

Industrial Motors

Commercial &
Appliance Motors

Automation

Digital &
Systems

Energy

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Distribution

Coatings

WG20 GEARED MOTORS

Up to 18,000 Nm

TECHNICAL
CATALOGUE



Driving efficiency and sustainability





WG20

A NEW GENERATION of Geared Motors

As one of the leading global manufacturers and solutions providers of drive technology, WEG's aim was to expand its extensive range of products by gear units produced in its own facilities. Perfect coordination of products throughout the drive train has put WEG in a position to offer customers even more superior and efficient solutions.

Under the leadership of WEG Gear Systems (formerly known as Watt Drive Antriebstechnik), the challenge was to develop a program which not only meets the current demands of the market, but also satisfied WEG's high quality requirements. The Group's own centre of excellence for geared motors in Austria, part of the WEG Group since 2011, can draw on more than 50 years of experience in development, production and sales of gear units and geared motors.

In order to satisfy the requirements of state-of-the-art geared motors the following market requirements were taken into account during the development phase:

STANDARD MOUNTING DIMENSIONS

For users, the aim was to make the new range of geared motors as easy and simple to use as possible. To ensure installation in an existing system or production line worked effortlessly without incurring unnecessary costs for conversions, the developers decided to adapt the mounting dimensions of the new gear units to products already established on the market. The objective: worldwide, easy and cost-effective interchangeability.

TORQUE TRANSMISSION

The gear units needed to be compact, efficient, robust and reliable. In order to achieve this goal a transmission had to be designed which allows large ratio ranges in a two-stage model while being able to integrate easily into the new design gear housing.

EFFICIENCY

Energy efficiency has always been of paramount importance to WEG. The aim here was to live up to this demand when designing the new WG20 geared motors. This requires the perfect interaction of sophisticated technology and exclusive use of high quality components.

WORLDWIDE USE

To meet the requirements of global mechanical and plant engineering, it was vital that the new geared motors can be used worldwide, whilst maintaining a high level of flexibility for applications.

The aim was to combine these and other market-related considerations and incorporate them into the designs of the geared motors, which are the perfect addition to WEG's range of products.

The solution is **WG20**.



Features



Highly efficient



In line with market



Optimised design



Less noise



www.cat4cad.com

Easy product selection

The “cat4CAD®” product configuration tool makes it easy to interactively select products. Comprehensive wizards, user-friendly navigation and many other extra features allow quick configuration of the required drive.

ADVANTAGES

- Extensive product library
- Fast configuration of motors and geared motors
- Creation of project files with comprehensive technical documentation
- Easy modification of generated product data by means of the project file
- Quick request times

FEATURES

- The entire menu is available in many languages.
- To-scale 2D/3D drawings and PDF and DXF dimension sheet drawings of the previously selected drive.
- The 2D/3D data can be exported for use in standard CAD programs.
- Comprehensive technical data sheets of the configured gear unit and motor at the click of a button.
- The project file allows complete management of previously selected drives on one screen.
At the click of a button one can save or print this project file, create PDF and DXF dimension drawings and send enquiries directly to our sales team.

SEE THE ONLINE VERSION AT www.cat4cad.com

DOWNLOAD THE OFFLINE VERSION AT www.weg.net/at/cat4cad

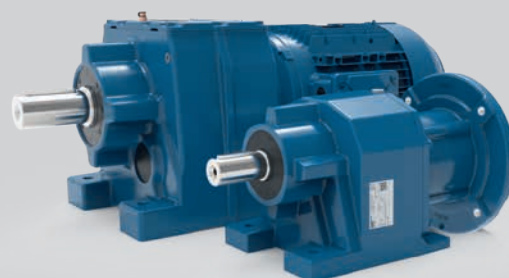
WG20 - Gear units and Geared motors up to 18000 Nm

WG20 is the first geared motor range to be completely developed in-house at WEG. It comprises helical, parallel shaft, helical bevel and helical worm gear units with torques between 50 and 18,000 Nm. Already the two-stage units excel with their large ratio range, as well as being exceptionally efficient thanks to the sophisticated design. The light aluminium housings of the gear units up to 600 Nm and the robust cast iron housings from 800 Nm provide a highly versatile and reliable product, with a wide range of possible applications.

C

Helical gear units

Nominal torque: 50 - 18000 Nm
Power range: 0.12 - 110 kW
Ratio range: 2.44 - 22,405.25



F

Parallel shaft gear units

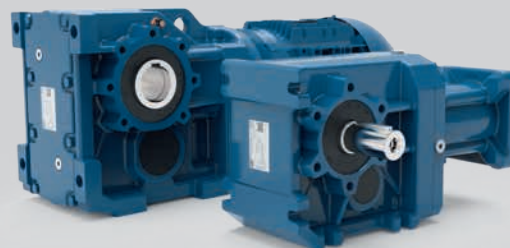
Nominal torque: 130 - 18000 Nm
Power range: 0.12 - 110 kW
Ratio range: 3.85 - 24,805.81



K

Helical bevel gear units

Nominal torque: 110 - 18000 Nm
Power range: 0.12 - 110 kW
Ratio range: 3.82 - 14,005.40



S

Helical worm gear units

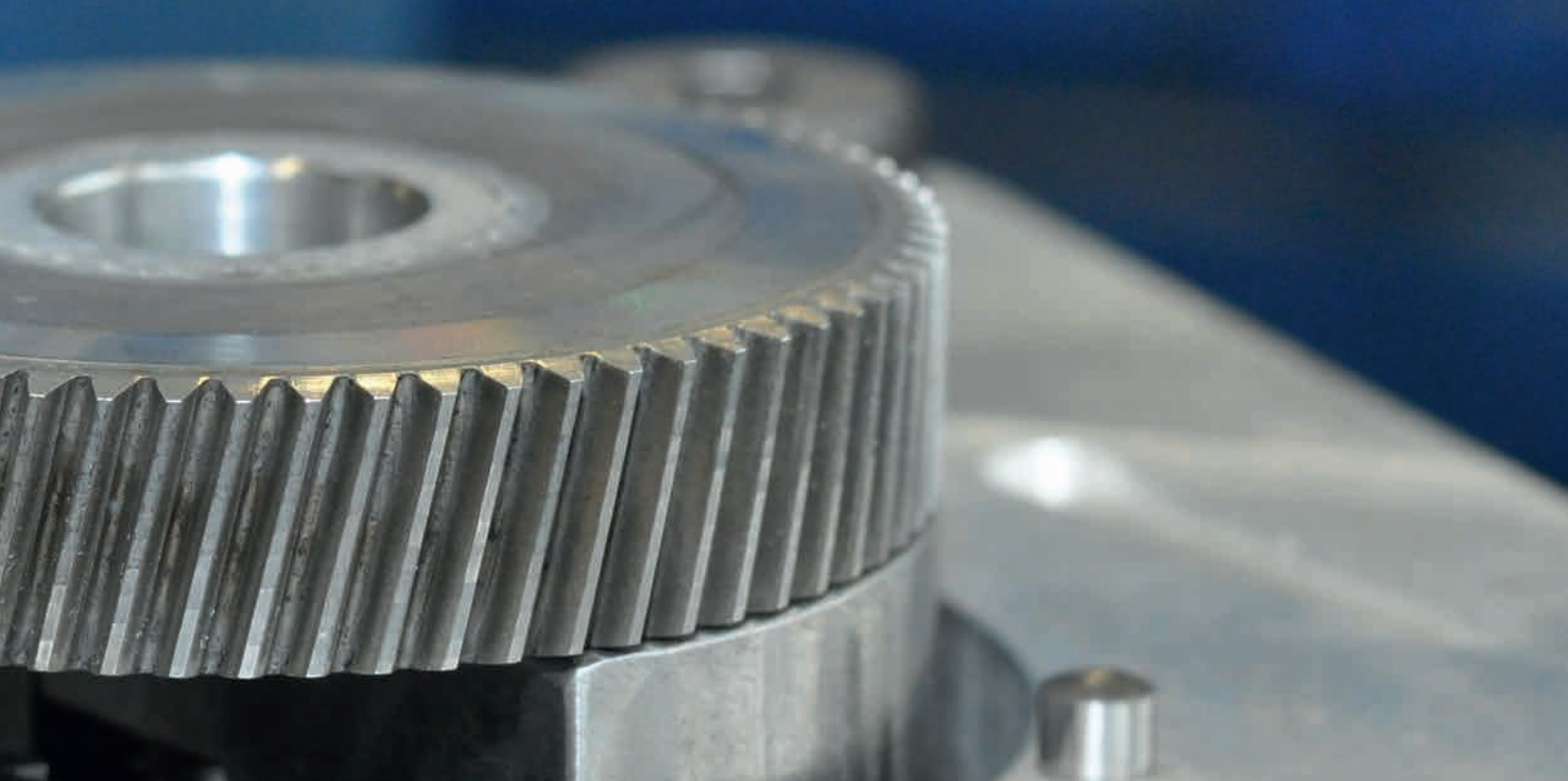
Nominal torque: 130 - 1600 Nm
Power range: 0.12 - 9.2 kW
Ratio range: 5.17 - 460





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Disclaimer

This catalogue contains information (descriptions and characteristics), which do not always apply as described in case of actual use. Data can also change due to product development. Characteristics are only binding if explicitly agreed to in the contract. Delivery opportunities and technical modifications subject to change without notice.

Drive calculation

1. Drive power

The required total power is divided into static and dynamic components. The static power is the component at constant speed (friction and lifting force). The dynamic component is the power for accelerating and decelerating of masses.

The selected rated motor power (P_N) must be bigger than the required static drive power. The required total power can be bigger than the rated motor power but it must be smaller than the maximum motor power.

	Formula	Unit
Output speed of the gear unit	$n_2 = \frac{v \cdot 30}{\pi \cdot r}$	[min ⁻¹]

Static drive power		
Linear movement Horizontal movement (conveyor, travel drive)	$P_{\text{stat}} = \frac{m \cdot g \cdot \mu \cdot v}{1000 \cdot \eta}$	[kW]
Inclined movement (inclined conveyor, travel drive with inclination)	$P_{\text{stat}} = \frac{m \cdot g \cdot v \cdot (\sin\alpha + \mu \cdot \cos\alpha)}{1000 \cdot \eta}$	[kW]
Vertical movement (lifting drive, hoist, bucket elevator)	$P_{\text{stat}} = \frac{m \cdot g \cdot v}{1000 \cdot \eta}$	[kW]
Static output torque	$M_{2\text{stat}} = \frac{P_{\text{stat}} \cdot 9550}{n_2}$	[Nm]

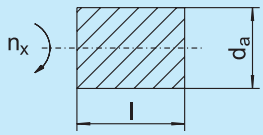
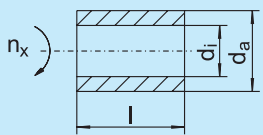
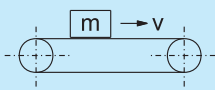
Dynamic drive power (acceleration/deceleration power)		
Horizontal movement	$P_{\text{dyn,A,(B)}} = \frac{m \cdot v^2}{1000 \cdot t_{A,(B)} \cdot \eta}$	[kW]
Rotary motion	$P_{\text{dyn,A,(B)}} = \frac{\Sigma J_{\text{red.}} \cdot n_1^2}{9,12 \cdot 10^4 \cdot t_{A,(B)} \cdot \eta}$	[kW]
Starting resp. braking time	$t_{A,(B)} = \frac{\Sigma J_{\text{red.}} \cdot n_1}{9,55 \cdot (M_{A,(B)} \pm M_L)}$	[s]
Minimum starting time against slipping	$t_{A\text{min}} = \frac{v}{\mu_0 \cdot g}$	[s]
Load torque of motor	$M_L = \frac{M_{2\text{stat}}}{i}$	[Nm]
Starting power	$P_A = P_{\text{dyn,A}} + P_{\text{stat}}$	[kW]
Braking power	$P_B = P_{\text{dyn,B}} \pm P_{\text{stat}}$	[kW]
Starting / braking torque	$M_{2,A,(B)} = \frac{P_{A,(B)} \cdot 9550}{n_2}$	[Nm]

+ M_L for braking when the load acts braking (e.g. lifts when going up)

- M_L for starting or for braking when the load acts accelerative (e.g. lifts when going down)

Mass moments of inertia

External load moments of inertia have to be reduced onto the motor shaft by squared ratios.

Reduced mass moment of inertia	$J_{ex.red.} = \frac{J_{ex}}{i^2}$	[kgm ²]
Solid cylinder 	$J_{ex.red.} = 98,2 \cdot \rho \cdot l \cdot d_a^4 \cdot \left(\frac{n_x}{n_1}\right)^2$	[kgm ²]
Hollow cylinder 	$J_{ex.red.} = 98,2 \cdot \rho \cdot l \cdot (d_a^4 - d_i^4) \cdot \left(\frac{n_x}{n_1}\right)^2$	[kgm ²]
Linear movement 	$J_{ex.red.} = 91,2 \cdot m \cdot \left(\frac{v}{n_1}\right)^2$	[kgm ²]

Approximate values for friction coefficients:

Rolling friction: $\mu_r = 0.005 - 0.02$ steel/steel
 $\mu_r = 0.02 - 0.06$ plastic/steel
 $\mu_r = 0.06 - 0.2$ rubber/steel

Static friction: $\mu_0 = 0.15$ steel/steel

Friction coefficient for conveyors:

$\mu_r = 0.13$ 10 m conveyor length
 $\mu_r = 0.08$ 25 m conveyor length
 $\mu_r = 0.06$ 50 m conveyor length
 $\mu_r = 0.05$ 100 m conveyor length

Designation	Unit	Description
d_a	[m]	Outside diameter
d_i	[m]	Inside diameter
f_B		Service factor
F_I		Inertial factor
g	[m/s ²]	Acceleration due to gravity
i		Gear ratio
$J_{ex.red.}$	[kgm ²]	All external mass moments of inertia corrected to motor input
J_{ex}	[kgm ²]	All external mass moments of inertia
J_{mot}	[kgm ²]	Mass moment of inertia of the motor
$\Sigma J_{red.}$	[kgm ²]	Sum of all $J_{red.}$ values
l	[m]	Length
m	[kg]	Mass
$M_{2,A}$	[Nm]	Output torque of gear unit for starting
$M_{2,B}$	[Nm]	Output torque of gear unit for braking
M_{2Nenn}	[Nm]	Permissible output torque
M_{2stat}	[Nm]	Static output torque
M_A	[Nm]	Starting torque of the motor (see motor electric data sheets from page 577)
M_B	[Nm]	Brake torque

Designation	Unit	Description
M_L	[Nm]	Load torque of motor
n_1	[min ⁻¹]	Input speed (motor speed)
n_2	[min ⁻¹]	Output speed (gear unit)
n_x	[min ⁻¹]	Speed of calculated components
P_A	[kW]	Power of gear unit at start
P_B	[kW]	Power of gear unit at stop
P_{stat}	[kW]	Static power
$P_{dyn,A}$	[kW]	Dynamic acceleration power
$P_{dyn,B}$	[kW]	Dynamic deceleration power
r	[m]	Sprocket / roller radius
t_{Amin}	[s]	Minimum starting time with risk of slip
t_A	[s]	Starting time
t_B	[s]	Braking time
v	[m/s]	Linear velocity
α	[°]	Angle of inclination
η		Efficiency of the gear unit, system
μ		Coefficient of friction
μ_0		Coefficient of static friction
μ_r		Coefficient of rolling friction
ρ	[kg/dm ³]	Density (steel=7.85 kg/dm ³)

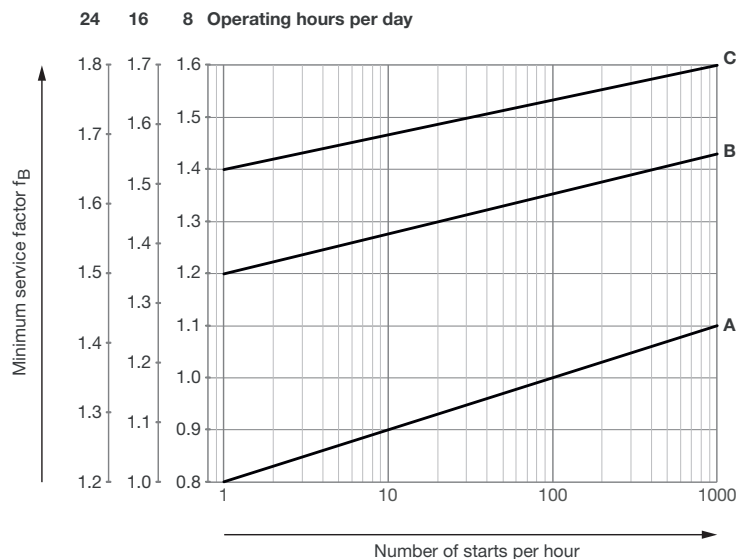
2. Load types

Load type A	Load type B	Load type C
Uniform load, small masses to be accelerated, no shocks	Non-uniform load, medium masses to be accelerated, medium shocks	Extremely rough conditions, high masses to be accelerated, heavy shocks and alternating load
Examples: Continuous conveyor for bulk goods, light conveyors, blowers, centrifugal pumps, light elevators, screw conveyors, fluid agitators	Examples: Bucket conveyors, rotary furnaces, printing and dyeing machines, conveyor drums, centrifugal pumps and semi-fluid good agitators, wood working machines, elevators, screw conveyors, concrete mixers	Examples: Ramming machines, calenders, duty rolling mills, presses, heavy mixer, stone crushers, shredders, heavy winches and lifts

3. Service factor

The gear unit required can be selected from the following tables showing the power, torque and output speed options. All our gear units are adequately dimensioned for long-life industrial applications and are designed for continuous loading under uniform operating conditions with small masses to be accelerated. Operating times of 8-10 hours a day are considered standard. No drive can be built to withstand all possible conditions, therefore the load conditions at the site have to be determined accurately and the proper load type identified. After determining the daily operating hours, selecting the type and establishing the number of starts (c/h), see the following diagram to find out the necessary service factor f_B . The inertial factor F_I assists in evaluating and attributing the masses to be accelerated. The service factor given in the tables indicates the reserve load in the rated torque for the specific gear unit.

In the tables you can usually choose between two types of gear units with the same or similar speeds, but different service factors. When you select the correct gear unit, the f_B from the diagram below should always be less than or equal to the available f_B (from the selection tables) for the chosen type. For short time operation, you can sometimes select a smaller gear unit, while for peak operation, a large number of starts or 24-hour continuous operation, a larger type is necessary. The output speed figures shown in the selection tables have been rounded up or rounded off. They may however vary due to the motor size and are valid for nominal load. Deviations of +/- 3 % are permissible.



	Formula	Unit
Service factor	$f_B = \frac{M_{2Nenn}}{M_{2stat}}$	
Inertial factor	$F_I = \frac{\sum J_{ex,red} + J_{mot}}{J_{mot}}$	[min ⁻¹]

Modes of operation DIN EN 60034-1 see page 571.

Legend see page 9.

Thermal power limit

The thermal power limit P_t must always be taken into account when designing a drive. It represents the maximum input power which can be transmitted by the gear unit at the given ambient temperature in a continuous operation mode (S1).

The technical data of the geared motors shown in the selection tables apply to an ambient temperature of +20°C. Thermal power limits for other temperatures can be seen in the table below.

Parameters to be considered:

- Higher / lower temperatures
- Vertical mounting positions (M2 or M4)
- Higher speed (> 1800 min⁻¹) due to e.g. use of frequency inverter
- Small ratios
- Little mounting space

For such conditions we recommend consulting WEG. The geared motors can be adapted according to customer requirements by using e.g. lubricant expansion, optimised oil quantities, synthetic oils or Viton seal rings.

Gear unit size	Ambient temperature								
	-20 °C	-10 °C	0 °C	+10 °C	+20 °C	+30 °C	+40 °C	+50 °C	+60 °C
C002	2.5	2.1	1.8	1.5	1.2	1.0	0.7	0.5	0.3
C012	5.0	4.3	3.6	3.0	2.5	2.0	1.5	1.1	0.7
C032	10	8.7	7.4	6.2	5.0	4.0	3.0	2.1	1.3
C033	6.1	5.2	4.5	3.7	3.0	2.4	1.8	1.3	0.8
C052	19	16	14	12	9.5	7.5	5.7	4.0	2.5
C053	11	9.8	8.4	7.0	5.7	4.5	3.4	2.4	1.5
C062	26	22	19	16	13	10	7.8	5.5	3.5
C063	16	14	11	9.6	7.8	6.2	4.7	3.3	2.1
C072	34	29	25	21	17	13	10	7.2	4.5
C073	20	17	15	12	10	8.1	6.1	4.3	2.7
C082	58	50	42	35	29	23	17	12	7.7
C083	35	30	26	21	17	14	11	7.4	4.7
C092	82	71	60	50	41	32	25	17	11
C093	49	43	36	30	25	20	15	11	6.6
C094	34	29	25	21	17	13	10	7.2	4.5
C102	103	89	75	63	51	41	31	22	14
C103	62	54	46	38	31	25	19	13	8.3
C104	42	36	31	26	21	17	13	9	5.6
C132	142	123	105	87	71	57	43	30	19
C133	86	74	63	53	43	34	26	18	12
C134	58	50	43	36	29	23	18	12	7.8
C142	191	165	140	117	96	76	57	41	26
C143	115	99	85	71	58	46	35	25	15
C144	78	68	57	48	39	31	24	17	11
C162	271	234	199	167	136	108	82	58	36
C163	164	141	120	101	82	65	49	35	22
C164	111	96	82	68	56	44	34	24	15
C165	81	70	59	50	41	32	24	17	11
F022	8.4	7.2	6.1	5.1	4.2	3.3	2.5	1.8	1.1
F032	11	9.7	8.3	6.9	5.7	4.5	3.4	2.4	1.5
F042	18	15	13	11	8.9	7.1	5.4	3.8	2.4
F043	11	9.3	7.9	6.6	5.4	4.3	3.2	2.3	1.4
F052	24	21	18	15	12	9.7	7.3	5.2	3.3
F053	15	13	11	9.0	7.4	5.8	4.4	3.1	2.0
F062	31	27	23	19	15	12	9.3	6.6	4.1
F063	19	16	14	11	9.3	7.4	5.6	4.0	2.5
F072	51	44	37	31	25	20	15	11	6.8
F073	31	26	23	19	15	12	9.2	6.6	4.1
F082	73	63	54	45	37	29	22	16	9.8
F083	44	38	32	27	22	18	13	9.4	5.9
F084	30	26	22	18	15	12	9	6.4	4.0
F092	107	92	78	65	53	42	32	23	14

Gear unit size	Ambient temperature								
	-20 °C	-10 °C	0 °C	+10 °C	+20 °C	+30 °C	+40 °C	+50 °C	+60 °C
F093	64	56	47	40	32	26	19	14	8.6
F094	44	38	32	27	22	17	13	9	5.9
F102	157	136	115	96	79	62	47	34	21
F103	95	82	70	58	48	38	29	20	13
F104	64	56	47	40	32	26	19	14	9
F122	220	190	162	135	110	87	66	47	30
F123	133	115	98	82	67	53	40	28	18
F124	90	78	66	55	45	36	27	19	12
F152	337	291	247	207	169	134	101	72	45
F153	203	176	149	125	102	81	61	43	27
F154	138	119	101	85	69	55	42	30	19
F155	100	87	74	62	50	40	30	21	13
K022	10	8.8	7.4	6.2	5.1	4.0	3.1	2.2	1.4
K033	10	8.6	7.3	6.1	5.0	4.0	3.0	2.1	1.3
K043	16	14	12	9.8	8.0	6.3	4.8	3.4	2.1
K053	21	18	15	13	10	8.3	6.3	4.5	2.8
K063	23	20	17	14	12	9.3	7.0	5.0	3.1
K073	37	32	27	23	19	15	11	8.0	5.0
K083	44	38	32	27	22	17	13	9.4	5.9
K084	30	26	22	18	15	12	9.0	6.4	4.0
K093	62	54	46	38	31	25	19	13	8.3
K094	42	36	31	26	21	17	13	9.0	5.7
K103	95	82	69	58	47	38	29	20	13
K104	64	55	47	39	32	26	19	14	8.6
K123	131	113	96	80	66	52	39	28	18
K124	89	77	65	55	45	35	27	19	12
K153	185	160	136	114	93	74	56	40	25
K154	126	109	92	77	63	50	38	27	17
K155	91	79	67	56	46	36	28	20	12

Thermal power limit P_t [kW]

Thermal power limit for helical worm gear units

The thermal power limit is calculated from the permissible thermal power loss using the following formula:

$$P_t = \frac{P_v}{1 - \frac{\eta}{100}}$$

Designation	Unit	Description
P_t	[kW]	Thermal power limit
P_v	[kW]	Permissible thermal power loss (see table)
η	[%]	Efficiency of the gear unit (see from page 531)

Gear unit size	Ambient temperature								
	-20 °C	-10 °C	0 °C	+10 °C	+20 °C	+30 °C	+40 °C	+50 °C	+60 °C
S03	0.22	0.20	0.17	0.15	0.13	0.11	0.09	0.07	0.04
S04	0.32	0.29	0.25	0.22	0.19	0.16	0.13	0.10	0.06
S05	0.48	0.44	0.39	0.34	0.29	0.24	0.19	0.15	0.10
S06	0.75	0.68	0.60	0.53	0.45	0.38	0.30	0.23	0.15
S07	0.95	0.86	0.76	0.67	0.57	0.48	0.38	0.29	0.19

Permissible thermal power loss P_v

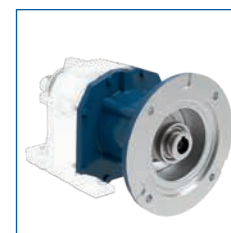
Input types

1. IEC Adapter I

Standard motors complying with DIN EN 50347 IM B5 can be mounted on WG20 gear units with IEC adapters. The adapters are oil-tight. The motors are attached using different couplings, depending on the adapter size:



Plug-in adapter



Adapter with coupling

- **I63 to I100: Plug-in adapter**

The connecting coupling is one part; the motor shaft is inserted directly into the coupling shaft. Before mounting, the motor shaft is to be cleaned and coated with lubricating paste (e.g. Klüberpaste 46 MR 401). This makes it easier to disassemble the shaft when servicing is required and protects the connection against frictional corrosion.

- **I112 to I132: Curved teeth coupling**

The connecting coupling comprises two parts; a coupling hub is mounted on the motor shaft and fixed using a threaded pin. Power is transmitted by means of the internally toothed coupling sleeve.

- **I160 to I280: Claw coupling**

The connecting coupling comprises two parts; a coupling hub is mounted on the motor shaft and fixed using a threaded pin. Power is transmitted by means of a flexible coupling star.

Complete drive systems with WEG IEC motors:

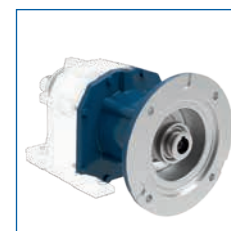
By mounting, for example, WEG W22 IEC motors or WEG roller table motors, complete packages can be supplied for a wide range of applications.

2. NEMA Adapter N

Standard motors complying with NEMA C-face standard can be mounted on WG20 gear units with NEMA adapters. The adapters are oil-tight. The motors are attached using different couplings, depending on the adapter size:



Plug-in adapter



Adapter with coupling

- **N56 to N182: Plug-in adapter**

The connecting coupling is one part; the motor shaft is inserted directly into the coupling shaft. Before mounting, the motor shaft is to be cleaned and coated with lubricating paste (e.g. Klüberpaste 46 MR 401). This makes it easier to disassemble the shaft when servicing is required and protects the connection against frictional corrosion.

- **N184 to N215: Curved teeth coupling**

The connecting coupling comprises two parts; a coupling hub is mounted on the motor shaft and fixed using a threaded pin. Power is transmitted by means of the internally toothed coupling sleeve.

- **N254 to N364: Claw coupling**

The connecting coupling comprises two parts; a coupling hub is mounted on the motor shaft and fixed using a threaded pin. Power is transmitted by means of a flexible coupling star.

Complete drive systems with WEG NEMA motors:

By mounting, for example, WEG W22 NEMA motors, complete packages can be supplied for a wide range of applications.

It is recommended that the motors are sealed with a sealant (e.g. Loctite 510) when IEC and NEMA adapters are mounted to the flange to prevent water or dust ingress. Use screws of strength class 8.8 (or higher) to fasten the motors to the flanges. Observe the corresponding tightening torques according to the mounting instruction.

3. SERVO Adapter S

WG20 gear units with SERVO adapters can be fitted with servomotors from different manufacturers. The adapters are oil-tight, and the motors are mounted using flexible servo couplings. The backlash-free connection between the motor shaft and the adapter shaft is made by means of a clamp connection.

Both servo motors with smooth shaft and servo motors with feather key can be mounted. The mounting clearance between the motor shaft and coupling is reduced to 0 by means of a clamp ring.



Servo coupling

- **S92 to S190: Servo coupling**

4. Input Unit U

Gear unit versions with input unit enable the WG20 gear units to be operated by attaching drive elements such as couplings or belt drives. Permissible shear forces or thermal power limits must be checked accordingly.



Input unit U2 and U3

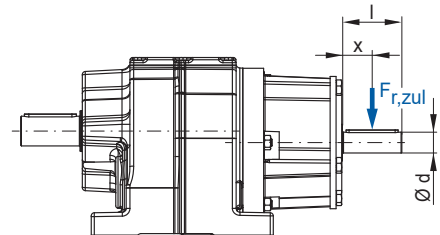


Input unit U5 to U7

- **Input unit sizes: U2, U3, U5, U6, U7**

Size	U2	U3	U5			U6	U7
Input shaft [mm]	19x40	24x50	28x60	38x80	42x110	48x110	55x110

The shear forces given in the following table (Permissible shear forces - Input unit on page 14) apply to input units with force applied to the shaft centre $x = l/2$. When determining the permissible shear forces, the unfavourable rotating direction and the most unfavourable force direction is assumed, as well as an input speed $n_1 = 1400 \text{ min}^{-1}$ at a given rated power P_N . The calculation was made with a standard shaft and standard bearing. For exact determination of the permissible shear force $F_{r,zul}$, the direction of force and the rotating direction must be specified.



Input shaft unit [mm]	$\varnothing d$	l	M_{max} [Nm] at $F_r = 0$	Nominal power P_N [kW]											
				0.12	0.18	0.25	0.37	0.55	0.75	1.1	1.5	2.2	3	4	5.5
				Permissible shear force $F_{r,zul}$ [N]											
U2	19	40	18	2600	2500	2400	2300	2000	1800	1600	1300	700	-	-	-
U3	24	50	100	5000	5000	5000	5000	5000	5000	4600	4200	3400	2500	2200	1700
U5	28	60	100	6500	6500	6500	6500	6500	6500	6500	6400	6400	6400	6300	6300
	38	80	170	11000	11000	11000	11000	11000	11000	11000	11000	10500	10500	10000	9500
	42	110	240	11000	11000	11000	11000	11000	11000	11000	11000	10500	10500	10000	9500
U6	48	110	490	15000	15000	15000	15000	15000	15000	15000	15000	15000	15000	14500	14500
U7	55	110	970	25000	25000	25000	25000	25000	25000	25000	25000	25000	25000	25000	25000

Input shaft unit [mm]	$\varnothing d$	l	M_{max} [Nm] at $F_r = 0$	Nominal power P_N [kW]											
				7.5	9.2	11	15	18.5	22	30	37	45	55	75	
				Permissible shear force $F_{r,zul}$ [N]											
U2	19	40	18	-	-	-	-	-	-	-	-	-	-	-	-
U3	24	50	100	1000	500	-	-	-	-	-	-	-	-	-	-
U5	28	60	100	6200	6100	6000	-	-	-	-	-	-	-	-	-
	38	80	170	9000	8000	7500	6000	4500	-	-	-	-	-	-	-
	42	110	240	9000	8000	7500	6000	4500	3000	-	-	-	-	-	-
U6	48	110	490	14000	13500	13000	11500	10500	9500	7500	5500	3000	-	-	-
U7	55	110	970	25000	25000	25000	25000	25000	25000	25000	25000	24000	23000	21000	-

Permissible shear force - Input unit $F_{r,zul}$ at $x = l/2$

Explosion-proof gear units and geared motors

WG20 type series gear units meet the requirements of Directive 2014/34/EU on equipment for use in potentially hazardous areas. Both gear units and geared motors can be used.



WG20 geared motor for application in zones 2 + 22



WG20 geared motor for application in zones 1 + 21

General information

The operation of systems requires special measures in areas with explosive air/gas mixtures or air/dust mixtures. The Directive governs the possible uses of equipment within the existing danger zones, whereby both electrical and mechanical equipment, such as gear units, must meet the minimum requirements specified in the standard.

Zoning

Zoning takes into account whether the Ex atmosphere is a mixture of air with gas or with dust.

Relevant areas

- **Category 2G/2D and EPL Gb/Db units**

are intended for use in areas in which there is *occasionally* an explosive atmosphere. They are permitted for use in zone 1 (category 2G) and zone 21 (category 2D), and zone 2 (3G) and 22 (3D).

- **Category 3G/3D and EPL Gc/Dc units**

are intended for use in areas in which an explosive atmosphere caused by gases, vapours, mists or suspended dust is unlikely to occur. However, if this does occur, it will occur only *rarely or for a short period of time*. These units are permitted for use in zone 2 (category 3G) or zone 22 (category 3D).

Marking according to standards

Category	Equipment group I		Equipment group II					
	Mines		Other areas with dust or gas explosive atmosphere					
	M1	M2	1		2		3	
Presence of explosive atmospheres			continuous, frequent or for long periods		likely in normal operation		not likely in normal operation, only for short period of time	
Surrounding atmosphere			G	D	G	D	G	D
Zone			0	20	1	21	2	22
Equipment Protection Level	Ma	Mb	Ga	Da	Gb	Db	Gc	Dc
Type of protection (not electric)					h (c, k)	h (c, k)	h (c, k)	h (c, k)
Type of protection (electric)					d, eb	tb	ec	tc
Ex-marking gear unit					II 2G Ex h IIC T4 Gb	II 2D Ex h IIIC T125°C Db	II 3G Ex h IIC T4 Gc	II 3D Ex h IIIC T125°C Dc
Ex-marking motor					II 2G Ex d IIC T4 Gb	II 2D Ex tb IIIC T125 °C Db	II 3G Ex ec IIC T3 Gc	II 3D Ex tc IIIC T125°C Dc

Possible range of application for WG20 products

Types of ignition protection used

The ignition of an explosive mixture in the classified zones is to be prevented by the various types of ignition protection used for the equipment.

- **Types of ignition protection for non-electrical equipment: according to EN ISO 80079-36 and -37**

„c“: Protection by means of structural safety

„k“: Protection by means of fluid coupling

- **Types of ignition protection for electrical equipment: according to EN ISO 60079-07 and -31**

„ec“ and „eb“: Protection by means of increased safety

„tc“ and „tb“: Protection by means of housing

„d“: flameproof enclosure

Applicable explosive atmospheres

For the types of ignition protection used, parts which can be exposed to an explosive atmosphere without restriction must not reach excessively high temperatures.

Temperature classes for gas explosion protection (G)

Flammable gases and vapours are divided into temperature classes according to their flammability. The influence of ambient temperature and self-heating of the equipment must also be taken into account.

The maximum surface temperature of the equipment may only assume values that correspond to the temperature class for gases. In fact, the ignition temperature represents the lowest temperature value at which a hot surface can ignite the corresponding explosive atmosphere.

In addition, gases and vapours are classified in explosion groups IIA, IIB and IIC. The hazardousness of gases increases from explosion group IIA to IIC.

WG20 geared motors can be used in temperature class T3 (max. surface temperature 200 °C).

WG20 gear units with input types can be used in temperature class T4 (max. surface temperature 135 °C).

Temperature class	T1	T2	T3	T4	T5	T6
Max. permissible surface temperature	450 °C	300 °C	200 °C	135 °C	100 °C	85 °C

Possible range of application for WG20 products

Surface temperature for dust explosion protection (D)

Dusts are not divided into temperature classes, but the value of the minimum ignition temperature is specified.

WG20 gear units and geared motors are classified with a max. surface temperature of 125 °C.

Dust group	Description	Degree of protection	
		tb	tc
IIIA	Combustible flyings	IP5X	IP5X
IIIB	Non-conductive dust	IP6X	IP5X
IIC	Conductive dust	IP6X	IP6X

Necessary degree of protection for dust explosive atmospheres

Table of lubricants

Recommended ambient temperatures	-10 °C ... +60 °C	-20 °C ... +80 °C	-25 °C ... +60 °C	-40 °C ... +80 °C	-20 °C ... +40 °C
DIN (ISO)	CLP (mineral oil) ¹⁾	CLP PG (polyglycol oil) ²⁾	CLP PG (polyglycol oil)	CLP-HC (polyalphaolefin oil) ³⁾	food grade
ISO VG	220	460	220	220	220
ARAL	Degol BG 220	Degol GS 460	Degol GS 220	Degol PAS 220	-
BP	Energol GR-XP 220	Energol SG-XP 460	Energol SG-XP 220	Energol HTX 220	-
Castrol	Alpha SP 220	Alphasyn PG 460	Alphasyn PG 220	Alphasyn HTX 220	Optileb GT 220
Klüber	Klüberoil GEM 1-220 N	Klübersynth GH 6-460	Klübersynth GH 6-220	Klübersynth GEM 4-220 N	Klüberoil 4UH1 220 N
Mobil	Mobilgear 600 XP 220	Glygoyle 460	Glygoyle 220	SHC 630	SHC Cibus 220
Shell	Omala S2 G 220	Omala S4 WE 460	Omala S4 WE 220	Omala S4 GX 220	-
Addinol	Gear Oil 220 F	Poly Gear PG 460	Poly Gear PG 220	Eco Gear 220 S	Ecoleb 220 FG

1) standard lubricant acc. to DIN 51517 part 3 - CLP ISO VG 220 for helical, parallel and helical bevel gear units

2) standard lubricant acc. to DIN 51517 part 3 - CLP PG ISO VG 460 for helical worm gear units

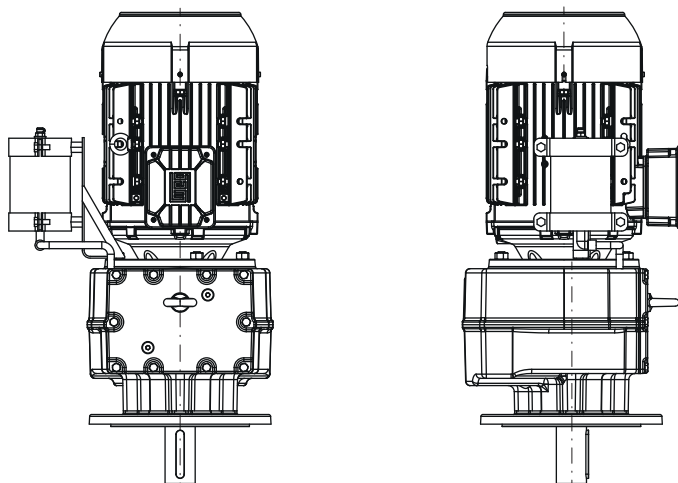
3) note critical starting behaviour at low temperatures

Lubricant expansion unit

For gear units and geared motors in M4 design, high oil levels are required for lubrication of the first gear stage. To prevent oil leaking from the gear unit during operation, expansion units are to be used at reductions $i < 20$ or at higher motor speeds (e.g. frequency drives operation $> 2000 \text{ min}^{-1}$).

The use of lubricant expansion units is recommended for gear unit sizes from C07 (helical gear unit), F06 (parallel shaft gear unit), K06 (helical bevel gear unit), S06 (helical worm gear unit) and for the conditions described above.

Example: CF082-11P-132S-04E-TH-TF



Painting

Standard colour geared motors: RAL 7011 (RAL 5009, RAL 9005 without additional costs)

In addition to the standard high-grade polyurethane-based surface finish other special finishes for applications that are subject to specific environmental conditions are offered. Paintwork is basically categorised according to the composition of the applied surface finish. The standard program contains 6 painting systems categorised from LA0 to LC5. Special colours are possible.

Painting system	Application	Layering	NDFT Nominal dry film thickness	Temperature range	Corrosion category DIN EN ISO 12944-5
not painted					
LA0	Primer	Dip primer Base coat (2 pack PUR)		-40 °C - +120 °C	
LC1 (Standard)	Indoor installation, neutral atmosphere	Dip primer Varnish (1K-AY-PUR*) or (2 pack PUR**)	40 µm	-40 °C - +120 °C	C1
LC2	Protected outdoor installation, neutral atmosphere	Dip primer 2x Varnish (2 pack PUR)	140 µm	-40 °C - +120 °C	C2
LC3	Outdoor installation, industrial atmosphere	Dip primer Base coat (2 pack PUR) Varnish (2 pack PUR)	160 µm	-40 °C - +120 °C	C3
LC4	Outdoor installation, aggressive atmosphere	Dip primer Base coat (2 pack EP) Intermediate base coat (2 pack PUR) Varnish (2 pack PUR)	240 µm	-40 °C - +120 °C	C4
LC5	Coast or offshore, very aggressive atmosphere, under water	Dip primer Base coat (2 pack EP) Intermediate base coat (2 pack PUR) 2x Varnish (2 pack PUR)	320 µm	-40 °C - +120 °C	C5

*) Colours RAL 7011, RAL 5009, RAL 9005

**) All other colours

Degrees of protection

Degree of protection according to DIN EN 60034-5.

The designation to indicate the degrees of protection consists of the characteristic letters IP followed by two numerals.

Code figure 1: degree of protection against contact with live or moving parts and against ingress of solid foreign objects

Code figure 2: degree of protection against harm for ingress of water

Code figure 1	
	Description
0	No protection
1	Protected against solid foreign objects of 50 mm diameter and larger: the probe (50 mm ball) may not fully penetrate.
2	Protected against solid foreign objects of 12.5 mm diameter and larger: the probe (ball 12.5 mm) shall not fully penetrate.
3	Protected against solid foreign objects of 2.5 mm diameter: the probe (ball 2.5 mm) must not penetrate at all.
4	Protected against solid foreign objects of 1 mm and larger: the probe (1 mm ball) must not penetrate at all.
5	Dust protected: ingress of dust is not totally prevented, but dust shall not penetrate in a quantity that the operation of the device is affected or to impair safety.
6	Dustproof: no ingress of dust at underpressure of 20 mbar in the housing

Code figure 2	
	Description
0	No protection
1	Protected against dripping water: vertically falling drops may not have any harmful effects.
2	Protected against dripping water when the housing is inclined up to 15°: vertically falling drops may not have any harmful effects when the housing is inclined up to 15° from the vertical.
3	Protected against water spray: water sprayed at an angle up to 60° on both sides of the vertical may not have any harmful effects.
4	Protected against splash water: water splashed against the housing from any direction may not have any harmful effects.
5	Protected against water jets: water that is from any direction in jets against the housing may not have any harmful effects.
6	Protected against strong water jets: water that is from any direction in powerful jets against the housing may not have any harmful effects.
7	Protected against the effects of temporary (1m for 30 min) immersion in water: water must not enter in quantities causing harmful effects, if the housing is under standardised conditions of pressure and time temporarily submerged in water.
8	Protected against the effects of continuous immersion in water: water must not enter in quantities causing harmful effects when the enclosure is permanently submerged in water under conditions to be agreed between manufacturer and user. The conditions must be more stringent than for index 7.

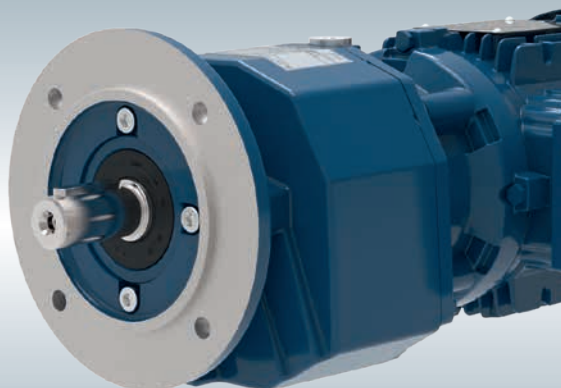
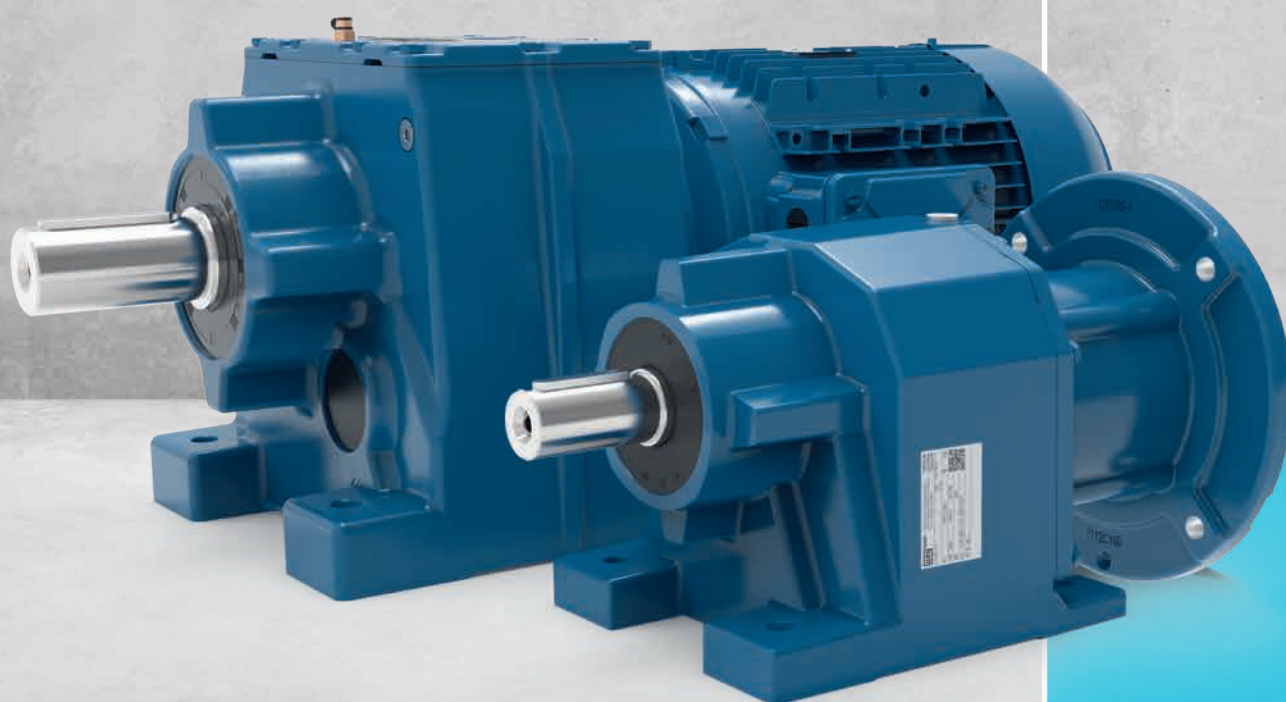
Degree of protection:

Modular system motor: IP55 (standard) to IP67

Brake: IP55 (standard) to IP66

Gear unit: IP65 (standard) to IP68

Helical gear units and Helical geared motors C



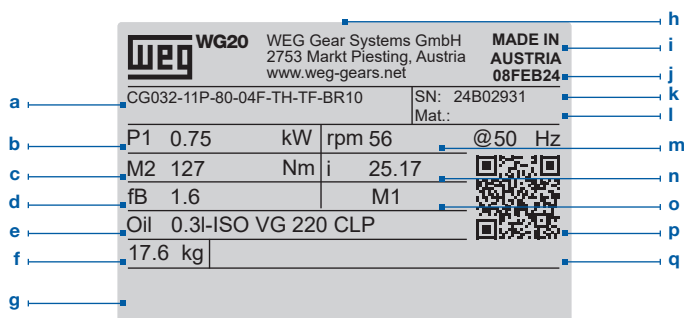
C

Technical Data

Size	C00	C01	C03	C05	C06	C07	C08	C09	C10	C13	C14	C16
Power [kW]	0.12 - 0.75	0.12 - 1.5	0.12 - 3.0	0.12 - 7.5	0.12 - 9.2	0.12 - 15	0.12 - 22	0.12 - 30	0.12 - 37	0.12 - 75	0.12 - 90	0.12 - 110
Torque [Nm]	50	85	200	400	600	820	1550	3000	4500	8000	13000	18000
Ratio	2.44	3.09	2.91	2.52	2.80	2.59	2.69	2.99	3.11	4.00	5.17	5.96
	47.44	66.50	286.32	328.43	375.71	351.33	368.94	3282.02	2636.78	1891.77	2162.84	22405.25
Number of stages	2	2	2/3	2/3	2/3	2/3	2/3	2/3/4	2/3/4	2/3/4	2/3/4	2/3/4/5
Housing material	aluminium						cast iron					
Solid shaft	Type	with key acc. to DIN 6885.1 and threaded bore acc. to DIN 332 sheet 2										
	Tolerance	< Ø 55: k6 / ≥ Ø 55: m6										
	Material	standard: C45E (1.1191) / stainless steel on request										
Flanges	Tolerance	centring ≤ 250: j6 / > 250: h6 acc. to DIN EN 50347										
	Material	cast iron										
Gear wheels	Type	honed - designed and produced according to DIN 3990/3991 - Q7										
	Material	16MnCr5 (1.7131) case hardened - minimum 58HRC										
Shaft seals	Type	type AS acc. to DIN 3760										
	Material	standard NBR / special FKM										
Bearing	standard / reinforced											
Lubricants	Type	standard CLP ISO VG 220 / special CLP HC ISO VG 220										
	Quantity	depending on mounting position										
Axle height	acc. to DIN 747: ≤ 50: -0.4; > 50 to ≤ 250: -0.5; > 250: -1 for foot-mounted gear motors, the motor may extend below the mounting surface											

General information

1. Nameplate



a	Type code	j	Production date
b	Motor power	k	Serial number
c	Output torque	l	Material number
d	Service factor	m	Output speed and Frequency
e	Type and quantity of lubricant	n	Total gear ratio
f	Weight	o	Mounting position
g	Space for ATEX code (if applicable)	p	QR-Code linked online to additional information
h	Manufacturer address	q	Space for additional information
i	Country of origin		

2. Type code

CG083-EX-11P-90S/L-04F ...

1 2 3 4 5 6 7 8 9 10

CG083-EX-I112-HT

1 2 3 4 5 11 12

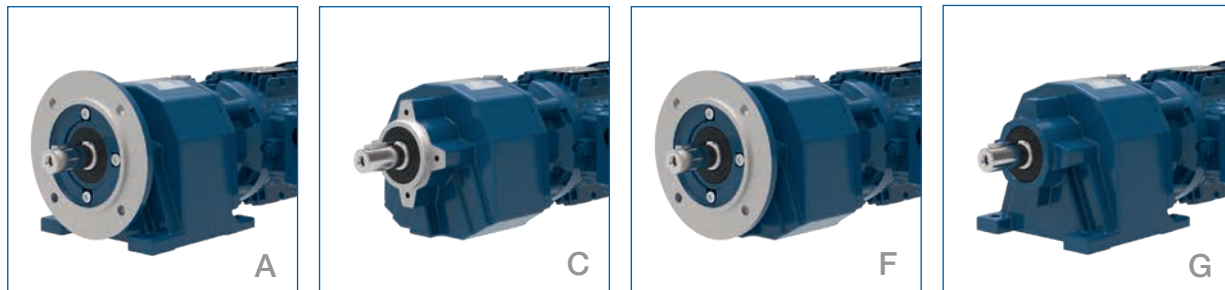
1	Type:	C = Helical gear unit
2	Design:	A = Foot mounted and B5 flange execution with output shaft C = B14 flange execution with output shaft F = Flange execution with output shaft G = Foot mounted with output shaft W = Foot mounted and B14 flange execution with output shaft
3	Size:	00 01 03 05 06 07 08 09 10 13 14 16
4	Number of stages:	2 = 2 gear stages 3 = 3 gear stages 4 = 4 gear stages 5 = 5 gear stages
5	ATEX execution:	when operated in explosive atmospheres, see page 15
6	Motor type:	14P = Integral motor aluminium IE3 11P = Integral motor aluminium IE3 11S = Integral motor aluminium IE4 22P = Integral motor cast iron IE3 22S = Integral motor cast iron IE4
7	Motor frame size:	63 71 80 L80 90S/L 100L L100L 112M 132S 132M L132M 160M 160L 180M 180L 200L 225S/M 280S/M
8	Number of poles:	04 = 4 poles 06 = 6 poles
9	Power indicator:	D E F G
10	Motor modules:	see from page 595
11	Adapters, Input unit:	IEC adapter I63 I71 I80 I90 I100 I112 I132 I160 I180 I200 I225 I250 I280 NEMA adapter N56 N143 N182 N184 N213 N254 N284 N324 N364 SERVO adapter S92 S105 S114 S115 S130 S141 S142 S180 S189 S190 Input unit U2 U3 U5 U6 U7 Direct mounting (IEC): IEC63 IEC71 IEC80 IEC90 IEC100 IEC112 IEC132 IEC160 IEC180 IEC200 IEC225 IEC250 IEC280
12	High/Low temperature execution:	HT LT

Type code Motor see page 565

3. Range

Size	C00	C01	C03	C05	C06	C07	C08	C09	C10	C13	C14	C16
Housing material	Aluminium					Cast iron						

4. Design



	A	Foot mounted and B5 flange execution with output shaft
	C	B14 flange execution with output shaft
	F	Flange execution with output shaft
	G	Foot mounted with output shaft
	W	Foot mounted and B14 flange execution with output shaft

5. Venting the gear unit

The helical gear unit sizes C00 to C06 are neither equipped with a venting nor an oil drain screw. They are supplied with lifetime-lubrication.

By default, the helical gear units from C07 are equipped with venting screws with a safety strap for transportation (see illustration). The rubber strap (a) of the venting screw must be removed entirely before the initial startup. The venting screw is placed accordingly to the mounting position (see chapter Mounting positions, page 26).



6. Overhung and axial loads

The overhung loads (F_{rN}) indicated in the respective selection tables apply to gear units with the force acting on the shaft center ($x=l/2$). The permissible overhung loads listed are based on the least favourable loading direction and calculated for standard shafts and standard bearings. Other load directions and action can be calculated with equations Q1 to Q3. If transmission elements are placed on the output shaft, an appropriate factor (f_z) has to be taken into consideration when determining the overhung load.

Gear wheels	Sprockets		V-belts	Flat belts
$f_z=1.1$ ($z \leq 17$)	$f_z=1.2$ ($z \leq 13$)	$f_z=1.1$ ($z > 13$)	$f_z=1.8$	$f_z=2.5$

Use the following equations Q1 and Q2 to calculate the permissible radial loads on the output shaft. Q3 is to calculate the real existing shaft loads for your application. The results are to be compared by using the equation Q4.

Q1	$F_{zL} = F_{rN} \cdot a_1$
Q2	$F_{zW} = F_W \cdot a_2$
Q3	$F_{Qvorh} = \frac{2 \cdot M_2}{d_0} \cdot f_z$
Q4	$F_{Qvorh} \leq F_{zL}$
	$F_{Qvorh} \leq F_{zW}$

Variable	Unit	Description
a1		Load action factor - output shaft bearing from Table 1
a2		Load action factor - output shaft from Table 1
d0	[m]	Effective diameter of the transmission element
M2	[Nm]	Geared motor output torque (from selection tables) or required calculated output torque
FzL	[N]	Permissible overhung load for output shaft bearings
FzW	[N]	Permissible overhung load for output shaft
FrN	[N]	Permissible overhung load from selection tables
Fw	[N]	Permissible overhung load - Output shaft x=l/2 from Table 2
FQvorh	[N]	Existing overhung load at gear shaft
fz		Factor for transmission element
Mmax	[Nm]	Highest possible output torque for coupling operation (Table 2)

Always use both equations Q1 and Q2 for your calculations.

		x / l						
		0	0.25	0.5	0.75	1	1.5	2
		a1 → Equation Q1						
		1.39	1.18	1.00	0.85	0.73	0.52	0.38
		a2 → Equation Q2						
		2.00	2.00	1.00	0.55	0.38	0.23	0.17

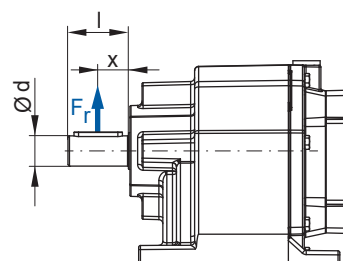


Table 1: Load action factors a1, a2

Intermediate values can be interpolated linearly. Combined load ($F_r \neq 0$; $F_a = 0$) on request.

Output shaft [mm]		Mmax at Fr = 0	Output torque M2 [Nm]													
			50	85	200	400	600	820	1550	3000	4500	8000	13000	18000		
Ø d	l		Fw [kN] at x/l = 0.5 → Equation Q2													
20	40	160	3.4	3.1												
25	50	300	5.9	5.7	4.8											
30	60	500		7.6	7.1	5.0										
35	70	800			11.0	10.0	8.3									
40	80	1170				13.0	12.0	10.7								
50	100	2250				24.0	24.0	23.0	20.0							
60	120	3740						31.0	30.0	23.0						
70	140	5850						44.0	41.0	36.0						
90	170	11700								72.0	70.0	61.0				
110	210	20800									106.0	103.0	93.0			
120	210	26700										129.0	121.0	109.0		

Table 2: Permissible overhung load - output shaft x = l/2

The axial loads (F_{aN}) for execution with output shaft, given in the following selection tables, are valid at radial force $F_{rN} = 0$. If there are axial loads or radial and axial components acting on the drive which are extraordinarily high, we recommend to contact the manufacturer.

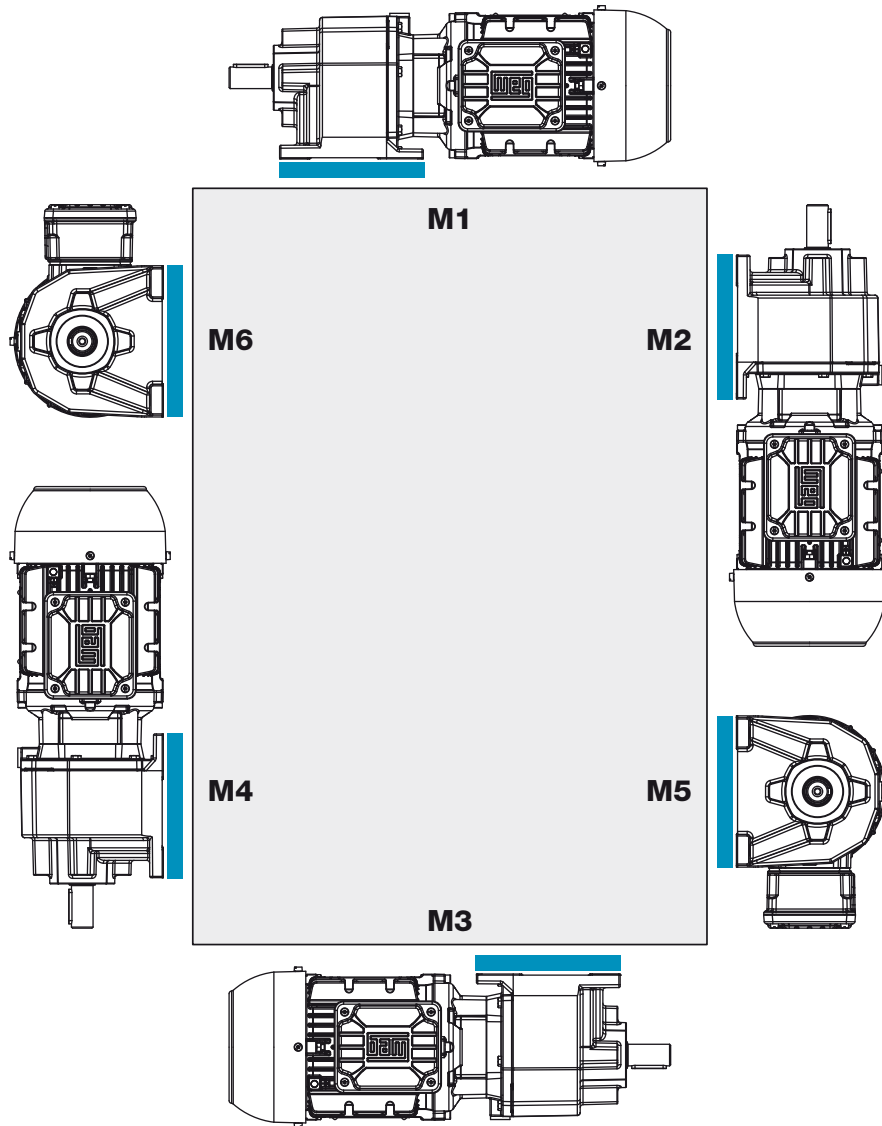
7. Mounting positions, Position of the terminal box and Cable entry

Mounting positions foot type - Sizes C00 to C06

Gear units C00 to C06 are not ventilated and supplied with lifetime lubrication

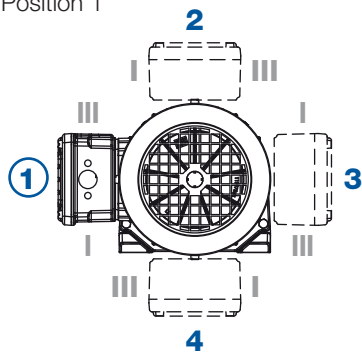
Reference area

C



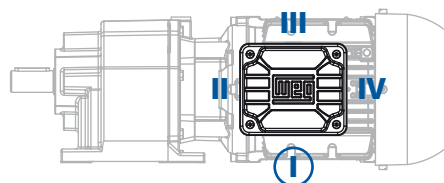
Position of the terminal box

Standard: Position 1



Cable entry

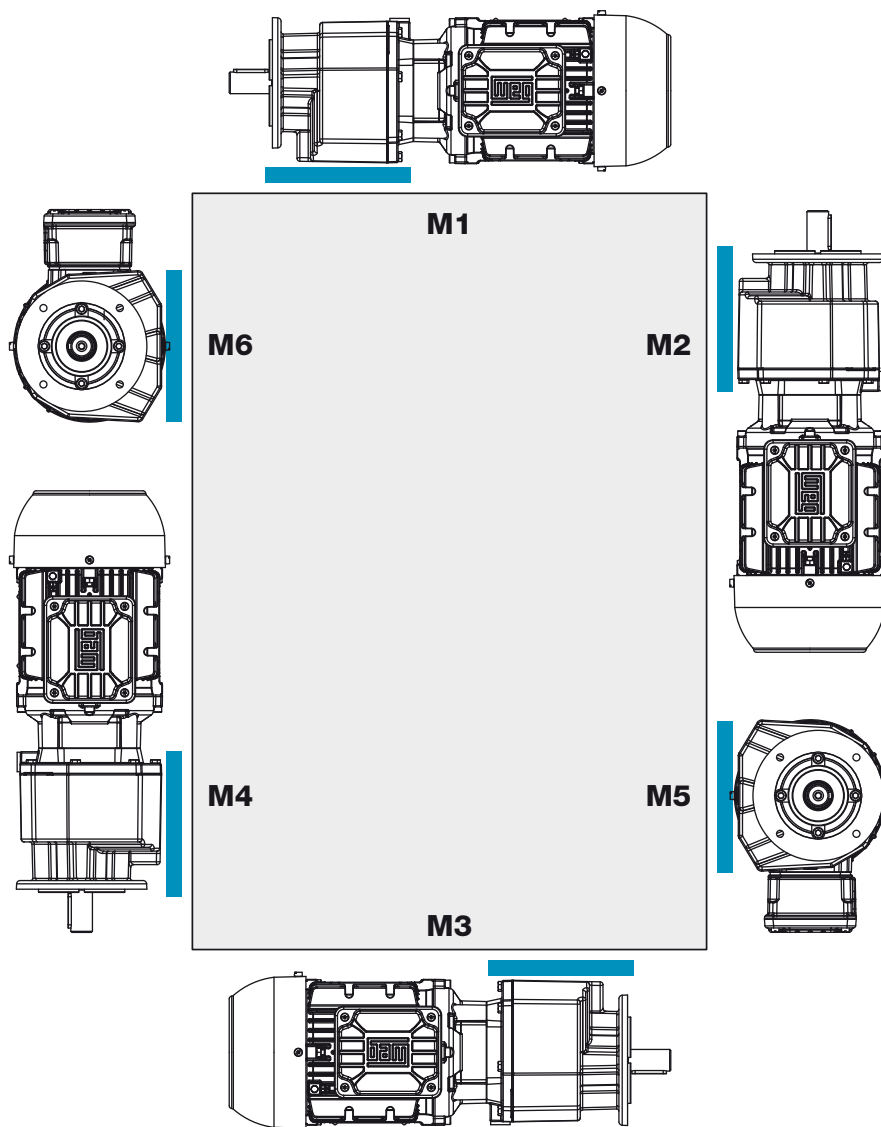
Standard: Position I



Mounting positions flange type - Sizes C00 to C06

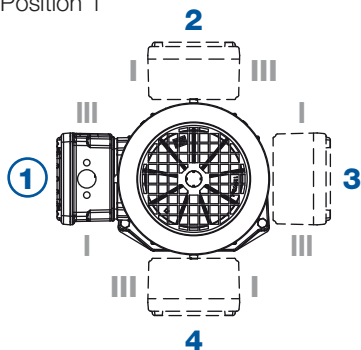
Gear units C00 to C06 are not ventilated and supplied with lifetime lubrication.

■ Reference area



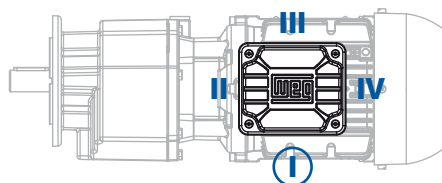
Position of the terminal box

Standard: Position 1



Cable entry

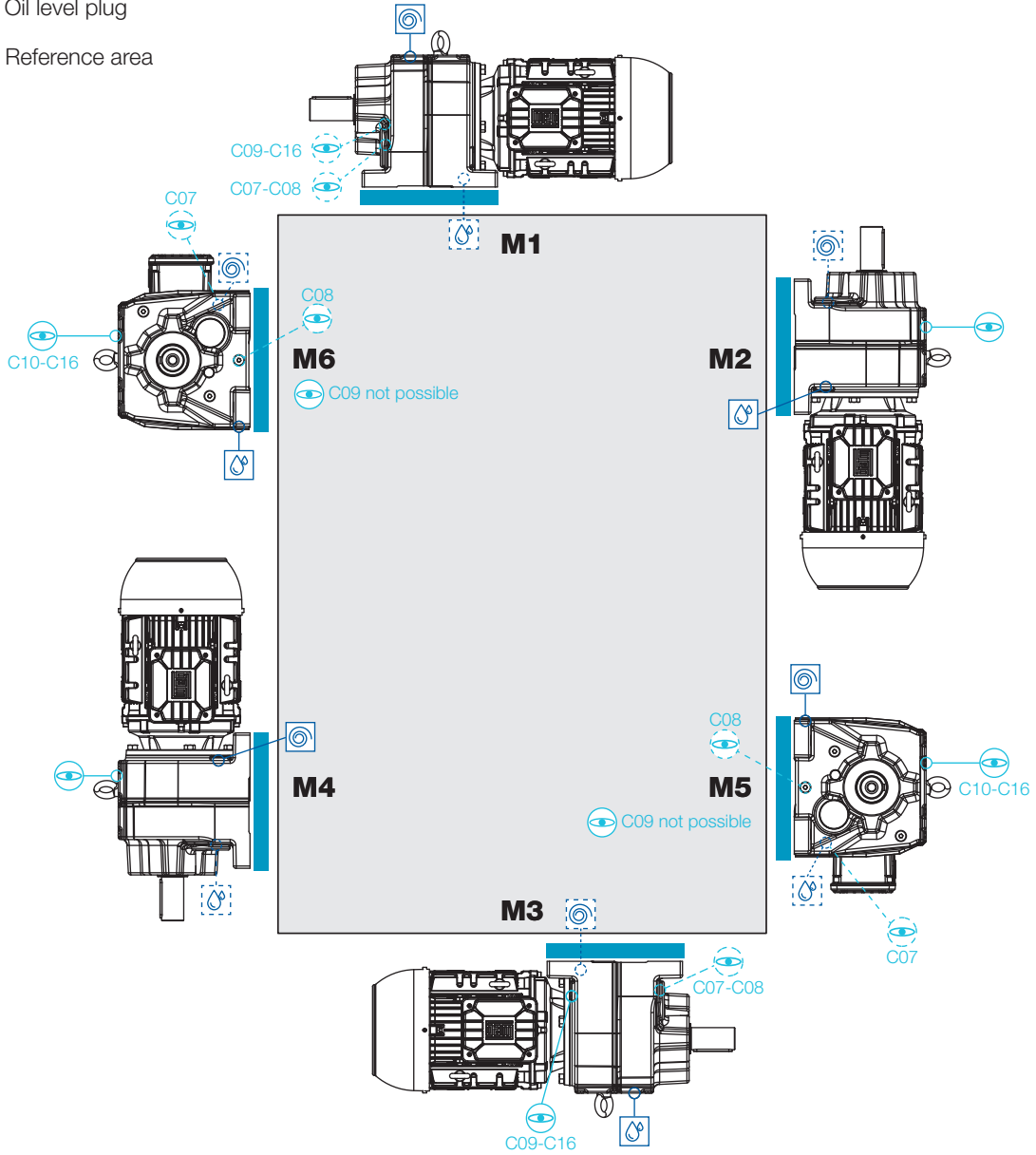
Standard: Position I



C

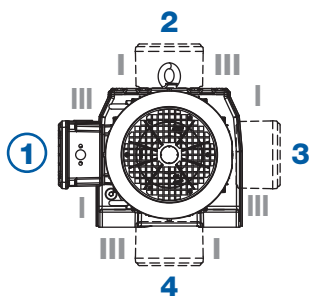
Mounting positions foot type - Sizes C07 to C16

- ☉ Venting screw
- ☉ Position visible on this side
- ☹ Oil drain screw
- ☹ Position covered or on the far side of the gear unit
- ☞ Oil level plug
- Reference area



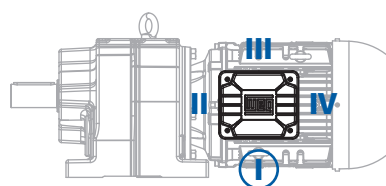
Position of the terminal box

Standard: Position 1



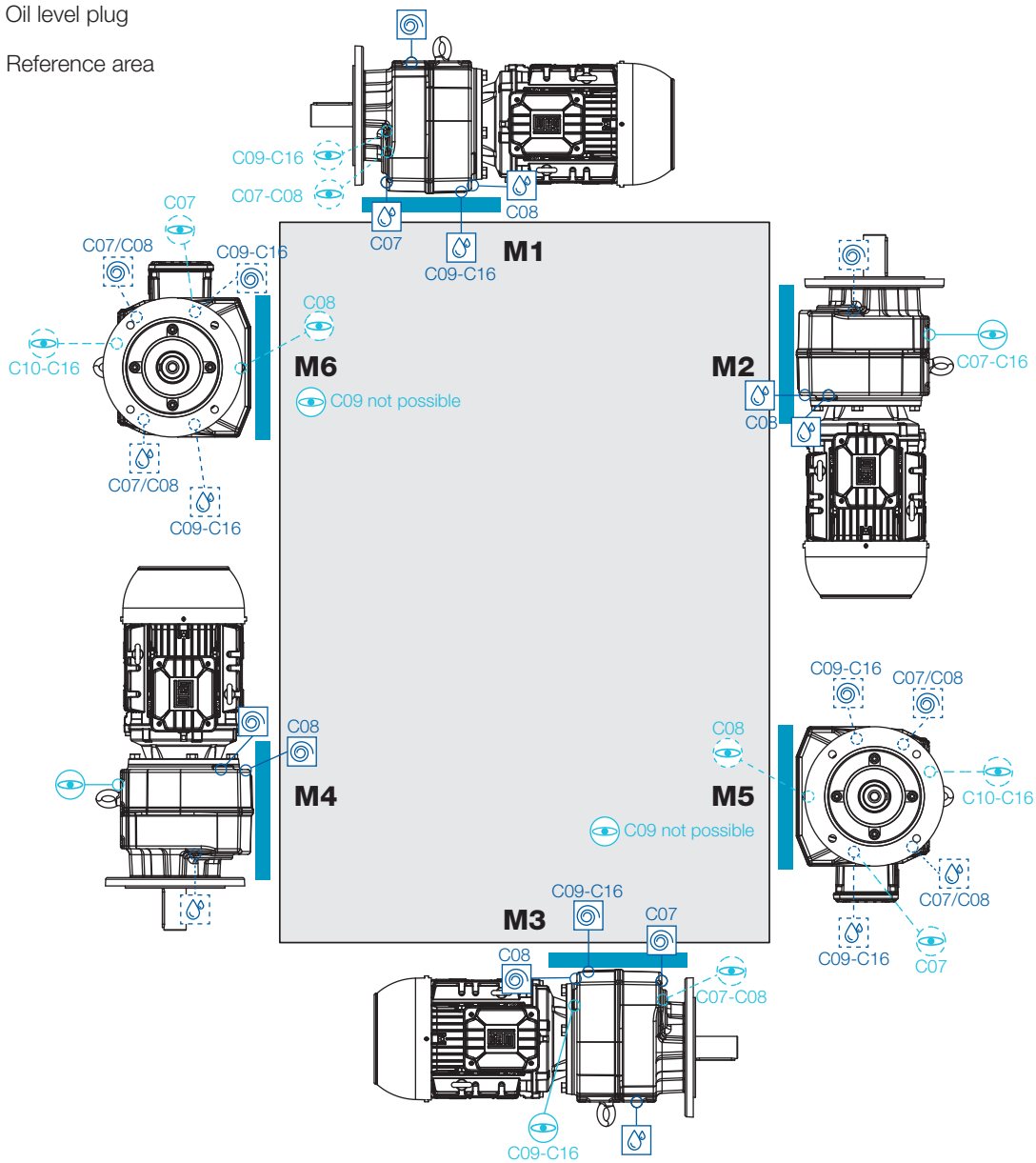
Cable entry

Standard: Position I



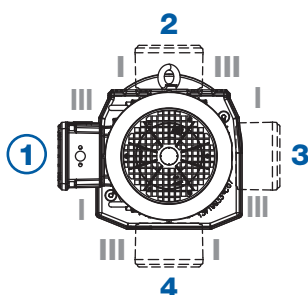
Mounting positions flange type - Sizes C07 to C16

- Position visible on this side
- Position covered or on the far side of the gear unit
- ⊕
 Venting screw
- ⊖
 Oil drain screw
- ⊕
 Oil level plug
- Reference area



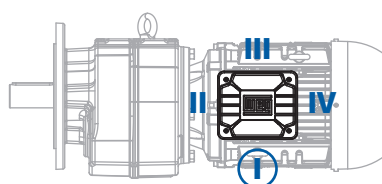
Position of the terminal box

Standard: Position 1



Cable entry

Standard: Position I



C

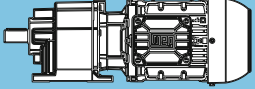
Selection tables - Geared motors

The technical data of the geared motors shown in the selection tables apply to an ambient temperature of +20 °C.

The selection tables are calculated with following motor data:

Power (IEC frame size)	Motor series (IE class)
up to 0.55 kW (63 - 80)	14P (IE3) - aluminium
0.75 - 9.2 kW (80 - 132)	11P (IE3) - aluminium
11 - 75 kW (160 - 250)	22P (IE3) - cast iron
75 - 110 kW (280)	22S (IE4) - cast iron

Structure of the selection tables

1										2	
P _N = 0.12 kW										IE3	
50 Hz		60 Hz				at 50 Hz				m kg	Dimension sheet see page
0.12 kW		0.14 kW									
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	f _B	i	F _{rn} kN	F _{an} kN					
3	4	5	6	7	8	9	10	11	12		

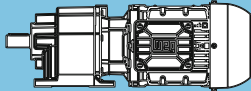
- 1 Rated power of the motor
- 2 Given values are based on the respective efficiency class
- 3 Output speed at 50 Hz
- 4 Output speed at 60 Hz
- 5 Output torque
- 6 Service factor
- 7 Total ratio
- 8 Permissible radial load at midpoint of the output shaft extension (standard bearing) at axial load=0
- 9 Permissible axial load (standard bearing) at radial load=0
- 10 Geared motor type
- 11 Weight
- 12 Page reference for dimension sheet

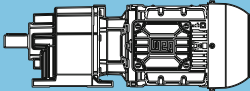
*) Increased rated power at 60 Hz can only be reached together with increased voltage within the wide range (for details see page 574).

Increased rated power
1.2 x P _N

P_N = 0.12 kW

IE3

50 Hz		60 Hz		i	at 50 Hz			m kg	Dimension sheet see page
0.12 kW	0.14 kW	M ₂ Nm	f _b		F _{rN} kN	F _{aN} kN			
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹								
0.05	0.06	20103	0.90	18322.05	106.8	22.2	CG165-14P-63-06F CF165-14P-63-06F	695 718	194
0.06	0.07	16816	1.10	15484.09	116.5	25.2			
0.07	0.09	13576	1.35	12662.22	123.8	28.2			
0.08	0.10	11904	1.55	11217.58	126.8	29.7			
0.09	0.11	10501	1.75	9998.22	129.0	31.0			
0.10	0.12	9568	1.90	9181.16	130.3	31.8			
0.12	0.15	7913	2.30	7752.38	132.3	33.3			
0.13	0.16	7120	2.55	7067.08	133.1	34.0			
0.15	0.18	6277	2.90	6345.03	133.8	34.8			
0.06	0.08	15979	1.15	22405.25	118.6	26.0	CG165-14P-63-04E CF165-14P-63-04E	695 718	194
0.08	0.09	12900	1.40	18322.05	125.1	28.8			
0.09	0.11	10734	1.70	15484.09	128.7	30.7			
0.10	0.12	9952	1.85	14467.28	129.8	31.5			
0.11	0.14	8598	2.10	12662.22	131.5	32.7			
0.13	0.15	7480	2.45	11217.58	132.7	33.7			
0.14	0.17	6563	2.75	9998.22	133.6	34.5			
0.35	0.43	2880	1.60	2636.78	41.7	23.5	CG104-14P-63-06F CF104-14P-63-06F	170 174	180
0.41	0.51	2405	1.90	2229.16	42.9	24.1			
0.43	0.53	2321	1.95	2156.24	43.1	24.2			
0.51	0.63	1930	2.35	1822.91	43.9	24.7			
0.54	0.67	1788	2.55	1702.59	44.1	24.9			
0.53	0.65	1827	2.50	2636.78	44.0	24.9	CG104-14P-63-04E CF104-14P-63-04E	170 174	180
0.63	0.77	1512	3.00	2229.16	44.5	25.3			
0.28	0.35	3697	0.85	3282.02	16.4	24.5	CG094-14P-63-06F CF094-14P-63-06F	128 126	176
0.34	0.42	3005	1.00	2683.89	22.9	25.6			
0.36	0.44	2902	1.05	2597.68	23.6	25.7			
0.41	0.50	2519	1.20	2268.18	25.9	26.3			
0.44	0.54	2349	1.30	2124.27	26.7	26.5			
0.50	0.61	2034	1.50	1854.82	28.1	27.0			
0.55	0.68	1828	1.65	1677.34	28.9	27.3			
0.56	0.69	1787	1.70	1643.20	29.0	27.4			
0.63	0.78	1580	1.90	1464.58	29.6	27.7			
0.69	0.85	1439	2.10	1344.90	30.0	27.9			
0.71	0.88	1386	2.20	1300.57	30.2	28.0			
0.81	1.0	1192	2.55	1135.60	30.6	28.2			
0.87	1.1	1108	2.75	1064.47	30.8	28.4			
0.89	1.1	1076	2.80	1035.22	30.9	28.4			
0.43	0.52	2390	1.30	3282.02	26.5	26.5	CG094-14P-63-04E CF094-14P-63-04E	127 125	176
0.52	0.64	1930	1.60	2683.89	28.5	27.1			
0.54	0.66	1864	1.65	2597.68	28.7	27.2			
0.62	0.76	1611	1.90	2268.18	29.6	27.6			
0.66	0.81	1503	2.00	2124.27	29.9	27.8			
0.76	0.93	1293	2.35	1854.82	30.4	28.1			
0.84	1.0	1157	2.60	1677.34	30.7	28.3			
0.86	1.0	1129	2.70	1643.20	30.8	28.3			
2.6	3.2	435	1.90	351.33	13.2	14.2	CG073-14P-63-06F CF073-14P-63-06F	38 42	170
2.9	3.6	396	2.10	319.60	13.3	14.2			
3.3	4.1	345	2.40	278.44	13.5	14.4			
3.7	4.5	314	2.65	253.30	13.6	14.4			
4.0	4.9	287	2.90	351.33	13.7	14.6	CG073-14P-63-04E CF073-14P-63-04E	38 42	170
2.5	3.0	465	1.30	375.71	9.6	6.8	CG063-14P-63-06F CF063-14P-63-06F	22 27	168
2.7	3.3	427	1.45	344.51	9.9	6.8			
3.0	3.7	381	1.60	307.24	10.2	7.0			
3.3	4.0	349	1.75	281.73	10.3	7.1			
3.8	4.7	301	2.00	242.60	10.6	7.2			
4.2	5.1	276	2.20	222.46	10.7	7.3			
4.9	6.1	233	2.60	188.11	10.9	7.4			
5.4	6.6	214	2.85	172.49	10.9	7.5			
3.7	4.6	306	2.00	375.71	10.6	7.2	CG063-14P-63-04E CF063-14P-63-04E	21 26	168
4.1	5.0	281	2.15	344.51	10.7	7.3			
4.6	5.6	251	2.40	307.24	10.8	7.4			
5.0	6.1	230	2.65	281.73	10.9	7.4			

P _N = 0.12 kW								IE3	
50 Hz		60 Hz		i	at 50 Hz			m kg	Dimension sheet see page
0.12 kW		0.14 kW			F _{rN} kN	F _{aN} kN			
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	f _B						
2.8	3.5	407	1.00	328.43	4.8	6.3	CG053-14P-63-06F CF053-14P-63-06F	17 22	166
3.1	3.8	370	1.10	298.57	5.4	6.4			
3.5	4.3	332	1.25	267.93	6.0	6.6			
3.8	4.7	302	1.35	243.57	6.3	6.7			
4.3	5.3	265	1.55	213.71	6.7	6.9			
4.8	5.9	241	1.70	194.29	6.8	7.0			
5.6	6.9	205	2.00	165.45	7.1	7.2			
6.1	7.6	186	2.15	150.41	7.2	7.2			
7.0	8.6	165	2.45	132.97	7.3	7.4			
7.7	9.4	150	2.70	120.88	7.4	7.4			
4.3	5.2	268	1.50	328.43	6.6	6.9	CG053-14P-63-04E CF053-14P-63-04E	17 22	166
4.7	5.8	244	1.65	298.57	6.8	7.0			
5.2	6.4	219	1.85	267.93	7.0	7.1			
5.8	7.1	199	2.05	243.57	7.1	7.2			
6.6	8.0	174	2.30	213.71	7.3	7.3			
7.2	8.9	158	2.55	194.29	7.4	7.4			
8.5	10	135	3.00	165.45	7.5	7.5			
4.6	5.6	251	0.80	202.55	3.9	3.0	CG033-14P-63-06F CF033-14P-63-06F	13 15	164
5.1	6.3	224	0.90	180.83	4.4	3.2			
5.6	6.9	203	1.00	164.23	4.7	3.3			
6.5	8.0	177	1.15	142.47	5.0	3.5			
7.1	8.8	160	1.25	129.39	5.2	3.6			
8.4	10	136	1.50	109.79	5.4	3.8			
9.3	11	124	1.65	99.71	5.5	3.8			
11	13	106	1.90	85.78	5.6	3.9			
12	15	97	2.10	77.90	5.7	4.0			
14	18	79	2.55	64.05	5.8	4.1			
16	20	72	2.80	58.17	5.8	4.1			
4.9	6.0	234	0.90	286.32	4.2	3.1	CG033-14P-63-04E CF033-14P-63-04E	12 14	164
5.4	6.6	212	0.95	260.03	4.6	3.3			
6.3	7.7	182	1.10	223.03	5.0	3.5			
6.9	8.5	165	1.25	202.55	5.2	3.6			
7.8	9.5	147	1.40	180.83	5.3	3.7			
8.6	10	134	1.50	164.23	5.4	3.8			
9.9	12	116	1.75	142.47	5.6	3.9			
11	13	106	1.90	129.39	5.6	3.9			
13	16	90	2.25	109.79	5.7	4.0			
14	17	81	2.50	99.71	5.7	4.1			
16	20	70	2.90	85.78	5.8	4.2			
14	17	82	1.05	66.50	3.1	1.1	CG012-14P-63-06F CF012-14P-63-06F	9.9 11	162
16	19	74	1.20	59.59	3.2	1.1			
18	22	64	1.35	51.80	3.3	1.2			
20	25	58	1.50	46.42	3.4	1.3			
22	27	52	1.65	42.00	3.4	1.3			
25	30	47	1.85	37.64	3.4	1.3			
28	34	41	2.10	33.09	3.5	1.4			
31	38	37	2.35	29.65	3.5	1.4			
36	45	32	2.70	25.50	3.5	1.4			
37	46	31	1.35	25.05	3.5	1.3			
47	58	24	2.75	19.51	3.6	1.4			
21	26	54	1.60	66.50	3.4	1.3	CG012-14P-63-04E CF012-14P-63-04E	9.5 11	162
24	29	49	1.75	59.59	3.4	1.3			
27	33	42	2.05	51.80	3.5	1.4			
30	37	38	2.25	46.42	3.5	1.4			
33	41	34	2.50	42.00	3.5	1.4			
37	46	31	2.80	37.64	3.5	1.4			
56	69	20	2.05	25.05	3.6	1.4			

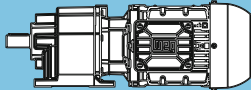
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Legend see page 29

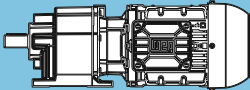
** ... auf Anfrage

P_N = 0.12 kW

IE3

50 Hz 0.12 kW	60 Hz 0.14 kW	M ₂ Nm	f _B	i	at 50 Hz			m kg	Dimension sheet see page
					F _{rN} kN	F _{aN} kN			
19	24	59	0.90	47.44	3.6	1.1	CG002-14P-63-06F CF002-14P-63-06F	8.8 10	160
22	27	52	1.00	42.34	3.6	1.2			
25	31	46	1.10	36.85	3.7	1.3			
28	35	41	1.25	32.89	3.7	1.3			
32	39	36	1.40	29.33	3.7	1.3			
35	44	32	1.55	26.18	3.7	1.4			
40	50	28	1.80	23.00	3.8	1.4			
45	56	25	2.00	20.53	3.8	1.4			
54	66	21	2.35	17.29	3.7	1.5			
55	68	21	1.50	16.86	3.7	1.4			
60	74	19	2.65	15.43	3.6	1.5			
68	84	17	3.00	13.54	3.5	1.5			
71	87	16	2.70	13.10	3.4	1.4			
30	36	39	1.30	47.44	3.7	1.3	CG002-14P-63-04E CF002-14P-63-04E	8.4 9.7	160
33	41	35	1.45	42.34	3.7	1.3			
38	47	30	1.70	36.85	3.8	1.4			
43	52	27	1.90	32.89	3.8	1.4			
48	59	24	2.10	29.33	3.8	1.4			
54	66	21	2.35	26.18	3.7	1.4			
61	75	19	2.70	23.00	3.6	1.5			
68	84	17	3.00	20.53	3.5	1.5			
81	100	14	3.55	17.29	3.3	1.5			
83	102	14	2.30	16.86	3.2	1.5			
91	111	13	4.00	15.43	3.2	1.5			
104	127	11	4.55	13.54	3.0	1.5			
107	131	11	4.05	13.10	3.0	1.5			
116	142	10	5.10	12.08	2.9	1.5			
135	165	9	5.30	10.42	2.8	1.5			
141	173	8	6.15	9.97	2.8	1.6			
158	193	7	6.90	8.90	2.7	1.6			
172	210	7	6.75	8.17	2.6	1.5			
204	250	6	8.75	6.88	2.5	1.6			
229	280	5	10.00	6.14	2.4	1.6			
292	357	4	9.95	4.81	2.2	1.6			
397	486	3	12.15	3.54	2.0	1.6			
575	704	2	15.60	2.44	1.7	1.6			

Legend see page 29

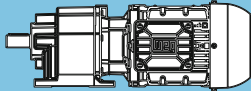
P _N = 0.18 kW								IE3	
50 Hz		60 Hz		i	at 50 Hz			m kg	Dimension sheet see page
0.18 kW		0.22 kW			F _{rN} kN	F _{aN} kN			
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	f _B						
0.07	0.09	21474	0.85	12662.22	101.9	21.0	CG165-14P-71-06E CF165-14P-71-06E	698 721	194
0.08	0.10	18878	1.00	11217.58	110.7	23.3			
0.09	0.11	16740	1.10	9998.22	116.7	25.3			
0.10	0.12	15293	1.20	9181.16	120.2	26.6			
0.12	0.14	12748	1.45	7752.38	125.4	28.9			
0.13	0.16	11532	1.60	7067.08	127.4	30.0			
0.14	0.17	10247	1.80	6345.03	129.4	31.2			
0.17	0.21	8468	2.15	5339.57	131.7	32.8			
0.18	0.23	7666	2.35	4884.00	132.5	33.5			
0.21	0.25	6735	2.70	4369.98	133.4	34.4			
0.08	0.09	20212	0.90	18322.05	106.4	22.1	CG165-14P-63-04F CF165-14P-63-04F	695 718	194
0.09	0.11	16907	1.10	15484.09	116.3	25.1			
0.10	0.12	15757	1.15	14467.28	119.1	26.2			
0.11	0.13	13650	1.35	12662.22	123.7	28.1			
0.12	0.15	11968	1.55	11217.58	126.7	29.6			
0.14	0.17	10558	1.75	9998.22	128.9	30.9			
0.15	0.19	9620	1.90	9181.16	130.2	31.8			
0.18	0.22	7956	2.30	7752.38	132.2	33.3			
0.20	0.24	7159	2.55	7067.08	133.0	34.0			
0.22	0.27	6328	2.85	6345.03	133.8	34.8			
0.48	0.59	3050	2.65	1891.77	73.7	26.0	CG134-14P-71-06E CF134-14P-71-06E	287 289	184
0.34	0.42	4551	1.00	2636.78	35.3	21.4	CG104-14P-71-06E CF104-14P-71-06E	173 177	180
0.40	0.50	3816	1.20	2229.16	38.6	22.3			
0.42	0.51	3684	1.25	2156.24	39.1	22.5			
0.49	0.61	3082	1.50	1822.91	41.1	23.3			
0.53	0.65	2867	1.60	1702.59	41.8	23.6			
0.63	0.77	2394	1.90	1439.39	42.9	24.2			
0.68	0.84	2178	2.10	1320.15	43.4	24.4			
0.81	0.99	1811	2.50	1116.07	44.1	24.9			
0.83	1.0	1746	2.60	1080.49	44.2	25.0			
0.52	0.64	2896	1.60	2636.78	41.7	23.5	CG104-14P-63-04F CF104-14P-63-04F	170 174	180
0.62	0.76	2418	1.90	2229.16	42.9	24.1			
0.64	0.79	2334	1.95	2156.24	43.1	24.2			
0.76	0.93	1941	2.35	1822.91	43.9	24.7			
0.81	1.0	1801	2.50	1702.59	44.1	24.9			
0.40	0.49	3947	0.80	2268.18	12.8	24.2	CG094-14P-71-06E CF094-14P-71-06E	130 128	176
0.42	0.52	3689	0.85	2124.27	16.5	24.5			
0.49	0.60	3208	0.95	1854.82	21.3	25.3			
0.54	0.66	2889	1.05	1677.34	23.7	25.7			
0.55	0.68	2825	1.10	1643.20	24.1	25.8			
0.61	0.76	2507	1.20	1464.58	25.9	26.3			
0.67	0.83	2288	1.35	1344.90	27.0	26.6			
0.69	0.85	2208	1.40	1300.57	27.4	26.7			
0.79	0.98	1912	1.60	1135.60	28.6	27.2			
0.85	1.0	1785	1.70	1064.47	29.0	27.4			
0.87	1.1	1732	1.75	1035.22	29.2	27.4			
0.97	1.2	1543	1.95	929.45	29.8	27.7			
1.1	1.4	1343	2.25	819.36	30.3	28.0			
1.2	1.4	1277	2.35	782.16	30.4	28.1			
1.3	1.6	1156	2.60	715.43	30.7	28.3			
1.4	1.7	1019	2.95	640.13	31.0	28.5			

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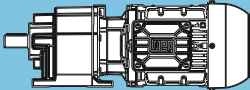
Legend see page 29

P_N = 0.18 kW

IE3

50 Hz		60 Hz		i	at 50 Hz			m kg	Dimension sheet see page
0.18 kW	0.22 kW	M ₂ Nm	f _b		F _{rN} kN	F _{aN} kN			
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹								
0.42	0.52	3717	0.85	3282.02	16.1	24.5	CG094-14P-63-04F CF094-14P-63-04F	128 126	176
0.51	0.63	3021	1.00	2683.89	22.7	25.5			
0.53	0.65	2918	1.05	2597.68	23.5	25.7			
0.61	0.75	2532	1.20	2268.18	25.8	26.3			
0.65	0.80	2362	1.30	2124.27	26.7	26.5			
0.74	0.92	2045	1.50	1854.82	28.1	27.0			
0.82	1.0	1838	1.65	1677.34	28.8	27.3			
0.84	1.0	1797	1.70	1643.20	29.0	27.3			
0.94	1.2	1589	1.90	1464.58	29.6	27.7			
1.0	1.3	1447	2.10	1344.90	30.0	27.9			
1.1	1.3	1396	2.15	1300.57	30.1	27.9			
1.2	1.5	1201	2.50	1135.60	30.6	28.2			
1.3	1.6	1117	2.70	1064.47	30.8	28.4			
2.4	3.0	705	2.20	368.94	23.7	21.1	CG083-14P-71-06E CF083-14P-71-06E	65 69	172
3.2	3.9	544	2.85	284.84	24.0	21.4			
2.6	3.2	671	1.25	351.33	11.9	13.5	CG073-14P-71-06E CF073-14P-71-06E	41 45	170
2.8	3.5	610	1.35	319.60	12.3	13.5			
3.2	4.0	532	1.55	278.44	12.7	13.9			
3.6	4.4	484	1.70	253.30	13.0	13.9			
4.2	5.1	413	2.00	216.20	13.3	14.3			
4.6	5.6	376	2.20	196.68	13.4	14.3			
5.1	6.3	339	2.45	177.39	13.5	14.5			
5.6	6.9	308	2.70	161.38	13.6	14.5			
3.9	4.8	438	1.90	351.33	13.2	14.2	CG073-14P-63-04F CF073-14P-63-04F	38 42	170
4.3	5.3	398	2.10	319.60	13.3	14.2			
5.0	6.1	347	2.40	278.44	13.5	14.4			
5.4	6.7	316	2.60	253.30	13.6	14.4			
2.4	3.0	718	0.85	375.71	6.6	6.0	CG063-14P-71-06E CF063-14P-71-06E	24 29	168
2.6	3.2	658	0.95	344.51	7.5	6.2			
2.9	3.6	587	1.05	307.24	8.4	6.4			
3.2	3.9	538	1.15	281.73	8.9	6.5			
3.7	4.6	463	1.30	242.60	9.6	6.8			
4.0	5.0	425	1.45	222.46	9.9	6.9			
4.8	5.9	359	1.70	188.11	10.3	7.1			
5.2	6.4	329	1.85	172.49	10.4	7.1			
5.8	7.2	294	2.05	153.96	10.6	7.2			
6.4	7.9	270	2.25	141.17	10.7	7.3			
7.6	9.4	226	2.70	118.51	10.9	7.4			
8.3	10	208	2.90	108.67	10.9	7.5			
3.7	4.5	468	1.30	375.71	9.6	6.7	CG063-14P-63-04F CF063-14P-63-04F	22 27	168
4.0	4.9	429	1.40	344.51	9.8	6.8			
4.5	5.5	383	1.60	307.24	10.1	7.0			
4.9	6.0	351	1.75	281.73	10.3	7.1			
5.7	7.0	302	2.00	242.60	10.6	7.2			
6.2	7.6	277	2.20	222.46	10.7	7.3			
7.3	9.0	234	2.60	188.11	10.8	7.4			
8.0	9.9	215	2.80	172.49	10.9	7.5			
3.4	4.1	512	0.80	267.93	1.5	5.8	CG053-14P-71-06E CF053-14P-71-06E	19 24	166
3.7	4.6	465	0.90	243.57	3.5	6.0			
4.2	5.2	408	1.00	213.71	4.8	6.2			
4.6	5.7	371	1.10	194.29	5.4	6.4			
5.4	6.7	316	1.30	165.45	6.1	6.7			
6.0	7.4	287	1.40	150.41	6.4	6.8			
6.8	8.3	254	1.60	132.97	6.7	6.9			
7.4	9.2	231	1.75	120.88	6.9	7.0			
8.9	11	194	2.10	101.55	7.2	7.2			
9.7	12	176	2.30	92.32	7.3	7.3			
12	14	149	2.70	77.79	7.4	7.4			
13	16	135	3.00	70.71	7.5	7.5			

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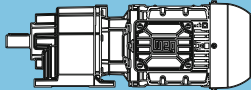
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50 Hz		60 Hz		i	at 50 Hz			m kg	Dimension sheet see page
0.18 kW		0.22 kW			F_{rN} kN	F_{aN} kN			
n₅₀ min ⁻¹	n₆₀ min ⁻¹	M₂ Nm	f_B						
4.2	5.2	409	1.00	328.43	4.8	6.2	CG053-14P-63-04F CF053-14P-63-04F	17	166
4.6	5.7	372	1.10	298.57	5.4	6.4			
5.2	6.3	334	1.20	267.93	5.9	6.6			
5.7	7.0	303	1.35	243.57	6.3	6.7			
6.5	8.0	266	1.55	213.71	6.6	6.9			
7.1	8.8	242	1.70	194.29	6.8	7.0			
8.3	10	206	1.95	165.45	7.1	7.2			
9.2	11	187	2.15	150.41	7.2	7.2			
10	13	166	2.45	132.97	7.3	7.3			
11	14	151	2.70	120.88	7.4	7.4			
15	19	112	2.25	58.85	7.5	7.6	CG052-14P-71-06E CF052-14P-71-06E	19	166
17	21	102	2.25	53.50	7.6	7.6			
25	31	68	2.25	35.67	7.7	7.7			
29	36	59	2.25	31.03	7.7	7.7			
7.0	8.6	247	0.85	129.39	4.0	3.0	CG033-14P-71-06E CF033-14P-71-06E	15	164
8.2	10	210	1.00	109.79	4.6	3.3			
9.0	11	190	1.10	99.71	4.9	3.4			
10	13	164	1.25	85.78	5.2	3.6			
12	14	149	1.35	77.90	5.3	3.7			
14	17	122	1.65	64.05	5.5	3.8			
15	19	111	1.85	58.17	5.6	3.9			
19	23	92	2.20	48.22	5.7	4.0			
21	25	84	2.40	43.79	5.7	4.1			
25	31	68	3.00	35.38	5.8	4.2			
6.8	8.4	252	0.80	202.55	3.9	3.0	CG033-14P-63-04F CF033-14P-63-04F	12	164
7.6	9.4	225	0.90	180.83	4.4	3.2			
8.4	10	205	1.00	164.23	4.7	3.3			
9.7	12	177	1.15	142.47	5.0	3.5			
11	13	161	1.25	129.39	5.2	3.6			
13	15	137	1.50	109.79	5.4	3.7			
14	17	124	1.65	99.71	5.5	3.8			
16	20	107	1.90	85.78	5.6	3.9			
18	22	97	2.10	77.90	5.7	4.0			
22	27	80	2.55	64.05	5.8	4.1			
24	29	72	2.80	58.17	5.8	4.1			
21	26	82	2.25	42.88	5.7	4.1	CG032-14P-71-06E CF032-14P-71-06E	15	164
23	29	74	2.30	38.95	5.8	4.1			
37	46	46	2.25	24.03	5.9	4.3			
43	53	40	2.25	20.95	5.9	4.3			
17	21	99	0.90	51.80	2.8	1.0	CG012-14P-71-06E CF012-14P-71-06E	12	162
19	24	89	1.00	46.42	3.0	1.0			
21	26	80	1.10	42.00	3.1	1.1			
24	29	72	1.20	37.64	3.2	1.2			
27	34	63	1.35	33.09	3.3	1.2			
30	37	57	1.55	29.65	3.4	1.3			
35	44	49	1.75	25.50	3.4	1.3			
36	44	48	0.90	25.05	3.4	1.2			
39	49	44	1.95	22.85	3.5	1.3			
45	56	38	2.25	19.92	3.5	1.4			
46	57	37	1.80	19.51	3.5	1.3			
50	62	34	2.50	17.85	3.5	1.4			
57	70	30	2.20	15.82	3.5	1.4			
61	75	28	3.00	14.88	3.5	1.4			
72	89	24	2.80	12.46	3.5	1.4			

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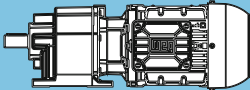
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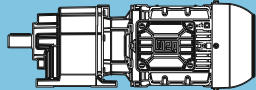
50 Hz		60 Hz		i	at 50 Hz			m kg	Dimension sheet see page
0.18 kW	0.22 kW	M ₂ Nm	f _b		F _{rN} kN	F _{aN} kN			
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹								
21	26	83	1.05	66.50	3.1	1.1	CG012-14P-63-04F CF012-14P-63-04F	9.7 11	162
23	29	74	1.15	59.59	3.2	1.1			
27	33	65	1.35	51.80	3.3	1.2			
30	37	58	1.50	46.42	3.4	1.2			
33	40	52	1.65	42.00	3.4	1.3			
37	45	47	1.85	37.64	3.4	1.3			
42	51	41	2.10	33.09	3.5	1.4			
47	57	37	2.35	29.65	3.5	1.4			
54	67	32	2.70	25.50	3.5	1.4			
55	68	31	1.35	25.05	3.5	1.3			
60	74	28	3.00	22.85	3.5	1.4			
71	87	24	2.75	19.51	3.6	1.4			
27	34	63	0.80	32.89	3.6	1.1	CG002-14P-71-06E CF002-14P-71-06E	11 12	160
31	38	56	0.90	29.33	3.6	1.2			
34	42	50	1.00	26.18	3.7	1.2			
39	48	44	1.15	23.00	3.7	1.3			
44	54	39	1.30	20.53	3.7	1.3			
52	64	33	1.55	17.29	3.7	1.4			
53	66	32	1.00	16.86	3.6	1.2			
58	72	29	1.70	15.43	3.6	1.4			
66	82	26	1.95	13.54	3.4	1.4			
69	85	25	1.75	13.10	3.4	1.3			
74	92	23	2.20	12.08	3.3	1.4			
86	106	20	2.30	10.42	3.1	1.4			
90	111	19	2.65	9.97	3.1	1.5			
101	125	17	2.95	8.90	3.0	1.5			
110	136	16	2.90	8.17	2.9	1.4			
29	36	59	0.85	47.44	3.6	1.1	CG002-14P-63-04F CF002-14P-63-04F	8.6 9.9	160
33	40	53	0.95	42.34	3.6	1.2			
37	46	46	1.10	36.85	3.7	1.3			
42	52	41	1.25	32.89	3.7	1.3			
47	58	37	1.40	29.33	3.7	1.3			
53	65	33	1.55	26.18	3.7	1.4			
60	74	29	1.75	23.00	3.5	1.4			
67	83	26	2.00	20.53	3.4	1.4			
80	98	22	2.35	17.29	3.3	1.4			
82	101	21	1.50	16.86	3.2	1.4			
89	110	19	2.65	15.43	3.1	1.5			
102	126	17	3.00	13.54	3.0	1.5			
105	130	16	2.65	13.10	3.0	1.4			
114	141	15	3.35	12.08	2.9	1.5			
132	163	13	3.50	10.42	2.8	1.5			
138	171	12	4.05	9.97	2.8	1.5			
155	191	11	4.55	8.90	2.7	1.5			
169	208	10	4.45	8.17	2.6	1.5			
201	247	9	5.75	6.88	2.4	1.6			
225	277	8	6.55	6.14	2.4	1.6			
287	353	6	6.55	4.81	2.2	1.6			
390	480	4	7.95	3.54	2.0	1.6			
565	696	3	10.20	2.44	1.7	1.6			

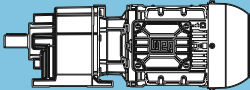
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P _N = 0.25 kW								IE3	
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n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	f _B						
0.10	0.12	22193	0.85	9998.22	99.1	20.3	CG165-14P-80-06D CF165-14P-80-06D	698 721	194
0.12	0.15	16989	1.10	7752.38	116.0	25.1			
0.14	0.17	15408	1.20	7067.08	119.9	26.5			
0.15	0.19	13727	1.35	6345.03	123.5	28.0			
0.18	0.22	11404	1.60	5339.57	127.6	30.1			
0.20	0.24	10351	1.75	4884.00	129.2	31.1			
0.22	0.27	9142	2.00	4369.98	130.9	32.2			
0.26	0.32	7561	2.40	3690.13	132.6	33.6			
0.27	0.33	7223	2.50	3543.61	133.0	33.9			
0.09	0.11	23846	0.80	15484.09	92.0	18.8	CG165-14P-71-04E CF165-14P-71-04E	696 719	194
0.10	0.12	22224	0.85	14467.28	99.0	20.3			
0.11	0.13	19351	0.95	12662.22	109.3	22.9			
0.12	0.15	17012	1.10	11217.58	116.0	25.0			
0.14	0.17	15085	1.20	9998.22	120.6	26.8			
0.15	0.19	13746	1.35	9181.16	123.5	28.0			
0.18	0.22	11458	1.60	7752.38	127.6	30.1			
0.20	0.24	10365	1.75	7067.08	129.2	31.1			
0.22	0.27	9186	2.00	6345.03	130.8	32.2			
0.26	0.32	7572	2.40	5339.57	132.6	33.6			
0.28	0.35	6836	2.65	4884.00	133.3	34.3			
0.32	0.39	6006	3.00	4369.98	134.1	35.0			
0.44	0.55	4516	2.90	2162.84	109.7	23.0	CG144-14P-80-06D CF144-14P-80-06D	434 452	188
0.50	0.63	4110	1.95	1891.77	72.2	24.8	CG134-14P-80-06D CF134-14P-80-06D	287 289	184
0.58	0.72	3516	2.30	1642.17	73.1	25.5			
0.65	0.81	3088	2.60	1460.54	73.6	26.0			
0.67	0.84	2988	2.70	1418.83	73.7	26.1			
0.73	0.90	2728	2.95	1891.77	74.0	26.4	CG134-14P-71-04E CF134-14P-71-04E	285 287	184
0.43	0.53	5057	0.90	2229.16	32.4	20.8	CG104-14P-80-06D CF104-14P-80-06D	173 177	180
0.44	0.55	4881	0.95	2156.24	33.4	21.0			
0.52	0.65	4101	1.10	1822.91	37.4	22.0			
0.56	0.70	3815	1.20	1702.59	38.6	22.3			
0.66	0.82	3192	1.45	1439.39	40.8	23.1			
0.72	0.90	2916	1.55	1320.15	41.6	23.5			
0.86	1.1	2435	1.85	1116.07	42.9	24.1			
0.88	1.1	2347	1.95	1080.49	43.0	24.2			
1.0	1.3	1952	2.35	913.46	43.8	24.7			
1.1	1.4	1759	2.60	831.69	44.2	25.0			
0.52	0.64	4106	1.10	2636.78	37.4	22.0	CG104-14P-71-04E CF104-14P-71-04E	171 175	180
0.62	0.76	3435	1.35	2229.16	40.0	22.8			
0.64	0.79	3316	1.40	2156.24	40.4	23.0			
0.76	0.93	2775	1.65	1822.91	42.0	23.7			
0.81	1.0	2581	1.75	1702.59	42.5	23.9			
0.96	1.2	2151	2.10	1439.39	43.5	24.5			
1.0	1.3	1952	2.35	1320.15	43.8	24.7			
1.2	1.5	1620	2.80	1116.07	44.4	25.1			
1.3	1.6	1561	2.90	1080.49	44.5	25.2			
0.57	0.71	3821	0.80	1677.34	14.8	24.4			
0.58	0.72	3735	0.85	1643.20	15.9	24.5			
0.65	0.81	3316	0.95	1464.58	20.4	25.1			
0.71	0.88	3038	1.00	1344.90	22.6	25.5			
0.73	0.91	2932	1.05	1300.57	23.4	25.7			
0.84	1.0	2545	1.20	1135.60	25.7	26.2			
0.90	1.1	2375	1.30	1064.47	26.6	26.5			
0.92	1.1	2310	1.30	1035.22	26.9	26.6			
1.0	1.3	2057	1.50	929.45	28.0	27.0			
1.2	1.4	1799	1.70	819.36	29.0	27.3			
1.3	1.7	1554	1.95	715.43	29.7	27.7			
1.5	1.9	1376	2.20	640.13	30.2	28.0			
1.8	2.2	1141	2.65	540.55	30.7	28.3			
1.9	2.3	1060	2.85	506.66	30.9	28.4			

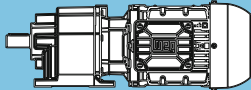
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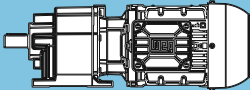
P _N = 0.25 kW								IE3	
50 Hz		60 Hz		i	at 50 Hz			m kg	Dimension sheet see page
0.25 kW	0.30 kW	M ₂ Nm	f _B		F _{rN} kN	F _{aN} kN			
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹								
0.61	0.75	3568	0.85	2268.18	17.9	24.7	CG094-14P-71-04E CF094-14P-71-04E	128 126	176
0.65	0.80	3335	0.90	2124.27	20.2	25.1			
0.74	0.92	2894	1.05	1854.82	23.6	25.7			
0.82	1.0	2601	1.20	1677.34	25.4	26.2			
0.84	1.0	2548	1.20	1643.20	25.7	26.2			
0.94	1.2	2257	1.35	1464.58	27.2	26.7			
1.0	1.3	2060	1.50	1344.90	28.0	27.0			
1.1	1.3	1988	1.55	1300.57	28.3	27.1			
1.2	1.5	1721	1.75	1135.60	29.2	27.5			
1.3	1.6	1604	1.90	1064.47	29.6	27.6			
1.5	1.8	1383	2.20	929.45	30.2	28.0			
1.7	2.1	1204	2.50	819.36	30.6	28.2			
1.8	2.2	1142	2.65	782.16	30.7	28.3			
1.9	2.4	1032	2.95	715.43	30.9	28.5			
2.6	3.2	922	1.70	368.94	23.1	20.6	CG083-14P-80-06D CF083-14P-80-06D	65 69	172
3.4	4.2	712	2.20	284.84	23.7	21.0			
4.0	5.0	597	2.60	238.89	23.9	21.3			
3.7	4.6	638	2.45	368.94	23.9	21.2	CG083-14P-71-04E CF083-14P-71-04E	63 67	172
2.7	3.4	878	0.95	351.33	10.1	13.0			
3.0	3.7	799	1.05	319.60	10.9	13.0			
3.4	4.3	696	1.20	278.44	11.7	13.5			
3.8	4.7	633	1.30	253.30	12.2	13.5			
4.4	5.5	541	1.55	216.20	12.7	13.9			
4.9	6.0	492	1.70	196.68	12.9	13.9			
5.4	6.7	443	1.85	177.39	13.2	14.2			
5.9	7.3	403	2.05	161.38	13.3	14.2			
7.0	8.6	343	2.40	137.38	13.5	14.5			
7.6	9.5	312	2.65	124.97	13.6	14.4			
3.9	4.8	608	1.35	351.33	12.3	13.7	CG073-14P-80-06D CF073-14P-80-06D	41 45	170
4.3	5.3	553	1.50	319.60	12.6	13.7			
5.0	6.1	482	1.75	278.44	13.0	14.1			
5.4	6.7	438	1.90	253.30	13.2	14.1			
6.4	7.9	374	2.20	216.20	13.4	14.4			
7.0	8.6	340	2.45	196.68	13.5	14.4			
7.8	9.6	307	2.70	177.39	13.6	14.6			
8.6	11	279	2.95	161.38	13.7	14.5			
3.1	3.9	768	0.80	307.24	5.6	5.9	CG063-14P-80-06D CF063-14P-80-06D	25 30	168
3.4	4.2	704	0.90	281.73	6.8	6.0			
3.9	4.9	606	1.00	242.60	8.2	6.3			
4.3	5.3	556	1.10	222.46	8.8	6.5			
5.1	6.3	470	1.30	188.11	9.5	6.7			
5.5	6.9	431	1.40	172.49	9.8	6.8			
6.2	7.7	385	1.60	153.96	10.1	7.0			
6.8	8.4	353	1.75	141.17	10.3	7.1			
8.1	10	296	2.05	118.51	10.6	7.2			
8.8	11	272	2.25	108.67	10.7	7.3			
11	13	224	2.70	89.54	10.9	7.5			
12	14	205	2.95	82.10	10.9	7.5			
3.7	4.5	650	0.95	375.71	7.7	6.2	CG063-14P-71-04E CF063-14P-71-04E	22 27	168
4.0	4.9	596	1.05	344.51	8.3	6.4			
4.5	5.5	532	1.15	307.24	9.0	6.6			
4.9	6.0	487	1.25	281.73	9.4	6.7			
5.7	7.0	420	1.45	242.60	9.9	6.9			
6.2	7.6	385	1.60	222.46	10.1	7.0			
7.3	9.0	325	1.85	188.11	10.5	7.2			
8.0	9.9	298	2.05	172.49	10.6	7.2			
9.0	11	266	2.30	153.96	10.7	7.3			
9.8	12	244	2.50	141.17	10.8	7.4			
12	14	205	2.95	118.51	10.9	7.5			
16	20	150	2.80	60.00	11.1	7.7			
17	22	138	2.80	55.02	11.1	7.7			
29	35	84	2.85	33.43	11.2	7.8			
32	40	74	2.85	29.67	11.2	7.8			

P_N = 0.25 kW								IE3	
50 Hz		60 Hz		i	at 50 Hz			m kg	Dimension sheet see page
0.25 kW		0.30 kW			F_{rN} kN	F_{aN} kN			
n₅₀ min ⁻¹	n₆₀ min ⁻¹	M₂ Nm	f_B						
4.9	6.1	486	0.85	194.29	2.8	5.9	CG053-14P-80-06D CF053-14P-80-06D	20 25	166
5.8	7.2	414	1.00	165.45	4.7	6.2			
6.3	7.9	376	1.10	150.41	5.4	6.4			
7.2	8.9	332	1.25	132.97	6.0	6.6			
7.9	9.8	302	1.35	120.88	6.3	6.7			
9.4	12	254	1.60	101.55	6.7	6.9			
10	13	231	1.75	92.32	6.9	7.0			
12	15	194	2.10	77.79	7.2	7.2			
14	17	177	2.30	70.71	7.3	7.3			
15	19	154	2.60	61.63	7.4	7.4			
17	21	140	2.90	56.02	7.4	7.5			
4.6	5.7	517	0.80	298.57	1.1	5.7	CG053-14P-71-04E CF053-14P-71-04E	18 23	166
5.2	6.3	464	0.90	267.93	3.6	6.0			
5.7	7.0	421	0.95	243.57	4.6	6.2			
6.5	8.0	370	1.10	213.71	5.4	6.4			
7.1	8.8	336	1.20	194.29	5.9	6.5			
8.3	10	286	1.40	165.45	6.5	6.8			
9.2	11	260	1.55	150.41	6.7	6.9			
10	13	230	1.75	132.97	6.9	7.1			
11	14	209	1.95	120.88	7.1	7.1			
14	17	176	2.30	101.55	7.3	7.3			
15	18	160	2.55	92.32	7.3	7.4			
18	22	135	3.00	77.79	7.5	7.5			
16	20	147	1.70	58.85	7.4	7.4	CG052-14P-80-06D CF052-14P-80-06D	19 24	166
18	22	134	1.70	53.50	7.5	7.5			
20	25	120	2.85	48.13	7.5	7.6			
22	27	109	2.85	43.75	7.5	7.6			
27	33	89	1.70	35.67	7.6	7.6			
31	38	78	1.75	31.03	7.6	7.6			
33	41	73	2.80	29.17	7.6	7.7			
38	47	63	2.85	25.38	7.7	7.7			
23	29	102	2.50	58.85	7.6	7.6	CG052-14P-71-04E CF052-14P-71-04E	17 22	166
26	32	93	2.50	53.50	7.6	7.7			
39	48	62	2.45	35.67	7.7	7.7			
44	55	54	2.50	31.03	7.7	7.8			
9.6	12	249	0.85	99.71	3.9	3.0	CG033-14P-80-06D CF033-14P-80-06D	16 18	164
11	14	214	0.95	85.78	4.5	3.3			
12	15	195	1.05	77.90	4.8	3.4			
15	19	160	1.25	64.05	5.2	3.6			
16	20	145	1.40	58.17	5.3	3.7			
17	21	138	1.45	55.25	5.4	3.7			
19	24	125	1.60	50.18	5.5	3.8			
20	25	121	1.70	48.22	5.5	3.8			
22	27	109	1.85	43.79	5.6	3.9			
27	34	88	2.30	35.38	5.7	4.0			
30	37	80	2.50	32.13	5.8	4.1			
9.7	12	246	0.85	142.47	4.0	3.1	CG033-14P-71-04E CF033-14P-71-04E	13 15	164
11	13	224	0.90	129.39	4.4	3.2			
13	15	190	1.10	109.79	4.9	3.4			
14	17	173	1.20	99.71	5.1	3.5			
16	20	148	1.35	85.78	5.3	3.7			
18	22	135	1.50	77.90	5.4	3.7			
22	27	111	1.85	64.05	5.6	3.9			
24	29	101	2.00	58.17	5.7	4.0			
29	35	83	2.40	48.22	5.7	4.1			
32	39	76	2.65	43.79	5.8	4.1			
22	28	107	1.75	42.88	5.6	3.9	CG032-14P-80-06D CF032-14P-80-06D	15 17	164
25	30	97	1.75	38.95	5.7	4.0			
27	34	87	2.30	34.88	5.7	4.1			
30	37	79	2.55	31.67	5.8	4.1			
34	43	69	2.90	27.71	5.8	4.2			
40	49	60	1.75	24.03	5.8	4.1			
46	57	52	1.75	20.95	5.7	4.2			
49	61	49	2.65	19.54	5.6	4.2			
56	70	43	2.65	17.04	5.4	4.3			

C

P _N = 0.25 kW								IE3	
50 Hz		60 Hz		i	at 50 Hz			m kg	Dimension sheet see page
0.25 kW		0.30 kW			F _{rN} kN	F _{aN} kN			
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	f _B						
32	40	74	2.50	42.88	5.8	4.1	CG032-14P-71-04E CF032-14P-71-04E	13 15	164
35	44	67	2.50	38.95	5.8	4.2			
57	71	42	2.50	24.03	5.3	4.3			
66	81	36	2.50	20.95	5.1	4.3			
23	28	105	0.85	42.00	2.7	1.0	CG012-14P-80-06D CF012-14P-80-06D	13 14	162
25	32	94	0.95	37.64	2.9	1.0			
29	36	83	1.05	33.09	3.1	1.1			
32	40	74	1.15	29.65	3.2	1.1			
37	47	64	1.35	25.50	3.3	1.2			
42	52	57	1.50	22.85	3.4	1.3			
48	60	50	1.75	19.92	3.4	1.3			
49	61	49	1.40	19.51	3.4	1.2			
53	66	45	1.95	17.85	3.5	1.3			
60	75	40	1.70	15.82	3.5	1.3			
64	80	37	2.30	14.88	3.5	1.4			
72	89	33	2.60	13.33	3.5	1.4			
74	92	32	2.65	12.83	3.5	1.4			
77	95	31	2.15	12.46	3.4	1.3			
83	103	29	3.00	11.50	3.4	1.4			
85	106	28	3.00	11.20	3.3	1.4			
99	123	24	2.75	9.60	3.2	1.4			
23	29	103	0.85	59.59	2.8	1.0	CG012-14P-71-04E CF012-14P-71-04E	11 12	162
27	33	90	0.95	51.80	3.0	1.0			
30	37	80	1.10	46.42	3.1	1.1			
33	40	73	1.20	42.00	3.2	1.2			
37	45	65	1.35	37.64	3.3	1.2			
42	51	57	1.50	33.09	3.4	1.3			
47	57	51	1.70	29.65	3.4	1.3			
54	67	44	1.95	25.50	3.5	1.3			
55	68	43	0.95	25.05	3.5	1.2			
60	74	40	2.20	22.85	3.5	1.4			
69	85	34	2.50	19.92	3.5	1.4			
71	87	34	2.00	19.51	3.5	1.3			
77	95	31	2.80	17.85	3.4	1.4			
87	107	27	2.45	15.82	3.3	1.4			
36	45	65	0.80	26.18	3.5	1.1	CG002-14P-80-06D CF002-14P-80-06D	12 13	160
42	52	58	0.90	23.00	3.6	1.2			
47	58	51	1.00	20.53	3.6	1.2			
55	69	43	1.20	17.29	3.6	1.3			
62	77	39	1.30	15.43	3.4	1.3			
71	88	34	1.50	13.54	3.3	1.3			
73	91	33	1.35	13.10	3.2	1.2			
79	98	30	1.70	12.08	3.2	1.4			
92	114	26	1.75	10.42	3.0	1.3			
96	119	25	2.05	9.97	3.0	1.4			
107	133	22	2.25	8.90	2.9	1.4			
117	145	20	2.25	8.17	2.8	1.4			
139	173	17	2.90	6.88	2.7	1.5			
155	193	15	2.75	6.14	2.6	1.4			

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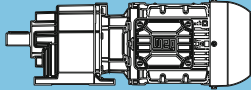
P _N = 0.25 kW								IE3	
50 Hz		60 Hz		i	at 50 Hz			m kg	Dimension sheet see page
0.25 kW		0.30 kW			F _{rN} kN	F _{aN} kN			
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	f _B						
37	46	64	0.80	36.85	3.5	1.1	CG002-14P-71-04E CF002-14P-71-04E	9.5 11	160
42	52	57	0.90	32.89	3.6	1.2			
47	58	51	1.00	29.33	3.6	1.2			
53	65	45	1.15	26.18	3.6	1.2			
60	74	40	1.30	23.00	3.5	1.3			
67	83	36	1.45	20.53	3.4	1.3			
80	98	30	1.70	17.29	3.2	1.4			
82	101	29	1.10	16.86	3.1	1.3			
89	110	27	1.90	15.43	3.1	1.4			
102	126	23	2.15	13.54	3.0	1.4			
105	130	23	1.90	13.10	2.9	1.4			
114	141	21	2.40	12.08	2.9	1.5			
132	163	18	2.50	10.42	2.7	1.4			
138	171	17	2.90	9.97	2.7	1.5			
155	191	15	3.25	8.90	2.6	1.5			
169	208	14	3.20	8.17	2.5	1.5			
201	247	12	4.15	6.88	2.4	1.5			
225	277	11	4.75	6.14	2.3	1.5			
287	353	8	4.70	4.81	2.1	1.5			
390	480	6	5.75	3.54	2.0	1.6			
565	696	4	7.35	2.44	1.7	1.6			

C

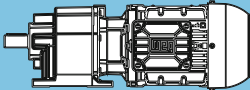
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$P_N = 0.37 \text{ kW}$

IE3

50 Hz 0.37 kW	60 Hz 0.44 kW	M_2 Nm	f_b	i	at 50 Hz			m kg	Dimension sheet see page
					F_{rN} kN	F_{aN} kN			
0.15	0.18	21521	0.85	6345.03	101.8	20.9	CG165-14P-80-06E CF165-14P-80-06E	700 723	194
0.17	0.21	17926	1.05	5339.57	113.5	24.2			
0.19	0.23	16312	1.15	4884.00	117.8	25.7			
0.21	0.26	14521	1.25	4369.98	121.9	27.3			
0.25	0.31	12105	1.50	3690.13	126.5	29.5			
0.26	0.32	11565	1.60	3543.61	127.4	30.0			
0.31	0.38	9704	1.90	3020.06	130.1	31.7			
0.38	0.47	7688	2.35	2448.96	132.5	33.5			
0.45	0.56	6253	2.90	2050.07	133.9	34.8			
0.14	0.17	22544	0.80	9998.22	97.7	20.0	CG165-14P-71-04F CF165-14P-71-04F	697 720	194
0.15	0.19	20596	0.90	9181.16	105.1	21.8			
0.18	0.22	17257	1.05	7752.38	115.3	24.8			
0.20	0.24	15611	1.20	7067.08	119.4	26.3			
0.22	0.27	13944	1.30	6345.03	123.1	27.8			
0.26	0.32	11555	1.60	5339.57	127.4	30.0			
0.29	0.35	10487	1.75	4884.00	129.0	31.0			
0.32	0.39	9287	1.95	4369.98	130.7	32.1			
0.38	0.46	7681	2.35	3690.13	132.5	33.5			
0.46	0.57	6077	3.00	3020.06	134.0	35.0			
0.44	0.54	6737	2.70	2093.95	133.4	34.4	CG164-14P-80-06E CF164-14P-80-06E	687 710	192
0.43	0.53	7224	1.80	2162.84	107.1	20.3	CG144-14P-80-06E CF144-14P-80-06E	436 454	188
0.49	0.60	6221	2.10	1885.79	108.2	21.3			
0.55	0.68	5440	2.40	1669.82	109.0	22.0			
0.57	0.70	5270	2.50	1624.38	109.1	22.2			
0.64	0.78	4665	2.80	1455.92	109.6	22.8			
0.66	0.81	4459	2.95	1400.42	109.8	23.0			
0.64	0.79	4586	2.85	2162.84	109.7	22.9	CG144-14P-71-04F CF144-14P-71-04F	433 451	188
0.49	0.60	6464	1.25	1891.77	67.4	22.1	CG134-14P-80-06E CF134-14P-80-06E	289 291	184
0.56	0.69	5565	1.45	1642.17	69.5	23.1			
0.63	0.78	4909	1.65	1460.54	70.9	23.9			
0.65	0.80	4759	1.70	1418.83	71.2	24.1			
0.73	0.90	4217	1.90	1267.83	72.1	24.7			
0.76	0.93	4058	2.00	1224.91	72.3	24.9			
0.84	1.0	3591	2.25	1095.41	73.0	25.4			
0.87	1.1	3479	2.30	1063.29	73.1	25.5			
0.96	1.2	3106	2.60	961.31	73.6	26.0			
1.0	1.2	2950	2.75	918.68	73.8	26.1			
0.74	0.9	4164	1.95	1891.77	72.2	24.7	CG134-14P-71-04F CF134-14P-71-04F	286 288	184
0.85	1.0	3570	2.25	1642.17	73.0	25.4			
0.96	1.2	3129	2.60	1460.54	73.6	25.9			
0.98	1.2	3033	2.65	1418.83	73.7	26.0			
1.1	1.3	2671	3.00	1267.83	74.1	26.4			
0.54	0.67	5926	0.80	1702.59	25.8	19.7	CG104-14P-80-06E CF104-14P-80-06E	175 179	180
0.64	0.79	4979	0.95	1439.39	32.9	20.9			
0.70	0.86	4557	1.00	1320.15	35.2	21.4			
0.83	1.0	3821	1.20	1116.07	38.6	22.3			
0.86	1.1	3692	1.25	1080.49	39.1	22.5			
1.0	1.2	3089	1.50	913.46	41.1	23.3			
1.1	1.4	2795	1.65	831.69	42.0	23.6			
1.3	1.6	2334	1.95	703.12	43.1	24.2			
1.5	1.8	2064	2.20	628.39	43.6	24.6			
1.7	2.1	1713	2.65	531.25	44.2	25.0			
1.8	2.2	1651	2.75	514.28	44.3	25.1			

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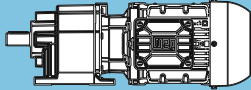
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50 Hz		60 Hz		i	at 50 Hz			m kg	Dimension sheet see page
0.37 kW		0.44 kW			F_{rN} kN	F_{aN} kN			
n₅₀ min ⁻¹	n₆₀ min ⁻¹	M₂ Nm	f_B						
0.63	0.77	5124	0.90	2229.16	32.0	20.7	CG104-14P-80-06E CF104-14P-80-06E	172 176	180
0.65	0.79	4946	0.95	2156.24	33.1	20.9			
0.77	0.94	4156	1.10	1822.91	37.2	21.9			
0.82	1.0	3865	1.20	1702.59	38.4	22.3			
0.97	1.2	3241	1.40	1439.39	40.7	23.1			
1.1	1.3	2954	1.55	1320.15	41.5	23.4			
1.2	1.5	2467	1.85	1116.07	42.8	24.1			
1.3	1.6	2383	1.90	1080.49	43.0	24.2			
1.5	1.9	1982	2.30	913.46	43.8	24.7			
1.7	2.1	1786	2.55	831.69	44.1	24.9			
0.81	1.0	3952	0.80	1135.60	12.7	24.2	CG094-14P-80-06E CF094-14P-80-06E	133 131	176
0.87	1.1	3697	0.85	1064.47	16.4	24.5			
0.89	1.1	3596	0.85	1035.22	17.6	24.7			
1.0	1.2	3215	0.95	929.45	21.2	25.3			
1.1	1.4	2817	1.10	819.36	24.1	25.8			
1.2	1.5	2684	1.15	782.16	24.9	26.0			
1.3	1.6	2444	1.25	715.43	26.3	26.4			
1.4	1.8	2174	1.40	640.13	27.5	26.8			
1.5	1.8	2098	1.45	619.07	27.8	26.9			
1.7	2.1	1813	1.70	540.55	28.9	27.3			
1.8	2.2	1737	1.75	519.08	29.2	27.4			
2.1	2.6	1459	2.10	442.39	30.0	27.8			
2.3	2.8	1347	2.25	410.85	30.3	28.0			
2.6	3.2	1159	2.60	358.73	30.7	28.3			
2.7	3.3	1104	2.75	343.93	30.8	28.4			
0.83	1.0	3871	0.80	1677.34	14.0	24.3	CG094-14P-71-04F CF094-14P-71-04F	129 127	176
0.85	1.0	3792	0.80	1643.20	15.2	24.4			
0.95	1.2	3366	0.90	1464.58	19.9	25.0			
1.0	1.3	3078	1.00	1344.90	22.3	25.5			
1.1	1.3	2971	1.05	1300.57	23.1	25.6			
1.2	1.5	2578	1.20	1135.60	25.5	26.2			
1.3	1.6	2412	1.25	1064.47	26.4	26.4			
1.5	1.8	2089	1.45	929.45	27.9	26.9			
1.7	2.1	1826	1.65	819.36	28.9	27.3			
1.8	2.2	1736	1.75	782.16	29.2	27.4			
1.9	2.4	1575	1.95	715.43	29.7	27.7			
2.2	2.7	1397	2.15	640.13	30.1	27.9			
2.3	2.8	1346	2.25	619.07	30.3	28.0			
2.6	3.2	1158	2.60	540.55	30.7	28.3			
2.8	3.4	1076	2.80	506.66	30.9	28.4			
3.0	3.7	1172	2.60	306.73	30.7	28.3	CG093-14P-80-06E CF093-14P-80-06E	120 118	174
2.5	3.1	1409	1.10	368.94	21.1	19.6	CG083-14P-80-06E CF083-14P-80-06E	67 71	172
3.2	4.0	1088	1.45	284.84	22.5	20.3			
3.9	4.8	913	1.70	238.89	23.2	20.6			
4.9	6.1	716	2.20	187.48	23.7	21.0			
6.4	7.9	553	2.85	144.69	24.0	21.4			
3.8	4.6	935	1.70	368.94	23.1	20.6	CG083-14P-71-04F CF083-14P-71-04F	64 68	172
4.9	6.0	721	2.15	284.84	23.7	21.0			
5.8	7.2	605	2.60	238.89	23.9	21.3			
3.3	4.1	1064	0.80	278.44	7.6	12.5	CG073-14P-80-06E CF073-14P-80-06E	43 47	170
3.7	4.5	968	0.85	253.30	9.1	12.4			
4.3	5.3	826	1.00	216.20	10.6	13.1			
4.7	5.8	751	1.10	196.68	11.3	13.1			
5.2	6.4	678	1.25	177.39	11.9	13.5			
5.7	7.1	616	1.35	161.38	12.3	13.5			
6.7	8.3	525	1.60	137.38	12.8	13.9			
7.4	9.1	477	1.75	124.97	13.0	13.9			
8.9	11	399	2.10	104.50	13.3	14.3			
9.7	12	363	2.30	95.06	13.5	14.3			
11	13	329	2.50	86.17	13.6	14.5			
12	15	299	2.75	78.39	13.6	14.5			

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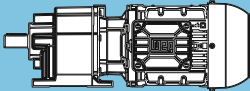
Legend see page 29

P_N = 0.37 kW

IE3

50 Hz		60 Hz		i	at 50 Hz			m kg	Dimension sheet see page
0.37 kW	0.44 kW	M ₂ Nm	f _B		F _{rN} kN	F _{aN} kN			
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹								
4.0	4.9	890	0.95	351.33	10.0	12.9	CG073-14P-71-04F CF073-14P-71-04F	40 44	170
4.4	5.4	810	1.05	319.60	10.8	12.9			
5.0	6.1	705	1.20	278.44	11.7	13.5			
5.5	6.8	642	1.30	253.30	12.1	13.4			
6.5	7.9	548	1.50	216.20	12.7	13.9			
7.1	8.7	498	1.65	196.68	12.9	13.9			
7.9	9.6	449	1.85	177.39	13.1	14.2			
8.6	11	409	2.05	161.38	13.3	14.2			
10	12	348	2.40	137.38	13.5	14.4			
11	14	317	2.60	124.97	13.6	14.4			
4.9	6.1	719	0.85	188.11	6.6	6.0			
5.4	6.6	659	0.95	172.49	7.5	6.2			
6.0	7.4	588	1.05	153.96	8.4	6.4			
6.6	8.1	539	1.15	141.17	8.9	6.5			
7.8	9.6	453	1.35	118.51	9.7	6.8			
8.5	10	415	1.45	108.67	9.9	6.9			
10	13	342	1.80	89.54	10.4	7.1			
11	14	314	1.95	82.10	10.5	7.2			
13	16	280	2.15	73.28	10.7	7.3			
14	17	257	2.35	67.19	10.8	7.3			
16	19	227	2.65	59.42	10.9	7.4			
17	21	208	2.90	54.49	10.9	7.5			
4.5	5.6	778	0.80	307.24	5.4	5.8	CG063-14P-71-04F CF063-14P-71-04F	23 28	168
5.0	6.1	714	0.85	281.73	6.7	6.0			
5.8	7.0	614	1.00	242.60	8.1	6.3			
6.3	7.7	563	1.10	222.46	8.7	6.4			
7.4	9.1	476	1.30	188.11	9.5	6.7			
8.1	9.9	437	1.40	172.49	9.8	6.8			
9.1	11	390	1.55	153.96	10.1	7.0			
9.9	12	358	1.70	141.17	10.3	7.1			
12	14	300	2.00	118.51	10.6	7.2			
13	16	275	2.20	108.67	10.7	7.3			
16	19	227	2.65	89.54	10.9	7.4			
17	21	208	2.90	82.10	10.9	7.5			
15	19	229	1.85	60.00	10.9	7.4	CG062-14P-80-06E CF062-14P-80-06E	26 31	168
17	21	210	1.85	55.02	10.9	7.5			
28	34	128	1.85	33.43	11.1	7.6			
23	29	152	2.80	60.00	11.1	7.7	CG062-14P-71-04F CF062-14P-71-04F	23 28	168
25	31	139	2.80	55.02	11.1	7.7			
42	51	85	2.80	33.43	11.2	7.7			
47	58	75	2.80	29.67	11.2	7.8			
7.0	8.6	508	0.80	132.97	1.8	5.8	CG053-14P-80-06E CF053-14P-80-06E	22 27	166
7.7	9.4	462	0.90	120.88	3.6	6.0			
9.1	11	388	1.05	101.55	5.2	6.3			
10	12	353	1.15	92.32	5.7	6.5			
12	15	297	1.35	77.79	6.3	6.8			
13	16	270	1.50	70.71	6.6	6.9			
15	18	235	1.70	61.63	6.9	7.0			
17	20	214	1.90	56.02	7.0	7.1			
19	23	188	2.15	49.20	7.2	7.2			
21	25	171	2.35	44.73	7.3	7.3			
23	28	154	2.60	40.33	7.4	7.4			
25	31	140	2.90	36.67	7.4	7.5			
7.2	8.8	492	0.85	194.29	2.6	5.8	CG053-14P-71-04F CF053-14P-71-04F	19 24	166
8.4	10	419	1.00	165.45	4.6	6.2			
9.3	11	381	1.05	150.41	5.3	6.3			
10	13	337	1.20	132.97	5.9	6.6			
12	14	306	1.35	120.88	6.3	6.7			
14	17	257	1.60	101.55	6.7	6.9			
15	19	234	1.75	92.32	6.9	7.0			
18	22	197	2.05	77.79	7.1	7.2			
20	24	179	2.25	70.71	7.2	7.3			
23	28	156	2.60	61.63	7.4	7.4			
25	31	142	2.85	56.02	7.4	7.4			

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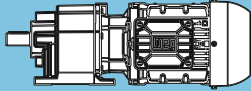
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50 Hz		60 Hz		i	at 50 Hz			m kg	Dimension sheet see page
0.37 kW		0.44 kW			F_{rN} kN	F_{aN} kN			
n₅₀ min ⁻¹	n₆₀ min ⁻¹	M₂ Nm	f_B						
16	19	225	1.15	58.85	7.0	7.1	CG052-14P-80-06E CF052-14P-80-06E	21 26	166
17	21	204	1.15	53.50	7.1	7.2			
19	24	184	1.85	48.13	7.2	7.3			
21	26	167	1.85	43.75	7.3	7.3			
24	30	145	2.80	38.00	7.4	7.4			
26	32	136	1.15	35.67	7.5	7.3			
30	37	119	1.15	31.03	7.5	7.4			
32	39	111	1.85	29.17	7.5	7.5			
36	45	97	1.85	25.38	7.6	7.5			
24	29	149	1.70	58.85	7.4	7.4	CG052-14P-71-04F CF052-14P-71-04F	18 23	166
26	32	136	1.70	53.50	7.5	7.5			
29	36	122	2.80	48.13	7.5	7.5			
32	39	111	2.80	43.75	7.5	7.6			
39	48	90	1.70	35.67	7.6	7.6			
45	55	79	1.70	31.03	7.6	7.6			
48	59	74	2.80	29.17	7.6	7.7			
55	67	64	2.80	25.38	7.7	7.7			
14	18	245	0.85	64.05	4.0	3.1	CG033-14P-80-06E CF033-14P-80-06E	17 19	164
16	20	222	0.95	58.17	4.4	3.2			
17	21	211	0.95	55.25	4.6	3.3			
18	23	192	1.05	50.18	4.9	3.4			
19	24	184	1.10	48.22	4.9	3.5			
21	26	167	1.20	43.79	5.1	3.5			
26	32	135	1.50	35.38	5.4	3.8			
29	35	123	1.65	32.13	5.5	3.8			
14	17	253	0.80	99.71	3.9	3.0	CG033-14P-71-04F CF033-14P-71-04F	14 16	164
16	20	217	0.95	85.78	4.5	3.2			
18	22	197	1.05	77.90	4.8	3.3			
22	27	162	1.25	64.05	5.2	3.6			
24	29	147	1.40	58.17	5.3	3.7			
29	35	122	1.65	48.22	5.5	3.8			
32	39	111	1.85	43.79	5.6	3.9			
39	48	90	2.25	35.38	5.7	4.0			
43	53	81	2.50	32.13	5.7	4.1			
22	27	164	1.15	42.88	5.2	3.6	CG032-14P-80-06E CF032-14P-80-06E	17 19	164
24	29	149	1.15	38.95	5.3	3.7			
27	33	133	1.55	34.88	5.4	3.8			
29	36	121	1.70	31.67	5.5	3.8			
33	41	106	1.90	27.71	5.6	3.9			
37	45	96	2.10	25.17	5.7	4.0			
38	47	92	1.15	24.03	5.7	3.9			
43	53	82	2.45	21.40	5.7	4.1			
44	54	80	1.15	20.95	5.6	4.0			
47	58	75	1.75	19.54	5.5	4.0			
48	59	74	2.70	19.44	5.5	4.1			
54	67	65	1.75	17.04	5.3	4.1			
60	73	59	2.20	15.53	5.1	4.2			
68	84	52	2.25	13.54	4.9	4.2			
77	95	46	2.85	11.99	4.8	4.3			
88	109	40	2.90	10.46	4.6	4.3			
33	40	109	1.70	42.88	5.6	3.9	CG032-14P-71-04F CF032-14P-71-04F	14 16	164
36	44	99	1.75	38.95	5.7	4.0			
40	49	88	2.30	34.88	5.7	4.0			
44	54	80	2.50	31.67	5.6	4.1			
50	62	70	2.85	27.71	5.5	4.2			
58	71	61	1.70	24.03	5.2	4.1			
67	82	53	1.70	20.95	5	4.2			
71	88	49	2.60	19.54	4.9	4.2			
82	100	43	2.60	17.04	4.7	4.3			

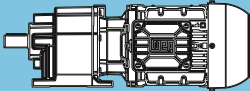
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Legend see page 29

P_N = 0.37 kW

IE3

50 Hz		60 Hz		i	at 50 Hz			m kg	Dimension sheet see page
0.37 kW	0.44 kW	M ₂ Nm	f _b		F _{rN} kN	F _{aN} kN			
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹								
31	38	113	0.80	29.65	2.6	0.9	CG012-14P-80-06E CF012-14P-80-06E	15 16	162
36	45	97	0.90	25.50	2.9	1.0			
40	50	87	1.00	22.85	3.0	1.1			
46	57	76	1.15	19.92	3.2	1.1			
47	58	75	0.90	19.51	3.2	1.0			
52	64	68	1.25	17.85	3.3	1.2			
58	72	60	1.10	15.82	3.3	1.1			
62	77	57	1.50	14.88	3.4	1.3			
69	86	51	1.70	13.33	3.4	1.3			
72	89	49	1.75	12.83	3.4	1.3			
74	91	48	1.40	12.46	3.3	1.2			
80	99	44	1.95	11.50	3.3	1.3			
83	102	43	2.00	11.20	3.3	1.4			
92	114	38	2.15	10.04	3.2	1.4			
96	119	37	1.80	9.60	3.1	1.3			
113	139	31	2.45	8.22	3.0	1.4			
123	152	29	2.35	7.50	2.9	1.4			
126	155	28	2.65	7.36	2.9	1.4			
33	41	106	0.80	42.00	2.7	0.9	CG012-14P-71-04F CF012-14P-71-04F	12 13	162
37	45	95	0.90	37.64	2.9	1.0			
42	52	84	1.05	33.09	3.1	1.1			
47	58	75	1.15	29.65	3.2	1.1			
55	67	65	1.35	25.50	3.3	1.2			
61	75	58	1.50	22.85	3.4	1.2			
70	86	50	1.70	19.92	3.4	1.3			
72	88	49	1.35	19.51	3.4	1.2			
78	96	45	1.90	17.85	3.3	1.3			
88	108	40	1.65	15.82	3.2	1.3			
94	115	38	2.30	14.88	3.2	1.4			
105	128	34	2.55	13.33	3.1	1.4			
112	137	32	2.10	12.46	3.0	1.3			
125	153	28	3.00	11.20	2.9	1.4			
145	178	24	2.75	9.60	2.8	1.4			
54	66	66	0.80	17.29	3.4	1.1	CG002-14P-80-06E CF002-14P-80-06E	14 15	160
60	74	59	0.85	15.43	3.3	1.1			
68	84	52	1.00	13.54	3.2	1.2			
71	87	50	0.90	13.10	3.1	1.0			
77	94	46	1.10	12.08	3.1	1.2			
89	109	40	1.15	10.42	2.9	1.1			
93	114	38	1.35	9.97	3.0	1.3			
104	128	34	1.50	8.90	2.9	1.3			
113	139	31	1.45	8.17	2.8	1.2			
135	166	26	1.90	6.88	2.7	1.4			
151	186	23	2.15	6.14	2.6	1.4			
192	237	18	2.15	4.81	2.4	1.4			
261	322	14	2.60	3.54	2.2	1.5			
53	65	66	0.80	26.18	3.4	1.1	CG002-14P-71-04F CF002-14P-71-04F	10 11	160
61	74	58	0.90	23.00	3.3	1.1			
68	83	52	1.00	20.53	3.2	1.2			
81	99	44	1.15	17.29	3.1	1.3			
90	111	39	1.30	15.43	3.0	1.3			
103	126	34	1.50	13.54	2.9	1.3			
107	131	33	1.30	13.10	2.8	1.2			
115	142	31	1.65	12.08	2.8	1.4			
134	164	26	1.75	10.42	2.6	1.3			
140	172	25	2.00	9.97	2.6	1.4			
157	192	23	2.25	8.90	2.6	1.4			
171	209	21	2.20	8.17	2.5	1.4			
203	249	17	2.85	6.88	2.4	1.5			
227	279	16	3.25	6.14	2.3	1.5			
290	355	12	3.25	4.81	2.1	1.5			
394	483	9	3.95	3.54	1.9	1.5			
571	700	6	5.05	2.44	1.7	1.6			

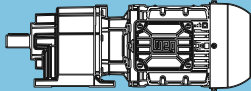
P _N = 0.55 kW								IE3	
50 Hz		60 Hz		i	at 50 Hz			m kg	Dimension sheet see page
0.55 kW		0.66 kW			F _{rN} kN	F _{aN} kN			
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	f _B						
0.22	0.26	21566	0.85	4369.98	101.6	20.9	CG165-14P-L80-06F CF165-14P-L80-06F	701 724	194
0.26	0.31	18072	1.00	3690.13	113.1	24.1			
0.27	0.33	17310	1.05	3543.61	115.2	24.8			
0.31	0.38	14602	1.25	3020.06	121.7	27.2			
0.32	0.39	14305	1.30	2966.43	122.3	27.5			
0.39	0.47	11659	1.55	2448.96	127.2	29.9			
0.46	0.56	9585	1.90	2050.07	130.3	31.8			
0.57	0.70	7569	2.40	1661.50	132.6	33.6			
0.20	0.24	23270	0.80	7067.08	94.6	19.4	CG165-14P-80-04E CF165-14P-80-04E	699 722	194
0.22	0.27	20785	0.90	6345.03	104.4	21.6			
0.27	0.32	17358	1.05	5339.57	115.1	24.7			
0.29	0.35	15795	1.15	4884.00	119.0	26.1			
0.32	0.39	14025	1.30	4369.98	122.9	27.8			
0.38	0.47	11691	1.55	3690.13	127.2	29.9			
0.40	0.49	11169	1.65	3543.61	128.0	30.4			
0.47	0.57	9372	1.95	3020.06	130.6	32.0			
0.48	0.58	9182	2.00	2966.43	130.8	32.2			
0.58	0.70	7405	2.45	2448.96	132.8	33.8			
0.59	0.72	7251	2.50	2404.16	133.0	33.9			
0.69	0.84	6024	3.00	2050.07	134.0	35.0			
0.45	0.55	10177	1.80	2093.95	129.5	31.3	CG164-14P-L80-06F CF164-14P-L80-06F	688 711	192
0.52	0.64	8657	2.10	1803.51	131.4	32.6			
0.57	0.70	7889	2.30	1657.33	132.3	33.3			
0.61	0.74	7380	2.45	1559.96	132.8	33.8			
0.65	0.80	6775	2.70	1447.11	133.4	34.3			
0.66	0.81	6683	2.70	1427.45	133.5	34.4			
0.68	0.82	6497	2.80	2093.95	133.6	34.6	CG164-14P-80-04E CF164-14P-80-04E	686 709	192
0.44	0.53	10753	1.25	2162.84	101.7	16.7	CG144-14P-L80-06F CF144-14P-L80-06F	437 455	188
0.50	0.61	9318	1.40	1885.79	104.2	18.2			
0.57	0.69	8183	1.60	1669.82	105.9	19.3			
0.58	0.71	7944	1.65	1624.38	106.2	19.5			
0.65	0.79	7061	1.85	1455.92	107.3	20.4			
0.67	0.82	6764	1.95	1400.42	107.7	20.7			
0.68	0.83	6756	1.95	1398.80	107.7	20.7			
0.75	0.92	5995	2.20	1254.10	108.5	21.5			
0.77	0.95	5825	2.25	1221.03	108.6	21.7			
0.86	1.1	5178	2.55	1099.05	109.2	22.3			
0.88	1.1	5077	2.60	1079.94	109.3	22.4			
0.90	1.1	4934	2.65	1051.77	109.4	22.6			
0.99	1.2	4440	2.95	958.27	109.8	23.1			
0.66	0.80	6966	1.90	2162.84	107.4	20.5	CG144-14P-80-04E CF144-14P-80-04E	435 453	188
0.75	0.91	5999	2.20	1885.79	108.5	21.5			
0.85	1.0	5246	2.50	1669.82	109.2	22.2			
0.87	1.1	5082	2.60	1624.38	109.3	22.4			
0.98	1.2	4498	2.90	1455.92	109.8	23.0			
0.50	0.61	9561	0.85	1891.77	56.5	18.6	CG134-14P-L80-06F CF134-14P-L80-06F	290 292	184
0.58	0.70	8248	1.00	1642.17	61.9	20.1			
0.65	0.79	7306	1.10	1460.54	65.0	21.2			
0.67	0.81	7083	1.15	1418.83	65.7	21.4			
0.75	0.91	6290	1.30	1267.83	67.8	22.3			
0.77	0.94	6065	1.35	1224.91	68.4	22.6			
0.86	1.1	5390	1.50	1095.41	69.9	23.3			
0.89	1.1	5221	1.55	1063.29	70.3	23.5			
0.98	1.2	4682	1.75	961.31	71.3	24.2			
1.0	1.3	4465	1.80	918.68	71.7	24.4			
1.1	1.4	4022	2.00	834.47	72.4	24.9			
1.3	1.6	3532	2.30	741.90	73.1	25.5			
1.5	1.8	3021	2.65	644.01	73.7	26.0			

C

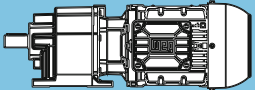
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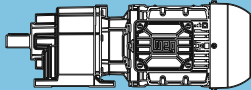
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IE3

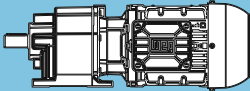
50 Hz		60 Hz		at 50 Hz			m kg	Dimension sheet see page	
0.55 kW	0.66 kW			F _{rN}	F _{aN}				
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	f _b	i	kN				kN
0.75	0.91	6246	1.30	1891.77	68.0	22.4	CG134-14P-80-04E CF134-14P-80-04E	288 290	184
0.86	1.0	5378	1.50	1642.17	69.9	23.4			
0.97	1.2	4743	1.70	1460.54	71.2	24.1			
1.0	1.2	4598	1.75	1418.83	71.4	24.2			
1.1	1.4	4067	2.00	1267.83	72.3	24.9			
1.2	1.4	3921	2.05	1224.91	72.5	25.0			
1.3	1.6	3463	2.35	1095.41	73.2	25.5			
1.5	1.8	2995	2.70	961.31	73.7	26.1			
0.85	1.0	5652	0.80	1116.07	28.1	20.0			
0.87	1.1	5461	0.85	1080.49	29.6	20.3			
1.0	1.3	4588	1.00	913.46	35.1	21.4			
1.1	1.4	4160	1.10	831.69	37.1	21.9			
1.3	1.6	3488	1.30	703.12	39.8	22.8			
1.5	1.8	3092	1.50	628.39	41.1	23.3			
1.8	2.2	2587	1.75	531.25	42.5	23.9			
2.2	2.7	2078	2.20	434.78	43.6	24.6			
2.3	2.8	1985	2.30	417.03	43.8	24.7			
2.7	3.3	1647	2.75	352.56	44.3	25.1			
0.83	1.0	5738	0.80	1702.59	27.4	19.9	CG104-14P-80-04E CF104-14P-80-04E	174 178	180
0.99	1.2	4821	0.95	1439.39	33.8	21.1			
1.1	1.3	4404	1.05	1320.15	36.0	21.6			
1.3	1.5	3693	1.25	1116.07	39.1	22.5			
1.6	1.9	2985	1.55	913.46	41.4	23.4			
1.7	2.1	2701	1.70	831.69	42.2	23.8			
2.0	2.4	2255	2.00	703.12	43.2	24.3			
2.3	2.7	1991	2.30	628.39	43.8	24.7			
2.7	3.2	1652	2.75	531.25	44.3	25.1			
2.8	3.3	1592	2.85	514.28	44.4	25.2			
1.2	1.5	3961	0.80	782.16	12.6	24.1	CG094-14P-L80-06F CF094-14P-L80-06F	134 132	176
1.3	1.6	3616	0.85	715.43	17.4	24.7			
1.5	1.8	3222	0.95	640.13	21.2	25.2			
1.7	2.1	2698	1.15	540.55	24.9	26.0			
1.8	2.2	2586	1.20	519.08	25.5	26.2			
1.9	2.3	2524	1.20	506.66	25.8	26.3			
2.1	2.6	2186	1.40	442.39	27.5	26.8			
2.2	2.7	2147	1.40	434.54	27.6	26.8			
2.3	2.8	2022	1.50	410.85	28.1	27.0			
2.6	3.2	1747	1.75	358.73	29.1	27.4			
2.7	3.3	1715	1.75	352.17	29.2	27.5			
3.1	3.8	1441	2.10	300.30	30.0	27.9			
3.4	4.1	1327	2.30	278.74	30.3	28.0			
3.9	4.7	1142	2.65	243.38	30.7	28.3			
1.3	1.5	3827	0.80	1135.60	14.7	24.3	CG094-14P-80-04E CF094-14P-80-04E	132 130	176
1.4	1.7	3475	0.90	1035.22	18.9	24.9			
1.5	1.9	3107	1.00	929.45	22.1	25.4			
1.7	2.1	2728	1.10	819.36	24.7	26.0			
1.8	2.2	2593	1.20	782.16	25.5	26.2			
2.0	2.4	2362	1.30	715.43	26.7	26.5			
2.2	2.7	2101	1.45	640.13	27.8	26.9			
2.3	2.8	2027	1.50	619.07	28.1	27.0			
2.6	3.2	1752	1.75	540.55	29.1	27.4			
2.7	3.3	1679	1.80	519.08	29.4	27.5			
2.8	3.4	1635	1.85	506.66	29.5	27.6			
3.2	3.9	1410	2.15	442.39	30.1	27.9			
3.3	4.0	1382	2.20	434.54	30.2	28.0			
3.5	4.2	1299	2.35	410.85	30.4	28.1			
4.0	4.8	1118	2.70	358.73	30.8	28.3			
4.1	5.0	1065	2.85	343.93	30.9	28.4			
3.1	3.8	1705	1.80	306.73	29.3	27.5	CG093-14P-L80-06F CF093-14P-L80-06F	121 119	174
3.9	4.8	1349	2.25	242.77	30.3	28.0			
4.5	5.4	1178	2.55	211.98	30.7	28.3			
5.0	6.2	1041	2.90	187.34	30.9	28.5			

Legend see page 29

P_N = 0.55 kW								IE3	
50 Hz		60 Hz		i	at 50 Hz			m kg	Dimension sheet see page
0.55 kW		0.66 kW			F_{rN} kN	F_{aN} kN			
n₅₀ min ⁻¹	n₆₀ min ⁻¹	M₂ Nm	f_B						
4.6	5.6	1135	2.65	306.73	30.7	28.3	CG093-14P-80-04E CF093-14P-80-04E	119 117	174
2.6	3.1	2051	0.80	368.94	16.5	18.3	CG083-14P-L80-06F CF083-14P-L80-06F	68 72	172
3.3	4.1	1583	1.00	284.84	20.1	19.3			
4.0	4.8	1328	1.20	238.89	21.5	19.8			
5.0	6.2	1042	1.50	187.48	22.7	20.4			
6.5	8.0	804	1.95	144.69	23.5	20.9			
7.9	9.7	665	2.35	119.68	23.8	21.1			
9.3	11	566	2.75	101.80	24.0	21.3			
3.8	4.7	1365	1.15	368.94	21.3	19.7	CG083-14P-80-04E CF083-14P-80-04E	66 70	172
5.0	6.0	1054	1.50	284.84	22.7	20.3			
5.9	7.2	884	1.80	238.89	23.2	20.7			
7.6	9.2	693	2.25	187.48	23.7	21.1			
9.8	12	535	2.90	144.69	24.1	21.4			
4.8	5.9	1093	0.80	196.68	7.1	12.1	CG073-14P-L80-06F CF073-14P-L80-06F	44 48	170
5.3	6.5	986	0.85	177.39	8.8	12.7			
5.9	7.2	897	0.95	161.38	9.9	12.7			
6.9	8.4	764	1.10	137.38	11.2	13.3			
7.6	9.2	695	1.20	124.97	11.7	13.3			
9.0	11	581	1.45	104.50	12.5	13.8			
9.9	12	528	1.60	95.06	12.8	13.8			
11	13	479	1.75	86.17	13.0	14.1			
12	15	436	1.90	78.39	13.2	14.1			
13	16	393	2.10	70.68	13.4	14.3			
15	18	357	2.30	64.30	13.5	14.3			
16	19	334	2.50	60.06	13.5	14.5			
17	21	304	2.75	54.63	13.6	14.5			
19	23	274	3.00	49.38	13.7	14.6			
5.1	6.2	1030	0.80	278.44	8.2	12.6	CG073-14P-80-04E CF073-14P-80-04E	42 46	170
5.6	6.8	937	0.90	253.30	9.5	12.5			
6.6	8.0	800	1.05	216.20	10.9	13.2			
7.2	8.7	727	1.15	196.68	11.5	13.2			
8.0	9.7	656	1.25	177.39	12.0	13.6			
8.8	11	597	1.40	161.38	12.4	13.6			
10	13	508	1.65	137.38	12.9	14.0			
11	14	462	1.80	124.97	13.1	14.0			
14	16	387	2.15	104.50	13.4	14.3			
15	18	352	2.35	95.06	13.5	14.3			
16	20	319	2.60	86.17	13.6	14.5			
18	22	290	2.85	78.39	13.7	14.5			
6.7	8.2	785	0.80	141.17	5.3	5.8	CG063-14P-L80-06F CF063-14P-L80-06F	28 33	168
8.0	9.7	659	0.95	118.51	7.5	6.2			
8.7	11	604	1.00	108.67	8.2	6.3			
11	13	498	1.25	89.54	9.3	6.7			
12	14	456	1.35	82.10	9.6	6.8			
13	16	407	1.50	73.28	10.0	6.9			
14	17	373	1.65	67.19	10.2	7.0			
16	19	330	1.85	59.42	10.4	7.1			
17	21	303	2.00	54.49	10.6	7.2			
19	23	276	2.20	49.74	10.7	7.3			
21	25	254	2.40	45.61	10.8	7.4			
7.5	9.1	696	0.90	188.11	7.0	6.1	CG063-14P-80-04E CF063-14P-80-04E	26 31	168
8.2	10	638	0.95	172.49	7.8	6.2			
9.2	11	569	1.10	153.96	8.6	6.5			
10	12	522	1.15	141.17	9.1	6.6			
12	15	438	1.40	118.51	9.8	6.8			
13	16	402	1.50	108.67	10.0	6.9			
16	19	331	1.85	89.54	10.4	7.1			
17	21	304	2.00	82.10	10.6	7.2			
19	23	271	2.25	73.28	10.7	7.3			
21	26	249	2.45	67.19	10.8	7.4			
24	29	220	2.75	59.42	10.9	7.5			
26	32	202	3.00	54.49	11.0	7.5			

P _N = 0.55 kW								IE3	
50 Hz		60 Hz		i	at 50 Hz			m kg	Dimension sheet see page
0.55 kW	0.66 kW	M ₂ Nm	f _B		F _{rN} kN	F _{aN} kN			
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹								
16	19	333	1.30	60.00	10.4	7.1	CG062-14P-L80-06F CF062-14P-L80-06F	28 33	168
17	21	306	1.30	55.02	10.6	7.2			
20	24	264	2.30	47.55	10.7	7.3			
22	26	242	2.35	43.60	10.8	7.4			
26	31	205	2.95	36.92	10.9	7.5			
28	35	186	1.30	33.43	11.0	7.3			
32	39	165	1.30	29.67	11.0	7.4			
36	44	147	2.35	26.49	11.1	7.5			
40	49	131	2.35	23.52	11.1	7.5			
24	29	222	1.90	60.00	10.9	7.5	CG062-14P-80-04E CF062-14P-80-04E	25 30	168
26	31	204	1.90	55.02	10.9	7.5			
42	51	124	1.90	33.43	11.1	7.6			
48	58	110	1.90	29.67	11.2	7.6			
10	13	513	0.80	92.32	1.4	5.7	CG053-14P-L80-06F CF053-14P-L80-06F	23 28	166
12	15	432	0.95	77.79	4.3	6.1			
13	16	393	1.05	70.71	5.1	6.3			
15	19	343	1.20	61.63	5.8	6.5			
17	21	311	1.30	56.02	6.2	6.7			
19	23	273	1.50	49.20	6.6	6.9			
21	26	249	1.65	44.73	6.8	7.0			
23	29	224	1.80	40.33	7.0	7.1			
26	31	204	2.00	36.67	7.1	7.2			
11	13	492	0.85	132.97	2.6	5.9	CG053-14P-80-04E CF053-14P-80-04E	21 26	166
12	14	447	0.90	120.88	4.0	6.0			
14	17	376	1.10	101.55	5.4	6.4			
15	19	341	1.20	92.32	5.8	6.5			
18	22	288	1.40	77.79	6.4	6.8			
20	24	262	1.55	70.71	6.7	6.9			
23	28	228	1.80	61.63	6.9	7.1			
25	31	207	1.95	56.02	7.1	7.1			
29	35	182	2.20	49.20	7.2	7.3			
32	38	165	2.45	44.73	7.3	7.3			
35	43	149	2.70	40.33	7.4	7.4			
39	47	136	2.95	36.67	7.5	7.5			
16	20	327	0.80	58.85	6.0	6.6	CG052-14P-L80-06F CF052-14P-L80-06F	22 27	166
18	22	297	0.80	53.50	6.3	6.7			
20	24	267	1.30	48.13	6.6	6.9			
22	26	243	1.30	43.75	6.8	7.0			
25	30	211	1.90	38.00	7.1	7.1			
26	32	198	0.80	35.67	7.1	7.0			
27	33	192	2.10	34.55	7.2	7.2			
30	37	172	0.80	31.03	7.3	7.1			
32	39	164	2.45	29.46	7.3	7.4			
35	43	149	2.70	26.79	7.4	7.4			
37	46	141	1.30	25.38	7.4	7.3			
39	48	134	3.00	24.12	7.5	7.5			
41	50	128	2.10	23.03	7.5	7.4			
47	58	111	2.10	20.04	7.5	7.4			
53	65	99	2.70	17.86	7.6	7.5			
61	74	86	2.70	15.54	7.6	7.6			
24	29	218	1.15	58.85	7.0	7.1	CG052-14P-80-04E CF052-14P-80-04E	20 25	166
27	32	198	1.15	53.50	7.1	7.2			
30	36	178	1.90	48.13	7.3	7.3			
32	39	162	1.90	43.75	7.3	7.4			
37	45	141	2.85	38.00	7.4	7.5			
40	48	132	1.15	35.67	7.5	7.3			
46	55	115	1.20	31.03	7.5	7.4			
49	59	108	1.90	29.17	7.6	7.5			
56	68	94	1.90	25.38	7.6	7.5			
22	26	243	0.85	43.79	4.1	3.1			
27	33	197	1.05	35.38	4.8	3.4			
29	36	179	1.15	32.13	5.0	3.5			

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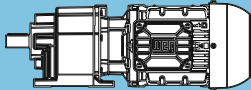
P _N = 0.55 kW								IE3	
50 Hz		60 Hz		i	at 50 Hz			m kg	Dimension sheet see page
0.55 kW		0.66 kW			F _{rN} kN	F _{aN} kN			
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	f _B						
22	27	237	0.85	64.05	4.2	3.1	CG033-14P-80-04E CF033-14P-80-04E	16 18	164
24	30	215	0.95	58.17	4.5	3.2			
26	31	204	1.00	55.25	4.7	3.3			
28	34	186	1.10	50.18	4.9	3.4			
29	36	178	1.15	48.22	5.0	3.5			
32	39	162	1.25	43.79	5.2	3.6			
40	49	131	1.55	35.38	5.5	3.8			
44	54	119	1.70	32.13	5.4	3.8			
22	27	238	0.80	42.88	4.2	3.1	CG032-14P-L80-06F CF032-14P-L80-06F	18 20	164
24	30	216	0.80	38.95	4.5	3.2			
27	33	194	1.05	34.88	4.8	3.4			
30	36	176	1.15	31.67	5.0	3.5			
34	42	154	1.30	27.71	5.3	3.6			
38	46	140	1.45	25.17	5.4	3.7			
39	48	134	0.80	24.03	5.4	3.6			
44	54	119	1.70	21.40	5.4	3.9			
45	55	116	0.80	20.95	5.3	3.7			
48	59	109	1.20	19.54	5.2	3.8			
49	59	108	1.90	19.44	5.3	3.9			
55	68	95	2.15	17.09	5.1	4.0			
61	74	86	2.35	15.52	5.0	4.1			
70	85	75	1.55	13.54	4.7	4.0			
73	89	72	2.75	12.92	4.8	4.2			
79	96	67	2.00	11.99	4.6	4.1			
90	110	58	2.00	10.46	4.4	4.1			
99	121	53	2.45	9.57	4.3	4.2			
113	138	46	2.50	8.35	4.2	4.2			
33	40	159	1.20	42.88	5.2	3.6	CG032-14P-80-04E CF032-14P-80-04E	16 18	164
36	44	144	1.20	38.95	5.3	3.7			
41	49	129	1.60	34.88	5.5	3.8			
45	54	117	1.75	31.67	5.4	3.9			
51	62	103	2.00	27.71	5.2	4.0			
56	68	93	2.15	25.17	5.1	4.0			
59	72	89	1.20	24.03	5.0	3.9			
66	80	79	2.55	21.40	4.9	4.1			
73	88	72	2.80	19.44	4.7	4.1			
73	88	72	1.80	19.54	4.7	4.1			
83	101	63	1.80	17.04	4.5	4.1			
91	111	57	2.30	15.53	4.4	4.2			
105	127	50	2.30	13.54	4.2	4.2			
118	143	44	2.95	11.99	4.1	4.3			
136	165	39	2.95	10.46	3.9	4.3			
47	58	111	0.80	19.92	2.6	0.9	CG012-14P-L80-06F CF012-14P-L80-06F	16 17	162
53	65	99	0.90	17.85	2.8	1.0			
60	73	88	0.80	15.82	3.0	0.8			
64	78	83	1.05	14.88	3.1	1.1			
71	87	74	1.15	13.33	3.2	1.1			
74	90	71	1.20	12.83	3.2	1.2			
76	93	69	1.00	12.46	3.2	1.0			
82	100	64	1.35	11.50	3.2	1.2			
84	103	62	1.35	11.20	3.2	1.2			
94	115	56	1.50	10.04	3.1	1.3			
98	120	53	1.25	9.60	3.0	1.1			
115	141	46	1.70	8.22	2.9	1.3			
126	154	42	1.60	7.50	2.8	1.3			
128	157	41	1.85	7.36	2.8	1.4			
169	206	31	2.15	5.60	2.6	1.3			
196	239	27	2.50	4.83	2.5	1.4			
224	274	23	2.85	4.22	2.4	1.4			

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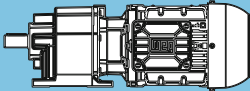
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$P_N = 0.55 \text{ kW}$

IE3

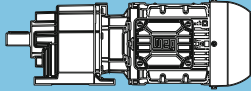
50 Hz 0.55 kW	60 Hz 0.66 kW	M_2 Nm	f_b	i	at 50 Hz			m kg	Dimension sheet see page
					F_{rN} kN	F_{aN} kN			
48	58	110	0.80	29.65	2.6	0.9	CG012-14P-80-04E CF012-14P-80-04E	14 15	162
56	67	94	0.95	25.50	2.9	1.0			
62	75	85	1.05	22.85	3.1	1.1			
71	86	74	1.20	19.92	3.2	1.2			
73	88	72	0.95	19.51	3.2	1.0			
80	96	66	1.30	17.85	3.2	1.2			
90	109	59	1.15	15.82	3.0	1.1			
95	116	55	1.55	14.88	3.1	1.3			
107	129	49	1.75	13.33	3.0	1.3			
111	134	47	1.80	12.83	2.9	1.3			
114	138	46	1.45	12.46	2.9	1.2			
123	150	43	2.00	11.50	2.8	1.3			
127	154	41	2.05	11.20	2.8	1.4			
141	171	37	2.20	10.04	2.7	1.4			
148	179	36	1.90	9.60	2.7	1.3			
173	209	30	2.55	8.22	2.6	1.4			
189	229	28	2.40	7.50	2.5	1.4			
193	234	27	2.75	7.36	2.5	1.4			
91	111	58	0.80	10.42	2.7	0.9	CG002-14P-L80-06F CF002-14P-L80-06F	15 16	160
95	116	55	0.95	9.97	2.8	1.2			
106	130	49	1.05	8.90	2.7	1.2			
116	141	45	1.00	8.17	2.6	1.1			
137	168	38	1.30	6.88	2.6	1.3			
154	188	34	1.25	6.14	2.4	1.2			
196	240	27	1.50	4.81	2.3	1.3			
267	326	20	1.80	3.54	2.1	1.4			
387	473	14	2.30	2.44	1.9	1.5			
82	100	64	0.80	17.29	2.9	1.1	CG002-14P-80-04E CF002-14P-80-04E	13 14	160
92	111	57	0.90	15.43	2.8	1.1			
105	127	50	1.00	13.54	2.8	1.2			
108	131	48	0.90	13.10	2.6	1.0			
118	142	45	1.15	12.08	2.7	1.3			
136	165	39	1.20	10.42	2.5	1.2			
142	173	37	1.40	9.97	2.6	1.3			
160	193	33	1.55	8.90	2.5	1.4			
174	210	30	1.50	8.17	2.4	1.3			
207	250	25	1.95	6.88	2.3	1.4			
231	280	23	1.85	6.14	2.2	1.4			
295	357	18	2.20	4.81	2.0	1.4			
401	486	13	2.70	3.54	1.9	1.5			
581	704	9	3.45	2.44	1.7	1.5			

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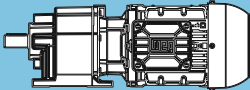
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50 Hz		60 Hz		i	at 50 Hz			m kg	Dimension sheet see page
0.75 kW		0.90 kW			F_m kN	F_{aN} kN			
n₅₀ min ⁻¹	n₆₀ min ⁻¹	M₂ Nm	f_B						
0.31	0.38	20380	0.90	3020.06	105.9	22.0	CG165-11P-90S/L-06E CF165-11P-90S/L-06E	707 730	194
0.32	0.39	20018	0.90	2966.43	107.1	22.3			
0.38	0.47	16315	1.15	2448.96	117.8	25.7			
0.39	0.48	16017	1.15	2404.16	118.5	25.9			
0.46	0.56	13518	1.35	2050.07	123.9	28.2			
0.57	0.69	10760	1.70	1661.50	128.6	30.7			
0.27	0.33	23807	0.80	5339.57	92.2	18.9	CG165-11P-80-04F CF165-11P-80-04F	701 724	194
0.29	0.36	21720	0.85	4884.00	101.0	20.8			
0.33	0.4	19335	0.95	4369.98	109.3	22.9			
0.39	0.47	16160	1.15	3690.13	118.1	25.8			
0.40	0.49	15479	1.20	3543.61	119.8	26.4			
0.47	0.58	13057	1.40	3020.06	124.8	28.6			
0.48	0.59	12792	1.45	2966.43	125.3	28.9			
0.58	0.71	10398	1.75	2448.96	129.2	31.1			
0.59	0.72	10182	1.80	2404.16	129.5	31.2			
0.70	0.85	8526	2.15	2050.07	131.6	32.8			
0.86	1.0	6715	2.70	1661.50	133.5	34.4			
0.45	0.55	14242	1.30	2093.95	122.5	27.6	CG164-11P-90S/L-06E CF164-11P-90S/L-06E	694 717	192
0.52	0.63	12166	1.50	1803.51	126.4	29.4			
0.57	0.69	11111	1.65	1657.33	128.1	30.4			
0.60	0.73	10415	1.75	1559.96	129.1	31.0			
0.65	0.79	9602	1.90	1447.11	130.3	31.8			
0.66	0.80	9452	1.95	1427.45	130.5	31.9			
0.73	0.90	8398	2.15	1278.93	131.7	32.9			
0.75	0.92	8151	2.25	1246.39	132.0	33.1			
0.76	0.93	8074	2.25	1234.69	132.1	33.2			
0.85	1.0	7114	2.55	1101.54	133.1	34.0			
0.87	1.1	6970	2.60	1081.51	133.2	34.2			
0.99	1.2	6039	3.00	952.78	134.0	35.0			
0.68	0.83	9095	2.00	2093.95	130.9	32.2			
0.79	0.96	7720	2.35	1803.51	132.5	33.5			
0.86	1.0	7021	2.60	1657.33	133.2	34.1			
0.92	1.1	6567	2.75	1559.96	133.6	34.5			
0.99	1.2	6029	3.00	1447.11	134.0	35.0			
0.43	0.53	14954	0.90	2162.84	91.8	12.5	CG144-11P-90S/L-06E CF144-11P-90S/L-06E	443 461	188
0.50	0.61	12959	1.05	1885.79	97.0	14.5			
0.56	0.69	11427	1.15	1669.82	100.4	16.0			
0.58	0.70	11094	1.20	1624.38	101.1	16.4			
0.65	0.79	9882	1.35	1455.92	103.3	17.6			
0.67	0.82	9486	1.40	1400.42	103.9	18.0			
0.75	0.91	8442	1.55	1254.10	105.5	19.0			
0.77	0.94	8203	1.60	1221.03	105.9	19.3			
0.86	1.0	7323	1.80	1099.05	107.0	20.2			
0.87	1.1	7180	1.85	1079.94	107.2	20.3			
0.89	1.1	6979	1.90	1051.77	107.4	20.5			
0.98	1.2	6306	2.10	958.27	108.2	21.2			
1.0	1.3	5935	2.20	905.71	108.5	21.6			
1.1	1.3	5512	2.40	848.21	108.9	22.0			
1.3	1.5	4737	2.75	739.56	109.6	22.8			
0.66	0.80	9650	1.35	2162.84	103.7	17.8	CG144-11P-80-04F CF144-11P-80-04F	437 455	188
0.76	0.92	8328	1.60	1885.79	105.7	19.2			
0.86	1.0	7313	1.80	1669.82	107.0	20.2			
0.88	1.1	7099	1.85	1624.38	107.3	20.4			
0.98	1.2	6298	2.10	1455.92	108.2	21.2			
1.0	1.2	6032	2.20	1400.42	108.4	21.5			
1.1	1.4	5346	2.45	1254.10	109.1	22.1			
1.2	1.4	5184	2.55	1221.03	109.2	22.3			
1.3	1.6	4608	2.85	1099.05	109.7	22.9			
1.4	1.7	4382	3.00	1051.77	109.8	23.1			

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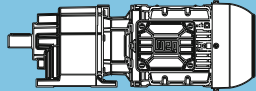
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P _N = 0.75 kW								IE3	
50 Hz 0.75 kW	60 Hz 0.90 kW	M ₂ Nm	f _b	i	at 50 Hz			m kg	Dimension sheet see page
					F _{rN} kN	F _{aN} kN			
0.64	0.78	10140	0.80	1460.54	53.7	17.9	CG134-11P-90S/L-06E CF134-11P-90S/L-06E	296 298	184
0.66	0.81	9830	0.85	1418.83	55.2	18.3			
0.74	0.9	8748	0.95	1267.83	60.0	19.5			
0.77	0.93	8452	0.95	1224.91	61.1	19.8			
0.86	1.0	7512	1.10	1095.41	64.4	20.9			
0.88	1.1	7292	1.10	1063.29	65.1	21.2			
0.98	1.2	6552	1.25	961.31	67.2	22.0			
1.0	1.2	6248	1.30	918.68	67.9	22.4			
1.1	1.4	5641	1.45	834.47	69.4	23.1			
1.3	1.5	4974	1.65	741.90	70.8	23.8			
1.5	1.8	4273	1.90	644.01	72.0	24.6			
1.7	2.1	3646	2.20	556.43	72.9	25.3			
1.8	2.1	3469	2.35	532.69	73.2	25.5			
2.0	2.5	2948	2.75	460.25	73.8	26.1			
2.1	2.5	2896	2.80	453.11	73.8	26.2			
0.76	0.92	8580	0.95	1891.77	60.6	19.7	CG134-11P-80-04F CF134-11P-80-04F	290 292	184
0.87	1.1	7403	1.10	1642.17	64.7	21.0			
0.98	1.2	6543	1.25	1460.54	67.2	22.0			
1.0	1.2	6343	1.30	1418.83	67.7	22.3			
1.1	1.4	5633	1.45	1267.83	69.4	23.1			
1.2	1.4	5431	1.50	1224.91	69.8	23.3			
1.3	1.6	4817	1.70	1095.41	71.0	24.0			
1.5	1.8	4184	1.95	961.31	72.1	24.7			
1.6	1.9	3982	2.05	918.68	72.4	25.0			
1.7	2.1	3587	2.25	834.47	73.0	25.4			
1.9	2.3	3150	2.55	741.90	73.6	25.9			
2.0	2.4	3048	2.65	720.98	73.7	26.0			
2.2	2.7	2683	3.00	644.01	74.1	26.4			
1.1	1.4	5774	0.80	831.69	27.1	19.9	CG104-11P-90S/L-06E CF104-11P-90S/L-06E	182 186	180
1.3	1.6	4852	0.95	703.12	33.6	21.0			
1.5	1.8	4318	1.05	628.39	36.4	21.7			
1.8	2.2	3621	1.25	531.25	39.3	22.6			
2.2	2.6	2927	1.55	434.78	41.6	23.5			
2.3	2.7	2796	1.65	417.03	42.0	23.6			
2.7	3.2	2334	1.95	352.56	43.1	24.2			
3.2	3.9	1922	2.35	295.14	43.9	24.8			
3.3	4.0	1831	2.50	282.94	44.0	24.9	CG104-11P-80-04F CF104-11P-80-04F	176 180	180
3.9	4.8	1516	3.00	239.20	44.5	25.3			
1.3	1.6	5072	0.90	1116.07	32.3	20.7			
1.6	1.9	4118	1.10	913.46	37.3	22.0			
1.7	2.1	3726	1.25	831.69	38.9	22.5			
2.0	2.5	3124	1.45	703.12	41.0	23.2			
2.3	2.8	2769	1.65	628.39	42.0	23.7			
2.7	3.3	2312	1.95	531.25	43.1	24.3			
2.8	3.4	2229	2.05	514.28	43.3	24.4	CG104-11P-90S/L-06E CF104-11P-90S/L-06E	169 173	180
3.3	4.0	1853	2.45	434.78	44.0	24.8			
3.4	4.2	1770	2.55	417.03	44.1	24.9			
3.8	4.6	1878	2.40	246.43	44.0	24.8	CG094-11P-90S/L-06E CF094-11P-90S/L-06E	139 137	176
4.5	5.5	1587	2.85	208.33	44.4	25.2			
1.7	2.1	3753	0.80	540.55	15.7	24.5			
1.8	2.2	3596	0.85	519.08	17.6	24.7			
1.9	2.3	3503	0.90	506.66	18.6	24.8			
2.1	2.6	3046	1.00	442.39	22.6	25.5			
2.2	2.6	2986	1.05	434.54	23.0	25.6			
2.3	2.8	2817	1.10	410.85	24.1	25.8			
2.6	3.2	2445	1.25	358.73	26.2	26.4			
2.7	3.3	2400	1.25	352.17	26.5	26.5			
3.1	3.8	2026	1.50	300.30	28.1	27.0			
3.4	4.1	1869	1.65	278.74	28.7	27.2			
3.9	4.7	1615	1.90	243.38	29.5	27.6			

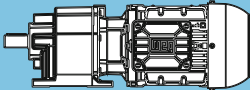
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P _N = 0.75 kW								IE3	
50 Hz		60 Hz		i	at 50 Hz			m kg	Dimension sheet see page
0.75 kW		0.90 kW			F _{rN} kN	F _{aN} kN			
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	f _B						
1.7	2.1	3732	0.85	819.36	16.0	24.5	CG094-11P-80-04F CF094-11P-80-04F	133 131	176
1.8	2.2	3562	0.85	782.16	18.0	24.7			
2.0	2.4	3245	0.95	715.43	21.0	25.2			
2.2	2.7	2892	1.05	640.13	23.6	25.7			
2.3	2.8	2791	1.10	619.07	24.3	25.9			
2.6	3.2	2422	1.25	540.55	26.4	26.4			
2.8	3.4	2321	1.30	519.08	26.9	26.6			
3.2	3.9	1958	1.55	442.39	28.4	27.1			
3.3	4.0	1919	1.60	434.54	28.5	27.2			
3.5	4.2	1807	1.70	410.85	28.9	27.3			
4.0	4.9	1561	1.95	358.73	29.7	27.7			
4.1	4.9	1530	2.00	352.17	29.8	27.7			
4.2	5.1	1491	2.05	343.93	29.9	27.8			
4.8	5.8	1286	2.35	300.30	30.4	28.1			
5.1	6.2	1183	2.55	278.74	30.6	28.3			
5.9	7.1	1014	3.00	243.38	31.0	28.5			
3.1	3.7	2337	1.30	306.73	26.8	26.5	CG093-11P-90S/L-06E CF093-11P-90S/L-06E	126 124	174
3.9	4.7	1850	1.65	242.77	28.8	27.3			
4.4	5.4	1615	1.90	211.98	29.5	27.6			
5.0	6.1	1427	2.15	187.34	30.1	27.9			
5.9	7.2	1207	2.50	158.42	30.6	28.2			
6.1	7.4	1175	2.60	154.24	30.7	28.3			
6.9	8.4	1038	2.90	136.18	30.9	28.5			
4.7	5.7	1536	2.00	306.73	29.8	27.7	CG093-11P-80-04F CF093-11P-80-04F	120 118	174
5.9	7.2	1216	2.50	242.77	30.6	28.2			
6.7	8.2	1062	2.85	211.98	30.9	28.4			
3.9	4.8	1820	0.90	238.89	18.5	18.8	CG083-11P-90S/L-06E CF083-11P-90S/L-06E	74 78	172
5.0	6.1	1429	1.10	187.48	21.0	19.6			
6.5	7.9	1102	1.45	144.69	22.5	20.2			
7.9	9.6	912	1.70	119.68	23.2	20.6			
9.2	11	776	2.00	101.80	23.5	20.9			
11	13	672	2.35	88.23	23.8	21.1			
13	15	568	2.75	74.50	24.0	21.3			
3.9	4.7	1848	0.85	368.94	18.2	18.7	CG083-11P-80-04F CF083-11P-80-04F	68 72	172
5.0	6.1	1427	1.10	284.84	21.0	19.6			
6.0	7.3	1197	1.30	238.89	22.1	20.1			
7.6	9.3	939	1.70	187.48	23.1	20.6			
9.9	12	725	2.15	144.69	23.7	21.0			
12	15	599	2.60	119.68	23.9	21.3			
6.8	8.3	1047	0.80	137.38	7.9	12.5	CG073-11P-90S/L-06E CF073-11P-90S/L-06E	50 54	170
7.5	9.2	952	0.90	124.97	9.3	12.5			
9.0	11	796	1.05	104.50	10.9	13.2			
9.9	12	724	1.15	95.06	11.5	13.2			
11	13	657	1.25	86.17	12.0	13.6			
12	15	597	1.40	78.39	12.4	13.6			
13	16	539	1.55	70.68	12.7	13.9			
15	18	490	1.70	64.30	12.9	13.9			
16	19	458	1.80	60.06	13.1	14.1			
17	21	416	2.00	54.63	13.3	14.1			
19	23	376	2.20	49.38	13.4	14.4			
21	25	342	2.35	44.92	13.5	14.4			
24	29	298	2.60	39.17	13.6	14.6			
26	32	271	2.70	35.63	13.7	14.6			

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P _N = 0.75 kW								IE3	
50 Hz 0.75 kW	60 Hz 0.90 kW	M ₂ Nm	f _B	i	at 50 Hz			m kg	Dimension sheet see page
					F _{rN} kN	F _{aN} kN			
6.6	8.0	1083	0.80	216.20	7.3	12.4	CG073-11P-80-04F CF073-11P-80-04F	44 48	170
7.3	8.8	985	0.85	196.68	8.8	12.4			
8.1	9.8	889	0.95	177.39	10.0	12.9			
8.9	11	808	1.05	161.38	10.8	12.9			
10	13	688	1.20	137.38	11.8	13.5			
11	14	626	1.35	124.97	12.2	13.5			
14	17	523	1.60	104.50	12.8	14.0			
15	18	476	1.75	95.06	13.0	13.9			
17	20	432	1.90	86.17	13.2	14.2			
18	22	393	2.10	78.39	13.4	14.2			
20	25	354	2.35	70.68	13.5	14.4			
22	27	322	2.55	64.30	13.6	14.4			
24	29	301	2.75	60.06	13.6	14.6			
26	32	274	3.00	54.63	13.7	14.6			
24	29	297	2.80	38.92	13.7	14.6	CG072-11P-90S/L-06E CF072-11P-90S/L-06E	49 53	170
10	13	682	0.90	89.54	7.2	6.1	CG063-11P-90S/L-06E CF063-11P-90S/L-06E	33 38	168
11	14	626	1.00	82.10	8.0	6.3			
13	16	558	1.10	73.28	8.7	6.5			
14	17	512	1.20	67.19	9.2	6.6			
16	19	453	1.35	59.42	9.7	6.8			
17	21	415	1.45	54.49	9.9	6.9			
19	23	379	1.60	49.74	10.2	7.0			
21	25	348	1.75	45.61	10.3	7.1			
9.3	11	771	0.80	153.96	5.6	5.9	CG063-11P-80-04F CF063-11P-80-04F	27 32	168
10	12	707	0.85	141.17	6.8	6.0			
12	15	594	1.05	118.51	8.4	6.4			
13	16	544	1.15	108.67	8.9	6.5			
16	19	448	1.35	89.54	9.7	6.8			
17	21	411	1.50	82.10	10.0	6.9			
20	24	367	1.65	73.28	10.2	7.0			
21	26	337	1.80	67.19	10.4	7.1			
24	29	298	2.05	59.42	10.6	7.2			
26	32	273	2.20	54.49	10.7	7.3			
29	35	249	2.45	49.74	10.8	7.4			
31	38	228	2.65	45.61	10.9	7.4			
16	19	457	0.95	60.00	9.6	6.8	CG062-11P-90S/L-06E CF062-11P-90S/L-06E	33 38	168
17	21	419	0.95	55.02	9.9	6.9			
20	24	362	1.70	47.55	10.3	7.1			
22	26	332	1.70	43.60	10.4	7.1			
25	31	281	2.15	36.92	10.7	7.3			
28	34	258	2.35	33.86	10.8	7.3			
31	38	231	2.60	30.30	10.9	7.4			
34	41	212	2.85	27.78	10.9	7.5			
35	43	202	1.70	26.49	11.0	7.3			
40	49	179	1.70	23.52	11.0	7.3			
46	56	157	2.45	20.57	11.1	7.4			
51	63	139	2.45	18.26	11.0	7.5			
56	68	129	2.95	16.88	10.7	7.6			
63	76	114	2.95	14.98	10.3	7.6			
24	29	301	1.40	60.00	10.6	7.2	CG063-11P-80-04F CF063-11P-80-04F	27 32	168
26	32	276	1.40	55.02	10.7	7.3			
30	37	238	2.55	47.55	10.8	7.4			
33	40	218	2.60	43.60	10.9	7.5			
43	52	167	1.40	33.43	11.0	7.4			
48	59	149	1.40	29.67	11.1	7.5			
54	66	133	2.60	26.49	10.8	7.5			
61	74	118	2.60	23.52	10.4	7.6			

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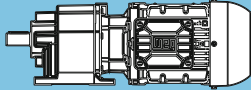
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0.75 kW		0.90 kW			F _{rN} kN	F _{aN} kN			
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	f _B						
15	19	470	0.90	61.63	3.4	6.0	CG053-11P-90S/L-06E CF053-11P-90S/L-06E	29 34	166
17	20	427	0.95	56.02	4.4	6.1			
19	23	375	1.10	49.20	5.4	6.4			
21	26	341	1.20	44.73	5.8	6.5			
23	28	307	1.35	40.33	6.2	6.7			
26	31	279	1.45	36.67	6.5	6.8			
14	17	509	0.80	101.55	1.7	5.8	CG053-11P-80-04F CF053-11P-80-04F	23 28	166
15	19	462	0.90	92.32	3.6	6.0			
18	22	390	1.05	77.79	5.1	6.3			
20	25	354	1.15	70.71	5.7	6.5			
23	28	309	1.30	61.63	6.2	6.7			
26	31	281	1.45	56.02	6.5	6.8			
29	35	246	1.65	49.20	6.8	7.0			
32	39	224	1.80	44.73	7.0	7.1			
35	43	202	2.00	40.33	7.1	7.2			
39	47	184	2.20	36.67	7.2	7.3			
20	24	367	0.95	48.13	5.5	6.4	CG052-11P-90S/L-06E CF052-11P-90S/L-06E	28 33	166
21	26	333	0.95	43.75	5.9	6.6			
25	30	290	1.40	38.00	6.4	6.8			
27	33	263	1.55	34.55	6.7	6.9			
32	39	225	1.80	29.46	7.0	7.1			
35	43	204	2.00	26.79	7.1	7.2			
37	45	193	0.95	25.38	7.2	7.0			
39	47	184	2.20	24.12	7.2	7.3			
41	50	175	1.55	23.03	7.3	7.1			
43	52	167	2.40	21.92	7.3	7.3			
47	57	153	1.55	20.04	7.4	7.2			
51	62	141	2.85	18.56	7.4	7.5			
53	64	136	2.00	17.86	7.5	7.3			
61	74	118	2.00	15.54	7.5	7.4			
64	78	111	2.40	14.62	7.5	7.5			
74	90	97	2.40	12.72	7.6	7.5			
24	30	295	0.85	58.85	6.4	6.8	CG052-11P-80-04F CF052-11P-80-04F	22 27	166
27	33	268	0.85	53.50	6.6	6.9			
30	36	241	1.40	48.13	6.8	7.0			
33	40	219	1.45	43.75	7.0	7.1			
38	46	190	2.15	38.00	7.2	7.2			
40	49	179	0.85	35.67	7.3	7.1			
41	50	173	2.35	34.55	7.3	7.3			
46	56	155	0.85	31.03	7.4	7.2			
49	60	146	1.40	29.17	7.4	7.3			
53	65	134	3.00	26.79	7.5	7.5			
56	69	127	1.45	25.38	7.5	7.3			
62	76	115	2.35	23.03	7.5	7.4			
71	87	100	2.35	20.04	7.6	7.5			
80	97	89	3.00	17.86	7.5	7.6			
92	112	78	3.00	15.54	7.2	7.6			
28	35	251	0.80	50.18	3.9	3.0	CG033-11P-80-04F CF033-11P-80-04F	18 20	164
30	36	242	0.85	48.22	4.1	3.1			
33	40	219	0.95	43.79	4.5	3.2			
40	49	177	1.15	35.38	5.0	3.5			
45	54	161	1.25	32.13	5.1	3.6			

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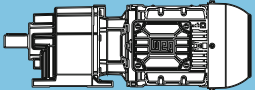
P_N = 0.75 kW

IE3

50 Hz 0.75 kW	60 Hz 0.90 kW	M ₂ Nm	f _b	i	at 50 Hz			m kg	Dimension sheet see page
					F _{rN} kN	F _{aN} kN			
					n ₅₀ min ⁻¹	n ₆₀ min ⁻¹			
27	33	266	0.80	34.88	3.6	2.9	CG032-11P-90S/L-06E CF032-11P-90S/L-06E	24 26	164
30	36	241	0.85	31.67	4.1	3.1			
34	41	211	0.95	27.71	4.6	3.3			
37	45	192	1.05	25.17	4.9	3.4			
44	53	163	1.25	21.40	5.2	3.6			
48	59	149	0.90	19.54	5.0	3.5			
55	67	130	1.55	17.09	4.9	3.8			
61	74	118	1.70	15.52	4.8	3.8			
69	85	103	1.15	13.54	4.6	3.8			
73	89	98	2.00	12.92	4.6	4.0			
78	95	91	1.45	11.99	4.5	3.9			
80	98	89	2.25	11.73	4.5	4.0			
90	110	80	1.45	10.46	4.3	4.0			
96	117	75	2.45	9.82	4.3	4.1			
98	120	73	1.80	9.57	4.2	4.1			
105	128	68	2.70	8.92	4.2	4.2			
113	137	64	1.80	8.35	4.0	4.1			
123	150	58	2.95	7.64	4.0	4.2			
130	158	55	2.40	7.24	3.9	4.2			
149	181	48	2.40	6.31	3.7	4.2			
33	41	215	0.90	42.88	4.5	3.3	CG032-11P-80-04F CF032-11P-80-04F	18 20	164
37	45	195	0.90	38.95	4.8	3.4			
41	50	175	1.15	34.88	5.1	3.5			
45	55	159	1.30	31.67	5.1	3.6			
52	63	139	1.45	27.71	5.0	3.7			
57	69	126	1.60	25.17	4.9	3.8			
60	72	120	0.90	24.03	4.7	3.7			
67	81	107	1.90	21.40	4.7	3.9			
68	83	105	0.90	20.95	4.6	3.8			
73	89	98	1.35	19.54	4.5	3.9			
74	90	97	2.10	19.44	4.6	4.0			
84	102	86	2.35	17.09	4.4	4.1			
92	112	78	2.60	15.52	4.3	4.1			
106	129	68	1.70	13.54	4.1	4.1			
111	135	65	3.00	12.92	4.1	4.2			
119	145	60	2.20	11.99	4.0	4.1			
137	166	52	2.20	10.46	3.8	4.2			
149	182	48	2.75	9.57	3.8	4.2			
171	208	42	2.75	8.35	3.6	4.3			
71	86	102	0.85	13.33	2.8	1.0	CG012-11P-90S/L-06E CF012-11P-90S/L-06E	22 23	162
73	89	98	0.90	12.83	2.9	1.0			
82	100	88	1.00	11.50	3.0	1.1			
84	102	85	1.00	11.20	3.0	1.1			
94	114	76	1.10	10.04	2.9	1.1			
98	119	73	0.95	9.60	2.8	1.0			
114	139	63	1.25	8.22	2.8	1.2			
125	153	57	1.20	7.50	2.7	1.1			
128	155	56	1.35	7.36	2.7	1.3			
168	204	43	1.55	5.60	2.5	1.2			
194	237	37	1.80	4.83	2.4	1.3			
223	271	32	2.10	4.22	2.3	1.3			
304	370	24	2.70	3.09	2.1	1.4			

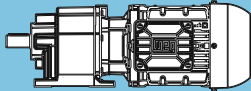
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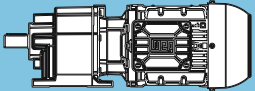
P _N = 0.75 kW								IE3	
50 Hz		60 Hz		i	at 50 Hz			m kg	Dimension sheet see page
0.75 kW		0.90 kW			F _{rN} kN	F _{aN} kN			
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	f _B						
72	87	100	0.90	19.92	2.8	1.0	CG012-11P-80-04F CF012-11P-80-04F	15 16	162
80	97	89	1.00	17.85	3.0	1.0			
90	110	79	0.85	15.82	2.9	0.9			
96	117	75	1.15	14.88	2.9	1.1			
107	131	67	1.30	13.33	2.9	1.2			
111	136	64	1.35	12.83	2.8	1.2			
115	140	62	1.10	12.46	2.7	1.1			
124	151	58	1.50	11.50	2.8	1.2			
128	155	56	1.50	11.20	2.7	1.3			
142	173	50	1.65	10.04	2.7	1.3			
149	181	48	1.40	9.60	2.6	1.2			
174	212	41	1.85	8.22	2.5	1.4			
191	232	38	1.80	7.50	2.4	1.3			
194	236	37	2.05	7.36	2.4	1.4			
255	311	28	2.40	5.60	2.2	1.4			
296	360	24	2.75	4.83	2.1	1.4			
118	144	61	0.85	12.08	2.6	1.1	CG002-11P-80-04F CF002-11P-80-04F	14 15	160
137	167	52	0.90	10.42	2.4	1.0			
143	175	50	1.05	9.97	2.5	1.2			
161	196	45	1.15	8.90	2.4	1.3			
175	213	41	1.10	8.17	2.3	1.1			
208	253	34	1.45	6.88	2.2	1.3			
233	283	31	1.40	6.14	2.1	1.3			
297	362	24	1.65	4.81	2.0	1.3			
404	491	18	2.00	3.54	1.8	1.4			
585	712	12	2.55	2.44	1.6	1.5			

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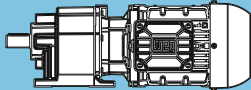
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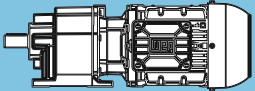
P _N = 1.1 kW								IE3	
50 Hz 1.1 kW	60 Hz 1.3 kW	M ₂ Nm	f _B	i	at 50 Hz			m kg	Dimension sheet see page
					F _{rN} kN	F _{aN} kN			
0.39	0.48	23716	0.80	3690.13	92.6	19.0	CG165-11P-90S/L-04E CF165-11P-90S/L-04E	705 728	194
0.41	0.50	22775	0.80	3543.61	96.8	19.8			
0.48	0.58	19261	0.95	3020.06	109.5	23.0			
0.49	0.59	18871	1.00	2966.43	110.7	23.4			
0.59	0.72	15420	1.20	2448.96	119.9	26.5			
0.61	0.73	15138	1.20	2404.16	120.5	26.7			
0.71	0.86	12743	1.45	2050.07	125.4	28.9			
0.88	1.1	10143	1.80	1661.50	129.5	31.3			
0.39	0.48	23855	0.80	2448.96	92.0	18.8	CG165-11P-100L-06D CF165-11P-100L-06D	711 734	194
0.40	0.48	23419	0.80	2404.16	94.0	19.2			
0.47	0.57	19817	0.95	2050.07	107.8	22.5			
0.58	0.70	15897	1.15	1661.50	118.8	26.1			
0.69	0.84	13467	1.35	2093.95	124.0	28.3	CG164-11P-90S/L-04E CF164-11P-90S/L-04E	692 715	192
0.81	0.98	11480	1.60	1803.51	127.5	30.1			
0.88	1.1	10484	1.75	1657.33	129.0	31.0			
0.93	1.1	9828	1.85	1559.96	130.0	31.6			
1.0	1.2	9060	2.00	1447.11	131.0	32.3			
1.1	1.4	7908	2.30	1278.93	132.3	33.3			
1.2	1.4	7691	2.35	1246.39	132.5	33.5			
1.3	1.6	6699	2.70	1101.54	133.5	34.4			
0.46	0.56	20792	0.90	2093.95	104.4	21.6	CG164-11P-100L-06D CF164-11P-100L-06D	698 721	192
0.53	0.65	17798	1.05	1803.51	113.9	24.3			
0.58	0.70	16288	1.15	1657.33	117.8	25.7			
0.62	0.75	15300	1.20	1559.96	120.2	26.6			
0.66	0.81	14135	1.30	1447.11	122.7	27.7			
0.67	0.82	13943	1.30	1427.45	123.1	27.8			
0.75	0.91	12415	1.45	1278.93	126.0	29.2			
0.77	0.93	12074	1.50	1246.39	126.5	29.5			
0.78	0.94	11936	1.55	1234.69	126.8	29.7			
0.87	1.1	10562	1.75	1101.54	128.9	30.9			
0.89	1.1	10370	1.75	1081.51	129.2	31.1			
1.0	1.2	9041	2.00	952.78	131.0	32.3			
1.2	1.4	7574	2.40	811.56	132.6	33.6			
1.4	1.7	6402	2.85	698.99	133.7	34.7			
0.67	0.81	14141	0.95	2162.84	94.0	13.3	CG144-11P-90S/L-04E CF144-11P-90S/L-04E	441 459	188
0.77	0.93	12254	1.10	1885.79	98.6	15.2			
0.87	1.1	10784	1.25	1669.82	101.6	16.7			
0.90	1.1	10490	1.25	1624.38	102.2	17.0			
1.0	1.2	9344	1.40	1455.92	104.2	18.1			
1.2	1.4	7966	1.65	1254.10	106.2	19.5			
1.3	1.6	6910	1.90	1099.05	107.5	20.6			
1.4	1.7	6585	2.00	1051.77	107.9	20.9			
1.5	1.8	5950	2.20	958.27	108.5	21.5			
1.6	1.9	5589	2.35	905.71	108.9	21.9			
1.7	2.1	5201	2.50	848.21	109.2	22.3			
1.8	2.1	5041	2.60	825.43	109.3	22.4			
2.0	2.4	4451	2.95	739.56	109.8	23.0			

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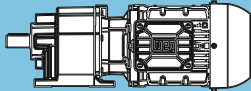
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50 Hz		60 Hz		i	at 50 Hz			m kg	Dimension sheet see page
1.1 kW		1.3 kW			F _{rN} kN	F _{aN} kN			
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	f _B						
0.57	0.70	16648	0.80	1669.82	86.4	10.8	CG144-11P-100L-06D CF144-11P-100L-06D	447 465	188
0.59	0.72	16162	0.85	1624.38	88.0	11.3			
0.66	0.80	14456	0.90	1455.92	93.2	13.0			
0.69	0.83	13877	0.95	1400.42	94.7	13.6			
0.77	0.93	12351	1.10	1254.10	98.4	15.1			
0.79	0.95	12025	1.10	1221.03	99.1	15.4			
0.87	1.1	10757	1.25	1099.05	101.7	16.7			
0.89	1.1	10570	1.25	1079.94	102.0	16.9			
0.91	1.1	10273	1.30	1051.77	102.6	17.2			
1.0	1.2	9322	1.40	958.27	104.2	18.2			
1.1	1.3	8774	1.50	905.71	105.0	18.7			
1.2	1.4	7947	1.65	825.43	106.2	19.5			
1.3	1.6	7062	1.85	739.56	107.3	20.4			
1.4	1.6	6759	1.95	710.80	107.7	20.7			
1.5	1.8	5995	2.20	637.04	108.5	21.5			
1.6	1.9	5733	2.30	611.72	108.7	21.8			
1.7	2.1	5077	2.60	548.57	109.3	22.4			
1.8	2.2	4857	2.70	526.92	109.5	22.6			
1.9	2.3	4757	2.75	517.20	109.6	22.7			
1.0	1.2	9588	0.85	1460.54	56.4	18.5	CG134-11P-90S/L-04E CF134-11P-90S/L-04E	294 296	184
1.1	1.4	8272	1.00	1267.83	61.8	20.1			
1.2	1.4	7976	1.05	1224.91	62.8	20.4			
1.3	1.6	7103	1.15	1095.41	65.6	21.4			
1.4	1.7	6881	1.20	1063.29	66.3	21.6			
1.5	1.8	6195	1.30	961.31	68.1	22.4			
1.6	1.9	5896	1.40	918.68	68.8	22.8			
1.7	2.1	5334	1.50	834.47	70.0	23.4			
2.0	2.4	4693	1.75	741.90	71.3	24.1			
2.3	2.7	4032	2.00	644.01	72.4	24.9			
2.4	2.9	3826	2.10	613.66	72.7	25.1			
2.6	3.2	3434	2.35	556.43	73.2	25.6			
2.7	3.3	3273	2.45	532.69	73.4	25.8			
2.8	3.4	3201	2.50	521.98	73.5	25.8			
3.2	3.8	2776	2.90	460.25	74.0	26.3			
0.90	1.1	10601	0.80	1063.29	51.2	17.4	CG134-11P-100L-06D CF134-11P-100L-06D	300 302	184
1.0	1.2	9565	0.85	961.31	56.5	18.6			
1.2	1.4	8252	1.00	834.47	61.9	20.1			
1.3	1.6	7306	1.10	741.90	65.0	21.2			
1.5	1.8	6291	1.30	644.01	67.8	22.3			
1.6	1.9	5982	1.35	613.66	68.6	22.7			
1.7	2.1	5390	1.50	556.43	69.9	23.3			
1.8	2.2	5139	1.60	532.69	70.4	23.6			
2.1	2.5	4395	1.85	460.25	71.8	24.5			
2.4	3.0	3696	2.20	392.69	72.9	25.3			
2.5	3.0	3684	2.20	391.48	72.9	25.3			
2.8	3.4	3147	2.55	339.29	73.6	25.9			
2.9	3.5	3063	2.65	331.61	73.7	26.0			
3.1	3.7	2888	2.80	314.70	73.8	26.2			
1.7	2.1	5460	0.85	831.69	29.6	20.3	CG104-11P-90S/L-04E CF104-11P-90S/L-04E	180 184	180
2.1	2.5	4588	1.00	703.12	35.1	21.4			
2.3	2.8	4075	1.15	628.39	37.5	22.0			
2.7	3.3	3417	1.35	531.25	40.1	22.9			
2.8	3.4	3301	1.40	514.28	40.5	23.0			
3.3	4.0	2762	1.65	434.78	42.0	23.7			
3.5	4.2	2638	1.75	417.03	42.4	23.8			
4.1	5.0	2203	2.05	352.56	43.4	24.4			
4.2	5.0	2177	2.10	349.11	43.4	24.4			
4.9	6.0	1810	2.50	295.14	44.1	24.9			
5.1	6.2	1724	2.65	282.94	44.2	25.0			

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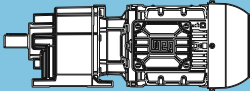
P _N = 1.1 kW								IE3	
50 Hz 1.1 kW	60 Hz 1.3 kW	M ₂ Nm	f _b	i	at 50 Hz			m kg	Dimension sheet see page
					F _{rN} kN	F _{aN} kN			
1.8	2.2	5275	0.90	531.25	30.9	20.5	CG104-11P-100L-06D CF104-11P-100L-06D	186 190	180
1.9	2.3	5107	0.90	514.28	32.1	20.7			
2.2	2.7	4291	1.05	434.78	36.5	21.7			
2.3	2.8	4107	1.10	417.03	37.4	22.0			
2.7	3.3	3437	1.35	352.56	40.0	22.8			
3.3	3.9	2847	1.60	295.14	41.8	23.6			
3.4	4.1	2718	1.70	282.94	42.2	23.7			
4.0	4.9	2270	2.00	239.20	43.2	24.3			
5.9	7.1	1779	2.55	246.43	44.1	24.9	CG103-11P-90S/L-04E CF103-11P-90S/L-04E	167 171	178
7.0	8.4	1504	3.00	208.33	44.5	25.3			
3.9	4.7	2697	1.70	246.43	42.2	23.8	CG103-11P-100L-06D CF103-11P-100L-06D	173 177	178
4.6	5.6	2280	2.00	208.33	43.2	24.3			
5.3	6.5	1973	2.30	180.35	43.8	24.7			
6.0	7.3	1748	2.60	159.72	44.2	25.0			
6.9	8.4	1512	3.00	138.17	44.5	25.3			
2.7	3.3	3549	0.85	540.55	18.1	24.8	CG094-11P-90S/L-04E CF094-11P-90S/L-04E	137 135	176
2.8	3.4	3401	0.90	519.08	19.6	25.0			
2.9	3.5	3313	0.95	506.66	20.4	25.1			
3.3	4.0	2880	1.05	442.39	23.7	25.7			
3.5	4.3	2664	1.15	410.85	25.1	26.1			
4.1	4.9	2312	1.30	358.73	26.9	26.6			
4.2	5.1	2207	1.40	343.93	27.4	26.7			
4.8	5.9	1912	1.60	300.30	28.6	27.2			
5.2	6.3	1767	1.70	278.74	29.1	27.4			
6.0	7.2	1524	2.00	243.38	29.8	27.7			
2.7	3.2	3569	0.85	358.73	17.9	24.7	CG094-11P-100L-06D CF094-11P-100L-06D	143 141	174
2.8	3.4	3415	0.90	343.93	19.5	25.0			
3.2	3.9	2964	1.05	300.30	23.1	25.6			
3.4	4.2	2745	1.10	278.74	24.6	25.9			
3.9	4.8	2377	1.30	243.38	26.6	26.5			
4.7	5.7	2215	1.40	306.73	27.3	26.7	CG093-11P-90S/L-04E CF093-11P-90S/L-04E	124 122	174
6.0	7.2	1753	1.75	242.77	29.1	27.4			
6.9	8.3	1530	2.00	211.98	29.8	27.7			
7.8	9.4	1353	2.25	187.34	30.3	28.0			
9.2	11	1144	2.65	158.42	30.7	28.3			
9.4	11	1114	2.70	154.24	30.8	28.4			
3.1	3.8	3356	0.90	306.73	20.0	25.0	CG093-11P-100L-06D CF093-11P-100L-06D	130 128	174
4.0	4.8	2657	1.15	242.77	25.1	26.1			
4.5	5.5	2320	1.30	211.98	26.9	26.6			
5.1	6.2	2050	1.50	187.34	28.0	27.0			
6.1	7.4	1734	1.75	158.42	29.2	27.4			
6.2	7.6	1688	1.80	154.24	29.3	27.5			
7.0	8.6	1490	2.05	136.18	29.9	27.8			
7.9	9.5	1336	2.25	122.08	30.3	28.0			
8.1	9.8	1301	2.35	118.88	30.4	28.1			
9.0	11	1166	2.60	106.60	30.7	28.3			
9.4	11	1115	2.70	101.85	30.8	28.4			
10	12	1031	2.95	94.21	30.9	28.5			
5.1	6.2	2057	0.80	284.84	16.4	18.3	CG083-11P-90S/L-04E CF083-11P-90S/L-04E	72 76	172
6.1	7.4	1725	0.90	238.89	19.2	19.0			
7.8	9.4	1354	1.15	187.48	21.4	19.7			
10	12	1045	1.50	144.69	22.7	20.4			
12	15	864	1.80	119.68	23.3	20.7			
14	17	735	2.15	101.80	23.6	21.0			
16	20	637	2.45	88.23	23.9	21.2			
20	24	538	2.90	74.50	24.1	21.4			
5.1	6.2	2052	0.80	187.48	16.4	18.3	CG083-11P-100L-06D CF083-11P-100L-06D	78 82	172
6.6	8.1	1583	1.00	144.69	20.1	19.3			
8.0	9.7	1310	1.20	119.68	21.6	19.8			
9.4	11	1114	1.40	101.80	22.4	20.2			
11	13	965	1.65	88.23	23.0	20.5			
13	16	815	1.95	74.50	23.4	20.8			
16	19	672	2.35	61.37	23.8	21.1			

P_N = 1.1 kW								IE3	
50 Hz		60 Hz		i	at 50 Hz			m kg	Dimension sheet see page
1.1 kW		1.3 kW			F_{rN} kN	F_{aN} kN			
n₅₀ min ⁻¹	n₆₀ min ⁻¹	M₂ Nm	f_B						
18	22	593	2.65	54.18	24.0	21.3	CG082-11P-100L-06D CF082-11P-100L-06D	77 81	172
11	13	992	0.85	137.38	8.7	12.7	CG073-11P-90S/L-04E CF073-11P-90S/L-04E	48 52	170
12	14	902	0.95	124.97	9.9	12.6			
14	17	754	1.10	104.50	11.3	13.3			
15	19	686	1.20	95.06	11.8	13.3			
17	20	622	1.35	86.17	12.2	13.7			
19	22	566	1.45	78.39	12.6	13.7			
21	25	510	1.65	70.68	12.9	14.0			
23	27	464	1.80	64.30	13.1	14.0			
24	29	434	1.90	60.06	13.2	14.2			
27	32	394	2.10	54.63	13.3	14.2			
29	36	357	2.35	49.38	13.5	14.4			
32	39	324	2.45	44.92	13.6	14.4			
37	45	283	2.75	39.17	13.7	14.6			
41	49	257	2.85	35.63	13.7	14.6			
10	12	1040	0.80	95.06	8.0	12.2	CG073-11P-100L-06D CF073-11P-100L-06D	54 58	170
11	14	943	0.90	86.17	9.4	12.8			
12	15	858	1.00	78.39	10.3	12.8			
14	16	773	1.10	70.68	11.1	13.3			
15	18	704	1.20	64.30	11.7	13.2			
16	19	657	1.25	60.06	12.0	13.6			
18	21	598	1.40	54.63	12.4	13.6			
19	24	540	1.55	49.38	12.7	13.9			
21	26	492	1.65	44.92	12.9	13.9			
25	30	429	1.80	39.17	13.2	14.2			
27	33	390	1.90	35.63	13.4	14.2			
37	45	281	2.95	38.92	13.7	14.6	CG072-11P-90S/L-04E CF072-11P-90S/L-04E	47 51	170
25	30	426	1.95	38.92	13.2	14.2	CG072-11P-100L-06D CF072-11P-100L-06D	53 57	170
27	33	387	2.15	35.41	13.4	14.2			
31	38	334	2.50	30.55	13.5	14.5			
35	42	304	2.70	27.79	13.6	14.5			
13	16	785	0.80	108.67	5.3	5.8	CG063-11P-90S/L-04E CF063-11P-90S/L-04E	31 36	168
16	20	646	0.95	89.54	7.7	6.2			
18	21	593	1.05	82.10	8.4	6.4			
20	24	529	1.15	73.28	9.0	6.6			
22	26	485	1.25	67.19	9.4	6.7			
24	30	429	1.40	59.42	9.8	6.9			
27	32	393	1.55	54.49	10.1	6.9			
29	35	359	1.70	49.74	10.3	7.1			
32	39	329	1.85	45.61	10.4	7.1			
14	17	735	0.85	67.19	6.3	5.9	CG063-11P-100L-06D CF063-11P-100L-06D	37 42	168
16	20	650	0.95	59.42	7.7	6.2			
18	21	596	1.05	54.49	8.3	6.4			
19	23	544	1.15	49.74	8.9	6.5			
21	26	499	1.25	45.61	9.3	6.6			
24	29	433	1.00	60.00	9.8	6.8	CG062-11P-90S/L-04E CF062-11P-90S/L-04E	31 36	168
26	32	397	1.00	55.02	10.1	6.9			
31	37	343	1.75	47.55	10.4	7.1			
33	40	315	1.80	43.60	10.5	7.2			
39	48	267	2.30	36.92	10.7	7.3			
43	52	244	2.50	33.86	10.8	7.4			
44	53	241	1.00	33.43	10.8	7.1			
48	58	219	2.75	30.30	10.9	7.5			
49	59	214	1.00	29.67	10.9	7.2			
52	63	201	3.00	27.78	10.8	7.5			
55	66	191	1.80	26.49	10.6	7.3			
62	75	170	1.80	23.52	10.2	7.4			
71	86	149	2.55	20.57	9.8	7.5			
80	96	132	2.55	18.26	9.4	7.5			

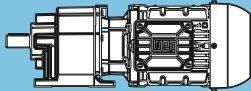
Legend see page 29

P _N = 1.1 kW								IE3	
50 Hz 1.1 kW	60 Hz 1.3 kW	M ₂ Nm	f _b	i	at 50 Hz			m kg	Dimension sheet see page
					F _{rN} kN	F _{aN} kN			
20	24	520	1.20	47.55	9.1	6.6	CG062-11P-100L-06D CF062-11P-100L-06D	37 42	168
22	27	477	1.20	43.60	9.5	6.7			
26	32	404	1.50	36.92	10.0	6.9			
28	34	370	1.65	33.86	10.2	7.0			
32	38	332	1.85	30.30	10.4	7.1			
35	42	304	2.00	27.78	10.6	7.2			
36	44	290	1.20	26.49	10.6	6.9			
41	50	257	2.35	23.46	10.8	7.4			
45	54	235	2.55	21.51	10.8	7.4			
47	57	225	1.70	20.57	10.9	7.2			
53	64	200	1.70	18.26	10.6	7.2			
57	69	185	2.05	16.88	10.4	7.3			
64	78	164	2.05	14.98	10.1	7.4			
73	89	143	2.65	13.07	9.7	7.5			
83	100	127	2.65	11.60	9.3	7.6			
21	25	511	0.80	70.71	1.6	5.7	CG053-11P-90S/L-04E CF053-11P-90S/L-04E	27 32	166
24	29	445	0.90	61.63	4.0	6.1			
26	31	404	1.00	56.02	4.9	6.2			
30	36	355	1.15	49.20	5.7	6.5			
33	39	323	1.25	44.73	6.1	6.6			
36	44	291	1.40	40.33	6.4	6.8			
40	48	265	1.55	36.67	6.7	6.9			
30	37	347	1.00	48.13	5.8	6.5	CG052-11P-90S/L-04E CF052-11P-90S/L-04E	26 31	166
33	40	316	1.00	43.75	6.1	6.6			
38	46	274	1.50	38.00	6.6	6.9			
42	51	249	1.65	34.55	6.8	6.9			
49	60	213	1.90	29.46	7.0	7.1			
50	60	211	1.00	29.17	7.1	6.9			
54	66	193	2.10	26.79	7.2	7.2			
57	69	183	1.00	25.38	7.2	7.0			
60	73	174	2.30	24.12	7.3	7.3			
63	76	166	1.65	23.03	7.3	7.1			
66	80	158	2.55	21.92	7.4	7.4			
73	88	145	1.65	20.04	7.4	7.2			
78	95	134	3.00	18.56	7.5	7.5			
81	99	129	2.10	17.86	7.3	7.4			
94	113	112	2.10	15.54	7.0	7.4			
100	120	106	2.55	14.62	6.9	7.5			
114	138	92	2.55	12.72	6.6	7.6			
25	31	416	1.00	38.00	4.7	6.2	CG052-11P-100L-06D CF052-11P-100L-06D	32 37	166
28	34	378	1.10	34.55	5.3	6.4			
33	40	322	1.25	29.46	6.1	6.6			
36	43	293	1.40	26.79	6.4	6.7			
40	48	264	1.55	24.12	6.7	6.9			
42	51	252	1.10	23.03	6.8	6.7			
44	53	240	1.70	21.92	6.9	7.0			
48	58	219	1.10	20.04	7.0	6.8			
52	63	203	2.00	18.56	7.1	7.2			
54	65	195	1.40	17.86	7.2	7.0			
57	69	185	2.20	16.88	7.2	7.2			
62	75	170	1.40	15.54	7.3	7.1			
66	80	160	1.70	14.62	7.3	7.2			
68	83	153	2.65	14.03	7.4	7.4			
75	91	140	2.90	12.75	7.4	7.5			
85	104	123	2.20	11.25	7.2	7.4			
98	119	107	2.20	9.79	6.9	7.5			
113	137	93	2.90	8.50	6.7	7.6			
130	158	81	2.90	7.40	6.4	7.6			

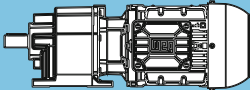
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P_N = 1.1 kW								IE3	
50 Hz		60 Hz		i	at 50 Hz			m kg	Dimension sheet see page
1.1 kW		1.3 kW			F_{rN} kN	F_{aN} kN			
n₅₀ min ⁻¹	n₆₀ min ⁻¹	M₂ Nm	f_B						
42	50	252	0.80	34.88	3.9	3.0	CG032-11P-90S/L-04E CF032-11P-90S/L-04E	22 24	164
46	56	229	0.90	31.67	4.3	3.1			
53	64	200	1.00	27.71	4.6	3.4			
58	70	182	1.15	25.17	4.5	3.4			
68	82	155	1.30	21.40	4.4	3.6			
74	90	141	0.95	19.54	4.2	3.5			
75	91	140	1.45	19.44	4.3	3.7			
85	103	123	1.65	17.09	4.2	3.8			
94	113	112	1.20	15.53	4.0	3.8			
107	130	98	1.20	13.54	3.9	3.8			
113	136	93	2.10	12.92	3.9	4.0			
121	147	87	1.55	11.99	3.8	3.9			
124	150	85	2.35	11.73	3.8	4.1			
139	168	75	1.55	10.46	3.7	4.0			
148	179	71	2.55	9.82	3.7	4.2			
152	184	69	1.90	9.57	3.6	4.1			
163	197	64	2.85	8.92	3.6	4.2			
174	211	60	1.90	8.35	3.5	4.1			
201	243	52	2.50	7.24	3.3	4.2			
231	279	46	2.55	6.31	3.2	4.2			
45	54	234	0.90	21.40	4.2	3.1	CG032-11P-100L-06D CF032-11P-100L-06D	28 30	164
49	60	213	0.95	19.44	4.6	3.3			
56	68	187	1.10	17.09	4.6	3.4			
62	75	170	0.80	15.53	4.3	3.3			
71	86	148	0.80	13.54	4.2	3.4			
74	90	141	1.40	12.92	4.3	3.7			
80	97	131	1.00	11.99	4.2	3.6			
82	99	128	1.55	11.73	4.2	3.8			
92	111	114	1.00	10.46	4.0	3.7			
98	119	107	1.70	9.82	4.1	3.9			
100	122	105	1.25	9.57	4.0	3.8			
108	131	98	1.90	8.92	4.0	4.0			
115	140	91	1.25	8.35	3.8	3.9			
126	153	84	2.05	7.64	3.8	4.1			
133	161	79	1.65	7.24	3.7	4.0			
138	168	76	2.30	6.94	3.7	4.1			
152	185	69	1.70	6.31	3.6	4.1			
161	195	65	2.45	5.96	3.6	4.2			
175	212	60	2.20	5.50	3.5	4.1			
177	215	59	2.70	5.41	3.5	4.2			
200	243	52	2.20	4.80	3.3	4.2			
224	272	47	2.80	4.28	3.3	4.2			
257	312	41	2.80	3.73	3.1	4.3			
98	118	107	0.80	14.88	2.7	0.9	CG012-11P-90S/L-04E CF012-11P-90S/L-04E	20 21	162
109	132	96	0.90	13.33	2.7	1.0			
113	137	93	0.95	12.83	2.6	1.0			
127	153	83	1.05	11.50	2.6	1.1			
130	157	81	1.05	11.20	2.6	1.1			
145	175	72	1.15	10.04	2.5	1.2			
152	183	69	1.00	9.60	2.4	1.0			
177	214	59	1.30	8.22	2.4	1.2			
194	235	54	1.25	7.50	2.3	1.1			
198	239	53	1.40	7.36	2.3	1.3			
260	314	40	1.65	5.60	2.1	1.3			
301	364	35	1.90	4.83	2.1	1.3			
345	417	30	2.20	4.22	2.0	1.4			
470	569	22	2.85	3.09	1.8	1.4			

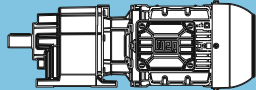
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P _N = 1.5 kW								IE3	
50 Hz 1.5 kW n ₅₀ min ⁻¹	60 Hz 1.8 kW n ₆₀ min ⁻¹	M ₂ Nm	f _b	i	at 50 Hz			m kg	Dimension sheet see page
					F _{rN} kN	F _{aN} kN			
0.59	0.72	21482	0.85	2448.96	101.9	21.0	CG165-11P-90S/L-04F CF165-11P-90S/L-04F	706 729	194
0.60	0.73	21035	0.90	2404.16	103.6	21.4			
0.71	0.86	17799	1.05	2050.07	113.9	24.3			
0.87	1.1	14242	1.30	1661.50	122.5	27.6			
0.69	0.84	18694	1.00	2093.95	111.3	23.5	CG164-11P-90S/L-04F CF164-11P-90S/L-04F	693 716	192
0.80	0.97	16003	1.15	1803.51	118.5	26.0			
0.87	1.1	14645	1.25	1657.33	121.6	27.2			
0.93	1.1	13728	1.35	1559.96	123.5	28.0			
1.0	1.2	12683	1.45	1447.11	125.5	29.0			
1.1	1.4	11117	1.65	1278.93	128.1	30.4			
1.2	1.4	10811	1.70	1246.39	128.6	30.7			
1.3	1.6	9476	1.90	1101.54	130.4	31.9			
1.5	1.8	8078	2.25	952.78	132.1	33.2			
1.6	1.9	7881	2.30	931.50	132.3	33.3			
1.8	2.2	6753	2.70	811.56	133.4	34.4			
0.77	0.93	16975	0.80	1885.79	85.3	10.5	CG144-11P-90S/L-04F CF144-11P-90S/L-04F	442 460	188
0.87	1.1	14969	0.90	1669.82	91.7	12.5			
0.89	1.1	14562	0.90	1624.38	92.9	12.9			
1.0	1.2	12972	1.05	1455.92	97.0	14.5			
1.2	1.4	11105	1.20	1254.10	101.0	16.4			
1.3	1.6	9672	1.35	1099.05	103.6	17.8			
1.4	1.7	9218	1.45	1051.77	104.4	18.3			
1.5	1.8	8347	1.60	958.27	105.7	19.1			
1.6	1.9	7856	1.70	905.71	106.3	19.6			
1.7	2.1	7327	1.80	848.21	107.0	20.2			
1.8	2.1	7116	1.85	825.43	107.3	20.4			
2.0	2.4	6310	2.10	739.56	108.1	21.2			
2.1	2.5	5961	2.20	701.59	108.5	21.5			
2.3	2.8	5356	2.45	637.04	109.1	22.1			
2.4	2.9	5122	2.55	611.72	109.3	22.4			
2.6	3.2	4527	2.90	548.57	109.7	23.0			
1.3	1.6	9840	0.85	1095.41	55.2	18.3	CG134-11P-90S/L-04F CF134-11P-90S/L-04F	295 297	184
1.4	1.7	9551	0.85	1063.29	56.5	18.6			
1.5	1.8	8600	0.95	961.31	60.6	19.7			
1.6	1.9	8202	1.00	918.68	62.0	20.1			
1.7	2.1	7419	1.10	834.47	64.7	21.0			
2.0	2.4	6556	1.25	741.90	67.2	22.0			
2.3	2.7	5644	1.45	644.01	69.4	23.1			
2.4	2.9	5367	1.50	613.66	70.0	23.4			
2.6	3.2	4827	1.70	556.43	71.0	24.0			
2.7	3.3	4611	1.75	532.69	71.4	24.2			
2.8	3.4	4509	1.80	521.98	71.6	24.3			
3.2	3.8	3935	2.05	460.25	72.5	25.0			
3.7	4.5	3302	2.45	392.69	73.4	25.7			
3.8	4.6	3205	2.50	382.01	73.5	25.8			
4.3	5.2	2800	2.90	339.29	73.9	26.3			
4.4	5.3	2731	2.95	331.61	74.0	26.4			
2.3	2.8	5656	0.80	628.39	28.1	20.0	CG134-11P-90S/L-04F CF134-11P-90S/L-04F	181 185	184
2.7	3.3	4753	0.95	531.25	34.2	21.2			
2.8	3.4	4591	1.00	514.28	35.0	21.4			
3.3	4.0	3850	1.20	434.78	38.5	22.3			
3.5	4.2	3685	1.25	417.03	39.1	22.5			
4.1	5.0	3084	1.50	352.56	41.1	23.3			
4.2	5.0	3053	1.50	349.11	41.2	23.3			
4.9	5.9	2550	1.80	295.14	42.6	24.0			
5.1	6.2	2439	1.85	282.94	42.8	24.1			
6.1	7.3	2028	2.25	239.20	43.7	24.6			
5.9	7.1	2435	1.85	246.43	42.9	24.1	CG103-11P-90S/L-04F CF103-11P-90S/L-04F	168 172	178
7.0	8.4	2058	2.20	208.33	43.6	24.6			
8.0	9.7	1782	2.55	180.35	44.1	24.9			
9.1	11	1578	2.90	159.72	44.4	25.2			

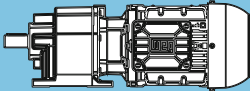
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P _N = 1.5 kW								IE3	
50 Hz		60 Hz		i	at 50 Hz			m kg	Dimension sheet see page
1.5 kW		1.8 kW			F _{rN} kN	F _{aN} kN			
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	f _B						
3.3	4.0	3982	0.80	442.39	12.2	24.1	CG094-11P-90S/L-04F CF094-11P-90S/L-04F	139 137	176
3.5	4.3	3691	0.85	410.85	16.5	24.5			
4.0	4.9	3209	0.95	358.73	21.3	25.3			
4.1	5.0	3144	1.00	352.17	21.8	25.4			
4.2	5.1	3071	1.00	343.93	22.4	25.5			
4.8	5.8	2665	1.15	300.30	25.1	26.1			
5.2	6.3	2463	1.25	278.74	26.2	26.4			
6.0	7.2	2133	1.45	243.38	27.7	26.8			
4.7	5.7	3030	1.00	306.73	22.7	25.5	CG093-11P-90S/L-04F CF093-11P-90S/L-04F	126 124	174
6.0	7.2	2398	1.30	242.77	26.5	26.5			
6.8	8.3	2094	1.45	211.98	27.9	26.9			
7.7	9.4	1851	1.65	187.34	28.8	27.3			
9.2	11	1565	1.95	158.42	29.7	27.7			
9.4	11	1524	2.00	154.24	29.8	27.7			
11	13	1345	2.25	136.18	30.3	28.0			
12	14	1206	2.50	122.08	30.6	28.2			
14	16	1053	2.85	106.60	30.9	28.4			
7.7	9.4	1852	0.85	187.48	18.2	18.7	CG083-11P-90S/L-04F CF083-11P-90S/L-04F	73 77	172
10	12	1429	1.10	144.69	21.0	19.6			
12	15	1182	1.35	119.68	22.2	20.1			
14	17	1006	1.55	101.80	22.8	20.4			
16	20	872	1.80	88.23	23.3	20.7			
19	24	736	2.15	74.50	23.6	21.0			
24	29	606	2.60	61.37	23.9	21.3			
27	32	535	2.90	54.18	24.1	21.4			
14	17	1032	0.80	104.50	8.1	12.5	CG073-11P-90S/L-04F CF073-11P-90S/L-04F	49 53	170
15	18	939	0.90	95.06	9.4	12.5			
17	20	851	1.00	86.17	10.4	13.0			
18	22	774	1.10	78.39	11.1	13.0			
21	25	698	1.20	70.68	11.7	13.5			
23	27	635	1.30	64.30	12.1	13.5			
24	29	593	1.40	60.06	12.4	13.8			
27	32	540	1.55	54.63	12.7	13.8			
29	36	488	1.70	49.38	13.0	14.1			
32	39	444	1.80	44.92	13.2	14.0			
37	45	387	2.00	39.17	13.4	14.3			
41	49	352	2.10	35.63	13.5	14.3			
37	45	385	2.15	38.92	13.4	14.3	CG072-11P-90S/L-04F CF072-11P-90S/L-04F	48 52	170
41	50	350	2.35	35.41	13.5	14.3			
47	57	302	2.75	30.55	13.6	14.6			
52	63	275	3.00	27.79	13.7	14.6			
20	24	724	0.85	73.28	6.5	6.0	CG063-11P-90S/L-04F CF063-11P-90S/L-04F	33 38	168
22	26	664	0.95	67.19	7.5	6.2			
24	30	587	1.05	59.42	8.4	6.4			
27	32	538	1.15	54.49	8.9	6.5			
29	35	491	1.25	49.74	9.4	6.7			
32	38	451	1.35	45.61	9.7	6.8			
30	37	470	1.30	47.55	9.5	6.7	CG062-11P-90S/L-04F CF062-11P-90S/L-04F	33 38	168
33	40	431	1.35	43.60	9.8	6.8			
39	48	365	1.65	36.92	10.3	7.0			
43	52	334	1.80	33.86	10.4	7.1			
48	58	299	2.05	30.30	10.6	7.2			
52	63	274	2.20	27.78	10.5	7.3			
55	66	262	1.35	26.49	10.3	7.0			
62	75	232	2.60	23.46	10.0	7.4			
67	82	213	2.85	21.51	9.8	7.5			
70	85	203	1.90	20.57	9.6	7.3			
79	96	180	1.90	18.26	9.3	7.3			
86	104	167	2.30	16.88	9.1	7.4			
97	117	148	2.30	14.98	8.8	7.5			
111	134	129	2.95	13.07	8.4	7.6			
125	151	115	2.95	11.60	8.1	7.6			

C

P _N = 1.5 kW								IE3	
50 Hz 1.5 kW n ₅₀ min ⁻¹	60 Hz 1.8 kW n ₆₀ min ⁻¹	M ₂ Nm	f _B	i	at 50 Hz			m kg	Dimension sheet see page
					F _{rN} kN	F _{aN} kN			
29	36	486	0.85	49.20	2.8	5.9	CG053-11P-90S/L-04F CF053-11P-90S/L-04F	28 33	166
32	39	442	0.95	44.73	4.1	6.1			
36	44	398	1.05	40.33	5.0	6.3			
40	48	362	1.15	36.67	5.6	6.4			
38	46	375	1.10	38.00	5.4	6.4	CG052-11P-90S/L-04F CF052-11P-90S/L-04F	27 32	166
42	51	341	1.20	34.55	5.8	6.5			
49	60	291	1.40	29.46	6.4	6.8			
54	66	265	1.55	26.79	6.7	6.9			
60	73	238	1.70	24.12	6.9	7.0			
63	76	228	1.20	23.03	6.9	6.8			
66	80	217	1.85	21.92	7.0	7.1			
72	88	198	1.20	20.04	7.1	6.9			
78	95	183	2.20	18.56	7.2	7.3			
81	98	176	1.55	17.86	7.1	7.1			
86	104	167	2.40	16.88	7.0	7.3			
93	113	153	1.55	15.54	6.8	7.2			
99	120	144	1.85	14.62	6.7	7.3			
103	125	139	2.90	14.03	6.7	7.5			
114	138	126	1.85	12.72	6.5	7.4			
129	156	111	2.45	11.25	6.3	7.5			
148	179	97	2.40	9.79	6.0	7.5			
58	70	249	0.85	25.17	4.0	3.0	CG032-11P-90S/L-04F CF032-11P-90S/L-04F	23 25	164
68	82	211	0.95	21.40	4.1	3.3			
75	90	192	1.05	19.44	4.0	3.4			
85	103	169	1.20	17.09	3.9	3.5			
93	113	153	1.35	15.52	3.9	3.6			
107	130	134	0.90	13.54	3.6	3.6			
112	136	128	1.55	12.92	3.7	3.8			
121	146	118	1.10	11.99	3.6	3.7			
124	150	116	1.75	11.73	3.6	3.9			
139	168	103	1.15	10.46	3.5	3.8			
148	179	97	1.90	9.82	3.5	4.0			
151	183	95	1.40	9.57	3.4	3.9			
163	197	88	2.10	8.92	3.4	4.0			
174	210	82	1.40	8.35	3.3	4.0			
190	230	75	2.25	7.64	3.3	4.1			
200	243	71	1.85	7.24	3.2	4.1			
209	253	69	2.50	6.94	3.2	4.2			
230	278	62	1.85	6.31	3.1	4.1			
243	294	59	2.70	5.96	3.1	4.2			
264	319	54	2.40	5.50	3.0	4.2			
268	324	53	3.00	5.41	3.0	4.3			
302	366	47	2.45	4.80	2.9	4.2			
129	157	111	0.80	11.20	2.4	0.9	CG012-11P-90S/L-04F CF012-11P-90S/L-04F	21 22	162
144	175	99	0.85	10.04	2.3	1.0			
176	214	81	0.95	8.22	2.3	1.1			
193	234	74	0.90	7.50	2.1	1.0			
197	238	73	1.05	7.36	2.2	1.2			
259	313	55	1.20	5.60	2.0	1.1			
300	363	48	1.40	4.83	2.0	1.2			
344	416	42	1.60	4.22	1.9	1.3			
469	567	31	2.10	3.09	1.8	1.4			

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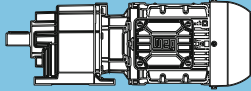
P_N = 2.2 kW							IE3		
50 Hz		60 Hz		i	at 50 Hz			m kg	Dimension sheet see page
2.2 kW		2.6 kW			F_{rN} kN	F_{aN} kN			
n₅₀ min ⁻¹	n₆₀ min ⁻¹	M₂ Nm	f_B						
0.79	0.96	23731	0.80	1820.82	92.6	18.9	CG165-11P-100L-04E CF165-11P-100L-04E	716 739	194
0.86	1.1	21599	0.85	1661.50	101.5	20.9			
0.90	1.1	20774	0.90	1602.16	104.5	21.6			
1.1	1.4	16109	1.15	1258.36	118.3	25.9			
0.87	1.1	22063	0.85	1657.33	99.7	20.5			
0.92	1.1	20725	0.90	1559.96	104.7	21.7			
0.99	1.2	19186	0.95	1447.11	109.8	23.1			
1.0	1.2	18887	1.00	1427.45	110.7	23.3			
1.1	1.4	16852	1.10	1278.93	116.4	25.2			
1.2	1.4	16423	1.10	1246.39	117.5	25.6			
1.3	1.6	14426	1.25	1101.54	122.1	27.4			
1.5	1.8	12350	1.50	952.78	126.1	29.3			
1.8	2.2	10411	1.75	811.56	129.2	31.0			
2.1	2.5	8856	2.05	698.99	131.2	32.5			
2.4	2.9	7550	2.40	604.60	132.7	33.6			
2.5	3.0	7166	2.55	577.48	133.0	34.0			
2.8	3.4	6348	2.85	517.99	133.8	34.7			
2.9	3.5	6083	3.00	499.49	134.0	35.0			
1.1	1.4	16730	0.80	1254.10	86.1	10.7			
1.2	1.4	16288	0.80	1221.03	87.6	11.2			
1.3	1.6	14601	0.90	1099.05	92.8	12.9			
1.4	1.7	13945	0.95	1051.77	94.5	13.5			
1.5	1.8	12653	1.05	958.27	97.7	14.8			
1.6	1.9	11934	1.10	905.71	99.3	15.5			
1.7	2.1	11131	1.20	848.21	101.0	16.3			
1.9	2.4	9645	1.35	739.56	103.7	17.8			
2.0	2.5	9232	1.45	710.80	104.3	18.2			
2.3	2.7	8223	1.60	637.04	105.8	19.3			
2.4	2.9	7672	1.70	596.77	106.6	19.8			
2.6	3.2	6994	1.90	548.57	107.4	20.5			
2.7	3.3	6704	1.95	526.92	107.7	20.8			
2.8	3.4	6606	2.00	520.33	107.8	20.9			
3.2	3.8	5690	2.30	453.75	108.8	21.8			
3.3	4.0	5454	2.40	436.75	109.0	22.0			
3.4	4.1	5237	2.50	421.15	109.2	22.3			
3.7	4.5	4780	2.75	388.44	109.5	22.7			
3.8	4.6	4676	2.80	380.80	109.6	22.8			
3.9	4.8	4491	2.90	367.20	109.8	23.0			
4.0	4.9	4382	3.00	359.79	109.8	23.1			
1.9	2.4	9877	0.85	741.90	55.0	18.2			
2.0	2.4	9598	0.85	720.98	56.3	18.5			
2.2	2.7	8538	0.95	644.01	60.8	19.7			
2.3	2.8	8119	1.00	613.66	62.3	20.2			
2.6	3.1	7332	1.10	556.43	64.9	21.1			
2.7	3.3	7005	1.15	532.69	65.9	21.5			
3.1	3.8	6003	1.35	460.25	68.6	22.6			
3.2	3.9	5897	1.40	453.11	68.8	22.8			
3.7	4.4	5069	1.60	392.69	70.6	23.7			
3.8	4.6	4921	1.65	382.01	70.9	23.9			
3.9	4.7	4735	1.70	368.37	71.2	24.1			
4.2	5.1	4335	1.85	339.29	71.9	24.5			
4.3	5.3	4228	1.90	331.61	72.1	24.7			
4.5	5.5	4060	2.00	319.76	72.3	24.9			
4.6	5.5	3987	2.05	314.70	72.4	24.9			
5.0	6.1	3600	2.25	286.51	73.0	25.4			
5.2	6.3	3457	2.35	276.28	73.2	25.6			
5.3	6.4	3418	2.35	273.18	73.2	25.6			
5.6	6.8	3202	2.50	257.51	73.5	25.8			
6.1	7.4	2899	2.80	236.02	73.8	26.2			
6.4	7.8	2728	2.95	223.53	74.0	26.4			

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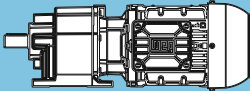
Legend see page 29

P_N = 2.2 kW

IE3

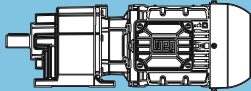
50 Hz 2.2 kW	60 Hz 2.6 kW	M ₂ Nm	f _B	i	at 50 Hz			m kg	Dimension sheet see page
					F _{rN} kN	F _{aN} kN			
3.3	4.0	5800	0.80	434.78	26.9	19.8	CG104-11P-100L-04E CF104-11P-100L-04E	305 307	180
3.4	4.2	5552	0.85	417.03	28.9	20.1			
4.1	4.9	4665	1.00	352.56	34.7	21.3			
4.9	5.9	3873	1.20	295.14	38.4	22.3			
5.1	6.2	3705	1.25	282.94	39.0	22.5			
5.3	6.4	3566	1.30	272.83	39.5	22.7			
6.0	7.3	3107	1.45	239.20	41.1	23.2			
6.2	7.6	2984	1.55	230.65	41.4	23.4			
6.7	8.1	2760	1.65	214.29	42.1	23.7			
7.9	9.6	2300	2.00	181.16	43.1	24.3			
5.8	7.1	3608	1.25	246.43	39.4	22.6	CG103-11P-100L-04E CF103-11P-100L-04E	178 182	178
6.9	8.4	3050	1.50	208.33	41.2	23.3			
8.0	9.7	2640	1.75	180.35	42.4	23.8			
9.0	11	2339	1.95	159.72	43.1	24.2			
10	13	2023	2.25	138.17	43.7	24.6			
11	13	1951	2.35	133.24	43.8	24.7			
12	14	1786	2.55	122.02	44.1	24.9			
14	17	1510	3.00	103.15	44.5	25.3			
5.1	6.3	3711	0.85	278.74	16.2	24.5	CG094-11P-100L-04E CF094-11P-100L-04E	149 147	176
5.3	6.5	3578	0.85	268.78	17.8	24.7			
5.4	6.5	3551	0.85	266.72	18.1	24.8			
5.9	7.2	3227	0.95	243.38	21.1	25.2			
6.1	7.4	3105	1.00	234.69	22.1	25.4			
6.8	8.3	2782	1.10	211.11	24.3	25.9			
7.8	9.5	2414	1.25	184.33	26.4	26.4			
5.9	7.2	3554	0.85	242.77	18.0	24.7	CG093-11P-100L-04E CF093-11P-100L-04E	136 134	174
6.8	8.2	3104	1.00	211.98	22.1	25.4			
7.7	9.3	2743	1.10	187.34	24.6	25.9			
9.1	11	2320	1.30	158.42	26.9	26.6			
9.3	11	2258	1.35	154.24	27.1	26.7			
11	13	1994	1.55	136.18	28.3	27.1			
12	14	1787	1.70	122.08	29.0	27.4			
13	16	1561	1.95	106.60	29.7	27.7			
14	17	1491	2.05	101.85	29.9	27.8			
15	18	1438	2.10	98.21	30.0	27.9			
17	20	1269	2.40	86.68	30.5	28.1			
18	22	1166	2.60	79.66	30.7	28.3			
20	24	1065	2.85	72.72	30.9	28.4			
21	25	1003	3.00	68.48	31.0	28.5			
12	15	1752	0.90	119.68	19.0	18.9	CG083-11P-100L-04E CF083-11P-100L-04E	83 87	172
14	17	1490	1.05	101.80	20.7	19.5			
16	20	1292	1.20	88.23	21.7	19.9			
19	23	1091	1.45	74.50	22.5	20.3			
20	24	1052	1.50	71.84	22.7	20.4			
23	28	899	1.75	61.37	23.2	20.7			
29	35	735	2.15	50.22	23.6	21.0			
35	42	607	2.60	41.43	23.9	21.3			
26	32	793	2.00	54.18	23.5	20.9	CG082-11P-100L-04E CF082-11P-100L-04E	82 86	172
33	41	628	2.50	42.88	23.9	21.2			
38	47	548	2.85	37.44	23.4	21.4			
46	56	457	2.45	31.23	22.0	21.4			
51	63	408	2.45	27.88	21.2	21.5			
20	25	1035	0.80	70.68	8.1	12.5	CG073-11P-100L-04E CF073-11P-100L-04E	59 63	170
22	27	941	0.90	64.30	9.4	12.5			
24	29	879	0.95	60.06	10.1	13.0			
26	32	800	1.05	54.63	10.9	13.0			
29	35	723	1.15	49.38	11.5	13.4			
30	37	697	1.20	47.62	11.7	13.5			
32	39	658	1.25	44.92	12.0	13.4			
33	40	634	1.25	43.32	12.2	13.5			
37	45	573	1.35	39.17	12.5	13.8			
40	49	522	1.40	35.63	12.8	13.8			
43	53	485	1.50	33.15	13.0	14.1			
48	58	442	1.55	30.16	13.2	14.1			

C

P _N = 2.2 kW								IE3	
50 Hz		60 Hz		i	at 50 Hz			m kg	Dimension sheet see page
2.2 kW		2.6 kW			F _{rN} kN	F _{aN} kN			
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	f _B						
37	45	570	1.45	38.92	12.5	13.8	CG072-11P-100L-04E CF072-11P-100L-04E	58 62	170
41	49	518	1.60	35.41	12.8	13.8			
47	57	447	1.85	30.55	13.1	14.2			
52	63	407	2.05	27.79	13.3	14.2			
61	74	345	2.35	23.58	13.5	14.4			
67	81	314	2.50	21.45	13.6	14.4			
70	85	302	2.30	20.65	13.6	14.1			
74	89	286	2.70	19.50	13.7	14.6			
75	92	278	2.30	19.02	13.7	14.2			
81	98	260	2.85	17.74	13.7	14.6			
87	105	243	3.00	16.59	13.8	14.7			
89	108	237	2.85	16.20	13.8	14.4			
96	117	219	2.90	14.93	13.8	14.4			
26	32	798	0.80	54.49	4.9	5.8	CG063-11P-100L-04E CF063-11P-100L-04E	43 48	168
29	35	728	0.85	49.74	6.4	6.0			
31	38	668	0.90	45.61	7.4	6.1			
47	57	447	1.35	30.53	9.7	6.8			
51	62	410	1.50	28.00	10	6.9			
39	47	541	1.15	36.92	8.9	6.5	CG062-11P-100L-04E CF062-11P-100L-04E	42 47	168
42	52	496	1.25	33.86	9.3	6.6			
47	58	444	1.40	30.30	9.7	6.8			
52	63	407	1.50	27.78	10.0	6.9			
61	74	344	1.75	23.46	9.7	7.1			
67	81	315	1.95	21.51	9.5	7.2			
70	85	301	1.30	20.57	9.3	6.8			
79	96	267	1.30	18.26	9.0	7.0			
80	98	261	2.30	17.85	9.1	7.3			
85	103	247	1.55	16.88	8.8	7.1			
88	107	240	2.55	16.36	8.8	7.4			
96	116	219	1.55	14.98	8.5	7.2			
98	119	215	2.80	14.72	8.6	7.5			
110	133	191	2.00	13.07	8.2	7.3			
124	150	170	2.00	11.60	7.9	7.4			
144	176	146	2.60	9.94	7.6	7.5			
163	198	129	2.60	8.83	7.4	7.5			
49	59	431	0.95	29.46	4.3	6.1	CG052-11P-100L-04E CF052-11P-100L-04E	37 42	166
54	65	392	1.05	26.79	5.1	6.3			
60	72	353	1.15	24.12	5.7	6.5			
65	80	321	1.25	21.92	6.1	6.6			
77	94	272	1.50	18.56	6.6	6.9			
80	98	261	1.05	17.86	6.7	6.6			
85	103	247	1.65	16.88	6.7	7.0			
92	112	227	1.05	15.54	6.5	6.7			
98	119	214	1.25	14.62	6.4	6.9			
102	124	205	1.95	14.03	6.5	7.2			
113	137	187	2.15	12.75	6.3	7.2			
113	137	186	1.25	12.72	6.2	7.0			
125	152	168	2.40	11.48	6.1	7.3			
128	155	165	1.65	11.25	6.0	7.2			
138	167	153	2.65	10.43	6.0	7.4			
147	178	143	1.65	9.79	5.8	7.2			
154	187	136	2.95	9.31	5.8	7.5			
169	205	124	2.15	8.50	5.6	7.4			
194	236	108	2.15	7.40	5.4	7.5			
206	251	102	2.65	6.96	5.3	7.5			
237	288	89	2.65	6.05	5.1	7.6			

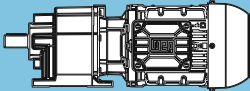
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Legend see page 29

P _N = 2.2 kW								IE3	
50 Hz	60 Hz	M ₂ Nm	f _B	i	at 50 Hz			m kg	Dimension sheet see page
2.2 kW	2.6 kW				F _{rN} kN	F _{aN} kN			
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹								
84	102	250	0.80	17.09	3.5	3.0	CG032-11P-100L-04E CF032-11P-100L-04E	33 35	164
92	112	227	0.90	15.52	3.4	3.2			
111	135	189	1.05	12.92	3.4	3.4			
122	149	172	1.20	11.73	3.3	3.5			
146	178	144	1.30	9.82	3.3	3.7			
150	182	140	0.95	9.57	3.1	3.5			
161	196	131	1.45	8.92	3.2	3.8			
172	209	122	0.95	8.35	3.1	3.6			
188	228	112	1.55	7.64	3.1	3.9			
198	241	106	1.25	7.24	3.0	3.8			
207	252	102	1.70	6.94	3.0	4.0			
227	277	92	1.25	6.31	2.9	3.9			
241	293	87	1.85	5.96	3.0	4.1			
261	317	81	1.65	5.50	2.9	4.0			
265	322	79	2.05	5.41	2.9	4.1			
299	364	70	1.65	4.80	2.8	4.1			
335	408	63	2.10	4.28	2.7	4.1			
385	468	55	2.10	3.73	2.6	4.2			
430	522	49	2.70	3.34	2.5	4.2			
493	599	43	2.50	2.91	2.4	4.3			

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P_N = 3.0 kW							IE3		
50 Hz		60 Hz		i	at 50 Hz			m kg	Dimension sheet see page
3.0 kW		3.6 kW			F_{rN} kN	F_{aN} kN			
n₅₀ min ⁻¹	n₆₀ min ⁻¹	M₂ Nm	f_B						
1.1	1.4	22229	0.85	1258.36	99	20.3	CG165-11P-L100L-04F CF165-11P-L100L-04F	723 746	194
1.1	1.4	23184	0.80	1278.93	95.0	19.4	CG164-11P-L100L-04F CF164-11P-L100L-04F	710 733	192
1.2	1.4	22594	0.80	1246.39	97.5	20.0			
1.3	1.6	19846	0.95	1101.54	107.7	22.5			
1.5	1.8	17061	1.10	952.78	115.9	25.0			
1.8	2.1	14442	1.25	811.56	122.0	27.4			
2.1	2.5	12312	1.50	698.99	126.1	29.3			
2.4	2.9	10540	1.75	604.60	129.0	30.9			
2.5	3.0	10046	1.80	577.48	129.7	31.4			
2.8	3.4	8919	2.05	517.99	131.1	32.4			
2.9	3.5	8582	2.10	499.49	131.5	32.7			
3.3	3.9	7465	2.45	440.86	132.7	33.7			
3.4	4.1	7225	2.50	427.56	133.0	33.9			
3.9	4.7	6133	2.95	369.82	134.0	34.9			
1.6	1.9	16418	0.80	905.71	87.2	11.0	CG144-11P-L100L-04F CF144-11P-L100L-04F	459 477	188
1.7	2.1	15345	0.85	848.21	90.6	12.1			
1.9	2.4	13297	1.00	739.56	96.2	14.2			
2.0	2.4	12754	1.05	710.80	97.5	14.7			
2.1	2.5	12589	1.05	701.59	97.9	14.9			
2.3	2.7	11383	1.15	637.04	100.5	16.1			
2.4	2.8	10909	1.20	611.72	101.4	16.6			
2.6	3.2	9722	1.35	548.57	103.5	17.8			
2.7	3.3	9319	1.40	526.92	104.2	18.2			
2.8	3.3	9184	1.45	520.33	104.4	18.3			
3.2	3.8	7943	1.65	453.75	106.2	19.5			
3.3	4.0	7614	1.75	436.75	106.6	19.9			
3.4	4.1	7327	1.80	421.15	107.0	20.2			
3.7	4.5	6716	1.95	388.44	107.7	20.8			
3.8	4.6	6570	2.00	380.80	107.9	20.9			
3.9	4.7	6309	2.10	367.20	108.2	21.2			
4.0	4.8	6169	2.15	359.79	108.3	21.3			
4.3	5.2	5700	2.30	334.50	108.8	21.8			
4.4	5.3	5578	2.35	328.01	108.9	21.9			
4.6	5.5	5356	2.45	316.30	109.1	22.1			
4.9	5.9	4944	2.65	294.41	109.4	22.5			
5.1	6.2	4714	2.80	282.46	109.6	22.8			
5.3	6.4	4526	2.90	272.37	109.7	23.0			
2.6	3.1	10087	0.80	556.43	54.0	18.0	CG134-11P-L100L-04F CF134-11P-L100L-04F	312 314	184
2.7	3.3	9637	0.85	532.69	56.1	18.5			
2.8	3.3	9443	0.85	521.98	57.0	18.7			
3.1	3.8	8275	1.00	460.25	61.8	20.0			
3.2	3.8	8147	1.00	453.11	62.2	20.2			
3.7	4.4	7017	1.15	392.69	65.9	21.5			
3.8	4.6	6812	1.20	382.01	66.5	21.7			
3.9	4.7	6555	1.25	368.37	67.2	22.0			
4.2	5.1	6013	1.35	339.29	68.5	22.6			
4.3	5.2	5865	1.40	331.61	68.9	22.8			
4.5	5.4	5644	1.45	319.76	69.4	23.1			
4.6	5.5	5554	1.45	314.70	69.6	23.2			
5.0	6.1	5026	1.60	286.51	70.7	23.8			
5.2	6.3	4826	1.70	276.28	71.0	24.0			
5.3	6.4	4772	1.70	273.18	71.1	24.0			
5.6	6.8	4480	1.80	257.51	71.6	24.4			
6.1	7.4	4072	2.00	236.02	72.3	24.8			
6.4	7.8	3841	2.10	223.53	72.7	25.1			
6.8	8.2	3627	2.25	212.42	72.9	25.4			
7.5	9.0	3270	2.45	193.13	73.4	25.8			
7.8	9.4	3103	2.60	184.39	73.6	26.0			

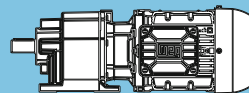
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P_N = 3.0 kW

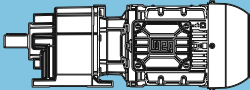
IE3

C



50 Hz 3.0 kW	60 Hz 3.6 kW	M ₂ Nm	f _B	i	at 50 Hz			m kg	Dimension sheet see page
					F _{rN} kN	F _{aN} kN			
4.9	5.9	5339	0.85	295.14	30.5	20.4	CG104-11P-L100L-04F CF104-11P-L100L-04F	198 202	180
5.1	6.1	5108	0.90	282.94	32.1	20.7			
5.3	6.4	4915	0.95	272.83	33.2	20.9			
6.0	7.3	4292	1.05	239.20	36.5	21.7			
6.2	7.5	4130	1.10	230.65	37.3	21.9			
6.7	8.1	3821	1.20	214.29	38.6	22.3			
7.9	9.6	3197	1.45	181.16	40.8	23.1			
5.8	7.1	4903	0.95	246.43	33.3	21.0	CG103-11P-L100L-04F CF103-11P-L100L-04F	185 189	178
6.9	8.4	4145	1.10	208.33	37.2	21.9			
8.0	9.6	3588	1.30	180.35	39.5	22.6			
9.0	11	3178	1.45	159.72	40.9	23.2			
10	13	2749	1.65	138.17	42.1	23.7			
11	13	2651	1.70	133.24	42.3	23.8			
12	14	2428	1.90	122.02	42.9	24.1			
14	17	2052	2.20	103.15	43.6	24.6			
16	19	1777	2.55	89.30	44.1	24.9			
17	20	1717	2.65	86.31	43.6	25.0			
18	22	1573	2.90	79.08	42.6	25.2			
6.8	8.2	3827	0.80	211.11	14.7	24.3	CG094-11P-L100L-04F CF094-11P-L100L-04F	155 153	176
7.8	9.4	3321	0.95	184.33	20.3	25.1			
7.7	9.3	3727	0.85	187.34	16.0	24.5	CG093-11P-L100L-04F CF093-11P-L100L-04F	142 140	174
9.1	11	3152	1.00	158.42	21.7	25.3			
9.3	11	3069	1.00	154.24	22.4	25.5			
11	13	2709	1.15	136.18	24.8	26.0			
12	14	2429	1.25	122.08	26.3	26.4			
14	16	2121	1.45	106.60	27.7	26.9			
15	18	1954	1.55	98.21	28.4	27.1			
17	20	1725	1.75	86.68	29.2	27.5			
18	22	1585	1.90	79.66	29.6	27.7			
20	24	1447	2.10	72.72	30.0	27.9			
21	25	1362	2.25	68.48	30.2	28.0			
23	28	1219	2.50	61.28	30.6	28.2			
24	29	1189	2.55	59.78	30.6	28.2			
28	34	1019	2.95	51.22	31.0	28.5			
14	17	2025	0.80	101.80	16.7	18.4	CG083-11P-L100L-04F CF083-11P-L100L-04F	90 94	172
16	20	1755	0.90	88.23	19.0	18.9			
19	23	1482	1.05	74.50	20.7	19.5			
20	24	1429	1.10	71.84	21.0	19.6			
23	28	1221	1.30	61.37	22.0	20.0			
29	35	999	1.60	50.22	22.9	20.5			
35	42	824	1.90	41.43	23.4	20.8			
27	32	1078	1.45	54.18	22.6	20.3	CG082-11P-L100L-04F CF082-11P-L100L-04F	89 93	172
34	41	853	1.85	42.88	23.3	20.8			
38	46	745	2.10	37.44	23.6	21.0			
44	53	658	2.40	33.09	22.6	21.2			
46	56	621	1.80	31.23	22.3	21.0			
51	62	557	2.80	27.98	21.4	21.4			
52	62	555	1.80	27.88	21.4	21.1			
58	70	492	2.30	24.72	20.5	21.3			
65	79	439	2.30	22.07	19.7	21.4			
26	32	1087	0.80	54.63	7.2	12.1	CG073-11P-L100L-04F CF073-11P-L100L-04F	66 70	170
29	35	982	0.85	49.38	8.9	12.7			
30	37	947	0.90	47.62	9.3	12.8			
32	39	894	0.90	44.92	10.0	12.7			
33	40	862	0.95	43.32	10.3	12.8			
37	44	779	1.00	39.17	11.1	13.2			
40	49	709	1.05	35.63	11.6	13.2			
43	52	660	1.10	33.15	12.0	13.6			
48	58	600	1.15	30.16	12.4	13.6			

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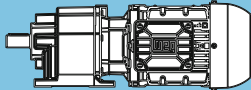
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n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	f _B						
37	45	774	1.10	38.92	11.1	13.3	CG072-11P-L100L-04F CF072-11P-L100L-04F	65 69	170
41	49	704	1.20	35.41	11.7	13.2			
47	57	608	1.35	30.55	12.3	13.7			
52	63	553	1.50	27.79	12.6	13.7			
61	74	469	1.75	23.58	13.0	14.1			
67	81	427	1.85	21.45	13.2	14.1			
70	84	411	1.70	20.65	13.3	13.7			
74	89	388	2.00	19.50	13.4	14.3			
76	91	378	1.70	19.02	13.3	13.7			
81	98	353	2.10	17.74	13.5	14.3			
87	105	330	2.20	16.59	13.6	14.5			
89	107	322	2.10	16.20	13.4	14.0			
95	115	300	2.35	15.09	13.6	14.5			
96	117	297	2.15	14.93	13.2	14.1			
100	121	286	2.45	14.38	13.7	14.6			
110	133	260	2.60	13.08	13.3	14.6			
115	139	249	2.50	12.51	13.1	14.3			
119	143	242	2.75	12.14	12.9	14.7			
123	149	233	2.80	11.71	12.8	14.8			
125	151	229	2.80	11.52	12.8	14.4			
130	158	220	2.90	11.04	12.5	14.7			
135	163	212	3.00	10.65	12.3	14.8			
139	168	206	2.85	10.34	12.3	14.5			
47	57	607	1.00	30.53	8.2	6.3	CG063-11P-L100L-04F CF063-11P-L100L-04F	49 54	168
51	62	557	1.10	28.00	8.8	6.5			
39	47	735	0.85	36.92	6.3	6.0	CG062-11P-L100L-04F CF062-11P-L100L-04F	49 54	168
43	51	674	0.90	33.86	7.3	6.1			
48	57	603	1.00	30.30	8.3	6.4			
52	63	553	1.10	27.78	8.8	6.5			
61	74	467	1.30	23.46	9.3	6.7			
67	81	428	1.45	21.51	9.1	6.8			
70	85	409	0.95	20.57	8.9	6.4			
79	95	363	0.95	18.26	8.6	6.5			
81	98	355	1.70	17.85	8.7	7.1			
85	103	336	1.15	16.88	8.5	6.7			
88	106	326	1.85	16.36	8.5	7.1			
96	116	298	1.15	14.98	8.2	6.8			
98	118	293	2.05	14.72	8.3	7.3			
107	129	268	2.25	13.49	8.1	7.3			
110	133	260	1.45	13.07	8.0	7.0			
119	144	240	2.50	12.07	7.9	7.4			
124	150	231	1.50	11.60	7.7	7.1			
130	157	220	2.75	11.07	7.7	7.5			
140	170	204	2.95	10.26	7.6	7.5			
145	175	198	1.95	9.94	7.4	7.3			
163	197	176	1.95	8.83	7.2	7.3			
176	212	163	2.35	8.20	7.0	7.4			
198	239	145	2.35	7.28	6.8	7.5			
214	259	134	2.85	6.73	6.7	7.5			
241	291	119	2.85	5.97	6.4	7.6			

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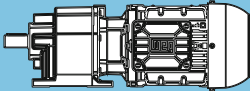
P_N = 3.0 kW

IE3

50 Hz 3.0 kW	60 Hz 3.6 kW	M ₂ Nm	f _B	i	at 50 Hz			m kg	Dimension sheet see page
					F _{rN} kN	F _{aN} kN			
					n ₅₀ min ⁻¹	n ₆₀ min ⁻¹			
54	65	533	0.80	26.79	**	5.6			
60	72	480	0.85	24.12	3.0	5.9			
66	79	436	0.95	21.92	4.2	6.1			
78	94	369	1.10	18.56	5.5	6.4			
81	97	355	0.80	17.86	5.7	6.1			
85	103	336	1.20	16.88	5.9	6.6			
93	112	309	0.80	15.54	6.1	6.3			
99	119	291	0.95	14.62	6.0	6.4			
103	124	279	1.45	14.03	6.1	6.8			
113	136	254	1.60	12.75	6.0	6.9			
125	152	228	1.80	11.48	5.9	7.1			
128	155	224	1.20	11.25	5.8	6.8			
138	167	208	1.95	10.43	5.7	7.1			
147	178	195	1.20	9.79	5.6	6.9			
155	187	185	2.20	9.31	5.6	7.3			
169	205	169	1.60	8.50	5.4	7.1			
170	206	168	2.25	8.46	5.5	7.3			
185	223	155	2.60	7.79	5.4	7.4			
195	235	147	1.60	7.40	5.2	7.2			
203	246	141	2.40	7.08	5.2	7.5			
207	250	138	1.95	6.96	5.1	7.3			
228	276	126	2.70	6.31	5.1	7.5			
236	286	121	2.70	6.09	5.0	7.5			
238	288	120	1.95	6.05	4.9	7.4			
251	303	114	2.55	5.74	4.9	7.6			
255	308	112	2.40	5.64	4.9	7.5			
260	314	110	2.60	5.54	4.9	7.6			
293	355	98	2.40	4.91	4.7	7.5			
301	364	95	2.65	4.78	4.7	7.7			
305	368	94	2.80	4.72	4.7	7.6			
331	400	87	2.80	4.35	4.6	7.7			
351	424	82	2.55	4.11	4.5	7.6			
376	455	76	2.75	3.83	4.4	7.7			
390	471	73	2.75	3.69	4.3	7.7			
432	523	66	2.65	3.33	4.2	7.7			
448	542	64	2.65	3.21	4.2	7.7			
497	600	58	2.70	2.90	4.1	7.8			
571	690	50	2.80	2.52	3.9	7.8			
111	135	257	0.80	12.92	3.0	3.0			
123	148	233	0.85	11.73	3.0	3.1			
147	177	195	0.95	9.82	2.9	3.4			
162	195	177	1.05	8.92	2.9	3.5			
189	228	152	1.15	7.64	2.9	3.7			
199	240	144	0.95	7.24	2.8	3.5			
208	251	138	1.25	6.94	2.8	3.7			
228	276	126	0.95	6.31	2.7	3.6			
242	292	119	1.35	5.96	2.8	3.9			
262	316	109	1.20	5.50	2.7	3.8			
266	321	108	1.50	5.41	2.7	3.9			
300	363	95	1.20	4.80	2.6	3.9			
337	407	85	1.55	4.28	2.5	4.0			
386	466	74	1.55	3.73	2.5	4.0			
431	521	66	2.00	3.34	2.4	4.1			
494	598	58	1.85	2.91	2.3	4.1			
							CG052-11P-L100L-04F CF052-11P-L100L-04F	44 49	166
							CG032-11P-L100L-04F CF032-11P-L100L-04F	40 42	164

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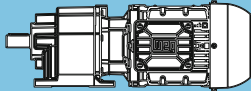
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50 Hz		60 Hz		i	at 50 Hz			m kg	Dimension sheet see page
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n₅₀ min ⁻¹	n₆₀ min ⁻¹	M₂ Nm	f_B						
1.5	1.8	22870	0.80	952.78	96.4	19.7	CG164-11P-112M-04E CF164-11P-112M-04E	711 734	192
1.6	1.9	22313	0.85	931.50	98.7	20.2			
1.8	2.2	19361	0.95	811.56	109.2	22.9			
2.1	2.5	16573	1.10	698.99	117.1	25.4			
2.2	2.6	15864	1.15	670.48	118.9	26.1			
2.4	2.9	14218	1.30	604.60	122.5	27.6			
2.5	3.0	13916	1.30	591.77	123.1	27.9			
2.8	3.4	12081	1.50	517.99	126.5	29.5			
2.9	3.5	11626	1.55	499.49	127.3	29.9			
3.3	4.0	10155	1.80	440.86	129.5	31.3			
3.4	4.1	9829	1.85	427.56	130.0	31.6			
3.5	4.2	9596	1.90	418.32	130.3	31.8			
3.9	4.7	8396	2.15	369.82	131.7	32.9			
4.0	4.9	8146	2.25	360.30	132.0	33.1			
4.7	5.6	6944	2.60	311.64	133.2	34.2			
2.0	2.5	17062	0.80	710.80	84.9	10.4	CG144-11P-112M-04E CF144-11P-112M-04E	460 478	188
2.1	2.5	16841	0.80	701.59	85.7	10.6			
2.3	2.8	15229	0.90	637.04	90.9	12.2			
2.4	2.9	14623	0.90	611.72	92.7	12.8			
2.6	3.2	13060	1.00	548.57	96.8	14.4			
2.8	3.3	12519	1.05	526.92	98.0	15.0			
3.2	3.9	10692	1.25	453.75	101.8	16.8			
3.3	4.0	10270	1.30	436.75	102.6	17.2			
3.4	4.2	9883	1.35	421.15	103.3	17.6			
3.7	4.5	9078	1.45	388.44	104.6	18.4			
3.8	4.5	9020	1.45	385.96	104.7	18.5			
3.9	4.8	8547	1.55	367.20	105.4	18.9			
4.0	4.9	8357	1.60	359.79	105.6	19.1			
4.3	5.2	7737	1.70	334.50	106.5	19.7			
4.4	5.4	7572	1.75	328.01	106.7	19.9			
4.6	5.5	7286	1.80	316.30	107.0	20.2			
4.9	6.0	6740	1.95	294.41	107.7	20.7			
5.1	6.2	6440	2.05	282.46	108.0	21.0			
5.3	6.4	6197	2.10	272.37	108.3	21.3			
5.4	6.5	6135	2.15	270.22	108.3	21.4			
5.6	6.8	5804	2.25	256.69	108.7	21.7			
6.0	7.2	5457	2.40	242.86	109.0	22.0			
6.2	7.5	5207	2.50	232.69	109.2	22.3			
6.6	7.9	4917	2.65	221.11	109.4	22.6			
6.8	8.3	4679	2.80	211.75	109.6	22.8			
7.0	8.5	5450	2.40	206.88	109.0	22.0	CG143-11P-112M-04E CF143-11P-112M-04E	436 454	186
8.0	9.7	4752	2.75	180.38	109.6	22.7			
8.3	10	4582	2.85	173.94	109.7	22.9			
3.7	4.5	9387	0.90	392.69	57.3	18.8	CG134-11P-112M-04E CF134-11P-112M-04E	313 315	184
3.8	4.6	9132	0.90	382.01	58.4	19.1			
3.9	4.8	8788	0.95	368.37	59.8	19.5			
4.3	5.2	8078	1.00	339.29	62.5	20.3			
4.4	5.3	7879	1.05	331.61	63.2	20.5			
4.5	5.5	7582	1.10	319.76	64.2	20.8			
4.6	5.6	7462	1.10	314.70	64.5	21.0			
5.1	6.1	6765	1.20	286.51	66.6	21.8			
5.2	6.4	6510	1.25	276.28	67.3	22.1			
5.3	6.4	6437	1.25	273.18	67.5	22.1			
5.6	6.8	6043	1.35	257.51	68.5	22.6			
6.1	7.4	5505	1.50	236.02	69.7	23.2			
6.5	7.9	5203	1.55	223.53	70.3	23.6			
6.8	8.3	4924	1.65	212.42	70.9	23.9			
7.5	9.1	4449	1.80	193.13	71.7	24.4			
7.9	9.5	4230	1.90	184.39	72.1	24.7			
9.1	11	3602	2.25	159.32	73.0	25.4			

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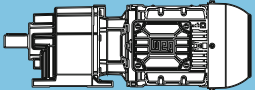
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P_N = 4.0 kW

IE3

50 Hz 4.0 kW	60 Hz 4.8 kW	M ₂ Nm	f _B	i	at 50 Hz			m kg	Dimension sheet see page
					F _{rN} kN	F _{aN} kN			
					n ₅₀ min ⁻¹	n ₆₀ min ⁻¹			
7.1	8.6	5397	1.50	204.88	69.9	23.3	CG133-11P-112M-04E CF133-11P-112M-04E	289 291	182
8.0	9.7	4767	1.70	180.95	71.1	24.1			
9.2	11	4138	1.95	157.08	72.2	24.8			
9.6	12	3990	2.05	151.47	72.4	24.9			
11	13	3575	2.25	135.71	73.0	25.4			
12	15	3060	2.65	116.14	73.7	26.0			
14	17	2683	3.00	101.85	74.1	26.4			
6.1	7.3	5742	0.80	239.20	27.4	19.9	CG104-11P-112M-04E CF104-11P-112M-04E	199 203	180
6.3	7.6	5525	0.85	230.65	29.1	20.2			
6.8	8.2	5123	0.90	214.29	32.0	20.7			
8.0	9.7	4304	1.05	181.16	36.5	21.7			
7.0	8.4	5488	0.85	208.33	29.4	20.2	CG103-11P-112M-04E CF103-11P-112M-04E	186 190	178
8.0	9.7	4751	0.95	180.35	34.2	21.2			
9.1	11	4208	1.10	159.72	36.9	21.8			
10	13	3640	1.25	138.17	39.3	22.6			
11	13	3510	1.30	133.24	39.7	22.7			
12	14	3214	1.40	122.02	40.7	23.1			
14	17	2718	1.70	103.15	42.2	23.7			
16	20	2352	1.95	89.30	43.0	24.2			
17	20	2274	2.00	86.31	43.2	24.3			
18	22	2083	2.20	79.08	43.4	24.6			
21	26	1802	2.50	68.41	40.9	24.9			
22	27	1738	2.60	65.97	40.3	25.0			
25	30	1533	2.95	58.21	38.4	25.3			
11	13	3588	0.85	136.18	17.7	24.7			
12	14	3216	0.95	122.08	21.2	25.2			
14	16	2808	1.10	106.60	24.2	25.9			
15	18	2587	1.20	98.21	25.5	26.2			
17	20	2284	1.35	86.68	27.0	26.6			
18	22	2099	1.45	79.66	27.8	26.9			
20	24	1916	1.60	72.72	28.5	27.2			
21	26	1804	1.70	68.48	28.9	27.3			
24	29	1614	1.90	61.28	29.5	27.6			
28	34	1349	2.25	51.22	30.3	28.0			
29	36	1301	2.35	49.39	30.4	28.1			
33	40	1148	2.50	43.59	30.7	28.3			
40	48	963	2.80	36.57	28.9	28.6			
37	44	1043	2.85	39.60	29.7	28.5	CG092-11P-112M-04E CF092-11P-112M-04E	141 139	174
64	78	595	2.85	22.58	24.4	28.8			
72	87	530	2.85	20.10	23.4	28.9			
19	24	1963	0.80	74.50	17.3	18.5	CG083-11P-112M-04E CF083-11P-112M-04E	91 95	172
20	24	1893	0.85	71.84	17.9	18.6			
24	29	1617	1.00	61.37	19.9	19.2			
29	35	1323	1.20	50.22	21.5	19.8			
35	42	1091	1.45	41.43	22.5	20.3			
27	32	1427	1.10	54.18	21.0	19.6	CG082-11P-112M-04E CF082-11P-112M-04E	90 94	172
34	41	1130	1.40	42.88	22.4	20.2			
39	47	986	1.60	37.44	22.9	20.5			
44	53	872	1.80	33.09	23.0	20.7			
46	56	823	1.40	31.23	22.7	20.5			
52	63	737	2.15	27.98	21.6	21.0			
59	71	651	1.75	24.72	20.7	20.9			
60	73	634	2.35	24.05	20.4	21.2			
66	80	581	1.75	22.07	19.9	21.0			
67	81	569	2.35	21.58	19.7	21.1			
69	84	553	2.60	21.00	19.4	21.4			
75	91	508	2.35	19.27	19.0	21.2			
76	92	503	2.60	19.08	18.8	21.3			
81	98	474	2.90	17.99	18.3	21.5			
84	101	457	2.95	17.35	18.1	21.6			
85	103	449	2.60	17.03	18.1	21.4			
101	122	379	2.90	14.40	17.0	21.5			

Legend see page 29

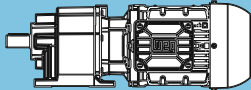
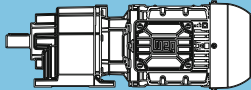
P _N = 4.0 kW								IE3	
50 Hz	60 Hz	M ₂ Nm	f _B	i	at 50 Hz			m kg	Dimension sheet see page
4.0 kW	4.8 kW				F _{rN} kN	F _{aN} kN			
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹								
41	49	939	0.80	35.63	9.4	12.5	CG073-11P-112M-04E CF073-11P-112M-04E	67	170
44	53	873	0.85	33.15	10.2	13.0		71	
48	58	794	0.90	30.16	10.9	13.0			
37	45	1025	0.80	38.92	8.2	12.6	CG072-11P-112M-04E CF072-11P-112M-04E	66	170
41	50	933	0.90	35.41	9.5	12.5			
47	57	805	1.05	30.55	10.8	13.2			
52	63	732	1.15	27.79	11.3	13.2			
62	74	621	1.30	23.58	11.9	13.7			
68	82	565	1.40	21.45	12.0	13.7			
70	85	544	1.30	20.65	11.2	13.1			
74	90	514	1.50	19.50	12.3	14.0			
76	92	501	1.30	19.02	11.1	13.2			
82	99	467	1.60	17.74	12.2	14.0			
87	106	437	1.65	16.59	12.4	14.2			
89	108	427	1.60	16.20	11.6	13.6			
96	116	398	1.80	15.09	12.3	14.2			
97	118	393	1.65	14.93	11.4	13.7			
101	122	379	1.85	14.38	12.3	14.4			
111	134	345	1.95	13.08	12.2	14.3			
116	140	329	1.90	12.51	11.7	14.0			
119	145	320	2.05	12.14	12.3	14.5			
124	150	308	2.10	11.71	12.2	14.5			
126	152	303	2.10	11.52	11.5	14.1			
131	159	291	2.20	11.04	12.1	14.5			
136	165	281	2.25	10.65	12.1	14.5			
140	170	272	2.15	10.34	11.6	14.2			
145	176	263	2.35	10.00	12.0	14.7			
152	184	251	2.50	9.53	11.4	14.3			
159	193	240	2.55	9.10	11.8	14.7			
165	199	232	2.40	8.80	11.4	14.4			
177	214	216	2.70	8.18	11.3	14.8			
179	217	214	2.75	8.10	11.2	14.5			
190	230	201	2.65	7.63	11.1	14.5			
195	236	196	2.90	7.44	10.9	14.8			
206	250	185	3.00	7.02	10.8	14.6			
225	273	170	2.95	6.44	10.4	14.7			

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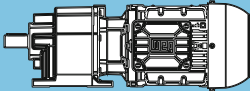
Legend see page 29

P_N = 4.0 kW

IE3

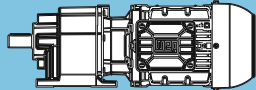
50 Hz 4.0 kW	60 Hz 4.8 kW	M ₂ Nm	f _b	i	at 50 Hz			m kg	Dimension sheet see page
					F _{rN} kN	F _{aN} kN			
					n ₅₀ min ⁻¹	n ₆₀ min ⁻¹			
48	58	798	0.80	30.30	4.9	5.8	 CG062-11P-112M-04E CF062-11P-112M-04E	50 55	168
52	63	732	0.85	27.78	6.4	6.0			
62	75	618	1.00	23.46	8.1	6.3			
67	82	567	1.10	21.51	8.6	6.4			
81	98	470	1.30	17.85	8.3	6.7			
86	104	445	0.85	16.88	8.0	6.2			
89	107	431	1.40	16.36	8.1	6.8			
97	117	395	0.85	14.98	7.8	6.4			
99	119	388	1.55	14.72	7.9	7.0			
107	130	355	1.70	13.49	7.8	7.1			
111	134	344	1.10	13.07	7.6	6.7			
120	145	318	1.90	12.07	7.6	7.2			
125	151	306	1.10	11.60	7.4	6.8			
131	159	292	2.10	11.07	7.4	7.2			
141	171	270	2.25	10.26	7.3	7.3			
146	177	262	1.45	9.94	7.2	7.0			
154	187	248	2.40	9.40	7.1	7.4			
164	199	233	1.45	8.83	6.9	7.1			
172	208	222	2.60	8.43	7.0	7.5			
177	214	216	1.75	8.20	6.8	7.2			
178	216	214	2.65	8.13	6.9	7.5			
188	227	204	2.55	7.73	6.8	7.5			
194	235	196	2.60	7.46	6.7	7.5			
199	241	192	1.75	7.28	6.6	7.3			
216	261	177	2.15	6.73	6.5	7.4			
217	262	176	2.75	6.69	6.5	7.6			
236	286	162	2.75	6.13	6.4	7.6			
243	294	157	2.15	5.97	6.3	7.4			
254	307	151	2.55	5.71	6.2	7.5			
256	310	149	2.85	5.66	6.2	7.7			
279	338	137	2.90	5.19	6.1	7.7			
286	346	134	2.55	5.07	6.0	7.5			
309	374	124	2.80	4.70	5.9	7.6			
320	387	119	2.80	4.53	5.8	7.6			
348	421	110	2.75	4.17	5.7	7.6			
361	436	106	2.80	4.02	5.6	7.6			
389	471	98	2.90	3.73	5.5	7.7			
438	531	87	2.90	3.31	5.3	7.7			
460	556	83	3.00	3.15	5.2	7.8			

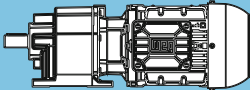
Legend see page 29

P _N = 4.0 kW								IE3	
50 Hz	60 Hz	M ₂ Nm	f _B	i	at 50 Hz			m kg	Dimension sheet see page
4.0 kW	4.8 kW				F _{rN} kN	F _{aN} kN			
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹								
78	95	489	0.85	18.56	2.7	5.9	45 50	166	
86	104	445	0.90	16.88	4.0	6.0			
103	125	369	1.10	14.03	5.5	6.4			
114	138	336	1.20	12.75	5.6	6.6			
126	153	302	1.35	11.48	5.5	6.7			
129	156	296	0.95	11.25	5.4	6.4			
139	168	275	1.50	10.43	5.4	6.8			
148	179	258	0.90	9.79	5.2	6.6			
156	189	245	1.65	9.31	5.3	7.0			
171	206	224	1.20	8.50	5.1	6.8			
186	225	205	1.95	7.79	5.1	7.2			
196	237	195	1.20	7.40	5.0	6.9			
205	248	187	1.80	7.08	5.0	7.2			
208	252	183	1.50	6.96	4.9	7.0			
230	278	166	2.05	6.31	4.9	7.3			
238	288	160	2.05	6.09	4.8	7.4			
240	290	159	1.50	6.05	4.7	7.2			
253	306	151	1.95	5.74	4.8	7.4			
257	311	149	1.80	5.64	4.7	7.2			
262	317	146	1.95	5.54	4.7	7.4			
295	358	129	1.80	4.91	4.5	7.3			
303	367	126	2.00	4.78	4.6	7.5			
307	372	124	2.10	4.72	4.5	7.4			
333	404	115	2.10	4.35	4.4	7.6			
353	427	108	1.90	4.11	4.3	7.5			
379	459	101	2.10	3.83	4.3	7.5			
393	476	97	2.10	3.69	4.2	7.5			
435	527	88	2.00	3.33	4.1	7.6			
452	547	85	2.00	3.21	4.1	7.6			
500	605	76	2.05	2.90	4.0	7.7			
575	696	66	2.15	2.52	3.8	7.7			

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Legend see page 29

P _N = 5.5 kW							IE3		
50 Hz 5.5 kW	60 Hz 6.6 kW	M ₂ Nm	f _b	i	at 50 Hz			m kg	Dimension sheet see page
					F _{rN} kN	F _{aN} kN			
2.1	2.5	22834	0.80	698.99	96.5	19.8	CG164-11P-132S-04E CF164-11P-132S-04E	729 752	192
2.2	2.6	21858	0.85	670.48	100.5	20.6			
2.4	2.9	19629	0.95	604.60	108.4	22.7			
2.5	3.0	19213	0.95	591.77	109.7	23.0			
2.8	3.4	16714	1.10	517.99	116.8	25.3			
2.9	3.5	16446	1.10	509.69	117.4	25.6			
3.0	3.6	15985	1.15	496.41	118.6	26.0			
3.3	4.0	14109	1.30	440.86	122.7	27.7			
3.4	4.1	13655	1.35	427.56	123.6	28.1			
3.5	4.2	13360	1.35	418.32	124.2	28.4			
4.0	4.8	11714	1.55	369.82	127.1	29.9			
4.1	4.9	11389	1.60	360.30	127.7	30.2			
4.7	5.7	9750	1.85	311.64	130.1	31.6			
2.8	3.3	17213	0.80	526.92	84.4	10.2			
3.2	3.9	14762	0.90	453.75	92.3	12.7			
3.3	3.9	14581	0.90	448.20	92.8	12.9			
3.4	4.0	14180	0.95	436.75	93.9	13.3			
3.5	4.2	13645	1.00	421.15	95.3	13.8			
3.8	4.5	12560	1.05	388.44	97.9	14.9			
4.0	4.8	11849	1.10	367.20	99.5	15.6			
4.1	4.9	11586	1.15	359.79	100.1	15.9			
4.4	5.3	10727	1.25	334.50	101.8	16.7			
4.5	5.4	10519	1.25	328.01	102.1	17.0			
4.6	5.6	10123	1.30	316.30	102.9	17.4			
4.7	5.6	10040	1.30	313.70	103.0	17.4			
5.0	6.0	9383	1.40	294.41	104.1	18.1			
5.2	6.2	8984	1.45	282.46	104.7	18.5			
5.4	6.5	8628	1.55	272.37	105.3	18.9			
5.7	6.9	8097	1.65	256.69	106.0	19.4			
6.0	7.3	7629	1.75	242.86	106.6	19.9			
6.3	7.6	7295	1.80	232.69	107.0	20.2	CG143-11P-132S-04E CF143-11P-132S-04E	454 472	186
6.6	8.0	6903	1.90	221.11	107.5	20.6			
6.9	8.3	6584	2.00	211.75	107.9	20.9			
7.7	9.3	5859	2.25	190.40	108.6	21.6			
8.0	9.7	5589	2.35	182.40	108.9	21.9			
7.1	8.5	7417	1.80	206.88	106.9	20.1	CG134-11P-132S-04E CF134-11P-132S-04E	331 333	184
8.1	9.8	6467	2.05	180.38	108.0	21.0			
8.4	10	6236	2.10	173.94	108.2	21.2			
9.4	11	5571	2.35	155.38	108.9	21.9			
11	13	4797	2.75	133.80	109.5	22.7			
4.6	5.5	10446	0.80	319.76	52.1	17.6	CG133-11P-132S-04E CF133-11P-132S-04E	307 309	182
4.7	5.6	10280	0.80	314.70	53.0	17.8			
5.1	6.2	9321	0.90	286.51	57.6	18.9			
5.3	6.4	8988	0.90	276.28	59.0	19.2			
5.4	6.5	8869	0.95	273.18	59.5	19.4			
5.7	6.9	8343	1.00	257.51	61.5	20.0			
6.2	7.5	7632	1.05	236.02	64.0	20.8			
6.6	7.9	7198	1.15	223.53	65.3	21.3			
6.9	8.3	6826	1.20	212.42	66.4	21.7			
7.6	9.1	6181	1.30	193.13	68.1	22.4			
7.9	9.6	5877	1.40	184.39	68.8	22.8			
9.2	11	5036	1.60	159.32	70.6	23.7			
7.2	8.6	7345	1.10	204.88	64.9	21.1			
8.1	9.8	6488	1.25	180.95	67.3	22.1			
9.3	11	5632	1.45	157.08	69.4	23.1			
9.7	12	5431	1.50	151.47	69.8	23.3			
11	13	4866	1.65	135.71	71.0	23.9			
13	15	4164	1.95	116.14	72.2	24.7			
14	17	3652	2.20	101.85	72.9	25.3			
15	18	3596	2.25	100.31	73.0	25.4			
16	20	3225	2.50	89.96	73.5	25.8			
19	23	2800	2.90	78.09	73.9	26.3			

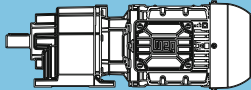
P_N = 5.5 kW								IE3	
50 Hz		60 Hz		i	at 50 Hz			m kg	Dimension sheet see page
5.5 kW		6.6 kW			F_{rN} kN	F_{aN} kN			
n₅₀ min ⁻¹	n₆₀ min ⁻¹	M₂ Nm	f_B						
8.1	9.7	5918	0.80	181.16	25.9	19.7	CG104-11P-132S-04E CF104-11P-132S-04E	217 221	180
9.2	11	5727	0.80	159.72	27.5	19.9	CG103-11P-132S-04E CF103-11P-132S-04E	204 208	178
11	13	4954	0.95	138.17	33.0	20.9			
12	14	4375	1.05	122.02	36.1	21.6			
14	17	3698	1.25	103.15	39.1	22.5			
15	18	3587	1.30	100.05	39.5	22.6			
16	20	3202	1.45	89.30	40.8	23.1			
17	20	3094	1.50	86.31	41.1	23.3			
19	22	2835	1.60	79.08	41.9	23.6			
21	26	2453	1.85	68.41	41.9	24.1			
22	27	2365	1.95	65.97	41.2	24.2			
25	30	2087	2.20	58.21	39.2	24.5			
30	36	1776	2.55	49.54	36.6	24.9			
34	41	1532	2.95	42.74	34.9	25.3			
14	17	3822	0.80	106.60	14.8	24.4	CG093-11P-132S-04E CF093-11P-132S-04E	162 160	174
15	18	3521	0.90	98.21	18.4	24.8			
16	19	3378	0.90	94.21	19.8	25.0			
17	20	3108	1.00	86.68	22.1	25.4			
18	22	2856	1.10	79.66	23.9	25.8			
20	24	2607	1.20	72.72	25.4	26.1			
21	26	2455	1.25	68.48	26.2	26.4			
24	29	2197	1.40	61.28	27.4	26.8			
25	30	2143	1.40	59.78	27.7	26.8			
29	34	1836	1.65	51.22	28.8	27.3			
30	36	1771	1.70	49.39	29.1	27.4			
34	40	1563	1.85	43.59	29.7	27.7			
40	48	1311	2.05	36.57	29.5	28.1			
48	57	1105	2.30	30.81	27.5	28.4			
37	45	1420	2.10	39.60	30.1	27.9	CG092-11P-132S-04E CF092-11P-132S-04E	160 158	174
44	53	1200	2.50	33.48	28.4	28.2			
51	61	1039	2.90	28.98	26.9	28.5			
65	78	810	2.10	22.58	24.7	28.4			
73	88	721	2.10	20.10	23.7	28.5			
77	92	684	2.50	19.09	23.2	28.6			
86	104	609	2.50	16.99	22.3	28.7			
89	107	593	2.90	16.53	22.0	28.8			
100	120	527	2.90	14.71	21.1	28.9			
29	35	1801	0.90	50.22	18.6	18.8			
35	43	1485	1.05	41.43	20.7	19.5			

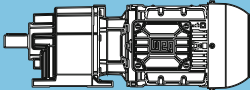
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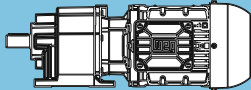
P_N = 5.5 kW

IE3

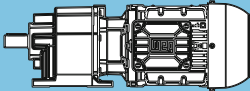
50 Hz 5.5 kW	60 Hz 6.6 kW	M ₂ Nm	f _b	i	at 50 Hz			m kg	Dimension sheet see page
					F _{rN} kN	F _{aN} kN			
					n ₅₀ min ⁻¹	n ₆₀ min ⁻¹			
27	33	1942	0.80	54.18	17.5	18.5	CG082-11P-132S-04E CF082-11P-132S-04E	108 112	172
34	41	1537	1.05	42.88	20.4	19.4			
39	47	1342	1.20	37.44	21.4	19.8			
44	53	1186	1.35	33.09	22.2	20.1			
47	57	1120	1.00	31.23	22.4	19.7			
52	63	1003	1.55	27.98	22.1	20.5			
53	63	1000	1.00	27.88	22.2	20.0			
59	71	886	1.30	24.72	21.2	20.3			
61	73	862	1.75	24.05	20.8	20.7			
66	80	791	1.30	22.07	20.3	20.5			
68	82	774	1.75	21.58	20.1	20.6			
70	84	753	1.90	21.00	19.7	21.0			
76	92	691	1.75	19.27	19.3	20.7			
77	93	684	1.95	19.08	19.1	20.8			
81	98	645	2.10	17.99	18.6	21.2			
84	102	622	2.20	17.35	18.4	21.2			
86	104	611	1.90	17.03	18.4	20.9			
91	109	578	2.25	16.13	18.0	21.1			
96	115	549	2.35	15.31	17.5	21.4			
102	123	516	2.15	14.40	17.2	21.2			
106	127	497	2.50	13.87	17.0	21.3			
114	137	460	2.65	12.84	16.4	21.6			
118	143	444	2.35	12.38	16.3	21.4			
121	146	434	2.75	12.10	16.1	21.4			
135	163	388	3.00	10.82	15.4	21.7			
136	163	387	2.55	10.81	15.5	21.5			
158	191	332	2.80	9.26	14.6	21.7			
164	198	320	2.85	8.93	14.5	21.7			
53	64	996	0.85	27.79	7.1	12.4	CG072-11P-132S-04E CF072-11P-132S-04E	84 88	170
62	75	845	0.95	23.58	8.5	13.1			
68	82	769	1.05	21.45	8.8	13.0			
71	85	740	0.95	20.65	7.8	12.3			
75	91	699	1.10	19.50	9.4	13.5			
77	93	682	0.95	19.02	7.9	12.4			
83	99	636	1.20	17.74	9.5	13.5			
88	106	595	1.25	16.59	9.9	13.8			
90	109	581	1.20	16.20	9.0	12.9			
97	117	541	1.30	15.09	10.0	13.7			
98	118	535	1.20	14.93	8.9	13.1			
102	123	515	1.35	14.38	10.2	14.0			
112	135	469	1.45	13.08	10.3	14.0			
117	141	448	1.40	12.51	9.6	13.5			
121	145	435	1.55	12.14	10.4	14.2			
125	151	420	1.55	11.71	10.5	14.2			
127	153	413	1.55	11.52	9.5	13.6			
133	160	396	1.65	11.04	10.4	14.2			
138	166	382	1.70	10.65	10.4	14.2			
142	171	371	1.60	10.34	9.9	13.8			
147	177	359	1.75	10.00	10.5	14.4			
154	185	342	1.85	9.53	9.7	13.9			
161	194	326	1.85	9.10	10.5	14.4			
167	201	315	1.75	8.80	10.0	14.1			
179	216	293	2.00	8.18	10.5	14.6			
181	218	291	2.00	8.10	9.8	14.1			
192	231	273	1.95	7.63	10.0	14.2			
197	237	267	2.15	7.44	10.4	14.6			
209	251	252	2.20	7.02	9.8	14.3			
217	261	242	2.30	6.75	10.3	14.7			
228	274	231	2.20	6.44	9.9	14.4			
236	284	223	2.25	6.21	9.9	14.5			
239	287	220	2.45	6.14	10.2	14.7			
247	298	213	2.40	5.93	9.7	14.5			
256	309	205	2.45	5.72	9.7	14.5			
276	333	190	2.50	5.30	9.7	14.6			
300	361	175	2.70	4.89	9.5	14.6			
338	407	156	2.85	4.34	9.1	14.7			

P _N = 5.5 kW								IE3	
50 Hz		60 Hz		i	at 50 Hz			m kg	Dimension sheet see page
5.5 kW		6.6 kW			F _{rN} kN	F _{aN} kN			
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	f _B						
68	82	771	0.80	21.51	5.6	5.8	CG062-11P-132S-04E CF062-11P-132S-04E	69 74	168
82	99	640	0.95	17.85	7.7	6.2			
90	108	587	1.05	16.36	7.5	6.4			
100	120	528	1.15	14.72	7.4	6.6			
109	131	484	1.25	13.49	7.3	6.7			
112	135	469	0.85	13.07	7.1	6.1			
121	146	433	1.40	12.07	7.2	6.8			
126	152	416	0.85	11.60	6.9	6.3			
132	159	397	1.55	11.07	7.1	6.9			
143	172	368	1.65	10.26	6.9	7.0			
147	178	356	1.10	9.94	6.8	6.6			
156	188	337	1.80	9.40	6.8	7.1			
166	200	316	1.10	8.83	6.6	6.7			
174	209	302	1.95	8.43	6.7	7.2			
179	215	294	1.30	8.20	6.5	6.9			
180	217	292	1.95	8.13	6.6	7.3			
189	228	277	1.90	7.73	6.5	7.3			
196	237	267	1.90	7.46	6.5	7.3			
201	243	261	1.30	7.28	6.3	7.0			
218	262	241	1.60	6.73	6.2	7.1			
219	264	240	2.05	6.69	6.3	7.4			
239	288	220	2.05	6.13	6.2	7.5			
245	296	214	1.60	5.97	6.0	7.2			
256	309	205	1.85	5.71	6.0	7.2			
259	312	203	2.10	5.66	6.0	7.5			
282	340	186	2.15	5.19	5.9	7.6			
289	348	182	1.85	5.07	5.8	7.3			
312	376	168	2.05	4.70	5.7	7.4			
323	390	162	2.05	4.53	5.6	7.4			
351	423	150	2.05	4.17	5.5	7.5			
364	439	144	2.05	4.02	5.4	7.5			
393	474	134	2.15	3.73	5.4	7.5			
443	534	119	2.15	3.31	5.2	7.6			
464	560	113	2.25	3.15	5.1	7.6			
523	630	100	2.25	2.80	4.9	7.7			
104	126	503	0.80	14.03	2.1	5.8	CG052-11P-132S-04E CF052-11P-132S-04E	63 68	166
115	138	457	0.90	12.75	3.7	6.0			
128	154	412	1.00	11.48	4.8	6.2			
140	169	374	1.10	10.43	5.0	6.4			
157	190	334	1.20	9.31	4.9	6.6			
172	208	305	0.90	8.50	4.7	6.3			
173	209	303	1.25	8.46	4.8	6.7			
188	227	279	1.45	7.79	4.8	6.8			
198	239	265	0.90	7.40	4.6	6.5			
207	249	254	1.35	7.08	4.7	6.9			
211	254	249	1.10	6.96	4.6	6.7			
232	280	226	1.50	6.31	4.6	7.1			
241	290	218	1.50	6.09	4.6	7.1			
242	292	217	1.10	6.05	4.4	6.8			
255	307	206	1.40	5.74	4.5	7.2			
260	313	202	1.35	5.64	4.4	6.9			
265	319	198	1.45	5.54	4.5	7.2			
299	360	176	1.35	4.91	4.3	7.1			
306	369	171	1.45	4.78	4.4	7.3			
310	374	169	1.55	4.72	4.3	7.1			
337	406	156	1.55	4.35	4.2	7.4			
357	430	147	1.40	4.11	4.1	7.2			
383	461	137	1.55	3.83	4.1	7.3			
397	478	132	1.55	3.69	4.0	7.3			
440	530	119	1.50	3.33	3.9	7.4			
456	550	115	1.50	3.21	3.9	7.4			
505	609	104	1.50	2.90	3.8	7.5			
581	700	90	1.55	2.52	3.7	7.6			

C

P _N = 7.5 kW								IE3	
50 Hz 7.5 kW n ₅₀ min ⁻¹	60 Hz 9.0 kW n ₆₀ min ⁻¹	M ₂ Nm	f _b	i	at 50 Hz			m kg	Dimension sheet see page
					F _{rN} kN	F _{aN} kN			
2.8	3.4	23074	0.80	517.99	95.5	19.5	CG164-11P-L132M-04F CF164-11P-L132M-04F	743 766	192
2.9	3.5	22704	0.80	509.69	97.1	19.9			
3.0	3.6	22068	0.85	496.41	99.6	20.4			
3.3	4.0	19518	0.95	440.86	108.7	22.8			
3.4	4.1	18890	1.00	427.56	110.7	23.3			
3.5	4.2	18482	1.00	418.32	111.9	23.7			
4.0	4.8	16239	1.15	369.82	117.9	25.7			
4.1	4.9	15821	1.15	360.30	119.0	26.1			
4.7	5.7	13572	1.35	311.64	123.8	28.2			
3.8	4.6	17193	0.80	385.96	84.5	10.3	CG144-11P-L132M-04F CF144-11P-L132M-04F	492 510	188
4.0	4.8	16357	0.80	367.20	87.4	11.1			
4.1	4.9	15994	0.85	359.79	88.6	11.5			
4.4	5.3	14839	0.90	334.50	92.1	12.6			
4.5	5.4	14552	0.90	328.01	92.9	12.9			
4.6	5.6	14003	0.95	316.30	94.4	13.5			
4.7	5.6	13889	0.95	313.70	94.7	13.6			
5.0	6.0	13007	1.00	294.41	96.9	14.5			
5.2	6.3	12454	1.05	282.46	98.2	15.0			
5.4	6.5	11985	1.10	272.37	99.2	15.5			
5.7	6.9	11248	1.20	256.69	100.7	16.2			
6.0	7.3	10620	1.25	242.86	102.0	16.9			
6.3	7.6	10155	1.30	232.69	102.8	17.3			
6.6	8.0	9610	1.40	221.11	103.7	17.9			
6.9	8.4	9184	1.45	211.75	104.4	18.3			
7.7	9.3	8207	1.60	190.40	105.9	19.3			
8.0	9.7	7830	1.70	182.40	106.4	19.7			
9.3	11	6673	1.95	157.07	107.8	20.8			
7.1	8.6	10115	1.30	206.88	102.9	17.4	CG143-11P-L132M-04F CF143-11P-L132M-04F	468 486	186
8.1	9.8	8819	1.50	180.38	105.0	18.7			
8.4	10	8504	1.55	173.94	105.4	19.0			
9.4	11	7596	1.75	155.38	106.7	19.9			
11	13	6541	2.00	133.80	107.9	20.9			
13	15	5714	2.30	116.88	108.7	21.8			
15	18	4828	2.70	98.76	109.5	22.7			
6.2	7.5	10514	0.80	236.02	51.7	17.5	CG134-11P-L132M-04F CF134-11P-L132M-04F	345 347	184
6.6	7.9	9937	0.85	223.53	54.7	18.1			
6.9	8.3	9443	0.85	212.42	57.0	18.7			
7.6	9.2	8550	0.95	193.13	60.7	19.7			
7.9	9.6	8147	1.00	184.39	62.2	20.2			
9.2	11	6996	1.15	159.32	65.9	21.5			
7.2	8.6	10017	0.80	204.88	54.3	18.1	CG133-11P-L132M-04F CF133-11P-L132M-04F	321 323	182
8.1	9.8	8847	0.95	180.95	59.6	19.4			
9.3	11	7680	1.05	157.08	63.8	20.7			
9.7	12	7405	1.10	151.47	64.7	21.0			
11	13	6635	1.25	135.71	66.9	21.9			
13	15	5678	1.45	116.14	69.3	23.0			
14	17	4980	1.65	101.85	70.7	23.8			
15	18	4904	1.65	100.31	70.9	23.9			
16	20	4398	1.85	89.96	71.8	24.5			
19	23	3818	2.10	78.09	72.7	25.1			
22	26	3299	2.45	67.47	73.4	25.7			
25	31	2823	2.85	57.74	73.9	26.3			
49	59	1460	2.50	29.86	75.0	27.8			
86	104	831	2.50	17.00	75.2	28.3	CG132-11P-L132M-04F CF132-11P-L132M-04F	312 314	182

Legend see page 29

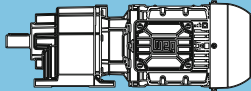
P _N = 7.5 kW								IE3	
50 Hz		60 Hz		i	at 50 Hz			m kg	Dimension sheet see page
7.5 kW		9.0 kW			F _{rN} kN	F _{aN} kN			
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	f _B						
12	15	5965	0.80	122.02	25.4	19.6	CG103-11P-L132M-04F CF103-11P-L132M-04F	218 222	178
14	17	5043	0.90	103.15	32.5	20.8			
15	18	4891	0.95	100.05	33.4	21.0			
16	20	4366	1.05	89.30	36.2	21.6			
17	21	4220	1.10	86.31	36.9	21.8			
19	22	3867	1.20	79.08	38.4	22.3			
21	26	3345	1.35	68.41	40.3	22.9			
22	27	3225	1.40	65.97	40.7	23.1			
25	30	2846	1.60	58.21	40.3	23.6			
30	36	2422	1.90	49.54	37.6	24.1			
34	41	2089	2.20	42.74	35.7	24.5			
44	54	1614	2.30	33.01	32.3	25.1	CG102-11P-L132M-04F CF102-11P-L132M-04F	213 217	178
60	73	1193	2.50	24.40	28.7	25.7			
76	92	937	2.30	19.17	26.5	25.6			
85	103	838	2.30	17.15	25.4	25.7			
103	125	693	2.50	14.17	23.7	26.0			
116	140	620	2.50	12.68	22.7	26.1			
18	22	3895	0.80	79.66	13.7	24.2	CG093-11P-L132M-04F CF093-11P-L132M-04F	176 174	174
20	24	3555	0.85	72.72	18.0	24.7			
21	26	3348	0.90	68.48	20.1	25.1			
24	29	2996	1.05	61.28	22.9	25.6			
25	30	2923	1.05	59.78	23.4	25.7			
29	35	2504	1.20	51.22	25.9	26.3			
30	36	2415	1.25	49.39	26.4	26.4			
34	41	2131	1.35	43.59	27.7	26.9			
40	48	1788	1.50	36.57	29.0	27.4			
48	57	1507	1.70	30.81	28.2	27.8			
37	45	1936	1.55	39.60	28.5	27.1	CG092-11P-L132M-04F CF092-11P-L132M-04F	174 172	174
44	53	1637	1.85	33.48	29.2	27.6			
51	61	1417	2.15	28.98	27.6	27.9			
57	69	1255	2.40	25.67	26.4	28.1			
65	78	1104	1.55	22.58	25.3	27.8			
66	80	1086	2.80	22.20	24.9	28.4			
68	83	1047	2.50	21.41	24.6	28.5			
73	88	983	1.55	20.10	24.2	28.0			
77	93	933	1.85	19.09	23.7	28.1			
86	104	831	1.85	16.99	22.7	28.3			
89	107	808	2.15	16.53	22.4	28.4			
100	120	719	2.15	14.71	21.5	28.5			
112	136	637	2.55	13.03	20.6	28.7			
116	140	619	2.95	12.66	20.3	28.8			
120	145	597	2.50	12.21	20.0	28.8			
130	157	551	2.95	11.27	19.5	28.9			
135	163	531	2.50	10.87	19.2	28.9			
35	43	2025	0.80	41.43	16.7	18.4	CG083-11P-L132M-04F CF083-11P-L132M-04F	123 127	172

C

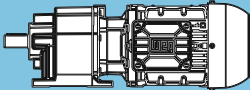
Legend see page 29

P_N = 7.5 kW

IE3

50 Hz		60 Hz		i	at 50 Hz			m kg	Dimension sheet see page
7.5 kW	9.0 kW	M ₂ Nm	f _b		F _{rN} kN	F _{aN} kN			
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹								
39	47	1830	0.85	37.44	18.4	18.8	CG082-11P-L132M-04F CF082-11P-L132M-04F	122 126	172
44	53	1618	1.00	33.09	19.9	19.2			
52	63	1368	1.15	27.98	21.3	19.7			
59	72	1209	0.95	24.72	21.9	19.5			
61	74	1176	1.30	24.05	21.4	20.1			
66	80	1079	0.95	22.07	21.0	19.8			
68	82	1055	1.25	21.58	20.7	19.9			
70	84	1027	1.40	21.00	20.2	20.4			
76	92	942	1.25	19.27	19.8	20.1			
77	93	933	1.45	19.08	19.7	20.2			
81	98	880	1.55	17.99	19.1	20.7			
84	102	848	1.60	17.35	18.8	20.8			
86	104	833	1.40	17.03	18.9	20.4			
91	110	789	1.65	16.13	18.4	20.5			
96	116	749	1.75	15.31	17.9	21.0			
102	123	704	1.55	14.40	17.6	20.7			
106	128	678	1.85	13.87	17.3	20.8			
114	138	628	1.95	12.84	16.7	21.2			
118	143	605	1.70	12.38	16.7	21.0			
121	146	592	2.00	12.10	16.5	21.0			
135	164	529	2.20	10.82	15.7	21.4			
136	164	528	1.85	10.81	15.8	21.2			
141	171	507	2.25	10.37	15.5	21.2			
147	177	489	2.30	10.00	15.3	21.3			
158	191	453	2.05	9.26	14.9	21.3			
164	198	437	2.10	8.93	14.7	21.4			
166	201	432	2.45	8.83	14.6	21.4			
186	225	385	2.25	7.88	14.0	21.5			
198	239	362	2.80	7.40	13.7	21.6			
222	268	323	2.50	6.61	13.1	21.7			
263	318	272	2.80	5.57	12.3	21.8			

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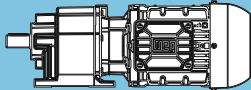
P _N = 7.5 kW							IE3		
50 Hz	60 Hz	M ₂ Nm	f _b	i	at 50 Hz			m kg	Dimension sheet see page
7.5 kW	9.0 kW				F _{rN} kN	F _{aN} kN			
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹								
75	91	953	0.80	19.50	5.5	12.8	CG072-11P-L132M-04F CF072-11P-L132M-04F	98 102	170
83	100	867	0.85	17.74	6.0	12.7			
88	107	811	0.90	16.59	6.6	13.2			
90	109	792	0.85	16.20	5.4	12.0			
97	117	738	0.95	15.09	7.0	13.1			
98	119	730	0.90	14.93	5.5	12.2			
102	123	703	1.00	14.38	7.4	13.5			
112	135	639	1.05	13.08	7.7	13.4			
117	142	611	1.05	12.51	6.9	12.8			
121	146	593	1.15	12.14	8.0	13.8			
125	151	572	1.15	11.71	8.2	13.8			
127	154	563	1.15	11.52	6.9	12.9			
133	160	540	1.20	11.04	8.2	13.7			
138	166	521	1.25	10.65	8.3	13.8			
142	171	506	1.20	10.34	7.6	13.3			
147	177	489	1.30	10.00	8.5	14.0			
154	186	466	1.35	9.53	7.6	13.4			
161	195	445	1.35	9.10	8.7	14.0			
167	201	430	1.30	8.80	8.0	13.6			
179	216	400	1.45	8.18	8.9	14.3			
181	218	396	1.50	8.10	8.0	13.7			
192	232	373	1.45	7.63	8.3	13.8			
197	238	364	1.55	7.44	8.9	14.3			
209	252	343	1.60	7.02	8.2	13.9			
217	262	330	1.70	6.75	9.0	14.5			
228	275	315	1.60	6.44	8.5	14.1			
236	285	304	1.65	6.21	8.5	14.1			
239	288	300	1.80	6.14	9.0	14.5			
247	298	290	1.80	5.93	8.3	14.1			
256	309	280	1.80	5.72	8.4	14.2			
276	334	259	1.85	5.30	8.5	14.3			
300	362	239	2.00	4.89	8.4	14.4			
338	408	212	2.10	4.34	8.5	14.5			
366	443	195	2.25	4.00	8.4	14.5			
409	494	175	2.40	3.58	8.4	14.7			
444	537	161	2.50	3.30	8.2	14.7			

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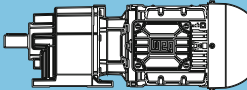
Legend see page 29

P_N = 7.5 kW

IE3

50 Hz 7.5 kW n ₅₀ min ⁻¹	60 Hz 9.0 kW n ₆₀ min ⁻¹	M ₂ Nm	f _B	i	at 50 Hz			m kg	Dimension sheet see page
					F _{rN} kN	F _{aN} kN			
100	120	719	0.85	14.72	6.6	6.0	CG062-11P-L132M-04F CF062-11P-L132M-04F	82 87	168
109	131	660	0.95	13.49	6.7	6.2			
121	147	590	1.05	12.07	6.7	6.4			
132	160	541	1.15	11.07	6.6	6.5			
143	173	501	1.20	10.26	6.5	6.6			
147	178	486	0.80	9.94	6.3	6.1			
156	188	460	1.30	9.40	6.4	6.8			
166	201	432	0.80	8.83	6.1	6.3			
174	210	412	1.40	8.43	6.3	6.9			
179	216	401	0.95	8.20	6.1	6.4			
180	218	398	1.45	8.13	6.2	6.9			
189	229	378	1.40	7.73	6.2	7.0			
196	237	365	1.40	7.46	6.1	7.0			
201	243	356	0.95	7.28	5.9	6.6			
218	263	329	1.15	6.73	5.9	6.7			
219	265	327	1.50	6.69	6.0	7.2			
239	289	300	1.50	6.13	5.9	7.2			
245	296	292	1.15	5.97	5.7	6.8			
256	310	279	1.35	5.71	5.7	6.9			
259	313	277	1.55	5.66	5.8	7.3			
282	341	254	1.55	5.19	5.7	7.4			
289	349	248	1.40	5.07	5.5	7.0			
312	377	230	1.50	4.70	5.5	7.1			
323	391	222	1.50	4.53	5.4	7.2			
351	424	204	1.50	4.17	5.3	7.2			
364	440	197	1.50	4.02	5.2	7.3			
393	475	182	1.60	3.73	5.2	7.3			
443	535	162	1.60	3.31	5.0	7.4			
464	561	154	1.65	3.15	5.0	7.5			
523	632	137	1.65	2.80	4.8	7.5			
140	170	510	0.80	10.43	1.6	5.7	CG052-11P-L132M-04F CF052-11P-L132M-04F	77 82	166
157	190	455	0.85	9.31	3.8	6.0			
173	209	414	0.90	8.46	4.3	6.2			
188	227	381	0.95	7.79	4.3	6.4			
207	250	346	0.95	7.08	4.3	6.5			
211	254	340	0.80	6.96	4.2	6.1			
232	280	309	1.00	6.31	4.3	6.7			
241	291	298	1.05	6.09	4.2	6.7			
242	292	296	0.80	6.05	4.1	6.3			
255	308	281	1.05	5.74	4.2	6.8			
260	314	276	1.00	5.64	4.1	6.5			
265	320	271	1.05	5.54	4.2	6.9			
299	361	240	1.00	4.91	4.0	6.7			
306	370	234	1.10	4.78	4.1	7.0			
310	375	231	1.15	4.72	4.0	6.8			
337	407	213	1.15	4.35	4.0	7.1			
357	431	201	1.05	4.11	3.9	6.9			
383	462	187	1.15	3.83	3.8	7.0			
397	480	180	1.15	3.69	3.8	7.1			
440	532	163	1.10	3.33	3.7	7.1			
456	551	157	1.10	3.21	3.7	7.2			
505	611	142	1.10	2.90	3.6	7.3			
581	702	123	1.15	2.52	3.5	7.4			

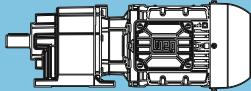
Legend see page 29

P _N = 9.2 kW								IE3	
50 Hz		60 Hz		i	at 50 Hz			m kg	Dimension sheet see page
9.2 kW		11 kW			F _{rN} kN	F _{aN} kN			
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	f _B						
3.4	4.1	23443	0.80	427.56	93.9	19.2	CG164-11P-L132M-04G CF164-11P-L132M-04G	748 771	192
3.5	4.2	22936	0.80	418.32	96.1	19.7			
3.9	4.8	20194	0.90	369.82	106.5	22.2			
4.1	4.9	19634	0.95	360.30	108.3	22.7			
4.7	5.7	16878	1.10	311.64	116.3	25.2			
4.7	5.6	17200	0.80	313.70	84.4	10.3	CG144-11P-L132M-04G CF144-11P-L132M-04G	497 515	188
5.0	6.0	16109	0.85	294.41	88.2	11.4			
5.2	6.2	15456	0.85	282.46	90.3	12.0			
5.4	6.5	14873	0.90	272.37	92.0	12.6			
5.7	6.9	13988	0.95	256.69	94.4	13.5			
6.0	7.3	13207	1.00	242.86	96.4	14.3			
6.3	7.6	12628	1.05	232.69	97.8	14.8			
6.6	8.0	11975	1.10	221.11	99.2	15.5			
6.9	8.3	11445	1.15	211.75	100.4	16.0			
7.7	9.3	10228	1.30	190.40	102.7	17.2			
8.0	9.7	9777	1.35	182.40	103.4	17.7			
9.3	11	8333	1.60	157.07	105.7	19.1			
7.1	8.5	12450	1.05	206.88	98.2	15.0	CG143-11P-L132M-04G CF143-11P-L132M-04G	473 491	186
8.1	9.8	10855	1.20	180.38	101.5	16.6			
8.4	10	10467	1.25	173.94	102.2	17.0			
9.4	11	9350	1.40	155.38	104.2	18.1			
11	13	8052	1.65	133.80	106.1	19.4			
12	15	7033	1.85	116.88	107.4	20.5			
13	16	6816	1.95	113.27	107.6	20.7			
15	18	5943	2.20	98.76	108.5	21.5			
17	21	5119	2.55	85.07	109.3	22.4			
20	24	4408	2.95	73.25	109.8	23.1			
7.6	9.1	10589	0.80	193.13	51.3	17.4	CG134-11P-L132M-04G CF134-11P-L132M-04G	350 352	184
7.9	9.6	10110	0.80	184.39	53.8	18.0			
9.2	11	8682	0.95	159.32	60.2	19.6			
9.3	11	9453	0.85	157.08	57.0	18.7	CG133-11P-L132M-04G CF133-11P-L132M-04G	326 328	182
9.6	12	9115	0.90	151.47	58.5	19.1			
11	13	8167	1.00	135.71	62.2	20.2			
13	15	6989	1.15	116.14	66.0	21.5			
14	17	6129	1.35	101.85	68.2	22.5			
15	18	6036	1.35	100.31	68.5	22.6			
16	20	5414	1.50	89.96	69.9	23.3			
19	23	4699	1.75	78.09	71.3	24.1			
22	26	4060	2.00	67.47	72.3	24.9			
25	31	3475	2.35	57.74	73.2	25.5			
29	35	3001	2.70	49.87	73.7	26.1			
41	50	2137	2.50	35.51	74.5	27.1	CG132-11P-L132M-04G CF132-11P-L132M-04G	317 319	178
49	59	1797	2.00	29.86	74.8	27.4			
72	87	1217	2.50	20.22	75.1	27.8			
86	104	1023	2.00	17.00	75.2	28.1			
16	20	5374	0.85	89.30	30.3	20.4	CG103-11P-L132M-04G CF103-11P-L132M-04G	223 227	178
17	20	5194	0.90	86.31	31.5	20.6			
18	22	4759	0.95	79.08	34.1	21.1			
21	26	4117	1.10	68.41	37.3	22.0			
22	27	3970	1.15	65.97	38.0	22.2			
25	30	3503	1.30	58.21	39.8	22.7			
29	36	2981	1.55	49.54	38.8	23.4			
34	41	2572	1.75	42.74	36.4	23.9			
44	53	1986	1.90	33.01	32.8	24.7			
50	61	1755	2.60	29.16	31.3	25.0	CG102-11P-L132M-04G CF102-11P-L132M-04G	218 222	178
58	70	1523	3.00	25.31	29.5	25.3			
60	72	1469	2.00	24.40	29.1	25.3			
76	92	1153	1.90	19.17	26.8	25.2			
85	103	1032	1.90	17.15	25.8	25.4			
86	104	1019	2.65	16.93	25.6	25.4			
96	117	911	2.65	15.15	24.6	25.6			
103	125	853	2.00	14.17	23.9	25.7			
115	139	763	2.00	12.68	23.0	25.8			

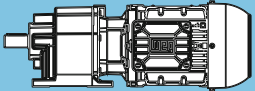
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P_N = 9.2 kW

IE3

50 Hz 9.2 kW n ₅₀ min ⁻¹	60 Hz 11 kW n ₆₀ min ⁻¹	M ₂ Nm	f _b	i	at 50 Hz			m kg	Dimension sheet see page
					F _{rN} kN	F _{aN} kN			
24	29	3688	0.85	61.28	16.5	24.6	CG093-11P-L132M-04G CF093-11P-L132M-04G	181 179	174
29	34	3082	1.00	51.22	22.3	25.4			
30	36	2972	1.05	49.39	23.1	25.6			
33	40	2623	1.10	43.59	25.3	26.1			
40	48	2200	1.25	36.57	27.4	26.7			
47	57	1854	1.40	30.81	28.8	27.3			
37	45	2383	1.25	39.60	26.6	26.5	CG092-11P-L132M-04G CF092-11P-L132M-04G	179 177	174
44	53	2015	1.50	33.48	28.2	27.0			
50	61	1744	1.75	28.98	28.3	27.4			
57	69	1545	1.95	25.67	26.9	27.7			
65	78	1359	1.25	22.58	25.8	27.3			
66	79	1336	2.25	22.20	25.3	28.0			
68	82	1288	2.00	21.41	25.0	28.1			
73	88	1210	1.25	20.10	24.7	27.5			
76	92	1149	1.50	19.09	24.2	27.7			
77	93	1137	2.65	18.89	23.8	28.3			
86	104	1023	1.50	16.99	23.1	27.9			
88	107	995	1.75	16.53	22.8	28.0			
99	120	885	1.75	14.71	21.9	28.2			
100	121	881	2.10	14.64	21.7	28.2			
112	135	784	2.10	13.03	20.9	28.4			
115	139	762	2.40	12.66	20.6	28.5			
120	145	735	2.00	12.21	20.3	28.5			
130	157	678	2.40	11.27	19.7	28.6			
134	162	654	2.00	10.87	19.5	28.6			
136	164	648	2.85	10.77	19.3	28.7			
152	184	577	2.85	9.59	18.6	28.8			
44	53	1991	0.80	33.09	17.0	18.4	CG082-11P-L132M-04G CF082-11P-L132M-04G	127 131	172
52	63	1684	0.95	27.98	19.5	19.1			
59	71	1488	0.80	24.72	20.7	18.8			
61	73	1447	1.05	24.05	20.9	19.5			
66	80	1328	0.80	22.07	21.5	19.1			
68	82	1299	1.05	21.58	21.2	19.3			
70	84	1264	1.15	21.00	20.7	19.9			
76	92	1160	1.05	19.27	20.3	19.6			
77	93	1148	1.15	19.08	20.1	19.7			
81	98	1083	1.25	17.99	19.5	20.3			
84	102	1044	1.30	17.35	19.2	20.4			
86	104	1025	1.15	17.03	19.3	19.9			
91	109	971	1.35	16.13	18.8	20.1			
95	115	921	1.40	15.31	18.3	20.6			
101	123	867	1.30	14.40	18.0	20.3			
105	127	834	1.50	13.87	17.7	20.4			
114	137	773	1.60	12.84	17.0	20.9			
118	143	745	1.40	12.38	17.0	20.6			
121	146	728	1.65	12.10	16.8	20.7			
135	163	651	1.80	10.82	15.9	21.2			
141	170	624	1.80	10.37	15.8	21.0			
146	177	602	1.85	10.00	15.6	21.0			
158	191	557	1.65	9.26	15.1	21.1			
164	198	537	1.70	8.93	14.9	21.1			
165	200	531	2.00	8.83	14.8	21.2			
185	224	474	1.85	7.88	14.2	21.3			
197	238	446	2.25	7.40	13.9	21.4			
221	267	398	2.05	6.61	13.3	21.5			
234	283	375	2.55	6.24	13.0	21.6			
262	317	335	2.30	5.57	12.5	21.6			

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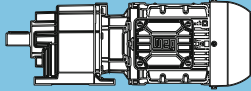
P_N = 9.2 kW							IE3		
50 Hz	60 Hz				at 50 Hz			m kg	Dimension sheet see page
9.2 kW	11 kW								
n₅₀ min ⁻¹	n₆₀ min ⁻¹	M₂ Nm	f_B	i	F_{rN} kN	F_{aN} kN			
97	117	908	0.80	15.09	4.4	12.6	CG072-11P-L132M-04G CF072-11P-L132M-04G	103 107	170
102	123	865	0.80	14.38	4.9	13.0			
112	135	787	0.90	13.08	5.4	13.0			
117	141	753	0.85	12.51	4.5	12.2			
120	145	730	0.90	12.14	6.0	13.4			
125	151	704	0.95	11.71	6.2	13.5			
127	153	693	0.95	11.52	4.6	12.4			
132	160	665	1.00	11.04	6.3	13.4			
137	166	641	1.00	10.65	6.5	13.4			
141	171	622	0.95	10.34	5.7	12.8			
146	177	602	1.05	10.00	6.9	13.7			
153	185	573	1.10	9.53	5.7	12.9			
160	194	547	1.10	9.10	7.1	13.7			
166	201	529	1.05	8.80	6.4	13.2			
178	216	492	1.20	8.18	7.5	14.0			
180	218	488	1.20	8.10	6.4	13.3			
191	231	459	1.20	7.63	6.9	13.5			
196	237	448	1.30	7.44	7.6	14.0			
208	251	423	1.30	7.02	6.8	13.5			
216	261	406	1.35	6.75	7.9	14.3			
227	274	387	1.30	6.44	7.2	13.8			
235	284	374	1.35	6.21	7.3	13.8			
238	287	370	1.45	6.14	7.9	14.3			
246	298	357	1.45	5.93	7.2	13.8			
255	309	344	1.50	5.72	7.3	13.9			
275	333	319	1.50	5.30	7.5	14.0			
299	361	294	1.60	4.89	7.5	14.1			
336	407	261	1.70	4.34	7.7	14.3			
365	441	241	1.80	4.00	7.6	14.3			
408	493	215	1.95	3.58	7.7	14.5			
443	535	198	2.05	3.30	7.6	14.5			
121	146	726	0.85	12.07	6.2	6.0	CG062-11P-L132M-04G CF062-11P-L132M-04G	87 92	168
132	159	666	0.95	11.07	6.1	6.1			
142	172	617	1.00	10.26	6.1	6.3			
155	188	566	1.05	9.40	6.0	6.4			
173	209	507	1.10	8.43	6.0	6.6			
178	215	493	0.80	8.20	5.8	6.0			
180	217	489	1.10	8.13	5.9	6.7			
189	228	465	1.15	7.73	5.9	6.7			
196	237	449	1.15	7.46	5.8	6.8			
201	243	438	0.80	7.28	5.6	6.2			
217	262	405	0.95	6.73	5.6	6.4			
218	264	403	1.20	6.69	5.8	6.9			
238	288	369	1.20	6.13	5.6	7.0			
245	296	359	0.95	5.97	5.5	6.6			
255	309	344	1.10	5.71	5.5	6.7			
258	312	341	1.25	5.66	5.6	7.1			
281	340	312	1.30	5.19	5.5	7.2			
288	348	305	1.10	5.07	5.3	6.8			
311	376	283	1.25	4.70	5.3	6.9			
322	390	273	1.25	4.53	5.2	7.0			
350	423	251	1.20	4.17	5.1	7.0			
363	439	242	1.25	4.02	5.1	7.1			
392	474	224	1.30	3.73	5.0	7.2			
441	534	199	1.30	3.31	4.9	7.2			
463	560	190	1.35	3.15	4.8	7.3			
521	630	168	1.35	2.80	4.7	7.4			

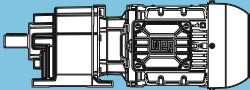
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P_N = 11 kW

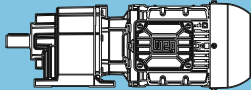
IE3

50 Hz 11 kW n ₅₀ min ⁻¹	60 Hz 13 kW n ₆₀ min ⁻¹	M ₂ Nm	f _b	i	at 50 Hz			m kg	Dimension sheet see page
					F _{rN} kN	F _{aN} kN			
4.1	4.9	23459	0.80	360.30	93.8	19.2	CG164-22P-160M-04E CF164-22P-160M-04E	810 833	192
4.3	5.2	22286	0.85	342.97	98.8	20.3			
4.7	5.7	20208	0.90	311.64	106.4	22.1			
5.0	6.0	19116	0.95	295.40	110.0	23.1			
5.4	6.5	17543	1.05	272.21	114.6	24.6			
5.8	6.9	16433	1.10	255.51	117.5	25.6			
6.3	7.6	15017	1.20	234.46	120.8	26.9			
7.2	8.8	12883	1.40	202.79	125.1	28.8			
7.3	8.8	12825	1.45	202.30	125.2	28.8			
8.4	10	10955	1.65	174.24	128.3	30.5			
9.8	12	9359	1.95	150.71	130.6	32.0			
6.3	7.6	16770	1.10	234.67	116.6	25.3	CG163-22P-160M-04E CF163-22P-160M-04E	764 787	190
7.3	8.8	14444	1.25	202.12	122.0	27.4			
8.4	10	12493	1.45	174.82	125.8	29.1			
9.5	12	11020	1.65	154.21	128.2	30.5			
11	13	9465	1.95	132.44	130.4	31.9			
13	16	8034	2.25	112.42	132.1	33.2			
15	18	6949	2.60	97.24	133.2	34.2			
16	19	6534	2.80	91.43	133.6	34.6			
17	21	6130	2.95	85.78	134.0	34.9			
5.7	6.9	16714	0.80	256.69	86.2	10.7	CG144-22P-160M-04E CF144-22P-160M-04E	559 577	188
6.1	7.3	15781	0.85	242.86	89.2	11.7			
6.3	7.6	15089	0.90	232.69	91.4	12.4			
6.6	8.0	14309	0.95	221.11	93.6	13.2			
6.9	8.4	13703	0.95	211.75	95.2	13.8			
7.7	9.3	12282	1.10	190.97	98.6	15.2			
8.1	9.7	11707	1.15	182.40	99.8	15.8			
8.8	11	10643	1.25	166.50	101.9	16.8			
9.4	11	10019	1.30	157.07	103.0	17.5			
10	12	9092	1.45	143.42	104.6	18.4			
12	14	7749	1.70	123.51	106.5	19.7			
7.1	8.6	14784	0.90	206.88	92.2	12.7			
8.1	9.8	12890	1.05	180.38	97.2	14.6			
9.5	11	11103	1.20	155.38	101.0	16.4			
11	13	9562	1.40	133.80	103.8	17.9			
13	15	8352	1.60	116.88	105.7	19.1			
15	18	7215	1.85	100.96	107.1	20.3			
17	21	6079	2.15	85.07	108.4	21.4			
18	21	5966	2.20	83.49	108.5	21.5			
20	24	5235	2.50	73.25	109.2	22.3			
21	26	4910	2.65	68.70	109.4	22.6			
23	28	4573	2.85	63.99	109.7	22.9			
39	47	2679	2.70	37.48	110.8	24.8			
69	83	1527	2.70	21.37	111.2	25.6			
9.2	11	10373	0.80	159.32	52.5	17.6	CG134-22P-160M-04E CF134-22P-160M-04E	412 414	184
10	12	9421	0.85	144.99	57.1	18.7			
12	14	8090	1.00	125.27	62.4	20.3			
11	13	9698	0.85	135.71	55.9	18.4	CG133-22P-160M-04E CF133-22P-160M-04E	388 390	182
13	15	8300	1.00	116.14	61.7	20.0			
15	18	7168	1.15	100.31	65.4	21.3			
16	20	6429	1.25	89.96	67.5	22.2			
17	21	6062	1.35	84.82	68.4	22.6			
19	23	5580	1.45	78.09	69.5	23.1			
21	26	4946	1.65	69.21	70.8	23.8			
22	26	4822	1.70	67.47	71.0	24.0			
25	31	4126	1.95	57.74	72.2	24.8			
26	32	4013	2.00	56.16	72.4	24.9			
29	36	3564	2.25	49.87	73.0	25.4			
35	42	3013	2.70	42.17	73.7	26.1			
41	50	2538	2.10	35.51	74.2	26.6			
47	57	2213	2.70	30.96	74.5	27.0			
73	88	1445	2.10	20.22	75.0	27.5			
83	101	1260	2.70	17.63	75.1	27.7			

P _N = 11 kW								IE3	
50 Hz		60 Hz		i	at 50 Hz			m kg	Dimension sheet see page
11 kW		13 kW			F _m kN	F _{aN} kN			
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	f _B						
19	22	5652	0.80	79.08	28.2	20.0	CG103-22P-160M-04E CF103-22P-160M-04E	285 289	178
20	25	5174	0.90	72.40	31.6	20.6			
21	26	4889	0.95	68.41	33.4	21.0			
25	30	4207	1.10	58.87	36.9	21.9			
30	36	3540	1.30	49.54	39.2	22.7			
32	39	3289	1.40	46.03	38.1	23.0			
34	42	3054	1.50	42.74	37.1	23.3			
41	50	2562	1.80	35.85	34.4	23.9			
50	61	2083	2.20	29.15	31.7	24.6			
65	78	1629	2.80	22.79	28.7	25.1			
50	61	2084	2.20	29.16	31.7	24.6	CG102-22P-160M-04E CF102-22P-160M-04E	280 284	178
58	70	1809	2.50	25.31	29.9	24.9			
67	81	1563	2.90	21.87	28.3	25.2			
87	105	1210	2.25	16.93	25.8	25.1			
97	117	1082	2.25	15.15	24.8	25.3			
100	121	1050	2.60	14.69	24.5	25.4			
112	135	940	2.60	13.15	23.5	25.5			
116	140	907	3.00	12.70	23.2	25.6			
129	156	812	3.00	11.36	22.3	25.7			
29	35	3660	0.85	51.22	16.8	24.6	CG093-22P-160M-04E CF093-22P-160M-04E	243 241	174
34	41	3115	0.95	43.59	22.0	25.4			
37	45	2850	0.95	39.88	23.9	25.8			
40	49	2613	1.05	36.57	25.3	26.1			
48	58	2202	1.15	30.81	27.4	26.7			
50	60	2118	1.15	29.63	27.8	26.9			
58	70	1805	1.30	25.26	27.2	27.3			
73	89	1433	1.50	20.05	24.8	27.9			
99	119	1065	1.80	14.90	22.0	28.4			
57	69	1834	1.65	25.67	27.4	27.3	CG092-22P-160M-04E CF092-22P-160M-04E	241 239	174
66	80	1587	1.90	22.20	25.8	27.7			
78	94	1350	2.25	18.89	24.1	28.0			
91	110	1149	2.65	16.08	22.7	28.3			
100	121	1046	1.75	14.64	22.1	27.9			
113	136	931	1.75	13.03	21.1	28.1			
116	140	905	2.05	12.66	20.8	28.2			
130	157	805	2.05	11.27	20.0	28.3			
136	165	770	2.40	10.77	19.6	28.5			
153	185	685	2.40	9.59	18.8	28.6			
160	194	655	2.80	9.17	18.4	28.7			
180	218	583	2.80	8.16	17.6	28.8			
70	85	1501	0.95	21.00	20.6	19.4	CG082-22P-160M-04E CF082-22P-160M-04E	189 193	172
82	99	1286	1.10	17.99	19.8	19.9			
96	116	1094	1.20	15.31	18.5	20.3			
114	138	918	1.35	12.84	17.3	20.6			
121	147	865	1.40	12.10	17.0	20.4			
136	164	773	1.50	10.82	16.1	20.9			
142	171	741	1.55	10.37	16.0	20.7			
159	192	662	1.40	9.26	15.3	20.8			
166	200	634	1.75	8.87	14.9	21.2			
167	201	631	1.70	8.83	15.0	20.9			
187	225	563	1.55	7.88	14.4	21.1			
199	240	529	1.90	7.40	14.0	21.2			
209	252	503	2.05	7.04	13.7	21.5			
222	269	472	1.75	6.61	13.5	21.3			
236	284	446	2.15	6.24	13.1	21.4			
264	319	398	1.90	5.57	12.6	21.5			
281	339	374	2.50	5.23	12.2	21.7			
287	347	366	2.45	5.12	12.2	21.6			
322	389	326	2.15	4.57	11.7	21.7			
362	437	290	2.80	4.06	11.2	21.8			
406	490	259	2.50	3.63	10.7	21.8			
546	659	193	3.00	2.69	9.6	22.0			

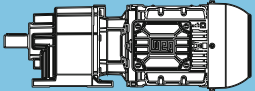
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P _N = 11 kW							IE3		
50 Hz	60 Hz				at 50 Hz			m kg	Dimension sheet see page
11 kW	13 kW								
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	f _B	i	F _{rN} kN	F _{aN} kN			
121	146	867	0.80	12.14	3.9	13.0	CG072-22P-160M-04E CF072-22P-160M-04E	165 169	170
133	161	789	0.85	11.04	4.4	13.0			
147	178	715	0.90	10.00	5.1	13.4			
162	195	650	0.95	9.10	5.5	13.4			
180	217	585	1.00	8.18	6.0	13.8			
193	233	545	1.00	7.63	5.4	13.1			
197	238	532	1.10	7.44	6.3	13.8			
209	253	502	1.10	7.02	5.4	13.2			
218	263	482	1.15	6.75	6.7	14.1			
228	276	460	1.10	6.44	6.0	13.4			
239	289	439	1.25	6.14	6.8	14.1			
248	299	424	1.25	5.93	6.0	13.5			
277	334	379	1.35	5.31	7.2	14.4			
301	363	349	1.35	4.89	6.5	13.9			
304	368	345	1.45	4.83	7.2	14.3			
339	409	310	1.45	4.34	6.8	14.1			
368	444	286	1.55	4.00	6.8	14.1			
411	496	256	1.65	3.58	7.0	14.3			
446	538	236	1.70	3.30	6.9	14.4			
522	630	201	1.95	2.82	7.1	14.5			
567	684	185	1.95	2.59	6.9	14.6			

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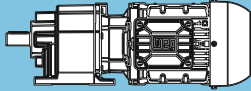
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P_N = 15 kW								IE3	
50 Hz		60 Hz		i	at 50 Hz			m kg	Dimension sheet see page
15 kW		18 kW			F_{rN} kN	F_{aN} kN			
n₅₀ min ⁻¹	n₆₀ min ⁻¹	M₂ Nm	f_B						
5.7	6.9	22764	0.80	255.51	96.8	19.8	CG164-22P-160L-04F CF164-22P-160L-04F	833 856	192
6.2	7.6	20803	0.90	234.46	104.4	21.6			
7.2	8.8	17883	1.05	202.79	113.6	24.3			
8.4	10	15271	1.20	174.24	120.2	26.6			
9.7	12	13100	1.40	150.71	124.7	28.6			
6.2	7.6	22946	0.80	234.67	96.0	19.7	CG163-22P-160L-04F CF163-22P-160L-04F	787 810	190
7.2	8.8	19763	0.95	202.12	107.9	22.5			
8.4	10	17094	1.10	174.82	115.8	25.0			
9.5	12	15079	1.20	154.21	120.7	26.8			
11	13	12950	1.40	132.44	125.0	28.7			
13	16	10993	1.65	112.42	128.3	30.5			
15	18	9509	1.90	97.24	130.4	31.9			
16	19	8940	2.05	91.43	131.1	32.4			
17	21	8387	2.15	85.78	131.8	32.9			
20	24	7203	2.50	73.67	133.0	34.0			
7.7	9.3	17013	0.80	190.97	85.1	10.4	CG144-22P-160L-04F CF144-22P-160L-04F	582 600	188
8.0	9.7	16217	0.85	182.40	87.8	11.2			
8.8	11	14773	0.90	166.50	92.3	12.7			
9.3	11	13908	0.95	157.07	94.6	13.6			
10	12	12647	1.05	143.42	97.7	14.8			
12	14	10802	1.25	123.51	101.6	16.7			
9.4	11	15193	0.90	155.38	91.0	12.3	CG143-22P-160L-04F CF143-22P-160L-04F	558 576	186
11	13	13083	1.00	133.80	96.7	14.4			
13	15	11428	1.15	116.88	100.4	16.0			
15	18	9872	1.35	100.96	103.3	17.6			
17	21	8318	1.60	85.07	105.7	19.2			
18	21	8164	1.60	83.49	105.9	19.3			
20	24	7163	1.85	73.25	107.2	20.3			
21	26	6718	1.95	68.70	107.7	20.8			
23	28	6257	2.10	63.99	108.2	21.2			
27	32	5405	2.45	55.27	109.0	22.1			
32	39	4470	2.95	45.71	109.8	23.0			
39	47	3665	1.95	37.48	110.3	23.8			
45	55	3157	3.00	32.28	110.6	24.3			
69	83	2090	1.95	21.37	111.0	24.9			
80	96	1800	3.00	18.41	111.1	25.3			
15	18	9809	0.85	100.31	55.3	18.3	CG133-22P-160L-04F CF133-22P-160L-04F	411 413	182
16	20	8796	0.95	89.96	59.8	19.5			
17	21	8294	1.00	84.82	61.7	20.0			
19	23	7636	1.05	78.09	64.0	20.8			
21	26	6768	1.20	69.21	66.6	21.8			
22	26	6597	1.25	67.47	67.0	22.0			
25	31	5646	1.45	57.74	69.4	23.1			
26	32	5491	1.50	56.16	69.7	23.2			
29	36	4876	1.65	49.87	70.9	23.9			
35	42	4123	1.95	42.17	72.2	24.8			
43	52	3365	2.40	34.41	73.3	25.7			
52	64	2730	2.95	27.92	74.0	26.4			
41	50	3472	1.55	35.51	73.2	25.5			
47	57	3028	1.95	30.96	73.7	26.0			
55	67	2608	3.00	26.67	74.1	26.5			
72	88	1977	1.55	20.22	74.7	26.7			
83	101	1724	1.95	17.63	74.8	27.1			
96	117	1485	3.00	15.19	75.0	27.4			
25	30	5756	0.80	58.87	27.3	19.9	CG103-22P-160L-04F CF103-22P-160L-04F	308 312	178
30	36	4844	0.95	49.54	33.7	21.0			
32	39	4501	1.00	46.03	35.5	21.5			
34	42	4179	1.10	42.74	37.1	21.9			
41	50	3505	1.30	35.85	35.8	22.7			
50	61	2850	1.60	29.15	32.9	23.6			
64	78	2228	2.05	22.79	29.7	24.4			

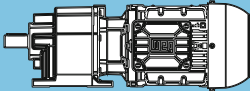
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P_N = 15 kW

IE3

50 Hz 15 kW n ₅₀ min ⁻¹	60 Hz 18 kW n ₆₀ min ⁻¹	M ₂ Nm	f _b	i	at 50 Hz			m kg	Dimension sheet see page			
					F _{rN} kN	F _{aN} kN						
50	61	2851	1.60	29.16	32.9	23.6	CG102-22P-160L-04F CF102-22P-160L-04F	303 307	178			
58	70	2475	1.85	25.31	30.9	24.1						
67	81	2138	2.15	21.87	29.1	24.5						
78	95	1830	2.50	18.71	27.4	24.9						
87	105	1655	1.65	16.93	26.6	24.3						
91	110	1580	2.85	16.16	25.8	25.2						
97	117	1481	1.65	15.15	25.5	24.5						
100	121	1437	1.90	14.69	25.1	24.7						
111	135	1286	1.90	13.15	24.2	24.9						
115	140	1241	2.20	12.70	23.8	25.0						
129	156	1111	2.20	11.36	22.8	25.2						
135	163	1062	2.55	10.86	22.3	25.3						
151	183	951	2.55	9.72	21.4	25.5						
156	189	918	2.95	9.38	21.1	25.6						
174	211	821	2.95	8.40	20.3	25.7						
48	58	3013	0.85	30.81	22.8	25.5				CG093-22P-160L-04F CF093-22P-160L-04F	266 264	174
49	60	2898	0.85	29.63	23.6	25.7						
58	70	2470	0.95	25.26	26.1	26.4						
73	89	1961	1.10	20.05	25.7	27.1						
98	119	1457	1.35	14.90	22.7	27.8						
57	69	2510	1.20	25.67	25.9	26.3	CG092-22P-160L-04F CF092-22P-160L-04F	264 262	174			
66	80	2171	1.40	22.20	26.8	26.8						
78	94	1847	1.65	18.89	25.0	27.3						
91	110	1572	1.95	16.08	23.4	27.7						
100	121	1431	1.30	14.64	22.8	27.1						
106	128	1356	2.25	13.87	22.0	28.0						
112	136	1274	1.30	13.03	21.8	27.4						
116	140	1238	1.50	12.66	21.5	27.5						
126	153	1138	2.65	11.63	20.5	28.3						
130	157	1102	1.50	11.27	20.6	27.7						
136	165	1053	1.75	10.77	20.1	27.9						
153	185	938	1.75	9.59	19.3	28.1						
160	194	896	2.05	9.17	18.9	28.2						
180	218	798	2.05	8.16	18.1	28.3						
185	224	773	2.40	7.91	17.8	28.4						
208	252	688	2.40	7.04	17.1	28.6						
221	268	649	2.85	6.63	16.6	28.7						
248	301	577	2.85	5.91	16.0	28.8						
81	99	1759	0.80	17.99	18.9	18.9	CG082-22P-160L-04F CF082-22P-160L-04F	212 216	172			
96	116	1497	0.90	15.31	19.3	19.4						
114	138	1256	1.00	12.84	17.9	19.9						
121	147	1184	1.00	12.10	17.7	19.6						
135	164	1058	1.10	10.82	16.7	20.3						
136	164	1057	0.95	10.81	16.9	19.8						
141	171	1014	1.15	10.37	16.6	20.0						
158	192	905	1.05	9.26	15.9	20.2						
165	200	868	1.30	8.87	15.4	20.7						
166	201	863	1.25	8.83	15.5	20.4						
186	225	771	1.15	7.88	14.9	20.5						
198	240	724	1.40	7.40	14.4	20.7						
208	252	689	1.50	7.04	14.0	21.1						
222	269	646	1.25	6.61	13.8	20.9						
235	284	610	1.55	6.24	13.5	21.0						
263	319	545	1.40	5.57	12.9	21.1						
280	339	512	1.85	5.23	12.5	21.5						
286	347	500	1.80	5.12	12.5	21.3						
321	389	447	1.60	4.57	12.0	21.4						
361	437	397	2.05	4.06	11.4	21.5						
404	490	354	1.85	3.63	11.0	21.6						
486	588	295	2.50	3.02	10.2	21.8						
544	659	263	2.20	2.69	9.8	21.8						

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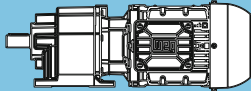
P _N = 15 kW								IE3	
50 Hz		60 Hz		i	at 50 Hz			m kg	Dimension sheet see page
15 kW		18 kW			F _{rN} kN	F _{aN} kN			
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	f _B						
197	238	728	0.80	7.44	3.3	13.2	CG072-22P-160L-04F CF072-22P-160L-04F	188 192	170
209	253	687	0.80	7.02	2.2	12.4			
217	263	660	0.85	6.75	4.0	13.6			
228	276	630	0.80	6.44	3.1	12.7			
239	289	600	0.90	6.14	4.4	13.6			
247	299	580	0.90	5.93	3.3	12.9			
276	334	519	1.00	5.31	5.1	14.0			
300	363	478	1.00	4.89	4.2	13.3			
303	368	472	1.05	4.83	5.3	14.0			
338	409	424	1.05	4.34	4.9	13.6			
366	444	391	1.15	4.00	4.9	13.7			
409	496	350	1.20	3.58	5.4	13.9			
444	538	322	1.25	3.30	5.4	14.0			
520	630	275	1.40	2.82	5.8	14.2			
565	684	254	1.45	2.59	5.7	14.3			

C

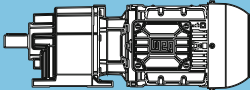
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P_N = 18.5 kW

IE3

50 Hz 18.5 kW	60 Hz 22 kW	M ₂ Nm	f _b	i	at 50 Hz			m kg	Dimension sheet see page
					F _{rN} kN	F _{aN} kN			
					n ₅₀ min ⁻¹	n ₆₀ min ⁻¹			
7.2	8.8	22162	0.85	202.79	99.3	20.4	CG164-22P-180M-04E CF164-22P-180M-04E	847 870	192
7.3	8.8	22108	0.85	202.30	99.5	20.4			
8.4	10	18963	0.95	174.24	110.5	23.3			
9.8	12	16268	1.15	150.71	117.9	25.7			
8.4	10	21011	0.90	174.82	103.6	21.4	CG163-22P-180M-04E CF163-22P-180M-04E	801 824	190
9.5	12	18534	1.00	154.21	111.7	23.7			
11	13	15918	1.15	132.44	118.7	26.0			
13	16	13244	1.40	110.19	124.4	28.5			
15	18	11687	1.55	97.24	127.2	29.9			
16	19	10989	1.65	91.43	128.3	30.5			
17	21	10309	1.75	85.78	129.3	31.1			
19	23	9164	2.00	76.25	130.8	32.2			
20	24	8854	2.05	73.67	131.2	32.5			
24	29	7367	2.45	61.29	132.8	33.8			
29	35	6112	2.95	50.86	134.0	34.9			
11	13	16081	0.85	133.80	88.3	11.4	CG143-22P-180M-04E CF143-22P-180M-04E	572 590	186
13	15	14047	0.95	116.88	94.3	13.4			
15	18	12134	1.10	100.96	98.9	15.3			
17	21	10224	1.30	85.07	102.7	17.3			
18	21	10034	1.30	83.49	103.0	17.4			
20	24	8804	1.50	73.25	105.0	18.7			
21	26	8257	1.60	68.70	105.8	19.2			
23	28	7691	1.70	63.99	106.5	19.8			
26	31	6787	1.95	56.47	107.6	20.7			
27	32	6643	2.00	55.27	107.8	20.8			
32	39	5494	2.40	45.71	108.9	22.0			
39	47	4521	2.90	37.61	109.7	23.0			
39	47	4505	1.60	37.48	109.7	23.0	CG142-22P-180M-04E CF142-22P-180M-04E	558 576	186
46	55	3880	2.45	32.28	110.2	23.6			
69	83	2569	1.60	21.37	110.9	24.3			
80	96	2213	2.45	18.41	111.0	24.8			
17	21	10194	0.80	84.82	53.4	17.9	CG133-22P-180M-04E CF133-22P-180M-04E	425 427	182
19	23	9385	0.90	78.09	57.3	18.8			
21	26	8319	1.00	69.21	61.6	20.0			
22	26	8109	1.00	67.47	62.4	20.2			
25	31	6939	1.20	57.74	66.1	21.6			
26	32	6749	1.20	56.16	66.6	21.8			
29	36	5994	1.35	49.87	68.6	22.7			
33	40	5388	1.50	44.83	69.9	23.3			
35	42	5068	1.60	42.17	70.6	23.7			
43	52	4136	1.95	34.41	72.2	24.8			
53	64	3355	2.40	27.92	73.3	25.7			
66	80	2679	3.00	22.29	74.1	26.4			
47	57	3721	1.60	30.96	72.8	25.2	CG132-22P-180M-04E CF132-22P-180M-04E	416 418	182
55	67	3205	2.45	26.67	73.5	25.8			
64	77	2760	2.90	22.97	74.0	26.3			
83	101	2119	1.60	17.63	74.5	26.5			
97	117	1825	2.45	15.19	74.8	26.9			
30	36	5954	0.80	49.54	25.5	19.6	CG103-22P-180M-04E CF103-22P-180M-04E	322 326	178
32	39	5532	0.85	46.03	29.1	20.2			
34	42	5136	0.90	42.74	31.9	20.7			
40	48	4407	1.05	36.67	36	21.6			
41	50	4309	1.05	35.85	36.5	21.7			
50	61	3503	1.30	29.15	33.8	22.7			
65	78	2739	1.65	22.79	30.3	23.7			
81	98	2182	2.10	18.16	27.6	24.4			

Legend see page 29

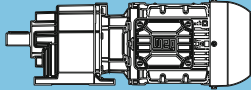
P _N = 18.5 kW								IE3	
50 Hz		60 Hz		i	at 50 Hz			m kg	Dimension sheet see page
18.5 kW		22 kW			F _{rN} kN	F _{aN} kN			
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	f _B						
58	70	3042	1.50	25.31	31.8	23.3	CG102-22P-180M-04E CF102-22P-180M-04E	317 321	178
67	81	2628	1.75	21.87	29.9	23.9			
79	95	2249	2.05	18.71	27.9	24.3			
91	110	1943	2.35	16.16	26.3	24.7			
100	121	1766	1.55	14.69	25.7	24.1			
108	130	1643	2.75	13.67	24.6	25.1			
112	135	1580	1.55	13.15	24.6	24.4			
116	140	1526	1.80	12.70	24.2	24.5			
129	156	1365	1.80	11.36	23.2	24.8			
135	163	1306	2.10	10.86	22.7	24.9			
151	183	1168	2.10	9.72	21.8	25.1			
157	189	1128	2.40	9.38	21.4	25.2			
175	211	1009	2.40	8.40	20.6	25.4			
185	224	954	2.85	7.93	20.1	25.5			
207	250	853	2.85	7.10	19.3	25.7			
66	80	2669	1.15	22.20	25.0	26.1	CG092-22P-180M-04E CF092-22P-180M-04E	278 276	174
78	94	2270	1.35	18.89	25.7	26.6			
91	110	1932	1.60	16.08	24.0	27.1			
106	128	1667	1.80	13.87	22.6	27.5			
116	140	1522	1.20	12.66	22.0	26.9			
126	153	1398	2.15	11.63	21.0	27.9			
130	157	1355	1.20	11.27	21.1	27.2			
136	165	1295	1.45	10.77	20.6	27.4			
153	185	1152	1.45	9.59	19.7	27.6			
155	188	1137	2.50	9.46	19.3	28.3			
160	194	1102	1.70	9.17	19.3	27.8			
180	218	981	1.70	8.16	18.4	28.0			
186	224	951	1.95	7.91	18.1	28.1			
199	240	889	2.95	7.40	17.5	28.7			
209	252	846	1.95	7.04	17.4	28.2			
222	268	797	2.30	6.63	16.9	28.4	CG082-22P-180M-04E CF082-22P-180M-04E	226 230	172
249	301	710	2.30	5.91	16.2	28.5			
272	329	648	2.85	5.39	15.6	28.7			
306	370	577	2.85	4.80	15.0	28.8			
114	138	1544	0.80	12.84	18.5	19.3			
136	164	1301	0.90	10.82	17.1	19.8			
142	171	1246	0.90	10.37	17.1	19.4			
159	192	1113	0.85	9.26	16.3	19.7			
166	200	1066	1.05	8.87	15.7	20.3			
167	201	1061	1.00	8.83	15.9	19.9			
187	225	947	0.95	7.88	15.2	20.1			
199	240	890	1.15	7.40	14.8	20.3			
209	252	846	1.20	7.04	14.3	20.8			
222	269	795	1.05	6.61	14.2	20.5			
236	284	750	1.30	6.24	13.8	20.6			
264	319	670	1.15	5.57	13.2	20.8			
281	339	629	1.50	5.23	12.7	21.2			
287	347	615	1.45	5.12	12.7	21.0			
322	389	549	1.30	4.57	12.2	21.1			
362	437	488	1.70	4.06	11.6	21.3			
406	490	436	1.50	3.63	11.1	21.4			
487	588	363	2.05	3.02	10.3	21.6			
546	659	324	1.80	2.69	9.9	21.7			

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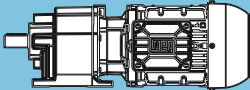
Legend see page 29

P_N = 22 kW

IE3

50 Hz 22 kW n ₅₀ min ⁻¹	60 Hz 26 kW n ₆₀ min ⁻¹	M ₂ Nm	f _B	i	at 50 Hz			m kg	Dimension sheet see page
					F _{rN} kN	F _{aN} kN			
					8.4 9.8	10 12			
9.5 11 13 15 16 17 19 20 24 29 35	12 13 16 18 19 21 23 24 29 35 42	22040 18929 16068 13898 13068 12260 10898 10529 8760 7269 6062	0.85 1.00 1.15 1.30 1.40 1.50 1.70 1.75 2.10 2.50 3.00	154.21 132.44 112.42 97.24 91.43 85.78 76.25 73.67 61.29 50.86 42.41	99.8 110.6 118.4 123.2 124.8 126.2 128.4 129.0 131.3 132.9 134.0	20.5 23.3 25.9 27.9 28.6 29.4 30.6 30.9 32.5 33.9 35.0	CG163-22P-180L-04F CF163-22P-180L-04F	822 845	190
45 83	54 100	4717 2529	3.00 3.00	33.00 17.70	135 136	36.2 37.9	CG162-22P-180L-04F CF162-22P-180L-04F	797 820	190
13 15 17 18 20 21 23 26 27 32 39 39 48	15 18 21 21 24 26 28 31 32 39 47 57	16704 14429 12158 11933 10470 9819 9146 8071 7900 6533 5376 4419	0.80 0.95 1.10 1.10 1.25 1.35 1.45 1.65 1.65 2.00 2.45 2.90	116.88 100.96 85.07 83.49 73.25 68.70 63.99 56.47 55.27 45.71 37.61 30.92	86.2 93.2 98.8 99.3 102.2 103.4 104.5 106.0 106.3 107.9 109.0 109.8	10.8 13.0 15.3 15.5 17.0 17.7 18.3 19.4 19.6 21.0 22.1 23.1	CG143-22P-180L-04F CF143-22P-180L-04F	593 611	186
39 46 53 69 80 92	47 55 64 83 96 111	5357 4614 3991 3055 2631 2276	1.35 2.05 2.95 1.35 2.05 2.95	37.48 32.28 27.92 21.37 18.41 15.92	109.1 109.7 110.1 110.6 110.8 111.0	22.1 22.9 23.5 23.7 24.3 24.7	CG142-22P-180L-04F CF142-22P-180L-04F	579 597	186
21 22 25 26 29 33 35 43 53 66	26 26 31 32 36 40 42 52 64 80	9892 9643 8252 8026 7127 6408 6027 4918 3990 3186	0.85 0.85 1.00 1.00 1.15 1.25 1.35 1.65 2.05 2.55	69.21 67.47 57.74 56.16 49.87 44.83 42.17 34.41 27.92 22.29	54.9 56.1 61.9 62.7 65.6 67.5 68.5 70.9 72.4 73.5	18.2 18.5 20.1 20.3 21.4 22.2 22.6 23.9 24.9 25.9	CG133-22P-180L-04F CF133-22P-180L-04F	446 448	182
47 55 64 73 83 97 112	57 67 77 88 101 117 136	4425 3812 3283 2867 2520 2170 1869	1.35 2.05 2.45 2.80 1.35 2.05 2.65	30.96 26.67 22.97 20.06 17.63 15.19 13.08	71.7 72.7 73.4 73.9 74.2 74.5 74.5	24.4 25.1 25.8 26.2 26.0 26.5 26.9	CG132-22P-180L-04F CF132-22P-180L-04F	437 439	182
40 41 50 65 81	48 50 61 78 98	5241 5124 4166 3257 2595	0.90 0.90 1.10 1.40 1.75	36.67 35.85 29.15 22.79 18.16	31.2 32.0 34.8 31.0 28.2	20.5 20.7 21.9 23.1 23.9	CG103-22P-180L-04F CF103-22P-180L-04F	343 347	178

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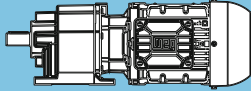
P _N = 22 kW								IE3	
50 Hz	60 Hz				at 50 Hz			m kg	Dimension sheet see page
22 kW	26 kW	M ₂	f _B	i	F _{rN}	F _{aN}			
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	Nm			kN	kN			
58	70	3617	1.25	25.31	32.6	22.6	CG102-22P-180L-04F CF102-22P-180L-04F	338 342	178
67	81	3125	1.45	21.87	30.6	23.2			
79	95	2675	1.70	18.71	28.5	23.8			
91	110	2310	1.95	16.16	26.9	24.3			
100	121	2100	1.30	14.69	26.2	23.5			
108	130	1953	2.35	13.67	25.1	24.7			
112	135	1879	1.30	13.15	25.1	23.8			
116	140	1815	1.50	12.70	24.6	24.0			
129	156	1624	1.50	11.36	23.6	24.3			
132	159	1594	2.85	11.15	23.1	25.2			
135	163	1553	1.75	10.86	23.1	24.5			
151	183	1389	1.75	9.72	22.2	24.7			
157	189	1341	2.05	9.38	21.8	24.9			
175	211	1200	2.05	8.40	20.9	25.1			
185	224	1134	2.40	7.93	20.4	25.2			
207	250	1015	2.40	7.10	19.6	25.4			
227	274	925	2.95	6.47	18.8	25.6			
254	306	828	2.95	5.79	18.1	25.7			
66	80	3173	0.95	22.20	21.6	25.3	CG092-22P-180L-04F CF092-22P-180L-04F	299 297	174
78	94	2700	1.15	18.89	24.8	26.0			
91	110	2298	1.35	16.08	24.7	26.6			
106	128	1982	1.55	13.87	23.1	27.1			
116	140	1810	1.05	12.66	22.6	26.4			
126	153	1663	1.80	11.63	21.5	27.5			
130	157	1611	1.05	11.27	21.6	26.7			
136	165	1540	1.20	10.77	21.1	26.9			
153	185	1370	1.20	9.59	20.1	27.2			
155	188	1352	2.10	9.46	19.7	28.0			
160	194	1310	1.40	9.17	19.7	27.4			
180	218	1166	1.40	8.16	18.8	27.6			
186	224	1130	1.65	7.91	18.5	27.7			
199	240	1057	2.50	7.40	17.8	28.4			
209	252	1006	1.65	7.04	17.7	27.9			
222	268	948	1.95	6.63	17.2	28.1			
249	301	844	1.95	5.91	16.5	28.3			
272	329	771	2.40	5.39	15.8	28.4			
306	370	686	2.40	4.80	15.2	28.6			
142	171	1482	0.80	10.37	17.5	18.8	CG082-22P-180L-04F CF082-22P-180L-04F	247 251	172
166	200	1268	0.90	8.87	16.1	19.9			
167	201	1261	0.85	8.83	16.3	19.4			
187	225	1126	0.80	7.88	15.6	19.6			
199	240	1058	0.95	7.40	15.1	19.9			
209	252	1007	1.05	7.04	14.6	20.4			
222	269	945	0.90	6.61	14.5	20.1			
236	284	892	1.10	6.24	14.1	20.3			
264	319	796	0.95	5.57	13.5	20.5			
281	339	748	1.25	5.23	12.9	21.0			
287	347	731	1.25	5.12	13.0	20.7			
322	389	653	1.10	4.57	12.4	20.8			
362	437	580	1.40	4.06	11.8	21.1			
406	490	518	1.25	3.63	11.3	21.2			
487	588	431	1.75	3.02	10.5	21.4			
546	659	385	1.50	2.69	10.0	21.5			

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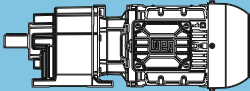
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P_N = 30 kW

IE3

50 Hz 30 kW n ₅₀ min ⁻¹	60 Hz 36 kW n ₆₀ min ⁻¹	M ₂ Nm	f _B	i	at 50 Hz			m kg	Dimension sheet see page			
					F _{rN} kN	F _{aN} kN						
13	16	21331	0.85	110.19	102.5	21.1	CG163-22P-200L-04E CF163-22P-200L-04E	880 903	190			
15	18	18824	1.00	97.24	110.9	23.4						
16	19	17699	1.05	91.43	114.1	24.4						
17	21	16605	1.10	85.78	117.0	25.4						
19	23	14760	1.25	76.25	121.4	27.1						
20	24	14261	1.30	73.67	122.4	27.5						
23	27	12687	1.45	65.54	125.5	29.0						
24	29	11865	1.55	61.29	126.9	29.7						
26	31	10979	1.65	56.72	128.3	30.5						
29	35	9845	1.85	50.86	129.9	31.6						
35	42	8210	2.20	42.41	132.0	33.0	CG162-22P-200L-04E CF162-22P-200L-04E	855 878	190			
41	49	7057	2.60	36.45	133.1	34.1						
47	56	6107	2.90	31.55	134.0	35.0						
45	54	6388	2.20	33.00	133.7	34.7						
84	101	3426	2.20	17.70	135.7	37.0						
18	21	16162	0.85	83.49	88.0	11.3				CG143-22P-200L-04E CF143-22P-200L-04E	651 669	186
20	24	14181	0.95	73.25	93.9	13.3						
22	26	13300	1.00	68.70	96.2	14.2						
23	28	12387	1.05	63.99	98.3	15.1						
26	32	10932	1.20	56.47	101.4	16.5						
27	32	10700	1.25	55.27	101.8	16.8						
31	37	9282	1.45	47.95	104.3	18.2						
32	39	8849	1.50	45.71	104.9	18.6						
36	43	7923	1.65	40.93	106.2	19.6						
39	47	7282	1.80	37.61	107.1	20.2						
48	58	5985	2.15	30.92	108.5	21.5	CG142-22P-200L-04E CF142-22P-200L-04E	637 655	186			
56	68	5082	2.40	26.25	109.3	22.4						
66	79	4338	2.70	22.41	109.9	23.2						
53	64	5405	2.20	27.92	109.0	22.1						
60	72	4768	2.75	24.63	109.5	22.7						
93	112	3082	2.20	15.92	110.6	23.7						
105	127	2719	3.00	14.05	110.8	24.2						
30	36	9654	0.85	49.87	56.1	18.5				CG133-22P-200L-04E CF133-22P-200L-04E	504 506	182
33	40	8679	0.95	44.83	60.2	19.6						
35	42	8163	1.00	42.17	62.2	20.2						
40	48	7204	1.15	37.21	65.3	21.3						
43	52	6661	1.25	34.41	66.9	21.9						
53	64	5404	1.50	27.92	69.9	23.3						
66	80	4315	1.90	22.29	71.9	24.6						
80	96	3581	2.25	18.50	73.0	25.4						
64	78	4446	1.80	22.97	71.7	24.4	CG132-22P-200L-04E CF132-22P-200L-04E	495 497	182			
74	89	3884	2.10	20.06	72.6	25.1						
85	103	3355	2.40	17.33	73.3	25.7						
103	124	2774	2.90	14.33	72.1	26.3						
113	136	2531	1.95	13.08	69.3	25.9						
130	156	2211	2.25	11.42	68.1	26.4						
150	180	1910	2.60	9.87	66.8	26.8						
79	95	3622	1.25	18.71	29.9	22.6				CG102-22P-200L-04E CF102-22P-200L-04E	396 400	178
92	110	3129	1.45	16.16	28.0	23.2						
108	130	2646	1.75	13.67	26.1	23.8						
133	160	2159	2.10	11.15	23.9	24.5						
136	164	2103	1.30	10.86	24.0	23.5						
152	183	1882	1.30	9.72	23.0	23.8						
158	190	1817	1.50	9.38	22.5	24.0						
164	197	1752	2.60	9.05	21.9	25.0						
176	212	1625	1.50	8.40	21.6	24.3						
187	224	1536	1.80	7.93	21.0	24.5						
208	251	1374	1.80	7.10	20.1	24.7						
229	275	1253	2.20	6.47	19.3	25.0						
255	307	1122	2.20	5.79	18.6	25.2						
282	339	1017	2.70	5.25	17.8	25.4						
315	379	910	2.70	4.70	17.1	25.6						

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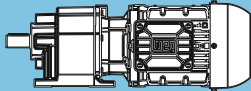
P _N = 30 kW								IE3	
50 Hz	60 Hz				at 50 Hz			m kg	Dimension sheet see page
30 kW	36 kW								
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	f _B	i	F _{rN} kN	F _{aN} kN			
92	111	3112	1.00	16.08	22.1	25.4	CG092-22P-200L-04E CF092-22P-200L-04E	357 355	174
107	128	2685	1.15	13.87	24.3	26.0			
127	153	2252	1.35	11.63	22.4	26.7			
156	188	1831	1.55	9.46	20.5	27.3			
161	194	1775	1.05	9.17	20.5	26.4			
181	218	1580	1.05	8.16	19.6	26.7			
187	225	1531	1.20	7.91	19.2	26.9			
200	241	1432	1.85	7.40	18.4	27.9			
210	253	1363	1.20	7.04	18.4	27.2			
223	268	1284	1.45	6.63	17.8	27.4			
251	301	1143	1.45	5.91	17.0	27.6			
274	330	1044	1.75	5.39	16.3	27.9			
308	371	930	1.75	4.80	15.6	28.1			
351	422	816	2.25	4.22	14.8	28.4			
394	474	727	2.25	3.75	14.1	28.5			
440	530	651	2.80	3.36	13.5	28.7			
495	595	579	2.80	2.99	12.9	28.8			

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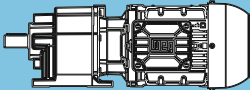
Legend see page 29

P_N = 37 kW

IE3

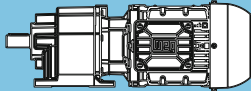
50 Hz 37 kW n ₅₀ min ⁻¹	60 Hz 44 kW n ₆₀ min ⁻¹	M ₂ Nm	f _b	i	at 50 Hz			m kg	Dimension sheet see page			
					F _{rN} kN	F _{aN} kN						
15	18	23217	0.80	97.24	94.9	19.4	CG163-22P-200L-04F CF163-22P-200L-04F	907 930	190			
16	19	21829	0.85	91.43	100.6	20.7						
17	21	20479	0.90	85.78	105.5	21.9						
19	23	18204	1.00	76.25	112.7	24.0						
20	24	17588	1.05	73.67	114.4	24.5						
23	27	15647	1.20	65.54	119.4	26.3						
24	29	14634	1.25	61.29	121.6	27.2						
26	31	13541	1.35	56.72	123.9	28.2						
29	35	12142	1.50	50.86	126.4	29.5						
35	42	10126	1.80	42.41	129.6	31.3						
41	49	8703	2.10	36.45	131.4	32.6	CG162-22P-200L-04F CF162-22P-200L-04F	882 905	190			
47	56	7532	2.35	31.55	132.7	33.7						
45	54	7879	1.80	33.00	132.3	33.3						
59	71	6005	3.00	25.15	134.1	35.0						
84	101	4225	1.80	17.70	135.3	36.1						
22	26	16403	0.80	68.70	87.2	11.1				CG143-22P-200L-04F CF143-22P-200L-04F	678 696	186
23	28	15278	0.90	63.99	90.8	12.2						
26	32	13483	1.00	56.47	95.7	14.0						
27	32	13197	1.00	55.27	96.4	14.3						
31	37	11447	1.15	47.95	100.3	16.0						
32	39	10914	1.20	45.71	101.4	16.6						
36	44	9771	1.35	40.93	103.5	17.7						
39	47	8981	1.45	37.61	104.7	18.5						
48	58	7382	1.75	30.92	106.9	20.1						
56	68	6268	1.95	26.25	108.2	21.2						
66	80	5350	2.20	22.41	109.1	22.1	CG142-22P-200L-04F CF142-22P-200L-04F	664 682	186			
53	64	6667	1.80	27.92	107.8	20.8						
60	72	5881	2.25	24.63	108.6	21.6						
70	84	5050	2.60	21.15	109.3	22.4						
93	112	3802	1.80	15.92	110.2	22.8						
105	127	3353	2.45	14.05	108.7	23.4						
123	148	2880	2.80	12.06	105.7	24.0	CG133-22P-200L-04F CF133-22P-200L-04F	531 533	182			
35	42	10068	0.80	42.17	54.1	18.0						
40	48	8884	0.95	37.21	59.4	19.4						
43	52	8215	1.00	34.41	62.0	20.1						
53	64	6666	1.25	27.92	66.2	21.9						
66	80	5321	1.55	22.29	68.1	23.4						
80	96	4417	1.85	18.50	68.3	24.5	CG132-22P-200L-04F CF132-22P-200L-04F	522 524	182			
64	78	5483	1.50	22.97	68.0	23.2						
74	89	4790	1.70	20.06	68.2	24.0						
85	103	4137	1.95	17.33	68.4	24.8						
103	124	3422	2.35	14.33	67.8	25.6						
113	136	3122	1.60	13.08	65.0	25.1						
125	151	2816	2.85	11.79	66.8	26.3						
130	156	2727	1.85	11.42	64.3	25.7						
150	181	2356	2.10	9.87	63.5	26.2						
181	218	1948	2.55	8.16	62.1	26.8						

Legend see page 29

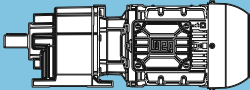
P_N = 37 kW							IE3		
50 Hz		60 Hz		i	at 50 Hz			m kg	Dimension sheet see page
37 kW		44 kW			F_{rN} kN	F_{aN} kN			
n₅₀ min ⁻¹	n₆₀ min ⁻¹	M₂ Nm	f_B						
79	95	4468	1.05	18.71	31.2	21.5	CG102-22P-200L-04F CF102-22P-200L-04F	423 427	178
92	110	3859	1.20	16.16	29.1	22.3			
108	130	3263	1.40	13.67	27.0	23.1			
133	160	2663	1.70	11.15	24.6	23.8			
136	164	2594	1.05	10.86	24.8	22.7			
152	183	2321	1.05	9.72	23.7	23.0			
158	190	2240	1.25	9.38	23.2	23.3			
164	197	2160	2.10	9.05	22.5	24.5			
176	212	2005	1.25	8.40	22.2	23.6			
187	225	1894	1.45	7.93	21.6	23.9			
205	247	1725	2.65	7.22	20.4	25.0			
208	251	1695	1.45	7.10	20.7	24.2			
229	275	1546	1.75	6.47	19.8	24.5			
247	297	1431	3.15	6.00	18.9	25.4			
255	308	1383	1.75	5.79	19.0	24.7			
282	339	1254	2.20	5.25	18.2	25.0			
315	379	1122	2.20	4.70	17.4	25.2			
353	425	1001	2.70	4.19	16.6	25.5			
394	475	896	2.70	3.75	15.9	25.6			
425	512	831	3.25	3.48	15.4	25.8			
475	572	744	3.25	3.11	14.8	25.9			

C

Legend see page 29

P _N = 45 kW								IE3	
50 Hz		60 Hz		i	at 50 Hz			m kg	Dimension sheet see page
45 kW		55 kW			F _{rN} kN	F _{aN} kN			
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	f _B						
19	23	22140	0.85	76.25	99.4	20.4	CG163-22P-225S/M-04F CF163-22P-225S/M-04F	1044 1067	190
20	24	21391	0.85	73.67	102.2	21.1			
23	27	19030	0.95	65.54	110.3	23.2			
24	29	17798	1.05	61.29	113.9	24.3			
26	31	16469	1.10	56.72	117.4	25.5			
29	35	14767	1.25	50.86	121.3	27.1			
35	42	12315	1.50	42.41	126.1	29.3			
41	49	10585	1.75	36.45	128.9	30.9			
47	56	9161	1.95	31.55	130.8	32.2			
45	54	9582	1.50	33.00	130.3	31.8	CG162-22P-225S/M-04F CF162-22P-225S/M-04F	1019 1042	190
59	71	7304	2.50	25.15	132.9	33.9			
70	84	6133	2.95	21.12	134.0	34.9			
84	101	5138	1.50	17.70	134.7	35.2			
110	132	3917	2.60	13.49	135.4	36.5			
26	32	16398	0.80	56.47	87.2	11.1	CG143-22P-225S/M-04F CF143-22P-225S/M-04F	815 833	186
27	32	16050	0.85	55.27	88.4	11.4			
31	37	13923	0.95	47.95	94.6	13.5			
32	39	13273	1.00	45.71	96.3	14.2			
36	44	11884	1.10	40.93	99.4	15.6			
39	47	10922	1.20	37.61	101.4	16.6			
48	58	8978	1.45	30.92	104.7	18.5			
56	68	7623	1.60	26.25	106.6	19.9			
66	80	6506	1.80	22.41	107.9	21.0			
53	64	8108	1.50	27.92	106.0	19.4			
60	72	7152	1.85	24.63	107.2	20.3			
70	84	6142	2.15	21.15	108.3	21.3			
84	101	5111	2.55	17.60	109.3	22.4			
93	112	4624	1.50	15.92	105.4	21.8			
105	127	4078	2.00	14.05	104.1	22.5			
123	148	3503	2.30	12.06	101.7	23.2			
64	78	6669	1.20	22.97	60.1	21.9	CG132-22P-225S/M-04F CF132-22P-225S/M-04F	659 661	182
74	89	5825	1.40	20.06	61.3	22.8			
85	103	5032	1.60	17.33	62.5	23.8			
103	124	4161	1.95	14.33	62.9	24.7			
113	136	3797	1.30	13.08	59.9	24.2			
125	151	3424	2.35	11.79	62.7	25.6			
130	156	3317	1.50	11.42	59.9	24.8			
150	181	2865	1.75	9.87	59.7	25.5			
153	184	2815	2.85	9.69	61.7	26.3			
180	217	2390	3.35	8.23	60.7	26.8			
181	218	2369	2.10	8.16	58.9	26.2			
211	254	2040	3.95	7.03	59.5	27.2			
220	265	1950	2.55	6.71	57.7	26.8			
268	323	1603	3.10	5.52	56.1	27.3			
316	380	1361	3.65	4.69	54.6	27.6			
370	446	1161	4.30	4.00	53.1	27.9			

Legend see page 29

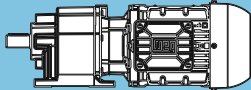
P _N = 55 kW								IE3	
50 Hz		60 Hz		i	at 50 Hz			m kg	Dimension sheet see page
55 kW		66 kW			F _{rN} kN	F _{aN} kN			
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	f _B						
23	27	23259	0.80	65.54	94.7	19.4	CG163-22P-225S/M-04G CF163-22P-225S/M-04G	1092 1115	190
24	29	21753	0.85	61.29	100.9	20.7			
26	31	20128	0.90	56.72	106.7	22.2			
29	35	18049	1.00	50.86	113.2	24.1			
35	42	15052	1.20	42.41	120.7	26.8			
41	49	12938	1.40	36.45	125.0	28.7			
47	57	11196	1.60	31.55	128.0	30.3			
59	71	8927	2.05	25.15	131.1	32.4	CG162-22P-225S/M-04G CF162-22P-225S/M-04G	1067 1090	190
70	85	7495	2.45	21.12	132.7	33.7			
85	103	6168	2.95	17.38	133.9	34.9			
110	132	4787	2.10	13.49	134.9	35.6			
131	158	4019	2.85	11.33	135.4	36.4			
31	37	17017	0.80	47.95	85.1	10.4	CG143-22P-225S/M-04G CF143-22P-225S/M-04G	863 881	186
32	39	16223	0.85	45.71	87.8	11.2			
36	44	14525	0.90	40.93	93.0	12.9			
39	47	13349	1.00	37.61	96.1	14.1			
48	58	10973	1.20	30.92	101.3	16.5			
56	68	9317	1.30	26.25	103.5	18.2			
66	80	7952	1.50	22.41	103.8	19.5			
60	72	8741	1.50	24.63	103.6	18.7	CG142-22P-225S/M-04G CF142-22P-225S/M-04G	849 867	186
70	84	7507	1.75	21.15	103.7	20.0			
84	101	6246	2.10	17.60	103.2	21.2			
101	122	5183	2.55	14.60	101.9	22.3			
105	127	4985	1.65	14.05	98.2	21.4			
123	148	4281	1.90	12.06	96.7	22.2			
147	178	3562	2.60	10.04	94.9	23.1			
74	89	7120	1.15	20.06	52.6	21.4	CG132-22P-225S/M-04G CF132-22P-225S/M-04G	707 709	182
85	103	6150	1.35	17.33	55.0	22.5			
103	125	5086	1.60	14.33	56.7	23.7			
125	151	4185	1.95	11.79	57.6	24.7			
130	156	4054	1.25	11.42	54.4	23.8			
150	181	3502	1.45	9.87	55.0	24.6			
153	184	3440	2.35	9.69	57.6	25.6			
180	217	2921	2.75	8.23	57.2	26.2			
181	219	2896	1.75	8.16	55.0	25.4			
211	254	2493	3.25	7.03	56.5	26.7			
220	266	2383	2.10	6.71	54.5	26.2			
268	323	1959	2.55	5.52	53.5	26.8			
316	381	1663	3.00	4.69	52.4	27.2			
370	446	1420	3.50	4.00	51.2	27.5			

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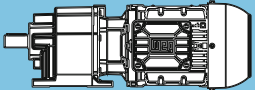
Legend see page 29

P_N = 75 kW

IE4

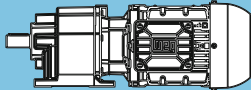
50 Hz 75 kW n ₅₀ min ⁻¹	60 Hz 90 kW n ₆₀ min ⁻¹	M ₂ Nm	f _B	i	at 50 Hz			m kg	Dimension sheet see page
					F _{rN} kN	F _{aN} kN			
59	71	12092	1.50	25.15	126.5	29.5	CG162-22S-280S/M-04E CF162-22S-280S/M-04E	1171 1194	190
71	85	10152	1.80	21.12	129.5	31.3			
86	103	8354	2.20	17.38	131.8	32.9			
101	121	7108	2.55	14.79	133.1	34.0			
110	133	6484	1.55	13.49	131.0	33.8			
117	140	6141	2.95	12.77	133.9	34.9			
132	158	5444	2.10	11.33	128.8	34.9			
160	192	4480	2.50	9.32	126.0	35.9			
188	226	3811	3.00	7.93	123.2	36.6			
60	73	11840	1.10	24.63	85.6	15.6	CG142-22S-280S/M-04E CF142-22S-280S/M-04E	953 971	186
70	85	10169	1.30	21.15	88.3	17.3			
85	102	8460	1.55	17.60	89.9	19.0			
102	123	7020	1.90	14.60	90.8	20.5			
106	128	6752	1.25	14.05	86.5	19.2			
122	147	5854	2.25	12.18	90.7	21.6			
124	148	5799	1.40	12.06	86.6	20.4			
142	171	5032	2.60	10.47	89.9	22.5			
148	178	4825	1.90	10.04	86.5	21.6			
164	198	4355	3.00	9.06	88.8	23.1			
179	215	4003	2.30	8.33	85.3	22.6			
215	258	3338	2.75	6.94	83.6	23.4			
250	300	2869	3.20	5.97	82.0	24.0			
288	347	2483	3.60	5.17	80.3	24.4			
74	89	9644	0.85	20.06	35.8	18.5	CG132-22S-280S/M-04E CF132-22S-280S/M-04E	811 813	182
86	103	8330	1.00	17.33	40.2	20.0			
104	125	6889	1.20	14.33	44.5	21.6			
126	152	5669	1.45	11.79	47.5	23.0			
130	157	5491	0.95	11.42	43.7	21.8			
151	182	4743	1.05	9.87	45.6	22.8			
154	185	4660	1.75	9.69	49.3	24.2			
181	218	3956	2.05	8.23	50.2	25.0			
183	219	3923	1.30	8.16	47.2	24.0			
212	255	3377	2.40	7.03	50.5	25.6			
222	267	3228	1.55	6.71	48.0	25.0			
270	324	2653	1.90	5.52	48.2	25.8			
318	382	2253	2.20	4.69	47.9	26.3			
373	448	1923	2.60	4.00	47.3	26.8			

Legend see page 29

P_N = 90 kW							IE4					
50 Hz		60 Hz		i	at 50 Hz			m kg	Dimension sheet see page			
90 kW		108 kW			F_{rN} kN	F_{aN} kN						
n₅₀ min ⁻¹	n₆₀ min ⁻¹	M₂ Nm	f_B									
59	71	14529	1.25	25.15	121.9	27.3	CG162-22S-280S/M-04F CF162-22S-280S/M-04F	1373 1396	190			
70	85	12199	1.50	21.12	126.3	29.4						
86	103	10039	1.80	17.38	128.4	31.4						
101	121	8541	2.15	14.79	128.5	32.7						
110	132	7791	1.30	13.49	122.1	32.5						
116	140	7379	2.45	12.77	128.1	33.8						
131	158	6542	1.75	11.33	121.7	33.8						
134	161	6422	2.85	11.12	126.6	34.7						
160	192	5383	2.10	9.32	119.9	34.9						
188	225	4580	2.50	7.93	117.9	35.8						
217	261	3957	2.85	6.85	115.9	36.4						
60	73	14227	0.95	24.63	71.8	13.2				CG142-22S-280S/M-04F CF142-22S-280S/M-04F	1155 1173	186
70	84	12219	1.10	21.15	76.5	15.3						
85	101	10166	1.30	17.60	80.0	17.3						
102	122	8435	1.55	14.60	82.7	19.0						
106	127	8113	1.05	14.05	77.7	17.5						
122	147	7035	1.85	12.18	83.9	20.4						
123	148	6968	1.20	12.06	79.4	18.9						
142	171	6046	2.20	10.47	84.0	21.4						
148	178	5797	1.60	10.04	80.2	20.4						
164	197	5233	2.50	9.06	83.7	22.3						
179	214	4810	1.90	8.33	80.1	21.6						
214	257	4011	2.30	6.94	79.4	22.6						
249	299	3448	2.65	5.97	78.4	23.3						
288	346	2984	3.00	5.17	77.1	23.8						

C

Legend see page 29

P _N = 110 kW								IE4	
50 Hz	60 Hz				at 50 Hz			m kg	Dimension sheet see page
110 kW	132 kW				F _{rN}	F _{aN}			
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	f _B	i	kN	kN			
59	71	17758	1.05	25.15	104.7	24.4	CG162-22S-280S/M-04G CF162-22S-280S/M-04G	1373 1396	190
70	85	14910	1.25	21.12	111.2	27.0			
86	103	12269	1.50	17.38	115.0	29.4			
101	121	10438	1.75	14.79	117.1	31.0			
110	132	9522	1.10	13.49	110.3	30.7			
116	140	9018	2.00	12.77	118.3	32.3			
131	158	7995	1.45	11.33	111.8	32.3			
134	161	7849	2.30	11.12	118.0	33.4			
160	192	6579	1.75	9.32	111.7	33.7			
188	225	5597	2.05	7.93	111.0	34.7			
217	261	4836	2.35	6.85	109.9	35.5			
250	300	4209	2.70	5.96	108.3	36.2			

C

Legend see page 29

Selection tables - Gear units

Structure of the selection tables

Type	$i_{ges.}$	M_{2nenn}	n_2	i_{exakt}	n_{1max}	IEC motor frame size 7												
						63	71	80	90	100	112	132	160	180	200	225	-	280
						IEC adapter 8												
						I63	I71	I80	I90	I100	I112	I132	I160	I180	I200	I225	I250	I280
NEMA adapter 9																		
		[Nm]	[min ⁻¹]			N56	N143/145	N182	N184	N213/215	N254/256	N284/286	N324/326	N364	-	-		
C002																		
2 stages	10																	
$n_1=1400 \text{ min}^{-1}$	11																	
Maximum torque 50 Nm	12																	

Type	$i_{ges.}$	SERVO adapter										Input unit									
		n_{1max}	Adapter size 14										n_{1max}	Input shaft [mm] 16							
			[min ⁻¹]	S92	S105	S114	S115	S130	S141	S142	S180	S189		S190	[min ⁻¹]	19x40	24x50	28x60	38x80	42x110	48x110

- 1** Type of gear unit
- 2** Total ratio
- 3** Permissible output torque at S1 operation ($f_b = 1.0$)
- 4** Output speed (gear unit) at $n_1 = 1400 \text{ min}^{-1}$
- 5** Exact mathematical ratio
- 6** Maximum permissible input speed gear unit, valid for direct mounting and IEC / NEMA adapter
Max. perm. input speed IEC / NEMA adapter: I63 - I132 / N56 - N213 = 3000 min^{-1} , I160 - I280 / N254 - N364 = 2500 min^{-1}
Max. perm. motor speed (Direct mounting): motor frame size 63 - 180 = 3000 min^{-1} , 200 - 280 = 2500 min^{-1} .
Higher motor speed on request
- 7** Possible motor frame sizes (Direct mounting)
- 8** Possible IEC adapter sizes
- 9** Possible NEMA adapter sizes
- 10** Number of gear stages
- 11** Motor speed
- 12** Maximum torque
- 13** Maximum input speed - SERVO adapter
- 14** Possible SERVO adapter sizes
- 15** Maximum input speed - direct mounting, IEC / NEMA adapter and input unit
Higher input speeds on request
- 16** Possible input shafts of the input unit

C

Type	$i_{ges.}$	M_{znom}	n_2	i_{exakt}	n_{1max}	IEC motor frame size											
						63	71	80	90	-	-	-	-	-	-	-	-
						IEC adapter											
						163	171	180	-	-	-	-	-	-	-	-	-
NEMA adapter																	
						N56	-	-	-	-	-	-	-	-	-	-	
						[Nm]	[min ⁻¹]										
C002	47.44	50	30	759/16	6000												
	42.34	50	33	1863/44	6000												
	36.85	50	38	737/20	6000												
	32.89	50	43	1809/55	6000												
	29.33	50	48	88/3	6000												
	26.18	50	53	288/11	6000												
	23.00	50	61	23/1	6000												
	20.53	50	68	2484/121	6000												
	17.29	50	81	121/7	6000												
	16.86	31	83	2967/176	6000												
	15.43	50	91	108/7	6000												
	13.54	50	103	176/13	5200												
	13.10	43	107	2881/220	6000												
	12.08	50	116	1728/143	5200												
	10.42	45	134	344/33	6000												
	9.97	50	140	319/32	4200												
	8.90	50	157	783/88	4200												
	8.17	45	171	989/121	6000												
	6.88	49	204	55/8	3400												
	6.14	42	228	43/7	6000												
6.14	50	228	135/22	3400													
4.81	39	291	688/143	5200													
3.54	35	395	1247/352	4200													
2.44	31	573	215/88	3400													
C012	66.50	85	21	133/2	6000												
	59.59	85	23	1311/22	6000												
	51.80	85	27	259/5	6000				*								
	46.42	85	30	2553/55	6000				*								
	42.00	85	33	42/1	6000				*								
	37.64	85	37	414/11	6000				*								
	33.09	85	42	364/11	6000				*								
	29.65	85	47	3588/121	6000				*								
	25.50	85	55	51/2	6000				*								
	25.05	41	56	551/22	6000												
	22.85	85	61	3519/154	6000				*								
	19.92	85	70	259/13	5800				*								
	19.51	66	72	1073/55	6000				*								
	17.85	85	78	2553/143	5800				*								
	15.82	66	89	174/11	6000				*								
	14.88	85	94	119/8	4700				*								
	13.33	85	105	1173/88	4700				*								
	12.83	85	109	77/6	4200				*								
	12.46	66	112	1508/121	6000				*								
	11.50	85	122	23/2	4200				*								
11.20	84	125	56/5	3800				*									
10.04	81	139	552/55	3800				*									
9.60	66	146	1479/154	6000				*									
8.22	76	170	189/23	3300				*									
7.50	66	187	1073/143	5800				*									
7.36	74	190	81/11	3300				*									
5.60	66	250	493/88	4700				*									
4.83	66	290	29/6	4200				*									
4.22	66	332	232/55	3800				*									
3.09	63	452	783/253	3300				*									

* Only direct mounting of motor possible

Legend see page 113

Type	$i_{ges.}$	M_{znom}	n_2	i_{exakt}	n_{1max}	IEC motor frame size											
						63	71	80	90	100	-	-	-	-	-	-	-
						IEC adapter											
						163	171	180	190	-	-	-	-	-	-	-	-
NEMA adapter																	
		[Nm]	[min ⁻¹]			N56	N143/145	-	-	-	-	-	-	-	-		
C032	42.88	184	33	2573/60	6000												
	38.95	168	36	5063/130	6000												
	34.88	200	40	279/8	6000												
	31.67	200	44	1647/52	6000												
	27.71	200	51	1829/66	6000												
	25.17	200	56	3599/143	6000												
	24.03	103	58	913/38	6000												
	21.40	200	65	899/42	6000				*								
	20.95	90	67	4399/210	6000												
	19.54	128	72	1485/76	6000												
	19.44	200	72	1769/91	6000				*								
	17.09	200	82	1333/78	6000				*								
	17.04	112	82	477/28	6000												
	15.53	130	90	295/19	6000												
	15.52	200	90	2623/169	6000				*								
	13.54	114	103	3127/231	6000												
	12.92	194	108	155/12	5200				*								
	11.99	130	117	1595/133	6000				*								
	11.73	198	119	305/26	5200				*								
	10.46	114	134	1537/147	6000				*								
	Maximum torque 200 Nm	9.82	180	143	589/60	4200				*							
		9.57	130	146	2365/247	6000				*							
		8.92	183	157	1159/130	4200				*							
		8.35	114	168	2279/273	6000				*							
		7.64	169	183	527/69	3600				*							
		7.24	130	193	275/38	5200				*							
		6.94	171	202	2074/299	3600				*							
		6.31	114	222	265/42	5200				*							
		5.96	158	235	155/26	3200				*							
		5.50	130	255	11/2	4200				*							
		5.41	159	259	915/169	3200				*							
		4.80	114	292	1007/210	4200				*							
4.28		130	327	1870/437	3600				*								
3.73		114	375	1802/483	3600				*								
3.34		130	419	825/247	3200				*								
2.91		106	481	265/91	3200				*								
C033	286.32	200	4.9	20615/72	6000												
	260.03	200	5.4	40565/156	6000												
	223.03	200	6.3	8029/36	6000												
	202.55	200	6.9	15799/78	6000												
	180.83	200	7.7	1085/6	6000												
	164.23	200	8.5	2135/13	6000												
	142.47	200	9.8	14105/99	6000												
	129.39	200	11	4270/33	6000												
	109.79	200	13	2635/24	6000												
	99.71	200	14	5185/52	6000												
	85.78	200	16	40145/468	6000												
	77.90	200	18	78995/1014	6000												
	64.05	200	22	18445/288	5200												
	58.17	200	24	36295/624	5200												
	55.25	200	25	11935/216	4600												
	50.18	200	28	23485/468	4600												
48.22	200	29	434/9	4200													
43.79	200	32	1708/39	4200													
35.38	200	40	3255/92	3600													
32.13	200	44	19215/598	3600													

* Only direct mounting of motor possible

Legend see page 113

Type	$i_{ges.}$	M_{znom}	n_2	i_{exakt}	n_{1max}	IEC motor frame size												
						63	71	80	90	100	112	132	-	-	-	-	-	-
						IEC adapter												
						l63	l71	l80	l90	l100	l112	-	-	-	-	-	-	
NEMA adapter																		
		[Nm]	[min ⁻¹]			N56	N143/145	N182	N184	-	-	-	-	-	-			
C052	58.85	250	24	1177/20	6000													
	53.50	227	26	107/2	6000													
	48.13	337	29	385/8	6000													
	43.75	307	32	175/4	6000													
	38.00	400	37	38/1	6000													
	35.67	151	39	107/3	6000													
	34.55	400	41	380/11	6000													
	31.03	132	45	3103/100	6000													
	29.46	400	48	825/28	6000					*								
	29.17	204	48	175/6	6000													
	26.79	400	52	375/14	6000					*								
	25.38	178	55	203/8	6000													
	24.12	400	58	627/26	6000					*								
	23.03	267	61	760/33	6000													
	21.92	400	64	285/13	6000					*								
	20.04	232	70	1102/55	6000													
	18.56	400	75	297/16	6000					*								
	17.86	267	78	125/7	6000					*								
	16.88	400	83	135/8	6000					*								
	15.54	232	90	435/28	6000					*								
	14.62	267	96	190/13	6000					*								
	14.03	400	100	561/40	4800					*								
	12.75	400	110	51/4	4800					*								
	2 stages	12.72	232	110	1653/130	6000				*								
		11.48	400	122	264/23	4200				*								
	$n_1=1400 \text{ min}^{-1}$	11.25	267	124	45/4	6000				*								
		10.43	400	134	240/23	4200				*								
	Maximum torque	9.79	232	143	783/80	6000				*								
400 Nm	9.31	400	150	121/13	3700				*									
	8.50	267	165	17/2	4800				*									
	8.46	377	165	110/13	3700				*									
	7.79	400	180	187/24	3300				*									
	7.40	232	189	1479/200	4800				*									
	7.08	333	198	85/12	3300				*									
	6.96	267	201	160/23	4200				*									
	6.31	337	222	341/54	3000				*									
	6.09	324	230	341/56	2900				*									
	6.05	232	231	696/115	4200				*									
	5.74	288	244	155/27	3000				*									
	5.64	267	248	220/39	3700				*									
	5.54	281	253	155/28	2900				*									
	4.91	232	285	319/65	3700				*									
	4.78	248	293	110/23	2600				*									
	4.72	259	296	85/18	3300				*									
	4.35	238	322	100/23	2600				*									
	4.11	205	341	493/120	3300				*									
	3.83	208	366	310/81	3000				*									
	3.69	200	379	155/42	2900				*									
	3.33	174	420	899/270	3000				*									
	3.21	169	436	899/280	2900				*									
	2.90	155	483	200/69	2600				*									
	2.52	140	555	58/23	2600				*									

* Only direct mounting of motor possible

Legend see page 113

Type	$i_{ges.}$	M_{znenn}	n_2	i_{exakt}	n_{1max}	IEC motor frame size											
						63	71	80	90	-	-	-	-	-	-	-	-
						IEC adapter											
						163	171	180	190	-	-	-	-	-	-	-	-
NEMA adapter																	
		[Nm]	[min ⁻¹]			N56	N143/145	-	-	-	-	-	-	-	-		
C053	328.43	400	4.3	2299/7	6000												
3 stages	298.57	400	4.7	2090/7	6000												
	267.93	400	5.2	3751/14	6000												
	243.57	400	5.7	1705/7	6000												
	213.71	400	6.6	1496/7	6000												
	194.29	400	7.2	1360/7	6000												
	165.45	400	8.5	8107/49	6000												
	150.41	400	9.3	7370/49	6000												
	132.97	400	11	12100/91	6000												
	120.88	400	12	11000/91	6000												
	101.55	400	14	5687/56	6000												
Maximum torque 400 Nm	92.32	400	15	2585/28	6000												
	77.79	400	18	1089/14	4800												
	70.71	400	20	495/7	4800												
	61.63	400	23	9922/161	4200												
	56.02	400	25	9020/161	4200												
	49.20	400	28	4477/91	3700												
	44.73	400	31	4070/91	3700												
	40.33	400	35	121/3	3300												
	36.67	400	38	110/3	3300												

Legend see page 113

Type	$i_{ges.}$	M_{znom}	n_2	i_{exakt}	n_{1max}	IEC motor frame size												
						63	71	80	90	100	112	132	-	-	-	-	-	-
						IEC adapter												
						l63	l71	l80	l90	l100	l112	-	-	-	-	-	-	
NEMA adapter																		
		[Nm]	[min ⁻¹]			N56	N143/145	N182	N184	-	-	-	-	-	-	-		
C062	60.00	420	23	60/1	6000													
	55.02	385	25	3081/56	6000													
	47.55	600	29	6800/143	6000													
	43.60	563	32	6715/154	6000													
	36.92	600	38	480/13	6000					*								
	33.86	600	41	237/7	6000					*								
	33.43	234	42	234/7	6000													
	30.30	600	46	5120/169	6000					*								
	29.67	208	47	1365/46	6000													
	27.78	600	50	2528/91	6000					*								
	26.49	342	53	2040/77	6000													
	23.52	303	60	5950/253	6000													
	23.46	600	60	305/13	6000					*								
	21.51	600	65	4819/224	6000					*								
	20.57	377	68	144/7	6000					*								
	18.26	335	77	420/23	6000					*								
	17.85	600	78	232/13	5100					*								
	16.88	377	83	1536/91	6000					*								
	16.36	600	86	2291/140	5100					*								
	14.98	335	93	4480/299	6000					*								
	14.72	600	95	4400/299	4500					*								
	13.49	600	104	4345/322	4500					*								
	13.07	377	107	183/14	6000					*								
	2 stages	12.07	600	116	2040/169	3900				*								
		11.60	335	121	2135/184	6000				*								
	$n_1=1400 \text{ min}^{-1}$	11.07	600	126	4029/364	3900				*								
		10.26	600	137	400/39	3600				*								
	Maximum torque 600 Nm	9.94	377	141	348/35	5100				*								
		9.40	592	149	395/42	3600				*								
		8.83	335	159	203/23	5100				*								
		8.43	575	166	2960/351	3200				*								
		8.20	377	171	1320/161	4500				*								
		8.13	559	172	740/91	3100				*								
		7.73	517	181	2923/378	3200				*								
		7.46	505	188	2923/392	3100				*								
		7.28	335	192	3850/529	4500				*								
		6.73	377	208	612/91	3900				*								
		6.69	481	209	2000/299	2800				*								
		6.13	441	228	1975/322	2800				*								
		5.97	335	235	1785/299	3900				*								
	5.71	377	245	40/7	3600				*									
	5.66	423	247	368/65	2600				*									
	5.19	393	270	1817/350	2600				*									
	5.07	335	276	350/69	3600				*									
	4.70	341	298	296/63	3200				*									
	4.53	332	309	222/49	3100				*									
	4.17	300	336	2590/621	3200				*									
	4.02	292	348	185/46	3100				*									
	3.73	284	376	600/161	2800				*									
	3.31	252	423	1750/529	2800				*									
	3.15	249	444	552/175	2600				*									
	2.80	222	500	14/5	2600				*									

* Only direct mounting of motor possible

Legend see page 113

Type	$i_{ges.}$	M_{znom}	n_2	i_{exakt}	n_{1max}	IEC motor frame size											
						63	71	80	90	100	112	-	-	-	-	-	-
						IEC adapter											
						l63	l71	l80	l90	l100	l112	-	-	-	-	-	-
NEMA adapter																	
		[Nm]	[min ⁻¹]			N56	N143/145	N182	N184	-	-	-	-	-	-		
C063	375.71	600	3.7	83032/221	6000												
	344.51	600	4.1	819941/2380	6000												
	307.24	600	4.6	67900/221	6000												
	281.73	600	5.0	38315/136	6000												
	242.60	600	5.8	589760/2431	6000												
	222.46	600	6.3	291194/1309	6000												
	188.11	600	7.4	291000/1547	6000												
	172.49	600	8.1	574725/3332	6000												
3 stages	153.96	600	9.1	442320/2873	6000												
	141.17	600	9.9	436791/3094	6000												
$n_1=1400 \text{ min}^{-1}$	118.51	600	12	26190/221	6000												
	108.67	600	13	206901/1904	6000												
	89.54	600	16	1164/13	5100												
Maximum torque 600 Nm	82.10	600	17	22989/280	5100												
	73.28	600	19	372480/5083	4500												
	67.19	600	21	183912/2737	4500												
	59.42	600	24	170720/2873	3900												
	54.49	600	26	84293/1547	3900												
	49.74	600	28	1940/39	3600												
	45.61	600	31	7663/168	3600												
	30.53	600	46	155200/5083	2800												
	28.00	600	50	76630/2737	2800												

Legend see page 113

Type	$i_{ges.}$	M_{znom}	n_2	i_{exakt}	n_{1max}	IEC motor frame size												
						63	71	80	90	100	112	132	160	-	-	-	-	-
						IEC adapter												
						l63	l71	l80	l90	l100	l112	l132	-	-	-	-	-	-
NEMA adapter																		
		[Nm]	[min ⁻¹]		[min ⁻¹]	N56	N143/145	N182	N184	N213/215	-	-	-	-	-	-		
C072	38.92	820	36	506/13	6000													
	35.41	820	40	5984/169	6000													
	30.55	820	46	1955/64	6000													
	27.79	820	50	1445/52	6000													
	23.58	802	59	943/40	5400													
	21.45	780	65	1394/65	5400													
	20.65	686	68	1342/65	6000													
	19.50	757	72	39/2	4700													
	19.02	632	74	5192/273	6000													
	17.74	736	79	408/23	4700													
	16.59	720	84	1725/104	4200													
	16.20	671	86	1037/64	6000													
	15.09	700	93	2550/169	4200													
	14.93	632	94	5015/336	6000													
	14.38	689	97	115/8	3700							*						
	13.08	670	107	170/13	3700							*						
	12.51	618	112	2501/200	5400													
	12.14	654	115	437/36	3300							*						
	11.71	647	120	1311/112	3200													
	11.52	632	122	2419/210	5400													
	11.04	637	127	1292/117	3300							*						
	10.65	630	131	969/91	3200													
	10.34	582	135	2379/230	4700													
	10.00	617	140	10/1	2900							*						
	9.53	622	147	1534/161	4700													
	9.10	600	154	2720/299	2900							*						
	8.80	552	159	915/104	4200													
	8.18	580	171	851/104	2600							*						
	8.10	581	173	1475/182	4200													
	7.63	528	184	61/8	3700							*						
	7.44	564	188	1258/169	2600							*						
	7.02	547	199	295/42	3700							*						
	6.75	547	207	27/4	2300							*						
	6.44	500	217	1159/180	3300							*						
	6.21	494	225	3477/560	3200													
	6.14	532	228	1836/299	2300							*						
	5.93	510	236	1121/189	3300							*						
	5.72	502	245	1121/196	3200													
	5.31	508	264	69/13	2100							*						
	5.30	470	264	122/23	2900							*						
	4.89	470	287	2360/483	2900							*						
	4.83	495	290	816/169	2100							*						
4.34	441	323	2257/520	2600							*							
4.00	432	350	2183/546	2600							*							
3.58	415	391	1647/460	2300							*							
3.30	398	424	531/161	2300							*							
2.82	384	497	183/65	2100							*							
2.59	360	540	236/91	2100							*							

* Only direct mounting of motor possible

Type	i _{ges.}	SERVO adapter											Input unit													
		n _{1max}	Adapter size											n _{1max}	Input shaft [mm]											
			[min ⁻¹]	S92	S105	S114	S115	S130	S141	S142	S180	S189	S190		[min ⁻¹]	19x40	24x50	28x60	38x80	42x110	48x110	55x110				
C072	38.92	5000														2500										
	35.41	5000														2500										
	30.55	5000														2500										
	27.79	5000														2500										
	23.58	5000														2500										
	21.45	5000														2500										
	20.65	5000														2500										
	19.50	4700														2500										
	19.02	5000														2500										
	17.74	4700														2500										
	16.59	4200														2500										
	16.20	5000														2500										
	15.09	4200														2500										
	14.93	5000														2500										
	14.38	3700														2500										
	13.08	3700														2500										
	12.51	5000														2500										
	12.14	3300														2500										
	11.71	3200														2500										
	11.52	5000														2500										
	11.04	3300														2500										
	10.65	3200														2500										
	10.34	4700														2500										
	10.00	2900														2500										
	9.53	4700														2500										
	9.10	2900														2500										
	8.80	4200														2500										
	8.18	2600														2500										
	8.10	4200														2500										
	7.63	3700														2500										
	7.44	2600														2500										
	7.02	3700														2500										
	6.75	2300														2300										
	6.44	3300														2500										
	6.21	3200														2500										
	6.14	2300														2300										
	5.93	3300														2500										
	5.72	3200														2500										
	5.31	-														2100										
	5.30	2900														2500										
	4.89	2900														2500										
	4.83	-														2100										
	4.34	2600														2500										
	4.00	2600														2500										
	3.58	2300														2300										
	3.30	2300														2300										
	2.82	-														2100										
	2.59	-														2100										

C

Legend see page 113

Type	$i_{ges.}$	M_{znom}	n_2	i_{exakt}	n_{1max}	IEC motor frame size												
						63	71	80	90	100	112	132	-	-	-	-	-	-
						IEC adapter												
						l63	l71	l80	l90	l100	l112	l132	-	-	-	-	-	-
NEMA adapter																		
		[Nm]	[min ⁻¹]			N56	N143/145	N182	N184	N213/215	-	-	-	-	-	-		
C073	351.33	820	4.0	14053/40	6000													
	319.60	820	4.4	1598/5	6000													
	278.44	820	5.0	18377/66	6000													
	253.30	820	5.5	108664/429	6000													
	216.20	820	6.5	1081/5	6000													
	196.68	820	7.1	12784/65	6000													
	177.39	820	7.9	34592/195	6000													
	161.38	820	8.7	409088/2535	6000													
	137.38	820	10	65941/480	6000													
	124.97	820	11	48739/390	6000													
3 stages	104.50	820	13	31349/300	5400													
	95.06	820	15	92684/975	5400													
	86.17	820	16	517/6	4700													
$n_1=1400 \text{ min}^{-1}$	78.39	820	18	70312/897	4700													
	70.68	820	20	18377/260	4200													
Maximum torque 820 Nm	64.30	820	22	54332/845	4200													
	60.06	820	23	1081/18	3700													
	54.63	820	26	6392/117	3700													
	49.38	820	28	39997/810	3300													
	47.62	819	29	39997/840	3200													
	44.92	794	31	236504/5265	3300													
	43.32	782	32	59126/1365	3200													
	39.17	765	36	235/6	2900													
	35.63	726	39	31960/897	2900													
	33.15	722	42	24863/750	2700													
	30.16	680	46	147016/4875	2700													

Legend see page 113

Type	$i_{ges.}$	M_{znom}	n_2	i_{exakt}	n_{1max}	IEC motor frame size												
						63	71	80	90	100	112	132	160	180	-	-	-	-
						IEC adapter												
						I63	I71	I80	I90	I100	I112	I132	I160	-	-	-	-	
NEMA adapter																		
		[Nm]	[min ⁻¹]			N56	N143/145	N182	N184	N213/215	N254/256	-	-	-	-	-		
C082	54.18	1550	26	4930/91	6000													
	42.88	1550	33	9605/224	6000													
	37.44	1550	37	3145/84	6000													
	33.09	1550	42	1853/56	6000													
	31.23	1117	45	406/13	6000													
	27.98	1549	50	4505/161	5200													
	27.88	997	50	725/26	6000													
	24.72	1120	57	791/32	6000													
	24.05	1479	58	8755/364	4600													
	22.07	1000	63	2825/128	6000													
	21.58	1316	65	259/12	6000													
	21.00	1418	67	7055/336	4200													
	19.27	1175	73	925/48	6000													
	19.08	1306	73	763/40	6000													
	17.99	1353	78	3400/189	3700								*					
	17.35	1338	81	850/49	3600													
	17.03	1160	82	545/32	6000													
	16.13	1298	87	371/23	5200													
	15.31	1288	91	2465/161	3300								*					
	14.40	1088	97	1325/92	5200													
	13.87	1233	101	721/52	4600													
	12.84	1220	109	4675/364	2900								*					
	12.38	1026	113	2575/208	4600													
	12.10	1177	116	581/48	4200													
	10.82	1158	129	3485/322	2600								*					
	10.81	974	130	2075/192	4200													
	10.37	1117	135	280/27	3700								*					
	10.00	1103	140	10/1	3600													
	9.26	918	151	250/27	3700								*					
	8.93	906	157	125/14	3600													
	8.87	1090	158	1615/182	2300								*					
	8.83	1057	159	203/23	3300								*					
	7.88	863	178	725/92	3300								*					
7.40	996	189	385/52	2900								*						
7.04	1015	199	493/70	2000								*						
6.61	807	212	1375/208	2900								*						
6.24	939	224	287/46	2600								*						
5.57	756	251	1025/184	2600								*						
5.23	927	267	2125/406	1700								*						
5.12	878	274	133/26	2300								*						
4.57	701	307	475/104	2300								*						
4.06	812	345	203/50	2000								*						
3.63	641	386	29/8	2000								*						
3.02	734	464	175/58	1700								*						
2.69	572	520	625/232	1700								*						
C083	368.94	1550	3.8	909075/2464	6000													
3 stages	284.84	1550	4.9	893265/3136	6000													
	238.89	1550	5.9	86955/364	6000													
	187.48	1550	7.5	671925/3584	6000													
$n_1=1400 \text{ min}^{-1}$	144.69	1550	9.7	64821/448	6000													
	119.68	1550	12	308295/2576	5200													
	101.80	1550	14	592875/5824	4600													
Maximum torque 1550 Nm	88.23	1550	16	39525/448	4200													
	74.50	1550	19	50065/672	3700													
	71.84	1550	19	450585/6272	3600													
	61.37	1550	23	39525/644	3300													
	50.22	1550	28	292485/5824	2900													
41.43	1550	34	213435/5152	2600														

* Only direct mounting of motor possible

Legend see page 113

Type	i _{ges.}	SERVO adapter										Input unit										
		n _{1max}	Adapter size										n _{1max}	Input shaft [mm]								
			[min ⁻¹]	S92	S105	S114	S115	S130	S141	S142	S180	S189		S190	[min ⁻¹]	19x40	24x50	28x60	38x80	42x110	48x110	55x110
C082	54.18	5000												2500								
	42.88	5000												2500								
	37.44	5000												2500								
	33.09	5000												2500								
	31.23	5000												2500								
	27.98	5000												2500								
	27.88	5000												2500								
	24.72	5000												2500								
	24.05	4600												2500								
	22.07	5000												2500								
	21.58	5000												2500								
	21.00	4200												2500								
	19.27	5000												2500								
	19.08	5000												2500								
	17.99	3700												2500								
	17.35	3600												2500								
	17.03	5000												2500								
	16.13	5000												2500								
	15.31	3300												2500								
	14.40	5000												2500								
	13.87	4600												2500								
	12.84	2900												2500								
	12.38	4600												2500								
	12.10	4200												2500								
	10.82	2600												2500								
	10.81	4200												2500								
	10.37	3700												2500								
	10.00	3600												2500								
	9.26	3700												2500								
	8.93	3600												2500								
	8.87	-												2300								
	8.83	3300												2500								
	7.88	3300												2500								
	7.40	2900												2500								
	7.04	-												2000								
	6.61	2900												2500								
	6.24	2600												2500								
	5.57	2600												2500								
	5.23	-												1700								
	5.12	-												2300								
	4.57	-												2300								
	4.06	-												2000								
	3.63	-												2000								
	3.02	-												1700								
	2.69	-												1700								
C083	368.94	5000												3000								
	284.84	5000												2500								
	238.89	5000												2500								
	187.48	5000												2500								
	144.69	5000												2500								
	119.68	5000												2500								
	101.80	4600												2500								
	88.23	4200												2500								
	74.50	3700												2500								
	71.84	3600												2500								
	61.37	3300												2500								
	50.22	2900												2500								
	41.43	2600												2500								
	32.58	-												2300								

Legend see page 113

Type	$i_{ges.}$	M_{znom}	n_2	i_{exakt}	n_{1max}	IEC motor frame size												
						63	71	80	90	100	112	132	160	180	200	-	-	-
						IEC adapter												
						163	171	180	190	1100	1112	1132	1160	1180	-	-	-	-
NEMA adapter																		
		[Nm]	[min ⁻¹]			N56	N143/145	N182	N184	N213/215	N254/256	N284/286	-	-	-	-		
C092	39.60	2970	35	198/5	6000													
	33.48	2992	42	770/23	5900													
	28.98	2981	48	1507/52	5200													
	25.67	3000	55	77/3	4700													
	22.58	1694	62	1242/55	6000													
	22.20	3000	63	1199/54	4200													
	21.41	2569	65	1199/56	4000													
	20.10	1508	70	201/10	6000													
	19.09	1706	73	210/11	5900													
	18.89	3000	74	869/46	3700													
	16.99	1519	82	2345/138	5900													
	16.53	1700	85	9453/572	5200													
	16.08	3000	87	209/13	3200									*				
	14.71	1513	95	9179/624	5200													
	14.64	1819	96	161/11	4700													
	13.87	3000	101	319/23	2900									*				
	13.03	1619	107	469/36	4700													
	12.66	1819	111	2507/198	4200													
	12.21	1465	115	7521/616	4000													
	11.63	2990	120	605/52	2600									*				
	11.27	1619	124	7303/648	4200													
	10.87	1304	129	7303/672	4000													
	10.77	1819	130	237/22	3700													
	9.59	1619	146	5293/552	3700													
	9.46	2805	148	473/50	2200									*				
	9.17	1819	153	1311/143	3200									*				
	8.16	1619	172	1273/156	3200									*				
	7.91	1819	177	87/11	2900									*				
	7.40	2600	189	429/58	1900									*				
	7.04	1619	199	1943/276	2900									*				
	6.63	1819	211	345/52	2600									*				
	5.91	1619	237	3685/624	2600									*				
	5.89	2424	238	165/28	1700									*				
5.39	1819	260	2967/550	2200									*					
4.80	1619	292	2881/600	2200									*					
4.22	1819	332	2691/638	1900									*					
3.75	1619	373	871/232	1900									*					
3.36	1819	417	1035/308	1700									*					
2.99	1619	468	335/112	1700									*					

* Only direct mounting of motor possible

Type	i _{ges.}	SERVO adapter											Input unit												
		n _{1max}	Adapter size											n _{1max}	Input shaft [mm]										
			[min ⁻¹]	S92	S105	S114	S115	S130	S141	S142	S180	S189	S190		[min ⁻¹]	19x40	24x50	28x60	38x80	42x110	48x110	55x110			
C092	39.60	5000													2500										
	33.48	5000													2500										
	28.98	5000													2500										
	25.67	4700													2500										
	22.58	5000													2500										
	22.20	4200													2500										
	21.41	4000													2500										
	20.10	5000													2500										
	19.09	5000													2500										
	18.89	3700													2500										
	16.99	5000													2500										
	16.53	5000													2500										
	16.08	3200													2500										
	14.71	5000													2500										
	14.64	4700													2500										
	13.87	2900													2500										
	13.03	4700													2500										
	12.66	4200													2500										
	12.21	4000													2500										
	11.63	-													2500										
	11.27	4200													2500										
	10.87	4000													2500										
	10.77	3700													2500										
	9.59	3700													2500										
	9.46	-													2200										
	9.17	3200													2500										
	8.16	3200													2500										
	7.91	2900													2500										
	7.40	-													1900										
	7.04	2900													2500										
	6.63	-													2500										
	5.91	-													2500										
	5.89	-													1700										
	5.39	-													2200										
	4.80	-													2200										
	4.22	-													1900										
	3.75	-													1900										
	3.36	-													1700										
	2.99	-													1700										

C

Legend see page 113

Type	$i_{ges.}$	M_{znom}	n_2	i_{exakt}	n_{1max}	IEC motor frame size												
						63	71	80	90	100	112	132	160	-	-	-	-	-
						IEC adapter												
						l63	l71	l80	l90	l100	l112	l132	l160	-	-	-	-	-
NEMA adapter																		
		[Nm]	[min ⁻¹]			N56	N143/145	N182	N184	N213/215	N254/256	-	-	-	-	-		
C093	306.73	3000	4.6	7975/26	6000													
	242.77	3000	5.8	31075/128	6000													
	211.98	3000	6.6	10175/48	6000													
	187.34	3000	7.5	5995/32	6000													
	158.42	3000	8.8	14575/92	5900													
	154.24	3000	9.1	14036/91	6000													
	136.18	3000	10	28325/208	5200													
	122.08	3000	11	13673/112	6000													
	118.88	3000	12	22825/192	4700													
	106.60	3000	13	4477/42	6000													
	101.85	3000	14	2750/27	4200													
	98.21	3000	14	1375/14	4000													
	94.21	3000	15	13189/140	6000													
	86.68	3000	16	7975/92	3700													
	79.66	3000	18	12826/161	5900													
	72.72	3000	19	15125/208	3200													
	68.48	3000	20	12463/182	5200													
	61.28	3000	23	11275/184	2900													
	59.78	3000	23	10043/168	4700													
	51.22	3000	27	9680/189	4200													
	50.24	2923	28	5225/104	2600													
	49.39	2995	28	2420/49	4000													
	43.59	2859	32	7018/161	3700													
	39.88	2691	35	319/8	2200													
	36.57	2677	38	6655/182	3200													
	30.81	2510	45	4961/161	2900													
	29.63	2421	47	6875/232	1900													
	25.26	2331	55	2299/91	2600													
	20.05	2137	70	3509/175	2200													
	14.90	1913	94	3025/203	1900													

Legend see page 113

Type	i _{ges.}	SERVO adapter											Input unit												
		n _{1max}	Adapter size											n _{1max}	Input shaft [mm]										
			[min ⁻¹]	S92	S105	S114	S115	S130	S141	S142	S180	S189	S190		[min ⁻¹]	19x40	24x50	28x60	38x80	42x110	48x110	55x110			
C093	306.73	5000													2500										
	242.77	5000													2500										
	211.98	5000													2500										
	187.34	5000													2500										
	158.42	5000													2500										
	154.24	5000													2500										
	136.18	5000													2500										
	122.08	5000													2500										
	118.88	4700													2500										
	106.60	5000													2500										
	101.85	4200													2500										
	98.21	4000													2500										
	94.21	5000													2500										
	86.68	3700													2500										
	79.66	5000													2500										
	72.72	3200													2500										
	68.48	5000													2500										
	61.28	2900													2500										
	59.78	4700													2500										
	51.22	4200													2500										
	50.24	-													2500										
	49.39	4000													2500										
	43.59	3700													2500										
	39.88	-													2200										
	36.57	3200													2500										
	30.81	2900													2500										
	29.63	-													1900										
	25.26	-													2500										
	20.05	-													2200										
	14.90	-													1900										

C

Legend see page 113

Type	$i_{ges.}$	M_{znom}	n_2	i_{exakt}	n_{1max}	IEC motor frame size												
						63	71	80	90	100	112	132	-	-	-	-	-	-
						IEC adapter												
						163	171	180	190	1100	1112	1132	-	-	-	-	-	-
NEMA adapter																		
		[Nm]	[min ⁻¹]			N56	N143/145	N182	N184	N213/215	-	-	-	-	-	-		
C094	3282.02	3000	0.43	170665/52	6000													
	2683.89	3000	0.52	279125/104	6000													
	2597.68	3000	0.54	665005/256	6000													
	2268.18	3000	0.62	217745/96	6000													
	2124.27	3000	0.66	1087625/512	6000													
	2119.23	3000	0.66	27550/13	6000													
	1854.82	3000	0.75	356125/192	6000													
	1677.34	3000	0.83	53675/32	6000													
	1643.20	3000	0.85	598125/364	6000													
	1464.58	3000	0.96	17575/12	6000													
	1344.90	3000	1.0	454575/338	6000													
	1300.57	3000	1.1	2330625/1792	6000													
	1135.60	3000	1.2	254375/224	6000													
	1064.47	3000	1.3	1771275/1664	6000													
	1035.22	3000	1.4	215325/208	6000													
	929.45	3000	1.5	193325/208	6000													
4 stages	819.36	3000	1.7	839025/1024	6000													
	782.16	3000	1.8	81345/104	6000													
	715.43	3000	2.0	91575/128	6000													
$n_1=1400 \text{ min}^{-1}$	640.13	3000	2.2	191400/299	5900													
	619.07	3000	2.3	316965/512	6000													
Maximum torque 3000 Nm	540.55	3000	2.6	34595/64	6000													
	519.08	3000	2.7	87725/169	5200													
	506.66	3000	2.8	93225/184	5900													
	442.39	3000	3.2	10175/23	5900													
	434.54	3000	3.2	135575/312	4700													
	410.85	3000	3.4	341825/832	5200													
	358.73	3000	3.9	111925/312	5200													
	352.17	3000	4.0	247225/702	4200													
	343.93	3000	4.1	528275/1536	4700													
	339.59	3000	4.1	247225/728	4000													
	300.30	3000	4.7	172975/576	4700													
	278.74	3000	5.0	963325/3456	4200													
	268.78	3000	5.2	963325/3584	4000													
	266.72	3000	5.2	79750/299	3700													
	243.38	3000	5.8	315425/1296	4200													
	234.69	3000	6.0	315425/1344	4000													
	211.11	3000	6.6	155375/736	3700													
	184.33	3000	7.6	50875/276	3700													

Legend see page 113

Type	i _{ges.}	SERVO adapter											Input unit													
		n _{1max}	Adapter size											n _{1max}	Input shaft [mm]											
			[min ⁻¹]	S92	S105	S114	S115	S130	S141	S142	S180	S189	S190		[min ⁻¹]	19x40	24x50	28x60	38x80	42x110	48x110	55x110				
C094	3282.02	5000														3000										
	2683.89	5000														3000										
	2597.68	5000														3000										
	2268.18	5000														3000										
	2124.27	5000														3000										
	2119.23	5000														3000										
	1854.82	5000														3000										
	1677.34	5000														3000										
	1643.20	5000														3000										
	1464.58	5000														3000										
	1344.90	5000														3000										
	1300.57	5000														3000										
	1135.60	5000														3000										
	1064.47	5000														3000										
	1035.22	5000														3000										
	929.45	5000														3000										
	819.36	5000														3000										
	782.16	5000														3000										
	715.43	5000														3000										
	640.13	5000														3000										
	619.07	5000														3000										
	540.55	5000														3000										
	519.08	5000														3000										
	506.66	5000														3000										
	442.39	5000														3000										
	434.54	4700														3000										
	410.85	5000														3000										
	358.73	5000														3000										
	352.17	4200														3000										
	343.93	4700														3000										
	339.59	4000														3000										
	300.30	4700														3000										
	278.74	4200														3000										
	268.78	4000														3000										
	266.72	3200														3000										
	243.38	4200														3000										
	234.69	4000														3000										
	211.11	3200														3000										
	184.33	3200														3000										

C

Legend see page 113

Type	$i_{ges.}$	M_{znom}	n_2	i_{exakt}	n_{1max}	IEC motor frame size												
						63	71	80	90	100	112	132	160	180	200	-	-	-
						IEC adapter												
						l63	l71	l80	l90	l100	l112	l132	l160	l180	-	-	-	-
						NEMA adapter												
		[Nm]	[min ⁻¹]		[min ⁻¹]	N56	N143/145	N182	N184	N213/215	N254/256	N284/286	-	-	-	-		
C102	33.01	3695	42	6437/195	5700													
	29.16	4500	48	1312/45	5100													
	25.31	4500	55	2050/81	4500													
	24.40	2930	57	1025/42	4400													
	21.87	4500	64	328/15	4000													
	19.17	2146	73	11461/598	5700													
	18.71	4500	75	3649/195	3500									*				
	17.15	1920	82	11147/650	5700													
	16.93	2698	83	1168/69	5100													
	16.16	4500	87	5576/345	3200									*				
	15.15	2414	92	1136/75	5100													
	14.69	2698	95	9125/621	4500													
	14.17	1701	99	9125/644	4400													
	13.67	4500	102	41/3	2800									*				
	13.15	2414	106	355/27	4500													
	12.70	2698	110	292/23	4000													
	12.68	1522	110	355/28	4400													
	11.36	2414	123	284/25	4000													
	11.15	4500	126	1394/125	2500									*				
	10.86	2698	129	6497/598	3500									*				
	9.72	2414	144	6319/650	3500									*				
	9.38	2698	149	4964/529	3200									*				
	9.05	4500	155	1312/145	2100									*				
	8.40	2414	167	4828/575	3200									*				
	7.93	2698	176	365/46	2800									*				
	7.22	4500	194	1517/210	1900									*				
	7.10	2414	197	71/10	2800									*				
	6.47	2698	216	3723/575	2500									*				
	6.00	4500	234	2788/465	1700									*				
	5.79	2414	242	3621/625	2500									*				
	5.25	2698	266	3504/667	2100									*				
	4.70	2414	298	3408/725	2100									*				
	4.19	2698	334	2701/644	1900									*				
3.75	2414	373	2627/700	1900									*					
3.48	2698	402	2482/713	1700									*					
3.11	2414	449	2414/775	1700									*					

* Only direct mounting of motor possible

Type	i _{ges.}	SERVO adapter											Input unit												
		n _{1max}	Adapter size											n _{1max}	Input shaft [mm]										
			[min ⁻¹]	S92	S105	S114	S115	S130	S141	S142	S180	S189	S190		[min ⁻¹]	19x40	24x50	28x60	38x80	42x110	48x110	55x110			
C102	33.01	5000													2500										
	29.16	5000													2500										
	25.31	4500													2500										
	24.40	4400													2500										
	21.87	4000													2500										
	19.17	5000													2500										
	18.71	3500													2500										
	17.15	5000													2500										
	16.93	5000													2500										
	16.16	3200													2500										
	15.15	5000													2500										
	14.69	4500													2500										
	14.17	4400													2500										
	13.67	-													2500										
	13.15	4500													2500										
	12.70	4000													2500										
	12.68	4400													2500										
	11.36	4000													2500										
	11.15	-													2500										
	10.86	3500													2500										
	9.72	3500													2500										
	9.38	3200													2500										
	9.05	-													2100										
	8.40	3200													2500										
	7.93	-													2500										
	7.22	-													1900										
	7.10	-													2500										
	6.47	-													2500										
	6.00	-													1700										
	5.79	-													2500										
	5.25	-													2100										
	4.70	-													2100										
	4.19	-													1900										
	3.75	-													1900										
	3.48	-													1700										
	3.11	-													1700										

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Legend see page 113

Type	$i_{ges.}$	M_{znom}	n_2	i_{exakt}	n_{1max}	IEC motor frame size												
						63	71	80	90	100	112	132	160	180	-	-	-	-
						IEC adapter												
						l63	l71	l80	l90	l100	l112	l132	l160	l180	-	-	-	-
NEMA adapter																		
		[Nm]	[min ⁻¹]			N56	N143/145	N182	N184	N213/215	N254/256	N284/286	-	-	-	-		
C103	246.43	4500	5.7	141696/575	6000													
	208.33	4500	6.7	110208/529	6000													
	180.35	4500	7.8	269616/1495	5700													
	159.72	4500	8.8	18368/115	5100													
	138.17	4500	10	143008/1035	4500													
	133.24	4500	11	107256/805	4400													
	122.02	4500	11	15252/125	6000													
	117.56	4500	12	310944/2645	4000													
	103.15	4500	14	35588/345	6000													
	100.05	4500	14	149568/1495	3500													
3 stages	89.30	4500	16	174127/1950	5700													
	86.31	4500	16	228288/2645	3200													
	79.08	4500	18	17794/225	5100													
$n_1=1400 \text{ min}^{-1}$	72.40	4500	19	21648/299	2800													
	68.41	4500	20	138539/2025	4500													
Maximum torque 4500 Nm	65.97	4500	21	138539/2100	4400													
	58.87	4500	24	169248/2875	2500													
	58.21	4500	24	100409/1725	4000													
	49.54	4500	28	48298/975	3500													
	46.03	4500	30	153504/3335	2100													
	42.74	4500	33	73718/1725	3200													
	36.67	4500	38	5904/161	1900													
	35.85	4500	39	13981/390	2800													
	29.15	4500	48	54653/1875	2500													
	22.79	4500	61	16523/725	2100													
	18.16	4500	77	1271/70	1900													

Legend see page 113

Type	i _{ges.}	SERVO adapter										Input unit									
		n _{1max}	Adapter size										n _{1max}	Input shaft [mm]							
			[min ⁻¹]	S92	S105	S114	S115	S130	S141	S142	S180	S189		S190	[min ⁻¹]	19x40	24x50	28x60	38x80	42x110	48x110
C103	246.43	5000											2500								
	208.33	5000											2500								
	180.35	5000											2500								
	159.72	5000											2500								
	138.17	4500											2500								
	133.24	4400											2500								
	122.02	5000											2500								
	117.56	4000											2500								
	103.15	5000											2500								
	100.05	3500											2500								
	89.30	5000											2500								
	86.31	3200											2500								
	79.08	5000											2500								
	72.40	-											2500								
	68.41	4500											2500								
	65.97	4400											2500								
	58.87	-											2500								
	58.21	4000											2500								
	49.54	3500											2500								
	46.03	-											2100								
	42.74	3200											2500								
	36.67	-											1900								
	35.85	-											2500								
	29.15	-											2500								
	22.79	-											2100								
	18.16	-											1900								

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Legend see page 113

Type	$i_{ges.}$	M_{znom}	n_2	i_{exakt}	n_{1max}	IEC motor frame size												
						63	71	80	90	100	112	132	-	-	-	-	-	-
						IEC adapter												
						l63	l71	l80	l90	l100	l112	l132	-	-	-	-	-	-
NEMA adapter																		
		[Nm]	[min ⁻¹]			N56	N143/145	N182	N184	N213/215	-	-	-	-	-	-		
C104	2636.78	4500	0.53	7580736/2875	6000													
	2229.16	4500	0.63	5896128/2645	6000													
	2156.24	4500	0.65	247968/115	6000													
	1822.91	4500	0.77	964320/529	6000													
	1702.59	4500	0.82	10768896/6325	6000													
	1439.39	4500	0.97	8375808/5819	6000													
	1320.15	4500	1.1	212544/161	6000													
	1116.07	4500	1.3	590400/529	6000													
	1080.49	4500	1.3	8076672/7475	6000													
	913.46	4500	1.5	6281856/6877	6000													
4 stages	831.69	4500	1.7	478224/575	6000													
	703.12	4500	2.0	371952/529	6000													
$n_1=1400 \text{ min}^{-1}$	628.39	4500	2.2	1806624/2875	6000													
	531.25	4500	2.6	1405152/2645	6000													
	514.28	4500	2.7	6801408/13225	6000													
Maximum torque 4500 Nm	434.78	4500	3.2	5289984/12167	6000													
	417.03	4500	3.4	3117312/7475	5700													
	352.56	4500	4.0	2424576/6877	5700													
	349.11	4500	4.0	200736/575	5100													
	295.14	4500	4.7	156128/529	5100													
	282.94	4500	4.9	162688/575	4500													
	272.83	4500	5.1	1098144/4025	4400													
	239.20	4500	5.9	1138816/4761	4500													
	230.65	4500	6.1	122016/529	4400													
	214.29	4500	6.5	566784/2645	4000													
	181.16	4500	7.7	2204160/12167	4000													

Legend see page 113

Type	$i_{ges.}$	M_{znom}	n_2	i_{exakt}	n_{1max}	IEC motor frame size												
						63	71	80	90	100	112	132	160	180	200	225	250	280
						IEC adapter												
						l63	l71	l80	l90	l100	l112	l132	l160	l180	l200	l225	-	-
NEMA adapter																		
		[Nm]	[min ⁻¹]			N56	N143/145	N182	N184	N213/215	N254/256	N284/286	N324/326	N364	-	-		
C132	35.51	5325	39	2983/84	5600													
	30.96	5885	45	836/27	5000													
	29.86	3583	47	209/7	4800													
	26.67	7730	52	4294/161	4400													
	22.97	8000	61	2090/91	3900													
	20.22	3032	69	2669/132	5600													
	20.06	8000	70	3230/161	3500										*	*		
	17.63	3351	79	476/27	5000										*	*		
	17.33	8000	81	1577/91	3100										*	*		
	17.00	2040	82	17/1	4800													
	15.19	4401	92	3842/253	4400													
	14.33	8000	98	2508/175	2700										*	*		
	13.08	4884	107	170/13	3900													
	11.79	8000	119	342/29	2300										*	*		
	11.42	4945	123	2890/253	3500										*	*		
	9.87	4945	142	1411/143	3100										*	*		
	9.69	8000	144	475/49	2100										*	*		
	8.23	8000	170	1786/217	1900										*	*		
	8.16	4945	172	204/25	2700										*	*		
	7.03	8000	199	836/119	1800										*	*		
6.71	4945	208	2142/319	2300										*	*			
5.52	4945	254	425/77	2100										*	*			
4.69	4945	299	1598/341	1900										*	*			
4.00	4945	350	4/1	1800										*	*			
C133	204.88	8000	6.8	74575/364	6000													
	180.95	8000	7.7	3800/21	5600													
	157.08	8000	8.9	59375/378	5000													
	151.47	8000	9.2	59375/392	4800													
	135.71	8000	10	950/7	4400													
	116.14	8000	12	42275/364	3900													
	101.85	8000	14	259521/2548	6000													
	100.31	8000	14	16150/161	3500													
	89.96	8000	16	4408/49	5600													
	84.82	8000	17	2375/28	3100													
	78.09	8000	18	68875/882	5000													
	75.30	8000	19	206625/2744	4800													
	69.21	8000	20	969/14	2700													
	67.47	8000	21	3306/49	4400													
	57.74	8000	24	147117/2548	3900													
	56.16	8000	25	11400/203	2300													
	49.87	8000	28	56202/1127	3500													
	44.83	8000	31	17575/392	2100													
	42.17	8000	33	8265/196	3100													
	37.21	8000	38	8075/217	1900													
34.41	8000	41	84303/2450	2700														
27.92	8000	50	1368/49	2300														
22.29	8000	63	61161/2744	2100														
18.50	8000	76	28101/1519	1900														

* Only direct mounting of motor possible

Type	$i_{ges.}$	M_{znom}	n_2	i_{exakt}	n_{1max}	IEC motor frame size												
						63	71	80	90	100	112	132	160	-	-	-	-	-
						IEC adapter												
						l63	l71	l80	l90	l100	l112	l132	l160	-	-	-	-	-
NEMA adapter																		
		[Nm]	[min ⁻¹]			N56	N143/145	N182	N184	N213/215	N254/256	-	-	-	-	-		
C134	1891.77	8000	0.74	437000/231	6000													
	1642.17	8000	0.85	6828125/4158	6000													
	1460.54	8000	0.96	214700/147	6000													
	1418.83	8000	0.99	109250/77	6000													
	1267.83	8000	1.1	6709375/5292	6000													
	1224.91	8000	1.1	334400/273	6000													
	1095.41	8000	1.3	53675/49	6000													
	1063.29	8000	1.3	2612500/2457	6000													
	961.31	8000	1.5	40375/42	6000													
	918.68	8000	1.5	83600/91	6000													
	834.47	8000	1.7	5046875/6048	6000													
	741.90	8000	1.9	15580/21	6000													
	720.98	8000	1.9	40375/56	6000													
	644.01	8000	2.2	486875/756	6000													
	613.66	8000	2.3	98800/161	6000													
	556.43	8000	2.5	3895/7	6000													
	532.69	8000	2.6	771875/1449	6000													
	521.98	8000	2.7	47500/91	6000													
4 stages	460.25	8000	3.0	74100/161	6000													
	453.11	8000	3.1	1484375/3276	6000													
$n_1=1400 \text{ min}^{-1}$	452.38	8000	3.1	9500/21	5600													
	392.69	8000	3.6	296875/756	5600													
	391.48	8000	3.6	35625/91	6000													
Maximum torque 8000 Nm	382.01	8000	3.7	72200/189	5000													
	368.37	8000	3.8	18050/49	4800													
	339.29	8000	4.1	2375/7	5600													
	331.61	8000	4.2	1128125/3402	5000													
	319.76	8000	4.4	1128125/3528	4800													
	314.70	8000	4.4	152000/483	4400													
	286.51	8000	4.9	18050/63	5000													
	276.28	8000	5.1	27075/98	4800													
	273.18	8000	5.1	1187500/4347	4400													
	257.51	8000	5.4	70300/273	3900													
	236.02	8000	5.9	38000/161	4400													
	223.53	8000	6.3	2196875/9828	3900													
	212.42	8000	6.6	34200/161	3500													
	193.13	8000	7.2	17575/91	3900													
	184.39	8000	7.6	59375/322	3500													
	167.03	8000	8.4	15200/91	3100													
	159.32	8000	8.8	25650/161	3500													
	144.99	8000	9.7	118750/819	3100													
	125.27	8000	11	11400/91	3100													

Legend see page 113

Type	$i_{ges.}$	SERVO adapter											Input unit										
		n_{1max}	Adapter size											n_{1max}	Input shaft [mm]								
			[min ⁻¹]	S92	S105	S114	S115	S130	S141	S142	S180	S189	S190		[min ⁻¹]	19x40	24x50	28x60	38x80	42x110	48x110	55x110	
C134	1891.77	5000												3000									
	1642.17	5000												3000									
	1460.54	5000												2500									
	1418.83	5000												3000									
	1267.83	5000												2500									
	1224.91	5000												2500									
	1095.41	5000												2500									
	1063.29	5000												2500									
	961.31	5000												2500									
	918.68	5000												2500									
	834.47	5000												2500									
	741.90	5000												2500									
	720.98	5000												2500									
	644.01	5000												2500									
	613.66	5000												2500									
	556.43	5000												2500									
	532.69	5000												2500									
	521.98	5000												2500									
	460.25	5000												2500									
	453.11	5000												2500									
	452.38	5000												2500									
	392.69	5000												2500									
	391.48	5000												2500									
	382.01	5000												2500									
	368.37	5000												2500									
	339.29	5000												2500									
	331.61	5000												2500									
	319.76	5000												2500									
	314.70	4500												2500									
	286.51	5000												2500									
	276.28	5000												2500									
	273.18	4500												2500									
	257.51	4000												2500									
	236.02	4500												2500									
	223.53	4000												2500									
	212.42	3600												2500									
	193.13	4000												2500									
	184.39	3600												2500									
	167.03	-												2500									
	159.32	3600												2500									
	144.99	-												2500									
	125.27	-												2500									

C

Legend see page 113

Type	$i_{ges.}$	M_{znom}	n_2	i_{exakt}	n_{1max}	IEC motor frame size												
						63	71	80	90	100	112	132	160	180	200	225	250	280
						IEC adapter												
						l63	l71	l80	l90	l100	l112	l132	l160	l180	l200	l225	l250	-
NEMA adapter																		
						N56	N143/145	N182	N184	N213/215	N254/256	N284/286	N324/326	N364	-	-		
	[Nm]	[min ⁻¹]			[min ⁻¹]													
C142	37.48	7123	37	1012/27	5000													
	32.28	9361	43	1485/46	4400													
	27.92	11759	50	363/13	3900													
	24.63	13000	57	1133/46	3500											*		
	21.37	4062	66	2116/99	5000													
	21.15	13000	66	275/13	3100											*		
	18.41	5338	76	405/22	4400													
	17.60	13000	80	88/5	2700											*		
	15.92	6706	88	207/13	3900													
	14.60	13000	96	847/58	2300											*		
	14.05	8155	100	309/22	3500											*		
	12.18	13000	115	341/28	2100											*		
	12.06	8032	116	1725/143	3100											*		
	10.47	13000	134	649/62	1900											*		
	10.04	9095	139	552/55	2700											*		
	9.06	13000	155	154/17	1800											*		
	8.33	9017	168	483/58	2300											*		
	6.94	9095	202	2139/308	2100											*		
	5.97	9095	235	4071/682	1900											*		
	5.17	8816	271	966/187	1800											*		
C143	206.88	13000	6.8	39721/192	5600													
	180.38	13000	7.8	19481/108	5000													
	173.94	13000	8.0	2783/16	4800													
	155.38	13000	9.0	1243/8	4400													
	133.80	13000	10	13915/104	3900													
	116.88	13000	12	935/8	3500										x			
	113.27	13000	12	146795/1296	5600													
	100.96	13000	14	20999/208	3100										x			
	98.76	13000	14	71995/729	5000													
	95.23	11428	15	10285/108	4800													
	85.07	13000	16	105655/1242	4400													
	83.49	13000	17	8349/100	2700										x			
	73.25	13000	19	51425/702	3900													
	68.70	13000	20	15939/232	2300										x			
	63.99	13000	22	79475/1242	3500										x			
	56.47	13000	25	6325/112	2100										x			
	55.27	13000	25	77605/1404	3100										x			
	47.95	13000	29	11891/248	1900										x			
	45.71	13000	31	2057/45	2700										x			
	40.93	13000	34	2783/68	1800										x			
37.61	13000	37	6545/174	2300										x				
30.92	12705	45	23375/756	2100										x				
26.25	12096	53	43945/1674	1900										x				
22.41	11535	62	605/27	1800										x				

* Only direct mounting of motor possible
x l250 only. Direct mounting of the motor not possible

Type	i _{ges.}	SERVO adapter											Input unit												
		n _{1max}	Adapter size											n _{1max}	Input shaft [mm]										
			[min ⁻¹]	S92	S105	S114	S115	S130	S141	S142	S180	S189	S190		[min ⁻¹]	19x40	24x50	28x60	38x80	42x110	48x110	55x110			
C142	37.48	5000													2500										
	32.28	4500													2500										
	27.92	4000													2500										
	24.63	3600													1800										
	21.37	5000													2500										
	21.15	-													1800										
	18.41	4500													2500										
	17.60	-													1800										
	15.92	4000													2500										
	14.60	-													1800										
	14.05	3600													1800										
	12.18	-													1800										
	12.06	-													1800										
	10.47	-													1800										
	10.04	-													1800										
	9.06	-													1800										
	8.33	-													1800										
	6.94	-													1800										
	5.97	-													1800										
	5.17	-													1800										
C143	206.88	5000													2500										
	180.38	5000													2500										
	173.94	5000													2500										
	155.38	4500													2500										
	133.80	4000													2500										
	116.88	3600													1800										
	113.27	5000													2500										
	100.96	-													1800										
	98.76	5000													2500										
	95.23	5000													2500										
	85.07	4500													2500										
	83.49	-													1800										
	73.25	4000													2500										
	68.70	-													1800										
	63.99	3600													1800										
	56.47	-													1800										
	55.27	-													1800										
	47.95	-													1800										
	45.71	-													1800										
	40.93	-													1800										
	37.61	-													1800										
	30.92	-													1800										
	26.25	-													1800										
	22.41	-													1800										

C

Legend see page 113

Type	$i_{ges.}$	M_{znom}	n_2	i_{exakt}	n_{1max}	IEC motor frame size												
						63	71	80	90	100	112	132	160	-	-	-	-	-
						IEC adapter												
						l63	l71	l80	l90	l100	l112	l132	l160	-	-	-	-	-
NEMA adapter																		
		[Nm]	[min ⁻¹]			N56	N143/145	N182	N184	N213/215	N254/256	-	-	-	-	-		
C144	2162.84	13000	0.65	415265/192	6000													
	1885.79	13000	0.74	203665/108	6000													
	1669.82	13000	0.84	4488473/2688	6000													
	1624.38	13000	0.86	12995/8	6000													
	1455.92	13000	0.96	314479/216	6000													
	1400.42	13000	1.0	436931/312	6000													
	1398.80	13000	1.0	145475/104	6000													
	1254.10	13000	1.1	140459/112	6000													
	1221.03	13000	1.1	428582/351	6000													
	1099.05	13000	1.3	3376285/3072	6000													
	1079.94	13000	1.3	1572395/1456	6000													
	1051.77	13000	1.3	13673/13	6000													
	958.27	13000	1.5	1655885/1728	6000													
	905.71	13000	1.5	153065/169	6000													
	848.21	13000	1.7	1628561/1920	6000													
	825.43	13000	1.7	105655/128	6000													
	739.56	13000	1.9	798721/1080	6000													
	710.80	13000	2.0	1182775/1664	6000													
	701.59	13000	2.0	22451/32	6000													
	637.04	13000	2.2	50963/80	6000													
	611.72	13000	2.3	11011/18	6000													
	596.77	13000	2.3	993025/1664	6000													
	548.57	13000	2.6	114103/208	6000													
	526.92	13000	2.7	48477/92	6000													
	520.33	13000	2.7	487025/936	6000													
	517.20	13000	2.7	198605/384	5600													
	453.75	13000	3.1	1815/4	6000													
	450.95	13000	3.1	97405/216	5600													
	448.20	13000	3.1	93225/208	6000													
	436.75	13000	3.2	754699/1728	5000													
	421.15	13000	3.3	754699/1792	4800													
	388.44	13000	3.6	6215/16	5600													
	385.96	13000	3.6	1043625/2704	6000													
	380.80	13000	3.7	370139/972	5000													
	367.20	13000	3.8	52877/144	4800													
	359.79	13000	3.9	8635/24	4400													
	334.50	13000	4.2	69575/208	5600													
	328.01	13000	4.3	23617/72	5000													
	316.30	13000	4.4	70851/224	4800													
	313.70	13000	4.5	8470/27	4400													
	294.41	13000	4.8	1469677/4992	3900													
	282.46	13000	5.0	264385/936	5000													
	272.37	13000	5.1	793155/2912	4800													
	270.22	13000	5.2	6215/23	4400													
	256.69	13000	5.5	720797/2808	3900													
242.86	13000	5.8	15543/64	3500														
232.69	13000	6.0	3025/13	4400														
221.11	13000	6.3	45991/208	3900														
211.75	13000	6.6	847/4	3500														
190.97	13000	7.3	39721/208	3100														
190.40	13000	7.4	514855/2704	3900														
182.40	13000	7.7	33561/184	3500														
166.50	13000	8.4	19481/117	3100														
157.07	13000	8.9	16335/104	3500														
143.42	13000	9.8	3729/26	3100														
123.51	13000	11	41745/338	3100														

Legend see page 113

Type	i _{ges.}	SERVO adapter											Input unit											
		n _{1max}	Adapter size											n _{1max}	Input shaft [mm]									
			[min ⁻¹]	S92	S105	S114	S115	S130	S141	S142	S180	S189	S190		[min ⁻¹]	19x40	24x50	28x60	38x80	42x110	48x110	55x110		
C144	2162.84	5000												3000										
	1885.79	5000												3000										
	1669.82	5000												2500										
	1624.38	5000												3000										
	1455.92	5000												2500										
	1400.42	5000												2500										
	1398.80	5000												3000										
	1254.10	5000												2500										
	1221.03	5000												2500										
	1099.05	5000												2500										
	1079.94	5000												2500										
	1051.77	5000												2500										
	958.27	5000												2500										
	905.71	5000												2500										
	848.21	5000												2500										
	825.43	5000												2500										
	739.56	5000												2500										
	710.80	5000												2500										
	701.59	5000												2500										
	637.04	5000												2500										
	611.72	5000												2500										
	596.77	5000												2500										
	548.57	5000												2500										
	526.92	5000												2500										
	520.33	5000												2500										
	517.20	5000												2500										
	453.75	5000												2500										
	450.95	5000												2500										
	448.20	5000												2500										
	436.75	5000												2500										
	421.15	5000												2500										
	388.44	5000												2500										
	385.96	5000												2500										
	380.80	5000												2500										
	367.20	5000												2500										
	359.79	4500												2500										
	334.50	5000												2500										
	328.01	5000												2500										
	316.30	5000												2500										
	313.70	4500												2500										
	294.41	4000												2500										
	282.46	5000												2500										
	272.37	5000												2500										
	270.22	4500												2500										
	256.69	4000												2500										
	242.86	3600												2500										
	232.69	4500												2500										
	221.11	4000												2500										
	211.75	3600												2500										
	190.97	-												2500										
	190.40	4000												2500										
	182.40	3600												2500										
	166.50	-												2500										
	157.07	3600												2500										
	143.42	-												2500										
	123.51	-												2500										

C

Legend see page 113

Type	$i_{ges.}$	M_{znom}	n_2	i_{exakt}	n_{1max}	IEC motor frame size												
						63	71	80	90	100	112	132	160	180	200	225	250	280
						IEC adapter												
						I63	I71	I80	I90	I100	I112	I132	I160	I180	I200	I225	I250	I280
NEMA adapter																		
		[Nm]	[min ⁻¹]			N56	N143/145	N182	N184	N213/215	N254/256	N284/286	N324/326	N364	-	-		
C162	33.00	13926	42	33/1	3900													
2 stages	25.15	18000	56	327/13	3100													
	21.12	18000	66	528/25	2700													
	17.70	7468	79	407/23	3900													
	17.38	18000	81	504/29	2300													
	14.79	18000	95	207/14	2100													
	$n_1=1400 \text{ min}^{-1}$	13.49	10003	104	4033/299	3100												
		12.77	18000	110	396/31	1900												
	Maximum torque 18000 Nm	11.33	11261	124	6512/575	2700												
		11.12	18000	126	189/17	1800												
		9.32	11197	150	6216/667	2300												
7.93		11261	177	111/14	2100													
	6.85	11261	204	4884/713	1900													
	5.96	11261	235	2331/391	1800													
C163	234.67	18000	6.0	704/3	5000													
3 stages	202.12	18000	6.9	106920/529	4400													
	174.82	18000	8.0	52272/299	3900													
	154.21	18000	9.1	81576/529	3500											x		
	132.44	18000	11	39600/299	3100											x		
	130.53	18000	11	15272/117	5000													
	112.42	18000	12	33615/299	4400													
	110.19	18000	13	12672/115	2700											x		
	97.24	18000	14	16434/169	3900													
	91.43	18000	15	60984/667	2300												x	
	85.78	18000	16	25647/299	3500												x	
Maximum torque 18000 Nm	76.25	18000	18	12276/161	2100												x	
	73.67	18000	19	12450/169	3100												x	
	65.54	18000	21	46728/713	1900												x	
	61.29	18000	23	3984/65	2700												x	
	56.72	18000	25	22176/391	1800												x	
	50.86	18000	28	19173/377	2300												x	
	42.41	18000	33	7719/182	2100												x	
	36.45	18000	38	14691/403	1900												x	
	31.55	17437	44	6972/221	1800												x	

x I280 only. Direct mounting of the motor not possible

Type	i _{ges.}	SERVO adapter											Input unit												
		n _{1max}	Adapter size											n _{1max}	Input shaft [mm]										
			[min ⁻¹]	S92	S105	S114	S115	S130	S141	S142	S180	S189	S190		[min ⁻¹]	19x40	24x50	28x60	38x80	42x110	48x110	55x110			
C162	33.00	-													2500										
	25.15	-													1800										
	21.12	-													1800										
	17.70	-													2500										
	17.38	-													1800										
	14.79	-													1800										
	13.49	-													1800										
	12.77	-													1800										
	11.33	-													1800										
	11.12	-													1800										
	9.32	-													1800										
	7.93	-													1800										
	6.85	-													1800										
	5.96	-													1800										
C163	234.67	-													2500										
	202.12	-													2500										
	174.82	-													2500										
	154.21	-													1800										
	132.44	-													1800										
	130.53	-													2500										
	112.42	-													2500										
	110.19	-													1800										
	97.24	-													2500										
	91.43	-													1800										
	85.78	-													1800										
	76.25	-													1800										
	73.67	-													1800										
	65.54	-													1800										
	61.29	-													1800										
	56.72	-													1800										
	50.86	-													1800										
	42.41	-													1800										
	36.45	-													1800										
	31.55	-													1800										

C

Legend see page 113

Type	$i_{ges.}$	M_{znom}	n_2	i_{exakt}	n_{1max}	IEC motor frame size												
						63	71	80	90	100	112	132	160	180	200	-	-	-
						IEC adapter												
						l63	l71	l80	l90	l100	l112	l132	l160	l180	l200	-	-	-
						NEMA adapter												
		[Nm]	[min ⁻¹]		[min ⁻¹]	N56	N143/145	N182	N184	N213/215	N254/256	N284/286	N324/326	-	-	-		
C164	2093.95	18000	0.67	81664/39	6000													
	1803.51	18000	0.78	12402720/6877	6000													
	1657.33	18000	0.84	4972/3	6000													
	1559.96	18000	0.90	6063552/3887	6000													
	1447.11	18000	0.97	13024/9	6000													
	1427.45	18000	0.98	1510245/1058	6000													
	1278.93	18000	1.1	19184/15	6000													
	1246.39	18000	1.1	659340/529	6000													
	1234.69	18000	1.1	369171/299	6000													
	1101.54	18000	1.3	582714/529	6000													
	1081.51	18000	1.3	74624/69	6000													
	1078.07	18000	1.3	322344/299	6000													
	952.78	18000	1.5	1424412/1495	6000													
	931.50	18000	1.5	11333520/12167	6000													
	929.64	18000	1.5	36256/39	6000													
	811.56	18000	1.7	7304/9	5600													
	805.70	18000	1.7	5540832/6877	6000													
	800.70	18000	1.7	5506380/6877	6000													
	698.99	18000	2.0	369765/529	5600													
	695.31	18000	2.0	56320/81	5000													
	692.57	18000	2.0	2692008/3887	6000													
	670.48	18000	2.1	14080/21	4800													
	604.60	18000	2.3	180774/299	5600													
	598.87	18000	2.3	316800/529	5000													
	591.77	18000	2.4	40832/69	4400													
	577.48	18000	2.4	2138400/3703	4800													
	517.99	18000	2.7	154880/299	5000													
	509.69	18000	2.7	6201360/12167	4400													
	499.49	18000	2.8	1045440/2093	4800													
	496.41	18000	2.8	19360/39	3900													
	440.86	18000	3.2	3031776/6877	4400													
	427.56	18000	3.3	2940300/6877	3900													
	418.32	18000	3.3	28864/69	3500													
	369.82	18000	3.8	1437480/3887	3900													
	360.30	18000	3.9	4383720/12167	3500													
	342.97	18000	4.1	13376/39	3100													
	311.64	18000	4.5	2143152/6877	3500													
	295.40	18000	4.7	2031480/6877	3100													
	272.21	18000	5.1	20416/75	2700													
	255.51	18000	5.5	993168/3887	3100													
	234.46	18000	6.0	620136/2645	2700													
	202.79	18000	6.9	1515888/7475	2700													
202.30	18000	6.9	17600/87	2300														
174.24	18000	8.0	2673000/15341	2300														
150.71	18000	9.3	1306800/8671	2300														

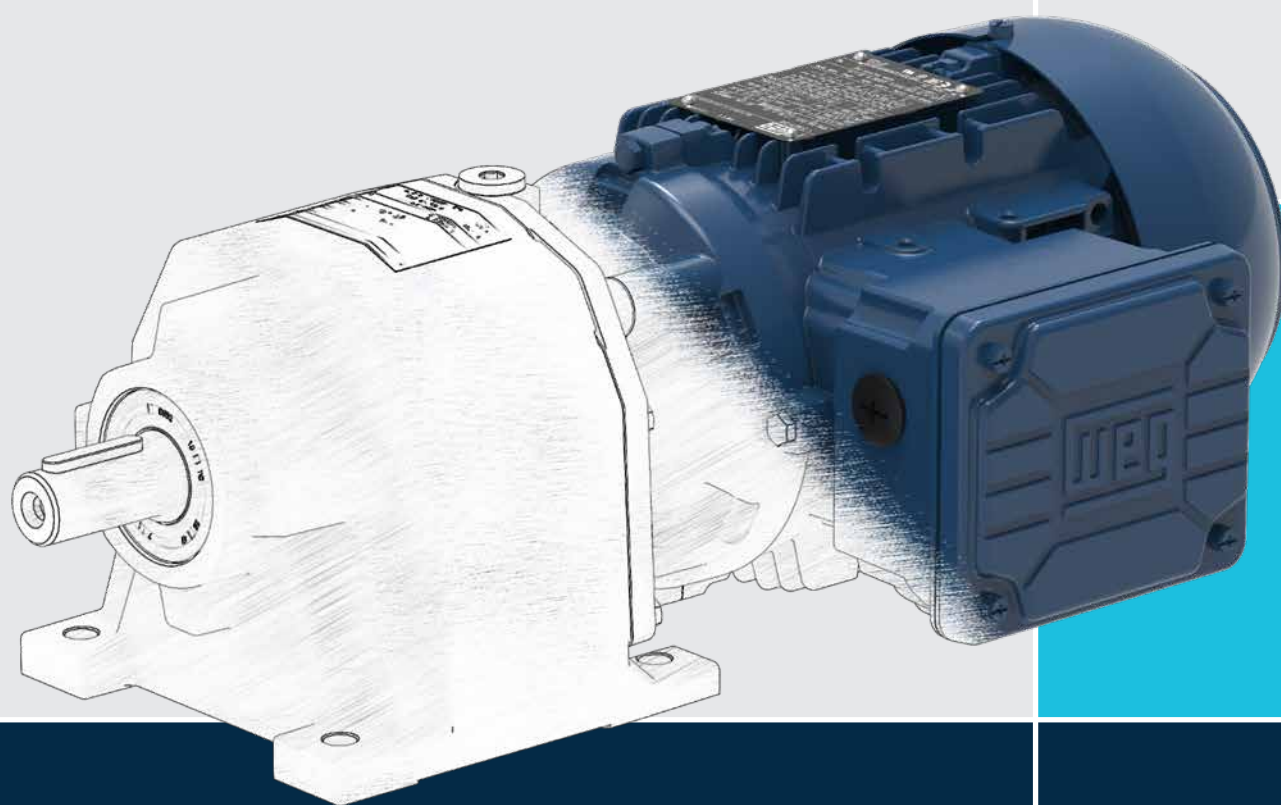
Legend see page 113

Type	$i_{ges.}$	M_{znom}	n_2	i_{exakt}	n_{1max}	IEC motor frame size												
						63	71	80	90	100	112	132	-	-	-	-	-	-
						IEC adapter												
						l63	l71	l80	l90	l100	l112	l132	-	-	-	-	-	-
NEMA adapter																		
		[Nm]	[min ⁻¹]			N56	N143/145	N182	N184	N213/215	-	-	-	-	-	-		
C165	22405.25	18000	0.06	4369024/195	6000													
	18322.05	18000	0.08	714560/39	6000													
	15484.09	18000	0.09	696784/45	6000													
	14467.28	18000	0.10	564224/39	6000													
	12662.22	18000	0.11	113960/9	6000													
	11217.58	18000	0.12	1020800/91	6000													
	9998.22	18000	0.14	89984/9	6000													
	9181.16	18000	0.15	1551616/169	6000													
	7752.38	18000	0.18	162800/21	6000													
	7067.08	18000	0.20	91872/13	6000													
5 stages	6345.03	18000	0.22	247456/39	6000													
	5339.57	18000	0.26	347072/65	6000													
$n_1=1400 \text{ min}^{-1}$	4884.00	18000	0.29	4884/1	6000													
	4369.98	18000	0.32	1306624/299	6000													
	3690.13	18000	0.38	55352/15	6000													
Maximum torque 18000 Nm	3543.61	18000	0.40	1796608/507	6000													
	3020.06	18000	0.46	208384/69	6000													
	2966.43	18000	0.47	347072/117	5600													
	2448.96	18000	0.57	286528/117	6000													
	2404.16	18000	0.58	2531584/1053	5000													
	2318.30	18000	0.60	632896/273	4800													
	2050.07	18000	0.68	55352/27	5600													
	1820.82	18000	0.77	1633280/897	4400													
	1661.50	18000	0.84	403744/243	5000													
	1602.16	18000	0.87	100936/63	4800													
	1258.36	18000	1.1	260480/207	4400													

Legend see page 113

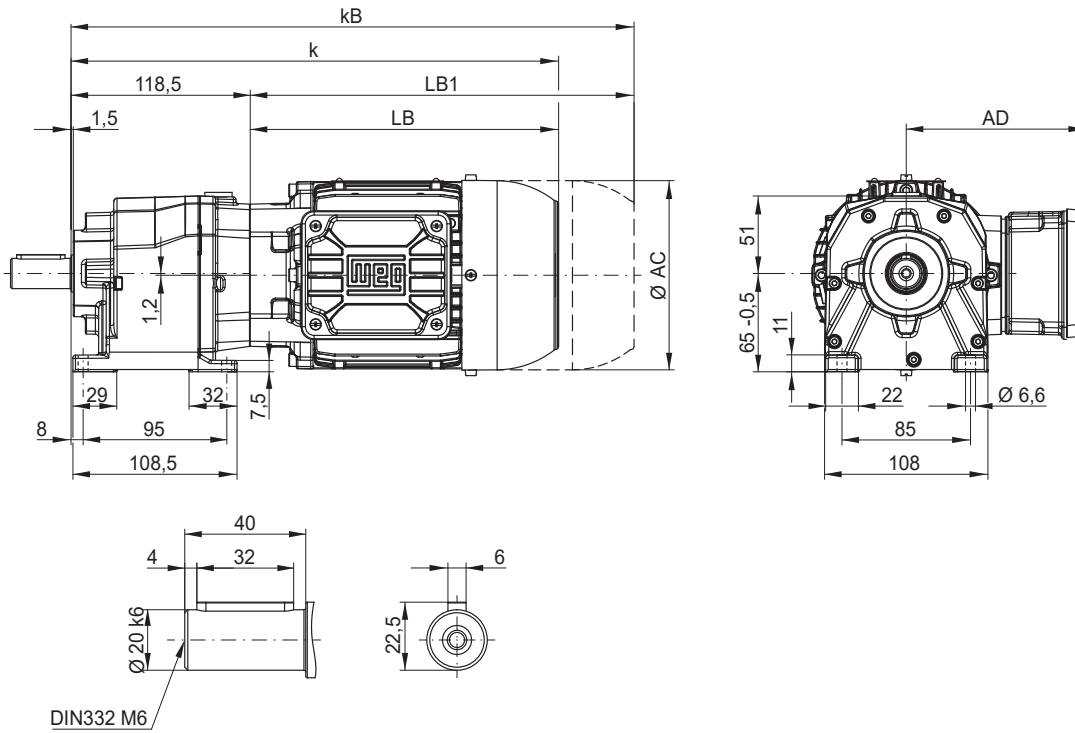
Legend see page 113

Dimension sheets Geared Motors



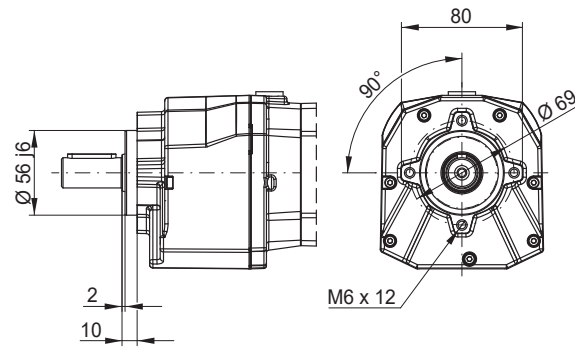
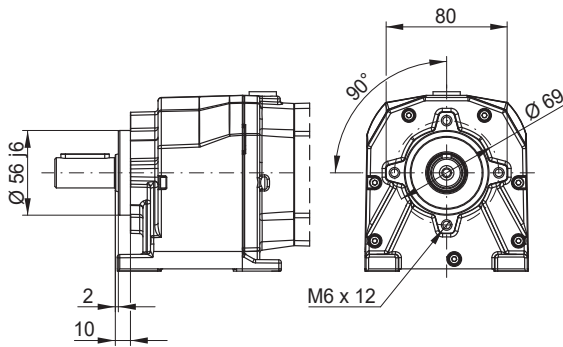
C

CG00 - Foot mounted



CW00 - Foot mounted with B14 flange execution + centring and threaded hole

CC00 - B14 flange execution + centring and threaded hole

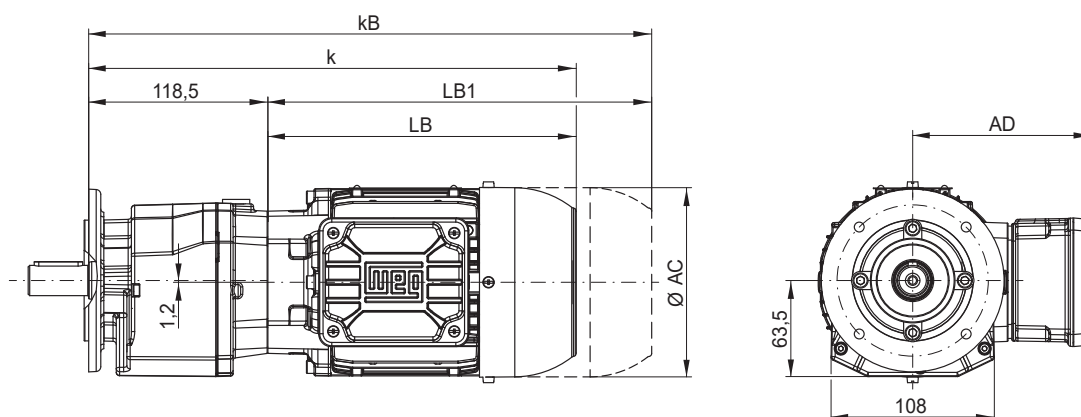


Motor fr.	63	71	80	L80
Dimension				
AC	126	141	159	159
AD	128	136	145	145
k	323	357	365	389
kB	367	406	423	447
LB	204	238	246	270
LB1	248	287	304	328

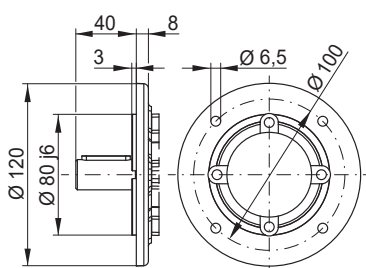
Motor dimension sheets see page 590

Description of motor lengths LB and LB1 see page 594

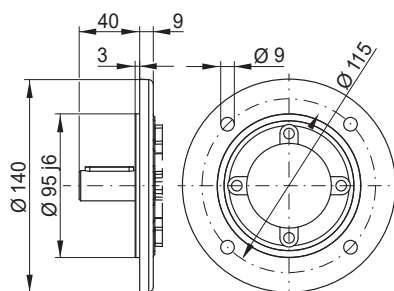
CF00 - Flange execution



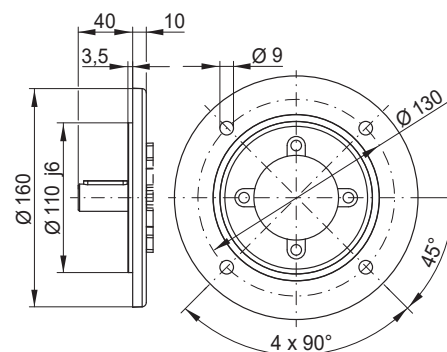
Flange Ø 120



Flange Ø 140

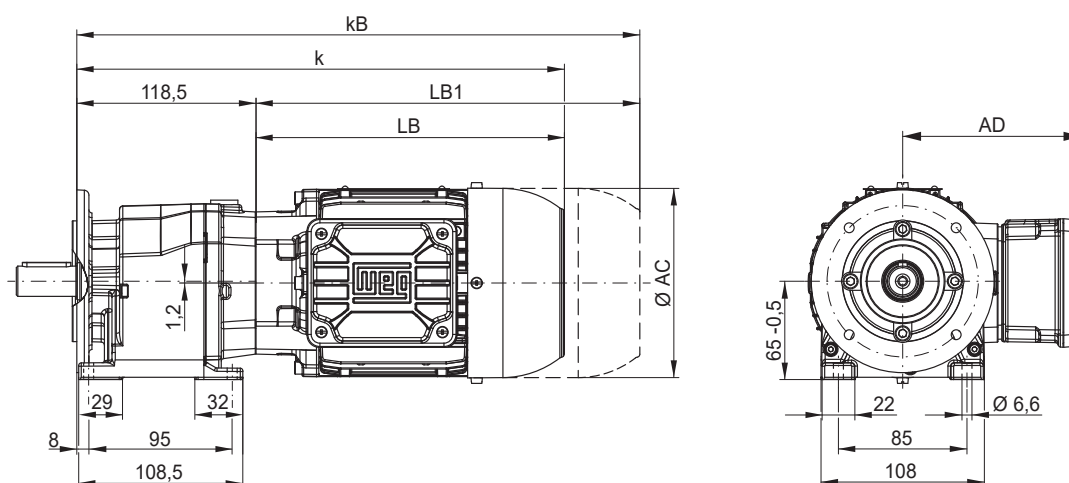


Flange Ø 160



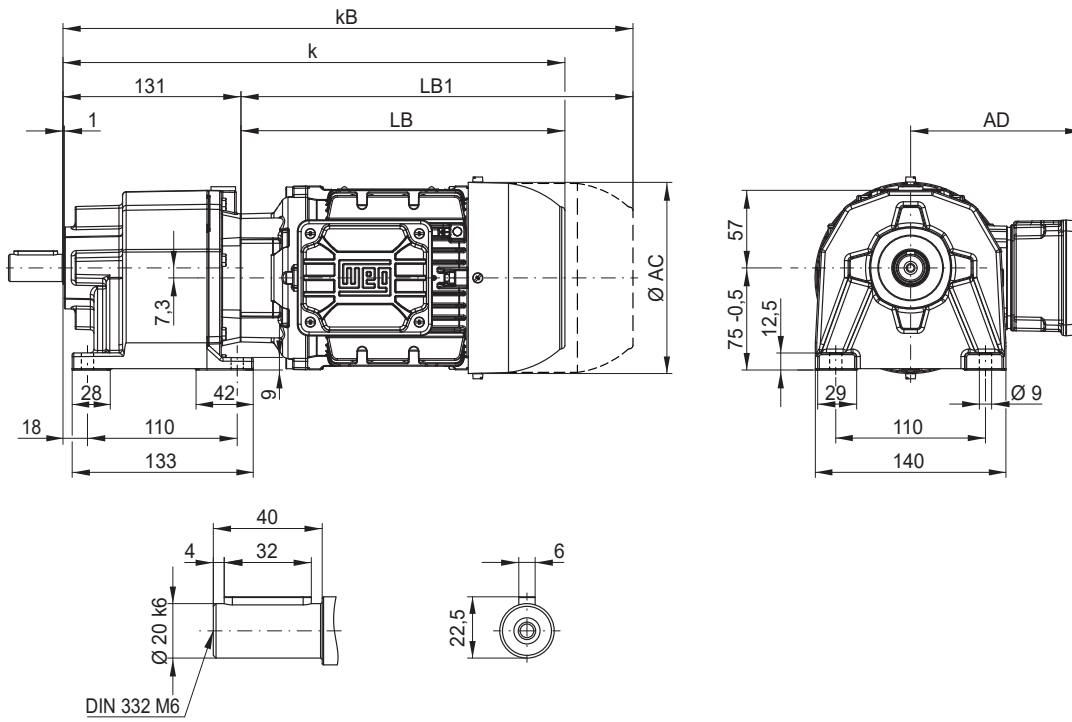
CA00 - Foot mounted and B5 flange execution

mountable flange sizes on the housing: Ø 120



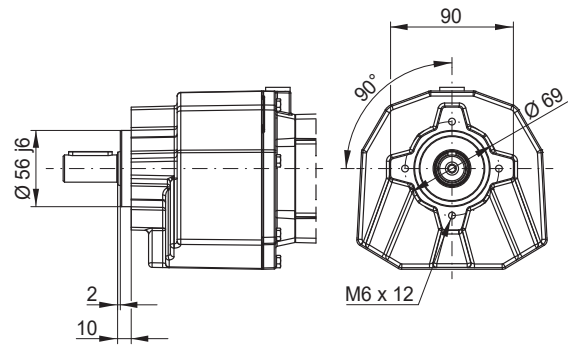
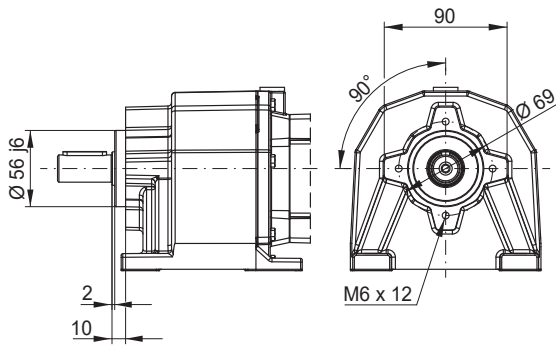
Dimensions in mm.

CG01 - Foot mounted



CW01 - Foot mounted with B14 flange execution + centring and threaded hole

CC01 - B14 flange execution + centring and threaded hole

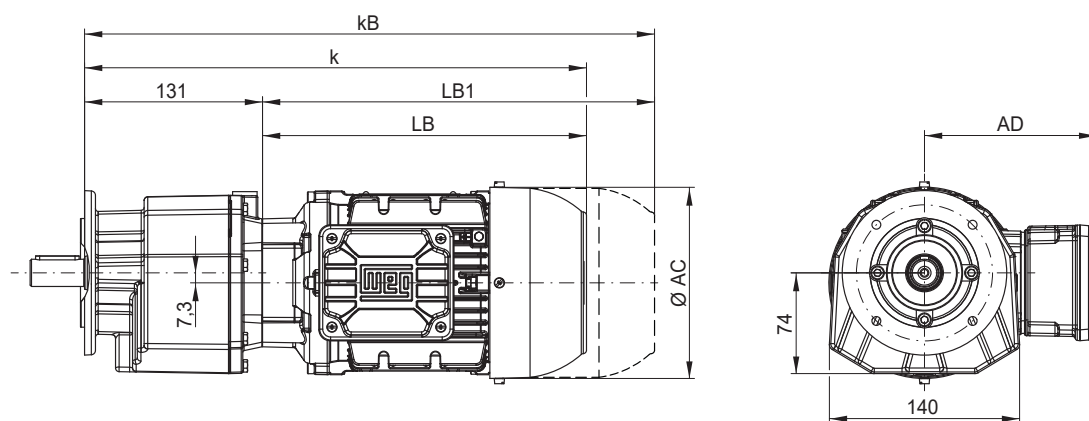


Motor fr.	63	71	80	L80	90S/L
AC	126	141	159	159	178
AD	128	136	145	145	155
k	335	369	377	401	419
kB	379	418	435	459	492
LB	204	238	246	270	288
LB1	248	287	304	328	361

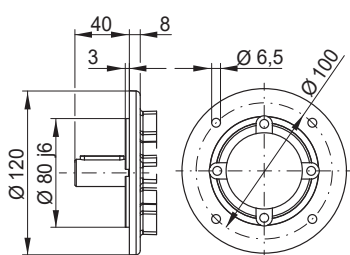
Motor dimension sheets see page 590

Description of motor lengths LB and LB1 see page 594

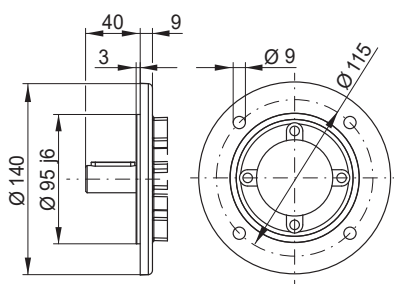
CF01 - Flange execution



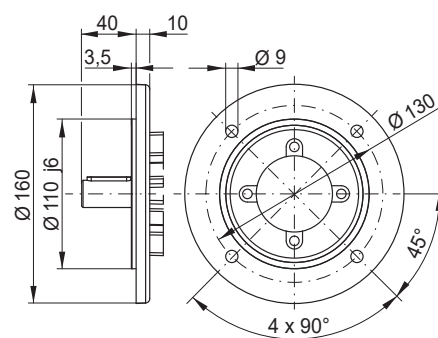
Flange $\varnothing 120$



Flange $\varnothing 140$

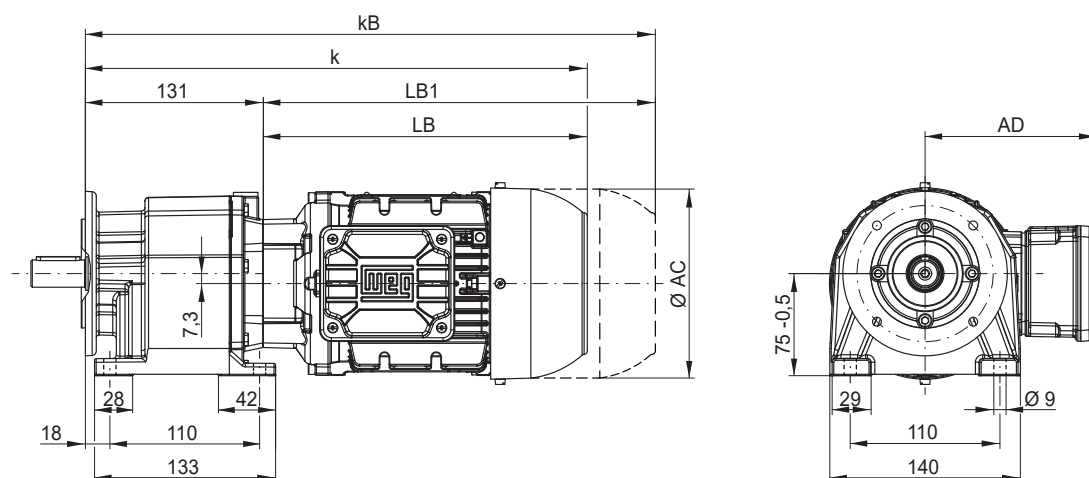


Flange $\varnothing 160$



CA01 - Foot mounted and B5 flange execution

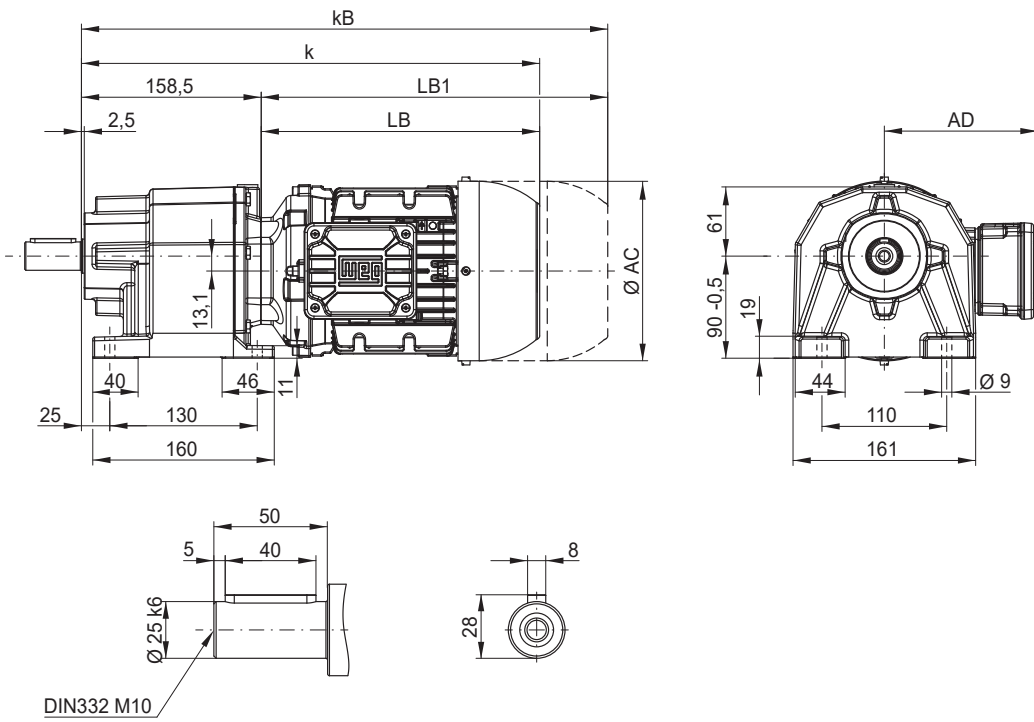
mountable flange sizes on the housing: $\varnothing 120$ and $\varnothing 140$



Dimensions in mm.

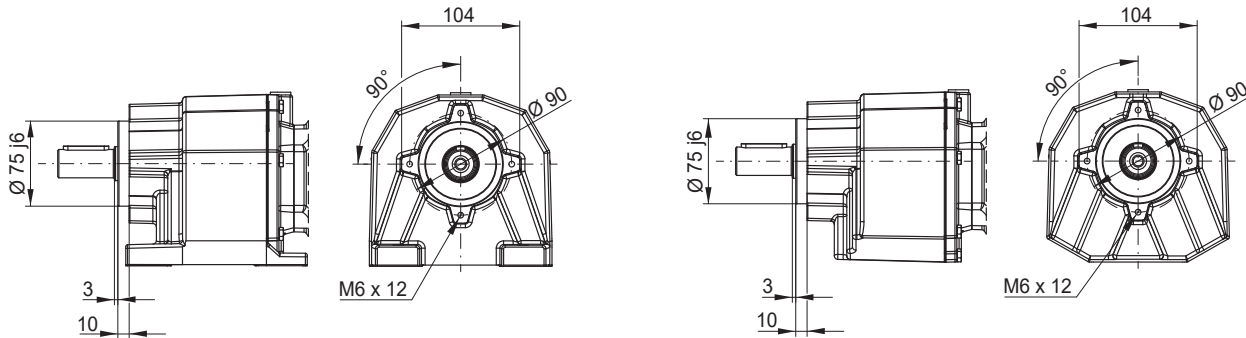
CG03 - Foot mounted

C



CW03 - Foot mounted with B14 flange execution + centring and threaded hole

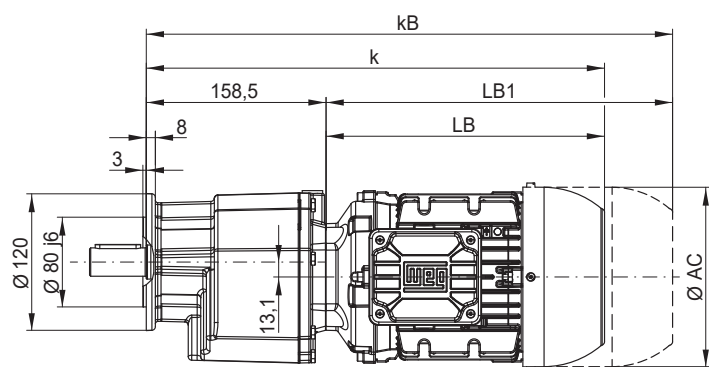
CC03 - B14 flange execution + centring and threaded hole



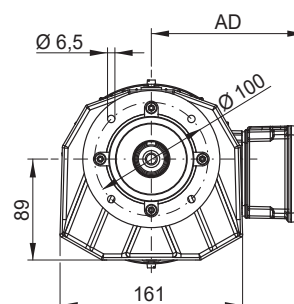
Motor fr.	63	71	80	L80	90S/L	100L	L100L
Dimension							
AC	126	141	159	159	178	199	199
AD	128	136	145	145	155	165	165
k	363	397	405	429	447	497	535
kB	407	446	463	487	520	581	619
LB	204	238	246	270	288	338	376
LB1	248	287	304	328	361	422	460

Motor dimension sheets see page 590
 Description of motor lengths LB and LB1 see page 594

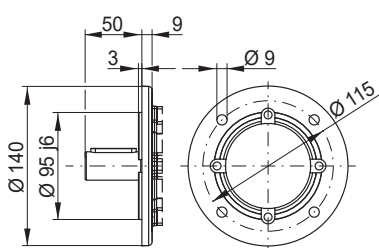
CF03 - Flange execution



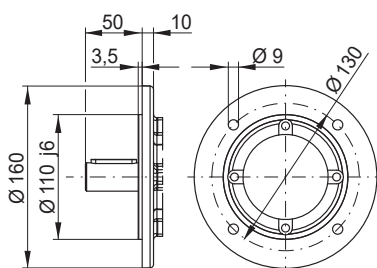
Flange Ø 120



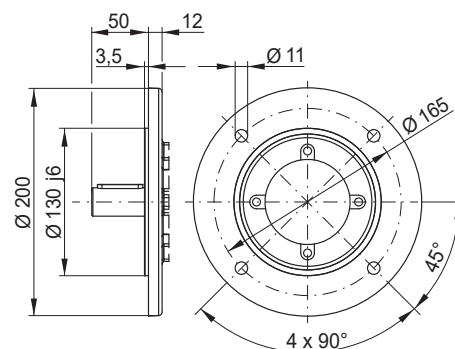
Flange Ø 140



Flange Ø 160

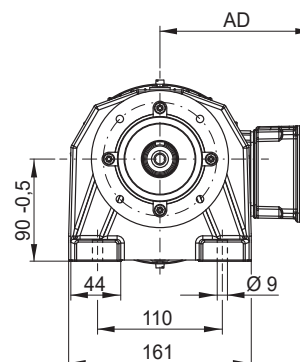
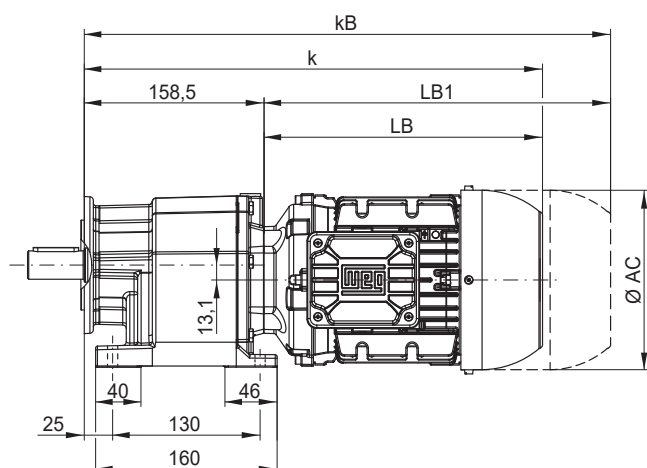


Flange Ø 200



CA03 - Foot mounted and B5 flange execution

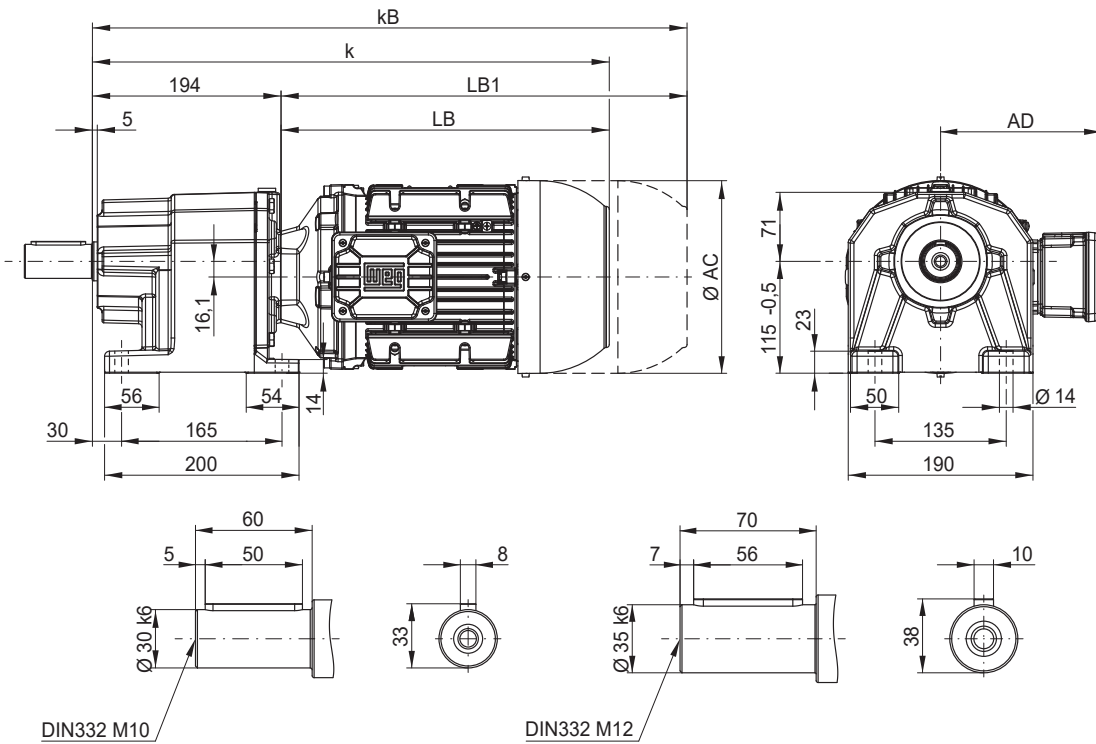
mountable flange sizes on the housing: Ø 120, Ø 140 and Ø 160



Dimensions in mm.

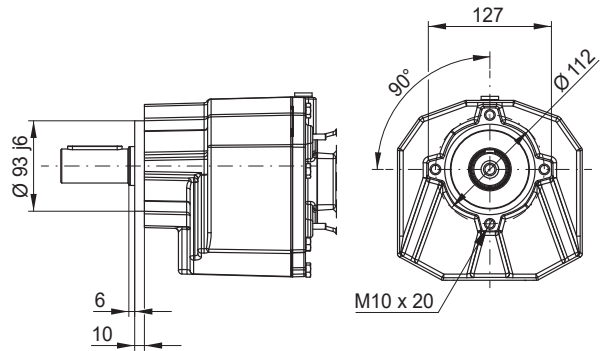
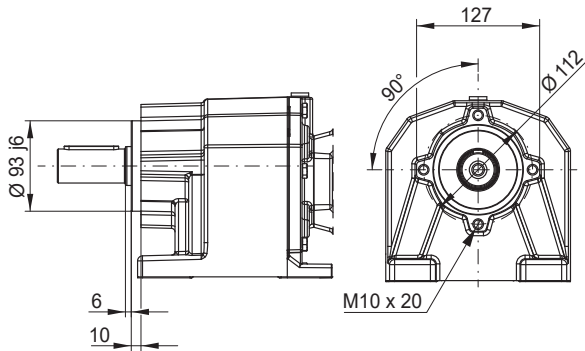
CG05 - Foot mounted

C



CW05 - Foot mounted with B14 flange execution + centring and threaded hole

CC05 - B14 flange execution + centring and threaded hole

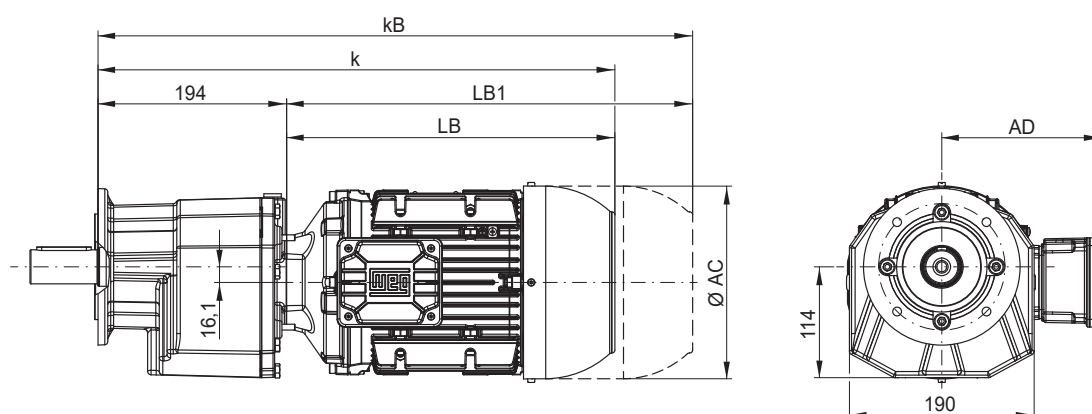


Motor fr.	63	71	80	L80	90S/L	100L	L100L	112M	132S,M	L132M
Dimension										
AC	126	141	159	159	178	199	199	221	261	261
AD	128	136	145	145	155	165	165	185	205	205
k	398	432	440	464	482	532	570	542	607	645
kB	442	481	498	522	555	616	654	629	725	763
LB	204	238	246	270	288	338	376	348	413	451
LB1	248	287	304	328	361	422	460	435	531	569

Motor dimension sheets see page 590

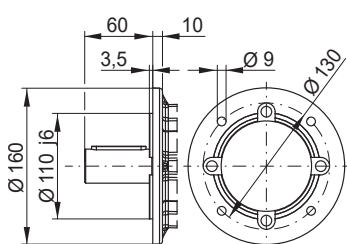
Description of motor lengths LB and LB1 see page 594

CF05 - Flange execution

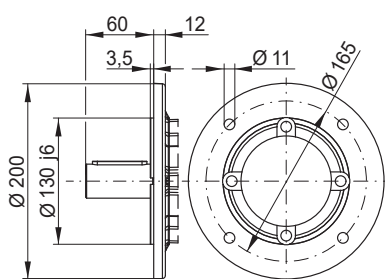


C

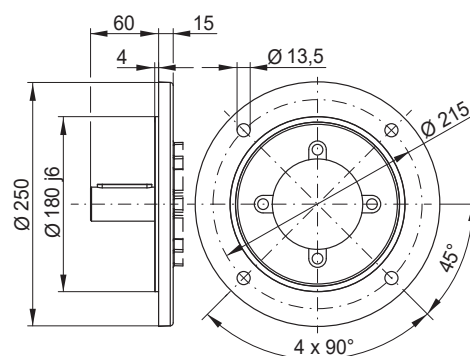
Flange Ø 160



Flange Ø 200

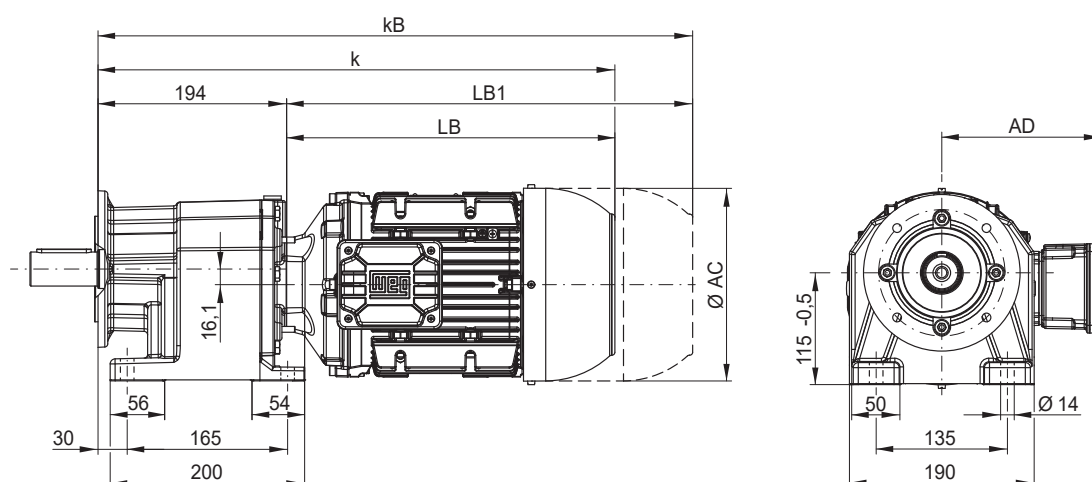


Flange Ø 250



CA05 - Foot mounted and B5 flange execution

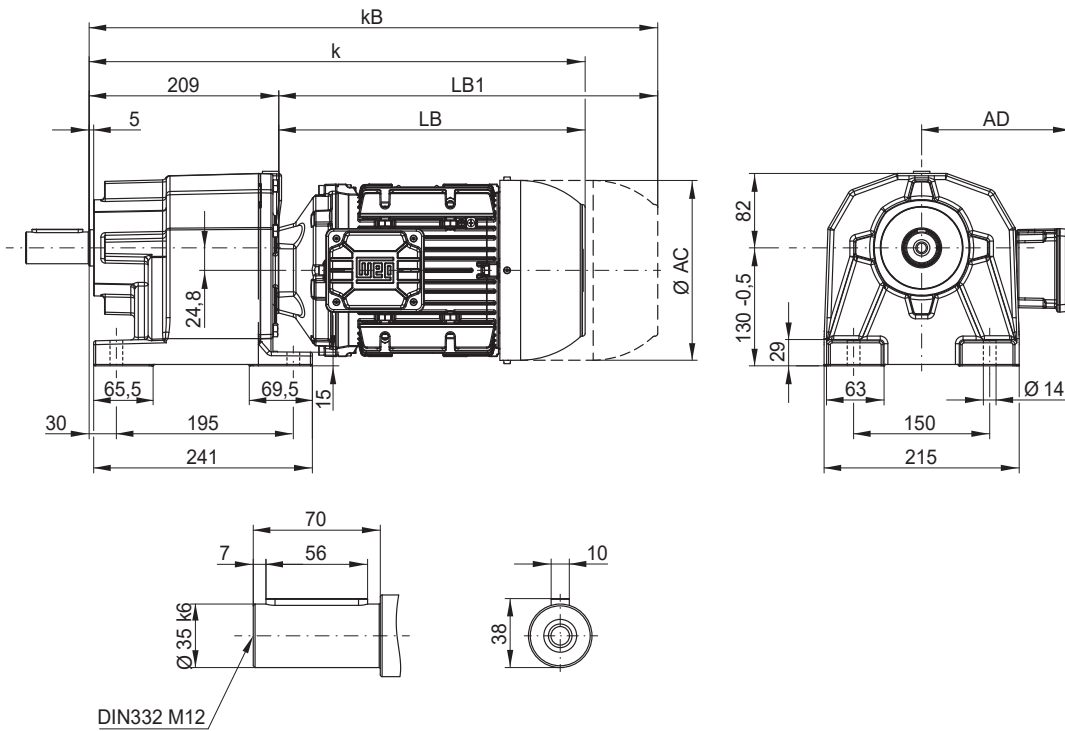
mountable flange sizes on the housing: Ø 160 and Ø 200



Dimensions in mm.

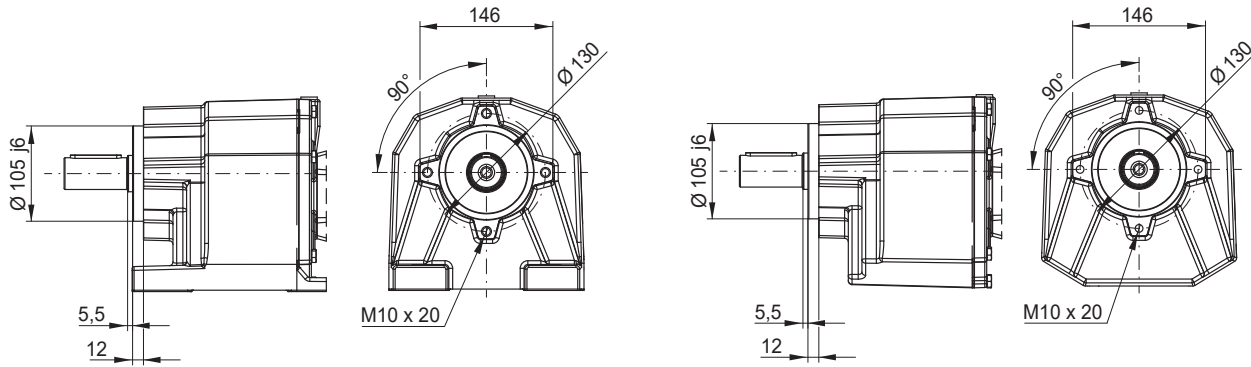
CG06 - Foot mounted

C



CW06 - Foot mounted with B14 flange execution + centring and threaded hole

CC06 - B14 flange execution + centring and threaded hole

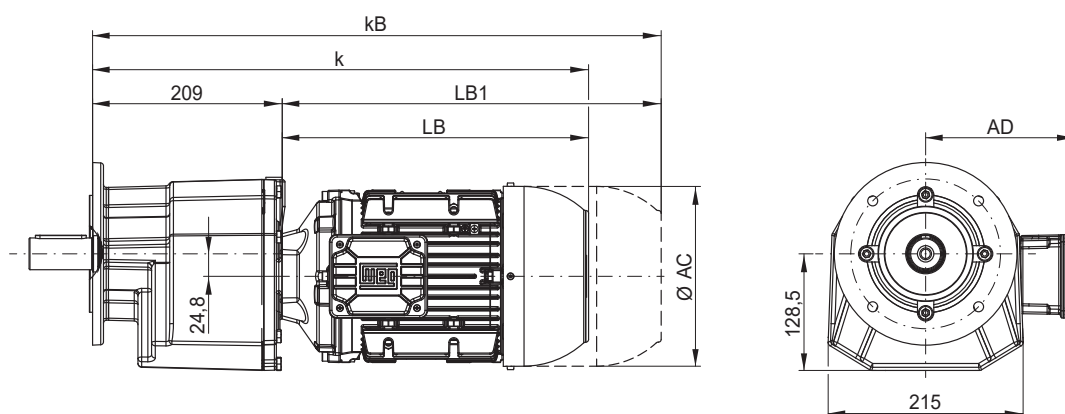


Motor fr.	63	71	80	L80	90S/L	100L	L100L	112M	132S,M	L132M
Dimension										
AC	126	141	159	159	178	199	199	221	261	261
AD	128	136	145	145	155	165	165	185	205	205
k	413	447	455	479	497	547	585	557	622	660
kB	457	496	513	537	570	631	669	644	740	778
LB	204	238	246	270	288	338	376	348	413	451
LB1	248	287	304	328	361	422	460	435	531	569

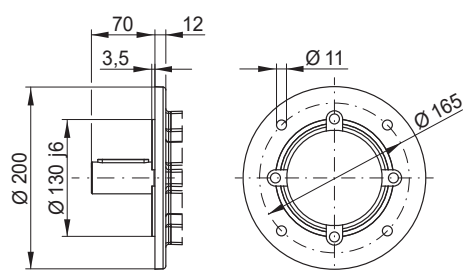
Motor dimension sheets see page 590

Description of motor lengths LB and LB1 see page 594

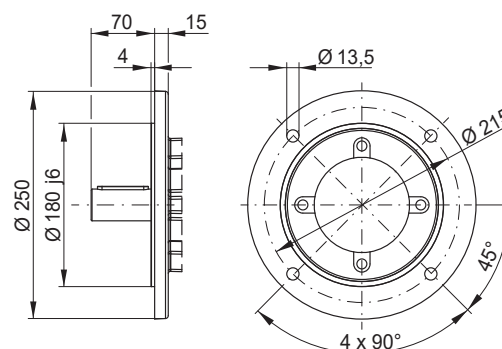
CF06 - Flange execution



Flange $\varnothing 200$

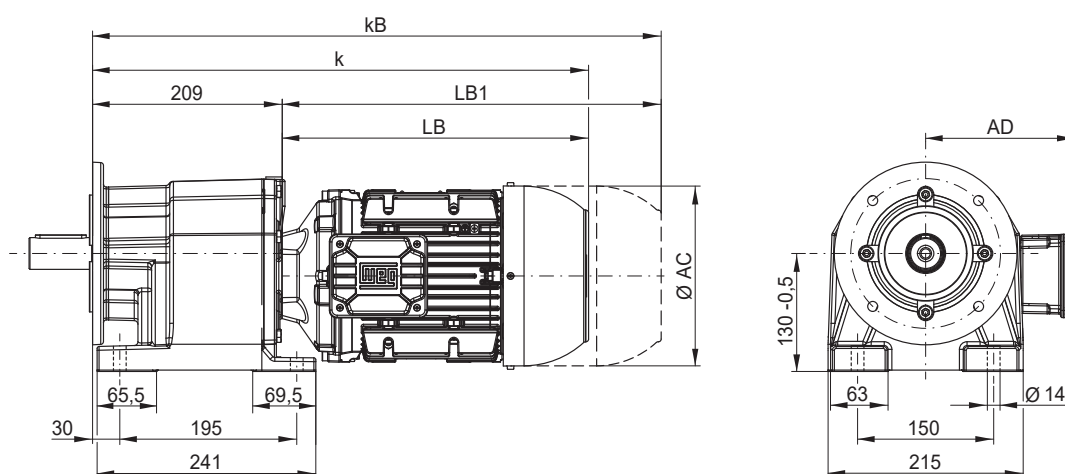


Flange $\varnothing 250$



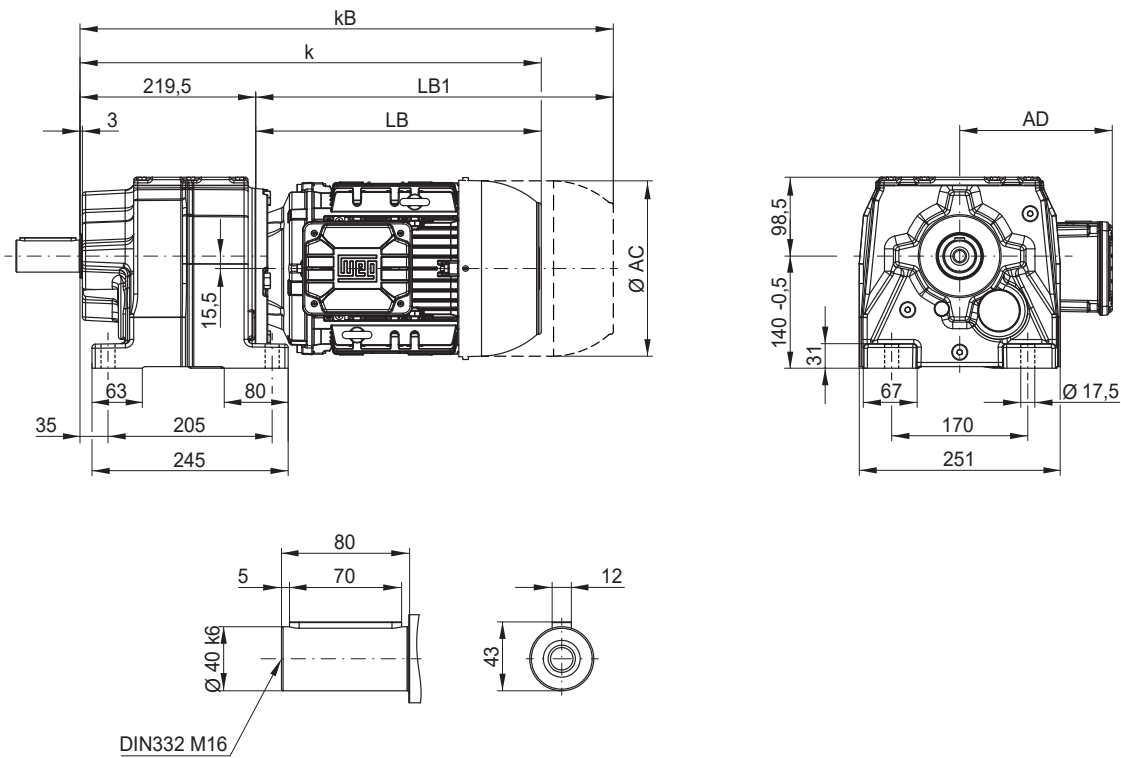
CA06 - Foot mounted and B5 flange execution

mountable flange sizes on the housing: $\varnothing 200$



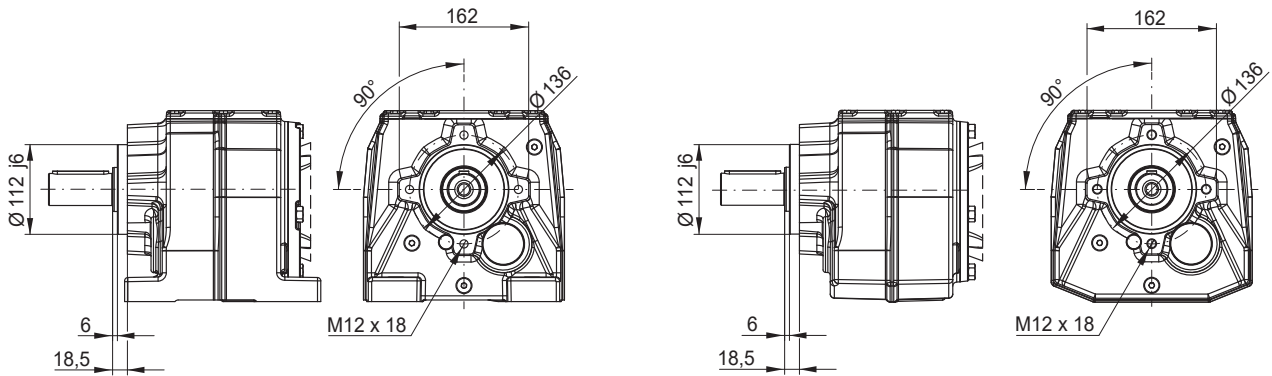
Dimensions in mm.

CG07 - Foot mounted



CW07 - Foot mounted with B14 flange execution + centring and threaded hole

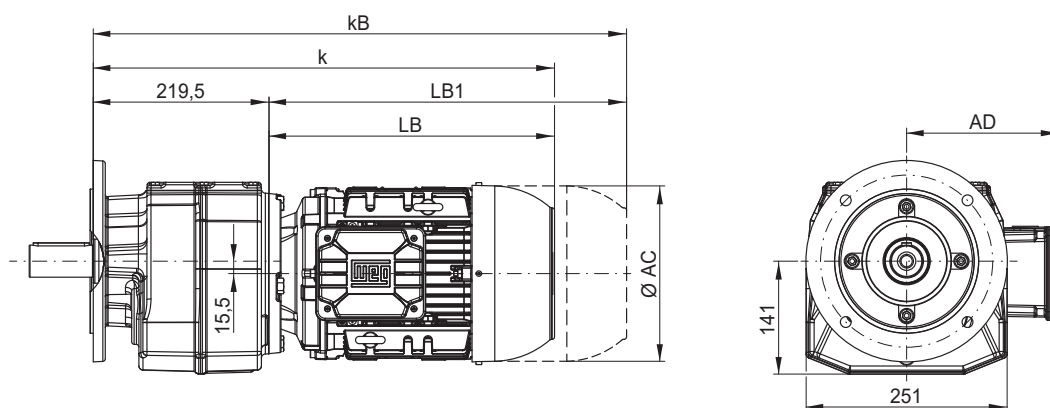
CC07 - B14 flange execution + centring and threaded hole



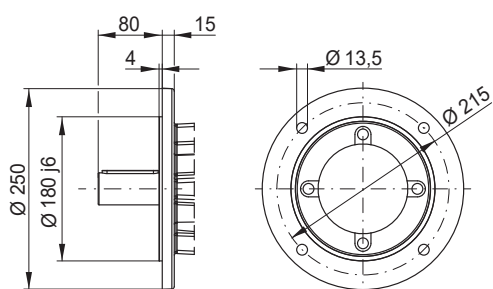
Motor fr.	63	71	80	L80	90S/L	100L	L100L	112M	132S,M	L132M	160M	160L
Dimension												
AC	126	141	159	159	178	199	199	221	261	261	329	329
AD	128	136	145	145	155	165	165	185	205	205	266	266
k	424	458	466	490	508	558	596	568	633	671	765	809
kB	468	507	524	548	581	642	680	655	751	789	889	933
LB	204	238	246	270	288	338	376	348	413	451	545	589
LB1	248	287	304	328	361	422	460	435	531	569	669	713

Motor dimension sheets see page 590; Gear unit size C07 corresponds to motor flange FR-200.
Description of motor lengths LB and LB1 see page 594

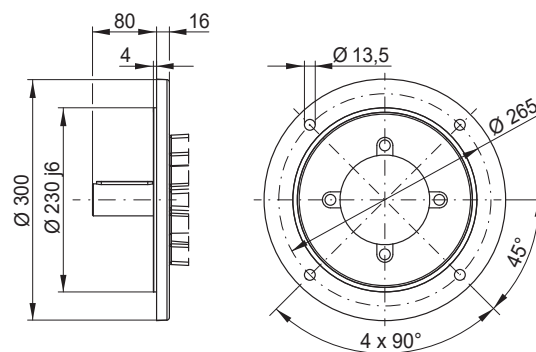
CF07 - Flange execution



Flange $\varnothing 250$

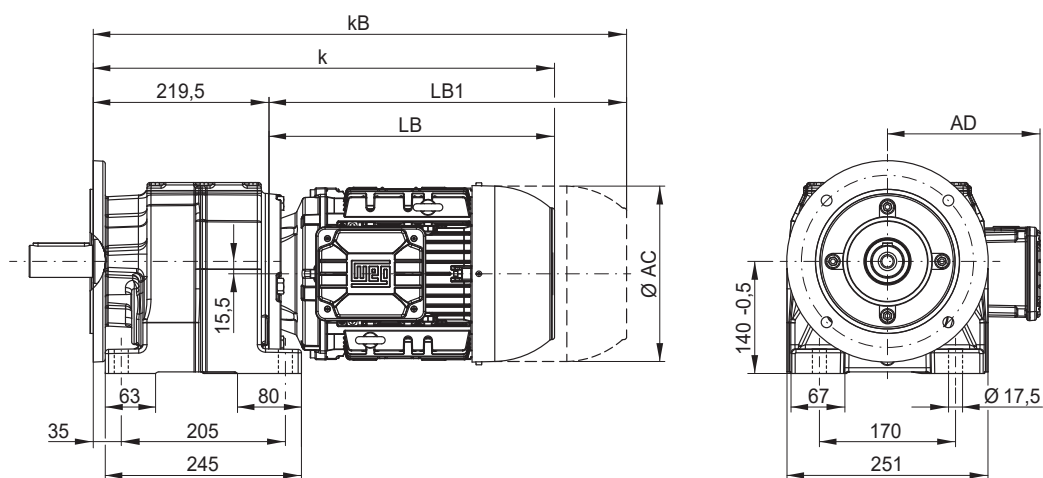


Flange $\varnothing 300$



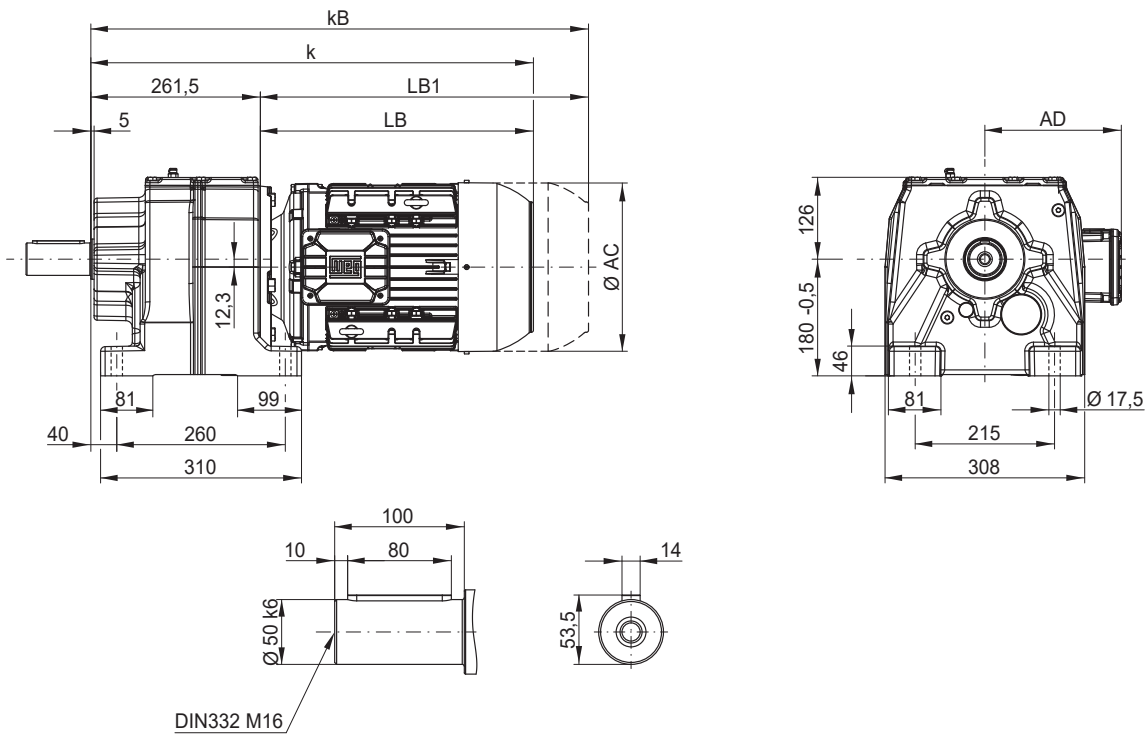
CA07 - Foot mounted and B5 flange execution

mountable flange sizes on the housing: $\varnothing 250$



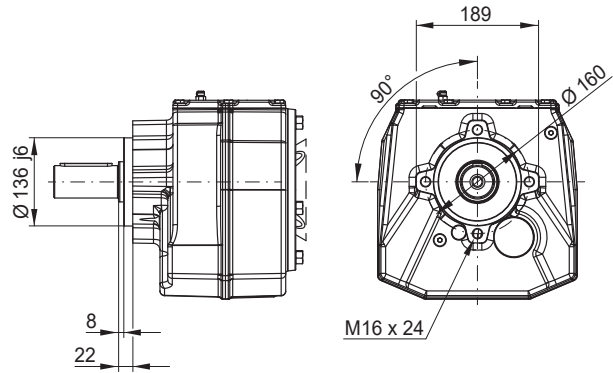
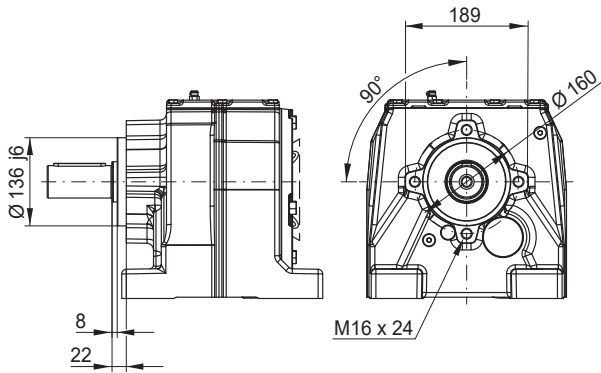
Dimensions in mm.

CG08 - Foot mounted



CW08 - Foot mounted with B14 flange execution + centring and threaded hole

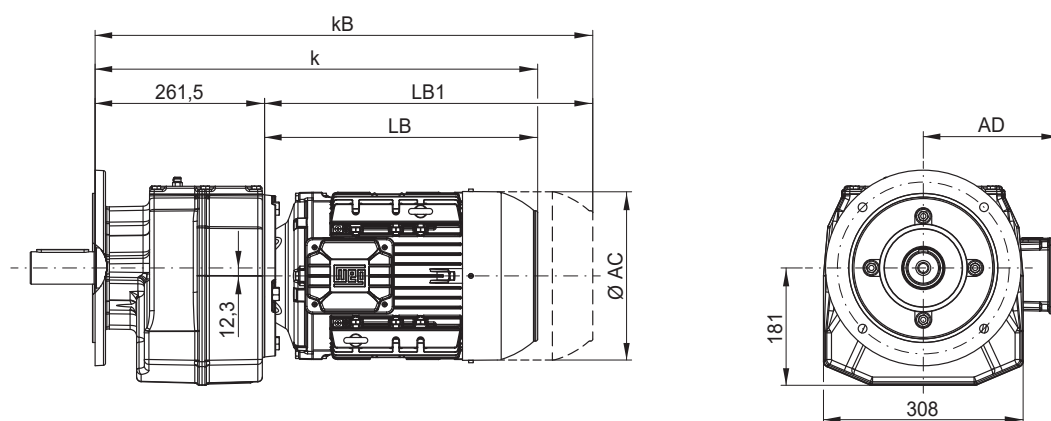
CC08 - B14 flange execution + centring and threaded hole



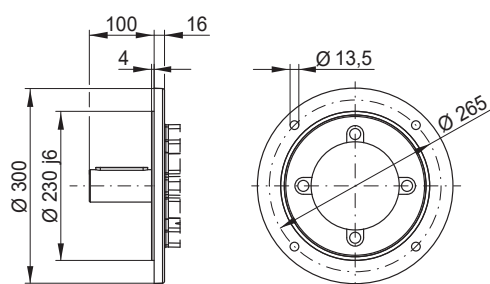
Motor fr.	63	71	80	L80	90S/L	100L	L100L	112M	132S,M	L132M	160M	160L	180M	180L
AC	126	141	159	159	178	199	199	221	261	261	329	329	347	347
AD	128	136	145	145	155	165	165	185	205	205	266	266	281	281
k	466	500	508	532	550	600	638	610	675	713	802	846	870	908
kB	510	549	566	590	623	684	722	697	793	831	926	970	988	1026
LB	204	238	246	270	288	338	376	348	413	451	540	584	608	646
LB1	248	287	304	328	361	422	460	435	531	569	664	708	726	764

Motor dimension sheets see page 590; Gear unit size C08 corresponds to motor flange FR-250.
Description of motor lengths LB and LB1 see page 594

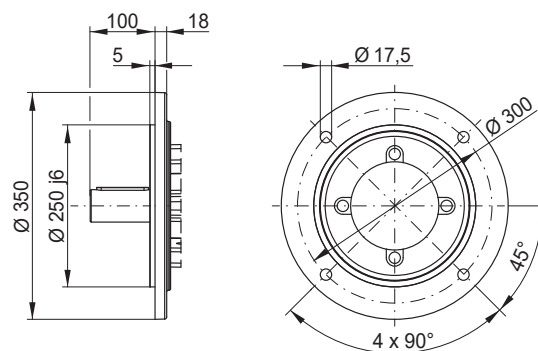
CF08 - Flange execution



Flange Ø 300

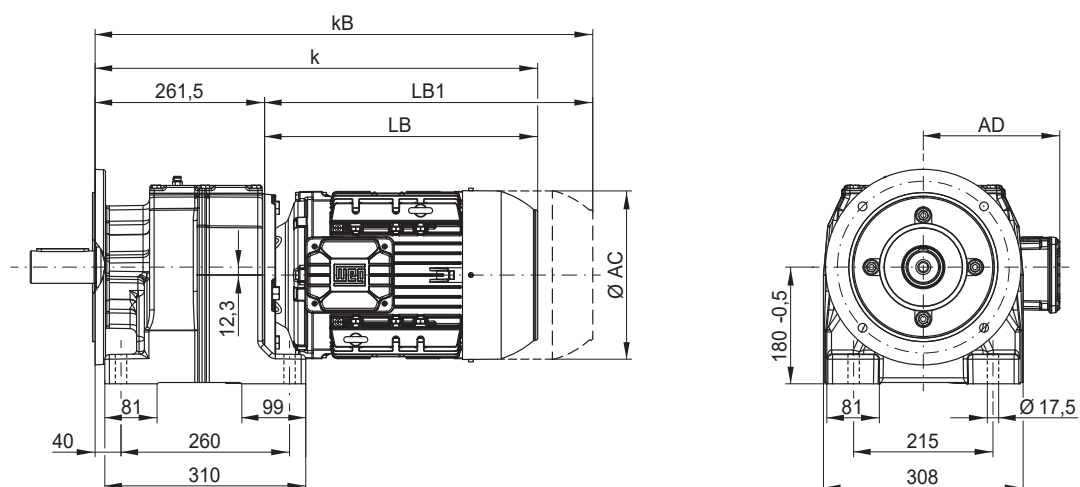


Flange Ø 350



CA08 - Foot mounted and B5 flange execution

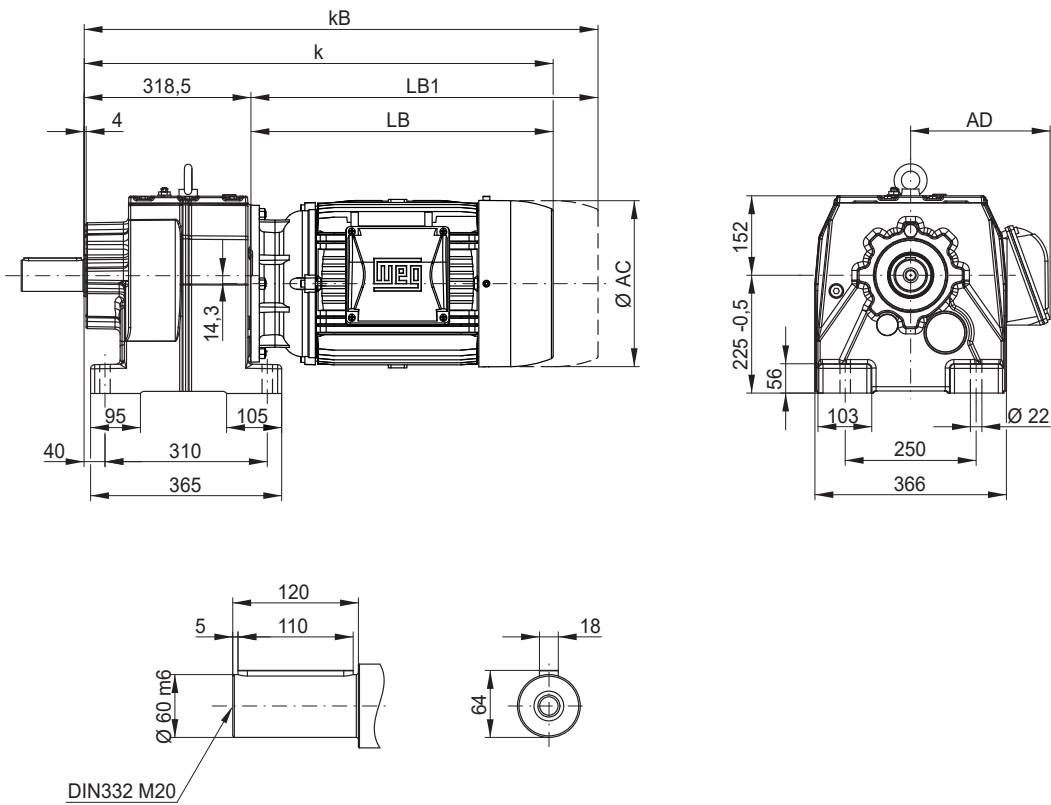
mountable flange sizes on the housing: Ø 300



Dimensions in mm.

CG092 / CG093 - Foot mounted

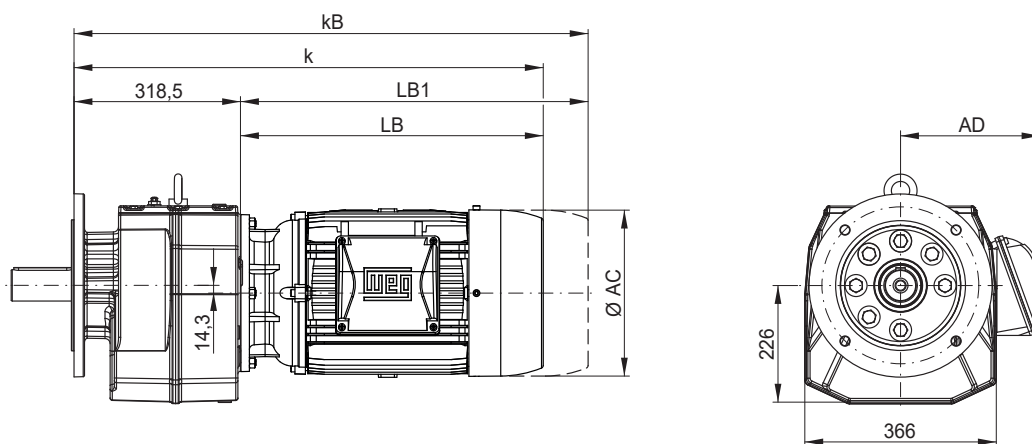
C



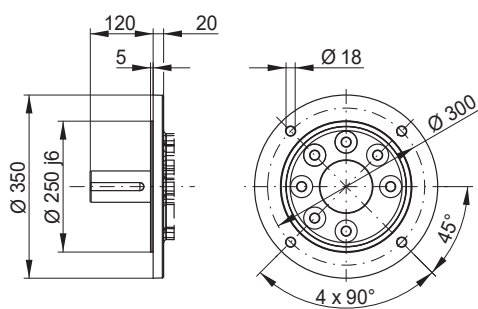
Motor fr.	63	71	80	L80	90S/L	100L	L100L	112M	132S,M	L132M	160M	160L	180M	180L	200L
AC	126	141	159	159	178	199	199	221	261	261	329	329	347	347	386
AD	128	136	145	145	155	165	165	185	205	205	266	266	281	281	317
k	523	557	565	589	607	657	695	667	732	770	854	898	922	960	1052
kB	567	606	623	647	680	741	779	754	850	888	978	1022	1040	1078	1178
LB	204	238	246	270	288	338	376	348	413	451	535	579	603	641	733
LB1	248	287	304	328	361	422	460	435	531	569	659	703	721	759	859

Motor dimension sheets see page 590; Gear unit size C092/C093 corresponds to motor flange FR-300.
Description of motor lengths LB and LB1 see page 594

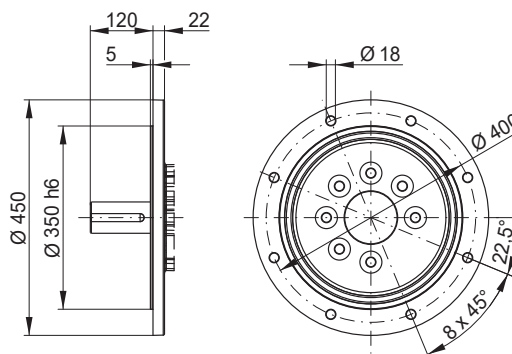
CF092 / CF093 - Flange execution



Flange Ø 350



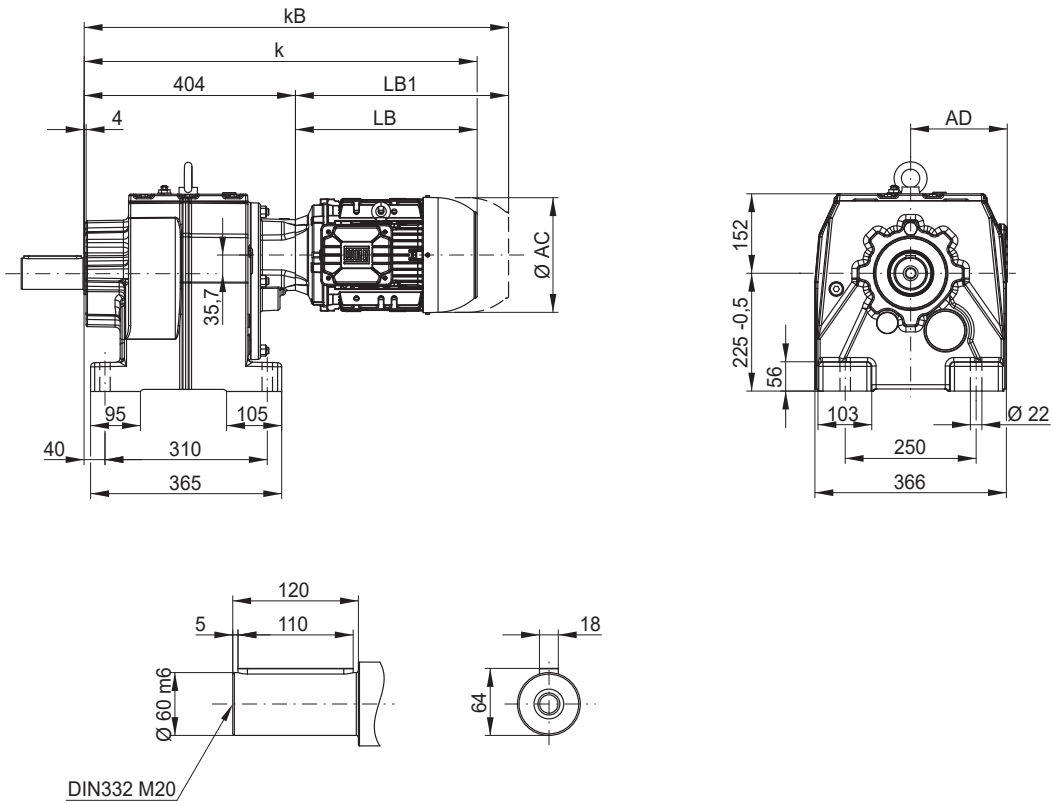
Flange Ø 450



Dimensions in mm.

CG094 - Foot mounted

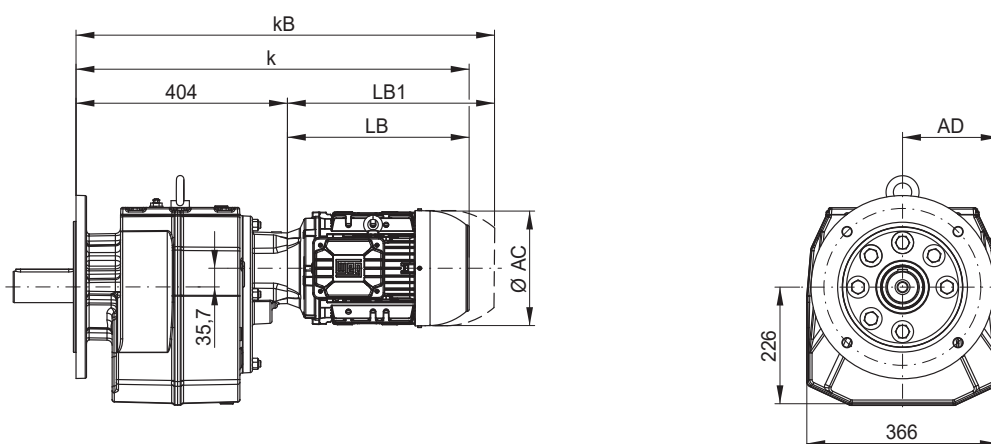
C



Motor fr.	63	71	80	L80	90S/L	100L	L100L	112M	132S,M	L132M
Dimension										
AC	126	141	159	159	178	199	199	221	261	261
AD	128	136	145	145	155	165	165	185	205	205
k	608	642	650	674	692	742	780	752	817	855
kB	652	691	708	732	765	826	864	839	935	973
LB	204	238	246	270	288	338	376	348	413	451
LB1	248	287	304	328	361	422	460	435	531	569

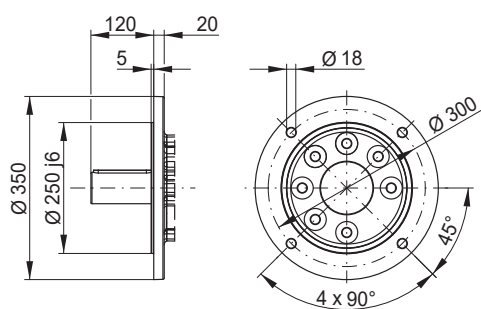
Motor dimension sheets see page 590
 Description of motor lengths LB and LB1 see page 594

CF094 - Flange execution

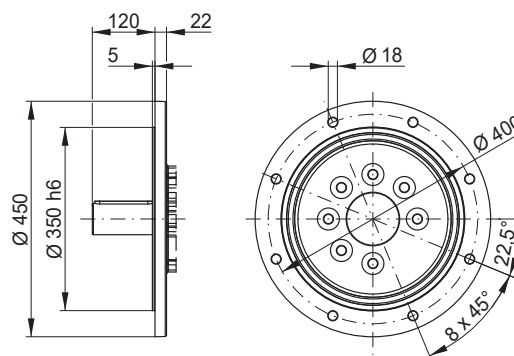


C

Flange $\varnothing 350$



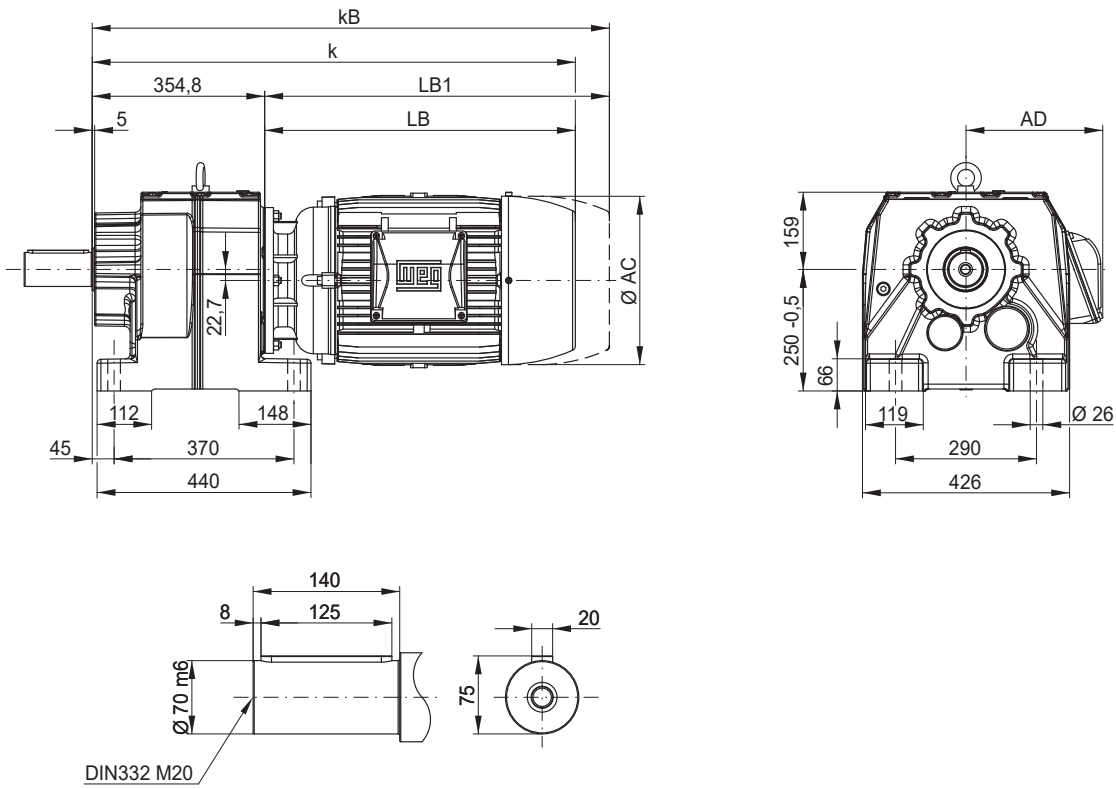
Flange $\varnothing 450$



Dimensions in mm.

CG102 / CG103 - Foot mounted

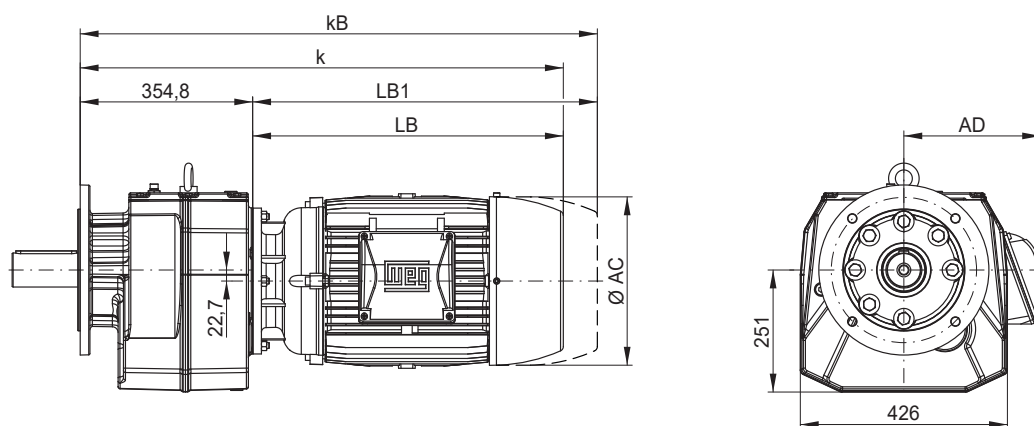
C



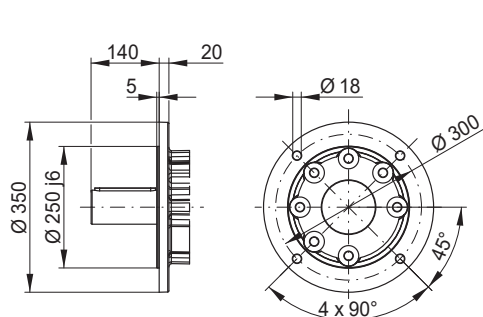
Motor fr.	63	71	80	L80	90S/L	100L	L100L	112M	132S,M	L132M	160M	160L	180M	180L	200L
AC	126	141	159	159	178	199	199	221	261	261	329	329	347	347	386
AD	128	136	145	145	155	165	165	185	205	205	266	266	281	281	317
k	559	593	601	625	643	693	731	703	768	806	890	934	958	996	1088
kB	603	642	659	683	716	777	815	790	886	924	1014	1058	1076	1114	1214
LB	204	238	246	270	288	338	376	348	413	451	535	579	603	641	733
LB1	248	287	304	328	361	422	460	435	531	569	659	703	721	759	859

Motor dimension sheets see page 590; Gear unit size C102/C103 corresponds to motor flange FR-300.
Description of motor lengths LB and LB1 see page 594

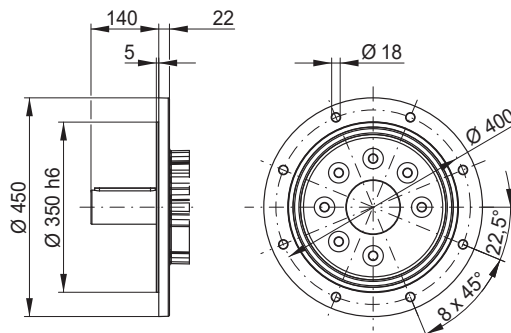
CF102 / CF103 - Flange execution



Flange $\varnothing 350$



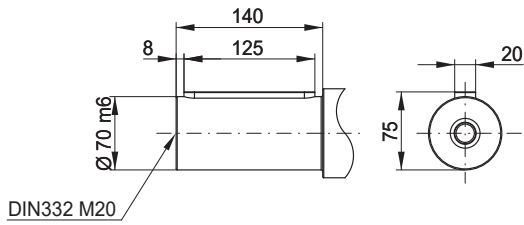
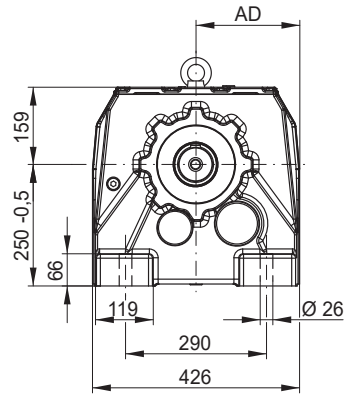
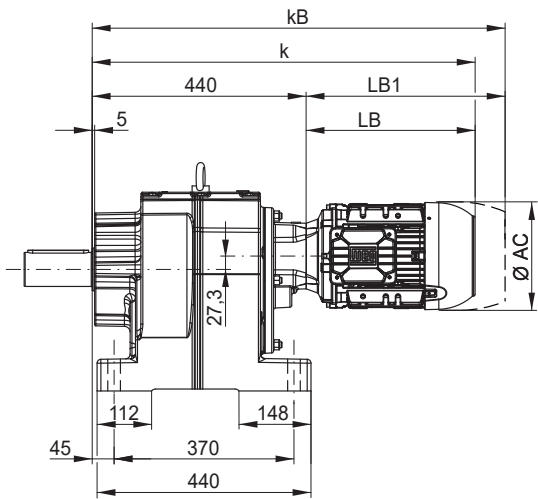
Flange $\varnothing 450$



Dimensions in mm.

CG104 - Foot mounted

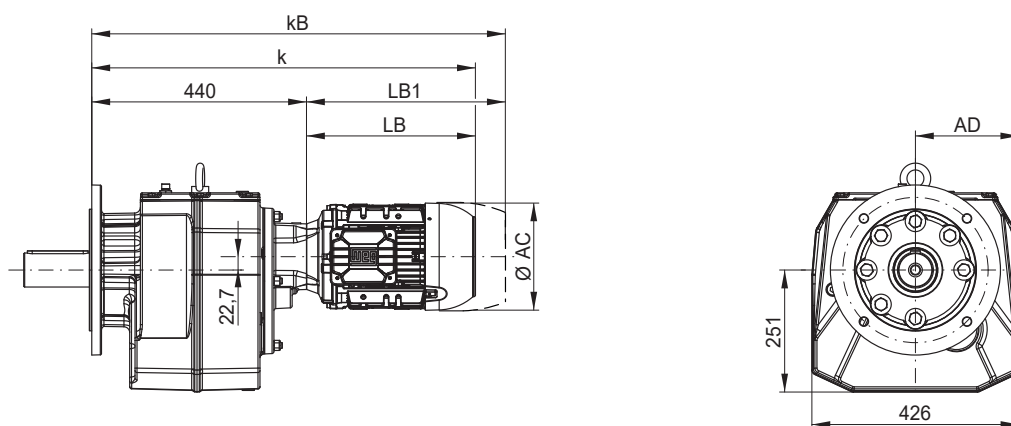
C



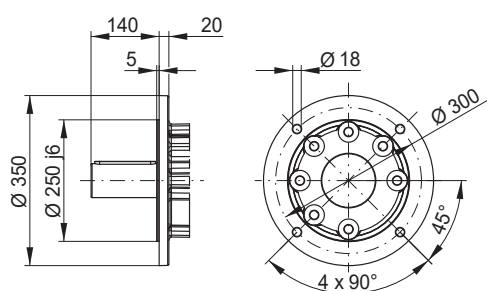
Motor fr.	63	71	80	L80	90S/L	100L	L100L	112M	132S,M	L132M
Dimension										
AC	126	141	159	159	178	199	199	221	261	261
AD	128	136	145	145	155	165	165	185	205	205
k	644	678	686	710	728	778	816	788	853	891
kB	688	727	744	768	801	862	900	875	971	1009
LB	204	238	246	270	288	338	376	348	413	451
LB1	248	287	304	328	361	422	460	435	531	569

Motor dimension sheets see page 590
 Description of motor lengths LB and LB1 see page 594

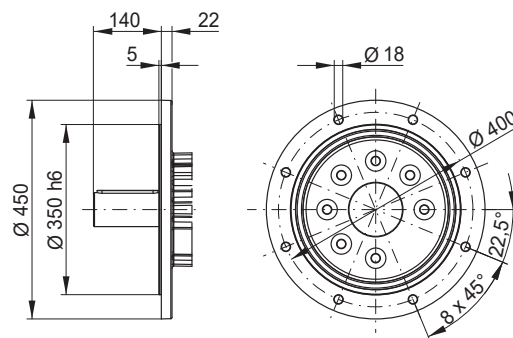
CF104 - Flange execution



Flange $\varnothing 350$



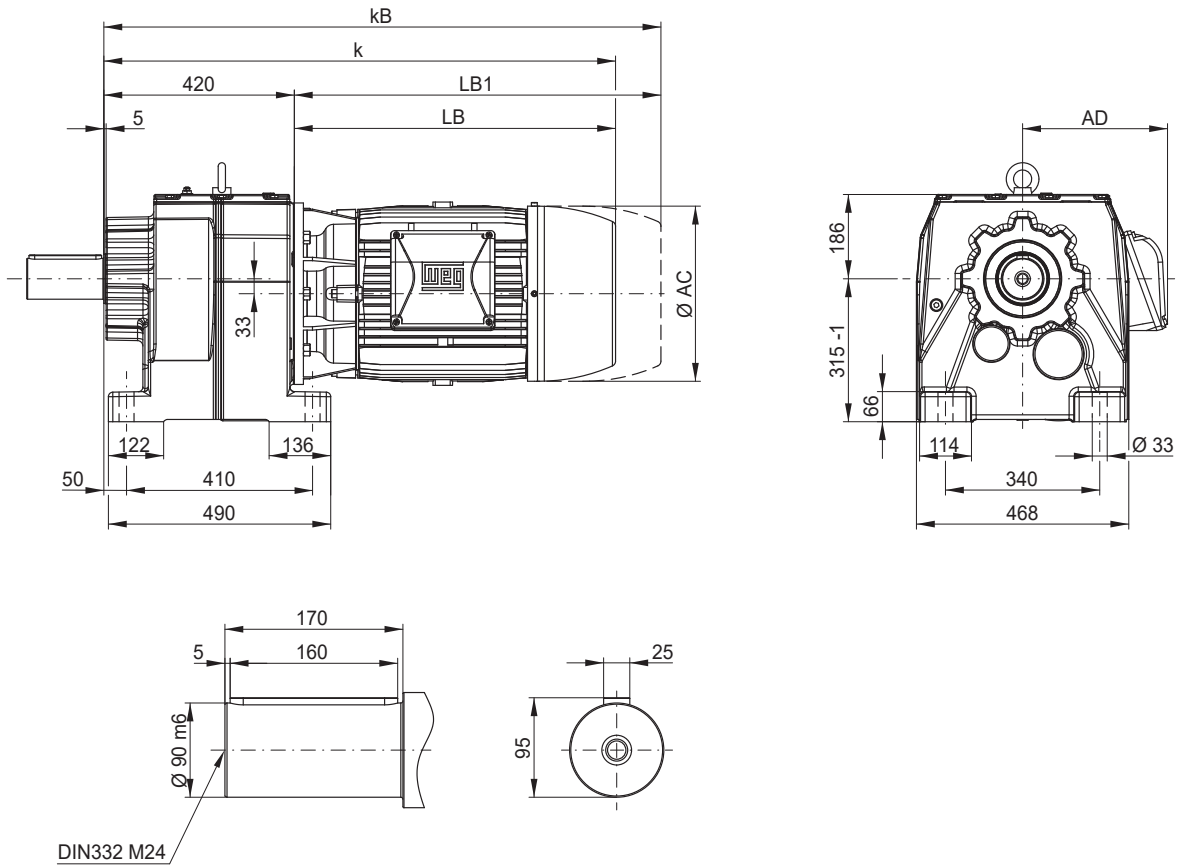
Flange $\varnothing 450$



Dimensions in mm.

CG132 / CG133 - Foot mounted

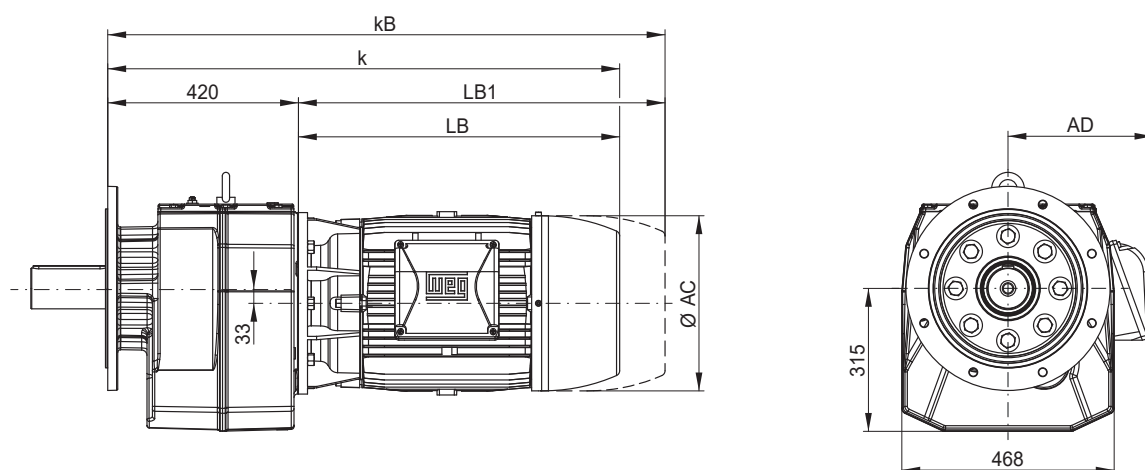
C



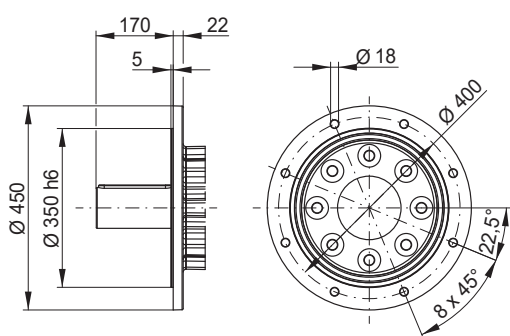
Motor fr.	63	71	80	L80	90S/L	100L	L100L	112M	132S,M	L132M	160M	160L	180M	180L	200L	225S/M	280S/M
Dimension																	
AC	-	-	-	-	-	-	-	221	261	261	329	329	347	347	386	453	599
AD	-	-	-	-	-	-	-	185	205	205	266	266	281	281	317	385	472
k	-	-	-	-	-	-	-	768	833	871	942	986	1010	1048	1140	1248	1409
kB	-	-	-	-	-	-	-	855	951	989	1066	1110	1128	1166	1266	1366	1502
LB	-	-	-	-	-	-	-	348	413	451	522	566	590	628	720	828	989
LB1	-	-	-	-	-	-	-	435	531	569	646	690	708	746	846	946	1082

Motor dimension sheets see page 590; Gear unit size C132/C133 corresponds to motor flange FR-400.
Description of motor lengths LB and LB1 see page 594

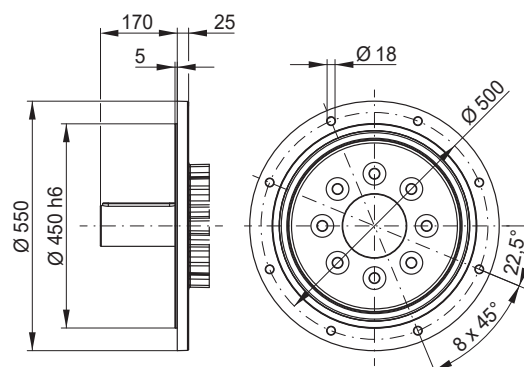
CF132 / CF133 - Flange execution



Flange Ø 450



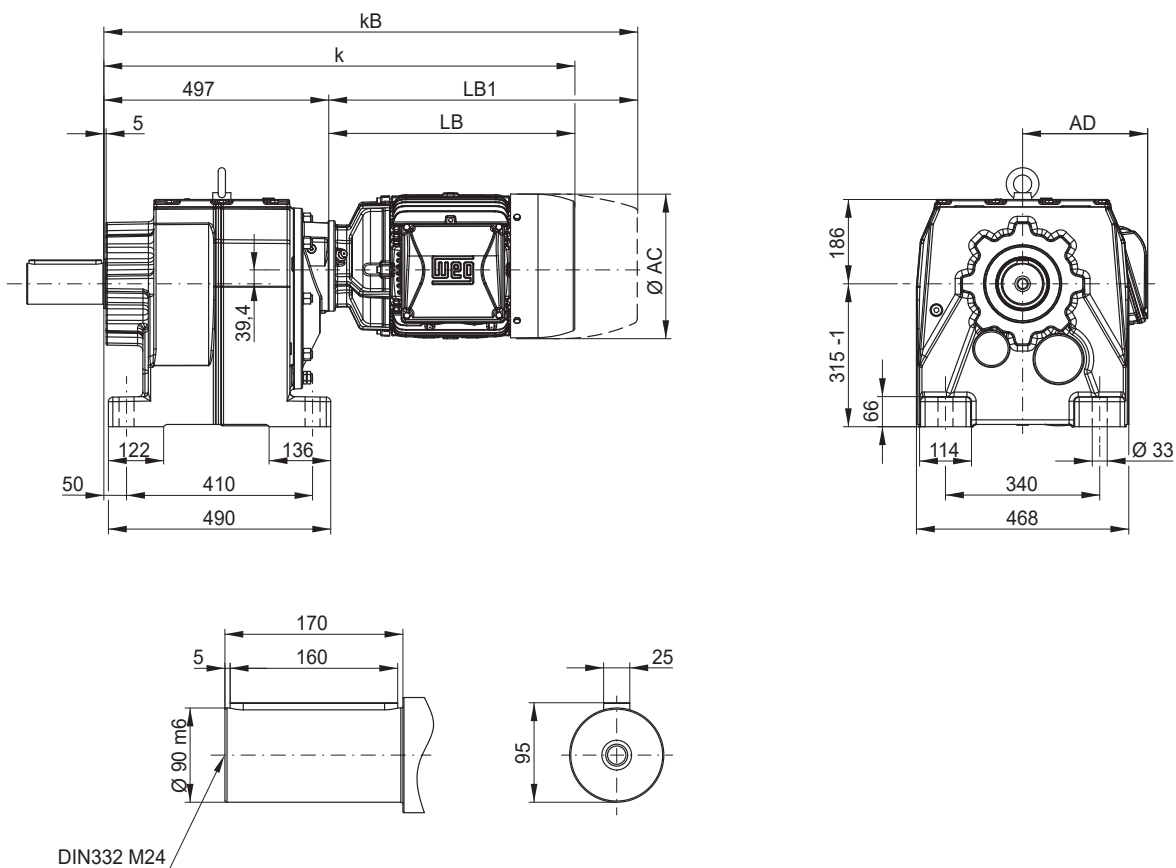
Flange Ø 550



Dimensions in mm.

CG134 - Foot mounted

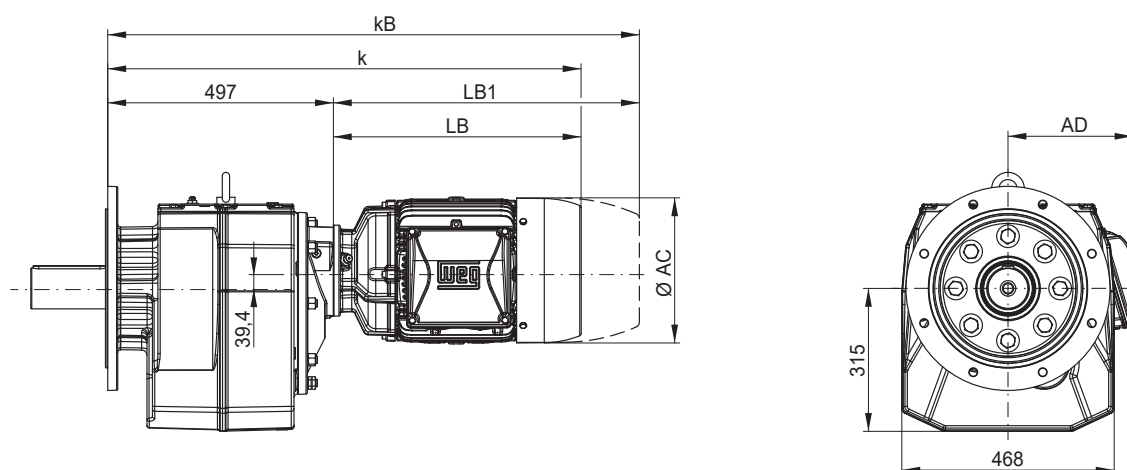
C



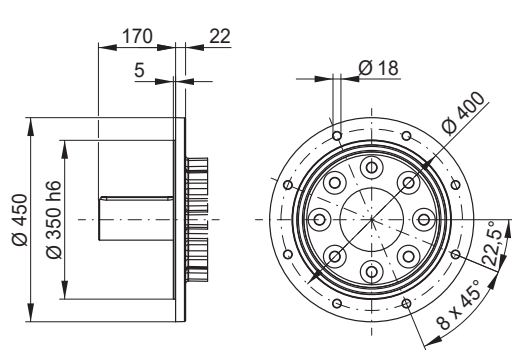
Motor fr.	63	71	80	L80	90S/L	100L	L100L	112M	132S,M	L132M	160M	160L
Dimension												
AC	126	141	159	159	178	199	199	221	261	261	329	329
AD	128	136	145	145	155	165	165	185	205	205	266	266
k	701	735	743	767	785	835	873	845	910	948	1042	1086
kB	745	784	801	825	858	919	957	932	1028	1066	1166	1210
LB	204	238	246	270	288	338	376	348	413	451	545	589
LB1	248	287	304	328	361	422	460	435	531	569	669	713

Motor dimension sheets see page 590; Gear unit size C134 corresponds to motor flange FR-200.
Description of motor lengths LB and LB1 see page 594

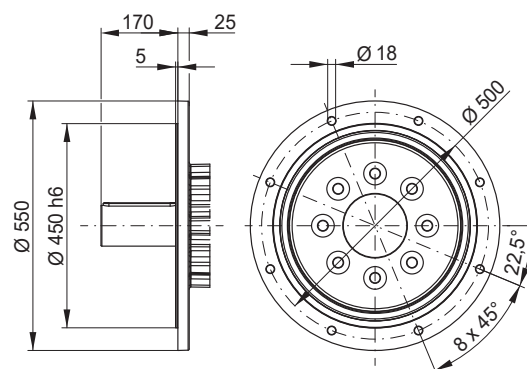
CF134 - Flange execution



Flange $\varnothing 450$



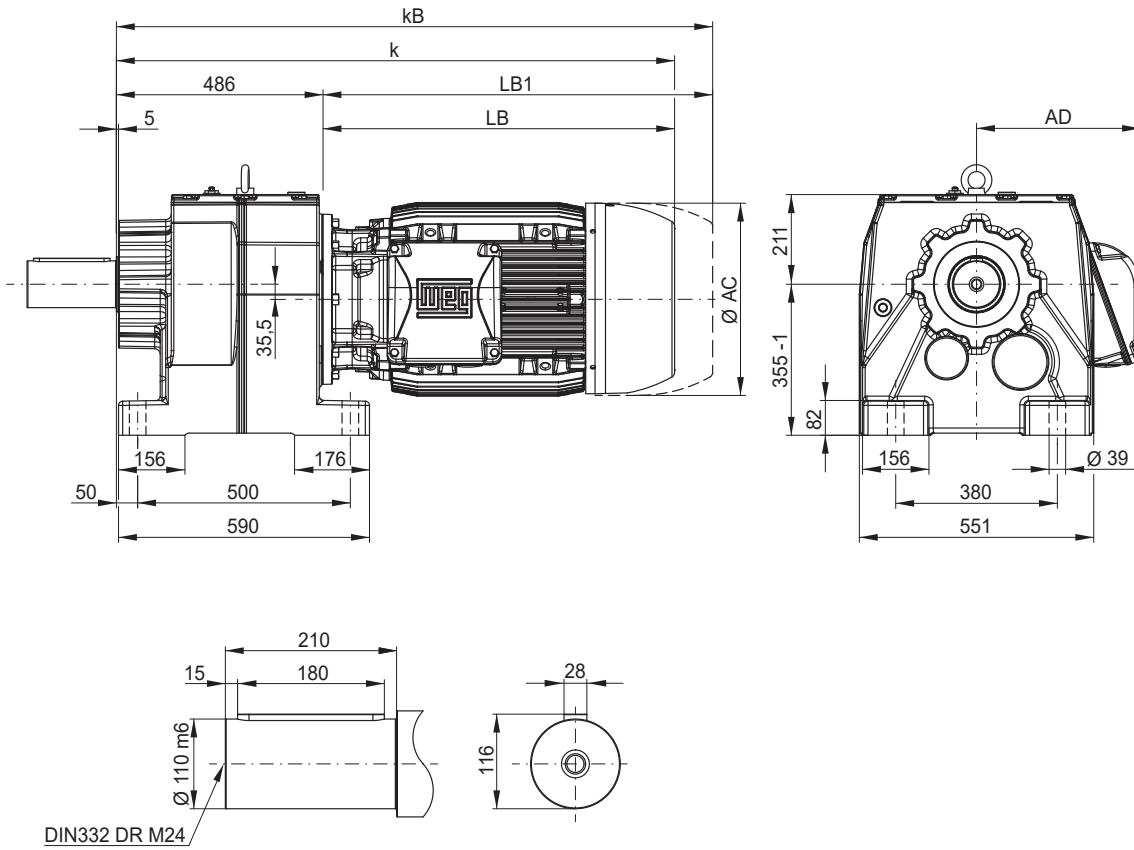
Flange $\varnothing 550$



Dimensions in mm.

CG142 / CG143 - Foot mounted

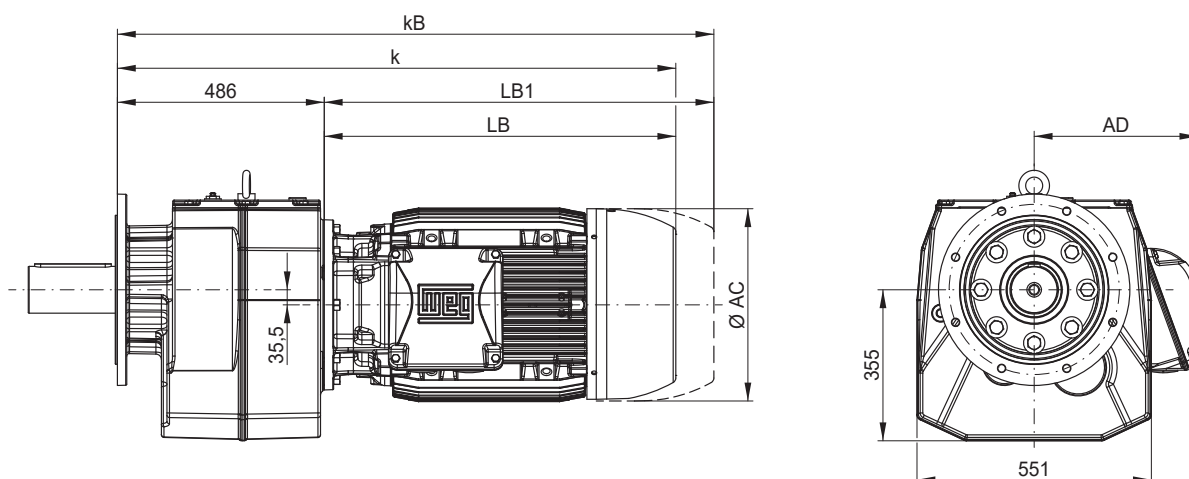
C



Motor fr.	63	71	80	L80	90S/L	100L	L100L	112M	132S,M	L132M	160M	160L	180M	180L	200L	225S/M	280S/M
Dimension																	
AC	-	-	-	-	-	-	-	221	261	261	329	329	347	347	386	453	599
AD	-	-	-	-	-	-	-	185	205	205	266	266	281	281	317	385	472
k	-	-	-	-	-	-	-	834	899	937	1008	1052	1076	1114	1206	1314	1475
kB	-	-	-	-	-	-	-	921	1017	1055	1132	1176	1194	1232	1332	1432	1568
LB	-	-	-	-	-	-	-	348	413	451	522	566	590	628	720	828	989
LB1	-	-	-	-	-	-	-	435	531	569	646	690	708	746	846	946	1082

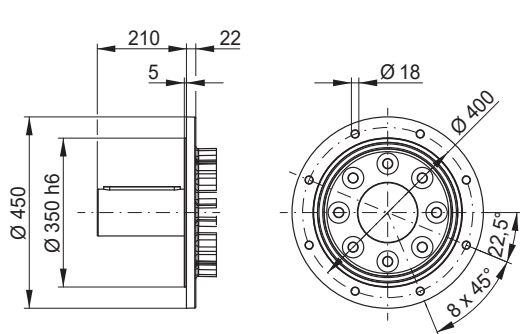
Motor dimension sheets see page 590; Gear unit size C142/143 corresponds to motor flange FR-400.
Description of motor lengths LB and LB1 see page 594

CF142 / CG143 - Flange execution

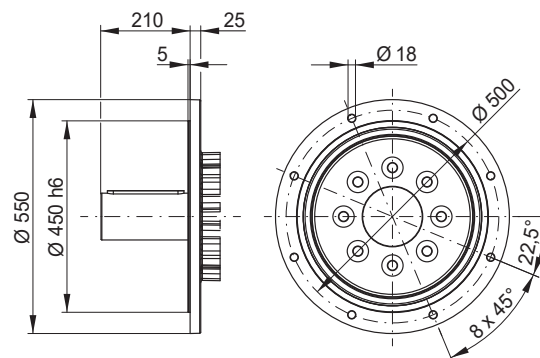


C

Flange Ø 450



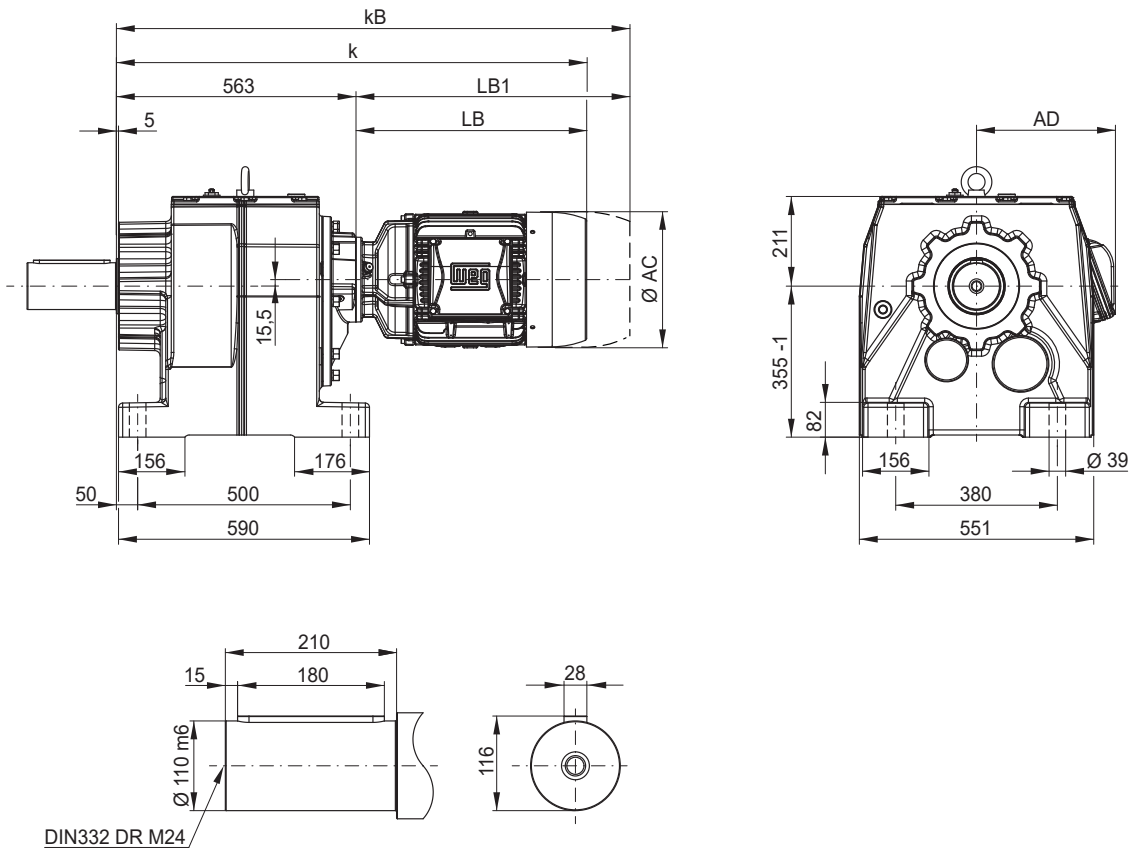
Flange Ø 550



Dimensions in mm.

CG144 - Foot mounted

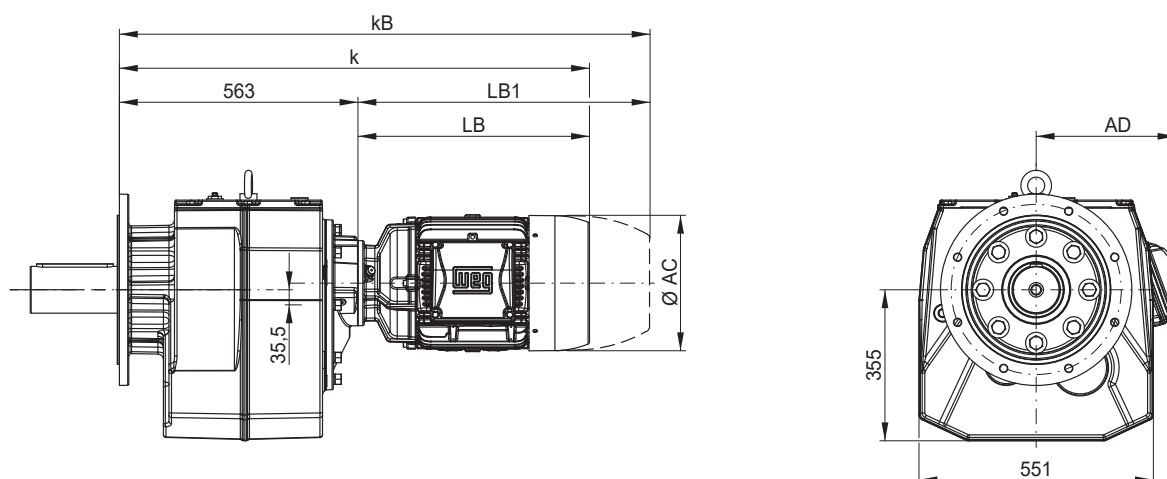
C



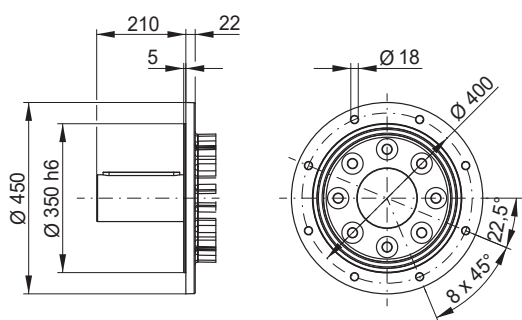
Motor fr.	63	71	80	L80	90S/L	100L	L100L	112M	132S,M	L132M	160M	160L
Dimension												
AC	126	141	159	159	178	199	199	221	261	261	329	329
AD	128	136	145	145	155	165	165	185	205	205	266	266
k	767	801	809	833	851	901	939	911	976	1014	1108	1152
kB	811	850	867	891	924	985	1023	998	1094	1132	1232	1276
LB	204	238	246	270	288	338	376	348	413	451	545	589
LB1	248	287	304	328	361	422	460	435	531	569	669	713

Motor dimension sheets see page 590; Gear unit size C144 corresponds to motor flange FR-200.
Description of motor lengths LB and LB1 see page 594

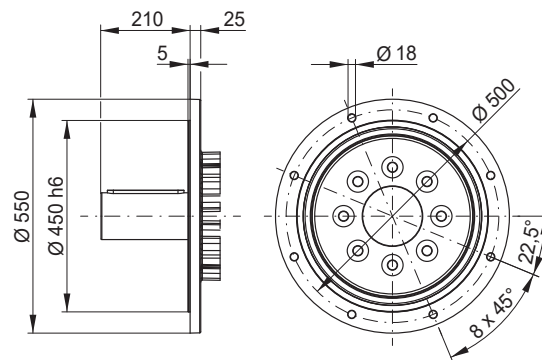
CF144 - Flange execution



Flange Ø 450



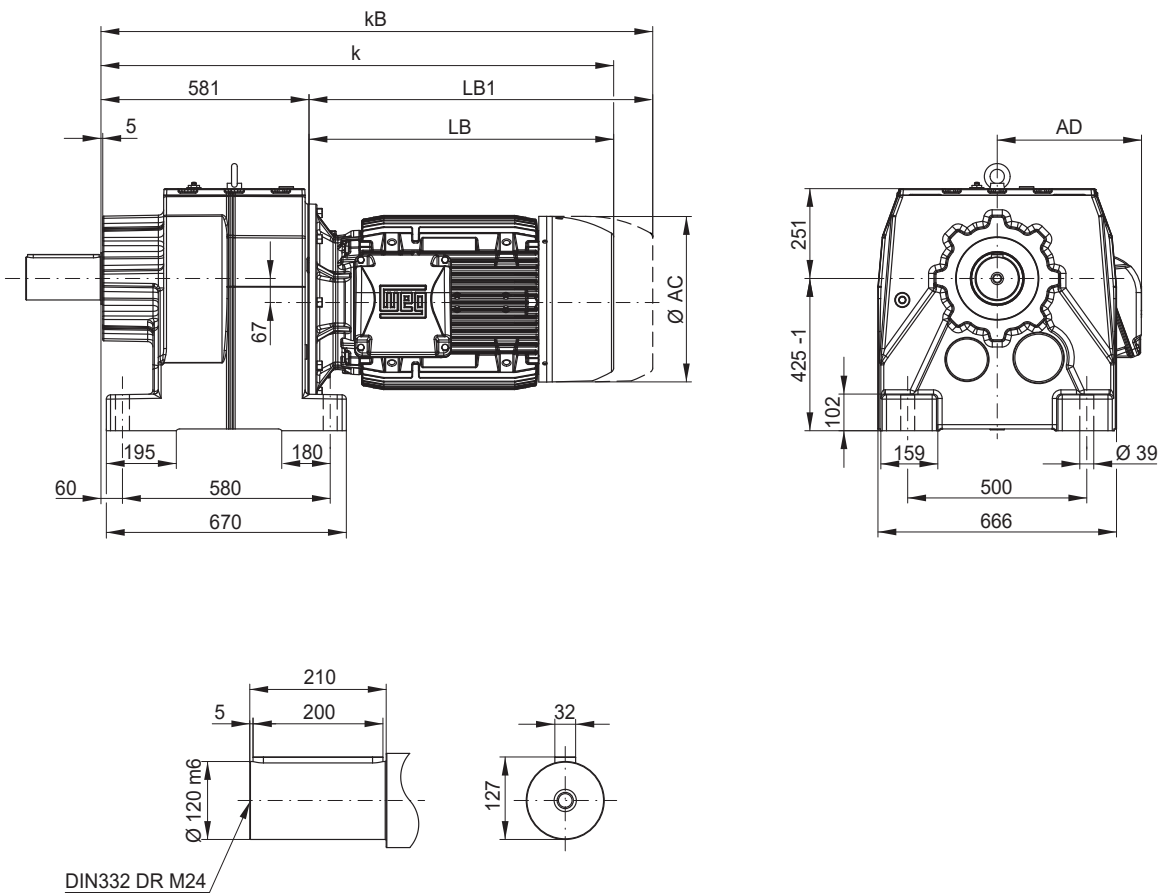
Flange Ø 550



Dimensions in mm.

CG162 / CG163 - Foot mounted

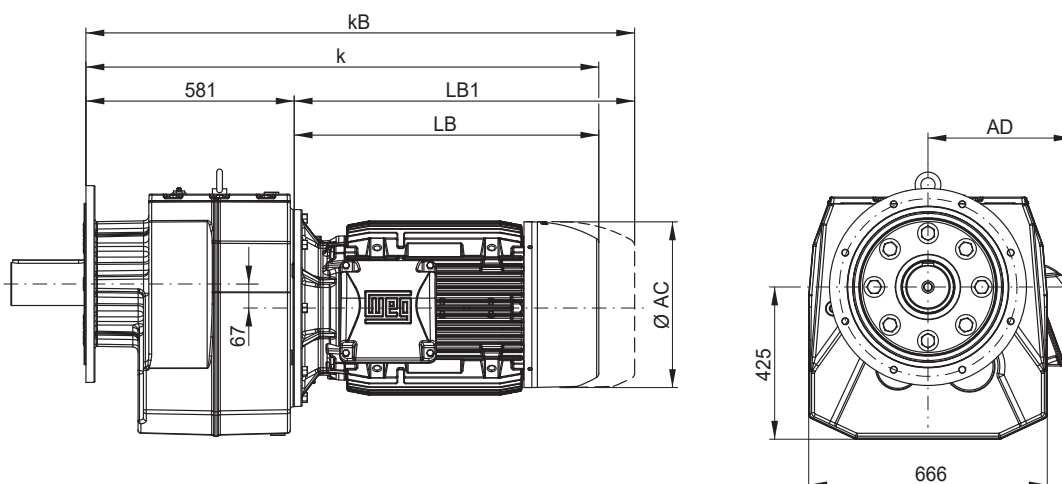
C



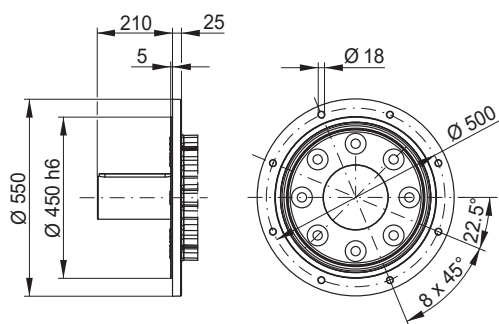
Motor fr.	63	71	80	L80	90S/L	100L	L100L	112M	132S,M	L132M	160M	160L	180M	180L	200L	225S/M	280S/M
Dimension																	
AC	-	-	-	-	-	-	-	-	-	-	329	329	347	347	386	453	599
AD	-	-	-	-	-	-	-	-	-	-	266	266	281	281	317	385	472
k	-	-	-	-	-	-	-	-	-	-	1087	1131	1155	1193	1285	1393	1554
kB	-	-	-	-	-	-	-	-	-	-	1211	1255	1273	1311	1411	1511	1647
LB	-	-	-	-	-	-	-	-	-	-	506	550	574	612	704	812	973
LB1	-	-	-	-	-	-	-	-	-	-	630	674	692	730	830	930	1066

Motor dimension sheets see page 590; Gear unit size C162/C163 corresponds to motor flange FR-550.
Description of motor lengths LB and LB1 see page 594

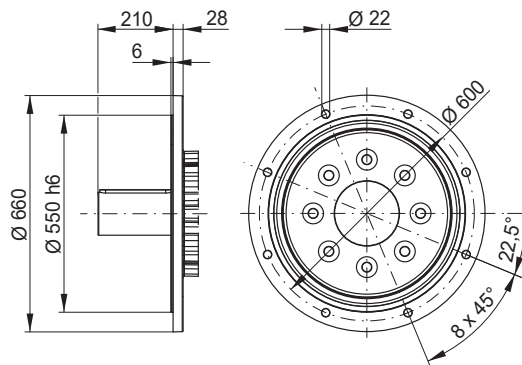
CF162 / CF163 - Flange execution



Flange $\varnothing 550$



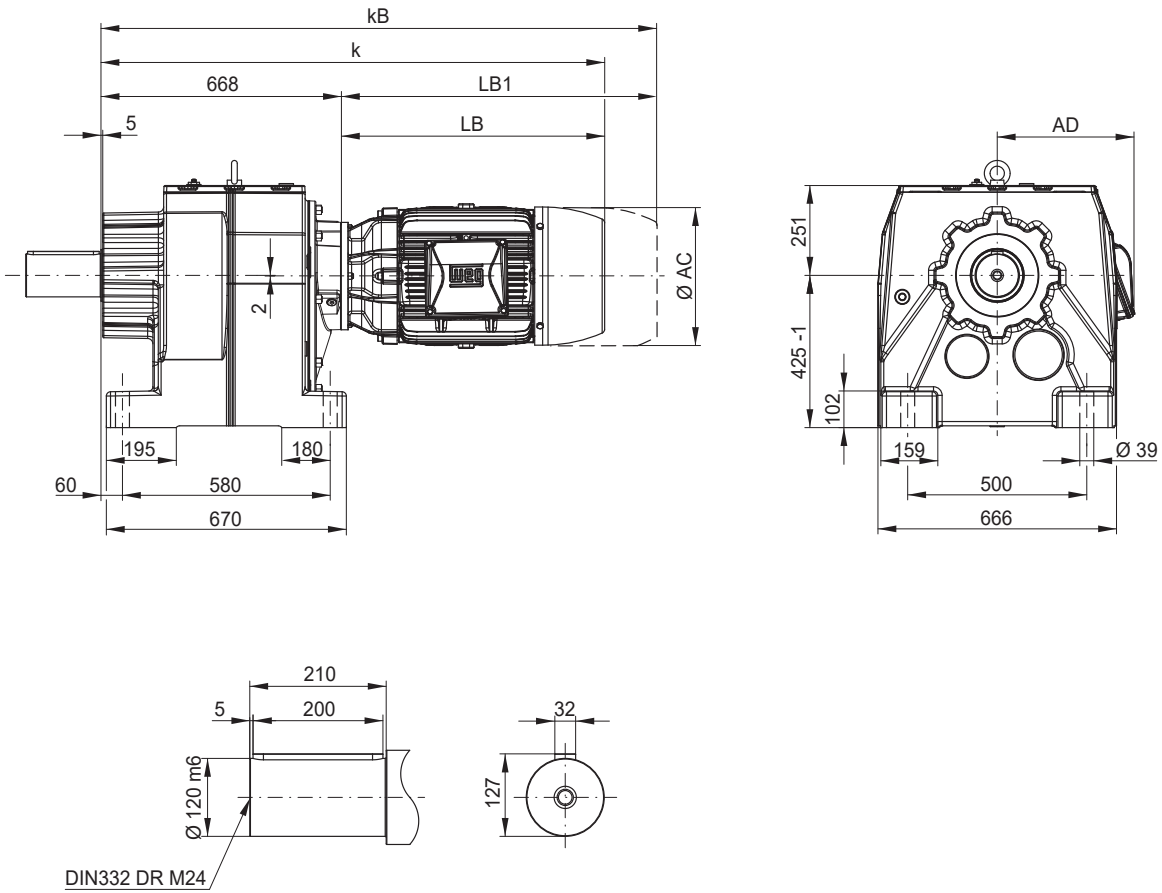
Flange $\varnothing 660$



Dimensions in mm.

CG164 - Foot mounted

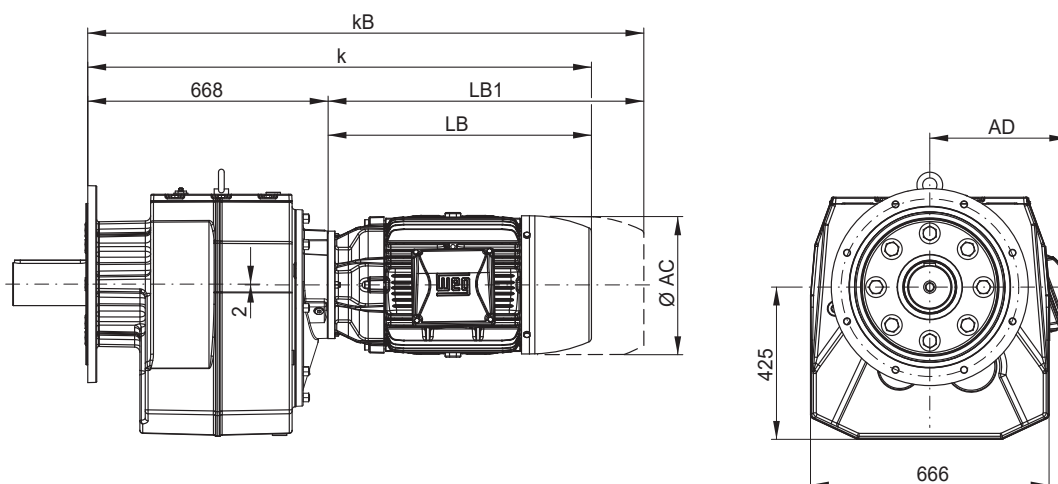
C



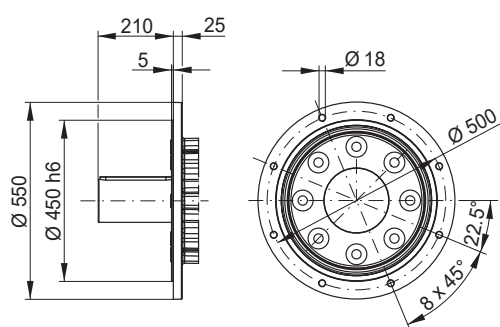
Motor fr.	63	71	80	L80	90S/L	100L	L100L	112M	132S,M	L132M	160M	160L	180M	180L	200L
Dimension															
AC	126	141	159	159	178	199	199	221	261	261	329	329	347	347	386
AD	128	136	145	145	155	165	165	185	205	205	266	266	281	281	317
k	204	238	246	270	288	338	376	348	413	451	535	579	603	641	733
kB	916	955	972	996	1029	1090	1128	1103	1199	1237	1327	1371	1389	1427	1527
LB	204	238	246	270	288	338	376	348	413	451	535	579	603	641	733
LB1	248	287	304	328	361	422	460	435	531	569	659	703	721	759	859

Motor dimension sheets see page 590; Gear unit size C164 corresponds to motor flange FR-300.
Description of motor lengths LB and LB1 see page 594

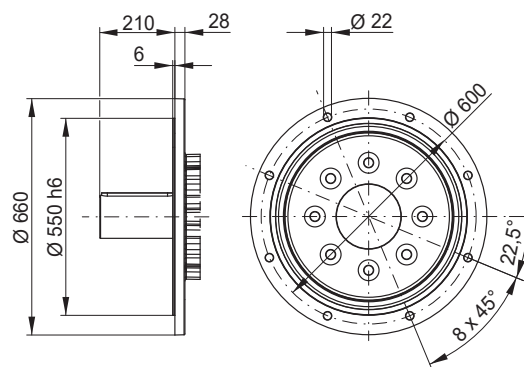
CF164 - Flange execution



Flange $\varnothing 550$



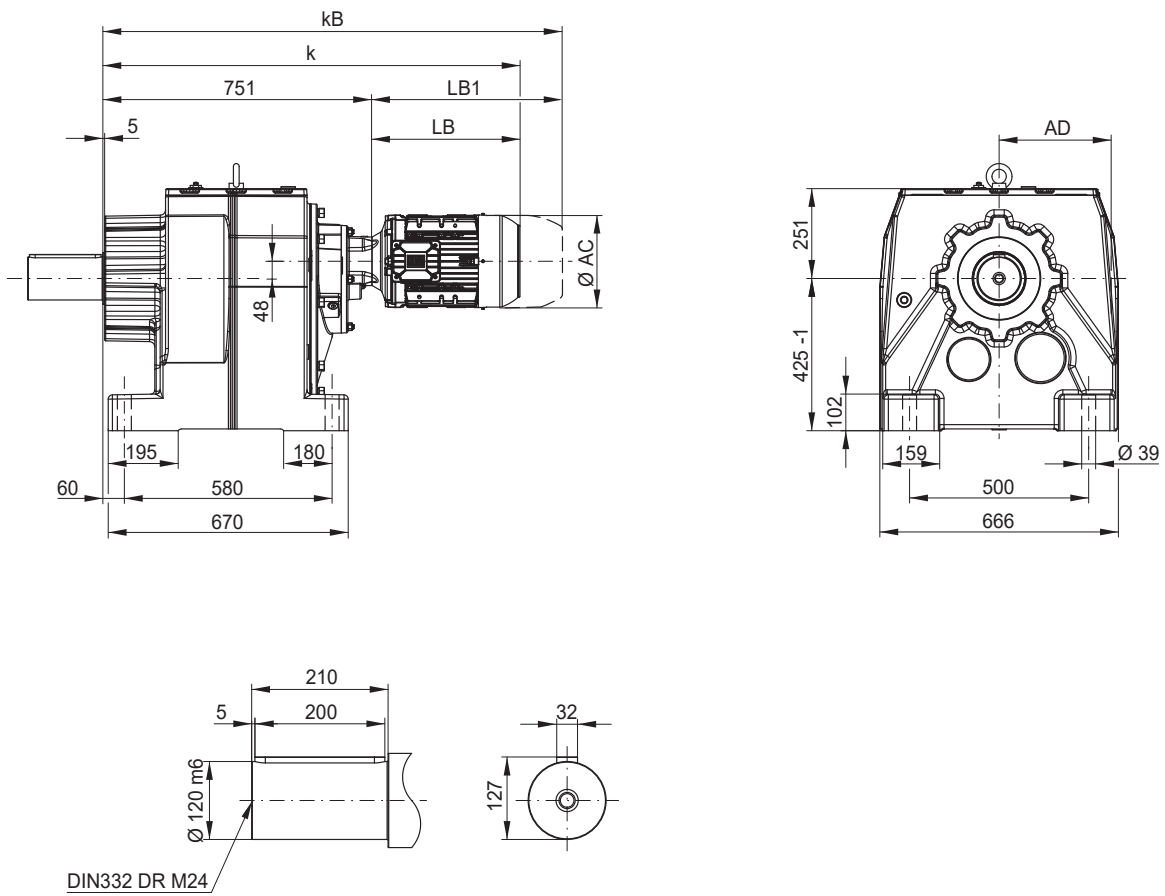
Flange $\varnothing 660$



Dimensions in mm.

CG165 - Foot mounted

C

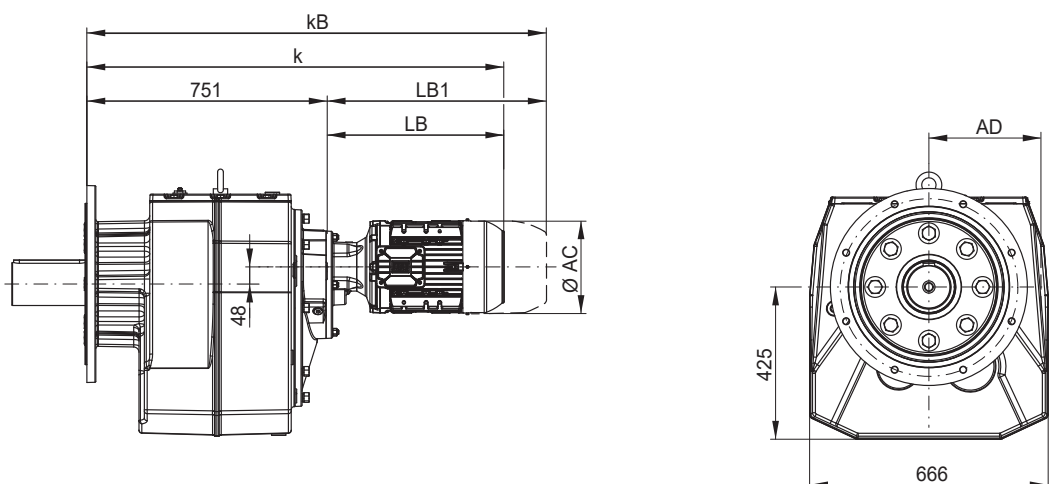


Motor fr.	63	71	80	L80	90S/L	100L	L100L	112M	132S,M	L132M
Dimension										
AC	126	141	159	159	178	199	199	221	261	261
AD	128	136	145	145	155	165	165	185	205	205
k	955	989	997	1021	1039	1089	1127	1099	1164	1202
kB	999	1038	1055	1079	1112	1173	1211	1186	1282	1320
LB	204	238	246	270	288	338	376	348	413	451
LB1	248	287	304	328	361	422	460	435	531	569

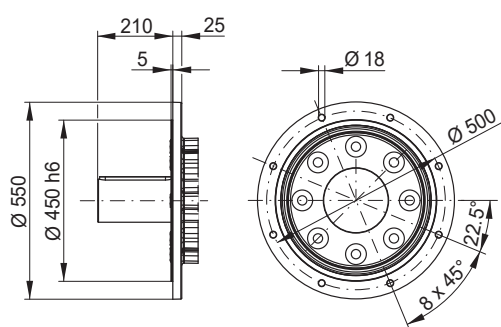
Motor dimension sheets see page 590

Description of motor lengths LB and LB1 see page 594

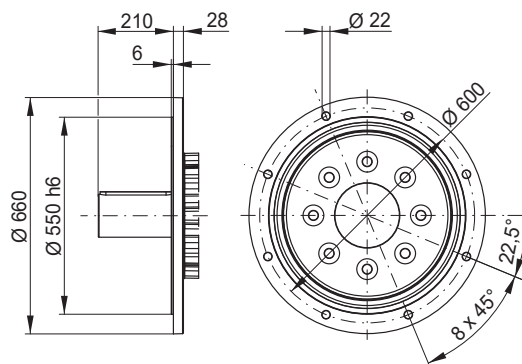
CF165 - Flange execution



Flange $\varnothing 550$

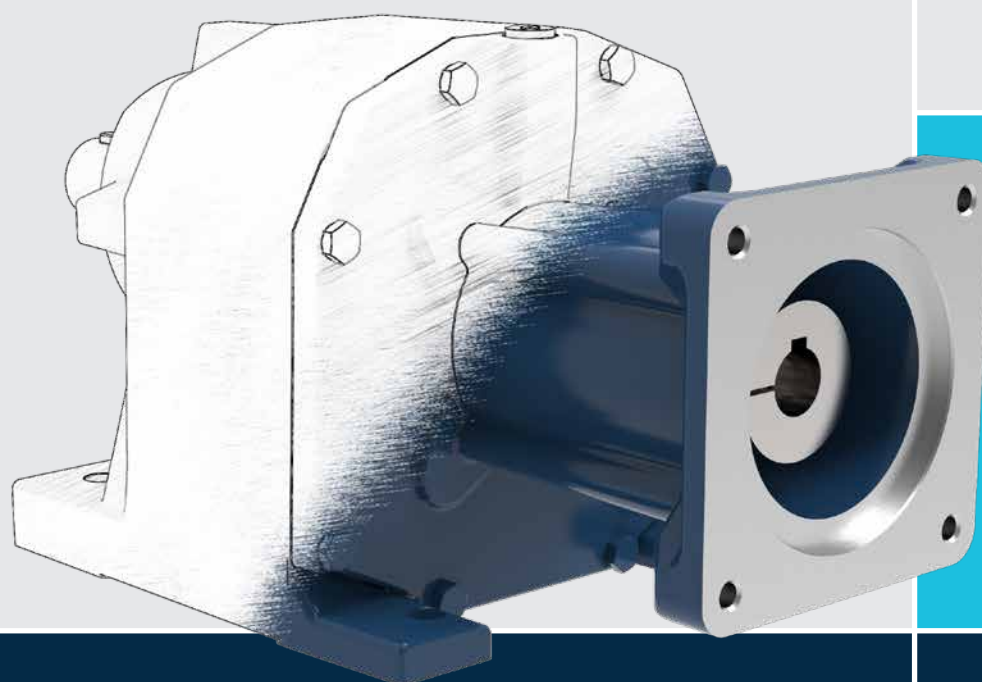


Flange $\varnothing 660$



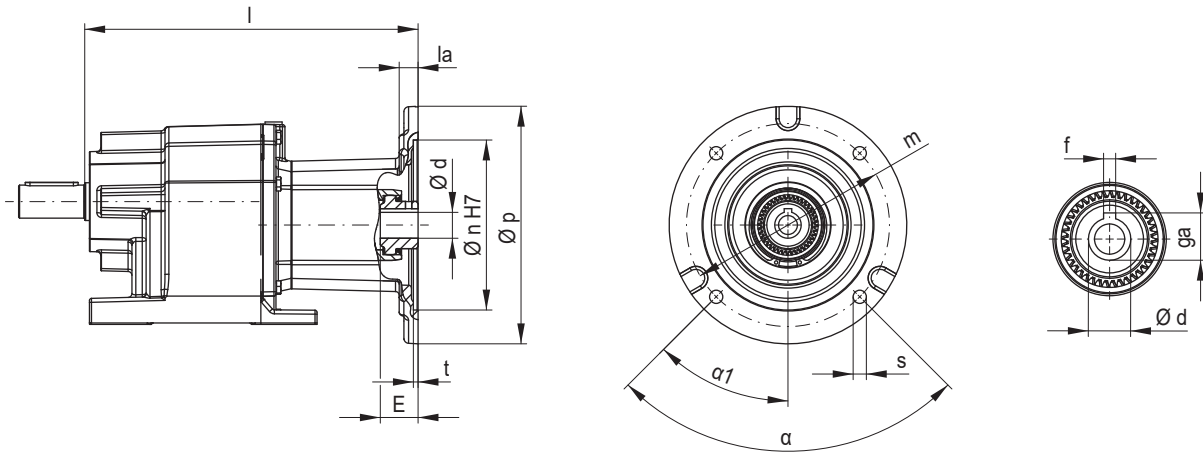
Dimensions in mm.

Dimension sheets Input types



C

IEC Adapter I63 to I280



C

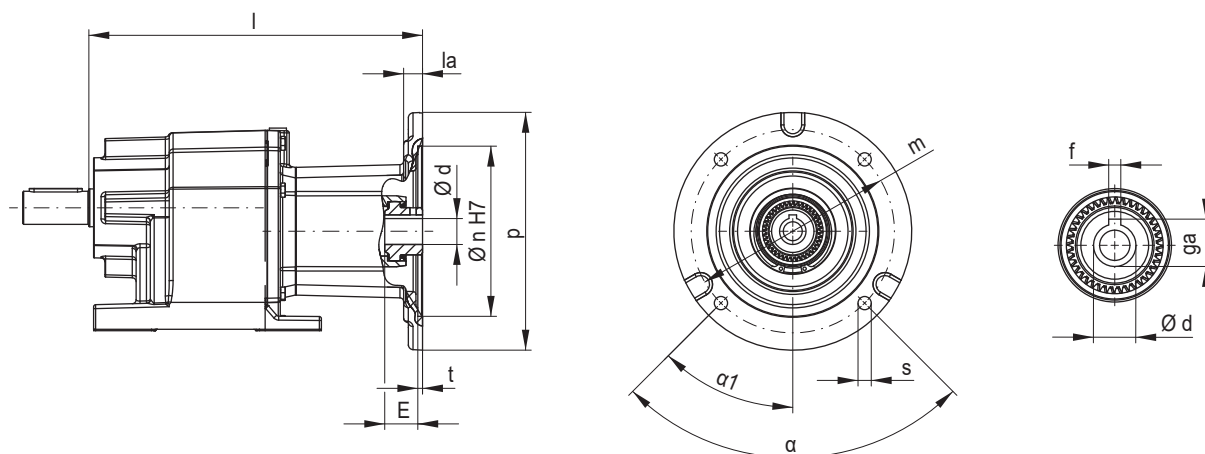
Type	I63	I71	I80	I90	I100	I112	I132	I160	I180	I200	I225	I250	I280
p	154	154	200	200	250	250	300	350	350	400	450	550	550
n	95	110	130	130	180	180	230	250	250	300	350	450	450
la	22.5	10	13	13	15	20	15	35	35	20	20	20	20
m	115	130	165	165	215	215	265	300	300	350	400	500	500
t	4.5	4.5	4.5	4.5	5	5	5	5	5	5.5	5	5	5
s	M8x16	M8x10	11	11	13.5	13.5	13.5	17.5	17.5	17.5	17.5	17.5	17.5
α	90	90	90	90	90	90	90	90	90	90	45	45	45
α ₁	35	45	45	45	45	45	45	45	45	45	45	45	45
d	11	14	19	24	28	28	38	42	48	55	60	65	75
f	4	5	6	8	8	8	10	12	14	16	18	18	20
ga	12.8	16.3	21.8	27.3	31.3	31.3	41.3	45.3	51.8	59.3	64.4	69.4	79.9
E ¹⁾	25	32	43	47.5	63	100	85.5	111.5	111.5	114.5	140	146	146

¹⁾ Maximum motor shaft length for motors with key

Gear unit size	I63	I71	I80	I90	I100	I112	I132	I160	I180	I200	I225	I250	I280
	l												
C00	150.5	150.5	178.5	178.5	209.5	-	-	-	-	-	-	-	-
C01	163	163	191	191	222	-	-	-	-	-	-	-	-
C03	190.5	190.5	218.5	218.5	249.5	-	-	-	-	-	-	-	-
C05	226	226	254	254	285	338	349	-	-	-	-	-	-
C06	241	241	269	269	300	353	364	-	-	-	-	-	-
C07	252.5	252.5	280.5	280.5	311.5	364.5	375.5	461.5	461.5	-	-	-	-
C08	293.5	293.5	321.5	321.5	352.5	405.5	416.5	498.5	498.5	-	-	-	-
C092/93	343	343	371	371	402	455	466	550.5	550.5	579	609	-	-
C094	425	425	453	453	484	538	549	-	-	-	-	-	-
C102/103	379	379	407	407	438	491	502	586.5	586.5	615	645	-	-
C104	462	462	490	490	521	574	585	-	-	-	-	-	-
C132/133	-	-	-	-	-	545.5	556.5	638.5	638.5	667	697	791	791
C134	529.5	529.5	557.5	557.5	588.5	641.5	652.5	738.5	738.5	-	-	-	-
C142/143	-	-	-	-	-	612.5	623.5	705.5	705.5	734	764	858	858
C144	595.5	595.5	623.5	623.5	654.5	707.5	718.5	804.5	804.5	-	-	-	-
C162/163	-	-	-	-	-	-	-	778.5	778.5	807	837	931	931
C164	721.5	721.5	749.5	749.5	780.5	803.5	814.5	899.5	899.5	928	958	-	-
C165	775	775	803	803	834	887	898	-	-	-	-	-	-

Dimensions in mm.

NEMA Adapter N56 to N364



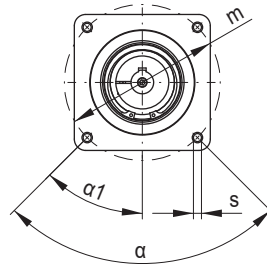
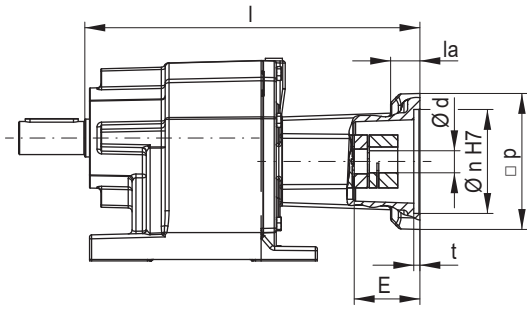
C

Type	N56	N143/145	N182	N184	N213/215	N254/256	N284/286	N324/326	N364
p	170	170	250	250	300	225	280	350	400
n	114.3	114.3	215.9	215.9	215.9	215.9	266.7	317.5	317.5
la	13	13	10	16.8	10	30	35	15	15
m	149.225	149.225	184.15	184.15	184.15	184.15	228.6	279.4	279.4
t	4.5	4.5	5	3.2	5	5	3	5	5
s	11	11	14	14	14	14	14	19	19
α	90	90	90	90	90	90	90	90	90
α ₁	45	45	45	45	45	45	45	45	45
d	15.875	22.225	28.575	28.575	34.925	41.275	47.625	53.975	60.325
f	4.775	4.775	6.350	6.350	7.950	9.525	12.700	12.700	15.875
ga	18.008	24.486	31.521	31.521	38.557	45.618	53.238	59.690	67.335
E ¹⁾	55	55	67.5	96.8	80.5	105.5	111.5	109.5	109.5

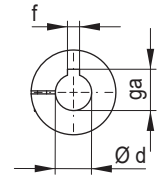
¹⁾ Maximum motor shaft length for motors with key

Gear unit size	N56	N143/145	N182	N184	N213/215	N254/256	N284/286	N324/326	N364
	l								
C00	178.5	178.5	209.5	-	-	-	-	-	-
C01	191	191	222	-	-	-	-	-	-
C03	218.5	218.5	249.5	-	-	-	-	-	-
C05	254	254	285	338	349	-	-	-	-
C06	269	269	300	353	364	-	-	-	-
C07	280.5	280.5	311.5	364.5	375.5	461.5	464.5	-	-
C08	321.5	321.5	352.5	405.5	416.5	498.5	501.5	-	-
C092/93	371	371	402	455	466	550.5	553.5	601	616.5
C094	453	453	484	538	549	-	-	-	-
C102/103	407	407	438	491	502	586.5	589.5	637	652.5
C104	490	490	521	574	585	-	-	-	-
C132/133	-	-	-	545.5	556.5	638.5	641.5	689	704.5
C134	557.5	557.5	588.5	641.5	652.5	738.5	741.5	-	-
C142/143	-	-	-	612.5	623.5	705.5	708.5	756	771.5
C144	623.5	623.5	654.5	707.5	718.5	804.5	807.5	-	-
C162/163	-	-	-	-	-	778.5	781.5	844.5	844.5
C164	749.5	749.5	780.5	803.5	814.5	899.5	902.5	950	965.5
C165	803	803	834	887	898	-	-	-	-

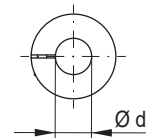
SERVO Adapter S92 to S190



Shaft with key



Smooth shaft



C

Type	S92	S105	S114	S115	S130	S141	S142	S180	S189	S190									
p	101	144	144	144	144	144	144	197	197	197									
n	80	95	95	110	110	110	130	114.3	130	180									
la	17.5	31	31	31	31	31	31	35	32	38									
m	100	115	130	130	145	165	165	200	215	215									
t	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5									
s	M6x12	M8x16	M8x16	M8x16	M8x16	M8x16	M8x16	13.5	15	15									
α	90°	90°	90°	90°	90°	90°	90°	90°	90°	90°									
α ₁	45°	45°	45°	45°	45°	45°	45°	45°	45°	45°									
d ¹⁾	14	16	19	19	19	22	24	28	24	24	32	35	32	38	38				
f	5	5	6	6	6	8	8	8	8	10	10	10	10	10	10				
ga	16.3	18.3	21.8	21.8	21.8	27.3	21.8	27.3	27.3	31.3	27.3	27.3	35.3	38.3	35.3	41.3	41.3		
E ²⁾	46	46	34	67	67	54	67	54	76	63	63	63	54	63	63	66	74	60	87
E ³⁾	46	46	46	67	67	67	67	67	76	76	76	63	67	76	63	87	74	60	87

¹⁾ Other shaft diameters on request

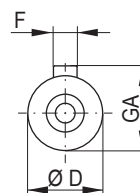
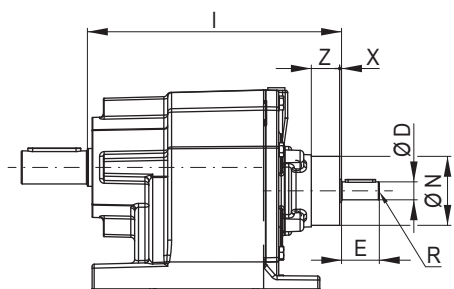
²⁾ Maximum motor shaft length for motors with key

³⁾ Maximum motor shaft length for motors with smooth shaft

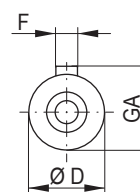
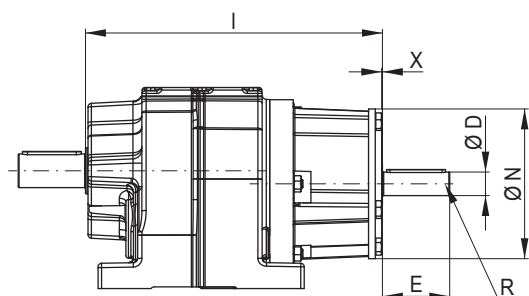
Gear unit size	S92	S105	S114	S115	S130	S141	S142	S180	S189	S190
	l									
C00	216	264	264	264	264	264	264	-	-	-
C01	228.5	276.5	276.5	276.5	276.5	276.5	276.5	-	-	-
C03	256	304	304	304	304	304	304	-	-	-
C05	291.5	339.5	339.5	339.5	339.5	339.5	339.5	410	404	431
C06	306.5	354.5	354.5	354.5	354.5	354.5	354.5	425	419	446
C07	318	366	366	366	366	366	366	436.5	430.5	457.5
C08	359	407	407	407	407	407	407	477.5	471.5	498.5
C092/093	408.5	456.5	456.5	456.5	456.5	456.5	456.5	527	521	548
C094	490.5	538.5	538.5	538.5	538.5	538.5	538.5	610	604	631
C102/103	444.5	492.5	492.5	492.5	492.5	492.5	492.5	563	557	584
C104	527.5	575.5	575.5	575.5	575.5	575.5	575.5	646	640	667
C132/133	-	-	-	-	-	-	-	617.5	611.5	638.5
C134	595	643	643	643	643	643	643	713.5	707.5	734.5
C142/143	-	-	-	-	-	-	-	684.5	678.5	705.5
C144	661	709	709	709	709	709	709	779.5	773.5	800.5
C162/C163	-	-	-	-	-	-	-	-	-	-
C164	787	835	835	835	835	835	835	875.5	869.5	896.5
C165	840.5	888.5	888.5	888.5	888.5	888.5	888.5	959	953	980

Dimensions in mm.

Input Unit U2, U3



Input Unit U5, U6, U7



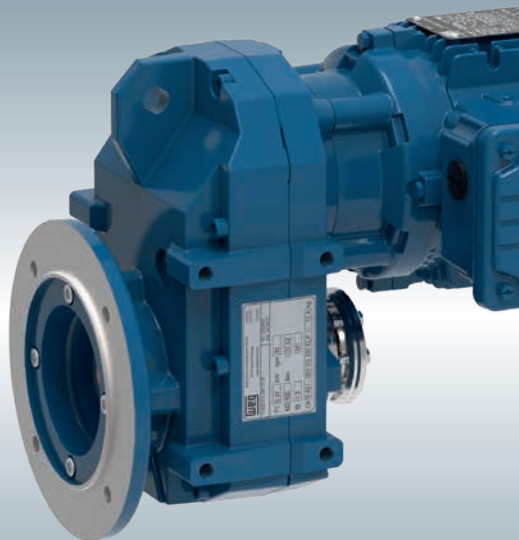
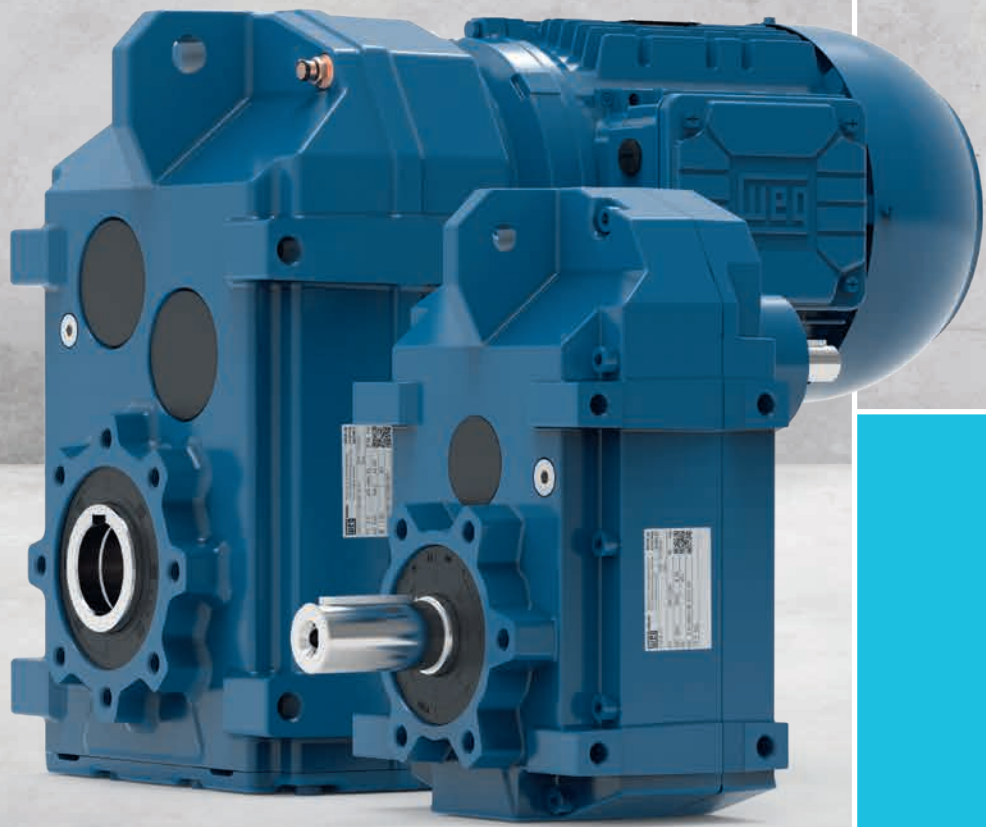
Type	Input shaft [mm]						
	19x40	24x50	28x60	38x80	42x110	48x110	55x110
	U2	U3	U5			U6	U7
D	19	24	28	38	42	48	55
F	6	8	8	10	12	14	16
GA	21.5	27	31	41	45	51.5	59
E	40	50	60	80	110	110	110
N	73	101	178			235	290
X	2	2.5	1.9			6.5	4
Z	3	35					
R	M6	M10	M10	M12	M16	M16	M20

Tolerances		
Dimension name	ISO tolerance DIN EN ISO 286-2	
D	< Ø 55 mm	k6
	≥ Ø 55 mm	m6

Gear unit size	Input shaft [mm]				
	19x40	24x50	28x60 38x80 42x110	48x110	55x110
	U2	U3	U5	U6	U7
	I				
C00	178.5	-	-	-	-
C01	191	-	-	-	-
C03	218.5	-	-	-	-
C05	254	286	-	-	-
C06	269	301	-	-	-
C07	280.5	312.5	355	-	-
C08	321.5	353.5	392	-	-
C092/093	371	403	444	466	-
C094	453	486	-	-	-
C102/C103	407	439	480	502	-
C104	490	522	-	-	-
C132/133	-	493.5	532	554	623
C134	557.5	489.5	632	-	-
C142/143	-	560.5	599	621	690
C144	623.5	655.5	698	-	-
C162/C163	-	-	672	694	763
C164	749.5	751.5	793	815	-
C165	803	835	-	-	-

Dimensions in mm.

Parallel shaft gear units and Parallel shaft geared motors F



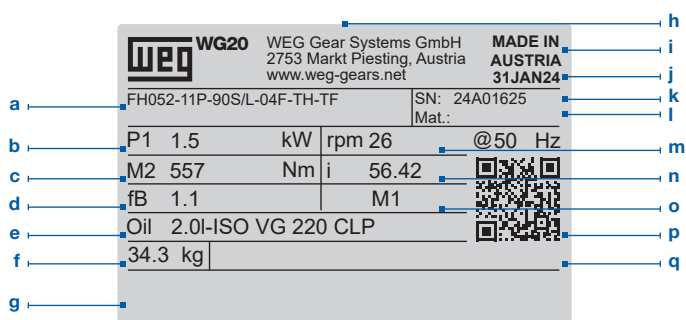
F

Technical Data

Size	F02	F03	F04	F05	F06	F07	F08	F09	F10	F12	F15
Power [kW]	0.12 - 1.5	0.12 - 3.0	0.12 - 3.0	0.12 - 9.2	0.12 - 15	0.12 - 15	0.12 - 22	0.12 - 30	0.12 - 75	0.12 - 90	0.12 - 110
Torque [Nm]	130	220	400	600	820	1500	3000	4500	8000	13000	18000
Ratio	3.93	3.85	4.26	4.98	4.41	4.29	4.09	4.16	4.38	4.64	5.84
	97.85	70.17	422.98	487.67	412.64	385.37	3836.13	3086.96	2276.77	2307.03	24805.81
Number of stages	2	2	2 / 3	2 / 3	2 / 3	2 / 3	2 / 3 / 4	2 / 3 / 4	2 / 3 / 4	2 / 3 / 4	2 / 3 / 4 / 5
Housing material	aluminium					cast iron					
Solid shaft	Type	with key acc. to DIN 6885.1 and threaded bore acc. to DIN 332 sheet 2									
	Tolerance	< Ø 55: k6 / ≥ Ø 55: m6									
	Material	standard: C45E (1.1191) / stainless steel on request									
Hollow shaft	Type	with key acc. to DIN 6885.1									
	Tolerance	H7									
	Material	standard: C45E (1.1191) / stainless steel on request									
Flanges	Tolerance	centring ≤ 250: j6 / > 250: h6 acc. to DIN EN 50347									
	Material	cast iron									
Gear wheels	Type	honed - designed and produced according to DIN 3990/3991 - Q7									
	Material	16MnCr5 (1.7131) case hardened – minimum 58HRC									
Shaft seals	Type	type AS acc. to DIN 3760									
	Material	standard NBR / special FKM									
Bearing	standard / reinforced										
Lubricants	Type	standard CLP ISO VG 220 / special CLP HC ISO VG 220									
	Quantity	depending on mounting position									
Axle height	acc. to DIN 747: ≤ 50: -0.4; > 50 to ≤ 250: -0.5; > 250: -1										

General information

1. Nameplate



a	Type code	j	Production date
b	Motor power	k	Serial number
c	Output torque	l	Material number
d	Service factor	m	Output speed and Frequency
e	Type and quantity of lubricant	n	Total gear ratio
f	Weight	o	Mounting position
g	Space for ATEX code (if applicable)	p	QR-Code linked online to additional information
h	Manufacturer address	q	Space for additional information
i	Country of origin		

2. Type code

FH073-EX-11P-90S/L-04F ...

1 2 3 4 5 6 7 8 9 10

FH073-EX-I112-HT

1 2 3 4 5 11 12

1	Type:	F = Parallel shaft gear unit																																																								
2	Design:	B = Output shaft on both sides D = Hollow shaft with shrink disc F = B5 flange execution with output shaft H = Hollow shaft O = B5 flange execution with hollow shaft P = B5 flange execution with hollow shaft and shrink disc S = Output shaft T = Hollow shaft with rubber buffer U = Hollow shaft with shrink disc and rubber buffer																																																								
3	Size:	02 03 04 05 06 07 08 09 10 12 15																																																								
4	Number of stages:	2 = 2 gear stages 3 = 3 gear stages 4 = 4 gear stages 5 = 5 gear stages																																																								
5	ATEX execution:	when operated in explosive atmospheres, see page 15																																																								
6	Motor type:	14P = Integral motor aluminium IE3 11P = Integral motor aluminium IE3 11S = Integral motor aluminium IE4 22P = Integral motor cast iron IE3 22S = Integral motor cast iron IE4																																																								
7	Motor frame size:	63 71 80 L80 90S/L 100L L100L 112M 132S 132M L132M 160M 160L 180M 180L 200L 225S/M 280S/M																																																								
8	Number of poles:	04 = 4 poles 06 = 6 poles																																																								
9	Power indicator:	D E F G																																																								
10	Motor modules:	see from page 595																																																								
11	Adapters, Input unit:	<table border="0"> <tr> <td>IEC adapter</td> <td>I63</td> <td>I71</td> <td>I80</td> <td>I90</td> <td>I100</td> <td>I112</td> <td>I132</td> </tr> <tr> <td></td> <td>I160</td> <td>I180</td> <td>I200</td> <td>I225</td> <td>I250</td> <td>I280</td> <td></td> </tr> <tr> <td>NEMA adapter</td> <td>N56</td> <td>N143</td> <td>N182</td> <td>N184</td> <td>N213</td> <td></td> <td></td> </tr> <tr> <td></td> <td>N254</td> <td>N284</td> <td>N324</td> <td>N364</td> <td></td> <td></td> <td></td> </tr> <tr> <td>SERVO adapter</td> <td>S92</td> <td>S105</td> <td>S114</td> <td>S115</td> <td>S130</td> <td></td> <td></td> </tr> <tr> <td></td> <td>S141</td> <td>S142</td> <td>S180</td> <td>S189</td> <td>S190</td> <td></td> <td></td> </tr> <tr> <td>Input unit</td> <td>U2</td> <td>U3</td> <td>U5</td> <td>U6</td> <td>U7</td> <td></td> <td></td> </tr> </table> Direct mounting (IEC): IEC63 IEC71 IEC80 IEC90 IEC100 IEC112 IEC132 IEC160 IEC180 IEC200 IEC225 IEC250 IEC280	IEC adapter	I63	I71	I80	I90	I100	I112	I132		I160	I180	I200	I225	I250	I280		NEMA adapter	N56	N143	N182	N184	N213				N254	N284	N324	N364				SERVO adapter	S92	S105	S114	S115	S130				S141	S142	S180	S189	S190			Input unit	U2	U3	U5	U6	U7		
IEC adapter	I63	I71	I80	I90	I100	I112	I132																																																			
	I160	I180	I200	I225	I250	I280																																																				
NEMA adapter	N56	N143	N182	N184	N213																																																					
	N254	N284	N324	N364																																																						
SERVO adapter	S92	S105	S114	S115	S130																																																					
	S141	S142	S180	S189	S190																																																					
Input unit	U2	U3	U5	U6	U7																																																					
12	High/Low temperature execution:	HT LT																																																								

Type code Motor see page 565

3. Range

Size	F02	F03	F04	F05	F06	F07	F08	F09	F10	F12	F15
Housing material	Aluminium					Cast iron					

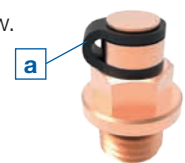
4. Design

B	Output shaft on both sides	P	B5 flange execution with hollow shaft and shrink disc
D	Hollow shaft with shrink disc	S	Output shaft
F	B5 flange execution with output shaft	T	Hollow shaft with rubber buffer
H	Hollow shaft	U	Hollow shaft with shrink disc and rubber buffer
O	B5 flange execution with hollow shaft		

5. Venting the gear unit

The parallel shaft gear unit sizes F02 to F05 are neither equipped with a venting nor an oil drain screw. They are supplied with lifetime-lubrication.

By default, the parallel shaft gear units from F06 are equipped with venting screws with a safety strap for transportation (see illustration). The rubber strap (a) of the venting screw must be removed entirely before the initial startup. The venting screw is placed accordingly to the mounting position (see chapter Mounting positions, page 209)



6. Overhung and axial loads

The overhung loads (F_{rN}) indicated in the respective selection tables apply to gear units with the force acting on the shaft center ($x=l/2$). The permissible overhung loads listed are based on the least favourable loading direction and calculated for standard shafts and standard bearings. Other load directions and action can be calculated with equations Q1 to Q3. If transmission elements are placed on the output shaft, an appropriate factor (f_z) has to be taken into consideration when determining the overhung load.

Gear wheels	Sprockets		V-belts	Flat belts
$f_z=1.1$ ($z \leq 17$)	$f_z=1.2$ ($z \leq 13$)	$f_z=1.1$ ($z > 13$)	$f_z=1.8$	$f_z=2.5$

Use the following equations Q1 and Q2 to calculate the permissible radial loads on the output shaft. Q3 is to calculate the real existing shaft loads for your application. The results are to be compared by using the equation Q4.

Q1 $F_{zL} = F_{rN} \cdot a_1$

Q2 $F_{zW} = F_W \cdot a_2$

Q3 $F_{Qvorh} = \frac{2 \cdot M_2}{d_0} \cdot f_z$

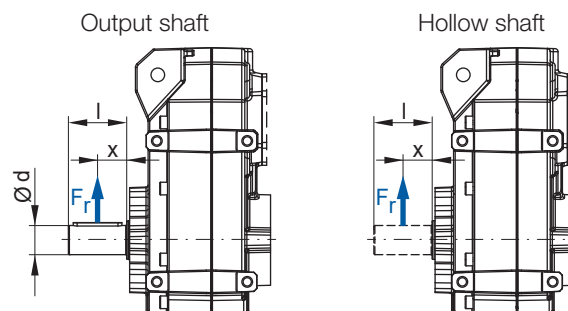
Q4 $F_{Qvorh} \leq F_{zL}$
 $F_{Qvorh} \leq F_{zW}$

Variable	Unit	Description
a ₁		Load action factor - output shaft bearing from Table 1
a ₂		Load action factor - output shaft from Table 1
d ₀	[m]	Effective diameter of the transmission element
M ₂	[Nm]	Geared motor output torque (from selection tables) or required calculated output torque
F _{zL}	[N]	Permissible overhung load for output shaft bearings
F _{zW}	[N]	Permissible overhung load for output shaft
F _{rN}	[N]	Permissible overhung load from selection tables
F _W	[N]	Permissible overhung load - Output shaft x=l/2 from Table 2
F _{Qvorh}	[N]	Existing overhung load at gear shaft
f _z		Factor for transmission element
M _{max}	[Nm]	Highest possible output torque for coupling operation (Table 2)

Always use both equations Q1 and Q2 for your calculations.

x / l						
0	0.25	0.5	0.75	1	1.5	2
a ₁ → Equation Q1						
1.39	1.18	1.00	0.85	0.73	0.52	0.38
a ₂ → Equation Q2						
2.00	2.00	1.00	0.55	0.38	0.23	0.17

Table 1: Load action factors a₁, a₂



Intermediate values can be interpolated linearly. Combined load (F_r ≠ 0; F_a = 0) on request.

Output shaft [mm]		M _{max} at F _r = 0	Output torque M ₂ [Nm]													
			130	220	400	600	820	1500	3000	4500	8000	13000	18000			
Ø d	l		F _W [kN] at x/l = 0.5 → Equation Q2													
20	40	160	2.2													
25	50	300	5.5	4.5												
30	60	500	7.5	7.0	5.0											
35	70	800		11.0	10.0	8.3										
40	80	1170			13.0	12.0	10.7									
50	100	2250			24.0	24.0	23.0	21.0								
60	120	3740					31.0	30.0	23.0							
70	140	5850						45.0	41.0	36.0						
90	170	11700							72.0	70.0	61.0					
110	210	20800								106.0	103.0	93.0				
120	210	26700									129.0	121.0	109.0			

Table 2: Permissible overhung load - output shaft x = l/2

The axial loads (F_{aN}) for the respective execution (output shaft or hollow shaft), given in the following selection tables, are valid at radial force F_{rN} = 0. If there are axial loads or radial and axial components acting on the drive which are extraordinarily high, we recommend to contact the manufacturer.

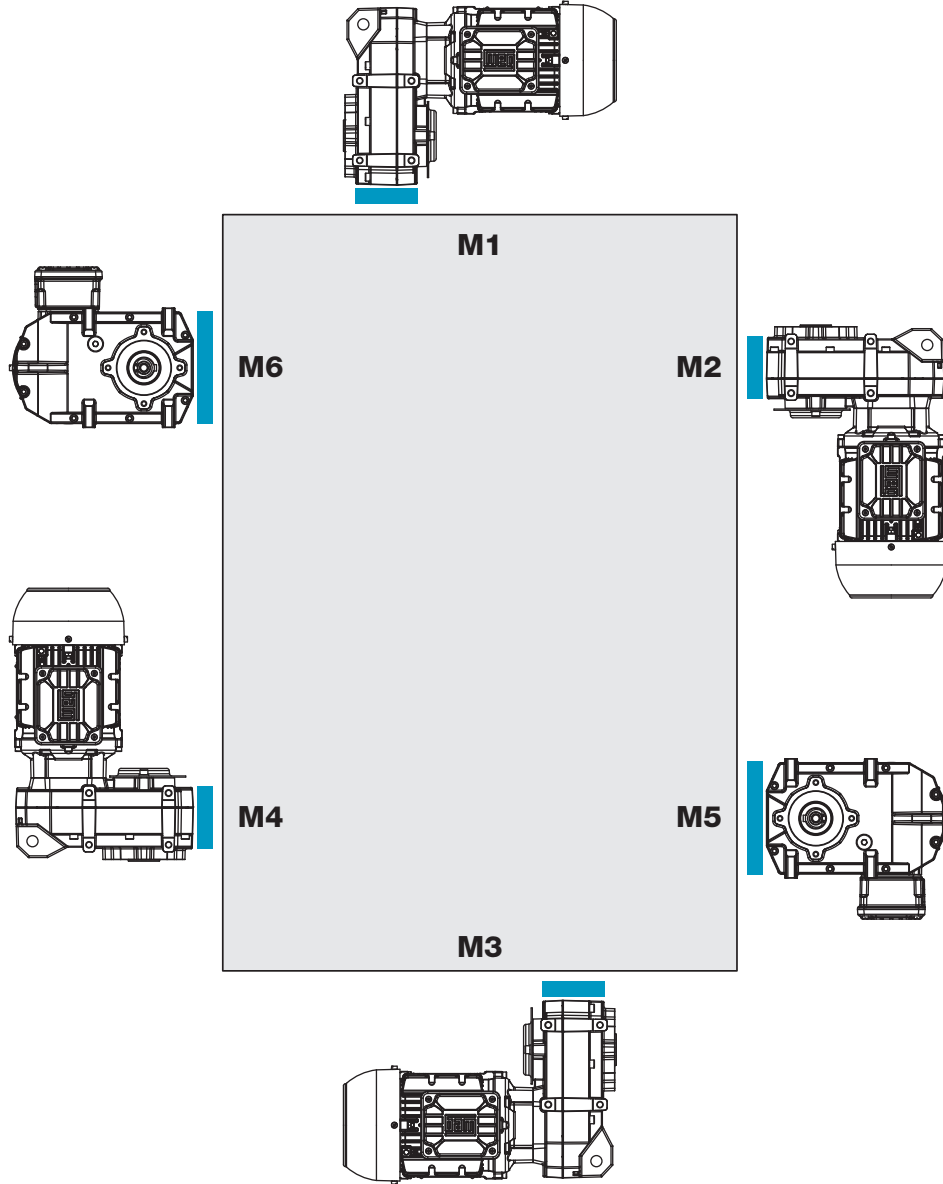
7. Mounting positions, Position of the terminal box and Cable entry

Mounting positions - Sizes F02 to F05

Gear units F02 to F05 are not ventilated and supplied with lifetime lubrication

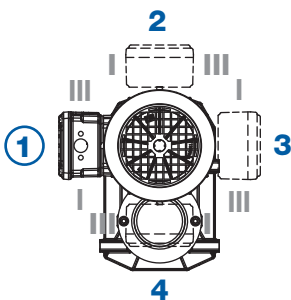
 Reference area

F



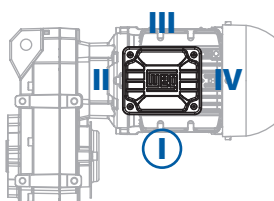
Position of the terminal box

Standard: Position 1

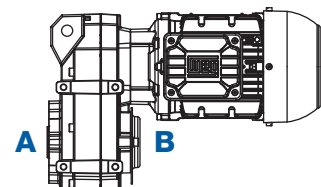


Cable entry

Standard: Position I



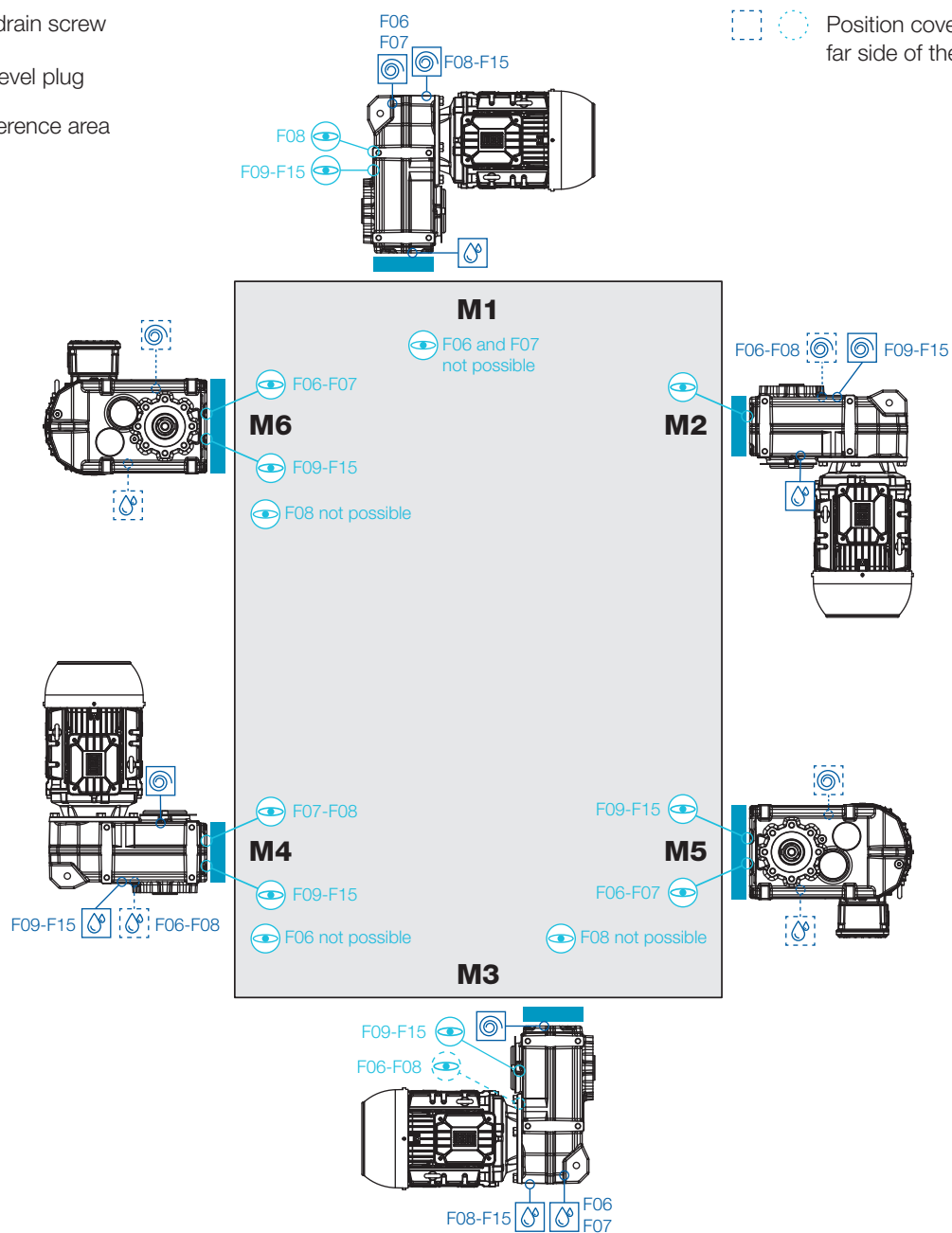
Side indication



Mounting positions - Sizes F06 to F15

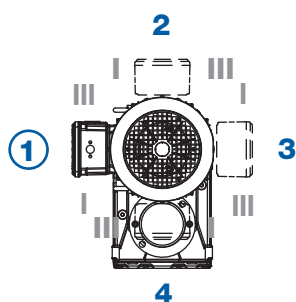
- Venting screw
- Oil drain screw
- Oil level plug
- Reference area

- Position visible on this side
- Position covered or on the far side of the gear unit



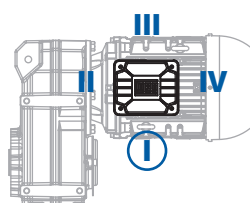
Position of the terminal box

Standard: Position 1

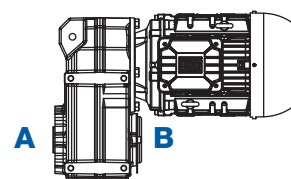


Cable entry

Standard: Position I



Side indication



F

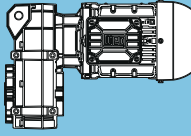
Selection tables - Geared motors

The technical data of the geared motors shown in the selection tables apply to an ambient temperature of +20°C.

The selection tables are calculated with following motor data:

Power (IEC frame size)	Motor series (IE class)
up to 0.55 kW (63 - 80)	14P (IE3) - aluminium
0.75 - 9.2 kW (80 - 132)	11P (IE3) - aluminium
11 - 75 kW (160 - 250)	22P (IE3) - cast iron
75 - 110 kW (280)	22S (IE4) - cast iron

Structure of the selection tables

1										2			
P _N = 0.12 kW										IE3			
50 Hz		60 Hz		M ₂ Nm	f _B	i	at 50 Hz					m kg	Dimension sheet see page
0.12 kW		0.14 kW					Output shaft		Hollow shaft				
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	F _{rN} kN	F _{aN} kN				F _{rN} kN	F _{aN} kN					
3	4	5	6	7	8	9	10	11	12	13	14		

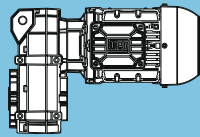
- 1 Rated power of the motor
- 2 Given values are based on the respective efficiency class
- 3 Output speed at 50 Hz
- 4 Output speed at 60 Hz
- 5 Output torque
- 6 Service factor
- 7 Total ratio
- 8 Permissible radial load - Execution with output shaft at midpoint of the shaft (standard bearing) at axial load=0
- 9 Permissible axial load - Execution with output shaft (standard bearing) at axial load=0
- 10 Permissible radial load - Execution with hollow shaft at midpoint of x=l/2 (standard bearing) at axial load=0
- 11 Permissible axial load - Execution with hollow shaft (standard bearing) at axial load=0
- 12 Geared motor type
- 13 Weight
- 14 Page reference for dimension sheet

*) Increased rated power at 60 Hz can only be reached together with increased voltage within the wide range (for details see page 574).

Increased rated power
1.2 x P _N

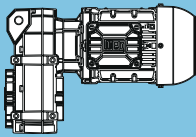
$P_N = 0.12 \text{ kW}$

IE3

50 Hz 0.12 kW	60 Hz 0.14 kW	M_2 Nm	f_b	i	at 50 Hz					m kg	Dimension sheet see page
					Output shaft		Hollow shaft				
					F_{rN} kN	F_{aN} kN	F_{rN} kN	F_{aN} kN			
0.05	0.07	18714	1.00	17143.10	75.1	114.6	75.1	114.6	FH155-14P-63-06F	685	346
0.06	0.07	17440	1.05	16017.35	80.4	115.7	80.4	115.7			
0.07	0.08	15147	1.20	14018.89	88.3	117.6	88.3	117.6			
0.08	0.10	11746	1.55	11069.46	97.1	120.4	97.1	120.4			
0.09	0.11	10703	1.70	10164.86	99.2	121.2	99.2	121.2			
0.11	0.13	8875	2.05	8582.99	102.4	122.7	102.4	122.7			
0.12	0.15	8007	2.25	7824.26	103.7	123.4	103.7	123.4			
0.13	0.16	7078	2.55	7024.85	104.9	124.2	104.9	124.2			
0.06	0.07	17782	1.05	24805.81	79.0	115.4	79.0	115.4	FH155-14P-63-04E	685	346
0.07	0.08	14355	1.30	20285.13	90.6	118.2	90.6	118.2			
0.08	0.10	12008	1.50	17143.10	96.5	120.1	96.5	120.1			
0.09	0.11	11133	1.65	16017.35	98.4	120.9	98.4	120.9			
0.10	0.12	9619	1.90	14018.89	101.2	122.1	101.2	122.1			
0.11	0.14	8411	2.15	12419.47	103.1	123.1	103.1	123.1			
0.13	0.16	7381	2.45	11069.46	104.5	123.9	104.5	123.9			
0.14	0.17	6690	2.70	10164.86	105.3	124.5	105.3	124.5			
0.30	0.37	3407	1.35	3086.96	33.6	40.5	33.6	40.5	FH094-14P-63-06F	175	332
0.35	0.44	2851	1.60	2609.75	35.6	41.2	35.6	41.2			
0.37	0.45	2752	1.65	2524.38	35.9	41.4	35.9	41.4			
0.43	0.53	2293	2.00	2134.14	37.2	42.0	37.2	42.0			
0.46	0.57	2128	2.15	1993.28	37.6	42.2	37.6	42.2			
0.55	0.68	1770	2.55	1685.14	38.3	42.7	38.3	42.7			
0.60	0.74	1603	2.85	1545.54	38.6	42.9	38.6	42.9			
0.46	0.56	2174	2.10	3086.96	37.5	42.1	37.5	42.1			
0.54	0.66	1808	2.50	2609.75	38.2	42.6	38.2	42.6			
0.56	0.68	1742	2.60	2524.38	38.4	42.7	38.4	42.7			
0.29	0.36	3534	0.85	3137.02	**	**	**	**	FH084-14P-63-06F	121	328
0.30	0.38	3413	0.90	3036.24	15.2	25.1	15.2	7.2			
0.35	0.43	2962	1.05	2651.12	19.7	34.8	19.7	7.9			
0.37	0.46	2768	1.10	2482.91	21.2	38.1	21.2	8.2			
0.43	0.53	2402	1.25	2167.97	23.5	41.3	23.5	8.8			
0.47	0.58	2159	1.40	1960.53	24.7	41.7	24.7	9.2			
0.48	0.59	2111	1.45	1920.62	25.0	41.7	25.0	9.2			
0.54	0.67	1866	1.65	1711.85	26.0	42.1	26.0	9.6			
0.59	0.73	1703	1.80	1571.96	26.6	42.4	26.6	9.9			
0.61	0.75	1643	1.85	1520.15	26.8	42.5	26.8	10.0			
0.70	0.86	1417	2.15	1327.33	27.5	42.8	27.5	10.3			
0.74	0.92	1320	2.30	1244.18	27.8	43.0	27.8	10.5			
0.76	0.94	1281	2.35	1209.99	27.9	43.0	27.9	10.5			
0.85	1.0	1136	2.65	1086.37	28.2	43.2	28.2	10.7			
0.37	0.45	2816	1.10	3836.13	20.8	37.3	20.8	8.2	FH084-14P-63-04E	120	328
0.45	0.55	2279	1.35	3137.02	24.1	41.5	24.1	9.0			
0.46	0.57	2202	1.40	3036.24	24.5	41.6	24.5	9.1			
0.53	0.65	1906	1.60	2651.12	25.9	42.1	25.9	9.6			
0.57	0.69	1778	1.70	2482.91	26.3	42.3	26.3	9.8			
0.65	0.79	1533	2.00	2167.97	27.2	42.6	27.2	10.1			
0.72	0.88	1375	2.20	1960.53	27.6	42.9	27.6	10.4			
0.73	0.90	1344	2.25	1920.62	27.7	42.9	27.7	10.4			
0.82	1.0	1183	2.55	1711.85	28.1	43.2	28.1	10.7			
0.89	1.1	1075	2.80	1571.96	28.3	43.3	28.3	10.8			
0.92	1.1	1036	2.90	1520.15	28.4	43.4	28.4	10.9			
2.2	2.8	511	1.65	412.64	11.1	13.6	11.1	3.6			
2.4	3.0	469	1.75	378.37	11.3	13.7	11.3	3.8			
2.7	3.4	418	2.00	337.44	11.6	13.9	11.6	3.9			
3.0	3.7	383	2.15	309.42	11.7	14.0	11.7	4.0			
3.5	4.3	330	2.50	266.44	11.9	14.2	11.9	4.2			
3.8	4.7	303	2.75	244.32	12.0	14.3	12.0	4.3			
3.4	4.2	337	2.45	412.64	11.9	14.2	11.9	4.2	FH063-14P-63-04E	37	322
3.7	4.5	309	2.70	378.37	12.0	14.2	12.0	4.3			
4.2	5.1	275	3.00	337.44	12.1	14.4	12.1	4.4			

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** ... on request

P _N = 0.12 kW										IE3		
50 Hz		60 Hz		f _B	i	at 50 Hz					m kg	Dimension sheet see page
0.12 kW		0.14 kW				Output shaft		Hollow shaft				
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm				F _{rN} kN	F _{aN} kN	F _{rN} kN	F _{aN} kN			
1.9	2.3	604	1.00	487.67	6.0	10.2	6.0	3.5	FH053-14P-63-06F	21	320	
2.1	2.6	552	1.10	445.56	6.8	10.3	6.8	3.6				
2.4	3	471	1.30	379.87	7.7	10.6	7.7	3.9				
2.7	3.3	430	1.40	347.07	8.1	10.7	8.1	4.0				
3.0	3.7	382	1.60	308.00	8.5	10.8	8.5	4.1				
3.3	4.1	349	1.75	281.41	8.7	10.9	8.7	4.2				
3.8	4.7	301	2.00	242.67	9.0	11.1	9.0	4.4				
4.2	5.1	275	2.20	221.71	9.1	11.2	9.1	4.5				
4.9	6.1	232	2.60	187.00	9.3	11.3	9.3	4.6				
5.4	6.7	212	2.85	170.85	9.4	11.3	9.4	4.6				
2.9	3.5	398	1.55	487.67	8.3	10.8	8.3	4.1	FH053-14P-63-04E	21	320	
3.2	3.9	363	1.65	445.56	8.6	10.9	8.6	4.2				
3.7	4.5	310	1.95	379.87	8.9	11.1	8.9	4.4				
4.0	5.0	283	2.15	347.07	9.1	11.1	9.1	4.4				
4.6	5.6	251	2.40	308.00	9.2	11.2	9.2	4.5				
5.0	6.1	230	2.65	281.41	9.3	11.3	9.3	4.6				
2.2	2.7	524	0.80	422.98	**	**	**	**	FH043-14P-63-06F	15	318	
2.4	3.0	478	0.85	385.85	**	**	**	**				
2.8	3.5	408	1.00	329.48	3.6	5.7	3.6	2.4				
3.1	3.8	372	1.10	300.55	4.4	7.5	4.4	2.6				
3.5	4.3	331	1.25	267.14	5.1	8.3	5.1	2.7				
3.8	4.7	302	1.35	243.69	5.4	8.4	5.4	2.8				
4.4	5.4	261	1.55	210.48	5.9	8.6	5.9	3.0				
4.8	5.9	238	1.70	192.00	6.1	8.7	6.1	3.1				
5.7	7.0	201	2.00	162.19	6.4	8.8	6.4	3.2				
6.3	7.7	183	2.20	147.96	6.5	8.9	6.5	3.3				
7.3	9.0	157	2.55	126.72	6.6	8.9	6.6	3.3				
8.0	9.9	143	2.80	115.60	6.7	9.0	6.7	3.4				
3.3	4.1	345	1.20	422.98	4.8	8.3	4.8	2.7	FH043-14P-63-04E	15	318	
3.6	4.5	315	1.30	385.85	5.3	8.4	5.3	2.8				
4.3	5.2	269	1.50	329.48	5.8	8.5	5.8	2.9				
4.7	5.7	245	1.65	300.55	6.0	8.6	6.0	3.0				
5.3	6.4	218	1.85	267.14	6.3	8.7	6.3	3.1				
5.8	7.1	199	2.05	243.69	6.4	8.8	6.4	3.2				
6.7	8.2	172	2.35	210.48	6.6	8.9	6.6	3.3				
7.3	9.0	157	2.60	192.00	6.6	8.9	6.6	3.3				
13	16	87	2.55	70.17	4.9	3.1	4.9	3.1	FH032-14P-63-06F	14	316	
15	18	79	2.80	63.63	5.0	3.3	5.0	3.3				
9.5	12	121	1.10	97.85	4.8	2.0	4.8	2.0	FH022-14P-63-06F	11	314	
11	13	109	1.20	88.09	4.9	2.3	4.9	2.3				
12	15	94	1.40	76.22	5.0	2.2	5.0	2.2				
13	17	85	1.55	68.62	5.0	2.4	5.0	2.4				
15	18	77	1.70	61.80	5.1	2.3	5.1	2.3				
17	20	69	1.90	55.64	5.1	2.4	5.1	2.4				
19	23	60	2.20	48.69	5.1	2.4	5.1	2.4				
21	26	54	2.40	43.83	5.2	2.5	5.2	2.5				
25	30	46	2.80	37.52	5.2	2.5	5.2	2.5				
29	36	39	1.35	31.79	5.2	2.6	5.2	2.6				
37	46	31	2.75	24.76	5.2	2.6	5.2	2.6				

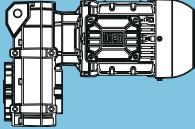
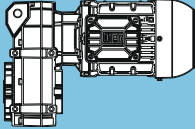
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** ... on request

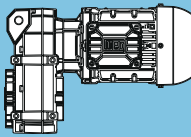
$P_N = 0.12 \text{ kW}$

IE3

50 Hz 0.12 kW	60 Hz 0.14 kW	M_2 Nm	f_b	i	at 50 Hz					m kg	Dimension sheet see page
					Output shaft		Hollow shaft				
					F_{rN} kN	F_{aN} kN	F_{rN} kN	F_{aN} kN			
14	18	80	1.65	97.85	5.1	2.3	5.1	2.3	 FH022-14P-63-04E	11	314
16	20	72	1.85	88.09	5.1	2.4	5.1	2.4			
18	23	62	2.10	76.22	5.1	2.4	5.1	2.4			
20	25	56	2.35	68.62	5.2	2.5	5.2	2.5			
23	28	50	2.60	61.80	5.2	2.5	5.2	2.5			
25	31	45	2.90	55.64	5.2	2.6	5.2	2.6			
29	35	40	3.30	48.69	5.2	2.5	5.2	2.5			
32	39	36	3.65	43.83	5.2	2.6	5.2	2.6			
37	46	31	4.25	37.52	5.2	2.6	5.2	2.6			
42	51	28	4.75	33.78	5.2	2.6	5.2	2.6			
44	54	26	2.05	31.79	5.2	2.6	5.2	2.6			
48	59	24	5.45	29.32	5.2	2.6	5.2	2.6			
53	65	22	6.05	26.39	5.2	2.7	5.2	2.7			
57	69	20	4.20	24.76	5.2	2.7	5.2	2.7			
64	79	18	7.30	21.89	5.2	2.6	5.2	2.6			
70	86	16	5.15	20.08	5.3	2.7	5.3	2.7			
71	87	16	8.10	19.70	5.3	2.7	5.3	2.7			
85	104	13	9.70	16.48	5.2	2.7	5.2	2.7			
89	109	13	6.55	15.82	5.1	2.7	5.1	2.7			
95	116	12	10.75	14.84	5.0	2.7	5.0	2.7			
115	141	10	8.45	12.19	4.7	2.7	4.7	2.7			
116	142	10	13.20	12.09	4.7	2.7	4.7	2.7			
129	158	9	14.65	10.89	4.5	2.7	4.5	2.7			
148	181	8	10.85	9.52	4.3	2.7	4.3	2.7			
198	242	6	14.50	7.11	3.9	2.7	3.9	2.7			
263	321	4	19.25	5.35	3.5	2.7	3.5	2.7			
358	438	3	22.50	3.93	3.2	2.7	3.2	2.7			

F

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P _N = 0.18 kW										IE3	
50 Hz		60 Hz		at 50 Hz						m kg	Dimension sheet see page
0.18 kW		0.22 kW		Output shaft		Hollow shaft					
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	f _B	i	F _{rN} kN	F _{aN} kN	F _{rN} kN	F _{aN} kN			
0.06	0.08	23835	0.80	14018.89	**	**	**	**	FH155-14P-71-06E	688	346
0.07	0.09	21008	0.90	12419.47	63.4	109.6	63.4	109.6			
0.08	0.10	18629	1.00	11069.46	75.5	114.7	75.5	114.7			
0.09	0.11	17019	1.10	10164.86	82.0	116.0	82.0	116.0			
0.10	0.13	14223	1.30	8582.99	91.0	118.3	91.0	118.3			
0.12	0.14	12899	1.40	7824.26	94.4	119.4	94.4	119.4			
0.13	0.16	11463	1.60	7024.85	97.7	120.6	97.7	120.6			
0.15	0.19	9498	1.90	5911.67	101.4	122.2	101.4	122.2			
0.17	0.21	8598	2.10	5407.29	102.8	122.9	102.8	122.9			
0.19	0.23	7574	2.40	4838.19	104.2	123.8	104.2	123.8			
0.22	0.27	6231	2.90	4085.50	105.8	124.9	105.8	124.9			
0.07	0.08	22436	0.85	20285.13	**	**	**	**	FH155-14P-63-04F	685	346
0.08	0.10	18815	1.00	17143.10	74.7	114.6	74.7	114.6			
0.09	0.11	17535	1.05	16017.35	80.0	115.6	80.0	115.6			
0.10	0.12	15229	1.20	14018.89	88.0	117.5	88.0	117.5			
0.11	0.14	13388	1.35	12419.47	93.2	119.0	93.2	119.0			
0.12	0.15	11810	1.55	11069.46	97.0	120.3	97.0	120.3			
0.14	0.17	10762	1.70	10164.86	99.1	121.2	99.1	121.2			
0.16	0.20	8924	2.05	8582.99	102.3	122.7	102.3	122.7			
0.18	0.22	8051	2.25	7824.26	103.6	123.4	103.6	123.4			
0.20	0.24	7116	2.55	7024.85	104.8	124.2	104.8	124.2			
0.40	0.49	3748	2.15	2276.77	58.8	65.0	58.8	65.0	FH104-14P-71-06E	283	336
0.46	0.56	3206	2.50	1976.36	59.6	65.6	59.6	65.6			
0.51	0.63	2810	2.85	1757.78	60.2	66.0	60.2	66.0			
0.53	0.65	2719	2.95	1707.58	60.3	66.1	60.3	66.1			
0.29	0.36	5361	0.85	3086.96	**	**	**	**	FH094-14P-71-06E	178	332
0.34	0.43	4505	1.00	2609.75	27.9	39.0	27.9	39.0			
0.36	0.44	4348	1.05	2524.38	28.9	39.2	28.9	39.2			
0.42	0.52	3646	1.25	2134.14	32.6	40.2	32.6	40.2			
0.45	0.56	3391	1.35	1993.28	33.6	40.5	33.6	40.5			
0.53	0.66	2838	1.60	1685.14	35.6	41.2	35.6	41.2			
0.58	0.72	2587	1.75	1545.54	36.4	41.6	36.4	41.6			
0.69	0.85	2155	2.10	1306.62	37.5	42.1	37.5	42.1			
0.71	0.88	2078	2.20	1264.97	37.7	42.2	37.7	42.2			
0.84	1.0	1724	2.65	1069.42	38.4	42.7	38.4	42.7			
0.92	1.1	1553	2.90	973.69	38.7	42.9	38.7	42.9			
0.45	0.55	3425	1.35	3086.96	33.5	40.5	33.5	40.5	FH094-14P-63-04F	175	332
0.53	0.65	2866	1.60	2609.75	35.6	41.2	35.6	41.2			
0.55	0.67	2767	1.65	2524.38	35.9	41.3	35.9	41.3			
0.65	0.80	2310	1.95	2134.14	37.1	41.9	37.1	41.9			
0.69	0.85	2144	2.10	1993.28	37.5	42.2	37.5	42.2			
0.82	1.0	1779	2.55	1685.14	38.3	42.6	38.3	42.6			
0.89	1.1	1615	2.80	1545.54	38.6	42.9	38.6	42.9			
0.42	0.51	3773	0.80	2167.97	**	**	**	**	FH084-14P-71-06E	123	328
0.46	0.57	3398	0.90	1960.53	15.4	25.6	15.4	25.6			
0.47	0.58	3322	0.95	1920.62	16.3	27.5	16.3	27.5			
0.53	0.65	2949	1.05	1711.85	19.8	35.1	19.8	35.1			
0.57	0.71	2697	1.15	1571.96	21.7	39.2	21.7	39.2			
0.59	0.73	2602	1.20	1520.15	22.3	40.6	22.3	40.6			
0.68	0.84	2258	1.35	1327.33	24.3	41.5	24.3	41.5			
0.72	0.89	2108	1.45	1244.18	25.0	41.7	25.0	41.7			
0.74	0.92	2046	1.50	1209.99	25.3	41.8	25.3	41.8			
0.83	1.0	1826	1.65	1086.37	26.2	42.2	26.2	42.2			
0.94	1.2	1593	1.90	957.69	27.0	42.5	27.0	42.5			
0.98	1.2	1514	2.00	914.22	27.2	42.7	27.2	42.7			
1.1	1.3	1374	2.20	836.22	27.6	42.9	27.6	42.9			
1.2	1.5	1214	2.50	748.21	28.0	43.1	28.0	43.1			
1.4	1.8	1004	3.00	631.81	28.5	43.5	28.5	43.5			

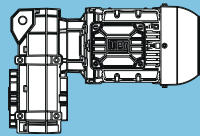
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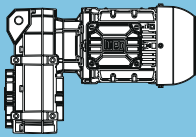
P_N = 0.18 kW

IE3

50 Hz 0.18 kW		60 Hz 0.22 kW		i	at 50 Hz					m kg	Dimension sheet see page
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	f _B		Output shaft		Hollow shaft				
					F _{rN} kN	F _{aN} kN	F _{rN} kN	F _{aN} kN			
0.44	0.54	3553	0.85	3137.02	**	**	**	**	FH084-14P-63-04F	121	328
0.45	0.56	3432	0.90	3036.24	14.9	24.5	14.9	7.2			
0.52	0.64	2978	1.05	2651.12	19.6	34.6	19.6	7.9			
0.56	0.68	2784	1.10	2482.91	21.1	37.9	21.1	8.2			
0.64	0.78	2416	1.25	2167.97	23.4	41.3	23.4	8.8			
0.70	0.87	2171	1.40	1960.53	24.7	41.7	24.7	9.2			
0.72	0.89	2122	1.45	1920.62	24.9	41.7	24.9	9.2			
0.81	0.99	1880	1.60	1711.85	26.0	42.1	26.0	9.6			
0.88	1.1	1716	1.75	1571.96	26.6	42.4	26.6	9.9			
0.91	1.1	1652	1.85	1520.15	26.8	42.5	26.8	10.0			
1.0	1.3	1425	2.15	1327.33	27.5	42.8	27.5	10.3			
1.1	1.4	1327	2.30	1244.18	27.8	43.0	27.8	10.5			
1.3	1.6	1142	2.65	1086.37	28.2	43.2	28.2	10.7			
2.3	2.9	736	2.05	385.37	19.4	17.5	19.4	6.3	FH073-14P-71-06E	63	324
2.9	3.6	583	2.60	305.42	19.8	17.8	19.8	6.6			
2.2	2.7	788	1.05	412.64	8.9	12.7	8.9	2.8	FH063-14P-71-06E	40	322
2.4	2.9	723	1.15	378.37	9.6	12.9	9.6	2.9			
2.7	3.3	645	1.30	337.44	10.2	13.2	10.2	3.2			
2.9	3.6	591	1.40	309.42	10.6	13.3	10.6	3.4			
3.4	4.2	509	1.65	266.44	11.1	13.6	11.1	3.7			
3.7	4.5	467	1.80	244.32	11.4	13.7	11.4	3.8			
4.4	5.4	395	2.10	206.59	11.7	14.0	11.7	4.0			
4.8	5.9	362	2.30	189.44	11.8	14.1	11.8	4.1			
5.3	6.6	323	2.55	169.09	11.9	14.2	11.9	4.3			
5.8	7.2	296	2.80	155.05	12.0	14.3	12.0	4.3			
3.3	4.1	514	1.60	412.64	11.1	13.6	11.1	3.6	FH063-14P-63-04F	37	322
3.6	4.5	471	1.75	378.37	11.3	13.7	11.3	3.8			
4.1	5.0	420	2.00	337.44	11.6	13.9	11.6	3.9			
4.5	5.5	385	2.15	309.42	11.7	14.0	11.7	4.0			
5.2	6.4	332	2.50	266.44	11.9	14.2	11.9	4.2			
5.6	7.0	304	2.70	244.32	12.0	14.3	12.0	4.3			
2.4	2.9	726	0.85	379.87	**	**	**	**	FH053-14P-71-06E	23	320
2.6	3.2	663	0.95	347.07	4.9	7.8	4.9	3.3			
2.9	3.6	588	1.05	308.00	6.3	10.2	6.3	3.5			
3.2	3.9	537	1.15	281.41	7.0	10.3	7.0	3.6			
3.7	4.6	463	1.30	242.67	7.8	10.6	7.8	3.9			
4.1	5.0	423	1.45	221.71	8.1	10.7	8.1	4.0			
4.8	5.9	357	1.70	187.00	8.6	10.9	8.6	4.2			
5.3	6.5	326	1.85	170.85	8.8	11.0	8.8	4.3			
6.2	7.6	279	2.20	146.10	9.1	11.1	9.1	4.4			
6.7	8.3	255	2.35	133.49	9.2	11.2	9.2	4.5			
8.3	10	208	2.90	109.08	9.4	11.4	9.4	4.7			
2.8	3.5	607	1.00	487.67	6.0	10.1	6.0	3.4	FH053-14P-63-04F	21	320
3.1	3.8	555	1.10	445.56	6.7	10.3	6.7	3.6			
3.6	4.5	473	1.30	379.87	7.7	10.6	7.7	3.9			
4.0	4.9	432	1.40	347.07	8.1	10.7	8.1	4.0			
4.5	5.5	384	1.60	308.00	8.4	10.8	8.4	4.1			
4.9	6.0	351	1.75	281.41	8.7	10.9	8.7	4.2			
5.7	7.0	302	2.00	242.67	9.0	11.1	9.0	4.4			
6.2	7.7	276	2.20	221.71	9.1	11.1	9.1	4.4			
7.4	9.1	233	2.60	187.00	9.3	11.3	9.3	4.6			
8.1	10	213	2.85	170.85	9.4	11.3	9.4	4.6			
10	13	167	2.25	87.38	9.5	11.5	9.5	4.8	FH052-14P-71-06E	23	320
11	14	152	2.25	79.84	9.6	11.5	9.6	4.8			
19	23	92	2.25	48.15	9.7	11.6	9.7	4.9			

Legend see page 211

** ... on request

P _N = 0.18 kW										IE3				
50 Hz		60 Hz		i	at 50 Hz					m kg	Dimension sheet see page			
0.18 kW		0.22 kW			Output shaft		Hollow shaft							
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	f _B		F _{rN} kN	F _{aN} kN	F _{rN} kN	F _{aN} kN						
3.4	4.2	510	0.80	267.14	**	**	**	**	FH043-14P-71-06E	17	318			
3.7	4.6	465	0.90	243.69	1.5	1.4	1.5	1.4						
4.3	5.3	402	1.00	210.48	3.8	6.2	3.8	2.5						
4.7	5.8	367	1.10	192.00	4.5	7.7	4.5	2.6						
5.5	6.8	310	1.30	162.19	5.3	8.4	5.3	2.8						
6.1	7.5	283	1.45	147.96	5.7	8.5	5.7	2.9						
7.1	8.8	242	1.70	126.72	6.1	8.6	6.1	3.0						
7.8	9.6	221	1.85	115.60	6.2	8.7	6.2	3.1						
9.5	12	181	2.25	94.61	6.5	8.9	6.5	3.3						
10	13	165	2.45	86.31	6.6	8.9	6.6	3.3						
13	16	136	2.95	71.24	6.7	9.0	6.7	3.4						
3.3	4.0	527	0.80	422.98	**	**	**	**				FH043-14P-63-04F	15	318
3.6	4.4	481	0.85	385.85	**	**	**	**						
4.2	5.2	410	1.00	329.48	3.6	5.7	3.6	2.4						
4.6	5.7	374	1.10	300.55	4.3	7.3	4.3	2.6						
5.2	6.4	333	1.25	267.14	5.0	8.3	5.0	2.7						
5.7	7.0	304	1.35	243.69	5.4	8.4	5.4	2.8						
6.6	8.1	262	1.55	210.48	5.9	8.6	5.9	3.0						
7.2	8.9	239	1.70	192.00	6.1	8.7	6.1	3.1						
8.5	10	202	2.00	162.19	6.4	8.8	6.4	3.2						
9.3	11	184	2.20	147.96	6.5	8.9	6.5	3.3						
11	13	158	2.55	126.72	6.6	8.9	6.6	3.3						
12	15	144	2.80	115.60	6.7	9.0	6.7	3.4						
12	15	145	2.25	75.79	6.7	9.0	6.7	3.4	FH042-14P-71-06E	17	318			
13	16	132	2.25	69.14	6.8	9.0	6.8	3.4						
22	27	79	2.25	41.20	6.9	9.1	6.9	3.5						
13	16	134	1.65	70.17	4.6	2.8	4.6	2.8	FH032-14P-71-06E	16	316			
14	17	122	1.85	63.63	4.7	3.1	4.7	3.1						
16	19	109	2.05	57.07	4.8	3.0	4.8	3.0						
17	21	99	2.25	51.75	4.8	3.2	4.8	3.2						
20	24	87	2.55	45.35	4.9	3.1	4.9	3.1						
22	27	79	2.85	41.12	5.0	3.3	5.0	3.3						
33	40	53	2.30	27.67	5.1	3.4	5.1	3.4						
20	24	87	2.55	70.17	4.9	3.1	4.9	3.1	FH032-14P-63-04F	14	316			
22	27	79	2.80	63.63	5.0	3.3	5.0	3.3						
10	13	168	0.80	88.09	**	**	**	**	FH022-14P-71-06E	14	314			
12	15	146	0.90	76.22	4.6	1.9	4.6	1.9						
13	16	131	1.00	68.62	4.7	2.2	4.7	2.2						
15	18	118	1.15	61.80	4.8	2.0	4.8	2.0						
16	20	106	1.25	55.64	4.9	2.3	4.9	2.3						
18	23	93	1.40	48.69	5.0	2.2	5.0	2.2						
21	25	84	1.60	43.83	5.0	2.4	5.0	2.4						
24	30	72	1.85	37.52	5.1	2.3	5.1	2.3						
27	33	65	2.05	33.78	5.1	2.5	5.1	2.5						
28	35	61	0.90	31.79	5.1	2.5	5.1	2.5						
31	38	56	2.35	29.32	5.2	2.4	5.2	2.4						
34	42	50	2.60	26.39	5.2	2.5	5.2	2.5						
36	45	47	1.80	24.76	5.2	2.5	5.2	2.5						
45	55	38	2.20	20.08	5.2	2.6	5.2	2.6						
57	70	30	2.80	15.82	5.2	2.6	5.2	2.6						

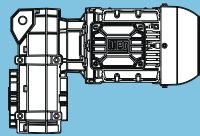
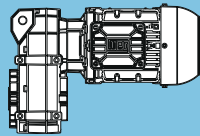
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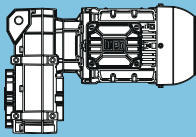
** ... on request

P_N = 0.18 kW

IE3

50 Hz 0.18 kW	60 Hz 0.22 kW	M ₂ Nm	f _B	i	at 50 Hz					m kg	Dimension sheet see page
					Output shaft		Hollow shaft				
					F _{rN} kN	F _{aN} kN	F _{rN} kN	F _{aN} kN			
14	17	122	1.10	97.85	4.8	2.0	4.8	2.0	 FH022-14P-63-04F	11	314
16	19	110	1.20	88.09	4.9	2.3	4.9	2.3			
18	22	95	1.40	76.22	5.0	2.2	5.0	2.2			
20	25	85	1.55	68.62	5.0	2.4	5.0	2.4			
22	28	77	1.70	61.80	5.1	2.3	5.1	2.3			
25	31	69	1.90	55.64	5.1	2.4	5.1	2.4			
28	35	61	2.15	48.69	5.1	2.4	5.1	2.4			
31	39	55	2.40	43.83	5.2	2.5	5.2	2.5			
37	45	47	2.80	37.52	5.2	2.5	5.2	2.5			
41	50	42	3.10	33.78	5.2	2.6	5.2	2.6			
43	53	40	1.35	31.79	5.2	2.6	5.2	2.6			
47	58	37	3.60	29.32	5.2	2.5	5.2	2.5			
52	64	33	4.00	26.39	5.2	2.6	5.2	2.6			
56	69	31	2.75	24.76	5.2	2.6	5.2	2.6			
63	78	27	4.80	21.89	5.2	2.6	5.2	2.6			
69	85	25	3.40	20.08	5.2	2.6	5.2	2.6			
70	86	25	5.30	19.70	5.2	2.6	5.2	2.6			
84	103	21	6.35	16.48	5.2	2.6	5.2	2.6			
87	107	20	4.30	15.82	5.2	2.7	5.2	2.7			
93	115	18	7.05	14.84	5.1	2.7	5.1	2.7			
113	139	15	5.55	12.19	4.7	2.7	4.7	2.7			
114	141	15	8.65	12.09	4.7	2.7	4.7	2.7			
127	156	14	9.60	10.89	4.6	2.7	4.6	2.7			
145	179	12	7.10	9.52	4.3	2.7	4.3	2.7			
194	239	9	9.50	7.11	3.9	2.7	3.9	2.7			
258	318	7	12.65	5.35	3.6	2.7	3.6	2.7			
351	433	5	14.75	3.93	3.2	2.7	3.2	2.7			

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P _N = 0.25 kW										IE3	
50 Hz		60 Hz		i	at 50 Hz					m kg	Dimension sheet see page
0.25 kW		0.30 kW			Output shaft		Hollow shaft				
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	f _B		F _{rN} kN	F _{aN} kN	F _{rN} kN	F _{aN} kN			
0.09	0.12	22621	0.80	10164.86	**	**	**	**	FH155-14P-80-06D	688	346
0.11	0.14	18955	0.95	8582.99	74	114.4	74.0	114.4			
0.12	0.15	17191	1.05	7824.26	81.3	115.9	81.3	115.9			
0.14	0.17	15316	1.20	7024.85	87.8	117.4	87.8	117.4			
0.16	0.20	12724	1.45	5911.67	94.9	119.6	94.9	119.6			
0.18	0.22	11549	1.60	5407.29	97.5	120.5	97.5	120.5			
0.20	0.25	10227	1.80	4838.19	100.1	121.6	100.1	121.6			
0.23	0.29	8481	2.15	4085.5	103	123.0	103.0	123.0			
0.24	0.30	8102	2.25	3923.28	103.5	123.4	103.5	123.4			
0.29	0.35	6745	2.70	3343.64	105.2	124.5	105.2	124.5			
0.10	0.12	21535	0.85	14018.89	**	**	**	**	FH155-14P-71-04E	686	346
0.11	0.14	18980	0.95	12419.47	73.9	114.4	73.9	114.4			
0.12	0.15	16787	1.10	11069.46	82.8	116.2	82.8	116.2			
0.14	0.17	15337	1.20	10164.86	87.7	117.4	87.7	117.4			
0.16	0.20	12784	1.45	8582.99	94.7	119.5	94.7	119.5			
0.18	0.22	11564	1.60	7824.26	97.5	120.5	97.5	120.5			
0.20	0.24	10303	1.75	7024.85	100.0	121.5	100.0	121.5			
0.23	0.29	8492	2.15	5911.67	103.0	123.0	103.0	123.0			
0.26	0.31	7688	2.35	5407.29	104.1	123.7	104.1	123.7			
0.29	0.35	6754	2.70	4838.19	105.2	124.5	105.2	124.5			
0.41	0.51	4858	2.70	2307.03	86.9	92.8	86.9	92.8	FH124-14P-80-06D	423	340
0.42	0.52	5018	1.60	2276.77	56.1	63.6	56.1	63.6	FH104-14P-80-06D	283	336
0.48	0.60	4302	1.90	1976.36	57.7	64.4	57.7	64.4			
0.54	0.67	3787	2.15	1757.78	58.7	65.0	58.7	65.0			
0.56	0.69	3671	2.20	1707.58	58.9	65.1	58.9	65.1			
0.63	0.78	3240	2.50	1525.85	59.6	65.6	59.6	65.6			
0.65	0.80	3117	2.60	1474.19	59.8	65.7	59.8	65.7			
0.72	0.90	2747	2.95	1318.33	60.3	66.1	60.3	66.1			
0.61	0.75	3360	2.40	2276.77	59.4	65.4	59.4	65.4	FH104-14P-71-04E	281	336
0.70	0.86	2868	2.80	1976.36	60.1	66.0	60.1	66.0			
0.37	0.45	5945	0.80	2609.75	**	**	**	**	FH094-14P-80-06D	178	332
0.38	0.47	5750	0.80	2524.38	**	**	**	**			
0.45	0.56	4831	0.95	2134.14	25.6	38.6	25.6	38.6			
0.48	0.59	4503	1.00	1993.28	27.9	39.0	27.9	39.0			
0.57	0.70	3776	1.20	1685.14	32.0	40.0	32.0	40.0			
0.62	0.77	3442	1.35	1545.54	33.4	40.4	33.4	40.4			
0.73	0.91	2880	1.60	1306.62	35.5	41.2	35.5	41.2			
0.75	0.94	2782	1.65	1264.97	35.8	41.3	35.8	41.3			
0.89	1.1	2323	1.95	1069.42	37.1	41.9	37.1	41.9			
0.98	1.2	2098	2.15	973.69	37.6	42.2	37.6	42.2			
1.2	1.4	1741	2.60	823.17	38.4	42.7	38.4	42.7			
1.3	1.6	1533	2.95	735.68	38.7	43.0	38.7	43.0			
0.45	0.55	4836	0.95	3086.96	25.6	38.6	25.6	38.6			
0.53	0.65	4055	1.15	2609.75	30.6	39.6	30.6	39.6			
0.55	0.67	3922	1.15	2524.38	31.2	39.8	31.2	39.8			
0.65	0.80	3282	1.40	2134.14	34.1	40.7	34.1	40.7			
0.69	0.85	3053	1.50	1993.28	34.9	41.0	34.9	41.0			
0.82	1.0	2549	1.80	1685.14	36.5	41.6	36.5	41.6			
0.89	1.1	2324	1.95	1545.54	37.1	41.9	37.1	41.9			
1.1	1.3	1932	2.35	1306.62	38.0	42.4	38.0	42.4			
1.3	1.6	1542	2.95	1069.42	38.7	43.0	38.7	43.0			

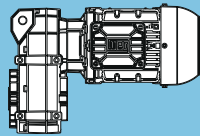
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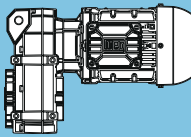
$P_N = 0.25 \text{ kW}$

IE3

50 Hz		60 Hz		i	at 50 Hz					m kg	Dimension sheet see page
0.25 kW		0.30 kW			Output shaft		Hollow shaft				
n_{50} min ⁻¹	n_{60} min ⁻¹	M_2 Nm	f_b		F_{rN} kN	F_{aIN} kN	F_{rN} kN	F_{aIN} kN			
0.56	0.69	3899	0.80	1711.85	**	**	**	**	FH084-14P-80-06D	124	328
0.61	0.75	3573	0.85	1571.96	**	**	**	**			
0.63	0.78	3448	0.90	1520.15	14.7	24.1	14.7	7.2			
0.72	0.89	2993	1.05	1327.33	19.4	34.2	19.4	7.9			
0.77	0.95	2799	1.10	1244.18	20.9	37.5	20.9	8.2			
0.79	0.98	2717	1.15	1209.99	21.5	38.8	21.5	8.3			
0.88	1.1	2429	1.25	1086.37	23.3	41.3	23.3	8.8			
1.0	1.2	2124	1.45	957.69	24.9	41.7	24.9	9.2			
1.1	1.4	1839	1.65	836.22	26.1	42.2	26.1	9.7			
1.3	1.6	1632	1.85	748.21	26.9	42.5	26.9	10.0			
1.5	1.9	1356	2.25	631.81	27.7	42.9	27.7	10.4			
1.6	2.0	1296	2.35	606.72	27.8	43.0	27.8	10.5			
1.8	2.3	1084	2.80	517.08	28.3	43.3	28.3	10.8			
1.9	2.3	1063	2.85	507.90	28.4	43.4	28.4	10.9			
0.56	0.68	3914	0.80	2482.91	**	**	**	**	FH084-14P-71-04E	121	328
0.64	0.78	3403	0.90	2167.97	15.3	25.4	15.3	7.3			
0.70	0.87	3065	1.00	1960.53	18.8	32.9	18.8	7.8			
0.72	0.89	3003	1.00	1920.62	19.3	34.0	19.3	7.9			
0.81	0.99	2660	1.15	1711.85	21.9	39.7	21.9	8.4			
0.88	1.1	2433	1.25	1571.96	23.3	41.2	23.3	8.7			
0.91	1.1	2348	1.30	1520.15	23.8	41.4	23.8	8.9			
1.0	1.3	2033	1.50	1327.33	25.3	41.9	25.3	9.4			
1.1	1.4	1898	1.60	1244.18	25.9	42.1	25.9	9.6			
1.3	1.6	1640	1.85	1086.37	26.8	42.5	26.8	10.0			
1.4	1.8	1431	2.10	957.69	27.5	42.8	27.5	10.3			
1.5	1.9	1357	2.25	914.22	27.7	42.9	27.7	10.4			
1.7	2.0	1231	2.45	836.22	28.0	43.1	28.0	10.6			
1.8	2.3	1086	2.80	748.21	28.3	43.3	28.3	10.8			
1.9	2.3	1046	2.90	723.59	28.4	43.4	28.4	10.9			
2.5	3.1	963	1.60	385.37	18.6	17.0	18.6	5.8	FH073-14P-80-06D	63	324
3.1	3.9	764	2.00	305.42	19.3	17.4	19.3	6.2			
4.0	5.0	593	2.55	237.15	19.8	17.8	19.8	6.5			
3.6	4.4	667	2.25	385.37	19.6	17.6	19.6	6.4	FH073-14P-71-04E	61	324
4.5	5.6	528	2.85	305.42	19.9	17.9	19.9	6.7			
2.3	2.9	1032	0.80	412.64	**	**	**	**	FH063-14P-80-06D	40	322
2.5	3.1	946	0.90	378.37	6.8	10.5	6.8	2.2			
2.8	3.5	844	1.00	337.44	8.3	12.5	8.3	2.6			
3.1	3.8	774	1.10	309.42	9.1	12.7	9.1	2.8			
3.6	4.5	666	1.25	266.44	10.1	13.1	10.1	3.1			
3.9	4.9	611	1.35	244.32	10.5	13.2	10.5	3.3			
4.6	5.7	516	1.60	206.59	11.1	13.6	11.1	3.6			
5.0	6.3	474	1.75	189.44	11.3	13.7	11.3	3.7			
5.6	7.0	423	1.95	169.09	11.6	13.9	11.6	3.9			
6.2	7.6	388	2.15	155.05	11.7	14.0	11.7	4.0			
7.3	9.1	325	2.55	130.15	11.9	14.2	11.9	4.2			
8.0	9.9	298	2.75	119.35	12.0	14.3	12.0	4.3			
3.3	4.1	714	1.15	412.64	9.6	12.9	9.6	3.0	FH063-14P-71-04E	38	322
3.6	4.5	655	1.30	378.37	10.1	13.1	10.1	3.2			
4.1	5.0	584	1.45	337.44	10.7	13.4	10.7	3.4			
4.5	5.5	535	1.55	309.42	11.0	13.5	11.0	3.5			
5.2	6.4	461	1.80	266.44	11.4	13.8	11.4	3.8			
5.6	7.0	423	1.95	244.32	11.6	13.9	11.6	3.9			
6.7	8.2	357	2.30	206.59	11.8	14.1	11.8	4.1			
7.3	9.0	328	2.55	189.44	11.9	14.2	11.9	4.2			
8.2	10	293	2.85	169.09	12.0	14.3	12.0	4.4			

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** ... on request

P _N = 0.25 kW										IE3	
50 Hz		60 Hz		at 50 Hz						m kg	Dimension sheet see page
0.25 kW		0.30 kW		Output shaft		Hollow shaft					
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	f _B	i	F _{rN} kN	F _{aN} kN	F _{rN} kN	F _{aN} kN			
3.1	3.9	770	0.80	308.00	**	**	**	**	FH053-14P-80-06D	24	320
3.4	4.2	704	0.85	281.41	**	**	**	**			
3.9	4.9	607	1.00	242.67	6.0	10.1	6.0	3.4			
4.3	5.3	554	1.10	221.71	6.8	10.3	6.8	3.6			
5.1	6.3	468	1.30	187.00	7.7	10.6	7.7	3.9			
5.6	6.9	427	1.40	170.85	8.1	10.7	8.1	4.0			
6.5	8.1	365	1.65	146.1	8.6	10.9	8.6	4.2			
7.2	8.9	334	1.80	133.49	8.8	11.0	8.8	4.3			
8.8	11	273	2.25	109.08	9.1	11.2	9.1	4.5			
9.6	12	249	2.40	99.66	9.2	11.2	9.2	4.5			
10	13	235	2.60	94.11	9.3	11.3	9.3	4.6			
11	14	215	2.80	85.99	9.4	11.3	9.4	4.6			
12	14	205	2.95	82.13	9.4	11.4	9.4	4.7			
3.1	3.8	771	0.80	445.56	**	**	**	**	FH053-14P-71-04E	22	320
3.6	4.5	657	0.95	379.87	5.1	8.2	5.1	3.3			
4.0	4.9	600	1.00	347.07	6.1	10.1	6.1	3.4			
4.5	5.5	533	1.15	308.00	7.0	10.4	7.0	3.7			
4.9	6.0	487	1.25	281.41	7.5	10.5	7.5	3.8			
5.7	7.0	420	1.45	242.67	8.2	10.7	8.2	4.0			
6.2	7.7	384	1.60	221.71	8.4	10.8	8.4	4.1			
7.4	9.1	324	1.90	187.00	8.8	11.0	8.8	4.3			
8.1	10	296	2.05	170.85	9.0	11.1	9.0	4.4			
9.4	12	253	2.40	146.10	9.2	11.2	9.2	4.5			
10	13	231	2.60	133.49	9.3	11.3	9.3	4.6			
11	14	218	1.70	87.38	9.3	11.3	9.3	4.6	FH052-14P-80-06D	24	320
12	15	200	1.70	79.84	9.4	11.4	9.4	4.7			
13	17	179	2.85	71.46	9.5	11.5	9.5	4.8			
15	18	163	2.80	65.29	9.5	11.5	9.5	4.8			
20	25	120	1.70	48.15	9.6	11.5	9.6	4.8			
24	30	98	2.85	39.38	9.7	11.6	9.7	4.9			
16	19	151	2.50	87.38	9.6	11.5	9.6	4.8	FH052-14P-71-04E	22	320
17	21	138	2.50	79.84	9.6	11.6	9.6	4.9			
29	35	83	2.45	48.15	9.7	11.6	9.7	4.9			
4.5	5.6	526	0.80	210.48	**	**	**	**	FH043-14P-80-06D	18	318
5.0	6.2	480	0.85	192.00	**	**	**	**			
5.9	7.3	405	1.00	162.19	3.7	6.0	3.7	2.5			
6.5	8.0	370	1.10	147.96	4.4	7.5	4.4	2.6			
7.5	9.4	317	1.30	126.72	5.2	8.4	5.2	2.8			
8.3	10	289	1.40	115.6	5.6	8.5	5.6	2.9			
10	13	237	1.70	94.61	6.1	8.7	6.1	3.1			
11	14	216	1.90	86.31	6.3	8.7	6.3	3.1			
12	15	204	2.00	81.63	6.4	8.8	6.4	3.2			
13	16	186	2.15	74.46	6.5	8.8	6.5	3.2			
15	18	162	2.50	64.98	6.6	8.9	6.6	3.3			
4.6	5.7	520	0.80	300.55	**	**	**	**	FH043-14P-71-04E	16	318
5.2	6.4	462	0.90	267.14	1.7	1.8	1.7	1.8			
5.7	7.0	422	0.95	243.69	3.3	5.1	3.3	2.4			
6.6	8.1	364	1.10	210.48	4.5	7.7	4.5	2.6			
7.2	8.9	332	1.25	192.00	5.0	8.3	5.0	2.7			
8.5	10	281	1.45	162.19	5.7	8.5	5.7	2.9			
9.3	11	256	1.60	147.96	5.9	8.6	5.9	3.0			
11	13	219	1.85	126.72	6.2	8.7	6.2	3.1			
12	15	200	2.05	115.60	6.4	8.8	6.4	3.2			
15	18	164	2.45	94.61	6.6	8.9	6.6	3.3			
16	20	149	2.70	86.31	6.7	9.0	6.7	3.4			
13	16	189	1.70	75.79	6.5	8.8	6.5	3.2	FH042-14P-80-06D	18	318
14	17	173	1.70	69.14	6.6	8.9	6.6	3.3			
15	19	155	2.60	61.98	6.6	8.9	6.6	3.3			
17	21	141	2.85	56.54	6.7	9.0	6.7	3.4			
23	29	103	1.70	41.20	6.9	9.0	6.9	3.4			
28	35	84	2.85	33.69	6.9	9.1	6.9	3.5			

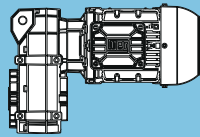
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** ... on request

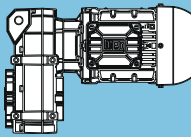
P_N = 0.25 kW

IE3

50 Hz		60 Hz		i	at 50 Hz					m kg	Dimension sheet see page
0.25 kW		0.30 kW			Output shaft		Hollow shaft				
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	f _b		F _{rN} kN	F _{aN} kN	F _{rN} kN	F _{aN} kN			
18	22	131	2.50	75.79	6.8	9.0	6.8	3.4	FH042-14P-71-04E	16	318
20	25	120	2.45	69.14	6.8	9.1	6.8	3.5			
33	41	71	2.50	41.2	7.0	9.1	7.0	3.5			
14	17	175	1.30	70.17	4.1	2.6	4.1	2.6	FH032-14P-80-06D	17	316
15	19	159	1.40	63.63	4.3	2.9	4.3	2.9			
17	21	143	1.55	57.07	4.5	2.8	4.5	2.8			
18	23	129	1.75	51.75	4.6	3.1	4.6	3.1			
21	26	113	1.95	45.35	4.7	2.9	4.7	2.9			
23	29	103	2.15	41.12	4.8	3.2	4.8	3.2			
27	34	88	2.55	35.03	4.9	3.1	4.9	3.1			
30	37	79	2.80	31.76	5.0	3.3	5.0	3.3			
35	43	69	1.75	27.67	5.0	3.3	5.0	3.3			
42	53	56	2.65	22.50	5.1	3.4	5.1	3.4			
20	24	121	1.85	70.17	4.7	2.9	4.7	2.9			
22	27	110	2.00	63.63	4.8	3.2	4.8	3.2			
24	30	99	2.25	57.07	4.8	3.0	4.8	3.0			
27	33	90	2.50	51.75	4.9	3.3	4.9	3.3			
30	37	78	2.85	45.35	5.0	3.2	5.0	3.2			
50	61	48	2.50	27.67	5.1	3.4	5.1	3.4			
14	17	172	0.80	68.62	**	**	**	**	FH022-14P-80-06D	14	314
15	19	155	0.85	61.80	**	**	**	**			
17	21	139	0.95	55.64	4.6	2.1	4.6	2.1			
20	24	122	1.10	48.69	4.8	2	4.8	2			
22	27	110	1.20	43.83	4.9	2.3	4.9	2.3			
25	32	94	1.40	37.52	5	2.2	5	2.2			
28	35	84	1.55	33.78	5	2.4	5	2.4			
33	40	73	1.80	29.32	5.1	2.3	5.1	2.3			
36	45	66	2.00	26.39	5.1	2.5	5.1	2.5			
39	48	62	1.40	24.76	5.1	2.5	5.1	2.5			
44	54	55	2.40	21.89	5.2	2.4	5.2	2.4			
48	59	50	1.70	20.08	5.2	2.5	5.2	2.5			
51	63	47	2.80	18.88	5.2	2.5	5.2	2.5			
60	75	40	2.15	15.82	5.2	2.6	5.2	2.6			
78	97	30	2.80	12.19	5.2	2.6	5.2	2.6			
14	17	169	0.80	97.85	**	**	**	**	FH022-14P-71-04E	12	314
16	19	152	0.90	88.09	4.5	2.1	4.5	2.1			
18	22	132	1.00	76.22	4.7	2.0	4.7	2.0			
20	25	119	1.10	68.62	4.8	2.2	4.8	2.2			
22	28	107	1.25	61.80	4.9	2.1	4.9	2.1			
25	31	96	1.40	55.64	5.0	2.3	5.0	2.3			
28	35	84	1.55	48.69	5.0	2.2	5.0	2.2			
31	39	76	1.75	43.83	5.1	2.4	5.1	2.4			
37	45	65	2.05	37.52	5.1	2.4	5.1	2.4			
41	50	58	2.25	33.78	5.2	2.5	5.2	2.5			
43	53	55	1.00	31.79	5.2	2.5	5.2	2.5			
47	58	51	2.60	29.32	5.2	2.4	5.2	2.4			
52	64	46	2.85	26.39	5.2	2.5	5.2	2.5			
56	69	43	2.00	24.76	5.2	2.6	5.2	2.6			
63	78	38	3.45	21.89	5.2	2.5	5.2	2.5			
69	85	35	2.45	20.08	5.2	2.6	5.2	2.6			
70	86	34	3.85	19.70	5.2	2.6	5.2	2.6			
84	103	29	4.60	16.48	5.2	2.6	5.2	2.6			
87	107	27	3.10	15.82	5.2	2.6	5.2	2.6			
93	115	26	5.10	14.84	5.1	2.6	5.1	2.6			
113	139	21	4.00	12.19	4.8	2.7	4.8	2.7			
114	141	21	6.25	12.09	4.8	2.6	4.8	2.6			
127	156	19	6.95	10.89	4.6	2.7	4.6	2.7			
145	179	16	5.15	9.52	4.4	2.7	4.4	2.7			
194	239	12	6.85	7.11	4.0	2.7	4.0	2.7			
258	318	9	9.10	5.35	3.6	2.7	3.6	2.7			
351	433	7	10.60	3.93	3.2	2.7	3.2	2.7			

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** ... on request

$P_N = 0.37 \text{ kW}$										IE3	
50 Hz		60 Hz		at 50 Hz						m kg	Dimension sheet see page
0.37 kW		0.44 kW		Output shaft		Hollow shaft					
n_{50} min ⁻¹	n_{60} min ⁻¹	M_2 Nm	f_B	i	F_{rN} kN	F_{aN} kN	F_{rN} kN	F_{aN} kN			
0.13	0.16	23888	0.80	7024.85	**	**	**	**	FH155-14P-80-06E	690	346
0.16	0.19	19948	0.95	5911.67	69.2	113.6	69.2	113.6			
0.17	0.21	18200	1.00	5407.29	77.3	115.1	77.3	115.1			
0.19	0.24	16159	1.15	4838.19	85.0	116.7	85.0	116.7			
0.23	0.28	13506	1.35	4085.5	92.9	118.9	92.9	118.9			
0.24	0.29	12936	1.40	3923.28	94.4	119.4	94.4	119.4			
0.28	0.34	10856	1.70	3343.64	98.9	121.1	98.9	121.1			
0.34	0.42	8623	2.10	2711.35	102.8	122.9	102.8	122.9			
0.35	0.43	8443	2.15	2661.75	103.0	123.1	103.0	123.1			
0.41	0.50	7033	2.60	2269.72	104.9	124.2	104.9	124.2			
0.14	0.17	22919	0.80	10164.86	**	**	**	**	FH155-14P-71-04F	687	346
0.16	0.20	19205	0.95	8582.99	72.9	114.2	72.9	114.2			
0.18	0.22	17417	1.05	7824.26	80.5	115.7	80.5	115.7			
0.20	0.24	15518	1.20	7024.85	87.1	117.3	87.1	117.3			
0.24	0.29	12925	1.40	5911.67	94.4	119.4	94.4	119.4			
0.26	0.32	11731	1.55	5407.29	97.1	120.4	97.1	120.4			
0.29	0.35	10389	1.75	4838.19	99.8	121.5	99.8	121.5			
0.34	0.42	8615	2.10	4085.5	102.8	122.9	102.8	122.9			
0.42	0.51	6852	2.65	3343.64	105.1	124.4	105.1	124.4			
0.40	0.49	7553	2.40	2318.3	104.3	123.8	104.3	123.8			
0.46	0.57	6384	2.85	1996.74	105.6	124.8	105.6	124.8			
0.40	0.49	7738	1.70	2307.03	83.1	90.0	83.1	90.0			
0.46	0.57	6677	1.95	2011.51	84.8	91.1	84.8	91.1			
0.52	0.64	5839	2.25	1781.14	85.8	91.9	85.8	91.9			
0.53	0.66	5669	2.30	1732.67	86.1	92.0	86.1	92.0			
0.60	0.73	5018	2.60	1552.98	86.8	92.7	86.8	92.7			
0.62	0.76	4796	2.75	1493.78	87.0	92.9	87.0	92.9			
0.60	0.74	4932	2.65	2307.03	86.9	92.7	86.9	92.7			
0.41	0.50	7843	1.05	2276.77	46.5	60.4	46.5	60.4			
0.47	0.58	6767	1.20	1976.36	50.9	61.6	50.9	61.6			
0.53	0.65	5981	1.35	1757.78	53.5	62.5	53.5	62.5			
0.54	0.67	5799	1.40	1707.58	54.0	62.7	54.0	62.7			
0.61	0.75	5139	1.60	1525.85	55.8	63.4	55.8	63.4			
0.63	0.77	4955	1.65	1474.19	56.3	63.7	56.3	63.7			
0.70	0.86	4394	1.85	1318.33	57.5	64.3	57.5	64.3			
0.72	0.89	4257	1.90	1279.68	57.8	64.4	57.8	64.4			
0.80	0.99	3817	2.10	1156.94	58.6	64.9	58.6	64.9			
0.84	1.0	3625	2.25	1105.64	59.0	65.1	59.0	65.1			
0.92	1.1	3258	2.50	1004.29	59.6	65.5	59.6	65.5			
1.0	1.3	2861	2.80	892.89	60.1	66.0	60.1	66.0			
1.1	1.3	2769	2.90	867.71	60.2	66.1	60.2	66.1			
0.61	0.75	5084	1.60	2276.77	56.0	63.5	56.0	63.5			
0.71	0.87	4368	1.85	1976.36	57.6	64.3	57.6	64.3			
0.79	0.97	3845	2.10	1757.78	58.6	64.9	58.6	64.9			
0.82	1.0	3728	2.15	1707.58	58.8	65.0	58.8	65.0			
0.91	1.1	3290	2.45	1525.85	59.5	65.5	59.5	65.5			
0.95	1.2	3165	2.55	1474.19	59.7	65.6	59.7	65.6			
1.1	1.3	2789	2.90	1318.33	60.2	66.1	60.2	66.1			
0.61	0.75	5084	1.60	2276.77	56.0	63.5	56.0	63.5			
0.71	0.87	4368	1.85	1976.36	57.6	64.3	57.6	64.3			
0.79	0.97	3845	2.10	1757.78	58.6	64.9	58.6	64.9			
0.82	1.0	3728	2.15	1707.58	58.8	65.0	58.8	65.0			
0.91	1.1	3290	2.45	1525.85	59.5	65.5	59.5	65.5			
0.95	1.2	3165	2.55	1474.19	59.7	65.6	59.7	65.6			
1.1	1.3	2789	2.90	1318.33	60.2	66.1	60.2	66.1			
0.55	0.68	5865	0.80	1685.14	**	**	**	**	FH094-14P-80-06E	180	332
0.60	0.74	5368	0.85	1545.54	**	**	**	**			
0.71	0.87	4511	1.00	1306.62	27.9	39.0	27.9	39.0			
0.73	0.90	4358	1.05	1264.97	28.8	39.2	28.8	39.2			
0.86	1.1	3654	1.25	1069.42	32.5	40.2	32.5	40.2			
0.95	1.2	3306	1.40	973.69	34.0	40.6	34.0	40.6			
1.1	1.4	2767	1.65	823.17	35.9	41.3	35.9	41.3			
1.3	1.5	2452	1.85	735.68	36.8	41.8	36.8	41.8			
1.5	1.8	2039	2.25	621.95	37.8	42.3	37.8	42.3			
1.8	2.2	1631	2.80	509.01	38.6	42.8	38.6	42.8			
1.9	2.3	1558	2.90	488.23	38.7	42.9	38.7	42.9			

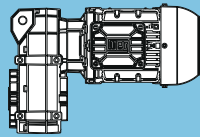
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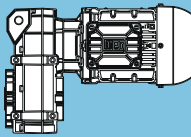
P_N = 0.37 kW

IE3

50 Hz		60 Hz		i	at 50 Hz					m kg	Dimension sheet see page
0.37 kW	0.44 kW	M ₂ Nm	f _b		Output shaft		Hollow shaft				
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹				F _{rN} kN	F _{aN} kN	F _{rN} kN	F _{aN} kN			
0.55	0.68	5826	0.80	2524.38	**	**	**	**	FH094-14P-71-04F	177	332
0.65	0.80	4895	0.95	2134.14	25.1	38.5	25.1	38.5			
0.70	0.86	4563	1.00	1993.28	27.5	39.0	27.5	39.0			
0.83	1.0	3826	1.20	1685.14	31.7	39.9	31.7	39.9			
0.90	1.1	3494	1.30	1545.54	33.2	40.4	33.2	40.4			
1.1	1.3	2924	1.55	1306.62	35.4	41.1	35.4	41.1			
1.3	1.6	2354	1.95	1069.42	37.0	41.9	37.0	41.9			
1.4	1.8	2125	2.15	973.69	37.6	42.2	37.6	42.2			
1.7	2.1	1767	2.55	823.17	38.3	42.7	38.3	42.7			
1.9	2.3	1557	2.90	735.68	38.7	42.9	38.7	42.9			
0.85	1.0	3781	0.80	1086.37	**	**	**	**	FH084-14P-80-06E	126	328
0.97	1.2	3313	0.95	957.69	16.4	27.7	16.4	27.7			
1.0	1.2	3162	0.95	914.22	17.9	30.9	17.9	30.9			
1.1	1.4	2881	1.05	836.22	20.3	36.2	20.3	36.2			
1.2	1.5	2562	1.20	748.21	22.5	41.1	22.5	41.1			
1.3	1.6	2472	1.25	723.59	23.1	41.2	23.1	41.2			
1.5	1.8	2145	1.40	631.81	24.8	41.7	24.8	41.7			
1.6	1.9	2003	1.50	592.20	25.4	41.9	25.4	41.9			
1.8	2.2	1731	1.75	517.08	26.5	42.3	26.5	42.3			
1.9	2.4	1597	1.90	480.21	27.0	42.5	27.0	42.5			
2.2	2.7	1378	2.20	419.30	27.6	42.9	27.6	42.9			
2.3	2.8	1315	2.30	401.99	27.8	43.0	27.8	43.0			
2.6	3.2	1129	2.70	351.00	28.2	43.3	28.2	43.3			
2.8	3.5	1040	2.90	325.80	28.4	43.4	28.4	43.4			
0.81	1.0	3951	0.80	1711.85	**	**	**	**	FH084-14P-71-04F	122	328
0.89	1.1	3620	0.85	1571.96	**	**	**	**			
0.92	1.1	3494	0.90	1520.15	14.1	22.8	14.1	22.8			
1.1	1.3	3038	1.00	1327.33	19.0	33.3	19.0	33.3			
1.2	1.4	2758	1.10	1209.99	21.2	38.1	21.2	38.1			
1.3	1.6	2461	1.25	1086.37	23.1	41.2	23.1	41.2			
1.5	1.8	2156	1.40	957.69	24.8	41.7	24.8	41.7			
1.7	2.0	1864	1.65	836.22	26.0	42.1	26.0	42.1			
1.9	2.3	1654	1.85	748.21	26.8	42.5	26.8	42.5			
2.2	2.7	1376	2.20	631.81	27.6	42.9	27.6	42.9			
2.4	2.9	1282	2.35	592.20	27.9	43.0	27.9	43.0			
2.7	3.3	1101	2.75	517.08	28.3	43.3	28.3	43.3			
2.6	3.2	1370	2.20	358.52	27.6	42.9	27.6	42.9	FH083-14P-80-06E	113	326
3.3	4.0	1084	2.80	283.76	28.3	43.3	28.3	43.3			
2.4	3.0	1472	1.05	385.37	15.8	16.0	15.8	16.0	FH073-14P-80-06E	65	324
3.0	3.7	1167	1.30	305.42	17.7	16.6	17.7	16.6			
3.9	4.8	906	1.70	237.15	18.8	17.2	18.8	17.2			
4.8	5.9	743	2.05	194.58	19.4	17.5	19.4	17.5			
6.1	7.6	576	2.65	150.69	19.8	17.8	19.8	17.8			
3.6	4.4	976	1.55	385.37	18.5	17.0	18.5	17.0	FH073-14P-71-04F	62	324
4.6	5.6	774	1.95	305.42	19.3	17.4	19.3	17.4			
5.9	7.2	601	2.50	237.15	19.8	17.8	19.8	17.8			
3.5	4.3	1018	0.85	266.44	**	**	**	**	FH063-14P-80-06E	42	322
3.8	4.7	933	0.90	244.32	7.0	10.9	7.0	10.9			
4.5	5.5	789	1.05	206.59	8.9	12.7	8.9	12.7			
4.9	6.0	724	1.15	189.44	9.6	12.9	9.6	12.9			
5.5	6.7	646	1.30	169.09	10.2	13.2	10.2	13.2			
6.0	7.4	592	1.40	155.05	10.6	13.3	10.6	13.3			
7.1	8.8	497	1.65	130.15	11.2	13.6	11.2	13.6			
7.8	9.6	456	1.80	119.35	11.4	13.8	11.4	13.8			
9.4	12	376	2.20	98.34	11.8	14.0	11.8	14.0			
10	13	344	2.40	90.17	11.9	14.1	11.9	14.1			
11	14	307	2.70	80.48	12.0	14.3	12.0	14.3			
13	15	282	2.95	73.80	12.1	14.3	12.1	14.3			

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** ... on request

P _N = 0.37 kW										IE3	
50 Hz		60 Hz		at 50 Hz						m kg	Dimension sheet see page
0.37 kW		0.44 kW		Output shaft		Hollow shaft					
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	f _B	i	F _{rN} kN	F _{aN} kN	F _{rN} kN	F _{aN} kN			
3.4	4.1	1045	0.80	412.64	**	**	**	**	FH063-14P-71-04F	39	322
3.7	4.5	958	0.90	378.37	6.5	9.9	6.5	2.2			
4.1	5.1	855	1.00	337.44	8.1	12.5	8.1	2.5			
4.5	5.5	784	1.05	309.42	9.0	12.7	9.0	2.7			
5.2	6.4	675	1.25	266.44	10.0	13.1	10.0	3.1			
5.7	7.0	619	1.35	244.32	10.4	13.2	10.4	3.3			
6.8	8.3	523	1.60	206.59	11.0	13.6	11.0	3.6			
7.4	9.0	480	1.75	189.44	11.3	13.7	11.3	3.7			
8.3	10	428	1.95	169.09	11.5	13.9	11.5	3.9			
9.0	11	393	2.10	155.05	11.7	14.0	11.7	4.0			
11	13	330	2.50	130.15	11.9	14.2	11.9	4.2			
12	14	302	2.75	119.35	12.0	14.3	12.0	4.3			
4.9	6.1	714	0.85	187.00	**	**	**	**	FH053-14P-80-06E	26	320
5.4	6.7	653	0.95	170.85	5.2	8.4	5.2	3.3			
6.3	7.8	558	1.10	146.10	6.7	10.3	6.7	3.6			
6.9	8.5	510	1.20	133.49	7.3	10.4	7.3	3.7			
8.5	10	417	1.45	109.08	8.2	10.7	8.2	4.0			
9.3	11	381	1.60	99.66	8.5	10.8	8.5	4.1			
9.8	12	360	1.70	94.11	8.6	10.9	8.6	4.2			
11	13	328	1.85	85.99	8.8	11.0	8.8	4.3			
12	15	287	2.10	75.04	9.0	11.1	9.0	4.4			
15	19	230	2.65	60.26	9.3	11.3	9.3	4.6			
17	21	210	2.85	55.06	9.4	11.4	9.4	4.7			
4.5	5.6	780	0.80	308.00	**	**	**	**	FH053-14P-71-04F	23	320
5.0	6.1	713	0.85	281.41	**	**	**	**			
5.7	7.0	615	1.00	242.67	5.9	9.9	5.9	3.4			
6.3	7.7	562	1.10	221.71	6.7	10.3	6.7	3.6			
7.5	9.1	474	1.30	187.00	7.7	10.6	7.7	3.9			
8.2	10	433	1.40	170.85	8.1	10.7	8.1	4.0			
9.5	12	370	1.65	146.10	8.5	10.9	8.5	4.2			
10	13	338	1.80	133.49	8.8	11.0	8.8	4.3			
13	16	276	2.20	109.08	9.1	11.2	9.1	4.5			
14	17	252	2.40	99.66	9.2	11.2	9.2	4.5			
17	21	208	2.90	82.13	9.4	11.4	9.4	4.7			
11	13	334	1.15	87.38	8.8	11.0	8.8	4.3	FH052-14P-80-06E	26	320
12	14	305	1.15	79.84	8.9	11.1	8.9	4.4			
13	16	273	1.85	71.46	9.1	11.2	9.1	4.5			
14	17	249	1.85	65.29	9.2	11.2	9.2	4.5			
16	20	216	2.80	56.42	9.4	11.3	9.4	4.6			
19	24	184	1.15	48.15	9.5	11.2	9.5	4.5			
23	29	150	1.85	39.38	9.6	11.3	9.6	4.6			
16	20	221	1.70	87.38	9.3	11.3	9.3	4.6	FH052-14P-71-04F	22	320
17	21	202	1.70	79.84	9.4	11.4	9.4	4.7			
20	24	181	2.80	71.46	9.5	11.4	9.5	4.7			
21	26	165	2.80	65.29	9.5	11.5	9.5	4.8			
29	36	122	1.70	48.15	9.6	11.5	9.6	4.8			
35	43	100	2.80	39.38	9.7	11.6	9.7	4.9			
7.3	9.0	484	0.85	126.72	**	**	**	**	FH043-14P-80-06E	20	318
8.0	9.9	442	0.95	115.60	2.6	3.6	2.6	2.3			
9.8	12	361	1.15	94.61	4.6	7.9	4.6	2.6			
11	13	330	1.25	86.31	5.1	8.3	5.1	2.7			
12	15	284	1.45	74.46	5.6	8.5	5.6	2.9			
13	16	272	1.50	71.24	5.8	8.5	5.8	2.9			
14	18	248	1.65	64.98	6.0	8.6	6.0	3.0			
18	22	200	2.05	52.27	6.4	8.8	6.4	3.2			
19	24	182	2.20	47.68	6.5	8.9	6.5	3.3			

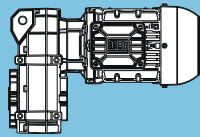
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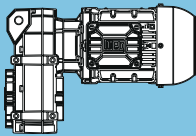
P_N = 0.37 kW

IE3

50 Hz 0.37 kW		60 Hz 0.44 kW		i	at 50 Hz					m kg	Dimension sheet see page
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	f _b		Output shaft		Hollow shaft				
					F _{rN} kN	F _{aN} kN	F _{rN} kN	F _{aN} kN			
6.6	8.1	533	0.80	210.48	**	**	**	**	FH043-14P-71-04F	17	318
7.3	8.9	486	0.85	192.00	**	**	**	**			
8.6	11	411	1.00	162.19	3.5	5.5	3.5	2.4			
9.4	12	375	1.10	147.96	4.3	7.3	4.3	2.6			
11	13	321	1.25	126.72	5.2	8.4	5.2	2.8			
12	15	293	1.40	115.60	5.5	8.5	5.5	2.9			
15	18	240	1.70	94.61	6.1	8.6	6.1	3.0			
16	20	219	1.85	86.31	6.2	8.7	6.2	3.1			
20	24	180	2.25	71.24	6.5	8.9	6.5	3.3			
21	26	165	2.45	64.98	6.6	8.9	6.6	3.3			
12	15	290	1.15	75.79	5.6	8.5	5.6	2.9	FH043-14P-80-06E	20	318
13	16	264	1.15	69.14	5.9	8.6	5.9	3.0			
15	18	237	1.70	61.98	6.1	8.7	6.1	3.1			
16	20	216	1.85	56.54	6.3	8.7	6.3	3.1			
19	23	187	2.15	48.94	6.5	8.8	6.5	3.2			
21	26	171	2.35	44.64	6.6	8.9	6.6	3.3			
22	28	157	1.15	41.20	6.6	8.7	6.6	3.1			
24	30	145	2.80	37.95	6.7	9.0	6.7	3.4			
27	34	129	1.85	33.69	6.8	8.8	6.8	3.2			
18	23	192	1.70	75.79	6.4	8.8	6.4	3.2	FH042-14P-71-04F	17	318
20	25	175	1.70	69.14	6.5	8.9	6.5	3.3			
23	28	157	2.55	61.98	6.6	8.9	6.6	3.3			
25	30	143	2.80	56.54	6.7	9.0	6.7	3.4			
34	42	104	1.70	41.20	6.9	9.0	6.9	3.4			
41	51	85	2.80	33.69	6.9	9.1	6.9	3.5			
13	16	268	0.85	70.17	**	**	**	**	FH032-14P-80-06E	19	316
15	18	243	0.95	63.63	2.8	2.6	2.8	2.6			
16	20	218	1.05	57.07	3.4	2.3	3.4	2.3			
18	22	198	1.15	51.75	3.8	2.8	3.8	2.8			
20	25	173	1.30	45.35	4.1	2.6	4.1	2.6			
22	28	157	1.45	41.12	4.3	3.0	4.3	3.0			
26	33	134	1.65	35.03	4.6	2.8	4.6	2.8			
29	36	121	1.85	31.76	4.7	3.1	4.7	3.1			
33	41	107	2.10	27.97	4.8	3.0	4.8	3.0			
36	45	97	2.30	25.36	4.9	3.2	4.9	3.2			
41	51	86	1.75	22.50	4.9	3.2	4.9	3.2			
44	54	81	2.75	21.14	4.9	3.2	4.9	3.2			
52	64	68	2.20	17.88	5.0	3.3	5.0	3.3			
67	83	53	2.85	13.81	5.1	3.4	5.1	3.4			
20	24	178	1.25	70.17	4.1	2.6	4.1	2.6	FH032-14P-71-04F	15	316
22	27	161	1.40	63.63	4.3	2.9	4.3	2.9			
24	30	145	1.55	57.07	4.5	2.8	4.5	2.8			
27	33	131	1.70	51.75	4.6	3.1	4.6	3.1			
31	38	115	1.95	45.35	4.7	2.9	4.7	2.9			
34	42	104	2.15	41.12	4.8	3.2	4.8	3.2			
40	49	89	2.50	35.03	4.9	3.1	4.9	3.1			
44	54	80	2.75	31.76	4.9	3.3	4.9	3.3			
50	62	70	1.70	27.67	5.0	3.3	5.0	3.3			
62	76	57	2.60	22.50	5.0	3.4	5.0	3.4			

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** ... on request

P _N = 0.37 kW										IE3		
50 Hz		60 Hz		f _B	i	at 50 Hz					m kg	Dimension sheet see page
0.37 kW		0.44 kW				Output shaft		Hollow shaft				
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	F _{rN} kN			F _{aN} kN	F _{rN} kN	F _{aN} kN				
21	26	167	0.80	43.83	**	**	**	**	FH022-14P-80-06E	16	314	
25	30	143	0.95	37.52	4.6	1.9	4.6	1.9				
27	34	129	1.05	33.78	4.7	2.2	4.7	2.2				
32	39	112	1.20	29.32	4.9	2.1	4.9	2.1				
35	43	101	1.30	26.39	4.9	2.3	4.9	2.3				
37	46	95	0.90	24.76	5.0	2.3	5.0	2.3				
42	52	84	1.60	21.89	5.0	2.3	5.0	2.3				
46	57	77	1.10	20.08	5.1	2.4	5.1	2.4				
47	58	75	1.75	19.70	5.1	2.4	5.1	2.4				
49	60	72	1.85	18.88	5.1	2.3	5.1	2.3				
54	67	65	2.05	17.00	5.1	2.5	5.1	2.5				
56	69	63	2.10	16.48	5.1	2.4	5.1	2.4				
58	72	60	1.40	15.82	5.1	2.5	5.1	2.5				
62	77	57	2.30	14.84	5.2	2.5	5.2	2.5				
76	94	47	1.85	12.19	5.2	2.5	5.2	2.5				
77	94	46	2.85	12.09	5.2	2.5	5.2	2.5				
97	120	36	2.35	9.52	5.1	2.6	5.1	2.6				
23	28	157	0.85	61.80	**	**	**	**	FH022-14P-71-04F	13	314	
25	31	141	0.95	55.64	4.6	2.1	4.6	2.1				
29	35	123	1.10	48.69	4.8	2.0	4.8	2.0				
32	39	111	1.20	43.83	4.9	2.3	4.9	2.3				
37	46	95	1.40	37.52	5.0	2.2	5.0	2.2				
41	51	86	1.55	33.78	5.0	2.4	5.0	2.4				
48	58	74	1.80	29.32	5.1	2.3	5.1	2.3				
53	65	67	1.95	26.39	5.1	2.5	5.1	2.5				
56	69	63	1.35	24.76	5.1	2.5	5.1	2.5				
64	78	55	2.35	21.89	5.2	2.4	5.2	2.4				
69	85	51	1.70	20.08	5.2	2.5	5.2	2.5				
71	87	50	2.65	19.70	5.2	2.5	5.2	2.5				
85	104	42	3.15	16.48	5.2	2.5	5.2	2.5				
88	108	40	2.10	15.82	5.2	2.6	5.2	2.6				
94	115	38	3.50	14.84	5.2	2.6	5.2	2.6				
114	140	31	2.75	12.19	4.8	2.6	4.8	2.6				
115	141	31	4.25	12.09	4.8	2.6	4.8	2.6				
128	157	28	4.75	10.89	4.6	2.6	4.6	2.6				
147	180	24	3.50	9.52	4.4	2.6	4.4	2.6				
196	241	18	4.70	7.11	4.0	2.7	4.0	2.7				
261	320	14	6.20	5.35	3.6	2.7	3.6	2.7				
355	435	10	7.25	3.93	3.2	2.7	3.2	2.7				

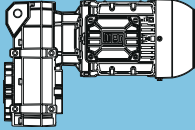
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Legend see page 211

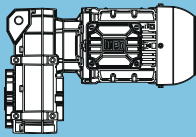
** ... on request

P_N = 0.55 kW

IE3

50 Hz 0.55 kW	60 Hz 0.66 kW	M ₂ Nm	f _b	i	at 50 Hz					m kg	Dimension sheet see page
					Output shaft		Hollow shaft				
					F _{rN} kN	F _{aN} kN	F _{rN} kN	F _{aN} kN			
0.20	0.24	23938	0.80	4838.19	**	**	**	**	FH155-14P-L80-06F	691	346
0.23	0.28	20111	0.90	4085.50	68.4	113.5	68.4	113.5			
0.24	0.29	19263	0.95	3923.28	72.6	114.2	72.6	114.2			
0.28	0.35	16249	1.15	3343.64	84.7	116.7	84.7	116.7			
0.29	0.35	15961	1.15	3284.26	85.7	116.9	85.7	116.9			
0.35	0.43	13008	1.40	2711.35	94.2	119.3	94.2	119.3			
0.36	0.43	12737	1.45	2661.75	94.8	119.5	94.8	119.5			
0.42	0.51	10722	1.70	2269.72	99.2	121.2	99.2	121.2			
0.51	0.63	8490	2.15	1839.52	103.0	123.0	103.0	123.0			
0.20	0.24	23131	0.80	7024.85	**	**	**	**	FH155-14P-80-04E	689	346
0.24	0.29	19316	0.95	5911.67	72.3	114.1	72.3	114.1			
0.26	0.32	17578	1.05	5407.29	79.9	115.6	79.9	115.6			
0.29	0.36	15607	1.20	4838.19	86.9	117.2	86.9	117.2			
0.35	0.42	13044	1.40	4085.5	94.1	119.3	94.1	119.3			
0.36	0.44	12494	1.45	3923.28	95.4	119.7	95.4	119.7			
0.42	0.51	10485	1.75	3343.64	99.6	121.4	99.6	121.4			
0.43	0.52	10298	1.75	3284.26	100	121.5	100	121.5			
0.52	0.63	8306	2.20	2711.35	103.2	123.2	103.2	123.2			
0.53	0.65	8133	2.25	2661.75	103.5	123.3	103.5	123.3			
0.63	0.76	6775	2.70	2269.72	105.2	124.4	105.2	124.4			
0.41	0.50	11361	1.60	2318.30	97.9	120.7	97.9	120.7	FH154-14P-L80-06F	678	344
0.47	0.58	9664	1.90	1996.74	101.1	122.1	101.1	122.1			
0.52	0.63	8826	2.05	1834.90	102.5	122.8	102.5	122.8			
0.55	0.67	8256	2.20	1727.10	103.3	123.2	103.3	123.2			
0.59	0.72	7595	2.40	1602.16	104.2	123.8	104.2	123.8			
0.60	0.73	7476	2.45	1580.39	104.4	123.9	104.4	123.9			
0.67	0.82	6615	2.75	1415.96	105.4	124.6	105.4	124.6			
0.68	0.84	6433	2.80	1379.93	105.6	124.7	105.6	124.7			
0.69	0.84	6360	2.85	1366.97	105.7	124.8	105.7	124.8			
0.61	0.74	7283	2.50	2318.3	104.6	124	104.6	124.0	FH154-14P-80-04E	676	344
0.71	0.86	6156	2.95	1996.74	105.9	124.9	105.9	124.9			
0.41	0.50	11517	1.15	2307.03	74.9	86.4	74.9	86.4	FH124-14P-L80-06F	426	340
0.47	0.57	9959	1.35	2011.51	78.8	87.9	78.8	87.9			
0.53	0.65	8764	1.50	1781.14	81.3	89.1	81.3	89.1			
0.55	0.67	8508	1.55	1732.67	81.8	89.3	81.8	89.3			
0.61	0.74	7563	1.75	1552.98	83.4	90.2	83.4	90.2			
0.63	0.77	7260	1.80	1493.78	83.9	90.5	83.9	90.5			
0.71	0.86	6434	2.05	1337.70	85.1	91.3	85.1	91.3			
0.73	0.89	6252	2.10	1302.43	85.3	91.5	85.3	91.5			
0.81	0.99	5569	2.35	1172.32	86.2	92.1	86.2	92.1			
0.82	1.0	5461	2.40	1151.94	86.3	92.2	86.3	92.2			
0.84	1.0	5307	2.45	1121.89	86.5	92.4	86.5	92.4			
0.92	1.1	4775	2.75	1022.15	87.0	92.9	87.0	92.9			
0.98	1.2	4485	2.90	966.09	87.3	93.2	87.3	93.2			
0.62	0.75	7477	1.75	2307.03	83.6	90.3	83.6	90.3	FH124-14P-80-04E	424	340
0.71	0.86	6439	2.05	2011.51	85.1	91.3	85.1	91.3			
0.80	0.97	5631	2.35	1781.14	86.1	92.1	86.1	92.1			
0.82	0.99	5466	2.40	1732.67	86.3	92.2	86.3	92.2			
0.91	1.1	4838	2.70	1552.98	87.0	92.8	87.0	92.8			
0.95	1.2	4625	2.85	1493.78	87.2	93.0	87.2	93.0			
0.48	0.58	10009	0.80	1976.36	**	**	**	**	FH104-14P-L80-06F	286	336
0.54	0.66	8847	0.95	1757.78	41.3	59.3	41.3	59.3			
0.55	0.68	8595	0.95	1707.58	42.7	59.6	42.7	59.6			
0.62	0.76	7648	1.05	1525.85	47.4	60.7	47.4	60.7			
0.64	0.78	7374	1.10	1474.19	48.5	61.0	48.5	61.0			
0.72	0.88	6554	1.25	1318.33	51.6	61.9	51.6	61.9			
0.74	0.90	6349	1.30	1279.68	52.3	62.1	52.3	62.1			
0.82	1.0	5716	1.40	1156.94	54.3	62.8	54.3	62.8			
0.85	1.0	5440	1.50	1105.64	55.1	63.1	55.1	63.1			
0.94	1.2	4911	1.65	1004.29	56.4	63.7	56.4	63.7			
1.1	1.3	4331	1.85	892.89	57.7	64.3	57.7	64.3			
1.2	1.5	3705	2.20	775.08	58.8	65.0	58.8	65.0			
1.3	1.6	3516	2.30	738.55	59.2	65.3	59.2	65.3			
1.4	1.7	3155	2.55	669.67	59.7	65.7	59.7	65.7			
1.5	1.8	3001	2.70	641.10	59.9	65.8	59.9	65.8			

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P _N = 0.55 kW										IE3	
50 Hz		60 Hz		i	at 50 Hz					m kg	Dimension sheet see page
0.55 kW		0.66 kW			Output shaft		Hollow shaft				
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	f _B		F _{rN} kN	F _{aN} kN	F _{rN} kN	F _{aN} kN			
0.62	0.76	7579	1.10	2276.77	47.7	60.7	47.7	60.7	FH104-14P-80-04E	284	336
0.72	0.87	6539	1.25	1976.36	51.7	61.9	51.7	61.9			
0.81	0.98	5780	1.40	1757.78	54.1	62.7	54.1	62.7			
0.83	1.0	5603	1.45	1707.58	54.6	62.9	54.6	62.9			
0.93	1.1	4966	1.65	1525.85	56.3	63.6	56.3	63.6			
0.96	1.2	4788	1.70	1474.19	56.7	63.8	56.7	63.8			
1.1	1.3	4246	1.90	1318.33	57.8	64.4	57.8	64.4			
1.2	1.5	3680	2.20	1156.94	58.9	65.1	58.9	65.1			
1.3	1.6	3503	2.30	1105.64	59.2	65.3	59.2	65.3			
1.4	1.7	3149	2.55	1004.29	59.7	65.7	59.7	65.7			
1.6	1.9	2759	2.90	892.89	60.2	66.1	60.2	66.1			
0.88	1.1	5405	0.85	1069.42	**	**	**	**	FH094-14P-L80-06F	181	332
0.97	1.2	4901	0.95	973.69	25.1	38.5	25.1	38.5			
1.1	1.4	4118	1.10	823.17	30.2	39.5	30.2	39.5			
1.3	1.6	3657	1.25	735.68	32.5	40.2	32.5	40.2			
1.5	1.9	3060	1.50	621.95	34.9	40.9	34.9	40.9			
1.6	1.9	2957	1.55	602.09	35.3	41.1	35.3	41.1			
1.9	2.3	2469	1.85	509.01	36.7	41.7	36.7	41.7			
2.3	2.8	1965	2.30	412.76	37.9	42.4	37.9	42.4			
2.7	3.3	1611	2.80	345.53	38.6	42.9	38.6	42.9			
2.9	3.5	1535	2.95	331.24	38.7	43.0	38.7	43.0			
0.84	1.0	5679	0.80	1685.14	**	**	**	**	FH094-14P-80-04E	179	332
0.92	1.1	5187	0.90	1545.54	22.7	38.1	22.7	38.1			
1.1	1.3	4359	1.05	1306.62	28.8	39.2	28.8	39.2			
1.3	1.6	3531	1.30	1069.42	33.1	40.3	33.1	40.3			
1.5	1.8	3195	1.45	973.69	34.4	40.8	34.4	40.8			
1.7	2.1	2673	1.70	823.17	36.2	41.5	36.2	41.5			
1.9	2.3	2370	1.90	735.68	37.0	41.9	37.0	41.9			
2.3	2.8	1970	2.30	621.95	37.9	42.4	37.9	42.4			
2.4	2.9	1899	2.40	602.09	38.1	42.5	38.1	42.5			
2.8	3.4	1573	2.90	509.01	38.7	42.9	38.7	42.9			
2.9	3.5	1502	3.00	488.23	38.8	43.0	38.8	43.0			
3.3	4.0	1604	2.85	288.50	38.6	42.9	38.6	42.9			
1.3	1.5	3789	0.80	748.21	**	**	**	**	FH084-14P-L80-06F	127	328
1.5	1.8	3180	0.95	631.81	17.7	30.5	17.7	7.6			
1.6	1.9	3047	1.00	606.72	19.0	33.3	19.0	7.8			
1.8	2.2	2576	1.20	517.08	22.5	41.0	22.5	8.5			
1.9	2.3	2530	1.20	507.90	22.7	41.1	22.7	8.6			
2.0	2.4	2382	1.30	480.21	23.6	41.3	23.6	8.8			
2.3	2.8	2063	1.50	419.30	25.2	41.8	25.2	9.3			
2.4	2.9	1974	1.55	401.99	25.6	42.0	25.6	9.5			
2.7	3.3	1706	1.80	351.00	26.6	42.4	26.6	9.9			
2.9	3.5	1574	1.95	325.80	27.0	42.6	27.0	10.1			
3.3	4.1	1357	2.25	284.47	27.7	42.9	27.7	10.4			
1.3	1.6	3654	0.85	1086.37	**	**	**	**	FH084-14P-80-04E	125	328
1.5	1.8	3208	0.95	957.69	17.5	30.1	17.5	7.6			
1.6	1.9	3056	1.00	914.22	18.9	33.1	18.9	7.8			
1.7	2.1	2784	1.10	836.22	21.1	37.9	21.1	8.2			
1.9	2.3	2475	1.25	748.21	23.1	41.2	23.1	8.7			
2.0	2.4	2389	1.30	723.59	23.6	41.3	23.6	8.8			
2.2	2.7	2073	1.45	631.81	25.1	41.8	25.1	9.3			
2.3	2.8	1983	1.55	606.72	25.5	41.9	25.5	9.4			
2.4	2.9	1931	1.60	592.20	25.7	42.0	25.7	9.5			
2.7	3.3	1672	1.80	517.08	26.7	42.4	26.7	9.9			
2.8	3.4	1639	1.85	507.90	26.8	42.5	26.8	10.0			
3.0	3.6	1544	1.95	480.21	27.1	42.6	27.1	10.1			
3.4	4.1	1328	2.30	419.30	27.8	43.0	27.8	10.5			
3.5	4.3	1268	2.40	401.99	27.9	43.0	27.9	10.5			
4.0	4.9	1091	2.75	351.00	28.3	43.3	28.3	10.8			
4.4	5.3	1002	3.00	325.80	28.5	43.5	28.5	11.0			

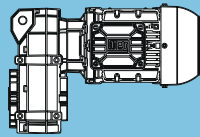
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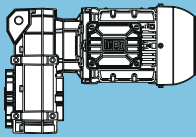
** ... on request

$P_N = 0.55 \text{ kW}$

IE3

50 Hz		60 Hz		i	at 50 Hz					m kg	Dimension sheet see page
0.55 kW	0.66 kW	M_2 Nm	f_b		Output shaft		Hollow shaft				
n_{50} min ⁻¹	n_{60} min ⁻¹				F_{rN} kN	F_{aN} kN	F_{rN} kN	F_{aN} kN			
2.6	3.2	1993	1.55	358.52	25.5	41.9	25.5	9.4	FH083-14P-L80-06F	114	326
3.3	4.1	1577	1.95	283.76	27.0	42.6	27.0	10.1			
3.8	4.7	1377	2.20	247.77	27.6	42.9	27.6	10.4			
4.3	5.3	1217	2.50	218.97	28.0	43.1	28.0	10.6			
5.1	6.2	1029	2.95	185.17	28.4	43.4	28.4	10.9			
5.2	6.4	1002	3.00	180.28	28.5	43.5	28.5	11.0			
4.0	4.8	1326	2.30	358.52	27.8	43.0	27.8	10.5	FH083-14P-80-04E	112	326
5.0	6.1	1050	2.90	283.76	28.4	43.4	28.4	10.9			
3.1	3.8	1698	0.90	305.42	13.9	15.5	13.9	4.3	FH073-14P-L80-06F	66	324
4.0	4.9	1318	1.15	237.15	16.8	16.3	16.8	5.1			
4.9	5.9	1082	1.40	194.58	18.1	16.8	18.1	5.5			
6.3	7.7	838	1.80	150.69	19.1	17.3	19.1	6.0			
8.2	10	637	2.40	114.62	19.7	17.7	19.7	6.5			
10	12	525	2.90	94.52	19.9	17.9	18.6	6.7			
3.7	4.5	1425	1.10	385.37	16.1	16.1	16.1	4.8	FH073-14P-80-04E	64	324
4.6	5.6	1130	1.35	305.42	17.9	16.7	17.9	5.4			
6.0	7.3	877	1.75	237.15	18.9	17.2	18.9	6.0			
7.3	8.8	720	2.10	194.58	19.4	17.5	19.4	6.3			
9.4	11	557	2.70	150.69	19.9	17.9	19.0	6.6			
5.0	6.1	1053	0.80	189.44	**	**	**	**			
5.6	6.8	940	0.90	169.09	6.9	10.8	6.9	2.3	FH063-14P-L80-06F	43	322
6.1	7.4	862	1.00	155.05	8.0	12.4	8.0	2.5			
7.3	8.9	723	1.15	130.15	9.6	12.9	9.6	3.0			
7.9	9.7	663	1.25	119.35	10.1	13.1	10.1	3.1			
9.6	12	547	1.55	98.34	10.9	13.5	10.9	3.5			
10	13	501	1.65	90.17	11.2	13.6	11.2	3.7			
12	14	447	1.85	80.48	11.4	13.8	11.4	3.9			
13	16	410	2.00	73.80	11.6	13.9	11.6	4.0			
14	18	363	2.30	65.26	11.8	14.1	11.8	4.1			
16	19	333	2.50	59.84	11.9	14.2	11.9	4.2			
17	21	304	2.75	54.63	12.0	14.3	12.0	4.3			
19	23	278	2.95	50.10	12.1	14.3	12.1	4.4			
5.3	6.5	986	0.85	266.44	**	**	**	**			
5.8	7.0	904	0.95	244.32	7.4	11.8	7.4	2.3			
6.9	8.3	764	1.10	206.59	9.2	12.8	9.2	2.8			
7.5	9.1	701	1.20	189.44	9.8	13.0	9.8	3.0			
8.4	10	625	1.35	169.09	10.4	13.2	10.4	3.3			
9.2	11	574	1.45	155.05	10.7	13.4	10.7	3.4			
11	13	481	1.75	130.15	11.3	13.7	11.3	3.7			
12	14	441	1.90	119.35	11.5	13.8	11.5	3.9			
14	17	364	2.30	98.34	11.8	14.1	11.8	4.1			
16	19	334	2.50	90.17	11.9	14.2	11.9	4.2			
18	21	298	2.80	80.48	12.0	14.3	12.0	4.3			
19	23	276	3.00	49.67	12.1	14.4	12.1	4.4	FH062-14P-L80-06F	42	322
7.1	8.7	742	0.85	133.49	**	**	**	**	FH053-14P-L80-06F	27	320
8.7	11	606	1.00	109.08	6.0	10.1	6.0	3.4			
9.5	12	554	1.10	99.66	6.8	10.3	6.8	3.6			
10	12	523	1.15	94.11	7.1	10.4	7.1	3.7			
11	13	478	1.25	85.99	7.6	10.5	7.6	3.8			
12	14	456	1.35	82.13	7.8	10.6	7.8	3.9			
13	15	417	1.45	75.04	8.2	10.7	8.2	4.0			
16	19	335	1.80	60.26	8.8	11.0	8.8	4.3			
17	21	306	2.00	55.06	8.9	11.1	8.9	4.4			
7.6	9.2	692	0.90	187.00	4.3	6.5	4.3	3.2	FH053-14P-80-04E	25	320
8.3	10	632	0.95	170.85	5.6	9.2	5.6	3.3			
9.7	12	540	1.15	146.10	6.9	10.3	6.9	3.6			
11	13	494	1.25	133.49	7.5	10.5	7.5	3.8			
13	16	403	1.50	109.08	8.3	10.8	8.3	4.1			
14	17	369	1.65	99.66	8.6	10.9	8.6	4.2			
15	18	348	1.75	94.11	8.7	10.9	8.7	4.2			
17	20	318	1.90	85.99	8.9	11.0	8.9	4.3			
19	23	278	2.20	75.04	9.1	11.1	9.1	4.4			
24	29	223	2.70	60.26	9.3	11.3	9.3	4.6			
26	31	204	2.95	55.06	9.4	11.4	9.4	4.7			

F

P _N = 0.55 kW										IE3		
50 Hz		60 Hz		at 50 Hz						m kg	Dimension sheet see page	
0.55 kW		0.66 kW		Output shaft		Hollow shaft						
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	f _B	i	F _{rN} kN	F _{aN} kN	F _{rN} kN	F _{aN} kN				
11	13	486	0.80	87.38	**	**	**	**	FH052-14P-L80-06F	27	320	
12	14	444	0.80	79.84	**	**	**	**				
13	16	397	1.30	71.46	8.3	10.8	8.3	4.1				
14	18	363	1.30	65.29	8.6	10.9	8.6	4.2				
17	20	314	1.95	56.42	8.9	11	8.9	4.3				
18	22	287	2.10	51.55	9.0	11.1	9.0	4.4				
20	24	268	0.80	48.15	**	**	**	**				
22	26	243	2.50	43.75	9.2	11.3	9.2	4.6				
24	29	222	2.70	39.97	9.3	11.3	9.3	4.6				
30	37	173	2.10	31.09	9.5	11.3	9.5	4.6				
39	48	134	2.70	24.11	9.6	11.4	9.6	4.7				
16	20	323	1.15	87.38	8.8	11.0	8.8	4.3	FH052-14P-80-04E	25	320	
18	22	295	1.15	79.84	9.0	11.1	9.0	4.4				
20	24	264	1.90	71.46	9.2	11.2	9.2	4.5				
22	26	242	1.90	65.29	9.3	11.3	9.3	4.6				
25	30	209	2.90	56.42	9.4	11.4	9.4	4.7				
29	36	178	1.15	48.15	9.5	11.2	9.5	4.5				
36	44	146	1.90	39.38	9.6	11.4	9.6	4.7				
10	12	526	0.80	94.61	**	**	**	**	FH043-14P-L80-06F	21	318	
11	13	480	0.85	86.31	**	**	**	**				
12	14	454	0.90	81.63	2.1	2.6	2.1	2.3				
13	16	396	1.05	71.24	3.9	6.4	3.9	2.5				
13	16	414	1.00	74.46	3.5	5.5	3.5	2.4				
15	18	361	1.15	64.98	4.6	7.9	4.6	2.6				
18	22	291	1.40	52.27	5.6	8.5	5.6	2.9				
20	24	265	1.55	47.68	5.8	8.6	5.8	3.0				
11	14	469	0.90	126.72	1.2	0.7	1.2	0.7	FH043-14P-80-04E	19	318	
12	15	428	0.95	115.6	3.1	4.7	3.1	2.4				
15	18	350	1.15	94.61	4.8	8.3	4.8	2.7				
16	20	319	1.30	86.31	5.2	8.4	5.2	2.8				
17	21	302	1.35	81.63	5.4	8.4	5.4	2.8				
19	23	275	1.50	74.46	5.7	8.5	5.7	2.9				
20	24	264	1.55	71.24	5.9	8.6	5.9	3.0				
22	26	240	1.70	64.98	6.1	8.7	6.1	3.1				
27	33	193	2.10	52.27	6.4	8.8	6.4	3.2				
30	36	176	2.30	47.68	6.5	8.9	6.5	3.3				
12	15	421	0.80	75.79	**	**	**	**	FH042-14P-L80-06F	21	318	
14	17	384	0.80	69.14	**	**	**	**				
15	19	344	1.20	61.98	4.9	8.3	4.9	2.7				
17	20	314	1.30	56.54	5.3	8.4	5.3	2.8				
19	24	272	1.50	48.94	5.8	8.5	5.8	2.9				
21	26	248	1.65	44.64	6.0	8.6	6.0	3.0				
23	28	229	0.80	41.20	**	**	**	**				
25	30	211	1.90	37.95	6.3	8.7	6.3	3.1				
27	33	192	2.10	34.62	6.4	8.8	6.4	3.2				
28	34	187	1.30	33.69	6.5	8.6	6.5	3.0				
30	37	173	2.35	31.06	6.6	8.9	6.6	3.3				
33	41	157	2.55	28.33	6.6	8.9	6.6	3.3				
36	43	148	2.10	26.60	6.7	8.8	6.7	3.2				
46	56	115	2.70	20.63	6.8	8.9	6.8	3.3				
19	23	280	1.15	75.79	5.7	8.5	5.7	2.9	FH042-14P-80-04E	19	318	
21	25	256	1.15	69.14	5.9	8.6	5.9	3.0				
23	28	229	1.75	61.98	6.2	8.7	6.2	3.1				
25	30	209	1.90	56.54	6.3	8.8	6.3	3.2				
29	35	181	2.25	48.94	6.5	8.9	6.5	3.3				
32	39	165	2.45	44.64	6.6	8.9	6.6	3.3				
34	42	152	1.15	41.20	6.7	8.7	6.7	3.1				
37	45	140	2.85	37.95	6.7	9.0	6.7	3.4				
42	51	125	1.90	33.69	6.8	8.9	6.8	3.3				

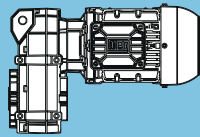
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** ... on request

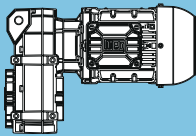
P_N = 0.55 kW

IE3

50 Hz 0.55 kW n ₅₀ min ⁻¹	60 Hz 0.66 kW n ₆₀ min ⁻¹	M ₂ Nm	f _b	i	at 50 Hz					m kg	Dimension sheet see page
					Output shaft		Hollow shaft				
					F _{rN} kN	F _{aN} kN	F _{rN} kN	F _{aN} kN			
18	22	288	0.80	51.75	**	**	**	**	FH032-14P-L80-06F	20	316
21	25	252	0.90	45.35	2.6	2.1	2.6	2.1			
23	28	229	1.00	41.12	3.2	2.6	3.2	2.6			
27	33	195	1.15	35.03	3.8	2.4	3.8	2.4			
30	36	177	1.25	31.76	4.1	2.9	4.1	2.9			
34	41	155	1.45	27.97	4.3	2.7	4.3	2.7			
37	46	141	1.60	25.36	4.5	3.0	4.5	3.0			
42	51	125	1.20	22.50	4.6	3.0	4.6	3.0			
45	55	118	1.90	21.14	4.7	2.9	4.7	2.9			
49	60	107	2.10	19.17	4.8	3.2	4.8	3.2			
53	65	99	1.55	17.88	4.8	3.1	4.8	3.1			
59	72	89	2.50	16.06	4.9	3.1	4.9	3.1			
65	79	81	2.75	14.57	4.9	3.3	4.9	3.3			
68	84	77	2.00	13.81	5.0	3.3	5.0	3.3			
86	105	61	2.45	11.03	5.0	3.3	5.0	3.3			
20	25	260	0.85	70.17	**	**	**	**	FH032-14P-80-04E	18	316
22	27	235	0.95	63.63	3.0	2.6	3.0	2.6			
25	30	211	1.05	57.07	3.5	2.3	3.5	2.3			
27	33	191	1.15	51.75	3.9	2.8	3.9	2.8			
31	38	168	1.35	45.35	4.2	2.6	4.2	2.6			
35	42	152	1.45	41.12	4.4	3.0	4.4	3.0			
41	49	130	1.70	35.03	4.6	2.8	4.6	2.8			
45	54	117	1.90	31.76	4.7	3.1	4.7	3.1			
51	61	103	2.15	27.97	4.8	3.0	4.8	3.0			
56	68	94	2.35	25.36	4.9	3.2	4.9	3.2			
63	76	83	1.80	22.50	4.9	3.2	4.9	3.2			
67	81	78	2.85	21.14	5.0	3.2	5.0	3.2			
79	96	66	2.30	17.88	5.0	3.3	5.0	3.3			
103	125	51	2.95	13.81	5.1	3.4	5.1	3.4			
32	39	163	0.80	29.32	**	**	**	**			
36	44	147	0.90	26.39	4.6	2.1	4.6	2.1			
43	53	122	1.10	21.89	4.8	2.0	4.8	2.0			
47	58	112	0.80	20.08	**	**	**	**			
48	59	109	1.20	19.70	4.9	2.3	4.9	2.3			
50	61	105	1.25	18.88	4.9	2.1	4.9	2.1			
56	68	94	1.40	17.00	5.0	2.3	5.0	2.3			
57	70	92	1.45	16.48	5.0	2.2	5.0	2.2			
60	73	88	1.00	15.82	5.0	2.4	5.0	2.4			
64	78	82	1.60	14.84	5.1	2.4	5.1	2.4			
78	95	68	1.25	12.19	5.1	2.5	5.1	2.5			
87	106	61	2.15	10.89	5.1	2.5	5.1	2.5			
99	121	53	1.60	9.52	5.2	2.5	5.2	2.5			
133	162	40	2.15	7.11	4.6	2.6	4.6	2.6			
154	188	34	2.50	6.13	4.4	2.6	4.4	2.6			
177	216	30	2.85	5.35	4.2	2.6	4.2	2.6			

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** ... on request

P _N = 0.55 kW										IE3		
50 Hz		60 Hz				at 50 Hz					m kg	Dimension sheet see page
0.55 kW		0.66 kW				Output shaft		Hollow shaft				
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	f _B	i	F _{rN} kN	F _{aN} kN	F _{rN} kN	F _{aN} kN				
32	39	162	0.85	43.83	**	**	**	**				
38	46	139	0.95	37.52	4.6	1.9	4.6	1.9				
42	51	125	1.05	33.78	4.8	2.2	4.8	2.2				
48	59	108	1.20	29.32	4.9	2.1	4.9	2.1				
54	65	98	1.35	26.39	5.0	2.3	5.0	2.3				
57	69	92	0.95	24.76	5.0	2.4	5.0	2.4				
65	79	81	1.65	21.89	5.1	2.3	5.1	2.3				
71	86	74	1.15	20.08	5.1	2.4	5.1	2.4				
72	87	73	1.80	19.70	5.1	2.4	5.1	2.4				
75	91	70	1.90	18.88	5.1	2.3	5.1	2.3				
84	101	63	2.10	17.00	5.1	2.5	5.1	2.5				
86	104	61	2.15	16.48	5.1	2.4	5.1	2.4				
90	109	59	1.45	15.82	5.2	2.5	5.2	2.5				
96	116	55	2.40	14.84	5.2	2.5	5.2	2.5				
116	141	45	1.90	12.19	4.9	2.6	4.9	2.6				
117	142	45	2.95	12.09	4.9	2.5	4.9	2.5				
130	158	40	3.25	10.89	4.7	2.6	4.7	2.6				
149	181	35	2.40	9.52	4.5	2.6	4.5	2.6				
200	242	26	3.20	7.11	4.0	2.6	4.0	2.6				
232	281	23	3.75	6.13	3.8	2.7	3.8	2.7				
265	321	20	4.25	5.35	3.6	2.7	3.6	2.7				
361	438	15	5.00	3.93	3.2	2.7	3.2	2.7				

FH022-14P-80-04E

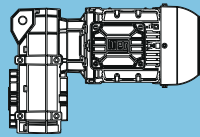
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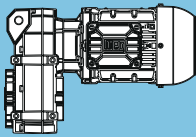
P_N = 0.75 kW

IE3

50 Hz		60 Hz		i	at 50 Hz					m kg	Dimension sheet see page
0.75 kW		0.90 kW			Output shaft		Hollow shaft				
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	f _b		F _{rN} kN	F _{aN} kN	F _{rN} kN	F _{aN} kN			
0.28	0.34	22679	0.80	3343.64	**	**	**	**	FH155-11P-90S/L-06E	697	346
0.29	0.35	22220	0.85	3284.26	**	**	**	**			
0.35	0.42	18203	1.00	2711.35	77.3	115.1	77.3	115.1			
0.41	0.50	15082	1.20	2269.72	88.5	117.6	88.5	117.6			
0.51	0.62	12036	1.50	1839.52	96.5	120.1	96.5	120.1			
0.30	0.36	21517	0.85	4838.19	**	**	**	**	FH155-11P-80-04F	691	346
0.35	0.43	18030	1.00	4085.50	78.0	115.2	78.0	115.2			
0.36	0.44	17270	1.05	3923.28	81.0	115.8	81.0	115.8			
0.43	0.52	14568	1.25	3343.64	90.0	118.0	90.0	118.0			
0.44	0.53	14272	1.30	3284.26	90.9	118.3	90.9	118.3			
0.53	0.64	11632	1.55	2711.35	97.3	120.5	97.3	120.5			
0.54	0.65	11390	1.60	2661.75	97.8	120.7	97.8	120.7			
0.63	0.77	9563	1.90	2269.72	101.3	122.2	101.3	122.2			
0.78	0.95	7552	2.40	1839.52	104.3	123.8	104.3	123.8			
0.41	0.49	15865	1.15	2318.30	86.0	117.0	86.0	117.0	FH154-11P-90S/L-06E	684	344
0.47	0.57	13553	1.35	1996.74	92.8	118.9	92.8	118.9			
0.51	0.62	12378	1.50	1834.90	95.7	119.8	95.7	119.8			
0.54	0.66	11626	1.55	1727.10	97.3	120.5	97.3	120.5			
0.59	0.71	10719	1.70	1602.16	99.2	121.2	99.2	121.2			
0.66	0.81	9376	1.95	1415.96	101.6	122.3	101.6	122.3			
0.68	0.83	9118	2.00	1379.93	102.0	122.5	102.0	122.5			
0.69	0.84	9032	2.00	1366.97	102.1	122.6	102.1	122.6			
0.77	0.94	7959	2.30	1219.56	103.7	123.5	103.7	123.5			
0.79	0.96	7798	2.35	1197.38	103.9	123.6	103.9	123.6			
0.89	1.1	6770	2.70	1054.87	105.2	124.4	105.2	124.4			
0.91	1.1	6605	2.75	1031.30	105.4	124.6	105.4	124.6			
0.62	0.75	10153	1.80	2318.30	100.2	121.7	100.2	121.7	FH154-11P-80-04F	678	344
0.72	0.87	8637	2.10	1996.74	102.7	122.9	102.7	122.9			
0.78	0.95	7871	2.30	1834.90	103.8	123.5	103.8	123.5			
0.83	1.0	7363	2.45	1727.10	104.5	124.0	104.5	124.0			
0.89	1.1	6759	2.70	1602.16	105.2	124.5	105.2	124.5			
0.90	1.1	6667	2.70	1580.39	105.3	124.5	105.3	124.5			
0.41	0.5	15984	0.85	2307.03	**	**	**	**	FH124-11P-90S/L-06E	432	340
0.47	0.57	13879	0.95	2011.51	67.4	84.1	67.4	84.1			
0.53	0.64	12214	1.10	1781.14	72.9	85.7	72.9	85.7			
0.54	0.66	11882	1.10	1732.67	73.9	86.1	73.9	86.1			
0.61	0.74	10584	1.25	1552.98	77.3	87.3	77.3	87.3			
0.63	0.77	10160	1.30	1493.78	78.3	87.7	78.3	87.7			
0.70	0.86	9042	1.45	1337.70	80.7	88.8	80.7	88.8			
0.72	0.88	8786	1.50	1302.43	81.3	89.0	81.3	89.0			
0.80	0.98	7843	1.70	1172.32	83.0	89.9	83.0	89.9			
0.82	0.99	7707	1.70	1151.94	83.2	90.1	83.2	90.1			
0.84	1.0	7490	1.75	1121.89	83.5	90.3	83.5	90.3			
0.92	1.1	6768	1.95	1022.15	84.6	91.0	84.6	91.0			
0.97	1.2	6370	2.05	966.09	85.2	91.4	85.2	91.4			
1.0	1.3	5929	2.20	904.76	85.7	91.8	85.7	91.8			
1.1	1.3	5746	2.30	880.46	86.0	92.0	86.0	92.0			
1.2	1.5	5084	2.60	788.86	86.7	92.6	86.7	92.6			
1.3	1.5	4793	2.75	748.37	87.0	92.9	87.0	92.9			
0.62	0.75	10314	1.30	2307.03	78.0	87.6	78.0	87.6	FH124-11P-80-04F	426	340
0.71	0.87	8919	1.50	2011.51	81.0	88.9	81.0	88.9			
0.80	0.98	7833	1.70	1781.14	83.0	90.0	83.0	90.0			
0.83	1.0	7604	1.75	1732.67	83.3	90.2	83.3	90.2			
0.92	1.1	6759	1.95	1552.98	84.6	91.0	84.6	91.0			
0.96	1.2	6475	2.05	1493.78	85.0	91.3	85.0	91.3			
1.1	1.3	5738	2.30	1337.70	86.0	92.0	86.0	92.0			
1.2	1.5	4956	2.65	1172.32	86.8	92.7	86.8	92.7			
1.3	1.6	4713	2.80	1121.89	87.1	93.0	87.1	93.0			

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** ... on request

P _N = 0.75 kW										IE3	
50 Hz		60 Hz		at 50 Hz						m kg	Dimension sheet see page
0.75 kW		0.90 kW		Output shaft		Hollow shaft					
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	f _B	i	F _{rN} kN	F _{aN} kN	F _{rN} kN	F _{aN} kN			
0.62	0.75	10593	0.80	1525.85	**	**	**	**	FH104-11P-90S/L-06E	292	336
0.64	0.78	10235	0.80	1474.19	**	**	**	**			
0.71	0.87	9115	0.90	1318.33	39.7	59.0	39.7	59.0			
0.73	0.89	8830	0.95	1279.68	41.4	59.3	41.4	59.3			
0.81	0.99	7950	1.05	1156.94	46.0	60.3	46.0	60.3			
0.85	1.0	7582	1.10	1105.64	47.7	60.7	47.7	60.7			
0.94	1.1	6859	1.20	1004.29	50.6	61.5	50.6	61.5			
1.1	1.3	6060	1.35	892.89	53.3	62.4	53.3	62.4			
1.2	1.5	5218	1.55	775.08	55.6	63.4	55.6	63.4			
1.3	1.6	4951	1.65	738.55	56.3	63.7	56.3	63.7			
1.4	1.7	4462	1.80	669.67	57.4	64.2	57.4	64.2			
1.5	1.8	4254	1.90	641.10	57.8	64.4	57.8	64.4			
1.7	2.1	3622	2.25	553.91	59.0	65.1	59.0	65.1			
2.0	2.4	3040	2.65	472.61	59.9	65.8	59.9	65.8			
0.63	0.76	10390	0.80	2276.77	**	**	**	**	FH104-11P-80-04F	286	336
0.72	0.88	8982	0.90	1976.36	40.5	59.2	40.5	59.2			
0.81	0.99	7940	1.05	1757.78	46.1	60.3	46.1	60.3			
0.84	1.0	7713	1.05	1707.58	47.1	60.6	47.1	60.6			
0.94	1.1	6850	1.20	1525.85	50.6	61.5	50.6	61.5			
0.97	1.2	6605	1.25	1474.19	51.5	61.8	51.5	61.8			
1.1	1.3	5870	1.40	1318.33	53.8	62.6	53.8	62.6			
1.2	1.5	5109	1.60	1156.94	55.9	63.5	55.9	63.5			
1.3	1.6	4872	1.65	1105.64	56.5	63.7	56.5	63.7			
1.4	1.7	4389	1.85	1004.29	57.5	64.3	57.5	64.3			
1.6	1.9	3862	2.10	892.89	58.6	64.9	58.6	64.9			
1.8	2.2	3304	2.45	775.08	59.5	65.5	59.5	65.5			
1.9	2.4	3129	2.60	738.55	59.7	65.7	59.7	65.7			
2.1	2.6	2808	2.85	669.67	60.2	66.0	60.2	66.0			
2.2	2.7	2671	3.00	641.10	60.3	66.2	60.3	66.2			
1.1	1.4	5715	0.80	823.17	**	**	**	**	FH094-11P-90S/L-06E	187	332
1.3	1.6	5087	0.90	735.68	23.6	38.3	23.6	38.3			
1.5	1.8	4265	1.10	621.95	29.4	39.3	29.4	39.3			
1.6	1.9	4129	1.10	602.09	30.2	39.5	30.2	39.5			
1.8	2.2	3462	1.30	509.01	33.4	40.4	33.4	40.4			
1.9	2.3	3307	1.40	488.23	34.0	40.6	34.0	40.6			
2.3	2.8	2767	1.65	412.76	35.9	41.3	35.9	41.3			
2.7	3.3	2283	2.00	345.53	37.2	42.0	37.2	42.0			
2.8	3.5	2180	2.10	331.24	37.5	42.1	37.5	42.1			
3.4	4.1	1812	2.50	280.04	38.2	42.6	38.2	42.6			
1.1	1.3	5963	0.80	1306.62	**	**	**	**	FH094-11P-80-04F	181	332
1.3	1.6	4850	0.95	1069.42	25.5	38.6	25.5	38.6			
1.5	1.8	4398	1.05	973.69	28.6	39.2	28.6	39.2			
1.7	2.1	3688	1.25	823.17	32.4	40.1	32.4	40.1			
1.9	2.4	3276	1.40	735.68	34.1	40.7	34.1	40.7			
2.3	2.8	2741	1.65	621.95	35.9	41.4	35.9	41.4			
2.4	2.9	2648	1.70	602.09	36.2	41.5	36.2	41.5			
2.8	3.4	2206	2.05	509.01	37.4	42.1	37.4	42.1			
2.9	3.6	2107	2.15	488.23	37.6	42.2	37.6	42.2			
3.5	4.2	1749	2.60	412.76	38.4	42.7	38.4	42.7			
3.3	4.0	2198	2.05	288.50	37.4	42.1	37.4	42.1	FH093-11P-90S/L-06E	174	330
3.9	4.7	1858	2.45	243.90	38.1	42.5	38.1	42.5			
4.5	5.4	1609	2.80	211.14	38.6	42.9	38.6	42.9			
1.8	2.2	3582	0.85	517.08	**	**	**	**	FH084-11P-90S/L-06E	132	328
1.9	2.3	3512	0.90	507.90	13.9	22.4	13.9	22.4			
2.0	2.4	3313	0.95	480.21	16.3	27.5	16.3	27.5			
2.2	2.7	2881	1.05	419.30	20.3	36.2	20.3	36.2			
2.3	2.8	2823	1.10	411.63	20.8	37.2	20.8	37.2			
2.7	3.3	2387	1.30	351.00	23.6	41.3	23.6	41.3			
2.9	3.5	2207	1.40	325.80	24.5	41.6	24.5	41.6			
3.3	4.0	1911	1.60	284.47	25.8	42.1	25.8	42.1			

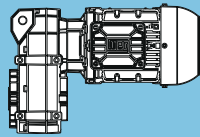
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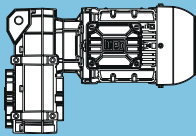
P_N = 0.75 kW

IE3

50 Hz		60 Hz		i	at 50 Hz					m kg	Dimension sheet see page
0.75 kW		0.90 kW			Output shaft		Hollow shaft				
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	f _b		F _{rN} kN	F _{aN} kN	F _{rN} kN	F _{aN} kN			
1.7	2.1	3816	0.80	836.22	**	**	**	**	FH084-11P-80-04F	126	328
1.9	2.3	3401	0.90	748.21	15.3	25.4	15.3	7.3			
2.0	2.4	3282	0.95	723.59	16.7	28.3	16.7	7.4			
2.3	2.8	2848	1.10	631.81	20.6	36.8	20.6	8.1			
2.4	2.9	2735	1.10	606.72	21.4	38.6	21.4	8.3			
2.8	3.4	2312	1.30	517.08	24.0	41.4	24.0	8.9			
3.0	3.6	2134	1.45	480.21	24.9	41.7	24.9	9.2			
3.4	4.1	1848	1.65	419.30	26.1	42.2	26.1	9.7			
3.5	4.2	1810	1.70	411.63	26.2	42.2	26.2	9.7			
3.6	4.3	1768	1.70	401.99	26.4	42.3	26.4	9.8			
4.1	5.0	1525	2.00	351.00	27.2	42.6	27.2	10.1			
4.4	5.3	1406	2.15	325.80	27.5	42.8	27.5	10.3			
5.0	6.1	1210	2.50	284.47	28.0	43.1	28.0	10.6			
2.6	3.2	2732	1.10	358.52	21.4	38.6	21.4	8.3	FH083-11P-90S/L-06E	119	326
3.3	4.0	2162	1.40	283.76	24.7	41.7	24.7	9.2			
3.8	4.6	1888	1.60	247.77	25.9	42.1	25.9	9.6			
4.3	5.2	1668	1.80	218.97	26.7	42.4	26.7	9.9			
5.1	6.2	1411	2.15	185.17	27.5	42.8	27.5	10.3			
5.2	6.4	1374	2.20	180.28	27.6	42.9	27.6	10.4			
5.9	7.2	1213	2.50	159.17	28.0	43.1	28.0	10.6			
6.6	8.0	1087	2.80	142.69	28.3	43.3	28.3	10.8			
6.8	8.2	1059	2.85	138.95	28.4	43.4	28.4	10.9			
4.0	4.9	1796	1.70	358.52	26.3	42.2	26.3	9.7	FH083-11P-80-04F	113	326
5.0	6.1	1421	2.15	283.76	27.5	42.8	27.5	10.3			
5.8	7.0	1241	2.45	247.77	28.0	43.1	28.0	10.6			
6.5	7.9	1097	2.75	218.97	28.3	43.3	28.3	10.8			
4.0	4.8	1807	0.85	237.15	**	**	**	**	FH073-11P-90S/L-06E	72	324
4.8	5.9	1483	1.05	194.58	15.7	16.0	15.7	4.7			
6.2	7.6	1148	1.35	150.69	17.8	16.7	17.8	5.4			
8.2	10	873	1.75	114.62	18.9	17.2	18.9	6.0			
9.9	12	720	2.10	94.52	19.4	17.5	19.3	6.3			
12	15	591	2.55	77.53	19.8	17.8	17.8	6.5			
14	17	502	3.00	65.88	20.0	18.0	16.7	6.7			
3.7	4.5	1930	0.80	385.37	**	**	**	**	FH073-11P-80-04F	66	324
4.7	5.7	1530	1.00	305.42	15.3	15.9	15.3	4.6			
6.0	7.3	1188	1.30	237.15	17.6	16.6	17.6	5.3			
7.3	8.9	975	1.55	194.58	18.6	17.0	18.6	5.8			
9.5	12	755	2.00	150.69	19.3	17.5	19.3	6.2			
12	15	574	2.65	114.62	19.8	17.8	17.7	6.6			
7.2	8.8	992	0.85	130.15	**	**	**	**	FH063-11P-90S/L-06E	49	322
7.9	9.6	909	0.95	119.35	7.3	11.6	7.3	2.3			
9.6	12	749	1.10	98.34	9.3	12.8	9.3	2.9			
10	13	687	1.20	90.17	9.9	13.0	9.9	3.0			
12	14	613	1.35	80.48	10.5	13.3	10.5	3.3			
13	16	562	1.50	73.80	10.8	13.4	10.8	3.5			
14	18	497	1.65	65.26	11.2	13.6	11.2	3.7			
16	19	456	1.80	59.84	11.4	13.8	11.4	3.8			
17	21	416	2.00	54.63	11.6	13.9	11.6	4.0			
19	23	382	2.15	50.10	11.7	14.0	11.7	4.0			
6.9	8.4	1035	0.80	206.59	**	**	**	**	FH063-11P-80-04F	43	322
7.5	9.2	949	0.90	189.44	6.7	10.3	6.7	2.2			
8.5	10	847	1.00	169.09	8.2	12.5	8.2	2.6			
9.2	11	777	1.10	155.05	9.0	12.7	9.0	2.8			
11	13	652	1.30	130.15	10.2	13.1	10.2	3.2			
12	15	598	1.40	119.35	10.6	13.3	10.6	3.3			
15	18	493	1.70	98.34	11.2	13.7	11.2	3.7			
16	19	452	1.85	90.17	11.4	13.8	11.4	3.8			
18	22	403	2.05	80.48	11.6	13.9	11.6	4.0			
19	24	370	2.25	73.80	11.8	14.0	11.8	4.1			
22	27	327	2.55	65.26	11.9	14.2	11.9	4.2			
24	29	300	2.75	59.84	12.0	14.3	11.7	4.3			
26	32	274	3.00	54.63	12.1	14.4	11.3	4.4			

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** ... on request

P _N = 0.75 kW										IE3	
50 Hz		60 Hz		i	at 50 Hz					m kg	Dimension sheet see page
0.75 kW		0.90 kW			Output shaft		Hollow shaft				
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	f _B		F _{rN} kN	F _{aN} kN	F _{rN} kN	F _{aN} kN			
19	23	378	2.20	49.67	11.7	14.0	11.7	4.1	FH062-11P-90S/L-06E	48	322
21	25	347	2.40	45.55	11.9	14.1	11.9	4.2			
23	27	317	2.60	41.66	12.0	14.2	11.9	4.3			
25	30	291	2.85	38.2	12.0	14.3	11.5	4.3			
46	56	156	2.75	20.49	12.4	14.6	9.2	4.6			
9.4	11	759	0.80	99.66	**	**	**	**	FH053-11P-90S/L-06E	33	320
10	12	717	0.85	94.11	**	**	**	**			
11	13	655	0.95	85.99	5.1	8.2	5.1	3.3			
11	14	626	1.00	82.13	5.7	9.5	5.7	3.4			
13	15	572	1.05	75.04	6.5	10.2	6.5	3.5			
16	19	459	1.35	60.26	7.8	10.6	7.8	3.9			
17	21	420	1.45	55.06	8.2	10.7	8.2	4.0			
9.8	12	732	0.85	146.10	**	**	**	**	FH053-11P-80-04F	26	320
11	13	669	0.90	133.49	4.8	7.5	4.8	3.2			
13	16	546	1.10	109.08	6.9	10.3	6.9	3.6			
14	17	499	1.20	99.66	7.4	10.5	7.4	3.8			
15	18	471	1.30	94.11	7.7	10.6	7.7	3.9			
17	20	431	1.40	85.99	8.1	10.7	8.1	4.0			
19	23	376	1.60	75.04	8.5	10.8	8.5	4.1			
24	29	302	2.00	60.26	9.0	11.1	9.0	4.4			
26	32	276	2.20	55.06	9.1	11.1	9.1	4.4			
13	16	545	0.95	71.46	6.9	10.3	6.9	3.6	FH052-11P-90S/L-06E	32	320
14	18	497	0.95	65.29	7.4	10.5	7.4	3.8			
17	20	430	1.40	56.42	8.1	10.7	8.1	4.0			
18	22	393	1.55	51.55	8.4	10.8	8.4	4.1			
21	26	333	1.80	43.75	8.8	11.0	8.8	4.3			
24	29	305	2.00	39.97	8.9	11.1	8.9	4.4			
26	32	273	2.20	35.81	9.1	11.2	9.1	4.5			
29	35	249	2.40	32.72	9.2	11.2	9.2	4.5			
30	37	237	1.55	31.09	9.3	11.0	9.3	4.3			
34	42	210	2.90	27.56	9.4	11.4	9.4	4.7			
39	47	184	2.00	24.11	9.5	11.2	9.5	4.5			
48	58	150	2.40	19.73	9.6	11.3	9.6	4.6			
16	20	438	0.85	87.38	**	**	**	**	FH052-11P-80-04F	26	320
18	22	400	0.85	79.84	**	**	**	**			
20	24	358	1.40	71.46	8.6	10.9	8.6	4.2			
22	27	327	1.40	65.29	8.8	11	8.8	4.3			
25	31	283	2.15	56.42	9.1	11.1	9.1	4.4			
28	34	258	2.35	51.55	9.2	11.2	9.2	4.5			
30	36	241	0.85	48.15	**	**	**	**			
33	40	219	2.75	43.75	9.3	11.3	9.3	4.6			
36	44	200	3.00	39.97	9.4	11.4	9.4	4.7			
46	56	156	2.35	31.09	9.5	11.3	9.5	4.6			
59	72	121	3.00	24.11	9.6	11.5	9.6	4.8			
14	18	495	0.85	64.98	**	**	**	**	FH043-11P-90S/L-06E	27	318
18	22	398	1.05	52.27	3.8	6.2	3.8	2.5			
20	24	363	1.15	47.68	4.5	7.7	4.5	2.6			
15	18	474	0.85	94.61	**	**	**	**	FH043-11P-80-04F	21	318
17	20	432	0.95	86.31	2.9	4.3	2.9	2.4			
18	21	409	1.00	81.63	3.6	5.7	3.6	2.4			
19	23	373	1.10	74.46	4.4	7.5	4.4	2.6			
20	24	357	1.15	71.24	4.7	8.1	4.7	2.6			
22	27	325	1.25	64.98	5.1	8.4	5.1	2.8			
27	33	262	1.55	52.27	5.9	8.6	5.9	3.0			
30	36	239	1.70	47.68	6.1	8.7	6.1	3.1			

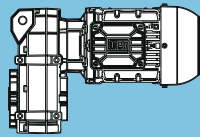
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P_N = 0.75 kW

IE3

50 Hz		60 Hz		i	at 50 Hz					m kg	Dimension sheet see page
0.75 kW		0.90 kW			Output shaft		Hollow shaft				
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	f _b		F _{rN} kN	F _{aN} kN	F _{rN} kN	F _{aN} kN			
15	18	472	0.85	61.98	**	**	**	**	FH042-11P-90S/L-06E	27	318
17	20	431	0.95	56.54	3.0	4.5	3.0	2.4			
19	23	373	1.10	48.94	4.4	7.5	4.4	2.6			
21	26	340	1.20	44.64	4.9	8.3	4.9	2.7			
25	30	289	1.40	37.95	5.6	8.5	5.6	2.9			
27	33	264	1.55	34.62	5.9	8.6	5.9	3.0			
28	34	257	0.95	33.69	5.9	8.2	5.9	2.6			
30	37	237	1.70	31.06	6.1	8.7	6.1	3.1			
33	40	216	1.90	28.33	6.3	8.7	6.3	3.1			
35	43	203	1.55	26.60	6.4	8.5	6.4	2.9			
39	48	182	2.20	23.91	6.5	8.8	6.5	3.2			
43	52	166	2.45	21.81	6.6	8.9	6.6	3.3			
46	56	157	2.00	20.63	6.6	8.7	6.6	3.1			
52	63	138	2.95	18.06	6.7	9.0	6.7	3.4			
56	68	129	2.40	16.88	6.8	8.8	6.8	3.2			
19	23	380	0.85	75.79	**	**	**	**	FH042-11P-80-04F	20	318
21	25	346	0.85	69.14	**	**	**	**			
23	28	310	1.30	61.98	5.3	8.4	5.3	2.8			
25	31	283	1.40	56.54	5.7	8.5	5.7	2.9			
29	36	245	1.65	48.94	6.0	8.6	6.0	3.0			
32	39	224	1.80	44.64	6.2	8.7	6.2	3.1			
35	42	206	0.85	41.20	**	**	**	**			
38	46	190	2.15	37.95	6.4	8.8	6.4	3.2			
41	50	173	2.35	34.62	6.5	8.9	6.5	3.3			
42	52	169	1.40	33.69	6.6	8.6	6.6	3.0			
46	56	156	2.60	31.06	6.6	8.9	6.6	3.3			
50	61	142	2.85	28.33	6.7	9.0	6.7	3.4			
54	65	133	2.35	26.60	6.8	8.8	6.8	3.2			
69	84	103	3.00	20.63	6.9	9.0	6.9	3.4			
27	33	267	0.85	35.03	**	**	**	**			
30	36	242	0.95	31.76	2.8	2.6	2.8	2.6			
34	41	213	1.05	27.97	3.5	2.3	3.5	2.3			
37	45	193	1.15	25.36	3.8	2.8	3.8	2.8			
42	51	171	0.90	22.50	4.2	2.8	4.2	2.8			
44	54	161	1.40	21.14	4.3	2.7	4.3	2.7			
49	60	146	1.55	19.17	4.4	3.0	4.4	3.0			
53	64	136	1.15	17.88	4.5	3.0	4.5	3.0			
59	71	122	1.80	16.06	4.7	2.9	4.7	2.9			
65	79	111	2.00	14.57	4.8	3.2	4.8	3.2			
68	83	105	1.45	13.81	4.8	3.1	4.8	3.1			
75	92	95	2.35	12.50	4.9	3.1	4.9	3.1			
83	101	86	2.55	11.33	4.9	3.3	4.9	3.3			
85	104	84	1.80	11.03	4.9	3.2	4.9	3.2			
96	117	74	2.90	9.76	5.0	3.2	5.0	3.2			
106	129	67	3.00	8.85	5.0	3.4	5.0	3.4			
113	137	63	2.40	8.33	5.0	3.3	5.0	3.3			
25	30	286	0.80	57.07	**	**	**	**	FH032-11P-80-04F	19	316
28	34	259	0.85	51.75	**	**	**	**			
32	38	227	1.00	45.35	3.2	2.2	3.2	2.2			
35	42	206	1.10	41.12	3.6	2.7	3.6	2.7			
41	50	175	1.30	35.03	4.1	2.6	4.1	2.6			
45	55	159	1.40	31.76	4.3	2.9	4.3	2.9			
51	62	140	1.60	27.97	4.5	2.8	4.5	2.8			
52	63	139	0.90	27.67	4.5	2.9	4.5	2.9			
56	69	127	1.75	25.36	4.6	3.1	4.6	3.1			
64	77	113	1.35	22.50	4.7	3.1	4.7	3.1			
68	82	106	2.10	21.14	4.8	3.0	4.8	3.0			
75	91	96	2.30	19.17	4.9	3.2	4.9	3.2			
80	97	90	1.70	17.88	4.9	3.2	4.9	3.2			
89	108	80	2.75	16.06	4.9	3.2	4.9	3.2			
104	126	69	2.20	13.81	5.0	3.3	5.0	3.3			
130	158	55	2.75	11.03	5.1	3.4	5.1	3.4			

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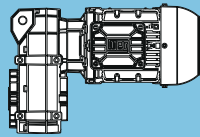
** ... on request

P _N = 0.75 kW										IE3		
50 Hz		60 Hz				at 50 Hz					m kg	Dimension sheet see page
0.75 kW		0.90 kW				Output shaft		Hollow shaft				
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	f _B	i	F _{rN} kN	F _{aN} kN	F _{rN} kN	F _{aN} kN				
43	52	167	0.80	21.89	**	**	**	**				
48	58	150	0.90	19.70	4.5	2.1	4.5	2.1				
50	61	144	0.95	18.88	4.6	1.9	4.6	1.9				
55	67	130	1.05	17.00	4.7	2.2	4.7	2.2				
57	69	126	1.05	16.48	4.8	2.0	4.8	2.0				
63	77	113	1.15	14.84	4.9	2.3	4.9	2.3				
77	94	93	0.95	12.19	5.0	2.3	5.0	2.3				
78	95	92	1.45	12.09	5.0	2.2	5.0	2.2				
86	105	83	1.60	10.89	5.0	2.4	5.0	2.4				
99	120	73	1.20	9.52	5.1	2.4	5.1	2.4				
132	161	54	1.60	7.11	4.8	2.5	4.8	2.5				
153	187	47	1.80	6.13	4.5	2.5	4.5	2.5				
176	214	41	2.10	5.35	4.3	2.6	4.3	2.6				
239	291	30	2.45	3.93	3.8	2.6	3.8	2.6				
42	52	169	0.80	33.78	**	**	**	**				
49	59	147	0.90	29.32	4.6	1.9	4.6	1.9				
54	66	132	1.00	26.39	4.7	2.2	4.7	2.2				
65	79	110	1.20	21.89	4.9	2.1	4.9	2.1				
71	87	101	0.85	20.08	**	**	**	**				
73	88	99	1.35	19.70	5.0	2.3	5.0	2.3				
76	92	95	1.40	18.88	5.0	2.2	5.0	2.2				
84	102	85	1.55	17.00	5.0	2.4	5.0	2.4				
87	106	83	1.60	16.48	5.1	2.3	5.1	2.3				
90	110	79	1.10	15.82	5.1	2.4	5.1	2.4				
96	117	74	1.75	14.84	5.1	2.4	5.1	2.4				
117	143	61	1.40	12.19	5.0	2.5	5.0	2.5				
118	144	61	2.15	12.09	5.0	2.4	5.0	2.4				
131	160	55	2.40	10.89	4.8	2.5	4.8	2.5				
150	183	48	1.80	9.52	4.5	2.5	4.5	2.5				
201	245	36	2.40	7.11	4.1	2.6	4.1	2.6				
233	284	31	2.75	6.13	3.8	2.6	3.8	2.6				
267	325	27	3.15	5.35	3.7	2.6	3.7	2.6				
364	443	20	3.70	3.93	3.3	2.7	3.3	2.7				

F

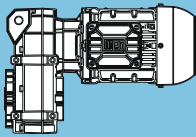
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** ... on request

P _N = 1.1 kW										IE3	
50 Hz		60 Hz		at 50 Hz						m kg	Dimension sheet see page
1.1 kW		1.3 kW		Output shaft		Hollow shaft					
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	f _b	i	F _{rN} kN	F _{aN} kN	F _{rN} kN	F _{aN} kN			
0.44	0.53	21435	0.85	3343.64	**	**	**	**	FH155-11P-90S/L-04E	695	346
0.54	0.65	17204	1.05	2711.35	81.3	115.9	81.3	115.9			
0.55	0.66	16846	1.10	2661.75	82.6	116.2	82.6	116.2			
0.64	0.78	14218	1.30	2269.72	91.0	118.3	91.0	118.3			
0.79	0.96	11346	1.60	1839.52	97.9	120.7	97.9	120.7			
0.42	0.51	22053	0.85	2269.72	**	**	**	**	FH155-11P-100L-06D	701	346
0.52	0.63	17690	1.05	1839.52	79.4	115.5	79.4	115.5			
0.63	0.76	15002	1.20	2318.30	88.7	117.7	88.7	117.7	FH154-11P-90S/L-04E	682	344
0.73	0.88	12789	1.45	1996.74	94.7	119.5	94.7	119.5			
0.79	0.96	11704	1.55	1834.90	97.2	120.4	97.2	120.4			
0.84	1.0	10971	1.65	1727.10	98.7	121.0	98.7	121.0			
0.91	1.1	10115	1.80	1602.16	100.3	121.7	100.3	121.7			
0.92	1.1	9956	1.85	1580.39	100.6	121.8	100.6	121.8			
1.0	1.2	8847	2.05	1415.96	102.4	122.7	102.4	122.7			
1.1	1.3	8604	2.10	1379.93	102.8	122.9	102.8	122.9			
1.2	1.4	7510	2.40	1219.56	104.3	123.8	104.3	123.8			
1.4	1.7	6375	2.85	1054.87	105.7	124.8	105.7	124.8			
0.41	0.5	23114	0.80	2318.30	**	**	**	**	FH154-11P-100L-06D	688	344
0.48	0.58	19786	0.95	1996.74	70.0	113.8	70.0	113.8			
0.52	0.63	18145	1.00	1834.90	77.6	115.1	77.6	115.1			
0.56	0.67	17009	1.10	1727.10	82.0	116.0	82.0	116.0			
0.60	0.73	15746	1.15	1602.16	86.4	117.1	86.4	117.1			
0.61	0.74	15500	1.20	1580.39	87.2	117.3	87.2	117.3			
0.68	0.82	13802	1.35	1415.96	92.1	118.7	92.1	118.7			
0.70	0.84	13451	1.35	1379.93	93.1	119.0	93.1	119.0			
0.79	0.96	11790	1.55	1219.56	97.0	120.3	97.0	120.3			
0.80	0.97	11552	1.60	1197.38	97.5	120.5	97.5	120.5			
0.91	1.1	10093	1.80	1054.87	100.4	121.7	100.4	121.7			
0.93	1.1	9828	1.85	1029.25	100.8	121.9	100.8	121.9			
1.1	1.3	8473	2.15	898.51	103.0	123.0	103.0	123.0			
1.2	1.5	7178	2.55	773.88	104.7	124.1	104.7	124.1			
1.3	1.5	7112	2.55	766.77	104.8	124.2	104.8	124.2			
1.4	1.7	6105	2.95	669.37	105.9	125.0	105.9	125.0			
0.63	0.76	15114	0.90	2307.03	62.5	82.9	62.5	82.9	FH124-11P-90S/L-04E	430	340
0.72	0.87	13124	1.00	2011.51	70.0	84.9	70.0	84.9			
0.82	0.99	11550	1.15	1781.14	74.8	86.4	74.8	86.4			
0.84	1.0	11212	1.20	1732.67	75.7	86.7	75.7	86.7			
0.94	1.1	10008	1.30	1552.98	78.7	87.9	78.7	87.9			
0.97	1.2	9587	1.40	1493.78	79.6	88.3	79.6	88.3			
0.98	1.2	9576	1.40	1492.05	79.6	88.3	79.6	88.3			
1.1	1.3	8533	1.55	1337.70	81.7	89.3	81.7	89.3			
1.2	1.5	7401	1.80	1172.32	83.7	90.4	83.7	90.4			
1.3	1.5	7272	1.80	1151.94	83.9	90.5	83.9	90.5			
1.4	1.7	6386	2.05	1022.15	85.2	91.3	85.2	91.3			
1.5	1.8	5999	2.20	966.09	85.7	91.7	85.7	91.7			
1.6	1.9	5583	2.35	904.76	86.2	92.1	86.2	92.1			
1.7	2.0	5422	2.40	880.46	86.3	92.3	86.3	92.3			
1.8	2.2	4787	2.75	788.86	87.0	92.9	87.0	92.9			
1.9	2.3	4582	2.85	758.19	87.2	93.1	87.2	93.1			

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** ... on request

P _N = 1.1 kW										IE3	
50 Hz		60 Hz		i	at 50 Hz					m kg	Dimension sheet see page
1.1 kW		1.3 kW			Output shaft		Hollow shaft				
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	f _B		F _{rN} kN	F _{aN} kN	F _{rN} kN	F _{aN} kN			
0.55	0.67	17275	0.80	1732.67	**	**	**	**	FH124-11P-100L-06D	436	340
0.62	0.75	15452	0.85	1552.98	**	**	**	**			
0.64	0.78	14832	0.90	1493.78	63.7	83.2	63.7	83.2			
0.72	0.87	13228	1.00	1337.70	69.7	84.8	69.7	84.8			
0.74	0.89	12853	1.05	1302.43	70.9	85.1	70.9	85.1			
0.82	0.99	11522	1.15	1172.32	74.9	86.4	74.9	86.4			
0.83	1.0	11321	1.15	1151.94	75.4	86.6	75.4	86.6			
0.86	1.0	11003	1.20	1121.89	76.3	86.9	76.3	86.9			
0.94	1.1	9963	1.35	1022.15	78.8	87.9	78.8	87.9			
0.99	1.2	9398	1.40	966.09	80.0	88.4	80.0	88.4			
1.1	1.3	8765	1.50	904.76	81.3	89.1	81.3	89.1			
1.2	1.5	7564	1.75	788.86	83.4	90.2	83.4	90.2			
1.3	1.5	7255	1.80	758.19	83.9	90.5	83.9	90.5			
1.4	1.7	6435	2.05	679.51	85.1	91.3	85.1	91.3			
1.5	1.8	6153	2.15	652.50	85.5	91.6	85.5	91.6			
1.6	2.0	5461	2.40	585.14	86.3	92.2	86.3	92.2			
1.7	2.1	5224	2.50	562.05	86.6	92.5	86.6	92.5			
2.0	2.4	4415	2.95	484.00	87.4	93.2	87.4	93.2			
0.95	1.2	10037	0.80	1525.85	**	**	**	**	FH104-11P-90S/L-04E	290	336
0.99	1.2	9678	0.85	1474.19	**	**	**	**			
1.1	1.3	8619	0.95	1318.33	42.6	59.6	42.6	59.6			
1.3	1.6	7170	1.15	1105.64	49.4	61.2	49.4	61.2			
1.4	1.8	6486	1.25	1004.29	51.9	62.0	51.9	62.0			
1.6	2.0	5731	1.40	892.89	54.2	62.8	54.2	62.8			
1.7	2.0	5558	1.45	867.71	54.7	63.0	54.7	63.0			
1.9	2.3	4924	1.65	775.08	56.4	63.7	56.4	63.7			
2.0	2.4	4672	1.75	738.55	56.9	64.0	56.9	64.0			
2.2	2.6	4201	1.95	669.67	57.9	64.5	57.9	64.5			
2.3	2.7	4014	2.00	641.10	58.3	64.7	58.3	64.7			
2.6	3.2	3418	2.35	553.91	59.3	65.4	59.3	65.4			
2.7	3.2	3358	2.40	545.32	59.4	65.4	59.4	65.4			
3.1	3.7	2862	2.80	472.61	60.1	66.0	60.1	66.0			
3.2	3.8	2773	2.90	459.75	60.2	66.1	60.2	66.1			
0.96	1.2	10013	0.80	1004.29	**	**	**	**	FH104-11P-100L-06D	296	336
1.1	1.3	8848	0.95	892.89	41.3	59.3	41.3	59.3			
1.2	1.5	7649	1.05	775.08	47.4	60.7	47.4	60.7			
1.3	1.6	7273	1.10	738.55	49.0	61.1	49.0	61.1			
1.4	1.7	6555	1.25	669.67	51.6	61.9	51.6	61.9			
1.5	1.8	6262	1.30	641.10	52.6	62.2	52.6	62.2			
1.7	2.1	5366	1.50	553.91	55.3	63.2	55.3	63.2			
1.8	2.1	5272	1.55	545.32	55.5	63.3	55.5	63.3			
2.0	2.5	4522	1.80	472.61	57.3	64.1	57.3	64.1			
2.1	2.5	4390	1.85	459.75	57.5	64.3	57.5	64.3			
2.4	2.9	3859	2.10	408.33	58.6	64.9	58.6	64.9			
2.5	3.1	3557	2.25	378.74	59.1	65.2	59.1	65.2			
2.8	3.4	3205	2.50	344.81	59.6	65.6	59.6	65.6			
2.9	3.5	3037	2.65	328.77	59.9	65.8	59.9	65.8			
1.8	2.1	5404	0.85	823.17	**	**	**	**	FH094-11P-90S/L-04E	185	332
2.0	2.4	4810	0.95	735.68	25.8	38.6	25.8	38.6			
2.3	2.8	4033	1.15	621.95	30.7	39.7	30.7	39.7			
2.4	2.9	3896	1.20	602.09	31.4	39.8	31.4	39.8			
2.9	3.5	3267	1.40	509.01	34.1	40.7	34.1	40.7			
3.0	3.6	3127	1.45	488.23	34.7	40.9	34.7	40.9			
3.5	4.3	2611	1.75	412.76	36.3	41.5	36.3	41.5			
3.6	4.3	2586	1.75	408.71	36.4	41.6	36.4	41.6			
4.2	5.1	2154	2.10	345.53	37.5	42.1	37.5	42.1			
4.4	5.3	2057	2.20	331.24	37.7	42.3	37.7	42.3			
5.2	6.3	1707	2.65	280.04	38.4	42.7	38.4	42.7			

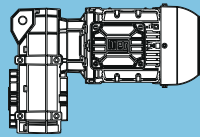
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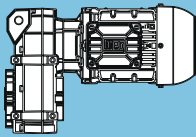
** ... on request

$P_N = 1.1 \text{ kW}$

IE3

50 Hz		60 Hz		i	at 50 Hz					m kg	Dimension sheet see page			
1.1 kW	1.3 kW	M_2 Nm	f_b		Output shaft		Hollow shaft							
n_{50} min ⁻¹	n_{60} min ⁻¹				F_{rN} kN	F_{aN} kN	F_{rN} kN	F_{aN} kN						
1.9	2.3	5054	0.90	509.01	23.8	38.3	23.8	38.3	FH094-11P-100L-06D	191	332			
2.0	2.4	4838	0.95	488.23	25.6	38.6	25.6	38.6						
2.3	2.8	4057	1.15	412.76	30.6	39.6	30.6	39.6						
2.8	3.4	3368	1.35	345.53	33.7	40.5	33.7	40.5						
2.9	3.5	3222	1.40	331.24	34.3	40.7	34.3	40.7						
3.4	4.2	2691	1.70	280.04	36.1	41.4	36.1	41.4						
5.0	6.1	2083	2.20	288.50	37.7	42.2	37.7	42.2	FH093-11P-90S/L-04E	172	330			
6.0	7.2	1761	2.60	243.90	38.3	42.7	38.3	42.7						
6.9	8.3	1524	3.00	211.14	38.7	43.0	38.7	43.0						
3.3	4.0	3157	1.45	288.50	34.6	40.8	34.6	40.8	FH093-11P-100L-06D	178	330			
3.9	4.8	2669	1.70	243.90	36.2	41.5	36.2	41.5						
4.5	5.5	2310	1.95	211.14	37.1	41.9	37.1	41.9						
5.1	6.2	2046	2.20	186.99	37.8	42.3	37.8	42.3						
5.9	7.2	1770	2.55	161.76	38.3	42.7	38.3	42.7						
6.7	8.2	1563	2.90	142.85	38.7	42.9	38.7	42.9						
7.0	8.5	1506	3.00	137.63	38.8	43.0	38.8	43.0						
2.4	2.9	3991	0.80	606.72	**	**	**	**				FH084-11P-90S/L-04E	130	328
2.5	3.0	3896	0.80	592.20	**	**	**	**						
2.8	3.4	3388	0.90	517.08	15.5	25.8	15.5	25.8						
2.9	3.5	3321	0.95	507.90	16.3	27.5	16.3	27.5						
3.0	3.7	3133	1.00	480.21	18.2	31.6	18.2	31.6						
3.5	4.2	2719	1.15	419.30	21.5	38.8	21.5	38.8						
3.6	4.4	2601	1.20	401.99	22.3	40.6	22.3	40.6						
4.1	5.0	2257	1.35	351.00	24.3	41.5	24.3	41.5						
4.5	5.4	2087	1.45	325.80	25.1	41.8	25.1	41.8						
5.1	6.2	1803	1.70	284.47	26.3	42.2	26.3	42.2						
2.7	3.3	3485	0.90	351.00	14.3	23.2	14.3	23.2	FH084-11P-100L-06D	136	328			
2.9	3.6	3228	0.95	325.80	17.2	29.4	17.2	29.4						
3.4	4.1	2802	1.10	284.47	20.9	37.5	20.9	37.5						
4.1	4.9	2588	1.20	358.52	22.4	40.8	22.4	40.8	FH083-11P-90S/L-04E	117	326			
5.1	6.2	2049	1.50	283.76	25.2	41.8	25.2	41.8						
5.9	7.1	1789	1.70	247.77	26.3	42.2	26.3	42.2						
6.6	8.0	1581	1.90	218.97	27.0	42.6	27.0	42.6						
7.9	9.5	1337	2.25	185.17	27.7	42.9	27.7	42.9						
8.1	9.8	1302	2.35	180.28	27.8	43.0	27.8	43.0						
9.1	11	1149	2.65	159.17	28.2	43.2	28.2	43.2						
10	12	1030	2.95	142.69	28.4	43.4	27.5	43.4						
2.7	3.2	3923	0.80	358.52	**	**	**	**				FH083-11P-100L-06D	123	326
3.4	4.1	3105	1.00	283.76	18.4	32.0	18.4	32.0						
3.9	4.7	2711	1.15	247.77	21.6	39.0	21.6	39.0						
4.4	5.3	2396	1.30	218.97	23.5	41.3	23.5	41.3						
5.2	6.3	2026	1.50	185.17	25.3	41.9	25.3	41.9						
5.3	6.5	1973	1.55	180.28	25.6	42.0	25.6	42.0						
6.0	7.3	1742	1.75	159.17	26.5	42.3	26.5	42.3						
6.7	8.2	1561	1.95	142.69	27.1	42.6	27.1	42.6						
6.9	8.4	1520	2.00	138.95	27.2	42.7	27.2	42.7						
7.7	9.4	1363	2.25	124.59	27.7	42.9	27.7	42.9						
8.1	9.8	1303	2.35	119.05	27.8	43.0	27.8	43.0						
8.7	11	1205	2.50	110.11	28.1	43.1	28.1	43.1						
9.5	11	1109	2.75	101.32	28.3	43.3	28.1	43.3						
10	13	1019	2.95	93.11	28.5	43.4	27.4	43.4						
6.1	7.4	1712	0.90	237.15	13.7	15.5	13.7	15.5	FH073-11P-90S/L-04E	70	324			
7.5	9.0	1405	1.10	194.58	16.2	16.1	16.2	16.2						
9.7	12	1088	1.40	150.69	18.1	16.8	18.1	16.8						
13	15	828	1.85	114.62	19.1	17.3	18.2	16.1						
15	19	682	2.20	94.52	19.6	17.6	17.0	16.4						
19	23	560	2.70	77.53	19.9	17.9	15.4	16.6						
6.4	7.7	1649	0.95	150.69	14.3	15.6	14.3	15.6	FH073-11P-100L-06D	76	324			
8.4	10	1254	1.20	114.62	17.2	16.4	17.2	16.4						
10	12	1034	1.50	94.52	18.3	16.9	18.3	16.9						
12	15	848	1.80	77.53	19.0	17.3	18.7	16.0						
15	18	721	2.10	65.88	19.4	17.5	17.1	16.3						
18	22	593	2.55	54.16	19.8	17.8	15.8	16.5						

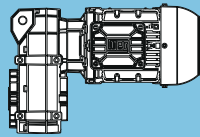
F

P _N = 1.1 kW										IE3				
50 Hz		60 Hz		i	at 50 Hz					m kg	Dimension sheet see page			
1.1 kW		1.3 kW			Output shaft		Hollow shaft							
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	f _B		F _{rN} kN	F _{aN} kN	F _{rN} kN	F _{aN} kN						
11	14	940	0.90	130.15	6.9	10.8	6.9	2.3	FH063-11P-90S/L-04E	47	322			
12	15	862	1.00	119.35	8.0	12.4	8.0	2.5						
15	18	710	1.20	98.34	9.7	13.0	9.7	3.0						
16	20	651	1.30	90.17	10.2	13.1	10.2	3.2						
18	22	581	1.45	80.48	10.7	13.4	10.7	3.4						
20	24	533	1.55	73.80	11.0	13.5	11.0	3.6						
22	27	471	1.75	65.26	11.3	13.7	11.3	3.8						
24	29	432	1.90	59.84	11.5	13.8	11.5	3.9						
27	32	394	2.10	54.63	11.7	14.0	11.7	4.0						
29	35	362	2.30	50.10	11.8	14.1	11.4	4.1						
9.8	12	1076	0.80	98.34	**	**	**	**	FH063-11P-100L-06D	53	322			
11	13	987	0.85	90.17	**	**	**	**						
12	14	881	0.95	80.48	7.8	12.4	7.8	2.5						
13	16	808	1.05	73.80	8.7	12.6	8.7	2.7						
15	18	714	1.15	65.26	9.6	12.9	9.6	3.0						
16	19	655	1.30	59.84	10.1	13.1	10.1	3.2						
18	21	598	1.40	54.63	10.6	13.3	10.6	3.4						
19	23	548	1.50	50.10	10.9	13.5	10.9	3.5						
29	35	359	2.30	49.67	11.8	14.1	11.3	4.1						
32	39	329	2.50	45.55	11.9	14.2	10.9	4.2						
35	42	301	2.75	41.66	12.0	14.3	10.5	4.3						
38	46	276	3.00	38.20	12.1	14.3	10.1	4.4						
71	86	148	2.90	20.49	12.4	14.6	8.0	4.6						
19	23	544	1.55	49.67	10.9	13.5	10.9	3.5	FH062-11P-100L-06D	52	322			
21	26	498	1.65	45.55	11.2	13.6	11.2	3.7						
23	28	456	1.80	41.66	11.4	13.8	11.4	3.8						
25	30	418	2.00	38.20	11.6	13.9	11.6	3.9						
29	36	358	2.30	32.69	11.8	14.1	11.3	4.1						
32	39	328	2.50	29.98	11.9	14.2	10.9	4.2						
38	46	276	3.00	25.23	12.1	14.4	10.1	4.4						
47	57	224	1.90	20.49	12.2	14.3	9.5	4.3						
13	16	788	0.80	109.08	**	**	**	**				FH053-11P-90S/L-04E	31	320
15	18	720	0.85	99.66	**	**	**	**						
17	20	621	1.00	85.99	5.8	9.7	5.8	3.4						
18	21	593	1.05	82.13	6.2	10.2	6.2	3.5						
19	23	542	1.15	75.04	6.9	10.3	6.9	3.6						
24	29	435	1.40	60.26	8.0	10.7	8.0	4.0						
26	32	398	1.55	55.06	8.3	10.8	8.3	4.1						
20	25	516	1.00	71.46	7.2	10.4	7.2	3.7	FH052-11P-90S/L-04E	30	320			
22	27	471	1.00	65.29	7.7	10.5	7.7	3.8						
26	31	407	1.50	56.42	8.3	10.8	8.3	4.1						
28	34	372	1.65	51.55	8.5	10.8	8.5	4.1						
33	40	316	1.90	43.75	8.9	11.0	8.9	4.3						
36	44	289	2.10	39.97	9.0	11.1	9.0	4.4						
37	45	284	1.00	39.38	9.1	10.8	9.1	4.1						
41	49	259	2.35	35.81	9.2	11.2	9.2	4.5						
44	54	236	2.55	32.72	9.3	11.3	9.3	4.6						
47	57	224	1.65	31.09	9.3	11.0	9.3	4.3						
60	73	174	2.10	24.11	9.5	11.2	9.5	4.5						
74	89	142	2.55	19.73	9.6	11.4	9.6	4.7						
17	21	617	1.00	56.42	5.8	9.7	5.8	3.4				FH052-11P-100L-06D	36	320
19	23	564	1.10	51.55	6.6	10.3	6.6	3.6						
22	27	479	1.30	43.75	7.6	10.5	7.6	3.8						
24	29	437	1.40	39.97	8.0	10.6	8.0	3.9						
27	33	392	1.55	35.81	8.4	10.8	8.4	4.1						
29	36	358	1.70	32.72	8.6	10.9	8.6	4.2						
31	37	340	1.10	31.09	8.7	10.5	8.7	3.8						
35	42	302	2.00	27.56	9.0	11.1	9.0	4.4						
38	46	276	2.20	25.18	9.1	11.1	9.1	4.4						
40	48	264	1.40	24.11	9.2	10.9	9.2	4.2						
46	56	228	2.65	20.83	9.3	11.3	9.3	4.6						
49	59	216	1.70	19.73	9.4	11.1	9.4	4.4						
50	61	208	2.90	19.03	9.4	11.4	9.4	4.7						
63	77	166	2.20	15.19	9.5	11.3	9.5	4.6						
84	101	126	2.90	11.48	9.6	11.5	9.1	4.8						

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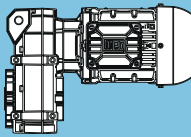
$P_N = 1.1 \text{ kW}$

IE3

50 Hz 1.1 kW	60 Hz 1.3 kW	M_2 Nm	f_b	i	at 50 Hz					m kg	Dimension sheet see page
					Output shaft		Hollow shaft				
					F_{rN} kN	F_{aN} kN	F_{rN} kN	F_{aN} kN			
20	25	514	0.80	71.24	**	**	**	**	FH043-11P-90S/L-04E	25	318
22	27	469	0.90	64.98	1.2	0.7	1.2	0.7			
28	34	377	1.10	52.27	4.3	7.3	4.3	2.6			
31	37	344	1.20	47.68	4.9	8.3	4.9	2.7			
23	28	447	0.90	61.98	2.4	3.2	2.4	2.3	FH042-11P-90S/L-04E	25	318
26	31	408	1.00	56.54	3.6	5.8	3.6	2.5			
30	36	353	1.15	48.94	4.7	8.1	4.7	2.6			
33	39	322	1.25	44.64	5.2	8.4	5.2	2.8			
38	46	274	1.50	37.95	5.8	8.5	5.8	2.9			
42	51	250	1.65	34.62	6.0	8.6	6.0	3.0			
43	52	243	1.00	33.69	6.0	8.3	6.0	2.7			
47	57	224	1.80	31.06	6.2	8.7	6.2	3.1			
51	62	205	2.00	28.33	6.4	8.8	6.4	3.2			
55	66	192	1.65	26.60	6.4	8.5	6.4	2.9			
61	74	173	2.35	23.91	6.6	8.9	6.6	3.3			
67	81	157	2.55	21.81	6.6	8.9	6.6	3.3			
71	85	149	2.10	20.63	6.7	8.7	6.7	3.1			
86	104	122	2.55	16.88	6.8	8.9	6.8	3.3			
22	26	488	0.85	44.64	**	**	**	**	FH042-11P-100L-06D	30	318
25	31	415	1.00	37.95	3.4	5.3	3.4	2.4			
28	34	379	1.10	34.62	4.3	7.3	4.3	2.6			
31	38	340	1.20	31.06	4.9	8.3	4.9	2.7			
34	41	310	1.30	28.33	5.3	8.4	5.3	2.8			
36	44	291	1.10	26.60	5.6	8.0	5.6	2.4			
40	49	262	1.55	23.91	5.9	8.6	5.9	3.0			
44	53	239	1.70	21.81	6.1	8.7	6.1	3.1			
47	56	226	1.40	20.63	6.2	8.4	6.2	2.8			
53	65	198	2.05	18.06	6.4	8.8	6.4	3.2			
57	69	185	1.70	16.88	6.5	8.6	6.5	3.0			
58	71	180	2.25	16.48	6.5	8.9	6.5	3.3			
65	79	162	2.50	14.78	6.6	8.9	6.6	3.3			
71	86	148	2.75	13.48	6.7	9.0	6.7	3.4			
74	90	142	2.20	12.99	6.7	8.8	6.7	3.2			
80	97	131	2.95	11.99	6.8	9.0	6.8	3.4			
98	119	107	2.90	9.82	6.9	9.0	6.9	3.4			
42	50	253	0.90	35.03	2.5	2.1	2.5	2.1	FH032-11P-90S/L-04E	23	316
46	55	229	1.00	31.76	3.2	2.6	3.2	2.6			
52	63	202	1.10	27.97	3.7	2.4	3.7	2.4			
57	69	183	1.25	25.36	4.0	2.8	4.0	2.8			
65	78	162	0.95	22.50	4.3	2.8	4.3	2.8			
69	83	153	1.45	21.14	4.4	2.7	4.4	2.7			
76	92	138	1.60	19.17	4.5	3.0	4.5	3.0			
81	98	129	1.20	17.88	4.6	3.0	4.6	3.0			
91	110	116	1.90	16.06	4.7	2.9	4.7	2.9			
100	121	105	2.10	14.57	4.8	3.2	4.8	3.2			
105	127	100	1.55	13.81	4.8	3.1	4.8	3.1			
116	141	90	2.45	12.50	4.9	3.1	4.9	3.1			
128	155	82	2.70	11.33	4.9	3.3	4.9	3.3			
132	160	80	1.90	11.03	5.0	3.2	5.0	3.2			
175	211	60	2.50	8.33	5.0	3.3	5.0	3.3			

Legend see page 211

** ... on request

P _N = 1.1 kW										IE3		
50 Hz		60 Hz		f _B	i	at 50 Hz					m kg	Dimension sheet see page
1.1 kW		1.3 kW				Output shaft		Hollow shaft				
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm				F _{rN} kN	F _{aN} kN	F _{rN} kN	F _{aN} kN			
38	46	278	0.80	25.36	**	**	**	**	FH032-11P-100L-06D	29	316	
45	55	231	1.00	21.14	3.1	2.2	3.1	2.2				
50	61	210	1.05	19.17	3.6	2.7	3.6	2.7				
54	65	196	0.80	17.88	**	**	**	**				
60	73	176	1.30	16.06	4.1	2.6	4.1	2.6				
66	80	159	1.40	14.57	4.3	2.9	4.3	2.9				
70	84	151	1.00	13.81	4.4	2.9	4.4	2.9				
77	93	137	1.65	12.50	4.5	2.8	4.5	2.8				
85	103	124	1.80	11.33	4.7	3.1	4.7	3.1				
87	106	121	1.25	11.03	4.7	3.0	4.7	3.0				
98	119	107	2.00	9.76	4.8	3.0	4.8	3.0				
108	132	97	2.10	8.85	4.9	3.2	4.9	3.2				
115	140	91	1.65	8.33	4.9	3.2	4.9	3.2				
152	184	69	2.10	6.33	5.0	3.3	5.0	3.3				
195	236	54	2.40	4.93	5.1	3.4	5.1	3.4				
249	303	42	2.65	3.85	4.9	3.4	4.9	3.4				
66	80	158	0.85	21.89	**	**	**	**	FH022-11P-90S/L-04E	21	314	
74	89	142	0.95	19.70	4.6	2.1	4.6	2.1				
77	93	136	1.00	18.88	4.7	1.9	4.7	1.9				
86	104	123	1.10	17.00	4.8	2.2	4.8	2.2				
88	107	119	1.10	16.48	4.8	2.0	4.8	2.0				
98	119	107	1.25	14.84	4.9	2.3	4.9	2.3				
119	144	88	1.00	12.19	5.0	2.4	5.0	2.4				
120	146	87	1.50	12.09	5.0	2.2	5.0	2.2				
134	162	79	1.70	10.89	4.9	2.4	4.9	2.4				
153	185	69	1.25	9.52	4.6	2.5	4.6	2.5				
205	248	51	1.65	7.11	4.1	2.5	4.1	2.5				
237	287	44	1.90	6.13	3.9	2.6	3.9	2.6				
272	329	39	2.20	5.35	3.7	2.6	3.7	2.6				
370	448	28	2.55	3.93	3.3	2.6	3.3	2.6				

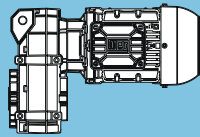
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Legend see page 211

** ... on request

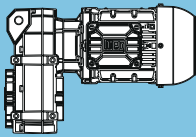
P_N = 1.5 kW

IE3

50 Hz 1.5 kW	60 Hz 1.8 kW	M ₂ Nm	f _b	i	at 50 Hz					m kg	Dimension sheet see page
					Output shaft		Hollow shaft				
					F _{rN} kN	F _{aN} kN	F _{rN} kN	F _{aN} kN			
0.53	0.65	23844	0.80	2711.35	**	**	**	**	FH155-11P-90S/L-04F	696	346
0.54	0.66	23408	0.80	2661.75	**	**	**	**			
0.64	0.77	19808	0.95	2269.72	69.9	113.7	69.9	113.7			
0.79	0.95	15890	1.15	1839.52	85.9	117.0	85.9	117.0			
0.63	0.76	20782	0.90	2318.30	64.7	112.3	64.7	112.3	FH154-11P-90S/L-04F	683	344
0.73	0.88	17790	1.05	1996.74	79.0	115.4	79.0	115.4			
0.79	0.96	16281	1.15	1834.90	84.6	116.6	84.6	116.6			
0.84	1.0	15293	1.20	1727.10	87.8	117.4	87.8	117.4			
0.91	1.1	14129	1.30	1602.16	91.3	118.4	91.3	118.4			
0.92	1.1	13937	1.30	1580.39	91.8	118.6	91.8	118.6			
1.0	1.2	12384	1.50	1415.96	95.7	119.8	95.7	119.8			
1.1	1.3	12069	1.50	1379.93	96.4	120.1	96.4	120.1			
1.2	1.4	10557	1.75	1219.56	99.5	121.3	99.5	121.3			
1.4	1.7	9037	2.00	1054.87	102.1	122.6	102.1	122.6			
1.6	2.0	7571	2.40	898.51	104.2	123.8	104.2	123.8			
1.9	2.3	6399	2.85	773.88	105.6	124.7	105.6	124.7			
0.81	0.99	16000	0.85	1781.14	**	**	**	**	FH124-11P-90S/L-04F	431	340
0.84	1.0	15564	0.85	1732.67	**	**	**	**			
0.93	1.1	13893	0.95	1552.98	67.3	84.1	67.3	84.1			
0.97	1.2	13336	1.00	1493.78	69.3	84.6	69.3	84.6			
1.1	1.3	11894	1.10	1337.70	73.9	86.0	73.9	86.0			
1.2	1.5	10338	1.30	1172.32	77.9	87.5	77.9	87.5			
1.3	1.5	10158	1.30	1151.94	78.3	87.7	78.3	87.7			
1.4	1.7	8940	1.50	1022.15	80.9	88.9	80.9	88.9			
1.5	1.8	8432	1.55	966.09	81.9	89.4	81.9	89.4			
1.6	1.9	7848	1.70	904.76	82.9	89.9	82.9	89.9			
1.8	2.2	6772	1.95	788.86	84.6	91.0	84.6	91.0			
1.9	2.3	6482	2.05	758.19	85.0	91.3	85.0	91.3			
2.1	2.6	5749	2.30	679.51	86.0	92.0	86.0	92.0			
2.2	2.7	5498	2.40	652.50	86.2	92.2	86.2	92.2			
2.3	2.8	5352	2.45	636.55	86.4	92.3	86.4	92.3			
2.5	3.0	4869	2.70	585.14	86.9	92.8	86.9	92.8			
2.6	3.1	4657	2.80	562.05	87.1	93.0	87.1	93.0			
1.3	1.5	10414	0.80	1156.94	**	**	**	**	FH104-11P-90S/L-04F	291	336
1.4	1.7	9003	0.90	1004.29	40.4	59.1	40.4	59.1			
1.6	2.0	7955	1.05	892.89	46.0	60.3	46.0	60.3			
1.7	2.0	7731	1.05	867.71	47.0	60.6	47.0	60.6			
1.9	2.3	6863	1.20	775.08	50.5	61.5	50.5	61.5			
2.0	2.4	6526	1.25	738.55	51.7	61.9	51.7	61.9			
2.2	2.6	5881	1.40	669.67	53.8	62.6	53.8	62.6			
2.3	2.7	5619	1.45	641.10	54.6	62.9	54.6	62.9			
2.6	3.2	4805	1.70	553.91	56.6	63.8	56.6	63.8			
2.7	3.2	4730	1.70	545.32	56.8	63.9	56.8	63.9			
3.1	3.7	4049	2.00	472.61	58.2	64.7	58.2	64.7			
3.2	3.8	3931	2.05	459.75	58.4	64.8	58.4	64.8			
3.6	4.3	3448	2.35	408.33	59.3	65.3	59.3	65.3			
3.8	4.6	3171	2.55	378.74	59.7	65.6	59.7	65.6			
4.2	5.1	2857	2.80	344.81	60.1	66	60.1	66.0			
4.4	5.3	2702	3.00	328.77	60.3	66.2	60.3	66.2			
2.3	2.8	5587	0.85	621.95	**	**	**	**	FH094-11P-90S/L-04F	186	332
2.4	2.9	5409	0.85	602.09	**	**	**	**			
2.8	3.4	4544	1.00	509.01	27.7	39.0	27.7	39.0			
3.0	3.6	4350	1.05	488.23	28.9	39.2	28.9	39.2			
3.5	4.3	3647	1.25	412.76	32.6	40.2	32.6	40.2			
4.2	5.1	3022	1.50	345.53	35.0	41.0	35.0	41.0			
4.4	5.3	2885	1.60	331.24	35.5	41.2	35.5	41.2			
5.2	6.3	2409	1.90	280.04	36.9	41.8	36.9	41.8			
5.0	6.1	2850	1.60	288.50	35.6	41.2	35.6	41.2	FH093-11P-90S/L-04F	173	330
5.9	7.2	2410	1.90	243.90	36.9	41.8	36.9	41.8			
6.9	8.3	2086	2.20	211.14	37.7	42.2	37.7	42.2			
7.8	9.4	1847	2.45	186.99	38.2	42.6	38.2	42.6			
9.0	11	1598	2.85	161.76	38.6	42.9	38.6	42.9			

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** ... on request

P _N = 1.5 kW										IE3		
50 Hz		60 Hz				at 50 Hz					m kg	Dimension sheet see page
1.5 kW		1.8 kW				Output shaft		Hollow shaft				
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	f _B			i	F _{rN} kN	F _{aN} kN	F _{rN} kN			
3.5	4.3	3698	0.85	411.63	**	**	**	**	FH084-11P-90S/L-04F	132	328	
3.6	4.4	3611	0.85	401.99	**	**	**	**				
4.1	5.0	3134	1.00	351.00	18.2	31.6	18.2	7.7				
4.5	5.4	2903	1.05	325.80	20.2	35.9	20.2	8.0				
5.1	6.2	2519	1.20	284.47	22.8	41.1	22.8	8.6				
4.0	4.9	3542	0.85	358.52	**	**	**	**	FH083-11P-90S/L-04F	119	326	
5.1	6.2	2803	1.10	283.76	20.9	37.5	20.9	8.2				
5.9	7.1	2448	1.25	247.77	23.2	41.2	23.2	8.7				
6.6	8.0	2163	1.40	218.97	24.7	41.7	24.7	9.2				
7.8	9.5	1829	1.65	185.17	26.2	42.2	26.2	9.7				
8.0	9.7	1781	1.70	180.28	26.3	42.3	26.3	9.8				
9.1	11	1572	1.95	159.17	27.0	42.6	27.0	10.1				
10	13	1373	2.20	138.95	27.6	42.9	27.6	10.4				
12	14	1231	2.45	124.59	28.0	43.1	26.6	10.6				
13	16	1088	2.80	110.11	28.3	43.3	25.6	10.8				
14	17	1001	3.00	101.32	28.5	43.5	24.8	11.0				
7.5	9	1922	0.80	194.58	**	**	**	**	FH073-11P-90S/L-04F	71	324	
9.6	12	1489	1.05	150.69	15.6	16.0	15.6	4.7				
13	15	1132	1.35	114.62	17.8	16.7	17.8	5.4				
15	19	934	1.65	94.52	18.7	17.1	17.8	5.8				
19	23	766	2.00	77.53	19.3	17.4	16.1	6.2				
22	27	651	2.35	65.88	19.6	17.7	15.1	6.4				
27	32	535	2.85	54.16	19.9	17.9	13.9	6.7				
15	18	972	0.85	98.34	**	**	**	**	FH063-11P-90S/L-04F	48	322	
16	19	891	0.95	90.17	7.6	12.3	7.6	2.4				
18	22	795	1.05	80.48	8.8	12.7	8.8	2.7				
20	24	729	1.15	73.80	9.5	12.9	9.5	2.9				
22	27	645	1.30	65.26	10.2	13.2	10.2	3.2				
24	29	591	1.40	59.84	10.6	13.3	10.6	3.4				
27	32	540	1.55	54.63	10.9	13.5	10.9	3.6				
29	35	495	1.70	50.10	11.2	13.6	11.2	3.7				
29	35	491	1.70	49.67	11.2	13.7	11.2	3.7				FH062-11P-90S/L-04F
32	39	450	1.85	45.55	11.4	13.8	11.4	3.8				
35	42	412	2.00	41.66	11.6	13.9	11.0	4.0				
38	46	377	2.20	38.20	11.8	14.0	10.6	4.1				
44	54	323	2.55	32.69	11.9	14.2	9.9	4.3				
48	59	296	2.80	29.98	12.0	14.3	9.6	4.3				
71	86	202	2.10	20.49	12.3	14.4	8.3	4.4				
19	23	741	0.85	75.04	**	**	**	**	FH053-11P-90S/L-04F	32	320	
24	29	595	1.05	60.26	6.2	10.2	6.2	3.5				
26	32	544	1.10	55.06	6.9	10.3	6.9	3.6				
26	31	557	1.10	56.42	6.7	10.3	6.7	3.6	FH052-11P-90S/L-04F	32	320	
28	34	509	1.20	51.55	7.3	10.4	7.3	3.7				
33	40	432	1.40	43.75	8.1	10.7	8.1	4.0				
36	44	395	1.55	39.97	8.4	10.8	8.4	4.1				
40	49	354	1.70	35.81	8.7	10.9	8.7	4.2				
44	54	323	1.85	32.72	8.8	11.0	8.8	4.3				
47	56	307	1.20	31.09	8.9	10.7	8.9	4.0				
53	64	272	2.25	27.56	9.1	11.2	9.1	4.5				
58	70	249	2.40	25.18	9.2	11.2	9.2	4.5				
60	73	238	1.55	24.11	9.3	11.0	9.3	4.3				
70	84	206	2.95	20.83	9.4	11.4	9.4	4.7				
73	89	195	1.85	19.73	9.4	11.2	9.4	4.5				
95	116	150	2.40	15.19	9.6	11.4	8.9	4.7				
28	34	516	0.80	52.27	**	**	**	**				FH043-11P-90S/L-04F
30	37	471	0.85	47.68	**	**	**	**				

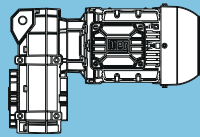
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** ... on request

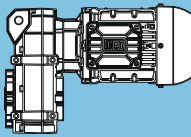
$P_N = 1.5 \text{ kW}$

IE3

50 Hz 1.5 kW n_{50} min ⁻¹	60 Hz 1.8 kW n_{60} min ⁻¹	M_2 Nm	f_b	i	at 50 Hz					m kg	Dimension sheet see page
					Output shaft		Hollow shaft				
					F_{rN} kN	F_{aN} kN	F_{rN} kN	F_{aN} kN			
30	36	483	0.85	48.94	**	**	**	**	FH042-11P-90S/L-04F	26	318
32	39	441	0.95	44.64	2.6	3.6	2.6	2.3			
38	46	375	1.10	37.95	4.3	7.3	4.3	2.6			
42	51	342	1.20	34.62	4.9	8.3	4.9	2.7			
47	57	307	1.35	31.06	5.4	8.4	5.4	2.8			
51	62	280	1.45	28.33	5.7	8.5	5.7	2.9			
55	66	263	1.20	26.60	5.9	8.2	5.9	2.6			
61	73	236	1.70	23.91	6.1	8.7	6.1	3.1			
66	80	215	1.90	21.81	6.3	8.7	6.3	3.1			
70	85	204	1.55	20.63	6.4	8.5	6.4	2.9			
80	97	178	2.25	18.06	6.5	8.9	6.5	3.3			
86	104	167	1.85	16.88	6.6	8.7	6.6	3.1			
88	106	163	2.50	16.48	6.6	8.9	6.6	3.3			
98	119	146	2.75	14.78	6.7	9.0	6.7	3.4			
112	135	128	2.45	12.99	6.8	8.9	6.8	3.3			
52	63	276	0.80	27.97	**	**	**	**	FH032-11P-90S/L-04F	25	316
57	69	251	0.90	25.36	2.6	2.5	2.6	2.5			
69	83	209	1.10	21.14	3.6	2.4	3.6	2.4			
76	92	189	1.20	19.17	3.9	2.8	3.9	2.8			
81	98	177	0.85	17.88	**	**	**	**			
90	109	159	1.40	16.06	4.3	2.7	4.3	2.7			
100	120	144	1.55	14.57	4.5	3.0	4.5	3.0			
105	127	136	1.10	13.81	4.5	3.0	4.5	3.0			
116	140	123	1.80	12.50	4.7	2.9	4.7	2.9			
128	155	112	2.00	11.33	4.7	3.2	4.7	3.2			
131	159	109	1.40	11.03	4.8	3.1	4.8	3.1			
149	180	96	2.20	9.76	4.9	3.1	4.9	3.1			
164	198	87	2.35	8.85	4.9	3.3	4.9	3.3			
174	211	82	1.85	8.33	4.9	3.2	4.9	3.2			
229	277	63	2.35	6.33	5.0	3.3	5.0	3.3			
294	356	49	2.65	4.93	4.7	3.4	4.7	3.4			
377	456	38	2.95	3.85	4.3	3.5	4.3	3.5			
85	103	168	0.80	17.00	**	**	**	**	FH022-11P-90S/L-04F	22	314
88	106	163	0.80	16.48	**	**	**	**			
98	118	147	0.90	14.84	4.6	2.1	4.6	2.1			
120	145	119	1.10	12.09	4.8	2.0	4.8	2.0			
133	161	108	1.25	10.89	4.9	2.3	4.9	2.3			
152	184	94	0.90	9.52	4.8	2.3	4.8	2.3			
204	247	70	1.20	7.11	4.3	2.4	4.3	2.4			
237	286	61	1.40	6.13	4.0	2.5	4.0	2.5			
271	328	53	1.60	5.35	3.8	2.5	3.8	2.5			
369	447	39	1.90	3.93	3.4	2.6	3.4	2.6			

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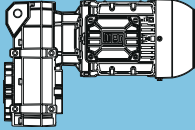
** ... on request

P _N = 2.2 kW										IE3	
50 Hz		60 Hz		at 50 Hz						m kg	Dimension sheet see page
2.2 kW		2.6 kW		Output shaft		Hollow shaft					
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	f _B	i	F _{rN} kN	F _{aN} kN	F _{rN} kN	F _{aN} kN			
0.81	0.98	23118	0.80	1773.82	**	**	**	**	FH155-11P-100L-04E	706	346
0.83	1.0	23039	0.80	1727.10	**	**	**	**	FH154-11P-100L-04E	693	344
0.90	1.1	21329	0.85	1602.16	**	**	**	**			
0.91	1.1	20996	0.90	1580.39	63.4	109.6	63.4	109.6			
1.0	1.2	18735	1.00	1415.96	75.0	114.6	75.0	114.6			
1.2	1.4	16037	1.15	1219.56	85.4	116.8	85.4	116.8			
1.4	1.7	13758	1.35	1054.87	92.3	118.7	92.3	118.7			
1.6	1.9	11622	1.55	898.51	97.4	120.5	97.4	120.5			
1.9	2.3	9887	1.85	773.88	100.7	121.9	100.7	121.9			
2.1	2.6	8446	2.15	669.37	103.0	123.1	103.0	123.1			
2.2	2.6	8349	2.20	663.03	103.2	123.1	103.2	123.1			
2.5	3.0	7117	2.55	573.49	104.8	124.2	104.8	124.2			
2.6	3.2	6834	2.65	553.01	105.1	124.4	105.1	124.4			
1.2	1.5	15607	0.85	1172.32	**	**	**	**	FH124-11P-100L-04E	441	340
1.3	1.6	14905	0.90	1121.89	63.4	83.1	63.4	83.1			
1.4	1.7	13524	1.00	1022.15	68.7	84.5	68.7	84.5			
1.5	1.8	12756	1.05	966.09	71.2	85.2	71.2	85.2			
1.6	1.9	11922	1.10	904.76	73.8	86.0	73.8	86.0			
1.8	2.2	10310	1.30	788.86	78.0	87.6	78.0	87.6			
1.9	2.3	9888	1.35	758.19	79.0	88.0	79.0	88.0			
2.1	2.6	8808	1.50	679.51	81.2	89.0	81.2	89.0			
2.2	2.7	8440	1.55	652.50	81.9	89.4	81.9	89.4			
2.3	2.7	8217	1.60	636.55	82.3	89.6	82.3	89.6			
2.5	3.0	7507	1.75	585.14	83.5	90.3	83.5	90.3			
2.6	3.1	7181	1.85	562.05	84.0	90.6	84.0	90.6			
3.0	3.6	6107	2.15	484.00	85.5	91.6	85.5	91.6			
3.1	3.7	5854	2.25	465.86	85.8	91.9	85.8	91.9			
3.2	3.9	5621	2.35	449.23	86.1	92.1	86.1	92.1			
3.5	4.2	5142	2.55	414.33	86.6	92.5	86.6	92.5			
3.7	4.5	4830	2.70	391.68	87.0	92.8	87.0	92.8			
4.0	4.9	4345	3.00	356.79	87.4	93.3	87.4	93.3			
1.9	2.3	10339	0.80	775.08	**	**	**	**	FH104-11P-100L-04E	301	336
2.1	2.6	8897	0.90	669.67	41.0	59.3	41.0	59.3			
2.2	2.7	8500	0.95	641.1	43.2	59.7	43.2	59.7			
2.3	2.8	8312	1.00	628.21	44.2	59.9	44.2	59.9			
2.6	3.2	7299	1.10	553.91	48.9	61.0	48.9	61.0			
3.0	3.7	6176	1.30	472.61	52.9	62.3	52.9	62.3			
3.1	3.8	5996	1.35	459.75	53.5	62.5	53.5	62.5			
3.2	3.9	5770	1.40	443.33	54.1	62.7	54.1	62.7			
3.5	4.3	5282	1.55	408.33	55.5	63.3	55.5	63.3			
3.6	4.4	5162	1.55	399.09	55.8	63.4	55.8	63.4			
3.7	4.5	4957	1.65	384.84	56.3	63.7	56.3	63.7			
3.8	4.6	4879	1.65	378.74	56.5	63.7	56.5	63.7			
4.2	5.1	4405	1.85	344.81	57.5	64.3	57.5	64.3			
4.3	5.2	4239	1.90	332.5	57.9	64.5	57.9	64.5			
4.4	5.3	4183	1.95	328.77	58.0	64.5	58.0	64.5			
5.1	6.1	3569	2.25	284.06	59.1	65.2	59.1	65.2			
3.5	4.2	5495	0.85	412.76	**	**	**	**	FH094-11P-100L-04E	196	332
4.2	5.1	4572	1.00	345.53	27.5	38.9	27.5	38.9			
4.3	5.3	4374	1.05	331.24	28.7	39.2	28.7	39.2			
4.5	5.5	4209	1.10	319.41	29.7	39.4	29.7	39.4			
5.1	6.2	3667	1.25	280.04	32.5	40.1	32.5	40.1			
5.3	6.5	3529	1.30	270.03	33.1	40.3	33.1	40.3			
5.0	6.0	4224	1.10	288.50	29.6	39.4	29.6	39.4	FH093-11P-100L-04E	183	330
5.9	7.2	3571	1.30	243.90	32.9	40.3	32.9	40.3			
6.8	8.3	3091	1.50	211.14	34.8	40.9	34.8	40.9			
7.7	9.3	2738	1.65	186.99	36.0	41.4	36.0	41.4			
8.9	11	2368	1.95	161.76	37.0	41.9	37.0	41.9			
9.2	11	2284	2.00	155.99	37.2	42.0	37.2	42.0			
10	12	2091	2.20	142.85	37.7	42.2	37.7	42.2			
12	14	1768	2.55	120.77	38.3	42.7	38.3	42.7			
14	17	1531	2.95	104.54	38.7	43.0	38.7	43.0			
5.0	6.1	3795	0.80	284.47	**	**	**	**	FH084-11P-100L-04E	142	328
5.2	6.4	3652	0.85	274.31	**	**	**	**			

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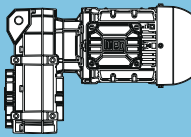
P_N = 2.2 kW

IE3

50 Hz 2.2 kW	60 Hz 2.6 kW	M ₂ Nm	f _b	i	at 50 Hz					m kg	Dimension sheet see page
					Output shaft		Hollow shaft				
					F _{rN} kN	F _{aN} kN	F _{rN} kN	F _{aN} kN			
5.8	7.0	3628	0.85	247.77	**	**	**	**	FH083-11P-100L-04E	129	326
6.6	8.0	3206	0.95	218.97	17.5	30.1	17.5	7.6			
7.7	9.4	2711	1.15	185.17	21.6	39.0	21.6	8.3			
8	9.7	2640	1.15	180.28	22.1	40.1	22.1	8.4			
9	11	2330	1.30	159.17	23.9	41.4	23.9	8.9			
10	12	2089	1.45	142.69	25.1	41.8	25.1	9.3			
12	14	1824	1.65	124.59	26.2	42.2	26.2	9.7			
13	15	1681	1.80	114.80	26.7	42.4	26.7	9.9			
14	17	1483	2.05	101.32	27.3	42.7	26.3	10.2			
15	19	1363	2.25	93.11	27.7	42.9	25.4	10.4			
17	21	1244	2.45	84.99	28.0	43.1	24.2	10.6			
18	22	1172	2.60	80.04	28.1	43.2	23.6	10.7			
20	24	1049	2.85	71.62	28.4	43.4	22.5	10.9			
21	25	1023	2.85	69.87	28.5	43.4	22.1	10.9			
13	15	1678	0.90	114.62	14.1	15.6	14.1	4.3	FH073-11P-100L-04E	81	324
15	18	1384	1.10	94.52	16.4	16.2	16.4	4.9			
19	23	1135	1.35	77.53	17.8	16.7	17.4	5.4			
22	26	965	1.60	65.88	18.6	17.0	16.2	5.8			
26	32	793	1.90	54.16	19.2	17.4	14.9	6.1			
27	33	765	2.00	52.23	19.3	17.4	14.6	6.2			
32	39	659	2.30	45.02	19.6	17.7	13.6	6.4	FH072-11P-100L-04E	80	324
37	44	576	2.65	39.31	19.8	17.8	12.8	6.6			
41	50	509	2.95	34.74	20.0	18.0	12.2	6.7			
22	27	955	0.90	65.26	6.6	10.1	6.6	2.2	FH063-11P-100L-04E	58	322
24	29	876	0.95	59.84	7.8	12.4	7.8	2.4			
26	32	800	1.05	54.63	8.8	12.7	8.8	2.7			
29	35	734	1.15	50.1	9.5	12.8	9.5	2.9			
29	35	727	1.15	49.67	9.5	12.9	9.5	2.9	FH062-11P-100L-04E	57	322
32	38	667	1.25	45.55	10.0	13.1	10.0	3.1			
34	42	610	1.35	41.66	10.5	13.3	10.5	3.3			
38	46	559	1.50	38.20	10.8	13.4	10.8	3.5			
44	53	479	1.75	32.69	11.3	13.7	10.6	3.8			
48	58	439	1.90	29.98	11.5	13.8	10.2	3.9			
57	69	369	2.25	25.23	11.8	14.1	9.4	4.1			
62	75	339	2.45	23.14	11.9	14.1	9.1	4.2			
69	84	306	2.70	20.87	12.0	14.3	8.6	4.3			
70	85	300	1.45	20.49	12.0	13.9	8.9	4.0			
75	91	280	2.95	19.14	12.1	14.3	8.3	4.4			
84	102	252	2.30	17.18	12.2	14.1	8.2	4.2			
106	129	198	2.90	13.49	12.3	14.4	7.4	4.4			
33	40	641	0.95	43.75	5.4	8.8	5.4	3.3	FH052-11P-100L-04E	42	320
36	44	585	1.05	39.97	6.3	10.2	6.3	3.5			
40	49	524	1.15	35.81	7.1	10.4	7.1	3.7			
44	53	479	1.25	32.72	7.6	10.5	7.6	3.8			
52	63	404	1.50	27.56	8.3	10.8	8.3	4.1			
57	69	369	1.65	25.18	8.6	10.9	8.6	4.2			
60	72	353	1.05	24.11	8.7	10.5	8.7	3.8			
69	84	305	2.00	20.83	8.9	11.1	8.9	4.4			
73	88	289	1.25	19.73	9.0	10.7	9.0	4.0			
75	92	279	2.15	19.03	9.1	11.1	9.1	4.4			
84	102	249	2.45	17.04	9.2	11.2	9.2	4.5			
92	112	228	2.65	15.57	9.3	11.3	9.3	4.6			
94	115	222	1.65	15.19	9.3	11.0	9.3	4.3			
104	126	202	3.00	13.82	9.4	11.4	8.9	4.7			
125	152	168	2.15	11.48	9.5	11.3	8.3	4.6			
153	186	137	2.65	9.39	9.6	11.4	7.7	4.7			

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** ... on request

P _N = 2.2 kW										IE3	
50 Hz		60 Hz		at 50 Hz						m kg	Dimension sheet see page
2.2 kW		2.6 kW		Output shaft		Hollow shaft					
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	f _B	i	F _{rN} kN	F _{aN} kN	F _{rN} kN	F _{aN} kN			
41	50	507	0.80	34.62	**	**	**	**	FH042-11P-100L-04E	36	318
46	56	455	0.90	31.06	2.1	2.6	2.1	2.3			
51	62	415	1.00	28.33	3.4	5.3	3.4	2.4			
60	73	350	1.15	23.91	4.8	8.3	4.8	2.7			
66	80	319	1.30	21.81	5.2	8.4	5.2	2.8			
70	85	302	1.05	20.63	5.4	8.0	5.4	2.4			
79	97	264	1.55	18.06	5.8	8.6	5.8	3.0			
85	103	247	1.25	16.88	6.0	8.2	6.0	2.6			
87	106	241	1.70	16.48	6.1	8.6	6.1	3.0			
97	118	216	1.85	14.78	6.3	8.7	6.3	3.1			
106	129	197	2.05	13.48	6.4	8.8	6.4	3.2			
110	134	190	1.65	12.99	6.4	8.5	6.4	2.9			
120	146	176	2.20	11.99	6.5	8.9	6.5	3.3			
131	160	160	2.30	10.93	6.6	8.9	6.6	3.3			
143	174	147	2.40	10.03	6.7	9.0	6.5	3.4			
146	178	144	2.15	9.82	6.7	8.8	6.5	3.2			
157	191	134	2.45	9.15	6.7	9.0	6.3	3.4			
177	215	119	2.65	8.13	6.8	9.1	6.0	3.5			
179	217	118	2.40	8.03	6.8	8.9	6.0	3.3			
183	223	115	2.65	7.84	6.8	9.1	5.9	3.5			
193	235	109	2.70	7.42	6.8	9.1	5.7	3.5			
201	244	105	2.75	7.15	6.9	9.1	5.7	3.5			
220	268	95	2.60	6.52	6.9	9.0	5.5	3.4			
263	320	80	2.80	5.45	6.9	9.1	5.1	3.5			
75	91	281	0.80	19.17	**	**	**	**	FH032-11P-100L-04E	35	316
89	109	235	0.95	16.06	3.0	2.2	3.0	2.2			
98	120	213	1.05	14.57	3.5	2.7	3.5	2.7			
115	140	183	1.25	12.5	4.0	2.5	4.0	2.5			
127	154	166	1.35	11.33	4.2	2.9	4.2	2.9			
130	158	161	0.95	11.03	4.3	2.8	4.3	2.8			
147	179	143	1.50	9.76	4.5	2.8	4.5	2.8			
162	197	130	1.60	8.85	4.6	3.1	4.6	3.1			
172	209	122	1.25	8.33	4.7	3.0	4.7	3.0			
227	276	93	1.60	6.33	4.9	3.2	4.9	3.2			
291	354	72	1.80	4.93	4.8	3.3	4.8	3.3			
373	453	56	2.00	3.85	4.4	3.4	4.4	3.4			

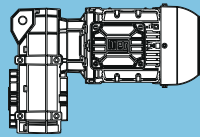
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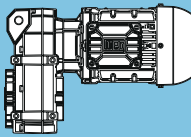
P_N = 3.0 kW

IE3

50 Hz 3.0 kW	60 Hz 3.6 kW	M ₂ Nm	f _b	i	at 50 Hz					m kg	Dimension sheet see page
					Output shaft		Hollow shaft				
					F _{rN} kN	F _{aN} kN	F _{rN} kN	F _{aN} kN			
1.2	1.4	22062	0.85	1219.56	**	**	**	**	FH154-11P-L100L-04F	700	344
1.4	1.6	19005	0.95	1054.87	73.8	114.4	73.8	114.4			
1.6	1.9	16056	1.15	898.51	85.4	116.8	85.4	116.8			
1.9	2.2	13715	1.35	773.88	92.4	118.7	92.4	118.7			
2.2	2.6	11766	1.55	669.37	97.0	120.3	97.0	120.3			
2.3	2.7	11192	1.65	639.35	98.3	120.8	98.3	120.8			
2.5	3.0	9956	1.85	573.49	100.6	121.8	100.6	121.8			
2.6	3.1	9797	1.85	564.30	100.9	122.0	100.9	122.0			
3.0	3.6	8352	2.20	488.09	103.2	123.1	103.2	123.1			
3.1	3.8	7892	2.30	463.14	103.8	123.5	103.8	123.5			
3.5	4.2	6876	2.65	409.44	105.1	124.4	105.1	124.4			
3.6	4.4	6685	2.70	398.90	105.3	124.5	105.3	124.5			
1.6	1.9	16401	0.80	904.76	**	**	**	**	FH124-11P-L100L-04F	448	340
1.8	2.2	14213	0.95	788.86	66.2	83.8	66.2	83.8			
1.9	2.3	13632	1.00	758.19	68.3	84.4	68.3	84.4			
2.1	2.6	12167	1.10	679.51	73.1	85.8	73.1	85.8			
2.2	2.7	11660	1.15	652.5	74.5	86.3	74.5	86.3			
2.3	2.7	11375	1.15	636.55	75.3	86.5	75.3	86.5			
2.5	3.0	10413	1.25	585.14	77.7	87.5	77.7	87.5			
2.6	3.1	9961	1.35	562.05	78.8	87.9	78.8	87.9			
3.0	3.6	8507	1.55	484.00	81.8	89.3	81.8	89.3			
3.1	3.7	8172	1.60	465.86	82.4	89.6	82.4	89.6			
3.2	3.9	7848	1.70	449.23	82.9	89.9	82.9	89.9			
3.5	4.2	7193	1.85	414.33	84.0	90.6	84.0	90.6			
3.7	4.4	6772	1.95	391.68	84.6	91.0	84.6	91.0			
3.8	4.5	6621	2.00	383.78	84.8	91.1	84.8	91.1			
4.0	4.9	6118	2.15	356.79	85.5	91.6	85.5	91.6			
4.1	5.0	5987	2.20	349.88	85.7	91.7	85.7	91.7			
4.3	5.2	5749	2.30	337.39	86.0	92.0	86.0	92.0			
4.8	5.8	5070	2.60	301.29	86.7	92.6	86.7	92.6			
5.0	6.0	4869	2.70	290.53	86.9	92.8	86.9	92.8			
2.6	3.1	10041	0.80	553.91	**	**	**	**	FH104-11P-L100L-04F	308	336
3.0	3.7	8515	0.95	472.61	43.2	59.7	43.2	59.7			
3.1	3.7	8488	0.95	471.15	43.3	59.7	43.3	59.7			
3.2	3.9	7955	1.05	443.33	46.0	60.3	46.0	60.3			
3.5	4.3	7312	1.10	408.33	48.8	61.0	48.8	61.0			
3.6	4.4	7131	1.15	399.09	49.5	61.2	49.5	61.2			
3.7	4.5	6863	1.20	384.84	50.5	61.5	50.5	61.5			
3.8	4.6	6754	1.20	378.74	50.9	61.7	50.9	61.7			
4.2	5.0	6111	1.35	344.81	53.1	62.4	53.1	62.4			
4.3	5.2	5881	1.40	332.50	53.8	62.6	53.8	62.6			
4.4	5.3	5815	1.40	328.77	54.0	62.7	54.0	62.7			
5.1	6.1	4972	1.65	284.06	56.2	63.6	56.2	63.6			
4.5	5.4	5790	0.80	319.41	**	**	**	**	FH094-11P-L100L-04F	203	332
5.1	6.2	5056	0.90	280.04	23.8	38.3	23.8	38.3			
5.3	6.4	4865	0.95	270.03	25.4	38.6	25.4	38.6			
5.0	6.0	5740	0.80	288.50	**	**	**	**	FH093-11P-L100L-04F	190	330
5.9	7.1	4853	0.95	243.90	25.5	38.6	25.5	38.6			
6.8	8.2	4201	1.10	211.14	29.8	39.4	29.8	39.4			
7.7	9.3	3720	1.25	186.99	32.2	40.1	32.2	40.1			
8.9	11	3218	1.40	161.76	34.3	40.7	34.3	40.7			
9.2	11	3104	1.45	155.99	34.7	40.9	34.7	40.9			
10	12	2842	1.60	142.85	35.6	41.2	35.6	41.2			
12	14	2403	1.90	120.77	36.9	41.8	36.9	41.8			
14	17	2080	2.20	104.54	37.7	42.2	37.7	42.2			
16	19	1842	2.45	92.59	38.2	42.6	38.2	42.6			
18	22	1593	2.85	80.09	38.6	42.9	38.6	42.9			
19	23	1537	2.95	77.23	38.7	43.0	38.7	43.0			

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** ... on request

P _N = 3.0 kW										IE3		
50 Hz		60 Hz				at 50 Hz					m kg	Dimension sheet see page
3.0 kW		3.6 kW				Output shaft		Hollow shaft				
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	f _B	i	F _{rN} kN	F _{aN} kN	F _{rN} kN	F _{aN} kN				
7.8	9.4	3684	0.85	185.17	**	**	**	**		FH083-11P-L100L-04F	135	326
8	9.7	3587	0.85	180.28	**	**	**	**				
9	11	3167	0.95	159.17	17.9	30.9	17.9	7.6				
10	12	2839	1.10	142.69	20.7	37.0	20.7	8.1				
12	14	2479	1.25	124.59	23.0	41.2	23.0	8.7				
13	15	2284	1.35	114.80	24.1	41.5	24.1	9.0				
14	17	2016	1.50	101.32	25.4	41.9	25.4	9.4				
15	19	1853	1.65	93.11	26.1	42.1	26.1	9.6				
17	20	1691	1.80	84.99	26.7	42.4	25.5	9.9				
18	22	1592	1.90	80.04	27.0	42.5	24.8	10.0				
20	24	1425	2.10	71.62	27.5	42.8	23.6	10.3				
21	25	1390	2.10	69.87	27.6	42.9	23.2	10.4				
24	29	1191	2.35	59.86	28.1	43.2	21.8	10.7				
25	30	1149	2.40	57.73	28.2	43.2	21.4	10.7				
28	34	1014	2.65	50.95	28.5	43.4	20.3	10.9				
34	41	850	2.95	42.74	28.8	43.7	18.8	11.2				
15	18	1881	0.80	94.52	**	**	**	**		FH073-11P-L100L-04F	88	324
19	22	1543	1.00	77.53	15.2	15.9	15.2	4.6				
22	26	1311	1.15	65.88	16.8	16.3	16.8	5.1				
27	32	1078	1.40	54.16	18.1	16.8	15.7	5.6				
28	33	1039	1.45	52.23	18.3	16.9	15.4	5.6				
32	39	896	1.70	45.02	18.9	17.2	14.4	5.9		FH072-11P-L100L-04F	87	324
37	44	782	1.95	39.31	19.3	17.4	13.5	6.2				
41	50	691	2.20	34.74	19.5	17.6	12.8	6.3				
49	59	585	2.60	29.38	19.8	17.8	11.9	6.6				
57	69	502	3.00	25.25	20.0	18.0	11.1	6.7				
69	84	412	2.30	20.72	20.1	17.8	10.4	6.5				
26	32	1087	0.80	54.63	**	**	**	**		FH063-11P-L100L-04F	65	322
29	35	997	0.85	50.10	**	**	**	**				
29	35	988	0.85	49.67	**	**	**	**		FH062-11P-L100L-04F	64	322
32	38	906	0.95	45.55	7.4	11.8	7.4	2.3				
35	42	829	1.00	41.66	8.4	12.6	8.4	2.6				
38	46	760	1.10	38.20	9.2	12.8	9.2	2.8				
44	53	650	1.30	32.69	10.2	13.1	10.2	3.2				
48	58	596	1.40	29.98	10.6	13.3	10.6	3.3				
57	69	502	1.65	25.23	11.2	13.6	10.0	3.7				
62	75	460	1.80	23.14	11.4	13.7	9.6	3.8				
69	83	415	2.00	20.87	11.6	13.9	9.1	4.0				
70	85	408	1.05	20.49	11.6	13.4	9.4	3.5				
75	91	381	2.20	19.14	11.7	14.0	8.8	4.1				
81	98	353	2.35	17.75	11.8	14.1	8.5	4.2				
84	101	342	1.70	17.18	11.9	13.7	8.6	3.8				
88	107	324	2.55	16.28	11.9	14.2	8.2	4.2				
94	113	306	2.70	15.38	12.0	14.3	7.9	4.3				
102	123	281	2.95	14.11	12.1	14.3	7.7	4.4				
107	129	268	2.15	13.49	12.1	14.1	7.7	4.1				
138	167	207	2.80	10.41	12.3	14.3	6.9	4.4				

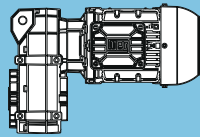
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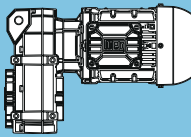
P_N = 3.0 kW

IE3

50 Hz 3.0 kW	60 Hz 3.6 kW	M ₂ Nm	f _b	i	at 50 Hz					m kg	Dimension sheet see page
					Output shaft		Hollow shaft				
					F _{rN} kN	F _{aN} kN	F _{rN} kN	F _{aN} kN			
36	44	795	0.80	39.97	**	**	**	**	FH052-11P-L100L-04F	48	320
40	49	712	0.85	35.81	**	**	**	**			
44	53	651	0.95	32.72	5.2	8.4	5.2	3.3			
52	63	548	1.10	27.56	6.8	10.3	6.8	3.6			
57	69	501	1.20	25.18	7.4	10.5	7.4	3.8			
60	72	480	0.80	24.11	**	**	**	**			
69	84	414	1.45	20.83	8.2	10.7	8.2	4.0			
73	88	393	0.95	19.73	8.4	10.3	8.4	3.6			
76	91	379	1.60	19.03	8.5	10.8	8.5	4.1			
85	102	339	1.80	17.04	8.7	11.0	8.7	4.3			
92	112	310	1.95	15.57	8.9	11.0	8.9	4.3			
95	115	302	1.20	15.19	9.0	10.7	9.0	4.0			
104	126	275	2.20	13.82	9.1	11.2	9.1	4.5			
114	138	251	2.40	12.63	9.2	11.2	8.9	4.5			
124	150	230	2.65	11.57	9.3	11.3	8.6	4.6			
125	152	228	1.60	11.48	9.3	11.0	8.7	4.3			
136	165	210	2.80	10.57	9.4	11.4	8.3	4.7			
153	185	187	1.95	9.39	9.5	11.2	7.9	4.5			
189	228	152	2.40	7.62	9.6	11.3	7.3	4.6			
226	273	127	2.85	6.38	9.4	11.5	6.8	4.8			
60	73	476	0.85	23.91	**	**	**	**	FH042-11P-L100L-04F	42	318
66	80	434	0.95	21.81	2.9	4.3	2.9	2.4			
70	84	410	0.80	20.63	**	**	**	**			
80	96	359	1.15	18.06	4.6	7.9	4.6	2.6			
85	103	336	0.95	16.88	5.0	7.8	5.0	2.2			
87	106	328	1.25	16.48	5.1	8.3	5.1	2.7			
97	118	294	1.40	14.78	5.5	8.5	5.5	2.9			
107	129	268	1.50	13.48	5.8	8.6	5.8	3.0			
111	134	258	1.20	12.99	5.9	8.2	5.9	2.6			
120	145	239	1.65	11.99	6.1	8.6	6.1	3.0			
132	159	217	1.70	10.93	6.3	8.7	6.3	3.1			
144	173	200	1.75	10.03	6.4	8.8	6.4	3.2			
147	177	195	1.60	9.82	6.4	8.5	6.4	2.9			
157	190	182	1.80	9.15	6.5	8.9	6.5	3.3			
177	214	162	1.95	8.13	6.6	8.9	6.2	3.3			
179	217	160	1.80	8.03	6.6	8.7	6.3	3.1			
184	222	156	1.95	7.84	6.6	8.9	6.1	3.3			
194	235	148	2.00	7.42	6.7	9.0	6.0	3.4			
201	243	142	2.05	7.15	6.7	9.0	5.9	3.4			
221	267	130	1.95	6.52	6.8	8.8	5.7	3.2			
264	319	108	2.05	5.45	6.8	9.0	5.3	3.4			
326	394	88	2.25	4.42	6.6	9.1	4.9	3.5			
338	408	85	2.30	4.26	6.6	9.1	4.8	3.5			
99	119	290	0.80	14.57	**	**	**	**	FH032-11P-L100L-04F	41	316
115	139	249	0.90	12.50	2.7	2.1	2.7	2.1			
127	154	225	1.00	11.33	3.2	2.6	3.2	2.6			
148	178	194	1.10	9.76	3.8	2.5	3.8	2.5			
163	197	176	1.15	8.85	4.1	2.9	4.1	2.9			
173	209	166	0.95	8.33	4.2	2.8	4.2	2.8			
227	275	126	1.20	6.33	4.6	3.0	4.6	3.0			
292	353	98	1.30	4.93	4.8	3.2	4.8	3.2			
374	452	77	1.45	3.85	4.5	3.3	4.5	3.3			

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** ... on request

P _N = 4.0 kW										IE3				
50 Hz		60 Hz		i	at 50 Hz					m kg	Dimension sheet see page			
4.0 kW		4.8 kW			Output shaft		Hollow shaft							
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	f _B		F _{rN} kN	F _{aN} kN	F _{rN} kN	F _{aN} kN						
1.6	2.0	21523	0.85	898.51	**	**	**	**	FH154-11P-112M-04E	701	344			
1.9	2.3	18424	1.00	773.88	76.4	114.9	76.4	114.9						
2.0	2.4	17636	1.05	742.31	79.6	115.5	79.6	115.5						
2.2	2.6	15838	1.15	669.37	86.1	117.0	86.1	117.0						
2.3	2.7	15097	1.20	639.35	88.4	117.6	88.4	117.6						
2.5	3.1	13458	1.35	573.49	93.0	119.0	93.0	119.0						
2.6	3.1	13215	1.40	564.30	93.7	119.2	93.7	119.2						
3.0	3.6	11337	1.60	488.09	98.0	120.7	98.0	120.7						
3.1	3.7	10972	1.65	473.37	98.7	121.0	98.7	121.0						
3.5	4.3	9373	1.95	409.44	101.6	122.3	101.6	122.3						
3.6	4.4	9113	2.00	398.90	102.0	122.5	102.0	122.5						
4.2	5.1	7769	2.35	345.03	104.0	123.6	104.0	123.6						
2.1	2.6	16311	0.80	679.51	**	**	**	**				FH124-11P-112M-04E	449	340
2.2	2.7	15630	0.85	652.50	**	**	**	**						
2.3	2.8	15217	0.90	636.55	62.0	82.8	62.0	82.8						
2.5	3.0	13959	0.95	585.14	67.1	84.0	67.1	84.0						
2.6	3.1	13381	1.00	562.05	69.2	84.6	69.2	84.6						
3.0	3.6	11452	1.15	484.00	75.1	86.5	75.1	86.5						
3.1	3.8	11000	1.20	465.86	76.3	86.9	76.3	86.9						
3.2	3.9	10586	1.25	449.23	77.3	87.3	77.3	87.3						
3.5	4.2	9723	1.35	414.33	79.3	88.1	79.3	88.1						
3.6	4.3	9513	1.40	406.19	79.8	88.3	79.8	88.3						
3.7	4.5	9154	1.45	391.68	80.5	88.7	80.5	88.7						
3.8	4.6	8969	1.45	383.78	80.9	88.9	80.9	88.9						
4.1	4.9	8287	1.60	356.79	82.2	89.5	82.2	89.5						
4.3	5.2	7804	1.70	337.39	83.0	90.0	83.0	90.0						
4.8	5.8	6912	1.90	301.29	84.4	90.8	84.4	90.8						
5.0	6.0	6637	2.00	290.53	84.8	91.1	84.8	91.1						
5.8	7.1	5589	2.35	248.21	86.1	92.1	86.1	92.1						
6.6	8.0	5814	2.25	220.67	85.9	91.9	85.9	91.9						
7.5	9.1	5069	2.60	192.40	86.7	92.6	86.7	92.6						
7.8	9.5	4888	2.70	185.53	86.9	92.8	86.9	92.8						
8.7	11	4366	3.00	165.73	87.4	93.3	87.4	93.3						
3.3	4.0	10641	0.80	443.33	**	**	**	**	FH104-11P-112M-04E	309	336			
3.6	4.3	9781	0.85	408.33	**	**	**	**						
3.8	4.6	9200	0.90	384.84	39.2	58.9	39.2	58.9						
4.2	5.1	8209	1.00	344.81	44.7	60.0	44.7	60.0						
4.4	5.3	7900	1.05	332.50	46.2	60.4	46.2	60.4						
5.1	6.2	6707	1.20	284.06	51.1	61.7	51.1	61.7						
5.9	7.1	6496	1.25	246.57	51.8	61.9	51.8	61.9						
6.7	8.1	5737	1.40	217.78	54.2	62.8	54.2	62.8						
7.7	9.3	4980	1.65	189.04	56.2	63.6	56.2	63.6						
8.0	9.6	4802	1.70	182.29	56.6	63.8	56.6	63.8						
8.9	11	4303	1.90	163.33	57.7	64.4	57.7	64.4						
10	13	3682	2.20	139.78	58.9	65.1	58.9	65.1						
12	14	3229	2.50	122.58	59.6	65.6	59.6	65.6						
13	16	2852	2.85	108.27	60.1	66.0	60.1	66.0						
6.9	8.3	5562	0.85	211.14	**	**	**	**	FH093-11P-112M-04E	191	330			
7.8	9.4	4926	0.95	186.99	24.9	38.5	24.9	38.5						
9.0	11	4262	1.10	161.76	29.4	39.4	29.4	39.4						
9.3	11	4110	1.10	155.99	30.3	39.6	30.3	39.6						
10	12	3763	1.20	142.85	32.0	40.0	32.0	40.0						
11	13	3626	1.25	137.63	32.7	40.2	32.7	40.2						
12	15	3182	1.45	120.77	34.5	40.8	34.5	40.8						
14	17	2754	1.65	104.54	35.9	41.4	35.9	41.4						
16	19	2439	1.85	92.59	36.8	41.8	36.8	41.8						
18	22	2110	2.15	80.09	37.6	42.2	37.6	42.2						
19	23	2035	2.25	77.23	37.8	42.3	37.8	42.3						
21	26	1795	2.55	68.15	38.3	42.6	38.3	42.6						
25	30	1528	2.95	57.99	38.7	43.0	38.7	43.0						

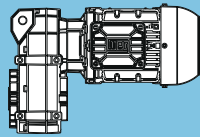
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** ... on request

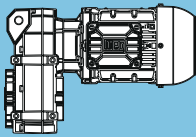
P_N = 4.0 kW

IE3

50 Hz 4.0 kW	60 Hz 4.8 kW	M ₂ Nm	f _b	i	at 50 Hz					m kg	Dimension sheet see page
					Output shaft		Hollow shaft				
					F _{rN} kN	F _{aN} kN	F _{rN} kN	F _{aN} kN			
10	12	3759	0.80	142.69	**	**	**	**	FH083-11P-112M-04E	136	326
12	14	3282	0.95	124.59	16.7	28.3	16.7	7.4			
13	15	3024	1.00	114.80	19.2	33.7	19.2	7.8			
14	17	2669	1.15	101.32	21.9	39.7	21.9	8.4			
16	19	2453	1.25	93.11	23.2	41.2	23.2	8.7			
17	21	2239	1.35	84.99	24.4	41.5	24.4	9.0			
18	22	2109	1.45	80.04	25.0	41.7	25.0	9.2			
20	25	1887	1.60	71.62	25.9	42.1	25.0	9.6			
21	25	1841	1.60	69.87	26.1	42.2	24.6	9.7			
24	29	1577	1.80	59.86	27.0	42.6	23.0	10.1			
25	30	1521	1.85	57.73	27.2	42.7	22.6	10.2			
28	34	1342	2.00	50.95	27.7	42.9	21.3	10.4			
34	41	1126	2.25	42.74	28.2	43.3	19.6	10.8			
40	49	949	2.55	36.02	28.6	43.5	18.2	11.0			
22	27	1736	0.90	65.88	13.5	15.5	13.5	4.2	FH073-11P-112M-04E	89	324
27	32	1427	1.10	54.16	16.1	16.1	16.1	4.8			
28	34	1376	1.10	52.23	16.4	16.2	16.4	4.9			
32	39	1186	1.30	45.02	17.6	16.6	15.4	5.3	FH072-11P-112M-04E	88	324
37	45	1036	1.45	39.31	18.3	16.9	14.3	5.6			
42	51	915	1.65	34.74	18.8	17.1	13.5	5.9			
49	60	774	1.95	29.38	19.3	17.4	12.5	6.2			
57	70	665	2.30	25.25	19.6	17.6	11.6	6.4			
66	80	581	2.60	22.05	19.8	17.8	10.9	6.6			
70	85	546	1.75	20.72	19.9	17.4	10.9	6.1			
80	97	477	2.35	18.09	20.0	17.6	10.2	6.3			
91	110	421	2.60	15.99	20.1	17.8	9.7	6.5			
38	46	1006	0.85	38.20	**	**	**	**			
44	54	861	1.00	32.69	8.0	12.5	8.0	2.5			
48	59	790	1.05	29.98	8.9	12.7	8.9	2.7			
57	70	665	1.25	25.23	10.1	13.1	10.1	3.2			
63	76	610	1.35	23.14	10.5	13.3	10.2	3.3			
69	84	550	1.50	20.87	10.9	13.5	9.7	3.5			
71	86	540	0.80	20.49	**	**	**	**			
76	92	504	1.65	19.14	11.2	13.6	9.3	3.6			
82	99	468	1.80	17.75	11.3	13.7	8.9	3.8			
84	102	453	1.30	17.18	11.4	13.2	9.2	3.3			
89	108	429	1.95	16.28	11.5	13.8	8.6	3.9			
94	114	405	2.05	15.38	11.6	13.9	8.4	4.0			
103	124	372	2.25	14.11	11.8	14.0	8.0	4.1			
107	130	355	1.65	13.49	11.8	13.7	8.2	3.7			
112	135	342	2.40	12.99	11.9	14.1	7.7	4.2			
116	140	330	2.50	12.53	11.9	14.2	7.6	4.2			
122	147	314	2.65	11.91	12.0	14.2	7.4	4.3			
126	153	303	2.75	11.49	12.0	14.3	7.3	4.3			
136	164	282	2.95	10.70	12.1	14.3	7.1	4.4			
139	169	274	2.10	10.41	12.1	14.0	7.2	4.1			
168	204	227	2.55	8.61	12.2	14.2	6.6	4.3			
198	240	193	3.00	7.32	12.3	14.4	6.2	4.4			

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** ... on request

P _N = 4.0 kW										IE3		
50 Hz		60 Hz		f _B	i	at 50 Hz					m kg	Dimension sheet see page
4.0 kW		4.8 kW				Output shaft		Hollow shaft				
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	F _{rN} kN			F _{aN} kN	F _{rN} kN	F _{aN} kN				
53	64	726	0.85	27.56	**	**	**	**				
58	70	663	0.90	25.18	4.9	7.7	4.9	3.2				
70	84	549	1.10	20.83	6.8	10.3	6.8	3.6				
76	92	501	1.20	19.03	7.4	10.5	7.4	3.8				
85	103	449	1.35	17.04	7.9	10.6	7.9	3.9				
93	113	410	1.50	15.57	8.2	10.7	8.2	4.0				
95	116	400	0.90	15.19	8.3	10.3	8.3	3.6				
105	127	364	1.65	13.82	8.6	10.9	8.6	4.2				
115	139	333	1.80	12.63	8.8	11.0	8.8	4.3				
125	152	305	2.00	11.57	8.9	11.1	8.9	4.4				
126	153	302	1.20	11.48	9.0	10.7	9.0	4.0				
137	166	278	2.10	10.57	9.1	11.1	8.6	4.4				
154	187	247	1.50	9.39	9.2	10.9	8.3	4.2				
155	187	247	2.30	9.38	9.2	11.2	8.2	4.5				
160	194	238	2.35	9.04	9.3	11.3	8.0	4.6				
169	205	226	2.45	8.57	9.3	11.3	7.9	4.6				
176	212	218	2.50	8.26	9.3	11.3	7.7	4.6				
190	230	201	1.80	7.62	9.4	11.1	7.5	4.4				
227	275	168	2.15	6.38	9.5	11.3	7.0	4.6				
280	339	136	2.65	5.17	8.8	11.4	6.4	4.7				
291	352	131	2.75	4.98	8.7	11.4	6.3	4.7				

FH052-11P-112M-04E

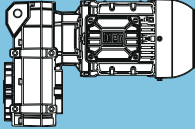
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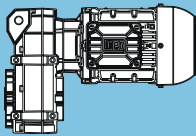
P_N = 5.5 kW

IE3

50 Hz 5.5 kW	60 Hz 6.6 kW	M ₂ Nm	f _b	i	at 50 Hz					m kg	Dimension sheet see page
					Output shaft		Hollow shaft				
					F _{rN} kN	F _{aN} kN	F _{rN} kN	F _{aN} kN			
2.2	2.6	21821	0.85	669.37	**	**	**	**	FH154-11P-132S-04E	719	344
2.3	2.8	20800	0.90	639.35	64.6	112.1	64.6	112.1			
2.6	3.1	18581	1.00	573.49	75.7	114.8	75.7	114.8			
2.7	3.2	17771	1.05	549.60	79.1	115.4	79.1	115.4			
3.0	3.6	15717	1.15	488.09	86.5	117.1	86.5	117.1			
3.1	3.7	15212	1.20	473.37	88.1	117.5	88.1	117.5			
3.2	3.8	14852	1.25	463.14	89.2	117.8	89.2	117.8			
3.6	4.3	13050	1.40	409.44	94.1	119.3	94.1	119.3			
3.7	4.4	12687	1.45	398.90	95.0	119.6	95.0	119.6			
4.2	5.1	10861	1.70	345.03	98.9	121.1	98.9	121.1			
3.0	3.6	15778	0.85	484.00	**	**	**	**	FH124-11P-132S-04E	467	340
3.1	3.7	15585	0.85	478.08	**	**	**	**			
3.3	3.9	14615	0.90	449.23	64.6	83.4	64.6	83.4			
3.5	4.3	13424	1.00	414.33	69.0	84.6	69.0	84.6			
3.6	4.3	13339	1.00	411.69	69.3	84.6	69.3	84.6			
3.7	4.5	12664	1.05	391.68	71.5	85.3	71.5	85.3			
3.8	4.6	12409	1.05	383.78	72.3	85.5	72.3	85.5			
4.1	4.9	11489	1.15	356.79	75.0	86.4	75.0	86.4			
4.2	5.0	11243	1.20	349.88	75.7	86.7	75.7	86.7			
4.3	5.2	10842	1.20	337.39	76.7	87.1	76.7	87.1			
4.4	5.3	10731	1.25	334.62	77.0	87.2	77.0	87.2			
4.9	5.9	9603	1.40	301.29	79.6	88.2	79.6	88.2			
5.0	6.1	9241	1.45	290.53	80.3	88.6	80.3	88.6			
5.1	6.1	9167	1.45	288.23	80.5	88.7	80.5	88.7			
5.9	7.1	7814	1.70	248.21	83.0	90.0	83.0	90.0			
6.6	8.0	7912	1.65	220.67	82.8	89.9	82.8	89.9	FH123-11P-132S-04E	443	338
7.6	9.2	6898	1.90	192.4	84.4	90.9	84.4	90.9			
7.9	9.5	6652	2.00	185.53	84.8	91.1	84.8	91.1			
8.8	11	5942	2.20	165.73	85.7	91.8	85.7	91.8			
10	12	5117	2.55	142.72	86.7	92.6	86.7	92.6			
12	14	4470	2.95	124.67	87.3	93.2	87.3	93.2			
5.2	6.2	9241	0.90	284.06	38.9	58.9	38.9	58.9	FH104-11P-132S-04E	327	336
5.9	7.2	8840	0.95	246.57	41.3	59.3	41.3	59.3	FH103-11P-132S-04E	303	334
6.7	8.1	7808	1.05	217.78	46.7	60.5	46.7	60.5			
7.7	9.3	6778	1.20	189.04	50.9	61.6	50.9	61.6			
8.0	9.7	6536	1.25	182.29	51.7	61.9	51.7	61.9			
9.0	11	5856	1.40	163.33	53.9	62.7	53.9	62.7			
10	13	5012	1.60	139.78	56.1	63.6	56.1	63.6			
12	14	4395	1.85	122.58	57.5	64.3	57.5	64.3			
14	16	3882	2.10	108.27	58.5	64.8	58.5	64.8			
16	19	3369	2.40	93.98	59.4	65.4	59.4	65.4			
18	22	2911	2.75	81.20	60.0	65.9	60.0	65.9			
9.1	11	5800	0.80	161.76	**	**	**	**	FH093-11P-132S-04E	209	330
9.4	11	5593	0.85	155.99	**	**	**	**			
10	12	5122	0.90	142.85	23.3	38.2	23.3	38.2			
11	13	4934	0.95	137.63	24.8	38.5	24.8	38.5			
12	15	4330	1.05	120.77	29.0	39.3	29.0	39.3			
13	15	4199	1.10	117.13	29.8	39.4	29.8	39.4			
14	17	3748	1.25	104.54	32.1	40.0	32.1	40.0			
16	19	3320	1.40	92.59	33.9	40.6	33.9	40.6			
18	22	2871	1.60	80.09	35.5	41.2	35.5	41.2			
19	23	2769	1.65	77.23	35.9	41.3	35.9	41.3			
21	26	2443	1.85	68.15	36.8	41.8	36.8	41.8			
25	30	2079	2.20	57.99	37.7	42.2	37.7	42.2			
29	35	1794	2.55	50.03	38.3	42.6	38.3	42.6			

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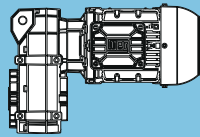
** ... on request

P _N = 5.5 kW										IE3		
50 Hz		60 Hz		f _B	i	at 50 Hz					m kg	Dimension sheet see page
5.5 kW		6.6 kW				Output shaft		Hollow shaft				
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	F _{rN} kN			F _{aN} kN	F _{rN} kN	F _{aN} kN				
13	16	3948	0.80	110.11	**	**	**	**	FH083-11P-132S-04E	155	326	
14	17	3633	0.85	101.32	**	**	**	**				
16	19	3338	0.90	93.11	16.1	27.1	16.1	7.4				
17	21	3047	1.00	84.99	19.0	33.3	19.0	7.8				
18	22	2870	1.05	80.04	20.4	36.4	20.4	8.1				
20	25	2568	1.15	71.62	22.5	41.0	22.5	8.5				
21	25	2505	1.20	69.87	22.9	41.1	22.9	8.6				
24	29	2146	1.30	59.86	24.8	41.7	24.7	9.2				
25	31	2070	1.35	57.73	25.2	41.8	24.2	9.3				
29	35	1827	1.45	50.95	26.2	42.2	22.6	9.7				
34	41	1532	1.65	42.74	27.2	42.6	20.8	10.1				
41	49	1291	1.85	36.02	27.9	43.0	19.1	10.5				
43	52	1214	2.30	33.87	28.0	43.1	18.7	10.6	FH082-11P-132S-04E	146	326	
49	59	1076	2.80	30.00	28.3	43.3	17.6	10.8				
27	33	1942	0.80	54.16	**	**	**	**	FH073-11P-132S-04E	107	324	
28	34	1873	0.85	52.23	**	**	**	**				
33	39	1614	0.95	45.02	14.6	15.7	14.6	4.5	FH072-11P-132S-04E	106	324	
37	45	1409	1.10	39.31	16.2	16.1	15.6	4.9				
42	51	1246	1.25	34.74	17.2	16.5	14.6	5.2				
50	60	1053	1.45	29.38	18.2	16.9	13.4	5.6				
58	70	905	1.70	25.25	18.8	17.2	12.4	5.9				
66	80	791	1.90	22.05	19.2	17.4	11.6	6.1				
71	85	743	1.30	20.72	19.4	16.8	11.6	5.6				
78	93	677	2.25	18.89	19.6	17.6	10.7	6.4				
80	97	653	2.30	18.21	19.6	17.7	10.6	6.4				
81	98	649	1.75	18.09	19.6	17.1	10.9	5.8				
91	110	577	2.65	16.08	19.8	17.8	10.0	6.6				
92	110	573	1.95	15.99	19.8	17.3	10.2	6.1				
108	131	485	2.30	13.52	20.0	17.6	9.5	6.3				
126	152	417	2.65	11.62	20.1	17.8	8.8	6.5				
49	59	1075	0.80	29.98	**	**	**	**	FH062-11P-132S-04E	83	322	
58	70	905	0.95	25.23	7.4	11.9	7.4	2.4				
63	76	830	1.00	23.14	8.4	12.5	8.4	2.6				
70	85	748	1.10	20.87	9.3	12.8	9.3	2.9				
77	92	686	1.20	19.14	9.9	13.0	9.9	3.1				
83	99	636	1.30	17.75	10.3	13.2	9.7	3.2				
85	103	616	0.95	17.18	10.4	12.5	10.1	2.6				
90	108	584	1.45	16.28	10.7	13.3	9.3	3.4				
95	115	551	1.50	15.38	10.9	13.5	9.0	3.5				
104	125	506	1.65	14.11	11.1	13.6	8.6	3.6				
109	131	484	1.20	13.49	11.3	13.1	8.8	3.2				
113	136	466	1.80	12.99	11.4	13.7	8.2	3.8				
117	141	449	1.85	12.53	11.4	13.8	8.1	3.8				
123	148	427	1.95	11.91	11.5	13.9	7.9	3.9				
128	154	412	2.00	11.49	11.6	13.9	7.8	4.0				
137	165	384	2.15	10.70	11.7	14.0	7.5	4.1				
141	170	373	1.55	10.41	11.8	13.6	7.7	3.6				
149	180	352	2.35	9.81	11.8	14.1	7.2	4.1				
170	205	309	1.85	8.61	12.0	13.9	7.0	3.9				
200	241	262	2.20	7.32	12.1	14.1	6.5	4.1				
231	278	228	2.55	6.35	12.2	14.2	6.1	4.3				
273	329	192	3.00	5.36	12.3	14.4	5.6	4.4				

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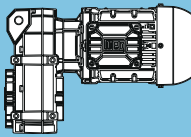
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** ... on request

P _N = 5.5 kW										IE3	
50 Hz	60 Hz				at 50 Hz					m kg	Dimension sheet see page
5.5 kW	6.6 kW	M ₂ Nm	f _B	i	Output shaft		Hollow shaft				
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹				F _{rN} kN	F _{aN} kN	F _{rN} kN	F _{aN} kN			
70	85	747	0.85	20.83	**	**	**	**	FH052-11P-132S-04E	68	320
77	93	682	0.90	19.03	4.5	6.9	4.5	3.2			
86	104	611	1.00	17.04	5.9	9.9	5.9	3.4			
94	113	558	1.10	15.57	6.7	10.3	6.7	3.6			
106	128	495	1.25	13.82	7.5	10.5	7.5	3.8			
116	140	453	1.35	12.63	7.9	10.6	7.9	3.9			
127	153	415	1.45	11.57	8.2	10.7	8.2	4.0			
128	154	412	0.90	11.48	8.2	10.2	8.2	3.5			
139	167	379	1.55	10.57	8.5	10.8	8.5	4.1			
156	188	336	1.70	9.38	8.8	11.0	8.6	4.3			
156	188	337	1.10	9.39	8.8	10.5	8.7	3.8			
162	195	324	1.75	9.04	8.8	11.0	8.5	4.3			
171	206	307	1.80	8.57	8.9	11.1	8.3	4.4			
177	214	296	1.85	8.26	9.0	11.1	8.1	4.4			
192	232	273	1.35	7.62	9.1	10.8	7.9	4.1			
230	277	229	1.60	6.38	9.3	11.0	7.3	4.3			
283	341	185	1.95	5.17	9.1	11.2	6.7	4.5			
294	354	179	2.05	4.98	8.9	11.2	6.5	4.5			

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** ... on request

P _N = 7.5 kW										IE3	
50 Hz		60 Hz		i	at 50 Hz					m kg	Dimension sheet see page
7.5 kW		9.0 kW			Output shaft		Hollow shaft				
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	f _B		F _{rN} kN	F _{aN} kN	F _{rN} kN	F _{aN} kN			
3.0	3.6	21698	0.85	488.09	**	**	**	**	FH154-11P-L132M-04F	733	344
3.1	3.7	21000	0.90	473.37	63.4	109.6	63.4	109.6			
3.2	3.8	20547	0.90	463.14	66.0	113.1	66.0	113.1			
3.6	4.3	18090	1.00	409.44	77.8	115.2	77.8	115.2			
3.7	4.4	17588	1.05	398.90	79.8	115.6	79.8	115.6			
4.2	5.1	15119	1.20	345.03	88.4	117.6	88.4	117.6			
3.8	4.6	17096	0.80	383.78	**	**	**	**	FH124-11P-L132M-04F	481	340
4.1	5.0	15861	0.85	356.79	**	**	**	**			
4.2	5.1	15554	0.85	349.88	**	**	**	**			
4.3	5.2	14968	0.90	337.39	63.1	83.1	63.1	83.1			
4.4	5.3	14845	0.90	334.62	63.6	83.2	63.6	83.2			
4.9	5.9	13312	1.00	301.29	69.4	84.7	69.4	84.7			
5.0	6.1	12810	1.05	290.53	71.1	85.2	71.1	85.2			
5.1	6.1	12708	1.05	288.23	71.4	85.3	71.4	85.3			
5.9	7.1	10877	1.20	248.21	76.6	87.0	76.6	87.0			
6.6	8.0	10789	1.25	220.67	76.8	87.1	76.8	87.1			
7.6	9.2	9407	1.40	192.40	80.0	88.4	80.0	88.4			
7.9	9.5	9071	1.45	185.53	80.7	88.8	80.7	88.8			
8.8	11	8103	1.65	165.73	82.5	89.7	82.5	89.7			
10	12	6978	1.90	142.72	84.3	90.8	84.3	90.8			
12	14	6095	2.15	124.67	85.5	91.6	85.5	91.6			
14	17	5150	2.55	105.34	86.6	92.5	86.6	92.5			
16	20	4436	2.95	90.74	87.3	93.2	87.3	93.2			
6.7	8.1	10647	0.80	217.78	**	**	**	**	FH103-11P-L132M-04F	317	334
7.7	9.4	9242	0.90	189.04	38.9	58.9	38.9	58.9			
8.0	9.7	8912	0.90	182.29	40.9	59.3	40.9	59.3			
9.0	11	7985	1.05	163.33	45.8	60.3	45.8	60.3			
10	13	6834	1.20	139.78	50.6	61.6	50.6	61.6			
12	14	5993	1.35	122.58	53.5	62.5	53.5	62.5			
12	15	5902	1.40	120.72	53.7	62.6	53.7	62.6			
14	16	5293	1.55	108.27	55.4	63.3	55.4	63.3			
16	19	4595	1.75	93.98	57.1	64.1	57.1	64.1			
16	20	4431	1.85	90.63	57.5	64.2	57.5	64.2			
18	22	3970	2.05	81.20	58.4	64.7	58.4	64.7			
21	25	3397	2.40	69.49	59.3	65.4	59.3	65.4			
24	29	2934	2.75	60.02	60.0	65.9	60.0	65.9			
41	49	1757	2.50	35.93	61.3	67.2	61.3	67.2			
79	95	910	2.50	18.62	51.4	68	51.4	68.0			
12	15	5905	0.80	120.77	**	**	**	**	FH093-11P-L132M-04F	223	330
13	15	5727	0.80	117.13	**	**	**	**			
14	17	5111	0.90	104.54	23.4	38.2	23.4	38.2			
16	19	4527	1.00	92.59	27.8	39.0	27.8	39.0			
18	22	3916	1.15	80.09	31.3	39.8	31.3	39.8			
19	23	3776	1.20	77.23	32.0	40.0	32.0	40.0			
21	26	3332	1.40	68.15	33.9	40.6	33.9	40.6			
25	31	2835	1.60	57.99	35.7	41.2	35.7	41.2			
29	35	2446	1.85	50.03	36.8	41.8	36.8	41.8			
38	46	1890	2.30	38.65	38.1	42.5	38.1	42.5			
43	52	1669	2.70	34.13	38.5	42.8	38.5	42.8			
51	62	1397	2.50	28.57	38.9	43.1	38.9	43.1			
77	93	929	2.30	19.01	39.5	43.6	39.5	43.6			
104	126	687	2.50	14.05	37.6	44.0	37.6	44.0			
18	22	3913	0.80	80.04	**	**	**	**	FH083-11P-L132M-04F	169	326
20	25	3502	0.85	71.62	**	**	**	**			
21	25	3416	0.85	69.87	**	**	**	**			
24	30	2927	0.95	59.86	20.0	35.5	20.0	35.5			
25	31	2822	1.00	57.73	20.8	37.2	20.8	37.2			
29	35	2491	1.10	50.95	23.0	41.2	23.0	41.2			
34	41	2090	1.20	42.74	25.1	41.8	25.1	41.8			
41	49	1761	1.40	36.02	26.4	42.3	26.4	42.3			

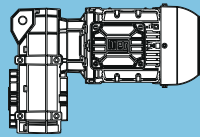
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** ... on request

P_N = 7.5 kW

IE3

50 Hz 7.5 kW n ₅₀ min ⁻¹	60 Hz 9.0 kW n ₆₀ min ⁻¹	M ₂ Nm	f _b	i	at 50 Hz					m kg	Dimension sheet see page
					Output shaft		Hollow shaft				
					F _{rN} kN	F _{aN} kN	F _{rN} kN	F _{aN} kN			
43	52	1656	1.70	33.87	26.8	42.4	20.0	9.9	FH082-11P-L132M-04F	160	326
49	59	1467	2.05	30.00	27.4	42.7	18.8	10.2			
56	68	1269	2.40	25.95	27.9	43.0	17.6	10.5			
66	80	1080	2.80	22.08	28.3	43.3	16.3	10.8			
103	125	693	2.55	14.18	29.0	43.8	13.6	11.3			
119	144	600	2.95	12.27	29.1	43.9	12.7	11.4			
37	45	1922	0.80	39.31	**	**	**	**	FH072-11P-L132M-04F	120	324
42	51	1698	0.90	34.74	13.9	15.5	13.9	4.3			
50	60	1436	1.05	29.38	16.0	16.1	14.6	4.8			
58	70	1234	1.25	25.25	17.3	16.5	13.5	5.2			
66	80	1078	1.40	22.05	18.1	16.8	12.6	5.6			
71	85	1013	0.95	20.72	18.4	16.0	12.7	4.8			
78	94	924	1.65	18.89	18.8	17.1	11.6	5.9			
80	97	890	1.70	18.21	18.9	17.2	11.4	5.9			
81	98	884	1.25	18.09	18.9	16.4	11.8	5.1			
91	110	786	1.95	16.08	19.2	17.4	10.7	6.1			
92	111	782	1.40	15.99	19.3	16.7	11.0	5.5			
108	131	661	1.70	13.52	19.6	17.1	10.2	5.8			
109	131	660	2.30	13.49	19.6	17.7	9.8	6.4			
126	152	568	1.95	11.62	19.8	17.3	9.4	6.1			
129	156	555	2.75	11.36	19.9	17.9	9.0	6.6			
144	175	496	2.25	10.14	20.0	17.5	8.8	6.3			
169	204	425	2.65	8.69	20.1	17.8	8.2	6.5			
175	211	410	2.50	8.38	20.1	17.8	8.1	6.5			
70	85	1020	0.85	20.87	**	**	**	**	FH062-11P-L132M-04F	97	322
77	92	936	0.90	19.14	6.9	10.7	6.9	2.2			
83	100	868	0.95	17.75	7.9	12.4	7.9	2.5			
90	109	796	1.05	16.28	8.8	12.6	8.8	2.7			
95	115	752	1.10	15.38	9.3	12.8	9.3	2.9			
104	125	690	1.20	14.11	9.9	13.0	9.4	3.0			
109	131	660	0.90	13.49	10.1	12.3	9.2	2.4			
113	136	635	1.30	12.99	10.3	13.2	9.0	3.2			
117	141	613	1.35	12.53	10.5	13.3	8.8	3.3			
123	149	582	1.45	11.91	10.7	13.3	8.6	3.4			
128	154	562	1.50	11.49	10.8	13.4	8.4	3.5			
137	165	523	1.60	10.70	11.0	13.6	8.1	3.6			
141	170	509	1.15	10.41	11.1	13.0	8.4	3.0			
149	180	480	1.75	9.81	11.3	13.7	7.8	3.7			
170	206	421	1.40	8.61	11.6	13.4	7.6	3.4			
200	242	358	1.60	7.32	11.8	13.7	7.0	3.7			
231	279	310	1.85	6.35	12.0	13.9	6.5	3.9			
273	330	262	2.20	5.36	12.1	14.1	6.0	4.1			
283	342	253	2.30	5.17	12.2	14.1	5.9	4.2			
332	401	216	2.65	4.41	12.2	14.3	5.5	4.3			
94	114	761	0.80	15.57	**	**	**	**	FH052-11P-L132M-04F	82	320
106	128	676	0.90	13.82	4.7	7.3	4.7	3.2			
116	140	617	1.00	12.63	5.8	9.7	5.8	3.4			
127	153	566	1.10	11.57	6.6	10.3	6.6	3.6			
139	167	517	1.15	10.57	7.2	10.4	7.2	3.7			
156	189	459	1.25	9.38	7.8	10.6	7.8	3.9			
162	196	442	1.30	9.04	8.0	10.6	8.0	3.9			
171	207	419	1.35	8.57	8.2	10.7	8.2	4.0			
177	214	404	1.35	8.26	8.3	10.8	8.3	4.1			
192	232	373	1.00	7.62	8.5	10.4	8.5	3.7			
230	277	312	1.20	6.38	8.9	10.6	7.8	3.9			
283	342	253	1.45	5.17	9.2	10.9	7.0	4.2			
294	355	243	1.50	4.98	9.2	10.9	6.9	4.2			

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** ... on request

P _N = 9.2 kW										IE3	
50 Hz		60 Hz		at 50 Hz						m kg	Dimension sheet see page
9.2 kW		11 kW		Output shaft		Hollow shaft					
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	f _B	i	F _{rN} kN	F _{aN} kN	F _{rN} kN	F _{aN} kN			
3.6	4.3	22404	0.85	409.44	**	**	**	**	FH154-11P-L132M-04G	738	344
3.7	4.4	21827	0.85	398.90	**	**	**	**			
4.2	5.1	18763	1.00	345.03	74.9	114.6	74.9	114.6			
4.8	5.9	16520	0.80	301.29	**	**	**	**	FH124-11P-L132M-04G	486	340
5.0	6.1	15897	0.85	290.53	**	**	**	**			
5.1	6.1	15771	0.85	288.23	**	**	**	**			
5.9	7.1	13498	1.00	248.21	68.8	84.5	68.8	84.5			
6.6	8.0	13279	1.00	220.67	69.5	84.7	69.5	84.7	FH123-11P-L132M-04G	462	338
7.6	9.2	11578	1.15	192.40	74.7	86.3	74.7	86.3			
7.9	9.5	11165	1.20	185.53	75.9	86.7	75.9	86.7			
8.8	11	9973	1.35	165.73	78.8	87.9	78.8	87.9			
10	12	8589	1.55	142.72	81.6	89.2	81.6	89.2			
12	14	7502	1.75	124.67	83.5	90.3	83.5	90.3			
12	15	7271	1.80	120.82	83.9	90.5	83.9	90.5			
14	17	6113	2.00	101.58	85.5	91.6	85.5	91.6			
14	17	6339	2.10	105.34	85.2	91.4	85.2	91.4			
16	19	5461	2.40	90.74	86.3	92.2	86.3	92.2			
19	23	4702	2.80	78.14	87.1	93.0	87.1	93.0			
8.9	11	9829	0.85	163.33	**	**	**	**	FH103-11P-L132M-04G	322	334
10	13	8412	1.00	139.78	43.7	59.8	43.7	59.8			
12	14	7377	1.10	122.58	48.5	61.0	48.5	61.0			
13	16	6515	1.25	108.27	51.8	61.9	51.8	61.9			
16	19	5656	1.45	93.98	54.5	62.9	54.5	62.9			
18	22	4886	1.65	81.20	56.4	63.7	56.4	63.7			
21	25	4182	1.95	69.49	58.0	64.5	58.0	64.5			
24	29	3612	2.25	60.02	59.0	65.1	59.0	65.1			
34	41	2572	2.50	42.74	60.5	66.3	60.5	66.3	FH102-11P-L132M-04G	296	334
41	49	2162	2.00	35.93	60.9	66.8	60.9	66.8			
66	80	1332	2.50	22.14	55.1	67.5	55.1	67.5			
78	95	1121	2.00	18.62	52.1	67.8	52.1	67.8			
16	19	5572	0.85	92.59	**	**	**	**	FH093-11P-L132M-04G	228	330
18	22	4820	0.95	80.09	25.7	38.6	25.7	38.6			
19	23	4648	1.00	77.23	27.0	38.8	27.0	38.8			
21	26	4101	1.10	68.15	30.3	39.6	30.3	39.6			
25	30	3490	1.30	57.99	33.2	40.4	33.2	40.4			
29	35	3011	1.50	50.03	35.1	41.0	35.1	41.0			
38	46	2326	1.90	38.65	37.1	41.9	37.1	41.9	FH092-11P-L132M-04G	214	330
43	52	2054	2.20	34.13	37.7	42.3	37.7	42.3			
49	60	1783	2.55	29.63	38.3	42.6	38.3	42.6			
51	62	1719	2.00	28.57	38.4	42.7	38.4	42.7			
57	69	1541	2.95	25.60	38.7	43.0	38.7	43.0			
77	93	1144	1.90	19.01	39.3	43.3	39.3	43.3			
87	105	1010	2.65	16.79	39.4	43.5	39.4	43.5			
104	126	846	2.00	14.05	38.2	43.7	38.2	43.7			
24	29	3602	0.80	59.86	**	**	**	**	FH083-11P-L132M-04G	174	326
25	31	3474	0.80	57.73	**	**	**	**			
29	35	3066	0.90	50.95	18.8	32.9	18.8	7.8			
34	41	2572	1.00	42.74	22.5	41.0	22.5	8.5			
41	49	2168	1.10	36.02	24.7	41.7	21.8	9.2			
43	52	2038	1.40	33.87	25.3	41.9	21.2	9.4	FH082-11P-L132M-04G	165	326
49	59	1805	1.70	30.00	26.2	42.2	19.8	9.7			
56	68	1562	1.95	25.95	27.1	42.6	18.5	10.1			
66	80	1329	2.30	22.08	27.8	43.0	17.0	10.5			
78	94	1131	2.70	18.79	28.2	43.3	15.7	10.8			
103	124	853	2.10	14.18	28.8	43.5	14.1	11.0			
119	144	738	2.40	12.27	28.9	43.7	13.2	11.2			
140	169	628	2.85	10.44	29.1	43.9	12.3	11.4			

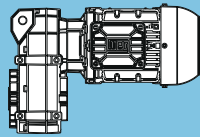
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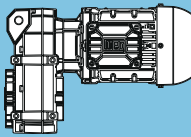
P_N = 9.2 kW

IE3

50 Hz 9.2 kW n ₅₀ min ⁻¹	60 Hz 11 kW n ₆₀ min ⁻¹	M ₂ Nm	f _b	i	at 50 Hz					m kg	Dimension sheet see page
					Output shaft		Hollow shaft				
					F _{rN} kN	F _{aN} kN	F _{rN} kN	F _{aN} kN			
50	60	1768	0.85	29.38	**	**	**	**	FH072-11P-L132M-04G	125	324
58	70	1519	1.00	25.25	15.4	15.9	13.3	4.7			
66	80	1327	1.15	22.05	16.8	16.3	13.3	5.0			
70	85	1247	0.80	20.72	**	**	**	**			
77	93	1137	1.35	18.89	17.8	16.7	12.3	5.4			
80	97	1096	1.40	18.21	18.0	16.8	12.1	5.5			
81	98	1089	1.05	18.09	18.1	15.8	12.4	4.5			
91	110	968	1.60	16.08	18.6	17.0	11.3	5.8			
108	131	814	1.40	13.52	19.2	16.6	10.7	5.4			
126	152	699	1.60	11.62	19.5	16.9	9.9	5.7			
129	155	684	2.20	11.36	19.6	17.6	9.5	6.4			
144	174	610	1.85	10.14	19.7	17.2	9.3	6.0			
168	203	523	2.15	8.69	19.9	17.5	8.6	6.2			
174	211	504	2.00	8.38	20.0	17.5	8.4	6.3			
197	239	445	2.55	7.40	20.1	17.7	7.9	6.4			
235	284	374	3.00	6.21	20.2	17.9	7.3	6.7			
82	99	1068	0.80	17.75	**	**	**	**	FH062-11P-L132M-04G	102	322
90	108	980	0.85	16.28	**	**	**	**			
95	115	926	0.90	15.38	7.1	11.2	7.1	2.3			
103	125	849	1.00	14.11	8.2	12.5	8.2	2.5			
112	136	782	1.05	12.99	9.0	12.7	9.0	2.8			
117	141	754	1.10	12.53	9.3	12.8	9.1	2.9			
123	148	717	1.15	11.91	9.6	12.9	9.0	3.0			
127	154	691	1.20	11.49	9.8	13.0	9.0	3.0			
136	165	644	1.30	10.70	10.2	13.2	8.7	3.2			
140	170	626	0.95	10.41	10.4	12.5	8.4	2.5			
149	180	590	1.40	9.81	10.6	13.3	8.3	3.4			
170	205	518	1.15	8.61	11.1	13.0	8.1	3.0			
199	241	441	1.30	7.32	11.5	13.3	7.5	3.3			
230	278	382	1.50	6.35	11.7	13.6	6.9	3.6			
272	329	323	1.80	5.36	12.0	13.8	6.3	3.9			
282	341	311	1.85	5.17	12.0	13.9	6.2	3.9			
331	400	265	2.20	4.41	12.1	14.1	5.7	4.1			
116	140	760	0.80	12.63	**	**	**	**	FH052-11P-L132M-04G	87	320
126	153	696	0.90	11.57	4.1	6.1	4.1	3.2			
138	167	636	0.95	10.57	5.5	9.0	5.5	3.3			
156	188	564	1.00	9.38	6.6	10.3	6.6	3.6			
162	195	544	1.05	9.04	6.9	10.3	6.9	3.6			
170	206	516	1.10	8.57	7.2	10.4	7.2	3.7			
177	214	497	1.10	8.26	7.4	10.5	7.4	3.8			
192	232	459	0.80	7.62	**	**	**	**			
229	277	384	0.95	6.38	8.4	10.3	8.2	3.6			
282	341	311	1.20	5.17	8.9	10.7	7.4	4.0			
293	354	300	1.25	4.98	9.0	10.7	7.2	4.0			

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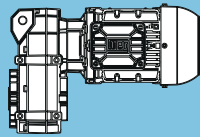
** ... on request

P _N = 11 kW										IE3	
50 Hz		60 Hz		i	at 50 Hz					m kg	Dimension sheet see page
11 kW		13 kW			Output shaft		Hollow shaft				
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	f _B		F _{rN} kN	F _{aN} kN	F _{rN} kN	F _{aN} kN			
4.3	5.1	22419	0.85	345.03	**	**	**	**	FH154-22P-160M-04E	800	344
4.5	5.4	21251	0.85	327.05	**	**	**	**			
5.2	6.3	18269	1.00	282.89	77.0	115.0	77.0	115.0			
5.7	6.8	18567	1.00	259.81	75.8	114.8	75.8	114.8	FH153-22P-160M-04E	754	342
6.6	7.9	15991	1.15	223.77	85.6	116.9	85.6	116.9			
7.6	9.2	13832	1.35	193.55	92.1	118.6	92.1	118.6			
8.6	10	12201	1.50	170.73	96.1	120.0	96.1	120.0			
10	12	10479	1.75	146.63	99.6	121.4	99.6	121.4			
12	14	8895	2.05	124.47	102.4	122.7	102.4	122.7			
14	16	7694	2.35	107.66	104.1	123.7	104.1	123.7			
15	18	7234	2.50	101.23	104.7	124.1	104.7	124.1			
5.9	7.2	16128	0.85	248.21	**	**	**	**	FH124-22P-160M-04E	548	340
6.7	8.0	15770	0.85	220.67	**	**	**	**	FH123-22P-160M-04E	524	338
7.6	9.2	13749	0.95	192.40	67.9	84.3	67.9	84.3			
8.9	11	11843	1.10	165.73	74.0	86.1	74.0	86.1			
10	12	10199	1.30	142.72	78.2	87.7	78.2	87.7			
12	14	8909	1.50	124.67	81.0	88.9	81.0	88.9			
14	16	7696	1.70	107.69	83.2	90.1	83.2	90.1			
16	20	6485	2.05	90.74	85.0	91.3	85.0	91.3			
17	20	6364	2.05	89.06	85.2	91.4	85.2	91.4			
19	23	5584	2.35	78.14	86.2	92.1	86.2	92.1			
20	24	5237	2.50	73.28	86.5	92.5	86.5	92.5			
22	26	4878	2.70	68.26	86.9	92.8	86.9	92.8			
37	44	2857	2.70	39.98	88.5	94.7	88.5	94.7	FH122-22P-160M-04E	483	338
77	93	1371	2.70	19.18	77.8	96.0	77.8	96.0			
11	13	9989	0.85	139.78	**	**	**	**	FH103-22P-160M-04E	384	334
12	15	8627	0.95	120.72	42.6	59.6	42.6	59.6			
14	16	7737	1.05	108.27	47.0	60.6	47.0	60.6			
16	19	6716	1.20	93.98	51.1	61.7	51.1	61.7			
18	21	5953	1.35	83.30	53.6	62.5	53.6	62.5			
21	26	4966	1.65	69.49	56.3	63.6	56.3	63.6			
22	26	4830	1.70	67.59	56.6	63.8	56.6	63.8			
24	30	4289	1.90	60.02	57.8	64.4	57.8	64.4			
29	35	3627	2.25	50.75	59.0	65.1	59.0	65.1			
35	43	2959	2.75	41.41	60.0	65.9	60.0	65.9			
34	42	3054	2.10	42.74	59.9	65.8	59.9	65.8	FH102-22P-160M-04E	358	334
39	48	2663	2.70	37.26	60.4	66.2	60.4	66.2			
66	80	1582	2.10	22.14	55.8	67.2	55.8	67.2			
76	92	1379	2.70	19.30	53.1	67.5	53.1	67.5			
18	22	5723	0.80	80.09	**	**	**	**	FH093-22P-160M-04E	290	330
21	26	4925	0.95	68.92	24.9	38.5	24.9	38.5			
22	26	4870	0.95	68.15	25.3	38.5	25.3	38.5			
25	31	4144	1.10	57.99	30.1	39.5	30.1	39.5			
27	33	3851	1.20	53.89	31.6	39.9	31.6	39.9			
29	35	3575	1.30	50.03	32.9	40.3	32.9	40.3			
35	42	2999	1.50	41.97	35.1	41.0	35.1	41.0			
43	52	2438	1.75	34.12	36.8	41.8	36.8	41.8			
55	67	1907	2.05	26.68	38.1	42.5	38.1	42.5			
43	52	2439	1.85	34.13	36.8	41.8	36.8	41.8	FH092-22P-160M-04E	276	330
50	60	2117	2.15	29.63	37.6	42.2	37.6	42.2			
57	69	1829	2.50	25.60	38.2	42.6	38.2	42.6			
67	81	1566	2.90	21.91	38.7	42.9	38.7	42.9			
88	106	1200	2.25	16.79	39.2	43.2	39.2	43.2			
101	122	1041	2.60	14.57	39.1	43.4	39.1	43.4			
117	141	900	3.00	12.59	37.1	43.7	37.1	43.7			
34	42	3054	0.85	42.74	**	**	**	**	FH083-22P-160M-04E	236	326
41	49	2574	0.95	36.02	22.5	41.0	22.5	41.0			
50	60	2110	1.10	29.53	25.0	41.7	20.7	42.5			

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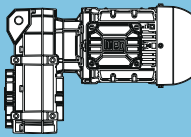
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** ... on request

P _N = 11 kW										IE3	
50 Hz		60 Hz		i	at 50 Hz					m kg	Dimension sheet see page
11 kW		13 kW			Output shaft		Hollow shaft				
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	f _B		F _{rN} kN	F _{aN} kN	F _{rN} kN	F _{aN} kN			
49	59	2144	1.40	30.00	24.8	41.7	20.8	9.2	FH082-22P-160M-04E	227	326
57	68	1854	1.65	25.95	26.1	42.1	19.3	9.6			
67	80	1578	1.95	22.08	27.0	42.6	17.7	10.1			
78	94	1343	2.25	18.79	27.7	42.9	16.4	10.4			
91	110	1158	2.60	16.21	28.2	43.2	15.2	10.7			
104	125	1013	1.75	14.18	28.5	43.2	14.7	10.7			
120	145	877	2.05	12.27	28.7	43.5	13.7	11.0			
141	170	746	2.40	10.44	28.9	43.7	12.7	11.2			
166	200	635	2.80	8.88	29.1	43.9	11.7	11.4			
67	80	1576	1.00	22.05	15.0	15.8	12.1	4.5	FH072-22P-160M-04E	187	324
78	94	1350	1.15	18.89	16.6	16.2	12.2	5.0			
91	110	1149	1.35	16.08	17.8	16.7	11.9	5.4			
109	132	964	1.60	13.49	18.6	17.0	10.8	5.8			
129	156	812	1.85	11.36	19.2	17.3	9.9	6.1			
145	175	725	1.55	10.14	19.4	16.9	9.7	5.6			
158	190	666	2.30	9.32	19.6	17.6	8.9	6.4			
169	204	621	1.80	8.69	19.7	17.2	8.9	5.9			
199	240	529	2.15	7.40	19.9	17.4	8.2	6.2			
237	286	444	2.55	6.21	20.1	17.7	7.6	6.4			
281	339	374	3.00	5.23	19.2	17.9	7.0	6.7			
104	126	1008	0.85	14.11	**	**	**	**	FH062-22P-160M-04E	164	322
113	137	928	0.90	12.99	7.1	11.2	7.1	2.3			
123	149	851	1.00	11.91	8.2	12.5	8.2	2.5			
137	166	765	1.10	10.7	9.2	12.8	8.4	2.8			
150	181	701	1.20	9.81	9.8	13.0	8.3	3.0			
231	280	454	1.30	6.35	11.4	13.2	7.3	3.3			
274	331	383	1.50	5.36	11.7	13.6	6.6	3.6			
333	402	315	1.85	4.41	12.0	13.9	6.0	3.9			

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** ... on request

P _N = 15 kW										IE3	
50 Hz		60 Hz		i	at 50 Hz					m kg	Dimension sheet see page
15 kW		18 kW			Output shaft		Hollow shaft				
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	f _B		F _{rN} kN	F _{aN} kN	F _{rN} kN	F _{aN} kN			
6.5	7.9	21881	0.85	223.77	**	**	**	**	FH153-22P-160L-04F	777	342
7.6	9.2	18926	1.00	193.55	74.2	114.5	74.2	114.5			
8.6	10	16694	1.10	170.73	83.2	116.3	83.2	116.3			
10	12	14338	1.30	146.63	90.7	118.2	90.7	118.2			
12	14	12171	1.50	124.47	96.2	120.0	96.2	120.0			
14	16	10527	1.75	107.66	99.6	121.4	99.6	121.4			
15	19	9286	1.95	94.97	101.7	122.4	101.7	122.4			
18	22	7975	2.30	81.56	103.7	123.5	103.7	123.5			
22	26	6635	2.75	67.86	105.4	124.6	105.4	124.6			
8.8	11	16205	0.85	165.73	**	**	**	**	FH123-22P-160L-04F	547	338
10	12	13955	0.95	142.72	67.1	84.1	67.1	84.1			
12	14	12190	1.10	124.67	73.0	85.8	73.0	85.8			
14	16	10530	1.25	107.69	77.5	87.4	77.5	87.4			
16	20	8873	1.50	90.74	81.1	88.9	81.1	88.9			
19	23	7641	1.75	78.14	83.3	90.1	83.3	90.1			
20	24	7165	1.85	73.28	84.0	90.6	84.0	90.6			
21	26	6675	1.95	68.26	84.8	91.1	84.8	91.1			
25	30	5765	2.25	58.96	85.9	91.9	85.9	91.9			
30	36	4768	2.60	48.76	87.0	92.9	87.0	92.9			
37	44	3923	2.95	40.12	87.8	93.7	87.8	93.7			
37	44	3909	1.95	39.98	87.8	93.7	87.8	93.7	FH122-22P-160L-04F	506	338
43	52	3367	3.00	34.43	88.2	94.3	88.2	94.3			
76	93	1875	1.95	19.18	79.2	95.4	79.2	95.4			
89	107	1615	3.00	16.52	75.2	95.7	75.2	95.7			
14	16	10587	0.80	108.27	**	**	**	**	FH103-22P-160L-04F	407	334
16	19	9190	0.90	93.98	39.2	58.9	39.2	58.9			
18	21	8145	1.00	83.30	45.1	60.1	45.1	60.1			
21	26	6795	1.20	69.49	50.8	61.6	50.8	61.6			
22	26	6609	1.25	67.59	51.5	61.8	51.5	61.8			
24	30	5869	1.40	60.02	53.8	62.6	53.8	62.6			
29	35	4962	1.65	50.75	56.3	63.6	56.3	63.6			
35	43	4049	2.00	41.41	58.2	64.7	58.2	64.7			
44	53	3285	2.40	33.60	59.5	65.5	59.5	65.5			
34	42	4179	1.55	42.74	58.0	64.5	58.0	64.5	FH102-22P-160L-04F	381	334
39	48	3643	1.95	37.26	58.9	65.1	58.9	65.1			
46	55	3139	2.55	32.10	59.7	65.7	59.7	65.7			
53	64	2703	3.00	27.64	60.3	66.2	60.3	66.2			
66	80	2165	1.55	22.14	57.2	66.5	57.2	66.5			
76	92	1887	1.95	19.30	54.4	66.8	54.4	66.8			
88	107	1626	3.00	16.63	51.6	67.2	51.6	67.2			
25	31	5670	0.80	57.99	**	**	**	**	FH093-22P-160L-04F	313	330
27	33	5269	0.90	53.89	21.9	36.8	21.9	36.8			
29	35	4892	0.95	50.03	25.2	38.5	25.2	38.5			
35	42	4104	1.10	41.97	30.3	39.6	30.3	39.6			
43	52	3336	1.30	34.12	33.9	40.6	33.9	40.6			
55	67	2609	1.50	26.68	36.3	41.5	36.3	41.5			
43	52	3337	1.35	34.13	33.9	40.6	33.9	40.6	FH092-22P-160L-04F	299	330
49	60	2897	1.60	29.63	35.5	41.2	35.5	41.2			
57	69	2503	1.80	25.60	36.6	41.7	36.6	41.7			
67	81	2142	2.15	21.91	37.5	42.2	37.5	42.2			
77	94	1850	2.45	18.92	38.2	42.5	38.2	42.5			
87	106	1642	1.65	16.79	38.5	42.5	38.5	42.5			
92	111	1565	2.90	16.00	38.7	42.9	38.7	42.9			
101	122	1425	1.90	14.57	38.9	42.9	38.9	42.9			
116	141	1231	2.20	12.59	38.3	43.2	38.3	43.2			
136	165	1054	2.55	10.78	36.1	43.4	36.1	43.4			
157	191	910	2.95	9.31	34.3	43.6	34.3	43.6			
50	60	2887	0.80	29.53	**	**	**	**	FH083-22P-160L-04F	259	326

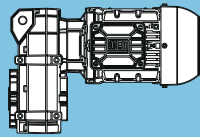
F

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** ... on request

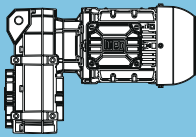
P_N = 15 kW

IE3

50 Hz 15 kW n ₅₀ min ⁻¹	60 Hz 18 kW n ₆₀ min ⁻¹	M ₂ Nm	f _B	i	at 50 Hz					m kg	Dimension sheet see page
					Output shaft		Hollow shaft				
					F _{rN} kN	F _{aN} kN	F _{rN} kN	F _{aN} kN			
49	59	2933	1.05	30.00	19.9	35.3	19.9	8.0	FH082-22P-160L-04F	250	326
56	68	2537	1.20	25.95	22.7	41.1	21.4	8.6			
66	80	2159	1.40	22.08	24.7	41.7	19.5	9.2			
78	94	1837	1.65	18.79	26.1	42.2	17.9	9.7			
90	110	1585	1.90	16.21	27.0	42.6	16.5	10.1			
103	125	1387	1.30	14.18	27.6	42.6	16.0	10.1			
108	131	1330	2.30	13.6	27.8	43.0	15.1	10.5			
119	145	1200	1.50	12.27	28.1	42.9	14.8	10.4			
132	160	1081	2.80	11.06	28.3	43.3	13.6	10.8			
140	170	1021	1.75	10.44	28.5	43.2	13.6	10.7			
165	200	868	2.05	8.88	28.7	43.5	12.6	11.0			
191	232	749	2.40	7.66	28.9	43.7	11.7	11.2			
228	276	629	2.85	6.43	29.1	43.9	10.8	11.4			
78	94	1847	0.85	18.89	**	**	**	**	FH072-22P-160L-04F	210	324
91	110	1572	1.00	16.08	15.0	15.8	10.3	4.5			
109	132	1319	1.15	13.49	16.8	16.3	10.4	5.1			
129	156	1111	1.40	11.36	17.9	16.7	10.4	5.5			
144	175	992	1.15	10.14	18.5	16.1	9.8	4.8			
157	190	911	1.65	9.32	18.8	17.1	9.8	5.9			
169	204	850	1.35	8.69	19.0	16.5	9.7	5.3			
198	240	724	1.55	7.40	19.4	16.9	9.0	5.6			
236	286	607	1.85	6.21	19.7	17.2	8.2	6.0			
280	339	511	2.20	5.23	19.8	17.5	7.5	6.2			
341	414	419	2.60	4.29	18.4	17.8	6.8	6.5			
137	166	1046	0.80	10.70	**	**	**	**	FH062-22P-160L-04F	187	322
149	181	959	0.90	9.81	6.5	9.9	6.5	2.2			
231	280	621	0.95	6.35	10.4	12.5	6.5	2.6			
273	331	524	1.10	5.36	11.0	12.9	6.6	3.0			
332	402	431	1.35	4.41	11.5	13.3	6.5	3.4			

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** ... on request

P _N = 18.5 kW										IE3	
50 Hz		60 Hz		at 50 Hz						m kg	Dimension sheet see page
18.5 kW		22 kW		Output shaft		Hollow shaft					
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	f _B	i	F _{rN} kN	F _{aN} kN	F _{rN} kN	F _{aN} kN			
7.6	9.2	23262	0.80	193.55	**	**	**	**	FH153-22P-180M-04E	791	342
8.6	10	20520	0.90	170.73	66.2	113.2	66.2	113.2			
10	12	17623	1.05	146.63	79.7	115.5	79.7	115.5			
12	14	14960	1.25	124.47	88.9	117.7	88.9	117.7			
14	16	12939	1.40	107.66	94.3	119.4	94.3	119.4			
15	18	12167	1.50	101.23	96.2	120.0	96.2	120.0			
17	21	10146	1.80	84.42	100.3	121.7	100.3	121.7			
18	22	9802	1.85	81.56	100.9	122.0	100.9	122.0			
20	24	8721	2.10	72.56	102.6	122.8	102.6	122.8			
22	26	8156	2.25	67.86	103.4	123.3	103.4	123.3			
26	32	6768	2.70	56.31	105.2	124.4	105.2	124.4			
10	12	17153	0.80	142.72	**	**	**	**	FH123-22P-180M-04E	561	338
12	14	14984	0.90	124.67	63.0	83.1	63.0	83.1			
14	16	12943	1.05	107.69	70.6	85.0	70.6	85.0			
16	20	10906	1.20	90.74	76.5	87.0	76.5	87.0			
17	20	10704	1.25	89.06	77.0	87.2	77.0	87.2			
19	23	9391	1.40	78.14	80.0	88.5	80.0	88.5			
20	24	8807	1.50	73.28	81.2	89.0	81.2	89.0			
22	26	8204	1.60	68.26	82.3	89.6	82.3	89.6			
24	29	7240	1.80	60.24	83.9	90.5	83.9	90.5			
25	30	7086	1.85	58.96	84.2	90.7	84.2	90.7			
29	35	6146	2.10	51.14	85.5	91.6	85.5	91.6			
30	36	5860	2.10	48.76	85.8	91.9	85.8	91.9			
37	44	4822	2.40	40.12	87.0	92.9	87.0	92.9			
45	54	3964	2.75	32.98	87.7	93.7	87.7	93.7			
37	44	4805	1.60	39.98	87.0	92.9	87.0	92.9	FH122-22P-180M-04E	520	338
43	52	4138	2.45	34.43	87.6	93.5	87.6	93.5			
77	93	2305	1.60	19.18	79.9	94.9	79.9	94.9			
89	107	1985	2.45	16.52	76.0	95.3	76.0	95.3			
18	21	10012	0.80	83.30	**	**	**	**	FH103-22P-180M-04E	421	334
21	26	8352	1.00	69.49	44.0	59.9	44.0	59.9			
22	26	8123	1.00	67.59	45.2	60.1	45.2	60.1			
24	30	7214	1.15	60.02	49.2	61.1	49.2	61.1			
27	33	6485	1.25	53.96	51.9	62.0	51.9	62.0			
29	35	6099	1.35	50.75	53.1	62.4	53.1	62.4			
35	43	4977	1.65	41.41	56.2	63.6	56.2	63.6			
44	53	4038	2.00	33.60	58.2	64.7	58.2	64.7			
55	66	3225	2.30	26.83	59.6	65.6	59.6	65.6			
39	48	4478	1.60	37.26	57.4	64.2	57.4	64.2	FH102-22P-180M-04E	395	334
46	55	3858	2.10	32.10	58.6	64.9	58.6	64.9			
53	64	3322	2.45	27.64	59.5	65.5	59.5	65.5			
61	74	2901	2.80	24.14	59.5	65.9	59.5	65.9			
76	92	2320	1.60	19.30	55.4	66.3	55.4	66.3			
88	107	1999	2.45	16.63	52.5	66.7	52.5	66.7			
35	42	5044	0.90	41.97	23.9	38.3	23.9	38.3	FH093-22P-180M-04E	327	330
43	52	4101	1.05	34.12	30.3	39.6	30.3	39.6			
55	67	3207	1.25	26.68	34.4	40.8	34.4	40.8			
50	60	3561	1.30	29.63	32.9	40.3	32.9	40.3	FH092-22P-180M-04E	313	330
57	69	3077	1.50	25.60	34.8	40.9	34.8	40.9			
67	81	2633	1.75	21.91	36.3	41.5	36.3	41.5			
78	94	2274	2.00	18.92	37.2	42.0	37.2	42.0			
92	111	1923	2.35	16.00	38.0	42.5	38.0	42.5			
101	122	1751	1.55	14.57	38.3	42.4	38.3	42.4			
113	136	1570	2.90	13.06	38.7	42.9	38.7	42.9			
117	141	1513	1.80	12.59	38.8	42.7	38.8	42.7			
136	165	1296	2.10	10.78	37.0	43.1	37.0	43.1			
158	191	1119	2.40	9.31	34.9	43.3	34.9	43.3			
187	226	946	2.85	7.87	32.8	43.6	32.8	43.6			

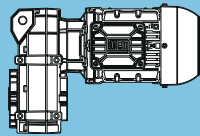
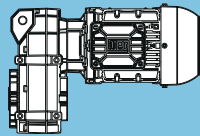
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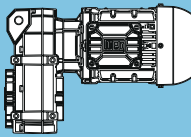
$P_N = 18.5 \text{ kW}$

IE3

50 Hz 18.5 kW	60 Hz 22 kW	M_2 Nm	f_b	i	at 50 Hz					m kg	Dimension sheet see page
					Output shaft		Hollow shaft				
					F_{rN} kN	F_{aIN} kN	F_{rN} kN	F_{aIN} kN			
57	68	3119	1.00	25.95	18.3	31.8	18.3	7.7	 FH082-22P-180M-04E	264	326
67	80	2654	1.15	22.08	22.0	39.9	19.3	8.4			
78	94	2258	1.35	18.79	24.3	41.5	19.1	9.0			
91	110	1948	1.55	16.21	25.7	42.0	17.6	9.5			
108	131	1635	1.85	13.60	26.8	42.5	16.0	10.0			
120	145	1475	1.20	12.27	27.3	42.4	15.7	9.9			
133	160	1329	2.30	11.06	27.8	43.0	14.3	10.5			
141	170	1255	1.45	10.44	27.9	42.8	14.4	10.3			
166	200	1067	1.70	8.88	28.4	43.1	13.2	10.6			
170	205	1040	2.90	8.65	28.4	43.4	12.6	10.9			
192	232	921	1.95	7.66	28.6	43.4	12.3	10.9			
229	276	773	2.30	6.43	28.9	43.6	11.2	11.1			
281	339	629	2.85	5.23	27.8	43.9	10.2	11.4			

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P _N = 22 kW										IE3	
50 Hz		60 Hz		at 50 Hz						m kg	Dimension sheet see page
22 kW		26 kW		Output shaft		Hollow shaft					
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	f _B	i	F _{rN} kN	F _{aN} kN	F _{rN} kN	F _{aN} kN			
10	12	20957	0.90	146.63	63.7	110.2	63.7	110.2	FH153-22P-180L-04F	812	342
12	14	17790	1.05	124.47	79.0	115.4	79.0	115.4			
14	16	15387	1.20	107.66	87.5	117.4	87.5	117.4			
15	18	14468	1.25	101.23	90.3	118.1	90.3	118.1			
17	21	12066	1.50	84.42	96.4	120.1	96.4	120.1			
18	22	11657	1.55	81.56	97.3	120.4	97.3	120.4			
20	24	10371	1.75	72.56	99.8	121.5	99.8	121.5			
22	26	9699	1.90	67.86	101.0	122.0	101.0	122.0			
26	32	8048	2.25	56.31	103.6	123.4	103.6	123.4			
31	38	6712	2.70	46.96	105.3	124.5	105.3	124.5			
40	49	5222	3.00	36.54	106.8	125.7	106.8	125.7	FH152-22P-180L-04F	774	342
85	102	2480	3.00	17.35	108.5	127.7	108.5	127.7			
14	16	15392	0.85	107.69	**	**	**	**	FH123-22P-180L-04F	582	338
16	20	12969	1.05	90.74	70.6	85.0	70.6	85.0			
17	20	12729	1.05	89.06	71.3	85.2	71.3	85.2			
19	23	11168	1.20	78.14	75.9	86.7	75.9	86.7			
20	24	10474	1.25	73.28	77.6	87.4	77.6	87.4			
22	26	9756	1.35	68.26	79.3	88.1	79.3	88.1			
24	29	8610	1.55	60.24	81.6	89.2	81.6	89.2			
25	30	8427	1.55	58.96	81.9	89.4	81.9	89.4			
29	35	7309	1.75	51.14	83.8	90.5	83.8	90.5			
30	36	6969	1.80	48.76	84.3	90.8	84.3	90.8			
37	44	5734	2.05	40.12	86.0	92.0	86.0	92.0	FH122-22P-180L-04F	541	338
45	54	4714	2.35	32.98	87.1	93.0	87.1	93.0			
37	44	5714	1.35	39.98	86.0	92.0	86.0	92.0			
43	52	4921	2.05	34.43	86.9	92.8	86.9	92.8			
49	60	4256	2.95	29.78	87.5	93.4	87.5	93.4			
77	93	2741	1.35	19.18	80.9	94.4	80.9	94.4			
89	107	2361	2.05	16.52	76.9	94.9	76.9	94.9			
103	124	2042	2.95	14.29	73.1	95.2	73.1	95.2			
21	26	9932	0.85	69.49	**	**	**	**	FH103-22P-180L-04F	442	334
22	26	9660	0.85	67.59	**	**	**	**			
24	30	8578	0.95	60.02	42.8	59.6	42.8	59.6			
27	33	7712	1.05	53.96	47.1	60.6	47.1	60.6			
29	35	7253	1.15	50.75	49.0	61.1	49.0	61.1			
35	43	5919	1.40	41.41	53.7	62.6	53.7	62.6			
44	53	4802	1.65	33.60	56.6	63.8	56.6	63.8			
55	66	3835	1.95	26.83	58.6	64.9	58.6	64.9			
39	48	5325	1.35	37.26	55.4	63.2	55.4	63.2	FH102-22P-180L-04F	416	334
46	55	4588	1.75	32.10	57.1	64.1	57.1	64.1			
53	64	3950	2.05	27.64	58.4	64.8	58.4	64.8			
61	74	3450	2.35	24.14	59.3	65.3	59.3	65.3			
70	85	2981	2.70	20.86	57.5	65.8	57.5	65.8			
76	92	2758	1.35	19.30	56.5	65.7	56.5	65.7			
88	107	2377	2.05	16.63	53.4	66.2	53.4	66.2			
103	124	2047	2.65	14.32	50.4	66.6	50.4	66.6			
43	52	4877	0.90	34.12	25.3	38.5	25.3	38.5	FH093-22P-180L-04F	348	330
55	67	3813	1.05	26.68	31.8	39.9	31.8	39.9			
50	60	4235	1.10	29.63	29.6	39.4	29.6	39.4	FH092-22P-180L-04F	334	330
57	69	3659	1.25	25.60	32.5	40.2	32.5	40.2			
67	81	3131	1.45	21.91	34.6	40.9	34.6	40.9			
78	94	2704	1.70	18.92	36.1	41.4	36.1	41.4			
92	111	2287	2.00	16.00	37.2	42.0	37.2	42.0			
101	122	2082	1.30	14.57	37.7	41.9	37.7	41.9			
113	136	1867	2.45	13.06	38.1	42.5	38.1	42.5			
117	141	1799	1.50	12.59	38.3	42.3	38.3	42.3			
136	165	1541	1.75	10.78	37.8	42.7	37.8	42.7			
139	168	1514	3.00	10.59	36.9	43.0	36.9	43.0			
158	191	1331	2.05	9.31	35.6	43.0	35.6	43.0			
187	226	1125	2.40	7.87	33.4	43.3	33.4	43.3			
229	276	918	2.95	6.42	31.0	43.6	31.0	43.6			

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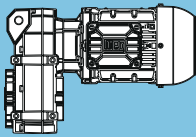
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** ... on request

P _N = 22 kW										IE3	
50 Hz	60 Hz				at 50 Hz					m kg	Dimension sheet see page
22 kW	26 kW	M ₂ Nm	f _B	i	Output shaft		Hollow shaft				
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹				F _{rN} kN	F _{aN} kN	F _{rN} kN	F _{aN} kN			
57	68	3709	0.85	25.95	**	**	**	**	FH082-22P-180L-04F	285	326
67	80	3156	1.00	22.08	18.0	31.1	17.6	7.6			
78	94	2686	1.15	18.79	21.7	39.3	17.7	8.4			
91	110	2317	1.30	16.21	23.9	41.4	17.7	8.9			
108	131	1944	1.55	13.60	25.7	42.0	16.9	9.5			
120	145	1754	1.05	12.27	26.4	41.9	16.5	9.4			
133	160	1581	1.90	11.06	27.0	42.6	15.1	10.1			
141	170	1492	1.20	10.44	27.3	42.4	15.2	9.9			
166	200	1269	1.40	8.88	27.9	42.8	13.9	10.3			
170	205	1236	2.45	8.65	28.0	43.1	13.2	10.6			
192	232	1095	1.65	7.66	28.3	43.1	12.9	10.6			
229	276	919	1.95	6.43	28.6	43.4	11.8	10.9			
281	339	747	2.40	5.23	28.2	43.7	10.6	11.2			
359	434	585	2.70	4.09	25.8	44.0	9.4	11.5			

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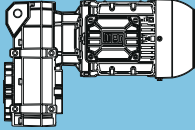
** ... on request

P _N = 30 kW										IE3	
50 Hz		60 Hz		i	at 50 Hz					m kg	Dimension sheet see page
30 kW		36 kW			Output shaft		Hollow shaft				
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	f _B		F _{rN} kN	F _{aN} kN	F _{rN} kN	F _{aN} kN			
12	15	23617	0.80	122.00	**	**	**	**	FH153-22P-200L-04E	870	342
14	17	20841	0.90	107.66	64.4	111.7	64.4	111.7			
15	18	19596	0.95	101.23	71.0	113.9	71.0	113.9			
16	19	18384	1.00	94.97	76.5	114.9	76.5	114.9			
18	21	16342	1.15	84.42	84.4	116.6	84.4	116.6			
20	25	14046	1.30	72.56	91.5	118.5	91.5	118.5			
22	26	13136	1.40	67.86	93.9	119.2	93.9	119.2			
24	28	12155	1.50	62.79	96.2	120.0	96.2	120.0			
26	32	10901	1.70	56.31	98.8	121.1	98.8	121.1			
32	38	9091	2.00	46.96	102.0	122.5	102.0	122.5			
37	44	7813	2.35	40.36	103.9	123.6	103.9	123.6			
42	51	6762	2.70	34.93	105.2	124.5	105.2	124.5			
41	49	7073	2.20	36.54	104.9	124.2	104.9	124.2	FH152-22P-200L-04E	832	342
85	103	3359	2.20	17.35	108.1	126.9	108.1	126.9			
17	20	17240	0.80	89.06	**	**	**	**	FH123-22P-200L-04E	640	338
19	23	15126	0.90	78.14	62.4	82.9	62.4	82.9			
20	24	14186	0.95	73.28	66.3	83.8	66.3	83.8			
22	26	13214	1.00	68.26	69.7	84.8	69.7	84.8			
25	30	11661	1.15	60.24	74.5	86.3	74.5	86.3			
29	35	9900	1.30	51.14	78.9	88.0	78.9	88.0			
30	37	9439	1.30	48.76	79.9	88.4	79.9	88.4			
34	41	8450	1.45	43.65	81.9	89.4	81.9	89.4			
37	44	7766	1.50	40.12	83.1	90.0	83.1	90.0			
45	54	6384	1.75	32.98	85.2	91.3	85.2	91.3			
53	64	5420	1.95	28.00	86.3	92.3	86.3	92.3			
62	74	4627	2.15	23.90	87.2	93.0	87.2	93.0			
50	60	5765	2.20	29.78	85.9	91.9	85.9	91.9	FH122-22P-200L-04E	599	338
56	68	5085	2.60	26.27	86.7	92.6	86.7	92.6			
66	79	4367	3.00	22.56	86.8	93.3	86.8	93.3			
104	125	2766	2.20	14.29	74.5	94.4	74.5	94.4			
117	141	2441	3.00	12.61	71.4	94.8	71.4	94.8			
27	33	10446	0.80	53.96	**	**	**	**	FH103-22P-200L-04E	500	334
29	35	9824	0.85	50.75	**	**	**	**			
36	43	8016	1.00	41.41	45.7	60.2	45.7	60.2			
44	53	6504	1.25	33.60	51.8	61.9	51.8	61.9			
55	66	5194	1.45	26.83	55.7	63.4	55.7	63.4			
54	64	5351	1.50	27.64	55.3	63.2	55.3	63.2	FH102-22P-200L-04E	474	334
61	74	4673	1.75	24.14	56.9	64.0	56.9	64.0			
71	85	4038	2.00	20.86	58.2	64.7	58.2	64.7			
86	103	3339	2.40	17.25	55.3	65.5	55.3	65.5			
103	124	2772	1.95	14.32	52.2	65.7	52.2	65.7			
104	125	2747	2.95	14.19	51.3	66.1	51.3	66.1			
118	142	2422	2.25	12.51	49.5	66.2	49.5	66.2			
137	165	2091	2.60	10.80	46.8	66.6	46.8	66.6			
68	81	4241	1.10	21.91	29.5	39.4	29.5	39.4	FH092-22P-200L-04E	392	330
78	94	3663	1.25	18.92	32.5	40.1	32.5	40.1			
93	111	3097	1.50	16.00	34.8	40.9	34.8	40.9			
113	136	2528	1.80	13.06	36.6	41.7	36.6	41.7			
137	165	2087	1.30	10.78	37.7	41.9	37.7	41.9			
140	168	2050	2.20	10.59	37.7	42.3	37.7	42.3			
159	191	1802	1.50	9.31	37.2	42.3	37.2	42.3			
175	210	1638	2.45	8.46	35.1	42.8	35.1	42.8			
188	226	1523	1.80	7.87	34.7	42.7	34.7	42.7			
231	277	1243	2.20	6.42	32.0	43.1	32.0	43.1			
284	342	1009	2.60	5.21	29.5	43.5	29.5	43.5			
356	428	805	2.85	4.16	27.1	43.8	27.1	43.8			

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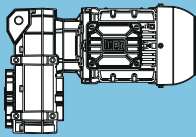
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** ... on request

P _N = 37 kW										IE3	
50 Hz		60 Hz		at 50 Hz						m kg	Dimension sheet see page
37 kW		44 kW		Output shaft		Hollow shaft					
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	f _b	i	F _{rN} kN	F _{aN} kN	F _{rN} kN	F _{aN} kN			
16	19	22674	0.80	94.97	**	**	**	**			
18	21	20155	0.90	84.42	68.1	113.5	68.1	113.5			
20	25	17324	1.05	72.56	80.8	115.8	80.8	115.8			
22	26	16202	1.15	67.86	84.9	116.7	84.9	116.7			
24	28	14991	1.25	62.79	88.8	117.7	88.8	117.7			
26	32	13444	1.35	56.31	93.1	119.0	93.1	119.0			
32	38	11212	1.65	46.96	98.2	120.8	98.2	120.8			
37	44	9636	1.90	40.36	101.1	122.1	101.1	122.1			
42	51	8340	2.20	34.93	103.2	123.2	103.2	123.2			
41	49	8724	1.80	36.54	102.6	122.8	102.6	122.8			
53	64	6649	2.75	27.85	105.4	124.5	105.4	124.5			
85	103	4142	1.80	17.35	107.6	126.1	107.6	126.1			
22	26	16297	0.80	68.26	**	**	**	**			
25	30	14382	0.95	60.24	65.5	83.6	65.5	83.6			
29	35	12210	1.05	51.14	72.9	85.7	72.9	85.7			
30	37	11641	1.05	48.76	74.6	86.3	74.6	86.3			
34	41	10421	1.20	43.65	77.7	87.5	77.7	87.5			
37	44	9579	1.25	40.12	79.6	88.3	79.6	88.3			
45	54	7874	1.40	32.98	82.9	89.9	82.9	89.9			
53	64	6685	1.55	28.00	84.7	91.1	84.7	91.1			
62	75	5706	1.75	23.90	86.0	92.0	86.0	92.0			
50	60	7110	1.80	29.78	84.1	90.6	84.1	90.6			
56	68	6272	2.10	26.27	85.3	91.5	85.3	91.5			
66	79	5386	2.40	22.56	86.4	92.3	86.4	92.3			
79	95	4481	2.80	18.77	82.9	93.2	82.9	93.2			
104	125	3412	1.80	14.29	76.0	93.7	76.0	93.7			
117	141	3011	2.45	12.61	72.7	94.1	72.7	94.1			
137	165	2586	2.80	10.83	68.7	94.6	68.7	94.6			
36	43	9887	0.85	41.41	**	**	**	**			
44	53	8022	1.00	33.60	45.7	60.2	45.7	60.2			
55	66	6406	1.15	26.83	52.1	62.0	52.1	62.0			
54	64	6599	1.25	27.64	51.5	61.8	51.5	61.8			
61	74	5763	1.40	24.14	54.2	62.8	54.2	62.8			
71	85	4980	1.65	20.86	56.2	63.6	56.2	63.6			
86	103	4118	1.95	17.25	57.0	64.6	57.0	64.6			
103	124	3419	1.60	14.32	53.8	64.9	53.8	64.9			
104	126	3388	2.40	14.19	52.7	65.4	52.7	65.4			
118	142	2987	1.85	12.51	50.9	65.5	50.9	65.5			
127	153	2786	2.85	11.67	48.8	66.1	48.8	66.1			
137	165	2579	2.15	10.80	48.0	66.0	48.0	66.0			
149	180	2366	3.25	9.91	45.8	66.5	45.8	66.5			
166	199	2134	2.55	8.94	44.6	66.5	44.6	66.5			
175	211	2017	3.65	8.45	43.2	66.9	43.2	66.9			
201	242	1755	3.10	7.35	41.4	67.0	41.4	67.0			
245	295	1442	3.80	6.04	38.5	67.4	38.5	67.4			
288	347	1225	4.45	5.13	36.3	67.6	36.3	67.6			
338	407	1046	5.20	4.38	34.3	67.3	34.3	67.3			

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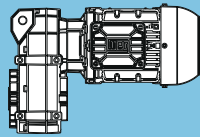
** ... on request

P _N = 45 kW										IE3		
50 Hz		60 Hz		f _B	i	at 50 Hz					m kg	Dimension sheet see page
45 kW		55 kW				Output shaft		Hollow shaft				
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm				F _{rN} kN	F _{aN} kN	F _{rN} kN	F _{aN} kN			
18	22	23683	0.80	81.56	**	**	**	**	FH153-22P-225S/M-04F	1034	342	
20	25	21069	0.90	72.56	63.0	108.7	63.0	108.7				
22	26	19705	0.95	67.86	70.4	113.8	70.4	113.8				
24	28	18232	1.00	62.79	77.2	115.0	77.2	115.0				
26	32	16351	1.15	56.31	84.4	116.6	84.4	116.6				
32	38	13636	1.35	46.96	92.6	118.8	92.6	118.8				
37	44	11719	1.55	40.36	97.1	120.4	97.1	120.4				
42	51	10143	1.80	34.93	100.3	121.7	100.3	121.7				
41	49	10610	1.50	36.54	99.4	121.3	99.4	121.3	FH152-22P-225S/M-04F	996	342	
53	64	8087	2.25	27.85	103.5	123.4	103.5	123.4				
63	76	6789	2.70	23.38	105.2	124.4	105.2	124.4				
85	103	5038	1.50	17.35	106.9	125.3	106.9	125.3				
112	135	3839	2.60	13.22	107.8	126.4	107.8	126.4				
25	30	17120	0.80	58.96	**	**	**	**	FH123-22P-225S/M-04F	804	338	
29	35	14850	0.85	51.14	**	**	**	**				
30	37	14159	0.90	48.76	66.4	83.9	66.4	83.9				
34	41	12675	0.95	43.65	71.5	85.3	71.5	85.3				
37	44	11650	1.00	40.12	74.6	86.3	74.6	86.3				
45	54	9576	1.15	32.98	79.6	88.3	79.6	88.3				
53	64	8130	1.30	28.00	82.5	89.7	82.5	89.7				
62	75	6940	1.45	23.90	84.4	90.8	84.4	90.8				
50	60	8647	1.50	29.78	81.5	89.2	81.5	89.2	FH122-22P-225S/M-04F	763	338	
56	68	7628	1.75	26.27	83.3	90.1	83.3	90.1				
66	79	6551	2.00	22.56	84.9	91.2	84.9	91.2				
79	95	5450	2.30	18.77	84.8	92.2	84.8	92.2				
95	114	4524	2.65	15.58	79.0	93.1	79.0	93.1				
104	125	4149	1.50	14.29	77.7	92.9	77.7	92.9				
117	141	3662	2.00	12.61	74.2	93.4	74.2	93.4				
137	165	3145	2.30	10.83	70.0	94.0	70.0	94.0				
44	53	9756	0.85	33.60	**	**	**	**	FH103-22P-225S/M-04F	664	334	
55	66	7791	0.95	26.83	46.7	60.5	46.7	60.5				
54	64	8026	1.00	27.64	45.6	60.2	45.6	60.2	FH102-22P-225S/M-04F	638	334	
61	74	7010	1.15	24.14	50.0	61.4	50.0	61.4				
71	85	6057	1.35	20.86	53.3	62.4	53.3	62.4				
86	103	5009	1.60	17.25	56.2	63.6	56.2	63.6				
103	124	4158	1.30	14.32	55.6	64.0	55.6	64.0				
104	126	4120	1.95	14.19	54.3	64.6	54.3	64.6				
118	142	3633	1.50	12.51	52.5	64.7	52.5	64.7				
127	153	3389	2.35	11.67	50.1	65.4	50.1	65.4				
137	165	3136	1.75	10.80	49.4	65.3	49.4	65.3				
149	180	2878	2.65	9.91	47.0	66.0	47.0	66.0				
166	199	2596	2.10	8.94	45.7	66.0	45.7	66.0				
175	211	2454	3.00	8.45	44.1	66.4	44.1	66.4				
201	242	2134	2.55	7.35	42.4	66.5	42.4	66.5				
245	295	1754	3.10	6.04	39.3	67.0	39.3	67.0				
288	347	1490	3.65	5.13	37.0	67.3	37.0	67.3				
338	407	1272	4.30	4.38	34.9	67.6	34.9	67.6				

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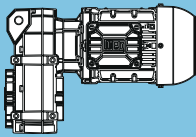
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** ... on request

P _N = 55 kW										IE3	
50 Hz	60 Hz				at 50 Hz					m kg	Dimension sheet see page
55 kW	66 kW	M ₂ Nm	f _b	i	Output shaft		Hollow shaft				
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹				F _{rN} kN	F _{aN} kN	F _{rN} kN	F _{aN} kN			
24	28	22284	0.85	62.79	**	**	**	**	FH153-22P-225S/M-04G	1082	342
26	32	19984	0.95	56.31	69.0	113.6	69.0	113.6			
32	38	16666	1.10	46.96	83.3	116.3	83.3	116.3			
37	44	14324	1.30	40.36	90.7	118.2	90.7	118.2			
42	51	12397	1.50	34.93	95.6	119.8	95.6	119.8			
53	64	9884	1.85	27.85	100.7	121.9	100.7	121.9	FH152-22P-225S/M-04G	1044	342
63	76	8298	2.20	23.38	103.2	123.2	103.2	123.2			
77	93	6828	2.65	19.24	105.1	124.4	105.1	124.4			
112	135	4692	2.10	13.22	107.2	125.6	107.2	125.6			
133	161	3939	2.85	11.10	106.4	126.3	106.4	126.3			
34	41	15491	0.80	43.65	**	**	**	**	FH123-22P-225S/M-04G	852	338
37	44	14239	0.85	40.12	**	**	**	**			
45	54	11705	0.95	32.98	74.4	86.2	74.4	86.2			
53	64	9937	1.05	28.00	78.8	87.9	78.8	87.9			
62	75	8482	1.20	23.90	81.8	89.3	81.8	89.3			
56	68	9323	1.40	26.27	80.2	88.5	80.2	88.5	FH122-22P-225S/M-04G	811	338
66	79	8007	1.65	22.56	82.7	89.8	82.7	89.8			
79	95	6661	1.90	18.77	84.8	91.1	84.8	91.1			
95	115	5529	2.15	15.58	81.0	92.2	81.0	92.2			
114	137	4610	2.50	12.99	75.4	93.1	75.4	93.1			
117	142	4475	1.65	12.61	76.1	92.5	76.1	92.5			
132	160	3964	2.80	11.17	71.3	93.7	71.3	93.7			
137	165	3844	1.90	10.83	71.6	93.2	71.6	93.2			
153	185	3428	3.10	9.66	67.5	94.2	67.5	94.2			
164	198	3198	2.60	9.01	66.8	93.9	66.8	93.9			
198	239	2651	3.10	7.47	62.3	94.5	62.3	94.5			
238	287	2211	3.70	6.23	58.2	95.0	58.2	95.0			
276	333	1902	4.30	5.36	55.2	95.4	55.2	95.4			
319	385	1647	4.65	4.64	52.5	95.7	52.5	95.7			
61	74	8567	0.95	24.14	42.9	59.6	42.9	59.6			
71	86	7403	1.10	20.86	48.4	60.9	48.4	60.9			
86	103	6122	1.35	17.25	53.1	62.4	53.1	62.4			
104	126	5036	1.60	14.19	56.1	63.6	56.1	63.6			
118	143	4440	1.25	12.51	54.5	63.7	54.5	63.7			
127	153	4142	1.95	11.67	51.8	64.6	51.8	64.6			
137	165	3833	1.45	10.8	51.1	64.4	51.1	64.4			
149	180	3517	2.20	9.91	48.4	65.3	48.4	65.3			
166	200	3173	1.75	8.94	47.1	65.2	47.1	65.2			
175	211	2999	2.50	8.45	45.3	65.8	45.3	65.8			
201	243	2609	2.10	7.35	43.5	65.9	43.5	65.9			
245	296	2144	2.55	6.04	40.3	66.5	40.3	66.5			
288	348	1821	3.00	5.13	37.8	66.9	37.8	66.9			

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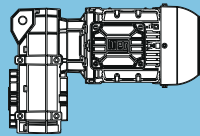
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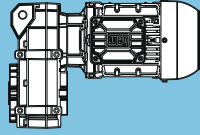
P _N = 75 kW										IE4	
50 Hz		60 Hz		i	at 50 Hz					m kg	Dimension sheet see page
75 kW		90 kW			Output shaft		Hollow shaft				
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	f _B		F _{rN} kN	F _{aN} kN	F _{rN} kN	F _{aN} kN			
54	64	13388	1.35	27.85	93.2	119.0	93.2	119.0	FH152-22S-280S/M-04E	1148	342
64	77	11239	1.65	23.38	98.2	120.8	98.2	120.8			
77	93	9249	1.95	19.24	101.8	122.4	101.8	122.4			
91	109	7869	2.30	16.37	103.8	123.5	103.8	123.5			
105	127	6797	2.65	14.14	105.2	124.4	105.2	124.4			
113	135	6355	1.55	13.22	105.7	124.1	105.7	124.1			
134	161	5336	2.10	11.10	106.7	125.0	106.7	125.0			
163	196	4394	2.50	9.14	101.4	125.9	101.4	125.9			
192	231	3735	3.00	7.77	95.7	126.5	95.7	126.5			
57	68	12628	1.05	26.27	71.7	85.3	71.7	85.3			
66	79	10845	1.20	22.56	76.7	87.0	76.7	87.0			
79	95	9023	1.40	18.77	80.8	88.8	80.8	88.8			
96	115	7489	1.60	15.58	83.5	90.3	83.5	90.3			
115	138	6244	1.85	12.99	78.5	91.5	78.5	91.5			
118	142	6062	1.25	12.61	79.5	90.7	79.5	90.7			
133	160	5369	2.05	11.17	73.9	92.3	73.9	92.3			
138	165	5206	1.40	10.83	74.5	91.7	74.5	91.7			
154	185	4644	2.30	9.66	69.8	93.0	69.8	93.0			
165	199	4331	1.90	9.01	69.3	92.7	69.3	92.7			
199	240	3591	2.30	7.47	64.3	93.5	64.3	93.5			
239	287	2995	2.75	6.23	60.0	94.2	60.0	94.2			
278	334	2577	3.20	5.36	56.7	94.6	56.7	94.6			
321	386	2230	3.45	4.64	53.7	95.0	53.7	95.0			
71	86	10028	0.80	20.86	**	**	**	**	FH102-22S-280S/M-04E	790	334
86	104	8292	1.00	17.25	44.3	59.9	44.3	59.9			
105	126	6821	1.20	14.19	50.7	61.6	50.7	61.6			
119	143	6014	0.95	12.51	53.4	61.7	53.4	61.7			
128	153	5610	1.45	11.67	54.6	62.9	54.6	62.9			
138	166	5192	1.05	10.8	54.3	62.7	54.3	62.7			
150	181	4764	1.60	9.91	51.0	63.9	51.0	63.9			
167	200	4298	1.30	8.94	49.8	63.8	49.8	63.8			
176	212	4062	1.85	8.45	47.6	64.6	47.6	64.6			
203	244	3533	1.55	7.35	45.7	64.8	45.7	64.8			
247	297	2903	1.90	6.04	42.0	65.6	42.0	65.6			
290	349	2466	2.20	5.13	39.3	66.1	39.3	66.1			
340	409	2105	2.60	4.38	36.9	66.6	36.9	66.6			

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Legend see page 211

** ... on request

$P_N = 90 \text{ kW}$										IE4	
50 Hz	60 Hz				at 50 Hz					m kg	Dimension sheet see page
90 kW	108 kW	M_2 Nm	f_b	i	Output shaft		Hollow shaft				
n_{50} min ⁻¹	n_{60} min ⁻¹				F_{rN} kN	F_{aN} kN	F_{rN} kN	F_{aN} kN			
53	64	16087	1.15	27.85	85.3	116.8	85.3	116.8	FH152-22S-280S/M-04F	1350	342
64	76	13505	1.35	23.38	92.9	118.9	92.9	118.9			
77	93	11113	1.65	19.24	98.4	120.9	98.4	120.9			
91	109	9456	1.95	16.37	101.5	122.2	101.5	122.2			
105	126	8168	2.25	14.14	103.4	123.3	103.4	123.3			
113	135	7636	1.30	13.22	104.2	122.9	104.2	122.9			
121	145	7111	2.55	12.31	104.8	124.2	104.8	124.2			
134	161	6412	1.75	11.10	105.6	124.0	105.6	124.0			
163	195	5279	2.10	9.14	103.2	125.1	103.2	125.1			
192	230	4488	2.50	7.77	97.2	125.8	97.2	125.8			
222	266	3876	2.85	6.71	92.2	126.4	92.2	126.4			
57	68	15174	0.90	26.27	62.2	82.9	62.2	82.9			
66	79	13031	1.00	22.56	70.4	84.9	70.4	84.9			
79	95	10842	1.15	18.77	76.7	87.1	76.7	87.1			
96	115	8999	1.35	15.58	80.8	88.8	80.8	88.8			
115	137	7503	1.55	12.99	81.0	90.3	81.0	90.3			
118	142	7284	1.05	12.61	82.3	89.4	82.3	89.4			
133	160	6452	1.70	11.17	76.1	91.3	76.1	91.3			
137	165	6256	1.20	10.83	77.1	90.5	77.1	90.5			
154	185	5580	1.90	9.66	71.6	92.1	71.6	92.1			
165	198	5204	1.60	9.01	71.3	91.7	71.3	91.7			
199	239	4315	1.90	7.47	66.0	92.7	66.0	92.7			
239	287	3599	2.30	6.23	61.3	93.5	61.3	93.5			
278	333	3096	2.65	5.36	57.8	94.0	57.8	94.0			
321	385	2680	2.90	4.64	54.7	94.5	54.7	94.5			

$P_N = 110 \text{ kW}$										IE4	
50 Hz	60 Hz				at 50 Hz					m kg	Dimension sheet see page
110 kW	132 kW	M_2 Nm	f_b	i	Output shaft		Hollow shaft				
n_{50} min ⁻¹	n_{60} min ⁻¹				F_{rN} kN	F_{aN} kN	F_{rN} kN	F_{aN} kN			
53	64	19662	0.95	27.85	70.7	113.9	70.7	113.9	FH152-22S-280S/M-04G	1350	342
64	76	16506	1.10	23.38	83.8	116.5	83.8	116.5			
77	93	13583	1.35	19.24	92.7	118.9	92.7	118.9			
91	109	11557	1.60	16.37	97.5	120.5	97.5	120.5			
105	126	9983	1.85	14.14	100.5	121.8	100.5	121.8			
113	135	9333	1.10	13.22	101.7	121.3	101.7	121.3			
121	145	8691	2.10	12.31	102.7	122.9	102.7	122.9			
134	161	7836	1.45	11.10	103.9	122.7	103.9	122.7			
163	195	6453	1.75	9.14	105.5	124.0	105.5	124.0			
192	230	5485	2.05	7.77	99.2	124.9	99.2	124.9			
222	266	4737	2.35	6.71	93.9	125.6	93.9	125.6			
255	306	4123	2.70	5.84	89.2	126.2	89.2	126.2			

Legend see page 211

Selection tables - Gear units

Structure of the selection tables

1 Type	2 i_{ges}	3 M_{2nenn} [Nm]	4 n_2 [min ⁻¹]	5 i_{exakt}	6 n_{1max} [min ⁻¹]	7 IEC motor frame size												
						63	71	80	90	100	112	132	160	180	200	225	-	280
						8 IEC adapter												
						I63	I71	I80	I90	I100	I112	I132	I160	I180	I200	I225	I250	I280
						9 NEMA adapter												
						N56	N143/145	N182	N184	N213/215	N254/256	N284/286	N324/326	N364	-	-		
F022																		
2 stages	10																	
$n_1=1400 \text{ min}^{-1}$	11																	
Maximum torque 130 Nm	12																	

1 Type	2 i_{ges}	13 SERVO adapter											15 Input unit										
		13 n_{1max} [min ⁻¹]	14 Adapter size									15 n_{1max} [min ⁻¹]	16 Input shaft [mm]										
			S92	S105	S114	S115	S130	S141	S142	S180	S189		S190	19x40	24x50	28x60	38x80	42x110	48x110	55x110			

- 1 Type of gear unit
- 2 Total ratio
- 3 Permissible output torque at S1 operation ($f_b = 1.0$)
- 4 Output speed (gear unit) at $n_1 = 1400 \text{ min}^{-1}$
- 5 Exact mathematical ratio
- 6 Maximum permissible input speed gear unit. valid for direct mounting and IEC / NEMA adapter
Max. perm. input speed IEC / NEMA adapter: I63 - I132 / N56 - N213 = 3000 min^{-1} , I160 - I280 / N254 - N364 = 2500 min^{-1}
Max. perm. motor speed (Direct mounting): motor frame size 63 - 180 = 3000 min^{-1} , 200 - 280 = 2500 min^{-1} .
Higher motor speed on request
- 7 Possible motor frame sizes (Direct mounting)
- 8 Possible IEC adapter sizes
- 9 Possible NEMA adapter sizes
- 10 Number of gear stages
- 11 Motor speed
- 12 Maximum torque
- 13 Maximum input speed - SERVO adapter
- 14 Possible SERVO adapter sizes
- 15 Maximum input speed - direct mounting, IEC / NEMA adapter and input unit
Higher input speeds on request
- 16 Possible input shafts of the input unit

Type	$i_{ges.}$	M_{znom}	n_2	i_{exakt}	n_{1max}	IEC motor frame size											
						63	71	80	90	100	-	-	-	-	-	-	-
						IEC adapter											
						163	171	180	190	1100	-	-	-	-	-	-	-
						NEMA adapter											
						N56	N143/145	N182	-	-	-	-	-	-	-		
						[Nm]	[min ⁻¹]										
F022	97.85	130	14	1957/20	6000												
	88.09	130	16	969/11	6000												
	76.22	130	18	3811/50	6000												
	68.62	130	20	3774/55	6000												
	61.80	130	23	309/5	6000												
	55.64	130	25	612/11	6000												
	48.69	130	29	2678/55	6000												
	43.83	130	32	5304/121	6000												
	37.52	130	37	5253/140	6000												
	33.78	130	41	2601/77	6000												
	31.79	53	44	1653/52	6000												
	29.32	130	48	3811/130	6000												
	26.39	130	53	3774/143	6000												
	24.76	84	57	3219/130	6000												
	21.89	130	64	1751/80	6000												
	20.08	84	70	261/13	6000												
	19.70	130	71	867/44	6000												
	18.88	130	74	1133/60	6000												
	17.00	130	82	17/1	6000												
	16.48	130	85	412/25	6000												
	15.82	84	89	174/11	6000												
	14.84	130	94	816/55	6000												
	12.19	84	115	4437/364	6000												
	12.09	130	116	2781/230	6000												
	10.89	130	129	2754/253	6000												
	9.52	84	147	3219/338	6000												
	7.11	84	197	1479/208	6000												
	6.13	84	228	319/52	6000												
	5.35	84	261	348/65	6000												
	3.93	72	356	2349/598	6000												
	F032	70.17	220	20	7719/110	6000											
		63.63	220	22	1909/30	6000											
57.07		220	25	2511/44	6000												
51.75		220	27	207/4	6000												
45.35		220	31	5487/121	6000												
41.12		220	34	1357/33	6000												
35.03		220	40	2697/77	6000												
31.76		220	44	667/21	6000												
27.97		220	50	3999/143	6000												
27.67		119	51	83/3	6000												
25.36		220	55	989/39	6000												
22.50		147	62	45/2	6000												
21.14		220	66	465/22	6000												
19.17		220	73	115/6	6000												
17.88		150	78	590/33	6000												
16.06		220	87	1767/110	6000												
14.57		220	96	437/30	6000												
13.81		150	101	290/21	6000												
12.50		220	112	3162/253	6000												
11.33		220	124	34/3	6000												
11.03		150	127	430/39	6000												
9.76		212	144	1395/143	6000												
8.85		202	158	115/13	6000												
8.33		150	168	25/3	6000												
6.33	145	221	19/3	6000													
4.93	127	284	340/69	6000													
3.85	111	364	50/13	6000													

Legend see page 279

Type	i _{ges.}	SERVO adapter										Input unit											
		n _{1max}	Adapter size										n _{1max}	Input shaft [mm]									
			[min ⁻¹]	S92	S105	S114	S115	S130	S141	S142	S180	S189		S190	[min ⁻¹]	19x40	24x50	28x60	38x80	42x110	48x110	55x110	
F022	97.85	5000													-								
	88.09	5000													-								
	76.22	5000													3000								
	68.62	5000													3000								
	61.80	5000													3000								
	55.64	5000													3000								
	48.69	5000													3000								
	43.83	5000													3000								
	37.52	5000													3000								
	33.78	5000													3000								
	31.79	5000													-								
	29.32	5000													3000								
	26.39	5000													3000								
	24.76	5000													3000								
	21.89	5000													3000								
	20.08	5000													3000								
	19.70	5000													3000								
	18.88	4700													3000								
	17.00	4700													3000								
	16.48	4200													3000								
	15.82	5000													3000								
	14.84	4200													3000								
	12.19	5000													3000								
	12.09	3700													3000								
	10.89	3700													3000								
	9.52	5000													3000								
	7.11	5000													3000								
	6.13	4700													3000								
	5.35	4200													3000								
	3.93	3700													3000								
F032	70.17	5000													3000								
	63.63	5000													3000								
	57.07	5000													3000								
	51.75	5000													3000								
	45.35	5000													3000								
	41.12	5000													3000								
	35.03	5000													3000								
	31.76	5000													3000								
	27.97	5000													3000								
	27.67	5000													3000								
	25.36	5000													3000								
	22.50	5000													3000								
	21.14	5000													3000								
	19.17	5000													3000								
	17.88	5000													3000								
	16.06	4600													3000								
	14.57	4600													3000								
	13.81	5000													3000								
	12.50	4000													3000								
	11.33	4000													3000								
	11.03	5000													3000								
	9.76	3500													3000								
	8.85	3500													3000								
	8.33	5000													3000								
	6.33	4600													3000								
	4.93	4000													3000								
	3.85	3500													3000								

F

Legend see page 279

Type	$i_{ges.}$	M_{znom}	n_2	i_{exakt}	n_{1max}	IEC motor frame size											
						63	71	80	90	100	-	-	-	-	-	-	-
						IEC adapter											
						163	171	180	190	1100	-	-	-	-	-	-	-
NEMA adapter																	
		[Nm]	[min ⁻¹]			N56	N143/145	N182	-	-	-	-	-	-	-	-	
F042	75.79	322	18	1819/24	6000												
	69.14	293	20	4494/65	6000												
	61.98	400	23	2975/48	6000												
	56.54	396	25	735/13	6000												
	48.94	400	29	1615/33	6000												
	44.64	400	31	6384/143	6000												
	41.20	175	34	8239/200	6000												
	37.95	400	37	2125/56	6000												
	34.62	400	40	450/13	6000												
	33.69	236	42	539/16	6000												
	31.06	400	45	1615/52	6000												
	28.33	400	49	4788/169	6000												
	26.60	308	53	133/5	6000												
	23.91	400	59	765/32	6000												
	21.81	400	64	567/26	6000												
2 stages	20.63	308	68	165/8	6000												
	18.06	400	78	289/16	6000												
$n_1=1400\text{ min}^{-1}$	16.88	308	83	4389/260	6000												
	16.48	400	85	1071/65	6000												
	14.78	400	95	340/23	6000												
Maximum torque 400 Nm	13.48	400	104	4032/299	6000												
	12.99	308	108	2079/160	6000												
	11.99	384	117	935/78	6000												
	10.93	361	128	1848/169	6000												
	10.03	348	140	1445/144	5600												
	9.82	308	143	3927/400	6000												
	9.15	327	153	119/13	5600												
	8.13	310	172	2635/324	5000												
	8.03	280	174	924/115	6000												
	7.84	304	179	2635/336	4800												
	7.42	291	189	868/117	5000												
	7.15	285	196	93/13	4800												
	6.52	247	215	847/130	6000												
	5.45	222	257	1309/240	5600												
	4.42	196	317	2387/540	5000												
	4.26	192	328	341/80	4800												
F043	422.98	400	3.3	17765/42	6000												
	385.85	400	3.6	5016/13	6000												
	329.48	400	4.2	6919/21	6000												
	300.55	400	4.7	19536/65	6000												
	267.14	400	5.2	1870/7	6000												
	243.69	400	5.7	3168/13	6000												
3 stages	210.48	400	6.7	4420/21	6000												
	192.00	400	7.3	192/1	6000												
	162.19	400	8.6	15895/98	6000												
$n_1=1400\text{ min}^{-1}$	147.96	400	9.5	13464/91	6000												
	126.72	400	11	34595/273	6000												
	115.60	400	12	19536/169	6000												
Maximum torque 400 Nm	94.61	400	15	15895/168	6000												
	86.31	400	16	1122/13	6000												
	81.63	400	17	10285/126	6000												
	74.46	400	19	968/13	6000												
	71.24	400	20	1496/21	6000												
	64.98	400	22	4224/65	6000												
	52.27	400	27	8415/161	6000												
	47.68	400	29	14256/299	6000												

Legend see page 279

Type	i _{ges.}	SERVO adapter										Input unit													
		n _{1max}	Adapter size										n _{1max}	Input shaft [mm]											
			[min ⁻¹]	S92	S105	S114	S115	S130	S141	S142	S180	S189		S190	[min ⁻¹]	19x40	24x50	28x60	38x80	42x110	48x110	55x110			
F042	75.79	5000													3000										
	69.14	5000													3000										
	61.98	5000													3000										
	56.54	5000													3000										
	48.94	5000													3000										
	44.64	5000													3000										
	41.20	5000													3000										
	37.95	5000													3000										
	34.62	5000													3000										
	33.69	5000													3000										
	31.06	5000													3000										
	28.33	5000													3000										
	26.60	5000													3000										
	23.91	5000													3000										
	21.81	5000													3000										
	20.63	5000													3000										
	18.06	4900													3000										
	16.88	5000													3000										
	16.48	4900													3000										
	14.78	4300													3000										
	13.48	4300													3000										
	12.99	5000													3000										
	11.99	3800													3000										
	10.93	3800													3000										
	10.03	3400													3000										
	9.82	4900													3000										
	9.15	3400													3000										
	8.13	3000													3000										
	8.03	4300													3000										
	7.84	2900													-										
	7.42	3000													3000										
	7.15	2900													-										
	6.52	3800													3000										
	5.45	3400													3000										
	4.42	3000													3000										
	4.26	2900													-										
F043	422.98	5000													-										
	385.85	5000													-										
	329.48	5000													3000										
	300.55	5000													3000										
	267.14	5000													3000										
	243.69	5000													3000										
	210.48	5000													3000										
	192.00	5000													3000										
	162.19	5000													3000										
	147.96	5000													3000										
	126.72	5000													3000										
	115.60	5000													3000										
	94.61	5000													3000										
	86.31	5000													3000										
	81.63	5000													3000										
	74.46	5000													3000										
	71.24	4900													3000										
	64.98	4900													3000										
	52.27	4300													3000										
	47.68	4300													3000										

Legend see page 279

Type	$i_{ges.}$	M_{znom}	n_2	i_{exakt}	n_{1max}	IEC motor frame size												
						63	71	80	90	100	112	132	-	-	-	-	-	-
						IEC adapter												
						l63	l71	l80	l90	l100	l112	l132	-	-	-	-	-	-
NEMA adapter																		
		[Nm]	[min ⁻¹]			N56	N143/145	N182	N184	N213/215	-	-	-	-	-	-		
F052	87.38	371	16	5243/60	6000													
	79.84	339	18	10379/130	6000													
	71.46	501	20	1715/24	6000													
	65.29	457	21	3395/52	6000													
	56.42	600	25	1862/33	6000													
	51.55	597	27	7372/143	6000													
	48.15	204	29	963/20	6000													
	43.75	600	32	175/4	6000													
	39.97	597	35	7275/182	6000													
	39.38	276	36	315/8	6000													
	35.81	600	39	931/26	6000													
	32.72	597	43	5529/169	6000													
	31.09	360	45	342/11	6000													
	27.56	600	51	441/16	6000													
	25.18	597	56	2619/104	6000													
	24.11	360	58	675/28	6000													
	20.83	600	67	833/40	6000													
	19.73	360	71	513/26	6000													
	19.03	597	74	4947/260	6000													
	17.04	600	82	392/23	6000													
	Maximum torque 600 Nm	15.57	597	90	4656/299	6000												
		15.19	360	92	243/16	6000												
		13.82	600	101	539/39	6000												
		12.63	597	111	2134/169	6000												
		11.57	600	121	833/72	5600												
		11.48	360	122	459/40	6000												
		10.57	584	132	1649/156	5600												
		9.39	360	149	216/23	6000												
		9.38	564	149	1519/162	5000												
		9.04	558	155	217/24	4800												
		8.57	549	163	3007/351	5000												
		8.26	543	169	3007/364	4800												
7.62		360	184	99/13	6000													
6.38		360	220	51/8	5600													
5.17		360	271	31/6	5000													
4.98		360	281	279/56	4800													
F053	487.67	600	2.9	1463/3	6000													
	445.56	597	3.1	40546/91	6000													
	379.87	600	3.7	5698/15	6000													
	347.07	597	4.0	157916/455	6000													
	308.00	600	4.5	308/1	6000													
	281.41	597	5.0	25608/91	6000													
	242.67	600	5.8	728/3	6000													
	221.71	597	6.3	1552/7	6000													
	187.00	600	7.5	187/1	6000													
	170.85	597	8.2	108834/637	6000													
	146.10	600	9.6	5698/39	6000													
	133.49	597	10	157916/1183	6000													
	109.08	600	13	1309/12	6000													
	99.66	597	14	18139/182	6000													
	94.11	600	15	847/9	6000													
	85.99	597	16	23474/273	6000													
82.13	600	17	1232/15	6000														
75.04	597	19	34144/455	6000														
60.26	600	23	1386/23	6000														
55.06	597	25	115236/2093	6000														

Legend see page 279

Type	i _{ges.}	SERVO adapter										Input unit												
		n _{1max}	Adapter size										n _{1max}	Input shaft [mm]										
			[min ⁻¹]	S92	S105	S114	S115	S130	S141	S142	S180	S189		S190	[min ⁻¹]	19x40	24x50	28x60	38x80	42x110	48x110	55x110		
F052	87.38	5000													3000									
	79.84	5000													3000									
	71.46	5000													3000									
	65.29	5000													3000									
	56.42	5000													3000									
	51.55	5000													3000									
	48.15	5000													3000									
	43.75	5000													3000									
	39.97	5000													3000									
	39.38	5000													3000									
	35.81	5000													3000									
	32.72	5000													3000									
	31.09	5000													3000									
	27.56	5000													3000									
	25.18	5000													3000									
	24.11	5000													3000									
	20.83	5000													3000									
	19.73	5000													3000									
	19.03	5000													3000									
	17.04	4600													3000									
	15.57	4600													3000									
	15.19	5000													3000									
	13.82	4100													3000									
	12.63	4100													3000									
	11.57	3700													3000									
	11.48	5000													3000									
	10.57	3700													3000									
	9.39	4600													3000									
	9.38	3300													3000									
	9.04	3200													3000									
	8.57	3300													3000									
	8.26	3200													3000									
	7.62	4100													3000									
	6.38	3700													3000									
	5.17	3300													3000									
	4.98	3200													3000									
F053	487.67	5000													-									
	445.56	5000													-									
	379.87	5000													3000									
	347.07	5000													3000									
	308.00	5000													3000									
	281.41	5000													3000									
	242.67	5000													3000									
	221.71	5000													3000									
	187.00	5000													3000									
	170.85	5000													3000									
	146.10	5000													3000									
	133.49	5000													3000									
	109.08	5000													3000									
	99.66	5000													3000									
	94.11	5000													3000									
	85.99	5000													3000									
	82.13	5000													3000									
	75.04	5000													3000									
	60.26	4600													3000									
	55.06	4600													3000									

F

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Type	$i_{ges.}$	M_{znom}	n_2	i_{exakt}	n_{1max}	IEC motor frame size												
						63	71	80	90	100	112	132	160	-	-	-	-	-
						IEC adapter												
						l63	l71	l80	l90	l100	l112	l132	-	-	-	-	-	-
NEMA adapter																		
		[Nm]	[min ⁻¹]			N56	N143/145	N182	N184	N213/215	-	-	-	-	-	-		
F062	49.67	820	28	4520/91	6000													
	45.55	820	31	8927/196	6000													
	41.66	820	34	7040/169	6000													
	38.20	820	37	3476/91	6000													
	32.69	820	43	425/13	6000													
	29.98	820	47	6715/224	6000													
	25.23	820	55	328/13	6000													
	23.14	820	61	3239/140	6000													
	20.87	820	67	480/23	6000													
	20.49	422	68	3729/182	6000													
	19.14	820	73	3081/161	6000													
	17.75	820	79	3000/169	6000													
	17.18	571	81	2904/169	6000													
	16.28	820	86	5925/364	6000													
	15.38	820	91	200/13	5600						*							
	14.11	820	99	395/28	5600						*							
	13.49	571	104	2805/208	6000													
	12.99	820	108	1520/117	5000						*							
	12.53	820	112	1140/91	4800													
	11.91	820	118	1501/126	5000						*							
	11.49	820	122	4503/392	4800													
	10.70	820	131	3200/299	4400						*							
	10.41	571	135	1353/130	6000													
	9.81	820	143	1580/161	4400						*							
	8.61	571	163	198/23	6000													
	7.32	571	191	2475/338	6000													
	6.35	571	221	165/26	5600						*							
5.36	571	261	209/39	5000						*								
5.17	571	271	1881/364	4800														
4.41	571	317	1320/299	4400						*								
F063	412.64	820	3.4	80464/195	6000													
	378.37	820	3.7	397291/1050	6000													
	337.44	820	4.1	13160/39	6000													
	309.42	820	4.5	3713/12	6000													
	266.44	820	5.3	114304/429	6000													
	244.32	820	5.7	282188/1155	6000													
	206.59	820	6.8	18800/91	6000													
	189.44	820	7.4	18565/98	6000													
	169.09	820	8.3	28576/169	6000													
	155.05	820	9.0	70547/455	6000													
	130.15	820	11	1692/13	6000													
	119.35	820	12	33417/280	6000													
	98.34	820	14	6392/65	6000													
	90.17	820	16	63121/700	6000													
	80.48	820	17	24064/299	6000													
	73.80	820	19	59408/805	6000													
	65.26	820	21	33088/507	6000													
59.84	820	23	81686/1365	6000														
54.63	820	26	6392/117	5600														
50.10	820	28	63121/1260	5600														

* Only direct mounting of motor possible

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Type	$i_{ges.}$	SERVO adapter											Input unit												
		n_{1max}	Adapter size											n_{1max}	Input shaft [mm]										
			[min ⁻¹]	S92	S105	S114	S115	S130	S141	S142	S180	S189	S190		[min ⁻¹]	19x40	24x50	28x60	38x80	42x110	48x110	55x110			
F062	49.67	5000													2500										
	45.55	5000													2500										
	41.66	5000													2500										
	38.20	5000													2500										
	32.69	5000													2500										
	29.98	5000													2500										
	25.23	5000													2500										
	23.14	5000													2500										
	20.87	4900													2500										
	20.49	5000													2500										
	19.14	4900													2500										
	17.75	4300													2500										
	17.18	5000													2500										
	16.28	4300													2500										
	15.38	3900													2500										
	14.11	3900													2500										
	13.49	5000													2500										
	12.99	3500													2500										
	12.53	3300													2500										
	11.91	3500													2500										
	11.49	3300													2500										
	10.70	3000													2500										
	10.41	5000													2500										
	9.81	3000													2500										
	8.61	4900													2500										
	7.32	4300													2500										
	6.35	3900													2500										
	5.36	3500													2500										
	5.17	3300													2500										
	4.41	3000													2500										
F063	412.64	5000													3000										
	378.37	5000													3000										
	337.44	5000													3000										
	309.42	5000													3000										
	266.44	5000													3000										
	244.32	5000													3000										
	206.59	5000													2500										
	189.44	5000													2500										
	169.09	5000													2500										
	155.05	5000													2500										
	130.15	5000													2500										
	119.35	5000													2500										
	98.34	5000													2500										
	90.17	5000													2500										
	80.48	4900													2500										
	73.80	4900													2500										
	65.26	4300													2500										
	59.84	4300													2500										
	54.63	3900													2500										
	50.10	3900													2500										

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Type	$i_{ges.}$	M_{znom}	n_2	i_{exakt}	n_{1max}	IEC motor frame size												
						63	71	80	90	100	112	132	160	-	-	-	-	-
						IEC adapter												
						l63	l71	l80	l90	l100	l112	l132	-	-	-	-	-	-
NEMA adapter																		
		[Nm]	[min ⁻¹]			N56	N143/145	N182	N184	N213/215	-	-	-	-	-	-		
F072	45.02	1500	31	5763/128	6000													
	39.31	1500	36	629/16	6000													
	34.74	1500	40	5559/160	6000													
	29.38	1500	48	2703/92	6000													
	25.25	1500	55	5253/208	6000													
	22.05	1500	64	1411/64	5600						*							
	20.72	939	68	1243/60	6000													
	18.89	1500	74	170/9	5000						*							
	18.21	1500	77	255/14	4800													
	18.09	1103	77	814/45	6000													
	16.08	1500	87	1479/92	4400							*						
	15.99	1094	88	1199/75	6000													
	13.52	1103	104	4664/345	6000													
	13.49	1500	104	2805/208	3900						*							
	11.62	1085	120	2266/195	6000													
	11.36	1500	123	2091/184	3500						*							
	10.14	1115	138	913/90	5600						*							
	9.32	1500	150	969/104	3100						*							
	8.69	1115	161	704/81	5000						*							
	8.38	1006	167	176/21	4800													
7.40	1115	189	2552/345	4400						*								
6.21	1115	226	242/39	3900						*								
5.23	1115	268	1804/345	3500						*								
4.29	1081	327	836/195	3100						*								
F073	385.37	1500	3.6	61659/160	6000													
	305.42	1500	4.6	26877/88	6000													
	237.15	1500	5.9	4743/20	6000													
	194.58	1500	7.2	12648/65	6000													
	150.69	1500	9.3	96441/640	6000													
	114.62	1500	12	45849/400	6000													
	94.52	1500	15	17391/184	6000													
	77.53	1500	18	80631/1040	6000													
	65.88	1500	21	527/8	5600													
	54.16	1500	26	19499/360	5000													
	52.23	1500	27	58497/1120	4800													

* Only direct mounting of motor possible

Type	$i_{ges.}$	SERVO adapter											Input unit												
		n_{1max}	Adapter size											n_{1max}	Input shaft [mm]										
			[min ⁻¹]	S92	S105	S114	S115	S130	S141	S142	S180	S189	S190		[min ⁻¹]	19x40	24x50	28x60	38x80	42x110	48x110	55x110			
F072	45.02	5000													2500										
	39.31	5000													2500										
	34.74	5000													2500										
	29.38	5000													2500										
	25.25	4800													2500										
	22.05	4300													2500										
	20.72	5000													2500										
	18.89	3800													2500										
	18.21	3700													2500										
	18.09	5000													2500										
	16.08	3400													2500										
	15.99	5000													2500										
	13.52	5000													2500										
	13.49	3000													2500										
	11.62	4800													2500										
	11.36	2700													2500										
	10.14	4300													2500										
	9.32	-													2400										
	8.69	3800													2500										
	8.38	3700													2500										
	7.40	3400													2500										
	6.21	3000													2500										
	5.23	2700													2500										
	4.29	-													2400										
F073	385.37	5000													3000										
	305.42	5000													3000										
	237.15	5000													2500										
	194.58	5000													2500										
	150.69	5000													2500										
	114.62	5000													2500										
	94.52	5000													2500										
	77.53	4800													2500										
	65.88	4300													2500										
	54.16	3800													2500										
	52.23	3700													2500										

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Type	$i_{ges.}$	M_{znom}	n_2	i_{exakt}	n_{1max}	IEC motor frame size												
						63	71	80	90	100	112	132	160	180	-	-	-	-
						IEC adapter												
						163	171	180	190	1100	1112	1132	1160	1180	-	-	-	-
						NEMA adapter												
		[Nm]	[min ⁻¹]		[min ⁻¹]	N56	N143/145	N182	N184	N213/215	N254/256	N284/286	-	-	-	-		
F082	33.87	2785	41	6165/182	6000													
2 stages $n_1=1400\text{ min}^{-1}$ Maximum torque 3000 Nm	30.00	3000	47	30/1	5600													
	25.95	3000	54	545/21	5000													
	22.08	3000	63	3555/161	4400													
	18.79	3000	75	1710/91	3900													
	16.21	3000	86	2610/161	3500													
	16.01	1647	87	10823/676	6000													
	14.18	1762	99	553/39	5600													
	13.60	3000	103	2475/182	3100													
	12.27	1762	114	8611/702	5000													
	11.06	3000	127	387/35	2700													
	10.44	1762	134	6241/598	4400													
	8.88	1762	158	1501/169	3900													
	8.65	3000	162	1755/203	2300													
	7.66	1762	183	2291/299	3500													
	6.43	1762	218	4345/676	3100													
	5.23	1762	268	3397/650	2700													
	4.09	1564	343	237/58	2300													
	F083	358.52	3000	3.9	32625/91	6000												
3 stages $n_1=1400\text{ min}^{-1}$ Maximum torque 3000 Nm	283.76	3000	4.9	127125/448	6000													
	247.77	3000	5.7	13875/56	6000													
	218.97	3000	6.4	24525/112	6000													
	185.17	3000	7.6	59625/322	6000													
	180.28	3000	7.8	114840/637	6000													
	159.17	3000	8.8	115875/728	6000													
	142.69	3000	9.8	55935/392	6000													
	138.95	3000	10	31125/224	5600													
	124.59	3000	11	6105/49	6000													
	119.05	3000	12	2500/21	5000													
	114.80	3000	12	5625/49	4800													
	110.11	3000	13	10791/98	6000													
	101.32	3000	14	32625/322	4400													
	93.11	3000	15	104940/1127	6000													
	84.99	3000	16	61875/728	3900													
	80.04	3000	17	50985/637	6000													
	71.62	2947	20	46125/644	3500													
	69.87	2903	20	13695/196	5600													
	59.86	2771	23	8800/147	5000													
	58.72	2777	24	21375/364	3100													
	57.73	2741	24	19800/343	4800													
	50.95	2640	27	57420/1127	4400													
	42.74	2505	33	27225/637	3900													
	36.02	2379	39	40590/1127	3500													
29.53	2242	47	18810/637	3100														

Legend see page 279

Type	$i_{ges.}$	SERVO adapter											Input unit												
		n_{1max}	Adapter size											n_{1max}	Input shaft [mm]										
			[min ⁻¹]	S92	S105	S114	S115	S130	S141	S142	S180	S189	S190		[min ⁻¹]	19x40	24x50	28x60	38x80	42x110	48x110	55x110			
F082	33.87	5000													2500										
	30.00	4500													2500										
	25.95	4000													2500										
	22.08	3600													2500										
	18.79	3100													2500										
	16.21	2800													2500										
	16.01	5000													2500										
	14.18	4500													2500										
	13.60	-													2500										
	12.27	4000													2500										
	11.06	-													2200										
	10.44	3600													2500										
	8.88	3100													2500										
	8.65	-													1900										
	7.66	2800													2500										
	6.43	-													2500										
	5.23	-													2200										
	4.09	-													1900										
F083	358.52	5000													2500										
	283.76	5000													2500										
	247.77	5000													2500										
	218.97	5000													2500										
	185.17	5000													2500										
	180.28	5000													2500										
	159.17	5000													2500										
	142.69	5000													2500										
	138.95	4500													2500										
	124.59	5000													2500										
	119.05	4000													2500										
	114.80	3900													2500										
	110.11	5000													2500										
	101.32	3600													2500										
	93.11	5000													2500										
	84.99	3100													2500										
	80.04	5000													2500										
	71.62	2800													2500										
	69.87	4500													2500										
	59.86	4000													2500										
	58.72	-													2500										
	57.73	3900													2500										
	50.95	3600													2500										
	42.74	3100													2500										
	36.02	2800													2500										
	29.53	-													2500										

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Type	$i_{ges.}$	M_{znom}	n_2	i_{exakt}	n_{1max}	IEC motor frame size												
						63	71	80	90	100	112	132	-	-	-	-	-	-
						IEC adapter												
						163	171	180	190	1100	1112	1132	-	-	-	-	-	-
NEMA adapter						N56	N143/145	N182	N184	N213/215	-	-	-	-	-	-		
	[Nm]	[min ⁻¹]			[min ⁻¹]													
F084	3836.13	3000	0.36	698175/182	6000													
	3137.02	3000	0.45	163125/52	6000													
	3036.24	3000	0.46	2720475/896	6000													
	2651.12	3000	0.53	296925/112	6000													
	2482.91	3000	0.56	635625/256	6000													
	2477.02	3000	0.57	2479500/1001	6000													
	2167.97	3000	0.65	69375/32	6000													
	1960.53	3000	0.71	2415375/1232	6000													
	1920.62	3000	0.73	2446875/1274	6000													
	1711.85	3000	0.82	263625/154	6000													
	1571.96	3000	0.89	1859625/1183	6000													
	1520.15	3000	0.92	9534375/6272	6000													
	1327.33	3000	1.1	1040625/784	6000													
	1244.18	3000	1.1	7246125/5824	6000													
4 stages	1209.99	3000	1.2	880875/728	6000													
	1086.37	3000	1.3	790875/728	6000													
	957.69	3000	1.5	3432375/3584	6000													
$n_1=1400 \text{ min}^{-1}$	914.22	3000	1.5	332775/364	6000													
	836.22	3000	1.7	374625/448	6000													
	748.21	3000	1.9	1566000/2093	6000													
Maximum torque 3000 Nm	723.59	3000	1.9	1296675/1792	6000													
	631.81	3000	2.2	141525/224	6000													
	606.72	3000	2.3	717750/1183	6000													
	592.20	3000	2.4	381375/644	6000													
	517.08	3000	2.7	83250/161	6000													
	507.90	3000	2.8	184875/364	5600													
	480.21	3000	2.9	1398375/2912	6000													
	419.30	3000	3.3	152625/364	6000													
	411.63	3000	3.4	112375/273	5000													
	401.99	3000	3.5	720375/1792	5600													
	396.93	3000	3.5	1011375/2548	4800													
	351.00	3000	4.0	78625/224	5600													
	325.80	3000	4.3	437875/1344	5000													
	314.16	3000	4.5	3940875/12544	4800													
	284.47	3000	4.9	143375/504	5000													
	274.31	3000	5.1	430125/1568	4800													

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Type	$i_{ges.}$	SERVO adapter											Input unit													
		n_{1max}	Adapter size											n_{1max}	Input shaft [mm]											
			[min ⁻¹]	S92	S105	S114	S115	S130	S141	S142	S180	S189	S190		[min ⁻¹]	19x40	24x50	28x60	38x80	42x110	48x110	55x110				
F084	3836.13	5000														3000										
	3137.02	5000														3000										
	3036.24	5000														3000										
	2651.12	5000														3000										
	2482.91	5000														3000										
	2477.02	5000														3000										
	2167.97	5000														3000										
	1960.53	5000														3000										
	1920.62	5000														3000										
	1711.85	5000														3000										
	1571.96	5000														3000										
	1520.15	5000														3000										
	1327.33	5000														3000										
	1244.18	5000														3000										
	1209.99	5000														3000										
	1086.37	5000														3000										
	957.69	5000														3000										
	914.22	5000														3000										
	836.22	5000														3000										
	748.21	5000														3000										
	723.59	5000														3000										
	631.81	5000														3000										
	606.72	5000														3000										
	592.20	5000														3000										
	517.08	5000														3000										
	507.90	4500														3000										
	480.21	5000														3000										
	419.30	5000														3000										
	411.63	4000														3000										
	401.99	4500														3000										
	396.93	3900														3000										
	351.00	4500														3000										
	325.80	4000														3000										
	314.16	3900														3000										
	284.47	4000														3000										
	274.31	3900														3000										



Legend see page 279

Type	$i_{ges.}$	M_{znom}	n_2	i_{exakt}	n_{1max}	IEC motor frame size												
						63	71	80	90	100	112	132	160	180	200	-	-	-
						IEC adapter												
						l63	l71	l80	l90	l100	l112	l132	l160	l180	-	-	-	-
NEMA adapter																		
		[Nm]	[min ⁻¹]			N56	N143/145	N182	N184	N213/215	N254/256	N284/286	-	-	-	-		
F092	38.65	4326	36	2512/65	6000													
	34.13	4500	41	512/15	5600													
	29.63	4500	47	800/27	5000													
	28.57	3430	49	200/7	4800													
	25.60	4500	55	128/5	4400													
	21.91	4500	64	1424/65	3900									*				
	19.01	2128	74	13345/702	6000													
	18.92	4500	74	2176/115	3500									*				
	16.79	2676	83	1360/81	5600													
	16.00	4500	88	16/1	3100									*				
	14.57	2676	96	10625/729	5000													
	14.05	1687	100	10625/756	4800													
	13.06	4500	107	1632/125	2700									*				
	12.59	2676	111	340/27	4400									*				
	10.78	2676	130	7565/702	3900									*				
	10.59	4500	132	1536/145	2300									*				
	9.31	2676	150	5780/621	3500									*				
	8.46	4006	166	296/35	2100									*				
	7.87	2676	178	425/54	3100									*				
	6.42	2676	218	289/45	2700									*				
5.21	2577	269	1360/261	2300									*					
4.16	2284	337	3145/756	2100									*					
F093	288.50	4500	4.9	165888/575	6000													
	243.90	4500	5.7	129024/529	6000													
	211.14	4500	6.6	315648/1495	6000													
	186.99	4500	7.5	21504/115	5600													
	161.76	4500	8.7	55808/345	5000													
	155.99	4500	9.0	125568/805	4800													
	142.85	4500	9.8	17856/125	6000													
	137.63	4500	10	364032/2645	4400													
	120.77	4500	12	13888/115	6000													
	117.13	4500	12	175104/1495	3900													
	104.54	4500	13	33976/325	6000													
	101.04	4500	14	267264/2645	3500													
	92.59	4500	15	6944/75	5600													
	84.76	4500	17	25344/299	3100													
	80.09	4500	17	54064/675	5000													
	77.23	4500	18	13516/175	4800													
	68.92	4500	20	198144/2875	2700													
	68.15	4500	21	39184/575	4400													
	57.99	4500	24	18848/325	3900													
	53.89	4500	26	179712/3335	2300													
50.03	4500	28	28768/575	3500														
41.97	4458	33	2728/65	3100														
34.12	4189	41	21328/625	2700														
26.68	3891	52	19344/725	2300														

* Only direct mounting of motor possible

Type	i _{ges.}	SERVO adapter											Input unit												
		n _{1max}	Adapter size											n _{1max}	Input shaft [mm]										
			[min ⁻¹]	S92	S105	S114	S115	S130	S141	S142	S180	S189	S190		[min ⁻¹]	19x40	24x50	28x60	38x80	42x110	48x110	55x110			
F092	38.65	5000													2500										
	34.13	4800													2500										
	29.63	4200													2500										
	28.57	4100													2500										
	25.60	3700													2500										
	21.91	3300													2500										
	19.01	5000													2500										
	18.92	3000													2500										
	16.79	4800													2500										
	16.00	-													2500										
	14.57	4200													2500										
	14.05	4100													2500										
	13.06	-													2300										
	12.59	3700													2500										
	10.78	3300													2500										
	10.59	-													2000										
	9.31	3000													2500										
	8.46	-													1800										
	7.87	-													2500										
	6.42	-													2300										
	5.21	-													2000										
	4.16	-													1800										
F093	288.50	5000													2500										
	243.90	5000													2500										
	211.14	5000													2500										
	186.99	4800													2500										
	161.76	4200													2500										
	155.99	4100													2500										
	142.85	5000													2500										
	137.63	3700													2500										
	120.77	5000													2500										
	117.13	3300													2500										
	104.54	5000													2500										
	101.04	3000													2500										
	92.59	4800													2500										
	84.76	-													2500										
	80.09	4200													2500										
	77.23	4100													2500										
	68.92	-													2300										
	68.15	3700													2500										
	57.99	3300													2500										
	53.89	-													2000										
	50.03	3000													2500										
	41.97	-													2500										
	34.12	-													2300										
	26.68	-													2000										

F

Legend see page 279

Type	$i_{ges.}$	M_{znom}	n_2	i_{exakt}	n_{1max}	IEC motor frame size												
						63	71	80	90	100	112	132	-	-	-	-	-	-
						IEC adapter												
						l63	l71	l80	l90	l100	l112	l132	-	-	-	-	-	-
NEMA adapter																		
		[Nm]	[min ⁻¹]			N56	N143/145	N182	N184	N213/215	-	-	-	-	-	-		
F094	3086.96	4500	0.45	8875008/2875	6000													
4 stages	2609.75	4500	0.54	6902784/2645	6000													
	2524.38	4500	0.55	290304/115	6000													
	2134.14	4500	0.66	1128960/529	6000													
	1993.28	4500	0.70	12607488/6325	6000													
	1685.14	4500	0.83	9805824/5819	6000													
	1545.54	4500	0.91	248832/161	6000													
	1306.62	4500	1.1	691200/529	6000													
	1264.97	4500	1.1	9455616/7475	6000													
	1069.42	4500	1.3	7354368/6877	6000													
	973.69	4500	1.4	559872/575	6000													
	823.17	4500	1.7	435456/529	6000													
	735.68	4500	1.9	2115072/2875	6000													
	621.95	4500	2.3	1645056/2645	6000													
	602.09	4500	2.3	7962624/13225	6000													
	509.01	4500	2.8	6193152/12167	6000													
	488.23	4500	2.9	3649536/7475	6000													
412.76	4500	3.4	2838528/6877	6000														
408.71	4500	3.4	235008/575	5600														
345.53	4500	4.1	182784/529	5600														
331.24	4500	4.2	190464/575	5000														
319.41	4500	4.4	1285632/4025	4800														
280.04	4500	5.0	444416/1587	5000														
270.03	4500	5.2	142848/529	4800														

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Legend see page 279

Type	$i_{ges.}$	M_{znom}	n_2	i_{exakt}	n_{1max}	IEC motor frame size													
						63	71	80	90	100	112	132	160	180	200	225	-	-	
						IEC adapter													
						l63	l71	l80	l90	l100	l112	l132	l160	l180	l200	l225	-	-	
NEMA adapter																			
		[Nm]	[min ⁻¹]		[min ⁻¹]	N56	N143/145	N182	N184	N213/215	N254/256	N284/286	N324/326	N364	-	-			
F102	42.74	6409	33	7693/180	5600														
	37.26	7082	38	15092/405	5000														
	35.93	4312	39	539/15	4800														
	32.10	8000	44	11074/345	4400														
	27.64	8000	51	1078/39	3900														
	24.14	8000	58	1666/69	3500														
	22.14	3320	63	1727/78	5600														
	20.86	8000	67	4067/195	3100														
	19.30	3669	73	6776/351	5000														
	18.62	2234	75	242/13	4800														
	17.25	8000	81	2156/125	2700														
	16.63	4820	84	4972/299	4400														
	14.32	5348	98	2420/169	3900														
	14.19	8000	99	2058/145	2300														
	12.51	5415	112	3740/299	3500														
	11.67	7875	120	35/3	2100														
	10.80	5415	130	1826/169	3100														
	9.91	7609	141	4606/465	1900														
	8.94	5415	157	2904/325	2700														
	8.45	7361	166	2156/255	1800														
7.35	5415	190	2772/377	2300															
6.04	5415	232	550/91	2100															
5.13	5415	273	2068/403	1900															
4.38	5415	320	968/221	1800															
F103	246.57	8000	5.7	38465/156	6000														
	217.78	8000	6.4	1960/9	5600														
	189.04	8000	7.4	30625/162	5000														
	182.29	8000	7.7	4375/24	4800														
	163.33	8000	8.6	490/3	4400														
	139.78	8000	10	21805/156	3900														
	122.58	8000	11	31871/260	6000														
	120.72	8000	12	8330/69	3500														
	108.27	8000	13	1624/15	5600														
	102.08	8000	14	1225/12	3100														
	93.98	8000	15	5075/54	5000														
	90.63	8000	15	725/8	4800														
	83.30	8000	17	833/10	2700														
	81.20	8000	17	406/5	4400														
	69.49	8000	20	18067/260	3900														
	67.59	8000	21	1960/29	2300														
	60.02	8000	23	6902/115	3500														
	53.96	8000	26	1295/24	2100														
	50.75	8000	28	203/4	3100														
	41.41	8000	34	10353/250	2700														
33.60	7876	42	168/5	2300															
26.83	7361	52	1073/40	2100															

Legend see page 279

Type	i _{ges.}	SERVO adapter											Input unit											
		n _{1max}	Adapter size											n _{1max}	Input shaft [mm]									
			[min ⁻¹]	S92	S105	S114	S115	S130	S141	S142	S180	S189	S190		[min ⁻¹]	19x40	24x50	28x60	38x80	42x110	48x110	55x110		
F102	42.74	5000												2500										
	37.26	4900												2500										
	35.93	4700												2500										
	32.10	4300												2500										
	27.64	3800												2500										
	24.14	3400												1800										
	22.14	5000												2500										
	20.86	-												1800										
	19.30	4900												2500										
	18.62	4700												2500										
	17.25	-												1800										
	16.63	4300												2500										
	14.32	3800												2500										
	14.19	-												1800										
	12.51	3400												1800										
	11.67	-												1800										
	10.80	-												1800										
	9.91	-												1800										
	8.94	-												1800										
	8.45	-												1700										
	7.35	-												1800										
	6.04	-												1800										
	5.13	-												1800										
	4.38	-												1700										
F103	246.57	5000												2500										
	217.78	5000												2500										
	189.04	4500												2500										
	182.29	4400												2500										
	163.33	4000												2500										
	139.78	3500												2500										
	122.58	5000												2500										
	120.72	3200												1800										
	108.27	5000												2500										
	102.08	-												1800										
	93.98	4500												2500										
	90.63	4400												2500										
	83.30	-												1800										
	81.20	4000												2500										
	69.49	3500												2500										
	67.59	-												1800										
	60.02	3200												1800										
	53.96	-												1800										
	50.75	-												1800										
	41.41	-												1800										
	33.60	-												1800										
	26.83	-												1800										

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Legend see page 279

Type	$i_{ges.}$	M_{znom}	n_2	i_{exakt}	n_{1max}	IEC motor frame size												
						63	71	80	90	100	112	132	160	-	-	-	-	-
						IEC adapter												
						l63	l71	l80	l90	l100	l112	l132	l160	-	-	-	-	-
NEMA adapter																		
		[Nm]	[min ⁻¹]			N56	N143/145	N182	N184	N213/215	N254/256	-	-	-	-	-		
F104	2276.77	8000	0.61	225400/99	6000													
	1976.36	8000	0.71	3521875/1782	6000													
	1757.78	8000	0.80	15820/9	6000													
	1707.58	8000	0.82	56350/33	6000													
	1525.85	8000	0.92	494375/324	6000													
	1474.19	8000	0.95	172480/117	6000													
	1318.33	8000	1.1	3955/3	6000													
	1279.68	8000	1.1	1347500/1053	6000													
	1156.94	8000	1.2	20825/18	6000													
	1105.64	8000	1.3	43120/39	6000													
	1004.29	8000	1.4	2603125/2592	6000													
	892.89	8000	1.6	8036/9	6000													
	867.71	8000	1.6	20825/24	6000													
	775.08	8000	1.8	251125/324	6000													
4 stages	738.55	8000	1.9	50960/69	6000													
	669.67	8000	2.1	2009/3	6000													
$n_1=1400 \text{ min}^{-1}$	641.10	8000	2.2	398125/621	6000													
	628.21	8000	2.2	24500/39	6000													
Maximum torque 8000 Nm	553.91	8000	2.5	12740/23	6000													
	545.32	8000	2.6	765625/1404	6000													
	544.44	8000	2.6	4900/9	5600													
	472.61	8000	3.0	153125/324	5600													
	471.15	8000	3.0	6125/13	6000													
	459.75	8000	3.0	37240/81	5000													
	443.33	8000	3.2	1330/3	4800													
	408.33	8000	3.4	1225/3	5600													
	399.09	8000	3.5	581875/1458	5000													
	384.84	8000	3.6	83125/216	4800													
	378.74	8000	3.7	78400/207	4400													
	344.81	8000	4.1	9310/27	5000													
	332.50	8000	4.2	665/2	4800													
	328.77	8000	4.3	612500/1863	4400													
	284.06	8000	4.9	19600/69	4400													

Legend see page 279

Type	i _{ges.}	SERVO adapter											Input unit													
		n _{1max}	Adapter size											n _{1max}	Input shaft [mm]											
			[min ⁻¹]	S92	S105	S114	S115	S130	S141	S142	S180	S189	S190		[min ⁻¹]	19x40	24x50	28x60	38x80	42x110	48x110	55x110				
F104	2276.77	5000														3000										
	1976.36	5000														3000										
	1757.78	5000														2500										
	1707.58	5000														3000										
	1525.85	5000														2500										
	1474.19	5000														2500										
	1318.33	5000														2500										
	1279.68	5000														2500										
	1156.94	5000														2500										
	1105.64	5000														2500										
	1004.29	5000														2500										
	892.89	5000														2500										
	867.71	5000														2500										
	775.08	5000														2500										
	738.55	5000														2500										
	669.67	5000														2500										
	641.10	5000														2500										
	628.21	5000														2500										
	553.91	5000														2500										
	545.32	5000														2500										
	544.44	5000														2500										
	472.61	5000														2500										
	471.15	5000														2500										
	459.75	4500														2500										
	443.33	4400														2500										
	408.33	5000														2500										
	399.09	4500														2500										
	384.84	4400														2500										
	378.74	4000														2500										
	344.81	4500														2500										
	332.50	4400														2500										
	328.77	4000														2500										
	284.06	4000														2500										

F

Legend see page 279

Type	$i_{ges.}$	M_{znom}	n_2	i_{exakt}	n_{1max}	IEC motor frame size													
						63	71	80	90	100	112	132	160	180	200	225	-	-	
						IEC adapter													
						l63	l71	l80	l90	l100	l112	l132	l160	l180	l200	l225	l250	-	
NEMA adapter																			
		[Nm]	[min ⁻¹]			N56	N143/145	N182	N184	N213/215	N254/256	N284/286	N324/326	N364	-	-			
F122	39.98	7597	35	16192/405	5000														
	34.43	9985	41	792/23	4400														
	29.78	12543	47	1936/65	3900														
	26.27	13000	53	9064/345	3500										*				
	22.56	12916	62	880/39	3100										*				
	19.18	3645	73	13984/729	5000														
	18.77	12365	75	1408/75	2700										*				
	16.52	4791	85	380/23	4400														
	15.58	11830	90	6776/435	2300										*				
	14.29	6018	98	1672/117	3900														
	12.99	11332	108	1364/105	2100										*				
	12.61	7319	111	7828/621	3500										*				
	11.17	10933	125	5192/465	1900										*				
	10.83	7209	129	3800/351	3100										*				
	9.66	10565	145	2464/255	1800										*				
	9.01	8163	155	1216/135	2700										*				
	7.47	8093	187	5852/783	2300										*				
	6.23	8163	225	1178/189	2100										*				
	5.36	8163	261	4484/837	1900										*				
	4.64	7647	302	2128/459	1800										*				
F123	220.67	13000	6.3	39721/180	5600														
	192.40	13000	7.3	77924/405	5000														
	185.53	13000	7.5	2783/15	4800														
	165.73	13000	8.4	2486/15	4400														
	142.72	13000	9.8	5566/39	3900														
	124.67	13000	11	374/3	3500										*				
	120.82	13000	12	29359/243	5600														
	107.69	13000	13	20999/195	3100										*				
	105.34	13000	13	230384/2187	5000														
	101.58	12190	14	8228/81	4800														
	90.74	13000	15	169048/1863	4400														
	89.06	13000	16	11132/125	2700										*				
	78.14	13000	18	82280/1053	3900														
	73.28	13000	19	10626/145	2300										*				
	68.26	13000	21	127160/1863	3500										*				
	60.24	13000	23	1265/21	2100										*				
	58.96	12929	24	62084/1053	3100										*				
	51.14	12609	27	23782/465	1900										*				
	48.76	12213	29	32912/675	2700										*				
	43.65	12024	32	11132/255	1800										*				
40.12	11519	35	10472/261	2300										*					
32.98	10861	42	18700/567	2100										*					
28.00	10341	50	70312/2511	1900										*					
23.90	9861	59	1936/81	1800										*					

* l250 only. Direct mounting of the motor not possible

Type	$i_{ges.}$	SERVO adapter											Input unit															
		n_{1max}	Adapter size											n_{1max}	Input shaft [mm]													
			[min ⁻¹]	S92	S105	S114	S115	S130	S141	S142	S180	S189	S190		[min ⁻¹]	19x40	24x50	28x60	38x80	42x110	48x110	55x110						
F122	39.98	5000													2500													
	34.43	4500													2500													
	29.78	4000													2500													
	26.27	3600													1800													
	22.56	-													1800													
	19.18	5000													2500													
	18.77	-													1800													
	16.52	4500													2500													
	15.58	-													1800													
	14.29	4000													2500													
	12.99	-													1800													
	12.61	3600													1800													
	11.17	-													1800													
	10.83	-													1800													
	9.66	-													1800													
	9.01	-													1800													
	7.47	-													1800													
	6.23	-													1800													
	5.36	-													1800													
	4.64	-													1800													
F123	220.67	5000													2500													
	192.40	5000													2500													
	185.53	5000													2500													
	165.73	4500													2500													
	142.72	4000													2500													
	124.67	3600													1800													
	120.82	5000													2500													
	107.69	-													1800													
	105.34	5000													2500													
	101.58	5000													2500													
	90.74	4500													2500													
	89.06	-													1800													
	78.14	4000													2500													
	73.28	-													1800													
	68.26	3600													1800													
	60.24	-													1800													
	58.96	-													1800													
	51.14	-													1800													
	48.76	-													1800													
	43.65	-													1800													
	40.12	-													1800													
	32.98	-													1800													
	28.00	-													1800													
	23.90	-													1800													

F

Legend see page 279

Type	$i_{ges.}$	M_{znenn}	n_2	i_{exakt}	n_{1max}	IEC motor frame size												
						63	71	80	90	100	112	132	160	-	-	-	-	-
						IEC adapter												
						l63	l71	l80	l90	l100	l112	l132	l160	-	-	-	-	-
NEMA adapter																		
		[Nm]	[min ⁻¹]			N56	N143/145	N182	N184	N213/215	N254/256	-	-	-	-	-		
F124	2307.03	13000	0.61	83053/36	6000													
	2011.51	13000	0.70	162932/81	6000													
	1781.14	13000	0.79	4488473/2520	6000													
	1732.67	13000	0.81	5198/3	6000													
	1552.98	13000	0.90	628958/405	6000													
	1493.78	13000	0.94	873862/585	6000													
	1492.05	13000	0.94	58190/39	6000													
	1337.70	13000	1.0	140459/105	6000													
	1302.43	13000	1.1	6857312/5265	6000													
	1172.32	13000	1.2	675257/576	6000													
	1151.94	13000	1.2	314479/273	6000													
	1121.89	13000	1.2	218768/195	6000													
	1022.15	13000	1.4	331177/324	6000													
	966.09	13000	1.4	489808/507	6000													
	904.76	13000	1.5	1628561/1800	6000													
	880.46	13000	1.6	21131/24	6000													
	788.86	13000	1.8	1597442/2025	6000													
	758.19	13000	1.8	236555/312	6000													
	748.37	13000	1.9	22451/30	6000													
	679.51	13000	2.1	50963/75	6000													
	652.50	13000	2.1	88088/135	6000													
	636.55	13000	2.2	198605/312	6000													
	585.14	13000	2.4	114103/195	6000													
	562.05	13000	2.5	64636/115	6000													
	555.01	13000	2.5	194810/351	6000													
	551.68	13000	2.5	39721/72	5600													
	484.00	13000	2.9	484/1	6000													
	481.01	13000	2.9	38962/81	5600													
	478.08	13000	2.9	6215/13	6000													
	465.86	13000	3.0	754699/1620	5000													
	449.23	13000	3.1	754699/1680	4800													
	414.33	13000	3.4	1243/3	5600													
	411.69	13000	3.4	69575/169	6000													
	406.19	13000	3.4	1480556/3645	5000													
	391.68	13000	3.6	52877/135	4800													
	383.78	13000	3.6	3454/9	4400													
	356.79	13000	3.9	13915/39	5600													
	349.88	13000	4.0	47234/135	5000													
	337.39	13000	4.1	23617/70	4800													
	334.62	13000	4.2	27104/81	4400													
301.29	13000	4.6	105754/351	5000														
290.53	13000	4.8	52877/182	4800														
288.23	13000	4.9	19888/69	4400														
248.21	13000	5.6	9680/39	4400														

F

Legend see page 279

Type	$i_{ges.}$	M_{znenn}	n_2	i_{exakt}	n_{1max}	IEC motor frame size												
						63	71	80	90	100	112	132	160	180	200	225	-	280
						IEC adapter												
						l63	l71	l80	l90	l100	l112	l132	l160	l180	l200	l225	l250	l280
NEMA adapter																		
		[Nm]	[min ⁻¹]			N56	N143/145	N182	N184	N213/215	N254/256	N284/286	N324/326	N364	-	-		
F152		36.54	15418	38	1023/28	3900												
	2 stages	27.85	18000	50	10137/364	3100										*		
		23.38	18000	60	4092/175	2700										*		
		19.24	18000	73	558/29	2300										*		
		17.35	7320	81	451/26	3900												
		16.37	18000	86	6417/392	2100										*		
		14.14	18000	99	99/7	1900										*		
	Maximum torque 18000 Nm	13.22	9805	106	4469/338	3100										*		
		12.31	18000	114	837/68	1800										*		
		11.10	11038	126	3608/325	2700										*		
		9.14	10975	153	3444/377	2300										*		
		7.77	11038	180	2829/364	2100										*		
		6.71	11038	208	2706/403	1900										*		
		5.84	11038	240	2583/442	1800										*		
																*		
F153	259.81	18000	5.4	5456/21	5000													
	223.77	18000	6.3	828630/3703	4400													
	193.55	18000	7.2	405108/2093	3900													
	170.73	18000	8.2	632214/3703	3500										*	x		
	146.63	18000	9.5	306900/2093	3100										*	x		
	144.52	18000	9.7	118358/819	5000													
	3 stages	124.47	18000	11	1042065/8372	4400												
		122.00	18000	11	98208/805	2700										*	x	
		107.66	18000	13	254727/2366	3900												
		101.23	18000	14	67518/667	2300										*	x	
		94.97	18000	15	795057/8372	3500										*	x	
		84.42	18000	17	95139/1127	2100										*	x	
	Maximum torque 18000 Nm	81.56	18000	17	192975/2366	3100										*	x	
		72.56	18000	19	11682/161	1900										*	x	
		67.86	18000	21	30876/455	2700										*	x	
		62.79	18000	22	24552/391	1800										*	x	
		56.31	18000	25	84909/1508	2300										*	x	
		46.96	18000	30	239289/5096	2100										*	x	
40.36		18000	35	14691/364	1900										*	x		
34.93		18000	40	7719/221	1800										*	x		

* I250 only. Direct mounting of the motor not possible
 x I280 only. Direct mounting of the motor not possible

Type	$i_{ges.}$	SERVO adapter											Input unit												
		n_{1max}	Adapter size											n_{1max}	Input shaft [mm]										
			[min ⁻¹]	S92	S105	S114	S115	S130	S141	S142	S180	S189	S190		[min ⁻¹]	19x40	24x50	28x60	38x80	42x110	48x110	55x110			
F152	36.54	-													2500										
	27.85	-													1800										
	23.38	-													1800										
	19.24	-													1800										
	17.35	-													2500										
	16.37	-													1800										
	14.14	-													1800										
	13.22	-													1800										
	12.31	-													1800										
	11.10	-													1800										
	9.14	-													1800										
	7.77	-													1800										
	6.71	-													1800										
	5.84	-													1800										
F153	259.81	-													2500										
	223.77	-													2500										
	193.55	-													2500										
	170.73	-													1800										
	146.63	-													1800										
	144.52	-													2500										
	124.47	-													2500										
	122.00	-													1800										
	107.66	-													2500										
	101.23	-													1800										
	94.97	-													1800										
	84.42	-													1800										
	81.56	-													1800										
	72.56	-													1800										
	67.86	-													1800										
	62.79	-													1800										
	56.31	-													1800										
	46.96	-													1800										
	40.36	-													1800										
	34.93	-													1800										

F

Legend see page 279

Type	$i_{ges.}$	M_{znenn}	n_2	i_{exakt}	n_{1max}	IEC motor frame size												
						63	71	80	90	100	112	132	160	180	200	-	-	-
						IEC adapter												
						l63	l71	l80	l90	l100	l112	l132	l160	l180	l200	-	-	-
NEMA adapter																		
		[Nm]	[min ⁻¹]			N56	N143/145	N182	N184	N213/215	N254/256	N284/286	N324/326	-	-	-		
F154	2318.30	18000	0.60	632896/273	6000													
	1996.74	18000	0.70	96121080/48139	6000													
	1834.90	18000	0.76	38533/21	6000													
	1727.10	18000	0.81	46992528/27209	6000													
	1602.16	18000	0.87	100936/63	6000													
	1580.39	18000	0.89	46817595/29624	6000													
	1415.96	18000	0.99	148676/105	6000													
	1379.93	18000	1.0	5109885/3703	6000													
	1366.97	18000	1.0	11444301/8372	6000													
	1219.56	18000	1.1	9032067/7406	6000													
	1197.38	18000	1.2	578336/483	6000													
	1193.58	18000	1.2	2498166/2093	6000													
	1054.87	18000	1.3	11039193/10465	6000													
	1031.30	18000	1.4	87834780/85169	6000													
	1029.25	18000	1.4	280984/273	6000													
	898.51	18000	1.6	56606/63	5600													
	892.03	18000	1.6	42941448/48139	6000													
	886.48	18000	1.6	42674445/48139	6000													
	773.88	18000	1.8	11462715/14812	5600													
	769.81	18000	1.8	436480/567	5000													
	766.77	18000	1.8	20863062/27209	6000													
	742.31	18000	1.9	109120/147	4800													
	669.37	18000	2.1	2801997/4186	5600													
	663.03	18000	2.1	2455200/3703	5000													
	655.17	18000	2.1	316448/483	4400													
	639.35	18000	2.2	16572600/25921	4800													
	573.49	18000	2.4	1200320/2093	5000													
	564.30	18000	2.5	48060540/85169	4400													
	553.01	18000	2.5	8102160/14651	4800													
	549.60	18000	2.5	150040/273	3900													
	488.09	18000	2.9	23496264/48139	4400													
	473.37	18000	3.0	22787325/48139	3900													
	463.14	18000	3.0	223696/483	3500													
	409.44	18000	3.4	11140470/27209	3900													
	398.90	18000	3.5	33973830/85169	3500													
	379.72	18000	3.7	103664/273	3100													
	345.03	18000	4.1	16609428/48139	3500													
	327.05	18000	4.3	15743970/48139	3100													
	282.89	18000	4.9	7697052/27209	3100													

Legend see page 279

Type	i _{ges.}	SERVO adapter											Input unit												
		n _{1max}	Adapter size											n _{1max}	Input shaft [mm]										
			[min ⁻¹]	S92	S105	S114	S115	S130	S141	S142	S180	S189	S190		[min ⁻¹]	19x40	24x50	28x60	38x80	42x110	48x110	55x110			
F154	2318.30	5000													2500										
	1996.74	5000													2500										
	1834.90	5000													2500										
	1727.10	5000													2500										
	1602.16	5000													2500										
	1580.39	5000													2500										
	1415.96	5000													2500										
	1379.93	5000													2500										
	1366.97	5000													2500										
	1219.56	5000													2500										
	1197.38	5000													2500										
	1193.58	5000													2500										
	1054.87	5000													2500										
	1031.30	5000													2500										
	1029.25	5000													2500										
	898.51	5000													2500										
	892.03	5000													2500										
	886.48	5000													2500										
	773.88	5000													2500										
	769.81	4900													2500										
	766.77	5000													2500										
	742.31	4700													2500										
	669.37	5000													2500										
	663.03	4900													2500										
	655.17	4300													2500										
	639.35	4700													2500										
	573.49	4900													2500										
	564.30	4300													2500										
	553.01	4700													2500										
	549.60	3800													2500										
	488.09	4300													2500										
	473.37	3800													2500										
	463.14	3500													2500										
	409.44	3800													2500										
	398.90	3500													2500										
	379.72	-													2500										
	345.03	3500													2500										
	327.05	-													2500										
	282.89	-													2500										

F

Legend see page 279

Type	$i_{ges.}$	M_{znenn}	n_2	i_{exakt}	n_{1max}	IEC motor frame size										
						63	71	80	90	100	112	132	-	-	-	-
						IEC adapter										
						l63	l71	l80	l90	l100	l112	l132	-	-	-	-
NEMA adapter																
		[Nm]	[min ⁻¹]			N56	N143/145	N182	N184	N213/215	-	-	-	-	-	
F155	24805.81	18000	0.06	33859936/1365	6000											
5 stages	20285.13	18000	0.07	791120/39	6000											
	17143.10	18000	0.08	5400076/315	6000											
	16017.35	18000	0.09	4372736/273	6000											
	14018.89	18000	0.10	126170/9	6000											
	12419.47	18000	0.11	7911200/637	6000											
	11069.46	18000	0.13	697376/63	6000											
	10164.86	18000	0.14	12025024/1183	6000											
	8582.99	18000	0.16	1261700/147	6000											
	7824.26	18000	0.18	712008/91	6000											
	7024.85	18000	0.20	1917784/273	6000											
	$n_1=1400 \text{ min}^{-1}$	5911.67	18000	0.24	2689808/455	6000										
		5407.29	18000	0.26	37851/7	6000										
	Maximum torque 18000 Nm	4838.19	18000	0.29	10126336/2093	6000										
		4085.50	18000	0.34	428978/105	6000										
3923.28		18000	0.36	13923712/3549	6000											
3343.64		18000	0.42	1614976/483	6000											
3284.26		18000	0.43	2689808/819	5600											
2711.35		18000	0.52	2220592/819	6000											
2661.75		18000	0.53	19619776/7371	5000											
2566.69		18000	0.55	4904944/1911	4800											
2269.72		18000	0.62	428978/189	5600											
1839.52		18000	0.76	3129016/1701	5000											
1773.82	18000	0.79	782254/441	4800												

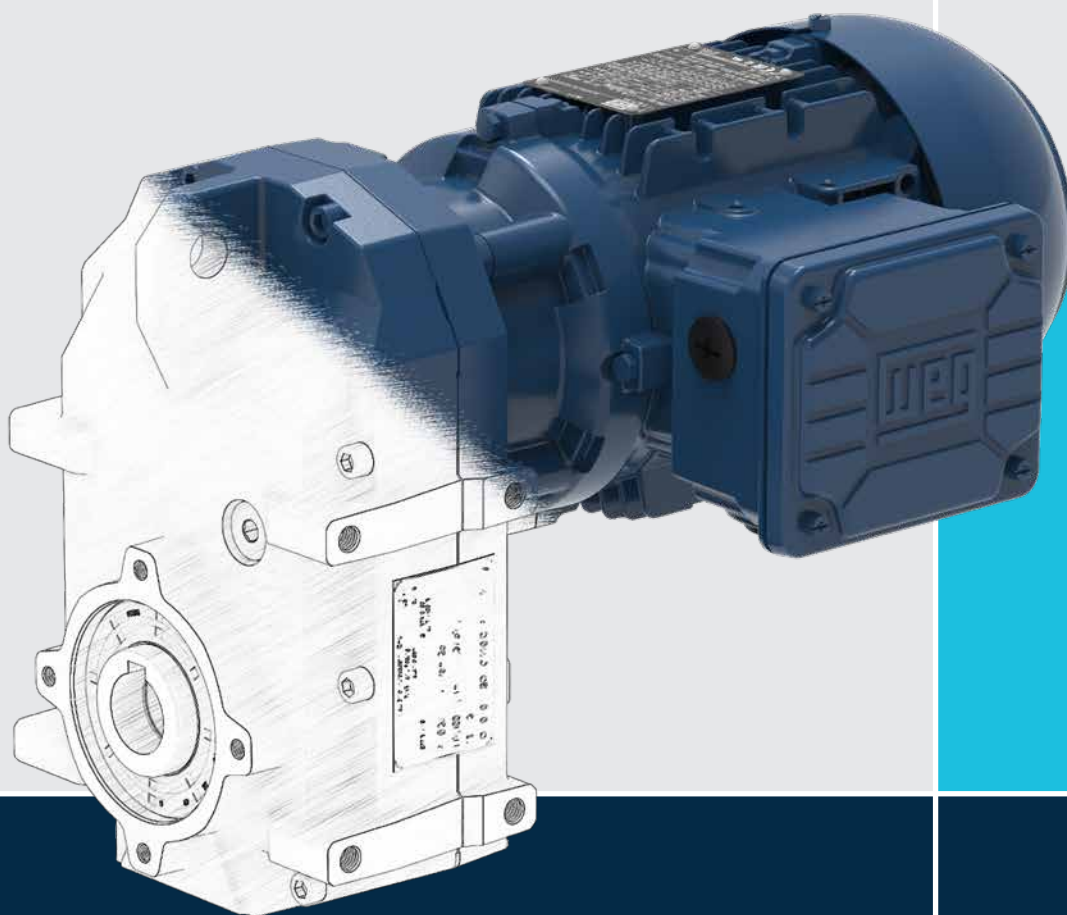
Legend see page 279

Type	$i_{ges.}$	SERVO adapter											Input unit														
		n_{1max}	Adapter size											n_{1max}	Input shaft [mm]												
			[min ⁻¹]	S92	S105	S114	S115	S130	S141	S142	S180	S189	S190		[min ⁻¹]	19x40	24x50	28x60	38x80	42x110	48x110	55x110					
F155	24805.81	5000													3000												
	20285.13	5000													3000												
	17143.10	5000													3000												
	16017.35	5000													3000												
	14018.89	5000													3000												
	12419.47	5000													3000												
	11069.46	5000													3000												
	10164.86	5000													3000												
	8582.99	5000													3000												
	7824.26	5000													3000												
	7024.85	5000													3000												
	5911.67	5000													3000												
	5407.29	5000													3000												
	4838.19	5000													3000												
	4085.50	5000													3000												
	3923.28	5000													3000												
	3343.64	5000													3000												
	3284.26	5000													3000												
	2711.35	5000													3000												
	2661.75	4900													3000												
	2566.69	4700													3000												
	2269.72	5000													3000												
	1839.52	4900													3000												
	1773.82	4700													3000												

F

Legend see page 279

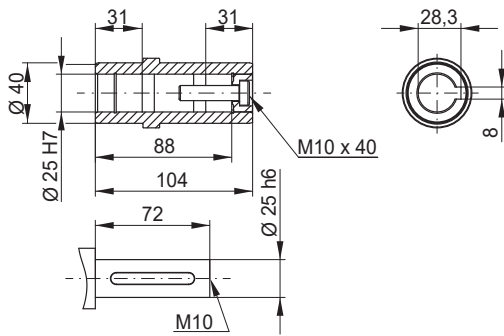
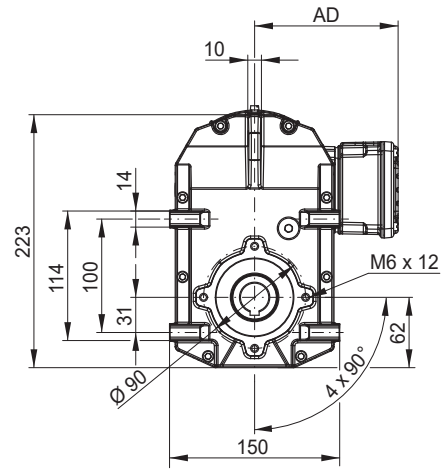
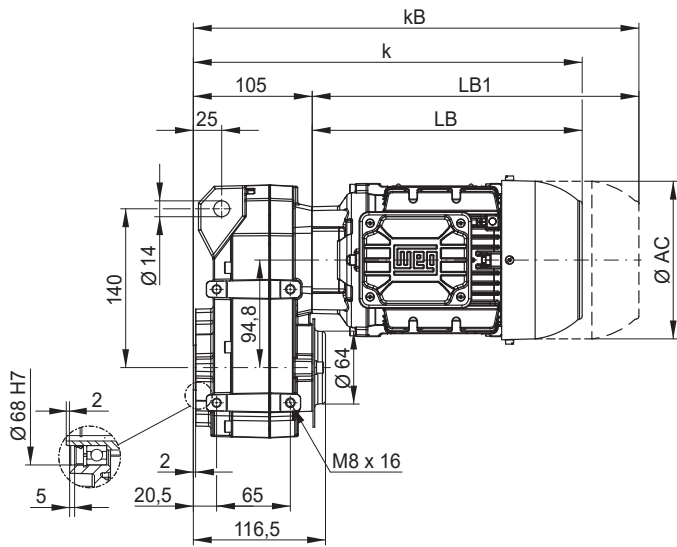
Dimension sheets Geared Motors



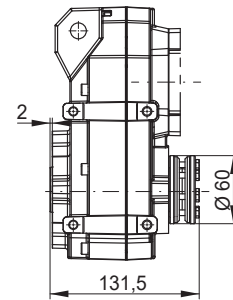
F

FH02 - Hollow shaft

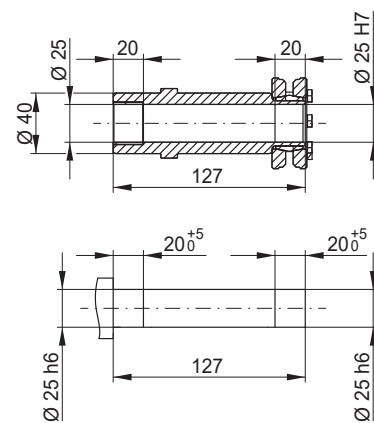
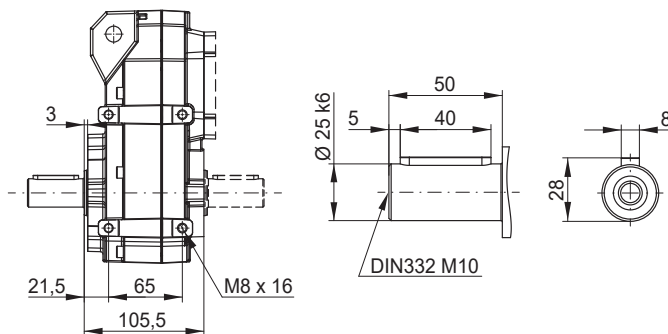
F



FD02 - Shrink disc *



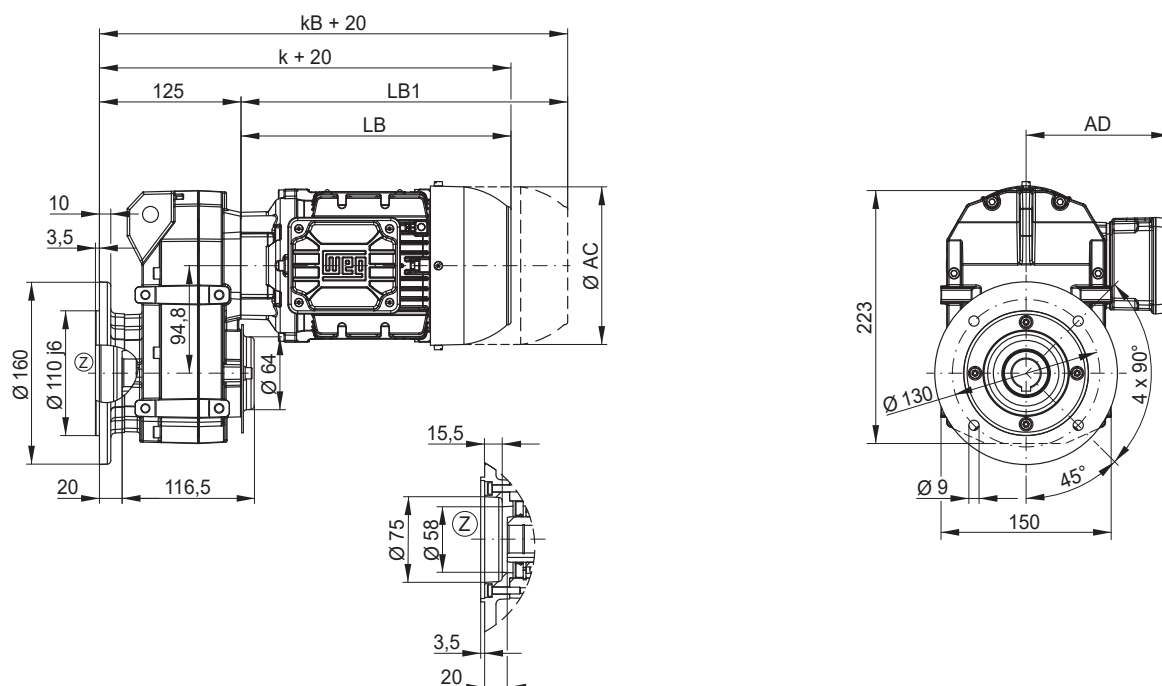
FS02 - Output shaft FB02 - Output shaft on both sides



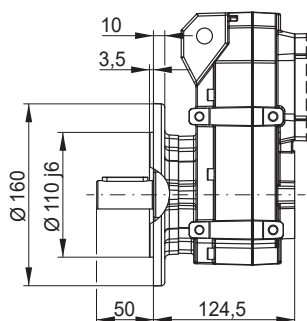
Motor fr.	63	71	80	L80	90S/L
Dimension					
AC	126	141	159	159	178
AD	128	136	145	145	155
k	309	343	351	375	393
kB	353	392	409	433	466
LB	204	238	246	270	288
LB1	248	287	304	328	361

Motor dimension sheets see page 590. Description of motor lengths LB and LB1 see page 594.

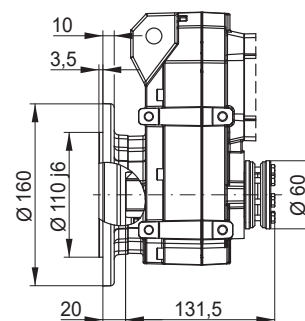
FO02 - B5 flange execution with hollow shaft



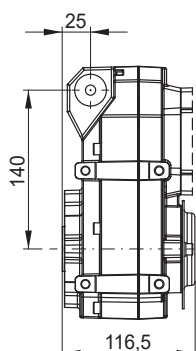
FO02 - B5 flange execution with output shaft



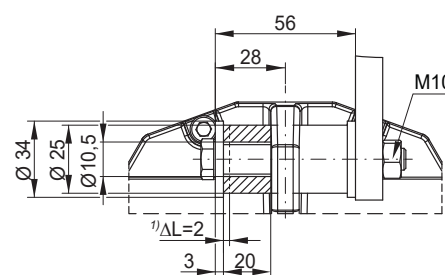
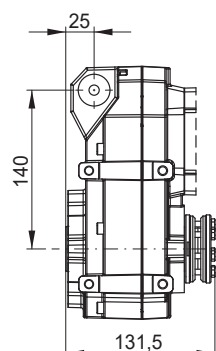
FP02 - B5 flange execution with hollow shaft and shrink disc *



FT02 - Hollow shaft with rubber buffer



FU02 - Hollow shaft with shrink disc * and rubber buffer

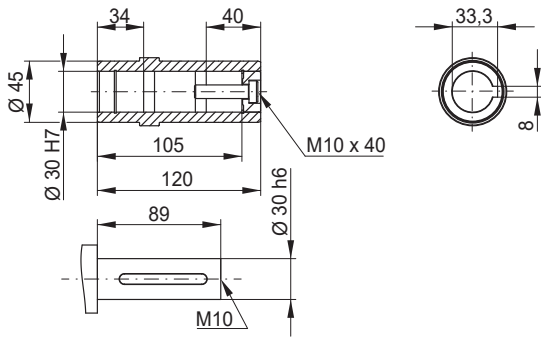
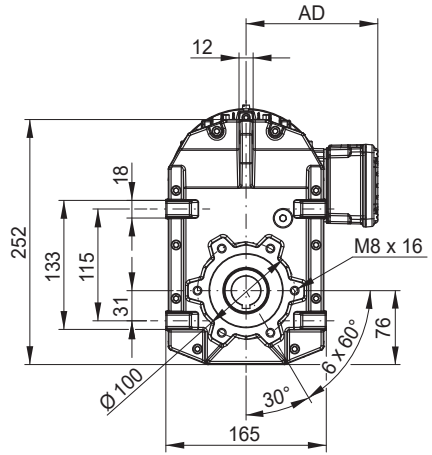
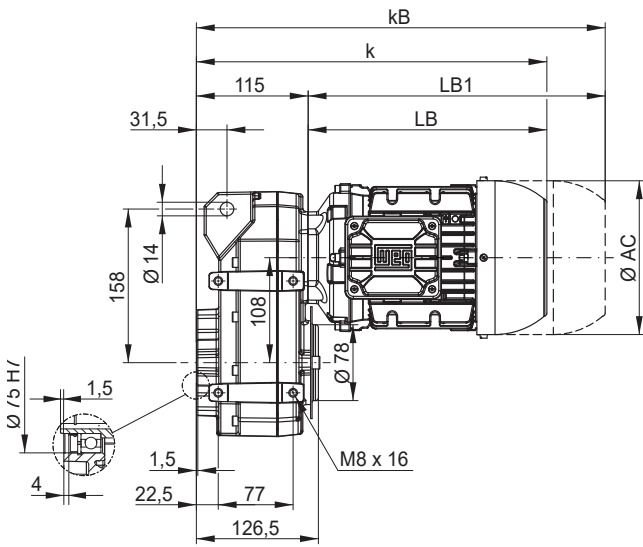


Dimensions in mm.

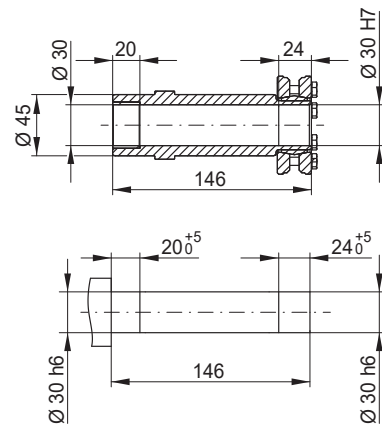
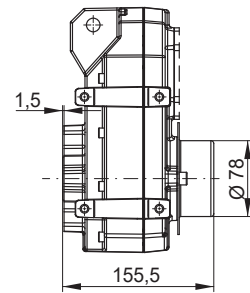
* Shrink disc only in combination with motor frame sizes 63 and 71
Protection cap for shrink disc never possible

1) ΔL = recommended preload

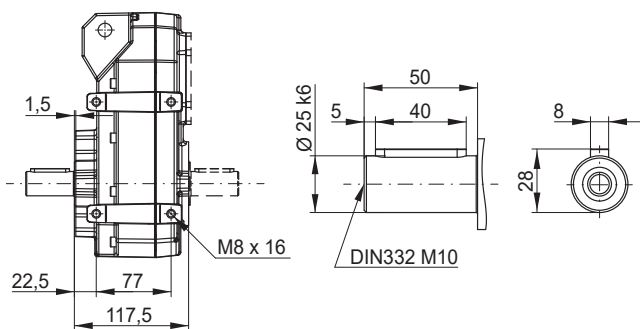
FH03 - Hollow shaft



FD03 - Shrink disc *

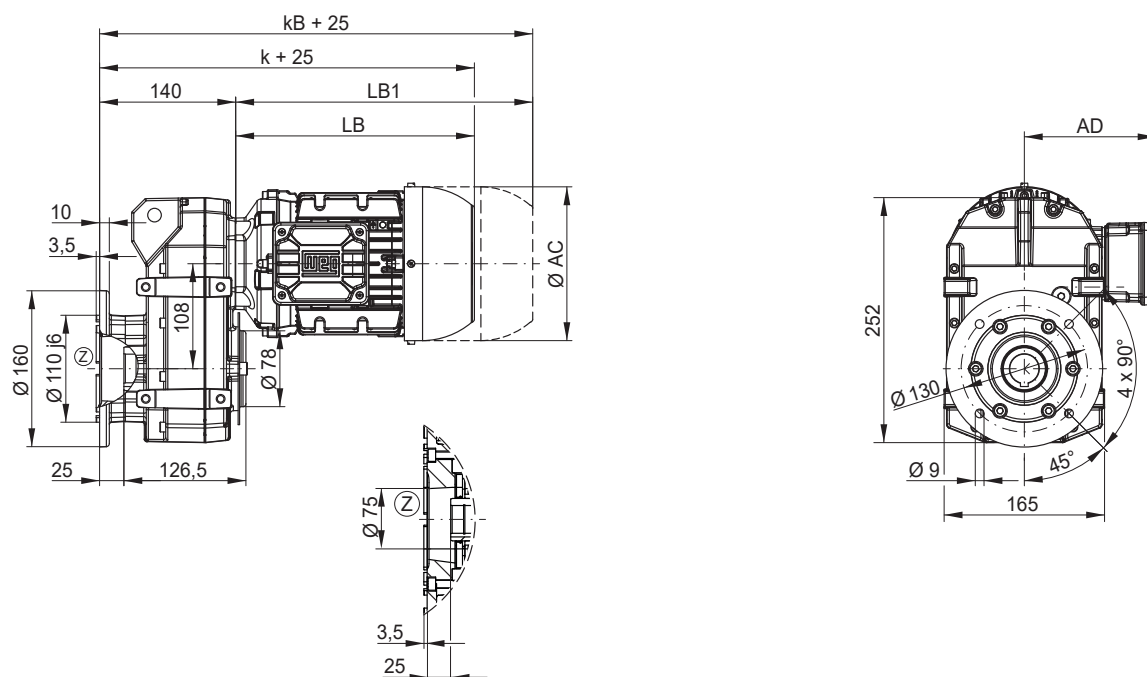
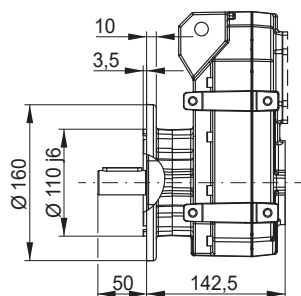
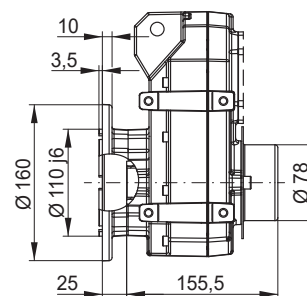
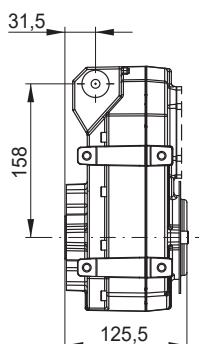
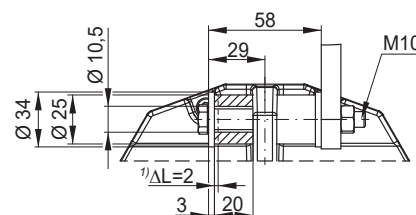
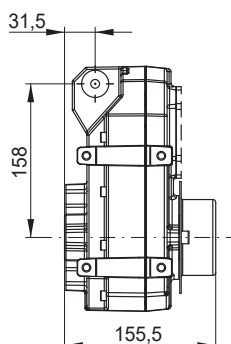


FS03 - Output shaft FB03 - Output shaft on both sides



Motor fr.	63	71	80	L80	90S/L	100L	L100L
Dimension							
AC	126	141	159	159	178	199	199
AD	128	136	145	145	155	165	165
k	319	353	361	385	403	453	491
kB	363	402	419	443	476	537	575
LB	204	238	246	270	288	338	376
LB1	248	287	304	328	361	422	460

Motor dimension sheets see page 590. Description of motor lengths LB and LB1 see page 594.

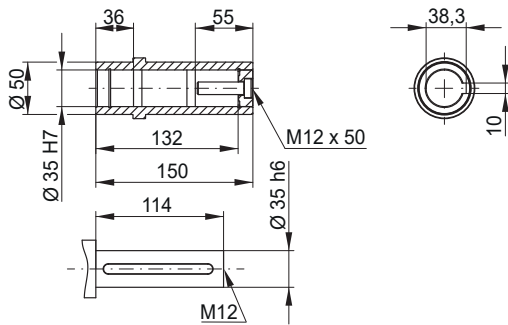
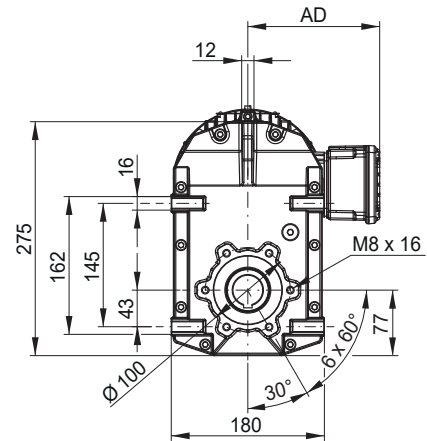
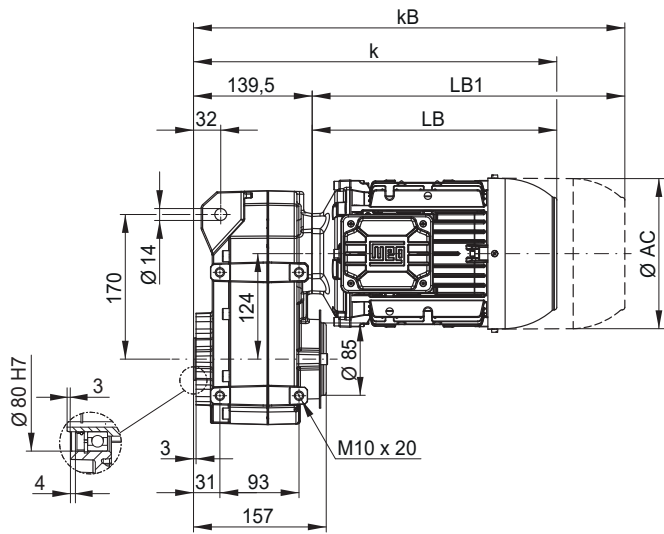
FO03 - B5 flange execution with hollow shaft

FF03 - B5 flange execution with output shaft

FP03 - B5 flange execution with hollow shaft and shrink disc *

FT03 - Hollow shaft with rubber buffer

FU03 - Hollow shaft with shrink disc * and rubber buffer


Dimensions in mm.

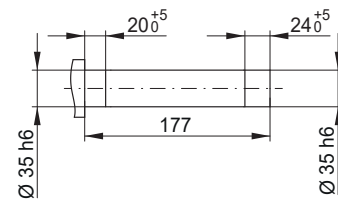
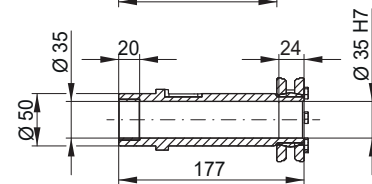
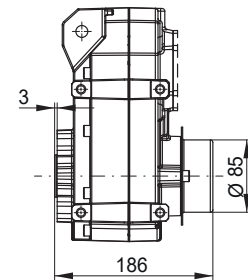
* Shrink disc only in combination with motor frame sizes 63 und 71

1) ΔL = recommended preload

FH04 - Hollow shaft

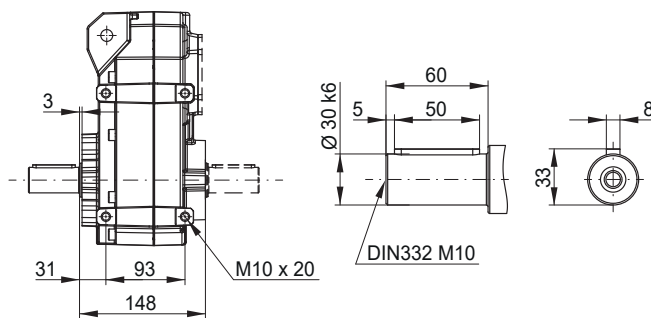


FD04 - Shrink disc *



FS04 - Output shaft

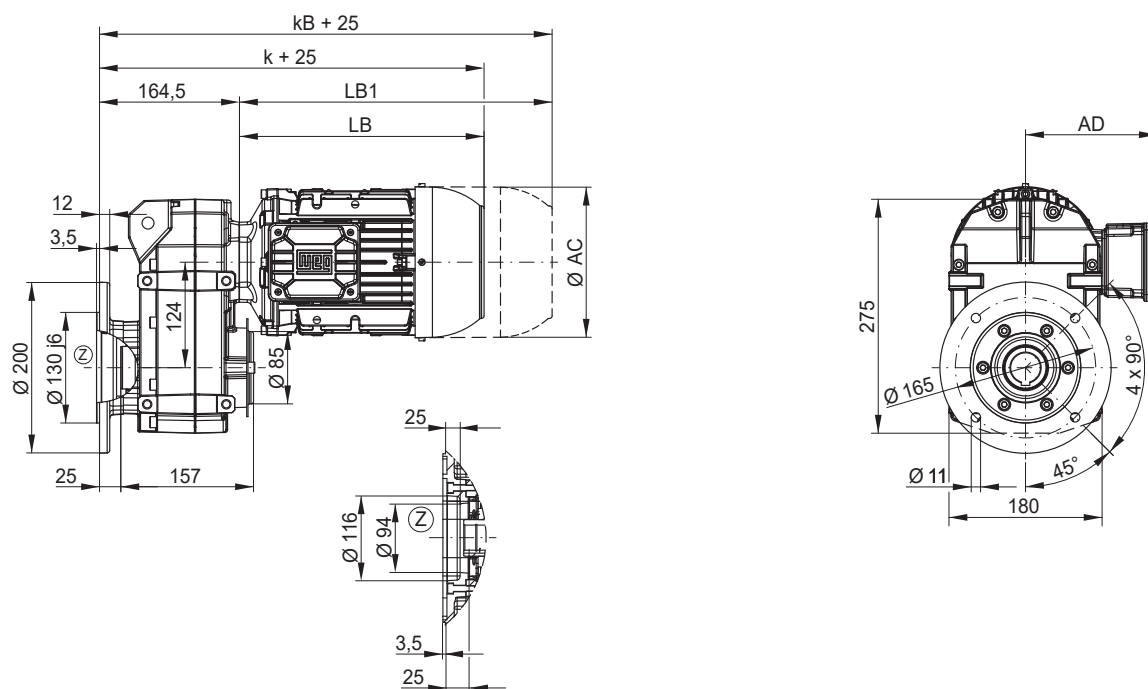
FB04 - Output shaft on both sides



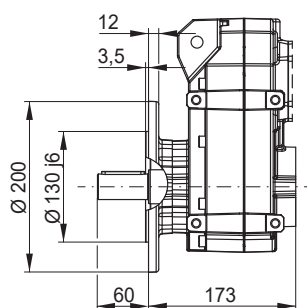
Motor fr.	63	71	80	L80	90S/L	100L	L100L
Dimension							
AC	126	141	159	159	178	199	199
AD	128	136	145	145	155	165	165
k	344	378	386	410	428	478	516
kB	388	427	444	468	501	562	600
LB	204	238	246	270	288	338	376
LB1	248	287	304	328	361	422	460

Motor dimension sheets see page 590. Description of motor lengths LB and LB1 see page 594.

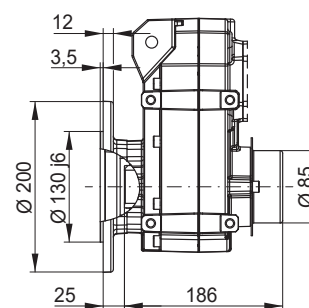
FO04 - B5 flange execution with hollow shaft



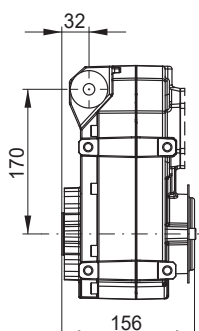
FO04 - B5 flange execution with output shaft



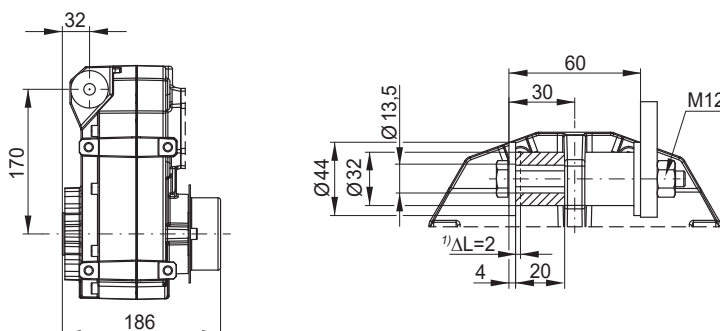
FP04 - B5 flange execution with hollow shaft and shrink disc *



FT04 - Hollow shaft with rubber buffer



FU04 - Hollow shaft with shrink disc * and rubber buffer

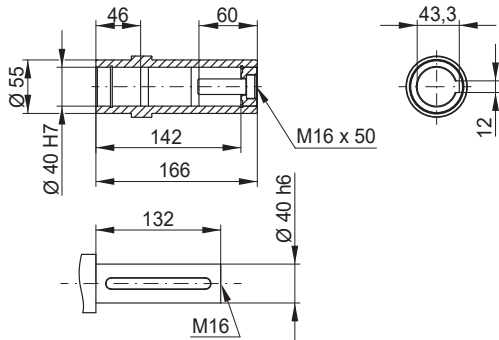
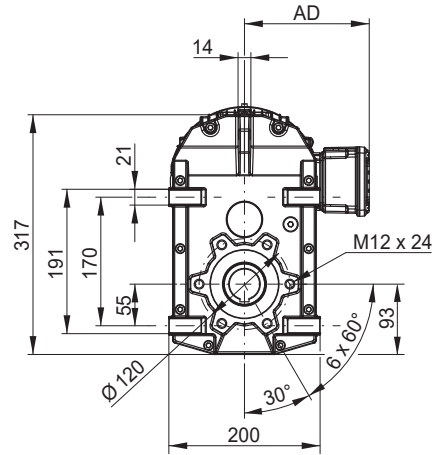
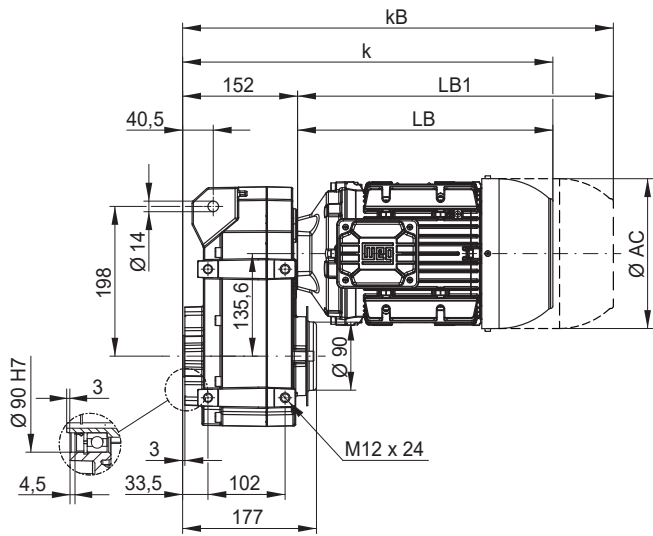


Dimensions in mm.

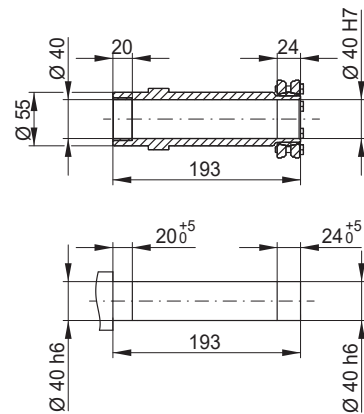
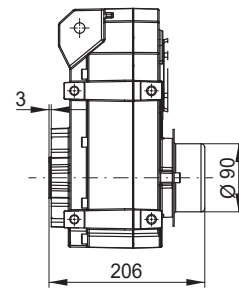
* Shrink disc only in combination with motor frame sizes 63, 71 and 80

1) ΔL = recommended preload

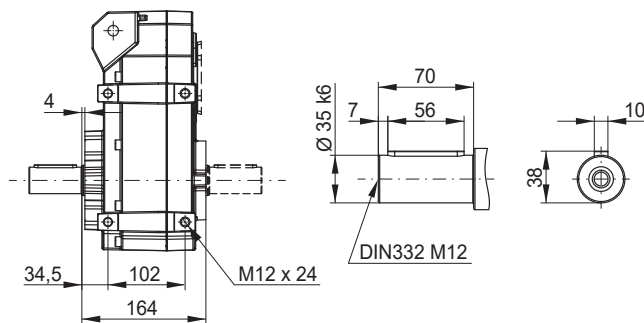
FH05 - Hollow shaft



FD05 - Shrink disc *



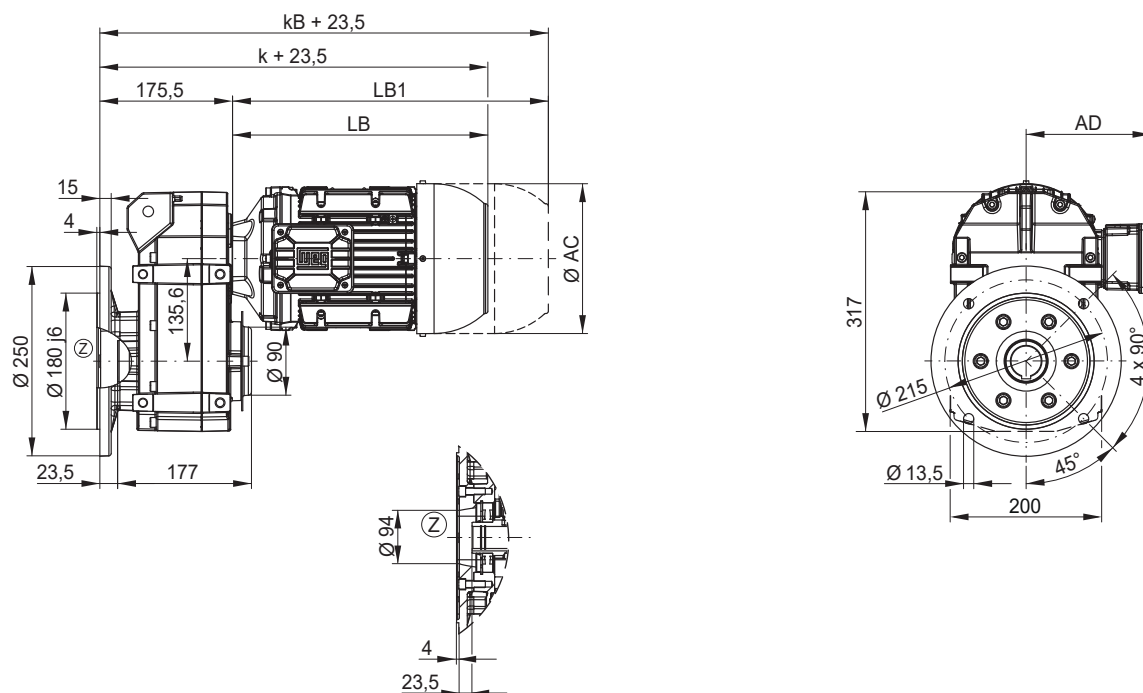
FS05 - Output shaft FB05 - Output shaft on both sides



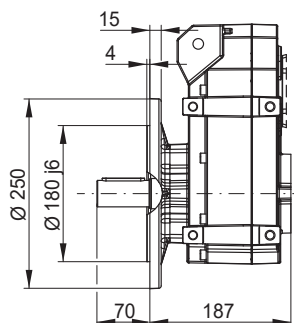
Motor fr.	63	71	80	L80	90S/L	100L	L100L	112M	132S,M	L132M
Dimension										
AC	126	141	159	159	178	199	199	221	261	261
AD	128	136	145	145	155	165	165	185	205	205
k	356	390	398	422	440	490	528	500	565	603
kB	400	439	456	480	513	574	612	587	683	721
LB	204	238	246	270	288	338	376	348	413	451
LB1	248	287	304	328	361	422	460	435	531	569

Motor dimension sheets see page 590. Description of motor lengths LB and LB1 see page 594.

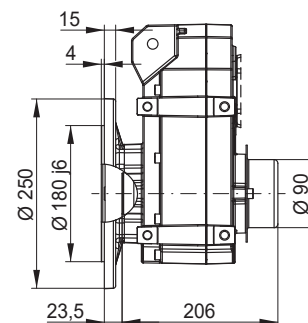
FO05 - B5 flange execution with hollow shaft



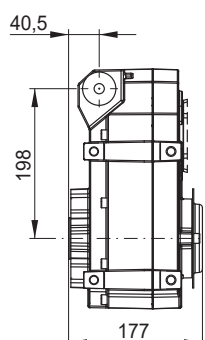
FF05 - B5 flange execution with output shaft



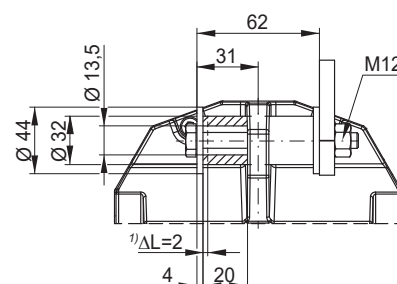
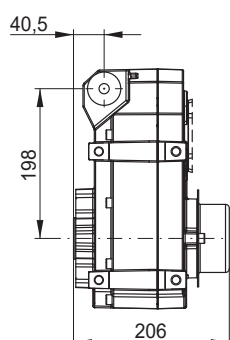
FP05 - B5 flange execution with hollow shaft and shrink disc *



FT05 - Hollow shaft with rubber buffer



FU05 - Hollow shaft with shrink disc * and rubber buffer

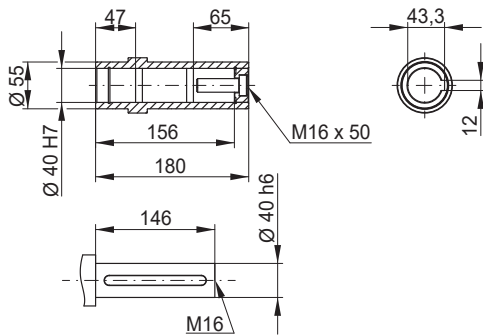
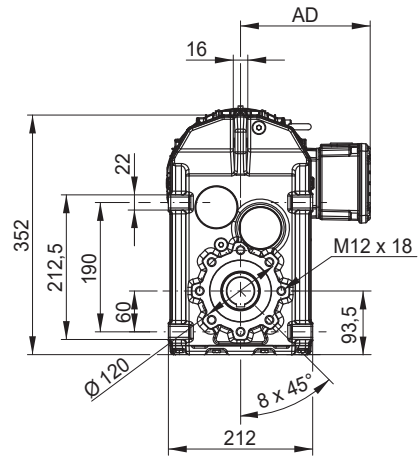
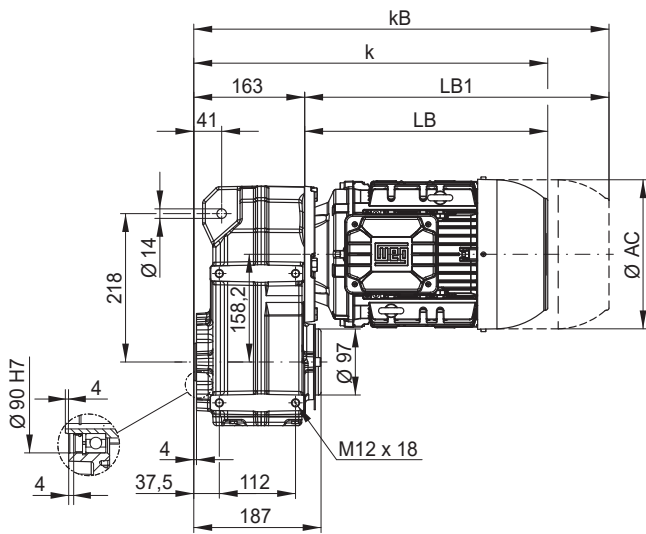


Dimensions in mm.

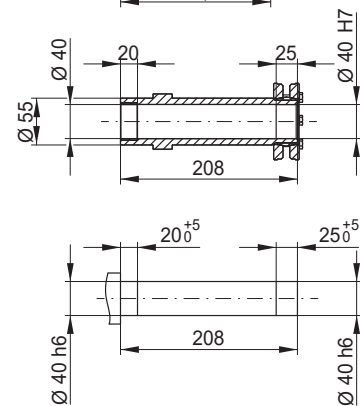
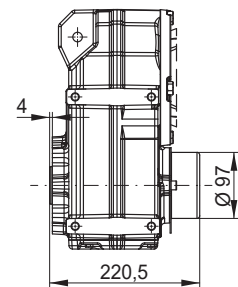
* Shrink disc only in combination with motor frame sizes 63, 71, 80 and 90

1) ΔL = recommended preload

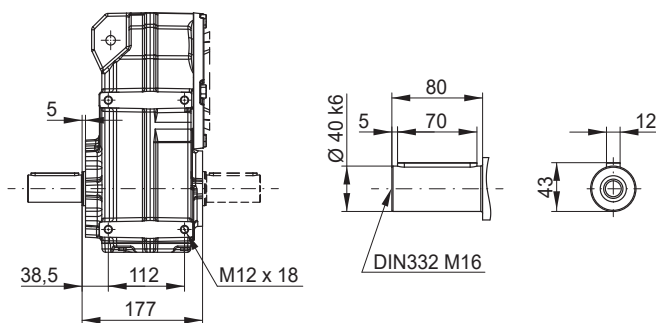
FH06 - Hollow shaft



FD06 - Shrink disc *



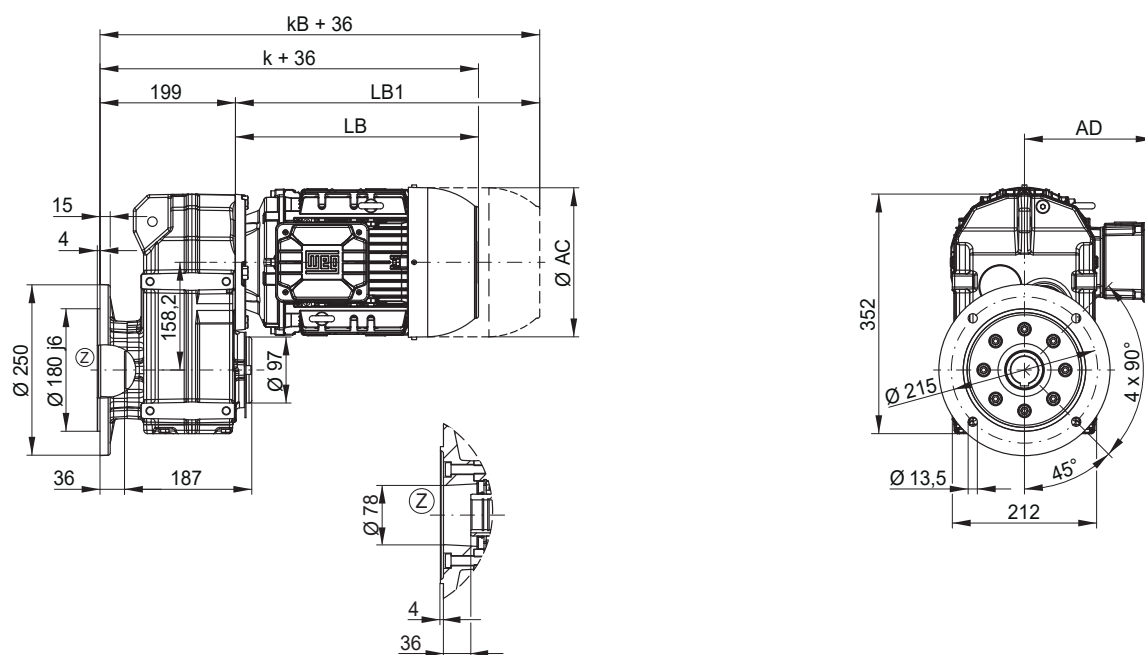
FS06 - Output shaft FB06 - Output shaft on both sides



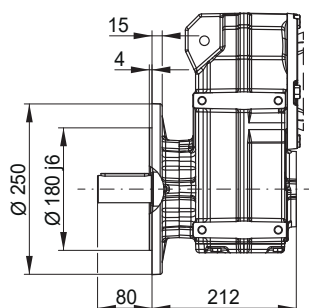
Motor fr.	63	71	80	L80	90S/L	100L	L100L	112M	132S,M	L132M	160M	160L
Dimension												
AC	126	141	159	159	178	199	199	221	261	261	329	329
AD	128	136	145	145	155	165	165	185	205	205	266	266
k	367	401	409	433	451	501	539	511	576	614	708	752
kB	411	450	467	491	524	585	623	598	694	732	832	876
LB	204	238	246	270	288	338	376	348	413	451	545	589
LB1	248	287	304	328	361	422	460	435	531	569	669	713

Motor dimension sheets see page 590; Gear unit size F06 corresponds to motor flange FR-200. Description of motor lengths LB and LB1 see page 594.

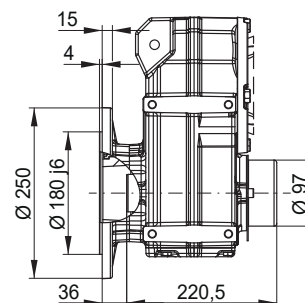
FO06 - B5 flange execution with hollow shaft



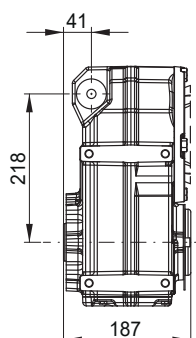
FO06 - B5 flange execution with output shaft



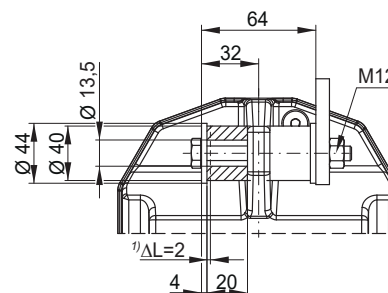
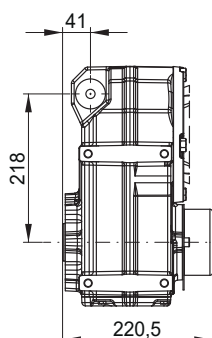
FP06 - B5 flange execution with hollow shaft and shrink disc *



FT06 - Hollow shaft with rubber buffer



FU06 - Hollow shaft with shrink disc * and rubber buffer

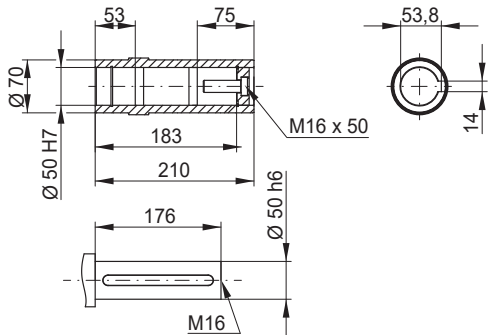
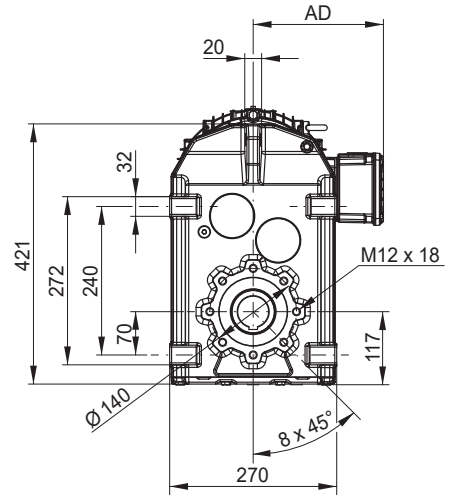
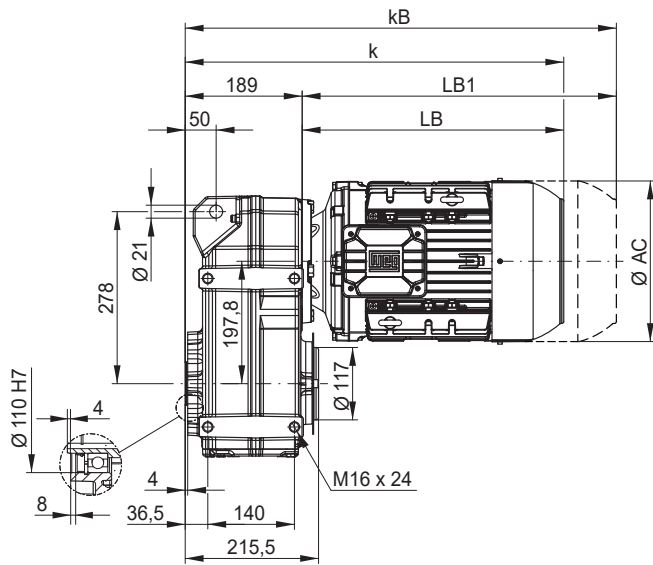


Dimensions in mm.

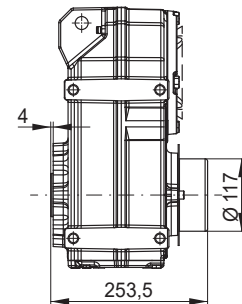
* Shrink disc only in combination with motor frame sizes 63, 71, 80, 90, 100 and 112

1) ΔL = recommended preload

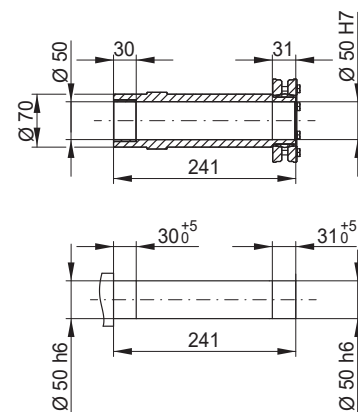
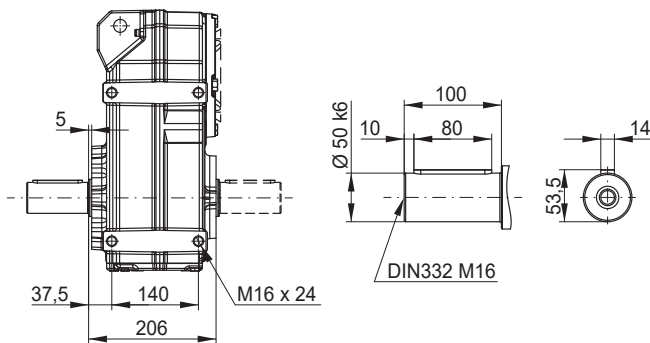
FH07 - Hollow shaft



FD07 - Shrink disc *



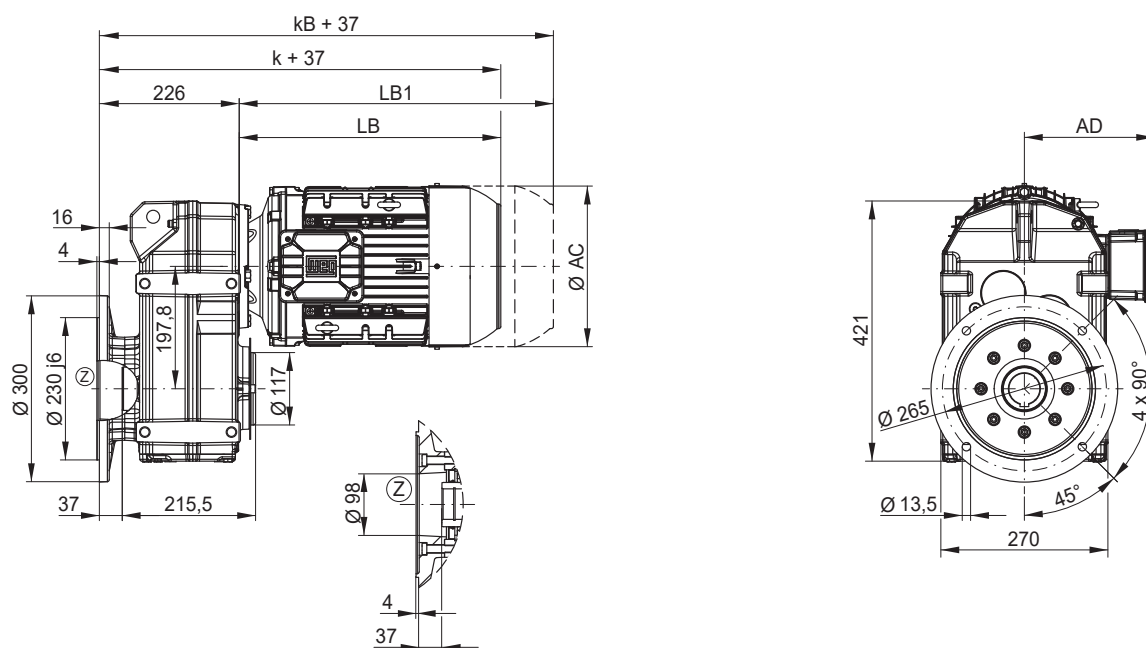
FS07 - Output shaft FB07 - Output shaft on both sides



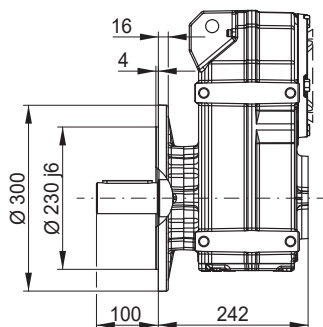
Motor fr.	63	71	80	L80	90S/L	100L	L100L	112M	132S,M	L132M	160M	160L
Dimension												
AC	126	141	159	159	178	199	199	221	261	261	329	329
AD	128	136	145	145	155	165	165	185	205	205	266	266
k	393	427	435	459	477	527	565	537	602	640	734	778
kB	437	476	493	517	550	611	649	624	720	758	858	902
LB	204	238	246	270	288	338	376	348	413	451	545	589
LB1	248	287	304	328	361	422	460	435	531	569	669	713

Motor dimension sheets see page 590; Gear unit size F07 corresponds to motor flange FR-200. Description of motor lengths LB and LB1 see page 594.

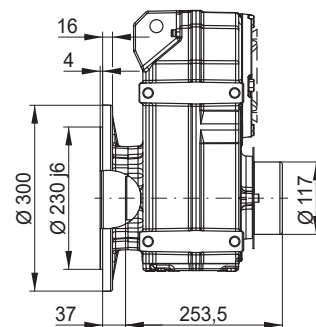
FO07 - B5 flange execution with hollow shaft



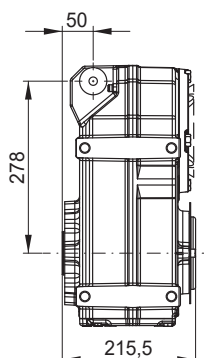
FF07 - B5 flange execution with output shaft



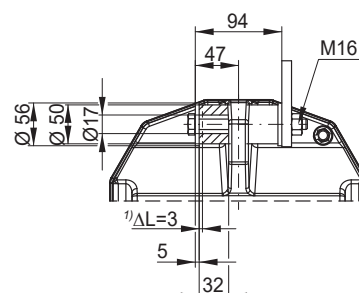
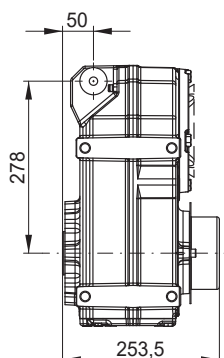
FP07 - B5 flange execution with hollow shaft and shrink disc *



FT07 - Hollow shaft with rubber buffer



FU07 - Hollow shaft with shrink disc * and rubber buffer

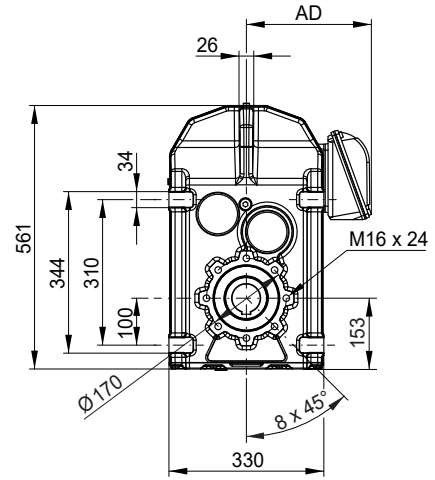
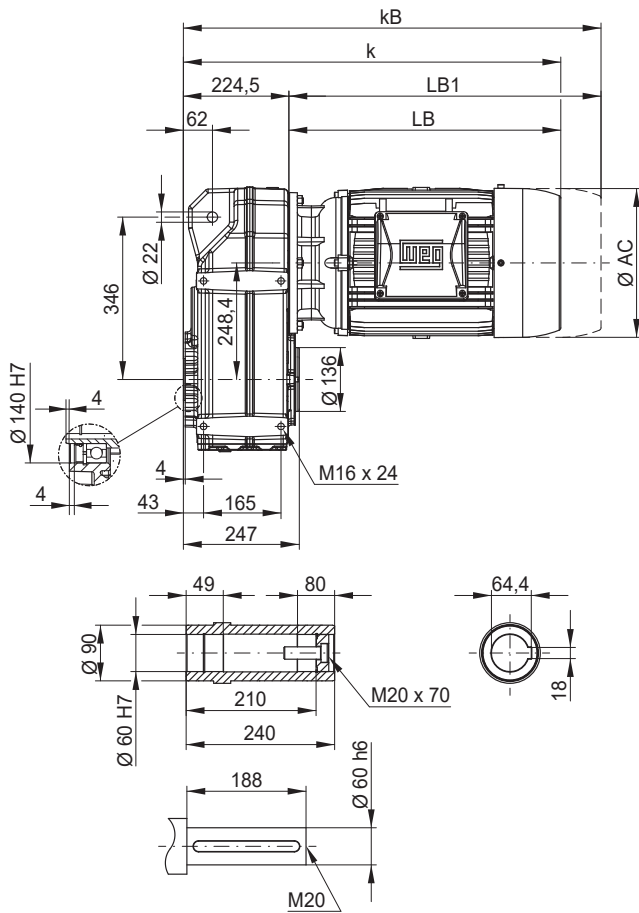


Dimensions in mm.

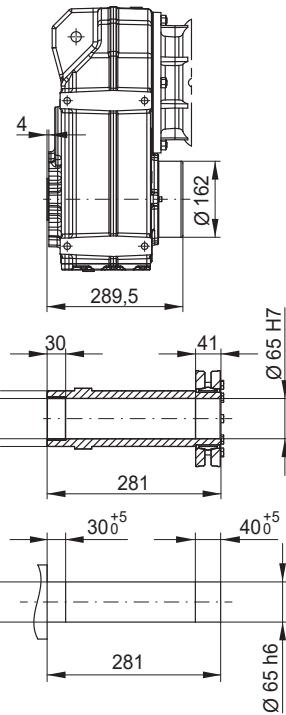
* Shrink disc and protection cap possible with all mountable motors.

1) ΔL = recommended preload

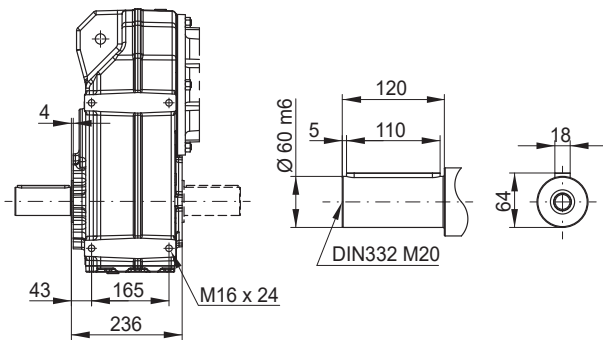
FH082 / FH083 - Hollow shaft



FD082 / FD083 - Shrink disc *



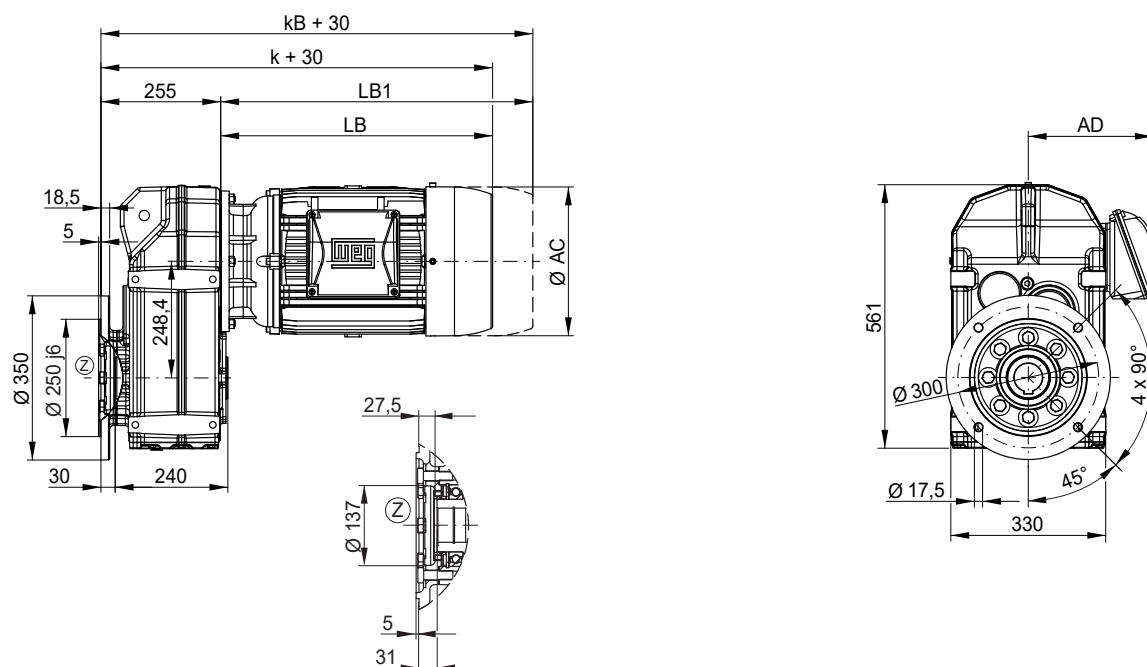
FS082 / FS083 - Output shaft FB082 / FB083 - Output shaft on both sides



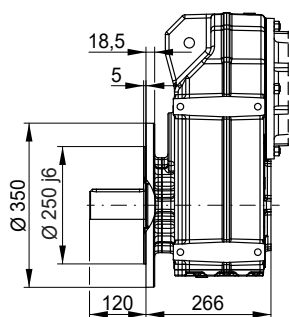
Motor fr.	63	71	80	L80	90S/L	100L	L100L	112M	132S,M	L132M	160M	160L	180M	180L
Dimension														
AC	126	141	159	159	178	199	199	221	261	261	329	329	347	347
AD	128	136	145	145	155	165	165	185	205	205	266	266	281	281
k	429	463	471	495	513	563	601	573	638	676	760	804	828	866
kB	473	512	529	553	586	647	685	660	756	794	884	928	946	984
LB	204	238	246	270	288	338	376	348	413	451	535	579	603	641
LB1	248	287	304	328	361	422	460	435	531	569	659	703	721	759

Motor dimension sheets see page 590; Gear unit size F082/F083 corresponds to motor flange FR-300. Description of motor lengths LB and LB1 see page 594.

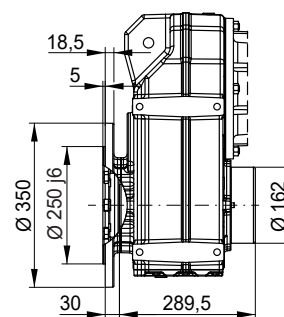
FO082 / FO083 - B5 flange execution with hollow shaft



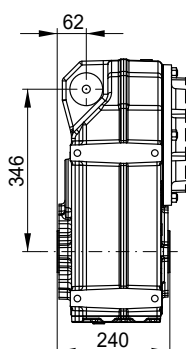
FF082 / FO083 - B5 flange execution with output shaft



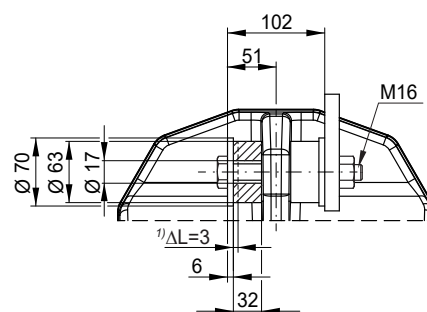
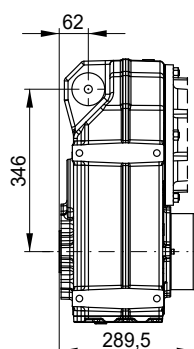
FP082 / FP083 - B5 flange execution with hollow shaft and shrink disc *



FT082 / FT083 - Hollow shaft with rubber buffer



FU082 / FU083 - Hollow shaft with shrink disc * and rubber buffer

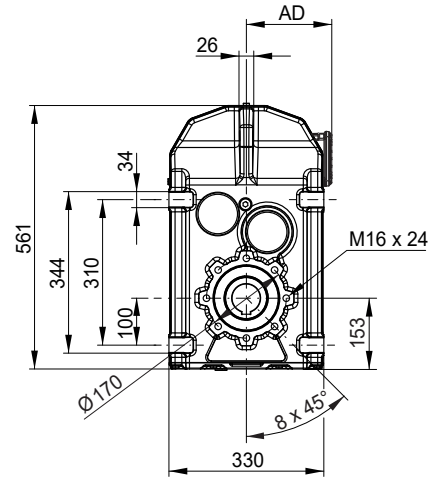
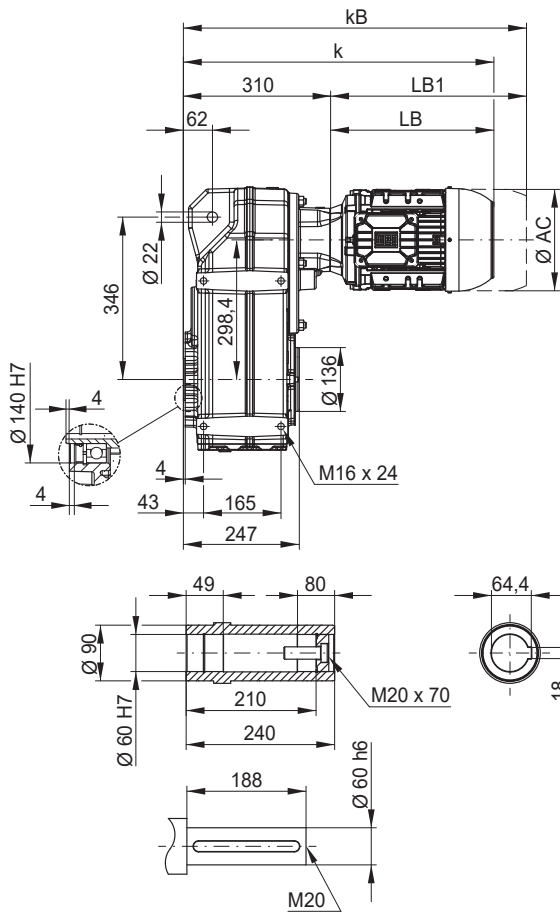


Dimensions in mm.

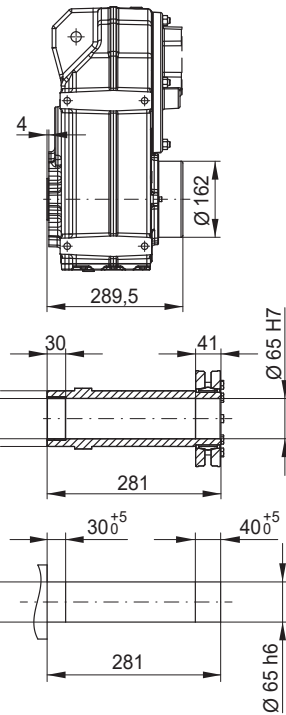
* Shrink disc and protection cap possible with all mountable motors.

1) ΔL = recommended preload

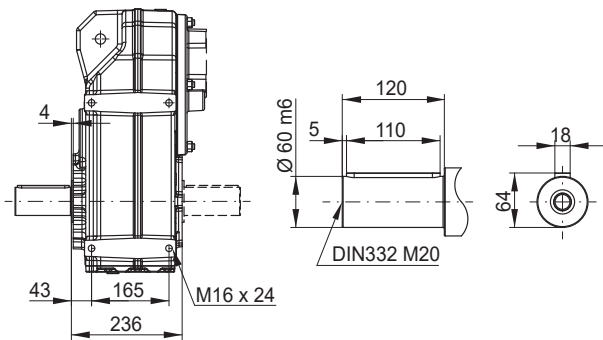
FH084 - Hollow shaft



FD084 - Shrink disc *



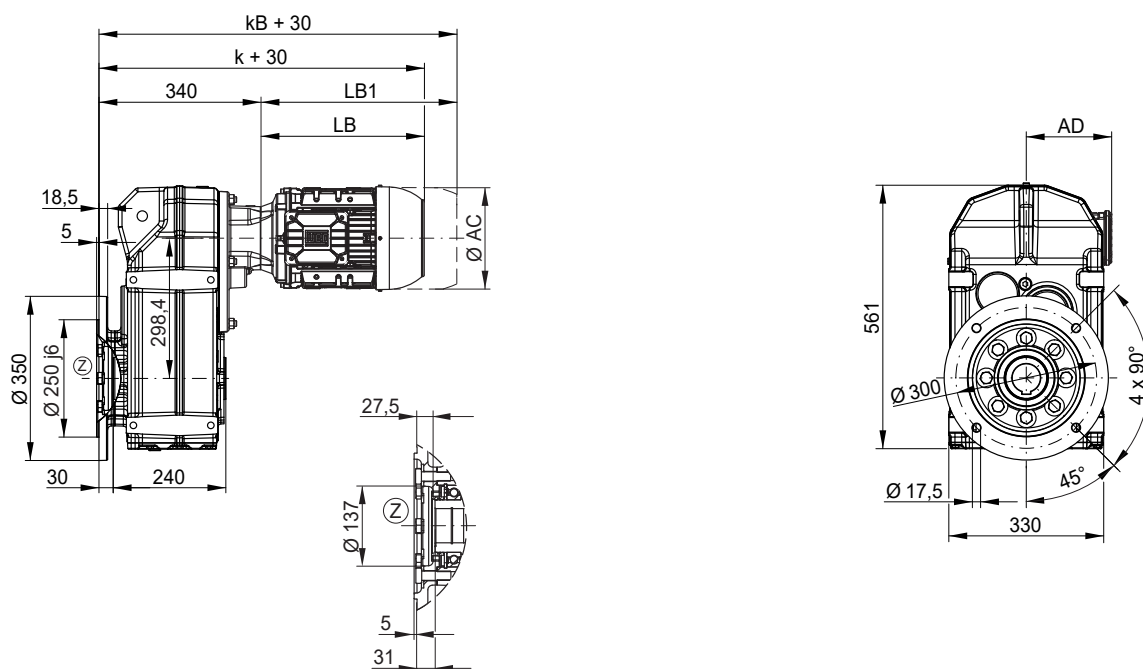
FS084 - Output shaft FB084 - Output shaft on both sides



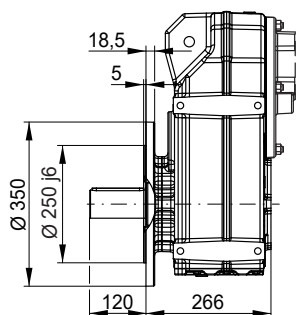
Motor fr.	63	71	80	L80	90S/L	100L	L100L	112M	132S,M	L132M
Dimension										
AC	126	141	159	159	178	199	199	221	261	261
AD	128	136	145	145	155	165	165	185	205	205
k	514	548	556	580	598	648	686	658	723	761
kB	558	597	614	638	671	732	770	745	841	879
LB	204	238	246	270	288	338	376	348	413	451
LB1	248	287	304	328	361	422	460	435	531	569

Motor dimension sheets see page 590. Description of motor lengths LB and LB1 see page 594.

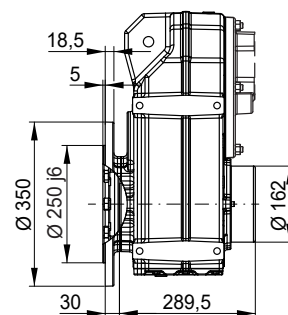
FO084 - B5 flange execution with hollow shaft



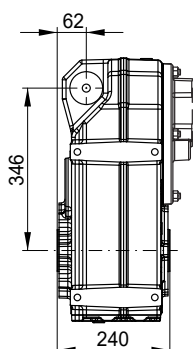
FF084 - B5 flange execution with output shaft



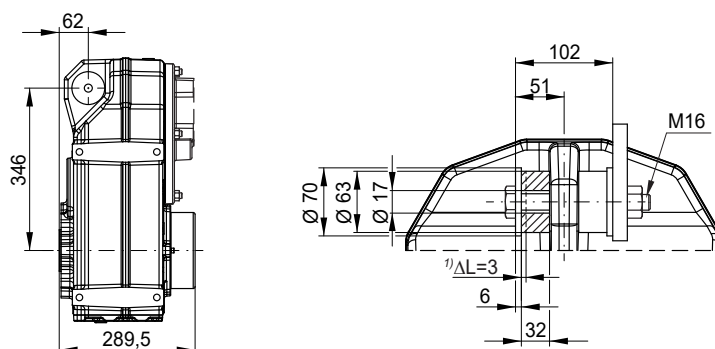
FP084 - B5 flange execution with hollow shaft and shrink disc *



FT084 - Hollow shaft with rubber buffer



FU084 - Hollow shaft with shrink disc * and rubber buffer

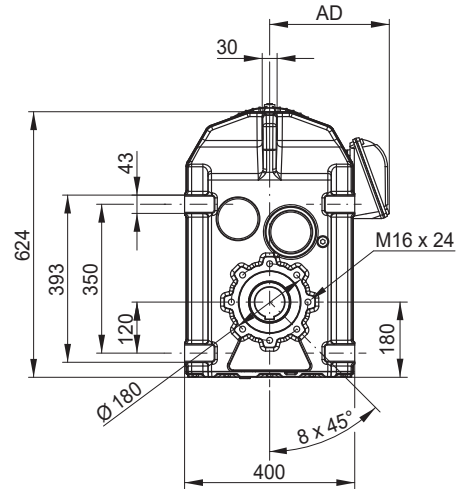
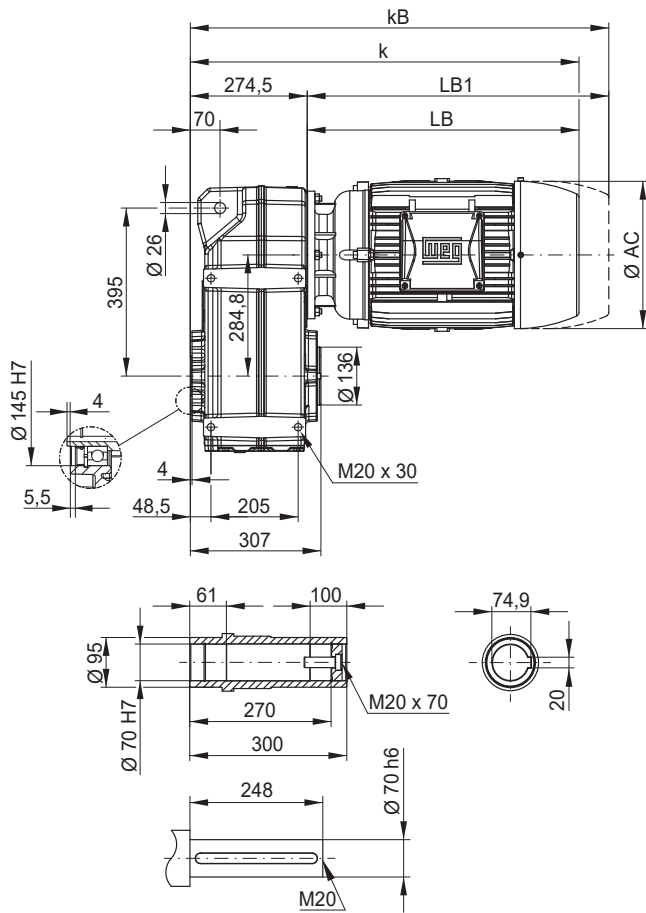


Dimensions in mm.

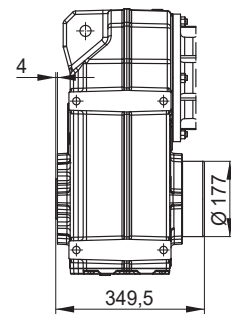
* Shrink disc and protection cap possible with all mountable motors.

1) ΔL = recommended preload

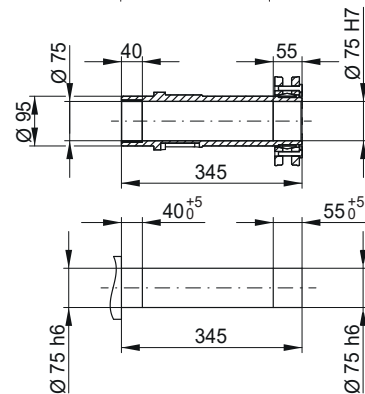
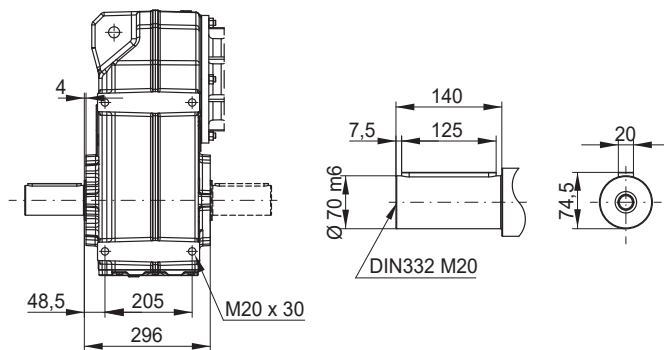
FH092 / FH093 - Hollow shaft



FD092 / FD093 - Shrink disc *



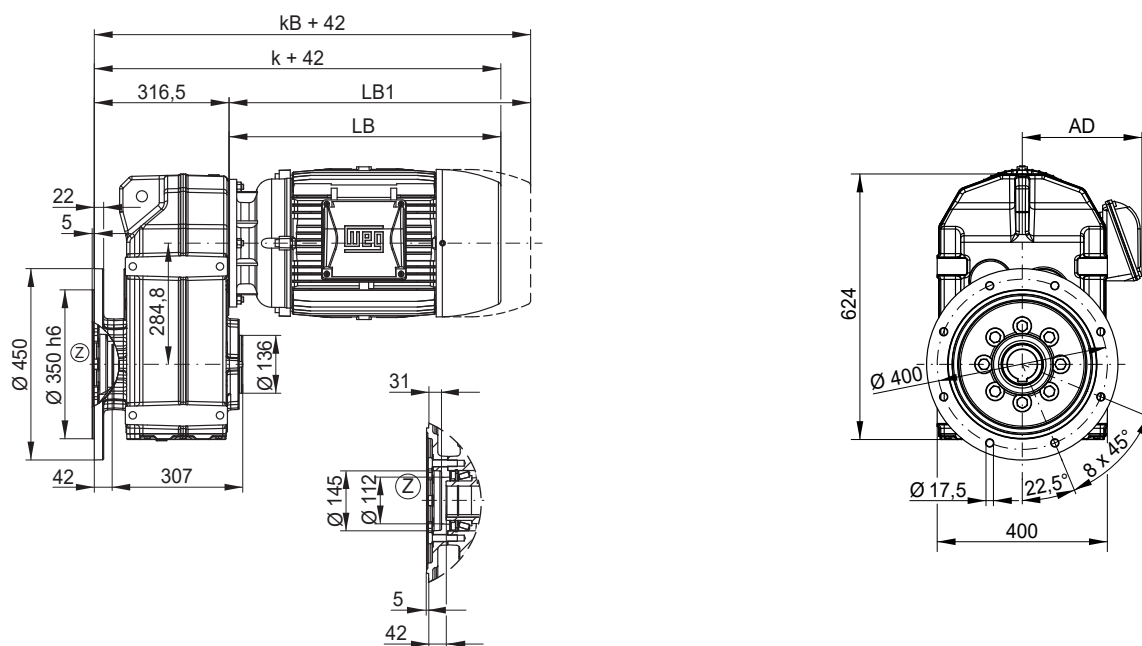
FS092 / FS093 - Output shaft FB092 / FB093 - Output shaft on both sides



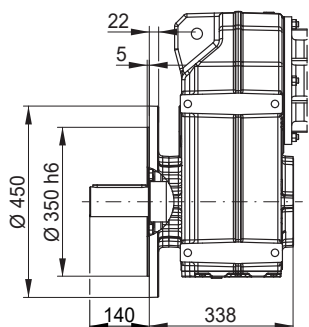
Motor fr.	63	71	80	L80	90S/L	100L	L100L	112M	132S,M	L132M	160M	160L	180M	180L	200L
Dimension	63	71	80	L80	90S/L	100L	L100L	112M	132S,M	L132M	160M	160L	180M	180L	200L
AC	126	141	159	159	178	199	199	221	261	261	329	329	347	347	386
AD	128	136	145	145	155	165	165	185	205	205	266	266	281	281	317
k	479	513	521	545	563	613	651	623	688	726	810	854	878	916	1008
kB	523	562	579	603	636	697	735	710	806	844	934	978	996	1034	1134
LB	204	238	246	270	288	338	376	348	413	451	535	579	603	641	733
LB1	248	287	304	328	361	422	460	435	531	569	659	703	721	759	859

Motor dimension sheets see page 590; Gear unit size F092/F093 corresponds to motor flange FR-300. Description of motor lengths LB and LB1 see page 594.

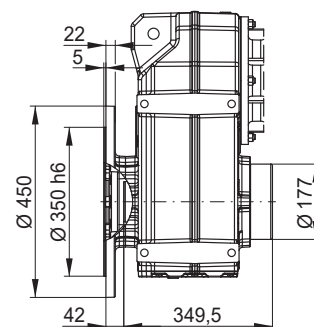
FO092 / FO093 - B5 flange execution with hollow shaft



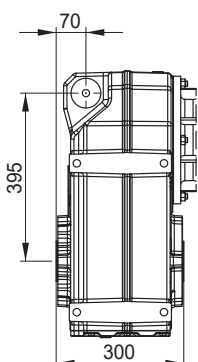
FF092 / FF093 - B5 flange execution with output shaft



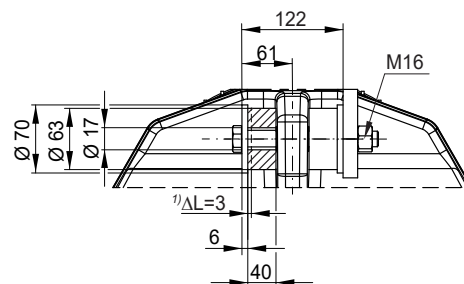
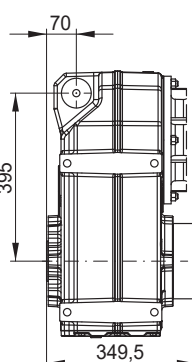
FP092 / FP093 - B5 flange execution with hollow shaft and shrink disc *



FT092 / FT093 - Hollow shaft with rubber buffer



FU092 / FU093 - Hollow shaft with shrink disc * and rubber buffer

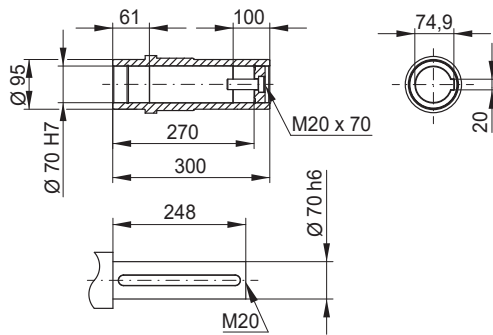
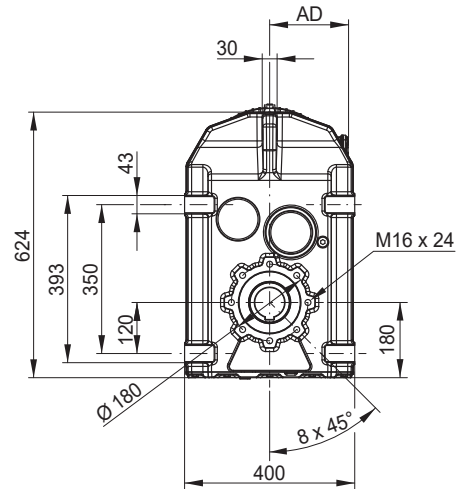
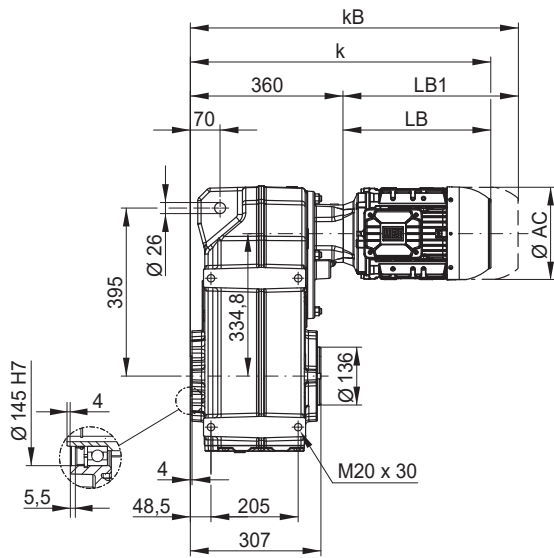


Dimensions in mm.

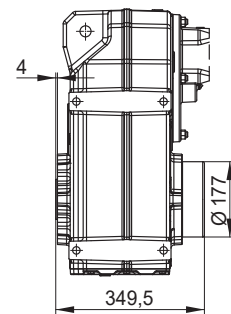
* Shrink disc and protection cap possible with all mountable motors.

¹⁾ ΔL = recommended preload

FH094 - Hollow shaft

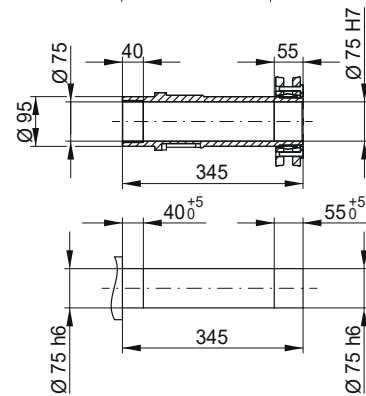
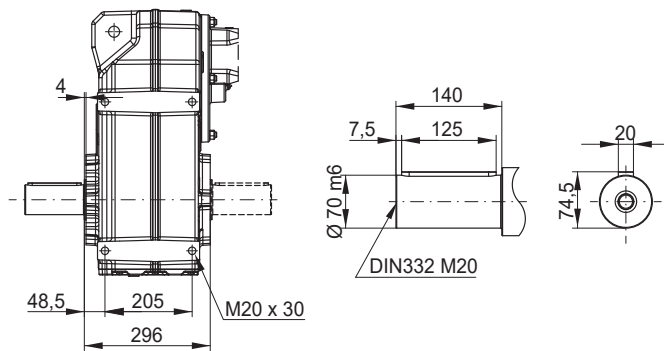


FD094 - Shrink disc *



FS094 - Output shaft

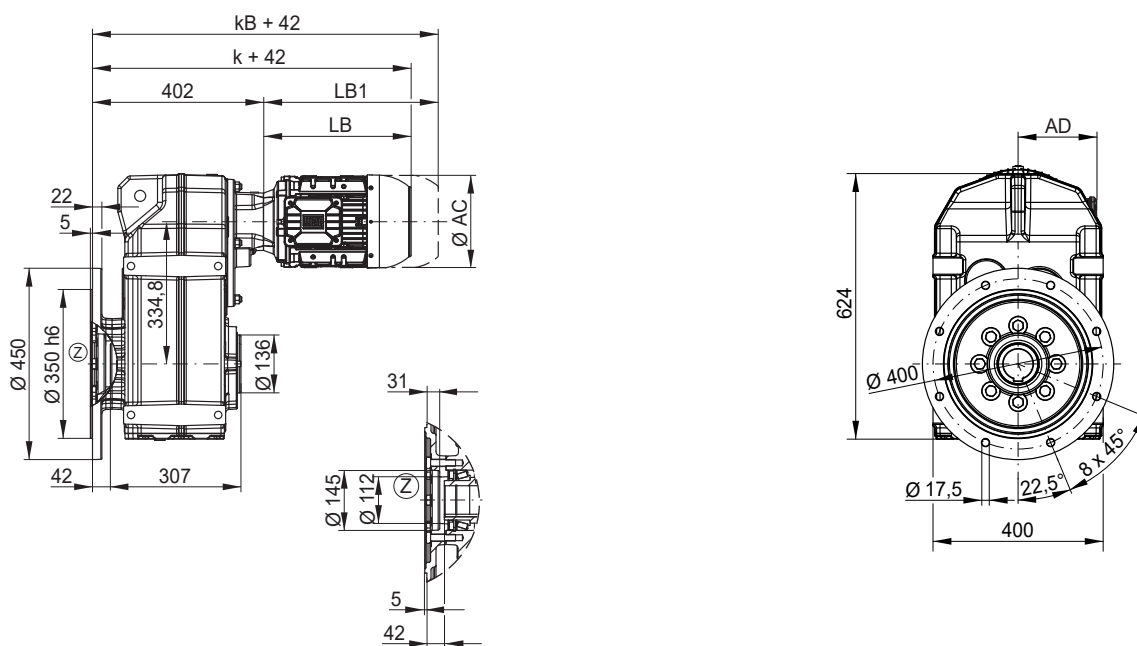
FB094 - Output shaft on both sides



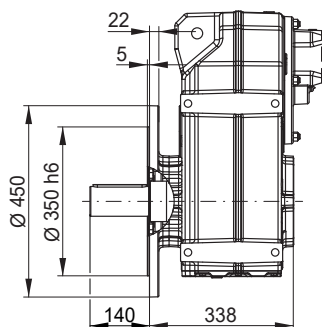
Motor fr.	63	71	80	L80	90S/L	100L	L100L	112M	132S,M	L132M
Dimension										
AC	126	141	159	159	178	199	199	221	261	261
AD	128	136	145	145	155	165	165	185	205	205
k	564	598	606	630	648	698	736	708	773	811
kB	608	647	664	688	721	782	820	795	891	929
LB	204	238	246	270	288	338	376	348	413	451
LB1	248	287	304	328	361	422	460	435	531	569

Motor dimension sheets see page 590. Description of motor lengths LB and LB1 see page 594.

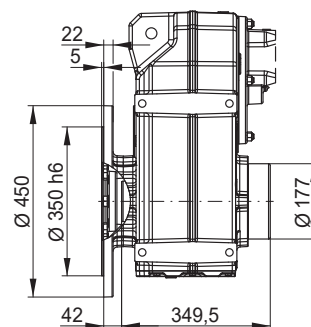
FO094 - B5 flange execution with hollow shaft



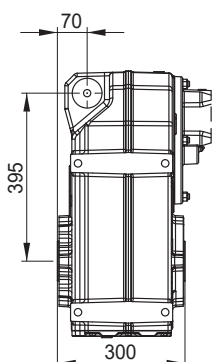
FF094 - B5 flange execution with output shaft



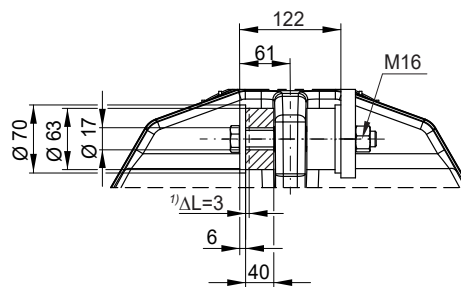
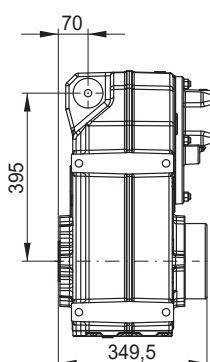
FP094 - B5 flange execution with hollow shaft and shrink disc *



FT094 - Ausführung mit Hohlwelle und Gummipuffer



FU094 - Hollow shaft with shrink disc * and rubber buffer

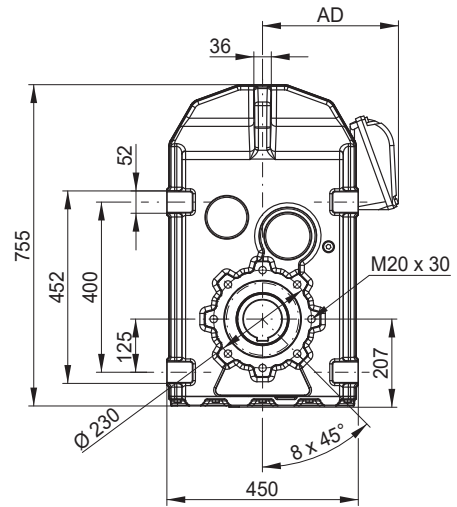
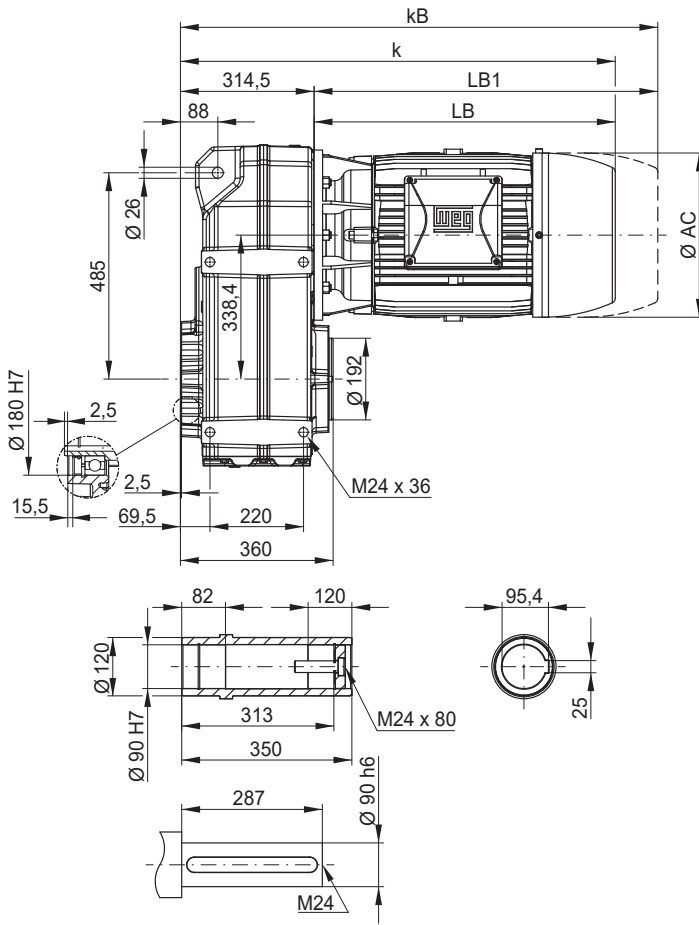


Dimensions in mm.

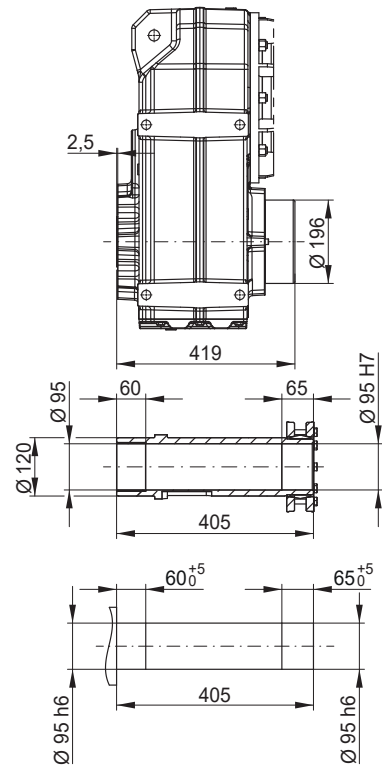
* Shrink disc and protection cap possible with all mountable motors.

${}^1/\Delta L$ = recommended preload

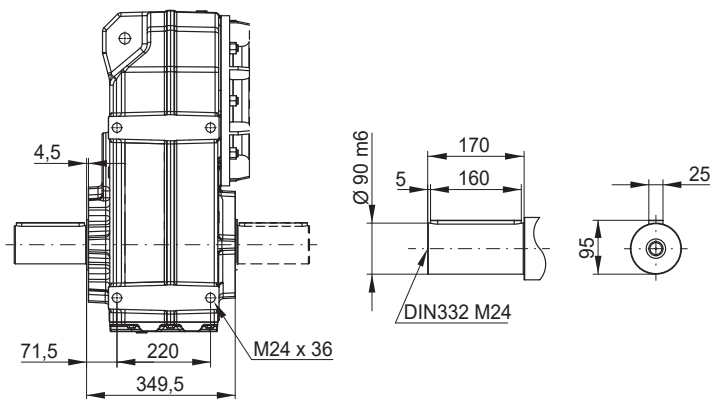
FH102 / FH103 - Hollow shaft



FD102 / FD103 - Shrink disc *



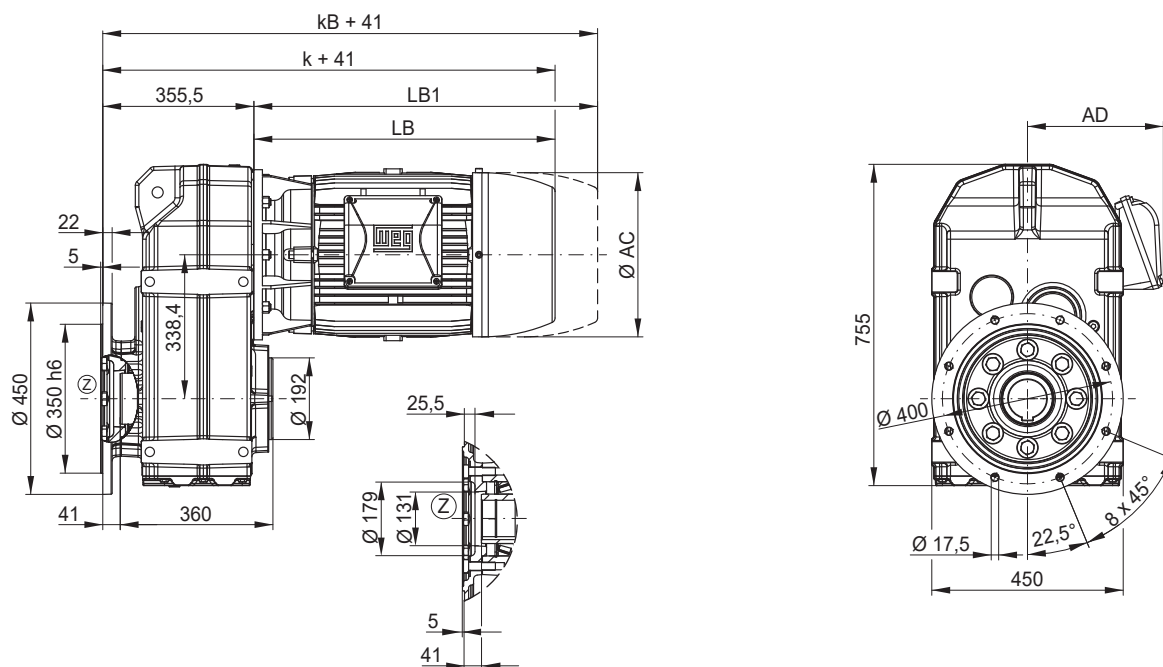
FS102 / FS103 - Output shaft FB102 / FB103 - Output shaft on both sides



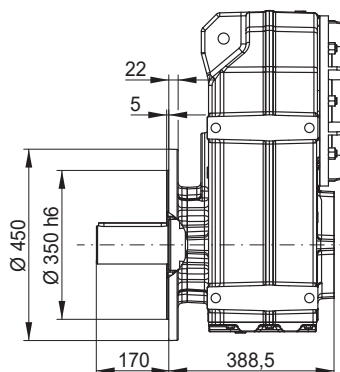
Motor fr.	63	71	80	L80	90S/L	100L	L100L	112M	132S,M	L132M	160M	160L	180M	180L	200L	225S/M
Dimension																
AC	-	-	-	-	-	-	-	221	261	261	329	329	347	347	386	453
AD	-	-	-	-	-	-	-	185	205	205	266	266	281	281	317	385
k	-	-	-	-	-	-	-	663	728	766	837	881	905	943	1035	1143
kB	-	-	-	-	-	-	-	750	846	884	961	1005	1023	1061	1161	1261
LB	-	-	-	-	-	-	-	348	413	451	522	566	590	628	720	828
LB1	-	-	-	-	-	-	-	435	531	569	646	690	708	746	846	946

Motor dimension sheets see page 590; Gear unit size F102/F103 corresponds to motor flange FR-400. Description of motor lengths LB and LB1 see page 594.

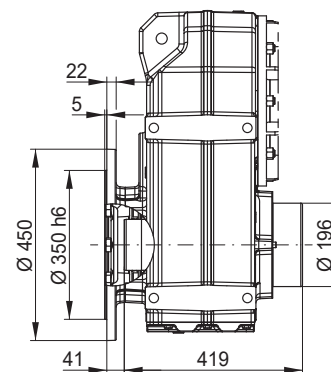
FO102 / FO103 - B5 flange execution with hollow shaft



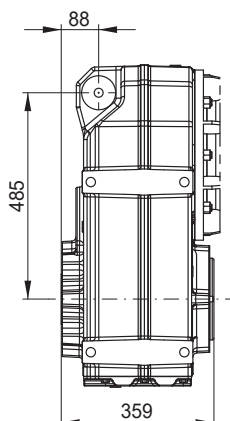
FF102 / FF103 - B5 flange execution with output shaft



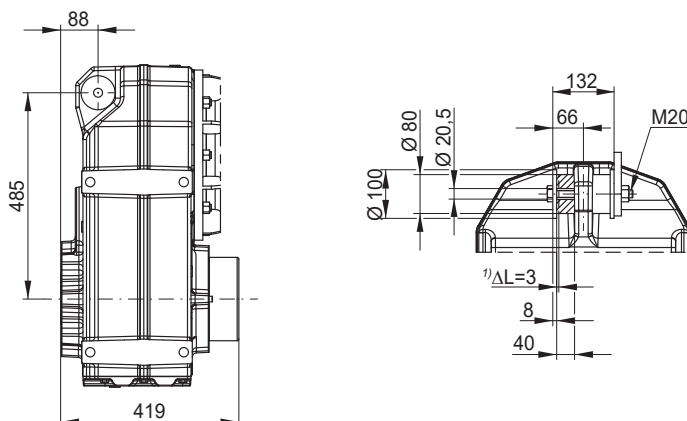
FP102 / FP103 - B5 flange execution with hollow shaft and shrink disc *



FT102 / FT103 - Hollow shaft with rubber buffer



FU102 / FU103 - Hollow shaft with shrink disc * and rubber buffer

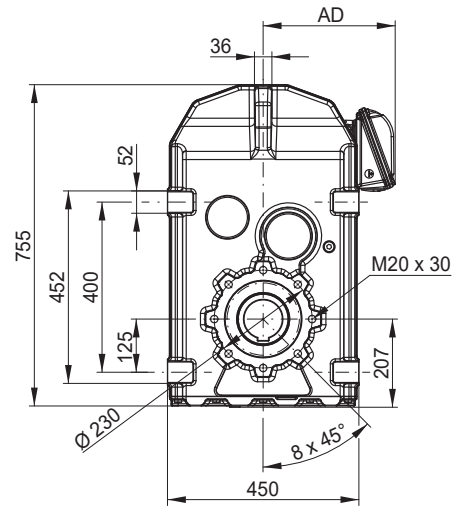
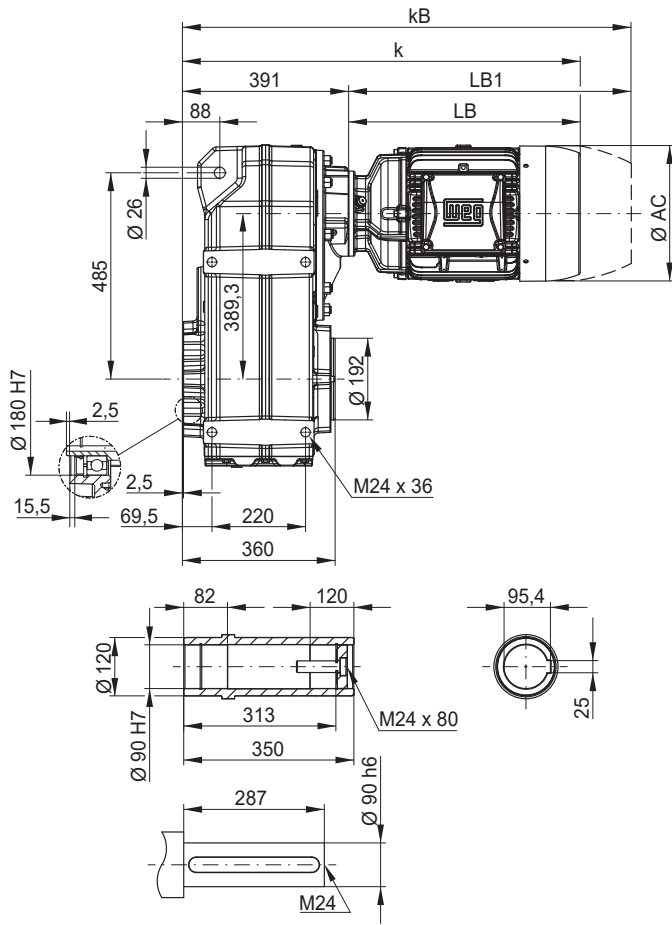


Dimensions in mm.

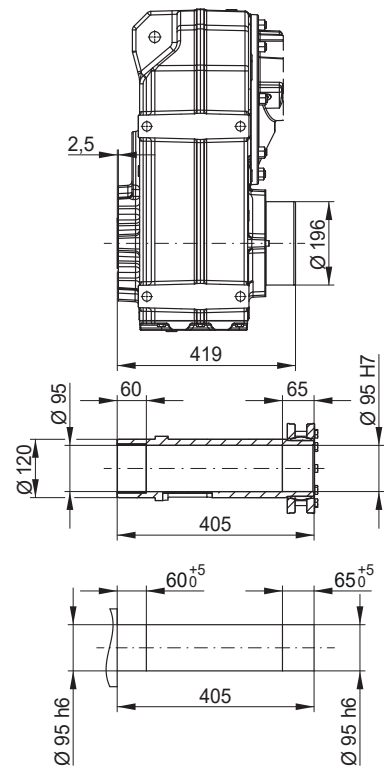
* Shrink disc and protection cap possible with all mountable motors.

¹⁾ ΔL = recommended preload

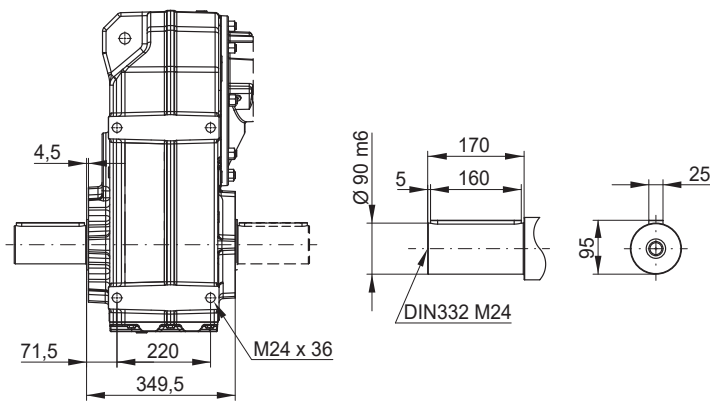
FH104 - Hollow shaft



FD104 - Shrink disc *



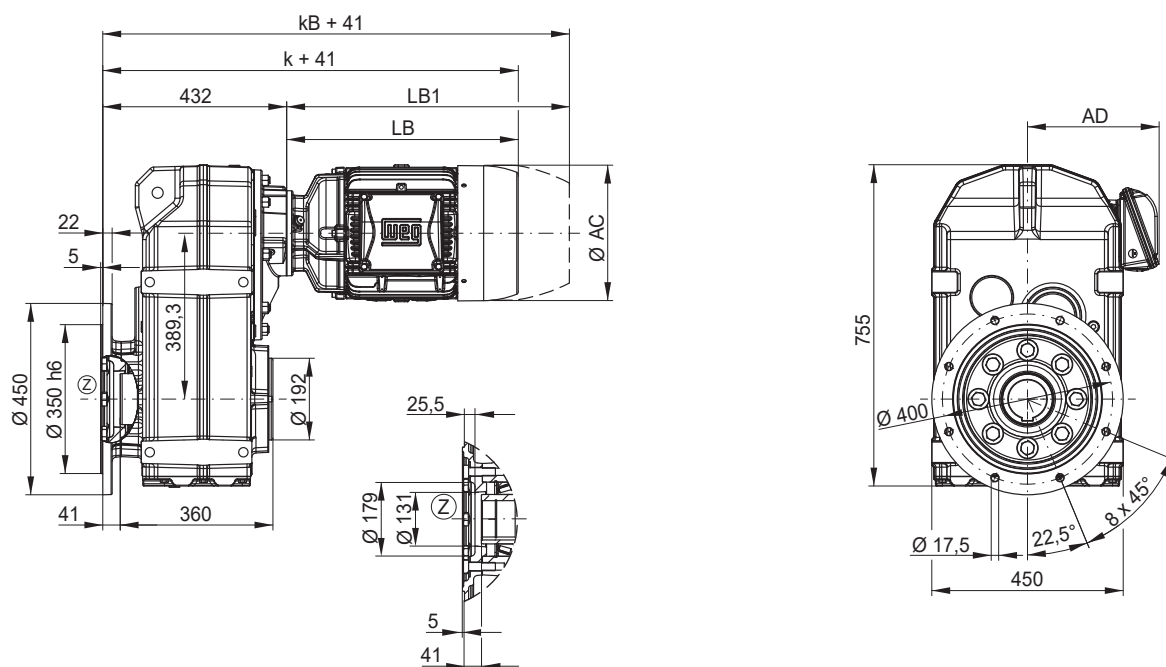
FS104 - Output shaft FB104 - Output shaft on both sides



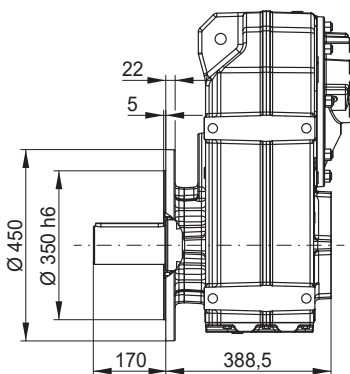
Motor fr.	63	71	80	L80	90S/L	100L	L100L	112M	132S,M	L132M	160M	160L
AC	126	141	159	159	178	199	199	221	261	261	329	329
AD	128	136	145	145	155	165	165	185	205	205	266	266
k	595	629	637	661	679	729	767	739	804	842	936	980
kB	639	678	695	719	752	813	851	826	922	960	1060	1104
LB	204	238	246	270	288	338	376	348	413	451	545	589
LB1	248	287	304	328	361	422	460	435	531	569	669	713

Motor dimension sheets see page 590; Gear unit size F104 corresponds to motor flange FR-200. Description of motor lengths LB and LB1 see page 594.

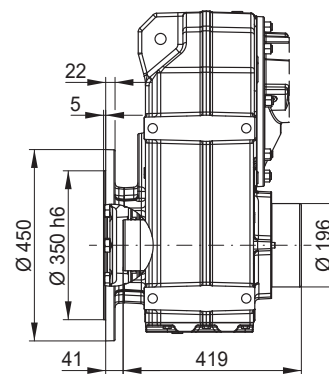
FO104 - B5 flange execution with hollow shaft



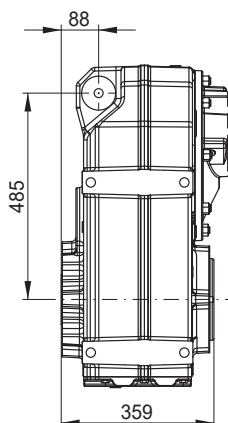
FF104 - B5 flange execution with output shaft



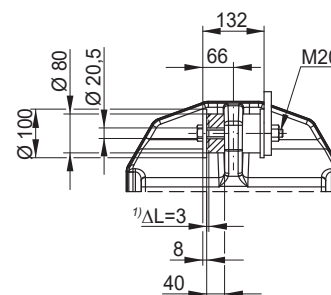
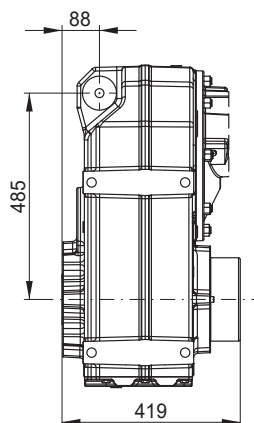
FP104 - B5 flange execution with hollow shaft and shrink disc *



FT104 - Hollow shaft with rubber buffer



FU104 - Hollow shaft with shrink disc * and rubber buffer

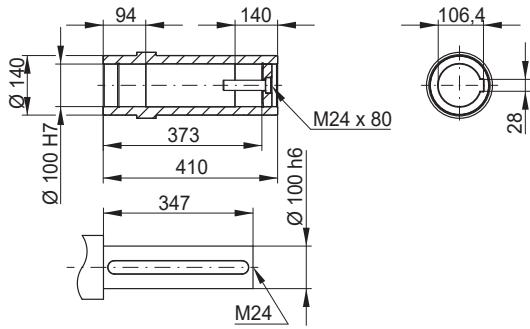
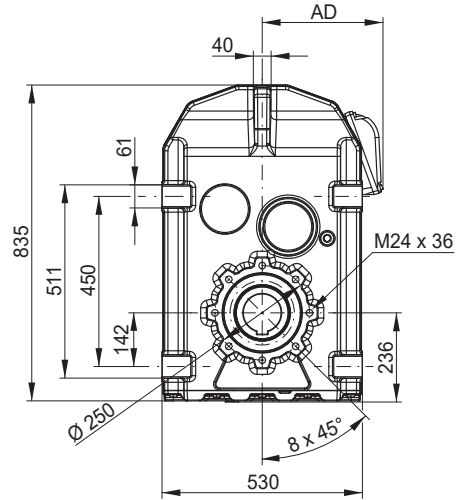
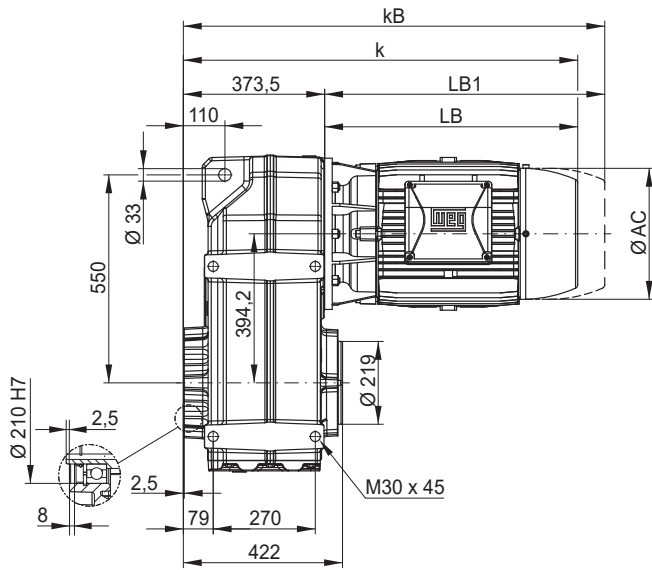


Dimensions in mm.

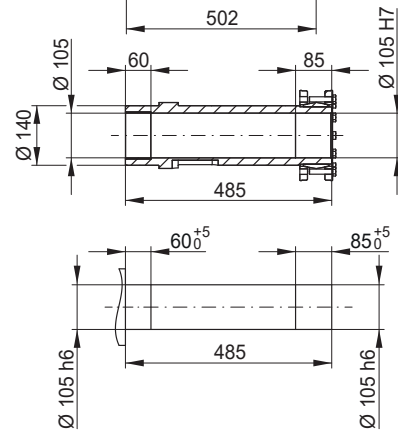
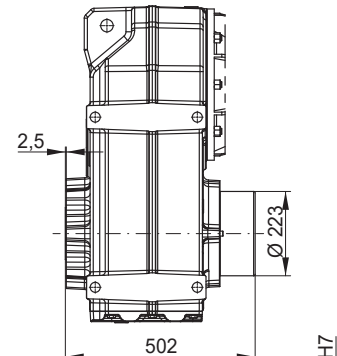
* Shrink disc and protection cap possible with all mountable motors.

1) ΔL = recommended preload

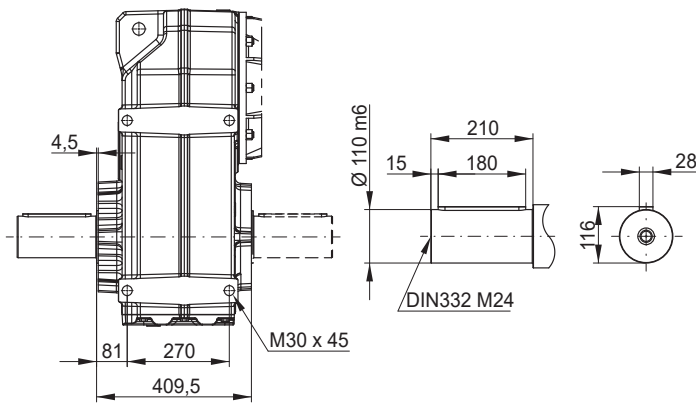
FH122 / FH123 - Hollow shaft



FD122 / FD123 - Shrink disc *



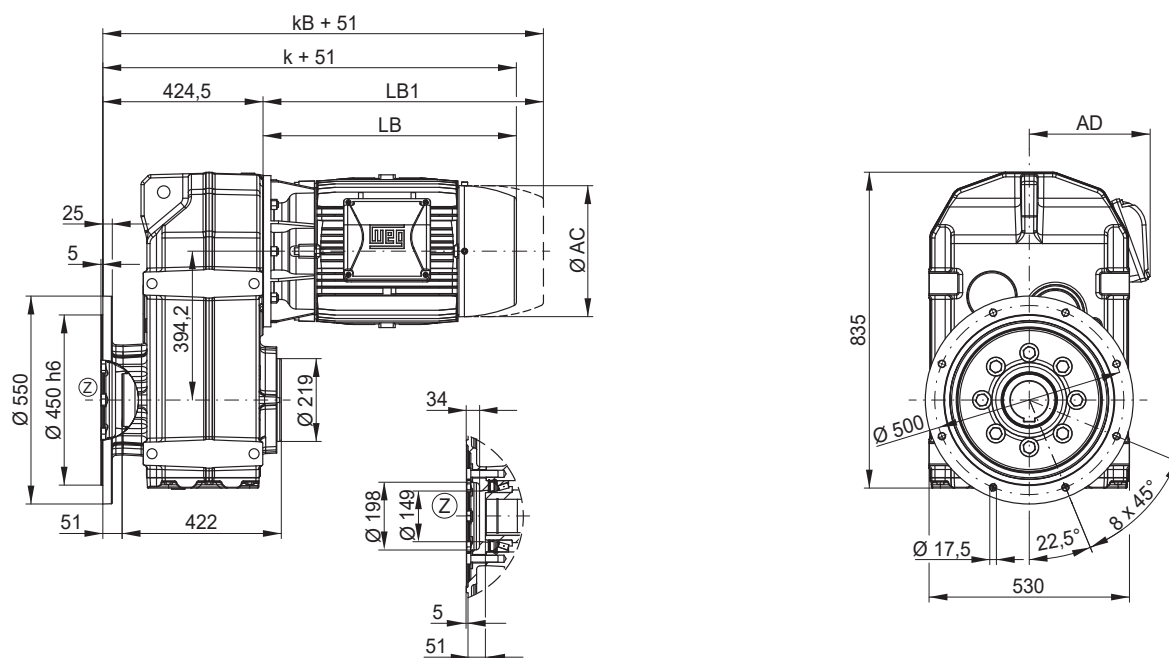
FS122 / FS123 - Output shaft FB122 / FB123 - Output shaft on both sides



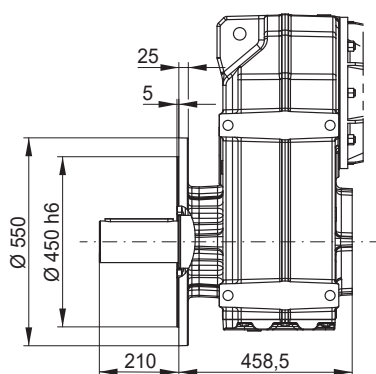
Motor fr.	63	71	80	L80	90S/L	100L	L100L	112M	132S,M	L132M	160M	160L	180M	180L	200L	225S/M
Dimension																
AC	-	-	-	-	-	-	-	221	261	261	329	329	347	347	386	453
AD	-	-	-	-	-	-	-	185	205	205	266	266	281	281	317	385
k	-	-	-	-	-	-	-	722	787	825	896	940	964	1002	1094	1202
kB	-	-	-	-	-	-	-	809	905	943	1020	1064	1082	1120	1220	1320
LB	-	-	-	-	-	-	-	348	413	451	522	566	590	628	720	828
LB1	-	-	-	-	-	-	-	435	531	569	646	690	708	746	846	946

Motor dimension sheets see page 590; Gear unit size F122/F123 corresponds to motor flange FR-400. Description of motor lengths LB and LB1 see page 594.

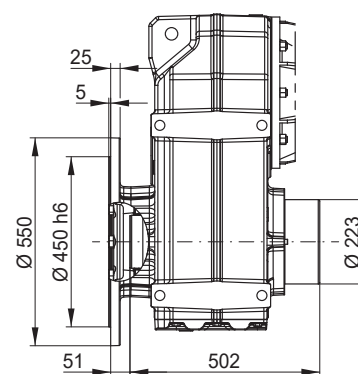
FO122 / FO123 - B5 flange execution with hollow shaft



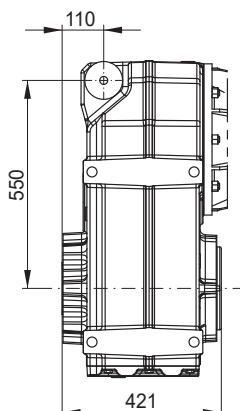
FF122 / FF123 - B5 flange execution with output shaft



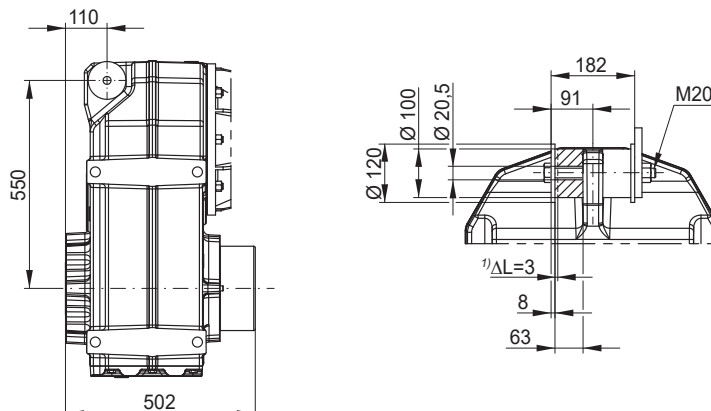
FP122 / FP123 - B5 flange execution with hollow shaft and shrink disc *



FT122 / FT123 - Hollow shaft with rubber buffer



FU122 / FU123 - Hollow shaft with shrink disc * and rubber buffer



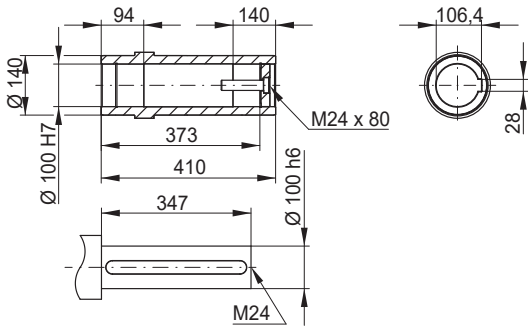
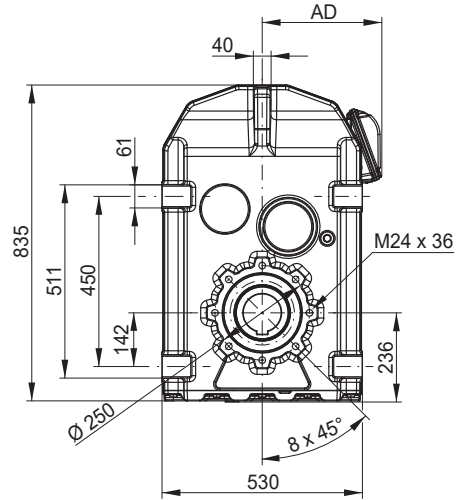
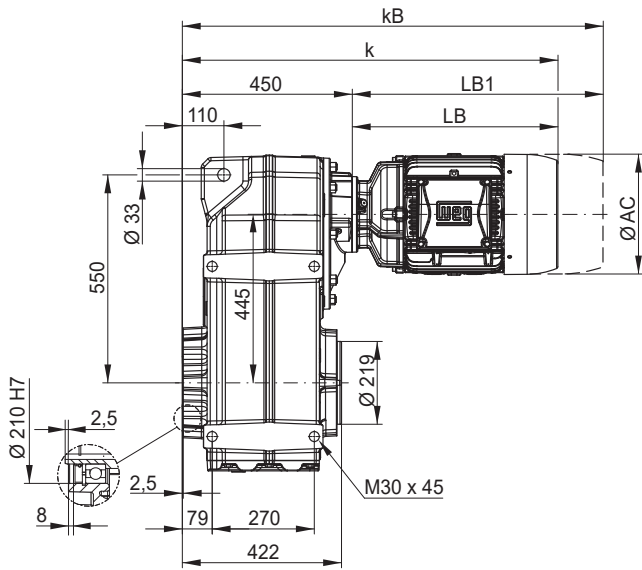
Dimensions in mm.

* Shrink disc and protection cap possible with all mountable motors.

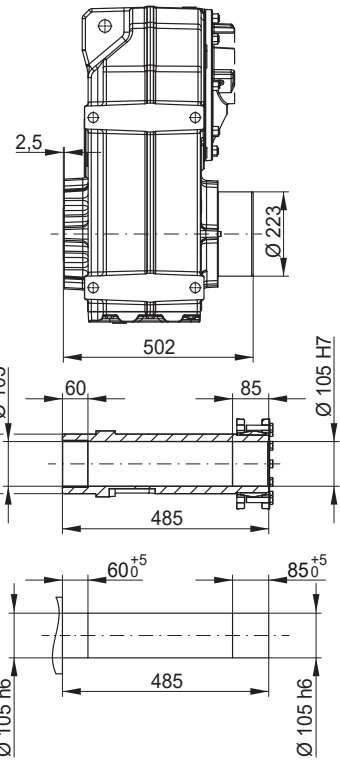
1) ΔL = recommended preload

FH124 - Hollow shaft

F

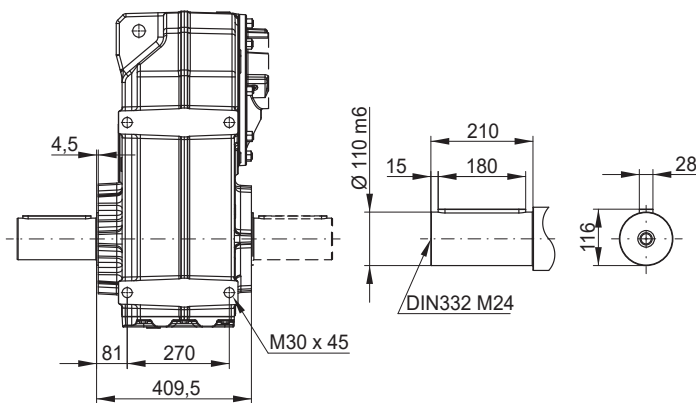


FD124 - Shrink disc *



FS124 - Output shaft

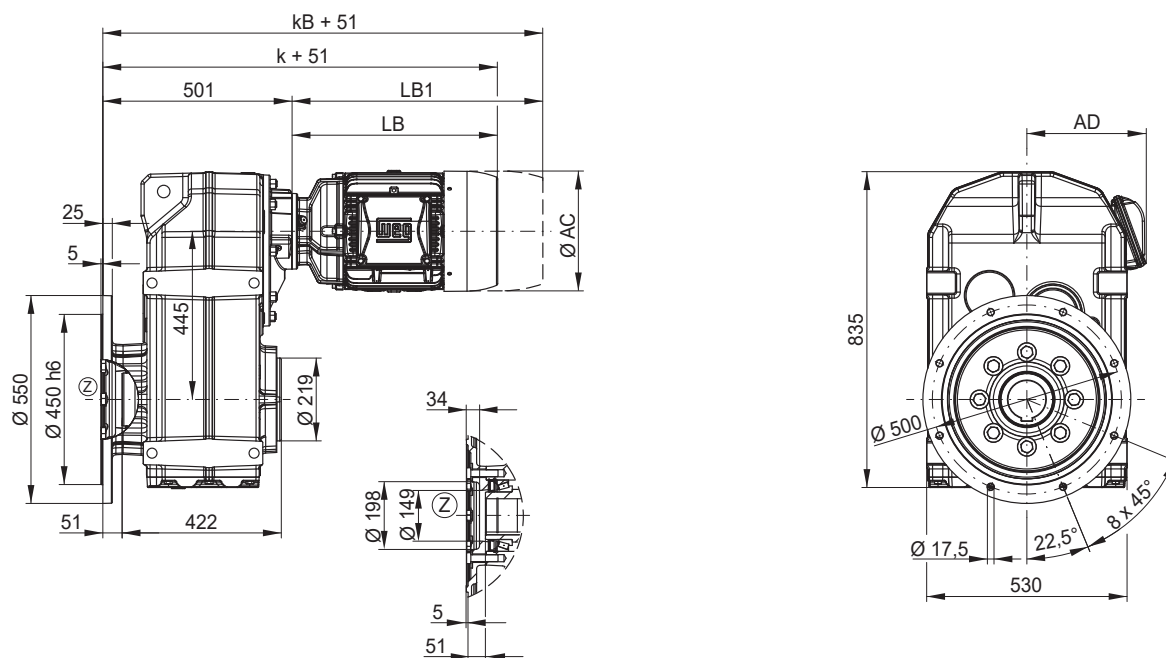
FB124 - Output shaft on both sides



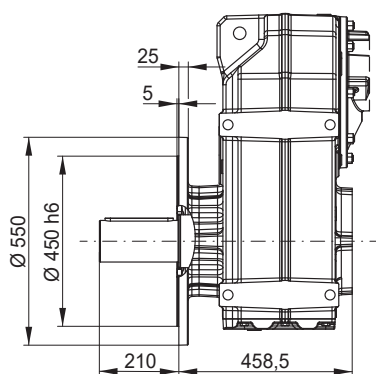
Motor fr.	63	71	80	L80	90S/L	100L	L100L	112M	132S,M	L132M	160M	160L
Dimension												
AC	126	141	159	159	178	199	199	221	261	261	329	329
AD	128	136	145	145	155	165	165	185	205	205	266	266
k	654	688	696	720	738	788	826	798	863	901	995	1039
kB	698	737	754	778	811	872	910	885	981	1019	1119	1163
LB	204	238	246	270	288	338	376	348	413	451	545	589
LB1	248	287	304	328	361	422	460	435	531	569	669	713

Motor dimension sheets see page 590; Gear unit size F124 corresponds to motor flange FR-200. Description of motor lengths LB and LB1 see page 594.

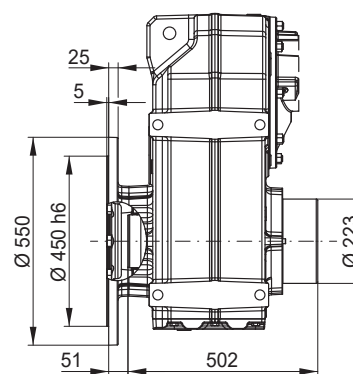
FO124 - B5 flange execution with hollow shaft



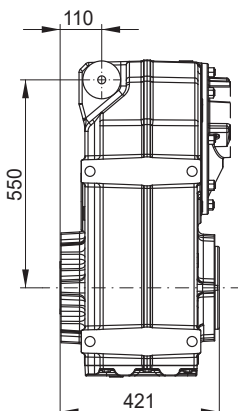
FF124 - B5 flange execution with output shaft



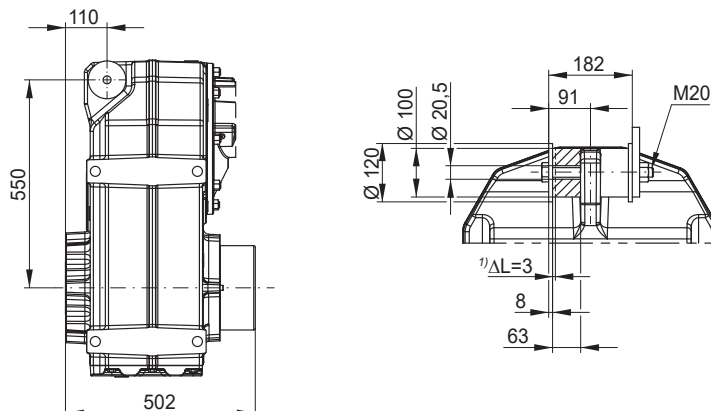
FP124 - B5 flange execution with hollow shaft and shrink disc *



FT124 - Hollow shaft with rubber buffer



FU124 - Hollow shaft with shrink disc * and rubber buffer

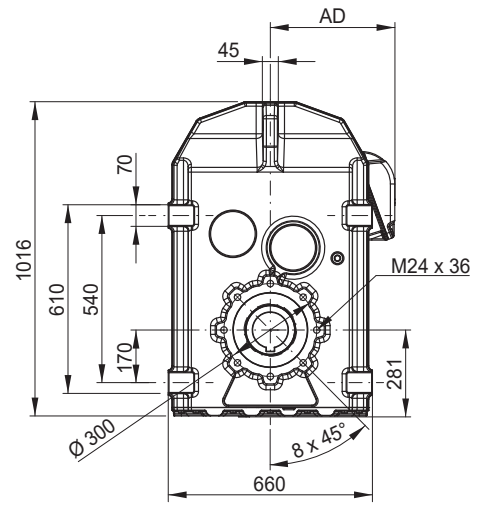
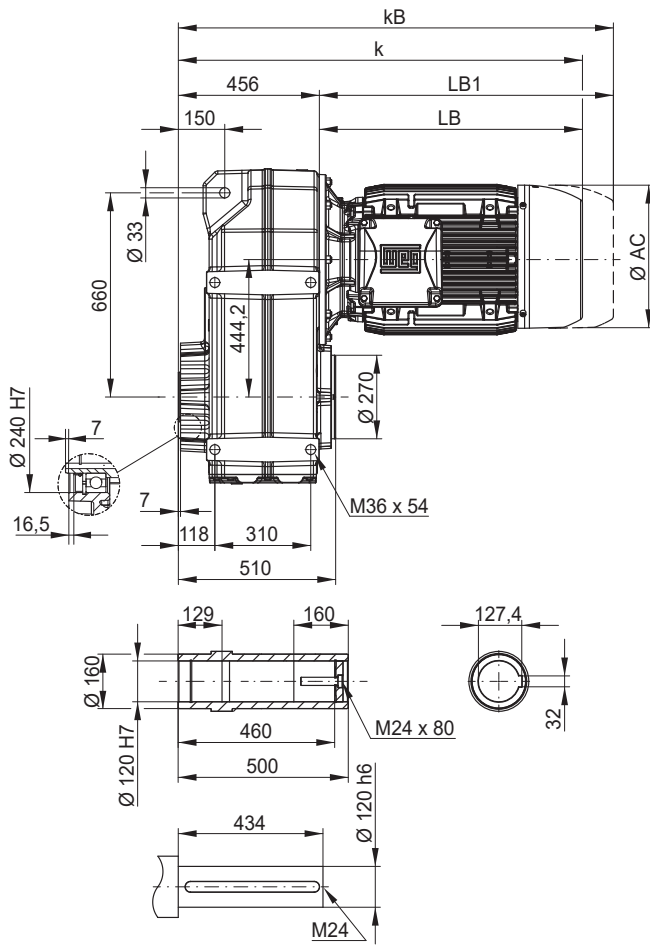


Dimensions in mm.

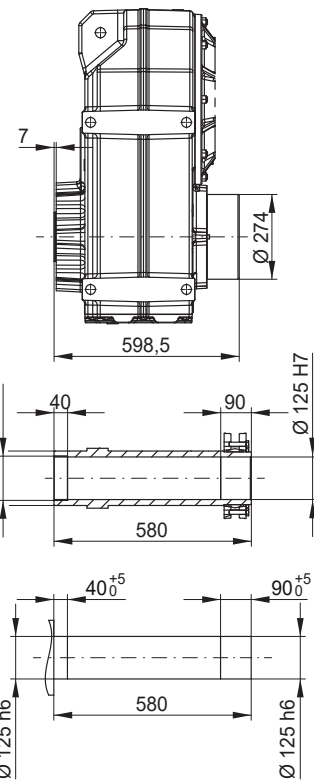
* Shrink disc and protection cap possible with all mountable motors.

¹⁾ ΔL = recommended preload

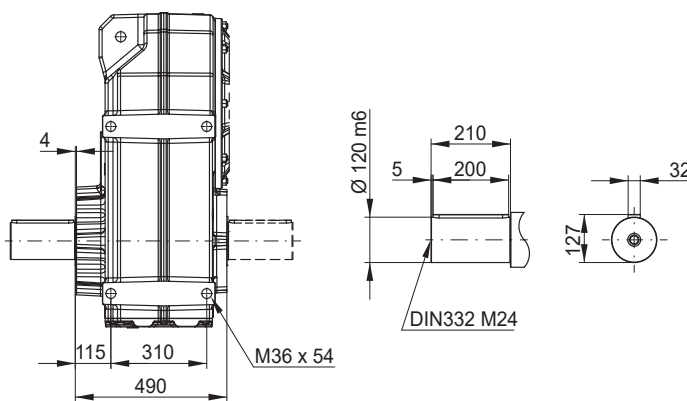
FH152 / FH153 - Hollow shaft



FD152 / FD153 - Shrink disc *



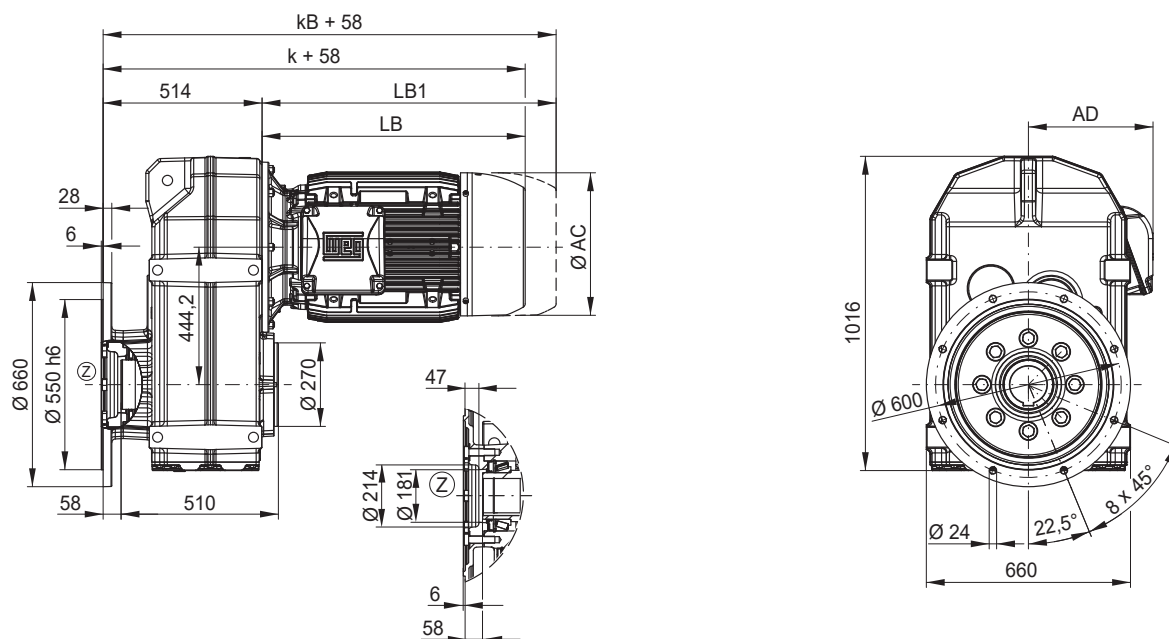
FS152 / FS153 - Output shaft FB152 / FB153 - Output shaft on both sides



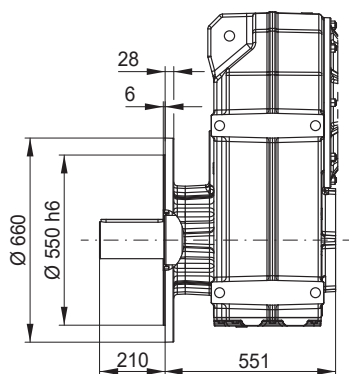
Motor fr.	63	71	80	L80	90S/L	100L	L100L	112M	132S,M	L132M	160M	160L	180M	180L	200L	225S/M	280S/M
AC	-	-	-	-	-	-	-	-	-	-	329	329	347	347	386	453	599
AD	-	-	-	-	-	-	-	-	-	-	266	266	281	281	317	385	472
k	-	-	-	-	-	-	-	-	-	-	962	1006	1030	1068	1160	1268	1429
kB	-	-	-	-	-	-	-	-	-	-	1086	1130	1148	1186	1286	1386	1522
LB	-	-	-	-	-	-	-	-	-	-	506	550	574	612	704	812	973
LB1	-	-	-	-	-	-	-	-	-	-	630	674	692	730	830	930	1066

Motor dimension sheets see page 590; Gear unit size F152/F153 corresponds to motor flange FR-550. Description of motor lengths LB and LB1 see page 594.

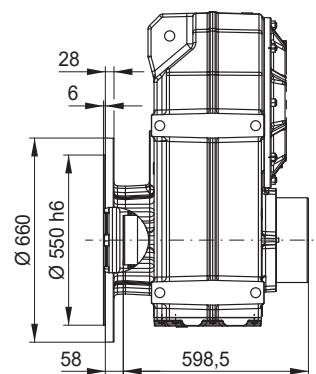
FO152 / FO153 - B5 flange execution with hollow shaft



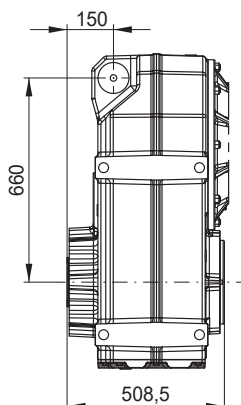
FF152 / FF153 - B5 flange execution with output shaft



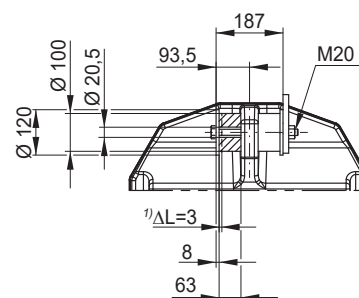
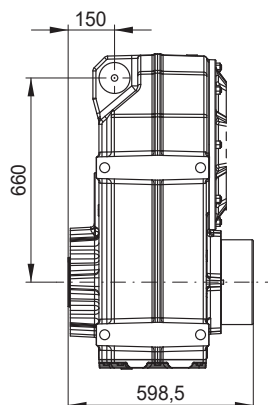
FP152 / FP153 - B5 flange execution with hollow shaft and shrink disc *



FT152 / FT153 - Hollow shaft with rubber buffer



FU152 / FU153 - Hollow shaft with shrink disc * and rubber buffer



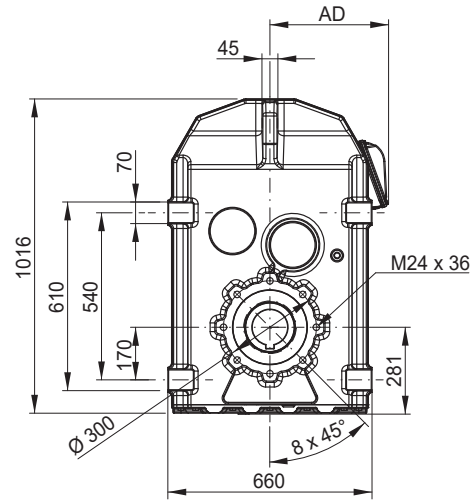
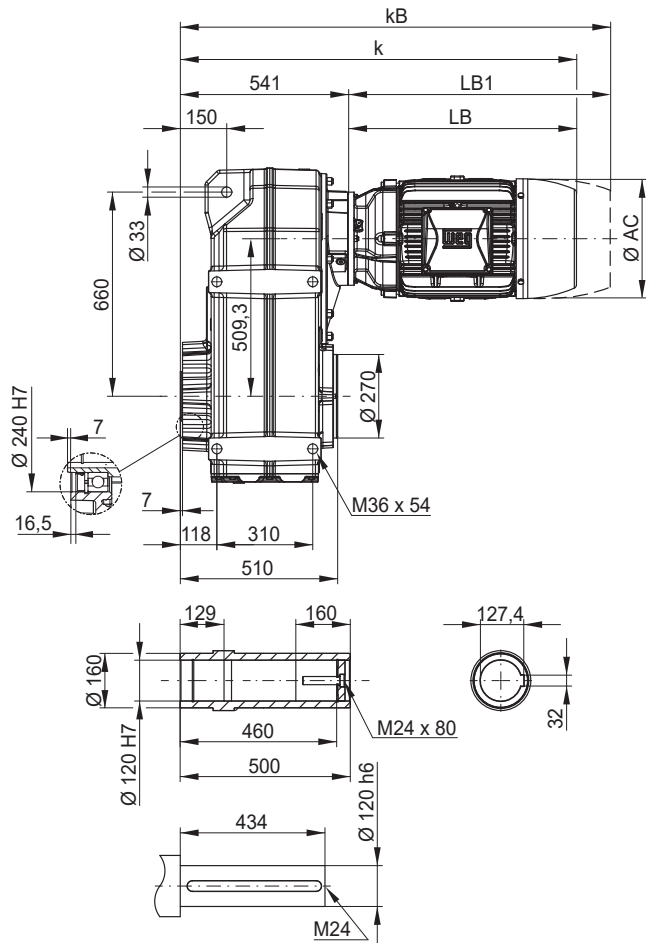
Dimensions in mm.

* Shrink disc and protection cap possible with all mountable motors.

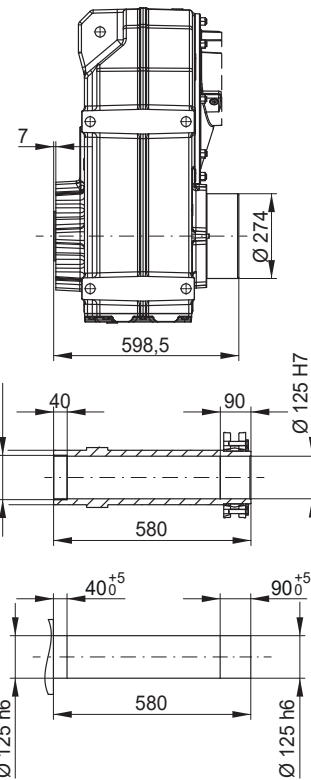
$^1)\Delta L$ = recommended preload

FH154 - Hollow shaft

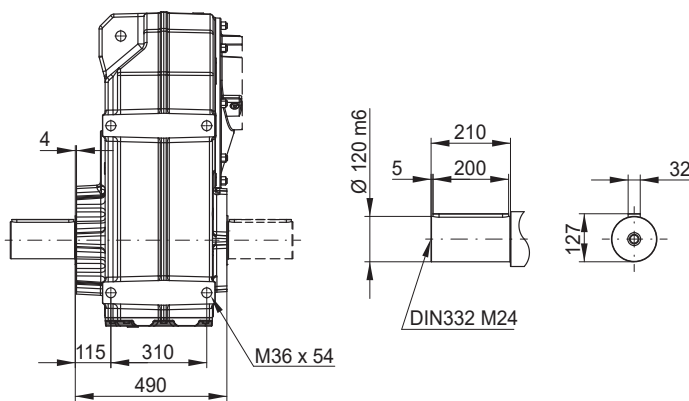
F



FD154 - Shrink disc *



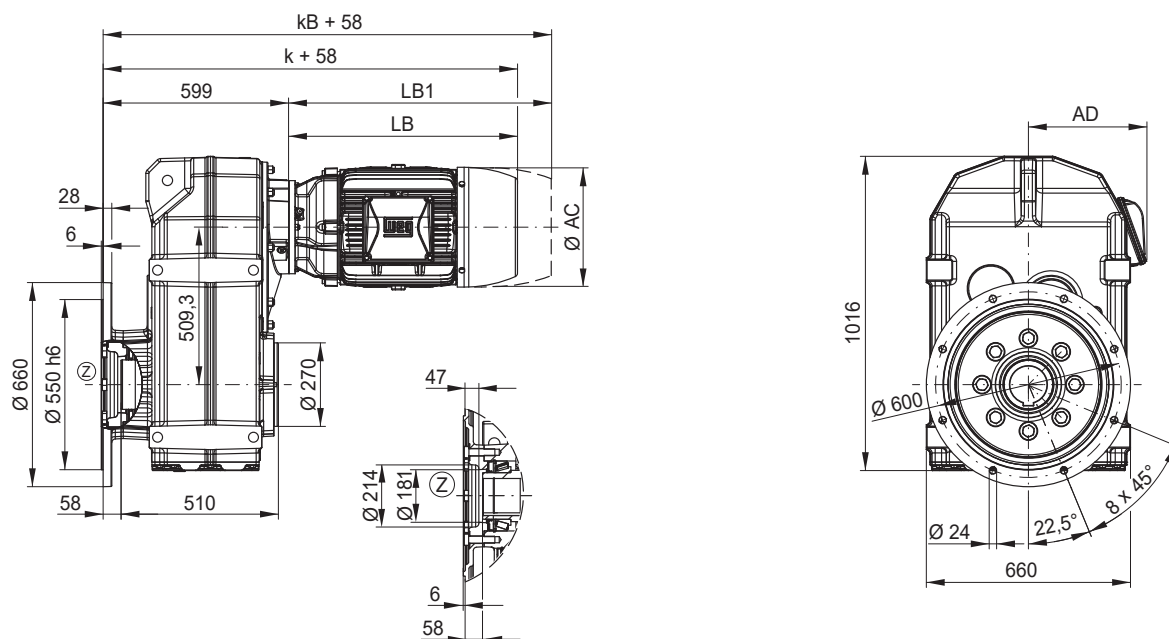
FS154 - Output shaft FB154 - Output shaft on both sides



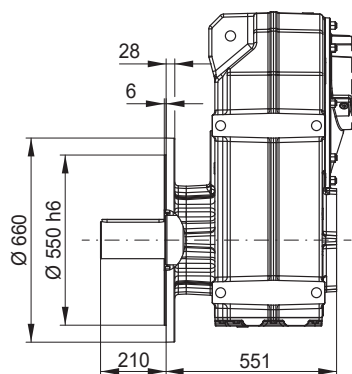
Motor fr.	63	71	80	L80	90S/L	100L	L100L	112M	132S,M	L132M	160M	160L	180M	180L	200L
AC	126	141	159	159	178	199	199	221	261	261	329	329	347	347	386
AD	128	136	145	145	155	165	165	185	205	205	266	266	281	281	317
k	745	779	787	811	829	879	917	889	954	992	1076	1120	1144	1182	1274
kB	789	828	845	869	902	963	1001	976	1072	1110	1200	1244	1262	1300	1400
LB	204	238	246	270	288	338	376	348	413	451	535	579	603	641	733
LB1	248	287	304	328	361	422	460	435	531	569	659	703	721	759	859

Motor dimension sheets see page 590; Gear unit size F154 corresponds to motor flange FR-300. Description of motor lengths LB and LB1 see page 594.

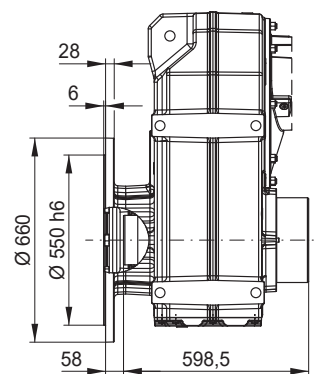
FO154 - B5 flange execution with hollow shaft



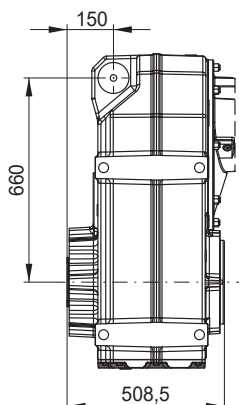
FF154 - B5 flange execution with output shaft



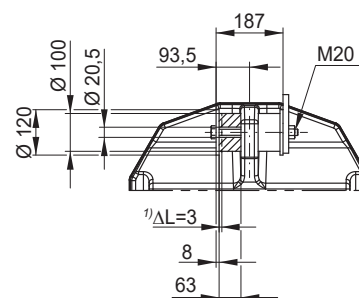
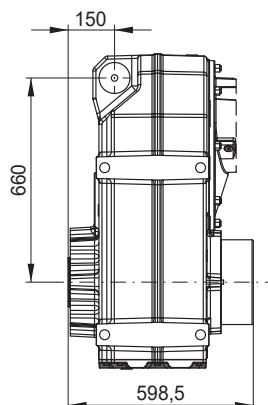
FP154 - B5 flange execution with hollow shaft and shrink disc *



FT154 - Hollow shaft with rubber buffer



FU154 - Hollow shaft with shrink disc * and rubber buffer



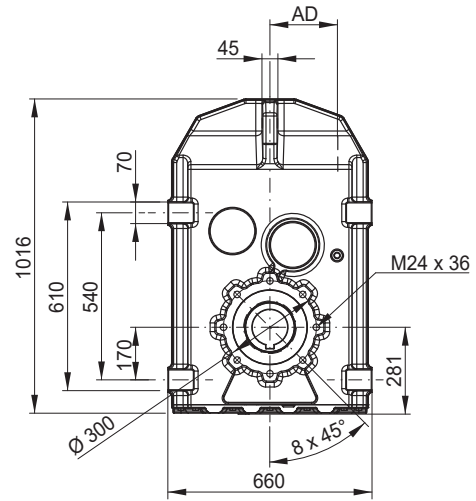
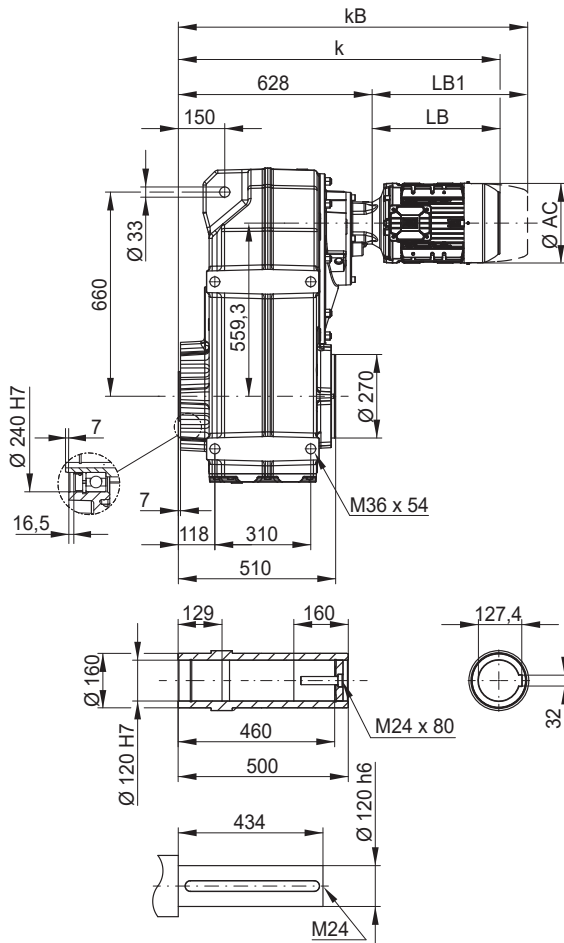
Dimensions in mm.

* Shrink disc and protection cap possible with all mountable motors.

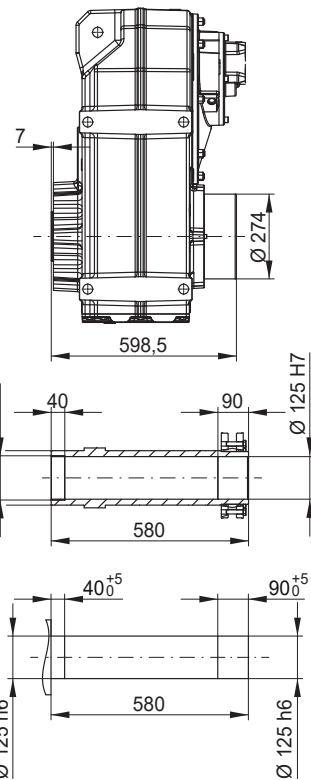
¹⁾ ΔL = recommended preload

FH155 - Hollow shaft

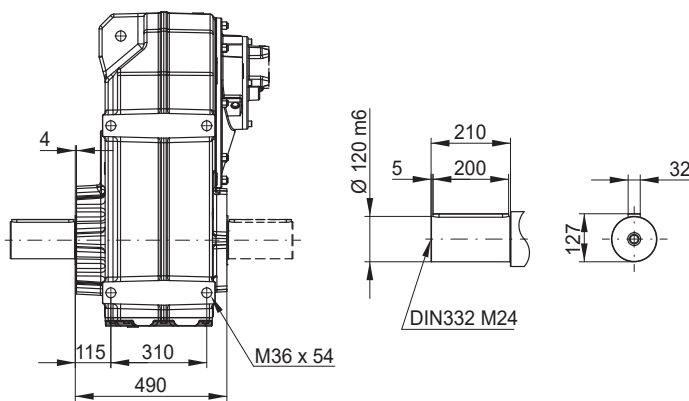
F



FD155 - Shrink disc *



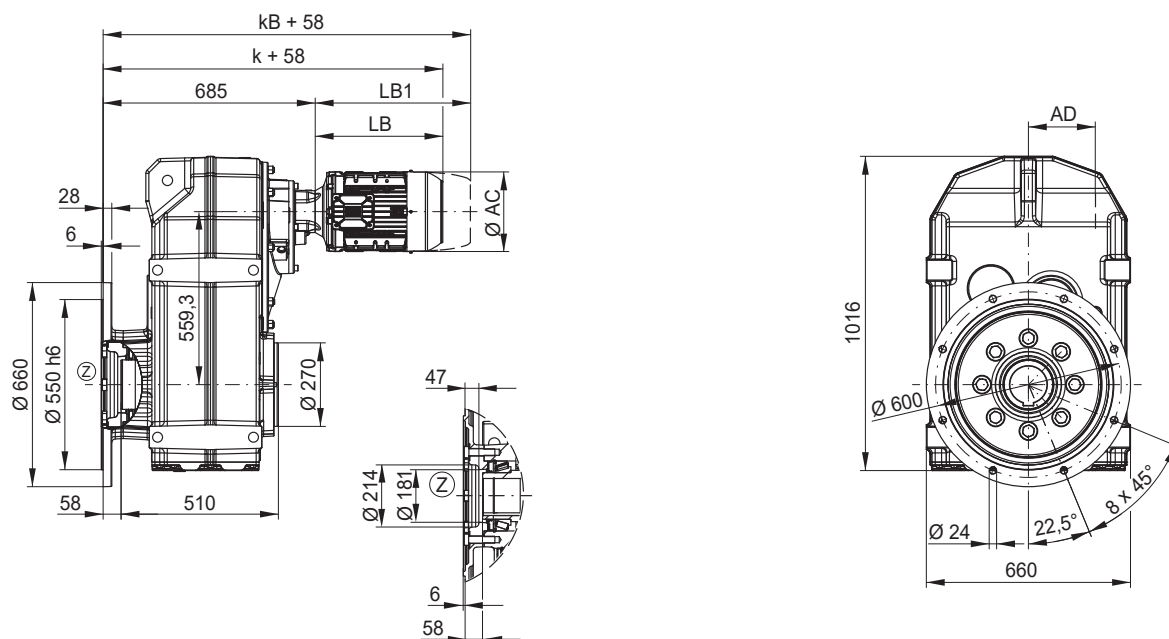
FS155 - Output shaft FB155 - Output shaft on both sides



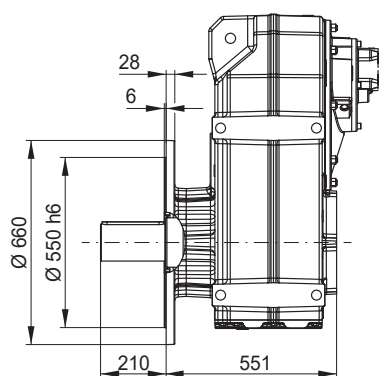
Motor fr.	63	71	80	L80	90S/L	100L	L100L	112M	132S,M	L132M
Dimension										
AC	126	141	159	159	178	199	199	221	261	261
AD	128	136	145	145	155	165	165	185	205	205
k	832	866	874	898	916	966	1004	976	1041	1079
kB	876	915	932	956	989	1050	1088	1063	1159	1197
LB	204	238	246	270	288	338	376	348	413	451
LB1	248	287	304	328	361	422	460	435	531	569

Motor dimension sheets see page 590; Gear unit size F155 corresponds to motor flange FR-550. Description of motor lengths LB and LB1 see page 594.

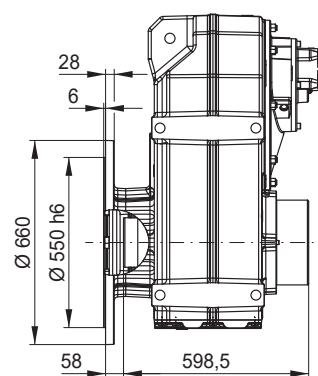
FO155 - B5 flange execution with hollow shaft



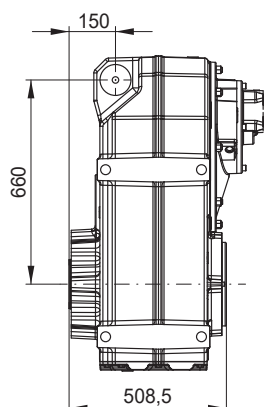
FF155 - B5 flange execution with output shaft



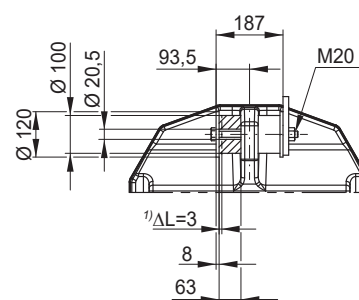
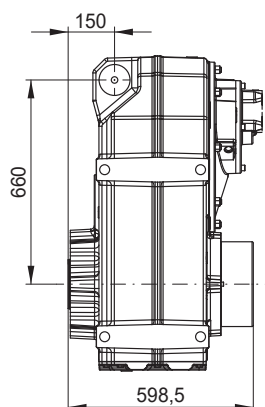
FP155 - B5 flange execution with hollow shaft and shrink disc *



FT155 - Hollow shaft with rubber buffer



FU155 - Hollow shaft with shrink disc * and rubber buffer

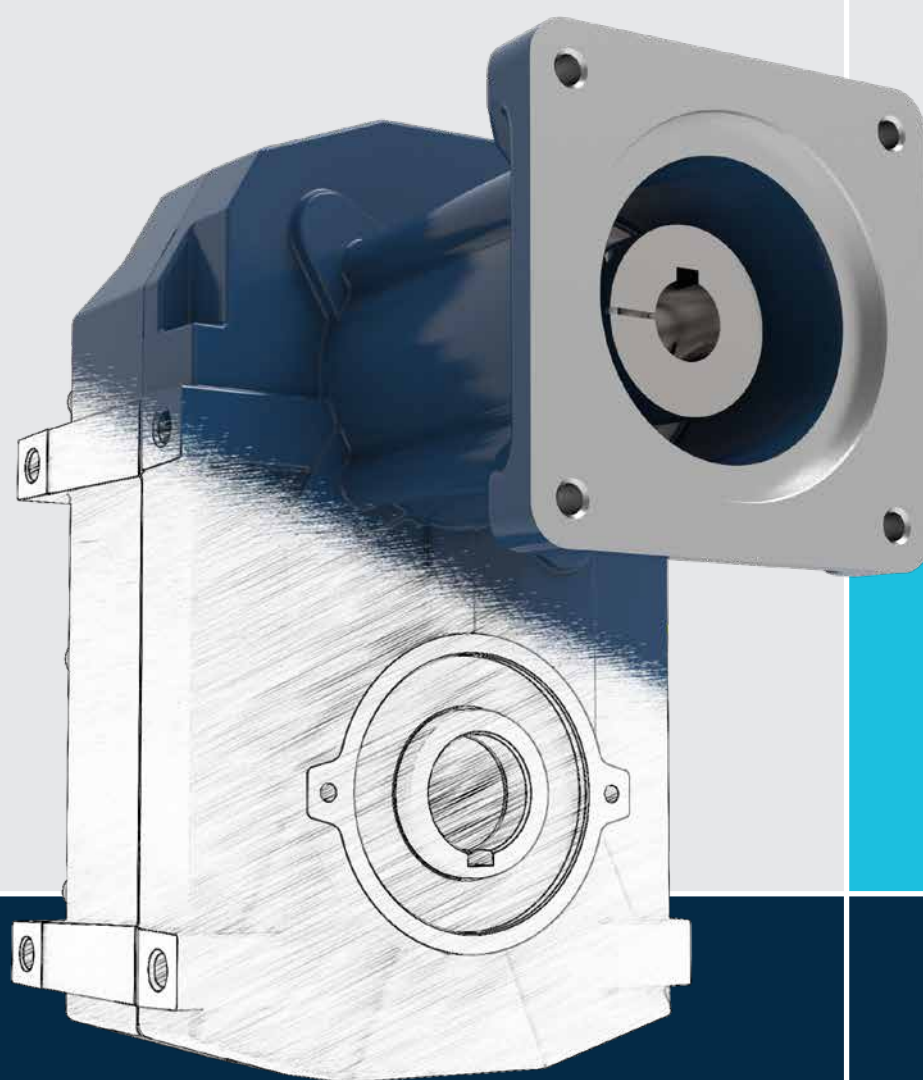


Dimensions in mm.

* Shrink disc and protection cap possible with all mountable motors.

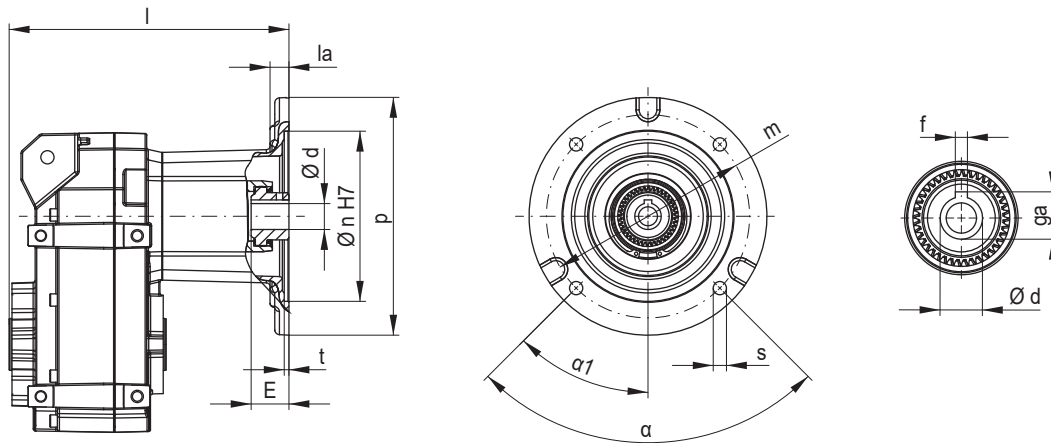
¹⁾ ΔL = recommended preload

Dimension sheets Input types



F

IEC Adapter I63 to I280



F

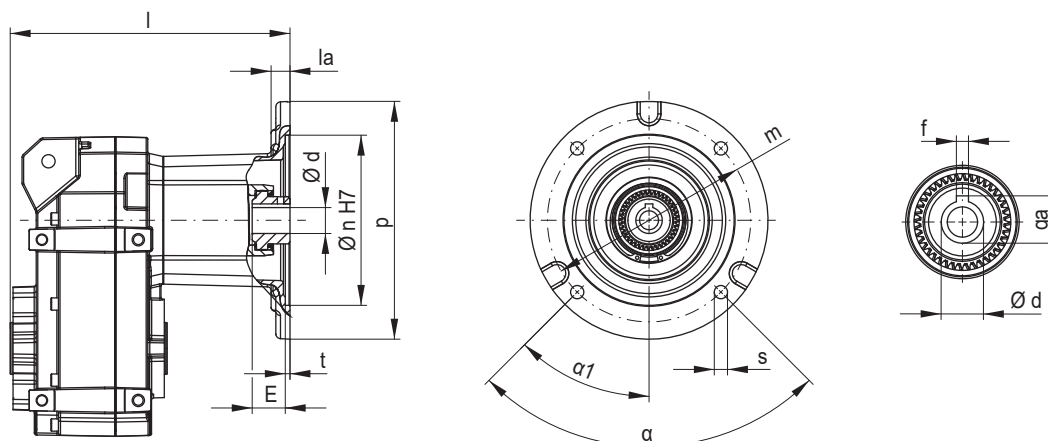
Type	I63	I71	I80	I90	I100	I112	I132	I160	I180	I200	I225	I250	I280
p	154	154	200	200	250	250	300	350	350	400	450	550	550
n	95	110	130	130	180	180	230	250	250	300	350	450	450
la	22.5	10	13	13	15	20	15	35	35	20	20	20	20
m	115	130	165	165	215	215	265	300	300	350	400	500	500
t	4.5	4.5	4.5	4.5	5	5	5	5	5	5.5	5	5	5
s	M8x16	M8x10	11	11	13.5	13.5	13.5	17.5	17.5	17.5	17.5	17.5	17.5
α	90	90	90	90	90	90	90	90	90	90	45	45	45
α ₁	35	45	45	45	45	45	45	45	45	45	45	45	45
d	11	14	19	24	28	28	38	42	48	55	60	65	75
f	4	5	6	8	8	8	10	12	14	16	18	18	20
ga	12.8	16.3	21.8	27.3	31.3	31.3	41.3	45.3	51.8	59.3	64.4	69.4	79.9
E ¹⁾	25	32	43	47.5	63	100	85.5	111.5	111.5	114.5	140	146	146

¹⁾ Maximum motor shaft length for motors with key

Gear unit size	I63	I71	I80	I90	I100	I112	I132	I160	I180	I200	I225	I250	I280
	l												
F02	137	137	165	165	196	-	-	-	-	-	-	-	-
F03	147	147	175	175	206	-	-	-	-	-	-	-	-
F04	171.5	171.5	199.5	199.5	230.5	-	-	-	-	-	-	-	-
F05	184	184	212	212	243	296	307	-	-	-	-	-	-
F06	195.5	195.5	223.5	223.5	254.5	307.5	318.5	404.5	404.5	-	-	-	-
F07	221.5	221.5	249.5	249.5	280.5	333.5	344.5	430.5	430.5	-	-	-	-
F082/083	248.5	248.5	276.5	276.5	307.5	360.5	371.5	456	456	484.5	514.5	-	-
F084	332	332	360	360	391	444	455	-	-	-	-	-	-
F092/093	298.5	298.5	326.5	326.5	357.5	410.5	421.5	506	506	534.5	564.5	-	-
F094	382	382	410	410	441	494	505	-	-	-	-	-	-
F102/103	-	-	-	-	-	440	451	533	533	561.5	591.5	685.5	685.5
F104	423.5	423.5	451.5	451.5	482.5	535.5	546.5	632.5	632.5	-	-	-	-
F122/123	-	-	-	-	-	499.5	510.5	592.5	592.5	621	651	745	745
F124	482.5	482.5	510.5	510.5	541.5	594.5	605.5	691.5	691.5	-	-	-	-
F152/153	-	-	-	-	-	-	-	659	659	687.5	717.5	811.5	811.5
F154	564.5	564.5	592.5	592.5	623.5	676.5	687.5	772.5	772.5	801	831	-	-
F155	647	647	675	675	706	759	770	-	-	-	-	-	-

Dimensions in mm.

NEMA Adapter N56 to N364



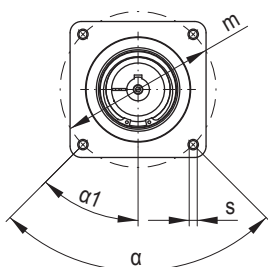
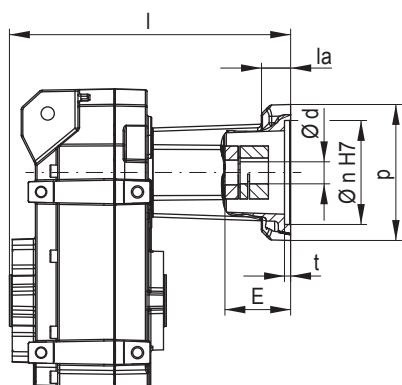
F

Typ	N56	N143/145	N182	N184	N213/215	N254/256	N284/286	N324/326	N364
p	170	170	250	250	300	225	280	350	400
n	114.3	114.3	215.9	215.9	215.9	215.9	266.7	317.5	317.5
la	13	13	10	16.8	10	30	35	15	15
m	149.225	149.225	184.15	184.15	184.15	184.15	228.6	279.4	279.4
t	4.5	4.5	5	3.2	5	5	3	5	5
s	11	11	14	14	14	14	14	16	16
α	90	90	90	90	90	90	90	90	90
α_1	45	45	45	45	45	45	45	45	45
d	15.875	22.225	28.575	28.575	34.925	41.275	47.625	53.975	60.325
f	4.775	4.775	6.350	6.350	7.950	9.525	12.700	12.700	15.875
ga	18.008	24.486	31.521	31.521	38.557	45.618	53.238	59.690	67.335
E ¹⁾	55	55	67.5	96.8	80.5	105.5	111.5	109.5	109.5

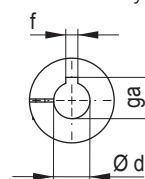
¹⁾ Maximum motor shaft length for motors with key

Gear unit size	N56	N143/145	N182	N184	N213/215	N254/256	N284/286	N324/326	N364
	l								
F02	165	165	196	-	-	-	-	-	-
F03	175	175	206	-	-	-	-	-	-
F04	199.5	199.5	230.5	-	-	-	-	-	-
F05	212	212	243	296	307	-	-	-	-
F06	223.5	223.5	254.5	307.5	318.5	404.5	407.5	-	-
F07	249.5	249.5	280.5	333.5	344.5	430.5	433.5	-	-
F082/083	276.5	276.5	307.5	360.5	371.5	456	459	506.5	522
F084	360	360	391	444	455	-	-	-	-
F092/093	326.5	326.5	357.5	410.5	421.5	506	509	556.5	572
F094	410	410	441	494	505	-	-	-	-
F102/103	-	-	-	440	451	533	536	583.5	599
F104	451.5	451.5	482.5	535.5	546.5	632.5	635.5	-	-
F122/123	-	-	-	499.5	510.5	592.5	595.5	643	658.5
F124	510.5	510.5	541.5	594.5	605.5	691.5	694.5	-	-
F152/153	-	-	-	-	-	659	662	725	725
F154	592.5	592.5	623.5	676.5	687.5	772.5	775.5	823	838.5
F155	675	675	706	759	770	-	-	-	-

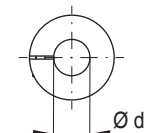
SERVO Adapter S92 to S190



Shaft with key



Smooth shaft



F

Typ	S92	S105	S114	S115	S130				S141	S142	S180	S189	S190						
p	101	144	144	144	144				144	144	197	197	197						
n	80	95	95	110	110				110	130	114.3	130	180						
la	17.5	31	31	31	31				31	31	35	32	38						
m	100	115	130	130	145				165	165	200	215	215						
t	6.5	6.5	6.5	6.5	6.5				6.5	6.5	6.5	6.5	6.5						
s	M6x12		M8x16	M8x16	M8x16	M8x16				M8x16	M8x16	13.5	15	15					
α	90°		90°	90°	90°				90°	90°	90°	90°	90°						
α ₁	45°		45°	45°	45°				45°	45°	45°	45°	45°						
d ¹⁾	14	16	19	19	19	24	19	22	24	28	24	24	32	35	32	38	38		
f	5	5	6	6	6	8	6	6	8	8	8	8	10	10	10	10	10		
ga	16.3	18.3	21.8	21.8	21.8	27.3	21.8	24.8	27.3	31.3	27.3	27.3	35.3	38.3	35.3	41.3	41.3		
E ²⁾	46	46	34	67	67	54	67	54	76	63	63	63	54	63	63	66	74	60	87
E ³⁾	46	46	46	67	67	67	67	67	76	76	76	63	67	76	63	87	74	60	87

¹⁾ Other shaft diameters on request

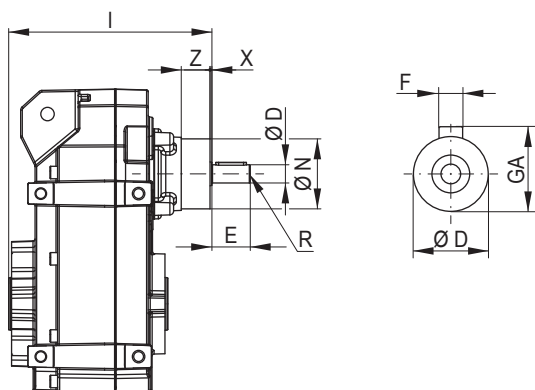
²⁾ Maximum motor shaft length for motors with key

³⁾ Maximum motor shaft length for motors with smooth shaft

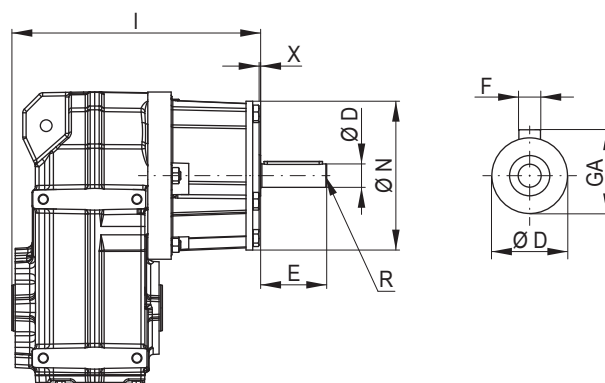
Gear unit size	S92	S105	S114	S115	S130	S141	S142	S180	S189	S190
	l									
F02	202.5	250.5	250.5	250.5	250.5	250.5	250.5	-	-	-
F03	212.5	260.5	260.5	260.5	260.5	260.5	260.5	-	-	-
F04	237	285	285	285	285	285	285	-	-	-
F05	249.5	297.5	297.5	297.5	297.5	297.5	297.5	368	362	389
F06	261	309	309	309	309	309	309	379.5	373.5	400.5
F07	287	335	335	335	335	335	335	405.5	399.5	426.5
F082/083	314	362	362	362	362	362	362	432.5	426.5	453.5
F084	397.5	445.5	445.5	445.5	445.5	445.5	445.5	516	510	537
F092/093	364	412	412	412	412	412	412	482.5	476.5	503.5
F094	447.5	495.5	495.5	495.5	495.5	495.5	495.5	566	560	587
F102/103	-	-	-	-	-	-	-	512	506	533
F104	489	537	537	537	537	537	537	607.5	601.5	628.5
F122/123	-	-	-	-	-	-	-	571.5	565.5	592.5
F124	548	596	596	596	596	596	596	666.5	660.5	687.5
F152/153	-	-	-	-	-	-	-	-	-	-
F154	630	678	678	678	678	678	678	748.5	742.5	769.5
F155	712.5	760.5	760.5	760.5	760.5	760.5	760.5	831	825	852

Dimensions in mm.

Input Unit U2, U3



Input Unit U5, U6, U7



F

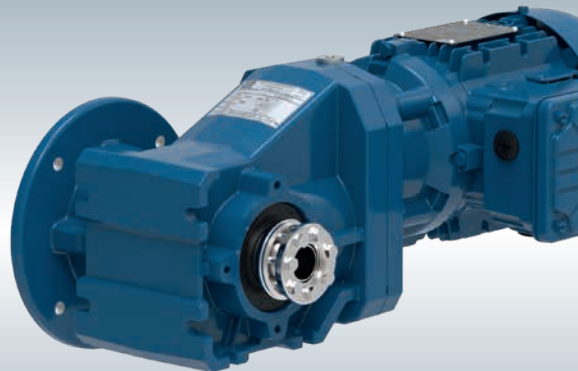
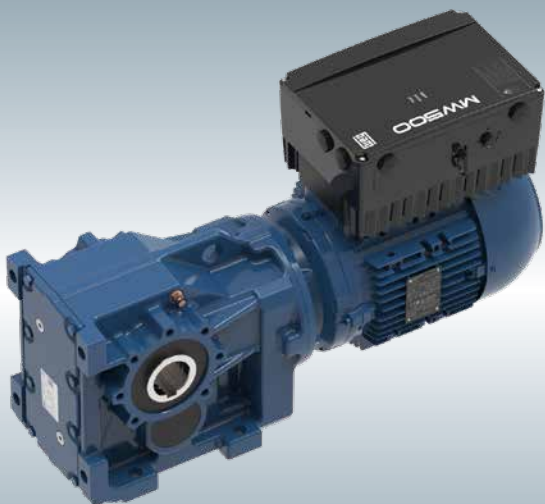
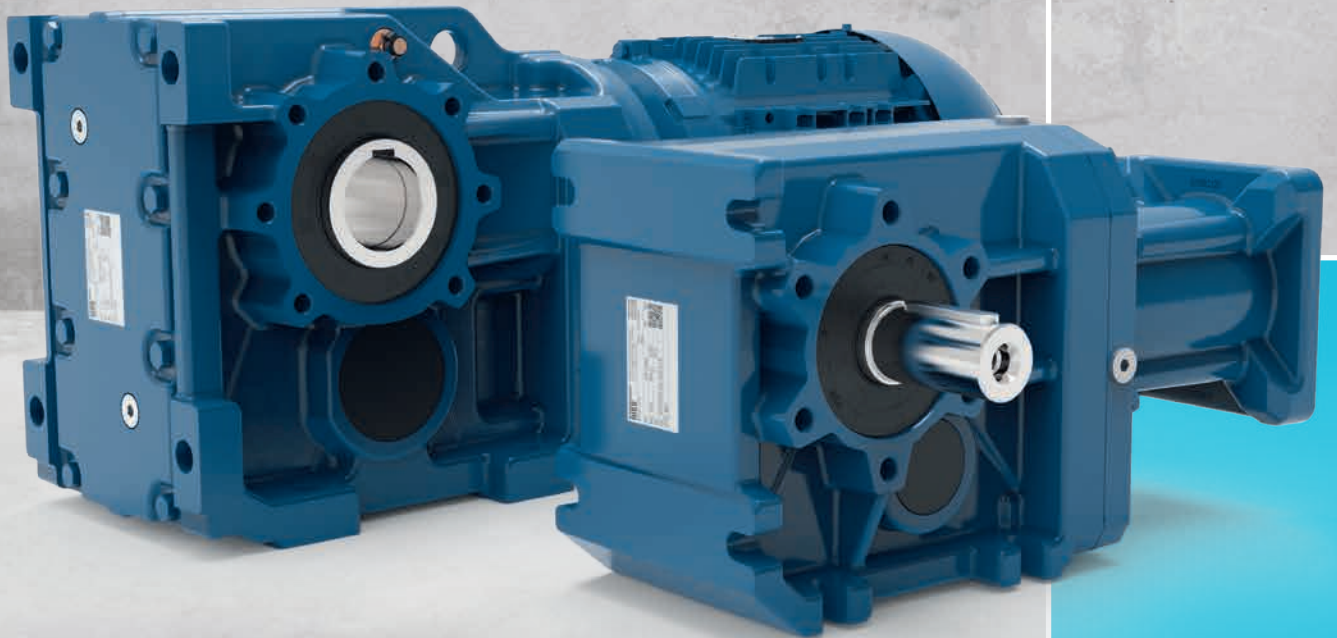
Type	Input shaft [mm]						
	19x40	24x50	28x60	38x80	42x110	48x110	55x110
	U2	U3	U5			U6	U7
D	19	24	28	38	42	48	55
F	6	8	8	10	12	14	16
GA	21.5	27	31	41	45	51.5	59
E	40	50	60	80	110	110	110
N	73	101	178			235	290
X	2	2.5	1.9			6.5	4
Z	3	35	-			-	-
R	M6	M10	M10	M12	M16	M16	M20

Tolerances		
Dimension name	ISO tolerance DIN EN ISO 286-2	
D	< Ø 55 mm	k6
	≥ Ø 55 mm	m6

Gear unit size	Input shaft [mm]				
	19x40	24x50	28x60 38x80 42x110	48x110	55x110
	U2	U3	U5	U6	U7
	I				
F02	165	-	-	-	-
F03	175	-	-	-	-
F04	199.5	-	-	-	-
F05	212	244	-	-	-
F06	223.5	255.5	298	-	-
F07	249.5	281.5	324	-	-
F082/083	276.5	308.5	349.5	371.5	-
F084	360	392	-	-	-
F092/093	326.5	358.5	399.5	421.5	-
F094	410	442	-	-	-
F102/103	-	388	426.5	448.5	517.5
F104	451.5	483.5	526	-	-
F122/123	-	447.5	486	508	577
F124	510.5	542.5	585	-	-
F152/153	-	-	552.5	574.5	643.5
F154	592.5	624.5	666	688	-
F155	675	707	-	-	-

Dimensions in mm.

Helical bevel gear units and Helical bevel geared motors K



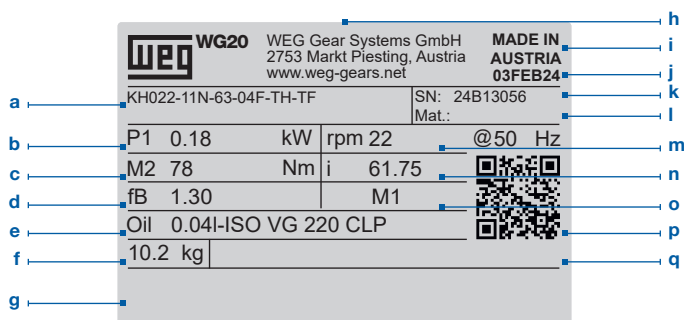
K

Technical data

Size	K02	K03	K04	K05	K06	K07	K08	K09	K10	K12	K15
Power [kW]	0.12 - 1.5	0.12 - 3.0	0.12 - 4.0	0.12 - 9.2	0.12 - 9.2	0.12 - 15	0.12 - 22	0.12 - 30	0.12 - 55	0.12 - 75	0.12 - 110
Torque [Nm]	110	200	400	600	820	1550	3000	4500	8000	13000	18000
Ratio	3.82 68.88	4.17 217.88	4.87 277.79	4.27 245.70	4.94 198.00	7.91 256.14	7.45 2205.52	6.94 1810.95	6.64 1301.54	6.60 1579.81	8.61 14005.40
Number of stages	2	3	3	3	3	3	3 / 4	3 / 4	3 / 4	3 / 4	3 / 4 / 5
Housing material	aluminium					cast iron					
Solid shaft	Type	with key acc. to DIN 6885.1 and threaded bore acc. to DIN 332 sheet 2									
	Tolerance	< Ø 55: k6 / ≥ Ø 55: m6									
	Material	standard: C45E (1.1191) / stainless steel on request									
Hollow shaft	Type	with key acc. to DIN 6885.1									
	Tolerance	H7									
	Material	standard: C45E (1.1191) / stainless steel on request									
Flanges	Tolerance	centring ≤ 250: j6 / > 250: h6 acc. to DIN EN 50347									
	Material	cast iron									
Gear wheels	Type	honed - designed and produced according to DIN 3990/3991 - Q7									
	Material	16MnCr5 (1.7131) case hardened – minimum 58HRC									
Shaft seals	Type	type AS acc. to DIN 3760									
	Material	standard NBR / special FKM									
Bearing	standard / reinforced										
Lubricants	Type	standard CLP ISO VG 220 / special CLP HC ISO VG 220									
	Quantity	depending on mounting position									
Axle height	acc. to DIN 747: ≤ 50: -0.4; > 50 bis ≤ 250: -0.5; > 250: -1 for foot-mounted gear motors, the motor may extend below the mounting surface										

General information

1. Nameplate



a	Type code	j	Production date
b	Motor power	k	Serial number
c	Output torque	l	Material number
d	Service factor	m	Output speed and Frequency
e	Type and quantity of lubricant	n	Total gear ratio
f	Weight	o	Mounting position
g	Space for ATEX code (if applicable)	p	QR-Code linked online to additional information
h	Manufacturer address	q	Space for additional information
i	Country of origin		

2. Type code

KH073-EX-11P-90S/L-04F ...

1 2 3 4 5 6 7 8 9 10

KH073-EX-I112-HT

1 2 3 4 5 11 12

- 1** Type: K = Helical bevel gear unit
- 2** Design: B = Output shaft on both sides
D = Hollow shaft with shrink disc
F = B5 flange type with output shaft
H = Hollow shaft
O = B5 flange type with hollow shaft
P = B5 flange type with hollow shaft and shrink disc
S = Output shaft
T = Hollow shaft with torque arm
U = Hollow shaft with shrink disc and torque arm
- 3** Size: 02 03 04 05 06 07 08 09 10 12 15
- 4** Number of stages: 2 = 2 gear stages 3 = 3 gear stages
4 = 4 gear stages 5 = 5 gear stages
- 5** ATEX execution: when operated in explosive atmospheres, see page 15
- 6** Motor type: 14P = Integral motor aluminium IE3
11P = Integral motor aluminium IE3
11S = Integral motor aluminium IE4
22P = Integral motor cast iron IE3
22S = Integral motor cast iron IE4
- 7** Motor frame size: 63 71 80 L80 90S/L 100L L100L 112M 132S
132M L132M 160M 160L 180M 180L 200L 225S/M 280S/M
- 8** Number of poles: 04 = 4 poles 06 = 6 poles
- 9** Power indicator: D E F G
- 10** Motor modules: see from page 595
- 11** Adapters, Input unit: IEC adapter I63 I71 I80 I90 I100 I112 I132
I160 I180 I200 I225 I250 I280
- NEMA adapter N56 N143 N182 N184 N213
N254 N284 N324 N364
- SERVO adapter S92 S105 S114 S115 S130
S141 S142 S180 S189 S190
- Input unit U2 U3 U5 U6 U7
- Direct mounting (IEC): IEC63 IEC71 IEC80 IEC90 IEC100 IEC112
IEC132 IEC160 IEC180 IEC200 IEC225 IEC250 IEC280
- 12** High/Low temperature execution: HT LT

Type code Motor see page 565

3. Range

Size	K02	K03	K04	K05	K06	K07	K08	K09	K10	K12	K15
Housing material	Aluminium				Cast iron						

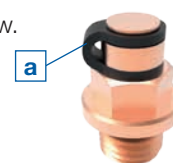
4. Design

	B	Output shaft on both sides		P	B5 flange type with hollow shaft and shrink disc
	D	Hollow shaft with shrink disc		S	Output shaft
	F	B5 flange type with output shaft		T	Hollow shaft with torque arm
	H	Hollow shaft		U	Hollow shaft with shrink disc and torque arm
	O	B5 flange type with hollow shaft			

5. Venting the gear unit

The helical bevel gear unit sizes K02 to K05 are neither equipped with a venting nor an oil drain screw. They are supplied with lifetime-lubrication.

By default, the helical bevel gear units from K06 are equipped with venting screws with a safety strap for transportation (see illustration). The rubber strap (a) of the venting screw must be removed entirely before the initial startup. The venting screw is placed accordingly to the mounting position (see chapter Mounting positions, page 361)



6. Overhung and axial loads

The overhung loads (F_{rN}) indicated in the respective selection tables apply to gear units with the force acting on the shaft center ($x=l/2$). The permissible overhung loads listed are based on the least favourable loading direction and calculated for standard shafts and standard bearings. Other load directions and action can be calculated with equations Q1 to Q3. If transmission elements are placed on the output shaft, an appropriate factor (f_z) has to be taken into consideration when determining the overhung load.

Gear wheels	Sprockets		V-belts	Flat belts
$f_z=1.1$ ($z \leq 17$)	$f_z=1.2$ ($z \leq 13$)	$f_z=1.1$ ($z > 13$)	$f_z=1.8$	$f_z=2.5$

Use the following equations Q1 and Q2 to calculate the permissible radial loads on the output shaft. Q3 is to calculate the real existing shaft loads for your application. The results are to be compared by using the equation Q4.

Q1 $F_{zL} = F_{rN} \cdot a_1$

Q2 $F_{zW} = F_W \cdot a_2$

Q3 $F_{Qvorh} = \frac{2 \cdot M_2}{d_0} \cdot f_z$

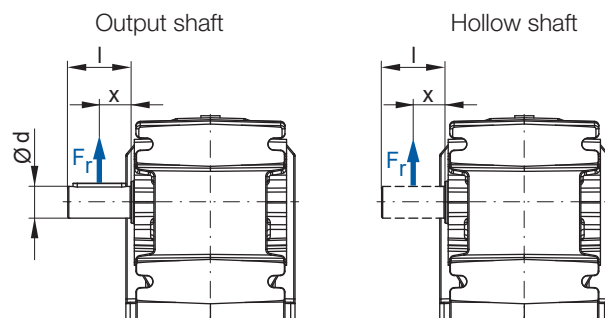
Q4 $F_{Qvorh} \leq F_{zL}$
 $F_{Qvorh} \leq F_{zW}$

Variable	Unit	Description
a1		Load action factor - output shaft bearing from Table 1
a2		Load action factor - output shaft from Table 1
d0	[m]	Effective diameter of the transmission element
M2	[Nm]	Geared motor output torque (from selection tables) or required calculated output torque
FzL	[N]	Permissible overhung load for output shaft bearings
FzW	[N]	Permissible overhung load for output shaft
FrN	[N]	Permissible overhung load from selection tables
Fw	[N]	Permissible overhung load - Output shaft x=l/2 from Table 2
FQvorh	[N]	Existing overhung load at gear shaft
fz		Factor for transmission element
Mmax	[Nm]	Highest possible output torque for coupling operation (Table 2)

Always use both equations Q1 and Q2 for your calculations.

		x / l						
		0	0.25	0.5	0.75	1	1.5	2
a1 → Equation Q1		1.39	1.18	1.00	0.85	0.73	0.52	0.38
a2 → Equation Q2		2.00	2.00	1.00	0.55	0.38	0.23	0.17

Table 1: Load action factors a1, a2



Intermediate values can be interpolated linearly. Combined load ($F_r \neq 0$; $F_a = 0$) on request.

Output shaft [mm]		Mmax at Fr = 0	Output torque M2 [Nm]										
Ø d	l		110	200	400	600	820	1550	3000	4500	8000	13000	18000
			Fw [kN] at x/l = 0.5 → Equation Q2										
20	40	160	2.6										
25	50	300	5.6	4.8									
30	60	500	7.5	7.1	5.0								
35	70	800		11.0	10.0	8.3							
40	80	1170			13.0	12.0	10.7						
50	100	2250			24.0	24.0	23.0	20.0					
60	120	3740					31.0	30.0	23.0				
70	140	5850						44.0	41.0	36.0			
90	170	11700							72.0	70.0	61.0		
110	210	20800								106.0	103.0	93.0	
120	210	26700									129.0	121.0	109.0

Table 2: Permissible overhung load - output shaft x = l/2

The axial loads (F_{aN}) for the respective execution (output shaft or hollow shaft), given in the following selection tables, are valid at radial force $F_{rN} = 0$. If there are axial loads or radial and axial components acting on the drive which are extraordinarily high, we recommend to contact the manufacturer.

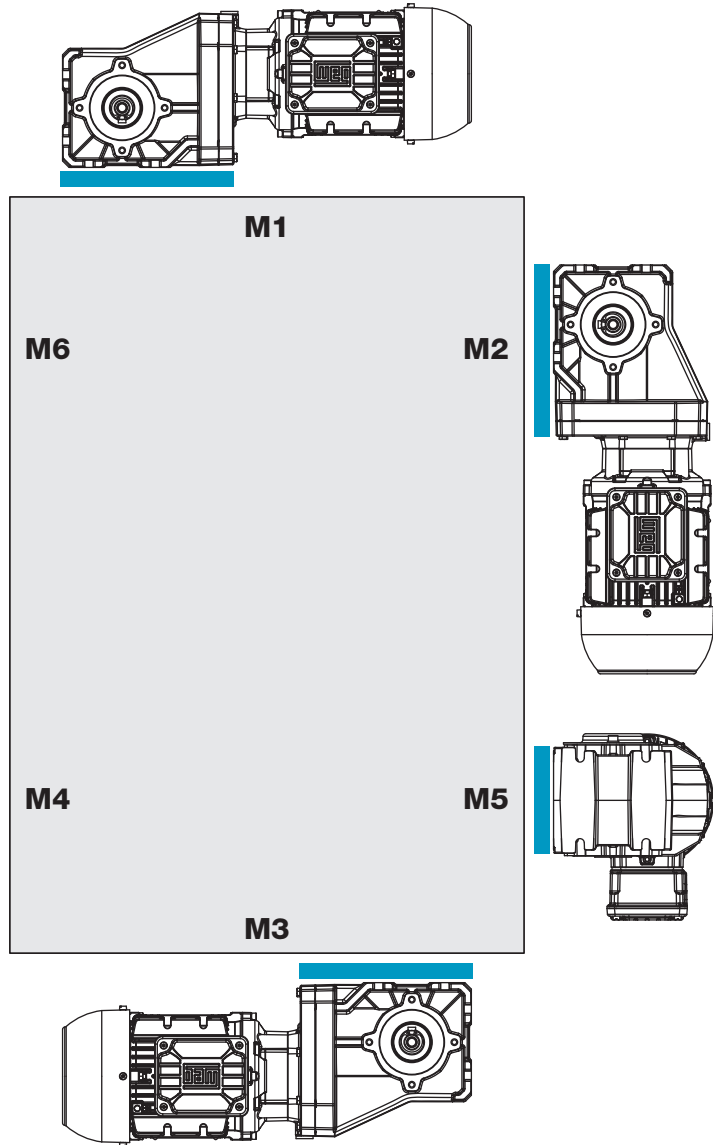
K

7. Mounting positions, Position of the terminal box and Cable entry
Mounting positions - Sizes K02 to K05

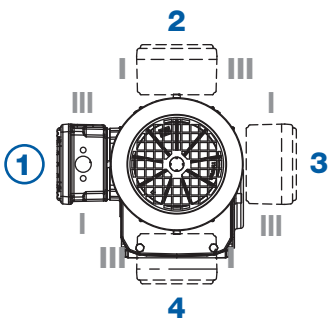
Gear units K02 to K05 are not ventilated and supplied with lifetime lubrication

■ Reference area

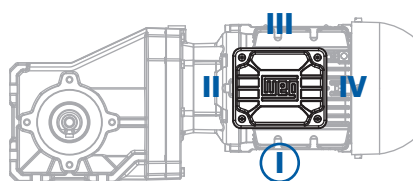
K



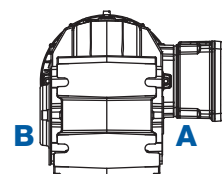
Position of the terminal box
 Standard: Position 1



Cable entry
 Standard: Position I



Side indication



Mounting positions - Sizes K06 to K15

☉ Venting screw

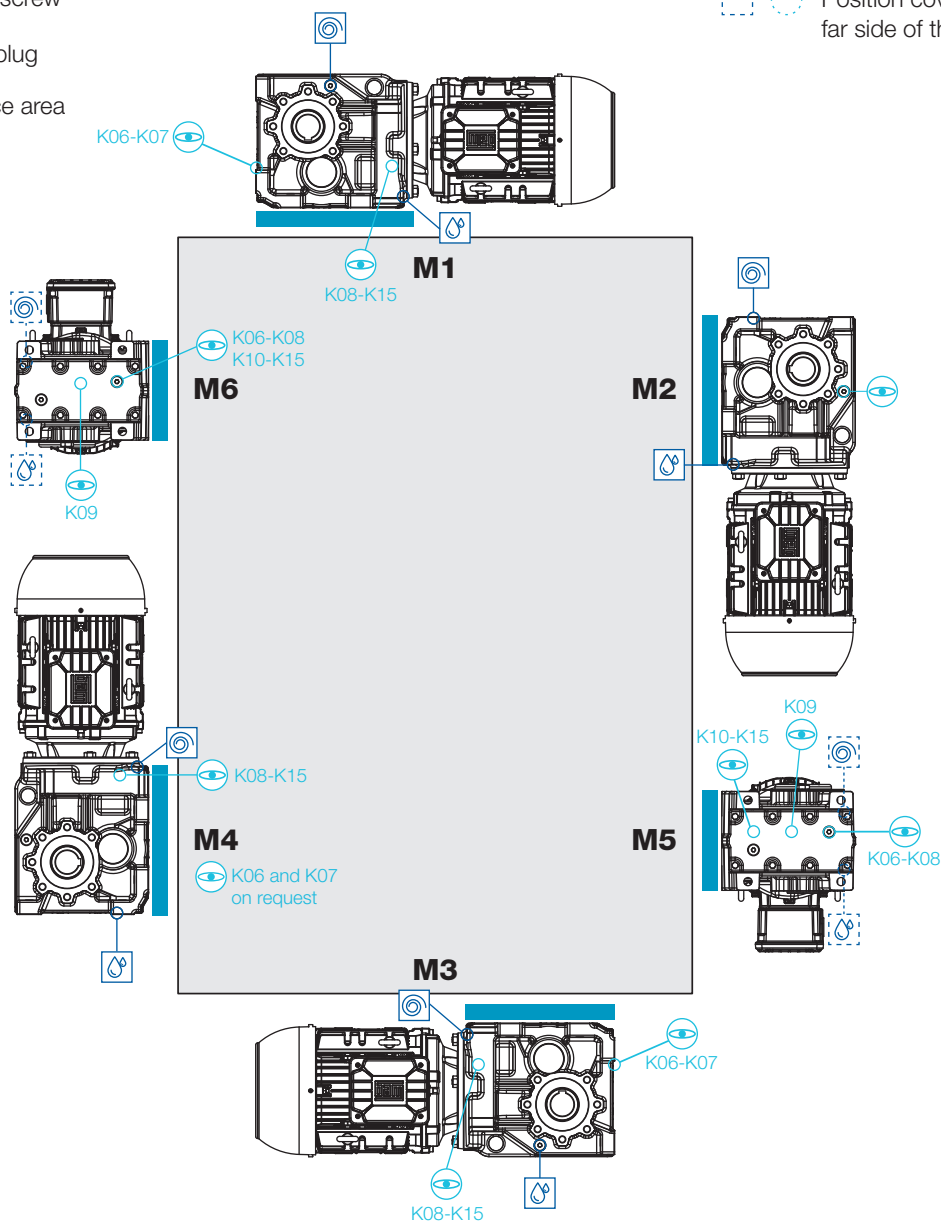
💧 Oil drain screw

👁️ Oil level plug

■ Reference area

□ ○ Position visible on this side

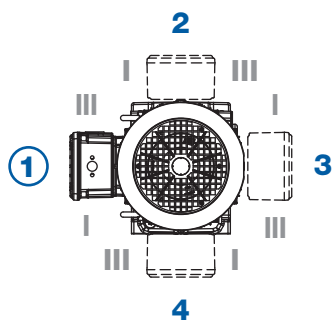
▨ ○ Position covered or on the far side of the gear unit



K

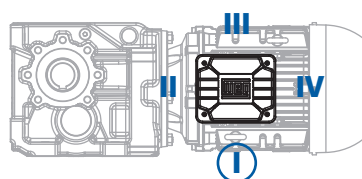
Position of the terminal box

Standard: Position 1

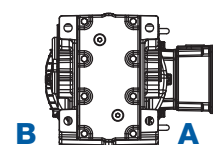


Cable entry

Standard: Position I



Side indication



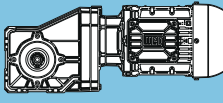
Selection tables - Geared motors

The technical data of the geared motors shown in the selection tables apply to an ambient temperature of +20 °C.

The selection tables are calculated with following motor data:

Power (IEC frame size)	Motor series (IE class)
up to 0.55 kW (63 - 80)	14P (IE3) - aluminium
0.75 - 9.2 kW (80 - 132)	11P (IE3) - aluminium
11 - 75 kW (160 - 250)	22P (IE3) - cast iron
75 - 110 kW (280)	22S (IE4) - cast iron

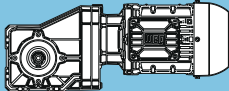
Structure of the selection tables

1										2				
P _N = 0.12 kW										IE3				
50 Hz		60 Hz						at 50 Hz			m kg	Dimension sheet see page		
0.12 kW		0.14 kW						Output shaft					Hollow shaft	
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	f _B	i	F _{rN} kN	F _{aN} kN	F _{rN} kN	F _{aN} kN						
3	4	5	6	7	8	9	10	11	12	13	14			

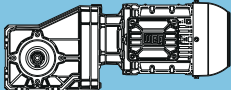
- 1 Rated power of the motor
- 2 Given values are based on the respective efficiency class
- 3 Output speed at 50 Hz
- 4 Output speed at 60 Hz
- 5 Output torque
- 6 Service factor
- 7 Total ratio
- 8 Permissible radial load - Execution with output shaft at midpoint of the shaft (standard bearing) at axial load=0
- 9 Permissible axial load - Execution with output shaft (standard bearing) at axial load=0
- 10 Permissible radial load - Execution with hollow shaft at midpoint of x=l/2 (standard bearing) at axial load=0
- 11 Permissible axial load - Execution with hollow shaft (standard bearing) at axial load=0
- 12 Geared motor type
- 13 Weight
- 14 Page reference for dimension sheet

*) Increased rated power at 60 Hz can only be reached together with increased voltage within the wide range (for details see page 574).

Increased rated power
1.2 x P _N

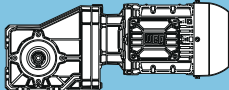
P _N = 0.12 kW										IE3	
50 Hz		60 Hz		at 50 Hz						m kg	Dimension sheet see page
0.12 kW		0.14 kW		Output shaft		Hollow shaft					
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	f _B	i	F _{rN} kN	F _{aN} kN	F _{rN} kN	F _{aN} kN			
0.07	0.08	15132	1.20	14005.40	88.3	118.5	88.3	118.5	KH155-14P-63-06F	677	492
0.08	0.10	12185	1.50	11453.02	96.1	120.7	96.1	120.7			
0.10	0.13	9400	1.95	9043.42	101.5	122.8	101.5	122.8			
0.12	0.14	8100	2.25	7915.09	103.5	123.8	103.5	123.8			
0.13	0.16	7065	2.55	7012.05	104.9	124.6	104.9	124.6			
0.15	0.18	6167	2.95	6249.84	105.9	125.3	105.9	125.3			
0.10	0.12	9609	1.90	14005.40	101.2	122.7	101.2	122.7	KH155-14P-63-04E	677	492
0.12	0.15	7677	2.35	11453.02	104.1	124.1	104.1	124.1			
0.15	0.18	6321	2.85	9679.02	105.7	125.2	105.7	125.2			
0.51	0.63	1918	2.35	1810.95	38.0	42.6	38.0	42.6	KH094-14P-63-06F	158	478
0.60	0.74	1588	2.85	1531.00	38.6	43.0	38.6	43.0			
0.62	0.77	1529	2.95	1480.92	38.7	43.1	38.7	43.1			
0.42	0.52	2444	1.25	2205.52	23.2	41.4	23.2	8.9	KH084-14P-63-06F	108	474
0.51	0.63	1974	1.55	1803.58	25.6	42.1	25.6	9.6			
0.53	0.65	1907	1.60	1745.64	25.8	42.2	25.8	9.7			
0.61	0.75	1648	1.85	1524.22	26.8	42.6	26.8	10.1			
0.65	0.80	1530	2.00	1424.12	27.2	42.7	27.2	10.2			
0.65	0.80	1534	2.00	1427.51	27.2	42.7	27.2	10.2			
0.74	0.91	1323	2.30	1246.44	27.8	43.0	27.8	10.5			
0.82	1.0	1184	2.55	1127.18	28.1	43.3	28.1	10.8			
0.84	1.0	1157	2.60	1104.23	28.2	43.3	28.2	10.8			
0.94	1.2	1014	3.00	984.20	28.5	43.5	28.5	11.0			
0.64	0.78	1563	1.95	2205.52	27.1	42.7	27.1	10.2	KH084-14P-63-04E	108	474
0.78	0.95	1255	2.40	1803.58	27.9	43.1	27.9	10.6			
0.80	0.99	1209	2.50	1745.64	28.1	43.2	28.1	10.7			
0.92	1.1	1038	2.90	1524.22	28.4	43.5	28.4	11.0			
3.8	4.6	304	2.00	245.70	8.9	11.1	8.9	4.4	KH053-14P-63-06F	21	466
4.8	5.9	241	2.50	194.73	9.3	11.3	9.3	4.6			
5.7	7.0	200	3.00	245.70	9.4	11.4	9.4	4.7	KH053-14P-63-04E	21	466
3.3	4.1	344	1.20	277.79	4.9	8.1	4.9	2.5	KH043-14P-63-06F	18	464
4.1	5.0	281	1.45	227.16	5.7	8.4	5.7	2.8			
5.2	6.4	222	1.80	179.37	6.2	8.6	6.2	3.0			
6.7	8.2	172	2.35	139.08	6.6	8.8	6.6	3.2			
8.1	10	141	2.85	113.83	6.7	8.9	6.7	3.3			
5.1	6.2	227	1.80	277.79	6.2	8.6	6.2	3.0	KH043-14P-63-04E	17	464
6.2	7.6	185	2.20	227.16	6.5	8.8	6.5	3.2			
7.8	9.6	146	2.75	179.37	6.7	8.9	6.7	3.3			
5.2	6.4	220	0.95	177.19	3.4	2.4	3.4	2.4	KH033-14P-63-06F	14	462
6.6	8.1	174	1.15	140.80	4.1	2.7	4.1	2.7			
8.5	10	135	1.50	108.75	4.6	2.9	4.6	2.9			
11	13	108	1.90	86.83	4.8	3.0	4.8	3.0			
13	16	89	2.25	71.93	4.9	3.1	4.9	3.1			
14	17	81	2.50	65.63	4.9	3.2	4.9	3.2			
16	19	72	2.80	58.50	5.0	3.2	5.0	3.2			
6.4	7.9	178	1.15	217.88	4.1	2.6	4.1	2.6	KH033-14P-63-04E	14	462
7.9	9.7	145	1.40	177.19	4.5	2.8	4.5	2.8			
10	12	115	1.75	140.80	4.7	3.0	4.7	3.0			
13	16	89	2.30	108.75	4.9	3.1	4.9	3.1			
16	20	71	2.85	86.83	5.0	3.3	5.0	3.3			
13	17	85	1.30	68.88	5.1	2.8	5.1	2.8	KH022-14P-63-06F	12	460
15	18	77	1.35	61.75	5.1	2.8	5.1	2.8			
17	21	66	1.70	53.65	5.2	2.8	5.2	2.8			
19	24	60	1.85	48.10	5.2	2.8	5.2	2.8			
21	26	54	2.05	43.50	5.2	2.8	5.2	2.8			
24	29	48	2.30	39.00	5.2	2.8	5.2	2.8			
27	33	42	2.60	34.27	5.3	2.8	5.3	2.8			
30	37	38	1.35	30.88	5.3	2.8	5.3	2.8			
38	47	30	2.75	24.05	5.3	2.8	5.3	2.8			

Legend see page 363

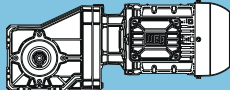
P _N = 0.12 kW										IE3		
50 Hz 0.12 kW		60 Hz 0.14 kW		f _B	i	at 50 Hz					m kg	Dimension sheet see page
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	Output shaft			Hollow shaft						
			F _{rN} kN			F _{aN} kN	F _{rN} kN	F _{aN} kN				
20	25	56	2.00	68.88	5.2	2.8	5.2	2.8	KH022-14P-63-04E	12	460	
23	28	50	2.05	61.75	5.2	2.8	5.2	2.8				
26	32	44	2.55	53.65	5.2	2.8	5.2	2.8				
29	36	39	2.85	48.10	5.3	2.8	5.3	2.8				
32	40	35	3.15	43.50	5.3	2.8	5.3	2.8				
36	44	32	3.50	39.00	5.3	2.8	5.3	2.8				
41	50	28	3.95	34.27	5.3	2.8	5.3	2.8				
45	56	25	2.05	30.88	5.3	2.8	5.3	2.8				
46	56	25	4.40	30.73	5.3	2.8	5.3	2.8				
53	65	22	5.15	26.41	5.3	2.8	5.3	2.8				
58	72	20	4.15	24.05	5.3	2.8	5.3	2.8				
59	73	19	5.70	23.68	5.3	2.8	5.3	2.8				
68	83	17	6.15	20.63	5.3	2.8	5.3	2.8				
72	88	16	5.10	19.50	5.3	2.8	5.3	2.8				
76	93	15	6.80	18.50	5.3	2.8	5.3	2.8				
91	112	13	6.50	15.36	5.3	2.8	5.3	2.8				
102	125	11	8.30	13.81	5.3	2.8	5.3	2.8				
119	145	10	8.40	11.84	5.1	2.8	5.1	2.8				
121	148	9	9.00	11.60	5.0	2.8	5.0	2.8				
135	165	8	10.05	10.40	4.8	2.8	4.8	2.8				
152	186	8	10.75	9.25	4.7	2.8	4.7	2.8				
165	202	7	11.10	8.51	4.5	2.8	4.5	2.8				
184	225	6	12.40	7.63	4.4	2.8	4.4	2.8				
203	249	6	13.15	6.91	4.2	2.8	4.2	2.8				
270	331	4	15.35	5.20	3.8	2.8	3.8	2.8				
368	450	3	18.30	3.82	3.5	2.8	3.5	2.8				

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Legend see page 363

P _N = 0.18 kW										IE3				
50 Hz		60 Hz		at 50 Hz						m kg	Dimension sheet see page			
0.18 kW		0.22 kW		Output shaft		Hollow shaft								
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	f _B	i	F _{rN} kN	F _{aN} kN	F _{rN} kN	F _{aN} kN						
0.06	0.08	23812	0.80	14005.40	**	**	**	**	KH155-14P-71-06E	680	492			
0.08	0.10	19324	0.95	11453.02	72.3	115.3	72.3	115.3						
0.09	0.11	16164	1.15	9679.02	85.0	117.7	85.0	117.7						
0.10	0.12	15064	1.20	9043.42	88.5	118.5	88.5	118.5						
0.11	0.14	13049	1.40	7915.09	94.1	120.0	94.1	120.0						
0.13	0.16	11442	1.60	7012.05	97.7	121.3	97.7	121.3						
0.14	0.18	10093	1.80	6249.84	100.4	122.3	100.4	122.3						
0.16	0.19	9173	2.00	5739.09	101.9	123.0	101.9	123.0						
0.19	0.23	7586	2.40	4845.97	104.2	124.2	104.2	124.2						
0.20	0.25	6826	2.65	4417.59	105.1	124.8	105.1	124.8						
0.23	0.28	6018	3.00	3966.24	106.0	125.4	106.0	125.4						
0.10	0.12	15214	1.20	14005.40	88.1	118.4	88.1	118.4				KH155-14P-63-04F	677	492
0.12	0.15	12251	1.50	11453.02	96.0	120.7	96.0	120.7						
0.14	0.18	10194	1.80	9679.02	100.2	122.2	100.2	122.2						
0.15	0.19	9476	1.90	9043.42	101.4	122.8	101.4	122.8						
0.17	0.21	8144	2.25	7915.09	103.5	123.8	103.5	123.8						
0.20	0.24	7103	2.55	7012.05	104.8	124.6	104.8	124.6						
0.22	0.27	6217	2.90	6249.84	105.8	125.3	105.8	125.3						
0.50	0.61	3062	1.50	1810.95	34.9	41.1	34.9	41.1	KH094-14P-71-06E	161	478			
0.59	0.73	2557	1.80	1531.00	36.5	41.7	36.5	41.7						
0.61	0.75	2468	1.85	1480.92	36.7	41.9	36.7	41.9						
0.72	0.89	2057	2.20	1251.99	37.7	42.4	37.7	42.4						
0.77	0.95	1905	2.40	1169.35	38.1	42.6	38.1	42.6						
0.91	1.1	1580	2.85	988.58	38.6	43.0	38.6	43.0						
0.76	0.94	1928	2.35	1810.95	38.0	42.5	38.0	42.5	KH094-14P-63-04F	158	478			
0.90	1.1	1596	2.85	1531.00	38.6	43.0	38.6	43.0						
0.93	1.1	1538	2.95	1480.92	38.7	43.0	38.7	43.0						
0.41	0.50	3838	0.80	2205.52	**	**	**	**	KH084-14P-71-06E	111	474			
0.50	0.62	3113	1.00	1803.58	18.4	32.2	18.4	7.9						
0.52	0.64	3013	1.00	1745.64	19.3	34.1	19.3	8.0						
0.59	0.73	2615	1.15	1524.22	22.2	40.5	22.2	8.6						
0.63	0.78	2439	1.25	1427.51	23.3	41.4	23.3	8.9						
0.72	0.89	2112	1.45	1246.44	25.0	41.9	25.0	9.4						
0.80	0.98	1898	1.60	1127.18	25.9	42.2	25.9	9.7						
0.82	1.0	1856	1.65	1104.23	26.1	42.3	26.1	9.8						
0.91	1.1	1640	1.85	984.20	26.8	42.6	26.8	10.1						
1.0	1.2	1494	2.05	903.77	27.3	42.8	27.3	10.3						
1.2	1.5	1241	2.45	763.13	28.0	43.2	28.0	10.7						
1.3	1.6	1156	2.60	715.32	28.2	43.3	28.2	10.8						
0.63	0.77	2457	1.25	2205.52	23.2	41.4	23.2	8.9				KH084-14P-63-04F	108	474
0.77	0.94	1985	1.55	1803.58	25.5	42.1	25.5	9.6						
0.79	0.97	1917	1.60	1745.64	25.8	42.2	25.8	9.7						
0.91	1.1	1657	1.85	1524.22	26.8	42.6	26.8	10.1						
0.97	1.2	1545	1.95	1427.51	27.1	42.7	27.1	10.2						
1.1	1.4	1330	2.30	1246.44	27.8	43.0	27.8	10.5						
1.2	1.5	1190	2.55	1127.18	28.1	43.2	28.1	10.7						
1.4	1.7	1022	2.95	984.20	28.5	43.5	28.5	11.0						
4.5	5.6	378	2.20	198.00	11.7	14.1	11.7	4.1	KH063-14P-71-06E	37	468			
5.7	7.1	300	2.75	156.92	12.0	14.3	12.0	4.4						
3.7	4.5	469	1.30	245.70	7.7	10.6	7.7	3.9	KH053-14P-71-06E	23	466			
4.6	5.7	372	1.65	194.73	8.5	10.9	8.5	4.2						
6.0	7.3	289	2.10	151.20	9.0	11.1	9.0	4.4						
7.3	8.9	237	2.55	124.06	9.3	11.3	9.3	4.6						
5.6	6.9	306	2.00	245.70	8.9	11.1	8.9	4.4	KH053-14P-63-04F	21	466			
7.1	8.7	243	2.50	194.73	9.2	11.3	9.2	4.6						
3.2	4.0	531	0.80	277.79	**	**	**	**	KH043-14P-71-06E	20	464			
4.0	4.9	434	0.95	227.16	2.9	4.1	2.9	2.2						
5.0	6.2	343	1.20	179.37	4.9	8.1	4.9	2.5						
6.5	8.0	266	1.55	139.08	5.8	8.4	5.8	2.8						
7.9	9.8	217	1.85	113.83	6.3	8.6	6.3	3.0						
10	12	170	2.25	89.17	6.6	8.8	6.6	3.2						
12	15	139	2.90	72.92	6.7	8.9	6.7	3.3						
19	24	90	2.25	47.07	6.9	9.0	6.9	3.4						

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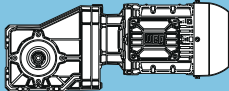
$P_N = 0.18 \text{ kW}$										IE3	
50 Hz		60 Hz		i	at 50 Hz					m kg	Dimension sheet see page
0.18 kW		0.22 kW			Output shaft		Hollow shaft				
n_{50} min ⁻¹	n_{60} min ⁻¹	M_2 Nm	f_b		F_{rN} kN	F_{aN} kN	F_{rN} kN	F_{aN} kN			
5.0	6.1	346	1.20	277.79	4.8	8.1	4.8	2.5	KH043-14P-63-04F	17	464
6.1	7.5	283	1.45	227.16	5.7	8.4	5.7	2.8			
7.7	9.5	223	1.80	179.37	6.2	8.6	6.2	3.0			
9.9	12	173	2.35	139.08	6.6	8.8	6.6	3.2			
12	15	142	2.85	113.83	6.7	8.9	6.7	3.3			
8.3	10	208	1.00	108.75	3.6	2.5	3.6	2.5	KH033-14P-71-06E	16	462
10	13	166	1.25	86.83	4.2	2.7	4.2	2.7			
13	15	137	1.50	71.93	4.5	2.9	4.5	2.9			
14	17	125	1.60	65.63	4.6	2.9	4.6	2.9			
15	19	112	1.80	58.50	4.8	3.0	4.8	3.0			
18	22	95	2.10	49.88	4.9	3.1	4.9	3.1			
19	24	89	2.30	46.48	4.9	3.1	4.9	3.1			
23	29	74	2.70	38.80	5.0	3.2	5.0	3.2			
25	31	69	2.95	35.90	5.0	3.3	5.0	3.3			
30	37	57	2.30	29.97	5.0	3.2	5.0	3.2			
7.8	9.6	221	0.95	177.19	3.3	2.4	3.3	2.4	KH033-14P-63-04F	14	462
9.8	12	175	1.15	140.80	4.1	2.7	4.1	2.7			
13	16	135	1.50	108.75	4.6	2.9	4.6	2.9			
16	20	108	1.85	86.83	4.8	3.0	4.8	3.0			
19	24	90	2.25	71.93	4.9	3.1	4.9	3.1			
21	26	82	2.45	65.63	4.9	3.2	4.9	3.2			
24	29	73	2.75	58.50	5.0	3.2	5.0	3.2			
13	16	132	0.85	68.88	4.8	2.8	4.8	2.8	KH022-14P-71-06E	14	460
15	18	118	0.90	61.75	4.9	2.8	4.9	2.8			
17	21	102	1.10	53.65	5.0	2.8	5.0	2.8			
19	23	92	1.20	48.10	5.0	2.8	5.0	2.8			
21	26	83	1.35	43.50	5.1	2.8	5.1	2.8			
23	28	74	1.50	39.00	5.1	2.8	5.1	2.8			
26	32	65	1.70	34.27	5.2	2.8	5.2	2.8			
29	36	59	1.90	30.73	5.2	2.8	5.2	2.8			
34	42	50	2.20	26.41	5.2	2.8	5.2	2.8			
37	46	46	1.80	24.05	5.2	2.8	5.2	2.8			
38	47	45	2.45	23.68	5.2	2.8	5.2	2.8			
44	54	39	2.65	20.63	5.3	2.8	5.3	2.8			
46	57	37	2.20	19.50	5.3	2.8	5.3	2.8			
49	60	35	2.90	18.50	5.3	2.8	5.3	2.8			
59	72	29	2.80	15.36	5.3	2.8	5.3	2.8			
20	25	86	1.30	68.88	5.1	2.8	5.1	2.8	KH022-14P-63-04F	12	460
22	28	77	1.35	61.75	5.1	2.8	5.1	2.8			
26	32	67	1.65	53.65	5.2	2.8	5.2	2.8			
29	35	60	1.85	48.10	5.2	2.8	5.2	2.8			
32	39	54	2.05	43.50	5.2	2.8	5.2	2.8			
35	44	49	2.30	39.00	5.2	2.8	5.2	2.8			
40	50	43	2.60	34.27	5.3	2.8	5.3	2.8			
45	55	38	2.90	30.73	5.3	2.8	5.3	2.8			
52	64	33	3.35	26.41	5.3	2.8	5.3	2.8			
57	71	30	2.75	24.05	5.3	2.8	5.3	2.8			
58	72	29	3.75	23.68	5.3	2.8	5.3	2.8			
67	82	26	4.05	20.63	5.3	2.8	5.3	2.8			
71	87	24	3.35	19.50	5.3	2.8	5.3	2.8			
75	92	23	4.45	18.50	5.3	2.8	5.3	2.8			
90	110	19	4.85	15.41	5.3	2.8	5.3	2.8			
100	123	17	5.45	13.81	5.3	2.8	5.3	2.8			
117	144	15	5.50	11.84	5.1	2.8	5.1	2.8			
119	147	14	5.90	11.60	5.1	2.8	5.1	2.8			
133	163	13	6.60	10.40	4.9	2.8	4.9	2.8			
149	184	12	7.05	9.25	4.7	2.8	4.7	2.8			
162	200	11	7.30	8.51	4.6	2.8	4.6	2.8			
181	223	10	8.15	7.63	4.4	2.8	4.4	2.8			
200	246	9	8.60	6.91	4.3	2.8	4.3	2.8			
265	327	6	10.05	5.20	3.9	2.8	3.9	2.8			
361	445	5	12.00	3.82	3.5	2.8	3.5	2.8			

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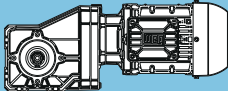
Legend see page 363

P_N = 0.25 kW

IE3

50 Hz		60 Hz		i	at 50 Hz					m kg	Dimension sheet see page			
0.25 kW		0.33 kW			Output shaft		Hollow shaft							
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	f _b		F _{rN} kN	F _{aN} kN	F _{rN} kN	F _{aN} kN						
0.10	0.12	21485	0.85	9679.02	60.5	104.6	60.5	104.6	KH155-14P-80-06D	680	492			
0.11	0.13	20023	0.90	9043.42	68.8	114.7	68.8	114.7						
0.12	0.15	17390	1.05	7915.09	80.6	116.7	80.6	116.7						
0.14	0.17	15288	1.20	7012.05	87.9	118.3	87.9	118.3						
0.15	0.19	13521	1.35	6249.84	92.9	119.7	92.9	119.7						
0.17	0.21	12321	1.50	5739.09	95.8	120.6	95.8	120.6						
0.20	0.24	10244	1.80	4845.97	100.1	122.2	100.1	122.2						
0.22	0.27	9266	1.95	4417.59	101.8	122.9	101.8	122.9						
0.24	0.30	8212	2.20	3966.24	103.4	123.7	103.4	123.7						
0.29	0.36	6733	2.70	3337.74	105.3	124.9	105.3	124.9						
0.31	0.39	6063	3.00	3052.96	106.0	125.4	106.0	125.4						
0.10	0.12	21514	0.85	14005.40	60.3	104.2	60.3	104.2	KH155-14P-71-04E	678	492			
0.12	0.15	17414	1.05	11453.02	80.5	116.7	80.5	116.7						
0.14	0.18	14566	1.25	9679.02	90.0	118.9	90.0	118.9						
0.15	0.19	13540	1.35	9043.42	92.8	119.7	92.8	119.7						
0.17	0.21	11729	1.55	7915.09	97.1	121.1	97.1	121.1						
0.20	0.24	10258	1.80	7012.05	100.1	122.2	100.1	122.2						
0.22	0.27	9048	2.00	6249.84	102.1	123.1	102.1	123.1						
0.24	0.30	8223	2.20	5739.09	103.4	123.7	103.4	123.7						
0.28	0.35	6765	2.70	4845.97	105.2	124.8	105.2	124.8						
0.31	0.38	6071	3.00	4417.59	106.0	125.4	106.0	125.4						
0.73	0.91	2712	2.95	1301.54	60.3	66.1	60.3	66.1				KH104-14P-80-06D	290	482
0.53	0.65	4066	1.15	1810.95	30.5	39.8	30.5	39.8	KH094-14P-80-06D	161	478			
0.62	0.77	3409	1.35	1531.00	33.6	40.7	33.6	40.7						
0.64	0.80	3291	1.40	1480.92	34.0	40.8	34.0	40.8						
0.76	0.95	2754	1.65	1251.99	35.9	41.5	35.9	41.5						
0.82	1.0	2556	1.80	1169.35	36.5	41.7	36.5	41.7						
0.97	1.2	2130	2.15	988.58	37.6	42.3	37.6	42.3						
1.1	1.3	1937	2.35	906.69	38.0	42.5	38.0	42.5						
1.2	1.5	1607	2.80	766.52	38.6	43.0	38.6	43.0						
1.3	1.6	1546	2.95	742.09	38.7	43.0	38.7	43.0						
0.76	0.94	2757	1.65	1810.95	35.9	41.5	35.9	41.5				KH094-14P-71-04E	159	478
0.90	1.1	2297	2.00	1531.00	37.2	42.1	37.2	42.1						
0.93	1.1	2217	2.05	1480.92	37.4	42.2	37.4	42.2						
1.1	1.4	1844	2.45	1251.99	38.2	42.7	38.2	42.7						
1.2	1.5	1708	2.65	1169.35	38.4	42.8	38.4	42.8						
0.55	0.68	3976	0.80	1745.64	**	**	**	**	KH084-14P-80-06D	111	474			
0.63	0.78	3458	0.90	1524.22	14.6	24.1	14.6	24.1						
0.67	0.83	3232	0.95	1427.51	17.2	29.6	17.2	29.6						
0.77	0.95	2804	1.10	1246.44	20.9	37.7	20.9	37.7						
0.85	1.1	2526	1.20	1127.18	22.8	41.3	22.8	41.3						
0.86	1.1	2469	1.25	1104.23	23.1	41.4	23.1	41.4						
0.97	1.2	2187	1.40	984.20	24.6	41.8	24.6	41.8						
1.1	1.3	2000	1.50	903.77	25.5	42.0	25.5	42.0						
1.3	1.6	1668	1.80	763.13	26.7	42.5	26.7	42.5						
1.4	1.7	1508	2.00	695.67	27.2	42.8	27.2	42.8						
1.5	1.9	1340	2.25	624.59	27.7	43.0	27.7	43.0						
1.7	2.2	1164	2.60	550.61	28.2	43.3	28.2	43.3						
1.8	2.3	1104	2.75	525.61	28.3	43.4	28.3	43.4						
0.63	0.77	3462	0.90	2205.52	14.6	24.1	14.6	24.1				KH084-14P-71-04E	109	474
0.77	0.94	2808	1.10	1803.58	20.9	37.7	20.9	37.7						
0.79	0.97	2712	1.15	1745.64	21.6	39.2	21.6	39.2						
0.91	1.1	2354	1.30	1524.22	23.8	41.5	23.8	41.5						
0.97	1.2	2190	1.40	1424.12	24.6	41.8	24.6	41.8						
0.97	1.2	2195	1.40	1427.51	24.6	41.8	24.6	41.8						
1.1	1.4	1901	1.60	1246.44	25.9	42.2	25.9	42.2						
1.2	1.5	1705	1.80	1127.18	26.6	42.5	26.6	42.5						
1.4	1.7	1474	2.05	984.20	27.4	42.8	27.4	42.8						
1.5	1.9	1342	2.25	903.77	27.7	43.0	27.7	43.0						
1.6	1.9	1292	2.35	873.98	27.8	43.1	27.8	43.1						
1.8	2.2	1112	2.70	763.13	28.3	43.4	28.3	43.4						
1.9	2.4	1032	2.95	715.32	28.4	43.5	28.4	43.5						
2.0	2.4	1001	3.00	695.67	28.5	43.5	28.5	43.5						

K

P _N = 0.25 kW										IE3		
50 Hz		60 Hz		f _B	i	at 50 Hz					m kg	Dimension sheet see page
0.25 kW		0.33 kW				Output shaft		Hollow shaft				
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm				F _{rN} kN	F _{aN} kN	F _{rN} kN	F _{aN} kN			
3.7	4.6	640	2.45	256.14	19.7	17.7	19.7	6.4	KH073-14P-80-06D	57	470	
4.8	6.0	495	1.70	198.00	11.2	13.7	11.2	3.7	KH063-14P-80-06D	37	468	
6.1	7.6	392	2.10	156.92	11.7	14.0	11.7	4.1				
7.8	9.7	305	2.70	121.85	12.0	14.3	12.0	4.3				
12	15	204	2.85	81.53	12.3	14.6	12.3	4.7				
22	27	111	2.85	44.35	12.4	14.8	11.4	4.8				
7,0	8.6	343	2.40	198.00	11.9	14.2	11.9	4.2	KH063-14P-71-04E	35	468	
3.9	4.8	614	1.00	245.70	5.9	9.9	5.9	3.4	KH053-14P-80-06D	24	466	
4.9	6.1	487	1.25	194.73	7.5	10.5	7.5	3.8				
6.3	7.8	378	1.60	151.20	8.5	10.9	8.5	4.2				
7.7	9.6	310	1.95	124.06	8.9	11.1	8.9	4.4				
9.9	12	240	2.50	96.08	9.3	11.3	9.3	4.6				
12	15	201	2.85	80.46	9.4	11.4	9.4	4.7				
25	31	96	2.80	38.32	9.7	11.6	9.7	4.9				
5.6	6.9	425	1.45	245.70	8.1	10.7	8.1	4.0	KH053-14P-71-04E	22	466	
7.1	8.7	337	1.80	194.73	8.8	11.0	8.8	4.3				
9.1	11	262	2.30	151.20	9.2	11.2	9.2	4.5				
11	14	215	2.80	124.06	9.4	11.4	9.4	4.7				
5.3	6.6	448	0.90	179.37	2.4	3.0	2.4	2.1	KH043-14P-80-06D	21	464	
6.9	8.5	348	1.20	139.08	4.8	8.1	4.8	2.5				
8.4	10	285	1.45	113.83	5.6	8.4	5.6	2.8				
11	13	223	1.70	89.17	6.2	8.6	6.2	3.0				
13	16	182	2.20	72.92	6.5	8.8	6.5	3.2				
14	18	166	2.45	66.20	6.6	8.8	6.6	3.2				
17	21	144	2.80	57.58	6.7	8.9	6.7	3.3				
18	22	135	3.00	54.18	6.7	9.0	6.7	3.4				
20	25	118	1.70	47.07	6.8	8.9	6.8	3.3				
25	31	96	2.85	38.49	6.9	9.0	6.9	3.4				
5.0	6.1	481	0.85	277.79	**	**	**	**				KH043-14P-71-04E
6.1	7.5	393	1.05	227.16	4.0	6.4	4.0	2.3				
7.7	9.5	310	1.30	179.37	5.3	8.3	5.3	2.7				
9.9	12	241	1.70	139.08	6.1	8.5	6.1	2.9				
12	15	197	2.05	113.83	6.4	8.7	6.4	3.1				
15	19	154	2.50	89.17	6.7	8.9	6.7	3.3				
16	19	152	2.65	87.62	6.7	8.9	6.7	3.3				
29	36	81	2.50	47.07	6.9	9.1	6.9	3.5				
11	14	217	0.95	86.83	3.4	2.4	3.4	2.4				
13	16	180	1.15	71.93	4.0	2.6	4.0	2.6				
15	18	164	1.25	65.63	4.2	2.7	4.2	2.7				
16	20	146	1.40	58.50	4.4	2.8	4.4	2.8				
19	24	125	1.65	49.88	4.6	2.9	4.6	2.9				
21	26	116	1.75	46.48	4.7	3.0	4.7	3.0				
25	31	97	2.10	38.80	4.9	3.1	4.9	3.1				
27	33	90	2.25	35.90	4.9	3.1	4.9	3.1				
32	39	76	2.65	30.29	5.0	3.2	5.0	3.2				
33	41	72	2.80	28.67	5.0	3.2	5.0	3.2				
39	49	61	2.65	24.38	5.0	3.2	5.0	3.2				
9.8	12	244	0.85	140.80	2.8	2.3	2.8	2.3	KH033-14P-71-04E	15	462	
13	16	188	1.10	108.75	3.9	2.6	3.9	2.6				
16	20	150	1.35	86.83	4.4	2.8	4.4	2.8				
19	24	124	1.65	71.93	4.7	2.9	4.7	2.9				
21	26	114	1.80	65.63	4.7	3.0	4.7	3.0				
24	29	101	2.00	58.50	4.8	3.1	4.8	3.1				
28	34	86	2.35	49.88	4.9	3.2	4.9	3.2				
30	37	80	2.50	46.48	4.9	3.2	4.9	3.2				
36	44	67	3.00	38.80	5.0	3.3	5.0	3.3				
46	57	52	2.50	29.97	5.1	3.3	5.1	3.3				

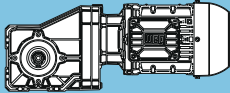
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** ... on request

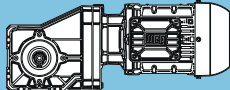
P_N = 0.25 kW

IE3

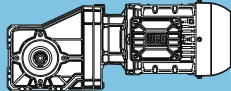
50 Hz		60 Hz		i	at 50 Hz					m kg	Dimension sheet see page
0.25 kW		0.33 kW			Output shaft		Hollow shaft				
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	f _b		F _{rN} kN	F _{aN} kN	F _{rN} kN	F _{aN} kN			
18	22	134	0.85	53.65	4.7	2.8	4.7	2.8	KH022-14P-80-06D	15	460
20	25	120	0.95	48.10	4.9	2.8	4.9	2.8			
22	27	109	1.05	43.50	4.9	2.8	4.9	2.8			
24	30	98	1.15	39.00	5.0	2.8	5.0	2.8			
28	35	86	1.30	34.27	5.1	2.8	5.1	2.8			
31	39	77	1.45	30.73	5.1	2.8	5.1	2.8			
36	45	66	1.70	26.41	5.2	2.8	5.2	2.8			
40	49	60	1.35	24.05	5.2	2.8	5.2	2.8			
46	57	52	2.00	20.63	5.2	2.8	5.2	2.8			
49	61	49	1.70	19.50	5.2	2.8	5.2	2.8			
52	64	46	2.25	18.50	5.2	2.8	5.2	2.8			
62	77	39	2.45	15.41	5.3	2.8	5.3	2.8			
69	86	35	2.70	13.81	5.3	2.8	5.3	2.8			
72	89	33	2.70	13.29	5.3	2.8	5.3	2.8			
80	99	30	3.00	11.92	5.3	2.8	5.3	2.8			
81	100	30	2.75	11.84	5.3	2.8	5.3	2.8			
82	102	29	2.95	11.60	5.3	2.8	5.3	2.8			
20	25	119	0.95	68.88	4.9	2.8	4.9	2.8	KH022-14P-71-04E	13	460
22	28	107	1.00	61.75	5.0	2.8	5.0	2.8			
26	32	93	1.20	53.65	5.0	2.8	5.0	2.8			
29	35	83	1.35	48.10	5.1	2.8	5.1	2.8			
32	39	75	1.50	43.50	5.1	2.8	5.1	2.8			
35	44	67	1.65	39.00	5.2	2.8	5.2	2.8			
40	50	59	1.90	34.27	5.2	2.8	5.2	2.8			
45	55	53	2.10	30.73	5.2	2.8	5.2	2.8			
52	64	46	2.45	26.41	5.2	2.8	5.2	2.8			
57	71	42	1.95	24.05	5.3	2.8	5.3	2.8			
58	72	41	2.70	23.68	5.3	2.8	5.3	2.8			
67	82	36	2.90	20.63	5.3	2.8	5.3	2.8			
71	87	34	2.45	19.50	5.3	2.8	5.3	2.8			
75	92	32	3.20	18.50	5.3	2.8	5.3	2.8			
90	110	27	3.50	15.41	5.3	2.8	5.3	2.8			
100	123	24	3.90	13.81	5.3	2.8	5.3	2.8			
117	144	20	4.00	11.84	5.1	2.8	5.1	2.8			
119	147	20	4.25	11.60	5.1	2.8	5.1	2.8			
133	163	18	4.75	10.40	4.9	2.8	4.9	2.8			
149	184	16	5.10	9.25	4.7	2.8	4.7	2.8			
162	200	15	5.25	8.51	4.6	2.8	4.6	2.8			
181	223	13	5.85	7.63	4.4	2.8	4.4	2.8			
200	246	12	6.20	6.91	4.3	2.8	4.3	2.8			
265	327	9	7.25	5.20	3.9	2.8	3.9	2.8			
361	445	7	8.65	3.82	3.5	2.8	3.5	2.8			

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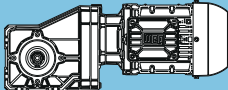
P _N = 0.37 kW										IE3	
50 Hz		60 Hz		i	at 50 Hz					m kg	Dimension sheet see page
0.37 kW		0.44 kW			Output shaft		Hollow shaft				
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	f _B		F _{rN} kN	F _{aN} kN	F _{rN} kN	F _{aN} kN			
0.13	0.16	23844	0.80	7012.05	**	**	**	**	KH155-14P-80-06E	682	492
0.15	0.18	21198	0.85	6249.84	62.2	108.2	62.2	108.2			
0.16	0.20	19366	0.95	5739.09	72.1	115.2	72.1	115.2			
0.19	0.24	16185	1.15	4845.97	84.9	117.6	84.9	117.6			
0.21	0.26	14679	1.25	4417.59	89.7	118.8	89.7	118.8			
0.23	0.29	13078	1.40	3966.24	94.0	120.0	94.0	120.0			
0.28	0.34	10837	1.70	3337.74	99.0	121.7	99.0	121.7			
0.30	0.37	9835	1.85	3052.96	100.8	122.5	100.8	122.5			
0.34	0.42	8687	2.10	2731.65	102.7	123.4	102.7	123.4			
0.40	0.49	7166	2.55	2306.68	104.7	124.5	104.7	124.5			
0.42	0.51	6846	2.65	2215.09	105.1	124.8	105.1	124.8			
0.14	0.18	21768	0.85	9679.02	58.6	100.6	58.6	100.6	KH155-14P-71-04F	679	492
0.15	0.19	20287	0.90	9043.42	67.4	114.5	67.4	114.5			
0.18	0.22	17620	1.05	7915.09	79.7	116.6	79.7	116.6			
0.20	0.24	15490	1.20	7012.05	87.2	118.2	87.2	118.2			
0.22	0.27	13700	1.35	6249.84	92.4	119.5	92.4	119.5			
0.24	0.30	12516	1.45	5739.09	95.4	120.4	95.4	120.4			
0.29	0.35	10406	1.75	4845.97	99.8	122.1	99.8	122.1			
0.32	0.39	9388	1.95	4417.59	101.6	122.8	101.6	122.8			
0.35	0.43	8320	2.20	3966.24	103.2	123.7	103.2	123.7			
0.42	0.51	6840	2.65	3337.74	105.1	124.8	105.1	124.8			
0.46	0.56	6159	2.95	3052.96	105.9	125.3	105.9	125.3			
0.59	0.72	5115	2.55	1579.81	86.7	92.4	86.7	92.4	KH124-14P-80-06E	415	486
0.67	0.83	4377	3.00	1377.44	87.4	93.1	87.4	93.1			
0.71	0.88	4338	1.85	1301.54	57.7	64.2	57.7	64.2	KH104-14P-80-06E	292	482
0.82	1.0	3712	2.20	1129.81	58.8	64.9	58.8	64.9			
0.92	1.1	3267	2.45	1004.85	59.5	65.4	59.5	65.4			
0.95	1.2	3161	2.55	976.16	59.7	65.6	59.7	65.6			
1.1	1.3	2783	2.90	872.27	60.2	66.0	60.2	66.0			
1.1	1.3	2748	2.95	1301.54	60.3	66.0	60.3	66.0	KH104-14P-71-04F	289	482
0.60	0.74	5318	0.85	1531.00	21.4	36.0	21.4	36.0	KH094-14P-80-06E	163	478
0.62	0.77	5133	0.90	1480.92	23.2	38.5	23.2	38.5			
0.74	0.91	4313	1.05	1251.99	29.1	39.5	29.1	39.5			
0.79	0.97	4012	1.15	1169.35	30.8	39.9	30.8	39.9			
0.94	1.2	3364	1.35	988.58	33.8	40.7	33.8	40.7			
1.0	1.3	3066	1.50	906.69	34.9	41.1	34.9	41.1			
1.2	1.5	2560	1.80	766.52	36.5	41.7	36.5	41.7			
1.5	1.8	2061	2.20	627.37	37.7	42.4	37.7	42.4			
1.6	2.0	1857	2.45	571.21	38.1	42.6	38.1	42.6			
1.9	2.4	1538	2.95	482.91	38.7	43.0	38.7	43.0			
0.77	0.94	4128	1.10	1810.95	30.2	39.7	30.2	39.7	KH094-14P-71-04F	160	478
0.91	1.1	3462	1.30	1531.00	33.4	40.6	33.4	40.6			
0.94	1.2	3341	1.35	1480.92	33.8	40.8	33.8	40.8			
1.1	1.4	2790	1.65	1251.99	35.8	41.5	35.8	41.5			
1.2	1.5	2595	1.75	1169.35	36.4	41.7	36.4	41.7			
1.4	1.7	2162	2.10	988.58	37.5	42.3	37.5	42.3			
1.5	1.9	1967	2.30	906.69	37.9	42.5	37.9	42.5			
1.8	2.2	1629	2.80	766.52	38.6	42.9	38.6	42.9			
1.9	2.3	1570	2.90	742.09	38.7	43.0	38.7	43.0			
0.82	1.0	3923	0.80	1127.18	**	**	**	**			
0.84	1.0	3843	0.80	1104.23	**	**	**	**			
0.94	1.2	3412	0.90	984.20	15.2	25.4	15.2	25.4			
1.0	1.3	3120	1.00	903.77	18.3	32.0	18.3	32.0			
1.1	1.3	3017	1.00	873.98	19.2	33.9	19.2	33.9			
1.2	1.5	2618	1.15	763.13	22.2	40.5	22.2	40.5			
1.3	1.6	2444	1.25	715.32	23.2	41.4	23.2	41.4			
1.5	1.8	2117	1.45	624.59	24.9	41.9	24.9	41.9			
1.7	2.1	1851	1.65	550.61	26.1	42.3	26.1	42.3			
1.8	2.2	1759	1.75	525.61	26.4	42.4	26.4	42.4			
1.9	2.4	1599	1.90	480.77	27.0	42.6	27.0	42.6			
2.2	2.7	1416	2.15	430.17	27.5	42.9	27.5	42.9			
2.5	3.1	1174	2.60	363.25	28.1	43.3	28.1	43.3			
2.7	3.3	1122	2.70	348.82	28.2	43.3	28.2	43.3			

K

P _N = 0.37 kW										IE3	
50 Hz		60 Hz		at 50 Hz						m kg	Dimension sheet see page
0.37 kW		0.44 kW		Output shaft		Hollow shaft					
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	f _B	i	F _{rN} kN	F _{aN} kN	F _{rN} kN	F _{aN} kN			
0.92	1.1	3503	0.90	1524.22	14.0	22.8	14.0	7.3	KH084-14P-71-04F	110	474
0.98	1.2	3274	0.95	1427.51	16.8	28.8	16.8	7.7			
1.1	1.4	2841	1.10	1246.44	20.6	37.0	20.6	8.3			
1.2	1.5	2559	1.20	1127.18	22.6	41.2	22.6	8.7			
1.3	1.5	2507	1.20	1104.23	22.9	41.3	22.9	8.8			
1.4	1.7	2216	1.40	984.20	24.5	41.7	24.5	9.2			
1.5	1.9	2027	1.50	903.77	25.3	42.0	25.3	9.5			
1.6	2.0	1956	1.55	873.98	25.6	42.1	25.6	9.6			
1.8	2.2	1690	1.80	763.13	26.7	42.5	26.7	10.0			
2.0	2.4	1574	1.95	715.32	27.0	42.7	27.0	10.2			
2.2	2.7	1358	2.25	624.59	27.7	43.0	27.7	10.5			
2.5	3.1	1182	2.55	550.61	28.1	43.3	28.1	10.8			
2.7	3.3	1121	2.70	525.61	28.2	43.3	28.2	10.8			
2.9	3.6	1013	3.00	480.77	28.5	43.5	28.5	11.0			
3.6	4.5	978	1.60	256.14	18.5	17.0	18.5	5.7	KH073-14P-80-06E	59	470
4.7	5.8	755	2.10	197.75	19.3	17.4	19.3	6.2			
5.6	6.9	634	2.45	165.85	19.7	17.7	19.7	6.4			
5.4	6.7	649	2.40	256.14	19.6	17.7	19.6	6.4	KH073-14P-71-04F	56	470
4.7	5.8	756	1.10	198.00	9.2	12.9	9.2	2.9	KH063-14P-80-06E	39	468
5.9	7.3	599	1.40	156.92	10.6	13.4	10.6	3.4			
7.6	9.4	465	1.80	121.85	11.4	13.8	11.4	3.8			
9.3	11	382	2.15	99.98	11.7	14.0	11.7	4.1			
11	14	311	1.85	81.53	12.0	14.3	12.0	4.3			
12	15	296	2.80	77.42	12.0	14.3	12.0	4.4			
21	26	169	1.85	44.35	12.3	14.5	11.9	4.5			
7.0	8.6	502	1.65	198.00	11.2	13.7	11.2	3.7	KH063-14P-71-04F	36	468
8.9	11	397	2.10	156.92	11.7	14.0	11.7	4.0			
11	14	309	2.70	121.85	12.0	14.3	12.0	4.3			
17	21	207	2.80	81.53	12.3	14.6	12.3	4.6			
31	39	112	2.80	44.35	12.4	14.7	10.2	4.8			
4.8	5.9	744	0.85	194.73	2.5	2.7	2.5	2.7	KH053-14P-80-06E	26	466
6.1	7.5	578	1.05	151.20	6.4	10.3	6.4	3.6			
7.5	9.2	474	1.30	124.06	7.7	10.6	7.7	3.9			
9.6	12	367	1.65	96.08	8.6	10.9	8.6	4.2			
11	14	307	1.85	80.46	8.9	11.1	8.9	4.4			
13	16	279	2.15	73.08	9.1	11.2	9.1	4.5			
15	18	244	2.50	63.77	9.2	11.3	9.2	4.6			
24	30	146	1.85	38.32	9.6	11.3	9.6	4.6			
5.7	7.0	622	1.00	245.70	5.7	9.5	5.7	3.4	KH053-14P-71-04F	23	466
7.2	8.8	493	1.25	194.73	7.5	10.5	7.5	3.8			
9.2	11	383	1.60	151.20	8.5	10.8	8.5	4.1			
11	14	314	1.95	124.06	8.9	11.0	8.9	4.3			
15	18	243	2.50	96.08	9.2	11.3	9.2	4.6			
17	21	204	2.80	80.46	9.4	11.4	9.4	4.7			
36	45	97	2.80	38.32	9.7	11.6	9.7	4.9			
6.7	8.2	531	0.80	139.08	**	**	**	**	KH043-14P-80-06E	22	464
8.1	10	435	0.95	113.83	2.9	4.1	2.9	2.2			
10	13	341	1.15	89.17	4.9	8.1	4.9	2.5			
11	13	335	1.20	87.62	5.0	8.2	5.0	2.6			
13	16	279	1.45	72.92	5.7	8.4	5.7	2.8			
14	17	253	1.60	66.20	6.0	8.5	6.0	2.9			
16	20	220	1.85	57.58	6.2	8.6	6.2	3.0			
17	21	207	1.95	54.18	6.3	8.7	6.3	3.1			
20	24	180	1.15	47.07	6.5	8.6	6.5	3.0			
21	26	171	2.35	44.64	6.6	8.8	6.6	3.2			
24	30	147	1.85	38.49	6.7	8.7	6.7	3.1			
25	31	140	2.75	36.78	6.7	8.9	6.7	3.3			
30	38	116	2.80	30.39	6.8	8.9	6.8	3.3			

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** ... on request

P _N = 0.37 kW										IE3	
50 Hz		60 Hz		i	at 50 Hz					m kg	Dimension sheet see page
0.37 kW		0.44 kW			Output shaft		Hollow shaft				
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	f _B		F _{rN} kN	F _{aN} kN	F _{rN} kN	F _{aN} kN			
7.8	9.5	454	0.90	179.37	2.1	2.4	2.1	2.1	KH043-14P-71-04F	19	464
10	12	352	1.15	139.08	4.7	8.0	4.7	2.5			
12	15	288	1.40	113.83	5.6	8.3	5.6	2.7			
16	19	226	1.70	89.17	6.2	8.6	6.2	3.0			
19	23	185	2.20	72.92	6.5	8.8	6.5	3.2			
21	26	168	2.40	66.20	6.6	8.8	6.6	3.2			
24	30	146	2.75	57.58	6.7	8.9	6.7	3.3			
26	32	137	2.95	54.18	6.7	9.0	6.7	3.4			
30	36	119	1.70	47.07	6.8	8.9	6.8	3.3			
36	44	97	2.80	38.49	6.9	9.0	6.9	3.4			
14	17	251	0.80	65.63	**	**	**	**	KH033-14P-80-06E	19	462
16	19	223	0.90	58.50	3.3	2.4	3.3	2.4			
19	23	191	1.05	49.88	3.9	2.6	3.9	2.6			
20	25	178	1.15	46.48	4.1	2.6	4.1	2.6			
24	29	148	1.35	38.80	4.4	2.8	4.4	2.8			
26	32	137	1.50	35.90	4.5	2.9	4.5	2.9			
31	38	116	1.75	30.29	4.7	3.0	4.7	3.0			
32	40	110	1.85	28.67	4.8	3.0	4.8	3.0			
38	47	93	1.75	24.38	4.9	3.0	4.9	3.0			
43	53	83	2.45	21.67	4.9	3.2	4.9	3.2			
48	59	74	2.25	19.37	5.0	3.1	5.0	3.1			
62	76	57	2.90	14.96	5.0	3.2	5.0	3.2			
16	20	220	0.95	86.83	3.4	2.4	3.4	2.4	KH033-14P-71-04F	16	462
19	24	182	1.10	71.93	4.0	2.6	4.0	2.6			
21	26	166	1.25	65.63	4.2	2.7	4.2	2.7			
24	29	148	1.35	58.50	4.4	2.8	4.4	2.8			
28	34	126	1.60	49.88	4.6	2.9	4.6	2.9			
30	37	118	1.70	46.48	4.7	3.0	4.7	3.0			
36	44	98	2.05	38.80	4.8	3.1	4.8	3.1			
39	48	91	2.20	35.90	4.9	3.1	4.9	3.1			
47	57	76	1.70	29.97	5.0	3.1	5.0	3.1			
49	60	73	2.80	28.67	5.0	3.2	5.0	3.2			
57	70	62	2.60	24.38	5.0	3.2	5.0	3.2			
27	33	131	0.85	34.27	4.8	2.8	4.8	2.8	KH022-14P-80-06E	17	460
30	37	117	0.95	30.73	4.9	2.8	4.9	2.8			
35	43	101	1.10	26.41	5.0	2.8	5.0	2.8			
38	47	92	0.90	24.05	5.0	2.8	5.0	2.8			
39	48	90	1.25	23.68	5.1	2.8	5.1	2.8			
45	55	79	1.35	20.63	5.1	2.8	5.1	2.8			
47	58	74	1.10	19.50	5.1	2.8	5.1	2.8			
50	62	71	1.45	18.50	5.2	2.8	5.2	2.8			
60	74	59	1.60	15.41	5.2	2.8	5.2	2.8			
67	83	53	1.80	13.81	5.2	2.8	5.2	2.8			
70	86	51	1.80	13.29	5.2	2.8	5.2	2.8			
78	96	45	1.80	11.84	5.2	2.8	5.2	2.8			
80	98	44	1.95	11.60	5.2	2.8	5.2	2.8			
89	110	40	2.15	10.40	5.3	2.8	5.3	2.8			
100	123	35	2.30	9.25	5.3	2.8	5.3	2.8			
109	134	33	2.40	8.51	5.3	2.8	5.3	2.8			
121	149	29	2.65	7.63	5.1	2.8	5.1	2.8			
134	165	26	2.85	6.91	4.9	2.8	4.9	2.8			

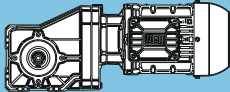
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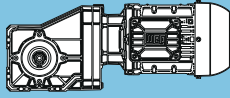
$P_N = 0.37 \text{ kW}$

IE3

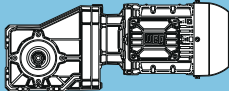
50 Hz 0.37 kW	60 Hz 0.44 kW	M_2 Nm	f_b	i	at 50 Hz					m kg	Dimension sheet see page
					Output shaft		Hollow shaft				
					F_{rN} kN	F_{aN} kN	F_{rN} kN	F_{aN} kN			
26	32	136	0.85	53.65	4.7	2.8	4.7	2.8	KH022-14P-71-04F	14	460
29	36	122	0.95	48.10	4.8	2.8	4.8	2.8			
32	39	110	1.00	43.50	4.9	2.8	4.9	2.8			
36	44	99	1.15	39.00	5.0	2.8	5.0	2.8			
41	50	87	1.30	34.27	5.1	2.8	5.1	2.8			
45	56	78	1.45	30.73	5.1	2.8	5.1	2.8			
53	65	67	1.65	26.41	5.2	2.8	5.2	2.8			
58	71	61	1.35	24.05	5.2	2.8	5.2	2.8			
59	72	60	1.85	23.68	5.2	2.8	5.2	2.8			
68	83	52	2.00	20.63	5.2	2.8	5.2	2.8			
72	88	49	1.65	19.50	5.2	2.8	5.2	2.8			
75	92	47	2.20	18.50	5.2	2.8	5.2	2.8			
91	111	39	2.40	15.41	5.3	2.8	5.3	2.8			
101	124	35	2.70	13.81	5.3	2.8	5.3	2.8			
118	144	30	2.75	11.84	5.2	2.8	5.2	2.8			
120	147	29	2.90	11.60	5.1	2.8	5.1	2.8			
134	164	26	3.25	10.40	4.9	2.8	4.9	2.8			
151	185	23	3.50	9.25	4.7	2.8	4.7	2.8			
164	201	22	3.60	8.51	4.6	2.8	4.6	2.8			
183	224	19	4.00	7.63	4.4	2.8	4.4	2.8			
202	247	18	4.25	6.91	4.3	2.8	4.3	2.8			
268	329	13	4.95	5.20	3.9	2.8	3.9	2.8			
365	448	10	5.90	3.82	3.5	2.8	3.5	2.8			

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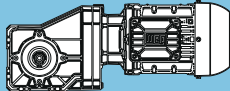
P _N = 0.55 kW										IE3	
50 Hz		60 Hz		i	at 50 Hz					m kg	Dimension sheet see page
0.55 kW		0.66 kW			Output shaft		Hollow shaft				
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	f _B		F _{rN} kN	F _{aN} kN	F _{rN} kN	F _{aN} kN			
0.21	0.26	21801	0.85	4417.59	58.4	100.2	58.4	100.2	KH155-14P-L80-06F	683	492
0.24	0.29	19474	0.95	3966.24	71.6	115.1	71.6	115.1			
0.28	0.35	16221	1.15	3337.74	84.8	117.6	84.8	117.6			
0.31	0.38	14761	1.25	3052.96	89.5	118.7	89.5	118.7			
0.35	0.42	13106	1.40	2731.65	93.9	120.0	93.9	120.0			
0.41	0.50	10925	1.65	2306.68	98.8	121.7	98.8	121.7			
0.43	0.52	10437	1.75	2215.09	99.7	122.0	99.7	122.0			
0.50	0.61	8735	2.10	1887.82	102.6	123.3	102.6	123.3			
0.51	0.62	8580	2.10	1854.30	102.8	123.5	102.8	123.5			
0.62	0.75	6884	2.65	1530.83	105.1	124.7	105.1	124.7			
0.63	0.77	6740	2.70	1502.83	105.2	124.9	105.2	124.9			
0.20	0.25	23088	0.80	7012.05	**	**	**	**	KH155-14P-80-04E	681	492
0.23	0.28	20474	0.90	6249.84	66.4	114.4	66.4	114.4			
0.25	0.30	18704	1.00	5739.09	75.2	115.7	75.2	115.7			
0.29	0.35	15672	1.15	4845.97	86.6	118.0	86.6	118.0			
0.32	0.39	14177	1.30	4417.59	91.1	119.2	91.1	119.2			
0.36	0.43	12631	1.45	3966.24	95.1	120.4	95.1	120.4			
0.43	0.52	10466	1.75	3337.74	99.7	122.0	99.7	122.0			
0.47	0.56	9499	1.90	3052.96	101.4	122.8	101.4	122.8			
0.52	0.63	8390	2.15	2731.65	103.1	123.6	103.1	123.6			
0.62	0.75	6903	2.65	2306.68	105.1	124.7	105.1	124.7			
0.64	0.78	6594	2.75	2215.09	105.4	125.0	105.4	125.0			
0.72	0.88	6051	3.00	1308.92	106.0	125.4	106.0	125.4	KH154-14P-L80-06F	670	490
0.60	0.73	7710	1.70	1579.81	83.2	89.8	83.2	89.8	KH124-14P-L80-06F	416	486
0.69	0.84	6639	2.00	1377.44	84.8	90.8	84.8	90.8			
0.77	0.95	5818	2.25	1219.69	85.9	91.7	85.9	91.7			
0.80	0.97	5636	2.35	1186.50	86.1	91.9	86.1	91.9			
0.89	1.1	4989	2.65	1063.46	86.8	92.5	86.8	92.5			
0.92	1.1	4779	2.75	1022.92	87.0	92.7	87.0	92.7			
0.90	1.1	4932	2.65	1579.81	86.9	92.6	86.9	92.6	KH124-14P-80-04E	414	486
0.73	0.89	6471	1.25	1301.54	51.9	61.8	51.9	61.8	KH104-14P-L80-06F	293	482
0.84	1.0	5571	1.45	1129.81	54.7	62.8	54.7	62.8			
0.94	1.1	4914	1.65	1004.85	56.4	63.6	56.4	63.6			
0.97	1.2	4764	1.70	976.16	56.7	63.7	56.7	63.7			
1.1	1.3	4222	1.90	872.27	57.9	64.3	57.9	64.3			
1.3	1.5	3595	2.25	753.64	59.0	65.1	59.0	65.1			
1.4	1.7	3109	2.60	661.38	59.8	65.6	59.8	65.6			
1.5	1.8	2953	2.75	632.05	60.0	65.8	60.0	65.8			
1.1	1.3	4184	1.95	1301.54	58.0	64.4	58.0	64.4	KH104-14P-80-04E	291	482
1.3	1.5	3587	2.25	1129.81	59.0	65.1	59.0	65.1			
1.4	1.7	3150	2.55	1004.85	59.7	65.6	59.7	65.6			
1.5	1.8	3048	2.65	976.16	59.9	65.7	59.9	65.7			
1.6	2.0	2684	3.00	872.27	60.3	66.1	60.3	66.1			
0.81	0.99	5922	0.80	1169.35	**	**	**	**	KH094-14P-L80-06F	164	478
0.96	1.2	4976	0.95	988.58	24.5	38.7	24.5	38.7			
1.0	1.3	4554	1.00	906.69	27.6	39.2	27.6	39.2			
1.2	1.5	3819	1.20	766.52	31.8	40.1	31.8	40.1			
1.3	1.6	3689	1.25	742.09	32.4	40.3	32.4	40.3			
1.5	1.8	3087	1.50	627.37	34.8	41.1	34.8	41.1			
1.7	2.0	2793	1.65	571.21	35.8	41.4	35.8	41.4			
2.0	2.4	2332	1.95	482.91	37.1	42.0	37.1	42.0			
2.2	2.7	2063	2.20	431.58	37.7	42.4	37.7	42.4			
2.6	3.2	1712	2.65	364.86	38.4	42.8	38.4	42.8			
2.7	3.3	1650	2.75	353.21	38.5	42.9	38.5	42.9			
0.93	1.1	5139	0.90	1531.00	23.1	38.5	23.1	38.5	KH094-14P-80-04E	162	478
0.96	1.2	4960	0.95	1480.92	24.6	38.7	24.6	38.7			
1.1	1.4	4168	1.10	1251.99	29.9	39.7	29.9	39.7			
1.2	1.5	3877	1.20	1169.35	31.5	40.1	31.5	40.1			
1.4	1.7	3251	1.40	988.58	34.2	40.9	34.2	40.9			
1.6	1.9	2963	1.55	906.69	35.2	41.2	35.2	41.2			
1.9	2.2	2474	1.85	766.52	36.7	41.9	36.7	41.9			
2.3	2.7	1987	2.30	627.37	37.9	42.5	37.9	42.5			
2.5	3.0	1791	2.55	571.21	38.3	42.7	38.3	42.7			

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P _N = 0.55 kW										IE3	
50 Hz		60 Hz		at 50 Hz						m kg	Dimension sheet see page
0.55 kW		0.66 kW		Output shaft		Hollow shaft					
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	f _b	i	F _{rN} kN	F _{aN} kN	F _{rN} kN	F _{aN} kN			
1.2	1.5	3865	0.80	763.13	**	**	**	**	KH084-14P-L80-06F	114	474
1.3	1.6	3615	0.85	715.32	12.4	19.5	12.4	7.2			
1.4	1.7	3509	0.90	695.67	13.9	22.6	13.9	7.3			
1.5	1.8	3137	1.00	624.59	18.1	31.6	18.1	7.9			
1.7	2.1	2754	1.10	550.61	21.3	38.5	21.3	8.4			
1.8	2.2	2624	1.15	525.61	22.2	40.5	22.2	8.6			
2.0	2.4	2385	1.30	480.77	23.6	41.5	23.6	9.0			
2.2	2.7	2121	1.45	430.17	24.9	41.9	24.9	9.4			
2.3	2.8	2047	1.50	416.02	25.3	42.0	25.3	9.5			
2.6	3.2	1773	1.70	363.25	26.4	42.4	26.4	9.9			
2.7	3.3	1695	1.80	348.82	26.6	42.5	26.6	10.0			
2.8	3.4	1651	1.85	340.47	26.8	42.6	26.8	10.1			
3.2	3.9	1424	2.15	297.29	27.5	42.9	27.5	10.4			
3.4	4.2	1314	2.30	276.09	27.8	43.1	27.8	10.6			
3.9	4.8	1129	2.70	241.07	28.2	43.3	28.2	10.8			
4.0	4.9	1106	2.75	236.66	28.3	43.4	28.3	10.9			
4.1	5.0	1078	2.80	231.12	28.3	43.4	28.3	10.9			
1.3	1.5	3799	0.80	1127.18	**	**	**	**	KH084-14P-80-04E	112	474
1.4	1.7	3297	0.95	984.20	16.5	28.1	16.5	7.6			
1.6	1.9	3021	1.00	903.77	19.2	33.9	19.2	8.0			
1.9	2.3	2530	1.20	763.13	22.7	41.3	22.7	8.8			
2.0	2.4	2362	1.30	715.32	23.7	41.5	23.7	9.0			
2.3	2.8	2045	1.50	624.59	25.3	42.0	25.3	9.5			
2.6	3.1	1788	1.70	550.61	26.3	42.4	26.3	9.9			
2.7	3.3	1700	1.80	525.61	26.6	42.5	26.6	10.0			
3.0	3.6	1545	1.95	480.77	27.1	42.7	27.1	10.2			
3.3	4.0	1368	2.20	430.17	27.6	43.0	27.6	10.5			
3.4	4.1	1318	2.30	416.02	27.8	43.1	27.8	10.6			
3.9	4.7	1134	2.65	363.25	28.2	43.3	28.2	10.8			
4.1	4.9	1082	2.80	348.82	28.3	43.4	28.3	10.9			
4.2	5.1	1054	2.85	340.47	28.4	43.4	28.4	10.9			
4.6	5.6	1146	2.65	206.12	28.2	43.3	28.2	10.8	KH083-14P-L80-06F	101	472
3.7	4.5	1424	1.10	256.14	16.1	16.1	16.1	4.8	KH073-14P-L80-06F	60	470
4.8	5.8	1099	1.45	197.75	18.0	16.7	18.0	5.5			
5.7	7.0	922	1.70	165.85	18.8	17.1	18.8	5.8			
7.3	8.9	723	2.15	130.16	19.4	17.5	19.4	6.3			
9.4	11	558	2.80	100.45	19.9	17.8	19.4	6.6			
9.5	12	555	2.35	99.87	19.9	17.9	19.4	6.6			
20	24	264	2.35	47.56	20.3	18.2	14.6	6.9			
5.5	6.7	947	1.65	256.14	18.7	17.0	18.7	5.8	KH073-14P-80-04E	58	470
7.2	8.7	731	2.15	197.75	19.4	17.5	19.4	6.2			
8.6	10	613	2.55	165.85	19.7	17.7	19.7	6.5			
6.0	7.4	872	0.95	156.92	7.9	12.5	7.9	2.6	KH063-14P-L80-06F	40	468
7.8	9.5	677	1.25	121.85	10.0	13.1	10.0	3.2			
9.5	12	556	1.50	99.98	10.8	13.5	10.8	3.5			
12	14	453	1.30	81.53	11.4	13.8	11.4	3.9			
15	18	359	2.30	64.62	11.8	14.1	11.8	4.2			
16	20	327	2.55	58.89	11.9	14.2	11.9	4.3			
19	23	279	2.95	50.17	12.1	14.4	12.1	4.4			
21	26	247	1.30	44.35	12.2	14.2	12.2	4.2			
27	33	195	2.35	35.15	12.3	14.4	11.2	4.4			
7.2	8.7	732	1.15	198.00	9.5	12.9	9.5	3.0			
9.0	11	580	1.45	156.92	10.7	13.4	10.7	3.5			
12	14	451	1.85	121.85	11.4	13.8	11.4	3.9			
14	17	370	2.25	99.98	11.8	14.1	11.8	4.1			
17	21	302	1.90	81.53	12.0	14.3	12.0	4.4			
18	22	286	2.90	77.42	12.1	14.3	12.1	4.4			
32	39	164	1.90	44.35	12.3	14.5	10.4	4.6			

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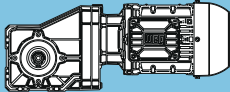
** ... on request

P _N = 0.55 kW										IE3	
50 Hz		60 Hz		i	at 50 Hz					m kg	Dimension sheet see page
0.55 kW		0.66 kW			Output shaft		Hollow shaft				
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	f _B		F _{rN} kN	F _{aN} kN	F _{rN} kN	F _{aN} kN			
7.6	9.3	690	0.90	124.06	4.3	6.5	4.3	3.2	KH053-14P-L80-06F	27	466
9.8	12	534	1.15	96.08	7.0	10.4	7.0	3.7			
12	14	447	1.30	80.46	7.9	10.6	7.9	3.9			
13	16	406	1.50	73.08	8.3	10.8	8.3	4.1			
15	18	354	1.70	63.77	8.6	10.9	8.6	4.2			
16	19	335	1.80	60.26	8.8	11.0	8.8	4.3			
19	23	275	2.20	49.52	9.1	11.2	9.1	4.5			
23	28	233	2.60	42.00	9.3	11.3	9.3	4.6			
25	30	213	1.30	38.32	9.4	11.0	9.4	4.3			
31	38	169	2.35	30.37	9.5	11.2	9.5	4.5			
7.3	8.8	720	0.85	194.73	3.4	4.6	3.4	3.1	KH084-14P-80-04E	25	474
9.4	11	559	1.10	151.20	6.7	10.3	6.7	3.6			
11	14	459	1.35	124.06	7.8	10.6	7.8	3.9			
15	18	355	1.70	96.08	8.6	10.9	8.6	4.2			
18	21	298	1.90	80.46	9.0	11.1	9.0	4.4			
19	24	270	2.25	73.08	9.1	11.2	9.1	4.5			
22	27	236	2.55	63.77	9.3	11.3	9.3	4.6			
24	29	223	2.70	60.26	9.3	11.3	9.3	4.6			
37	45	142	1.90	38.32	9.6	11.4	9.6	4.7			
11	13	496	0.80	89.17	**	**	**	**			
13	16	405	1.00	72.92	3.7	5.8	3.7	2.3			
14	17	368	1.10	66.20	4.5	7.5	4.5	2.4			
16	20	320	1.25	57.58	5.2	8.2	5.2	2.6			
17	21	301	1.35	54.18	5.4	8.3	5.4	2.7			
20	25	262	0.80	47.07	**	**	**	**			
21	26	248	1.65	44.64	6.0	8.5	6.0	2.9			
22	26	244	1.65	43.93	6.0	8.5	6.0	2.9			
25	30	214	1.30	38.49	6.3	8.4	6.3	2.8			
26	31	204	1.90	36.78	6.4	8.7	6.4	3.1			
31	38	169	1.95	30.39	6.6	8.6	6.6	3.0			
32	39	166	2.20	29.81	6.6	8.8	6.6	3.2			
34	41	156	2.60	28.13	6.6	8.9	6.6	3.3			
40	49	131	2.35	23.57	6.8	8.8	6.8	3.2			
49	60	107	2.75	19.29	6.9	8.9	6.9	3.3			
10	12	514	0.80	139.08	**	**	**	**	KH084-14P-80-04E	21	474
12	15	421	1.00	113.83	3.3	4.9	3.3	2.2			
16	19	330	1.15	89.17	5.1	8.2	5.1	2.6			
19	24	270	1.50	72.92	5.8	8.4	5.8	2.8			
21	26	245	1.65	66.20	6.0	8.5	6.0	2.9			
25	30	213	1.90	57.58	6.3	8.6	6.3	3.0			
26	32	200	2.00	54.18	6.4	8.7	6.4	3.1			
30	37	174	1.15	47.07	6.5	8.6	6.5	3.0			
32	39	165	2.45	44.64	6.6	8.8	6.6	3.2			
37	45	142	1.90	38.49	6.7	8.8	6.7	3.2			
39	47	136	2.85	36.78	6.7	9.0	6.7	3.4			
47	57	112	2.90	30.39	6.8	8.9	6.8	3.3			
20	25	258	0.80	46.48	**	**	**	**	KH033-14P-L80-06F	20	462
24	30	216	0.95	38.80	3.4	2.4	3.4	2.4			
26	32	200	1.05	35.90	3.7	2.5	3.7	2.5			
31	38	168	1.20	30.29	4.2	2.7	4.2	2.7			
32	39	167	0.80	29.97	**	**	**	**			
33	40	159	1.30	28.67	4.3	2.7	4.3	2.7			
39	47	136	1.20	24.38	4.6	2.7	4.6	2.7			
44	53	120	1.70	21.67	4.7	3.0	4.7	3.0			
49	60	108	1.55	19.37	4.8	2.9	4.8	2.9			
57	70	92	2.20	16.47	4.9	3.1	4.9	3.1			
63	77	83	2.00	14.96	4.9	3.1	4.9	3.1			
74	90	71	2.85	12.81	5.0	3.2	5.0	3.2			
79	97	66	2.50	11.94	5.0	3.2	5.0	3.2			

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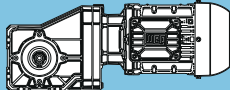
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** ... on request

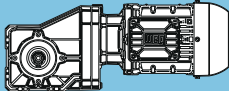
P _N = 0.55 kW										IE3	
50 Hz		60 Hz		i	at 50 Hz					m kg	Dimension sheet see page
0.55 kW		0.66 kW			Output shaft		Hollow shaft				
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	f _b		F _{rN} kN	F _{aN} kN	F _{rN} kN	F _{aN} kN			
20	24	266	0.80	71.93	**	**	**	**	KH033-14P-80-04E	18	462
22	26	243	0.85	65.63	2.8	2.3	2.8	2.3			
24	29	216	0.95	58.50	3.4	2.4	3.4	2.4			
28	34	185	1.10	49.88	4.0	2.6	4.0	2.6			
31	37	172	1.20	46.48	4.1	2.7	4.1	2.7			
37	44	144	1.40	38.80	4.5	2.8	4.5	2.8			
40	48	133	1.55	35.90	4.6	2.9	4.6	2.9			
47	57	112	1.80	30.29	4.7	3.0	4.7	3.0			
50	60	106	1.90	28.67	4.8	3.1	4.8	3.1			
58	71	90	1.80	24.38	4.9	3.0	4.9	3.0			
66	79	80	2.50	21.67	4.9	3.2	4.9	3.2			
73	89	72	2.30	19.37	5.0	3.1	5.0	3.1			
95	115	55	2.95	14.96	5.1	3.3	5.1	3.3			
40	49	132	0.85	23.68	4.8	2.8	4.8	2.8			
46	56	115	0.90	20.63	4.9	2.8	4.9	2.8			
51	62	103	1.00	18.50	5.0	2.8	5.0	2.8			
61	75	86	1.10	15.41	5.1	2.8	5.1	2.8			
62	75	85	0.95	15.36	5.1	2.8	5.1	2.8			
68	84	77	1.25	13.81	5.1	2.8	5.1	2.8			
71	87	74	1.25	13.29	5.1	2.8	5.1	2.8			
79	97	66	1.35	11.92	5.2	2.8	5.2	2.8			
80	98	66	1.25	11.84	5.2	2.8	5.2	2.8			
81	100	64	1.35	11.60	5.2	2.8	5.2	2.8			
91	111	58	1.50	10.40	5.2	2.8	5.2	2.8			
102	125	51	1.60	9.25	5.2	2.8	5.2	2.8			
111	136	47	1.65	8.51	5.2	2.8	5.2	2.8			
124	151	42	1.85	7.63	5.1	2.8	5.1	2.8			
137	167	38	1.95	6.91	4.9	2.8	4.9	2.8			
159	194	33	2.10	5.96	4.7	2.8	4.7	2.8			
182	222	29	2.25	5.20	4.5	2.8	4.5	2.8			
247	302	21	2.70	3.82	4.0	2.8	4.0	2.8			
36	44	144	0.80	39.00	**	**	**	**	KH022-14P-80-04E	16	460
41	50	127	0.90	34.27	4.8	2.8	4.8	2.8			
46	56	114	1.00	30.73	4.9	2.8	4.9	2.8			
54	65	98	1.15	26.41	5.0	2.8	5.0	2.8			
59	72	89	0.95	24.05	5.1	2.8	5.1	2.8			
60	73	88	1.30	23.68	5.1	2.8	5.1	2.8			
69	83	76	1.35	20.63	5.1	2.8	5.1	2.8			
73	88	72	1.15	19.50	5.1	2.8	5.1	2.8			
77	93	68	1.50	18.50	5.2	2.8	5.2	2.8			
92	112	57	1.65	15.41	5.2	2.8	5.2	2.8			
103	125	51	1.85	13.81	5.2	2.8	5.2	2.8			
107	129	49	1.85	13.29	5.2	2.8	5.2	2.8			
119	144	44	2.05	11.92	5.2	2.8	5.2	2.8			
120	145	44	1.85	11.84	5.2	2.8	5.2	2.8			
122	148	43	2.00	11.60	5.2	2.8	5.2	2.8			
137	165	38	2.25	10.40	4.9	2.8	4.9	2.8			
154	186	34	2.40	9.25	4.7	2.8	4.7	2.8			
167	202	31	2.45	8.51	4.6	2.8	4.6	2.8			
186	225	28	2.75	7.63	4.4	2.8	4.4	2.8			
205	249	26	2.90	6.91	4.3	2.8	4.3	2.8			
238	289	22	3.15	5.96	4.1	2.8	4.1	2.8			
273	331	19	3.40	5.20	3.9	2.8	3.9	2.8			
372	450	14	4.05	3.82	3.5	2.8	3.5	2.8			

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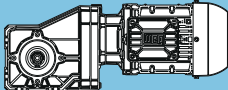
P _N = 0.75 kW										IE3		
50 Hz		60 Hz				at 50 Hz					m kg	Dimension sheet see page
0.75 kW		0.90 kW				Output shaft		Hollow shaft				
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	f _B			F _{rN} kN	F _{aN} kN	F _{rN} kN	F _{aN} kN			
0.28	0.34	22639	0.80	3337.74	**	**	**	**	KH155-11P-90S/L-06E	689	492	
0.31	0.38	20602	0.90	3052.96	65.7	114.3	65.7	114.3				
0.34	0.42	18339	1.00	2731.65	76.7	116.0	76.7	116.0				
0.41	0.50	15328	1.20	2306.68	87.7	118.3	87.7	118.3				
0.42	0.52	14682	1.25	2215.09	89.7	118.8	89.7	118.8				
0.50	0.61	12353	1.50	1887.82	95.7	120.6	95.7	120.6				
0.51	0.62	12133	1.50	1854.30	96.2	120.7	96.2	120.7				
0.61	0.75	9837	1.85	1530.83	100.8	122.5	100.8	122.5				
0.63	0.76	9632	1.90	1502.83	101.2	122.7	101.2	122.7				
0.73	0.89	8066	2.25	1281.49	103.6	123.8	103.6	123.8				
0.91	1.10	6336	2.85	1038.59	105.7	125.2	105.7	125.2				
0.30	0.36	21551	0.85	4845.97	60.0	103.6	60.0	103.6	KH155-11P-80-04F	683	492	
0.32	0.39	19546	0.95	4417.59	71.2	115.1	71.2	115.1				
0.36	0.44	17459	1.05	3966.24	80.3	116.7	80.3	116.7				
0.43	0.52	14542	1.25	3337.74	90.1	118.9	90.1	118.9				
0.47	0.57	13199	1.40	3052.96	93.7	119.9	93.7	119.9				
0.52	0.64	11719	1.55	2731.65	97.1	121.1	97.1	121.1				
0.62	0.75	9744	1.85	2306.68	101.0	122.6	101.0	122.6				
0.65	0.79	9309	1.95	2215.09	101.7	122.9	101.7	122.9				
0.76	0.92	7770	2.35	1887.82	104.0	124.1	104.0	124.1				
0.77	0.94	7612	2.40	1854.30	104.2	124.2	104.2	124.2				
0.93	1.1	6107	2.95	1530.83	105.9	125.3	105.9	125.3				
0.72	0.87	8613	2.10	1308.92	102.8	123.4	102.8	123.4	KH154-11P-90S/L-06E	676	490	
0.83	1.0	7296	2.50	1127.36	104.6	124.4	104.6	124.4				
0.91	1.1	6635	2.75	1035.99	105.4	124.9	105.4	124.9				
0.96	1.2	6193	2.95	975.12	105.8	125.3	105.8	125.3				
0.60	0.72	10767	1.25	1579.81	76.9	86.7	76.9	86.7	KH154-11P-90S/L-06E	422	490	
0.68	0.83	9330	1.40	1377.44	80.2	88.1	80.2	88.1				
0.77	0.94	8194	1.60	1219.69	82.3	89.3	82.3	89.3				
0.79	0.97	7954	1.65	1186.50	82.8	89.5	82.8	89.5				
0.88	1.1	7071	1.85	1063.46	84.2	90.4	84.2	90.4				
0.92	1.1	6773	1.95	1022.92	84.6	90.7	84.6	90.7				
1.0	1.2	6003	2.20	916.04	85.6	91.5	85.6	91.5				
1.1	1.3	5832	2.25	891.88	85.9	91.7	85.9	91.7				
1.2	1.4	5185	2.55	802.79	86.6	92.3	86.6	92.3				
1.3	1.6	4446	2.95	699.95	87.3	93.0	87.3	93.0				
0.91	1.1	6890	1.90	1579.81	84.4	90.6	84.4	90.6	KH124-11P-80-04F	416	486	
1.0	1.3	5933	2.20	1377.44	85.7	91.6	85.7	91.6				
1.2	1.4	5178	2.55	1219.69	86.6	92.3	86.6	92.3				
1.3	1.6	4440	2.95	1063.46	87.3	93.1	87.3	93.1				
0.72	0.88	8999	0.90	1301.54	40.4	58.9	40.4	58.9	KH104-11P-90S/L-06E	299	482	
0.83	1.0	7764	1.05	1129.81	46.9	60.3	46.9	60.3				
0.94	1.1	6863	1.20	1004.85	50.5	61.3	50.5	61.3				
0.96	1.2	6667	1.20	976.16	51.3	61.6	51.3	61.6				
1.1	1.3	5908	1.40	872.27	53.7	62.4	53.7	62.4				
1.2	1.5	5063	1.60	753.64	56.0	63.4	56.0	63.4				
1.3	1.6	4904	1.65	731.54	56.4	63.6	56.4	63.6				
1.4	1.7	4397	1.85	661.38	57.5	64.1	57.5	64.1				
1.5	1.8	4185	1.95	632.05	58.0	64.4	58.0	64.4				
1.6	2.0	3770	2.15	574.12	58.7	64.9	58.7	64.9				
1.8	2.2	3310	2.45	510.43	59.5	65.4	59.5	65.4				
1.9	2.3	3210	2.50	496.04	59.6	65.5	59.6	65.5				
2.1	2.6	2826	2.85	443.08	60.2	65.9	60.2	65.9				
2.2	2.7	2676	3.00	422.20	60.3	66.1	60.3	66.1				
1.1	1.3	5795	1.40	1301.54	54.1	62.5	54.1	62.5	KH104-11P-80-04F	293	482	
1.3	1.5	4979	1.65	1129.81	56.2	63.5	56.2	63.5				
1.4	1.7	4392	1.85	1004.85	57.5	64.1	57.5	64.1				
1.5	1.8	4258	1.90	976.16	57.8	64.3	57.8	64.3				
1.6	2.0	3765	2.15	872.27	58.7	64.9	58.7	64.9				
1.7	2.1	3623	2.25	842.74	59.0	65.0	59.0	65.0				
1.9	2.3	3206	2.50	753.64	59.6	65.5	59.6	65.5				
2.0	2.4	3099	2.60	731.54	59.8	65.6	59.8	65.6				
2.2	2.6	2767	2.90	661.38	60.2	66.0	60.2	66.0				

K

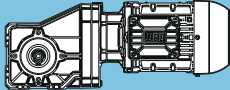
P _N = 0.75 kW										IE3	
50 Hz		60 Hz		at 50 Hz						m kg	Dimension sheet see page
0.75 kW		0.90 kW		Output shaft		Hollow shaft					
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	f _B	i	F _{rN} kN	F _{aN} kN	F _{rN} kN	F _{aN} kN			
1.2	1.5	5311	0.85	766.52	21.5	36.2	21.5	36.2	KH094-11P-90S/L-06E	170	478
1.3	1.5	5131	0.90	742.09	23.2	38.5	23.2	38.5			
1.5	1.8	4311	1.05	627.37	29.1	39.5	29.1	39.5			
1.6	2.0	3901	1.20	571.21	31.4	40.0	31.4	40.0			
1.9	2.4	3271	1.40	482.91	34.1	40.8	34.1	40.8			
2.2	2.7	2905	1.55	431.58	35.4	41.3	35.4	41.3			
2.6	3.1	2421	1.90	364.86	36.9	41.9	36.9	41.9			
2.7	3.2	2339	1.95	353.21	37.1	42.0	37.1	42.0			
3.1	3.8	1945	2.35	298.61	38.0	42.5	38.0	42.5			
3.3	4.0	1858	2.45	286.42	38.1	42.6	38.1	42.6			
3.9	4.7	1538	2.95	242.14	38.7	43.0	38.7	43.0			
1.1	1.4	5714	0.80	1251.99	**	**	**	**	KH094-11P-80-04F	164	478
1.2	1.5	5326	0.85	1169.35	21.3	35.8	21.3	35.8			
1.4	1.8	4465	1.05	988.58	28.2	39.3	28.2	39.3			
1.6	1.9	4079	1.15	906.69	30.4	39.8	30.4	39.8			
1.9	2.3	3420	1.35	766.52	33.5	40.7	33.5	40.7			
2.3	2.8	2765	1.65	627.37	35.9	41.5	35.9	41.5			
2.5	3.0	2502	1.80	571.21	36.6	41.8	36.6	41.8			
3.0	3.6	2080	2.20	482.91	37.7	42.4	37.7	42.4			
3.3	4.0	1840	2.45	431.58	38.2	42.7	38.2	42.7			
3.9	4.8	1520	3.00	364.86	38.7	43.1	38.7	43.1			
1.7	2.1	3823	0.80	550.61	**	**	**	**	KH084-11P-90S/L-06E	120	474
1.8	2.2	3642	0.85	525.61	11.9	18.4	11.9	7.1			
2.0	2.4	3317	0.95	480.77	16.3	27.7	16.3	7.6			
2.2	2.7	2956	1.05	430.17	19.7	35.0	19.7	8.1			
2.3	2.8	2859	1.05	416.02	20.5	36.8	20.5	8.3			
2.6	3.2	2476	1.25	363.25	23.1	41.3	23.1	8.8			
2.7	3.3	2372	1.30	348.82	23.7	41.5	23.7	9.0			
2.8	3.4	2316	1.30	340.47	24.0	41.6	24.0	9.1			
3.2	3.9	2005	1.50	297.29	25.4	42.0	25.4	9.5			
3.4	4.1	1851	1.65	276.09	26.1	42.3	26.1	9.8			
3.9	4.7	1600	1.90	241.07	27.0	42.6	27.0	10.1			
4.0	4.8	1567	1.95	236.66	27.1	42.7	27.1	10.2			
4.1	5.0	1527	2.00	231.12	27.2	42.7	27.2	10.2			
4.7	5.7	1317	2.30	201.80	27.8	43.1	27.8	10.6			
5.0	6.1	1212	2.50	187.31	28.0	43.2	28.0	10.7			
5.7	7.0	1041	2.90	163.55	28.4	43.5	28.4	11.0			
1.6	2.0	3988	0.80	873.98	**	**	**	**	KH084-11P-80-04F	114	474
1.9	2.3	3468	0.90	763.13	14.5	23.9	14.5	7.4			
2.0	2.4	3244	0.95	715.32	17.1	29.4	17.1	7.7			
2.1	2.5	3149	1.00	695.67	18.0	31.3	18.0	7.8			
2.3	2.8	2816	1.10	624.59	20.8	37.4	20.8	8.3			
2.6	3.2	2467	1.25	550.61	23.1	41.4	23.1	8.9			
2.7	3.3	2350	1.30	525.61	23.8	41.5	23.8	9.0			
3.0	3.6	2136	1.45	480.77	24.8	41.8	24.8	9.3			
3.3	4.0	1900	1.60	430.17	25.9	42.2	25.9	9.7			
3.4	4.2	1833	1.65	416.02	26.1	42.3	26.1	9.8			
3.9	4.8	1584	1.90	363.25	27.0	42.7	27.0	10.2			
4.1	5.0	1515	2.00	348.82	27.2	42.8	27.2	10.3			
4.2	5.1	1476	2.05	340.47	27.3	42.8	27.3	10.3			
4.8	5.9	1270	2.40	297.29	27.9	43.1	27.9	10.6			
4.9	6.0	1245	2.45	292.01	28.0	43.2	28.0	10.7			
5.2	6.3	1170	2.60	276.09	28.1	43.3	28.1	10.8			
5.9	7.2	1004	3.00	241.07	28.5	43.5	28.5	11.0			
4.6	5.6	1571	1.95	206.12	27.1	42.7	27.1	10.2	KH083-11P-90S/L-06E	107	472
5.8	7.0	1243	2.45	163.14	28.0	43.2	28.0	10.7			
6.6	8.0	1085	2.80	142.45	28.3	43.4	28.3	10.9			
6.9	8.4	1032	2.95	206.12	28.4	43.5	28.4	11.0			

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** ... on request

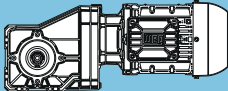
P _N = 0.75 kW										IE3	
50 Hz		60 Hz		i	at 50 Hz					m kg	Dimension sheet see page
0.75 kW		0.90 kW			Output shaft		Hollow shaft				
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	f _B		F _{rN} kN	F _{aN} kN	F _{rN} kN	F _{aN} kN			
3.7	4.5	1952	0.80	256.14	**	**	**	**	KH073-11P-90S/L-06E	66	470
4.8	5.8	1507	1.05	197.75	15.5	15.9	15.5	4.6			
5.7	6.9	1264	1.25	165.85	17.1	16.4	17.1	5.1			
7.2	8.8	992	1.60	130.16	18.5	17.0	18.5	5.7			
9.4	11	765	2.05	100.45	19.3	17.4	19.3	6.2			
11	14	633	2.45	83.09	19.7	17.7	18.9	6.4			
12	15	588	2.65	77.11	19.8	17.8	18.2	6.5			
13	16	538	2.90	70.67	19.9	17.9	17.6	6.6			
20	24	362	1.70	47.56	20.2	17.9	15.0	6.6			
26	31	280	2.75	36.72	20.3	18.1	13.5	6.9			
5.6	6.8	1283	1.25	256.14	17.0	16.3	17.0	5.1	KH073-11P-80-04F	60	470
7.2	8.8	990	1.60	197.75	18.5	17.0	18.5	5.7			
8.6	10	831	1.90	165.85	19.1	17.3	19.1	6.0			
11	13	652	2.40	130.16	19.6	17.7	18.9	6.4			
14	17	500	2.60	99.87	20.0	18.0	17.1	6.7			
30	37	238	2.60	47.56	20.4	18.3	12.8	7.0			
7.7	9.4	928	0.90	121.85	7.0	11.1	7.0	2.4	KH063-11P-90S/L-06E	46	468
9.4	11	762	1.10	99.98	9.2	12.9	9.2	2.9			
12	14	621	0.95	81.53	10.4	13.3	10.4	3.3			
15	18	492	1.70	64.62	11.2	13.7	11.2	3.7			
16	19	449	1.85	58.89	11.4	13.8	11.4	3.9			
19	23	382	2.15	50.17	11.7	14.0	11.7	4.1			
21	26	338	0.95	44.35	11.9	13.7	11.9	3.8			
23	28	314	2.65	41.17	12.0	14.3	12.0	4.3			
24	29	303	2.65	39.83	12.0	14.3	12.0	4.3			
27	33	268	1.70	35.15	12.1	14.1	11.6	4.1			
28	34	258	2.95	33.85	12.1	14.4	11.2	4.5			
34	42	208	2.45	27.29	12.3	14.3	10.5	4.4			
42	51	171	2.95	22.40	12.3	14.5	9.6	4.5			
7.2	8.8	992	0.85	198.00	5.9	8.7	5.9	2.2	KH063-11P-80-04F	40	468
9.1	11	786	1.05	156.92	8.9	12.8	8.9	2.8			
12	14	610	1.35	121.85	10.5	13.3	10.5	3.4			
14	17	501	1.65	99.98	11.2	13.7	11.2	3.7			
18	21	408	1.40	81.53	11.6	14.0	11.6	4.0			
22	27	324	2.55	64.62	11.9	14.2	11.9	4.3			
24	30	295	2.80	58.89	12.0	14.3	12.0	4.4			
32	39	222	1.45	44.35	12.2	14.3	10.8	4.3			
41	50	176	2.60	35.15	12.3	14.5	9.7	4.5			
9.8	12	732	0.85	96.08	3.0	3.8	3.0	3.1	KH053-11P-90S/L-06E	33	466
12	14	613	0.95	80.46	5.9	9.9	5.9	3.4			
13	16	557	1.10	73.08	6.7	10.3	6.7	3.6			
15	18	486	1.25	63.77	7.6	10.5	7.6	3.8			
16	19	459	1.35	60.26	7.8	10.6	7.8	3.9			
19	23	377	1.60	49.43	8.5	10.9	8.5	4.2			
22	27	320	1.90	42.00	8.9	11.0	8.9	4.3			
23	28	310	1.95	40.63	8.9	11.1	8.9	4.4			
25	30	292	0.95	38.32	9.0	10.7	9.0	4.0			
27	33	263	2.30	34.53	9.2	11.2	9.2	4.5			
30	36	240	2.55	31.46	9.3	11.3	9.3	4.6			
31	38	231	1.70	30.37	9.3	11.0	9.3	4.3			
34	42	209	2.80	27.39	9.4	11.4	9.4	4.7			
40	49	180	2.30	23.58	9.5	11.2	9.5	4.5			
49	59	147	2.85	19.35	9.6	11.3	9.6	4.6			
9.5	12	757	0.80	151.20	**	**	**	**	KH053-11P-80-04F	26	466
12	14	621	1.00	124.06	5.7	9.5	5.7	3.4			
15	18	481	1.25	96.08	7.6	10.5	7.6	3.8			
18	22	403	1.40	80.46	8.3	10.8	8.3	4.1			
20	24	366	1.65	73.08	8.6	10.9	8.6	4.2			
22	27	319	1.90	63.77	8.9	11.0	8.9	4.3			
24	29	302	2.00	60.26	9.0	11.1	9.0	4.4			
29	35	248	2.45	49.43	9.2	11.3	9.2	4.6			
34	41	210	2.90	42.00	9.4	11.4	9.4	4.7			
35	43	204	2.95	40.63	9.4	11.4	9.4	4.7			
37	45	192	1.40	38.32	9.4	11.1	9.4	4.4			
47	57	152	2.60	30.37	9.6	11.3	9.6	4.6			

K

P _N = 0.75 kW										IE3	
50 Hz		60 Hz		i	at 50 Hz					m kg	Dimension sheet see page
0.75 kW		0.90 kW			Output shaft		Hollow shaft				
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	f _b		F _{rN} kN	F _{aN} kN	F _{rN} kN	F _{aN} kN			
14	17	504	0.80	66.20	**	**	**	**	KH043-11P-90S/L-06E	29	464
16	20	439	0.95	57.58	2.7	3.6	2.7	2.1			
17	21	413	1.00	54.18	3.5	5.3	3.5	2.2			
21	26	340	1.20	44.64	4.9	8.1	4.9	2.5			
24	30	293	0.95	38.49	5.5	8.0	5.5	2.4			
26	31	280	1.40	36.78	5.7	8.4	5.7	2.8			
31	38	232	1.40	30.39	6.1	8.3	6.1	2.7			
32	38	227	1.60	29.81	6.2	8.6	6.2	3.0			
33	41	214	1.90	28.13	6.3	8.6	6.3	3.0			
40	49	180	1.75	23.57	6.5	8.6	6.5	3.0			
44	54	162	2.50	21.25	6.6	8.9	6.6	3.3			
49	59	147	2.05	19.29	6.7	8.7	6.7	3.1			
63	77	113	2.50	14.85	6.8	8.9	6.8	3.3			
16	20	447	0.85	89.17	2.4	3.0	2.4	2.1	KH043-11P-80-04F	23	464
20	24	365	1.10	72.92	4.5	7.5	4.5	2.4			
22	26	332	1.25	66.20	5.0	8.2	5.0	2.6			
25	30	288	1.40	57.58	5.6	8.3	5.6	2.7			
26	32	271	1.50	54.18	5.8	8.4	5.8	2.8			
30	37	236	0.85	47.07	6.1	8.3	6.1	2.7			
32	39	224	1.80	44.64	6.2	8.6	6.2	3.0			
33	40	220	1.85	43.93	6.2	8.6	6.2	3.0			
37	45	193	1.45	38.49	6.4	8.5	6.4	2.9			
39	47	184	2.10	36.78	6.5	8.8	6.5	3.2			
39	48	183	2.20	36.54	6.5	8.8	6.5	3.2			
47	57	152	2.15	30.39	6.7	8.7	6.7	3.1			
48	58	149	2.45	29.81	6.7	8.9	6.7	3.3			
51	62	141	2.85	28.13	6.7	8.9	6.7	3.3			
61	74	118	2.65	23.57	6.8	8.9	6.8	3.3			
31	38	231	0.90	30.29	3.1	2.3	3.1	2.3	KH033-11P-90S/L-06E	26	462
33	40	218	0.95	28.67	3.4	2.4	3.4	2.4			
39	47	186	0.90	24.38	4.0	2.3	4.0	2.3			
43	53	165	1.25	21.67	4.2	2.7	4.2	2.7			
49	59	148	1.15	19.37	4.4	2.6	4.4	2.6			
57	70	125	1.60	16.47	4.6	2.9	4.6	2.9			
63	77	114	1.45	14.96	4.7	2.8	4.7	2.8			
73	89	98	2.05	12.81	4.8	3.1	4.8	3.1			
79	96	91	1.80	11.94	4.9	3.0	4.9	3.0			
94	115	76	2.65	10.00	5.0	3.2	5.0	3.2			
104	127	69	2.40	9.03	5.0	3.2	5.0	3.2			
137	167	52	2.90	6.86	5.1	3.3	5.1	3.3			
29	35	250	0.85	49.88	2.6	2.2	2.6	2.2			
31	37	233	0.90	46.48	3.1	2.3	3.1	2.3			
37	45	194	1.05	38.80	3.8	2.6	3.8	2.6			
40	48	180	1.15	35.90	4.0	2.6	4.0	2.6			
47	57	152	1.35	30.29	4.4	2.8	4.4	2.8			
48	58	150	0.90	29.97	4.4	2.6	4.4	2.6			
50	61	144	1.40	28.67	4.5	2.8	4.5	2.8			
59	71	122	1.35	24.38	4.7	2.8	4.7	2.8			
66	80	109	1.85	21.67	4.8	3.0	4.8	3.0			
74	90	97	1.70	19.37	4.9	3.0	4.9	3.0			
87	106	82	2.45	16.47	4.9	3.2	4.9	3.2			
96	116	75	2.20	14.96	5.0	3.1	5.0	3.1			
120	146	60	2.75	11.94	5.0	3.2	5.0	3.2			

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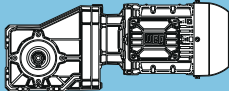
** ... on request

P _N = 0.75 kW										IE3		
50 Hz		60 Hz		f _B	i	at 50 Hz					m kg	Dimension sheet see page
0.75 kW		0.90 kW				Output shaft		Hollow shaft				
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	F _{rN} kN			F _{aN} kN	F _{rN} kN	F _{aN} kN				
61	74	117	0.80	15.41	**	**	**	**	KH022-11P-90S/L-06E	24	460	
68	83	105	0.90	13.81	5.0	2.8	5.0	2.8				
71	86	101	0.90	13.29	5.0	2.8	5.0	2.8				
79	96	91	1.00	11.92	5.1	2.8	5.1	2.8				
81	99	88	1.00	11.60	5.1	2.8	5.1	2.8				
90	110	79	1.10	10.40	5.1	2.8	5.1	2.8				
102	124	70	1.15	9.25	5.2	2.8	5.2	2.8				
110	135	65	1.20	8.51	5.2	2.8	5.2	2.8				
123	150	58	1.35	7.63	5.2	2.8	5.2	2.8				
136	166	53	1.45	6.91	5.0	2.8	5.0	2.8				
158	192	45	1.55	5.96	4.8	2.8	4.8	2.8				
181	220	40	1.65	5.20	4.5	2.8	4.5	2.8				
246	300	29	2.00	3.82	4.1	2.8	4.1	2.8				
54	66	132	0.85	26.41	4.8	2.8	4.8	2.8	KH022-11P-80-04F	17	460	
60	73	119	0.95	23.68	4.9	2.8	4.9	2.8				
69	84	103	1.00	20.63	5.0	2.8	5.0	2.8				
73	89	98	0.85	19.50	5.0	2.8	5.0	2.8				
77	94	93	1.15	18.50	5.0	2.8	5.0	2.8				
93	113	77	1.25	15.41	5.1	2.8	5.1	2.8				
104	126	69	1.35	13.81	5.2	2.8	5.2	2.8				
108	131	67	1.35	13.29	5.2	2.8	5.2	2.8				
120	146	60	1.50	11.92	5.2	2.8	5.2	2.8				
121	147	59	1.40	11.84	5.2	2.8	5.2	2.8				
123	150	58	1.50	11.60	5.2	2.8	5.2	2.8				
138	167	52	1.65	10.40	5.0	2.8	5.0	2.8				
155	188	46	1.75	9.25	4.8	2.8	4.8	2.8				
168	204	43	1.85	8.51	4.6	2.8	4.6	2.8				
187	228	38	2.05	7.63	4.5	2.8	4.5	2.8				
207	252	35	2.15	6.91	4.3	2.8	4.3	2.8				
240	292	30	2.35	5.96	4.1	2.8	4.1	2.8				
275	335	26	2.50	5.20	3.9	2.8	3.9	2.8				
374	455	19	3.00	3.82	3.5	2.8	3.5	2.8				

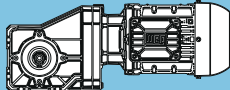
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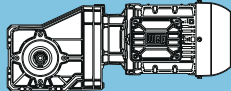
** ... on request

P _N = 1.1 kW										IE3	
50 Hz		60 Hz		at 50 Hz						m kg	Dimension sheet see page
1.1 kW		1.3 kW		Output shaft		Hollow shaft					
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	f _B	i	F _{rN} kN	F _{aN} kN	F _{rN} kN	F _{aN} kN			
0.44	0.53	21397	0.85	3337.74	61.0	105.7	61.0	105.7	KH155-11P-90S/L-04E	687	492
0.48	0.58	19471	0.95	3052.96	71.6	115.1	71.6	115.1			
0.53	0.64	17333	1.05	2731.65	80.8	116.8	80.8	116.8			
0.63	0.76	14487	1.25	2306.68	90.2	118.9	90.2	118.9			
0.66	0.79	13876	1.30	2215.09	91.9	119.4	91.9	119.4			
0.77	0.93	11674	1.55	1887.82	97.2	121.1	97.2	121.1			
0.78	0.95	11438	1.60	1854.30	97.7	121.3	97.7	121.3			
0.95	1.1	9273	1.95	1530.83	101.8	122.9	101.8	122.9			
0.97	1.2	9080	2.00	1502.83	102.1	123.1	102.1	123.1			
1.1	1.4	7583	2.40	1281.49	104.2	124.2	104.2	124.2			
0.42	0.51	22412	0.85	2306.68	54.1	91.1	54.1	91.1	KH155-11P-100L-06D	693	492
0.43	0.53	21522	0.85	2215.09	60.2	104.0	60.2	104.0			
0.51	0.62	18202	1.00	1887.82	77.3	116.1	77.3	116.1			
0.52	0.63	17833	1.05	1854.30	78.8	116.4	78.8	116.4			
0.63	0.76	14571	1.25	1530.83	90.0	118.9	90.0	118.9			
0.64	0.78	14268	1.30	1502.83	90.9	119.1	90.9	119.1			
0.75	0.91	12042	1.50	1281.49	96.4	120.8	96.4	120.8			
0.92	1.1	9560	1.90	1038.59	101.3	122.7	101.3	122.7			
1.1	1.3	8111	2.25	1308.92	103.5	123.8	103.5	123.8	KH154-11P-90S/L-04E	674	490
1.3	1.6	6870	2.65	1127.36	105.1	124.8	105.1	124.8			
1.4	1.7	6248	2.90	1035.99	105.8	125.2	105.8	125.2			
0.73	0.89	12706	1.45	1308.92	94.9	120.3	94.9	120.3	KH154-11P-100L-06D	680	490
0.85	1.0	10832	1.70	1127.36	99.0	121.7	99.0	121.7			
0.93	1.1	9892	1.85	1035.99	100.7	122.5	100.7	122.5			
0.98	1.2	9272	1.95	975.12	101.8	122.9	101.8	122.9			
1.1	1.3	8531	2.15	904.58	102.9	123.5	102.9	123.5			
1.2	1.5	7446	2.45	799.45	104.4	124.3	104.4	124.3			
1.4	1.7	6294	2.90	688.57	105.7	125.2	105.7	125.2			
0.92	1.1	10181	1.30	1579.81	78.3	87.3	78.3	87.3	KH124-11P-90S/L-04E	420	486
1.1	1.3	8804	1.50	1377.44	81.2	88.7	81.2	88.7			
1.2	1.4	7732	1.70	1219.69	83.1	89.8	83.1	89.8			
1.4	1.7	6672	1.95	1063.46	84.8	90.8	84.8	90.8			
1.6	1.9	5664	2.30	916.04	86.1	91.8	86.1	91.8			
1.8	2.2	4882	2.70	802.79	86.9	92.6	86.9	92.6			
1.9	2.3	4652	2.80	768.25	87.1	92.8	87.1	92.8			
0.61	0.74	15719	0.85	1579.81	59.8	81.7	59.8	81.7	KH124-11P-100L-06D	426	486
0.70	0.85	13621	1.00	1377.44	68.3	83.8	68.3	83.8			
0.79	0.96	12012	1.10	1219.69	73.5	85.5	73.5	85.5			
0.81	0.98	11661	1.15	1186.50	74.5	85.8	74.5	85.8			
0.90	1.1	10409	1.25	1063.46	77.8	87.1	77.8	87.1			
0.94	1.1	9971	1.35	1022.92	78.8	87.5	78.8	87.5			
1.0	1.3	8874	1.50	916.04	81.1	88.6	81.1	88.6			
1.1	1.3	8622	1.55	891.88	81.6	88.9	81.6	88.9			
1.2	1.5	7713	1.70	802.79	83.2	89.8	83.2	89.8			
1.4	1.7	6642	2.00	699.95	84.8	90.8	84.8	90.8			
1.5	1.8	6252	2.10	661.56	85.3	91.2	85.3	91.2			
1.6	1.9	5639	2.35	602.92	86.1	91.8	86.1	91.8			
1.8	2.2	4989	2.65	540.20	86.8	92.5	86.8	92.5			
1.9	2.3	4704	2.80	512.47	87.1	92.8	87.1	92.8			
1.1	1.4	8509	0.95	1301.54	43.2	59.4	43.2	59.4	KH104-11P-90S/L-04E	297	482
1.3	1.6	7341	1.10	1129.81	48.7	60.8	48.7	60.8			
1.4	1.8	6489	1.25	1004.85	51.9	61.8	51.9	61.8			
1.5	1.8	6291	1.30	976.16	52.5	62.0	52.5	62.0			
1.7	2.0	5587	1.45	872.27	54.7	62.8	54.7	62.8			
1.9	2.3	4777	1.70	753.64	56.7	63.7	56.7	63.7			
2.0	2.4	4628	1.75	731.54	57.0	63.9	57.0	63.9			
2.2	2.7	4149	1.95	661.38	58.0	64.4	58.0	64.4			
2.3	2.8	3949	2.05	632.05	58.4	64.7	58.4	64.7			
2.5	3.1	3557	2.25	574.12	59.1	65.1	59.1	65.1			
2.9	3.4	3117	2.60	510.43	59.8	65.6	59.8	65.6			

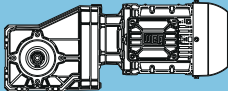
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P _N = 1.1 kW										IE3	
50 Hz		60 Hz		at 50 Hz						m kg	Dimension sheet see page
1.1 kW		1.3 kW		Output shaft		Hollow shaft					
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	f _B	i	F _{rN} kN	F _{aN} kN	F _{rN} kN	F _{aN} kN			
0.96	1.2	10019	0.80	1004.85	**	**	**	**	KH104-11P-100L-06D	303	482
0.98	1.2	9713	0.85	976.16	35.6	58.1	35.6	58.1			
1.1	1.3	8643	0.95	872.27	42.5	59.3	42.5	59.3			
1.3	1.5	7422	1.10	753.64	48.3	60.7	48.3	60.7			
1.5	1.8	6473	1.25	661.38	51.9	61.8	51.9	61.8			
1.7	2.0	5573	1.45	574.12	54.7	62.8	54.7	62.8			
1.9	2.3	4914	1.65	510.43	56.4	63.6	56.4	63.6			
2.2	2.6	4222	1.90	443.08	57.9	64.3	57.9	64.3			
2.3	2.8	4006	2.00	422.20	58.3	64.6	58.3	64.6			
2.5	3.0	3595	2.25	382.82	59.0	65.1	59.0	65.1			
2.6	3.2	3428	2.35	366.49	59.3	65.3	59.3	65.3			
2.7	3.2	3352	2.40	359.12	59.4	65.3	59.4	65.3			
3.0	3.7	2912	2.75	316.65	60.0	65.8	60.0	65.8			
3.1	3.7	2861	2.80	311.74	60.1	65.9	60.1	65.9			
1.6	1.9	5964	0.80	906.69	**	**	**	**	KH124-11P-90S/L-04E	168	486
1.9	2.3	5022	0.90	766.52	24.1	38.6	24.1	38.6			
2.0	2.4	4852	0.95	742.09	25.5	38.8	25.5	38.8			
2.3	2.8	4068	1.15	627.37	30.5	39.8	30.5	39.8			
2.5	3.1	3689	1.25	571.21	32.4	40.3	32.4	40.3			
3.0	3.6	3087	1.50	482.91	34.8	41.1	34.8	41.1			
3.4	4.1	2742	1.65	431.58	35.9	41.5	35.9	41.5			
4.0	4.8	2284	2.00	364.86	37.2	42.1	37.2	42.1			
4.1	5.0	2207	2.05	353.21	37.4	42.2	37.4	42.2			
4.9	5.9	1831	2.50	298.61	38.2	42.7	38.2	42.7			
5.1	6.1	1749	2.60	286.42	38.4	42.8	38.4	42.8			
1.7	2.0	5695	0.80	571.21	**	**	**	**	KH094-11P-100L-06D	174	478
2.0	2.4	4785	0.95	482.91	26.0	38.9	26.0	38.9			
2.2	2.7	4250	1.10	431.58	29.5	39.6	29.5	39.6			
2.6	3.2	3564	1.30	364.86	32.9	40.5	32.9	40.5			
2.7	3.3	3443	1.35	353.21	33.4	40.6	33.4	40.6			
3.2	3.9	2881	1.60	298.61	35.5	41.3	35.5	41.3			
3.4	4.1	2758	1.65	286.42	35.9	41.5	35.9	41.5			
4.0	4.8	2298	2.00	242.14	37.2	42.1	37.2	42.1			
4.7	5.7	1892	2.40	202.70	38.1	42.6	38.1	42.6			
4.9	6.0	1806	2.50	194.32	38.2	42.7	38.2	42.7			
5.7	6.9	1852	2.45	169.25	38.2	42.6	38.2	42.6			
6.7	8.1	1566	2.90	143.08	38.7	43.0	38.7	43.0			
2.6	3.2	3615	0.85	550.61	12.4	19.5	12.4	7.2	KH084-11P-90S/L-04E	118	474
2.8	3.3	3443	0.90	525.61	14.8	24.5	14.8	7.4			
3.0	3.7	3137	1.00	480.77	18.1	31.6	18.1	7.9			
3.4	4.1	2795	1.10	430.17	21.0	37.9	21.0	8.4			
3.5	4.2	2698	1.15	416.02	21.7	39.4	21.7	8.5			
4.0	4.8	2341	1.30	363.25	23.8	41.5	23.8	9.0			
4.2	5.0	2243	1.35	348.82	24.3	41.7	24.3	9.2			
4.3	5.2	2185	1.40	340.47	24.6	41.8	24.6	9.3			
4.9	5.9	1892	1.60	297.29	25.9	42.2	25.9	9.7			
5.0	6.0	1855	1.65	292.01	26.1	42.3	26.1	9.8			
5.3	6.4	1747	1.75	276.09	26.5	42.4	26.5	9.9			
6.0	7.3	1509	2.00	241.07	27.2	42.8	27.2	10.3			
6.1	7.4	1479	2.05	236.66	27.3	42.8	27.3	10.3			
6.3	7.6	1441	2.10	231.12	27.4	42.9	27.4	10.4			
7.2	8.7	1240	2.45	201.80	28.0	43.2	28.0	10.7			
7.8	9.4	1141	2.65	187.31	28.2	43.3	28.2	10.8			
2.6	3.2	3614	0.85	363.25	12.4	19.5	12.4	7.2	KH093-11P-100L-06D	124	476
2.8	3.3	3464	0.90	348.82	14.5	23.9	14.5	7.4			
3.2	3.9	2934	1.05	297.29	19.9	35.5	19.9	8.2			
3.3	4.0	2882	1.05	292.01	20.3	36.3	20.3	8.2			
3.5	4.2	2713	1.15	276.09	21.6	39.2	21.6	8.5			
4.0	4.8	2355	1.30	241.07	23.7	41.5	23.7	9.0			
4.1	4.9	2312	1.30	236.66	24.0	41.6	24.0	9.1			
4.2	5.0	2253	1.35	231.12	24.3	41.7	24.3	9.2			
4.8	5.8	1951	1.55	201.80	25.7	42.1	25.7	9.6			
5.1	6.2	1800	1.70	187.31	26.3	42.3	26.3	9.8			
5.9	7.1	1555	1.95	163.55	27.1	42.7	27.1	10.2			

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P _N = 1.1 kW										IE3	
50 Hz		60 Hz		i	at 50 Hz					m kg	Dimension sheet see page
1.1 kW		1.3 kW			Output shaft		Hollow shaft				
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	f _B		F _{rN} kN	F _{aN} kN	F _{rN} kN	F _{aN} kN			
7.1	8.5	1488	2.05	206.12	27.3	42.8	27.3	10.3	KH083-11P-90S/L-04E	105	472
8.9	11	1178	2.55	163.14	28.1	43.3	28.1	10.8			
10	12	1028	2.95	142.45	28.4	43.5	27.9	11.0			
4.7	5.7	2256	1.35	206.12	24.3	41.7	24.3	9.2	KH083-11P-100L-06D	111	472
5.9	7.1	1785	1.70	163.14	26.3	42.4	26.3	9.9			
6.7	8.2	1559	1.95	142.45	27.1	42.7	27.1	10.2			
7.6	9.3	1378	2.20	125.90	27.6	43.0	27.6	10.5			
9.0	11	1165	2.60	106.46	28.2	43.3	28.2	10.8			
10	13	1001	3.00	91.51	28.5	43.5	27.8	11.0			
5.7	6.9	1849	0.85	256.14	12.3	15.2	12.3	3.9	KH073-11P-90S/L-04E	64	470
7.4	8.9	1428	1.10	197.75	16.1	16.0	16.1	4.8			
8.8	11	1197	1.30	165.85	17.5	16.5	17.5	5.3			
11	14	940	1.65	130.16	18.7	17.1	18.7	5.8			
14	18	725	2.15	100.45	19.4	17.5	18.0	6.3			
15	18	721	1.80	99.87	19.4	17.5	17.6	6.3			
18	21	600	2.60	83.09	19.8	17.8	16.3	6.5			
19	23	557	2.80	77.11	19.9	17.8	15.8	6.6			
31	37	343	1.80	47.56	20.2	17.9	13.1	6.7			
40	48	265	2.90	36.72	20.3	18.2	11.8	6.9			
5.8	7	1815	0.90	165.85	12.6	15.2	12.6	4.0	KH073-11P-100L-06D	70	470
7.4	9	1424	1.10	130.16	16.1	16.1	16.1	4.8			
9.6	12	1099	1.45	100.45	18.0	16.7	18.0	5.5			
12	14	909	1.75	83.09	18.8	17.1	18.8	5.9			
14	16	773	2.05	70.67	19.3	17.4	18.2	6.2			
15	18	708	2.20	64.67	19.5	17.5	17.6	6.3			
16	19	670	2.35	61.25	19.6	17.6	17.1	6.4			
19	23	566	2.75	51.72	19.8	17.8	15.9	6.6			
20	24	520	1.20	47.56	19.9	17.4	15.8	6.1			
26	32	402	1.90	36.72	20.2	17.7	14.1	6.5			
31	38	337	2.75	30.79	20.3	17.9	13.1	6.7			
12	14	880	0.95	121.85	7.8	12.5	7.8	2.5	KH063-11P-90S/L-04E	44	468
15	18	722	1.15	99.98	9.6	13.0	9.6	3.0			
18	22	589	1.00	81.53	10.6	13.4	10.6	3.4			
19	23	559	1.50	77.42	10.8	13.5	10.8	3.5			
23	27	467	1.80	64.62	11.4	13.8	11.4	3.8			
25	30	425	1.95	58.89	11.5	13.9	11.5	4.0			
29	35	362	2.30	50.17	11.8	14.1	11.7	4.2			
30	36	351	2.35	48.56	11.9	14.1	11.5	4.2			
33	40	320	1.00	44.35	12.0	13.8	11.3	3.9			
35	43	297	2.80	41.17	12.0	14.3	10.8	4.4			
37	44	288	2.80	39.83	12.1	14.3	10.5	4.4			
41	50	254	1.80	35.15	12.2	14.1	10.2	4.2			
53	64	197	2.55	27.29	12.3	14.4	9.2	4.4			
12	15	847	1.00	77.42	8.2	12.6	8.2	2.6	KH063-11P-100L-06D	50	468
15	18	707	1.20	64.62	9.7	13.0	9.7	3.1			
16	20	644	1.30	58.89	10.2	13.2	10.2	3.3			
19	23	549	1.50	50.17	10.9	13.5	10.9	3.6			
20	24	531	1.55	48.56	11.0	13.6	11.0	3.6			
23	28	451	1.85	41.17	11.4	13.8	11.4	3.9			
24	29	436	1.85	39.83	11.5	13.9	11.5	3.9			
27	33	385	1.20	35.15	11.7	13.5	11.7	3.6			
28	34	370	2.05	33.85	11.8	14.1	11.8	4.1			
30	37	349	2.40	31.88	11.9	14.2	11.5	4.2			
34	42	305	2.35	27.83	12.0	14.3	10.9	4.3			
35	43	299	1.70	27.29	12.0	13.9	11.0	4.0			
40	48	265	2.95	24.25	12.1	14.4	10.2	4.5			
43	52	245	2.05	22.40	12.2	14.2	10.0	4.2			
55	67	190	2.65	17.34	12.3	14.4	9.0	4.5			

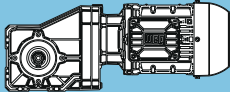
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P _N = 1.1 kW										IE3		
50 Hz		60 Hz				at 50 Hz					m kg	Dimension sheet see page
1.1 kW		1.3 kW				Output shaft		Hollow shaft				
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	f _B			i	F _{rN} kN	F _{aN} kN	F _{rN} kN			
15	18	694	0.90	96.08	4.2	6.3	4.2	3.2	KH053-11P-90S/L-04E	31	466	
18	22	581	1.00	80.46	6.4	10.2	6.4	3.5				
20	24	528	1.15	73.08	7.1	10.4	7.1	3.7				
23	28	460	1.35	63.77	7.8	10.6	7.8	3.9				
24	29	435	1.40	60.26	8.0	10.7	8.0	4.0				
29	36	358	1.70	49.52	8.6	10.9	8.6	4.2				
35	42	303	2.00	42.00	9.0	11.1	9.0	4.4				
36	43	293	2.05	40.63	9.0	11.1	9.0	4.4				
38	46	277	1.00	38.32	9.1	10.8	9.1	4.1				
42	51	249	2.45	34.53	9.2	11.2	9.2	4.5				
46	56	227	2.65	31.46	9.3	11.3	9.3	4.6				
48	58	219	1.80	30.37	9.3	11.0	9.3	4.3				
53	64	198	2.95	27.39	9.4	11.4	9.4	4.7				
62	75	170	2.45	23.58	9.5	11.2	9.5	4.5				
75	91	140	3.00	19.35	9.6	11.4	9.6	4.7				
13	16	800	0.80	73.08	**	**	**	**	KH053-11P-100L-06D	36	466	
15	18	698	0.90	63.77	4.1	6.1	4.1	3.2				
16	19	659	0.95	60.26	5.0	8.0	5.0	3.3				
19	24	542	1.15	49.52	6.9	10.4	6.9	3.7				
23	28	460	1.35	42.00	7.8	10.6	7.8	3.9				
24	29	445	1.35	40.63	8.0	10.7	8.0	4.0				
28	34	378	1.60	34.53	8.5	10.9	8.5	4.2				
31	37	344	1.75	31.46	8.7	11.0	8.7	4.3				
32	38	332	1.20	30.37	8.8	10.5	8.8	3.8				
35	43	300	1.95	27.39	9.0	11.1	9.0	4.4				
40	49	262	2.30	23.93	9.2	11.2	9.2	4.5				
41	49	258	1.65	23.58	9.2	10.8	9.2	4.1				
49	59	216	2.80	19.73	9.4	11.3	9.4	4.6				
50	60	212	2.00	19.35	9.4	11.1	9.4	4.4				
64	78	164	2.55	14.98	9.5	11.3	9.5	4.6				
20	24	526	0.80	72.92	**	**	**	**	KH043-11P-90S/L-04E	27	464	
22	27	478	0.85	66.20	**	**	**	**				
25	31	416	1.00	57.58	3.4	5.1	3.4	2.2				
27	32	391	1.05	54.18	4.0	6.4	4.0	2.3				
33	39	322	1.25	44.64	5.2	8.2	5.2	2.6				
38	46	278	1.00	38.49	5.7	8.1	5.7	2.5				
40	48	266	1.45	36.78	5.8	8.4	5.8	2.8				
48	58	219	1.50	30.39	6.2	8.4	6.2	2.8				
49	59	215	1.70	29.81	6.3	8.6	6.3	3.0				
52	63	203	2.00	28.13	6.4	8.7	6.4	3.1				
62	75	170	1.85	23.57	6.6	8.6	6.6	3.0				
68	83	153	2.65	21.25	6.7	8.9	6.7	3.3				
75	91	139	2.15	19.29	6.7	8.8	6.7	3.2				
98	119	107	2.60	14.85	6.9	8.9	6.9	3.3				
22	26	488	0.85	44.64	**	**	**	**				KH043-11P-100L-06D
26	32	402	1.00	36.78	3.8	6.0	3.8	2.3				
32	38	333	1.00	30.39	5.0	7.8	5.0	2.2				
34	41	308	1.30	28.13	5.4	8.3	5.4	2.7				
41	49	258	1.20	23.57	5.9	8.2	5.9	2.6				
45	55	233	1.75	21.25	6.1	8.6	6.1	3.0				
50	60	211	1.40	19.29	6.3	8.4	6.3	2.8				
55	67	190	2.15	17.39	6.4	8.7	6.4	3.1				
65	78	162	1.75	14.85	6.6	8.7	6.6	3.1				
68	83	154	2.60	14.10	6.7	8.9	6.7	3.3				
86	104	123	2.15	11.22	6.8	8.9	6.8	3.3				
105	127	100	2.50	9.18	6.9	9.0	6.9	3.4				
129	157	81	2.95	7.44	6.9	9.1	6.4	3.5				

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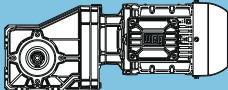
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** ... on request

P _N = 1.1 kW										IE3	
50 Hz		60 Hz		at 50 Hz						m kg	Dimension sheet see page
1.1 kW		1.3 kW		Output shaft		Hollow shaft					
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	f _B	i	F _{rN} kN	F _{aN} kN	F _{rN} kN	F _{aN} kN			
41	49	259	0.80	35.90	**	**	**	**	KH033-11P-90S/L-04E	24	462
48	58	219	0.95	30.29	3.4	2.4	3.4	2.4			
51	61	207	1.00	28.67	3.6	2.5	3.6	2.5			
60	72	176	0.95	24.38	4.1	2.4	4.1	2.4			
67	81	156	1.30	21.67	4.3	2.8	4.3	2.8			
75	91	140	1.20	19.37	4.5	2.6	4.5	2.6			
88	107	119	1.70	16.47	4.7	3.0	4.7	3.0			
97	118	108	1.55	14.96	4.8	2.9	4.8	2.9			
114	137	92	2.20	12.81	4.9	3.1	4.9	3.1			
122	147	86	1.90	11.94	4.9	3.0	4.9	3.0			
146	176	72	2.80	10.00	5.0	3.2	5.0	3.2			
161	195	65	2.55	9.03	5.0	3.2	5.0	3.2			
44	54	237	0.85	21.67	3.0	2.3	3.0	2.3	KH033-11P-100L-06D	29	462
50	60	212	0.80	19.37	**	**	**	**			
58	71	180	1.15	16.47	4.0	2.6	4.0	2.6			
64	78	164	1.00	14.96	4.3	2.5	4.3	2.5			
75	91	140	1.45	12.81	4.5	2.9	4.5	2.9			
80	98	131	1.25	11.94	4.6	2.7	4.6	2.7			
96	117	109	1.85	10.00	4.8	3.0	4.8	3.0			
106	129	99	1.65	9.03	4.8	2.9	4.8	2.9			
140	170	75	2.00	6.86	5.0	3.1	5.0	3.1			
180	218	58	2.35	5.34	5.0	3.2	5.0	3.2			
230	279	46	2.80	4.17	5.1	3.3	5.1	3.3			
79	95	134	0.80	18.50	**	**	**	**	KH022-11P-90S/L-04E	22	460
94	114	111	0.85	15.41	4.9	2.8	4.9	2.8			
105	127	100	0.95	13.81	5.0	2.8	5.0	2.8			
109	132	96	0.95	13.29	5.0	2.8	5.0	2.8			
122	148	86	1.05	11.92	5.1	2.8	5.1	2.8			
123	149	85	0.95	11.84	5.1	2.8	5.1	2.8			
125	152	84	1.05	11.60	5.1	2.8	5.1	2.8			
140	169	75	1.15	10.40	5.1	2.8	5.1	2.8			
157	190	67	1.25	9.25	4.9	2.8	4.9	2.8			
171	207	61	1.30	8.51	4.7	2.8	4.7	2.8			
191	231	55	1.40	7.63	4.5	2.8	4.5	2.8			
211	255	50	1.50	6.91	4.4	2.8	4.4	2.8			
244	295	43	1.65	5.96	4.1	2.8	4.1	2.8			
280	338	38	1.75	5.20	3.9	2.8	3.9	2.8			
381	461	28	2.10	3.82	3.5	2.8	3.5	2.8			

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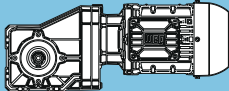
** ... on request

P _N = 1.5 kW										IE3	
50 Hz		60 Hz		i	at 50 Hz					m kg	Dimension sheet see page
1.5 kW		1.8 kW			Output shaft		Hollow shaft				
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	f _B		F _{rN} kN	F _{aN} kN	F _{rN} kN	F _{aN} kN			
0.63	0.76	20182	0.90	2306.68	68.0	114.6	68.0	114.6	KH155-11P-90S/L-04F	688	492
0.65	0.79	19331	0.95	2215.09	72.3	115.2	72.3	115.2			
0.77	0.93	16307	1.15	1887.82	84.5	117.6	84.5	117.6			
0.78	0.95	16017	1.15	1854.30	85.5	117.8	85.5	117.8			
0.95	1.1	13054	1.40	1530.83	94.1	120.0	94.1	120.0			
0.96	1.2	12782	1.45	1502.83	94.7	120.2	94.7	120.2			
1.1	1.4	10760	1.70	1281.49	99.1	121.8	99.1	121.8			
1.4	1.7	8520	2.15	1038.59	102.9	123.5	102.9	123.5			
1.1	1.3	11401	1.60	1308.92	97.8	121.3	97.8	121.3	KH154-11P-90S/L-04F	675	490
1.3	1.6	9698	1.90	1127.36	101.0	122.6	101.0	122.6			
1.4	1.7	8857	2.05	1035.99	102.4	123.2	102.4	123.2			
1.5	1.8	8285	2.20	975.12	103.3	123.7	103.3	123.7			
1.6	1.9	7622	2.40	904.58	104.2	124.2	104.2	124.2			
1.8	2.2	6639	2.75	799.45	105.4	124.9	105.4	124.9			
1.9	2.3	6456	2.80	779.11	105.6	125.1	105.6	125.1			
0.92	1.1	14133	0.95	1579.81	66.5	83.3	66.5	83.3	KH124-11P-90S/L-04F	421	486
1.1	1.3	12247	1.10	1377.44	72.8	85.2	72.8	85.2			
1.2	1.5	10485	1.25	1186.50	77.6	87.0	77.6	87.0			
1.4	1.7	9340	1.40	1063.46	80.1	88.1	80.1	88.1			
1.6	1.9	7962	1.65	916.04	82.7	89.5	82.7	89.5			
1.8	2.2	6906	1.90	802.79	84.4	90.6	84.4	90.6			
1.9	2.3	6582	2.00	768.25	84.9	90.9	84.9	90.9			
2.1	2.5	5947	2.20	699.95	85.7	91.5	85.7	91.5			
2.2	2.7	5586	2.35	661.56	86.1	91.9	86.1	91.9			
2.3	2.8	5188	2.55	619.56	86.6	92.3	86.6	92.3			
2.4	2.9	5038	2.60	602.92	86.7	92.5	86.7	92.5			
2.7	3.2	4448	2.95	540.20	87.3	93.0	87.3	93.0			
1.3	1.6	10170	0.80	1129.81	**	**	**	**	KH104-11P-90S/L-04F	298	482
1.4	1.7	9008	0.90	1004.85	40.3	58.9	40.3	58.9			
1.5	1.8	8733	0.95	976.16	42.0	59.2	42.0	59.2			
1.7	2.0	7772	1.05	872.27	46.8	60.3	46.8	60.3			
1.9	2.3	6673	1.20	753.64	51.2	61.5	51.2	61.5			
2.0	2.4	6464	1.25	731.54	52.0	61.8	52.0	61.8			
2.2	2.7	5808	1.40	661.38	54.0	62.5	54.0	62.5			
2.3	2.8	5539	1.45	632.05	54.8	62.8	54.8	62.8			
2.5	3.1	5001	1.60	574.12	56.2	63.5	56.2	63.5			
2.8	3.4	4400	1.85	510.43	57.5	64.1	57.5	64.1			
2.9	3.5	4267	1.90	496.04	57.8	64.3	57.8	64.3			
3.3	4.0	3772	2.15	443.08	58.7	64.9	58.7	64.9			
3.4	4.2	3580	2.25	422.20	59.1	65.1	59.1	65.1			
3.8	4.6	3212	2.50	382.82	59.6	65.5	59.6	65.5			
4.0	4.8	3056	2.65	366.49	59.8	65.7	59.8	65.7			
2.3	2.8	5647	0.80	627.37	**	**	**	**	KH094-11P-90S/L-04F	169	478
2.5	3.1	5121	0.90	571.21	23.3	38.5	23.3	38.5			
3.0	3.6	4302	1.05	482.91	29.2	39.5	29.2	39.5			
3.4	4.1	3822	1.20	431.58	31.7	40.1	31.7	40.1			
4.0	4.8	3198	1.45	364.86	34.4	40.9	34.4	40.9			
4.1	5.0	3089	1.50	353.21	34.8	41.1	34.8	41.1			
4.9	5.9	2585	1.75	298.61	36.4	41.7	36.4	41.7			
5.1	6.1	2469	1.85	286.42	36.7	41.9	36.7	41.9			
6.0	7.2	2057	2.20	242.14	37.7	42.4	37.7	42.4			
7.2	8.7	1687	2.70	202.70	38.5	42.9	38.5	42.9			
7.5	9.0	1610	2.80	194.32	38.6	43.0	38.6	43.0			
8.6	10	1672	2.70	169.25	38.5	42.9	38.5	42.9			

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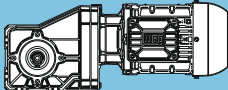
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** ... on request

P _N = 1.5 kW										IE3	
50 Hz		60 Hz		at 50 Hz						m kg	Dimension sheet see page
1.5 kW		1.8 kW		Output shaft		Hollow shaft					
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	f _B	i	F _{rN} kN	F _{aN} kN	F _{rN} kN	F _{aN} kN			
3.4	4.1	3872	0.80	430.17	**	**	**	**	KH084-11P-90S/L-04F	119	474
3.5	4.2	3737	0.85	416.02	10.2	14.9	10.2	7.0			
4.0	4.8	3250	0.95	363.25	17.0	29.2	17.0	7.7			
4.2	5.0	3114	1.00	348.82	18.4	32.2	18.4	7.9			
4.3	5.2	3040	1.00	340.47	19.0	33.5	19.0	8.0			
4.9	5.9	2638	1.15	297.29	22.1	40.3	22.1	8.6			
5.0	6.0	2586	1.20	292.01	22.4	41.0	22.4	8.7			
5.3	6.4	2440	1.25	276.09	23.3	41.4	23.3	8.9			
6.0	7.3	2113	1.45	241.07	25.0	41.9	25.0	9.4			
6.1	7.4	2074	1.45	236.66	25.1	41.9	25.1	9.4			
6.3	7.6	2021	1.50	231.12	25.4	42.0	25.4	9.5			
7.2	8.7	1747	1.75	201.80	26.5	42.4	26.5	9.9			
7.7	9.4	1611	1.90	187.31	26.9	42.6	26.9	10.1			
8.9	11	1390	2.20	163.55	27.6	42.9	27.6	10.4			
7.0	8.5	2036	1.50	206.12	25.3	42.0	25.3	9.5	KH083-11P-90S/L-04F	106	472
8.9	11	1612	1.90	163.14	26.9	42.6	26.9	10.1			
10	12	1407	2.15	142.45	27.5	42.9	27.5	10.4			
12	14	1244	2.45	125.90	28.0	43.2	27.2	10.7			
14	16	1052	2.90	106.46	28.4	43.4	25.4	10.9			
7.3	8.9	1954	0.80	197.75	**	**	**	**	KH073-11P-90S/L-04F	65	470
8.7	11	1638	0.95	165.85	14.4	15.6	14.4	4.4			
11	13	1286	1.25	130.16	17.0	16.3	17.0	5.1			
14	17	992	1.60	100.45	18.5	16.9	18.5	5.7			
15	18	987	1.35	99.87	18.5	17.0	18.5	5.7			
17	21	821	1.90	83.09	19.1	17.3	17.4	6.1			
19	23	762	2.05	77.11	19.3	17.4	16.7	6.2			
21	25	698	2.25	70.67	19.5	17.6	16.0	6.3			
22	27	639	2.45	64.67	19.7	17.7	15.5	6.4			
24	29	605	2.60	61.25	19.8	17.7	15.0	6.5			
30	37	470	1.35	47.56	20.0	17.5	13.9	6.3			
39	48	363	2.10	36.72	20.2	17.9	12.4	6.6			
47	57	304	3.00	30.79	20.3	18.1	11.5	6.8			
15	18	988	0.85	99.98	6.0	8.9	6.0	2.2	KH063-11P-90S/L-04F	45	470
19	23	765	1.10	77.42	9.1	12.8	9.1	2.9			
22	27	638	1.30	64.62	10.3	13.2	10.3	3.3			
25	30	582	1.45	58.89	10.7	13.4	10.7	3.5			
29	35	496	1.70	50.17	11.2	13.7	11.2	3.7			
30	36	480	1.75	48.56	11.3	13.7	11.3	3.8			
35	43	407	2.05	41.17	11.6	14.0	11.3	4.0			
36	44	393	2.05	39.83	11.7	14.0	11.2	4.1			
41	50	347	1.35	35.15	11.9	13.7	10.8	3.8			
43	52	334	2.30	33.85	11.9	14.2	10.3	4.2			
45	55	315	2.65	31.88	12.0	14.3	10.1	4.3			
52	63	275	2.60	27.83	12.1	14.4	9.5	4.4			
53	64	270	1.90	27.29	12.1	14	9.6	4.1			
65	78	221	2.30	22.40	12.2	14.3	8.8	4.3			
84	101	171	2.95	17.34	12.3	14.5	7.9	4.5			
20	24	722	0.85	73.08	3.4	4.6	3.4	3.1	KH053-11P-90S/L-04F	32	466
23	28	630	1.00	63.77	5.6	9.3	5.6	3.4			
24	29	595	1.05	60.26	6.2	10.2	6.2	3.5			
29	35	489	1.25	49.52	7.5	10.5	7.5	3.8			
35	42	415	1.45	42.00	8.2	10.7	8.2	4.0			
36	43	401	1.50	40.63	8.3	10.8	8.3	4.1			
42	51	341	1.80	34.53	8.7	11.0	8.7	4.3			
46	56	311	1.95	31.46	8.9	11.1	8.9	4.4			
48	58	300	1.35	30.37	9.0	10.7	9.0	4.0			
53	64	271	2.15	27.39	9.1	11.2	9.1	4.5			
61	73	236	2.55	23.93	9.3	11.3	9.3	4.6			
75	91	191	2.20	19.35	9.4	11.1	9.4	4.4			
97	117	148	2.80	14.98	9.6	11.3	9.1	4.6			

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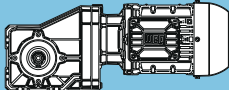
** ... on request

P _N = 1.5 kW										IE3		
50 Hz		60 Hz		f _B	i	at 50 Hz					m kg	Dimension sheet see page
1.5 kW		1.8 kW				Output shaft		Hollow shaft				
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm				F _{rN} kN	F _{aN} kN	F _{rN} kN	F _{aN} kN			
32	39	441	0.95	44.64	2.6	3.4	2.6	2.1	KH043-11P-90S/L-04F	29	464	
33	40	434	0.95	43.93	2.9	4.1	2.9	2.2				
39	48	363	1.10	36.78	4.5	7.5	4.5	2.4				
40	48	361	1.15	36.54	4.6	7.8	4.6	2.5				
48	58	300	1.10	30.39	5.5	8.0	5.5	2.4				
49	59	295	1.25	29.81	5.5	8.3	5.5	2.7				
52	62	278	1.45	28.13	5.7	8.4	5.7	2.8				
62	74	233	1.35	23.57	6.1	8.3	6.1	2.7				
68	83	210	1.95	21.25	6.3	8.7	6.3	3.1				
75	91	191	1.55	19.29	6.4	8.5	6.4	2.9				
83	101	172	2.35	17.39	6.6	8.8	6.6	3.2				
98	118	147	1.90	14.85	6.7	8.7	6.7	3.1				
103	124	139	2.90	14.10	6.7	8.9	6.7	3.3				
129	156	111	2.40	11.22	6.8	8.9	6.7	3.3				
158	191	91	2.80	9.18	6.9	9.0	6.1	3.4				
67	81	214	0.95	21.67	3.5	2.4	3.5	2.4	KH033-11P-90S/L-04F	25	462	
75	91	191	0.90	19.37	3.9	2.3	3.9	2.3				
88	107	163	1.25	16.47	4.3	2.7	4.3	2.7				
97	117	148	1.15	14.96	4.4	2.6	4.4	2.6				
113	137	127	1.60	12.81	4.6	2.9	4.6	2.9				
121	147	118	1.40	11.94	4.7	2.8	4.7	2.8				
145	176	99	2.05	10.00	4.8	3.1	4.8	3.1				
161	194	89	1.85	9.03	4.9	3.0	4.9	3.0				
211	256	68	2.20	6.86	5.0	3.2	5.0	3.2				
272	329	53	2.60	5.34	5.0	3.3	5.0	3.3				
122	147	118	0.80	11.92	**	**	**	**	KH022-11P-90S/L-04F	23	460	
139	169	103	0.85	10.40	5.0	2.8	5.0	2.8				
157	190	91	0.90	9.25	5.0	2.8	5.0	2.8				
170	206	84	0.95	8.51	4.8	2.8	4.8	2.8				
190	230	75	1.05	7.63	4.6	2.8	4.6	2.8				
210	254	68	1.10	6.91	4.4	2.8	4.4	2.8				
243	294	59	1.20	5.96	4.2	2.8	4.2	2.8				
279	338	51	1.30	5.20	4.0	2.8	4.0	2.8				
380	459	38	1.55	3.82	3.6	2.8	3.6	2.8				

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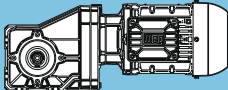
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** ... on request

P _N = 2.2 kW										IE3	
50 Hz		60 Hz		i	at 50 Hz					m kg	Dimension sheet see page
2.2 kW		2.6 kW			Output shaft		Hollow shaft				
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	f _B		F _{rN} kN	F _{aN} kN	F _{rN} kN	F _{aN} kN			
0.94	1.1	19799	0.95	1530.83	70.0	114.9	70.0	114.9	KH155-11P-100L-04E	698	492
0.95	1.2	19437	0.95	1502.83	71.8	115.2	71.8	115.2			
0.99	1.2	18694	1.00	1449.16	75.2	115.7	75.2	115.7			
1.1	1.4	16447	1.10	1281.49	84.0	117.4	84.0	117.4			
1.4	1.7	13125	1.40	1038.59	93.9	120.0	93.9	120.0			
1.1	1.3	17283	1.05	1308.92	81.0	116.8	81.0	116.8	KH154-11P-100L-04E	685	490
1.3	1.5	14764	1.25	1127.36	89.4	118.7	89.4	118.7			
1.4	1.7	13511	1.35	1035.99	92.9	119.7	92.9	119.7			
1.5	1.8	12665	1.45	975.12	95.0	120.3	95.0	120.3			
1.6	1.9	11701	1.55	904.58	97.2	121.1	97.2	121.1			
1.8	2.2	10235	1.80	799.45	100.1	122.2	100.1	122.2			
1.9	2.3	9860	1.85	771.80	100.8	122.5	100.8	122.5			
2.1	2.5	8706	2.10	688.57	102.6	123.4	102.6	123.4			
2.4	2.9	7422	2.45	595.58	104.4	124.3	104.4	124.3			
2.5	3.0	7241	2.50	582.27	104.7	124.5	104.7	124.5			
2.8	3.4	6191	2.95	507.30	105.8	125.3	105.8	125.3			
2.9	3.5	6108	2.95	500.51	105.9	125.3	105.9	125.3			
1.2	1.4	16271	0.80	1219.69	**	**	**	**	KH124-11P-100L-04E	431	486
1.3	1.6	14100	0.95	1063.46	66.6	83.4	66.6	83.4			
1.4	1.7	13534	1.00	1022.92	68.6	83.9	68.6	83.9			
1.6	1.9	12070	1.10	916.04	73.3	85.4	73.3	85.4			
1.8	2.2	10513	1.25	802.79	77.5	87.0	77.5	87.0			
1.9	2.3	10040	1.30	768.25	78.6	87.4	78.6	87.4			
2.1	2.5	9091	1.45	699.95	80.6	88.4	80.6	88.4			
2.2	2.6	8557	1.55	661.56	81.7	88.9	81.7	88.9			
2.3	2.8	7981	1.65	619.56	82.7	89.5	82.7	89.5			
2.4	2.9	7751	1.70	602.92	83.1	89.7	83.1	89.7			
2.7	3.2	6887	1.90	540.20	84.5	90.6	84.5	90.6			
2.8	3.4	6592	2.00	519.19	84.9	90.9	84.9	90.9			
3.1	3.8	5847	2.25	465.31	85.8	91.6	85.8	91.6			
3.2	3.9	5591	2.35	446.82	86.1	91.9	86.1	91.9			
3.3	4.0	5443	2.40	435.90	86.3	92.0	86.3	92.0			
3.6	4.4	4952	2.65	400.70	86.8	92.5	86.8	92.5			
3.7	4.5	4736	2.75	384.88	87.1	92.8	87.1	92.8			
3.8	4.6	4667	2.80	380.06	87.1	92.8	87.1	92.8			
1.9	2.3	10053	0.80	753.64	**	**	**	**	KH104-11P-100L-04E	308	482
2.0	2.4	9739	0.85	731.54	35.4	58.0	35.4	58.0			
2.2	2.6	8769	0.95	661.38	41.8	59.1	41.8	59.1			
2.3	2.8	8363	1.00	632.05	44.0	59.6	44.0	59.6			
2.5	3.0	7565	1.10	574.12	47.7	60.5	47.7	60.5			
2.8	3.4	6698	1.20	510.43	51.1	61.5	51.1	61.5			
2.9	3.5	6496	1.25	496.04	51.8	61.7	51.8	61.7			
3.2	3.9	5767	1.40	443.08	54.1	62.6	54.1	62.6			
3.4	4.1	5472	1.50	422.20	55.0	62.9	55.0	62.9			
3.7	4.6	4931	1.65	382.82	56.3	63.5	56.3	63.5			
3.9	4.8	4711	1.70	366.49	56.9	63.8	56.9	63.8			
4.0	4.9	4607	1.75	359.12	57.1	63.9	57.1	63.9			
4.5	5.5	4020	2.00	316.65	58.3	64.6	58.3	64.6			
4.6	5.6	3950	2.05	311.74	58.4	64.7	58.4	64.7			
5.3	6.5	3374	2.40	270.17	59.4	65.3	59.4	65.3			
5.5	6.6	3275	2.45	262.82	59.5	65.4	59.5	65.4			
5.7	6.9	3145	2.55	253.44	59.7	65.6	59.7	65.6			
6.1	7.5	2867	2.80	233.43	60.1	65.9	60.1	65.9			
6.3	7.6	2790	2.90	228.15	60.2	66.0	60.2	66.0			
6.5	7.9	2679	3.00	220.00	60.3	66.1	60.3	66.1			

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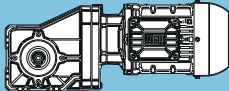
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P _N = 2.2 kW										IE3		
50 Hz		60 Hz		f _B	i	at 50 Hz					m kg	Dimension sheet see page
2.2 kW		2.6 kW				Output shaft		Hollow shaft				
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm				F _{rN} kN	F _{aN} kN	F _{rN} kN	F _{aN} kN			
3.3	4.0	5757	0.80	431.58	**	**	**	**	KH094-11P-100L-04E	179	478	
3.9	4.8	4837	0.95	364.86	25.6	38.8	25.6	38.8				
4.1	4.9	4673	1.00	353.21	26.8	39.1	26.8	39.1				
4.8	5.8	3927	1.15	298.61	31.2	40.0	31.2	40.0				
5.0	6.1	3759	1.20	286.42	32.0	40.2	32.0	40.2				
5.9	7.2	3145	1.45	242.14	34.6	41.0	34.6	41.0				
6.0	7.3	3114	1.45	239.77	34.7	41.0	34.7	41.0				
7.1	8.6	2600	1.75	202.70	36.4	41.7	36.4	41.7				
7.4	9.0	2483	1.85	194.32	36.7	41.8	36.7	41.8				
7.7	9.3	2389	1.90	187.38	36.9	42.0	36.9	42.0				
8.7	11	2069	2.20	164.28	37.7	42.4	37.7	42.4				
9.1	11	1986	2.30	158.41	37.9	42.5	37.9	42.5				
8.5	10	2478	1.85	169.25	36.7	41.8	36.7	41.8	KH093-11P-100L-04E	166	476	
10	12	2095	2.15	143.08	37.7	42.3	37.7	42.3				
12	14	1813	2.50	123.86	38.2	42.7	38.2	42.7				
13	16	1606	2.85	109.70	38.6	43.0	38.6	43.0				
4.8	5.9	3966	0.80	297.29	**	**	**	**	KH084-11P-100L-04E	129	474	
4.9	6.0	3895	0.80	292.01	**	**	**	**				
5.2	6.3	3675	0.85	276.09	11.4	17.4	11.4	7.1				
6.0	7.2	3196	0.95	241.07	17.6	30.5	17.6	7.8				
6.1	7.4	3131	1.00	236.66	18.2	31.8	18.2	7.9				
6.2	7.6	3058	1.00	231.12	18.9	33.3	18.9	8.0				
6.3	7.6	3019	1.00	228.21	19.2	33.9	19.2	8.0				
7.1	8.6	2654	1.15	201.80	22.0	40.1	22.0	8.6				
7.7	9.3	2453	1.25	187.31	23.2	41.4	23.2	8.9				
7.9	9.7	2361	1.30	180.62	23.7	41.5	23.7	9.0				
8.8	11	2124	1.45	163.55	24.9	41.9	24.9	9.4				
9.1	11	2044	1.50	157.71	25.3	42.0	25.3	9.5				
7.0	8.5	3018	1.00	206.12	19.2	33.9	19.2	8.0	KH083-11P-100L-04E	116	472	
8.8	11	2389	1.30	163.14	23.6	41.5	23.6	9.0				
10	12	2086	1.45	142.45	25.1	41.9	25.1	9.4				
11	14	1843	1.65	125.90	26.1	42.3	26.1	9.8				
13	16	1559	1.95	106.46	27.1	42.7	27.1	10.2				
16	19	1340	2.25	91.51	27.7	43.0	25.5	10.5				
18	22	1170	2.60	79.89	28.1	43.3	24.1	10.8				
21	25	1002	3.00	68.44	28.5	43.5	22.5	11.0				
32	38	666	2.45	45.48	29.0	43.7	19.1	11.2				
11	13	1906	0.85	130.16	11.6	15.1	11.6	3.8				KH073-11P-100L-04E
14	17	1471	1.10	100.45	15.8	16.0	15.8	4.7				
17	21	1217	1.30	83.09	17.4	16.5	17.4	5.2				
19	23	1129	1.40	77.11	17.9	16.7	17.9	5.4				
20	25	1035	1.50	70.67	18.3	16.9	17.6	5.6				
22	27	947	1.65	64.67	18.7	17.0	16.8	5.8				
23	28	897	1.75	61.25	18.9	17.1	16.4	5.9				
28	34	757	2.05	51.72	19.3	17.4	15.0	6.2				
29	35	730	2.15	49.88	19.4	17.5	14.8	6.2				
34	41	624	2.50	42.61	19.7	17.7	13.7	6.5				
37	45	573	2.75	39.17	19.8	17.8	13.2	6.6				
39	48	538	1.45	36.72	19.9	17.3	13.2	6.1				
47	57	451	2.05	30.79	20.1	17.6	12.2	6.3				
59	72	354	2.60	24.17	20.2	17.9	11.0	6.6				

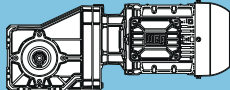
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** ... on request

P _N = 2.2 kW										IE3	
50 Hz		60 Hz		i	at 50 Hz					m kg	Dimension sheet see page
2.2 kW		2.6 kW			Output shaft		Hollow shaft				
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	f _b		F _{rN} kN	F _{aN} kN	F _{rN} kN	F _{aN} kN			
24	30	862	1.00	58.89	8.0	12.5	8.0	2.6	KH063-11P-100L-04E	55	468
29	35	735	1.15	50.17	9.4	12.9	9.4	3.0			
30	36	711	1.20	48.56	9.7	13.0	9.7	3.1			
35	42	603	1.40	41.17	10.5	13.4	10.5	3.4			
36	44	583	1.40	39.83	10.7	13.4	10.7	3.5			
42	52	496	1.55	33.85	11.2	13.7	11.2	3.7			
45	55	467	1.80	31.88	11.4	13.8	10.9	3.8			
52	63	407	1.80	27.83	11.6	14.0	10.2	4.0			
53	64	400	1.30	27.29	11.7	13.5	10.4	3.5			
59	72	355	2.25	24.25	11.8	14.1	9.6	4.2			
64	78	328	1.55	22.40	11.9	13.8	9.5	3.8			
65	79	323	2.10	22.07	11.9	14.2	9.2	4.3			
72	87	293	2.55	20.00	12.0	14.3	8.8	4.4			
83	101	254	2.00	17.34	12.2	14.1	8.4	4.2			
88	106	240	2.90	16.40	12.2	14.5	8.0	4.5			
109	132	193	2.60	13.19	12.3	14.4	7.4	4.4			
29	35	725	0.85	49.52	3.3	4.4	3.3	3.1	KH053-11P-100L-04E	42	466
34	42	615	1.00	42.00	5.9	9.9	5.9	3.4			
35	43	595	1.05	40.63	6.2	10.2	6.2	3.5			
42	51	506	1.20	34.53	7.3	10.5	7.3	3.8			
43	52	488	1.25	33.30	7.5	10.5	7.5	3.8			
46	55	461	1.35	31.46	7.8	10.6	7.8	3.9			
52	64	401	1.45	27.39	8.3	10.8	8.3	4.1			
60	73	350	1.75	23.93	8.7	10.9	8.7	4.2			
61	74	345	1.20	23.58	8.7	10.5	8.7	3.8			
73	88	289	2.10	19.73	9.0	11.1	9.0	4.4			
74	90	283	1.50	19.35	9.1	10.7	9.1	4.0			
89	108	237	2.55	16.19	9.3	11.3	9.3	4.6			
96	116	219	1.90	14.98	9.3	11.0	9.3	4.3			
104	127	201	3.00	13.75	9.4	11.4	9.1	4.7			
126	153	167	2.50	11.40	9.5	11.3	8.5	4.6			
48	59	436	0.85	29.81	2.8	3.9	2.8	2.2	KH043-11P-100L-04E	38	464
50	61	421	0.85	28.74	3.3	4.9	3.3	2.2			
51	62	412	1.00	28.13	3.5	5.4	3.5	2.3			
61	74	345	0.90	23.57	4.8	7.7	4.8	2.1			
68	82	311	1.30	21.25	5.3	8.3	5.3	2.7			
74	90	282	1.05	19.29	5.7	8.0	5.7	2.4			
83	100	255	1.60	17.39	5.9	8.5	5.9	2.9			
97	118	217	1.30	14.85	6.3	8.4	6.3	2.8			
102	124	206	1.95	14.10	6.3	8.7	6.3	3.1			
122	148	173	2.35	11.81	6.6	8.8	6.6	3.2			
128	156	164	1.60	11.22	6.6	8.7	6.6	3.1			
150	182	140	2.70	9.57	6.7	8.9	6.5	3.3			
155	189	135	2.75	9.23	6.7	9.0	6.4	3.4			
156	190	134	1.90	9.18	6.7	8.8	6.5	3.2			
193	235	109	2.25	7.44	6.8	8.9	5.9	3.3			
230	280	91	2.55	6.23	6.9	9.0	5.5	3.4			
284	346	74	3.00	5.05	6.9	9.1	5.0	3.5			
87	106	241	0.85	16.47	2.9	2.3	2.9	2.3	KH033-11P-100L-04E	35	462
112	136	188	1.10	12.81	3.9	2.6	3.9	2.6			
120	146	175	0.95	11.94	4.1	2.4	4.1	2.4			
144	175	146	1.40	10.00	4.4	2.8	4.4	2.8			
159	193	132	1.25	9.03	4.6	2.7	4.6	2.7			
209	254	100	1.50	6.86	4.8	2.9	4.8	2.9			
269	327	78	1.80	5.34	5.0	3.1	5.0	3.1			
344	418	61	2.10	4.17	4.7	3.2	4.7	3.2			

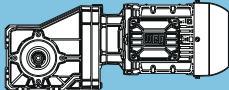
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P _N = 3.0 kW										IE3	
50 Hz		60 Hz		i	at 50 Hz					m kg	Dimension sheet see page
3.0 kW		3.6 kW			Output shaft		Hollow shaft				
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	f _B		F _{rN} kN	F _{aN} kN	F _{rN} kN	F _{aN} kN			
1.1	1.4	22696	0.80	1281.49	**	**	**	**	KH155-11P-L100L-04F	705	492
1.4	1.7	18207	1.00	1038.59	77.3	116.1	77.3	116.1			
1.1	1.3	23728	0.80	1308.92	**	**	**	**	KH154-11P-L100L-04F	692	490
1.3	1.5	20353	0.90	1127.36	67.1	114.5	67.1	114.5			
1.4	1.7	18627	1.00	1035.99	75.5	115.8	75.5	115.8			
1.5	1.8	17496	1.05	975.12	80.2	116.6	80.2	116.6			
1.6	1.9	16164	1.15	904.58	85.0	117.7	85.0	117.7			
1.8	2.2	14198	1.30	799.45	91.1	119.2	91.1	119.2			
1.9	2.3	13678	1.35	771.80	92.5	119.6	92.5	119.6			
2.1	2.5	12128	1.50	688.57	96.2	120.7	96.2	120.7			
2.4	2.9	10383	1.75	595.58	99.8	122.1	99.8	122.1			
2.5	3.0	10130	1.80	582.27	100.3	122.3	100.3	122.3			
2.8	3.4	8716	2.10	507.30	102.6	123.3	102.6	123.3			
2.9	3.5	8653	2.10	503.64	102.7	123.4	102.7	123.4			
3.3	4.0	7399	2.45	436.93	104.5	124.4	104.5	124.4			
3.4	4.2	7068	2.55	419.11	104.9	124.6	104.9	124.6			
3.8	4.6	6281	2.90	377.93	105.8	125.2	105.8	125.2			
3.9	4.7	6135	2.95	369.91	105.9	125.3	105.9	125.3			
1.6	1.9	16606	0.80	916.04	**	**	**	**	KH124-11P-L100L-04F	438	486
1.8	2.2	14493	0.90	802.79	65.1	83.0	65.1	83.0			
1.9	2.3	13841	0.95	768.25	67.5	83.6	67.5	83.6			
2.1	2.5	12559	1.05	699.95	71.9	84.9	71.9	84.9			
2.2	2.6	11846	1.10	661.56	74.0	85.6	74.0	85.6			
2.3	2.8	11048	1.20	619.56	76.2	86.4	76.2	86.4			
2.4	2.9	10730	1.25	602.92	77.0	86.7	77.0	86.7			
2.7	3.2	9554	1.40	540.20	79.7	87.9	79.7	87.9			
2.8	3.4	9164	1.45	519.19	80.5	88.3	80.5	88.3			
3.1	3.7	8162	1.60	465.31	82.4	89.3	82.4	89.3			
3.2	3.9	7805	1.70	446.82	83.0	89.7	83.0	89.7			
3.3	4.0	7599	1.75	435.90	83.4	89.9	83.4	89.9			
3.6	4.3	6942	1.90	400.70	84.4	90.5	84.4	90.5			
3.7	4.5	6640	2.00	384.88	84.8	90.8	84.8	90.8			
3.8	4.6	6557	2.00	380.06	84.9	90.9	84.9	90.9			
4.3	5.2	5636	2.35	331.43	86.1	91.9	86.1	91.9			
4.4	5.3	5601	2.35	329.39	86.1	91.9	86.1	91.9			
4.5	5.5	5402	2.45	319.02	86.4	92.1	86.4	92.1			
4.7	5.7	5187	2.55	307.62	86.6	92.3	86.6	92.3			
5.1	6.1	4745	2.75	283.73	87.0	92.7	87.0	92.7			
5.2	6.3	4632	2.85	278.15	87.2	92.9	87.2	92.9			
5.4	6.5	4448	2.95	268.22	87.3	93.0	87.3	93.0			
5.5	6.6	4349	3.00	262.80	87.4	93.1	87.4	93.1			
2.5	3.0	10407	0.80	574.12	**	**	**	**	KH104-11P-L100L-04F	315	482
2.8	3.4	9215	0.90	510.43	39.1	58.6	39.1	58.6			
2.9	3.5	8955	0.90	496.04	40.7	58.9	40.7	58.9			
3.2	3.9	7950	1.05	443.08	46.0	60.1	46.0	60.1			
3.4	4.1	7560	1.10	422.20	47.8	60.5	47.8	60.5			
3.8	4.5	6827	1.20	382.82	50.7	61.4	50.7	61.4			
3.9	4.7	6522	1.25	366.49	51.8	61.7	51.8	61.7			
4.0	4.8	6378	1.30	359.12	52.2	61.9	52.2	61.9			
4.5	5.5	5589	1.45	316.65	54.6	62.8	54.6	62.8			
4.6	5.6	5491	1.50	311.74	54.9	62.9	54.9	62.9			
5.3	6.4	4720	1.70	270.17	56.8	63.8	56.8	63.8			
5.5	6.6	4582	1.75	262.82	57.1	63.9	57.1	63.9			
5.7	6.9	4400	1.85	253.44	57.5	64.1	57.5	64.1			
6.2	7.5	4027	2.00	233.43	58.3	64.6	58.3	64.6			
6.3	7.6	3928	2.05	228.15	58.4	64.7	58.4	64.7			
6.5	7.9	3772	2.15	220.00	58.7	64.9	58.7	64.9			
6.7	8.0	3705	2.20	216.51	58.8	64.9	58.8	64.9			
7.3	8.8	3345	2.40	197.12	59.4	65.3	59.4	65.3			
7.6	9.2	3212	2.50	190.08	59.6	65.5	59.6	65.5			
7.7	9.3	3169	2.55	187.95	59.7	65.5	59.7	65.5			
8.9	11	2687	3.00	162.39	60.3	66.1	60.3	66.1			

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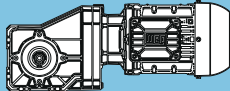
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** ... on request

P _N = 3.0 kW										IE3	
50 Hz		60 Hz		at 50 Hz						m kg	Dimension sheet see page
3.0 kW		3.6 kW		Output shaft		Hollow shaft					
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	f _B	i	F _{rN} kN	F _{aN} kN	F _{rN} kN	F _{aN} kN			
4.8	5.8	5402	0.85	298.61	20.6	34.3	20.6	34.3	KH094-11P-L100L-04F	186	478
5.0	6.1	5171	0.90	286.42	22.8	38.4	22.8	38.4			
5.9	7.2	4345	1.05	242.14	28.9	39.5	28.9	39.5			
6.0	7.3	4302	1.05	239.77	29.2	39.5	29.2	39.5			
7.1	8.6	3607	1.25	202.70	32.7	40.4	32.7	40.4			
7.4	9.0	3444	1.35	194.32	33.4	40.6	33.4	40.6			
7.7	9.3	3314	1.40	187.38	34.0	40.8	34.0	40.8			
8.8	11	2882	1.60	164.28	35.5	41.3	35.5	41.3			
9.1	11	2773	1.65	158.41	35.8	41.5	35.8	41.5			
8.5	10	3367	1.35	169.25	33.7	40.7	33.7	40.7	KH093-11P-L100L-04F	173	476
10	12	2847	1.60	143.08	35.6	41.4	35.6	41.4			
12	14	2464	1.85	123.86	36.7	41.9	36.7	41.9			
13	16	2183	2.10	109.70	37.5	42.2	37.5	42.2			
15	18	1888	2.40	94.90	38.1	42.6	38.1	42.6			
16	19	1821	2.50	91.51	38.2	42.7	38.2	42.7			
18	22	1606	2.85	80.74	38.6	43.0	38.6	43.0			
7.1	8.6	3651	0.85	201.80	11.8	18.2	11.8	7.1	KH084-11P-L100L-04F	136	474
7.7	9.3	3382	0.90	187.31	15.6	26.2	15.6	7.5			
8.0	9.6	3254	0.95	180.62	17.0	29.2	17.0	7.7			
8.8	11	2935	1.05	163.55	19.9	35.5	19.9	8.2			
9.1	11	2824	1.10	157.71	20.8	37.4	20.8	8.3			
8.8	11	3246	0.95	163.14	17.1	29.4	17.1	7.7	KH083-11P-L100L-04F	123	472
10	12	2834	1.10	142.45	20.7	37.2	20.7	8.3			
11	14	2505	1.20	125.90	22.9	41.3	22.9	8.8			
14	16	2118	1.45	106.46	24.9	41.9	24.9	9.4			
16	19	1821	1.65	91.51	26.2	42.3	26.2	9.8			
18	22	1589	1.90	79.89	27.0	42.7	25.5	10.2			
21	25	1362	2.25	68.44	27.7	43.0	23.7	10.5			
22	26	1313	2.30	66.00	27.8	43.1	23.3	10.6			
23	28	1256	2.30	63.12	27.9	43.1	22.8	10.6			
25	30	1159	2.60	58.25	28.2	43.3	21.9	10.8			
26	32	1096	2.75	55.11	28.3	43.4	21.5	10.9			
32	38	905	1.80	45.48	28.7	43.2	20	10.7			
40	48	716	2.30	35.99	29.0	43.6	18.1	11.1			
14	17	1999	0.80	100.45	**	**	**	**	KH073-11P-L100L-04F	82	470
17	21	1653	0.95	83.09	14.3	15.6	14.3	4.3			
19	23	1534	1.05	77.11	15.3	15.8	15.3	4.6			
20	25	1406	1.15	70.67	16.2	16.1	16.2	4.8			
22	27	1287	1.25	64.67	17.0	16.3	17.0	5.1			
24	28	1219	1.30	61.25	17.4	16.5	17.4	5.2			
28	34	1029	1.55	51.72	18.3	16.9	16.2	5.6			
29	35	992	1.60	49.88	18.5	16.9	15.9	5.7			
34	41	848	1.85	42.61	19.0	17.2	14.7	6.0			
37	44	779	2.00	39.17	19.3	17.4	14.1	6.1			
39	47	731	1.05	36.72	19.4	16.7	14.1	5.5			
44	54	645	2.45	32.40	19.7	17.7	12.9	6.4			
47	57	613	1.50	30.79	19.7	17.1	12.9	5.8			
52	63	548	2.85	27.56	19.9	17.9	11.9	6.6			
60	72	481	1.90	24.17	20.0	17.5	11.5	6.2			
77	93	371	2.50	18.65	20.2	17.8	10.3	6.6			
93	113	307	3.00	15.43	20.3	18.0	9.4	6.8			

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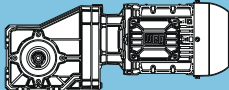
** ... on request

P _N = 3.0 kW										IE3		
50 Hz		60 Hz				at 50 Hz					m kg	Dimension sheet see page
3.0 kW		3.6 kW				Output shaft		Hollow shaft				
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	f _B			F _{rN} kN	F _{aN} kN	F _{rN} kN	F _{aN} kN			
29	35	998	0.85	50.17	5.8	8.5	5.8	2.2	KH063-11P-L100L-04F	62	468	
30	36	966	0.85	48.56	6.4	9.8	6.4	2.3				
35	42	819	1.05	41.17	8.6	12.7	8.6	2.7				
36	44	792	1.05	39.83	8.9	12.8	8.9	2.8				
43	51	673	1.15	33.85	10.0	13.1	10.0	3.2				
45	55	634	1.30	31.88	10.3	13.3	10.3	3.3				
52	63	554	1.30	27.83	10.9	13.5	10.9	3.6				
53	64	543	0.95	27.29	10.9	12.8	10.9	2.9				
54	65	534	1.35	26.84	11.0	13.6	10.8	3.6				
59	72	482	1.65	24.25	11.3	13.7	10.3	3.8				
64	78	446	1.15	22.40	11.5	13.3	10.2	3.3				
65	79	439	1.55	22.07	11.5	13.9	9.8	3.9				
72	87	398	1.90	20.00	11.7	14.0	9.3	4.0				
83	100	345	1.45	17.34	11.9	13.7	9.0	3.8				
88	106	326	2.15	16.40	11.9	14.2	8.5	4.3				
103	125	277	2.40	13.94	12.1	14.4	7.9	4.4				
109	132	262	1.95	13.19	12.1	14.1	7.9	4.1				
126	152	228	2.75	11.46	12.2	14.5	7.2	4.6				
130	157	220	2.85	11.05	12.2	14.6	7.1	4.6				
132	160	216	2.35	10.88	12.2	14.3	7.2	4.3				
161	195	177	2.85	8.92	12.3	14.5	6.6	4.5				
42	50	687	0.90	34.53	4.4	6.7	4.4	3.2	KH053-11P-L100L-04F	48	466	
43	52	663	0.95	33.30	5.0	8.0	5.0	3.3				
46	55	626	1.00	31.46	5.7	9.5	5.7	3.4				
53	64	545	1.10	27.39	6.9	10.3	6.9	3.6				
60	73	476	1.30	23.93	7.7	10.6	7.7	3.9				
61	74	469	0.90	23.58	7.7	9.9	7.7	3.2				
73	88	393	1.55	19.73	8.4	10.8	8.4	4.1				
74	90	385	1.10	19.35	8.4	10.3	8.4	3.6				
89	107	322	1.90	16.19	8.8	11.0	8.8	4.3				
96	116	298	1.40	14.98	9.0	10.7	9.0	4.0				
105	127	274	2.20	13.75	9.1	11.2	9.1	4.5				
126	153	227	1.85	11.40	9.3	11.0	9.0	4.3				
127	154	225	2.70	11.31	9.3	11.3	8.7	4.6				
132	159	217	2.80	10.91	9.3	11.3	8.6	4.6				
153	185	187	2.25	9.40	9.5	11.2	8.2	4.5				
187	226	153	2.70	7.71	9.5	11.3	7.5	4.6				
68	82	423	0.95	21.25	3.2	4.7	3.2	2.2	KH043-11P-L100L-04F	45	464	
75	90	384	0.80	19.29	**	**	**	**				
83	100	346	1.20	17.39	4.8	8.1	4.8	2.5				
97	117	295	0.95	14.85	5.5	8.0	5.5	2.4				
102	123	281	1.45	14.10	5.7	8.4	5.7	2.8				
122	147	235	1.75	11.81	6.1	8.6	6.1	3.0				
128	155	223	1.20	11.22	6.2	8.4	6.2	2.8				
150	182	190	2.00	9.57	6.4	8.7	6.4	3.1				
156	189	184	2.05	9.23	6.5	8.8	6.5	3.2				
157	190	183	1.40	9.18	6.5	8.6	6.5	3.0				
194	234	148	1.65	7.44	6.7	8.7	6.2	3.1				
231	279	124	1.90	6.23	6.8	8.9	5.7	3.3				
285	345	100	2.20	5.05	6.9	9.0	5.2	3.4				
296	357	97	2.30	4.87	6.9	9.0	5.2	3.4				
112	136	255	0.80	12.81	**	**	**	**	KH033-11P-L100L-04F	41	462	
144	174	199	1.05	10.00	3.7	2.5	3.7	2.5				
159	193	180	0.95	9.03	4.0	2.4	4.0	2.4				
210	254	136	1.10	6.86	4.5	2.7	4.5	2.7				
270	326	106	1.30	5.34	4.8	2.9	4.8	2.9				
345	417	83	1.55	4.17	4.9	3.1	4.9	3.1				

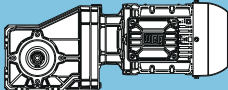
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** ... on request

P _N = 4.0 kW										IE3		
50 Hz 4.0 kW		60 Hz 4.8 kW		at 50 Hz						m kg	Dimension sheet see page	
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	f _B	i	Output shaft		Hollow shaft					
					F _{rN} kN	F _{aN} kN	F _{rN} kN	F _{aN} kN				
1.4	1.8	23487	0.80	1001.50	**	**	**	**	KH155-11P-112M-04E	706	492	
1.5	1.8	23406	0.80	975.12	**	**	**	**				
1.6	1.9	21669	0.85	904.58	59.3	102.1	59.3	102.1				
1.8	2.2	19072	0.95	799.45	73.5	115.4	73.5	115.4				
1.9	2.3	18549	1.00	779.11	75.8	115.8	75.8	115.8				
2.1	2.5	16292	1.15	688.57	84.6	117.6	84.6	117.6				
2.2	2.6	15945	1.15	673.90	85.7	117.8	85.7	117.8				
2.4	2.9	14006	1.30	595.58	91.6	119.3	91.6	119.3				
2.5	3.0	13664	1.35	582.27	92.5	119.6	92.5	119.6				
2.9	3.5	11807	1.55	507.30	97.0	121.0	97.0	121.0				
3.3	4.0	10065	1.80	436.93	100.4	122.3	100.4	122.3				
3.5	4.2	9615	1.90	419.11	101.2	122.7	101.2	122.7				
3.8	4.6	8598	2.10	377.93	102.8	123.4	102.8	123.4				
3.9	4.7	8499	2.15	374.35	103.0	123.5	103.0	123.5				
4.0	4.9	8162	2.25	360.98	103.4	123.8	103.4	123.8				
4.5	5.4	7245	2.50	323.79	104.6	124.5	104.6	124.5				
4.6	5.5	7114	2.55	318.60	104.8	124.6	104.8	124.6				
4.7	5.7	6900	2.65	310.30	105.1	124.7	105.1	124.7				
5.3	6.4	6039	3.00	275.58	106.0	125.4	106.0	125.4				
2.1	2.5	16801	0.80	699.95	**	**	**	**	KH124-11P-112M-04E	439	486	
2.2	2.7	15847	0.85	661.56	59.2	81.6	59.2	81.6				
2.3	2.8	14811	0.90	619.56	63.8	82.7	63.8	82.7				
2.4	2.9	14383	0.95	602.92	65.5	83.1	65.5	83.1				
2.7	3.2	12834	1.05	540.20	71.0	84.6	71.0	84.6				
2.8	3.4	12310	1.10	519.19	72.6	85.2	72.6	85.2				
3.1	3.8	10987	1.20	465.31	76.3	86.5	76.3	86.5				
3.2	3.9	10529	1.25	446.82	77.5	86.9	77.5	86.9				
3.3	4.0	10251	1.30	435.90	78.1	87.2	78.1	87.2				
3.6	4.4	9384	1.40	400.70	80.0	88.1	80.0	88.1				
3.8	4.6	8995	1.45	384.88	80.8	88.5	80.8	88.5				
4.4	5.3	7666	1.70	331.43	83.2	89.8	83.2	89.8				
4.5	5.5	7349	1.80	319.02	83.8	90.1	83.8	90.1				
4.7	5.7	7072	1.85	307.62	84.2	90.4	84.2	90.4				
5.1	6.2	6469	2.05	283.73	85.0	91.0	85.0	91.0				
5.2	6.3	6328	2.10	278.15	85.2	91.2	85.2	91.2				
5.4	6.5	6090	2.15	268.22	85.5	91.4	85.5	91.4				
5.5	6.7	5954	2.20	262.80	85.7	91.5	85.7	91.5				
5.9	7.2	5490	2.40	244.33	86.3	92.0	86.3	92.0				
6.1	7.3	5372	2.45	239.59	86.4	92.1	86.4	92.1				
6.3	7.6	5159	2.55	231.04	86.6	92.3	86.6	92.3				
7.0	8.5	4540	2.90	206.32	87.2	92.9	87.2	92.9				
7.3	8.8	4360	3.00	198.95	87.4	93.1	87.4	93.1				
3.3	4.0	10635	0.80	443.08	**	**	**	**	KH104-11P-112M-04E	316	482	
3.4	4.2	10134	0.80	422.20	**	**	**	**				
3.8	4.6	9151	0.90	382.82	39.5	58.7	39.5	58.7				
4.0	4.8	8743	0.95	366.49	41.9	59.2	41.9	59.2				
4.6	5.5	7508	1.10	316.65	48.0	60.6	48.0	60.6				
4.7	5.6	7391	1.10	311.74	48.5	60.7	48.5	60.7				
5.4	6.5	6353	1.30	270.17	52.3	61.9	52.3	61.9				
5.5	6.7	6180	1.30	262.82	52.9	62.1	52.9	62.1				
5.7	6.9	5948	1.35	253.44	53.6	62.4	53.6	62.4				
6.2	7.5	5444	1.50	233.43	55.0	62.9	55.0	62.9				
6.4	7.7	5310	1.55	228.15	55.4	63.1	55.4	63.1				
6.6	8.0	5110	1.60	220.00	55.9	63.3	55.9	63.3				
6.7	8.1	5029	1.60	216.51	56.1	63.4	56.1	63.4				
7.4	8.9	4541	1.80	197.12	57.2	64.0	57.2	64.0				
7.6	9.2	4370	1.85	190.08	57.6	64.2	57.6	64.2				
7.7	9.3	4312	1.90	187.95	57.7	64.2	57.7	64.2				
8.9	11	3679	2.20	162.39	58.9	65.0	58.9	65.0				
10	12	3713	2.20	140.95	58.8	64.9	58.8	64.9				
12	14	3280	2.45	124.50	59.5	65.4	59.5	65.4				
13	16	2847	2.85	108.07	60.1	65.9	60.1	65.9				
14	17	2745	2.95	104.21	60.3	66.0	60.3	66.0				
										KH103-11P-112M-04E	292	480

K

P _N = 4.0 kW										IE3		
50 Hz		60 Hz		f _B	i	at 50 Hz					m kg	Dimension sheet see page
4.0 kW		4.8 kW				Output shaft		Hollow shaft				
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	F _{rN} kN			F _{aN} kN	F _{rN} kN	F _{aN} kN				
6.0	7.2	5812	0.80	242.14	**	**	**	**	KH094-11P-112M-04E	187	478	
7.2	8.7	4836	0.95	202.70	25.6	38.9	25.6	38.9				
7.5	9.0	4626	1.00	194.32	27.1	39.1	27.1	39.1				
7.7	9.4	4452	1.05	187.38	28.3	39.3	28.3	39.3				
8.8	11	3879	1.20	164.28	31.5	40.1	31.5	40.1				
9.2	11	3733	1.25	158.41	32.2	40.3	32.2	40.3				
8.6	10	4459	1.05	169.25	28.2	39.3	28.2	39.3	KH093-11P-112M-04E	174	476	
10	12	3769	1.20	143.08	32.0	40.2	32.0	40.2				
12	14	3263	1.40	123.86	34.2	40.9	34.2	40.9				
13	16	2890	1.60	109.70	35.5	41.3	35.5	41.3				
15	18	2500	1.80	94.90	36.6	41.8	36.6	41.8				
16	19	2411	1.90	91.51	36.9	41.9	36.9	41.9				
18	22	2127	2.15	80.74	37.6	42.3	37.6	42.3				
21	26	1810	2.50	68.71	38.2	42.7	38.2	42.7				
23	27	1685	2.70	63.96	38.5	42.9	38.5	42.9				
24	30	1562	2.90	59.28	38.7	43.0	38.7	43.0				
39	47	978	2.85	37.13	39.4	43.3	39.4	43.3				
8.9	11	3926	0.80	163.55	**	**	**	**	KH084-11P-112M-04E	137	474	
9.2	11	3786	0.80	157.71	**	**	**	**				
10	12	3753	0.80	142.45	**	**	**	**	KH083-11P-112M-04E	124	472	
12	14	3317	0.95	125.90	16.3	27.7	16.3	7.6				
14	16	2805	1.10	106.46	20.9	37.7	20.9	8.4				
16	19	2411	1.25	91.51	23.4	41.4	23.4	8.9				
18	22	2105	1.45	79.89	25.0	41.9	25.0	9.4				
21	26	1803	1.70	68.44	26.3	42.3	25.3	9.8				
22	27	1739	1.75	66.00	26.5	42.4	24.7	9.9				
23	28	1663	1.75	63.12	26.8	42.5	24.2	10.0				
25	30	1535	2.00	58.25	27.2	42.7	23.3	10.2				
26	32	1452	2.10	55.11	27.4	42.9	22.7	10.4				
30	36	1287	2.35	48.87	27.9	43.1	21.3	10.6				
32	39	1198	1.40	45.48	28.1	42.6	21.1	10.1				
35	43	1085	2.80	41.18	28.3	43.4	19.8	10.9				
40	49	948	1.75	35.99	28.6	43.1	19.0	10.6				
46	56	828	2.35	31.43	28.8	43.3	17.8	10.8				
52	63	732	2.60	27.78	28.9	43.5	16.9	11.0				
19	23	2031	0.80	77.11	**	**	**	**	KH073-11P-112M-04E	83	470	
21	25	1862	0.85	70.67	12.1	15.2	12.1	3.9				
22	27	1704	0.95	64.67	13.8	15.5	13.8	4.2				
24	29	1614	1.00	61.25	14.6	15.7	14.6	4.4				
28	34	1363	1.15	51.72	16.5	16.2	16.5	4.9				
29	35	1337	1.20	50.75	16.7	16.2	16.7	5.0				
34	41	1123	1.40	42.61	17.9	16.7	15.8	5.4				
37	45	1032	1.55	39.17	18.3	16.9	15.1	5.6				
39	48	967	0.80	36.72	**	**	**	**				
45	54	854	1.85	32.40	19.0	17.2	13.7	6.0				
47	57	811	1.15	30.79	19.2	16.5	13.9	5.2				
53	64	726	2.15	27.56	19.4	17.5	12.6	6.2				
60	73	637	1.45	24.17	19.7	17.0	12.3	5.8				
61	73	629	2.50	23.88	19.7	17.7	11.8	6.5				
72	87	531	2.95	20.17	19.9	17.9	10.9	6.7				
78	94	491	1.90	18.65	20.0	17.5	10.8	6.2				
94	114	407	2.25	15.43	20.2	17.7	9.9	6.5				
111	134	346	2.65	13.12	20.2	17.9	9.2	6.7				

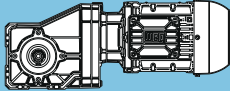
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** ... on request

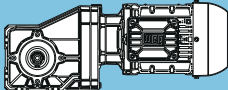
P_N = 4.0 kW

IE3

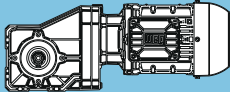
50 Hz 4.0 kW n ₅₀ min ⁻¹	60 Hz 4.8 kW n ₆₀ min ⁻¹	M ₂ Nm	f _B	i	at 50 Hz					m kg	Dimension sheet see page			
					Output shaft		Hollow shaft							
					F _{rN} kN	F _{aN} kN	F _{rN} kN	F _{aN} kN						
35	43	1085	0.80	41.17	**	**	**	**	KH063-11P-112M-04E	63	468			
36	44	1049	0.80	39.83	**	**	**	**						
43	52	892	0.85	33.85	7.6	12.4	7.6	2.5						
45	55	840	1.00	31.88	8.3	12.6	8.3	2.7						
52	63	733	1.00	27.83	9.5	12.9	9.5	3.0						
54	65	707	1.00	26.84	9.7	13.0	9.7	3.1						
60	72	639	1.25	24.25	10.3	13.2	10.3	3.3						
65	78	590	0.85	22.40	10.6	12.6	10.6	2.7						
66	80	581	1.15	22.07	10.7	13.4	10.5	3.5						
73	88	527	1.45	20.00	11.0	13.6	10.0	3.6						
84	101	457	1.10	17.34	11.4	13.2	9.6	3.3						
88	107	432	1.65	16.40	11.5	13.9	9.1	3.9						
104	126	367	1.85	13.94	11.8	14.1	8.3	4.1						
110	133	347	1.45	13.19	11.9	13.7	8.4	3.7						
127	153	302	2.10	11.46	12.0	14.3	7.6	4.3						
131	159	291	2.15	11.05	12.0	14.3	7.5	4.4						
133	161	287	1.75	10.88	12.1	14.0	7.6	4.0						
160	193	239	2.45	9.09	12.2	14.5	6.8	4.5						
163	197	235	2.15	8.92	12.2	14.2	6.9	4.3						
191	232	200	2.45	7.58	12.3	14.4	6.4	4.4						
233	282	164	2.80	6.23	12.3	14.5	5.9	4.6						
241	292	158	2.90	6.01	12.3	14.5	5.8	4.6						
53	64	722	0.80	27.39	**	**	**	**				KH053-11P-112M-04E	49	466
61	73	630	1.00	23.93	5.6	9.3	5.6	3.4						
73	89	520	1.20	19.73	7.2	10.4	7.2	3.7						
75	91	510	0.85	19.35	7.3	9.7	7.3	3.0						
90	108	427	1.45	16.19	8.1	10.7	8.1	4.0						
97	117	395	1.05	14.98	8.4	10.2	8.4	3.5						
105	128	362	1.70	13.75	8.6	10.9	8.6	4.2						
127	154	300	1.40	11.40	9.0	10.7	9.0	4.0						
128	155	298	2.05	11.31	9.0	11.1	9.0	4.4						
133	161	287	2.10	10.91	9.0	11.1	9.0	4.4						
154	187	248	1.70	9.40	9.2	10.9	8.6	4.2						
162	196	236	2.40	8.97	9.3	11.3	8.2	4.6						
188	228	203	2.05	7.71	9.4	11.1	7.9	4.4						
221	268	173	2.40	6.55	9.5	11.2	7.3	4.5						
269	326	142	2.95	5.39	9.2	11.4	6.7	4.7						
83	101	458	0.90	17.39	1.9	2.0	1.9	2.0	KH043-11P-112M-04E	46	464			
103	124	371	1.10	14.10	4.4	7.3	4.4	2.4						
123	149	311	1.30	11.81	5.3	8.3	5.3	2.7						
129	156	296	0.90	11.22	5.5	8.0	5.5	2.4						
152	183	252	1.50	9.57	6.0	8.5	6.0	2.9						
157	190	243	1.55	9.23	6.0	8.5	6.0	2.9						
158	191	242	1.05	9.18	6.1	8.3	6.1	2.7						
195	236	196	1.25	7.44	6.4	8.5	6.4	2.9						
233	282	164	1.45	6.23	6.6	8.7	6.0	3.1						
287	348	133	1.70	5.05	6.8	8.8	5.5	3.2						
298	360	128	1.75	4.87	6.8	8.8	5.4	3.2						

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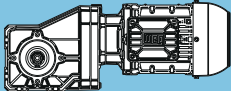
** ... on request

P _N = 5.5 kW										IE3	
50 Hz		60 Hz		i	at 50 Hz					m kg	Dimension sheet see page
5.5 kW		6.6 kW			Output shaft		Hollow shaft				
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	f _B		F _{rN} kN	F _{aN} kN	F _{rN} kN	F _{aN} kN			
2.1	2.6	22447	0.85	688.57	53.9	90.7	53.9	90.7	KH154-11P-132S-04E	711	490
2.2	2.6	22039	0.85	676.04	56.8	96.8	56.8	96.8			
2.5	3.0	19336	0.95	595.58	72.2	115.2	72.2	115.2			
2.9	3.5	16369	1.10	507.30	84.3	117.5	84.3	117.5			
3.4	4.0	13983	1.30	436.93	91.7	119.3	91.7	119.3			
3.5	4.2	13385	1.35	419.11	93.2	119.8	93.2	119.8			
3.9	4.7	11971	1.55	377.93	96.6	120.9	96.6	120.9			
4.0	4.8	11717	1.55	369.91	97.2	121.1	97.2	121.1			
4.1	4.9	11411	1.60	360.98	97.8	121.3	97.8	121.3			
4.5	5.5	10151	1.80	323.79	100.2	122.3	100.2	122.3			
4.6	5.5	9967	1.85	318.60	100.6	122.4	100.6	122.4			
4.7	5.7	9768	1.85	312.23	100.9	122.5	100.9	122.5			
5.3	6.4	8515	2.15	275.58	102.9	123.5	102.9	123.5			
5.5	6.6	8241	2.20	267.26	103.3	123.7	103.3	123.7			
5.6	6.7	8046	2.25	261.49	103.6	123.9	103.6	123.9			
6.3	7.6	7010	2.60	231.17	104.9	124.7	104.9	124.7			
6.5	7.8	6816	2.65	225.22	105.2	124.8	105.2	124.8			
2.8	3.4	16960	0.80	519.19	**	**	**	**	KH124-11P-132S-04E	457	486
2.9	3.4	16741	0.80	512.47	**	**	**	**			
3.1	3.8	15138	0.90	465.31	62.4	82.3	62.4	82.3			
3.3	4.0	14537	0.90	446.82	64.9	82.9	64.9	82.9			
3.4	4.0	14152	0.95	435.90	66.4	83.3	66.4	83.3			
3.7	4.4	12956	1.05	400.70	70.6	84.5	70.6	84.5			
3.8	4.6	12445	1.05	384.88	72.2	85.0	72.2	85.0			
3.9	4.6	12264	1.10	380.06	72.8	85.2	72.8	85.2			
4.4	5.3	10629	1.25	331.43	77.2	86.8	77.2	86.8			
4.5	5.4	10499	1.25	327.38	77.5	87.0	77.5	87.0			
4.6	5.5	10210	1.30	319.02	78.2	87.3	78.2	87.3			
4.8	5.7	9825	1.35	307.62	79.1	87.7	79.1	87.7			
5.2	6.2	9024	1.45	283.73	80.8	88.5	80.8	88.5			
5.3	6.3	8829	1.50	278.15	81.2	88.7	81.2	88.7			
5.5	6.6	8496	1.55	268.22	81.8	89.0	81.8	89.0			
5.6	6.7	8307	1.60	262.80	82.1	89.2	82.1	89.2			
6.0	7.2	7691	1.70	244.33	83.2	89.8	83.2	89.8			
6.1	7.4	7527	1.75	239.59	83.5	90.0	83.5	90.0			
6.3	7.6	7243	1.80	231.04	83.9	90.2	83.9	90.2			
6.4	7.7	7169	1.85	229.14	84.0	90.3	84.0	90.3			
7.1	8.6	6401	2.05	206.32	85.1	91.1	85.1	91.1			
7.4	8.9	6147	2.15	198.95	85.5	91.3	85.5	91.3			
8.6	10	5165	2.55	169.97	86.6	92.3	86.6	92.3			
9.7	12	5418	2.40	151.11	86.3	92.1	86.3	92.1	KH123-11P-132S-04E	433	484
11	13	4724	2.80	131.76	87.1	92.8	87.1	92.8			
12	14	4555	2.90	127.05	87.2	92.9	87.2	92.9			
4.6	5.6	10344	0.80	316.65	**	**	**	**	KH104-11P-132S-04E	334	482
4.7	5.7	10184	0.80	311.74	**	**	**	**			
5.4	6.5	8772	0.95	270.17	41.7	59.1	41.7	59.1			
5.6	6.7	8533	0.95	262.82	43.1	59.4	43.1	59.4			
5.8	7.0	8211	1.00	253.44	44.7	59.8	44.7	59.8			
6.3	7.6	7532	1.10	233.43	47.9	60.6	47.9	60.6			
6.4	7.7	7362	1.10	228.15	48.6	60.8	48.6	60.8			
6.7	8.0	7084	1.15	220.00	49.7	61.1	49.7	61.1			
6.8	8.2	6972	1.15	216.51	50.1	61.2	50.1	61.2			
7.4	9.0	6308	1.30	197.12	52.5	62.0	52.5	62.0			
7.7	9.3	6071	1.35	190.08	53.2	62.2	53.2	62.2			
7.8	9.4	6003	1.35	187.95	53.4	62.3	53.4	62.3			
9.0	11	5133	1.60	162.39	55.8	63.3	55.8	63.3			
10	13	5054	1.60	140.95	56.0	63.4	56.0	63.4	KH103-11P-132S-04E	310	480
12	14	4464	1.80	124.50	57.4	64.1	57.4	64.1			
14	16	3875	2.10	108.07	58.5	64.7	58.5	64.7			
16	19	3348	2.40	93.37	59.4	65.3	59.4	65.3			
18	22	2865	2.80	79.90	60.1	65.9	60.1	65.9			
8.9	11	5356	0.85	164.28	21.0	35.2	21.0	35.2	KH094-11P-132S-04E	205	478
9.2	11	5154	0.90	158.41	23.0	38.4	23.0	38.4			

K

P _N = 5.5 kW										IE3	
50 Hz		60 Hz		i	at 50 Hz					m kg	Dimension sheet see page
5.5 kW		6.6 kW			Output shaft		Hollow shaft				
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	f _B		F _{rN} kN	F _{aN} kN	F _{rN} kN	F _{aN} kN			
10	12	5130	0.90	143.08	23.2	38.5	23.2	38.5	KH093-11P-132S-04E	192	476
12	14	4441	1.05	123.86	28.3	39.4	28.3	39.4			
13	16	3933	1.15	109.70	31.2	40.0	31.2	40.0			
15	19	3402	1.35	94.90	33.6	40.7	33.6	40.7			
16	19	3281	1.40	91.51	34.1	40.8	34.1	40.8			
18	22	2895	1.60	80.74	35.5	41.3	35.5	41.3			
21	26	2463	1.85	68.71	36.7	41.9	36.7	41.9			
23	28	2293	2.00	63.96	37.2	42.1	37.2	42.1			
25	30	2125	2.15	59.28	37.6	42.3	37.6	42.3			
27	33	1939	2.35	54.07	38.0	42.5	38.0	42.5			
31	38	1678	2.70	46.81	38.5	42.9	38.5	42.9			
39	48	1331	2.10	37.13	39.0	42.7	39.0	42.7			
47	56	1125	2.50	31.39	39.3	43.0	39.3	43.0			
54	65	974	2.90	27.18	39.4	43.3	39.4	43.3			
14	17	3817	0.80	106.46	**	**	**	**			
16	19	3281	0.95	91.51	16.7	28.6	16.7	7.7			
18	22	2864	1.05	79.89	20.5	36.8	20.5	8.3			
21	26	2454	1.25	68.44	23.2	41.4	23.2	8.9			
22	27	2366	1.30	66.00	23.7	41.5	23.7	9.0			
23	28	2263	1.30	63.12	24.2	41.7	24.2	9.2			
25	30	2088	1.45	58.25	25.1	41.9	25.1	9.4			
27	32	1976	1.55	55.11	25.6	42.1	24.3	9.6			
30	36	1752	1.75	48.87	26.4	42.4	23.0	9.9			
32	39	1631	1.00	45.48	26.9	41.7	22.8	9.2			
36	43	1477	2.05	41.19	27.3	42.8	21.0	10.3			
41	49	1290	1.30	35.99	27.9	42.4	20.2	9.9			
47	56	1127	1.75	31.43	28.2	42.7	18.9	10.2			
53	64	996	1.95	27.78	28.5	43.0	17.8	10.5			
62	75	842	2.30	23.49	28.8	43.3	16.5	10.8			
73	87	724	2.65	20.19	29.0	43.5	15.3	11.0			
28	34	1854	0.85	51.72	12.2	15.2	12.2	3.9	KH073-11P-132S-04E	101	470
29	35	1820	0.90	50.75	12.6	15.2	12.6	4.0			
34	41	1528	1.05	42.61	15.3	15.8	15.3	4.6			
37	45	1404	1.15	39.17	16.2	16.1	15.7	4.8			
45	54	1162	1.35	32.40	17.7	16.6	15.0	5.3			
48	57	1104	0.85	30.79	18.0	15.6	14.4	4.3			
53	64	988	1.60	27.56	18.5	17.0	13.7	5.7			
61	73	867	1.10	24.17	19.0	16.3	13.3	5.0			
73	88	723	2.15	20.17	19.4	17.5	11.6	6.3			
75	91	697	2.25	19.45	19.5	17.6	11.5	6.3			
79	95	669	1.40	18.65	19.6	16.9	11.6	5.7			
88	106	596	2.65	16.61	19.8	17.8	10.6	6.5			
95	114	553	1.65	15.43	19.9	17.3	10.6	6.0			
112	135	470	1.95	13.12	20.0	17.5	9.7	6.3			
129	155	408	2.25	11.37	20.1	17.7	9.1	6.5			
153	184	344	2.65	9.60	20.2	17.9	8.4	6.7			
158	191	332	2.75	9.26	20.3	18.0	8.3	6.7			
60	73	869	0.90	24.25	7.9	12.5	7.9	2.6	KH063-11P-132S-04E	81	468
66	80	791	0.85	22.07	8.9	12.8	8.9	2.8			
73	88	717	1.05	20.00	9.6	13.0	9.6	3.0			
84	102	622	0.85	17.34	10.4	12.5	10.1	2.5			
89	108	588	1.20	16.40	10.6	13.4	9.9	3.4			
105	127	500	1.35	13.94	11.2	13.7	9.0	3.7			
111	134	473	1.10	13.19	11.3	13.1	9.1	3.2			
128	154	411	1.55	11.46	11.6	14.0	8.2	4.0			
133	160	396	1.60	11.05	11.7	14.0	8.0	4.1			
135	162	390	1.30	10.88	11.7	13.5	8.2	3.6			
161	194	326	1.80	9.09	11.9	14.2	7.3	4.3			
164	198	320	1.60	8.92	12.0	13.8	7.4	3.9			
193	233	272	1.80	7.58	12.1	14.0	6.8	4.1			
235	283	223	2.10	6.23	12.2	14.3	6.2	4.3			
244	294	215	2.15	6.01	12.2	14.3	6.1	4.3			
297	357	177	2.45	4.94	12.3	14.5	5.6	4.5			

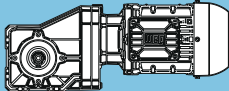
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P _N = 5.5 kW										IE3		
50 Hz		60 Hz		f _B	i	at 50 Hz					m kg	Dimension sheet see page
5.5 kW		6.6 kW				Output shaft		Hollow shaft				
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	F _{rN} kN			F _{aN} kN	F _{rN} kN	F _{aN} kN				
74	89	707	0.85	19.73	3.8	5.5	3.8	3.2	KH053-11P-132S-04E	68	466	
90	109	580	1.05	16.19	6.4	10.2	6.4	3.5				
98	118	537	0.80	14.98	**	**	**	**				
107	128	493	1.25	13.75	7.5	10.5	7.5	3.8				
129	155	409	1.05	11.40	8.3	10.2	8.3	3.5				
130	156	406	1.50	11.31	8.3	10.8	8.3	4.1				
134	162	391	1.55	10.91	8.4	10.8	8.4	4.1				
156	188	337	1.25	9.40	8.8	10.5	8.8	3.8				
163	197	322	1.80	8.97	8.9	11.0	8.7	4.3				
190	229	276	1.50	7.71	9.1	10.8	8.4	4.1				
224	269	235	1.80	6.55	9.3	10.9	7.7	4.2				
272	327	193	2.15	5.39	9.4	11.1	7.1	4.4				
282	340	186	2.25	5.19	9.4	11.2	6.9	4.5				
343	413	153	2.70	4.27	8.6	11.3	6.4	4.6				



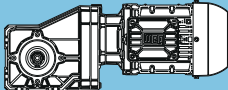
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** ... on request

P _N = 7.5 kW										IE3	
50 Hz		60 Hz		at 50 Hz						m kg	Dimension sheet see page
7.5 kW		9.0 kW		Output shaft		Hollow shaft					
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	f _b	i	F _{rN} kN	F _{aN} kN	F _{rN} kN	F _{aN} kN			
2.9	3.5	22598	0.80	507.30	**	**	**	**	KH154-11P-L132M-04F	725	490
3.4	4.1	19344	0.95	436.93	72.2	115.2	72.2	115.2			
3.5	4.2	18517	1.00	419.11	76.0	115.9	76.0	115.9			
3.9	4.7	16629	1.10	377.93	83.4	117.3	83.4	117.3			
4.0	4.8	16243	1.15	369.91	84.7	117.6	84.7	117.6			
4.1	4.9	15851	1.15	360.98	86.1	117.9	86.1	117.9			
4.5	5.5	14130	1.30	323.79	91.2	119.2	91.2	119.2			
4.6	5.6	13904	1.30	318.60	91.9	119.4	91.9	119.4			
4.7	5.7	13598	1.35	312.23	92.7	119.6	92.7	119.6			
5.3	6.4	11903	1.55	275.58	96.7	120.9	96.7	120.9			
5.5	6.6	11520	1.60	267.26	97.6	121.2	97.6	121.2			
5.6	6.8	11271	1.60	261.49	98.1	121.4	98.1	121.4			
6.3	7.7	9862	1.85	231.17	100.8	122.5	100.8	122.5			
6.5	7.9	9588	1.90	225.22	101.2	122.7	101.2	122.7			
7.5	9.1	8191	2.20	194.80	103.4	123.8	103.4	123.8			
3.8	4.6	17145	0.80	384.88	**	**	**	**	KH124-11P-L132M-04F	471	486
3.9	4.7	16930	0.80	380.06	**	**	**	**			
4.4	5.3	14703	0.90	331.43	64.2	82.8	64.2	82.8			
4.5	5.4	14524	0.90	327.38	64.9	82.9	64.9	82.9			
4.6	5.5	14124	0.95	319.02	66.5	83.3	66.5	83.3			
4.8	5.8	13591	1.00	307.62	68.4	83.9	68.4	83.9			
5.2	6.2	12510	1.05	283.73	72.0	85.0	72.0	85.0			
5.3	6.4	12239	1.10	278.15	72.8	85.2	72.8	85.2			
5.5	6.6	11778	1.15	268.22	74.2	85.7	74.2	85.7			
5.6	6.7	11540	1.15	262.80	74.9	85.9	74.9	85.9			
6.0	7.2	10685	1.25	244.33	77.1	86.8	77.1	86.8			
6.1	7.4	10477	1.25	239.59	77.6	87.0	77.6	87.0			
6.3	7.7	10083	1.30	231.04	78.5	87.4	78.5	87.4			
6.4	7.7	9979	1.35	229.14	78.8	87.5	78.8	87.5			
7.1	8.6	8930	1.50	206.32	81.0	88.5	81.0	88.5			
7.4	8.9	8593	1.55	198.95	81.6	88.9	81.6	88.9			
8.6	10	7266	1.80	169.97	83.9	90.2	83.9	90.2			
9.7	12	7388	1.80	151.11	83.7	90.1	83.7	90.1			
11	13	6442	2.05	131.76	85.1	91.0	85.1	91.0			
12	14	6212	2.10	127.05	85.4	91.3	85.4	91.3			
13	16	5549	2.35	113.49	86.2	91.9	86.2	91.9			
15	18	4778	2.75	97.73	87.0	92.7	87.0	92.7			
30	36	2403	2.50	49.16	88.7	95.1	88.7	95.1			
52	63	1370	2.50	28.03	87.3	95.8	87.3	95.8			
6.3	7.6	10398	0.80	233.43	**	**	**	**	KH104-11P-L132M-04F	348	482
6.4	7.8	10163	0.80	228.15	**	**	**	**			
6.7	8.0	9780	0.85	220.00	35.1	58.0	35.1	58.0			
6.8	8.2	9625	0.85	216.51	36.3	58.2	36.3	58.2			
7.4	9.0	8727	0.95	197.12	42.0	59.2	42.0	59.2			
7.7	9.3	8398	1.00	190.08	43.8	59.6	43.8	59.6			
7.8	9.4	8304	1.00	187.95	44.3	59.7	44.3	59.7			
9.0	11	7131	1.15	162.39	49.5	61.0	49.5	61.0			
10	13	6891	1.20	140.95	50.4	61.3	50.4	61.3			
12	14	6087	1.35	124.50	53.2	62.2	53.2	62.2			
14	16	5284	1.55	108.07	55.5	63.1	55.5	63.1			
16	19	4565	1.80	93.37	57.2	64.0	57.2	64.0			
18	22	3906	2.05	79.90	58.5	64.7	58.5	64.7			
21	26	3374	2.40	69.01	59.4	65.3	59.4	65.3			
28	33	2604	2.30	53.27	60.4	66.2	60.4	66.2			
37	45	1925	2.50	39.38	61.1	67.0	61.1	67.0			
48	58	1483	2.30	30.33	61.1	67.1	61.1	67.1			
65	79	1096	2.50	22.42	55.1	67.6	55.1	67.6			

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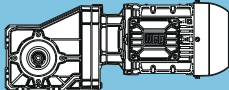
** ... on request

P _N = 7.5 kW										IE3		
50 Hz		60 Hz		f _B	i	at 50 Hz					m kg	Dimension sheet see page
7.5 kW		9.0 kW				Output shaft		Hollow shaft				
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	F _{rN} kN			F _{aN} kN	F _{rN} kN	F _{aN} kN				
13	16	5363	0.85	109.70	21.0	35.2	21.0	35.2	KH093-11P-L132M-04F	206	476	
15	19	4640	1.00	94.90	27.0	39.1	27.0	39.1				
16	19	4474	1.05	91.51	28.1	39.3	28.1	39.3				
18	22	3947	1.15	80.74	31.1	40.0	31.1	40.0				
21	26	3359	1.35	68.71	33.8	40.7	33.8	40.7				
23	28	3127	1.45	63.96	34.7	41.0	34.7	41.0				
25	30	2898	1.60	59.28	35.4	41.3	35.4	41.3				
27	33	2644	1.75	54.07	36.2	41.6	36.2	41.6				
31	38	2289	2.00	46.81	37.2	42.1	37.2	42.1				
35	43	2027	2.25	41.46	37.8	42.4	37.8	42.4				
39	48	1815	1.55	37.13	38.2	41.8	38.2	41.8				
41	49	1753	2.60	35.86	38.3	42.8	38.3	42.8				
42	51	1691	2.50	34.58	38.5	42.9	38.5	42.9				
47	56	1535	1.85	31.39	38.7	42.3	38.7	42.3				
54	65	1329	2.15	27.18	39.0	42.7	39.0	42.7				
61	74	1177	2.55	24.07	39.2	42.9	39.2	42.9				
70	85	1018	2.95	20.82	39.4	43.2	39.4	43.2				
73	88	982	2.50	20.08	39.4	43.3	39.4	43.3				
18	22	3906	0.80	79.89	**	**	**	**	KH083-11P-L132M-04F	156	472	
21	26	3346	0.90	68.44	16.0	27.1	16.0	27.1				
22	27	3227	0.95	66.00	17.3	29.8	17.3	29.8				
23	28	3086	0.95	63.12	18.6	32.6	18.6	32.6				
25	30	2848	1.10	58.25	20.6	37.0	20.6	37.0				
27	32	2694	1.15	55.11	21.7	39.4	21.7	39.4				
30	36	2381	1.30	48.71	23.6	41.5	23.6	41.5				
36	43	2013	1.50	41.18	25.4	42.0	22.9	42.0				
36	43	2014	1.50	41.19	25.4	42.0	22.9	42.0				
41	49	1760	0.95	35.99	26.4	41.5	22.0	41.5				
47	56	1537	1.25	31.43	27.2	41.9	20.5	41.9				
47	57	1511	2.00	30.91	27.2	42.8	19.8	42.8				
53	64	1358	1.40	27.78	27.7	42.3	19.2	42.3				
55	67	1295	2.30	26.48	27.8	43.1	18.3	43.1				
57	69	1249	2.40	25.54	28.0	43.2	18.0	43.2				
62	75	1148	1.70	23.49	28.2	42.7	17.7	42.7				
65	79	1102	2.60	22.54	28.3	43.4	16.9	43.4				
73	88	987	1.95	20.19	28.5	43.0	16.3	43.0				
77	94	925	2.95	18.91	28.6	43.6	15.5	43.6				
83	100	862	2.25	17.63	28.7	43.3	15.3	43.3				
97	117	738	2.65	15.10	28.9	43.5	14.3	43.5				
101	122	712	2.50	14.56	29.0	43.6	14.0	43.6				
37	45	1915	0.85	39.17	11.4	15.0	11.4	15.0	KH073-11P-L132M-04F	115	470	
45	55	1584	1.00	32.40	14.9	15.7	13.3	15.7				
53	64	1347	1.20	27.56	16.6	16.2	13.4	16.2				
61	73	1182	0.80	24.17	**	**	**	**				
73	88	986	1.60	20.17	18.5	17.0	12.7	17.0				
75	91	951	1.65	19.45	18.7	17.0	12.5	17.0				
79	95	912	1.00	18.65	18.8	16.2	12.3	16.2				
88	107	812	1.95	16.61	19.2	17.3	11.5	17.3				
95	115	754	1.25	15.43	19.3	16.6	11.5	16.6				
112	135	641	1.45	13.12	19.7	17.0	10.6	17.0				
129	156	556	1.65	11.37	19.9	17.3	9.8	17.3				
153	184	469	1.95	9.60	20.0	17.5	9.0	17.5				
158	191	453	2.05	9.26	20.1	17.6	8.8	17.6				
185	224	387	2.40	7.91	20.2	17.8	8.2	17.8				

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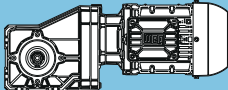
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** ... on request

P _N = 7.5 kW										IE3	
50 Hz		60 Hz		i	at 50 Hz					m kg	Dimension sheet see page
7.5 kW		9.0 kW			Output shaft		Hollow shaft				
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	f _B		F _{rN} kN	F _{aN} kN	F _{rN} kN	F _{aN} kN			
73	89	978	0.80	20.00	**	**	**	**	KH063-11P-L132M-04F	95	468
89	108	802	0.90	16.40	8.8	12.7	8.8	2.8			
105	127	682	1.00	13.94	9.9	13.1	9.2	3.2			
111	134	645	0.80	13.19	**	**	**	**			
128	154	560	1.15	11.46	10.8	13.5	9.0	3.5			
133	160	540	1.15	11.05	10.9	13.5	8.8	3.6			
135	163	532	0.95	10.88	11.0	12.9	8.6	2.9			
161	195	444	1.35	9.09	11.5	13.9	7.9	3.9			
164	198	436	1.15	8.92	11.5	13.3	8.1	3.4			
193	234	371	1.35	7.58	11.8	13.6	7.4	3.6			
235	284	305	1.55	6.23	12.0	13.9	6.7	3.9			
244	295	294	1.55	6.01	12.0	13.9	6.6	4.0			
297	358	242	1.80	4.94	12.2	14.2	6.0	4.2			
90	109	792	0.80	16.19	**	**	**	**			
107	129	672	0.90	13.75	4.7	7.4	4.7	3.3			
130	156	553	1.10	11.31	6.8	10.3	6.8	3.6			
134	162	533	1.15	10.91	7.0	10.4	7.0	3.7			
156	188	460	0.90	9.40	7.8	9.9	7.8	3.2			
163	197	439	1.30	8.97	8.0	10.7	8.0	4.0			
190	230	377	1.10	7.71	8.5	10.3	8.5	3.6			
224	270	320	1.30	6.55	8.9	10.6	8.3	3.9			
272	328	264	1.60	5.39	9.2	10.8	7.5	4.1			
282	341	254	1.65	5.19	9.2	10.9	7.4	4.2			
343	415	209	2.00	4.27	9.0	11.1	6.7	4.4			

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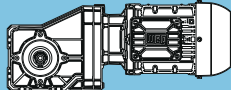
** ... on request

P _N = 9.2 kW										IE3				
50 Hz		60 Hz		i	at 50 Hz					m kg	Dimension sheet see page			
9.2 kW		11 kW			Output shaft		Hollow shaft							
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	f _B		F _{rN} kN	F _{aN} kN	F _{rN} kN	F _{aN} kN						
3.4	4.1	23831	0.80	434.63	**	**	**	**	KH154-11P-L132M-04G	730	490			
3.5	4.2	22980	0.80	419.11	**	**	**	**						
3.9	4.7	20637	0.90	377.93	65.5	114.3	65.5	114.3						
4.0	4.9	19671	0.95	360.98	70.6	115.0	70.6	115.0						
4.5	5.5	17572	1.05	323.79	79.9	116.6	79.9	116.6						
4.6	5.5	17291	1.05	318.60	81.0	116.8	81.0	116.8						
4.7	5.7	16910	1.10	312.23	82.4	117.1	82.4	117.1						
5.3	6.4	14834	1.25	275.58	89.2	118.7	89.2	118.7						
5.5	6.6	14356	1.30	267.26	90.6	119.0	90.6	119.0						
5.6	6.7	14046	1.30	261.49	91.5	119.3	91.5	119.3						
6.3	7.6	12316	1.50	231.17	95.8	120.6	95.8	120.6						
6.5	7.8	11974	1.55	225.22	96.6	120.9	96.6	120.9						
7.5	9.1	10250	1.80	194.80	100.1	122.2	100.1	122.2						
4.7	5.7	16867	0.80	307.62	**	**	**	**				KH124-11P-L132M-04G	476	486
5.1	6.2	15525	0.85	283.73	60.7	81.9	60.7	81.9						
5.2	6.3	15426	0.85	281.92	61.1	82.0	61.1	82.0						
5.4	6.6	14646	0.90	268.22	64.4	82.8	64.4	82.8						
5.6	6.7	14321	0.95	262.80	65.7	83.1	65.7	83.1						
6.0	7.2	13287	1.00	244.33	69.5	84.2	69.5	84.2						
6.1	7.4	13029	1.00	239.59	70.4	84.4	70.4	84.4						
6.3	7.6	12539	1.05	231.04	71.9	84.9	71.9	84.9						
6.4	7.7	12436	1.05	229.14	72.3	85.0	72.3	85.0						
7.1	8.6	11128	1.20	206.32	76.0	86.3	76.0	86.3						
7.3	8.9	10709	1.25	198.95	77.0	86.8	77.0	86.8						
7.4	8.9	10624	1.25	197.38	77.2	86.9	77.2	86.9						
8.6	10	9074	1.45	169.97	80.7	88.4	80.7	88.4						
9.7	12	9094	1.45	151.11	80.6	88.4	80.6	88.4	KH123-11P-L132M-04G	452	484			
11	13	7929	1.65	131.76	82.8	89.6	82.8	89.6						
13	16	6830	1.95	113.49	84.5	90.7	84.5	90.7						
15	18	5881	2.25	97.73	85.8	91.6	85.8	91.6						
17	21	5137	2.55	85.37	86.6	92.4	86.6	92.4						
25	30	3519	2.50	58.47	88.1	94.0	88.1	94.0						
30	36	2958	2.00	49.16	88.4	94.5	88.4	94.5						
44	53	2006	2.50	33.34	88.9	95.0	88.9	95.0						
52	63	1687	2.00	28.03	88.1	95.4	88.1	95.4						
7.7	9.3	10422	0.80	190.08	**	**	**	**	KH104-11P-L132M-04G	353	482			
7.8	9.4	10305	0.80	187.95	**	**	**	**						
9.0	11	8849	0.95	162.39	41.3	59.1	41.3	59.1						
10	13	8482	0.95	140.95	43.3	59.5	43.3	59.5	KH103-11P-L132M-04G	329	480			
12	14	7492	1.10	124.50	48.0	60.6	48.0	60.6						
14	16	6503	1.25	108.07	51.8	61.7	51.8	61.7						
16	19	5619	1.45	93.37	54.6	62.7	54.6	62.7						
18	22	4808	1.70	79.90	56.6	63.7	56.6	63.7						
21	26	4153	1.95	69.01	58.0	64.4	58.0	64.4						
27	33	3206	1.90	53.27	59.6	65.5	59.6	65.5						
31	38	2831	2.65	47.05	60.1	65.9	60.1	65.9						
37	45	2370	2.00	39.38	60.7	66.5	60.7	66.5						
48	58	1825	1.90	30.33	61.2	66.6	61.2	66.6						
54	66	1612	2.65	26.79	59.4	66.9	59.4	66.9						
65	79	1349	2.00	22.42	55.7	67.3	55.7	67.3						

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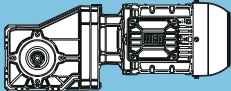
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** ... on request

P _N = 9.2 kW										IE3	
50 Hz		60 Hz		at 50 Hz						m kg	Dimension sheet see page
9.2 kW		11 kW		Output shaft		Hollow shaft					
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	f _B	i	F _{rN} kN	F _{aN} kN	F _{rN} kN	F _{aN} kN			
15	19	5711	0.80	94.90	**	**	**	**	KH093-11P-L132M-04G	211	476
16	19	5507	0.85	91.51	19.4	31.8	19.4	31.8			
18	22	4859	0.95	80.74	25.4	38.8	25.4	38.8			
21	26	4135	1.10	68.71	30.1	39.7	30.1	39.7			
23	28	3849	1.20	63.96	31.6	40.1	31.6	40.1			
25	30	3567	1.30	59.28	32.9	40.5	32.9	40.5			
27	33	3254	1.40	54.07	34.2	40.9	34.2	40.9			
31	38	2817	1.60	46.81	35.7	41.4	35.7	41.4			
35	43	2495	1.85	41.46	36.7	41.8	36.7	41.8			
39	48	2234	1.25	37.13	37.3	41.1	37.3	41.1			
41	49	2158	2.10	35.86	37.5	42.3	37.5	42.3			
42	51	2081	2.00	34.58	37.7	42.4	37.7	42.4			
47	56	1889	1.50	31.39	38.1	41.7	38.1	41.7			
48	58	1836	2.50	30.51	38.2	42.7	38.2	42.7			
54	65	1636	1.75	27.18	38.6	42.2	38.6	42.2			
56	68	1563	2.90	25.97	38.7	43.0	38.7	43.0			
61	73	1448	2.10	24.07	38.9	42.5	38.9	42.5			
70	85	1253	2.40	20.82	39.1	42.8	39.1	42.8			
73	88	1208	2.00	20.08	39.2	42.9	39.2	42.9			
82	100	1066	2.85	17.72	39.3	43.1	39.3	43.1			
22	27	3972	0.80	66.00	**	**	**	**	KH083-11P-L132M-04G	161	472
23	28	3798	0.80	63.12	**	**	**	**			
25	30	3505	0.90	58.25	14.0	22.8	14.0	7.3			
26	32	3316	0.95	55.11	16.3	27.7	16.3	7.6			
30	36	2941	1.05	48.87	19.9	35.5	19.9	8.2			
35	43	2479	1.25	41.19	23.0	41.3	23.0	8.8			
41	49	2166	0.80	35.99	**	**	**	**			
46	56	1891	1.05	31.43	25.9	41.2	21.9	8.7			
47	57	1860	1.65	30.91	26.0	42.3	21.0	9.8			
53	64	1672	1.15	27.78	26.7	41.6	20.4	9.1			
55	67	1594	1.90	26.48	27.0	42.6	19.3	10.1			
57	69	1537	1.95	25.54	27.2	42.7	19.0	10.2			
62	75	1414	1.40	23.49	27.5	42.2	18.7	9.7			
65	78	1356	2.10	22.54	27.7	43.0	17.8	10.5			
72	87	1215	1.60	20.19	28.0	42.6	17.3	10.1			
77	93	1138	2.40	18.91	28.2	43.3	16.3	10.8			
83	100	1061	1.85	17.63	28.4	42.9	16.1	10.4			
92	111	959	2.70	15.93	28.6	43.6	14.9	11.1			
97	117	909	2.15	15.10	28.7	43.2	14.9	10.7			
100	121	876	2.00	14.56	28.7	43.2	14.7	10.7			
114	137	773	2.55	12.85	28.9	43.4	13.8	10.9			
135	164	649	3.00	10.78	29.0	43.7	12.7	11.2			
45	54	1950	0.80	32.40	**	**	**	**	KH073-11P-L132M-04G	120	470
53	64	1659	0.95	27.56	14.2	15.6	11.8	4.3			
61	74	1437	1.10	23.88	16.0	16.0	12.0	4.8			
72	88	1214	1.30	20.17	17.4	16.5	12.1	5.2			
75	91	1170	1.35	19.45	17.6	16.6	12.1	5.3			
78	95	1122	0.85	18.65	17.9	15.5	11.2	4.2			
88	106	1000	1.60	16.61	18.5	16.9	12.0	5.7			
95	114	929	1.00	15.43	18.7	16.1	11.2	4.8			
111	135	790	1.20	13.12	19.2	16.5	11.2	5.3			
128	155	684	1.35	11.37	19.6	16.9	10.4	5.6			
152	184	578	1.60	9.60	19.8	17.2	9.5	5.9			
158	191	557	1.65	9.26	19.9	17.3	9.3	6.0			
185	223	476	1.95	7.91	20.0	17.5	8.6	6.3			

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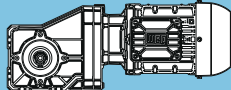
** ... on request

P _N = 9.2 kW										IE3		
50 Hz		60 Hz		f _B	i	at 50 Hz					m kg	Dimension sheet see page
9.2 kW		11 kW				Output shaft		Hollow shaft				
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	F _{rN} kN			F _{aN} kN	F _{rN} kN	F _{aN} kN				
105	127	839	0.80	13.94	**	**	**	**	KH063-11P-L132M-04G	100	468	
127	154	690	0.95	11.46	9.9	13.1	8.3	3.1				
132	160	665	0.95	11.05	10.1	13.2	8.3	3.2				
134	162	655	0.80	10.88	**	**	**	**				
161	194	547	1.10	9.09	10.9	13.5	8.2	3.6				
164	198	537	0.95	8.92	11.0	12.9	7.8	2.9				
193	233	456	1.10	7.58	11.4	13.2	7.8	3.3				
234	283	375	1.25	6.23	11.8	13.6	7.1	3.6				
243	294	362	1.30	6.01	11.8	13.6	7.0	3.7				
296	357	297	1.45	4.94	12	13.9	6.3	4.0				
129	156	681	0.90	11.31	4.5	6.9	4.5	3.2	KH053-11P-L132M-04G	87	466	
134	162	657	0.95	10.91	5.1	8.2	5.1	3.3				
163	197	540	1.05	8.97	6.9	10.4	6.9	3.7				
189	229	464	0.90	7.71	7.8	9.9	7.8	3.2				
223	269	394	1.05	6.55	8.4	10.2	8.4	3.5				
271	327	324	1.30	5.39	8.8	10.5	8.0	3.8				
281	340	312	1.35	5.19	8.9	10.6	7.8	3.9				
342	413	257	1.65	4.27	9.2	10.8	7.1	4.1				

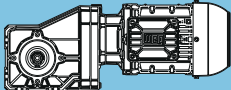
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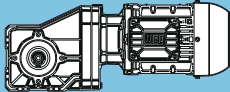
P _N = 11 kW										IE3	
50 Hz		60 Hz		at 50 Hz						m kg	Dimension sheet see page
11 kW		13 kW		Output shaft		Hollow shaft					
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	f _B	i	F _{rN} kN	F _{aN} kN	F _{rN} kN	F _{aN} kN			
4.5	5.5	20996	0.90	323.79	63.4	110.8	63.4	110.8	KH154-22P-160M-04E	792	490
4.6	5.6	20660	0.90	318.60	65.4	114.2	65.4	114.2			
4.7	5.7	20121	0.90	310.30	68.3	114.6	68.3	114.6			
5.3	6.4	17760	1.05	275.58	79.1	116.4	79.1	116.4			
5.5	6.6	17224	1.05	267.26	81.2	116.9	81.2	116.9			
5.6	6.8	16818	1.10	261.49	82.7	117.2	82.7	117.2			
6.4	7.7	14776	1.25	231.17	89.4	118.7	89.4	118.7			
6.5	7.9	14366	1.30	225.22	90.6	119.0	90.6	119.0			
6.9	8.3	13648	1.35	214.39	92.6	119.6	92.6	119.6			
7.5	9.1	12324	1.50	194.80	95.8	120.6	95.8	120.6			
8.0	9.6	11658	1.55	184.65	97.3	121.1	97.3	121.1			
9.2	11	9960	1.85	159.72	100.6	122.4	100.6	122.4			
10	12	10483	1.75	146.69	99.6	122.0	99.6	122.0	KH153-22P-160M-04E	746	488
12	14	9029	2.00	126.34	102.1	123.1	102.1	123.1			
13	16	7809	2.35	109.28	103.9	124.0	103.9	124.0			
15	18	6888	2.65	96.39	105.1	124.7	105.1	124.7			
26	31	4056	2.70	56.75	107.7	126.9	107.7	126.9			
41	50	2546	2.70	35.63	108.5	127.4	108.5	127.4			
5.6	6.8	17111	0.80	262.80	**	**	**	**	KH124-22P-160M-04E	538	486
6.0	7.3	15876	0.85	244.33	59	81.6	59	81.6			
6.1	7.4	15568	0.85	239.59	60.5	81.9	60.5	81.9			
6.4	7.7	14859	0.90	229.14	63.6	82.6	63.6	82.6			
7.1	8.6	13324	1.00	206.32	69.4	84.1	69.4	84.1			
7.4	9.0	12721	1.05	197.38	71.4	84.8	71.4	84.8			
8.6	10	10887	1.20	169.97	76.6	86.6	76.6	86.6			
9.7	12	10799	1.25	151.11	76.8	86.7	76.8	86.7			
11	13	9416	1.40	131.76	80.0	88.1	80.0	88.1			
13	16	8110	1.65	113.49	82.5	89.4	82.5	89.4			
15	18	6984	1.90	97.73	84.3	90.5	84.3	90.5			
17	21	6101	2.15	85.37	85.5	91.4	85.5	91.4			
20	24	5270	2.50	73.74	86.5	92.2	86.5	92.2			
24	29	4358	3.00	60.98	87.4	93.1	87.4	93.1			
25	30	4178	2.10	58.47	87.6	93.3	87.6	93.3			
29	35	3643	2.70	50.98	88.0	93.8	88.0	93.8			
44	53	2383	2.10	33.34	88.8	94.6	88.8	94.6			
51	61	2077	2.70	29.07	88.9	94.9	88.9	94.9			
9.1	11	10573	0.80	162.39	**	**	**	**	KH104-22P-160M-04E	415	482
12	14	8897	0.90	124.50	41.0	59.0	41.0	59.0	KH103-22P-160M-04E	391	480
14	16	7723	1.05	108.07	47.0	60.3	47.0	60.3			
16	19	6672	1.20	93.37	51.2	61.5	51.2	61.5			
18	22	5710	1.45	79.90	54.3	62.6	54.3	62.6			
21	26	4932	1.65	69.01	56.3	63.5	56.3	63.5			
25	30	4171	1.95	58.36	58.0	64.4	58.0	64.4			
31	37	3403	2.40	47.62	59.3	65.3	59.3	65.3			
36	43	2919	2.60	40.84	60.0	65.8	60.0	65.8			
38	46	2761	2.90	38.64	60.2	66.0	60.2	66.0			
42	50	2522	3.00	35.29	60.5	66.3	60.5	66.3			
55	66	1914	2.25	26.79	59.9	66.5	59.9	66.5			
63	76	1662	2.60	23.25	57.1	66.8	57.1	66.8			
73	88	1436	3.00	20.09	54.2	67.2	54.2	67.2			
18	22	5770	0.80	80.74	**	**	**	**	KH093-22P-160M-04E	273	476
21	26	4910	0.95	68.71	25.0	38.8	25.0	38.8			
25	30	4236	1.10	59.28	29.6	39.6	29.6	39.6			
30	36	3554	1.30	49.73	33.0	40.5	33.0	40.5			
35	43	2963	1.55	41.46	35.2	41.2	35.2	41.2			
36	44	2889	1.60	40.43	35.5	41.3	35.5	41.3			
41	49	2563	1.80	35.86	36.5	41.7	36.5	41.7			
47	56	2259	2.00	31.61	37.3	42.1	37.3	42.1			
48	58	2180	2.10	30.51	37.5	42.2	37.5	42.2			
57	68	1856	2.45	25.97	38.2	42.6	38.2	42.6			
61	74	1720	1.75	24.07	38.4	42.0	38.4	42.0			
66	79	1601	2.85	22.40	38.6	43.0	38.6	43.0			
71	85	1488	2.05	20.82	38.8	42.4	38.8	42.4			
83	100	1266	2.40	17.72	39.1	42.8	39.1	42.8			
97	118	1078	2.80	15.08	39.3	43.1	39.3	43.1			

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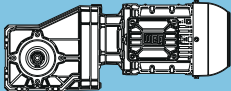
P _N = 11 kW										IE3		
50 Hz		60 Hz		f _B	i	at 50 Hz					m kg	Dimension sheet see page
11 kW		13 kW				Output shaft		Hollow shaft				
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm				F _{rN} kN	F _{aN} kN	F _{rN} kN	F _{aN} kN			
30	36	3492	0.90	48.87	14.2	23.2	14.2	7.3	KH083-22P-160M-04E	223	472	
36	43	2943	1.05	41.18	19.8	35.3	19.8	8.2				
44	53	2413	1.25	33.76	23.4	41.4	22.4	8.9				
48	57	2209	1.40	30.91	24.5	41.7	22.1	9.2				
56	67	1892	1.60	26.48	25.9	42.2	20.3	9.7				
65	79	1611	1.80	22.54	26.9	42.6	18.6	10.1				
78	94	1351	2.00	18.91	27.7	43.0	17.0	10.5				
83	101	1260	1.55	17.63	27.9	42.5	16.9	10.0				
92	111	1138	2.25	15.93	28.2	43.3	15.6	10.8				
97	118	1079	1.80	15.10	28.3	42.8	15.6	10.3				
113	136	933	2.60	13.06	28.6	43.6	14.1	11.1				
114	138	918	2.15	12.85	28.6	43.2	14.4	10.7				
136	165	770	2.55	10.78	28.9	43.5	13.2	11.0				
162	195	650	3.00	9.09	29.0	43.7	12.1	11.2				
62	74	1707	0.95	23.88	13.8	15.5	10.5	4.2	KH073-22P-160M-04E	182	470	
73	88	1441	1.10	20.17	16.0	16.0	10.8	4.8				
89	107	1187	1.35	16.61	17.6	16.5	11.0	5.3				
129	156	813	1.15	11.37	19.2	16.5	10.3	5.2				
153	185	686	1.35	9.60	19.5	16.9	10.0	5.6				
186	224	565	1.65	7.91	19.8	17.2	9.0	6.0				

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P _N = 15 kW										IE3	
50 Hz		60 Hz		at 50 Hz						m kg	Dimension sheet see page
15 kW	18 kW			Output shaft		Hollow shaft					
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	f _b	i	F _{rN} kN	F _{aN} kN	F _{rN} kN	F _{aN} kN			
5.5	6.6	23811	0.80	267.26	**	**	**	**	KH154-22P-160L-04F	815	490
5.6	6.8	23296	0.80	261.49	**	**	**	**			
6.3	7.7	20511	0.90	231.17	66.2	114.3	66.2	114.3			
6.5	7.9	19942	0.95	225.22	69.2	114.8	69.2	114.8			
6.8	8.3	18983	0.95	214.39	73.9	115.5	73.9	115.5			
7.5	9.1	17178	1.05	194.80	81.4	116.9	81.4	116.9			
7.9	9.6	16216	1.15	184.65	84.8	117.6	84.8	117.6			
9.2	11	13941	1.30	159.72	91.8	119.4	91.8	119.4			
10	12	14344	1.30	146.69	90.7	119.1	90.7	119.1			
12	14	12354	1.50	126.34	95.7	120.6	95.7	120.6			
13	16	10686	1.70	109.28	99.3	121.8	99.3	121.8			
15	18	9425	1.95	96.39	101.5	122.8	101.5	122.8			
18	21	8095	2.25	82.79	103.5	123.8	103.5	123.8			
21	26	6735	2.70	68.88	105.3	124.9	105.3	124.9			
26	31	5549	1.95	56.75	106.5	125.8	106.5	125.8			
30	36	4780	3.00	48.88	107.1	126.4	107.1	126.4			
41	50	3484	1.95	35.63	108.0	126.4	108.0	126.4			
48	58	3001	3.00	30.69	108.3	126.9	108.3	126.9			
8.6	10	15081	0.90	169.97	62.6	82.4	62.6	82.4	KH124-22P-160L-04F	561	486
9.7	12	14776	0.90	151.11	63.9	82.7	63.9	82.7	KH123-22P-160L-04F	537	484
11	13	12884	1.05	131.76	70.8	84.6	70.8	84.6			
13	16	11097	1.20	113.49	76.0	86.4	76.0	86.4			
15	18	9556	1.40	97.73	79.7	87.9	79.7	87.9			
17	21	8348	1.60	85.37	82.1	89.1	82.1	89.1			
20	24	7210	1.85	73.74	84.0	90.3	84.0	90.3			
24	29	5963	2.20	60.98	85.7	91.5	85.7	91.5			
25	30	5717	1.55	58.47	86.0	91.8	86.0	91.8			
29	35	4985	1.95	50.98	86.8	92.5	86.8	92.5			
33	40	4294	3.00	43.91	87.5	93.2	87.5	93.2			
44	53	3260	1.55	33.34	88.3	93.5	88.3	93.5			
50	61	2843	1.95	29.07	88.5	94.0	88.5	94.0			
59	71	2448	3.00	25.04	86.8	94.5	86.8	94.5			
14	16	10567	0.80	108.07	**	**	**	**	KH103-22P-160L-04F	414	480
16	19	9130	0.90	93.37	39.6	58.7	39.6	58.7			
18	22	7813	1.05	79.90	46.6	60.2	46.6	60.2			
21	26	6748	1.20	69.01	51.0	61.5	51.0	61.5			
25	30	5707	1.45	58.36	54.3	62.6	54.3	62.6			
31	37	4656	1.75	47.62	57.0	63.8	57.0	63.8			
36	43	3993	1.90	40.84	58.3	64.6	58.3	64.6			
38	46	3778	2.15	38.64	58.7	64.9	58.7	64.9			
42	50	3451	2.20	35.29	59.3	65.2	59.3	65.2			
49	59	2953	2.55	30.20	60.0	65.8	60.0	65.8			
55	66	2620	1.65	26.79	60.4	65.5	60.4	65.5			
56	68	2550	2.95	26.08	60.5	66.3	60.5	66.3			
63	76	2273	1.90	23.25	58.7	66.0	58.7	66.0			
73	88	1964	2.20	20.09	55.6	66.4	55.6	66.4			
85	103	1681	2.55	17.19	52.6	66.8	52.6	66.8			
99	120	1452	2.95	14.85	49.8	67.1	49.8	67.1			
25	30	5796	0.80	59.28	**	**	**	**	KH093-22P-160L-04F	296	476
29	36	4863	0.95	49.73	25.4	38.8	25.4	38.8			
35	43	4054	1.15	41.46	30.6	39.8	30.6	39.8			
36	44	3953	1.15	40.43	31.1	40.0	31.1	40.0			
41	49	3506	1.30	35.86	33.2	40.5	33.2	40.5			
46	56	3091	1.50	31.61	34.8	41.1	34.8	41.1			
48	58	2983	1.55	30.51	35.2	41.2	35.2	41.2			
56	68	2539	1.80	25.97	36.5	41.8	36.5	41.8			
61	74	2354	1.30	24.07	37.0	40.9	37.0	40.9			
65	79	2190	2.10	22.40	37.4	42.2	37.4	42.2			
70	85	2036	1.50	20.82	37.8	41.5	37.8	41.5			
78	94	1837	2.45	18.79	38.2	42.7	38.2	42.7			
83	100	1733	1.75	17.72	38.4	42.0	38.4	42.0			
97	118	1475	2.05	15.08	38.8	42.4	38.8	42.4			
113	136	1272	2.40	13.01	39.1	42.8	39.1	42.8			
134	163	1067	2.85	10.91	36.7	43.1	36.7	43.1			

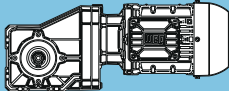
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P _N = 15 kW										IE3		
50 Hz		60 Hz		f _B	i	at 50 Hz					m kg	Dimension sheet see page
15 kW		18 kW				Output shaft		Hollow shaft				
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	F _{rN} kN			F _{aN} kN	F _{rN} kN	F _{aN} kN				
43	53	3301	0.95	33.76	16.5	28.1	16.5	7.6	KH083-22P-160L-04F	246	472	
47	57	3022	1.00	30.91	19.2	33.9	19.1	8.0				
55	67	2589	1.15	26.48	22.4	41.0	19.3	8.7				
65	79	2204	1.30	22.54	24.5	41.7	19.3	9.2				
77	94	1849	1.50	18.91	26.1	42.3	18.8	9.8				
83	101	1724	1.15	17.63	26.5	41.5	18.3	9.0				
92	111	1558	1.65	15.93	27.1	42.7	17.0	10.2				
97	118	1477	1.35	15.10	27.3	42.0	17.1	9.5				
112	136	1277	1.90	13.06	27.9	43.1	15.3	10.6				
114	138	1256	1.55	12.85	27.9	42.5	15.7	10.0				
136	165	1054	1.85	10.78	28.4	42.9	14.3	10.4				
161	195	889	2.20	9.09	28.7	43.2	13.1	10.7				
197	238	728	2.70	7.45	28.9	43.5	11.8	11.0				
73	88	1972	0.80	20.17	**	**	**	**				KH073-22P-160L-04F
88	107	1624	1.00	16.61	14.5	15.6	8.8	4.4				
129	156	1112	0.85	11.37	17.9	15.5	8.5	4.3				
153	185	939	1.00	9.60	18.7	16.1	8.7	4.8				
185	224	773	1.20	7.91	19.3	16.6	8.8	5.3				

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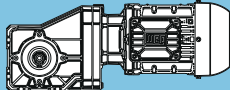
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** ... on request

P _N = 18.5 kW										IE3	
50 Hz		60 Hz		at 50 Hz						m kg	Dimension sheet see page
18.5 kW		22 kW		Output shaft		Hollow shaft					
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	f _b	i	F _{rN} kN	F _{aN} kN	F _{rN} kN	F _{aN} kN			
6.9	8.3	23477	0.80	214.39	**	**	**	**	KH154-22P-180M-04E	829	490
7.5	9.1	21288	0.85	194.80	61.7	107.2	61.7	107.2			
8.0	9.6	20138	0.90	184.65	68.2	114.6	68.2	114.6			
9.2	11	17312	1.05	159.72	80.9	116.8	80.9	116.8			
10	12	17630	1.05	146.69	79.7	116.5	79.7	116.5	KH153-22P-180M-04E	783	488
12	14	15184	1.20	126.34	88.2	118.4	88.2	118.4			
13	16	13134	1.40	109.28	93.9	120.0	93.9	120.0			
15	18	11585	1.60	96.39	97.4	121.2	97.4	121.2			
18	21	9950	1.85	82.79	100.6	122.4	100.6	122.4			
21	26	8278	2.20	68.88	103.3	123.7	103.3	123.7			
26	31	6821	1.60	56.75	105.2	124.8	105.2	124.8			
26	31	6869	2.65	57.15	105.1	124.8	105.1	124.8			
30	36	5875	2.45	48.88	106.2	125.5	106.2	125.5			
41	50	4282	1.60	35.63	107.5	125.6	107.5	125.6			
48	58	3689	2.45	30.69	107.9	126.2	107.9	126.2			
11	13	15836	0.85	131.76	59.2	81.6	59.2	81.6	KH123-22P-180M-04E	551	484
13	16	13640	1.00	113.49	68.3	83.8	68.3	83.8			
15	18	11746	1.15	97.73	74.3	85.7	74.3	85.7			
17	21	10260	1.30	85.37	78.1	87.2	78.1	87.2			
20	24	8863	1.50	73.74	81.1	88.6	81.1	88.6			
24	29	7329	1.80	60.98	83.8	90.2	83.8	90.2			
29	35	6127	1.60	50.98	85.5	91.4	85.5	91.4			
33	40	5277	2.45	43.91	86.5	92.2	86.5	92.2			
36	43	4958	2.65	41.25	86.8	92.5	86.8	92.5			
39	47	4544	2.90	37.81	87.2	92.9	87.2	92.9			
51	61	3494	1.60	29.07	88.1	93.2	88.1	93.2			
59	71	3009	2.45	25.04	88.2	93.8	88.2	93.8			
18	22	9603	0.85	79.90	36.4	58.2	36.4	58.2	KH103-22P-180M-04E	428	480
21	26	8294	1.00	69.01	44.3	59.7	44.3	59.7			
25	30	7014	1.15	58.36	50.0	61.2	50.0	61.2			
31	37	5723	1.40	47.62	54.3	62.6	54.3	62.6			
36	43	4908	1.55	40.84	56.4	63.6	56.4	63.6			
38	46	4644	1.75	38.64	57.0	63.9	57.0	63.9			
42	50	4241	1.80	35.29	57.9	64.3	57.9	64.3			
48	58	3708	2.20	30.85	58.8	64.9	58.8	64.9			
49	59	3630	2.10	30.20	59.0	65.0	59.0	65.0			
56	68	3134	2.40	26.08	59.7	65.6	59.7	65.6			
63	76	2794	1.55	23.25	60.1	65.2	60.1	65.2			
67	80	2650	2.85	22.05	58.0	66.1	58.0	66.1			
73	88	2415	1.80	20.09	56.8	65.8	56.8	65.8			
86	103	2066	2.10	17.19	53.5	66.3	53.5	66.3			
99	120	1785	2.40	14.85	50.7	66.7	50.7	66.7			
117	141	1510	2.85	12.56	47.8	67.0	47.8	67.0			
30	36	5977	0.80	49.73	**	**	**	**	KH093-22P-180M-04E	310	476
36	44	4859	0.95	40.43	25.4	38.8	25.4	38.8			
41	49	4310	1.05	35.86	29.1	39.5	29.1	39.5			
47	56	3799	1.20	31.61	31.9	40.2	31.9	40.2			
48	58	3667	1.25	30.51	32.5	40.3	32.5	40.3			
57	68	3121	1.45	25.97	34.7	41.0	34.7	41.0			
66	79	2692	1.70	22.40	36.1	41.6	36.1	41.6			
71	85	2502	1.20	20.82	36.6	40.6	36.6	40.6			
78	94	2258	2.00	18.79	37.3	42.1	37.3	42.1			
83	100	2130	1.45	17.72	37.6	41.3	37.6	41.3			
96	116	1836	2.50	15.28	38.2	42.7	38.2	42.7			
97	118	1812	1.70	15.08	38.2	41.8	38.2	41.8			
113	136	1564	1.95	13.01	38.7	42.3	38.7	42.3			
135	163	1311	2.30	10.91	37.5	42.7	37.5	42.7			
166	200	1066	2.85	8.87	34.6	43.1	34.6	43.1			

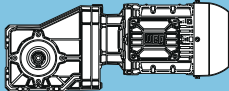
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** ... on request

P _N = 18.5 kW										IE3		
50 Hz		60 Hz		f _B	i	at 50 Hz					m kg	Dimension sheet see page
18.5 kW		22 kW				Output shaft		Hollow shaft				
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm				F _{rN} kN	F _{aN} kN	F _{rN} kN	F _{aN} kN			
56	67	3183	0.95	26.48	17.7	30.7	16.6	7.8	KH083-22P-180M-04E	260	472	
65	79	2709	1.05	22.54	21.6	39.2	17.2	8.5				
78	94	2273	1.20	18.91	24.2	41.6	17.3	9.1				
92	111	1915	1.35	15.93	25.8	42.2	17.4	9.7				
97	118	1815	1.10	15.10	26.2	41.4	16.5	8.9				
113	136	1570	1.55	13.06	27.1	42.7	16.3	10.2				
114	138	1544	1.30	12.85	27.1	41.9	16.4	9.4				
136	165	1296	1.50	10.78	27.8	42.4	15.2	9.9				
162	195	1093	1.80	9.09	28.3	42.8	13.8	10.3				
197	238	895	2.20	7.45	28.7	43.2	12.5	10.7				

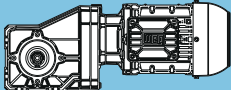


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P _N = 22 kW										IE3	
50 Hz 22 kW		60 Hz 26 kW		i	at 50 Hz					m kg	Dimension sheet see page
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	f _B		Output shaft		Hollow shaft				
					F _{rN} kN	F _{aN} kN	F _{rN} kN	F _{aN} kN			
9.2	11	20714	0.90	159.72	65.1	114.2	65.1	114.2	KH154-22P-180L-04F	850	490
10	12	20966	0.90	146.69	63.6	111.2	63.6	111.2	KH153-22P-180L-04F	804	488
12	14	18057	1.00	126.34	77.9	116.2	77.9	116.2			
13	16	15619	1.20	109.28	86.8	118.1	86.8	118.1			
15	18	13777	1.35	96.39	92.2	119.5	92.2	119.5			
18	21	11833	1.55	82.79	96.9	121.0	96.9	121.0			
21	26	9845	1.85	68.88	100.8	122.5	100.8	122.5			
26	31	8168	2.25	57.15	103.4	123.8	103.4	123.8			
30	36	6986	2.05	48.88	105.0	124.7	105.0	124.7			
31	37	6812	2.65	47.66	105.2	124.8	105.2	124.8			
35	42	6043	2.95	42.28	106.0	125.4	106.0	125.4			
41	50	5092	1.35	35.63	106.9	124.7	106.9	124.7			
48	58	4386	2.05	30.69	107.4	125.5	107.4	125.5			
55	67	3793	2.95	26.54	107.8	126.1	107.8	126.1			
13	16	16221	0.85	113.49	57.3	81.2	57.3	81.2	KH123-22P-180L-04F	572	484
15	18	13968	0.95	97.73	67.1	83.5	67.1	83.5			
17	21	12202	1.10	85.37	73.0	85.3	73.0	85.3			
20	24	10539	1.25	73.74	77.4	86.9	77.4	86.9			
24	29	8716	1.50	60.98	81.4	88.8	81.4	88.8			
29	35	7286	1.35	50.98	83.9	90.2	83.9	90.2			
33	40	6276	2.05	43.91	85.3	91.2	85.3	91.2			
36	43	5896	2.25	41.25	85.8	91.6	85.8	91.6			
39	47	5404	2.45	37.81	86.4	92.1	86.4	92.1			
42	51	5005	2.60	35.02	86.8	92.5	86.8	92.5			
45	54	4721	2.80	33.03	87.1	92.8	87.1	92.8			
51	61	4155	1.35	29.07	87.6	92.4	87.6	92.4			
59	71	3579	2.05	25.04	88.0	93.1	88.0	93.1			
68	82	3081	2.65	21.56	85.0	93.7	85.0	93.7			
21	26	9863	0.85	69.01	34.5	57.7	34.5	57.7	KH103-22P-180L-04F	449	480
25	30	8341	1.00	58.36	44.1	59.6	44.1	59.6			
31	37	6806	1.20	47.62	50.8	61.4	50.8	61.4			
36	43	5837	1.30	40.84	53.9	62.5	53.9	62.5			
38	46	5523	1.45	38.64	54.8	62.9	54.8	62.9			
42	50	5044	1.50	35.29	56.1	63.4	56.1	63.4			
48	58	4409	1.85	30.85	57.5	64.1	57.5	64.1			
49	59	4316	1.75	30.20	57.7	64.2	57.7	64.2			
56	68	3727	2.05	26.08	58.8	64.9	58.8	64.9			
63	76	3323	1.30	23.25	59.5	64.5	59.5	64.5			
67	80	3152	2.40	22.05	59.3	65.6	59.3	65.6			
73	88	2871	1.50	20.09	58.1	65.1	58.1	65.1			
82	99	2573	2.95	18.00	54.8	66.2	54.8	66.2			
86	103	2457	1.75	17.19	54.5	65.7	54.5	65.7			
99	120	2122	2.05	14.85	51.6	66.2	51.6	66.2			
117	141	1795	2.40	12.56	48.5	66.6	48.5	66.6			
143	173	1465	2.95	10.25	45.1	67.1	45.1	67.1			
36	44	5778	0.80	40.43	**	**	**	**	KH093-22P-180L-04F	331	476
41	49	5125	0.90	35.86	23.2	38.5	23.2	38.5			
47	56	4518	1.00	31.61	27.8	39.3	27.8	39.3			
48	58	4361	1.05	30.51	28.8	39.5	28.8	39.5			
57	68	3712	1.25	25.97	32.3	40.3	32.3	40.3			
66	79	3202	1.45	22.40	34.4	40.9	34.4	40.9			
71	85	2976	1.05	20.82	35.2	39.8	35.2	39.8			
78	94	2686	1.70	18.79	36.1	41.6	36.1	41.6			
83	100	2533	1.20	17.72	36.6	40.6	36.6	40.6			
96	116	2184	2.10	15.28	37.4	42.2	37.4	42.2			
97	118	2155	1.40	15.08	37.5	41.2	37.5	41.2			
113	136	1859	1.65	13.01	38.1	41.8	38.1	41.8			
123	149	1708	2.65	11.95	38.4	42.8	38.4	42.8			
135	163	1559	1.95	10.91	38.4	42.3	38.4	42.3			
166	200	1268	2.40	8.87	35.4	42.8	35.4	42.8			

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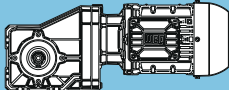
** ... on request

P _N = 22 kW										IE3		
50 Hz		60 Hz		f _B	i	at 50 Hz					m kg	Dimension sheet see page
22 kW		26 kW				Output shaft		Hollow shaft				
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	F _{rN} kN			F _{aN} kN	F _{rN} kN	F _{aN} kN				
56	67	3785	0.80	26.48	**	**	**	**	KH083-22P-180L-04F	281	472	
65	79	3222	0.90	22.54	17.3	29.8	15.0	7.7				
78	94	2703	1.00	18.91	21.6	39.2	15.5	8.5				
92	111	2277	1.15	15.93	24.2	41.6	15.8	9.1				
97	118	2158	0.90	15.10	24.7	40.7	14.9	8.2				
113	136	1867	1.30	13.06	26.0	42.2	15.9	9.7				
114	138	1837	1.10	12.85	26.1	41.3	15.1	8.8				
136	165	1541	1.30	10.78	27.1	41.9	15.1	9.4				
162	195	1299	1.50	9.09	27.8	42.4	14.6	9.9				
197	238	1065	1.85	7.45	28.4	42.9	13.1	10.4				



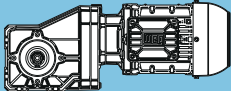
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** ... on request

P _N = 30 kW										IE3	
50 Hz		60 Hz		at 50 Hz						m kg	Dimension sheet see page
30 kW		36 kW		Output shaft		Hollow shaft					
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	f _B	i	F _{rN} kN	F _{aN} kN	F _{rN} kN	F _{aN} kN			
14	16	21155	0.90	109.28	62.5	108.9	62.5	108.9	KH153-22P-200L-04E	862	488
15	18	18659	1.00	96.39	75.4	115.8	75.4	115.8			
18	22	16027	1.15	82.79	85.5	117.8	85.5	117.8			
21	26	13334	1.35	68.88	93.4	119.8	93.4	119.8			
26	31	11063	1.65	57.15	98.5	121.6	98.5	121.6			
31	37	9226	2.00	47.66	101.8	123.0	101.8	123.0			
35	42	8185	2.20	42.28	103.4	123.8	103.4	123.8			
36	43	7931	2.30	40.97	103.8	123.9	103.8	123.9			
40	48	7221	2.50	37.30	104.7	124.5	104.7	124.5			
42	50	6862	2.65	35.45	105.1	124.8	105.1	124.8			
46	56	6200	2.95	32.03	105.8	125.3	105.8	125.3			
56	67	5138	2.20	26.54	106.8	124.7	106.8	124.7			
63	76	4532	3.00	23.41	107.3	125.3	107.3	125.3			
17	21	16526	0.80	85.37	**	**	**	**	KH123-22P-200L-04E	630	484
20	24	14275	0.95	73.74	65.9	83.2	65.9	83.2			
24	29	11805	1.15	60.98	74.1	85.7	74.1	85.7			
29	35	9714	1.35	50.18	79.3	87.8	79.3	87.8			
36	43	7985	1.65	41.25	82.7	89.5	82.7	89.5			
39	47	7319	1.80	37.81	83.8	90.2	83.8	90.2			
42	51	6779	1.95	35.02	84.6	90.7	84.6	90.7			
45	54	6394	2.05	33.03	85.1	91.1	85.1	91.1			
50	60	5786	2.25	29.89	85.9	91.7	85.9	91.7			
52	62	5523	2.40	28.53	86.2	92.0	86.2	92.0			
63	75	4569	2.85	23.60	87.2	92.9	87.2	92.9			
69	83	4174	1.95	21.56	87.3	92.4	87.3	92.4			
79	94	3647	2.25	18.84	82.9	93.0	82.9	93.0			
91	109	3150	2.60	16.27	78.6	93.6	78.6	93.6			
31	37	9218	0.90	47.62	39.0	58.6	39.0	58.6	KH103-22P-200L-04E	507	480
38	46	7480	1.10	38.64	48.1	60.6	48.1	60.6			
48	58	5972	1.35	30.85	53.5	62.3	53.5	62.3			
49	59	5846	1.30	30.20	53.9	62.5	53.9	62.5			
57	68	5049	1.50	26.08	56.1	63.4	56.1	63.4			
67	81	4268	1.80	22.05	57.8	64.3	57.8	64.3			
82	99	3484	2.20	18.00	57.0	65.2	57.0	65.2			
86	104	3328	1.30	17.19	56.9	64.5	56.9	64.5			
100	120	2875	1.50	14.85	53.5	65.1	53.5	65.1			
101	122	2826	2.70	14.60	52.5	65.9	52.5	65.9			
118	142	2431	1.80	12.56	50.1	65.8	50.1	65.8			
144	174	1984	2.20	10.25	46.4	66.4	46.4	66.4			
178	214	1609	2.70	8.31	42.9	66.9	42.9	66.9			
57	69	5027	0.90	25.97	24.1	38.6	24.1	38.6	KH093-22P-200L-04E	389	476
66	79	4336	1.05	22.40	29.0	39.5	29.0	39.5			
79	95	3637	1.25	18.79	32.6	40.4	32.6	40.4			
97	116	2958	1.55	15.28	35.3	41.2	35.3	41.2			
98	118	2919	1.05	15.08	35.4	39.9	35.4	39.9			
114	137	2518	1.20	13.01	36.6	40.6	36.6	40.6			
124	149	2313	1.95	11.95	37.1	42.1	37.1	42.1			
136	163	2112	1.45	10.91	37.6	41.3	37.6	41.3			
167	201	1717	1.75	8.87	37.0	42.0	37.0	42.0			
213	256	1343	2.25	6.94	33.5	42.7	33.5	42.7			

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** ... on request

P _N = 37 kW										IE3		
50 Hz		60 Hz		f _B	i	at 50 Hz					m kg	Dimension sheet see page
37 kW		44 kW				Output shaft		Hollow shaft				
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	F _{rN} kN			F _{aN} kN	F _{rN} kN	F _{aN} kN				
15	18	23013	0.80	96.39	**	**	**	**	KH153-22P-200L-04F	889	488	
18	22	19766	0.95	82.79	70.1	114.9	70.1	114.9				
21	26	16445	1.10	68.88	84.0	117.5	84.0	117.5				
26	31	13645	1.35	57.15	92.6	119.6	92.6	119.6				
31	37	11379	1.60	47.66	97.9	121.3	97.9	121.3				
35	42	10094	1.80	42.28	100.3	122.3	100.3	122.3				
36	43	9782	1.85	40.97	100.9	122.5	100.9	122.5				
40	48	8905	2.05	37.30	102.3	123.2	102.3	123.2				
42	50	8464	2.15	35.45	103.0	123.5	103.0	123.5				
46	56	7647	2.40	32.03	104.1	124.2	104.1	124.2				
56	67	6336	1.80	26.54	105.7	123.5	105.7	123.5				
56	67	6363	2.85	26.65	105.7	125.1	105.7	125.1				
63	76	5589	2.45	23.41	106.4	124.2	106.4	124.2				
74	89	4801	2.80	20.11	107.1	125.0	107.1	125.0				
24	29	14559	0.90	60.98	64.8	82.9	64.8	82.9	KH123-22P-200L-04F	657	484	
29	36	11980	1.10	50.18	73.6	85.5	73.6	85.5				
36	43	9848	1.35	41.25	79.0	87.6	79.0	87.6				
39	47	9027	1.45	37.81	80.8	88.5	80.8	88.5				
42	51	8361	1.60	35.02	82.0	89.1	82.0	89.1				
45	54	7886	1.65	33.03	82.9	89.6	82.9	89.6				
50	60	7136	1.85	29.89	84.1	90.3	84.1	90.3				
52	62	6812	1.95	28.53	84.6	90.7	84.6	90.7				
63	76	5635	2.35	23.60	86.1	91.9	86.1	91.9				
69	83	5147	1.60	21.56	86.6	91.2	86.6	91.2				
76	92	4637	2.85	19.42	85.0	92.9	85.0	92.9				
79	95	4498	1.85	18.84	85.0	92.0	85.0	92.0				
91	110	3884	2.10	16.27	80.4	92.7	80.4	92.7				
110	132	3214	2.55	13.46	74.9	93.6	74.9	93.6				
38	46	9225	0.90	38.64	39.0	58.6	39.0	58.6	KH103-22P-200L-04F	534	480	
48	58	7365	1.10	30.85	48.6	60.8	48.6	60.8				
49	59	7210	1.05	30.20	49.2	60.9	49.2	60.9				
57	68	6227	1.25	26.08	52.7	62.1	52.7	62.1				
67	81	5264	1.45	22.05	55.5	63.2	55.5	63.2				
82	99	4298	1.75	18.00	57.7	64.3	57.7	64.3				
86	104	4104	1.05	17.19	58.1	63.4	58.1	63.4				
100	120	3545	1.25	14.85	55.3	64.2	55.3	64.2				
101	122	3486	2.20	14.60	54.1	65.2	54.1	65.2				
118	142	2999	1.45	12.56	51.7	65.0	51.7	65.0				
127	153	2784	2.70	11.66	49.4	66.0	49.4	66.0				
144	174	2447	1.75	10.25	47.6	65.7	47.6	65.7				
178	214	1984	2.20	8.31	43.9	66.4	43.9	66.4				
223	268	1585	2.70	6.64	40.3	66.9	40.3	66.9				

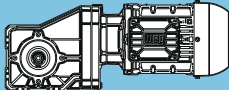
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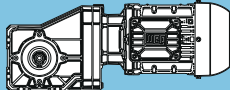
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P_N = 45 kW

IE3

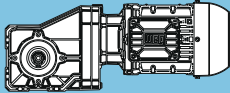
50 Hz 45 kW n ₅₀ min ⁻¹	60 Hz 55 kW n ₆₀ min ⁻¹	M ₂ Nm	f _b	i	at 50 Hz					m kg	Dimension sheet see page
					Output shaft		Hollow shaft				
					F _{rN} kN	F _{aN} kN	F _{rN} kN	F _{aN} kN			
21	26	20001	0.90	68.88	68.9	114.7	68.9	114.7	KH153-22P-225S/M-04F	1026	488
26	31	16595	1.10	57.15	83.5	117.3	83.5	117.3			
31	37	13839	1.35	47.66	92.0	119.4	92.0	119.4			
35	42	12277	1.50	42.28	95.9	120.6	95.9	120.6			
36	43	11897	1.55	40.97	96.8	120.9	96.8	120.9			
40	48	10831	1.70	37.30	99.0	121.7	99.0	121.7			
42	50	10294	1.75	35.45	100.0	122.1	100.0	122.1			
46	56	9301	1.95	32.03	101.7	122.9	101.7	122.9			
56	67	7738	2.35	26.65	104.0	124.1	104.0	124.1			
63	76	6798	2.00	23.41	105.2	123.0	105.2	123.0			
67	81	6420	2.85	22.11	105.6	125.1	105.6	125.1			
74	89	5839	2.30	20.11	106.2	124.0	106.2	124.0			
88	107	4858	2.95	16.73	107.1	125.0	107.1	125.0			
29	36	14571	0.90	50.18	64.7	82.9	64.7	82.9	KH123-22P-225S/M-04F	794	484
36	43	11978	1.10	41.25	73.6	85.5	73.6	85.5			
39	47	10979	1.20	37.81	76.3	86.5	76.3	86.5			
42	51	10169	1.30	35.02	78.3	87.3	78.3	87.3			
45	54	9591	1.40	33.03	79.6	87.9	79.6	87.9			
50	60	8679	1.50	29.89	81.5	88.8	81.5	88.8			
52	62	8284	1.60	28.53	82.2	89.2	82.2	89.2			
63	76	6853	1.90	23.60	84.5	90.6	84.5	90.6			
69	83	6260	1.30	21.56	85.3	89.8	85.3	89.8			
76	92	5639	2.35	19.42	86.1	91.8	86.1	91.8			
79	95	5471	1.50	18.84	86.3	90.8	86.3	90.8			
91	110	4724	1.75	16.27	82.4	91.7	82.4	91.7			
93	112	4634	2.85	15.96	80.6	92.9	80.6	92.9			
110	132	3908	2.10	13.46	76.5	92.7	76.5	92.7			
134	161	3214	2.55	11.07	71.0	93.5	71.0	93.5			
48	58	8958	0.90	30.85	40.7	58.9	40.7	58.9	KH103-22P-225S/M-04F	671	480
49	59	8769	0.90	30.20	41.8	59.1	41.8	59.1			
57	68	7573	1.00	26.08	47.7	60.5	47.7	60.5			
67	81	6403	1.20	22.05	52.2	61.9	52.2	61.9			
82	99	5227	1.45	18.00	55.6	63.2	55.6	63.2			
86	104	4991	0.90	17.19	56.2	62.2	56.2	62.2			
100	120	4312	1.00	14.85	57.4	63.1	57.4	63.1			
101	122	4239	1.80	14.60	55.9	64.3	55.9	64.3			
118	142	3647	1.20	12.56	53.4	64.0	53.4	64.0			
127	153	3386	2.25	11.66	50.8	65.3	50.8	65.3			
144	174	2976	1.45	10.25	49.1	65.0	49.1	65.0			
178	214	2413	1.80	8.31	45.0	65.8	45.0	65.8			
223	268	1928	2.25	6.64	41.2	66.5	41.2	66.5			

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P _N = 55 kW										IE3		
50 Hz		60 Hz		f _B	i	at 50 Hz					m kg	Dimension sheet see page
55 kW		66 kW				Output shaft		Hollow shaft				
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	F _{rN} kN			F _{aN} kN	F _{rN} kN	F _{aN} kN				
26	31	20282	0.90	57.15	67.5	114.5	67.5	114.5	KH153-22P-225S/M-04G	1074	488	
31	37	16914	1.10	47.66	82.4	117.1	82.4	117.1				
36	44	14540	1.25	40.97	90.1	118.9	90.1	118.9				
40	48	13238	1.40	37.30	93.6	119.9	93.6	119.9				
42	50	12581	1.45	35.45	95.2	120.4	95.2	120.4				
46	56	11367	1.60	32.03	97.9	121.3	97.9	121.3				
56	67	9458	1.95	26.65	101.4	122.8	101.4	122.8				
63	76	8308	1.65	23.41	103.2	121.4	103.2	121.4				
67	81	7847	2.30	22.11	103.9	124.0	103.9	124.0				
74	89	7137	1.90	20.11	104.8	122.6	104.8	122.6				
80	97	6544	2.80	18.44	105.5	125.0	105.5	125.0				
88	107	5937	2.40	16.73	106.1	123.9	106.1	123.9				
107	129	4926	2.90	13.88	107.0	124.9	107.0	124.9				
36	43	14640	0.90	41.25	64.5	82.8	64.5	82.8	KH123-22P-225S/M-04G	842	484	
42	51	12429	1.05	35.02	72.3	85.0	72.3	85.0				
45	54	11722	1.15	33.03	74.3	85.8	74.3	85.8				
50	60	10608	1.25	29.89	77.3	86.9	77.3	86.9				
52	63	10125	1.30	28.53	78.4	87.4	78.4	87.4				
63	76	8376	1.60	23.60	82.0	89.1	82.0	89.1				
76	92	6892	1.90	19.42	84.4	90.6	84.4	90.6				
79	95	6686	1.25	18.84	84.7	89.3	84.7	89.3				
91	110	5774	1.45	16.27	85.0	90.4	85.0	90.4				
93	112	5664	2.30	15.96	82.9	91.8	82.9	91.8				
109	132	4809	2.75	13.55	77.7	92.7	77.7	92.7				
110	133	4777	1.75	13.46	78.6	91.6	78.6	91.6				
134	161	3929	2.10	11.07	72.7	92.7	72.7	92.7				
163	196	3230	2.55	9.10	67.4	93.5	67.4	93.5				
191	231	2743	3.00	7.73	63.5	94.1	63.5	94.1				
224	270	2342	3.50	6.60	59.8	94.6	59.8	94.6				
57	68	9256	0.85	26.08	38.8	58.6	38.8	58.6	KH103-22P-225S/M-04G	719	480	
67	81	7826	1.00	22.05	46.6	60.2	46.6	60.2				
82	99	6388	1.20	18.00	52.2	61.9	52.2	61.9				
100	120	5270	0.85	14.85	55.5	61.8	55.5	61.8				
101	122	5182	1.45	14.60	55.7	63.2	55.7	63.2				
118	142	4458	1.00	12.56	55.6	62.9	55.6	62.9				
127	153	4138	1.85	11.66	52.6	64.4	52.6	64.4				
144	174	3638	1.20	10.25	50.8	64.1	50.8	64.1				
178	215	2949	1.45	8.31	46.5	65.0	46.5	65.0				
223	269	2357	1.85	6.64	42.3	65.9	42.3	65.9				

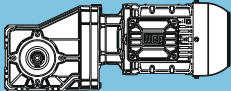
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P _N = 75 kW										IE4	
50 Hz		60 Hz		i	at 50 Hz					m kg	Dimension sheet see page
75 kW		90 kW			Output shaft		Hollow shaft				
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	f _B		F _{rN} kN	F _{aN} kN	F _{rN} kN	F _{aN} kN			
31	38	22910	0.80	47.66	**	**	**	**	KH153-22S-280S/M-04E	1178	488
36	44	19694	0.95	40.97	70.5	115.0	70.5	115.0			
40	48	17930	1.05	37.30	78.4	116.3	78.4	116.3			
42	51	17041	1.10	35.45	81.9	117.0	81.9	117.0			
47	56	15397	1.20	32.03	87.5	118.3	87.5	118.3			
56	67	12811	1.45	26.65	94.7	120.2	94.7	120.2			
64	77	11253	1.25	23.41	98.1	118.4	98.1	118.4			
67	81	10628	1.70	22.11	99.4	121.9	99.4	121.9			
74	89	9667	1.40	20.11	101.1	120.0	101.1	120.0			
81	97	8864	2.05	18.44	102.4	123.2	102.4	123.2			
89	107	8042	1.80	16.73	103.6	121.7	103.6	121.7			
94	113	7619	2.40	15.85	104.2	124.2	104.2	124.2			
107	129	6672	2.15	13.88	105.3	123.1	105.3	123.1			
109	131	6595	2.75	13.72	105.4	125.0	105.4	125.0			
129	155	5567	2.50	11.58	106.5	124.3	106.5	124.3			
150	180	4783	2.80	9.95	105.3	125.1	105.3	125.1			
43	51	16834	0.80	35.02	**	**	**	**	KH123-22S-280S/M-04E	946	484
45	54	15878	0.85	33.03	59.0	81.6	59.0	81.6			
50	60	14368	0.95	29.89	65.5	83.1	65.5	83.1			
52	63	13715	0.95	28.53	68.0	83.8	68.0	83.8			
63	76	11345	1.15	23.60	75.4	86.1	75.4	86.1			
77	92	9335	1.40	19.42	80.1	88.1	80.1	88.1			
79	95	9056	0.95	18.84	80.7	86.4	80.7	86.4			
92	110	7821	1.05	16.27	83.0	87.9	83.0	87.9			
93	112	7672	1.70	15.96	83.2	89.8	83.2	89.8			
110	132	6514	2.00	13.55	81.3	91.0	81.3	91.0			
111	133	6470	1.30	13.46	82.6	89.5	82.6	89.5			
129	155	5562	2.35	11.57	76.1	91.9	76.1	91.9			
135	162	5321	1.55	11.07	76.0	91.0	76.0	91.0			
164	197	4374	1.90	9.10	70.1	92.1	70.1	92.1			
193	232	3716	2.20	7.73	65.7	92.9	65.7	92.9			
226	271	3173	2.60	6.60	61.7	93.6	61.7	93.6			

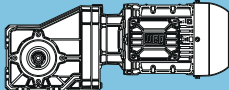
Legend see page 363

** ... on request

P _N = 90 kW										IE4		
50 Hz		60 Hz		f _B	i	at 50 Hz					m kg	Dimension sheet see page
90 kW		108 kW				Output shaft		Hollow shaft				
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	F _{rN} kN			F _{aN} kN	F _{rN} kN	F _{aN} kN				
36	44	23665	0.80	40.97	**	**	**	**				
40	48	21545	0.85	37.30	60.1	103.8	60.1	103.8				
42	50	20477	0.90	35.45	66.4	114.4	66.4	114.4				
46	56	18501	1.00	32.03	76.0	115.9	76.0	115.9				
56	67	15394	1.20	26.65	87.5	118.3	87.5	118.3				
64	76	13522	1.05	23.41	92.9	116.1	92.9	116.1				
67	81	12771	1.45	22.11	94.8	120.3	94.8	120.3				
74	89	11616	1.20	20.11	97.4	118.0	97.4	118.0				
81	97	10651	1.70	18.44	99.3	121.9	99.3	121.9				
89	107	9664	1.50	16.73	101.1	120.0	101.1	120.0				
94	113	9155	2.00	15.85	101.9	123.0	101.9	123.0				
107	129	8017	1.80	13.88	103.6	121.7	103.6	121.7				
108	130	7925	2.30	13.72	103.8	124.0	103.8	124.0				
128	154	6689	2.10	11.58	105.3	123.1	105.3	123.1				
150	179	5747	2.35	9.95	106.3	124.1	106.3	124.1				
173	207	4973	2.60	8.61	101.7	124.9	101.7	124.9				
										KH153-22S-280S/M-04F	1380	488

Legend see page 363

** ... on request

P _N = 110 kW										IE4	
50 Hz		60 Hz		i	at 50 Hz					m kg	Dimension sheet see page
110 kW		132 kW			Output shaft		Hollow shaft				
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	f _B		F _{rN} kN	F _{aN} kN	F _{rN} kN	F _{aN} kN			
46	56	22613	0.80	32.03	**	**	**	**	KH153-22S-280S/M-04G	1380	488
56	67	18814	1.00	26.65	74.7	115.6	74.7	115.6			
64	76	16527	0.85	23.41	83.8	113.0	83.8	113.0			
67	81	15609	1.20	22.11	86.8	118.1	86.8	118.1			
74	89	14197	0.95	20.11	91.1	115.4	91.1	115.4			
81	97	13018	1.40	18.44	94.2	120.1	94.2	120.1			
89	107	11811	1.20	16.73	97.0	117.8	97.0	117.8			
94	113	11190	1.65	15.85	98.3	121.5	98.3	121.5			
107	129	9799	1.45	13.88	100.9	119.9	100.9	119.9			
108	130	9686	1.90	13.72	101.1	122.6	101.1	122.6			
128	154	8175	1.70	11.58	103.4	121.6	103.4	121.6			
150	179	7025	1.90	9.95	104.9	122.8	104.9	122.8			
173	207	6078	2.15	8.61	104.1	123.7	104.1	123.7			

Selection tables - Gear units

Structure of the selection tables

1 Type	2 $i_{ges.}$	3 M_{2nenn} [Nm]	4 n_2 [min ⁻¹]	5 i_{exakt}	6 n_{1max} [min ⁻¹]	7 IEC motor frame size												
						63	71	80	90	100	112	132	160	180	200	225	-	280
						8 IEC adapter												
						I63	I71	I80	I90	I100	I112	I132	I160	I180	I200	I225	I250	I280
						9 NEMA adapter												
						N56	N143/145	N182	N184	N213/215	N254/256	N284/286	N324/326	N364	-	-		
K022																		
2 stages	10																	
$n_1=1400 \text{ min}^{-1}$	11																	
Maximum torque 110 Nm	12																	

K

1 Type	2 $i_{ges.}$	13 SERVO adapter										15 Input unit											
		13 n_{1max} [min ⁻¹]	14 Adapter size										15 n_{1max} [min ⁻¹]	16 Input shaft [mm]									
			S92	S105	S114	S115	S130	S141	S142	S180	S189	S190		19x40	24x50	28x60	38x80	42x110	48x110	55x110			

- 1 Type of gear unit
- 2 Total ratio
- 3 Permissible output torque at S1 operation ($f_b = 1.0$)
- 4 Output speed (gear unit) at $n_1 = 1400 \text{ min}^{-1}$
- 5 Exact mathematical ratio
- 6 Maximum permissible input speed gear unit. valid for direct mounting and IEC / NEMA adapter
Max. perm. input speed IEC / NEMA adapter: I63 - I132 / N56 - N213 = 3000 min^{-1} , I160 - I280 / N254 - N364 = 2500 min^{-1}
Max. perm. motor speed (Direct mounting): motor frame size 63 - 180 = 3000 min^{-1} , 200 - 280 = 2500 min^{-1} .
Higher motor speed on request
- 7 Possible motor frame sizes (Direct mounting)
- 8 Possible IEC adapter sizes
- 9 Possible NEMA adapter sizes
- 10 Number of gear stages
- 11 Motor speed
- 12 Maximum torque
- 13 Maximum input speed - SERVO adapter
- 14 Possible SERVO adapter sizes
- 15 Maximum input speed - direct mounting, IEC / NEMA adapter and input unit
Higher input speeds on request
- 16 Possible input shafts of the input unit

Type	$i_{ges.}$	M_{znom}	n_2	i_{exakt}	n_{1max}	IEC motor frame size											
						63	71	80	90	100	-	-	-	-	-	-	-
						IEC adapter											
						163	171	180	190	1100	-	-	-	-	-	-	-
NEMA adapter																	
		[Nm]	[min ⁻¹]			N56	N143/145	N182	-	-	-	-	-	-	-	-	
K022	68.88	110	20	551/8	6000												
	61.75	102	23	247/4	6000												
	53.65	110	26	1073/20	6000												
	48.10	110	29	481/10	6000												
	43.50	110	32	87/2	6000												
	39.00	110	36	39/1	6000												
	34.27	110	41	377/11	6000												
	30.88	51	45	247/8	6000												
	30.73	110	46	338/11	6000												
	26.41	110	53	1479/56	6000												
	24.05	81	58	481/20	6000												
	23.68	110	59	663/28	6000												
	20.63	103	68	1073/52	6000												
	19.50	81	72	39/2	6000												
	18.50	102	76	37/2	6000												
	15.41	93	91	493/32	6000												
	15.36	81	91	169/11	6000												
	13.81	93	101	221/16	6000												
	13.29	89	105	319/24	6000												
	11.92	89	117	143/12	6000												
	11.84	81	118	663/56	6000												
	11.60	85	121	58/5	6000												
	10.40	85	135	52/5	6000												
	9.25	81	151	37/4	6000												
	8.51	77	164	783/92	6000												
	7.63	77	183	351/46	6000												
	6.91	74	203	221/32	6000												
	5.96	69	235	143/24	6000												
	5.20	65	269	26/5	6000												
	3.82	57	367	351/92	6000												
K033	217.88	200	6.4	1743/8	6000												
	177.19	200	7.9	2835/16	6000												
	140.80	200	9.9	6195/44	6000												
	108.75	200	13	435/4	6000												
	86.83	200	16	4515/52	6000												
	71.93	200	19	1079/15	6000												
	65.63	200	21	525/8	6000												
	58.50	200	24	117/2	6000												
	49.88	200	28	399/8	6000												
	46.48	200	30	1534/33	6000												
	38.80	200	36	1785/46	6000												
	35.90	200	39	754/21	6000												
	30.29	200	46	1575/52	6000												
	29.97	129	47	1079/36	6000												
	28.67	200	49	86/3	6000												
	24.38	160	57	195/8	6000												
	21.67	200	65	65/3	6000												
	19.37	163	72	3835/198	6000												
	16.47	200	85	247/15	6000												
	14.96	163	94	1885/126	6000												
	12.81	200	109	884/69	6000												
	11.94	163	117	215/18	6000												
	10.00	200	140	10/1	6000												
	9.03	163	155	325/36	6000												
	6.86	149	204	247/36	6000												
	5.34	137	262	1105/207	6000												
	4.17	126	336	25/6	6000												

Legend see page 425

Type	$i_{ges.}$	SERVO adapter										Input unit													
		n_{1max}	Adapter size										n_{1max}	Input shaft [mm]											
			[min ⁻¹]	S92	S105	S114	S115	S130	S141	S142	S180	S189		S190	[min ⁻¹]	19x40	24x50	28x60	38x80	42x110	48x110	55x110			
K022	68.88	5000													-										
	61.75	5000													-										
	53.65	5000													3000										
	48.10	5000													3000										
	43.50	5000													3000										
	39.00	5000													3000										
	34.27	5000													3000										
	30.88	5000													-										
	30.73	5000													3000										
	26.41	5000													3000										
	24.05	5000													3000										
	23.68	5000													3000										
	20.63	5000													3000										
	19.50	5000													3000										
	18.50	5000													3000										
	15.41	4900													3000										
	15.36	5000													3000										
	13.81	4900													3000										
	13.29	4300													3000										
	11.92	4300													3000										
	11.84	5000													3000										
	11.60	3900													3000										
	10.40	3900													3000										
	9.25	5000													3000										
	8.51	3400													3000										
	7.63	3400													3000										
	6.91	4900													3000										
	5.96	4300													3000										
	5.20	3900													3000										
	3.82	3400													3000										
K033	217.88	5000													3000										
	177.19	5000													3000										
	140.80	5000													3000										
	108.75	5000													3000										
	86.83	5000													3000										
	71.93	5000													3000										
	65.63	5000													3000										
	58.50	5000													3000										
	49.88	4400													3000										
	46.48	5000													3000										
	38.80	3800													3000										
	35.90	5000													3000										
	30.29	3400													3000										
	29.97	5000													3000										
	28.67	5000													3000										
	24.38	5000													3000										
	21.67	5000													3000										
	19.37	5000													3000										
	16.47	4400													3000										
	14.96	5000													3000										
	12.81	3800													3000										
	11.94	5000													3000										
	10.00	3400													3000										
	9.03	5000													3000										
	6.86	4400													3000										
	5.34	3800													3000										
	4.17	3400													3000										

K

Legend see page 425

Type	$i_{ges.}$	M_{znenn}	n_2	i_{exakt}	n_{1max}	IEC motor frame size											
						63	71	80	90	100	112	-	-	-	-	-	-
						IEC adapter											
						163	171	180	190	1100	1112	-	-	-	-	-	-
NEMA adapter																	
		[Nm]	[min ⁻¹]			N56	N143/145	N182	N184	-	-	-	-	-	-		
K 3 stages $n_1=1400 \text{ min}^{-1}$ Maximum torque 400 Nm	277.79	400	5.0	14445/52	6000												
	227.16	400	6.2	23625/104	6000												
	179.37	400	7.8	25650/143	6000												
	139.08	400	10	50625/364	6000												
	113.83	400	12	38475/338	6000												
	89.17	378	16	535/6	6000												
	87.62	400	16	18225/208	6000												
	72.92	400	19	875/12	6000												
	66.20	400	21	6885/104	6000												
	57.58	400	24	1900/33	6000												
	54.18	400	26	16200/299	6000												
	47.07	200	30	93197/1980	6000												
	44.64	400	31	625/14	6000												
	43.93	400	32	7425/169	6000												
	38.49	270	36	30485/792	6000												
	36.78	384	38	3825/104	5600												
	36.54	400	38	475/13	6000												
	30.39	324	46	33098/1089	6000												
	29.81	361	47	775/26	5000												
	28.74	357	49	20925/728	4800												
	28.13	400	50	225/8	6000												
	23.57	307	59	21775/924	6000												
	21.25	400	66	85/4	6000												
	19.29	294	73	1273/66	6000												
	17.39	400	81	400/23	6000												
	14.85	278	94	2613/176	6000												
	14.10	400	99	550/39	6000												
	11.81	400	119	425/36	5600												
	11.22	262	125	14807/1320	6000												
	9.57	373	146	775/81	5000												
	9.23	369	152	775/84	4800												
	9.18	251	152	6968/759	6000												
	7.44	240	188	67/9	6000												
6.23	231	225	14807/2376	5600													
5.05	221	277	27001/5346	5000													
4.87	219	287	27001/5544	4800													

Legend see page 425

Type	$i_{ges.}$	SERVO adapter											Input unit																	
		n_{1max}	Adapter size											n_{1max}	Input shaft [mm]															
			[min ⁻¹]	S92	S105	S114	S115	S130	S141	S142	S180	S189	S190		[min ⁻¹]	19x40	24x50	28x60	38x80	42x110	48x110	55x110								
K043	277.79	5000														3000														
	227.16	5000														3000														
	179.37	5000														3000														
	139.08	5000														3000														
	113.83	5000														3000														
	89.17	5000														3000														
	87.62	5000														3000														
	72.92	5000														3000														
	66.20	4900														3000														
	57.58	5000														3000														
	54.18	4200														3000														
	47.07	5000														3000														
	44.64	5000														3000														
	43.93	3700														3000														
	38.49	5000														3000														
	36.78	3400														3000														
	36.54	5000														3000														
	30.39	5000														3000														
	29.81	3000														3000														
	28.74	2900														2900														
	28.13	5000														3000														
	23.57	5000														3000														
	21.25	4900														3000														
	19.29	5000														3000														
	17.39	4200														3000														
	14.85	5000														3000														
	14.10	3700														3000														
	11.81	3400														3000														
	11.22	4900														3000														
	9.57	3000														3000														
	9.23	2900														2900														
	9.18	4200														3000														
	7.44	3700														3000														
	6.23	3400														3000														
	5.05	3000														3000														
	4.87	2900														2900														



Legend see page 425

Type	$i_{ges.}$	M_{znom}	n_2	i_{exakt}	n_{1max}	IEC motor frame size												
						63	71	80	90	100	112	132	-	-	-	-	-	-
						IEC adapter												
						163	171	180	190	1100	1112	1132	-	-	-	-	-	-
NEMA adapter						NEMA adapter												
		[Nm]	[min ⁻¹]			N56	N143/145	N182	N184	N213/215	-	-	-	-	-	-		
K053 3 stages $n_1=1400 \text{ min}^{-1}$ Maximum torque 600 Nm	245.70	600	5.7	2457/10	6000													
	194.73	600	7.2	2142/11	6000													
	151.20	600	9.3	756/5	6000													
	124.06	600	11	8064/65	6000													
	96.08	600	15	3843/40	6000													
	80.46	564	17	7644/95	6000													
	73.08	600	19	1827/25	6000													
	63.77	600	22	13328/209	6000													
	60.26	600	23	1386/23	6000													
	49.52	600	28	4704/95	6000													
	49.43	600	28	3213/65	6000													
	42.00	600	33	42/1	5600													
	40.63	600	34	50176/1235	6000													
	38.32	268	37	728/19	6000													
	34.53	600	41	518/15	5000													
	33.30	600	42	333/10	4800													
	31.46	600	44	2989/95	6000													
	30.37	392	46	19040/627	6000													
	27.39	577	51	630/23	4400													
	23.93	600	58	11368/475	6000													
	23.58	413	59	448/19	6000													
	19.73	600	71	8624/437	6000													
	19.35	413	72	14336/741	6000													
	16.19	600	86	19992/1235	6000													
	14.98	413	93	854/57	6000													
	13.75	600	102	784/57	5600													
	11.40	413	123	3248/285	6000													
	11.31	600	124	29008/2565	5000													
	10.91	600	128	1036/95	4800													
	9.40	413	149	12320/1311	6000													
	8.97	565	156	3920/437	4400													
	7.71	413	182	1904/247	6000													
	6.55	413	214	1120/171	5600													
5.39	413	260	8288/1539	5000														
5.19	413	270	296/57	4800														
4.27	413	328	5600/1311	4400														

Legend see page 425

Type	i _{ges.}	SERVO adapter											Input unit										
		n _{1max}	Adapter size											n _{1max}	Input shaft [mm]								
			[min ⁻¹]	S92	S105	S114	S115	S130	S141	S142	S180	S189	S190		[min ⁻¹]	19x40	24x50	28x60	38x80	42x110	48x110	55x110	
K053	245.70	5000												3000									
	194.73	5000												3000									
	151.20	5000												3000									
	124.06	5000												3000									
	96.08	5000												3000									
	80.46	5000												3000									
	73.08	5000												3000									
	63.77	5000												3000									
	60.26	4500												3000									
	49.52	5000												3000									
	49.43	3900												3000									
	42.00	3600												3000									
	40.63	5000												3000									
	38.32	5000												3000									
	34.53	3200												3000									
	33.30	3100												3000									
	31.46	5000												3000									
	30.37	5000												3000									
	27.39	2800												2800									
	23.93	5000												3000									
	23.58	5000												3000									
	19.73	4500												3000									
	19.35	5000												3000									
	16.19	3900												3000									
	14.98	5000												3000									
	13.75	3600												3000									
	11.40	5000												3000									
	11.31	3200												3000									
	10.91	3100												3000									
	9.40	4500												3000									
	8.97	2800												2800									
	7.71	3900												3000									
	6.55	3600												3000									
	5.39	3200												3000									
	5.19	3100												3000									
	4.27	2800												2800									

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Legend see page 425

Type	$i_{ges.}$	M_{znom}	n_2	i_{exakt}	n_{1max}	IEC motor frame size												
						63	71	80	90	100	112	132	-	-	-	-	-	-
						IEC adapter												
						163	171	180	190	1100	1112	1132	-	-	-	-	-	-
NEMA adapter																		
		[Nm]	[min ⁻¹]			N56	N143/145	N182	N184	N213/215	-	-	-	-	-	-		
K063 3 stages $n_1=1400 \text{ min}^{-1}$ Maximum torque 820 Nm	198.00	820	7.1	198/1	6000													
	156.92	820	8.9	2040/13	6000													
	121.85	820	11	1584/13	6000													
	99.98	820	14	16896/169	6000													
	81.53	571	17	1386/17	6000													
	77.42	820	18	2013/26	6000													
	64.62	820	22	840/13	6000													
	58.89	820	24	3828/65	6000													
	50.17	820	28	11088/221	6000													
	48.56	820	29	14520/299	6000													
	44.35	311	32	754/17	6000													
	41.17	820	34	118272/2873	6000													
	39.83	795	35	6732/169	6000													
	35.15	454	40	1160/33	6000													
	33.85	757	41	440/13	5600													
	31.88	820	44	14091/442	6000													
	27.83	714	50	3256/117	5000													
	27.29	500	51	464/17	6000													
	26.84	707	52	2442/91	4800													
	24.25	782	58	26796/1105	6000													
	22.40	500	63	14848/663	6000													
	22.07	666	63	6600/299	4400													
	20.00	738	70	101640/5083	6000													
	17.34	500	81	1769/102	6000													
	16.40	695	85	2772/169	6000													
	13.94	662	100	3080/221	5600													
	13.19	500	106	3364/255	6000													
	11.46	624	122	22792/1989	5000													
	11.05	618	127	2442/221	4800													
	10.88	500	129	12760/1173	6000													
	9.09	582	154	46200/5083	4400													
	8.92	500	157	116/13	6000													
7.58	487	185	1160/153	5600														
6.23	459	225	8584/1377	5000														
6.01	454	233	2146/357	4800														
4.94	428	283	5800/1173	4400														

Legend see page 425

Type	$i_{ges.}$	SERVO adapter											Input unit										
		n_{1max}	Adapter size											n_{1max}	Input shaft [mm]								
			[min ⁻¹]	S92	S105	S114	S115	S130	S141	S142	S180	S189	S190		[min ⁻¹]	19x40	24x50	28x60	38x80	42x110	48x110	55x110	
K063	198.00	5000												3000									
	156.92	5000												3000									
	121.85	5000												2500									
	99.98	5000												2500									
	81.53	5000												3000									
	77.42	5000												2500									
	64.62	5000												3000									
	58.89	5000												2500									
	50.17	5000												2500									
	48.56	4700												2500									
	44.35	5000												3000									
	41.17	5000												2500									
	39.83	4200												2500									
	35.15	5000												3000									
	33.85	3700												2500									
	31.88	5000												2500									
	27.83	3300												2500									
	27.29	5000												2500									
	26.84	3200												2500									
	24.25	5000												2500									
	22.40	5000												2500									
	22.07	2900												2500									
	20.00	4700												2500									
	17.34	5000												2500									
	16.40	4200												2500									
	13.94	3700												2500									
	13.19	5000												2500									
	11.46	3300												2500									
	11.05	3200												2500									
	10.88	4700												2500									
	9.09	2900												2500									
	8.92	4200												2500									
	7.58	3700												2500									
	6.23	3300												2500									
	6.01	3200												2500									
	4.94	2900												2500									

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Legend see page 425

Type	$i_{ges.}$	M_{znom}	n_2	i_{exakt}	n_{1max}	IEC motor frame size												
						63	71	80	90	100	112	132	160	-	-	-	-	-
						IEC adapter												
						l63	l71	l80	l90	l100	l112	l132	-	-	-	-	-	-
NEMA adapter																		
		[Nm]	[min ⁻¹]			N56	N143/145	N182	N184	N213/215	-	-	-	-	-	-		
K073	256.14	1550	5.5	5635/22	6000													
	197.75	1550	7.1	791/4	6000													
	165.85	1550	8.4	2156/13	6000													
	130.16	1550	11	4165/32	6000													
	100.45	1550	14	2009/20	6000													
	99.87	1288	14	18676/187	6000													
	83.09	1550	17	1911/23	6000													
	77.11	1550	18	6554/85	6000													
	70.67	1550	20	3675/52	6000													
	64.67	1550	22	71456/1105	6000													
	61.25	1550	23	245/4	5600						*							
	51.72	1550	27	931/18	5000						*							
	50.75	1550	28	203/4	6000													
	49.88	1550	28	399/8	4800													
	47.56	613	29	26680/561	6000													
	42.61	1550	33	980/23	4400						*							
	39.17	1550	36	16646/425	6000													
	36.72	757	38	13108/357	6000													
	32.40	1550	43	63336/1955	6000													
	30.79	910	45	20416/663	6000													
	27.56	1550	51	6090/221	6000													
	24.17	910	58	145/6	6000													
	23.88	1550	59	406/17	5600						*							
	20.17	1550	69	15428/765	5000						*							
	19.45	1550	72	1653/85	4800													
	18.65	910	75	4756/255	6000													
	16.61	1550	84	6496/391	4400						*							
	15.43	910	91	6032/391	6000													
	13.12	910	107	2900/221	6000													
	11.37	910	123	580/51	5600						*							
	9.60	910	146	4408/459	5000						*							
	9.26	910	151	1102/119	4800													
	7.91	910	177	9280/1173	4400						*							

* Only direct mounting of motor possible

Type	i _{ges.}	SERVO adapter											Input unit											
		n _{1max}	Adapter size											n _{1max}	Input shaft [mm]									
			[min ⁻¹]	S92	S105	S114	S115	S130	S141	S142	S180	S189	S190		[min ⁻¹]	19x40	24x50	28x60	38x80	42x110	48x110	55x110		
K073	256.14	5000												3000										
	197.75	5000												2500										
	165.85	5000												2500										
	130.16	5000												2500										
	100.45	5000												2500										
	99.87	5000												3000										
	83.09	5000												2500										
	77.11	5000												2500										
	70.67	4600												2500										
	64.67	5000												2500										
	61.25	4200												2500										
	51.72	3700												2500										
	50.75	5000												2500										
	49.88	3600												2500										
	47.56	5000												3000										
	42.61	3300												2500										
	39.17	5000												2500										
	36.72	5000												2500										
	32.40	5000												2500										
	30.79	5000												2500										
	27.56	4600												2500										
	24.17	5000												2500										
	23.88	4200												2500										
	20.17	3700												2500										
	19.45	3600												2500										
	18.65	5000												2500										
	16.61	3300												2500										
	15.43	5000												2500										
	13.12	4600												2500										
	11.37	4200												2500										
	9.60	3700												2500										
	9.26	3600												2500										
	7.91	3300												2500										

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Legend see page 425

Type	$i_{ges.}$	M_{znom}	n_2	i_{exakt}	n_{1max}	IEC motor frame size												
						63	71	80	90	100	112	132	160	180	-	-	-	-
						IEC adapter												
						l63	l71	l80	l90	l100	l112	l132	l160	l180	-	-	-	-
NEMA adapter																		
		[Nm]	[min ⁻¹]			N56	N143/145	N182	N184	N213/215	N254/256	N284/286	-	-	-	-		
K 3 stages $n_1=1400\text{ min}^{-1}$ Maximum torque 3000 Nm	K083	206.12	3000	6.8	13398/65	6000												
		163.14	3000	8.6	26103/160	6000												
		142.45	3000	9.8	2849/20	6000												
		125.90	3000	11	25179/200	6000												
		106.46	3000	13	12243/115	6000												
		91.51	3000	15	23793/260	6000												
		79.89	3000	18	6391/80	5600												
		79.75	2851	18	319/4	6000												
		68.44	3000	20	616/9	5000												
		66.00	3000	21	66/1	4800												
		63.12	2860	22	16159/256	6000												
		58.25	3000	24	6699/115	4400												
		55.11	3000	25	5291/96	6000												
		48.87	3000	29	2541/52	3900												
		48.71	3000	29	15587/320	6000												
		45.48	1626	31	2001/44	6000												
		41.19	3000	34	7579/184	6000												
		41.18	3000	34	9471/230	3500												
		35.99	1631	39	101361/2816	6000												
		35.41	3000	40	1133/32	6000												
		33.76	3000	41	4389/130	3100												
		31.43	1916	45	11063/352	6000												
		30.91	3000	45	11869/384	5600												
		27.78	1901	50	97773/3520	6000												
		26.48	2972	53	715/27	5000												
		25.54	2940	55	715/28	4800												
		23.49	1916	60	2067/88	6000												
		22.54	2832	62	4147/184	4400												
		20.19	1886	69	7107/352	6000												
		18.91	2686	74	605/32	3900												
		17.63	1937	79	24817/1408	5600												
		15.93	2552	88	5863/368	3500												
		15.10	1937	93	1495/99	5000												
		14.56	1748	96	4485/308	4800												
		13.06	2404	107	209/16	3100												
		12.85	1937	109	1131/88	4400												
		10.78	1937	130	345/32	3900												
		9.09	1937	154	1599/176	3500												
		7.45	1937	188	1311/176	3100												

Legend see page 425

Type	i _{ges.}	SERVO adapter											Input unit												
		n _{1max}	Adapter size											n _{1max}	Input shaft [mm]										
			[min ⁻¹]	S92	S105	S114	S115	S130	S141	S142	S180	S189	S190		[min ⁻¹]	19x40	24x50	28x60	38x80	42x110	48x110	55x110			
K083	206.12	5000													2500										
	163.14	5000													2500										
	142.45	5000													2500										
	125.90	5000													2500										
	106.46	5000													2500										
	91.51	5000													2500										
	79.89	4500													2500										
	79.75	5000													2500										
	68.44	4000													2500										
	66.00	3900													2500										
	63.12	5000													2500										
	58.25	3600													2500										
	55.11	5000													2500										
	48.87	3100													2500										
	48.71	5000													2500										
	45.48	5000													2500										
	41.19	5000													2500										
	41.18	2800													2500										
	35.99	5000													2500										
	35.41	5000													2500										
	33.76	-													2500										
	31.43	5000													2500										
	30.91	4500													2500										
	27.78	5000													2500										
	26.48	4000													2500										
	25.54	3900													2500										
	23.49	5000													2500										
	22.54	3600													2500										
	20.19	5000													2500										
	18.91	3100													2500										
	17.63	4500													2500										
	15.93	2800													2500										
	15.10	4000													2500										
	14.56	3900													2500										
	13.06	-													2500										
	12.85	3600													2500										
	10.78	3100													2500										
	9.09	2800													2500										
	7.45	-													2500										

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Legend see page 425

Type	$i_{ges.}$	M_{znom}	n_2	i_{exakt}	n_{1max}	IEC motor frame size												
						63	71	80	90	100	112	132	-	-	-	-	-	-
						IEC adapter												
						l63	l71	l80	l90	l100	l112	l132	-	-	-	-	-	-
NEMA adapter																		
		[Nm]	[min ⁻¹]		[min ⁻¹]	N56	N143/145	N182	N184	N213/215	-	-	-	-	-	-		
K084 4 stages $n_1=1400 \text{ min}^{-1}$ Maximum torque 3000 Nm	2205.52	3000	0.63	716793/325	6000													
	1803.58	3000	0.78	46893/26	6000													
	1745.64	3000	0.80	2793021/1600	6000													
	1524.22	3000	0.92	304843/200	6000													
	1427.51	3000	0.98	182721/128	6000													
	1424.12	3000	0.98	92568/65	6000													
	1246.44	3000	1.1	19943/16	6000													
	1127.18	3000	1.2	45087/40	6000													
	1104.23	3000	1.3	14355/13	6000													
	984.20	3000	1.4	4921/5	6000													
	903.77	3000	1.5	763686/845	6000													
	873.98	3000	1.6	55935/64	6000													
	763.13	3000	1.8	6105/8	6000													
	715.32	3000	2.0	1487871/2080	6000													
	695.67	3000	2.0	180873/260	6000													
	624.59	3000	2.2	162393/260	6000													
	550.61	3000	2.5	704781/1280	6000													
	525.61	3000	2.7	341649/650	6000													
	480.77	3000	2.9	76923/160	6000													
	430.17	3000	3.3	643104/1495	6000													
	416.02	3000	3.4	1331253/3200	6000													
	363.25	3000	3.9	145299/400	6000													
	348.82	3000	4.0	294756/845	6000													
	340.47	3000	4.1	78309/230	6000													
	297.29	3000	4.7	34188/115	6000													
	292.01	3000	4.8	37961/130	5600													
	276.09	3000	5.1	287133/1040	6000													
	241.07	3000	5.8	31339/130	6000													
	236.66	3000	5.9	138446/585	5000													
	231.12	3000	6.1	147917/640	5600													
	228.21	3000	6.1	29667/130	4800													
	201.80	3000	6.9	48433/240	5600													
187.31	3000	7.5	269731/1440	5000														
180.62	3000	7.8	115599/640	4800														
163.55	3000	8.6	88319/540	5000														
157.71	3000	8.9	12617/80	4800														

Legend see page 425

Type	$i_{ges.}$	SERVO adapter											Input unit															
		n_{1max}	Adapter size											n_{1max}	Input shaft [mm]													
			[min ⁻¹]	S92	S105	S114	S115	S130	S141	S142	S180	S189	S190		[min ⁻¹]	19x40	24x50	28x60	38x80	42x110	48x110	55x110						
K084	2205.52	5000													3000													
	1803.58	5000													3000													
	1745.64	5000													3000													
	1524.22	5000													3000													
	1427.51	5000													3000													
	1424.12	5000													3000													
	1246.44	5000													3000													
	1127.18	5000													3000													
	1104.23	5000													3000													
	984.20	5000													3000													
	903.77	5000													3000													
	873.98	5000													3000													
	763.13	5000													3000													
	715.32	5000													3000													
	695.67	5000													3000													
	624.59	5000													3000													
	550.61	5000													3000													
	525.61	5000													3000													
	480.77	5000													3000													
	430.17	5000													3000													
	416.02	5000													3000													
	363.25	5000													3000													
	348.82	5000													3000													
	340.47	5000													3000													
	297.29	5000													3000													
	292.01	4500													3000													
	276.09	5000													3000													
	241.07	5000													3000													
	236.66	4000													3000													
	231.12	4500													3000													
	228.21	3900													3000													
	201.80	4500													3000													
	187.31	4000													3000													
	180.62	3900													3000													
	163.55	4000													3000													
	157.71	3900													3000													

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Legend see page 425

Type	$i_{ges.}$	M_{znom}	n_2	i_{exakt}	n_{1max}	IEC motor frame size												
						63	71	80	90	100	112	132	160	180	200	-	-	-
						IEC adapter												
						l63	l71	l80	l90	l100	l112	l132	l160	l180	-	-	-	-
NEMA adapter																		
		[Nm]	[min ⁻¹]			N56	N143/145	N182	N184	N213/215	N254/256	N284/286	-	-	-	-		
K 3 stages $n_1=1400\text{ min}^{-1}$ Maximum torque 4500 Nm	169.25	4500	8.3	21156/125	6000													
	143.08	4500	9.8	49364/345	6000													
	123.86	4500	11	241531/1950	6000													
	109.70	4500	13	24682/225	5600													
	94.90	4500	15	192167/2025	5000													
	91.51	4500	15	192167/2100	4800													
	80.74	4500	17	139277/1725	4400													
	68.71	4500	20	66994/975	3900									*				
	63.96	4500	22	1599/25	6000													
	59.28	4500	24	102254/1725	3500									*				
	54.07	4500	26	3731/69	6000													
	49.73	4500	28	19393/390	3100									*				
	46.81	4500	30	5617/120	6000													
	41.46	4500	34	3731/90	5600													
	40.43	4500	35	75809/1875	2700									*				
	37.13	2785	38	8541/230	6000													
	35.86	4500	39	58097/1620	5000													
	34.58	4149	40	58097/1680	4800													
	31.61	4500	44	22919/725	2300									*				
	31.39	2806	45	33215/1058	6000													
	30.51	4500	46	42107/1380	4400													
	27.18	2795	52	10001/368	6000													
	25.97	4500	54	779/30	3900									*				
	24.07	2991	58	6643/276	5600													
	22.40	4500	62	15457/690	3500									*				
	20.82	2991	67	103441/4968	5000													
	20.08	2409	70	103441/5152	4800													
	18.79	4500	75	451/24	3100									*				
	17.72	2991	79	74971/4232	4400													
	15.28	4500	92	22919/1500	2700									*				
	15.08	2991	93	1387/92	3900									*				
	13.01	2991	108	27521/2116	3500									*				
11.95	4500	117	6929/580	2300									*					
10.91	2991	128	4015/368	3100									*					
8.87	2991	158	40807/4600	2700									*					
6.94	2991	202	37011/5336	2300									*					

* Only direct mounting of motor possible

Type	i _{ges.}	SERVO adapter											Input unit												
		n _{1max}	Adapter size											n _{1max}	Input shaft [mm]										
			[min ⁻¹]	S92	S105	S114	S115	S130	S141	S142	S180	S189	S190		[min ⁻¹]	19x40	24x50	28x60	38x80	42x110	48x110	55x110			
K093	169.25	5000													2500										
	143.08	5000													2500										
	123.86	5000													2500										
	109.70	4800													2500										
	94.90	4200													2500										
	91.51	4100													2500										
	80.74	3700													2500										
	68.71	3300													2500										
	63.96	5000													2500										
	59.28	3000													2500										
	54.07	5000													2500										
	49.73	-													2500										
	46.81	5000													2500										
	41.46	4800													2500										
	40.43	-													2300										
	37.13	5000													2500										
	35.86	4200													2500										
	34.58	4100													2500										
	31.61	-													2000										
	31.39	5000													2500										
	30.51	3700													2500										
	27.18	5000													2500										
	25.97	3300													2500										
	24.07	4800													2500										
	22.40	3000													2500										
	20.82	4200													2500										
	20.08	4100													2500										
	18.79	-													2500										
	17.72	3700													2500										
	15.28	-													2300										
	15.08	3300													2500										
	13.01	3000													2500										
	11.95	-													2000										
	10.91	-													2500										
	8.87	-													2300										
	6.94	-													2000										

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Type	$i_{ges.}$	M_{znom}	n_2	i_{exakt}	n_{1max}	IEC motor frame size												
						63	71	80	90	100	112	132	-	-	-	-	-	-
						IEC adapter												
						l63	l71	l80	l90	l100	l112	l132	-	-	-	-	-	-
NEMA adapter																		
		[Nm]	[min ⁻¹]			N56	N143/145	N182	N184	N213/215	-	-	-	-	-	-		
K094	1810.95	4500	0.77	1131846/625	6000													
4 stages	1531.00	4500	0.91	2640974/1725	6000													
	1480.92	4500	0.95	37023/25	6000													
	1251.99	4500	1.1	86387/69	6000													
	1169.35	4500	1.2	1607856/1375	6000													
	988.58	4500	1.4	3751664/3795	6000													
	906.69	4500	1.5	31734/35	6000													
	766.52	4500	1.8	17630/23	6000													
	742.09	4500	1.9	1205892/1625	6000													
	627.37	4500	2.2	937916/1495	6000													
	571.21	4500	2.5	142803/250	6000													
	482.91	4500	2.9	111069/230	6000													
	431.58	4500	3.2	269739/625	6000													
	364.86	4500	3.8	209797/575	6000													
	Maximum torque 4500 Nm	353.21	4500	4.0	1015488/2875	6000												
		298.61	4500	4.7	789824/2645	6000												
		286.42	4500	4.9	465432/1625	6000												
242.14		4500	5.8	1086008/4485	6000													
239.77		4500	5.8	29971/125	5600													
202.70		4500	6.9	209797/1035	5600													
194.32		4500	7.2	218612/1125	5000													
187.38		4500	7.5	163959/875	4800													
164.28		4500	8.5	1530284/9315	5000													
158.41		4500	8.8	54653/345	4800													



Legend see page 425

Type	i _{ges.}	SERVO adapter											Input unit										
		n _{1max}	Adapter size											n _{1max}	Input shaft [mm]								
			[min ⁻¹]	S92	S105	S114	S115	S130	S141	S142	S180	S189	S190		[min ⁻¹]	19x40	24x50	28x60	38x80	42x110	48x110	55x110	
K094	1810.95	5000												3000									
	1531.00	5000												3000									
	1480.92	5000												3000									
	1251.99	5000												3000									
	1169.35	5000												3000									
	988.58	5000												3000									
	906.69	5000												3000									
	766.52	5000												3000									
	742.09	5000												3000									
	627.37	5000												3000									
	571.21	5000												3000									
	482.91	5000												3000									
	431.58	5000												3000									
	364.86	5000												3000									
	353.21	5000												3000									
	298.61	5000												3000									
	286.42	5000												3000									
	242.14	5000												3000									
	239.77	4800												3000									
	202.70	4800												3000									
	194.32	4200												3000									
	187.38	4100												3000									
	164.28	4200												3000									
	158.41	4100												3000									

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Legend see page 425

Type	$i_{ges.}$	M_{znom}	n_2	i_{exakt}	n_{1max}	IEC motor frame size												
						63	71	80	90	100	112	132	160	180	200	225	-	-
						IEC adapter												
						l63	l71	l80	l90	l100	l112	l132	l160	l180	l200	l225	-	-
NEMA adapter																		
		[Nm]	[min ⁻¹]			N56	N143/145	N182	N184	N213/215	N254/256	N284/286	N324/326	N364	-	-		
K103	140.95	8000	9.9	128269/910	6000													
	124.50	8000	11	13072/105	5600													
	108.07	8000	13	20425/189	5000													
	104.21	8000	13	20425/196	4800													
	93.37	8000	15	3268/35	4400													
	79.90	8000	18	72713/910	3900													
	69.01	8000	20	55556/805	3500													
	58.36	8000	24	817/14	3100													
	53.27	5963	26	2983/56	6000													
	47.62	8000	29	41667/875	2700													
	47.05	7498	30	988/21	5600													
	40.84	7498	34	30875/756	5000													
	39.38	4728	36	30875/784	4800													
	38.64	8000	36	39216/1015	2300													
	35.29	7498	40	247/7	4400													
	30.85	8000	45	30229/980	2100													
	30.33	3395	46	2669/88	6000													
	30.20	7498	46	1691/56	3900													
	26.79	4269	52	884/33	5600													
	26.08	7498	54	4199/161	3500													
	23.25	4269	60	27625/1188	5000													
	22.42	2692	62	27625/1232	4800													
	22.05	7498	63	1235/56	3100													
	20.09	4269	70	221/11	4400													
	18.00	7498	78	12597/700	2700													
	17.19	4269	81	1513/88	3900													
	14.85	4269	94	3757/253	3500													
	14.60	7498	96	2964/203	2300													
	12.56	4269	111	1105/88	3100													
	11.66	7498	120	9139/784	2100													
	10.25	4269	137	11271/1100	2700													
	8.31	4269	168	2652/319	2300													
	6.64	4269	211	8177/1232	2100													

Legend see page 425

Type	$i_{ges.}$	SERVO adapter											Input unit															
		n_{1max}	Adapter size											n_{1max}	Input shaft [mm]													
			[min ⁻¹]	S92	S105	S114	S115	S130	S141	S142	S180	S189	S190		[min ⁻¹]	19x40	24x50	28x60	38x80	42x110	48x110	55x110						
K103	140.95	5000													2500													
	124.50	5000													2500													
	108.07	4500													2500													
	104.21	4400													2500													
	93.37	4000													2500													
	79.90	3500													2500													
	69.01	3200													1800													
	58.36	-													1800													
	53.27	5000													2500													
	47.62	-													1800													
	47.05	5000													2500													
	40.84	4500													2500													
	39.38	4400													2500													
	38.64	-													1800													
	35.29	4000													2500													
	30.85	-													1800													
	30.33	5000													2500													
	30.20	3500													2500													
	26.79	5000													2500													
	26.08	3200													1800													
	23.25	4500													2500													
	22.42	4400													2500													
	22.05	-													1800													
	20.09	4000													2500													
	18.00	-													1800													
	17.19	3500													2500													
	14.85	3200													1800													
	14.60	-													1800													
	12.56	-													1800													
	11.66	-													1800													
	10.25	-													1800													
	8.31	-													1800													
	6.64	-													1800													

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Legend see page 425

Type	$i_{ges.}$	M_{znom}	n_2	i_{exakt}	n_{1max}	IEC motor frame size												
						63	71	80	90	100	112	132	160	-	-	-	-	-
						IEC adapter												
						l63	l71	l80	l90	l100	l112	l132	l160	-	-	-	-	-
NEMA adapter																		
		[Nm]	[min ⁻¹]			N56	N143/145	N182	N184	N213/215	N254/256	-	-	-	-	-		
K104 4 stages $n_1=1400 \text{ min}^{-1}$ Maximum torque 8000 Nm	1301.54	8000	1.1	300656/231	6000													
	1129.81	8000	1.2	2348875/2079	6000													
	1004.85	8000	1.4	738568/735	6000													
	976.16	8000	1.4	75164/77	6000													
	872.27	8000	1.6	2308025/2646	6000													
	842.74	8000	1.7	1150336/1365	6000													
	753.64	8000	1.9	184642/245	6000													
	731.54	8000	1.9	1797400/2457	6000													
	661.38	8000	2.1	13889/21	6000													
	632.05	8000	2.2	287584/455	6000													
	574.12	8000	2.4	1736125/3024	6000													
	510.43	8000	2.7	267976/525	6000													
	496.04	8000	2.8	13889/28	6000													
	443.08	8000	3.2	167485/378	6000													
	422.20	8000	3.3	339872/805	6000													
	382.82	8000	3.7	66994/175	6000													
	366.49	8000	3.8	531050/1449	6000													
	359.12	8000	3.9	32680/91	6000													
	316.65	8000	4.4	254904/805	6000													
	311.74	8000	4.5	510625/1638	6000													
	311.24	8000	4.5	6536/21	5600													
	270.17	8000	5.2	102125/378	5600													
	269.34	8000	5.2	24510/91	6000													
	262.82	8000	5.3	248368/945	5000													
	253.44	8000	5.5	62092/245	4800													
	233.43	8000	6.0	1634/7	5600													
	228.15	8000	6.1	388075/1701	5000													
	220.00	8000	6.4	388075/1764	4800													
	216.51	8000	6.5	104576/483	4400													
	197.12	8000	7.1	62092/315	5000													
	190.08	8000	7.4	46569/245	4800													
	187.95	8000	7.4	817000/4347	4400													
162.39	8000	8.6	26144/161	4400														

Legend see page 425

Type	i _{ges.}	SERVO adapter											Input unit									
		n _{1max}	Adapter size											n _{1max}	Input shaft [mm]							
			[min ⁻¹]	S92	S105	S114	S115	S130	S141	S142	S180	S189	S190		[min ⁻¹]	19x40	24x50	28x60	38x80	42x110	48x110	55x110
K104	1301.54	5000												3000								
	1129.81	5000												3000								
	1004.85	5000												2500								
	976.16	5000												3000								
	872.27	5000												2500								
	842.74	5000												2500								
	753.64	5000												2500								
	731.54	5000												2500								
	661.38	5000												2500								
	632.05	5000												2500								
	574.12	5000												2500								
	510.43	5000												2500								
	496.04	5000												2500								
	443.08	5000												2500								
	422.20	5000												2500								
	382.82	5000												2500								
	366.49	5000												2500								
	359.12	5000												2500								
	316.65	5000												2500								
	311.74	5000												2500								
	311.24	5000												2500								
	270.17	5000												2500								
	269.34	5000												2500								
	262.82	4500												2500								
	253.44	4400												2500								
	233.43	5000												2500								
	228.15	4500												2500								
	220.00	4400												2500								
	216.51	4000												2500								
	197.12	4500												2500								
	190.08	4400												2500								
	187.95	4000												2500								
	162.39	4000												2500								

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Legend see page 425

Type	$i_{ges.}$	M_{znenn}	n_2	i_{exakt}	n_{1max}	IEC motor frame size													
						63	71	80	90	100	112	132	160	180	200	225	-	-	
						IEC adapter													
						l63	l71	l80	l90	l100	l112	l132	l160	l180	l200	l225	l250	-	
NEMA adapter																			
		[Nm]	[min ⁻¹]			N56	N143/145	N182	N184	N213/215	N254/256	N284/286	N324/326	N364	-	-			
K123	151.11	13000	9.3	12089/80	5600														
	131.76	13000	11	5929/45	5000														
	127.05	13000	11	2541/20	4800														
	113.49	13000	12	26103/230	4400														
	97.73	13000	14	2541/26	3900														
	85.37	13000	16	3927/46	3500											*			
	73.74	13000	19	19173/260	3100											*			
	60.98	13000	23	7623/125	2700											*			
	58.47	8768	24	22451/384	5600														
	50.98	9688	27	11011/216	5000														
	50.18	13000	28	14553/290	2300											*			
	49.16	5899	28	1573/32	4800														
	43.91	12727	32	16159/368	4400														
	41.25	13000	34	165/4	2100											*			
	37.81	13000	37	605/16	3900														
	35.02	13000	40	10857/310	1900											*			
	33.34	5000	42	46943/1408	5600														
	33.03	13000	42	12155/368	3500											*			
	29.89	13000	47	2541/85	1800											*			
	29.07	5525	48	2093/72	5000														
	Maximum torque 13000 Nm	28.53	13000	49	913/32	3100										*			
		28.03	3364	50	897/32	4800													
		25.04	7258	56	4407/176	4400													
		23.60	13000	59	4719/200	2700										*			
		21.56	8053	65	345/16	3900													
		19.42	13000	72	9009/464	2300										*			
		18.84	8155	74	3315/176	3500										*			
		16.27	8155	86	5727/352	3100										*			
		15.96	13000	88	3575/224	2100										*			
		13.55	13000	103	6721/496	1900										*			
		13.46	8155	104	2691/200	2700										*			
		11.57	13000	121	1573/136	1800										*			
		11.07	8155	126	56511/5104	2300										*			
9.10		8155	154	22425/2464	2100										*				
7.73		8155	181	42159/5456	1900										*				
6.60	8155	212	897/136	1800										*					

* l250 only. Direct mounting of the motor not possible

Type	i _{ges.}	SERVO adapter											Input unit										
		n _{1max}	Adapter size											n _{1max}	Input shaft [mm]								
			[min ⁻¹]	S92	S105	S114	S115	S130	S141	S142	S180	S189	S190		[min ⁻¹]	19x40	24x50	28x60	38x80	42x110	48x110	55x110	
K123	151.11	5000												2500									
	131.76	5000												2500									
	127.05	5000												2500									
	113.49	4500												2500									
	97.73	4000												2500									
	85.37	3600												1800									
	73.74	-												1800									
	60.98	-												1800									
	58.47	5000												2500									
	50.98	5000												2500									
	50.18	-												1800									
	49.16	5000												2500									
	43.91	4500												2500									
	41.25	-												1800									
	37.81	4000												2500									
	35.02	-												1800									
	33.34	5000												2500									
	33.03	3600												1800									
	29.89	-												1800									
	29.07	5000												2500									
	28.53	-												1800									
	28.03	5000												2500									
	25.04	4500												2500									
	23.60	-												1800									
	21.56	4000												2500									
	19.42	-												1800									
	18.84	3600												1800									
	16.27	-												1800									
	15.96	-												1800									
	13.55	-												1800									
	13.46	-												1800									
	11.57	-												1800									
	11.07	-												1800									
	9.10	-												1800									
	7.73	-												1800									
	6.60	-												1800									

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Legend see page 425

Type	$i_{ges.}$	M_{znom}	n_2	i_{exakt}	n_{1max}	IEC motor frame size												
						63	71	80	90	100	112	132	160	-	-	-	-	-
						IEC adapter												
						l63	l71	l80	l90	l100	l112	l132	l160	-	-	-	-	-
NEMA adapter																		
		[Nm]	[min ⁻¹]			N56	N143/145	N182	N184	N213/215	N254/256	-	-	-	-	-		
K124	1579.81	13000	0.89	25277/16	6000													
	1377.44	13000	1.0	12397/9	6000													
	1219.69	13000	1.1	195151/160	6000													
	1186.50	13000	1.2	2373/2	6000													
	1063.46	13000	1.3	95711/90	6000													
	1022.92	13000	1.4	132979/130	6000													
	1021.73	13000	1.4	26565/26	6000													
	916.04	13000	1.5	421377/460	6000													
	891.88	13000	1.6	521752/585	6000													
	802.79	13000	1.7	205513/256	6000													
	788.83	13000	1.8	41019/52	6000													
	768.25	13000	1.8	1148532/1495	6000													
	699.95	13000	2.0	100793/144	6000													
	661.56	13000	2.1	111804/169	6000													
	619.56	13000	2.3	495649/800	6000													
	602.92	13000	2.3	443751/736	6000													
	540.20	13000	2.6	243089/450	6000													
	519.19	13000	2.7	215985/416	6000													
	512.47	13000	2.7	471471/920	6000													
	465.31	13000	3.0	1070223/2300	6000													
	446.82	13000	3.1	154154/345	6000													
	435.90	13000	3.2	181335/416	6000													
	400.70	13000	3.5	104181/260	6000													
	384.88	13000	3.6	1018017/2645	6000													
	380.06	13000	3.7	29645/78	6000													
	377.78	13000	3.7	12089/32	5600													
	331.43	13000	4.2	7623/23	6000													
	329.39	13000	4.3	5929/18	5600													
	327.38	13000	4.3	391545/1196	6000													
	319.02	13000	4.4	229691/720	5000													
	307.62	13000	4.6	98439/320	4800													
	283.73	13000	4.9	26103/92	5600													
	281.92	13000	5.0	190575/676	6000													
	278.15	13000	5.0	112651/405	5000													
	268.22	13000	5.2	16093/60	4800													
	262.80	13000	5.3	12089/46	4400													
	244.33	13000	5.7	12705/52	5600													
	239.59	13000	5.8	165319/690	5000													
	231.04	13000	6.1	212553/920	4800													
	229.14	13000	6.1	47432/207	4400													
	206.32	13000	6.8	16093/78	5000													
	198.95	13000	7.0	20691/104	4800													
197.38	13000	7.1	104412/529	4400														
169.97	13000	8.2	50820/299	4400														

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Type	i _{ges.}	SERVO adapter											Input unit										
		n _{1max}	Adapter size											n _{1max}	Input shaft [mm]								
			[min ⁻¹]	S92	S105	S114	S115	S130	S141	S142	S180	S189	S190		[min ⁻¹]	19x40	24x50	28x60	38x80	42x110	48x110	55x110	
K124	1579.81	5000												3000									
	1377.44	5000												3000									
	1219.69	5000												2500									
	1186.50	5000												3000									
	1063.46	5000												2500									
	1022.92	5000												2500									
	1021.73	5000												3000									
	916.04	5000												2500									
	891.88	5000												2500									
	802.79	5000												2500									
	788.83	5000												2500									
	768.25	5000												2500									
	699.95	5000												2500									
	661.56	5000												2500									
	619.56	5000												2500									
	602.92	5000												2500									
	540.20	5000												2500									
	519.19	5000												2500									
	512.47	5000												2500									
	465.31	5000												2500									
	446.82	5000												2500									
	435.90	5000												2500									
	400.70	5000												2500									
	384.88	5000												2500									
	380.06	5000												2500									
	377.78	5000												2500									
	331.43	5000												2500									
	329.39	5000												2500									
	327.38	5000												2500									
	319.02	4800												2500									
	307.62	4600												2500									
	283.73	5000												2500									
	281.92	5000												2500									
	278.15	4800												2500									
	268.22	4600												2500									
	262.80	4200												2500									
	244.33	5000												2500									
	239.59	4800												2500									
	231.04	4600												2500									
	229.14	4200												2500									
	206.32	4800												2500									
	198.95	4600												2500									
	197.38	4200												2500									
	169.97	4200												2500									

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Type	$i_{ges.}$	M_{znom}	n_2	i_{exakt}	n_{1max}	IEC motor frame size												
						63	71	80	90	100	112	132	160	180	200	225	-	280
						IEC adapter												
						I63	I71	I80	I90	I100	I112	I132	I160	I180	I200	I225	I250	I280
NEMA adapter																		
		[Nm]	[min ⁻¹]		[min ⁻¹]	N56	N143/145	N182	N184	N213/215	N254/256	N284/286	N324/326	N364	-	-		
K153	146.69	18000	9.5	6601/45	5000													
	126.34	18000	11	23247/184	4400													
	109.28	18000	13	28413/260	3900													
	96.39	18000	15	88683/920	3500										*	x		
	82.79	18000	17	4305/52	3100										*	x		
	68.88	18000	20	1722/25	2700										*	x		
	57.15	18000	24	66297/1160	2300										*	x		
	56.75	10785	25	12259/216	5000													
	48.88	14174	29	71955/1472	4400													
	47.66	18000	29	3813/80	2100										*			
	42.28	17806	33	1353/32	3900													
	40.97	18000	34	50799/1240	1900										*			
	37.30	18000	38	54899/1472	3500										*			
	35.63	6771	39	962/27	5000													
	35.45	18000	39	6027/170	1800										*			
	32.03	18000	44	1025/32	3100										*			
	30.69	8899	46	64935/2116	4400													
	26.65	18000	53	533/20	2700										*			
	26.54	11178	53	1221/46	3900													
	23.41	13593	60	49543/2116	3500										*			
	22.11	18000	63	41041/1856	2300										*			
	20.11	13390	70	925/46	3100										*			
	18.44	18000	76	16523/896	2100										*			
	16.73	14116	84	1924/115	2700										*			
	15.85	18000	88	31447/1984	1900										*			
	13.88	14116	101	37037/2668	2300										*			
	13.72	18000	102	3731/272	1800										*			
	11.58	13865	121	14911/1288	2100										*			
	9.95	13306	141	28379/2852	1900										*			
	8.61	12793	163	3367/391	1800										*			

* I250 only. Direct mounting of the motor not possible
x I280 only. Direct mounting of the motor not possible

Type	i _{ges.}	SERVO adapter											Input unit														
		n _{1max}	Adapter size											n _{1max}	Input shaft [mm]												
			[min ⁻¹]	S92	S105	S114	S115	S130	S141	S142	S180	S189	S190		[min ⁻¹]	19x40	24x50	28x60	38x80	42x110	48x110	55x110					
K153	146.69	-													2500												
	126.34	-													2500												
	109.28	-													2500												
	96.39	-													1800												
	82.79	-													1800												
	68.88	-													1800												
	57.15	-													1800												
	56.75	-													2500												
	48.88	-													2500												
	47.66	-													1800												
	42.28	-													2500												
	40.97	-													1800												
	37.30	-													1800												
	35.63	-													2500												
	35.45	-													1800												
	32.03	-													1800												
	30.69	-													2500												
	26.65	-													1800												
	26.54	-													2500												
	23.41	-													1800												
	22.11	-													1800												
	20.11	-													1800												
	18.44	-													1800												
	16.73	-													1800												
	15.85	-													1800												
	13.88	-													1800												
	13.72	-													1800												
	11.58	-													1800												
	9.95	-													1800												
	8.61	-													1800												

K

Legend see page 425

Type	$i_{ges.}$	M_{znom}	n_2	i_{exakt}	n_{1max}	IEC motor frame size												
						63	71	80	90	100	112	132	160	180	200	-	-	-
						IEC adapter												
						l63	l71	l80	l90	l100	l112	l132	l160	l180	l200	-	-	-
NEMA adapter																		
		[Nm]	[min ⁻¹]			N56	N143/145	N182	N184	N213/215	N254/256	N284/286	N324/326	-	-	-		
K154	1308.92	18000	1.1	765716/585	6000													
	1127.36	18000	1.2	674163/598	6000													
	1035.99	18000	1.4	745913/720	6000													
	975.12	18000	1.4	823977/845	6000													
	904.58	18000	1.5	244237/270	6000													
	892.29	18000	1.6	2626911/2944	6000													
	799.45	18000	1.8	719509/900	6000													
	779.11	18000	1.8	286713/368	6000													
	771.80	18000	1.8	3210669/4160	6000													
	688.57	18000	2.0	2533923/3680	6000													
	676.04	18000	2.1	30422/45	6000													
	673.90	18000	2.1	350427/520	6000													
	595.58	18000	2.4	3097017/5200	6000													
	582.27	18000	2.4	1232091/2116	6000													
	581.11	18000	2.4	679903/1170	6000													
	507.30	18000	2.8	547883/1080	5600													
	503.64	18000	2.8	1505889/2990	6000													
	500.51	18000	2.8	2394441/4784	6000													
	436.93	18000	3.2	643167/1472	5600													
	434.63	18000	3.2	105616/243	5000													
	432.92	18000	3.2	2926539/6760	6000													
	419.11	18000	3.3	3772/9	4800													
	377.93	18000	3.7	786093/2080	5600													
	374.35	18000	3.7	8610/23	5000													
	369.91	18000	3.8	16646/45	4400													
	360.98	18000	3.9	16605/46	4800													
	323.79	18000	4.3	12628/39	5000													
	318.60	18000	4.4	674163/2116	4400													
	312.23	18000	4.5	4059/13	4800													
	310.30	18000	4.5	72611/234	3900													
	275.58	18000	5.1	823977/2990	4400													
	267.26	18000	5.2	1278585/4784	3900													
	261.49	18000	5.4	11767/45	3500													
	231.17	18000	6.1	312543/1352	3900													
	225.22	18000	6.2	953127/4232	3500													
	214.39	18000	6.5	125419/585	3100													
	194.80	18000	7.2	1164933/5980	3500													
	184.65	18000	7.6	441693/2392	3100													
	159.72	18000	8.8	539847/3380	3100													

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Legend see page 425

Type	i _{ges.}	SERVO adapter										Input unit											
		n _{1max}	Adapter size										n _{1max}	Input shaft [mm]									
			[min ⁻¹]	S92	S105	S114	S115	S130	S141	S142	S180	S189		S190	[min ⁻¹]	19x40	24x50	28x60	38x80	42x110	48x110	55x110	
K154	1308.92	5000												2500									
	1127.36	5000												2500									
	1035.99	5000												2500									
	975.12	5000												2500									
	904.58	5000												2500									
	892.29	5000												2500									
	799.45	5000												2500									
	779.11	5000												2500									
	771.80	5000												2500									
	688.57	5000												2500									
	676.04	5000												2500									
	673.90	5000												2500									
	595.58	5000												2500									
	582.27	5000												2500									
	581.11	5000												2500									
	507.30	5000												2500									
	503.64	5000												2500									
	500.51	5000												2500									
	436.93	5000												2500									
	434.63	4900												2500									
	432.92	5000												2500									
	419.11	4700												2500									
	377.93	5000												2500									
	374.35	4900												2500									
	369.91	4300												2500									
	360.98	4700												2500									
	323.79	4900												2500									
	318.60	4300												2500									
	312.23	4700												2500									
	310.30	3800												2500									
	275.58	4300												2500									
	267.26	3800												2500									
	261.49	3500												2500									
	231.17	3800												2500									
	225.22	3500												2500									
	214.39	-												2500									
	194.80	3500												2500									
	184.65	-												2500									
	159.72	-												2500									

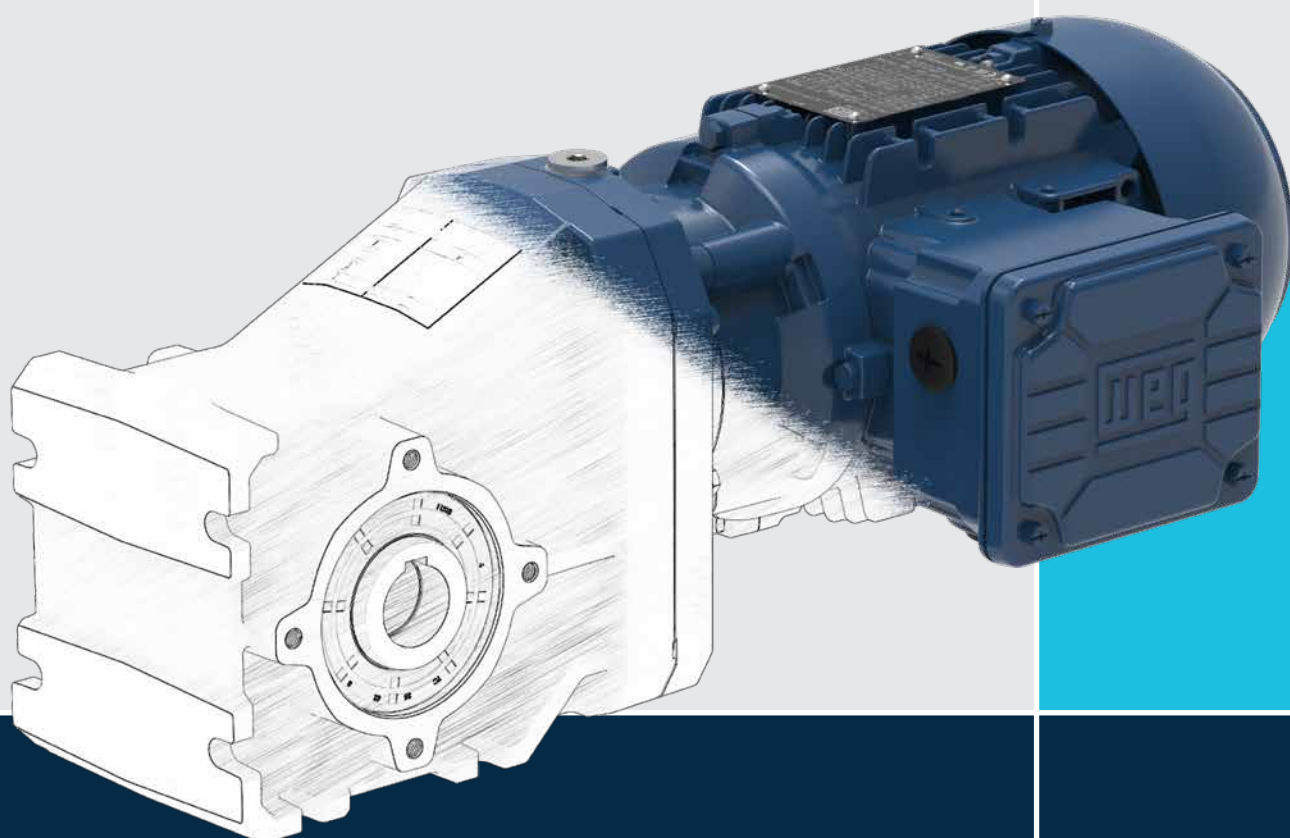
K

Legend see page 425

Type	$i_{ges.}$	M_{znenn}	n_2	i_{exakt}	n_{1max}	IEC motor frame size										
						63	71	80	90	100	112	132	-	-	-	-
						IEC adapter										
						l63	l71	l80	l90	l100	l112	l132	-	-	-	-
NEMA adapter																
		[Nm]	[min ⁻¹]			N56	N143/145	N182	N184	N213/215	-	-	-	-	-	
K155	14005.40	18000	0.10	40965806/2925	6000											
	11453.02	18000	0.12	1340003/117	6000											
	9679.02	18000	0.14	26133359/2700	6000											
	9043.42	18000	0.15	58194416/6435	6000											
	7915.09	18000	0.18	1709659/216	6000											
	7012.05	18000	0.20	273470/39	6000											
	6249.84	18000	0.22	9281006/1485	6000											
	5739.09	18000	0.24	14548604/2535	6000											
	4845.97	18000	0.29	174455/36	6000											
5 stages	4417.59	18000	0.32	574287/130	6000											
	3966.24	18000	0.35	4640503/1170	6000											
$n_1=1400 \text{ min}^{-1}$	3337.74	18000	0.42	3254293/975	6000											
	3052.96	18000	0.46	244237/80	6000											
	2731.65	18000	0.51	532672/195	6000											
Maximum torque 18000 Nm	2306.68	18000	0.61	4152029/1800	6000											
	2215.09	18000	0.63	16845752/7605	6000											
	1887.82	18000	0.74	84952/45	6000											
	1854.30	18000	0.76	3254293/1755	5600											
	1530.83	18000	0.91	2686607/1755	6000											
	1502.83	18000	0.93	23737196/15795	5000											
	1449.16	18000	0.97	847757/585	4800											
	1281.49	18000	1.1	4152029/3240	5600											
	1038.59	18000	1.3	7571347/7290	5000											
	1001.50	18000	1.4	1081621/1080	4800											

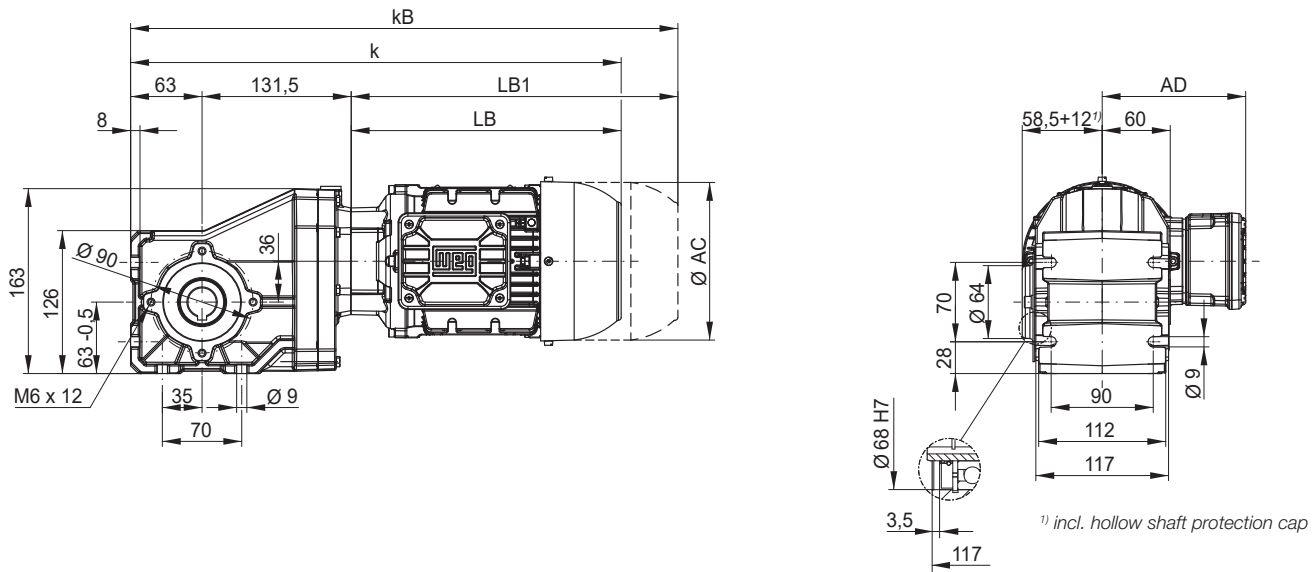


Dimension sheets Geared Motors

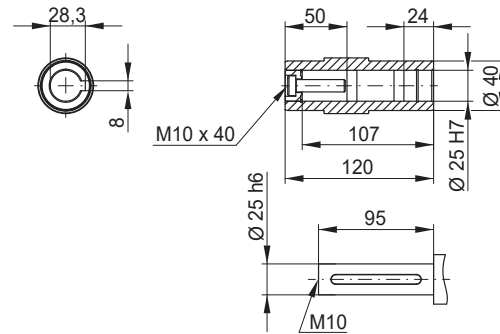
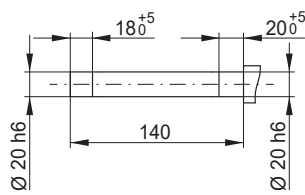
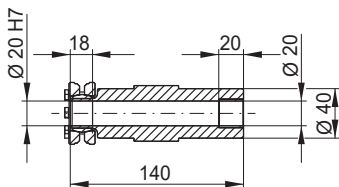
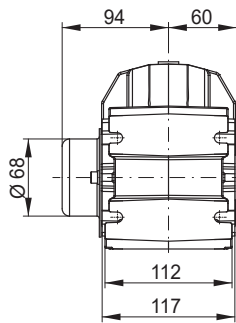


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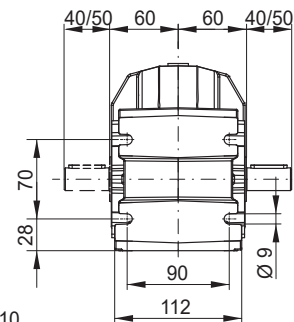
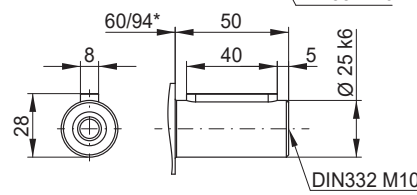
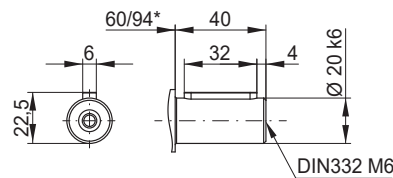
KH022 - Hollow shaft



KD022 - Shrink disc



KS022 - Output shaft KB022 - Output shaft on both sides

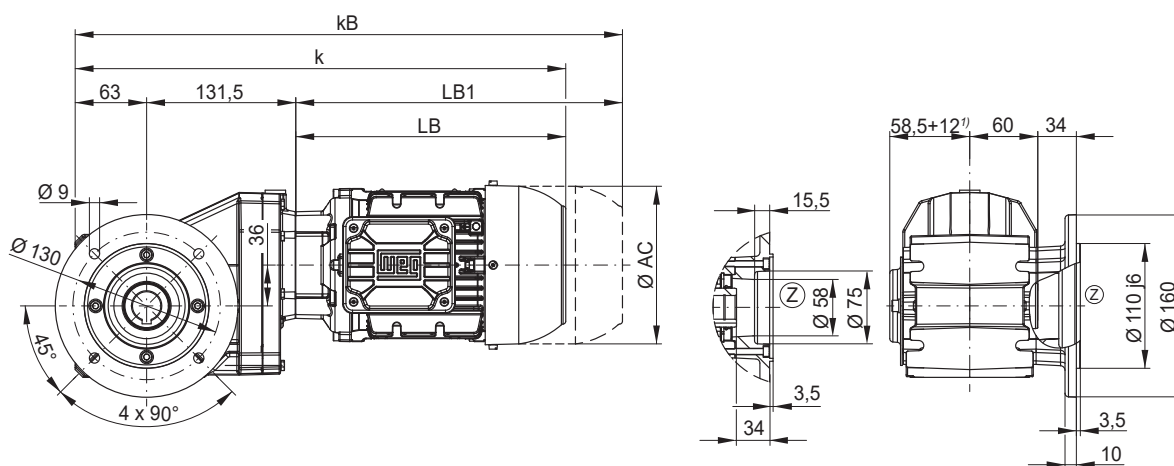


Motor fr.	63	71	80	L80	90S/L
AC	126	141	159	159	178
AD	128	136	145	145	155
k	399	433	441	465	483
kB	443	482	499	523	556
LB	204	238	246	270	288
LB1	248	287	304	328	361

Motor dimension sheets see page 590. Description of motor lengths LB and LB1 see page 594.

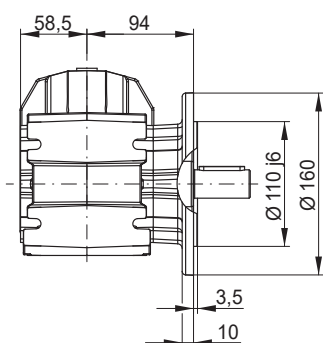
*Design KS(KB)/KF

KO022 - B5 flange execution with hollow shaft

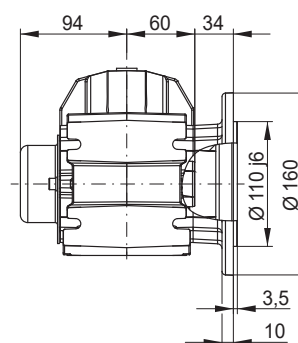


¹⁾ incl. hollow shaft protection cap

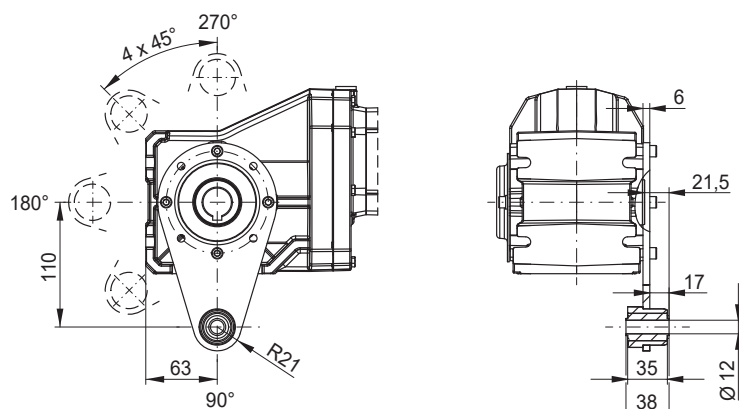
KF022 - B5 flange execution with output shaft



KP022 - B5 flange execution with hollow shaft and shrink disc

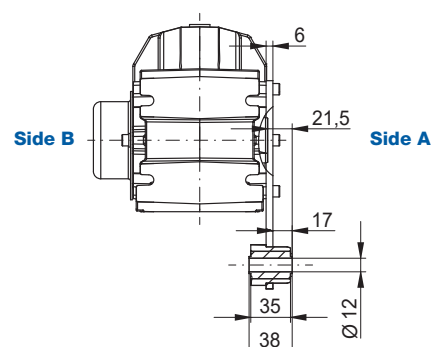


KT022 - Hollow shaft with torque arm **



Torque arm possible positions:
90°, 135°, 180°, 225°, 270°

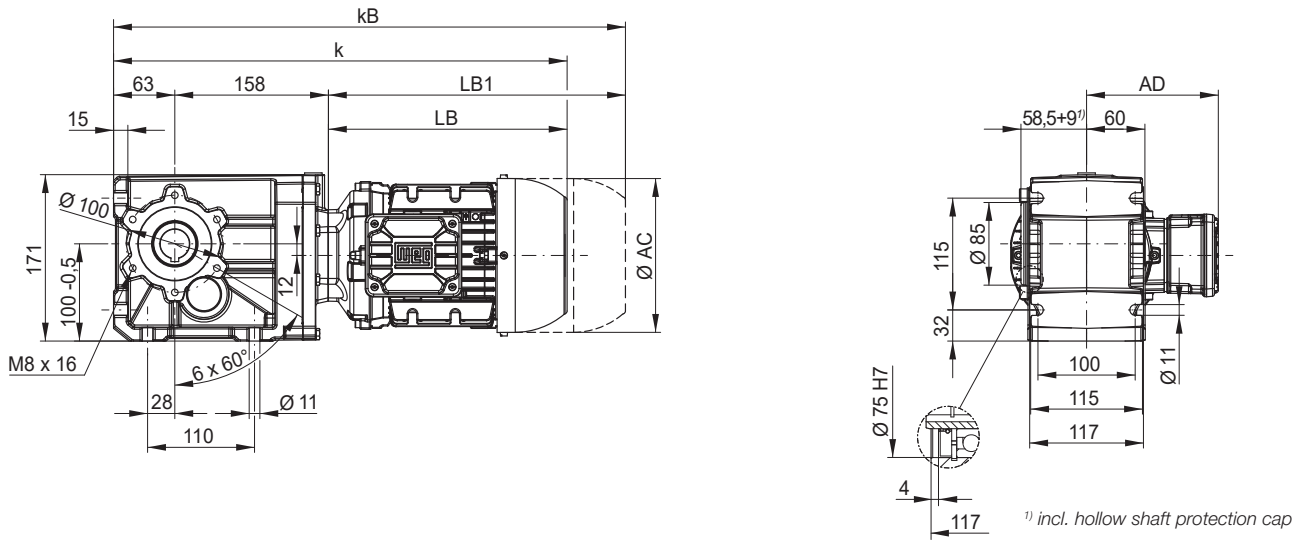
KU022 - Hollow shaft with shrink disc and torque arm **



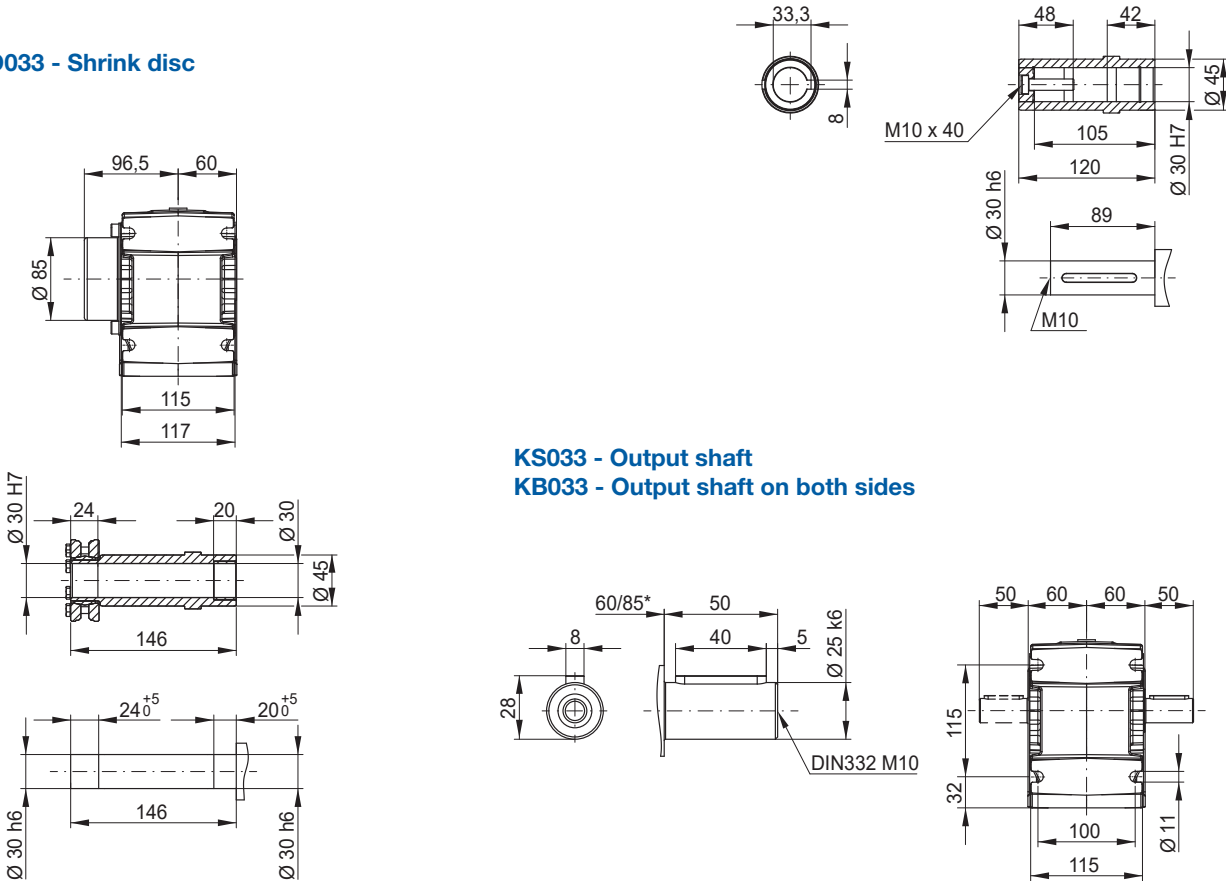
** Torque arm may be mounted on side A or side B.

Dimensions in mm.

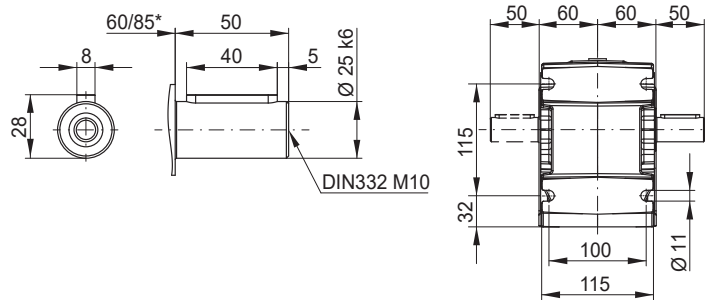
KH033 - Hollow shaft



KD033 - Shrink disc



KS033 - Output shaft KB033 - Output shaft on both sides

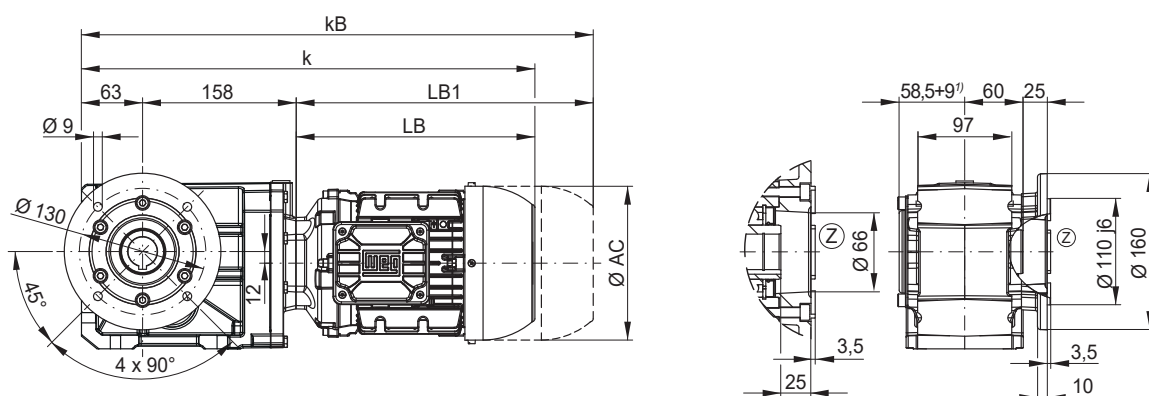


Motor fr.	63	71	80	L80	90S/L	100L	L100L
AC	126	141	159	159	178	199	199
AD	128	136	145	145	155	165	165
k	425	459	467	491	509	559	597
kB	469	508	525	549	582	643	681
LB	204	238	246	270	288	338	376
LB1	248	287	304	328	361	422	460

Motor dimension sheets see page 590. Description of motor lengths LB and LB1 see page 594.

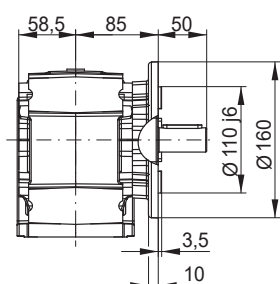
*Design KS(KB)/KF

KO033 - B5 flange execution with hollow shaft

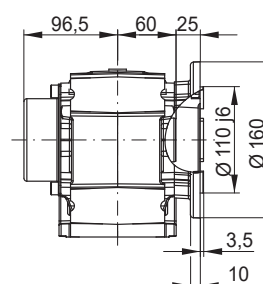


¹⁾ incl. hollow shaft protection cap

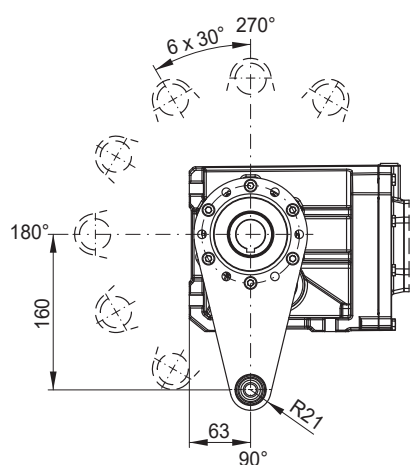
KF033 - B5 flange execution with output shaft



KP033 - B5 flange execution with hollow shaft and shrink disc



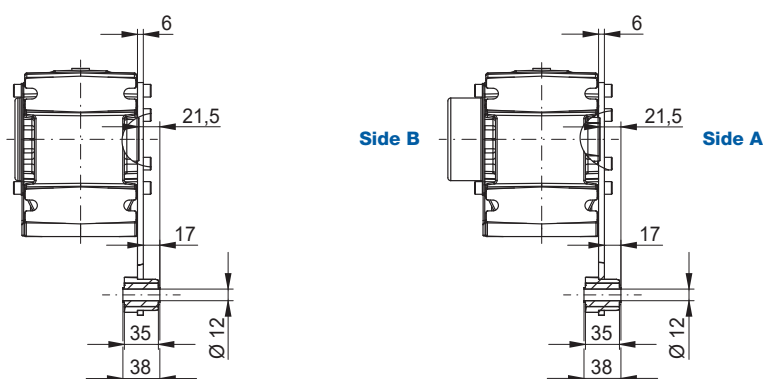
KT033 - Hollow shaft with torque arm **



Torque arm possible positions:
90°, 120°, 150°, 180°, 210°, 240°, 270°, 300°

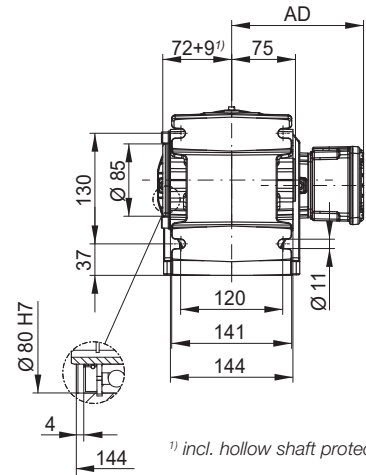
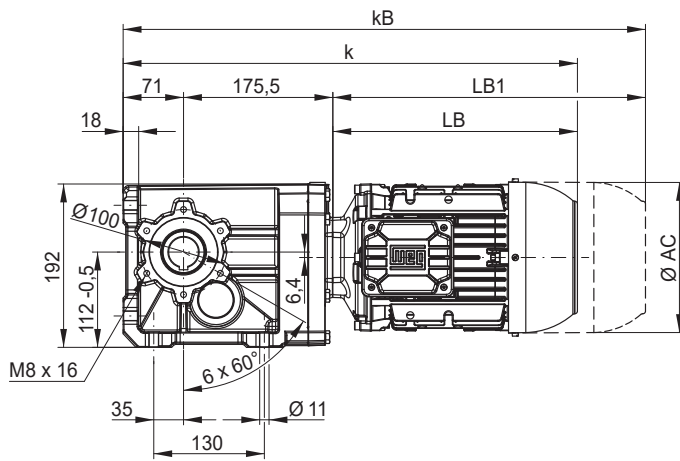
Dimensions in mm.

KU033 - Hollow shaft with shrink disc and torque arm **

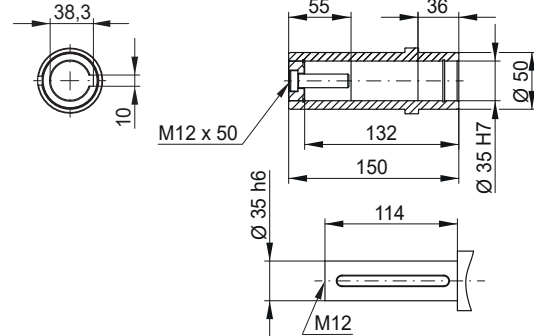


** Torque arm may be mounted on side A or side B.

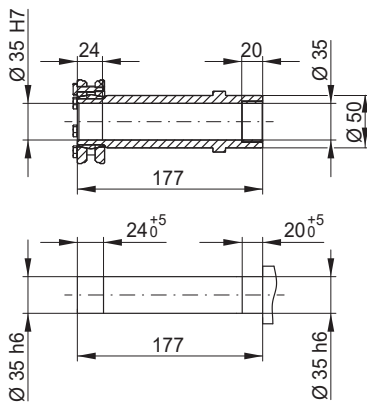
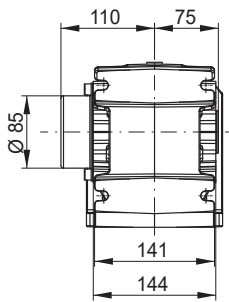
KH043 - Hollow shaft



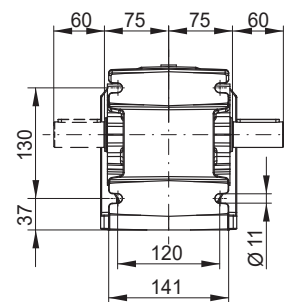
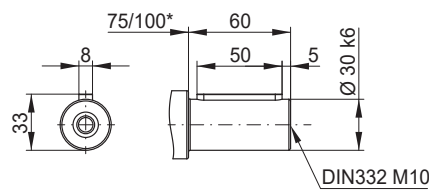
¹⁾ incl. hollow shaft protection cap



KD043 - Shrink disc



KS043 - Output shaft KB043 - Output shaft on both sides

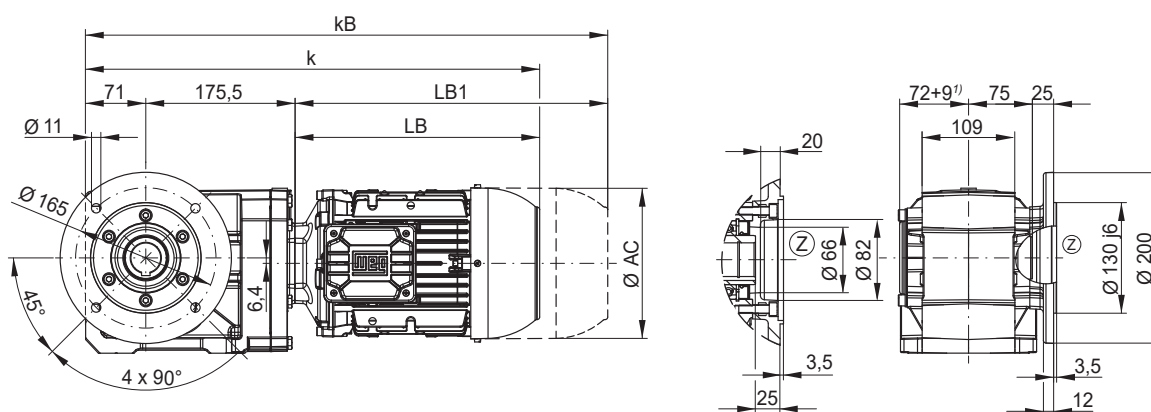


Motor fr.	63	71	80	L80	90S/L	100L	L100L	112M
AC	126	141	159	159	178	199	199	221
AD	128	136	145	145	155	165	165	185
k	451	485	493	517	535	585	623	595
kB	495	534	551	575	608	669	707	682
LB	204	238	246	270	288	338	376	348
LB1	248	287	304	328	361	422	460	435

Motor dimension sheets see page 590. Description of motor lengths LB and LB1 see page 594.

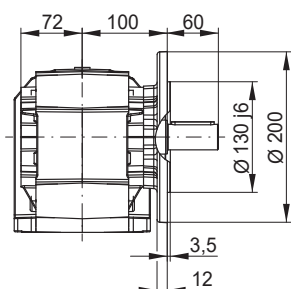
*Design KS(KB)/KF

KO043 - B5 flange execution with hollow shaft

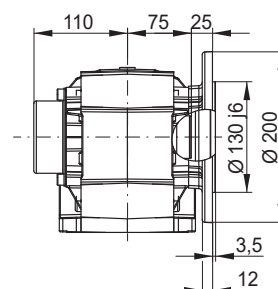


¹⁾ incl. hollow shaft protection cap

KF043 - B5 flange execution with output shaft

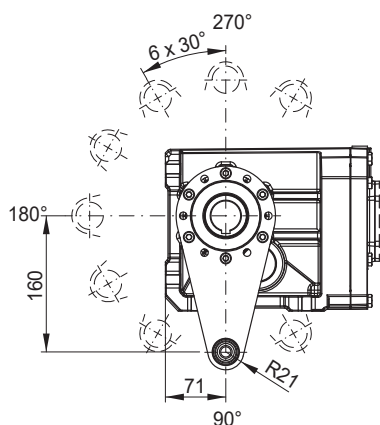


KP043 - B5 flange execution with hollow shaft and shrink disc



K

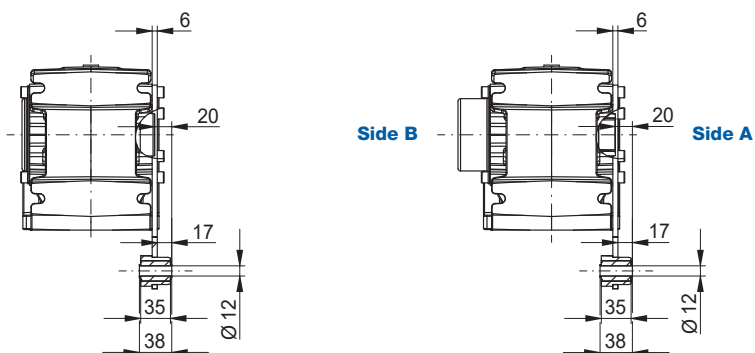
KT043 - Hollow shaft with torque arm **



Torque arm possible positions:
60°, 90°, 120°, 150°, 180°, 210°, 240°, 270°, 300°

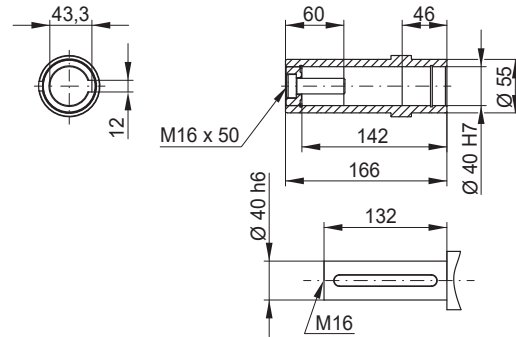
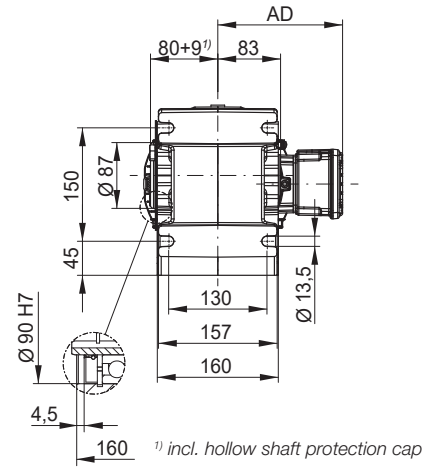
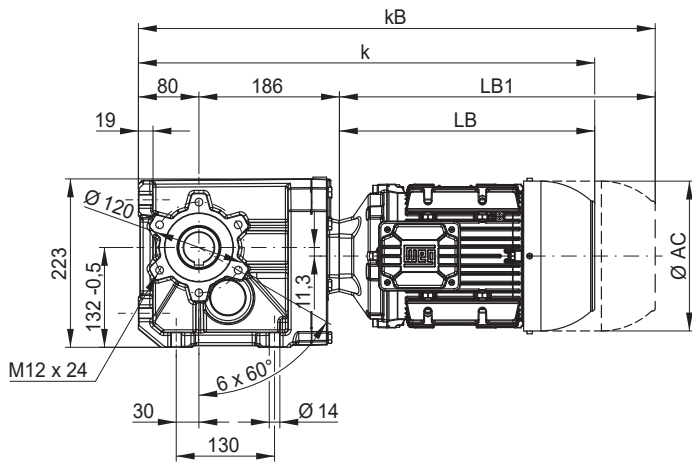
Dimensions in mm.

KU043 - Hollow shaft with shrink disc and torque arm **

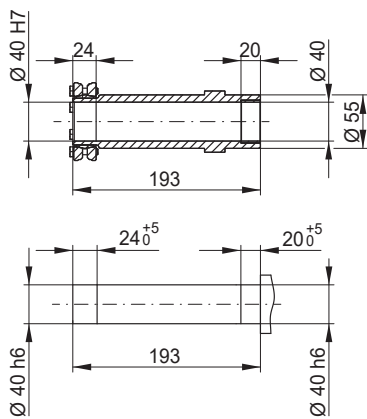
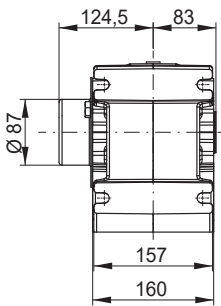


** Torque arm may be mounted on side A or side B.

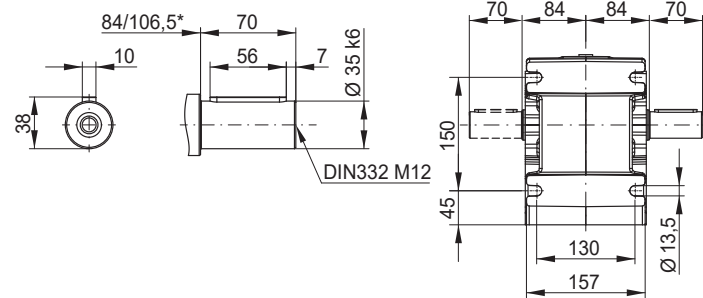
KH053 - Hollow shaft



KD053 - Shrink disc



KS053 - Output shaft KB053 - Output shaft on both sides

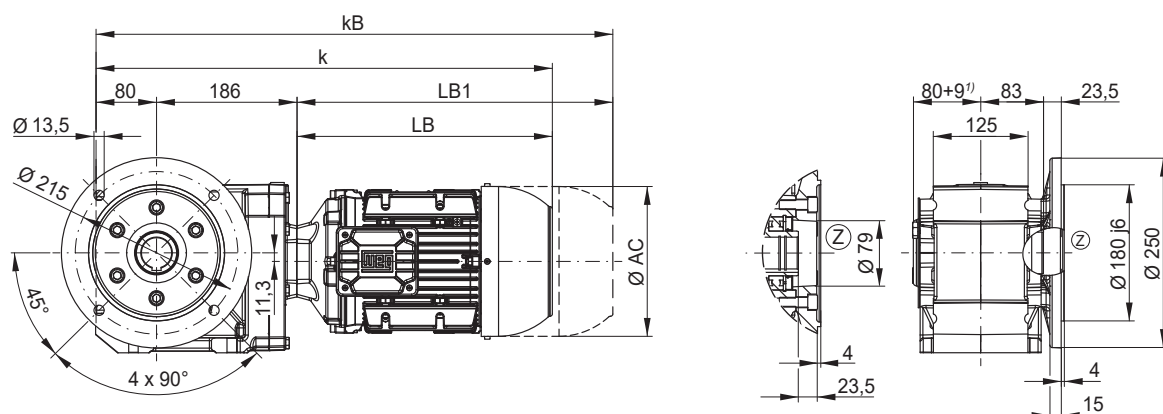


Motor fr.	63	71	80	L80	90S/L	100L	L100L	112M	132S,M	L132M
Dimension										
AC	126	141	159	159	178	199	199	221	261	261
AD	128	136	145	145	155	165	165	185	205	205
k	470	504	512	536	554	604	642	614	679	717
kB	514	553	570	594	627	688	726	701	797	835
LB	204	238	246	270	288	338	376	348	413	451
LB1	248	287	304	328	361	422	460	435	531	569

Motor dimension sheets see page 590. Description of motor lengths LB and LB1 see page 594.

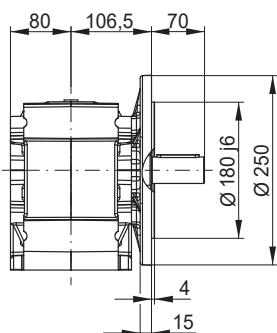
*Design KS(KB)/KF

KO053 - B5 flange execution with hollow shaft

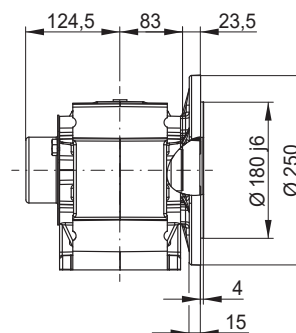


¹⁾ incl. hollow shaft protection cap

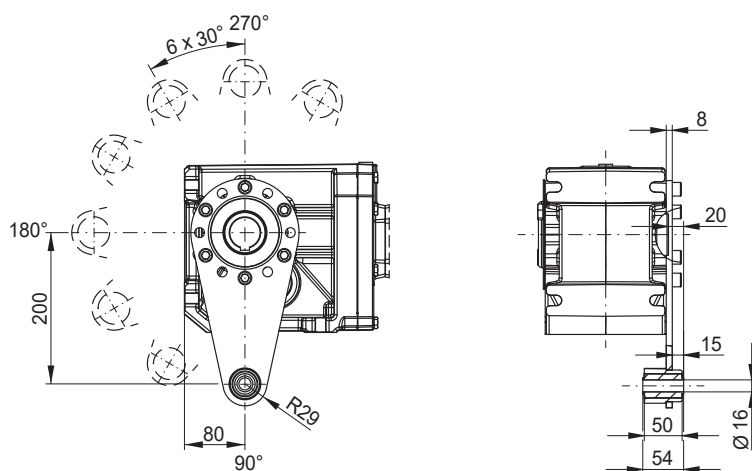
KF053 - B5 flange execution with output shaft



KP053 - B5 flange execution with hollow shaft and shrink disc

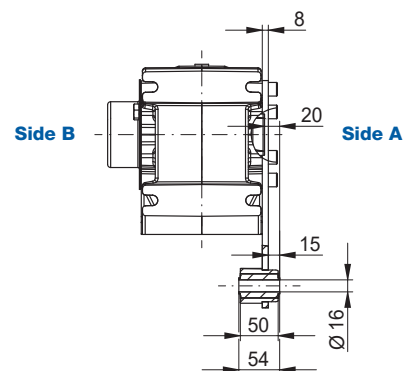


KT053 - Hollow shaft with torque arm **



Torque arm possible positions:
 $90^\circ, 120^\circ, 150^\circ, 180^\circ, 210^\circ, 240^\circ, 270^\circ, 300^\circ$

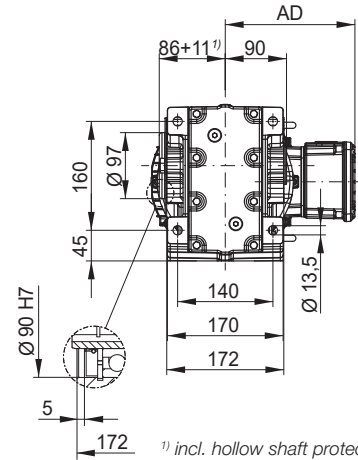
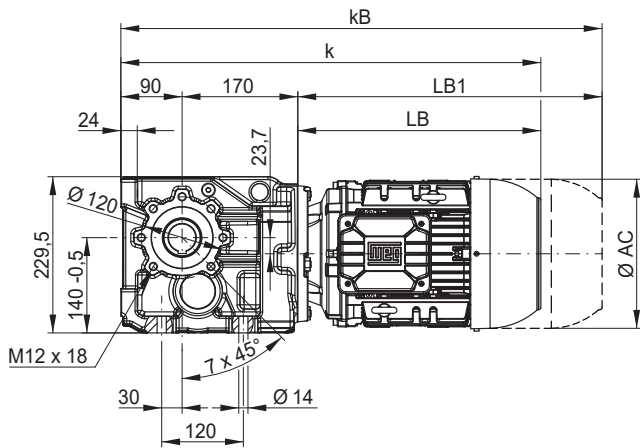
KU053 - Hollow shaft with shrink disc and torque arm **



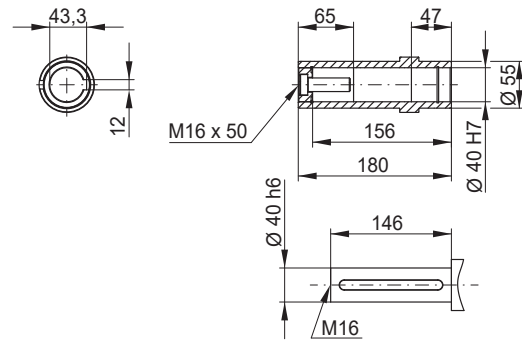
** Torque arm may be mounted on side A or side B.

Dimensions in mm.

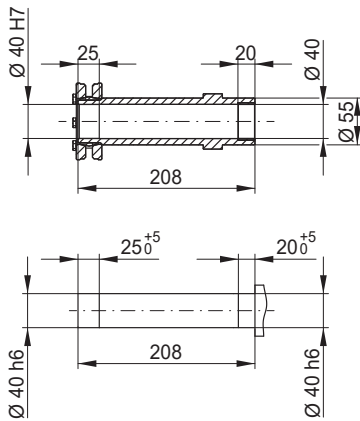
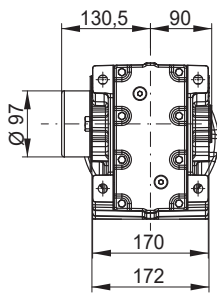
KH063 - Hollow shaft



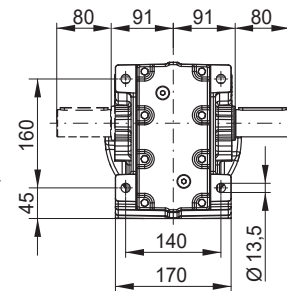
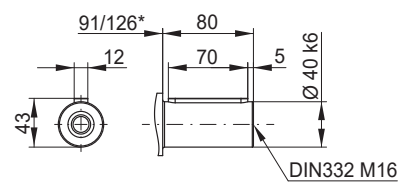
¹⁾ incl. hollow shaft protection cap



KD063 - Shrink disc



KS063 - Output shaft KB063 - Output shaft on both sides

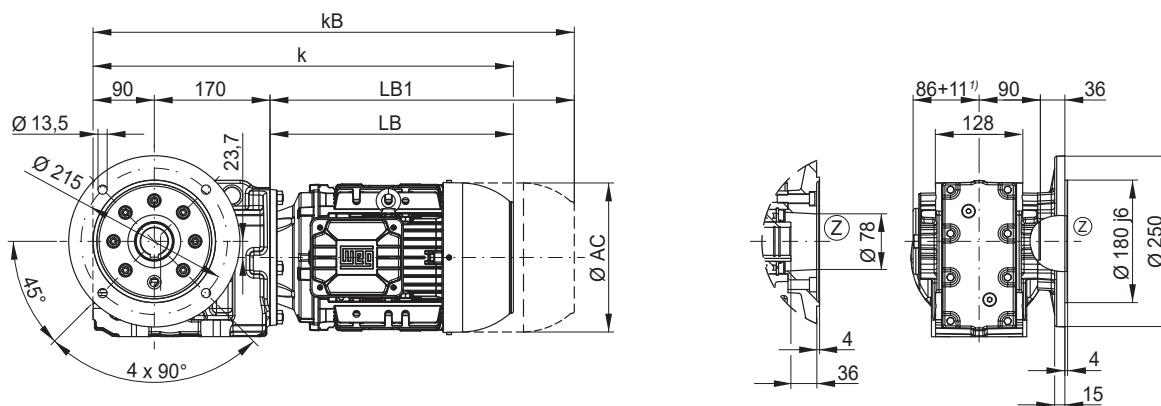


Motor fr.	63	71	80	L80	90S/L	100L	L100L	112M	132S,M	L132M
AC	126	141	159	159	178	199	199	221	261	261
AD	128	136	145	145	155	165	165	185	205	205
k	464	498	506	530	548	598	636	608	673	711
kB	508	547	564	588	621	682	720	695	791	829
LB	204	238	246	270	288	338	376	348	413	451
LB1	248	287	304	328	361	422	460	435	531	569

Motor dimension sheets see page 590. Description of motor lengths LB and LB1 see page 594.

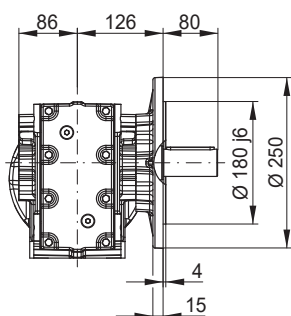
*Design KS(KB)/KF

KO063 - B5 flange execution with hollow shaft

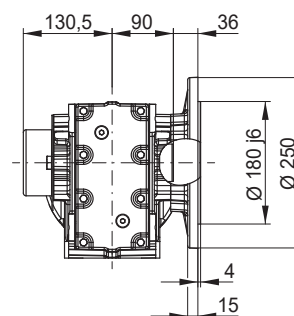


¹⁾ incl. hollow shaft protection cap

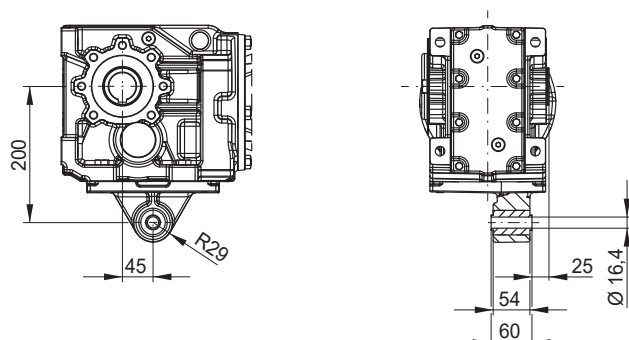
KF063 - B5 flange execution with output shaft



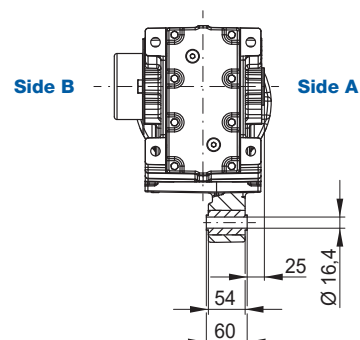
KP063 - B5 flange execution with hollow shaft and shrink disc



KT063 - Hollow shaft with torque arm **



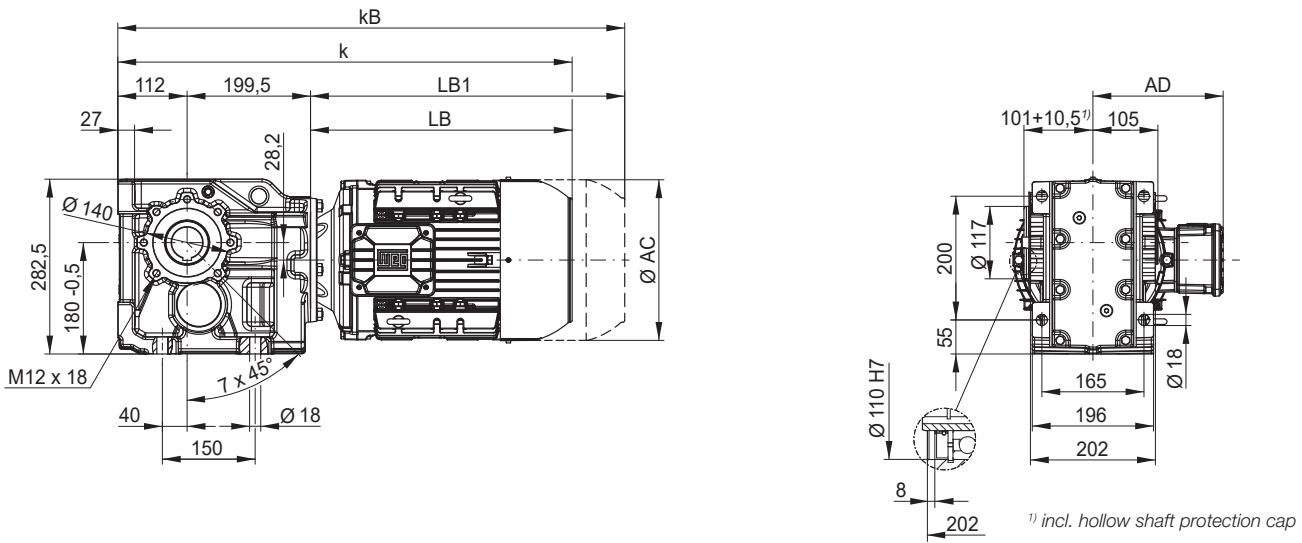
KU063 - Hollow shaft with shrink disc and torque arm **



Dimensions in mm.

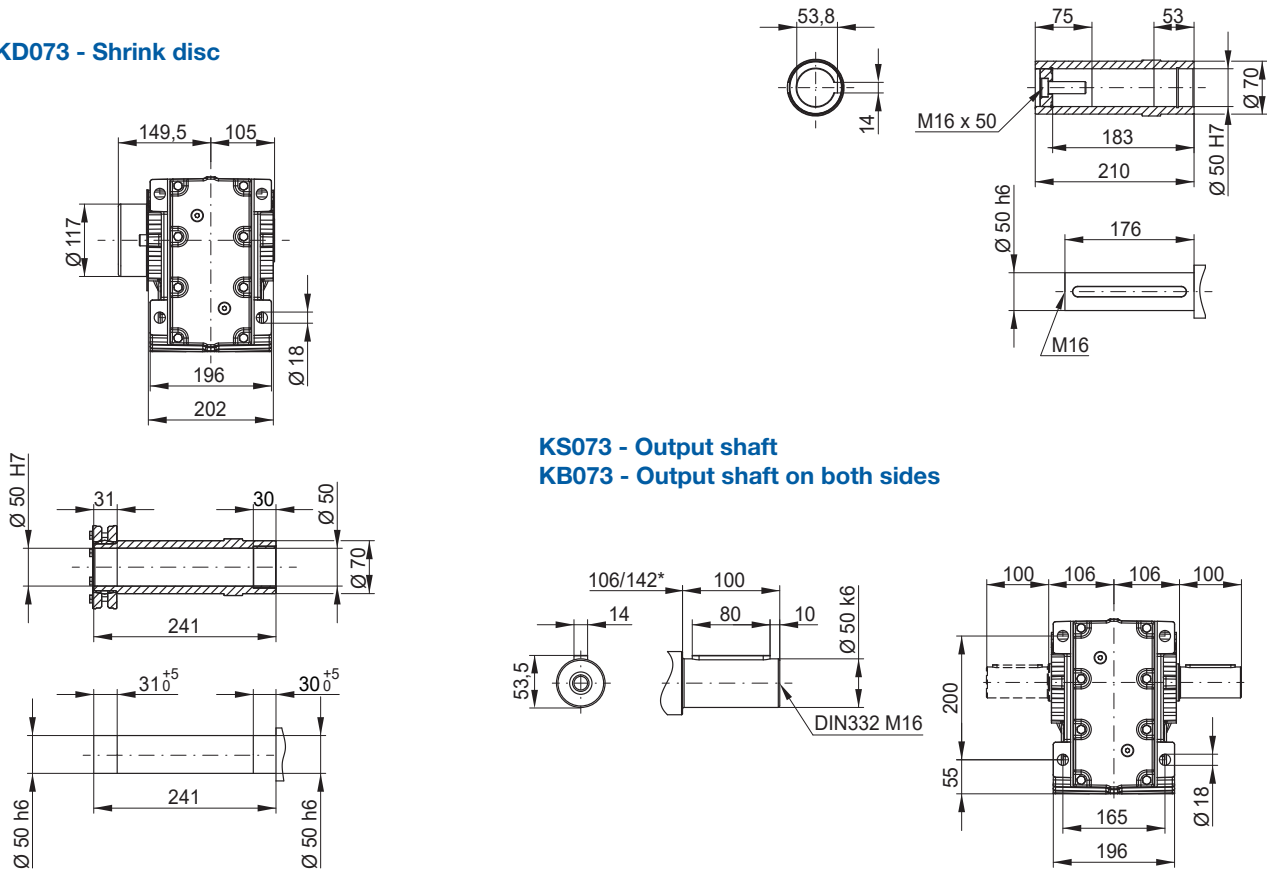
** Torque arm may be mounted on side A or side B.

KH073 - Hollow shaft



K

KD073 - Shrink disc



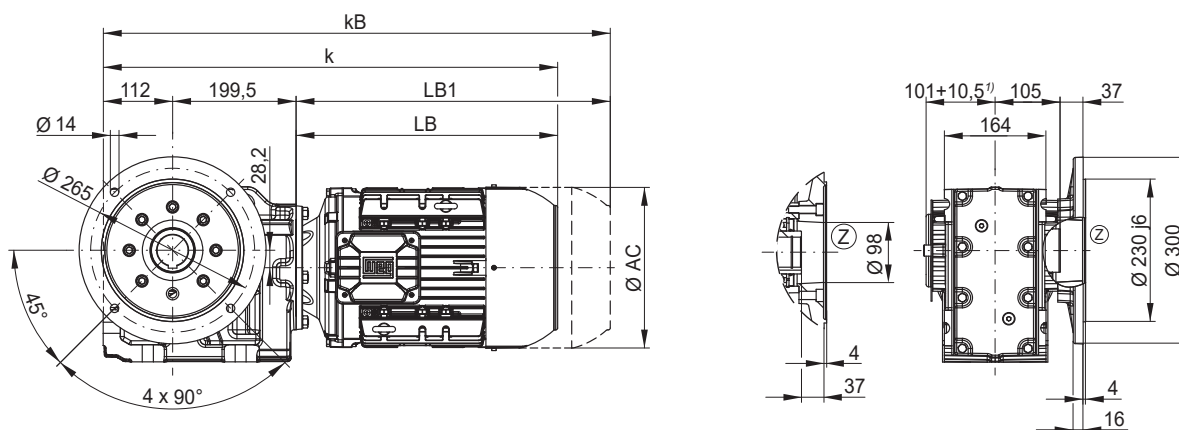
KS073 - Output shaft KB073 - Output shaft on both sides

Motor fr.	63	71	80	L80	90S/L	100L	L100L	112M	132S,M	L132M	160M	160L
Dimension												
AC	126	141	159	159	178	199	199	221	261	261	329	329
AD	128	136	145	145	155	165	165	185	205	205	266	266
k	516	550	558	582	600	650	688	660	725	763	857	901
kB	560	599	616	640	673	734	772	747	843	881	981	1025
LB	204	238	246	270	288	338	376	348	413	451	545	589
LB1	248	287	304	328	361	422	460	435	531	569	669	713

Motor dimension sheets see page 590. Gear unit size K07 corresponds to motor flange FR-200. Description of motor lengths LB and LB1 see page 594.

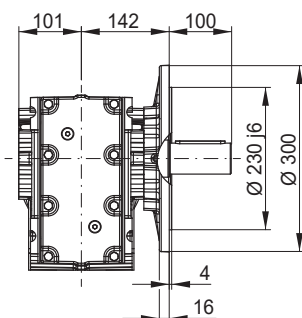
*Design KS(KB)/KF

KO073 - B5 flange execution with hollow shaft

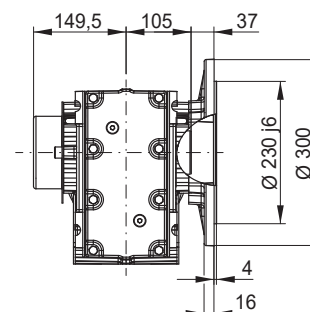


¹⁾ incl. hollow shaft protection cap

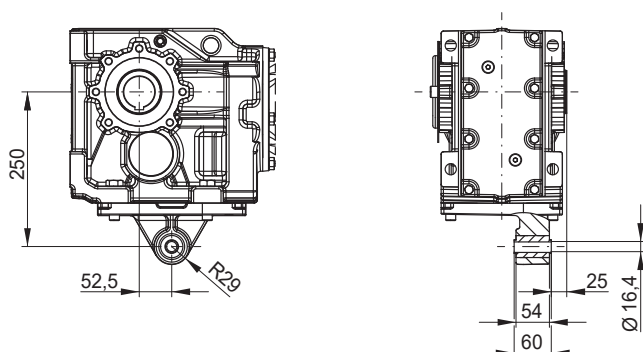
KF073 - B5 flange execution with output shaft



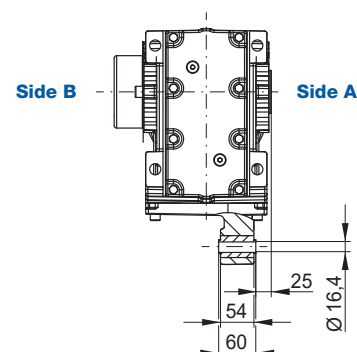
KP073 - B5 flange execution with hollow shaft and shrink disc



KT073 - Hollow shaft with torque arm **



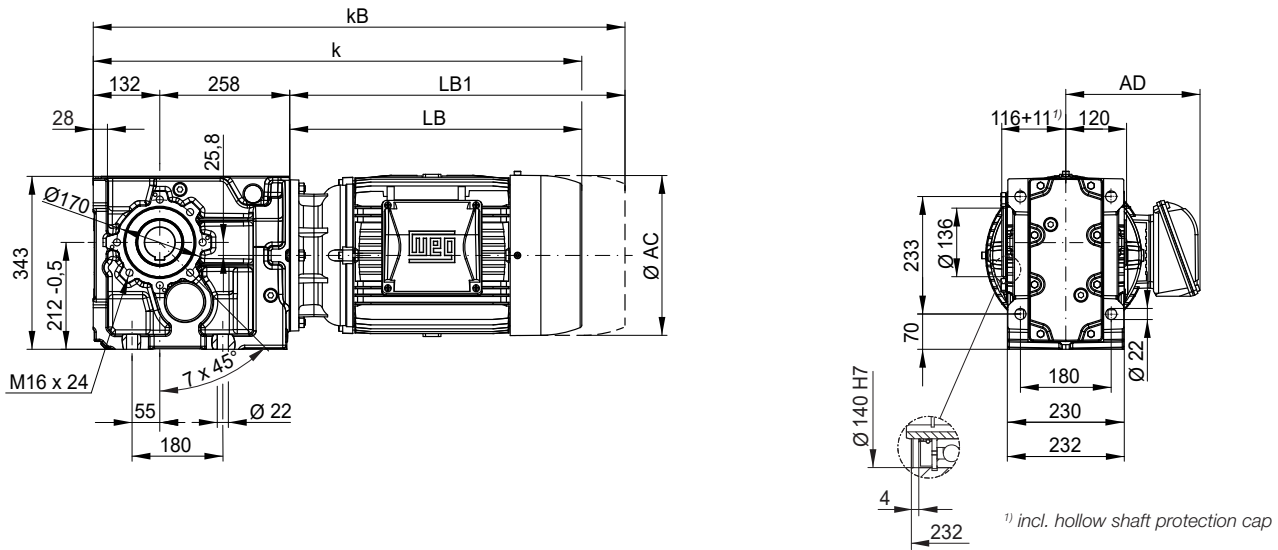
KU073 - Hollow shaft with shrink disc and torque arm **



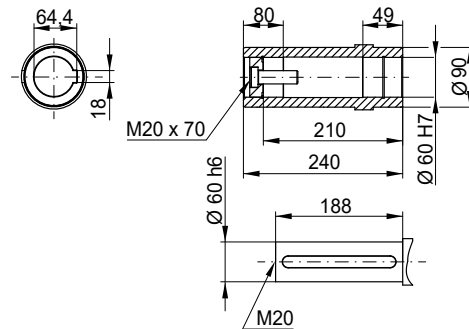
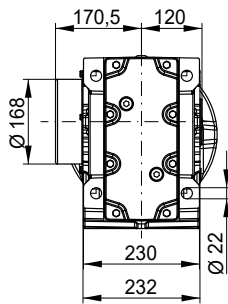
Dimensions in mm.

** Torque arm may be mounted on side A or side B.

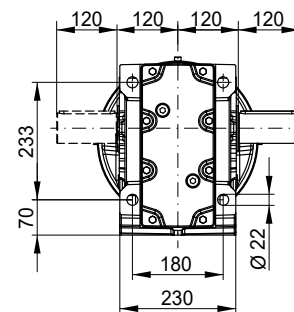
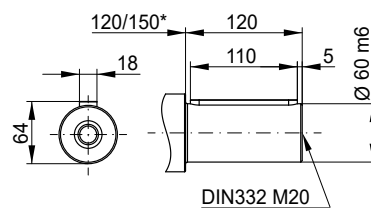
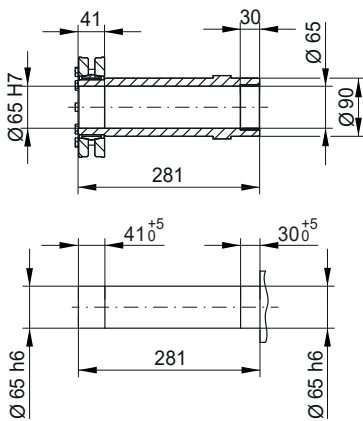
KH083 - Hollow shaft



KD083 - Shrink disc



KS083 - Output shaft KB083 - Output shaft on both sides

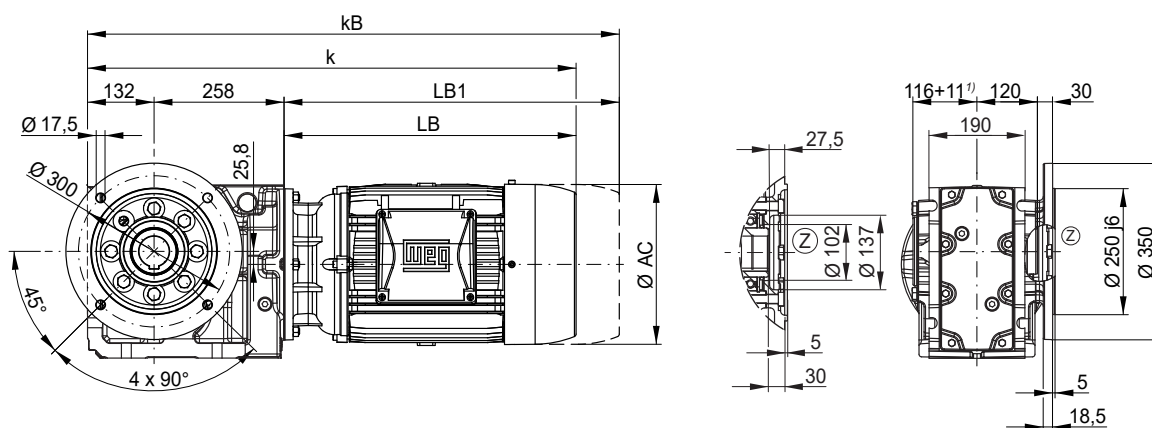


Motor fr.	63	71	80	L80	90S/L	100L	L100L	112M	132S,M	L132M	160M	160L	180M	180L
AC	126	141	159	159	178	199	199	221	261	261	329	329	347	347
AD	128	136	145	145	155	165	165	185	205	205	266	266	281	281
k	594	628	636	660	678	728	766	738	803	841	925	969	993	1031
kB	638	677	694	718	751	812	850	825	921	959	1049	1093	1111	1149
LB	204	238	246	270	288	338	376	348	413	451	535	579	603	641
LB1	248	287	304	328	361	422	460	435	531	569	659	703	721	759

Motor dimension sheets see page 590. Gear unit size K083 corresponds to motor flange FR-300. Description of motor lengths LB and LB1 see page 594.

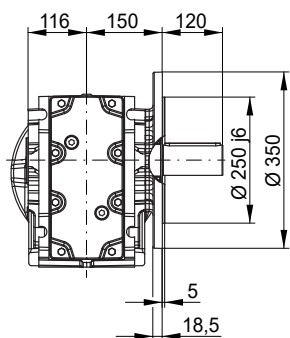
*Design KS(KB)/KF

KO083 - B5 flange execution with hollow shaft

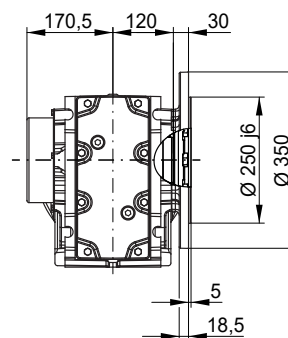


¹⁾ incl. hollow shaft protection cap

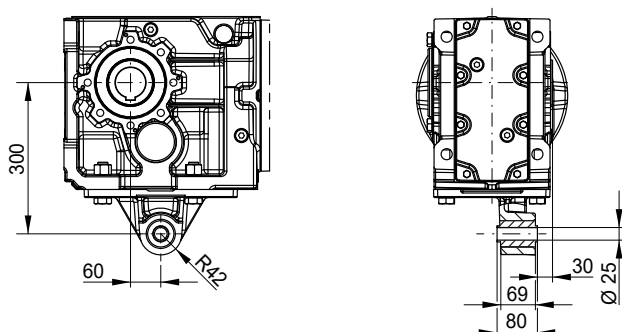
KF083 - B5 flange execution with output shaft



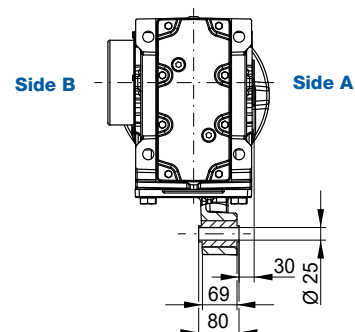
KP083 - B5 flange execution with hollow shaft and shrink disc



KT083 - Hollow shaft with torque arm **



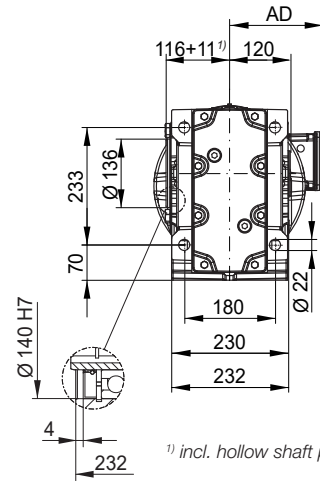
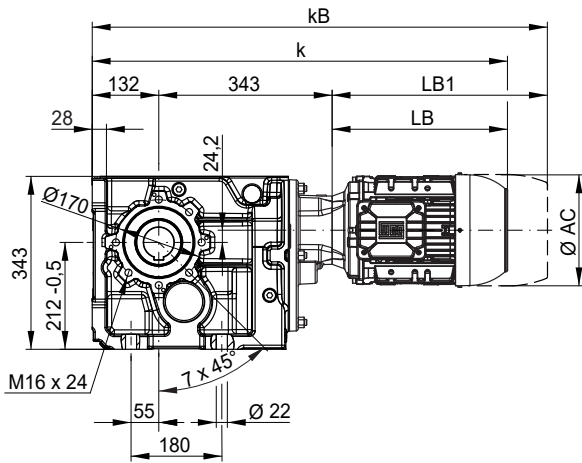
KU083 - Hollow shaft with shrink disc and torque arm **



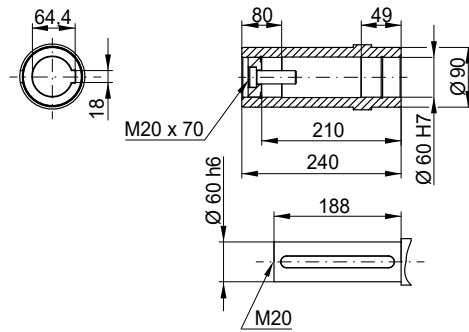
Dimensions in mm.

** Torque arm may be mounted on side A or side B.

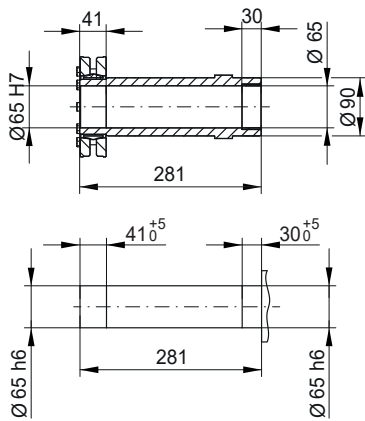
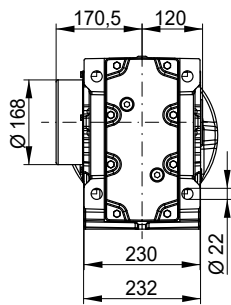
KH084 - Hollow shaft



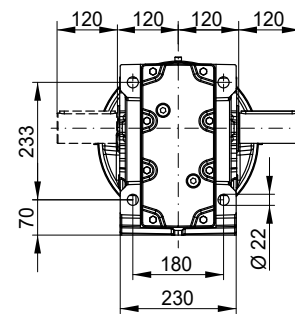
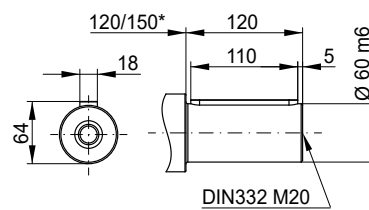
¹⁾ incl. hollow shaft protection cap



KD084 - Shrink disc



KS084 - Output shaft KB084 - Output shaft on both sides

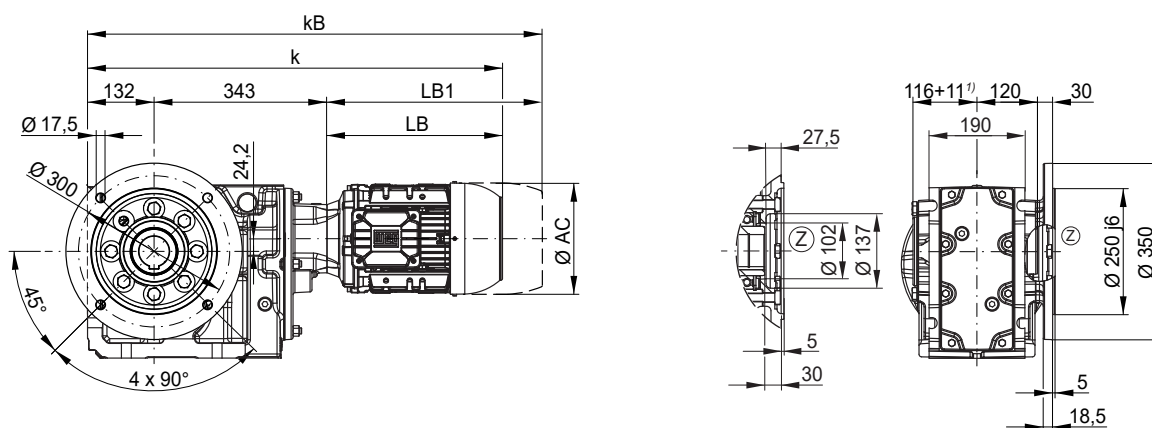


Motor fr.	63	71	80	L80	90S/L	100L	L100L	112M	132S,M	L132M
Dimension										
AC	126	141	159	159	178	199	199	221	261	261
AD	128	136	145	145	155	165	165	185	205	205
k	679	713	721	745	763	813	851	823	888	926
kB	723	762	779	803	836	897	935	910	1006	1044
LB	204	238	246	270	288	338	376	348	413	451
LB1	248	287	304	328	361	422	460	435	531	569

Motor dimension sheets see page 590. Description of motor lengths LB and LB1 see page 594.

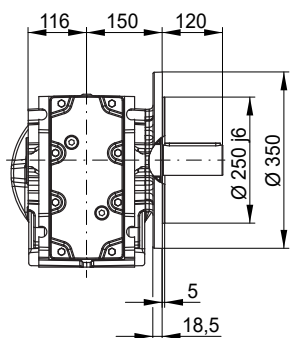
*Design KS(KB)/KF

KO084 - B5 flange execution with hollow shaft

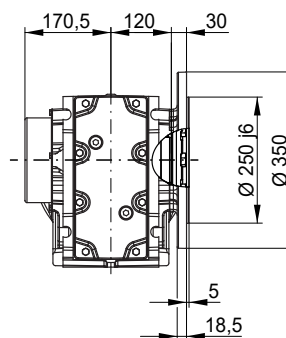


¹⁾ incl. hollow shaft protection cap

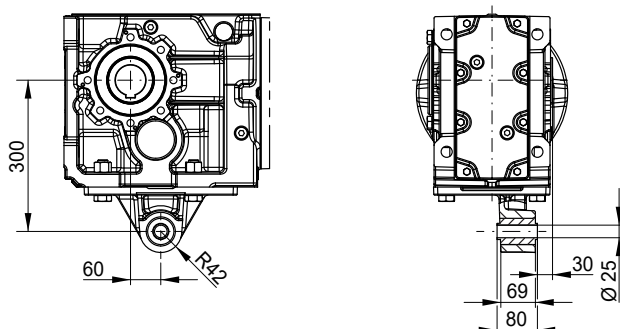
KF084 - B5 flange execution with output shaft



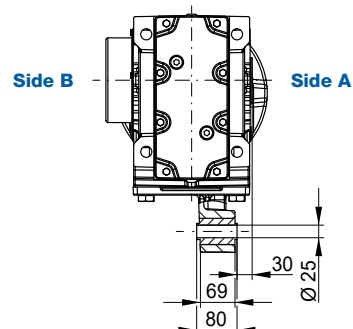
KP084 - B5 flange execution with hollow shaft and shrink disc



KT084 - Hollow shaft with torque arm **



KU084 - Hollow shaft with shrink disc and torque arm **

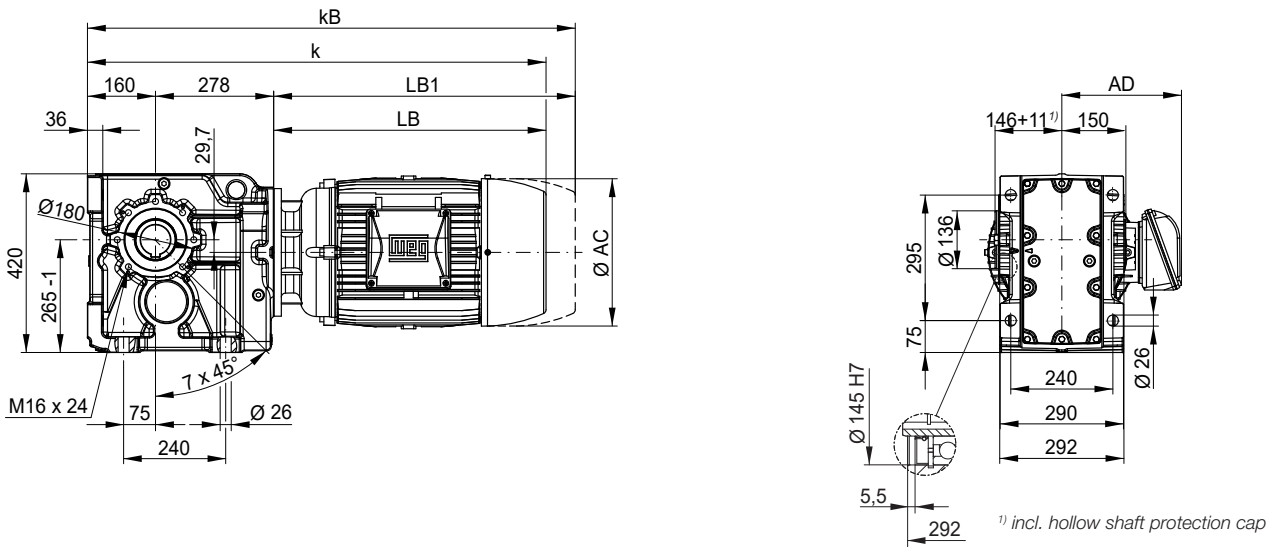


Dimensions in mm.

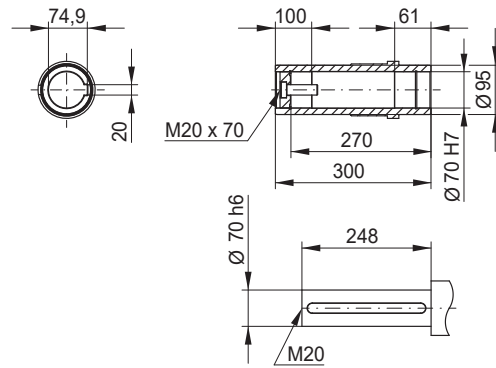
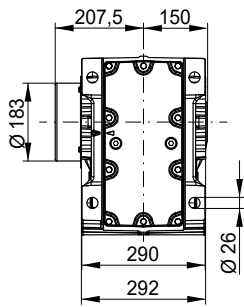
** Torque arm may be mounted on side A or side B.



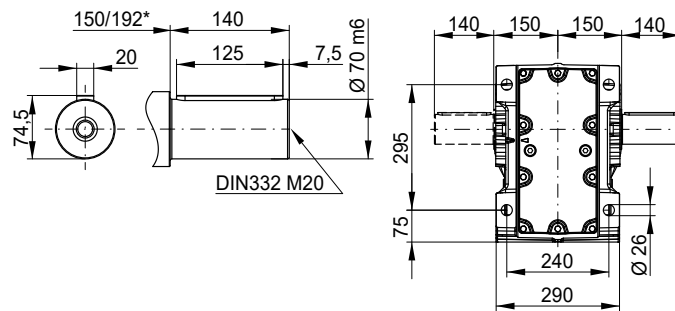
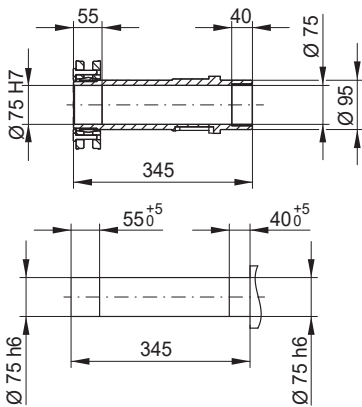
KH093 - Hollow shaft



KD093 - Shrink disc



KS093 - Output shaft KB093 - Output shaft on both sides

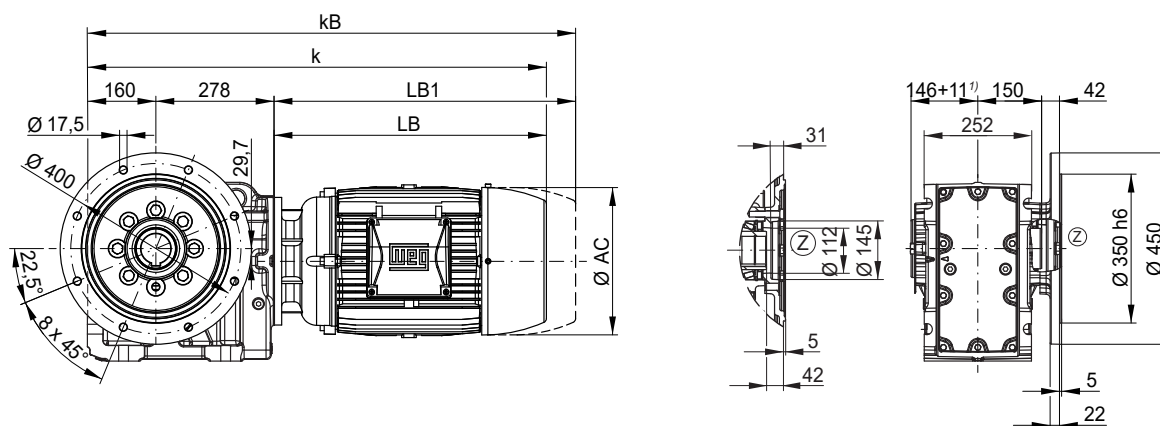


Motor fr.	63	71	80	L80	90S/L	100L	L100L	112M	132S,M	L132M	160M	160L	180M	180L	200L
AC	126	141	159	159	178	199	199	221	261	261	329	329	347	347	386
AD	128	136	145	145	155	165	165	185	205	205	266	266	281	281	317
k	642	676	684	708	726	776	814	786	851	889	973	1017	1041	1079	1171
kB	686	725	742	766	799	860	898	873	969	1007	1097	1141	1159	1197	1297
LB	204	238	246	270	288	338	376	348	413	451	535	579	603	641	733
LB1	248	287	304	328	361	422	460	435	531	569	659	703	721	759	859

Motor dimension sheets see page 590. Gear unit size K093 corresponds to motor flange FR-300. Description of motor lengths LB and LB1 see page 594.

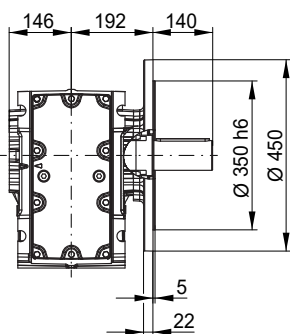
*Design KS(KB)/KF

KO093 - B5 flange execution with hollow shaft

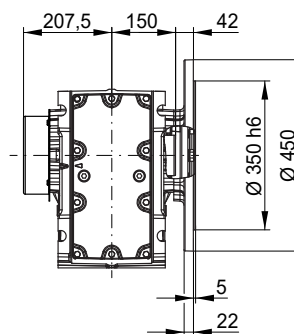


¹) incl. hollow shaft protection cap

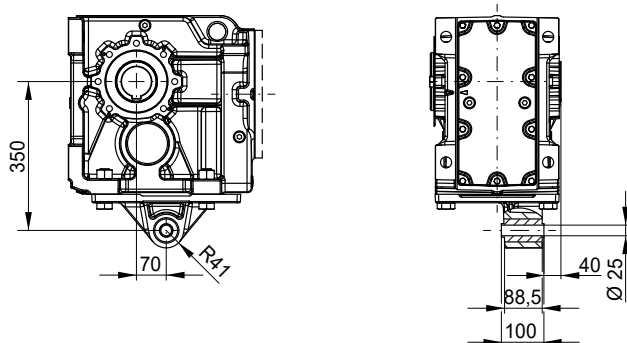
KF093 - B5 flange execution with output shaft



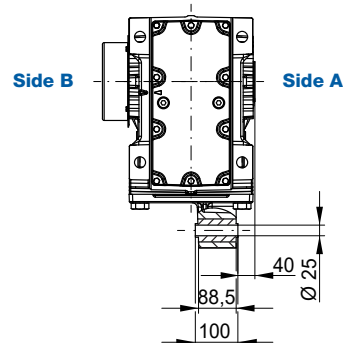
KP093 - B5 flange execution with hollow shaft and shrink disc



KT093 - Hollow shaft with torque arm **



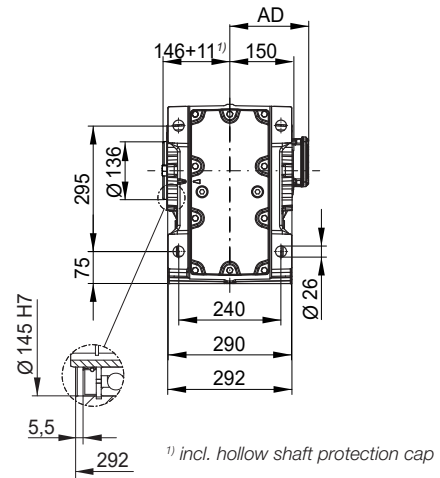
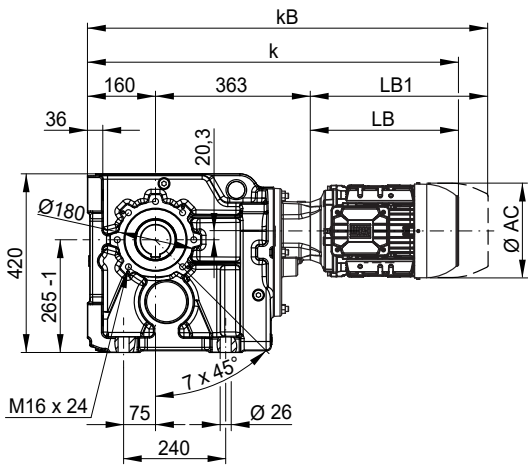
KU093 - Hollow shaft with shrink disc and torque arm **



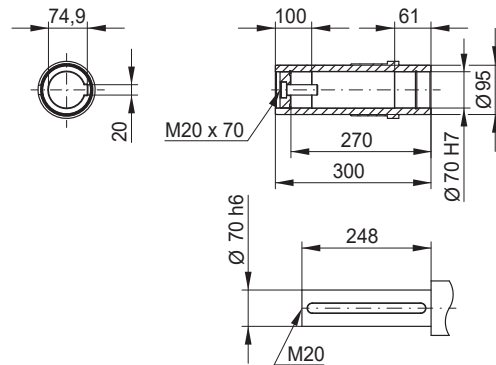
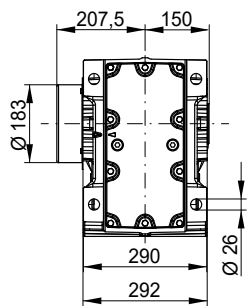
Dimensions in mm.

** Torque arm may be mounted on side A or side B.

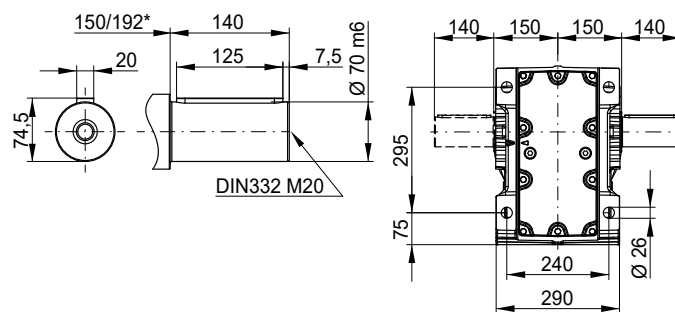
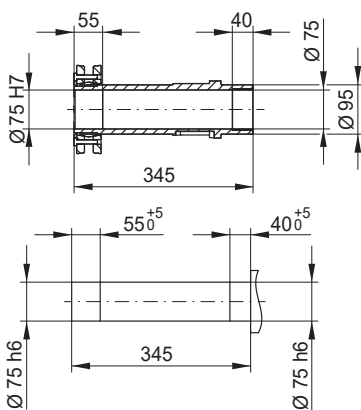
KH094 - Hollow shaft



KD094 - Shrink disc



KS094 - Output shaft KB094 - Output shaft on both sides

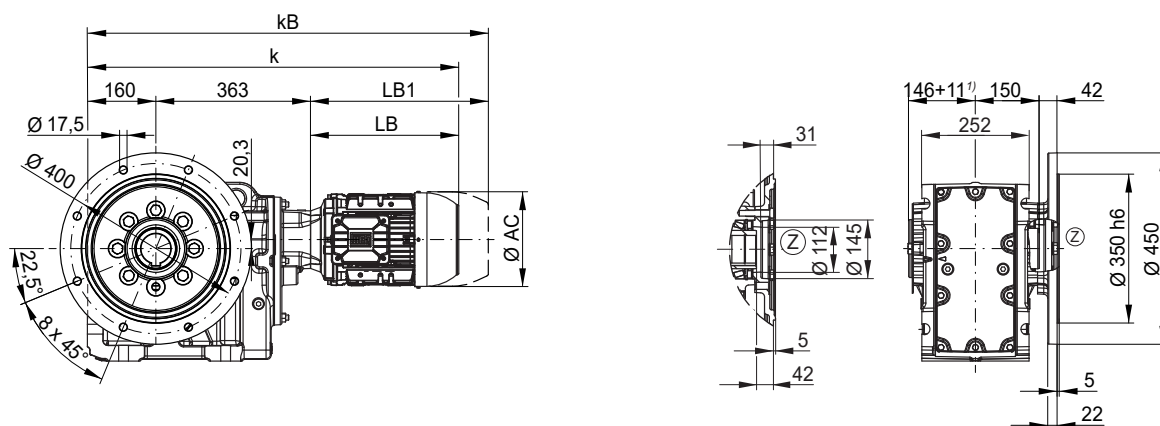


Motor fr.	63	71	80	L80	90S/L	100L	L100L	112M	132S,M	L132M
Dimension										
AC	126	141	159	159	178	199	199	221	261	261
AD	128	136	145	145	155	165	165	185	205	205
k	727	761	769	793	811	861	899	871	936	974
kB	771	810	827	851	884	945	983	958	1054	1092
LB	204	238	246	270	288	338	376	348	413	451
LB1	248	287	304	328	361	422	460	435	531	569

Motor dimension sheets see page 590. Description of motor lengths LB and LB1 see page 594.

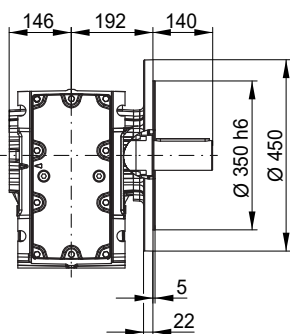
*Design KS(KB)/KF

KO094 - B5 flange execution with hollow shaft

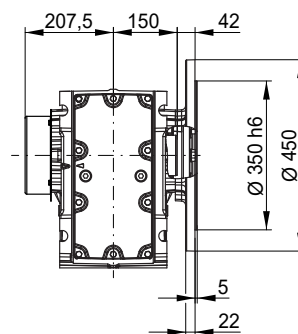


¹⁾ incl. hollow shaft protection cap

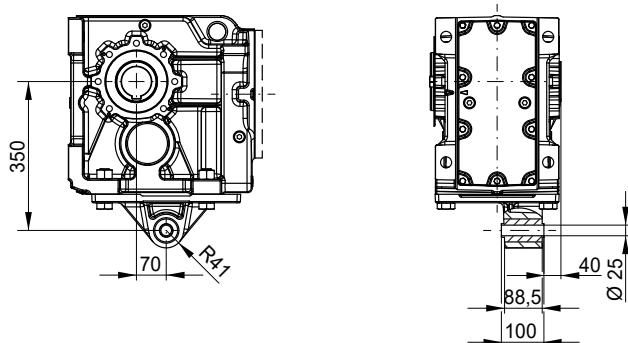
KF094 - B5 flange execution with output shaft



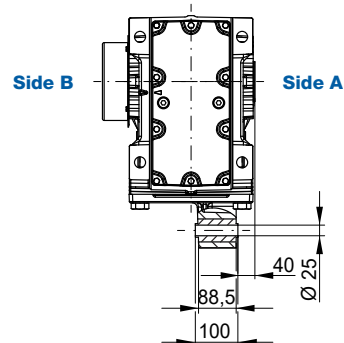
KP094 - B5 flange execution with hollow shaft and shrink disc



KT094 - Hollow shaft with torque arm **



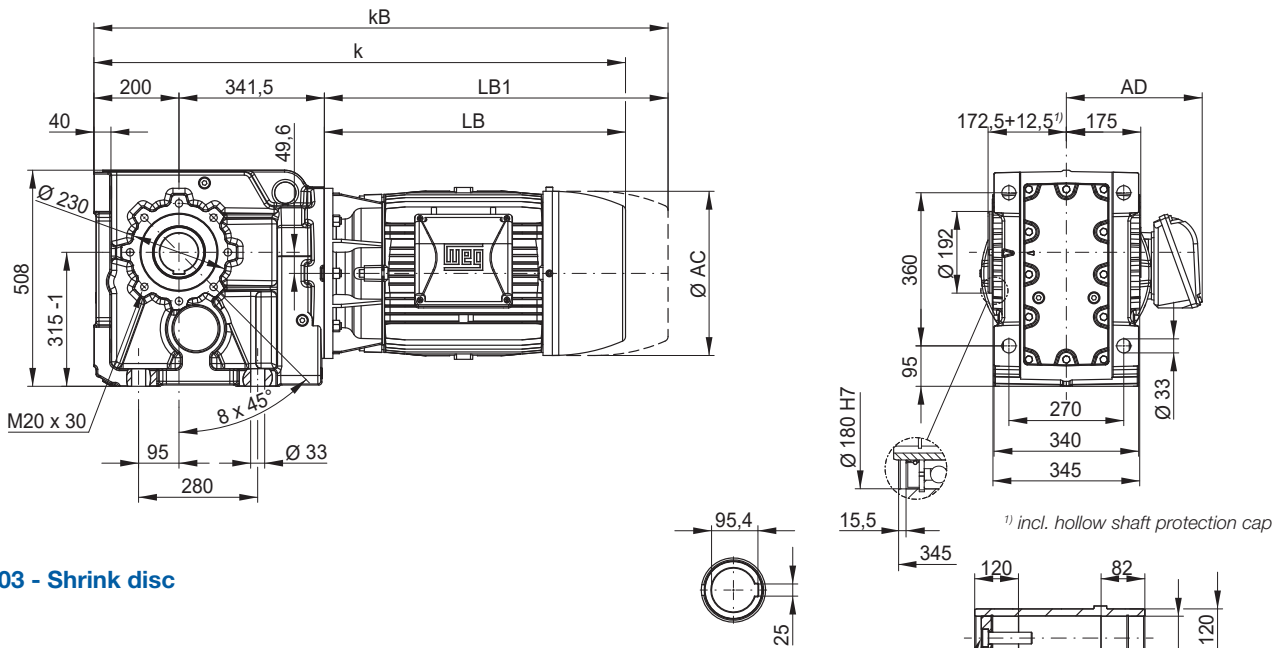
KU094 - Hollow shaft with shrink disc and torque arm **



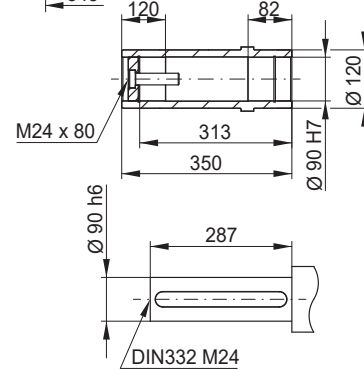
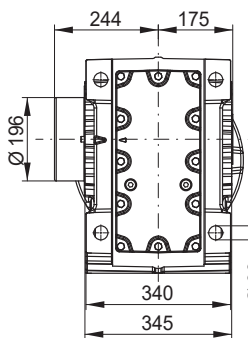
Dimensions in mm.

** Torque arm may be mounted on side A or side B.

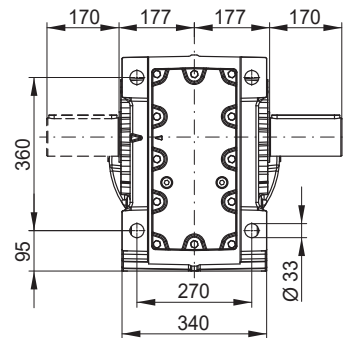
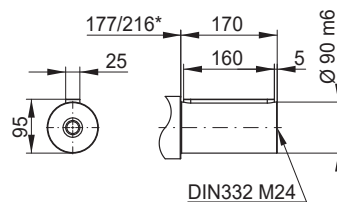
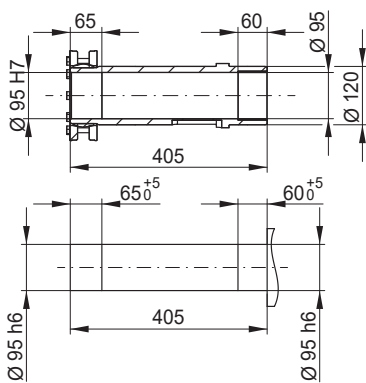
KH103 - Hollow shaft



KD103 - Shrink disc



KS103 - Output shaft KB103 - Output shaft on both sides

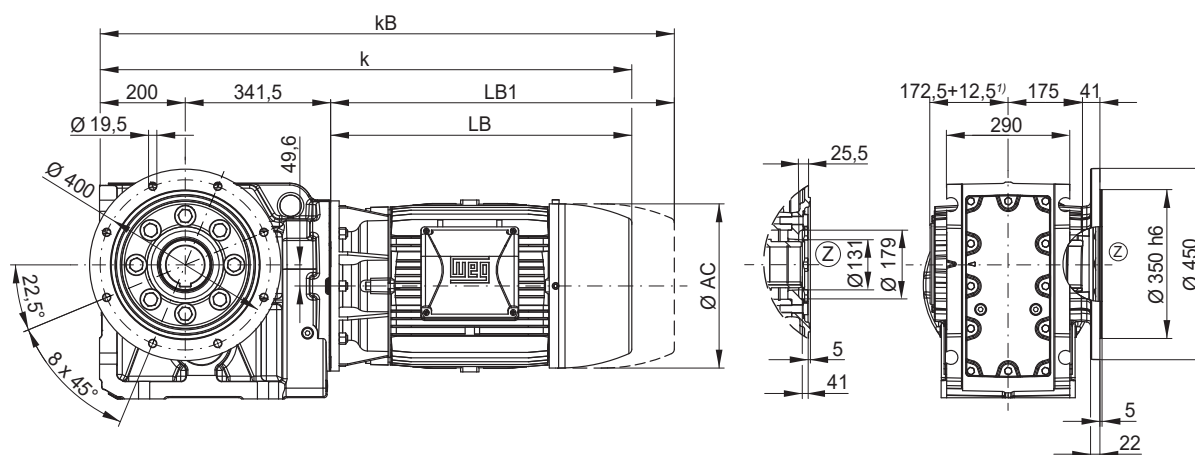


Motor fr.	63	71	80	L80	90S/L	100L	L100L	112M	132S,M	L132M	160M	160L	180M	180L	200L	225S/M
AC	-	-	-	-	-	-	-	221	261	261	329	329	347	347	386	453
AD	-	-	-	-	-	-	-	185	205	205	266	266	281	281	317	385
k	-	-	-	-	-	-	-	890	955	993	1064	1108	1132	1170	1262	1370
kB	-	-	-	-	-	-	-	977	1073	1111	1188	1232	1250	1288	1388	1488
LB	-	-	-	-	-	-	-	348	413	451	522	566	590	628	720	828
LB1	-	-	-	-	-	-	-	435	531	569	646	690	708	746	846	946

Motor dimension sheets see page 590. Gear unit size K103 corresponds to motor flange FR-400.
Description of motor lengths LB and LB1 see page 594.

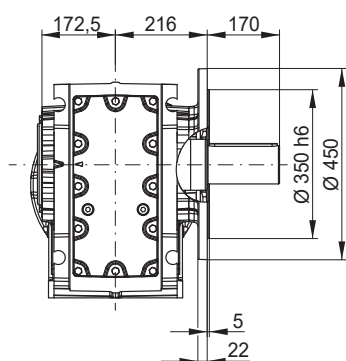
*Design KS(KB)/KF

KO103 - B5 flange execution with hollow shaft

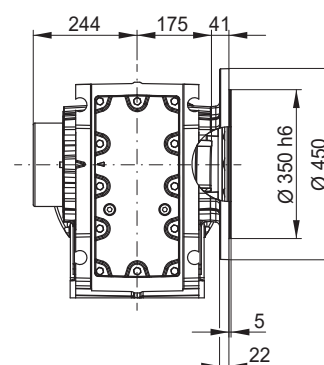


¹) incl. hollow shaft protection cap

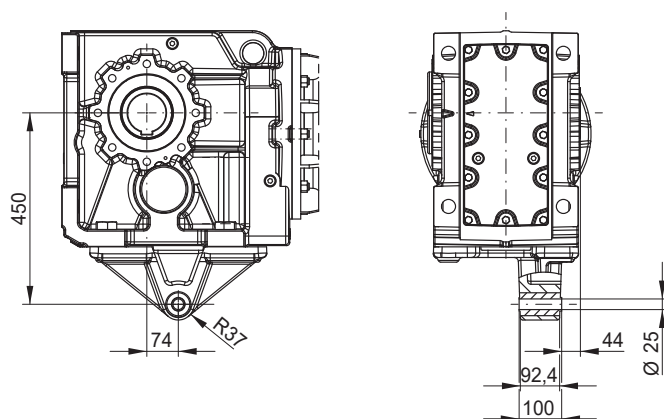
KF103 - B5 flange execution with output shaft



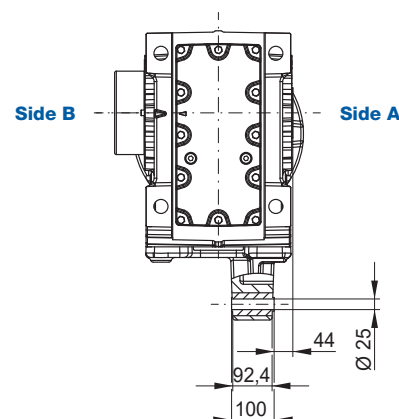
KP103 - B5 flange execution with hollow shaft and shrink disc



KT103 - Hollow shaft with torque arm **



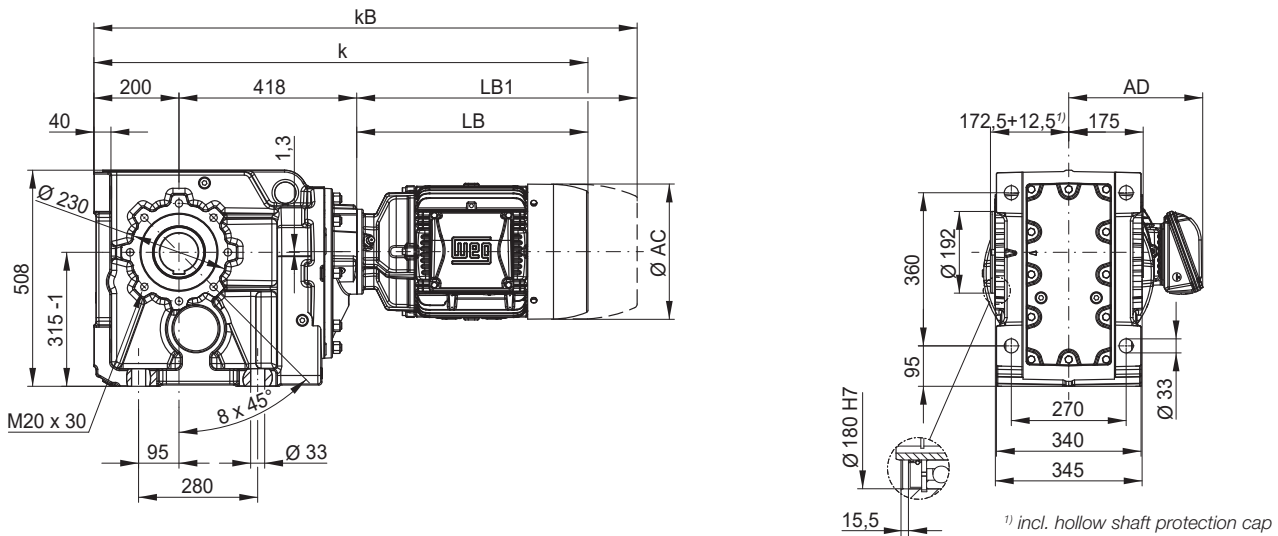
KU103 - Hollow shaft with shrink disc and torque arm **



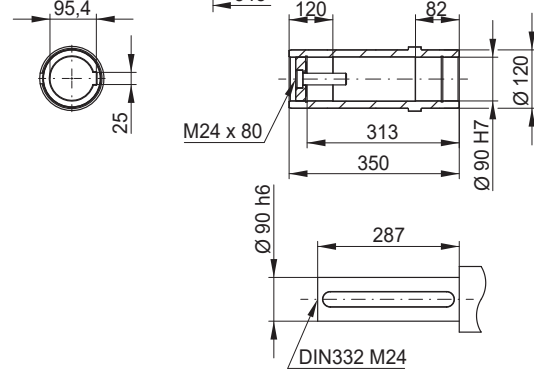
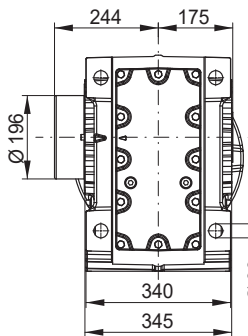
Dimensions in mm.

** Torque arm may be mounted on side A or side B.

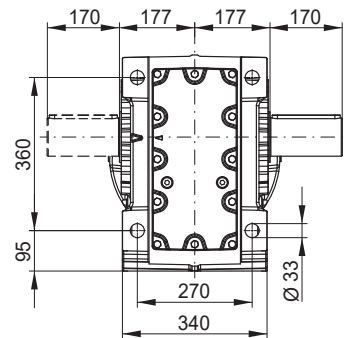
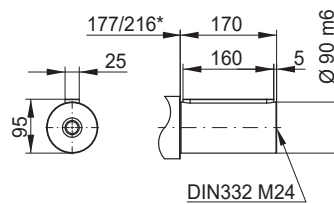
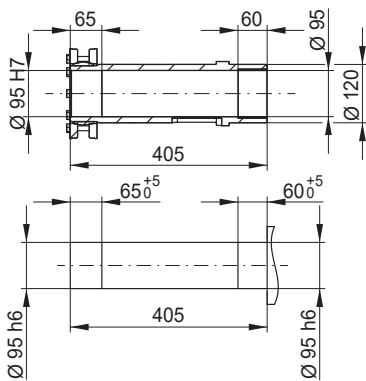
KH104 - Hollow shaft



KD104 - Shrink disc



KS104 - Output shaft KB104 - Output shaft on both sides

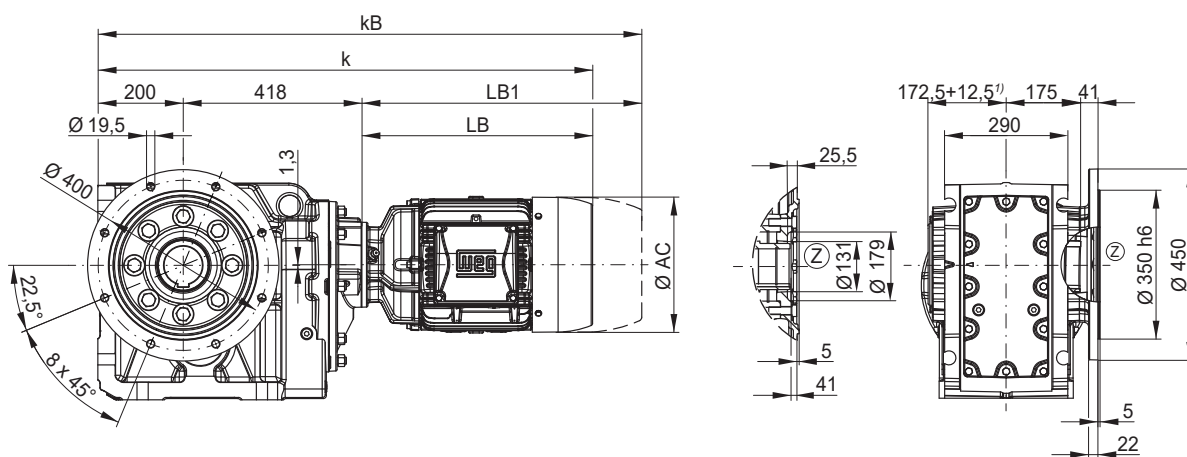


Motor fr.	63	71	80	L80	90S/L	100L	L100L	112M	132S,M	L132M	160M	160L
Dimension												
AC	126	141	159	159	178	199	199	221	261	261	329	329
AD	128	136	145	145	155	165	165	185	205	205	266	266
k	822	856	864	888	906	956	994	966	1031	1069	1163	1207
kB	866	905	922	946	979	1040	1078	1053	1149	1187	1287	1331
LB	204	238	246	270	288	338	376	348	413	451	545	589
LB1	248	287	304	328	361	422	460	435	531	569	669	713

Motor dimension sheets see page 590. Gear unit size K104 corresponds to motor flange FR-200. Description of motor lengths LB and LB1 see page 594.

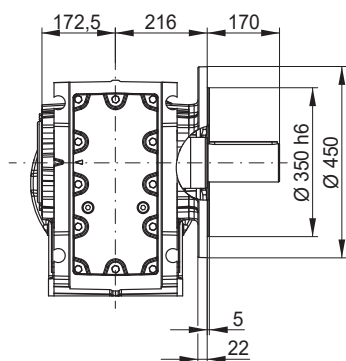
*Design KS(KB)/KF

KO104 - B5 flange execution with hollow shaft

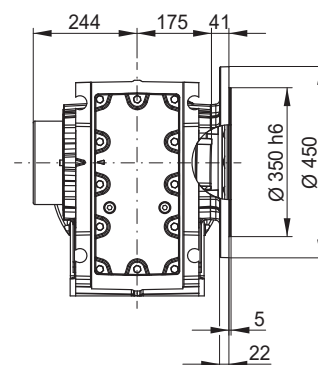


¹⁾ incl. hollow shaft protection cap

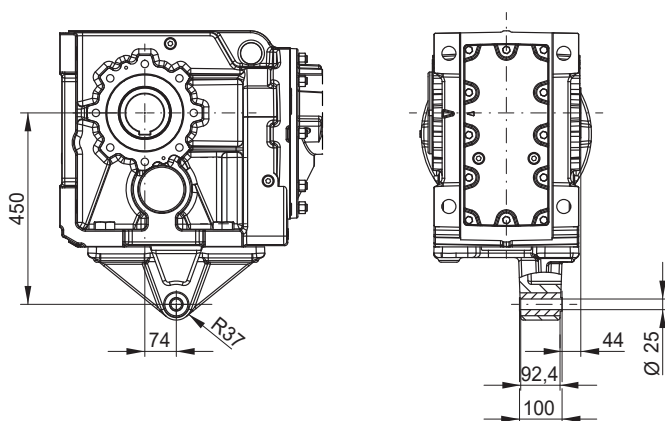
KF104 - B5 flange execution with output shaft



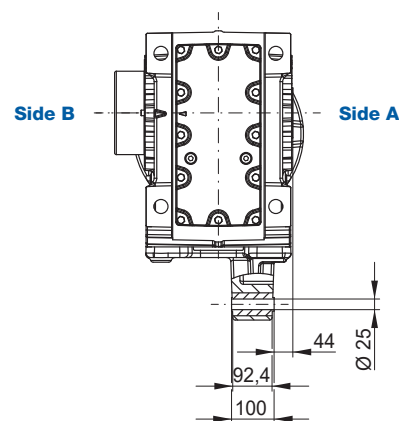
KP104 - B5 flange execution with hollow shaft and shrink disc



KT104 - Hollow shaft with torque arm **



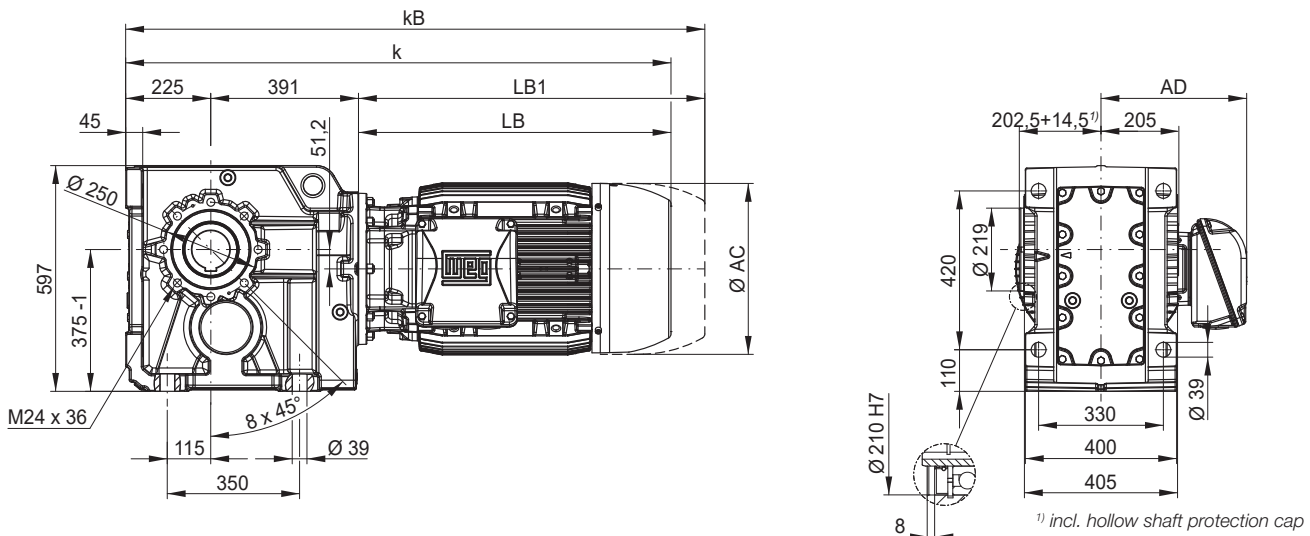
KU104 - Hollow shaft with shrink disc and torque arm **



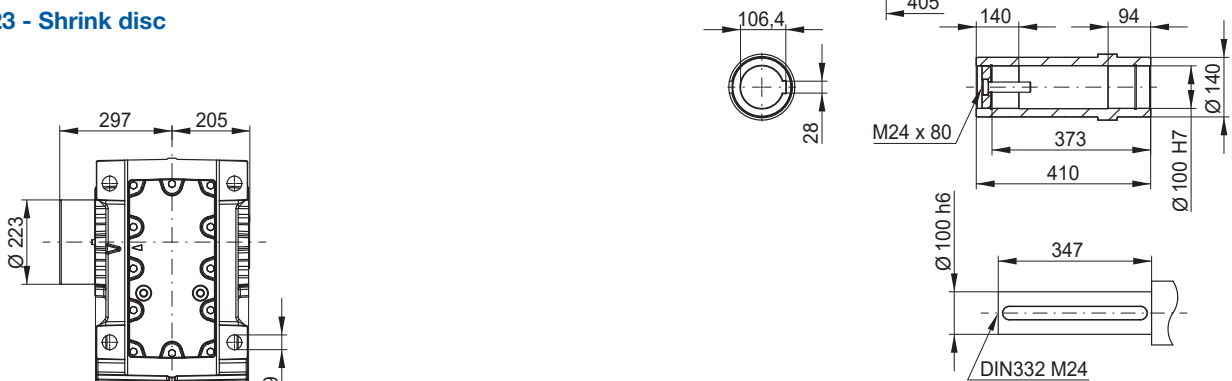
Dimensions in mm.

** Torque arm may be mounted on side A or side B.

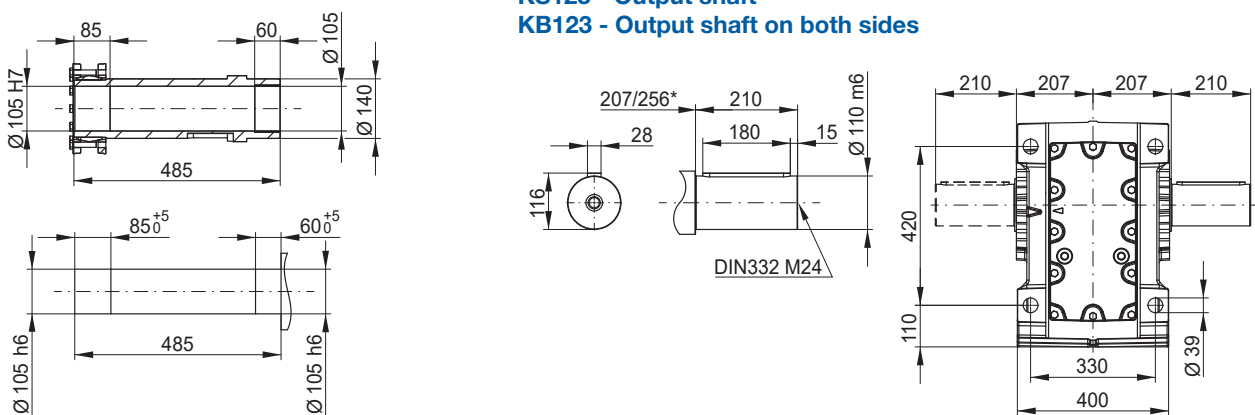
KH123 - Hollow shaft



KD123 - Shrink disc



KS123 - Output shaft KB123 - Output shaft on both sides

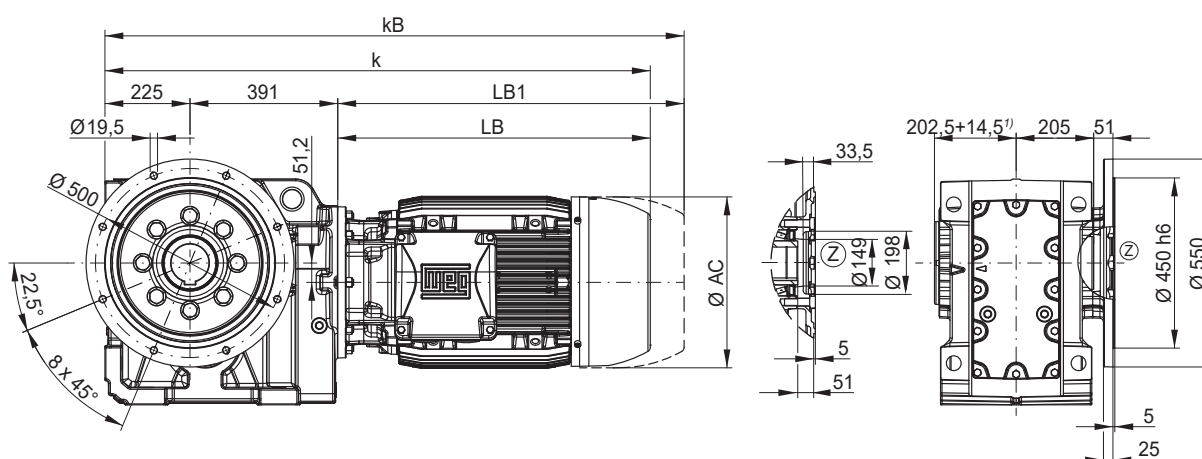


Motor fr.	63	71	80	L80	90S/L	100L	L100L	112M	132S,M	L132M	160M	160L	180M	180L	200L	225S/M
Dimension AC	-	-	-	-	-	-	-	221	261	261	329	329	347	347	386	453
AD	-	-	-	-	-	-	-	185	205	205	266	266	281	281	317	385
k	-	-	-	-	-	-	-	964	1029	1067	1138	1182	1206	1244	1336	1444
kB	-	-	-	-	-	-	-	1051	1147	1185	1262	1306	1324	1362	1462	1562
LB	-	-	-	-	-	-	-	348	413	451	522	566	590	628	720	828
LB1	-	-	-	-	-	-	-	435	531	569	646	690	708	746	846	946

Motor dimension sheets see page 590. Gear unit size K123 corresponds to motor flange FR-400.
Description of motor lengths LB and LB1 see page 594.

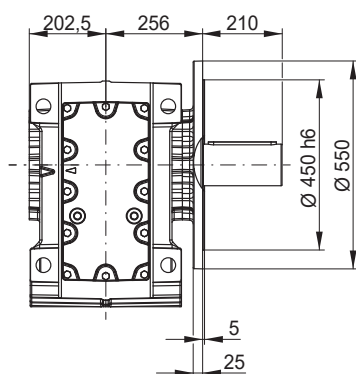
*Design KS(KB)/KF

KO123 - B5 flange execution with hollow shaft

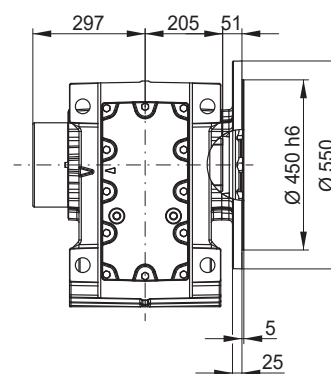


¹⁾ incl. hollow shaft protection cap

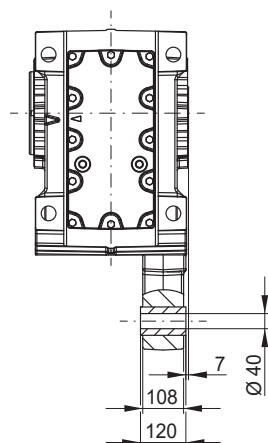
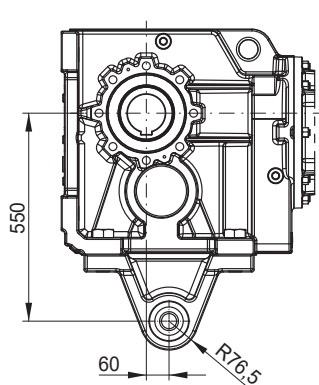
KF123 - B5 flange execution with output shaft



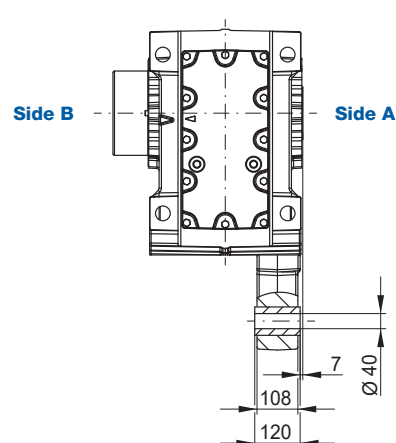
KP123 - B5 flange execution with hollow shaft and shrink disc



KT123 - Hollow shaft with torque arm **



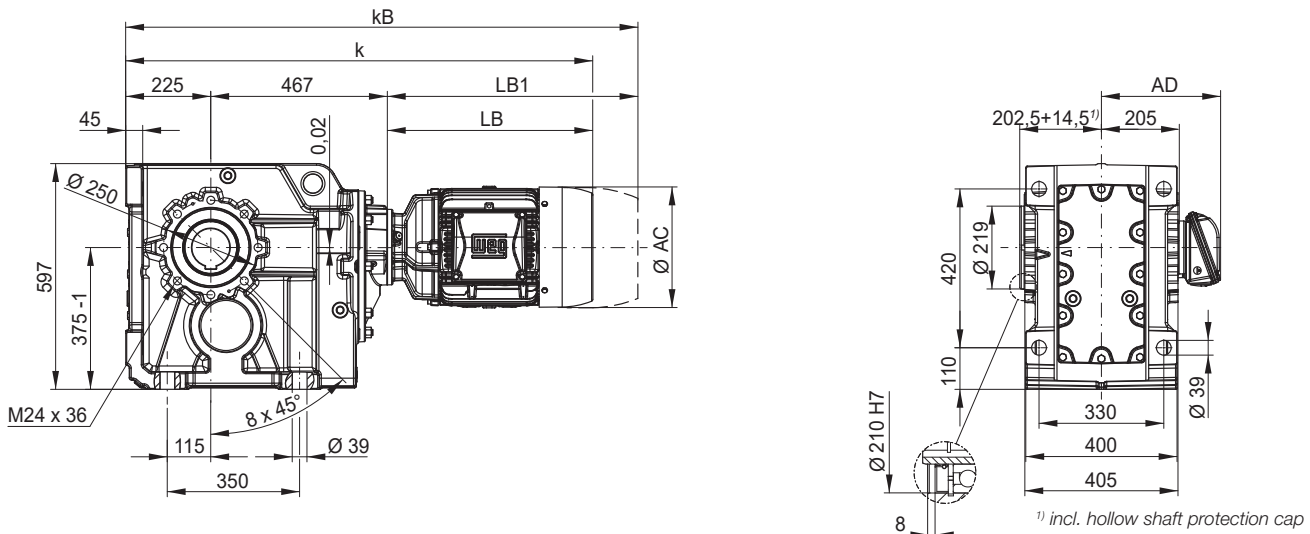
KU123 - Hollow shaft with shrink disc and torque arm **



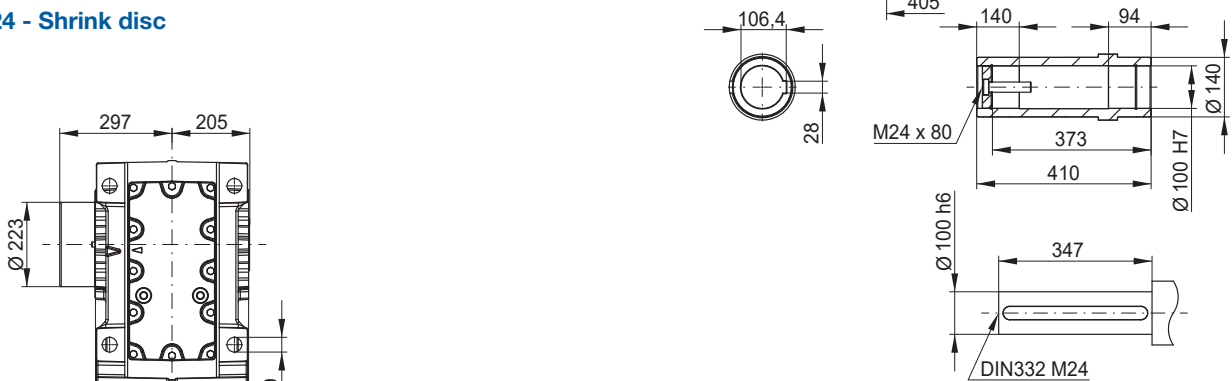
Dimensions in mm.

** Torque arm may be mounted on side A or side B.

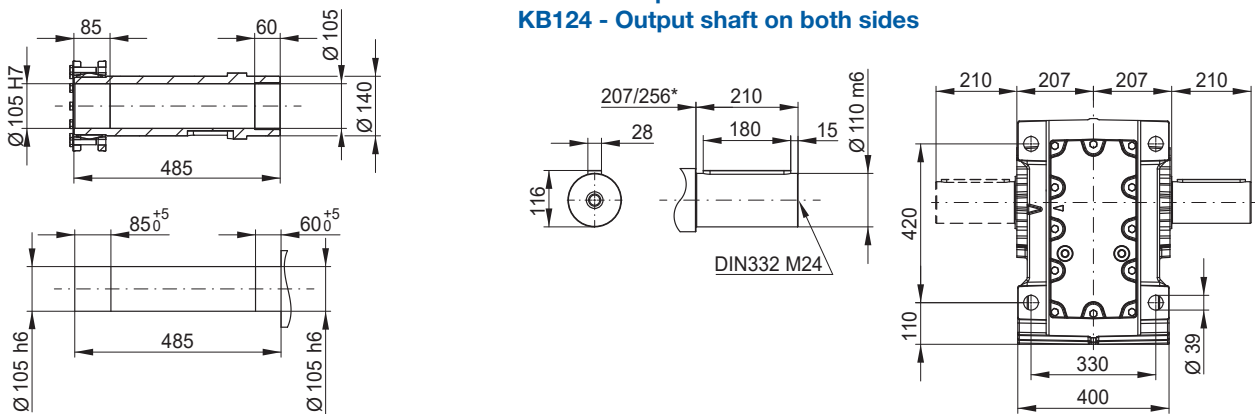
KH124 - Hollow shaft



KD124 - Shrink disc



KS124 - Output shaft KB124 - Output shaft on both sides

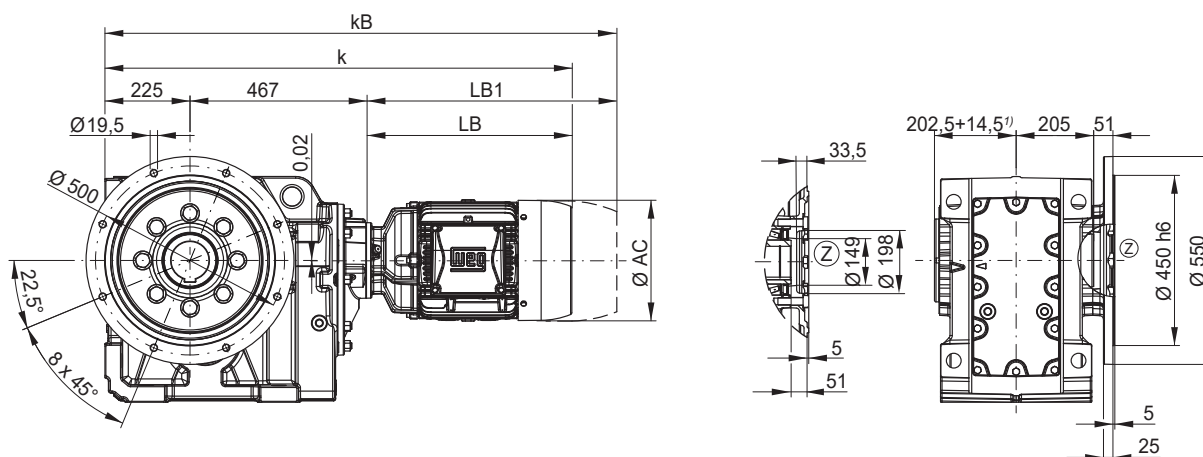


Motor fr.	63	71	80	L80	90S/L	100L	L100L	112M	132S,M	L132M	160M	160L
Dimension												
AC	126	141	159	159	178	199	199	221	261	261	329	329
AD	128	136	145	145	155	165	165	185	205	205	266	266
k	896	930	938	962	980	1030	1068	1040	1105	1143	1237	1281
kB	940	979	996	1020	1053	1114	1152	1127	1223	1261	1361	1405
LB	204	238	246	270	288	338	376	348	413	451	545	589
LB1	248	287	304	328	361	422	460	435	531	569	669	713

Motor dimension sheets see page 590. Gear unit size K124 corresponds to motor flange FR-200. Description of motor lengths LB and LB1 see page 594.

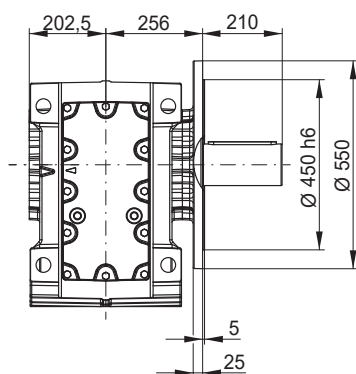
*Design KS(KB)/KF

KO124 - B5 flange execution with hollow shaft

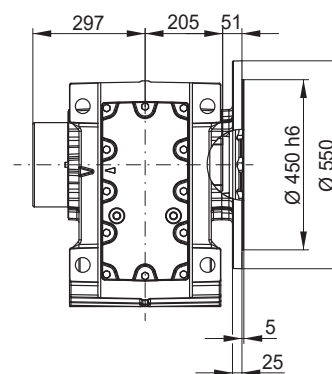


¹) incl. hollow shaft protection cap

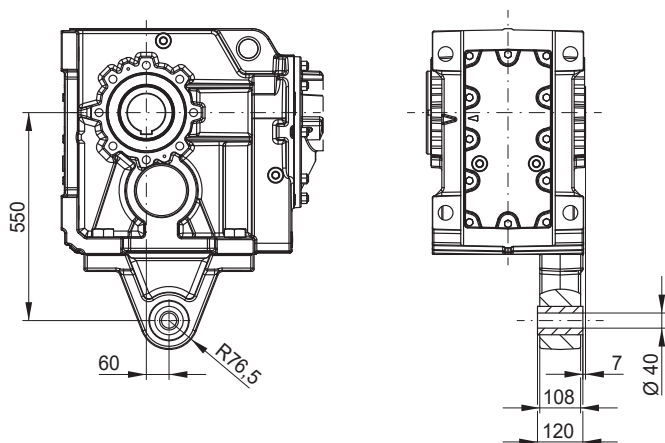
KF124 - B5 flange execution with output shaft



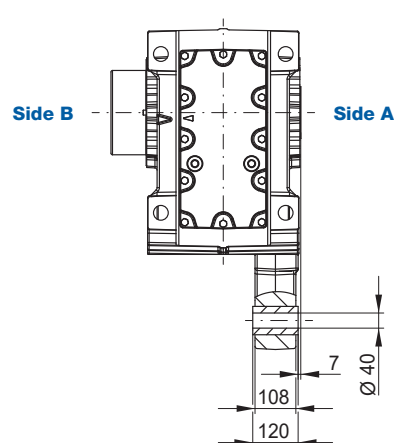
KP124 - B5 flange execution with hollow shaft and shrink disc



KT124 - Hollow shaft with torque arm **



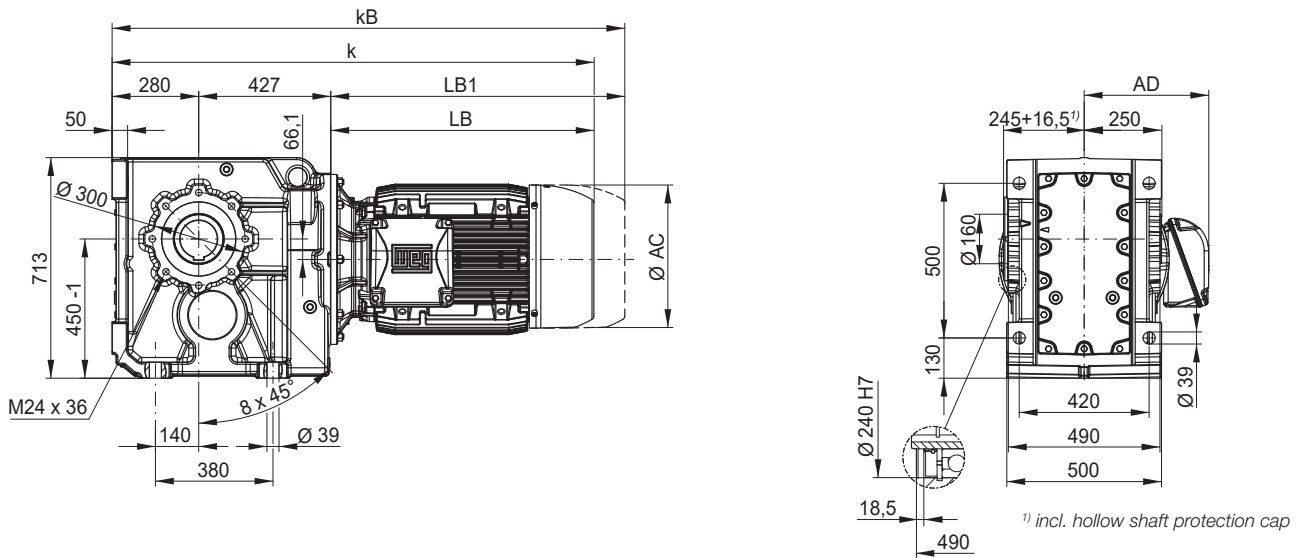
KU124 - Hollow shaft with shrink disc and torque arm **



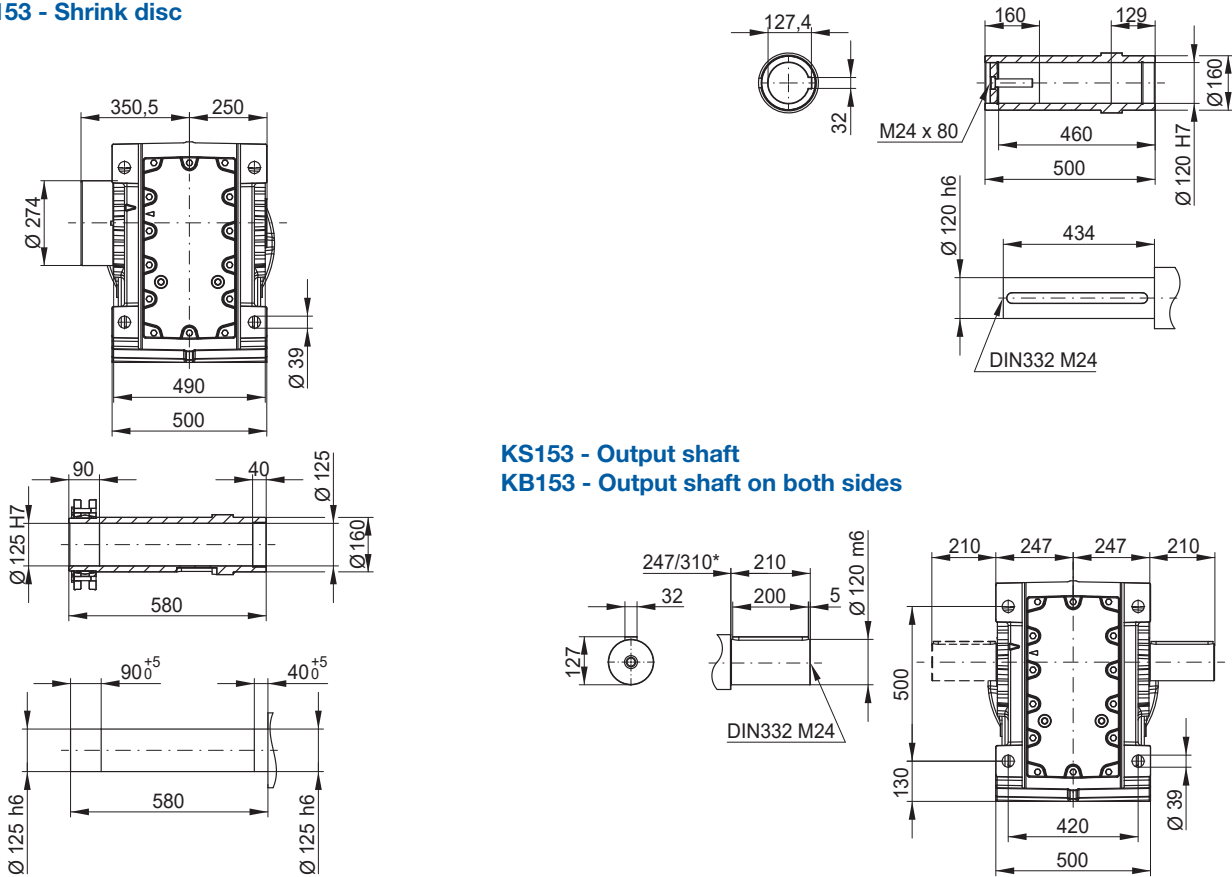
Dimensions in mm.

** Torque arm may be mounted on side A or side B.

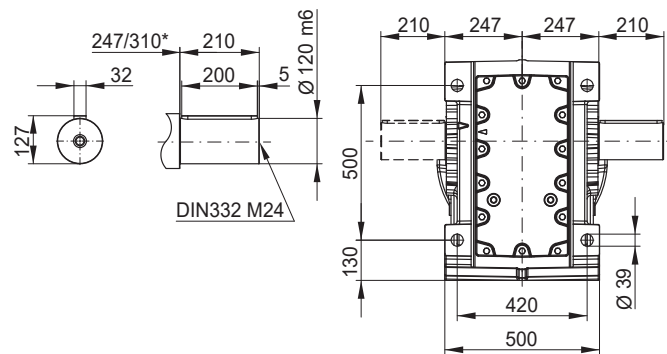
KH153 - Hollow shaft



KD153 - Shrink disc



KS153 - Output shaft KB153 - Output shaft on both sides

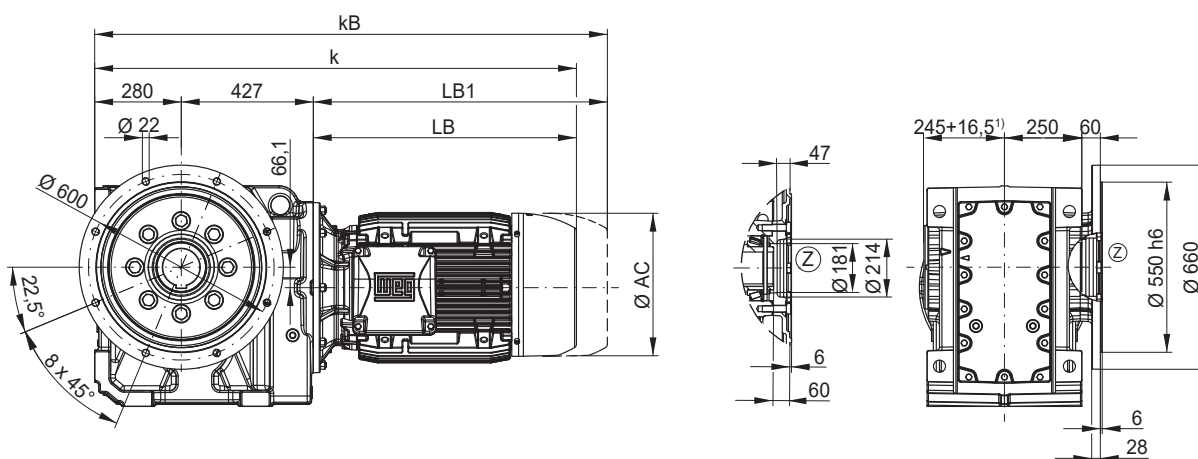


Motor fr.	63	71	80	L80	90S/L	100L	L100L	112M	132S,M	L132M	160M	160L	180M	180L	200L	225S/M	280S/M
Dimension																	
AC	-	-	-	-	-	-	-	-	-	-	329	329	347	347	386	453	599
AD	-	-	-	-	-	-	-	-	-	-	266	266	281	281	317	385	472
k	-	-	-	-	-	-	-	-	-	-	1213	1257	1281	1319	1411	1519	1680
kB	-	-	-	-	-	-	-	-	-	-	1337	1381	1399	1437	1537	1637	1773
LB	-	-	-	-	-	-	-	-	-	-	506	550	574	612	704	812	973
LB1	-	-	-	-	-	-	-	-	-	-	630	674	692	730	830	930	1066

Motor dimension sheets see page 590. Gear unit size K153 corresponds to motor flange FR-550.
Description of motor lengths LB and LB1 see page 594.

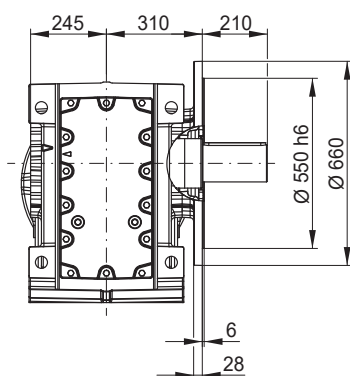
*Design KS(KB)/KF

KO153 - B5 flange execution with hollow shaft

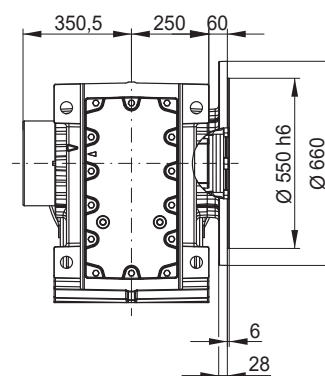


¹⁾ incl. hollow shaft protection cap

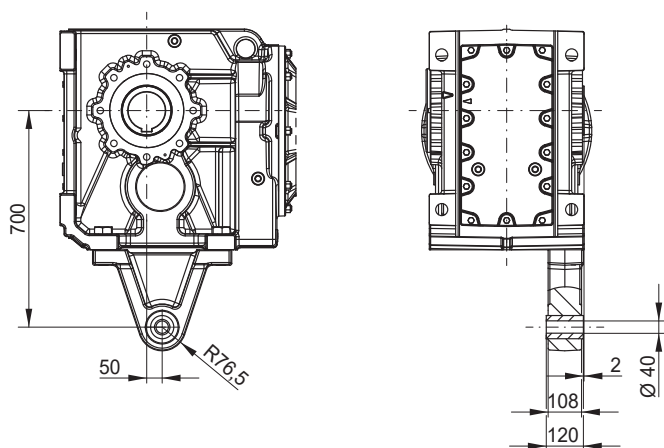
KF153 - B5 flange execution with output shaft



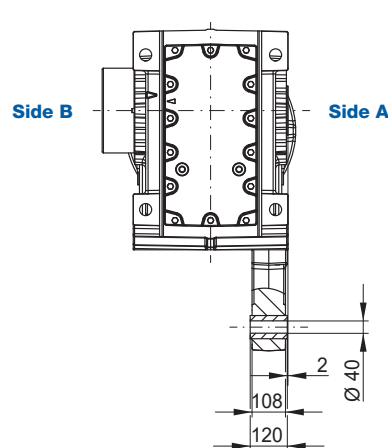
KP153 - B5 flange execution with hollow shaft and shrink disc



KT153 - Hollow shaft with torque arm **



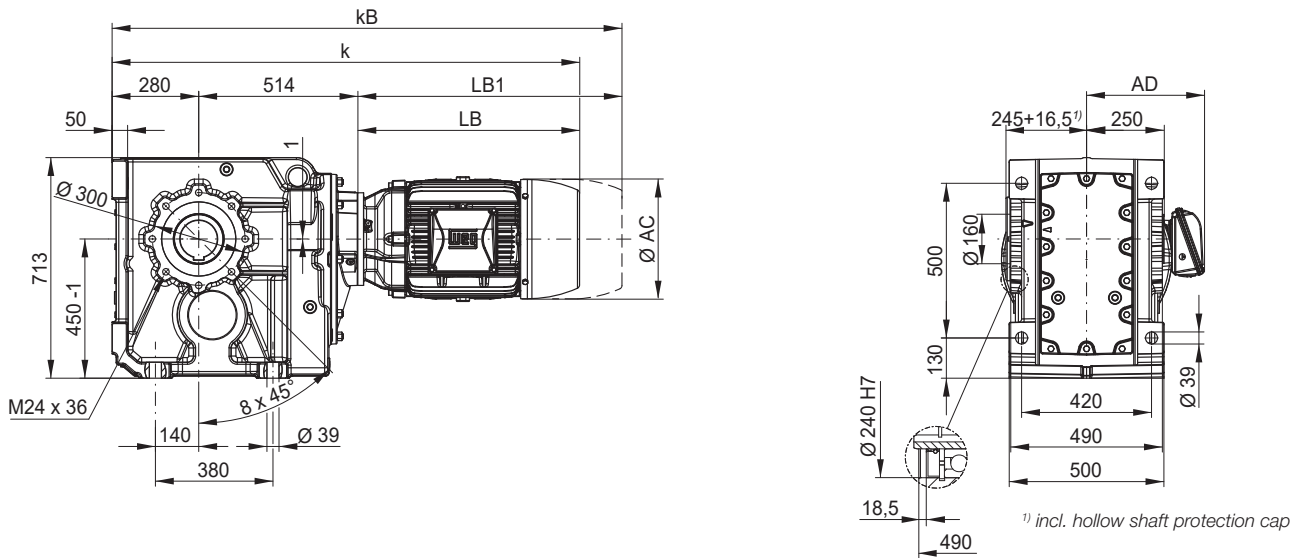
KU153 - Hollow shaft with shrink disc and torque arm **



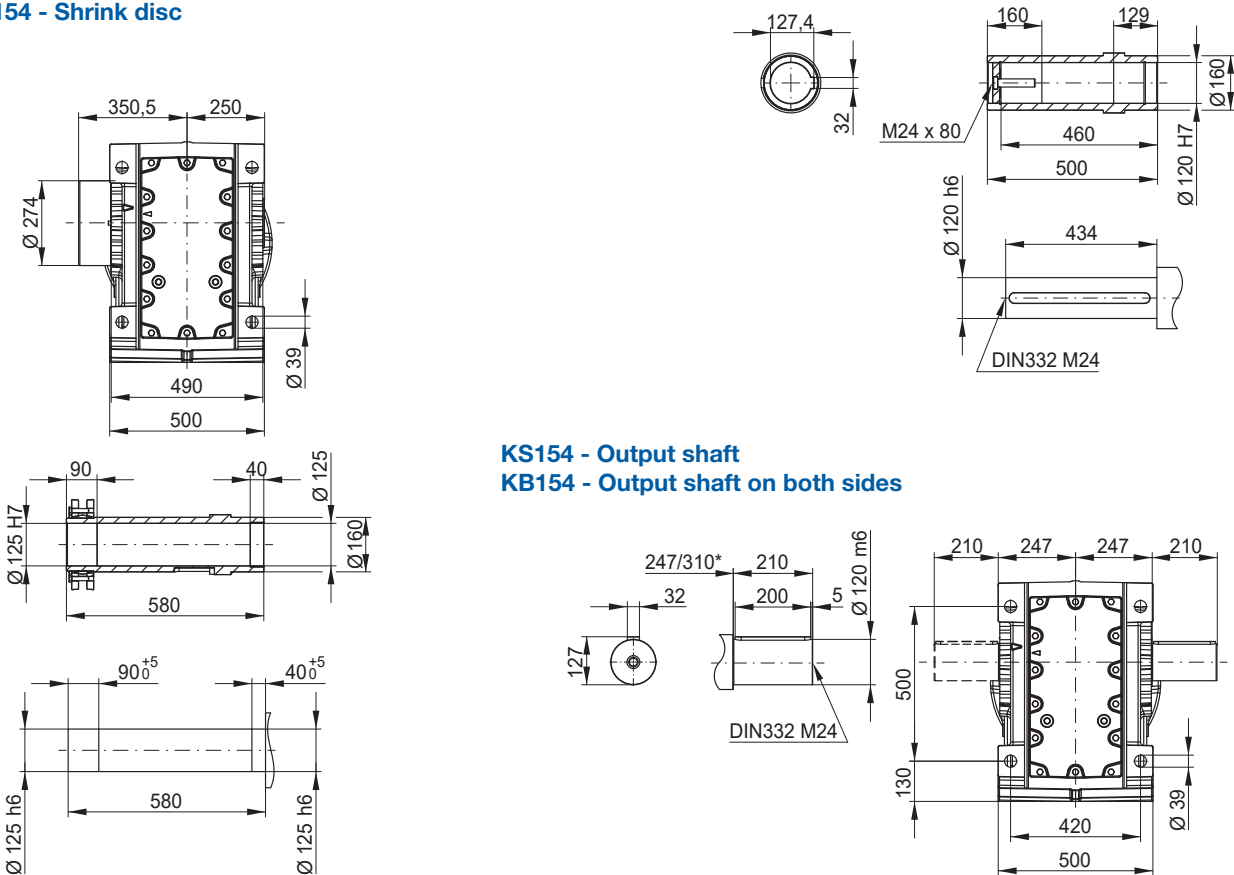
Dimensions in mm.

** Torque arm may be mounted on side A or side B.

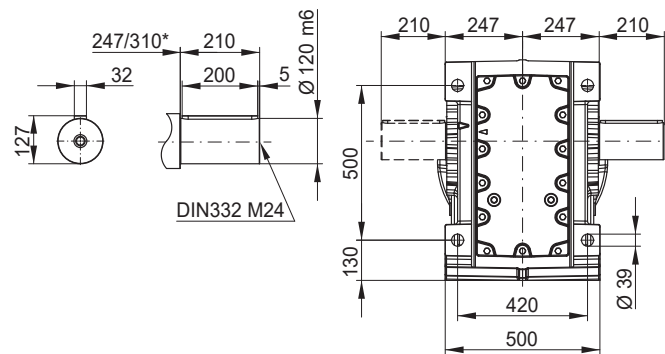
KH154 - Hollow shaft



KD154 - Shrink disc



KS154 - Output shaft KB154 - Output shaft on both sides

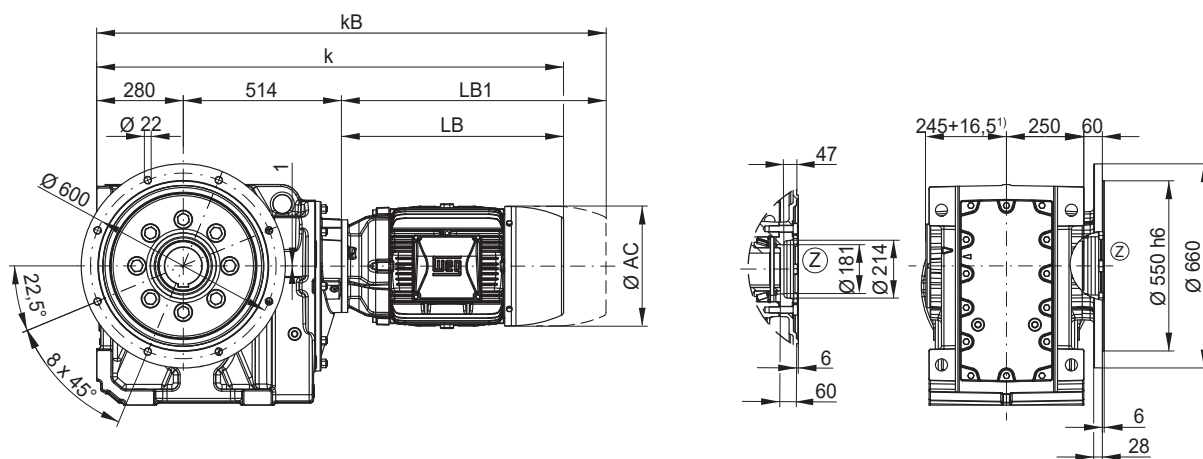


Motor fr.	63	71	80	L80	90S/L	100L	L100L	112M	132S,M	L132M	160M	160L	180M	180L	200L
AC	126	141	159	159	178	199	199	221	261	261	329	329	347	347	386
AD	128	136	145	145	155	165	165	185	205	205	266	266	281	281	317
k	998	1032	1040	1064	1082	1132	1170	1142	1207	1245	1329	1373	1397	1435	1527
kB	1042	1081	1098	1122	1155	1216	1254	1229	1325	1363	1453	1497	1515	1553	1653
LB	204	238	246	270	288	338	376	348	413	451	535	579	603	641	733
LB1	248	287	304	328	361	422	460	435	531	569	659	703	721	759	859

Motor dimension sheets see page 590. Gear unit size K154 corresponds to motor flange FR-300.
Description of motor lengths LB and LB1 see page 594.

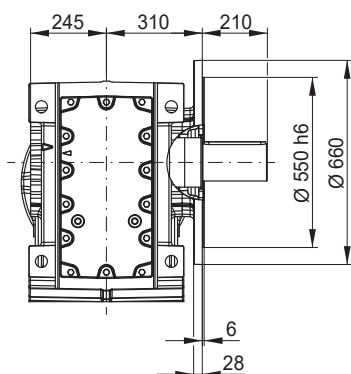
*Design KS(KB)/KF

KO154 - B5 flange execution with hollow shaft

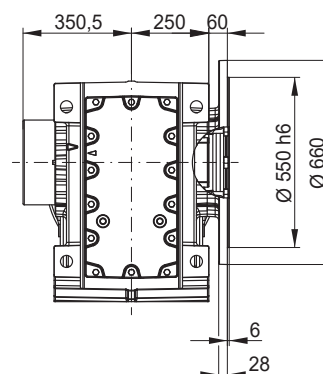


¹⁾ incl. hollow shaft protection cap

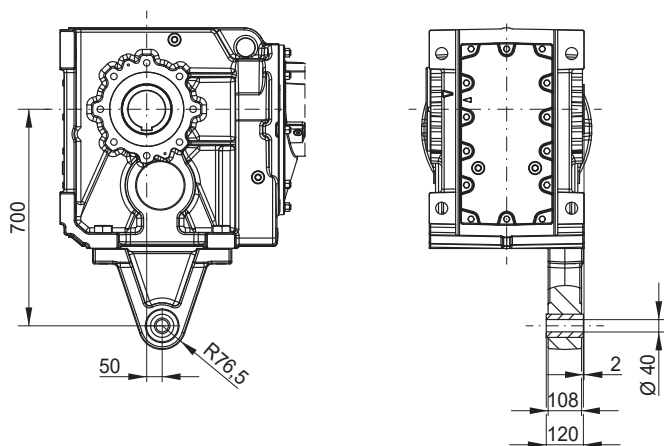
KF154 - B5 flange execution with output shaft



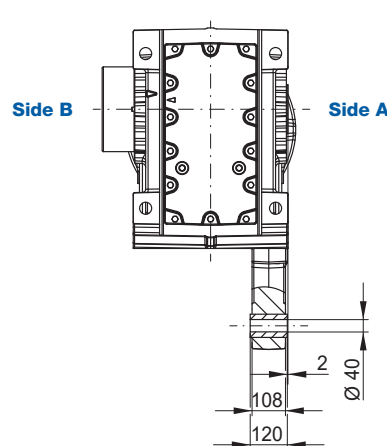
KP154 - B5 flange execution with hollow shaft and shrink disc



KT154 - Hollow shaft with torque arm **



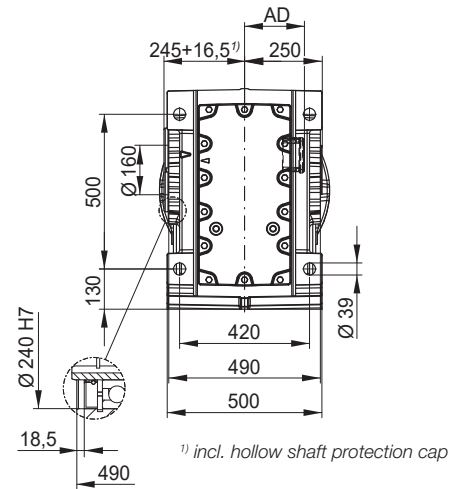
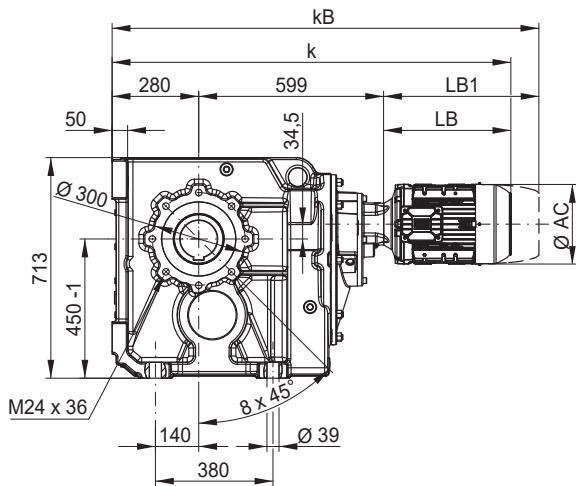
KU154 - Hollow shaft with shrink disc and torque arm **



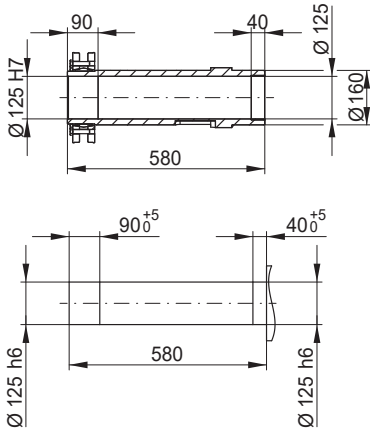
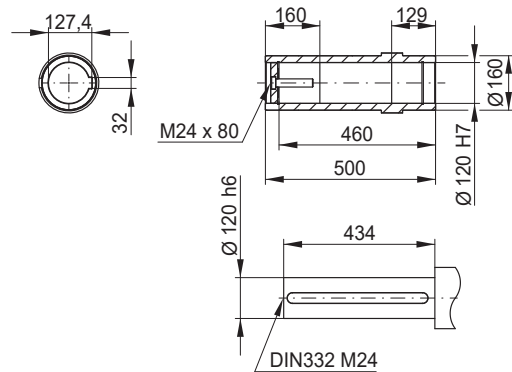
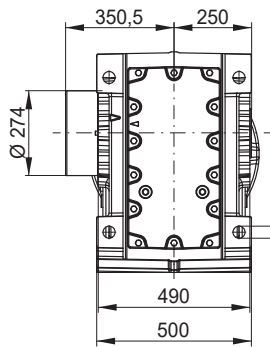
Dimensions in mm.

** Torque arm may be mounted on side A or side B.

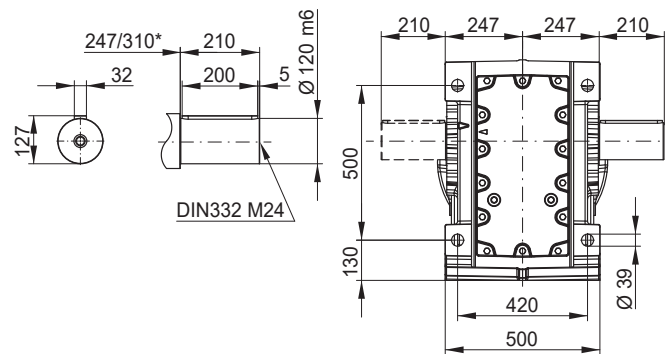
KH155 - Hollow shaft



KD155 - Shrink disc



KS155 - Output shaft KB155 - Output shaft on both sides

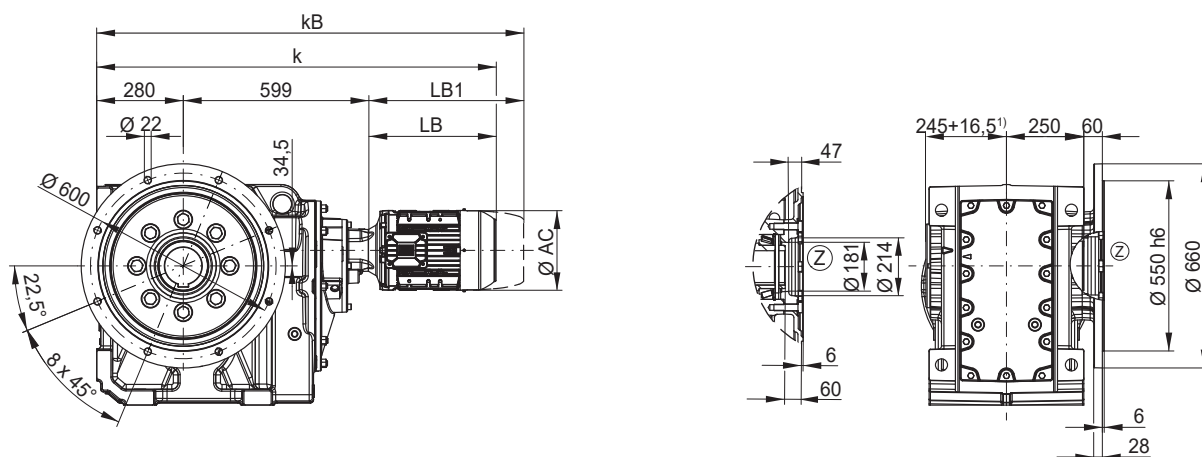


Motor fr.	63	71	80	L80	90S/L	100L	L100L	112M	132S,M	L132M
AC	126	141	159	159	178	199	199	221	261	261
AD	128	136	145	145	155	165	165	185	205	205
k	1083	1117	1125	1149	1167	1217	1255	1227	1292	1330
kB	1127	1166	1183	1207	1240	1301	1339	1314	1410	1448
LB	204	238	246	270	288	338	376	348	413	451
LB1	248	287	304	328	361	422	460	435	531	569

Motor dimension sheets see page 590. Description of motor lengths LB and LB1 see page 594.

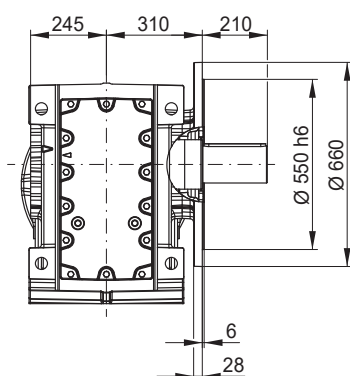
*Design KS(KB)/KF

KO155 - B5 flange execution with hollow shaft

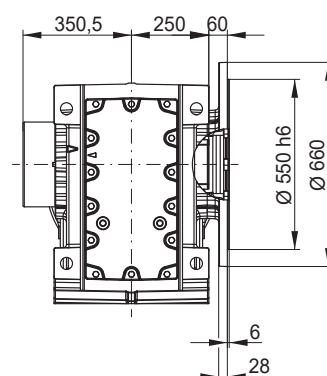


¹⁾ incl. hollow shaft protection cap

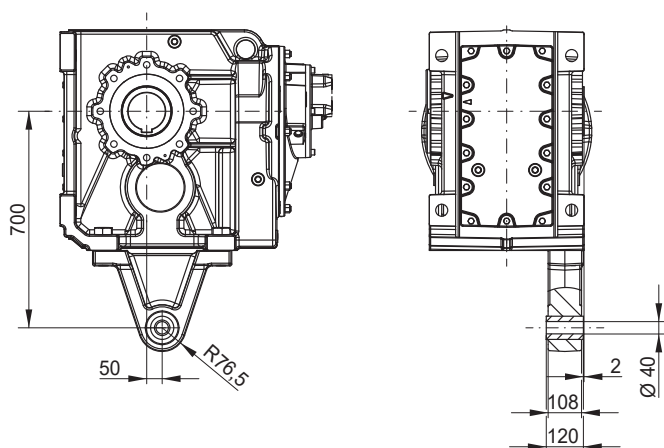
KF155 - B5 flange execution with output shaft



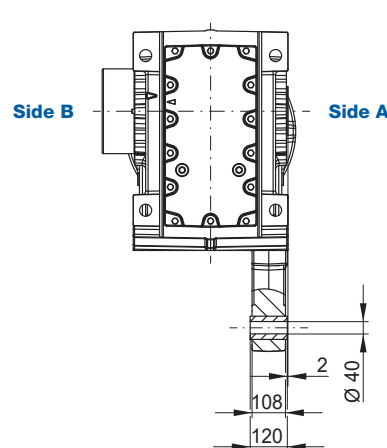
KP155 - B5 flange execution with hollow shaft and shrink disc



KT155 - Hollow shaft with torque arm **



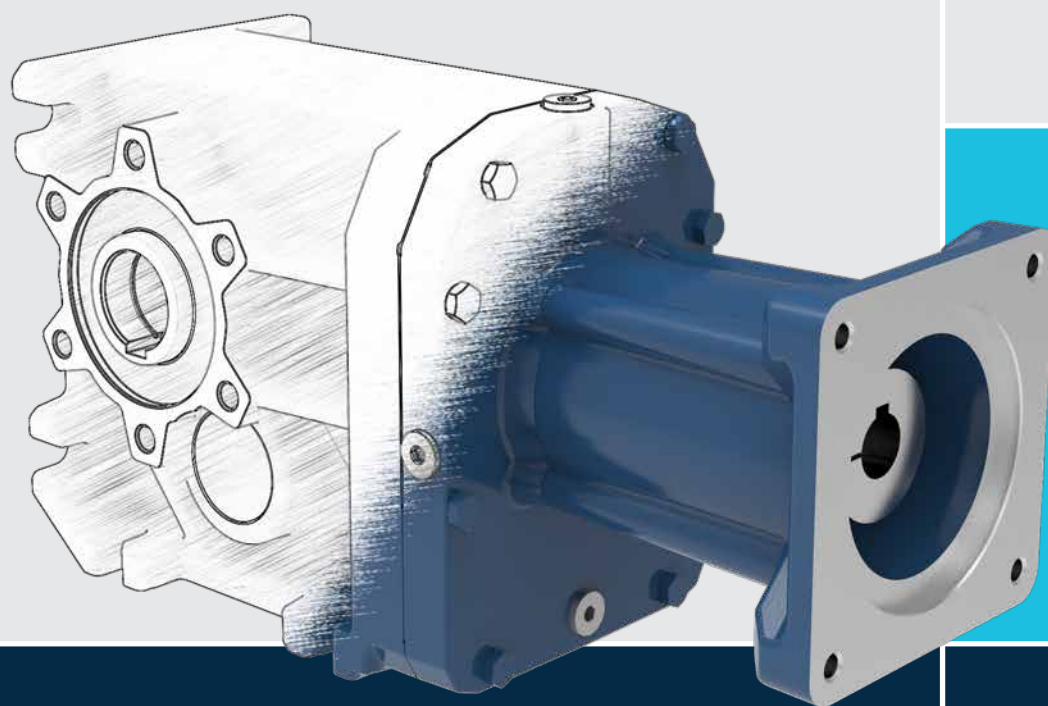
KU155 - Hollow shaft with shrink disc and torque arm **



Dimensions in mm.

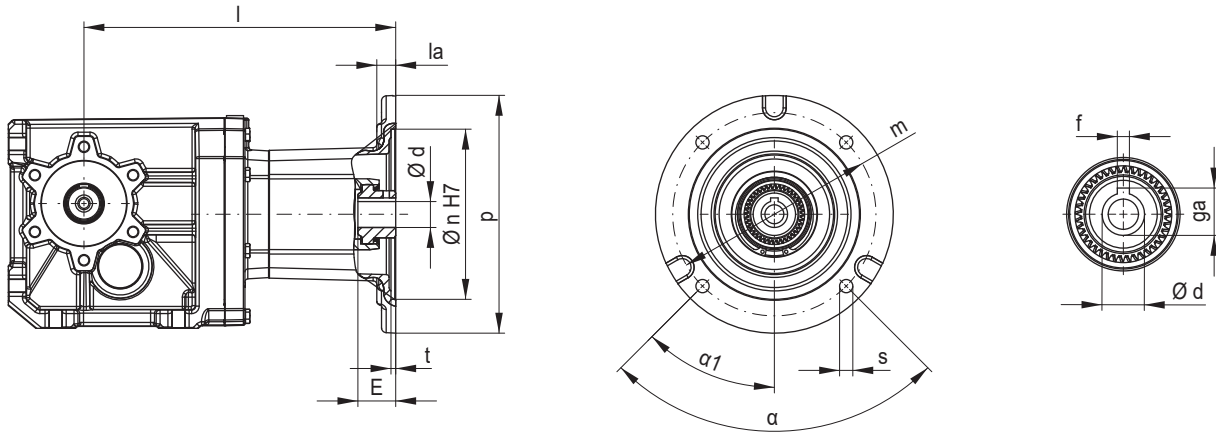
** Torque arm may be mounted on side A or side B.

Dimension sheets Input types



K

IEC Adapter I63 to I280



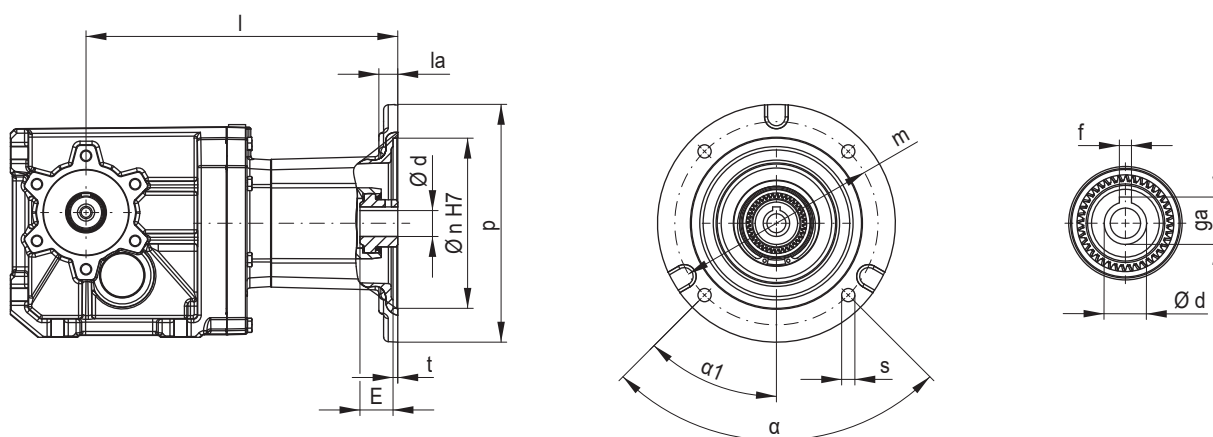
Type	I63	I71	I80	I90	I100	I112	I132	I160	I180	I200	I225	I250	I280
p	154	154	200	200	250	250	300	350	350	400	450	550	550
n	95	110	130	130	180	180	230	250	250	300	350	450	450
la	22.5	10	13	13	15	20	15	35	35	20	20	20	20
m	115	130	165	165	215	215	265	300	300	350	400	500	500
t	4.5	4.5	4.5	4.5	5	5	5	5	5	5.5	5	5	5
s	M8x16	M8x10	11	11	13.5	13.5	13.5	17.5	17.5	17.5	17.5	17.5	17.5
α	90	90	90	90	90	90	90	90	90	90	45	45	45
α ₁	35	45	45	45	45	45	45	45	45	45	45	45	45
d	11	14	19	24	28	28	38	42	48	55	60	65	75
f	4	5	6	8	8	8	10	12	14	16	18	18	20
ga	12.8	16.3	21.8	27.3	31.3	31.3	41.3	45.3	51.8	59.3	64.4	69.4	79.9
E ¹⁾	25	32	43	47.5	63	100	85.5	111.5	111.5	114.5	140	146	146

¹⁾ Maximum motor shaft length for motors with key

Getriebe- größe	I63	I71	I80	I90	I100	I112	I132	I160	I180	I200	I225	I250	I280
	l												
K02	163.5	163.5	191.5	191.5	222.5	-	-	-	-	-	-	-	-
K03	190	190	218	218	249	-	-	-	-	-	-	-	-
K04	207.5	207.5	235.5	235.5	266.5	319.5	330.5	-	-	-	-	-	-
K05	218	218	246	246	277	330	341	-	-	-	-	-	-
K06	202.5	202.5	230.5	230.5	261.5	314.5	325.5	411.5	411.5	-	-	-	-
K07	232.5	232.5	260.5	260.5	291.5	344.5	355.5	441.5	441.5	-	-	-	-
K083	281.5	281.5	309.5	309.5	340.5	393.5	404.5	489	489	517.5	547.5	-	-
K084	365	365	393	393	424	477	488	-	-	-	-	-	-
K093	301.5	301.5	329.5	329.5	360.5	413.5	424.5	509	509	537.5	567.5	-	-
K094	385	385	413	413	444	497	508	-	-	-	-	-	-
K103	-	-	-	-	-	467.5	478.5	560.5	560.5	589	619	713	713
K104	450.5	450.5	478.5	478.5	509.5	562.5	573.5	659.5	659.5	-	-	-	-
K123	-	-	-	-	-	516.5	527.5	609.5	609.5	638	668	762	762
K124	499.5	499.5	527.5	527.5	558.5	611.5	622.5	708.5	708.5	-	-	-	-
K153	-	-	-	-	-	-	-	629.5	629.5	658	688	782	782
K154	537.5	537.5	565.5	565.5	596.5	649.5	660.5	745.5	745.5	774	804	-	-
K155	621	621	649	649	680	733	744	-	-	-	-	-	-

Dimensions in mm.

NEMA Adapter N56 to N364

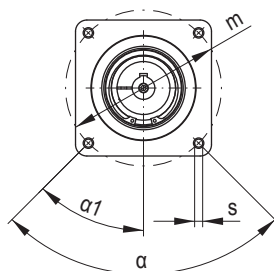
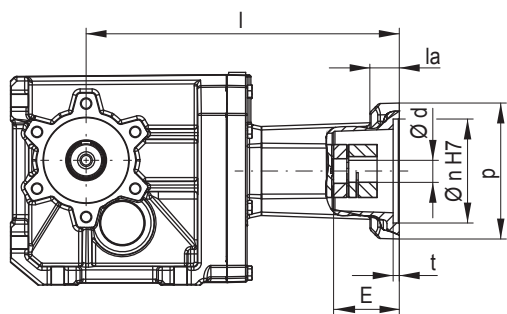


Type	N56	N143/145	N182	N184	N213/215	N254/256	N284/286	N324/326	N364
p	170	170	250	250	300	225	280	350	400
n	114.3	114.3	215.9	215.9	215.9	215.9	266.7	317.5	317.5
la	13	13	10	16.8	10	30	35	15	15
m	149.225	149.225	184.15	184.15	184.15	184.15	228.6	279.4	279.4
t	4.5	4.5	5	3.2	5	5	3	5	5
s	11	11	14	14	14	14	14	16	16
α	90	90	90	90	90	90	90	90	90
α_1	45	45	45	45	45	45	45	45	45
d	15.875	22.225	28.575	28.575	34.925	41.275	47.625	53.975	60.325
f	4.775	4.775	6.350	6.350	7.950	9.525	12.700	12.700	15.875
ga	18.008	24.486	31.521	31.521	38.557	45.618	53.238	59.690	67.335
E	55	55	67.5	96.8	80.5	105.5	111.5	109.5	109.5

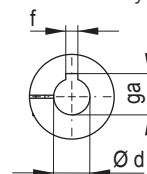
¹⁾ Maximum motor shaft length for motors with key

Gear unit size	N56	N143/145	N182	N184	N213/215	N254/256	N284/286	N324/326	N364
	l								
K02	191.5	191.5	222.5	-	-	-	-	-	-
K03	218	218	249	-	-	-	-	-	-
K04	235.5	235.5	266.5	319.5	330.5	-	-	-	-
K05	246	246	277	330	341	-	-	-	-
K06	230.5	230.5	261.5	314.5	325.5	411.5	414.5	-	-
K07	260.5	260.5	291.5	344.5	355.5	441.5	444.5	-	-
K083	309.5	309.5	340.5	393.5	404.5	489	492	539.5	555
K084	393	393	424	477	488	-	-	-	-
K093	329.5	329.5	360.5	413.5	424.5	509	512	559.5	575
K094	413	413	444	497	508	-	-	-	-
K103	-	-	-	467.5	478.5	560.5	563.5	611	626.5
K104	478.5	478.5	509.5	562.5	573.5	659.5	662.5	-	-
K123	-	-	-	516.5	527.5	609.5	612.5	660	675.5
K124	527.5	527.5	558.5	611.5	622.5	708.5	711.5	-	695.5
K153	-	-	-	-	-	629.5	632.5	695.5	695.5
K154	565.5	565.5	596.5	649.5	660.5	745.5	784.5	796	811.5
K155	649	649	680	733	744	-	-	-	-

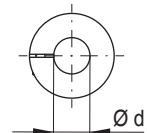
SERVO Adapter S92 to S190



Shaft with key



Smooth shaft



Typ	S92	S105	S114	S115	S130				S141	S142	S180	S189	S190						
p	101	144	144	144	144				144	144	197	197	197						
n	80	95	95	110	110				110	130	114,3	130	180						
la	17,5	31	31	31	31				31	31	35	32	38						
m	100	115	130	130	145				165	165	200	215	215						
t	6,5	6,5	6,5	6,5	6,5				6,5	6,5	6,5	6,5	6,5						
s	M6x12		M8x16	M8x16	M8x16				M8x16	M8x16	13,5	15	15						
α	90°		90°	90°	90°				90°	90°	90°	90°	90°						
α ₁	45°		45°	45°	45°				45°	45°	45°	45°	45°						
d ¹⁾	14	16	19	19	19	24	19	22	24	28	24	24	32	35	32	38	38		
f	5	5	6	6	6	8	6	6	8	8	8	8	10	10	10	10	10		
ga	16,3	18,3	21,8	21,8	21,8	27,3	21,8	24,8	27,3	31,3	27,3	27,3	35,3	38,3	35,3	41,3	41,3		
E ²⁾	46	46	34	67	67	54	67	54	76	63	63	63	54	63	63	66	74	60	87
E ³⁾	46	46	46	67	67	67	67	67	76	76	76	63	67	76	63	87	74	60	87

¹⁾ Other shaft diameters on request

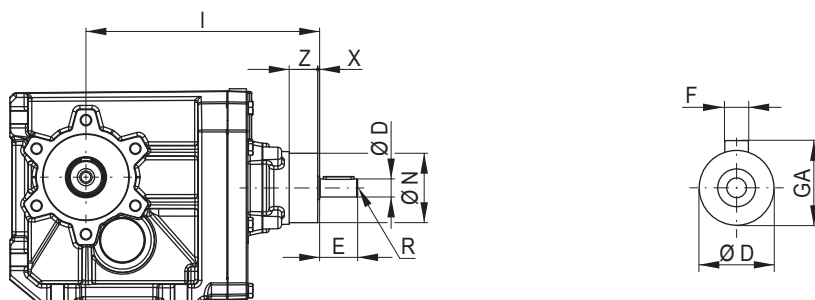
²⁾ Maximum motor shaft length for motors with key

³⁾ Maximum motor shaft length for motors with smooth shaft

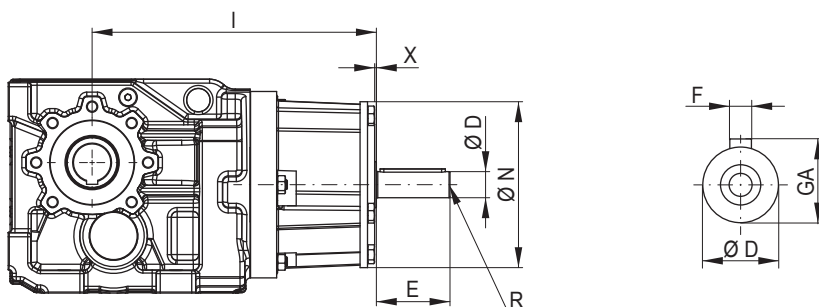
Gear unit size	S92	S105	S114	S115	S130	S141	S142	S180	S189	S190
	l									
K02	229	277	277	277	277	277	277	-	-	-
K03	255.5	303.5	303.5	303.5	303.5	303.5	303.5	-	-	-
K04	273	321	321	321	321	321	321	391.5	385.5	412.5
K05	283.5	331.5	331.5	331.5	331.5	331.5	331.5	402	396	423
K06	268	316	316	316	316	316	316	386.5	380.5	407.5
K07	298	346	346	346	346	346	346	416.5	410.5	437.5
K083	347	395	395	395	395	395	395	465.5	459.5	486.5
K084	430.5	478.5	478.5	478.5	478.5	478.5	478.5	549	543	570
K093	367	415	415	415	415	415	415	485.5	479.5	506.5
K094	450.5	498.5	498.5	498.5	498.5	498.5	498.5	569	563	590
K103	-	-	-	-	-	-	-	539.5	533.5	560.5
K104	516	564	564	564	564	564	564	634.5	628.5	655.5
K123	-	-	-	-	-	-	-	588.5	582.5	609.5
K124	565	613	613	613	613	613	613	683.5	677.5	704.5
K153	-	-	-	-	-	-	-	-	-	-
K154	603	651	651	651	651	651	651	721.5	715.5	742.5
K155	686.5	734.5	734.5	734.5	734.5	734.5	734.5	805	799	826

Dimensions in mm.

Input Unit U2, U3



Input Unit U5, U6, U7



Typ	Input shaft [mm]						
	19x40	24x50	28x60	38x80	42x110	48x110	55x110
	U2	U3	U5			U6	U7
D	19	24	28	38	42	48	55
F	6	8	8	10	12	14	16
GA	21.5	27	31	41	45	51.5	59
E	40	50	60	80	110	110	110
N	73	101	178			235	290
X	2	2.5	1.9			6.5	4
Z	3	35	-			-	-
R	M6	M10	M10	M12	M16	M16	M20

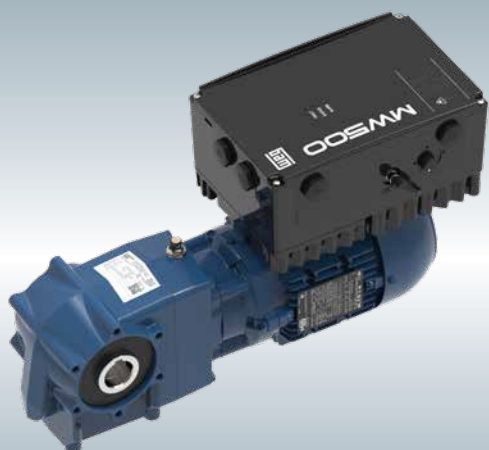
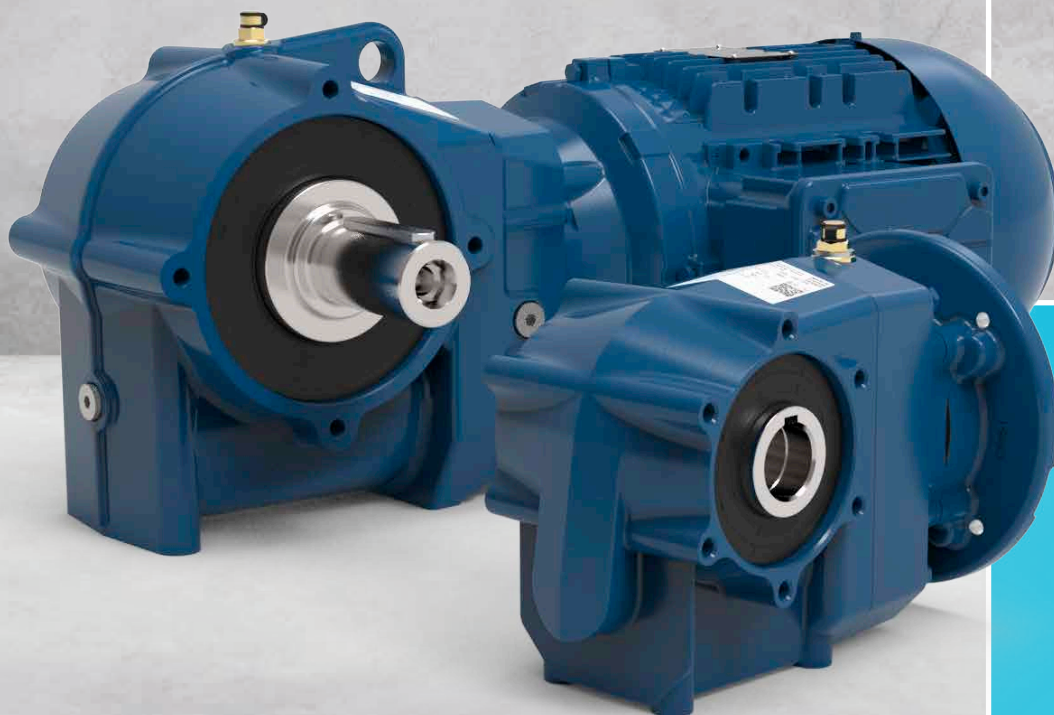
Tolerances		
Dimension name	ISO tolerance DIN EN ISO 286-2	
D	< Ø 55 mm	k6
	≥ Ø 55 mm	m6

Gear unit size	Input shaft [mm]				
	19x40	24x50	28x60 38x80 42x110	48x110	55x110
	U2	U3	U5	U6	U7
	I				
K02	191.5	-	-	-	-
K03	218	-	-	-	-
K04	235.5	267.5	-	-	-
K05	246	278	-	-	-
K06	230.5	262.5	305	-	-
K07	260.5	292.5	335	-	-
K083	309.5	341.5	382.5	404.5	-
K084	393	425	-	-	-
K093	329.5	361.5	402.5	424.5	-
K094	413	445	-	-	-
K103	-	415.5	454	476	545
K104	478.5	510.5	553	-	-
K123	-	464.5	503	525	594
K124	527.5	559.5	602	-	-
K153	-	-	523	545	614
K154	565.5	597.5	639	661	-
K155	649	681	-	-	-

Dimensions in mm.



Helical worm gears and Helical worm geared motors S



S

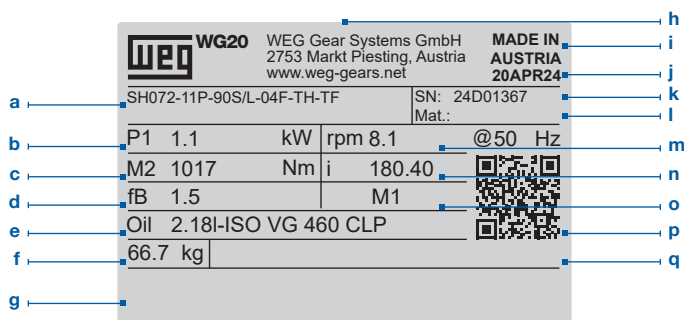
Technical data

Size	S03	S04	S05	S06	S07
Power [kW]	0.12 - 1.5	0.12 - 2.2	0.12 - 3.0	0.12 - 7.5	0.12 - 9.2
Torque [Nm]	130	230	490	1000	1600
Ratio	5.17 - 275.50	6.92 - 323.70	9.33 - 370.50	7.07 - 351.00	9.68 - 460.00
Number of stages	2	2	2	2	2
Housing material	aluminium			cast iron	
Solid shaft	Type	with key acc. to DIN 6885.1 and threaded bore acc. to DIN 332 sheet 2			
	Tolerance	< Ø 55: k6			
	Material	standard: C45E (1.1191) / stainless steel on request			
Hollow shaft	Type	with key acc. to DIN 6885.1/ with shrink disc			
	Tolerance	H7			
	Material	standard: C45E (1.1191) / stainless steel on request			
Flanges	Tolerance	centring ≤ 230: j6			
	Material	cast iron			
Gear wheels	Type	honed - designed and produced according to DIN 3990/3991 - Q7			
	Material	16MnCr5 (1.7131) case hardened – minimum 58HRC / 20MnCr5			
Schneckenrad	Material	Nickel-Bronze (CuSn12Ni2-C - GC)			
Shaft seals	Type	type AS acc. to DIN 3760			
	Material	standard NBR / special FKM			
Bearing		standard / reinforced			
Lubricants	Type	standard CLP PG ISO VG 460			
	Quantity	depending on mounting position			
Axle height	acc. to DIN 747: ≤ 50: -0.4; > 50 bis ≤ 250: -0.5; > 250: -1 for foot-mounted gear motors, the motor may extend below the mounting surface				

S

General information

1. Nameplate



a	Type code	j	Production date
b	Motor power	k	Serial number
c	Output torque	l	Material number
d	Service factor	m	Output speed and Frequency
e	Type and quantity of lubricant	n	Total gear ratio
f	Weight	o	Mounting position
g	Space for ATEX code (if applicable)	p	QR-Code linked online to additional information
h	Manufacturer address	q	Space for additional information
i	Country of origin		

2. Type code

SH072-EX-11P-90S/L-04E ...

1 2 3 4 5 6 7 8 9 10

SH072-EX-I90-HT

1 2 3 4 5 11 12

1	Type:	S = Helical worm gear unit
2	Design:	B = Output shaft on both sides D = Hollow shaft with shrink disc F = B5 flange type with output shaft H = Hollow shaft O = B5 flange type with hollow shaft P = B5 flange type with hollow shaft and shrink disc S = Output shaft T = Hollow shaft with torque arm U = Hollow shaft with shrink disc and torque arm
3	Size:	03 04 05 06 07
4	Number of stages:	2 = 2 gear stages
5	ATEX execution:	when operated in explosive atmospheres, see page 15
6	Motor type:	14P = Integral motor aluminium IE3 11P = Integral motor aluminium IE3
7	Motor frame size:	63 71 80 90S/L 100L L100L 112M 132S L132M
8	Number of poles:	04 = 4 poles 06 = 6 poles
9	Power indicator:	D E F G
10	Motor modules:	see from page 595
11	Adapters, Input unit:	IEC adapter I63 I71 I80 I90 I100 I112 I132 NEMA adapter N56 N143 N182 N184 N213 SERVO adapter S92 S105 S114 S115 S130 S141 S142 S180 S189 S190 Input unit U2 U3 Direct mounting (IEC): IEC63 IEC71 IEC80 IEC90 IEC100 IEC112 IEC132
12	High/Low temperature execution:	HT LT



3. Range

Size	S03	S04	S05	S06	S07
Housing material	Aluminium			Cast iron	

4. Design

	<table border="1"> <tr><td>B</td><td>Output shaft on both sides</td></tr> <tr><td>D</td><td>Hollow shaft with shrink disc</td></tr> <tr><td>F</td><td>B5 flange type with output shaft</td></tr> <tr><td>H</td><td>Hollow shaft</td></tr> <tr><td>O</td><td>B5 flange type with hollow shaft</td></tr> </table>	B	Output shaft on both sides	D	Hollow shaft with shrink disc	F	B5 flange type with output shaft	H	Hollow shaft	O	B5 flange type with hollow shaft	<table border="1"> <tr><td>P</td><td>B5 flange type with hollow shaft and shrink disc</td></tr> <tr><td>S</td><td>Output shaft</td></tr> <tr><td>T</td><td>Hollow shaft with torque arm</td></tr> <tr><td>U</td><td>Hollow shaft with shrink disc and torque arm</td></tr> </table>	P	B5 flange type with hollow shaft and shrink disc	S	Output shaft	T	Hollow shaft with torque arm	U	Hollow shaft with shrink disc and torque arm	
B	Output shaft on both sides																				
D	Hollow shaft with shrink disc																				
F	B5 flange type with output shaft																				
H	Hollow shaft																				
O	B5 flange type with hollow shaft																				
P	B5 flange type with hollow shaft and shrink disc																				
S	Output shaft																				
T	Hollow shaft with torque arm																				
U	Hollow shaft with shrink disc and torque arm																				

5. Venting the gear unit

The helical worm gear unit sizes S03 to S05 are neither equipped with a venting nor an oil drain screw. They are supplied with lifetime-lubrication.

By default, the helical worm gear unit sizes S06 and S07 are equipped with venting screws with a safety strap for transportation (see illustration). The rubber strap (a) of the venting screw must be removed entirely before the initial startup. The venting screw is placed accordingly to the mounting position (see chapter Mounting positions, page 507)



6. Overhung and axial loads

The overhung loads (F_{rN}) indicated in the respective selection tables apply to gear units with the force acting on the shaft center ($x=l/2$). The permissible overhung loads listed are based on the least favourable loading direction and calculated for standard shafts and standard bearings. Other load directions and action can be calculated with equations Q1 to Q3. If transmission elements are placed on the output shaft, an appropriate factor (f_z) has to be taken into consideration when determining the overhung load.

Gear wheels	Sprockets		V-belts	Flat belts
$f_z=1.1$ ($z \leq 17$)	$f_z=1.2$ ($z \leq 13$)	$f_z=1.1$ ($z > 13$)	$f_z=1.8$	$f_z=2.5$

Use the following equations Q1 and Q2 to calculate the permissible radial loads on the output shaft. Q3 is to calculate the real existing shaft loads for your application. The results are to be compared by using the equation Q4.

Q1 $F_{zL} = F_{rN} \cdot a_1$

Q2 $F_{zW} = F_W \cdot a_2$

Q3 $F_{Qvorh} = \frac{2 \cdot M_2}{d_0} \cdot f_z$

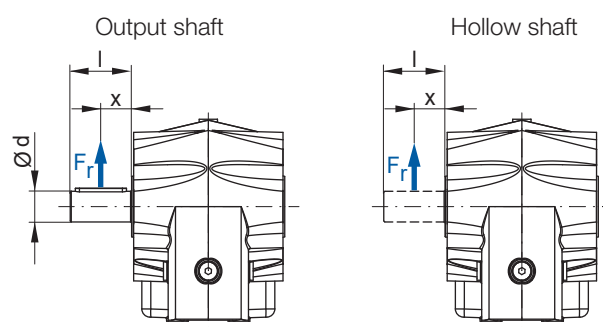
Q4 $F_{Qvorh} \leq F_{zL}$
 $F_{Qvorh} \leq F_{zW}$

Variable	Unit	Description
a1		Load action factor - output shaft bearing from Table 1
a2		Load action factor - output shaft from Table 1
d0	[m]	Effective diameter of the transmission element
M2	[Nm]	Geared motor output torque (from selection tables) or required calculated output torque
FzL	[N]	Permissible overhung load for output shaft bearings
FzW	[N]	Permissible overhung load for output shaft
FrN	[N]	Permissible overhung load from selection tables
FW	[N]	Permissible overhung load - Output shaft x=l/2 from Table 2
FQvorh	[N]	Existing overhung load at gear shaft
fz		Factor for transmission element
Mmax	[Nm]	Highest possible output torque for coupling operation (Table 2)

Always use both equations Q1 and Q2 for your calculations.

x / l						
0	0.25	0.5	0.75	1	1.5	2
a1 → Equation Q1						
1.39	1.18	1.00	0.85	0.73	0.52	0.38
a2 → Equation Q2						
2.00	2.00	1.00	0.55	0.38	0.23	0.17

Table 1: Load action factors a1, a2



Intermediate values can be interpolated linearly. Combined load ($F_r \neq 0$; $F_a = 0$) on request.

Output shaft [mm]		Mmax at Fr = 0	Output torque M2 [Nm]				
			130	230	460	1000	1600
Ø d	l		Fw [kN] at x/l = 0.5 → Equation Q2				
20	40	160	2.2				
25	50	300	5.5	4.3			
30	60	500	7.5	6.9	3.7		
35	70	800		11.0	9.6		
40	80	1170			13.0	8.6	
45	90	1650			18.0	16.0	
50	100	2250			24.0	23.0	20.0

Table 2: Permissible overhung load - output shaft x = l/2

The axial loads (F_{aN}) for the respective execution (output shaft or hollow shaft), given in the following selection tables, are valid at radial force $F_{rN} = 0$. If there are axial loads or radial and axial components acting on the drive which are extraordinarily high, we recommend to contact the manufacturer.

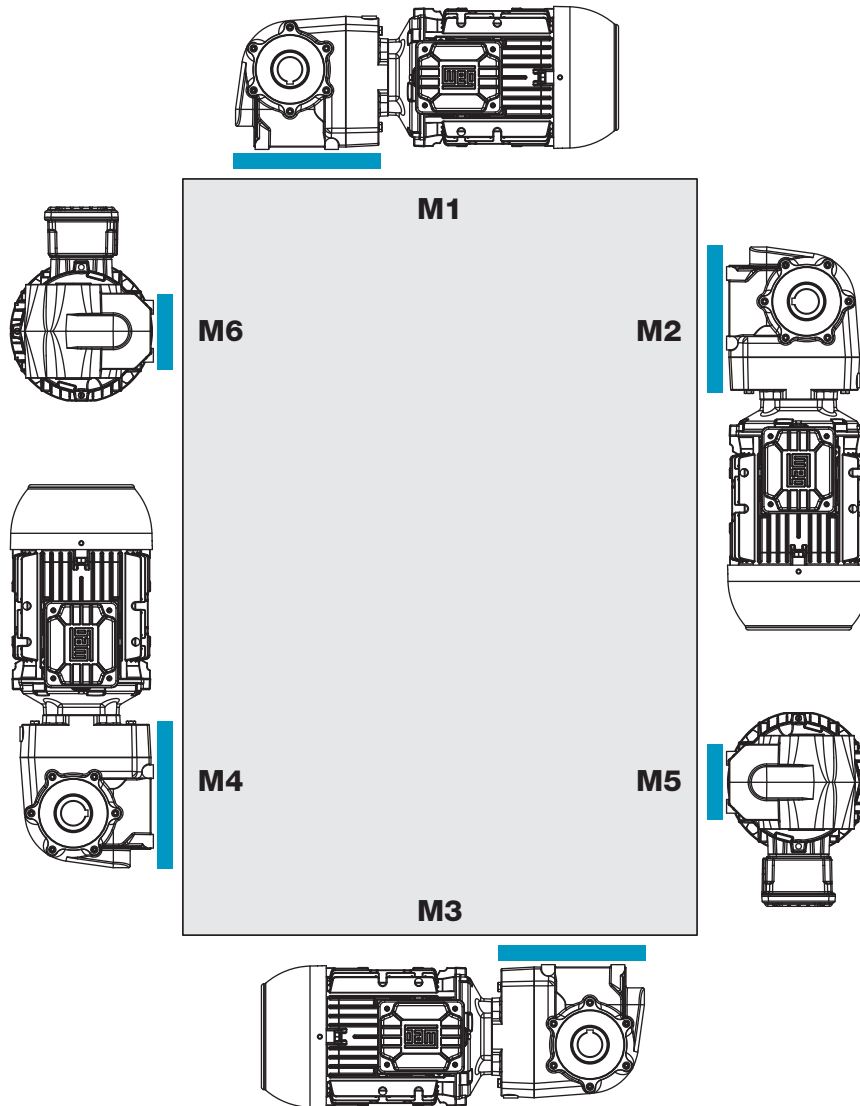
S

7. Mounting positions, Position of the terminal box and Cable entry

Mounting positions - Sizes S03 to S05

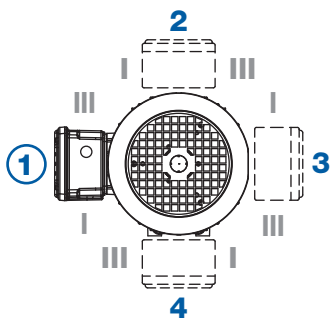
Gear units S03 to S05 are not ventilated and supplied with lifetime lubrication

Reference area



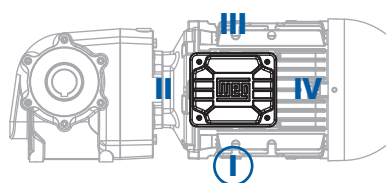
Position of the terminal box

Standard: Position 1

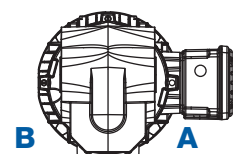


Cable entry

Standard: Position I



Side indication



Mounting positions - Sizes S06 to S07

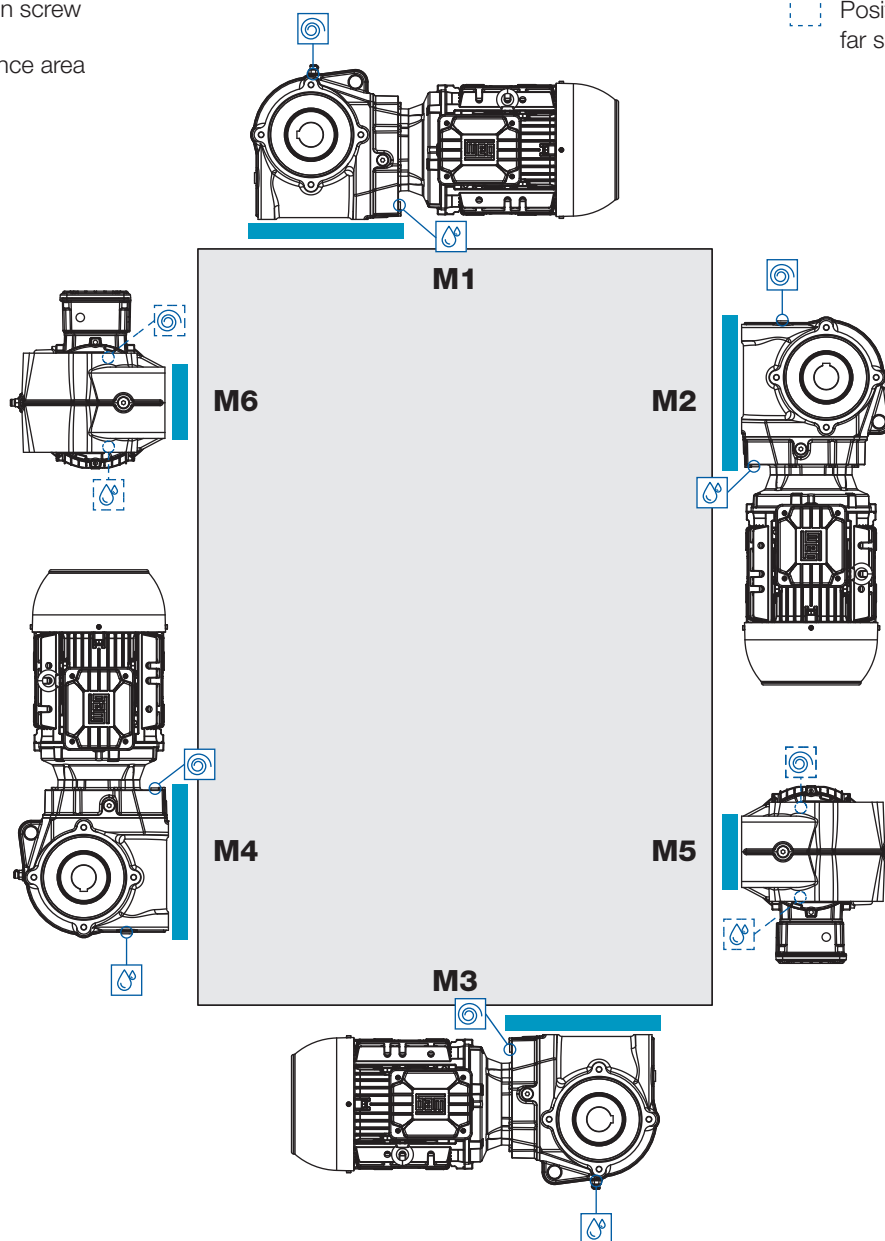
Venting screw

Oil drain screw

Reference area

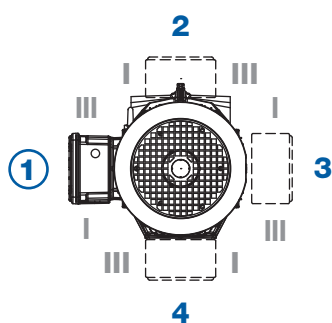
Position visible on this side

Position covered or on the far side of the gear unit



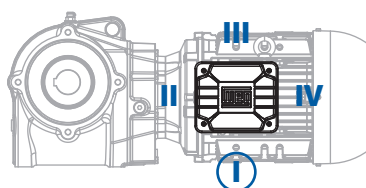
Position of the terminal box

Standard: Position 1

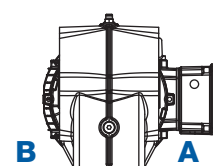


Cable entry

Standard: Position I



Side indication



S

8. Efficiency rating

Our helical worm gear units achieve efficiency ratings of up to 96 %.

With new gearboxes, the worm gear set has to run in, the friction is initially higher than after running in. The efficiency before running-in is therefore lower than it will be afterwards. This effect increases with smaller lead angles, i.e. with larger gear reductions. The calculated efficiency rating given in the catalogue can therefore only serve as a guide value.

If efficiency and selflocking are particularly crucial to the function of your application, the manufacturer should be consulted, stating all relevant operational constraints.

The following reductions in efficiency can be expected during the running-in phase:

1 gear: up to 12 %
2 or 3 gears: up to 3 %
4 to 6 gears: bis zu 2 %

The gear unit is completely run in after about 24 hours of rated operation. To achieve the values given in the tables (see page 531) it is important to fulfil the following requirements:

- Gear unit completely run in
- Steady-state temperature reached
- Lubricant in accordance with the stated specifications
- Operation of the gear unit at rated torque

The maximum surface temperature of the housing should not exceed 80 °C.

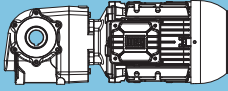
Selection tables - Geared motors

The technical data of the geared motors shown in the selection tables apply to an ambient temperature of +20°C.

The selection tables are calculated with following motor data:

Power (IEC frame size)	Motor series (IE class)
up to 0.55 kW (63 - 80)	14P (IE3) - aluminium
0.75 - 9.2 kW (80 - 132)	11P (IE3) - aluminium

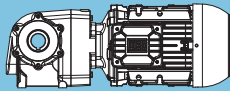
Structure of the selection tables

1 $P_N = 0.12 \text{ kW}$								2 IE3	
50 Hz		60 Hz		i	at 50 Hz			m kg	12 Dimension sheet see page
0.12 kW	0.14 kW	n_{50}	n_{60}		F_{rn}	F_{an}			
n_{50}	n_{60}	M_2	f_B		F_{rn}	F_{an}			
min ⁻¹	min ⁻¹	Nm			kN	kN			
3	4	5	6	7	8	9	10	11	12

- 1 Rated power of the motor
- 2 Given values are based on the respective efficiency class
- 3 Output speed at 50 Hz
- 4 Output speed at 60 Hz
- 5 Output torque
- 6 Service factor
- 7 Total ratio
- 8 Permissible radial load at midpoint of the shaft (standard bearing) at axial load=0
- 9 Permissible axial load at radial load=0
- 10 Geared motor type
- 11 Weight
- 12 Page reference for dimension sheet

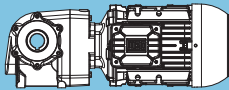
*) Increased rated power at 60 Hz can only be reached together with increased voltage within the wide range (for details see page 574).

Increased rated power
$1.2 \times P_N$

P _N = 0.12 kW								IE3	
50 Hz		60 Hz		i	at 50 Hz			m kg	Dimension sheet see page
0.12 kW		0.14 kW			F _{rN} kN	F _{aN} kN			
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	f _b						
2.5	3.1	283	1.75	370.50	5.2	17.5	SH052-14P-63-06F	16	548
3.1	3.8	237	2.00	302.25	5.7	17.6			
3.8	4.7	195	2.45	241.09	6.0	17.6			
5.0	6.1	156	3.00	186.64	6.3	17.7			
3.8	4.6	197	2.50	370.50	6.0	17.6	SH052-14P-63-04E	16	548
4.6	5.7	165	2.90	302.25	6.2	17.7			
2.9	3.5	247	0.95	323.70	2.5	10.2	SH042-14P-63-06F	12	546
3.5	4.3	206	1.10	263.25	3.5	10.3			
4.4	5.4	168	1.35	209.18	4.1	10.4			
5.7	7.1	134	1.65	161.57	4.5	10.5			
7.2	8.8	110	1.90	129.00	4.7	10.5			
9.5	12	86	2.15	97.50	4.8	10.6			
10	12	94	2.30	91.30	4.8	10.0			
12	15	78	2.75	74.25	4.9	10.2			
16	20	53	2.85	57.65	5.0	10.7			
4.3	5.3	172	1.35	323.70	4.0	10.4	SH042-14P-63-04E	12	546
5.3	6.5	143	1.60	263.25	4.4	10.4			
6.7	8.2	117	1.90	209.18	4.6	10.5			
8.7	11	93	2.35	161.57	4.8	10.6			
11	13	76	2.75	129.00	4.9	10.6			
5.3	6.6	142	0.90	174.00	**	2.3	SH032-14P-63-06F	11	544
6.7	8.3	115	1.05	137.09	1.8	2.4			
8.8	11	92	1.35	105.64	2.4	2.4			
11	14	74	1.60	82.54	2.7	2.5			
12	15	80	1.35	76.00	2.6	1.8			
15	18	57	2.00	61.63	2.9	2.6			
16	19	63	1.80	59.20	2.8	2.0			
19	24	51	2.15	48.00	2.9	2.2			
20	25	44	2.45	46.40	3.0	2.6			
22	27	46	1.35	41.80	2.9	1.8			
24	30	41	2.65	37.82	3.0	2.3			
27	33	33	3.00	34.04	3.0	2.6			
28	35	36	2.80	32.56	3.0	2.0			
5.1	6.2	148	0.90	275.50	**	2.3	SH032-14P-63-04E	10	544
6.5	8.0	119	1.10	214.60	1.7	2.4			
8.1	9.9	99	1.30	174.00	2.2	2.4			
10	13	80	1.55	137.09	2.6	2.5			
13	16	63	1.90	105.64	2.8	2.5			
17	21	51	2.30	82.54	2.9	2.6			
18	23	53	2.05	76.00	2.9	2.1			
23	28	39	2.90	61.63	3.0	2.6			
24	29	42	2.65	59.20	3.0	2.3			
29	36	35	3.20	48.00	3.0	2.4			
30	37	30	3.55	46.40	3.0	2.7			
34	41	31	2.05	41.80	3.0	2.1			
37	45	28	3.95	37.82	3.1	2.4			
41	51	22	4.40	34.04	3.1	2.7			
43	53	24	4.20	32.56	3.1	2.3			
48	59	21	4.90	29.14	3.1	2.5			
53	65	20	5.10	26.40	3.1	2.3			
62	76	17	6.10	22.77	3.1	2.6			
68	83	16	6.40	20.80	3.1	2.4			
83	101	13	7.70	17.00	3.1	2.6			
88	107	12	7.95	16.03	3.1	2.5			
110	134	10	9.65	12.80	3.1	2.6			
112	137	10	9.80	12.52	3.1	2.6			
150	184	7	12.50	9.35	3.1	2.6			
200	244	5	15.60	7.04	3.1	2.6			
272	333	4	19.45	5.17	3.1	2.7			

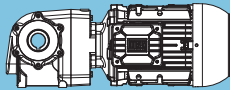
Legend see page 509

** ... on request

P _N = 0.18 kW								IE3	
50 Hz		60 Hz		i	at 50 Hz			m kg	Dimension sheet see page
0.18 kW		0.22 kW			F _{rN} kN	F _{aN} kN			
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	f _B						
2.0	2.4	595	2.70	460.00	17.2	28.8	SH072-14P-71-06E	59	552
2.6	3.2	449	2.25	351.00	9.7	26.8	SH062-14P-71-06E	37	550
3.2	4.0	366	2.70	278.18	10.1	26.9			
2.4	3.0	437	1.15	370.50	1.7	17.2	SH052-14P-71-06E	19	548
3.0	3.7	365	1.30	302.25	3.9	17.3			
3.7	4.6	300	1.60	241.09	5.0	17.4			
4.8	5.9	240	1.95	186.64	5.7	17.6			
6.0	7.4	198	2.30	150.00	6.0	17.6			
7.9	9.7	156	2.80	114.56	6.3	17.7			
11	13	141	2.25	85.50	6.4	17.0			
12	15	126	2.25	76.00	6.4	17.0			
3.7	4.6	301	1.65	370.50	5.0	17.4	SH052-14P-63-04F	16	548
4.6	5.6	252	1.90	302.25	5.5	17.5			
5.7	7.1	207	2.30	241.09	5.9	17.6			
7.4	9.1	165	2.80	186.64	6.2	17.7			
4.3	5.3	260	0.90	209.18	2.1	10.2	SH042-14P-71-06E	15	546
5.6	6.9	207	1.10	161.57	3.5	10.3			
7.0	8.6	170	1.25	129.00	4.1	10.4			
9.2	11	133	1.40	97.50	4.5	10.5			
9.9	12	146	1.50	91.30	4.3	9.6			
12	15	120	1.80	74.25	4.6	9.8			
15	19	96	2.20	59.00	4.8	10.0			
16	19	82	1.85	57.65	4.8	10.6			
18	22	84	2.15	49.80	4.8	9.5			
20	24	75	2.75	45.57	4.9	10.2			
22	27	69	2.65	40.50	4.9	9.8			
4.3	5.3	262	0.90	323.70	2.0	10.2	SH042-14P-63-04F	12	546
5.2	6.5	219	1.05	263.25	3.2	10.3			
6.6	8.1	179	1.25	209.18	3.9	10.4			
8.5	11	143	1.55	161.57	4.4	10.4			
11	13	117	1.80	129.00	4.6	10.5			
14	17	91	2.05	97.50	4.8	10.6			
15	19	97	2.20	91.30	4.8	10.0			
19	23	80	2.65	74.25	4.9	10.1			
24	29	56	2.70	57.65	5.0	10.7			
8.5	11	141	0.85	105.64	**	2.3	SH032-14P-71-06E	13	544
11	13	114	1.05	82.54	1.8	2.4			
12	15	123	0.90	76.00	1.5	1.4			
15	18	88	1.30	61.63	2.4	2.5			
19	24	68	1.60	46.40	2.7	2.5			
22	27	71	0.90	41.80	2.7	1.3			
24	29	63	1.75	37.82	2.8	2.0			
26	33	51	1.95	34.04	2.9	2.6			
28	34	56	1.85	32.56	2.9	1.6			
31	38	49	2.15	29.14	2.9	2.2			
34	42	46	2.25	26.40	2.9	1.8			
40	49	39	2.65	22.77	3.0	2.3			
43	53	36	2.80	20.80	3.0	2.0			

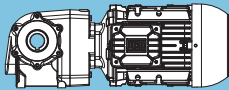
Legend see page 509

** ... on request

P _N = 0.18 kW								IE3	
50 Hz		60 Hz		i	at 50 Hz			m kg	Dimension sheet see page
0.18 kW	0.22 kW	M ₂ Nm	f _B		F _{rN} kN	F _{aN} kN			
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹								
7.9	9.8	151	0.85	174.00	**	2.3	SH032-14P-63-04F	11	544
10	12	122	1.00	137.09	1.5	2.3			
13	16	97	1.25	105.64	2.3	2.4			
17	21	78	1.50	82.54	2.6	2.5			
18	22	82	1.35	76.00	2.5	1.8			
22	28	59	1.90	61.63	2.8	2.6			
23	29	64	1.75	59.20	2.8	2.0			
29	35	53	2.10	48.00	2.9	2.2			
30	37	46	2.35	46.40	2.9	2.6			
33	41	47	1.35	41.80	2.9	1.8			
36	45	42	2.60	37.82	3.0	2.3			
41	50	34	2.90	34.04	3.0	2.6			
42	52	37	2.75	32.56	3.0	2.0			
47	58	33	3.25	29.14	3.0	2.4			
52	64	30	3.35	26.40	3.0	2.1			
61	75	26	4.00	22.77	3.1	2.5			
66	82	24	4.20	20.80	3.1	2.3			
81	100	19	5.05	17.00	3.1	2.5			
86	106	19	5.20	16.03	3.1	2.4			
108	133	15	6.35	12.80	3.1	2.6			
110	136	15	6.45	12.52	3.1	2.5			
147	181	11	7.90	9.39	3.1	2.6			
148	182	11	8.20	9.35	3.1	2.5			
196	241	8	10.25	7.04	3.1	2.6			
267	329	6	12.75	5.17	3.1	2.6			

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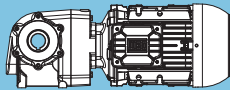
** ... on request

P _N = 0.25 kW								IE3	
50 Hz		60 Hz		i	at 50 Hz			m kg	Dimension sheet see page
0.25 kW		0.33 kW			F _m kN	F _{aN} kN			
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	f _B						
2.1	2.6	779	2.10	460.00	16.6	28.5	SH072-14P-80-06D	60	552
2.7	3.3	619	2.50	355.14	17.1	28.7			
3.2	4.0	530	2.90	297.85	17.4	28.8			
3.0	3.7	566	2.85	460.00	17.3	28.8	SH072-14P-71-04E	58	552
2.7	3.4	588	1.70	351.00	8.7	26.6	SH062-14P-80-06D	38	550
3.4	4.3	479	2.05	278.18	9.5	26.8			
4.4	5.5	383	2.50	216.00	10.0	26.9			
5.4	6.7	321	2.95	177.23	10.3	27.0			
5.9	7.4	326	2.85	160.88	10.2	26.4			
15	19	144	2.85	63.38	10.7	26.3			
3.9	4.8	428	2.35	351.00	9.8	26.8	SH062-14P-71-04E	36	550
5.0	6.1	349	2.85	278.18	10.2	27.0			
2.6	3.2	572	0.90	370.50	**	16.9	SH052-14P-80-06D	19	548
3.2	3.9	478	1.00	302.25	**	17.1			
4.0	4.9	393	1.20	241.09	3.3	17.3			
5.1	6.4	314	1.50	186.64	4.8	17.4			
6.4	7.9	260	1.75	150.00	5.5	17.5			
8.3	10	205	2.15	114.56	6.0	17.6			
11	14	161	2.60	87.75	6.2	17.7			
13	16	165	1.75	76.00	6.2	16.6			
14	17	132	2.80	69.52	6.4	17.8			
15	19	136	2.65	62.00	6.4	16.9			
3.7	4.6	419	1.20	370.50	2.5	17.2	SH052-14P-71-04E	17	548
4.6	5.6	351	1.35	302.25	4.2	17.3			
5.7	7.1	288	1.65	241.09	5.2	17.5			
7.4	9.1	230	2.05	186.64	5.8	17.6			
9.2	11	189	2.40	150.00	6.1	17.6			
12	15	148	3.00	114.56	6.3	17.7			
16	20	130	2.50	85.50	6.4	17.0			
18	22	116	2.50	76.00	6.5	17.0			
5.9	7.3	271	0.85	161.57	1.6	10.1	SH042-14P-80-06D	15	546
7.4	9.2	223	0.95	129.00	3.2	10.3			
9.8	12	174	1.10	97.50	4.0	10.4			
10	13	191	1.15	91.30	3.8	9.2			
13	16	157	1.35	74.25	4.2	9.5			
16	20	126	1.70	59.00	4.5	9.8			
17	21	107	1.40	57.65	4.7	10.5			
19	24	110	1.65	49.80	4.7	9.2			
21	26	99	2.10	45.57	4.7	10.0			
24	29	90	2.05	40.50	4.8	9.5			
26	33	80	2.50	36.38	4.9	10.1			
30	37	73	2.55	32.18	4.9	9.7			
35	43	61	2.90	27.50	4.9	10.3			
6.6	8.1	249	0.90	209.18	2.5	10.2	SH042-14P-71-04E	13	546
8.5	11	198	1.15	161.57	3.6	10.3			
11	13	162	1.30	129.00	4.2	10.4			
14	17	126	1.50	97.50	4.5	10.5			
15	19	135	1.60	91.30	4.5	9.7			
19	23	111	1.95	74.25	4.7	9.9			
23	29	89	2.35	59.00	4.8	10.1			
24	29	78	1.95	57.65	4.9	10.6			
28	34	78	2.35	49.80	4.9	9.6			
30	37	70	2.95	45.57	4.9	10.2			
34	42	64	2.90	40.50	4.9	9.9			

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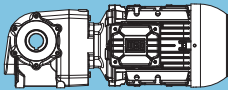
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** ... on request

P _N = 0.25 kW								IE3	
50 Hz		60 Hz		i	at 50 Hz			m kg	Dimension sheet see page
0.25 kW	0.33 kW	M ₂ Nm	f _b		F _{rN} kN	F _{aN} kN			
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹								
12	14	149	0.80	82.54	**	2.3	SH032-14P-80-06D	14	544
15	19	115	1.00	61.63	1.8	2.4			
16	20	127	0.90	59.20	1.4	1.3			
18	22	100	1.10	53.17	2.2	2.4			
20	25	104	1.10	48.00	2.1	1.6			
21	26	89	1.20	46.40	2.4	2.5			
25	31	83	1.35	37.82	2.5	1.8			
28	35	67	1.50	34.04	2.7	2.5			
29	36	73	1.40	32.56	2.7	1.3			
33	41	64	1.65	29.14	2.8	2.0			
36	45	60	1.70	26.40	2.8	1.5			
42	52	51	2.05	22.77	2.9	2.2			
46	57	47	2.15	20.80	2.9	1.8			
56	70	38	2.55	17.00	3.0	2.3			
60	74	37	2.65	16.03	3.0	2.0			
65	81	33	2.90	14.67	3.0	2.4			
13	16	135	0.90	105.64	0.9	2.3	SH032-14P-71-04E	11	544
17	21	108	1.10	82.54	2.0	2.4			
18	22	113	1.00	76.00	1.8	1.5			
22	28	83	1.35	61.63	2.5	2.5			
23	29	89	1.25	59.20	2.4	1.7			
29	35	73	1.55	48.00	2.7	1.9			
30	37	64	1.70	46.40	2.8	2.5			
33	41	66	1.00	41.80	2.8	1.4			
36	45	58	1.90	37.82	2.8	2.1			
41	50	47	2.10	34.04	2.9	2.6			
42	52	52	2.00	32.56	2.9	1.7			
47	58	45	2.35	29.14	3.0	2.2			
52	64	42	2.45	26.40	3.0	1.9			
61	75	36	2.90	22.77	3.0	2.3			
66	82	33	3.00	20.80	3.0	2.1			
81	100	27	3.65	17.00	3.1	2.4			
86	106	26	3.75	16.03	3.1	2.2			
108	133	20	4.55	12.80	3.1	2.5			
110	136	20	4.65	12.52	3.1	2.3			
147	181	15	5.70	9.39	3.1	2.6			
148	182	15	5.90	9.35	3.1	2.4			
196	241	12	7.35	7.04	3.1	2.5			
267	329	9	9.20	5.17	3.1	2.6			

Legend see page 509

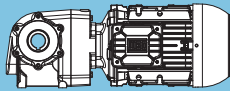
** ... on request

P _N = 0.37 kW								IE3	
50 Hz		60 Hz		i	at 50 Hz			m kg	Dimension sheet see page
0.37 kW		0.44 kW			F _m kN	F _{aN} kN			
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	f _B						
2.0	2.5	1190	1.35	460.00	14.6	28.0	SH072-14P-80-06E	62	552
2.6	3.2	946	1.65	355.14	15.9	28.3			
3.1	3.8	809	1.90	297.85	16.5	28.5			
4.0	4.9	652	2.35	233.75	17.0	28.7			
4.3	5.3	664	2.40	214.32	17.0	27.7			
5.1	6.3	517	2.90	180.40	17.4	28.9			
5.6	6.9	522	3.00	165.46	17.4	28.1			
3.0	3.7	829	1.95	460.00	16.4	28.5	SH072-14P-71-04F	59	552
3.9	4.8	659	2.35	355.14	17.0	28.7			
4.7	5.7	563	2.70	297.85	17.3	28.8			
2.6	3.2	898	1.15	351.00	4.4	26.1	SH062-14P-80-06E	40	550
3.3	4.1	732	1.35	278.18	7.2	26.4			
4.3	5.3	585	1.65	216.00	8.7	26.6			
5.2	6.4	491	1.95	177.23	9.4	26.7			
5.7	7.1	498	1.85	160.88	9.4	25.9			
6.7	8.3	391	2.35	137.25	10.0	26.9			
7.3	8.9	401	2.40	127.50	9.9	26.2			
8.9	11	305	2.85	104.40	10.3	27.0			
9.3	12	317	2.95	99.00	10.3	26.5			
15	18	220	1.85	63.38	10.6	25.7			
4.0	4.9	627	1.60	351.00	8.4	26.5	SH062-14P-71-04F	36	550
5.0	6.1	511	1.95	278.18	9.3	26.7			
6.5	7.9	407	2.35	216.00	9.9	26.9			
7.9	9.6	341	2.80	177.23	10.2	27.0			
8.7	11	340	2.80	160.88	10.2	26.4			
22	27	147	2.80	63.38	10.7	26.3			
3.8	4.7	600	0.80	241.09	**	16.9	SH052-14P-80-06E	21	548
5.0	6.1	480	1.00	186.64	**	17.1			
6.2	7.6	397	1.15	150.00	3.2	17.3			
8.1	10	313	1.40	114.56	4.8	17.4			
11	13	247	1.70	87.75	5.6	17.5			
12	15	252	1.15	76.00	5.6	15.9			
13	16	201	1.85	69.52	6.0	17.6			
15	18	207	1.75	62.00	5.9	16.3			
17	20	186	2.20	55.64	6.1	16.6			
19	23	167	2.60	49.45	6.2	16.6			
20	25	137	2.40	45.50	6.4	17.7			
21	26	146	2.70	43.07	6.3	16.9			
3.8	4.6	613	0.80	370.50	**	16.9	SH052-14P-71-04F	18	548
4.6	5.7	513	0.95	302.25	**	17.0			
5.8	7.1	421	1.15	241.09	2.4	17.2			
7.5	9.2	336	1.40	186.64	4.5	17.4			
9.3	11	277	1.65	150.00	5.3	17.5			
12	15	217	2.05	114.56	5.9	17.6			
16	19	170	2.45	87.75	6.2	17.7			
18	23	170	1.70	76.00	6.2	16.6			
20	25	137	2.70	69.52	6.4	17.7			
23	28	140	2.60	62.00	6.4	16.8			

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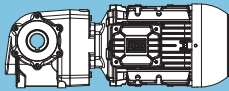
Legend see page 509

** ... on request

P _N = 0.37 kW								IE3	
50 Hz		60 Hz		i	at 50 Hz			m kg	Dimension sheet see page
0.37 kW	0.44 kW	M ₂ Nm	f _b		F _{rN} kN	F _{aN} kN			
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹								
12	15	240	0.90	74.25	2.7	8.8	SH042-14P-80-06E	17	546
16	19	193	1.10	59.00	3.7	9.2			
19	23	169	1.10	49.80	4.1	8.3			
20	25	151	1.40	45.57	4.3	9.6			
21	25	129	1.10	45.00	4.5	10.5			
23	28	138	1.35	40.50	4.4	8.7			
25	31	122	1.65	36.38	4.6	9.8			
29	35	111	1.70	32.18	4.7	9.2			
34	41	93	1.90	27.50	4.8	10.0			
37	46	86	2.15	24.86	4.8	9.5			
44	55	72	2.25	20.90	4.9	10.2			
47	57	70	2.60	19.85	4.9	9.8			
57	70	56	2.60	16.26	5.0	10.3			
73	90	44	3.00	12.69	5.0	10.4			
8.6	11	290	0.80	161.57	**	10.1	SH042-14P-71-04F	14	546
11	13	238	0.90	129.00	2.8	10.2			
14	18	185	1.00	97.50	3.9	10.3			
15	19	198	1.10	91.30	3.6	9.2			
19	23	163	1.30	74.25	4.2	9.5			
24	29	131	1.60	59.00	4.5	9.7			
28	34	114	1.60	49.80	4.6	9.1			
31	38	102	2.00	45.57	4.7	10.0			
34	42	93	2.00	40.50	4.8	9.4			
38	47	82	2.45	36.38	4.8	10.1			
43	53	75	2.50	32.18	4.9	9.7			
51	62	63	2.85	27.50	4.9	10.3			
20	25	135	0.80	46.40	0.8	2.3	SH032-14P-80-06E	16	544
24	30	126	0.90	37.82	1.4	1.3			
27	33	102	1.00	34.04	2.1	2.4			
28	35	112	0.95	32.56	1.9	0.5			
32	39	98	1.10	29.14	2.2	1.6			
35	43	91	1.15	26.40	2.4	0.9			
41	50	78	1.35	22.77	2.6	1.9			
44	55	73	1.40	20.80	2.7	1.3			
54	67	59	1.70	17.00	2.8	2.1			
58	71	56	1.75	16.03	2.9	1.6			
63	78	51	1.90	14.67	2.9	2.2			
72	89	45	2.10	12.80	3.0	2.2			
74	91	44	2.15	12.52	3.0	1.8			
98	121	33	2.65	9.39	3.0	2.4			
99	122	33	2.70	9.35	3.0	2.1			
23	28	121	0.95	61.63	1.6	2.3	SH032-14P-71-04F	12	544
24	29	131	0.85	59.20	1.1	1.3			
29	36	107	1.05	48.00	2.0	1.5			
30	37	93	1.15	46.40	2.3	2.4			
37	45	85	1.30	37.82	2.5	1.8			
41	50	69	1.45	34.04	2.7	2.5			
43	53	75	1.35	32.56	2.6	1.2			
48	59	67	1.60	29.14	2.7	2.0			
53	65	62	1.65	26.40	2.8	1.5			
61	75	52	2.00	22.77	2.9	2.2			
67	82	49	2.05	20.80	2.9	1.8			
82	101	40	2.50	17.00	3.0	2.3			
87	107	38	2.60	16.03	3.0	2.0			
109	134	30	3.15	12.80	3.0	2.4			
111	137	30	3.20	12.52	3.0	2.1			
149	183	22	4.05	9.35	3.1	2.3			
198	243	17	5.05	7.04	3.1	2.4			
270	331	12	6.30	5.17	3.1	2.5			

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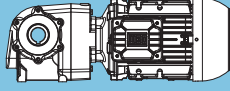
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P _N = 0.55 kW								IE3	
50 Hz		60 Hz		i	at 50 Hz			m kg	Dimension sheet see page
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n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	f _B						
2.1	2.5	1731	0.95	460.00	9.4	27.3	SH072-14P-80-06F	63	552
2.7	3.3	1376	1.15	355.14	13.2	27.8			
3.2	3.9	1177	1.30	297.85	14.6	28.0			
4.0	4.9	949	1.60	233.75	15.9	28.3			
4.4	5.4	967	1.65	214.32	15.8	27.0			
5.2	6.4	752	2.00	180.40	16.7	28.6			
5.7	7.0	759	2.10	165.46	16.7	27.5			
6.3	7.7	634	2.30	149.22	17.1	28.7			
6.8	8.3	644	2.40	138.77	17.1	27.8			
7.4	9.1	547	2.60	126.92	17.3	28.8			
8.6	11	479	2.85	110.00	17.5	28.9			
8.7	11	513	2.95	108.91	17.4	28.1			
11	13	437	2.35	86.25	17.6	26.7			
3.1	3.7	1211	1.35	460.00	14.4	28.0	SH072-14P-80-04E	61	552
4.0	4.8	962	1.65	355.14	15.8	28.3			
4.8	5.8	822	1.85	297.85	16.4	28.5			
6.1	7.4	660	2.30	233.75	17.0	28.7			
6.6	8.0	662	2.40	214.32	17.0	27.8			
7.9	9.5	521	2.85	180.40	17.4	28.8			
8.6	10	520	3.00	165.46	17.4	28.1			
2.7	3.3	1307	0.80	351.00	**	25.5	SH062-14P-80-06F	41	550
3.4	4.2	1065	0.95	278.18	**	25.9			
4.4	5.3	851	1.15	216.00	5.4	26.2			
5.3	6.5	714	1.35	177.23	7.4	26.4			
5.9	7.2	725	1.30	160.88	7.3	25.1			
6.9	8.4	568	1.60	137.25	8.9	26.6			
7.4	9.1	584	1.65	127.50	8.7	25.6			
9.1	11	444	1.95	104.40	9.7	26.8			
9.5	12	461	2.05	99.00	9.6	26.0			
11	13	372	2.25	86.09	10.1	26.9			
12	14	383	2.40	81.23	10.0	26.2			
13	16	310	2.60	70.62	10.3	27.0			
15	18	301	2.90	62.91	10.3	26.5			
16	19	264	2.90	60.00	10.5	27.1			
19	23	255	2.35	50.23	10.5	25.4			
4.0	4.9	916	1.10	351.00	3.9	26.1	SH062-14P-80-04E	39	550
5.1	6.2	745	1.35	278.18	7.1	26.4			
6.6	8.0	595	1.65	216.00	8.6	26.6			
8.0	9.7	497	1.90	177.23	9.4	26.7			
8.8	11	497	1.90	160.88	9.4	25.9			
10	13	394	2.35	137.25	10.0	26.9			
11	13	400	2.40	127.50	9.9	26.2			
14	17	315	2.95	99.00	10.3	26.5			
22	27	215	1.90	63.38	10.6	25.8			
6.3	7.7	577	0.80	150.00	**	16.9	SH052-14P-80-06F	23	548
8.2	10	455	1.00	114.56	**	17.2			
11	13	359	1.15	87.75	4.1	17.3			
12	15	366	0.80	76.00	3.9	14.9			
14	17	293	1.30	69.52	5.1	17.5			
15	19	302	1.20	62.00	5.0	15.5			
17	21	271	1.50	55.64	5.3	16.0			
19	23	243	1.80	49.45	5.6	16.0			
21	25	200	1.65	45.50	6.0	17.6			
22	27	212	1.85	43.07	5.9	16.4			
25	30	190	2.20	38.29	6.1	16.4			
27	33	172	2.25	34.62	6.2	16.7			
31	38	154	2.65	30.77	6.3	16.7			
36	44	133	2.80	26.44	6.4	17.0			

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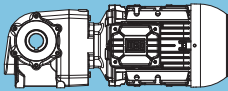
Legend see page 509

** ... on request

P _N = 0.55 kW								IE3	
50 Hz		60 Hz		i	at 50 Hz			m kg	Dimension sheet see page
0.55 kW	0.66 kW	M ₂ Nm	f _b		F _{rN} kN	F _{aN} kN			
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹								
5.9	7.1	615	0.80	241.09	**	16.9	SH052-14P-80-04E	20	548
7.6	9.2	491	0.95	186.64	**	17.1			
9.5	11	404	1.15	150.00	3.0	17.2			
12	15	317	1.40	114.56	4.8	17.4			
16	20	248	1.70	87.75	5.6	17.5			
17	20	278	1.20	85.50	5.3	15.9			
19	23	249	1.20	76.00	5.6	15.9			
20	25	200	1.85	69.52	6.0	17.6			
23	28	205	1.80	62.00	6.0	16.3			
26	31	184	2.20	55.64	6.1	16.6			
29	35	165	2.60	49.45	6.2	16.6			
31	38	134	2.45	45.50	6.4	17.8			
33	40	144	2.75	43.07	6.3	16.9			
21	25	220	0.95	45.57	3.2	9.0	SH042-14P-80-06F	19	546
23	29	201	0.95	40.50	3.6	7.8			
26	32	177	1.15	36.38	4.0	9.3			
29	36	161	1.15	32.18	4.2	8.4			
34	42	136	1.35	27.50	4.4	9.7			
38	46	126	1.50	24.86	4.5	8.9			
45	55	104	1.55	20.90	4.7	9.9			
48	58	101	1.80	19.85	4.7	9.3			
58	71	82	1.80	16.26	4.8	10.1			
63	77	77	2.15	15.00	4.9	9.7			
74	91	64	2.05	12.69	4.9	10.3			
83	101	59	2.55	11.40	4.9	9.9			
107	130	46	2.95	8.87	5.0	10.1			
19	23	237	0.90	74.25	2.8	8.8	SH042-14P-80-04E	16	546
24	29	191	1.10	59.00	3.8	9.2			
25	30	166	0.90	57.65	4.1	10.4			
29	35	166	1.10	49.80	4.1	8.3			
31	38	149	1.40	45.57	4.3	9.6			
32	38	132	1.05	45.00	4.5	10.5			
35	42	136	1.35	40.50	4.4	8.8			
39	47	120	1.65	36.38	4.6	9.8			
44	53	109	1.70	32.18	4.7	9.2			
52	63	92	1.95	27.50	4.8	10.0			
57	69	85	2.20	24.86	4.8	9.5			
68	82	71	2.30	20.90	4.9	10.2			
72	87	68	2.70	19.85	4.9	9.8			
87	106	55	2.65	16.26	5.0	10.3			
36	44	133	0.80	26.40	1.0	0.1	SH032-14P-80-06F	17	544
42	51	113	0.95	22.77	1.8	1.5			
45	56	106	0.95	20.80	2.1	0.6			
56	68	86	1.15	17.00	2.5	1.8			
59	72	82	1.20	16.03	2.5	1.1			
64	79	74	1.30	14.67	2.6	1.9			
74	90	65	1.45	12.80	2.8	2.0			
75	92	65	1.50	12.52	2.8	1.4			
101	124	49	1.85	9.35	2.9	1.8			
117	143	42	2.10	8.07	3.0	1.9			
134	164	37	2.35	7.04	3.0	2.0			
183	224	27	2.90	5.17	3.1	2.2			

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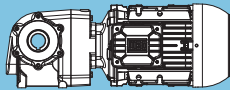
** ... on request

P _N = 0.55 kW								IE3	
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n ₅₀ min ⁻¹	n ₆₀ min ⁻¹								
31	37	136	0.80	46.40	0.8	2.3	SH032-14P-80-04E	15	544
38	45	125	0.90	37.82	1.4	1.3			
42	51	101	1.00	34.04	2.2	2.4			
44	53	110	0.95	32.56	1.9	0.5			
49	59	97	1.10	29.14	2.3	1.6			
54	65	90	1.15	26.40	2.4	0.9			
62	76	77	1.35	22.77	2.6	1.9			
68	83	71	1.45	20.80	2.7	1.3			
84	101	58	1.70	17.00	2.8	2.1			
89	107	55	1.80	16.03	2.9	1.6			
97	117	50	1.95	14.67	2.9	2.2			
111	134	44	2.15	12.80	3.0	2.3			
113	137	44	2.20	12.52	3.0	1.9			
151	183	32	2.70	9.39	3.0	2.4			
152	184	33	2.80	9.35	3.0	2.1			
176	213	28	3.10	8.07	3.1	2.2			
202	244	25	3.45	7.04	3.1	2.2			
275	333	18	4.30	5.17	3.1	2.4			

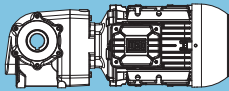
Legend see page 509

P_N = 0.75 kW

IE3

50 Hz		60 Hz		i	at 50 Hz			m kg	Dimension sheet see page
0.75 kW	0.90 kW	M ₂ Nm	f _B		F _{rN} kN	F _{aN} kN			
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹								
2.6	3.2	1887	0.85	355.14	6.6	27.1	SH072-11P-90S/L-06E	69	552
3.2	3.8	1614	0.95	297.85	10.9	27.5			
4.0	4.9	1301	1.20	233.75	13.8	27.9			
4.4	5.3	1325	1.20	214.32	13.6	26.0			
5.2	6.3	1031	1.45	180.40	15.5	28.2			
5.7	6.9	1041	1.50	165.46	15.4	26.8			
6.3	7.7	869	1.70	149.22	16.3	28.4			
6.8	8.3	883	1.75	138.77	16.2	27.2			
7.4	9.0	750	1.90	126.92	16.7	28.6			
8.5	10	657	2.10	110.00	17.0	28.7			
8.6	11	704	2.15	108.91	16.9	27.6			
10	12	562	2.35	92.89	17.3	28.8			
11	14	551	2.65	84.05	17.3	28.0			
12	15	473	2.65	76.52	17.5	28.9			
14	17	464	2.75	66.59	17.5	26.5			
3.1	3.8	1640	1.00	460.00	10.6	27.4	SH072-11P-80-04F	63	552
4.0	4.9	1302	1.20	355.14	13.8	27.9			
4.8	5.8	1112	1.40	297.85	15.0	28.1			
6.1	7.4	894	1.70	233.75	16.1	28.4			
6.7	8.1	897	1.75	214.32	16.1	27.1			
7.9	9.6	706	2.10	180.40	16.9	28.6			
8.6	11	704	2.25	165.46	16.9	27.6			
9.6	12	592	2.45	149.22	17.2	28.8			
10	13	594	2.60	138.77	17.2	27.9			
11	14	509	2.75	126.92	17.4	28.9			
17	20	396	2.60	86.25	17.6	27.0			
4.4	5.3	1167	0.85	216.00	**	25.7	SH062-11P-90S/L-06E	46	550
5.3	6.5	979	1.00	177.23	0.5	26.0			
5.8	7.1	994	0.95	160.88	**	24.2			
6.8	8.3	779	1.20	137.25	6.6	26.3			
7.4	9.0	800	1.20	127.50	6.3	24.9			
9.0	11	608	1.45	104.40	8.5	26.6			
9.5	12	632	1.50	99.00	8.3	25.4			
11	13	510	1.65	86.09	9.3	26.7			
12	14	525	1.75	81.23	9.2	25.8			
13	16	425	1.90	70.62	9.8	26.9			
15	18	413	2.15	62.91	9.9	26.1			
16	19	362	2.10	60.00	10.1	26.9			
19	23	301	2.40	49.33	10.3	27.0			
20	24	318	2.65	47.85	10.3	26.5			
24	29	273	2.50	39.00	10.4	25.3			
4.1	5.0	1240	0.85	351.00	**	25.6	SH062-11P-80-04F	40	550
5.1	6.3	1009	1.00	278.18	**	26.0			
6.6	8.1	805	1.20	216.00	6.2	26.3			
8.1	9.8	674	1.40	177.23	7.9	26.5			
8.9	11	673	1.40	160.88	7.9	25.3			
10	13	533	1.75	137.25	9.1	26.7			
11	14	541	1.75	127.50	9.1	25.7			
14	18	427	2.20	99.00	9.8	26.1			
17	20	346	2.45	86.09	10.2	27.0			
18	21	354	2.60	81.23	10.1	26.3			
20	25	287	2.80	70.62	10.4	27.1			
23	27	291	1.40	63.38	10.4	25.1			
28	35	233	2.60	50.23	10.6	25.6			

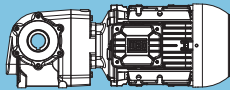
** ... on request

P _N = 0.75 kW								IE3	
50 Hz		60 Hz		i	at 50 Hz			m kg	Dimension sheet see page
0.75 kW		0.90 kW			F _{rN} kN	F _{aN} kN			
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	f _B						
11	13	492	0.85	87.75	**	17.1	SH052-11P-90S/L-06E	28	548
13	16	461	0.90	69.75	**	14.6			
14	16	401	0.95	69.52	3.1	17.3			
15	18	413	0.90	62.00	2.7	14.6			
17	21	372	1.10	55.64	3.8	15.2			
19	23	333	1.30	49.45	4.5	15.2			
21	25	274	1.20	45.50	5.3	17.5			
22	27	291	1.35	43.07	5.1	15.8			
25	30	261	1.65	38.29	5.5	15.8			
27	33	236	1.65	34.62	5.7	16.2			
31	37	212	1.95	30.77	5.9	16.2			
36	43	182	2.05	26.44	6.1	16.6			
40	49	163	2.40	23.50	6.2	16.6			
46	57	141	2.50	20.25	6.4	17.0			
52	64	126	3.00	18.00	6.4	16.9			
59	71	113	2.95	16.04	6.5	17.2			
9.5	12	547	0.85	150.00	**	17.0	SH052-11P-80-04F	22	548
12	15	429	1.05	114.56	2.1	17.2			
16	20	336	1.25	87.75	4.5	17.4			
17	20	376	0.90	85.50	3.7	15.2			
19	23	337	0.90	76.00	4.5	15.2			
21	25	271	1.40	69.52	5.4	17.5			
23	28	277	1.35	62.00	5.3	15.7			
26	31	249	1.65	55.64	5.6	16.2			
29	35	223	1.95	49.45	5.8	16.1			
31	38	181	1.80	45.50	6.1	17.7			
33	40	195	2.05	43.07	6.0	16.6			
37	45	175	2.40	38.29	6.2	16.5			
41	50	158	2.45	34.62	6.3	16.8			
46	57	141	2.90	30.77	6.4	16.8			
26	31	243	0.85	36.38	2.6	8.8	SH042-11P-90S/L-06E	24	546
29	36	221	0.85	32.18	3.2	7.5			
34	42	186	1.00	27.50	3.8	9.3			
38	46	172	1.10	24.86	4.0	8.2			
45	55	143	1.15	20.90	4.4	9.6			
47	58	139	1.30	19.85	4.4	8.7			
58	70	112	1.30	16.26	4.6	9.9			
63	76	106	1.55	15.00	4.7	9.2			
74	90	88	1.50	12.69	4.8	10.1			
82	100	81	1.85	11.40	4.8	9.6			
106	129	63	2.15	8.87	4.9	9.9			
136	165	50	2.55	6.92	5.0	10.1			
24	29	259	0.85	59.00	2.1	8.7			
29	35	225	0.85	49.80	3.1	7.5			
31	38	202	1.05	45.57	3.6	9.1			
32	39	179	0.80	45.00	3.9	10.4			
35	43	184	1.00	40.50	3.9	8.1			
39	48	163	1.25	36.38	4.1	9.5			
44	54	148	1.25	32.18	4.3	8.6			
52	63	125	1.45	27.50	4.5	9.8			
58	70	115	1.65	24.86	4.6	9.1			
68	83	96	1.70	20.90	4.8	10.0			
72	88	92	2.00	19.85	4.8	9.4			
88	107	75	1.95	16.26	4.9	10.2			
95	116	70	2.35	15.00	4.9	9.8			
113	137	59	2.25	12.69	4.9	10.3			
125	153	54	2.80	11.40	5.0	10.0			

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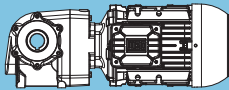
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** ... on request

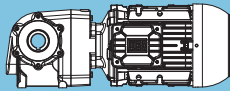
P _N = 0.75 kW								IE3	
50 Hz		60 Hz		i	at 50 Hz			m kg	Dimension sheet see page
0.75 kW	0.90 kW	M ₂ Nm	f _B		F _{rN} kN	F _{aN} kN			
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹								
55	67	117	0.85	17.00	1.7	1.4	SH032-11P-90S/L-06E	22	544
59	71	113	0.90	16.03	1.9	0.5			
64	78	102	0.95	14.67	2.2	1.6			
73	89	89	1.05	12.80	2.4	1.7			
75	91	89	1.10	12.52	2.4	1.0			
100	122	66	1.35	9.39	2.8	2.0			
101	122	67	1.35	9.35	2.7	1.4			
117	142	58	1.55	8.07	2.8	1.6			
134	163	51	1.70	7.04	2.9	1.7			
182	222	37	2.10	5.17	3.0	2.0			
49	60	132	0.80	29.14	1.1	1.3	SH032-11P-80-04F	16	544
54	66	122	0.85	26.40	1.6	0.3			
63	76	104	1.00	22.77	2.1	1.6			
69	84	97	1.05	20.80	2.3	0.8			
84	102	78	1.30	17.00	2.6	1.9			
89	109	75	1.30	16.03	2.6	1.2			
97	119	68	1.45	14.67	2.7	2.0			
112	136	59	1.60	12.80	2.8	2.1			
114	139	59	1.60	12.52	2.8	1.6			
152	185	44	2.00	9.39	3.0	2.3			
153	186	44	2.05	9.35	3.0	1.9			
177	216	38	2.30	8.07	3.0	2.0			
203	247	33	2.55	7.04	3.0	2.1			
277	337	25	3.20	5.17	3.1	2.2			

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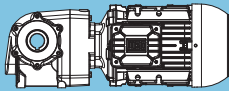
P _N = 1.1 kW								IE3	
50 Hz		60 Hz		i	at 50 Hz			m kg	Dimension sheet see page
1.1 kW		1.3 kW			F _m kN	F _{an} kN			
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	f _B						
4.1	5.0	1877	0.85	355.14	6.8	27.1	SH072-11P-90S/L-04E	67	552
4.9	5.9	1604	0.95	297.85	11.0	27.5			
6.2	7.5	1289	1.20	233.75	13.9	27.9			
6.8	8.2	1293	1.25	214.32	13.9	26.1			
8.1	9.8	1017	1.50	180.40	15.6	28.2			
8.8	11	1014	1.55	165.46	15.6	26.8			
9.8	12	854	1.70	149.22	16.3	28.4			
10	13	857	1.80	138.77	16.3	27.2			
11	14	734	1.95	126.92	16.8	28.6			
13	16	684	2.20	108.91	16.9	27.7			
16	19	547	2.40	92.89	17.3	28.8			
17	21	534	2.75	84.05	17.4	28.1			
19	23	455	2.75	76.52	17.5	28.9			
22	26	444	2.90	66.59	17.6	26.7			
4.1	5.0	1868	0.85	233.75	7.0	27.2	SH072-11P-100L-06D	73	552
4.5	5.4	1903	0.85	214.32	6.2	24.5			
5.3	6.5	1481	1.00	180.40	12.3	27.6			
5.8	7.0	1495	1.05	165.46	12.2	25.6			
6.4	7.8	1248	1.20	149.22	14.2	27.9			
6.9	8.4	1268	1.25	138.77	14.0	26.2			
7.6	9.2	1077	1.30	126.92	15.2	28.2			
8.7	11	943	1.45	110.00	15.9	28.3			
8.8	11	1011	1.50	108.91	15.6	26.8			
10	13	807	1.65	92.89	16.5	28.5			
11	14	860	1.20	86.25	16.3	24.0			
13	15	680	1.85	76.52	16.9	28.6			
14	17	666	1.90	66.59	17.0	25.3			
16	20	567	2.45	59.13	17.3	28.0			
17	21	561	2.55	55.85	17.3	25.9			
19	23	495	2.70	51.25	17.4	28.2			
22	27	421	3.00	43.28	17.6	28.4			
6.7	8.1	1161	0.85	216.00	**	25.7	SH062-11P-90S/L-04E	44	550
8.2	9.9	971	1.00	177.23	1.5	26.0			
9.0	11	970	1.00	160.88	1.6	24.3			
11	14	780	1.25	127.50	6.6	24.9			
14	17	597	1.45	104.40	8.6	26.6			
15	18	615	1.55	99.00	8.5	25.5			
17	20	498	1.70	86.09	9.4	26.7			
18	22	510	1.80	81.23	9.3	25.8			
21	25	413	1.95	70.62	9.9	26.9			
23	28	400	2.20	62.91	9.9	26.2			
24	29	354	2.15	60.00	10.1	27.0			
29	36	293	2.45	49.33	10.4	27.1	SH062-11P-100L-06D	50	550
30	37	307	2.70	47.85	10.3	26.5			
37	45	262	2.65	39.00	10.5	25.4			
7.0	8.5	1119	0.85	137.25	**	25.8			
7.5	9.1	1149	0.85	127.50	**	23.7			
9.2	11	874	1.00	104.40	4.9	26.2			
9.7	12	907	1.05	99.00	4.1	24.5			
11	14	732	1.15	86.09	7.2	26.4			
12	14	754	1.20	81.23	6.9	25.0			
14	16	610	1.35	70.62	8.5	26.6			
15	19	593	1.50	62.91	8.7	25.6			
16	19	520	1.50	60.00	9.2	26.7			
19	24	432	1.65	49.33	9.8	26.8			
20	24	457	1.85	47.85	9.6	26.0			
24	30	380	2.10	39.46	10.0	26.3			
25	30	393	1.75	39.00	10.0	24.3			
30	36	314	2.45	32.37	10.3	26.5			
35	42	269	2.65	27.50	10.5	26.6			
39	47	253	2.95	24.78	10.5	25.5			
42	52	222	2.80	22.61	10.6	26.8			
54	65	177	2.95	17.93	10.7	26.9			

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P _N = 1.1 kW								IE3	
50 Hz		60 Hz		i	at 50 Hz			m kg	Dimension sheet see page
1.1 kW	1.3 kW	M ₂ Nm	f _b		F _{rN} kN	F _{aN} kN			
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹								
17	20	485	0.85	87.75	**	17.1	SH052-11P-90S/L-04E	26	548
21	25	446	0.95	69.75	1.1	14.7			
23	28	400	0.95	62.00	3.1	14.7			
26	32	360	1.15	55.64	4.1	15.3			
29	36	322	1.35	49.45	4.7	15.3			
32	39	262	1.25	45.50	5.5	17.5			
34	41	281	1.40	43.07	5.2	15.9			
38	46	252	1.70	38.29	5.6	15.9			
42	51	228	1.70	34.62	5.8	16.3			
47	57	204	2.00	30.77	6.0	16.3			
55	67	175	2.10	26.44	6.2	16.7			
62	75	157	2.50	23.50	6.3	16.7			
72	87	135	2.60	20.25	6.4	17.0			
17	21	534	0.80	55.64	**	14.0	SH052-11P-100L-06D	32	548
19	24	479	0.90	49.45	**	14.0			
21	26	393	0.85	45.50	3.3	17.3			
22	27	418	0.95	43.07	2.5	14.9			
25	30	375	1.15	38.29	3.7	14.9			
28	34	339	1.15	34.62	4.4	15.5			
31	38	304	1.35	30.77	5.0	15.5			
36	44	262	1.45	26.44	5.4	16.1			
41	50	234	1.70	23.50	5.7	16.0			
47	58	203	1.75	20.25	6.0	16.5			
53	65	181	2.10	18.00	6.1	16.5			
60	73	162	2.05	16.04	6.2	16.8			
67	82	144	2.45	14.26	6.3	16.8			
75	91	130	2.45	12.81	6.4	17.0			
84	102	116	2.70	11.38	6.5	17.0			
91	111	107	2.65	10.50	6.5	17.2			
103	125	95	2.95	9.33	6.5	17.2			
40	48	235	0.85	36.38	2.9	8.9	SH042-11P-90S/L-04E	22	546
45	55	213	0.90	32.18	3.4	7.6			
53	64	180	1.00	27.50	3.9	9.3			
59	71	166	1.15	24.86	4.1	8.3			
70	84	138	1.20	20.90	4.4	9.7			
73	89	132	1.40	19.85	4.5	8.8			
89	108	108	1.35	16.26	4.7	9.9			
97	117	101	1.65	15.00	4.7	9.3			
115	139	85	1.60	12.69	4.8	10.1			
128	154	78	1.95	11.40	4.9	9.6			
164	198	61	2.25	8.87	4.9	9.9			
210	254	47	2.65	6.92	5.0	10.1			
46	56	206	0.80	20.90	3.5	9.1	SH042-11P-100L-06D	28	546
48	59	199	0.95	19.85	3.6	7.8			
59	72	161	0.90	16.26	4.2	9.5			
64	78	152	1.10	15.00	4.3	8.5			
76	92	127	1.05	12.69	4.5	9.8			
84	102	116	1.30	11.40	4.6	9.1			
108	131	91	1.50	8.87	4.8	9.4			
139	168	71	1.75	6.92	4.9	9.7			
86	104	113	0.90	17.00	1.9	1.5	SH032-11P-90S/L-04E	20	544
91	110	108	0.90	16.03	2.0	0.6			
99	120	98	1.00	14.67	2.2	1.6			
114	138	85	1.10	12.80	2.5	1.8			
116	141	85	1.15	12.52	2.5	1.0			
155	187	63	1.40	9.39	2.8	2.0			
156	188	64	1.45	9.35	2.8	1.5			
180	218	55	1.60	8.07	2.9	1.6			
207	250	48	1.80	7.04	2.9	1.8			
282	341	36	2.20	5.17	3.0	2.0			

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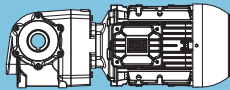
** ... on request

P _N = 1.5 kW								IE3	
50 Hz		60 Hz		i	at 50 Hz			m kg	Dimension sheet see page
1.5 kW		1.8 kW			F _{rN} kN	F _{aN} kN			
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	f _B						
6.2	7.5	1763	0.90	233.75	8.9	27.3	SH072-11P-90S/L-04F	68	552
6.8	8.2	1769	0.90	214.32	8.8	24.8			
8.0	9.7	1392	1.10	180.40	13.1	27.8			
8.8	11	1388	1.15	165.46	13.1	25.8			
9.7	12	1168	1.25	149.22	14.7	28.0			
10	13	1172	1.35	138.77	14.7	26.4			
11	14	1005	1.40	126.92	15.6	28.2			
13	16	935	1.65	108.91	16.0	27.0			
16	19	749	1.80	92.89	16.7	28.6			
17	21	731	2.00	84.05	16.8	27.6			
19	23	622	2.05	76.52	17.1	28.7			
21	25	609	2.35	69.52	17.2	27.9			
22	26	608	2.10	66.59	17.2	25.6			
25	30	521	2.65	59.13	17.4	28.1			
26	31	512	2.75	55.85	17.4	26.2			
28	34	454	2.95	51.25	17.5	28.3			
11	14	1068	0.90	127.50	**	24.0	SH062-11P-90S/L-04F	46	550
14	17	817	1.10	104.40	6.0	26.3			
15	18	841	1.10	99.00	5.6	24.7			
17	20	682	1.25	86.09	7.8	26.5			
18	22	698	1.30	81.23	7.6	25.2			
21	25	565	1.45	70.62	8.9	26.6			
23	28	547	1.60	62.91	9.0	25.7			
24	29	484	1.60	60.00	9.5	26.8			
29	36	401	1.80	49.33	9.9	26.9			
30	37	420	2.00	47.85	9.8	26.1			
37	44	349	2.30	39.46	10.2	26.4			
45	54	288	2.70	32.37	10.4	26.6			
53	64	245	2.90	27.50	10.5	26.7			
26	32	492	0.85	55.64	**	14.4	SH052-11P-90S/L-04F	28	548
29	35	440	1.00	49.45	1.5	14.3			
32	39	358	0.95	45.50	4.1	17.3			
34	41	385	1.05	43.07	3.5	15.2			
38	46	344	1.25	38.29	4.3	15.1			
42	51	312	1.25	34.62	4.8	15.7			
47	57	279	1.50	30.77	5.3	15.7			
55	66	240	1.55	26.44	5.7	16.2			
62	75	215	1.85	23.50	5.9	16.2			
72	87	185	1.90	20.25	6.1	16.6			
81	98	165	2.25	18.00	6.2	16.6			
90	109	147	2.25	16.04	6.3	16.9			
102	123	132	2.70	14.26	6.4	16.9			
113	137	118	2.65	12.81	6.5	17.1			
127	154	105	2.95	11.38	6.5	17.1			
138	167	97	2.95	10.50	6.5	17.3			
58	71	227	0.85	24.86	3.1	7.4	SH042-11P-90S/L-04F	24	546
69	84	188	0.85	20.90	3.8	9.2			
73	88	181	1.00	19.85	3.9	8.1			
89	108	148	1.00	16.26	4.3	9.6			
97	117	139	1.20	15.00	4.4	8.7			
114	138	116	1.15	12.69	4.6	9.8			
127	154	106	1.40	11.40	4.7	9.2			
163	198	83	1.65	8.87	4.8	9.6			
209	253	65	1.95	6.92	4.9	9.8			
113	137	117	0.80	12.80	1.7	1.4	SH032-11P-90S/L-04F	22	544
116	140	116	0.85	12.52	1.8	0.4			
154	187	86	1.00	9.39	2.5	1.8			
155	188	87	1.05	9.35	2.4	1.0			
180	218	76	1.20	8.07	2.6	1.2			
206	249	66	1.30	7.04	2.8	1.4			
281	340	49	1.65	5.17	2.9	1.8			

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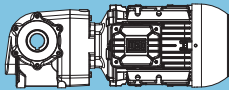
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** ... on request

P _N = 2.2 kW							IE3		
50 Hz	60 Hz				at 50 Hz			m kg	Dimension sheet see page
2.2 kW	2.6 kW								
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	f _b	i	F _{rN} kN	F _{aN} kN			
8.7	11	2057	0.80	165.46	**	24.1	SH072 11P 100L-04E	78	552
9.6	12	1731	0.85	149.22	9.4	27.3			
10	13	1737	0.90	138.77	9.3	24.9			
11	14	1489	0.95	126.92	12.2	27.6			
13	16	1386	1.10	108.91	13.1	25.8			
15	19	1109	1.20	92.89	15.1	28.1			
16	19	1072	1.25	89.57	15.3	28.2			
17	21	1083	1.35	84.05	15.2	26.6			
19	23	922	1.40	76.52	16.0	28.3			
21	25	903	1.60	69.52	16.1	27.1			
22	26	901	1.45	66.59	16.1	23.8			
23	28	761	1.45	62.62	16.7	28.5			
24	30	773	1.80	59.13	16.6	27.5			
26	31	759	1.85	55.85	16.7	24.7			
28	34	673	2.00	51.25	17.0	27.7			
33	40	600	2.30	43.83	17.2	25.7			
34	42	551	2.25	41.73	17.3	28.0			
40	49	473	2.40	35.65	17.5	28.3			
42	52	466	2.85	33.83	17.5	26.5			
49	60	388	2.50	29.17	17.7	28.5			
60	73	321	2.60	24.07	17.8	28.7			
17	20	1010	0.85	86.09	**	26.0	SH062 11P 100L-04E	56	550
18	21	1034	0.90	81.23	**	24.1			
20	25	838	1.00	70.62	5.6	26.2			
23	28	810	1.10	62.91	6.1	24.8			
24	29	717	1.10	60.00	7.4	26.4			
29	35	594	1.20	49.33	8.6	26.6			
30	36	623	1.35	47.85	8.4	25.5			
36	44	517	1.55	39.46	9.2	25.8			
37	45	532	1.30	39.00	9.1	23.2			
44	54	426	1.80	32.37	9.8	26.1			
45	55	439	1.70	32.00	9.7	23.9			
52	63	364	1.95	27.50	10.1	26.3			
58	70	342	2.15	24.78	10.2	24.7			
63	77	300	2.05	22.61	10.3	26.5			
66	80	290	2.05	21.80	10.4	26.6			
76	93	261	2.75	18.85	10.5	25.4			
80	97	239	2.15	17.93	10.5	26.7			
92	112	216	2.60	15.54	10.6	25.8			
113	137	178	2.70	12.75	10.7	26.1			
132	161	151	2.75	10.83	10.7	26.3			
161	196	125	2.85	8.91	10.8	26.5			
167	203	120	2.90	8.59	10.8	26.5			
203	247	99	2.95	7.07	10.8	26.7			
37	46	510	0.85	38.29	**	13.8	SH052 11P 100L-04E	37	548
41	50	462	0.85	34.62	**	14.6			
47	57	413	1.00	30.77	2.7	14.6			
54	66	356	1.05	26.44	4.1	15.4			
61	74	318	1.25	23.50	4.8	15.4			
71	86	274	1.30	20.25	5.3	16.0			
80	97	245	1.55	18.00	5.6	16.0			
89	109	218	1.55	16.04	5.9	16.4			
101	122	195	1.85	14.26	6.0	16.4			
112	136	175	1.80	12.81	6.2	16.7			
126	153	156	2.00	11.38	6.3	16.7			
137	166	144	2.00	10.50	6.3	16.9			
154	187	128	2.20	9.33	6.4	16.9			
96	116	206	0.80	15.00	3.5	7.7	SH042-11P-100L-04E	33	546
113	137	172	0.80	12.69	4.0	9.4			
126	153	157	0.95	11.40	4.2	8.5			
162	197	123	1.15	8.87	4.6	9.0			
207	252	96	1.30	6.92	4.8	9.4			

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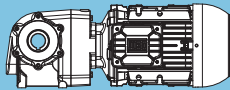
** ... on request

P_N = 3.0 kW							IE3		
50 Hz		60 Hz		i	at 50 Hz			m kg	Dimension sheet see page
3.0 kW		3.6 kW			F_{rN} kN	F_{aN} kN			
n₅₀ min ⁻¹	n₆₀ min ⁻¹	M₂ Nm	f_B						
13	16	1884	0.80	108.91	6.7	24.5	SH072-11P-L100L-04F	85	552
16	19	1507	0.90	92.89	12.0	27.6			
17	21	1472	1.00	84.05	12.4	25.6			
19	23	1253	1.00	76.52	14.1	27.9			
21	25	1227	1.15	69.52	14.3	26.3			
22	26	1224	1.05	66.59	14.3	21.7			
23	28	1034	1.10	62.62	15.5	28.2			
24	29	1050	1.30	59.13	15.4	26.7			
26	31	1032	1.40	55.85	15.5	22.9			
28	34	914	1.45	51.25	16.1	27.1			
33	40	815	1.70	43.83	16.5	24.3			
35	42	749	1.65	41.73	16.7	27.5			
40	49	642	1.80	35.65	17.1	27.8			
43	51	633	2.10	33.83	17.1	25.5			
49	60	528	1.85	29.17	17.4	28.1			
51	62	525	2.45	27.98	17.4	26.1			
61	73	448	2.75	23.80	17.5	26.6			
70	84	389	2.80	20.63	17.7	27.0			
83	100	330	2.90	17.42	17.7	27.4			
86	104	318	2.90	16.79	17.8	27.5			
100	121	272	3.00	14.35	17.8	27.8			
23	28	1101	0.80	62.91	**	23.9	SH062-11P-L100L-04F	62	550
24	29	975	0.80	60.00	1.2	26.0			
29	35	808	0.90	49.33	6.2	26.3			
30	36	847	1.00	47.85	5.5	24.7			
36	44	703	1.15	39.46	7.6	25.2			
37	45	723	0.95	39.00	7.3	21.6			
44	54	579	1.35	32.37	8.8	25.6			
45	54	596	1.25	32.00	8.6	22.7			
52	63	494	1.45	27.50	9.4	25.9			
58	70	464	1.60	24.78	9.6	23.7			
64	77	408	1.55	22.61	9.9	26.2			
66	80	394	1.55	21.80	10.0	26.2			
76	92	355	2.05	18.85	10.1	24.6			
80	97	325	1.60	17.93	10.3	26.4			
93	112	294	1.90	15.54	10.4	25.1			
113	136	241	2.00	12.75	10.5	25.5			
133	161	205	2.05	10.83	10.6	25.8			
162	195	169	2.10	8.91	10.7	26.1			
168	203	163	2.15	8.59	10.7	26.2			
204	246	134	2.15	7.07	10.8	26.4			
54	66	483	0.80	26.44	**	14.4	SH052-11P-L100L-04F	44	548
61	74	432	0.95	23.50	2.0	14.4			
71	86	373	0.95	20.25	3.8	15.2			
80	97	333	1.15	18.00	4.5	15.2			
90	108	297	1.15	16.04	5.0	15.8			
101	122	265	1.35	14.26	5.4	15.8			
112	136	238	1.35	12.81	5.7	16.2			
126	153	212	1.50	11.38	5.9	16.2			
137	166	196	1.45	10.50	6.0	16.6			
154	186	175	1.60	9.33	6.2	16.5			

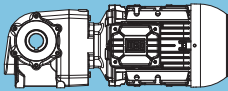
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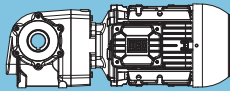
P _N = 4.0 kW							IE3		
50 Hz	60 Hz				at 50 Hz			m kg	Dimension sheet see page
4.0 kW	4.8 kW	M ₂ Nm	f _b	i	F _{rN}	F _{aN}			
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹				kN	kN			
19	23	1660	0.80	76.52	10.3	27.4	SH072-11P-112M-04E	85	552
21	25	1625	0.90	69.52	10.8	25.2			
22	26	1621	0.80	66.59	10.8	19.2			
23	28	1369	0.80	62.62	13.3	27.8			
25	30	1390	1.00	59.13	13.1	25.8			
26	31	1366	1.05	55.85	13.3	20.8			
28	34	1211	1.10	51.25	14.4	26.3			
33	40	1079	1.30	43.83	15.2	22.6			
34	41	1027	1.25	43.28	15.5	26.8			
35	42	991	1.25	41.73	15.7	26.9			
41	49	850	1.35	35.65	16.3	27.3			
43	52	838	1.60	33.83	16.4	24.2			
50	60	699	1.40	29.17	16.9	27.7			
52	63	696	1.85	27.98	16.9	25.1			
61	74	594	2.05	23.80	17.2	25.7			
70	85	515	2.10	20.63	17.4	26.2			
83	101	436	2.20	17.42	17.6	26.7			
86	104	421	2.20	16.79	17.6	26.8			
101	122	360	2.25	14.35	17.7	27.2			
124	149	295	2.35	11.74	17.8	27.6			
150	181	244	2.40	9.68	17.9	27.9			
37	44	930	0.90	39.46	3.4	24.5	SH062-11P-112M-04E	63	550
45	54	767	1.00	32.37	6.8	25.0			
53	64	655	1.10	27.50	8.1	25.4			
59	71	615	1.20	24.78	8.5	22.5			
64	78	540	1.15	22.61	9.1	25.7			
67	80	521	1.15	21.80	9.2	25.8			
77	93	470	1.55	18.85	9.5	23.7			
81	98	430	1.20	17.93	9.8	26.1			
93	113	389	1.45	15.54	10.0	24.4			
114	138	320	1.50	12.75	10.3	24.9			
134	162	272	1.55	10.83	10.4	25.3			
163	197	224	1.60	8.91	10.6	25.7			
169	204	216	1.60	8.59	10.6	25.8			
205	248	178	1.65	7.07	10.7	26.1			

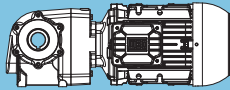
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P_N = 5.5 kW								IE3	
50 Hz		60 Hz		i	at 50 Hz			m kg	Dimension sheet see page
5.5 kW		6.6 kW			F_{rn} kN	F_{aN} kN			
n₅₀ min ⁻¹	n₆₀ min ⁻¹	M₂ Nm	f_B						
26	32	1860	0.80	55.85	7.2	17.6	SH072-11P-132S-04E	104	552
29	34	1648	0.85	51.25	10.5	25.2			
33	40	1469	0.95	43.83	12.4	20.1			
34	41	1398	0.90	43.28	13.0	25.8			
35	42	1349	0.95	41.73	13.4	25.9			
41	50	1157	1.00	35.65	14.8	26.4			
43	52	1141	1.20	33.83	14.9	22.2			
50	61	951	1.05	29.17	15.9	27.0			
52	63	947	1.35	27.98	15.9	23.5			
62	74	808	1.50	23.80	16.5	24.3			
71	86	702	1.55	20.63	16.9	25.0			
84	101	594	1.60	17.42	17.2	25.7			
87	105	573	1.65	16.79	17.3	25.8			
102	123	490	1.70	14.35	17.5	26.4			
125	150	402	1.70	11.74	17.6	26.9			
151	182	332	1.75	9.68	17.7	27.4			
53	64	891	0.80	27.50	4.5	24.6	SH062-11P-132S-04E	82	550
59	71	837	0.90	24.78	5.7	20.7			
65	78	735	0.85	22.61	7.2	25.1			
67	81	710	0.85	21.80	7.5	25.2			
78	94	640	1.15	18.85	8.2	22.3			
82	98	586	0.90	17.93	8.7	25.6			
94	114	529	1.10	15.54	9.1	23.2			
115	138	435	1.10	12.75	9.7	24.0			
135	163	370	1.15	10.83	10.1	24.5			
164	198	305	1.20	8.91	10.3	25.0			
171	205	294	1.20	8.59	10.4	25.1			
207	250	242	1.20	7.07	10.5	25.5			



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P_N = 7.5 kW								IE3	
50 Hz	60 Hz				at 50 Hz			m kg	Dimension sheet see page
7.5 kW	9.0 kW	M ₂ Nm	f _B	i	F _{rN} kN	F _{aN} kN			
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹								
43	52	1555	0.85	33.83	11.5	19.6	SH072-11P-L132M-04F	118	552
52	63	1291	1.00	27.98	13.9	21.3			
62	74	1101	1.10	23.80	15.1	22.5			
71	86	957	1.15	20.63	15.9	23.4			
84	102	810	1.20	17.42	16.5	24.3			
87	105	781	1.20	16.79	16.6	24.5			
102	123	669	1.25	14.35	17.0	25.2			
125	151	548	1.25	11.74	17.3	26.0			
151	183	453	1.30	9.68	17.5	26.6			
78	94	872	0.85	18.85	5.0	20.4	SH062-11P-L132M-04F	96	550
94	114	721	0.80	15.54	7.4	21.7			
115	139	593	0.80	12.75	8.7	22.7			
135	163	505	0.85	10.83	9.3	23.4			
164	199	416	0.85	8.91	9.8	24.1			
171	206	401	0.90	8.59	9.9	24.3			
207	251	330	0.90	7.07	10.2	24.8			

P_N = 9.2 kW								IE3	
50 Hz	60 Hz				at 50 Hz			m kg	Dimension sheet see page
9.2 kW	11 kW	M ₂ Nm	f _B	i	F _{rN} kN	F _{aN} kN			
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹								
52	63	1589	0.85	27.98	11.2	19.4	SH072-11P-L132M-04G	123	552
61	74	1356	0.90	23.80	13.4	20.9			
71	86	1178	0.95	20.63	14.6	22.0			
84	101	997	1.00	17.42	15.7	23.1			
87	105	961	1.00	16.79	15.8	23.4			
102	123	823	1.00	14.35	16.4	24.3			
124	150	675	1.05	11.74	17.0	25.2			
151	182	557	1.05	9.68	17.3	25.9			

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Selection tables - Gear units

Structure of the selection tables

Type	$i_{ges.}$	M_{2nenn} [Nm]	n_4 [min ⁻¹]	η_4	n_6 [min ⁻¹]	η_6	i_{exakt}	n_{1max} [min ⁻¹]	IEC motor frame size 10										
									63	71	80	90	100	112	132				
									IEC adapter 11										
									I63	I71	I80	I90	I100	I112	I132				
									NEMA adapter 12										
N56	N143/145	N182	N184	N213/215															
S032																			
2 stages	13																		
$n_4=1400\text{ min}^{-1}$	14																		
$n_6=900\text{ min}^{-1}$																			
Maximum torque 126 Nm	15																		

Type	$i_{ges.}$	SERVO adapter											Input unit						
		n_{1max} [min ⁻¹]	Adapter size 17										n_{1max} [min ⁻¹]	Input shaft [mm] 19					
			S92	S105	S114	S115	S130	S141	S142	S180	S189	S190		19x40	24x50				

- 1** Type of gear unit
- 2** Total ratio
- 3** Permissible output torque at S1 operation ($f_b = 1.0$)
- 4** Output speed (gear unit) at $n_4 = 1400\text{ min}^{-1}$
- 5** Efficiency gear unit at $n_4 = 1400\text{ min}^{-1}$
- 6** Output speed (gear unit) at $n_6 = 900\text{ min}^{-1}$
- 7** Efficiency gear unit at $n_6 = 900\text{ min}^{-1}$
- 8** Exact mathematical ratio
- 9** Maximum permissible input speed gear unit. valid for direct mounting and IEC / NEMA adapter
Max. permissible input speed IEC / NEMA adapter: I63 - I132 / N56 - N213 = 3000 min^{-1}
Max. permissible motor speed (Direct mounting): motor frame size 63 - 132 = 3000 min^{-1}
Higher motor speed on request
- 10** Possible motor frame sizes (Direct mounting)
- 11** Possible IEC adapter sizes
- 12** Possible NEMA adapter sizes
- 13** Number of gear stages
- 14** Motor speed n_4 (4 poles) / n_6 (6 poles)
- 15** Maximum torque
- 16** Maximum input speed - SERVO adapter
- 17** Possible SERVO adapter size
- 18** Maximum input speed - direct mounting, IEC / NEMA adapter and input unit
Higher input speeds on request
- 19** Possible input shafts of the input unit

Type	$i_{ges.}$	M_{znom}	n_4	η_4	n_6	η_6	i_{exakt}	n_{1max}	IEC motor frame size						
									63	71	80	90	100	112	132
									IEC adapter						
									I63	I71	I80	I90	I100	I112	I132
									NEMA adapter						
	[Nm]	[min ⁻¹]		[min ⁻¹]				[min ⁻¹]	N56	N143/145	N182	N184	N213/215		
S032	275.50	126	5.1	66%	6.4	63%	551/2	6000							
	214.60	125	6.5	68%	8.2	65%	1073/5	6000							
2 stages	174.00	124	8.0	70%	10	66%	174/1	6000							
	137.09	121	10	72%	13	68%	1508/11	6000							
	105.64	120	13	74%	17	70%	1479/14	6000							
	82.54	116	17	76%	21	72%	1073/13	5200							
	76.00	108	18	86%	23	84%	76/1	6000							
	61.63	111	23	77%	28	74%	493/8	4200							
	59.20	111	24	87%	30	85%	296/5	6000							
	53.17	108	26	78%	33	75%	319/6	3800							
	48.00	110	29	88%	36	86%	48/1	6000							
	46.40	106	30	79%	38	76%	232/5	3400							
	41.80	63	33	91%	42	89%	209/5	6000							
	$n_4=1400 \text{ min}^{-1}$	37.82	108	37	89%	46	87%	416/11	6000						
		34.04	98	41	81%	51	78%	783/23	3000						
	$n_6=900 \text{ min}^{-1}$	32.56	101	43	91%	54	90%	814/25	6000						
		29.14	105	48	90%	60	88%	204/7	6000						
		26.40	101	53	92%	66	90%	132/5	6000						
22.77		103	61	91%	77	89%	296/13	5200							
20.80		100	67	93%	84	91%	104/5	6000							
17.00		98	82	92%	103	91%	17/1	4200							
16.03		97	87	93%	109	92%	561/35	6000							
14.67		96	95	92%	119	91%	44/3	3800							
12.80		93	109	93%	137	91%	64/5	3400							
12.52		94	112	94%	140	93%	814/65	5200							
Maximum torque 126 Nm	9.39	86	149	93%	186	92%	216/23	3000							
	9.35	90	150	95%	187	94%	187/20	4200							
	8.07	87	174	95%	217	94%	121/15	3800							
	7.04	85	199	95%	249	94%	176/25	3400							
	5.17	78	271	95%	339	95%	594/115	3000							

Type	$i_{ges.}$	SERVO adapter											Input unit				
		n_{1max}	Adapter size										n_{1max}	Input shaft [mm]			
			[min ⁻¹]	S92	S105	S114	S115	S130	S141	S142	S180	S189		S190	[min ⁻¹]	19x40	24x50
S032	275.50	6600													-		
	214.60	6600													3000		
	174.00	6600													3000		
	137.09	6600													3000		
	105.64	6600													3000		
	82.54	5800													3000		
	76.00	6600													-		
	61.63	4700													3000		
	59.20	6600													3000		
	53.17	4200													3000		
	48.00	6600													3000		
	46.40	3800													3000		
	41.80	6600													-		
	37.82	6600													3000		
	34.04	3300													3000		
	32.56	6600													3000		
	29.14	6600													3000		
	26.40	6600													3000		
	22.77	5800													3000		
	20.80	6600													3000		
	17.00	4700													3000		
	16.03	6600													3000		
	14.67	4200													3000		
	12.80	3800													3000		
	12.52	5800													3000		
	9.39	3300													3000		
	9.35	4700													3000		
	8.07	4200													3000		
	7.04	3800													3000		
	5.17	3300													3000		

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Type	$i_{ges.}$	M_{znom}	n_4	η_4	n_6	η_6	i_{exakt}	n_{1max}	IEC motor frame size						
									63	71	80	90	100	112	132
									IEC adapter						
									I63	I71	I80	I90	I100	I112	I132
									NEMA adapter						
	[Nm]	[min ⁻¹]		[min ⁻¹]				[min ⁻¹]	N56	N143/145	N182	N184	N213/215		
S042	323.70	228	4.3	65%	5.4	62%	3237/10	6000							
	263.25	224	5.3	67%	6.6	63%	1053/4	6000							
	209.18	222	6.7	69%	8.4	65%	2301/11	6000							
	161.57	218	8.7	71%	11	67%	1131/7	6000							
	129.00	208	11	73%	14	69%	129/1	5800							
	97.50	184	14	75%	18	71%	195/2	4700							
	91.30	213	15	85%	19	83%	913/10	6000							
	74.25	211	19	86%	24	84%	297/4	6000							
	74.10	164	19	77%	24	73%	741/10	3800							
	59.00	209	24	87%	30	85%	59/1	6000							
	57.65	149	24	78%	30	74%	1326/23	3300							
2 stages	49.80	181	28	90%	35	89%	249/5	6000							
$n_4=1400 \text{ min}^{-1}$	45.57	204	31	89%	38	87%	319/7	6000							
$n_6=900 \text{ min}^{-1}$	45.00	136	31	79%	39	75%	45/1	2900							
	40.50	182	35	91%	43	89%	81/2	6000							
	36.38	198	38	89%	48	88%	473/13	5800							
	32.18	184	44	92%	54	90%	354/11	6000							
Maximum torque 228 Nm	27.50	177	51	90%	64	89%	55/2	4700							
	24.86	185	56	92%	70	91%	174/7	6000							
	20.90	160	67	91%	84	90%	209/10	3800							
	19.85	180	71	92%	88	92%	258/13	5800							
	16.26	144	86	92%	108	91%	374/23	3300							
	15.00	164	93	94%	117	93%	15/1	4700							
	12.69	132	110	92%	138	91%	165/13	2900							
	11.40	148	123	94%	154	93%	57/5	3800							
	8.87	136	158	95%	197	94%	204/23	3300							
	6.92	125	202	95%	253	94%	90/13	2900							

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Type	$i_{ges.}$	SERVO adapter											Input unit			
		n_{1max}	Adapter size											n_{1max}	Input shaft [mm]	
			[min ⁻¹]	S92	S105	S114	S115	S130	S141	S142	S180	S189	S190		[min ⁻¹]	19x40
S042	323.70	6600												3000		
	263.25	6600												3000		
	209.18	6600												3000		
	161.57	6600												3000		
	129.00	6400												3000		
	97.50	5200												3000		
	91.30	6600												3000		
	74.25	6600												3000		
	74.10	4200												3000		
	59.00	6600												3000		
	57.65	3600												3000		
	49.80	6600												3000		
	45.57	6600												3000		
	45.00	3200												3000		
	40.50	6600												3000		
	36.38	6400												3000		
	32.18	6600												3000		
	27.50	5200												3000		
	24.86	6600												3000		
	20.90	4200												3000		
	19.85	6400												3000		
	16.26	3600												3000		
	15.00	5200												3000		
	12.69	3200												3000		
	11.40	4200												3000		
	8.87	3600												3000		
	6.92	3200												3000		

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Type	$i_{ges.}$	M_{znom}	n_4	η_4	n_6	η_6	i_{exakt}	n_{1max}	IEC motor frame size						
									63	71	80	90	100	112	132
									IEC adapter						
									I63	I71	I80	I90	I100	I112	I132
									NEMA adapter						
	[Nm]	[min ⁻¹]		[min ⁻¹]			[min ⁻¹]	N56	N143/145	N182	N184	N213/215			
S052	370.50	489	3.8	65%	4.7	62%	741/2	6000							
	302.25	473	4.6	67%	5.8	63%	1209/4	6000							
2 stages	241.09	468	5.8	69%	7.3	65%	2652/11	6000							
	186.64	463	7.5	71%	9.4	67%	2613/14	6000							
	150.00	452	9.3	73%	12	69%	150/1	6000							
	114.56	438	12	75%	15	72%	1833/16	5400							
	87.75	412	16	77%	20	74%	351/4	4300							
	85.50	320	16	88%	20	86%	171/2	6000							
	76.00	287	18	88%	23	87%	76/1	6000							
	69.75	403	20	89%	25	87%	279/4	6000							
	69.52	367	20	78%	25	76%	1599/23	3700							
	62.00	361	23	89%	28	88%	62/1	6000							
	55.64	402	25	90%	31	88%	612/11	6000							
	55.50	344	25	79%	32	78%	111/2	3300							
	49.45	428	28	90%	35	88%	544/11	6000							
	45.50	323	31	80%	38	79%	91/2	3000							
	Maximum torque 489 Nm	43.07	392	33	90%	41	89%	603/14	6000						
		38.29	418	37	91%	46	89%	268/7	6000						
34.62		382	40	91%	51	90%	450/13	6000							
30.77		407	46	92%	57	90%	400/13	6000							
26.44		367	53	92%	66	91%	423/16	5400							
23.50		391	60	92%	74	91%	47/2	5400							
20.25		350	69	93%	86	91%	81/4	4300							
18.00		372	78	93%	97	92%	18/1	4300							
16.04		331	87	93%	109	92%	369/23	3700							
14.26		353	98	93%	123	93%	328/23	3700							
12.81	313	109	93%	137	93%	333/26	3300								
11.38	311	123	94%	154	93%	148/13	3300								
10.50	282	133	94%	167	93%	21/2	3000								
9.33	278	150	94%	188	93%	28/3	3000								

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Type	$i_{ges.}$	SERVO adapter											Input unit			
		n_{1max}	Adapter size										n_{1max}	Input shaft [mm]		
			[min ⁻¹]	S92	S105	S114	S115	S130	S141	S142	S180	S189		S190	[min ⁻¹]	19x40
S052	370.50	6600												3000		
	302.25	6600												3000		
	241.09	6600												3000		
	186.64	6600												3000		
	150.00	6600												3000		
	114.56	6000												3000		
	87.75	4800												3000		
	85.50	6600												3000		
	76.00	6600												3000		
	69.75	6600												3000		
	69.52	4200												3000		
	62.00	6600												3000		
	55.64	6600												3000		
	55.50	3700												3000		
	49.45	6600												3000		
	45.50	3300												3000		
	43.07	6600												3000		
	38.29	6600												3000		
	34.62	6600												3000		
	30.77	6600												3000		
	26.44	6000												3000		
	23.50	6000												3000		
	20.25	4800												3000		
	18.00	4800												3000		
	16.04	4200												3000		
	14.26	4200												3000		
	12.81	3700												3000		
	11.38	3700												3000		
	10.50	3300												3000		
	9.33	3300												3000		

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Type	$i_{ges.}$	M_{znom}	n_4	n_4	n_6	n_6	i_{exakt}	n_{1max}	IEC motor frame size						
									63	71	80	90	100	112	132
									IEC adapter						
									163	171	180	190	1100	1112	1132
									NEMA adapter						
									N56	N143/145	N182	N184	N213/215		
S062	351.00	996	4.0	71%	5.0	67%	351/1	6000							
	278.18	978	5.0	72%	6.3	69%	3060/11	6000							
	216.00	956	6.5	74%	8.1	71%	216/1	6000							
	177.23	940	7.9	76%	9.9	73%	2304/13	6000							
	160.88	941	8.7	84%	11	81%	1287/8	6000							
	137.25	908	10	78%	13	75%	549/4	5800							
	127.50	944	11	85%	14	82%	255/2	6000							
	104.40	864	13	79%	17	76%	522/5	4600							
	99.00	923	14	86%	18	84%	99/1	6000							
	86.09	831	16	80%	20	78%	1980/23	4000							
	81.23	904	17	87%	22	85%	1056/13	6000							
	70.62	796	20	81%	25	79%	918/13	3500							
	63.38	408	22	92%	28	91%	507/8	6000							
	62.91	871	22	88%	28	86%	2013/32	5800							
	60.00	758	23	82%	29	79%	60/1	3200							
	50.23	599	28	92%	35	91%	1105/22	6000							
	49.33	711	28	82%	35	80%	148/3	2800							
	47.85	829	29	89%	37	87%	957/20	4600							
	47.57	682	29	82%	37	80%	333/7	2700							
	39.46	797	35	89%	44	88%	1815/46	4000							
	39.13	594	36	83%	45	81%	900/23	2500							
	39.00	682	36	93%	45	92%	39/1	6000							
	32.37	765	43	90%	54	89%	1683/52	3500							
	32.00	730	44	94%	55	93%	32/1	6000							
	27.50	708	51	90%	64	89%	55/2	3200							
	24.78	734	56	94%	71	93%	793/32	5800							
	22.61	614	62	91%	77	90%	407/18	2800							
	21.80	592	64	91%	80	90%	1221/56	2700							
	18.85	717	74	95%	93	94%	377/20	4600							
	17.93	514	78	91%	98	90%	825/46	2500							
	15.54	557	90	95%	113	94%	715/46	4000							
	12.75	474	110	95%	137	95%	51/4	3500							
10.83	415	129	95%	162	95%	65/6	3200								
8.91	351	157	95%	196	95%	481/54	2800								
8.59	343	163	96%	204	95%	481/56	2700								
7.07	287	198	96%	248	95%	325/46	2500								

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Type	$i_{ges.}$	SERVO adapter											Input unit			
		n_{1max}	Adapter size										n_{1max}	Input shaft [mm]		
			[min ⁻¹]	S92	S105	S114	S115	S130	S141	S142	S180	S189		S190	[min ⁻¹]	19x40
S062	351.00	6600												3000		
	278.18	6600												3000		
	216.00	6600												3000		
	177.23	6600												3000		
	160.88	6600												3000		
	137.25	6400												3000		
	127.50	6600												3000		
	104.40	5100												3000		
	99.00	6600												3000		
	86.09	4500												3000		
	81.23	6600												3000		
	70.62	3900												3000		
	63.38	6600												3000		
	62.91	6400												3000		
	60.00	3600												3000		
	50.23	6600												3000		
	49.33	3200												3000		
	47.85	5100												3000		
	47.57	3100												3000		
	39.46	4500												3000		
	39.13	2800												2800		
	39.00	6600												3000		
	32.37	3900												3000		
	32.00	6600												3000		
	27.50	3600												3000		
	24.78	6400												3000		
	22.61	3200												3000		
	21.80	3100												3000		
	18.85	5100												3000		
	17.93	2800												2800		
	15.54	4500												3000		
	12.75	3900												3000		
	10.83	3600												3000		
	8.91	3200												3000		
	8.59	3100												3000		
	7.07	2800												2800		

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Type	$i_{ges.}$	M_{znom}	n_4	n_4	n_6	n_6	i_{exakt}	n_{1max}	IEC motor frame size						
									63	71	80	90	100	112	132
									IEC adapter						
									163	171	180	190	1100	1112	1132
									NEMA adapter						
	[Nm]	[min ⁻¹]		[min ⁻¹]			[min ⁻¹]	N56	N143/145	N182	N184	N213/215			
S072	460.00	1597	3.0	71%	3.8	68%	460/1	6000							
	355.14	1546	3.9	73%	4.9	70%	2486/7	6000							
	297.85	1513	4.7	75%	5.9	71%	3872/13	6000							
	233.75	1502	6.0	76%	7.5	73%	935/4	6000							
	214.32	1567	6.5	84%	8.2	81%	4715/22	6000							
	180.40	1478	7.8	78%	9.7	75%	902/5	4900							
	165.46	1558	8.5	85%	11	83%	4633/28	6000							
	149.22	1436	9.4	79%	12	76%	3432/23	4200							
	138.77	1534	10	86%	13	84%	1804/13	6000							
	126.92	1396	11	80%	14	78%	1650/13	3700							
	110.00	1362	13	81%	16	78%	110/1	3400							
	108.91	1497	13	87%	16	85%	3485/32	6000							
	92.89	1310	15	82%	19	79%	836/9	3000							
	89.57	1295	16	82%	20	80%	627/7	2900							
	86.25	1019	16	92%	20	91%	345/4	6000							
	84.05	1447	17	88%	21	86%	1681/20	4900							
	76.52	1250	18	82%	23	81%	1760/23	2600							
	69.52	1404	20	89%	25	87%	1599/23	4200							
	66.59	1267	21	92%	26	91%	3729/56	6000							
	62.62	1095	22	83%	28	83%	814/13	2100							
	59.13	1363	24	89%	30	88%	3075/52	3700							
	55.85	1402	25	93%	31	92%	726/13	6000							
	51.65	937	27	84%	34	83%	1188/23	1900							
	51.25	1324	27	90%	34	88%	205/4	3400							
	43.83	1365	32	93%	40	92%	2805/64	6000							
	43.28	1256	32	90%	40	89%	779/18	3000							
	41.73	1222	34	90%	42	89%	2337/56	2900							
	35.65	1132	39	91%	49	89%	820/23	2600							
	33.83	1315	41	94%	52	93%	1353/40	4900							
	29.17	969	48	91%	60	90%	1517/52	2100							
	27.98	1273	50	94%	63	93%	1287/46	4200							
	24.07	823	58	91%	73	90%	1107/46	1900							
23.80	1211	59	95%	74	94%	2475/104	3700								
20.63	1082	68	95%	85	94%	165/8	3400								
17.42	948	80	95%	100	94%	209/12	3000								
16.79	920	83	95%	104	95%	1881/112	2900								
14.35	809	98	95%	122	95%	330/23	2600								
11.74	683	119	95%	149	95%	1221/104	2100								
9.68	579	145	96%	181	95%	891/92	1900								

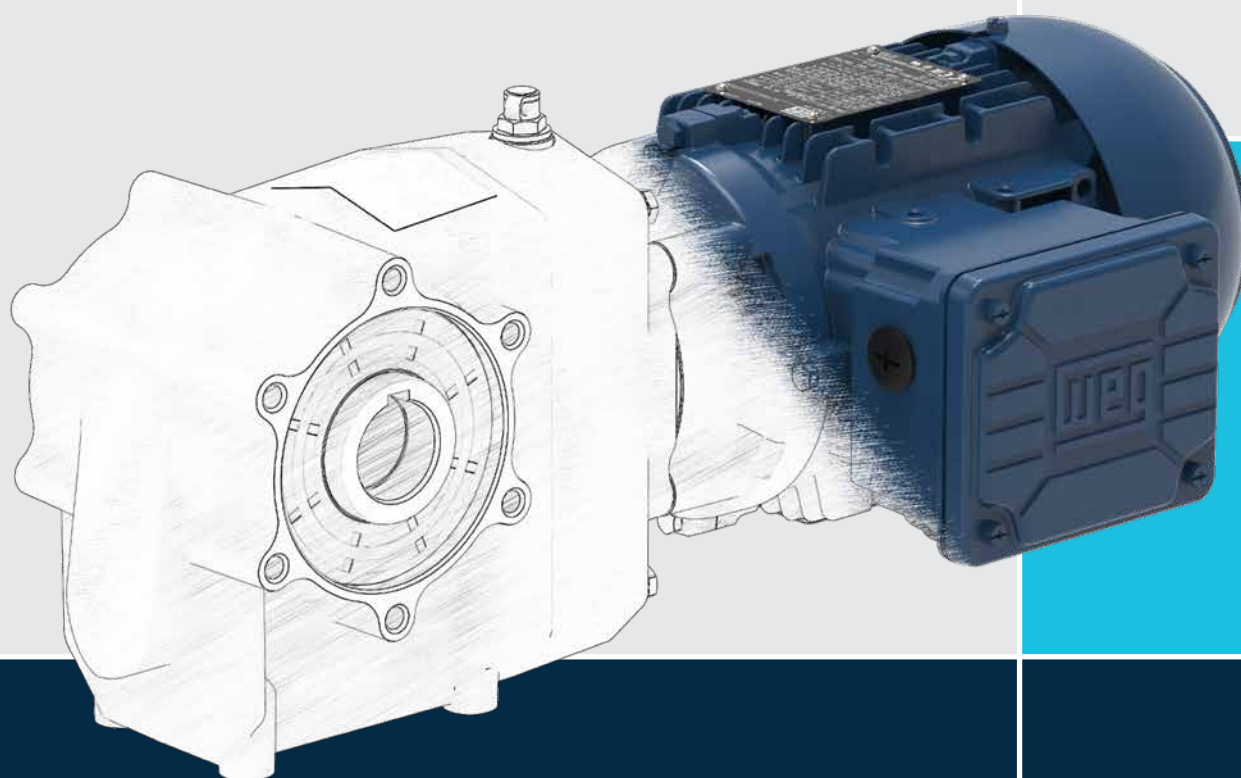
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Type	$i_{ges.}$	SERVO adapter											Input unit		
		n_{1max}	Adapter size										n_{1max}	Input shaft [mm]	
			[min ⁻¹]	S92	S105	S114	S115	S130	S141	S142	S180	S189		S190	[min ⁻¹]
S072	460.00	6600											3000		
	355.14	6600											3000		
	297.85	6600											3000		
	233.75	6600											3000		
	214.32	6600											3000		
	180.40	5400											3000		
	165.46	6600											3000		
	149.22	4700											3000		
	138.77	6600											3000		
	126.92	4200											3000		
	110.00	3700											3000		
	108.91	6600											3000		
	92.89	3300											3000		
	89.57	3200											3000		
	86.25	6600											3000		
	84.05	5400											3000		
	76.52	2900											2900		
	69.52	4700											3000		
	66.59	6600											3000		
	62.62	2600											2600		
	59.13	4200											3000		
	55.85	6600											3000		
	51.65	2300											2300		
	51.25	3700											3000		
	43.83	6600											3000		
	43.28	3300											3000		
	41.73	3200											3000		
	35.65	2900											2900		
	33.83	5400											3000		
	29.17	2600											2600		
	27.98	4700											3000		
	24.07	2300											2300		
	23.80	4200											3000		
	20.63	3700											3000		
	17.42	3300											3000		
	16.79	3200											3000		
	14.35	2900											2900		
	11.74	2600											2600		
	9.68	2300											2300		

S

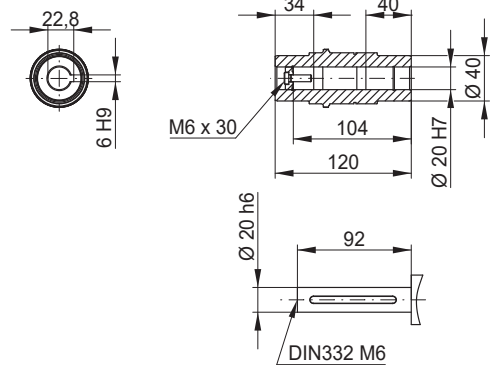
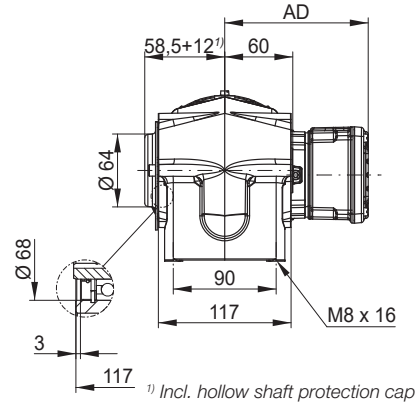
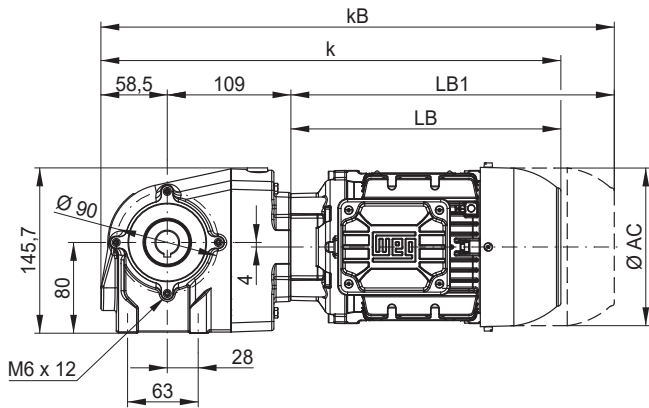
Legend see page 531

Dimension sheets Geared Motors

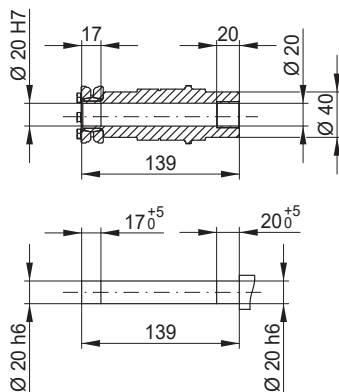
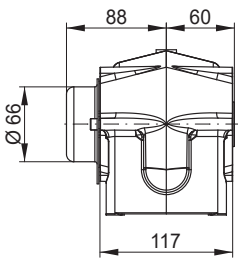


S

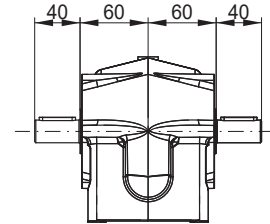
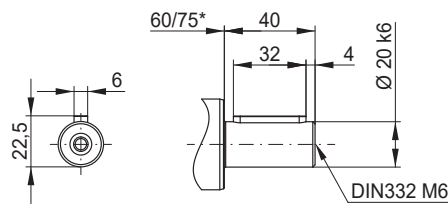
SH032 - Hollow shaft



SD032 - Shrink disc



SS032 - Output shaft SB032 - Output shaft on both sides

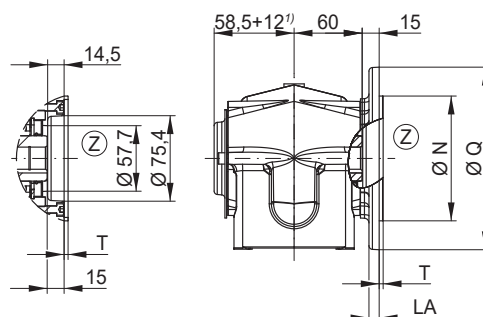
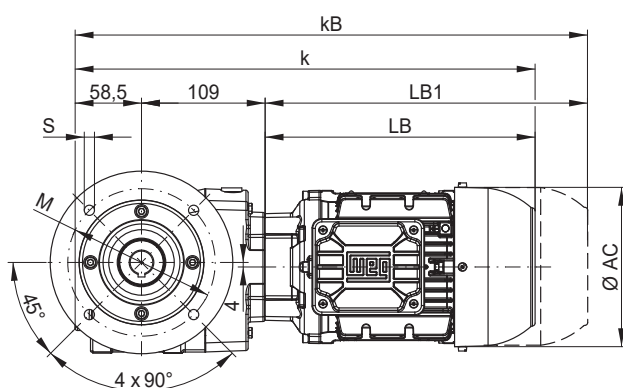


Motor fr.	63	71	80	L80	90S/L
AC	126	141	159	159	178
AD	128	136	145	145	155
k	372	406	414	438	456
kB	416	455	472	496	529
LB	204	238	246	270	288
LB1	248	287	304	328	361

Motor dimension sheets see page 590. Description of motor lengths LB and LB1 see page 594.

*Design SS(SB)/SF

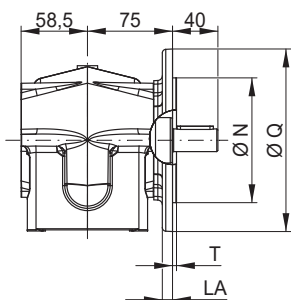
SO032 - B5 flange execution with hollow shaft



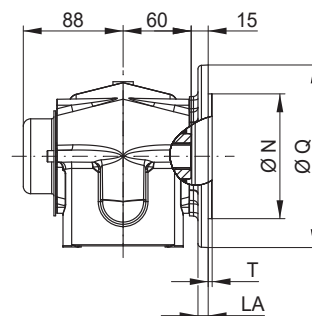
Flange size	LA	M	N	Q	S	T
120	8.5	100	80 j6	120	6.6	3.0
160	9.0	130	110 j6	160	9.0	3.5

¹) Incl. hollow shaft protection cap

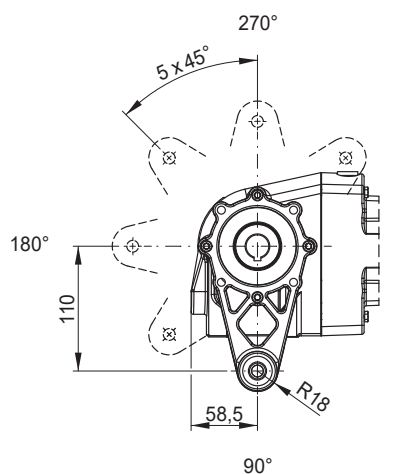
SF032 - B5 flange execution with output shaft



SP032 - B5 flange execution with hollow shaft and shrink disc

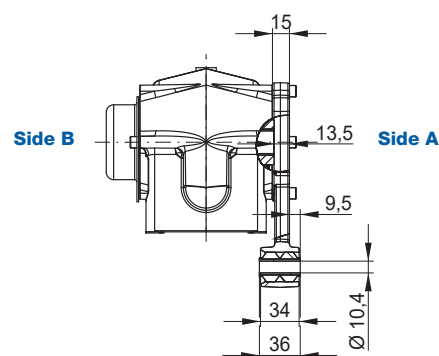


ST032 - Hollow shaft with torque arm **



Torque arm possible positions:
90°, 135°, 180°, 225°, 270°, 315°

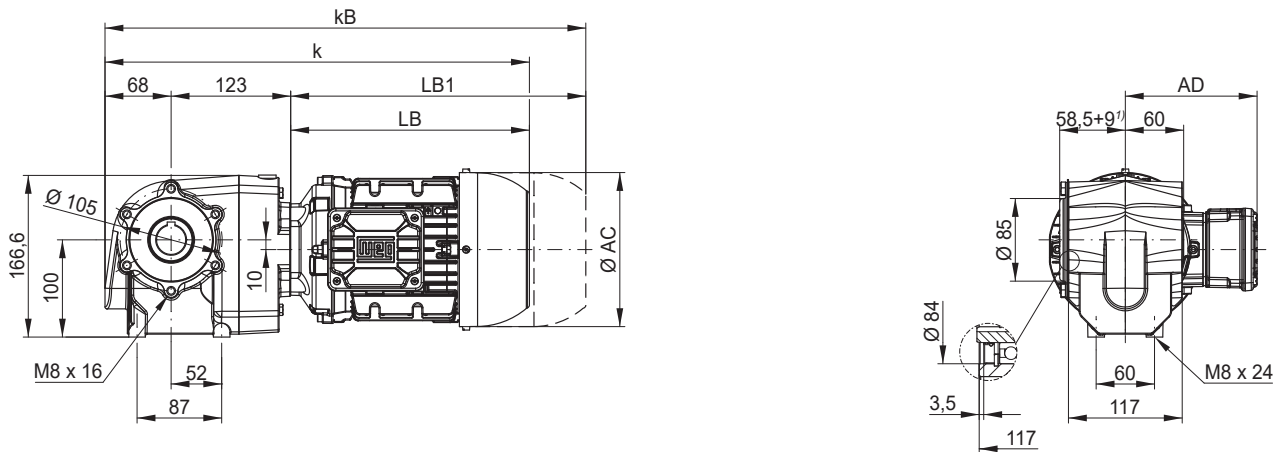
SU032 - Hollow shaft with shrink disc and torque arm **



Dimensions in mm.

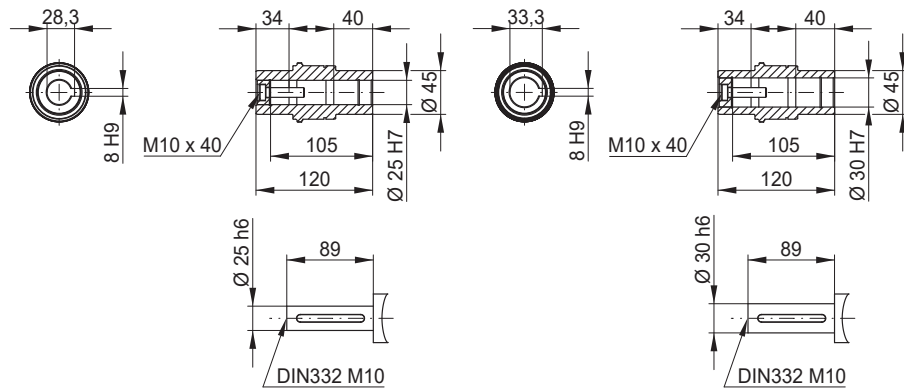
** Torque arm may be mounted on side A or side B.

SH042 - Hollow shaft

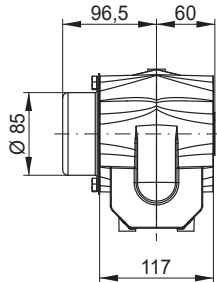


¹) Incl. hollow shaft protection cap

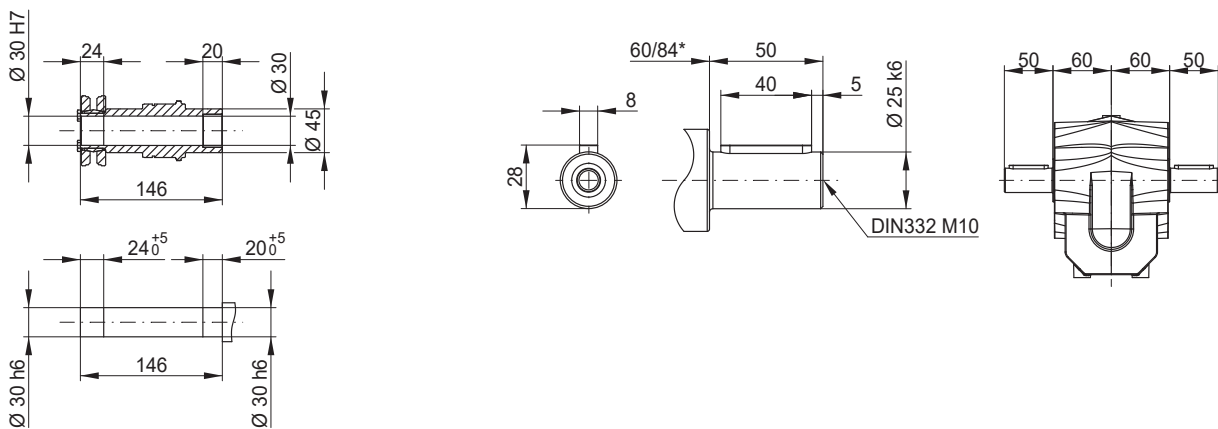
SD042 - Shrink disc



S



SS042 - Output shaft SB042 - Output shaft on both sides

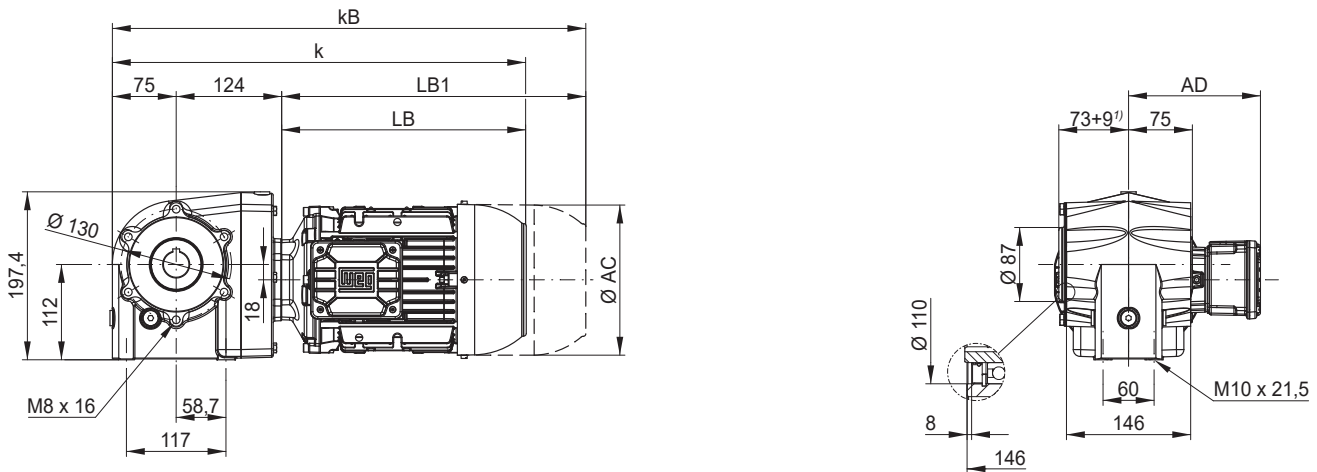


Motor fr. Dimension	63	71	80	L80	90S/L	100L	L100L
AC	126	141	159	159	178	199	199
AD	128	136	145	145	155	165	165
k	395	429	437	461	479	529	567
kB	439	478	495	519	552	613	651
LB	204	238	246	270	288	338	376
LB1	248	287	304	328	361	422	460

Motor dimension sheets see page 590. Description of motor lengths LB and LB1 see page 594.

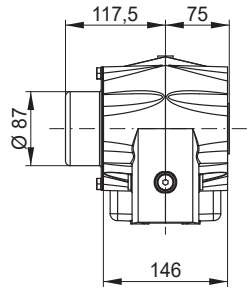
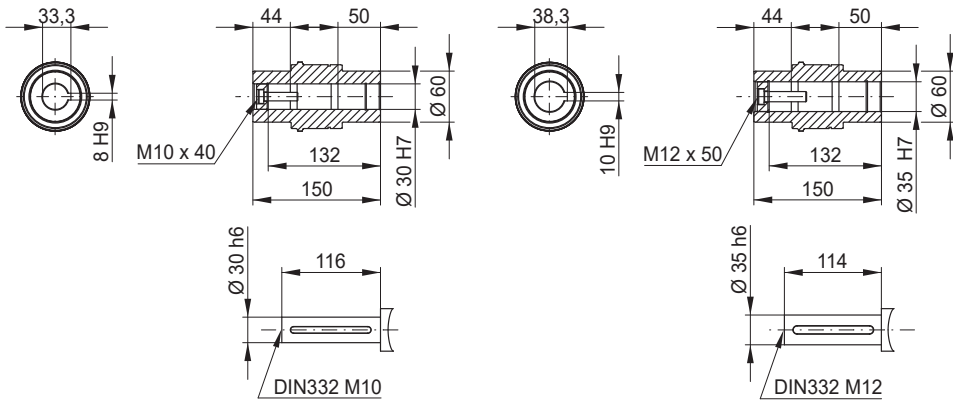
*Design SS(SB)/SF

SH052 - Hollow shaft

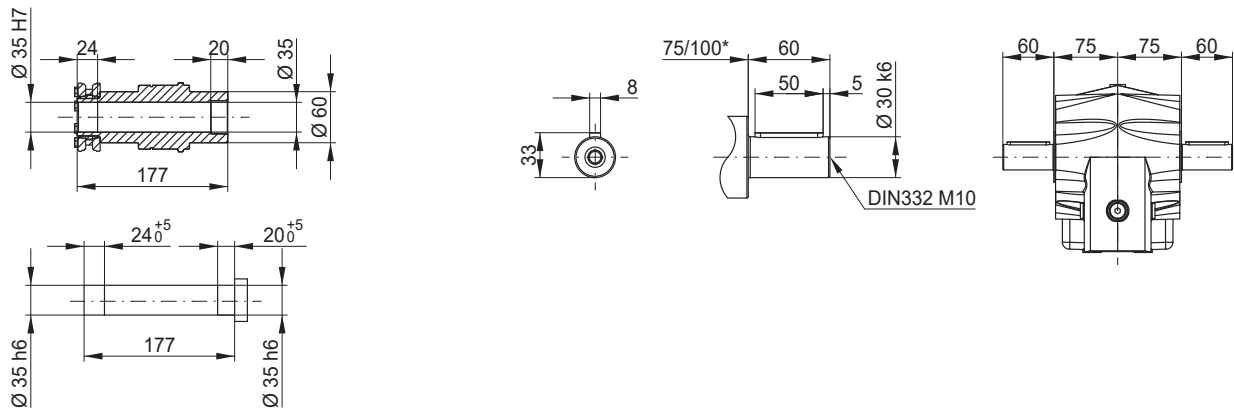


¹⁾ Incl. hollow shaft protection cap

SD052 - Shrink disc



SS052 - Output shaft SB052 - Output shaft on both sides

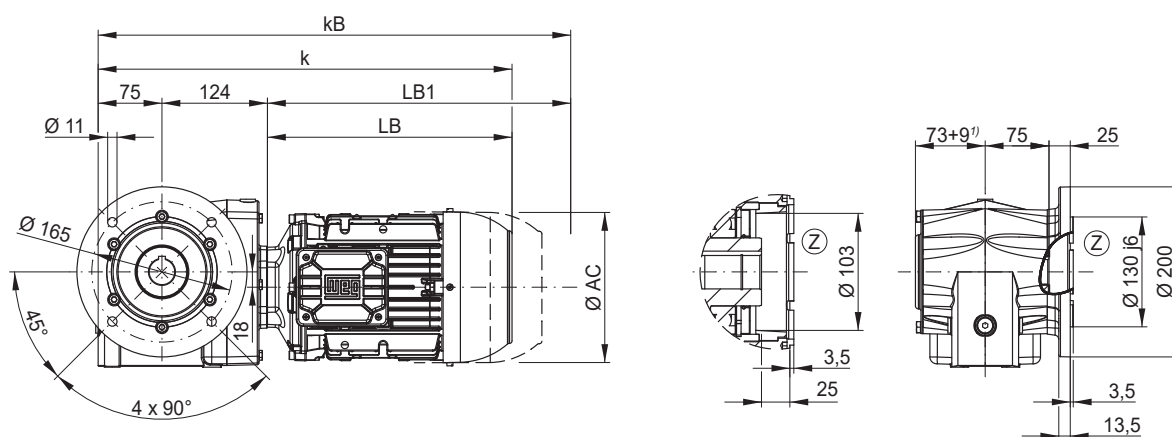


Motor fr. Dimension	63	71	80	L80	90S/L	100L	L100L
AC	126	141	159	159	178	199	199
AD	128	136	145	145	155	165	165
k	403	437	445	469	487	537	575
kB	447	486	503	527	560	621	659
LB	204	238	246	270	288	338	376
LB1	248	287	304	328	361	422	460

Motor dimension sheets see page 590. Description of motor lengths LB and LB1 see page 594.

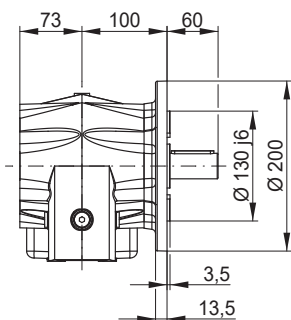
*Design SS(SB)/SF

SO052 - B5 flange execution with hollow shaft

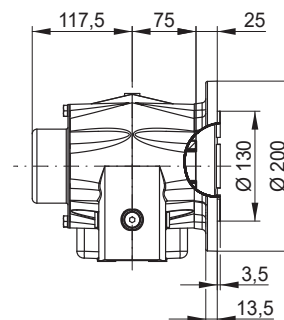


¹⁾ Incl. hollow shaft protection cap

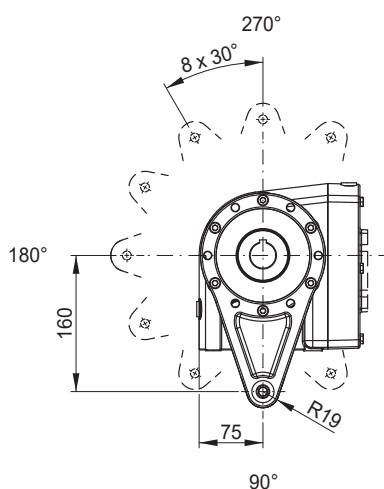
SF052 - B5 flange execution with output shaft



SP052 - B5 flange execution with hollow shaft and shrink disc



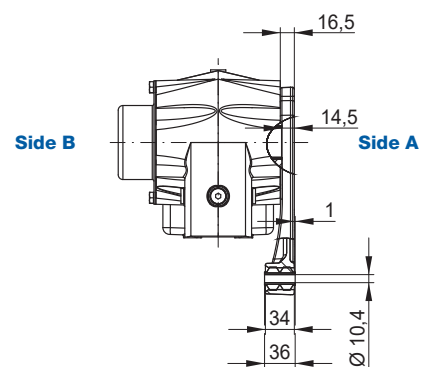
ST052 - Hollow shaft with torque arm **



Torque arm possible positions:
 $60^\circ, 90^\circ, 120^\circ, 150^\circ, 180^\circ, 210^\circ, 240^\circ, 270^\circ, 300^\circ$

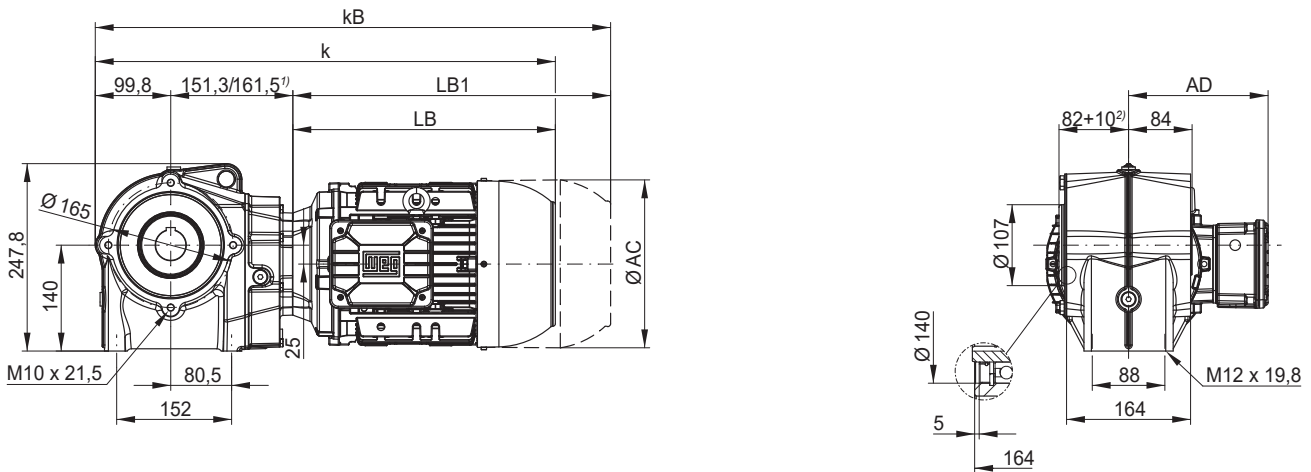
Dimensions in mm.

SU052 - Hollow shaft with shrink disc and torque arm **



** Torque arm may be mounted on side A or side B.

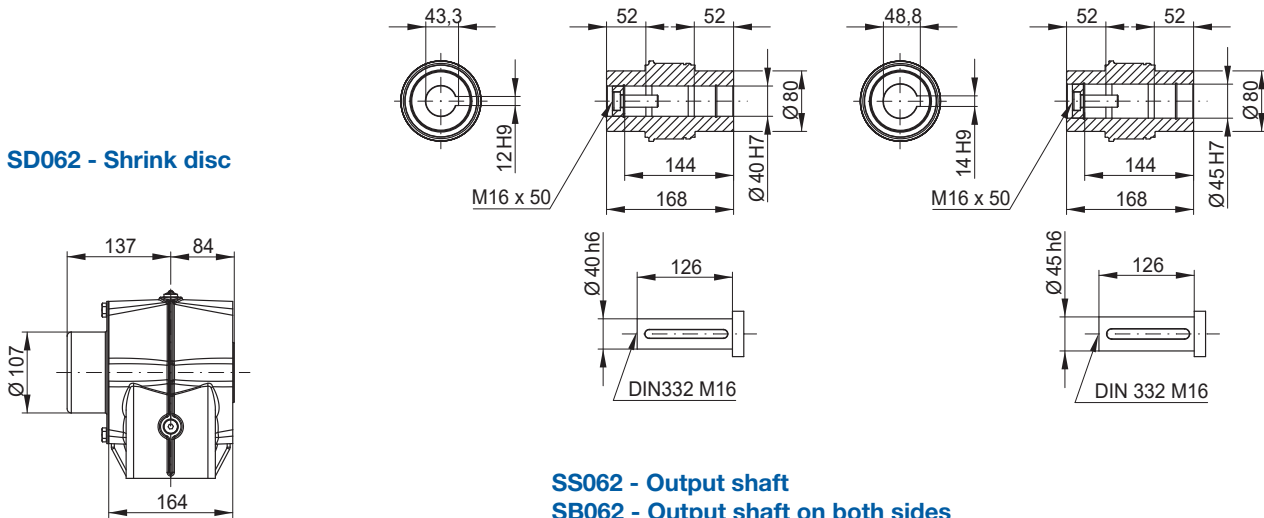
SH062 - Hollow shaft



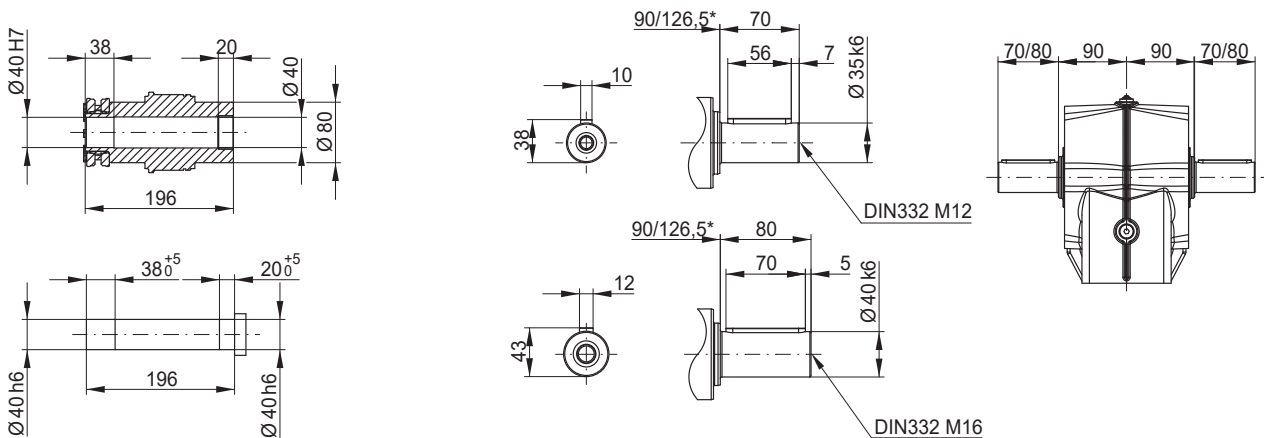
¹⁾ Longer value from motor frame size 112

²⁾ Incl. hollow shaft protection cap

SD062 - Shrink disc



SS062 - Output shaft SB062 - Output shaft on both sides

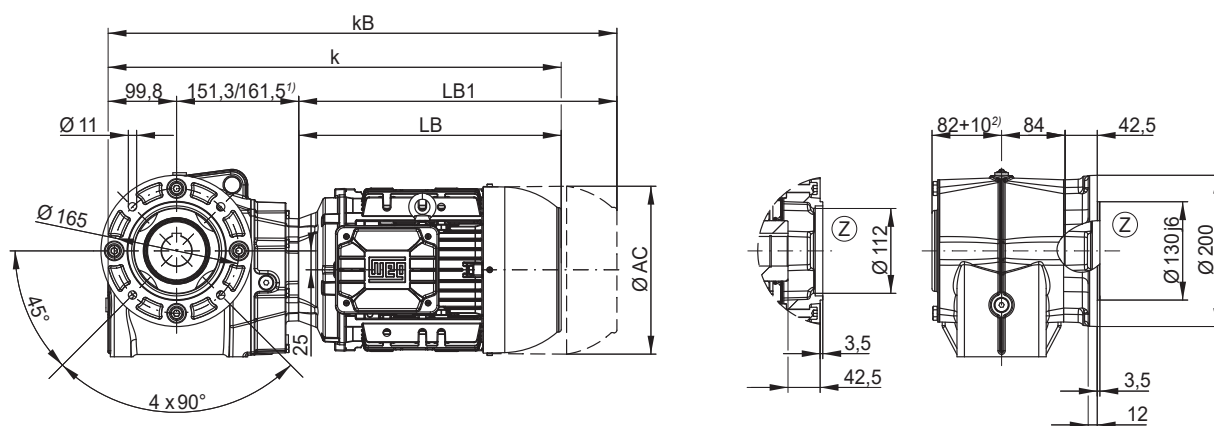


Motor fr.	63	71	80	L80	90S/L	100L	L100L	112M	132S,M	L132M
AC	126	141	159	159	178	199	199	221	261	261
AD	128	136	145	145	155	165	165	185	205	205
k	456	490	498	522	540	590	628	610	675	713
kB	500	539	556	580	613	674	712	697	793	831
LB	204	238	246	270	288	338	376	348	413	451
LB1	248	287	304	328	361	422	460	435	531	569

Motor dimension sheets see page 590. Description of motor lengths LB and LB1 see page 594.

*Design SS(SB)/SF

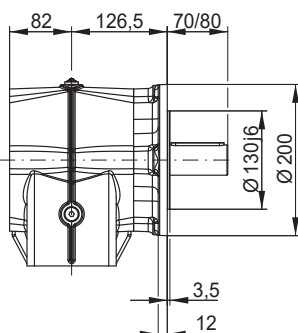
SO062 - B5 flange execution with hollow shaft



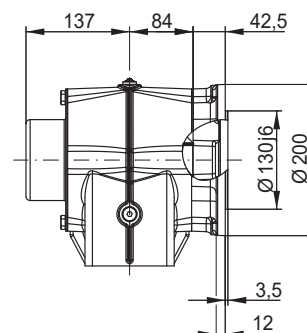
¹⁾ Longer value from motor frame size 112

²⁾ Incl. hollow shaft protection cap

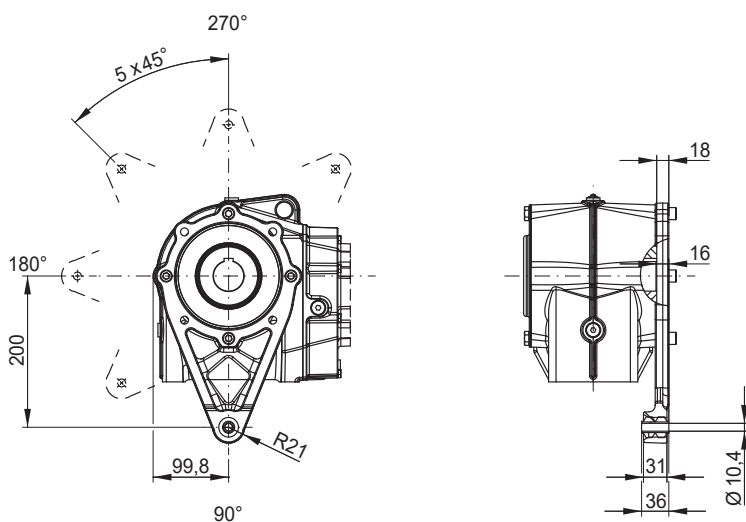
SF062 - B5 flange execution with output shaft



SP062 - B5 flange execution with hollow shaft and shrink disc

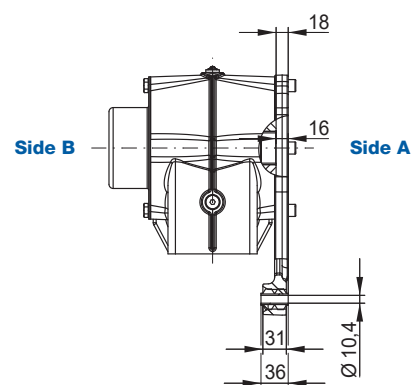


ST062 - Hollow shaft with torque arm **



Torque arm possible positions:
90°, 135°, 180°, 225°, 270°, 315°

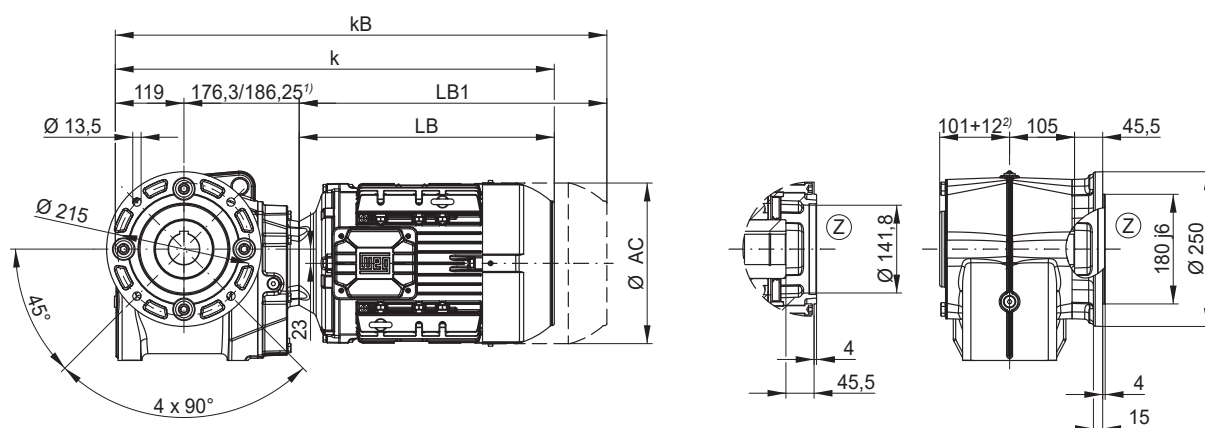
SU062 - Hollow shaft with shrink disc and torque arm **



Dimensions in mm.

** Torque arm may be mounted on side A or side B.

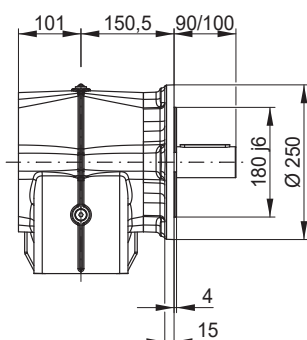
SO072 - B5 flange execution with hollow shaft



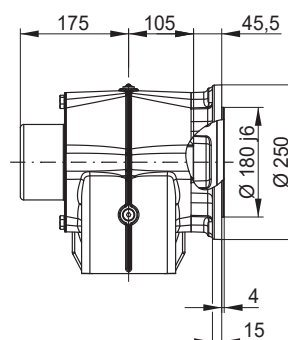
¹⁾ Longer value from motor frame size 112

²⁾ Incl. hollow shaft protection cap

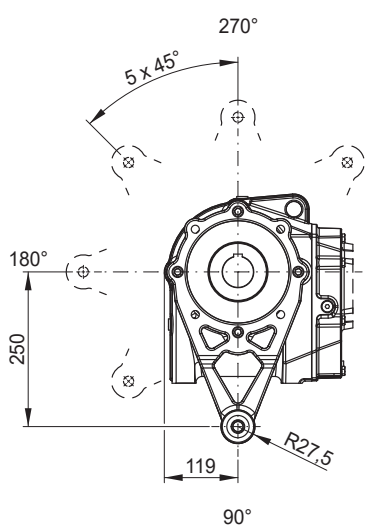
SF072 - B5 flange execution with output shaft



SP072 - B5 flange execution with hollow shaft and shrink disc



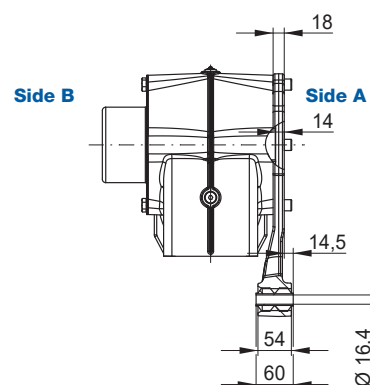
ST072 - Hollow shaft with torque arm **



Torque arm possible positions:
90°, 135°, 180°, 225°, 270°, 315°

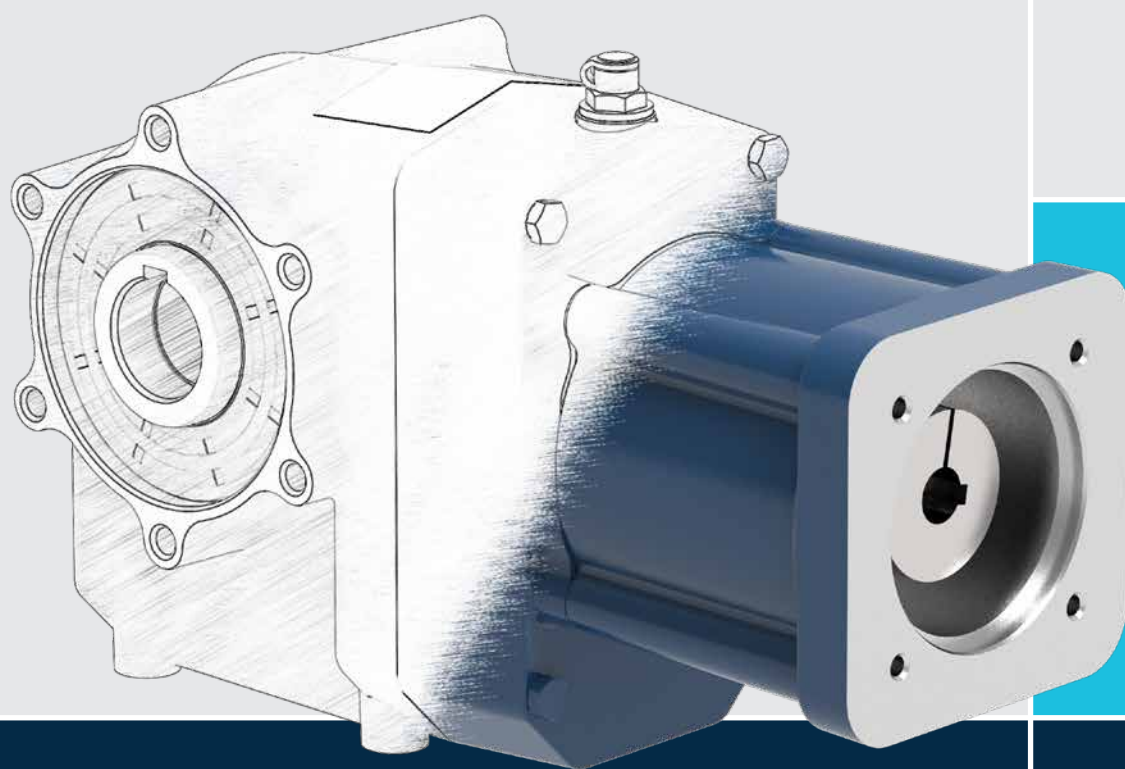
Dimensions in mm.

SU072 - Hollow shaft with shrink disc and torque arm **



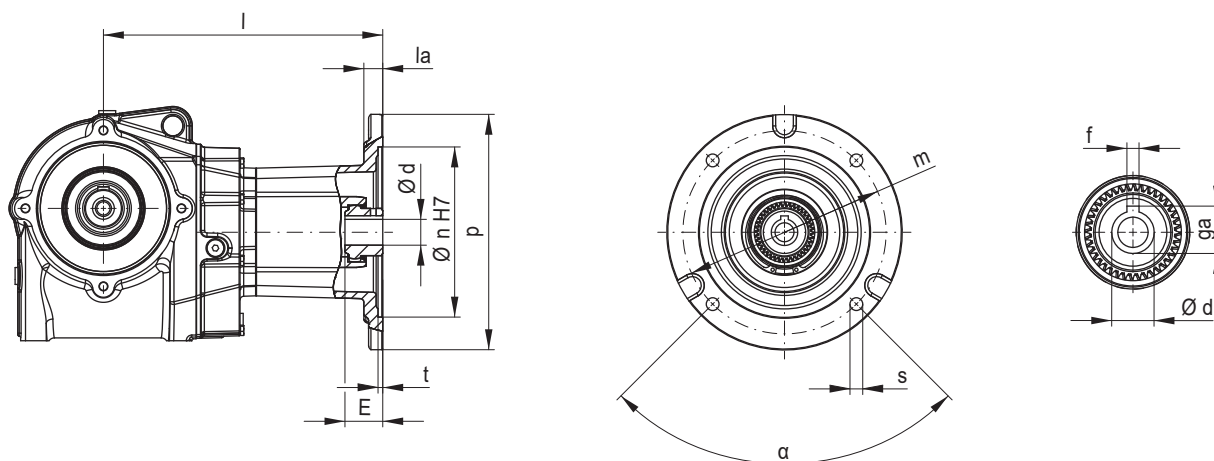
** Torque arm may be mounted on side A or side B.

Dimension sheets Input types



S

IEC Adapter I63 to I132



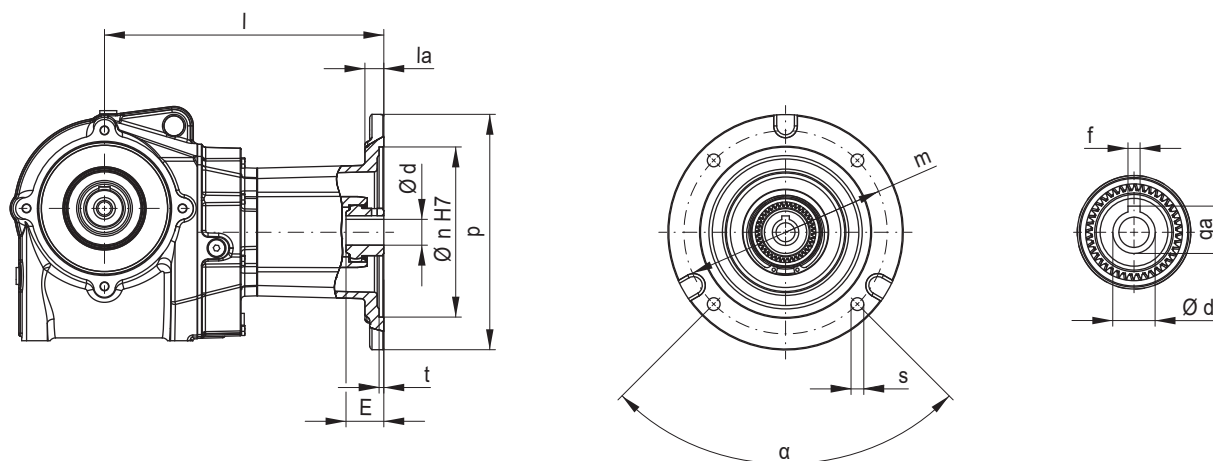
Type	I63	I71	I80	I90	I100	I112	I132
p	154	154	200	200	250	250	300
n	95	110	130	130	180	180	230
la	22.5	10	13	13	15	20	15
m	115	130	165	165	215	215	265
t	4.5	4.5	4.5	4.5	5	5	5
s	M8x16	M8x10	11	11	13.5	13.5	13.5
α	90	90	90	90	90	90	90
α ₁	35	45	45	45	45	45	45
d	11	14	19	24	28	28	38
f	4	5	6	8	8	8	10
ga	12.8	16.3	21.8	27.3	31.3	31.3	41.3
E ¹⁾	25	32	43	47.5	63	100	85.5

¹⁾ Maximum motor shaft length for motors with key

Gear unit size	I63	I71	I80	I90	I100	I112	I132
	l						
S03	141	141	169	169	200	-	-
S04	155	155	183	183	214	-	-
S05	156	156	184	184	215	-	-
S06	183.5	183.5	211.5	211.5	242.5	296	307
S07	208.5	208.5	236.5	236.5	267.5	320.5	331.5

Dimensions in mm.

NEMA Adapter N56 to N213/215



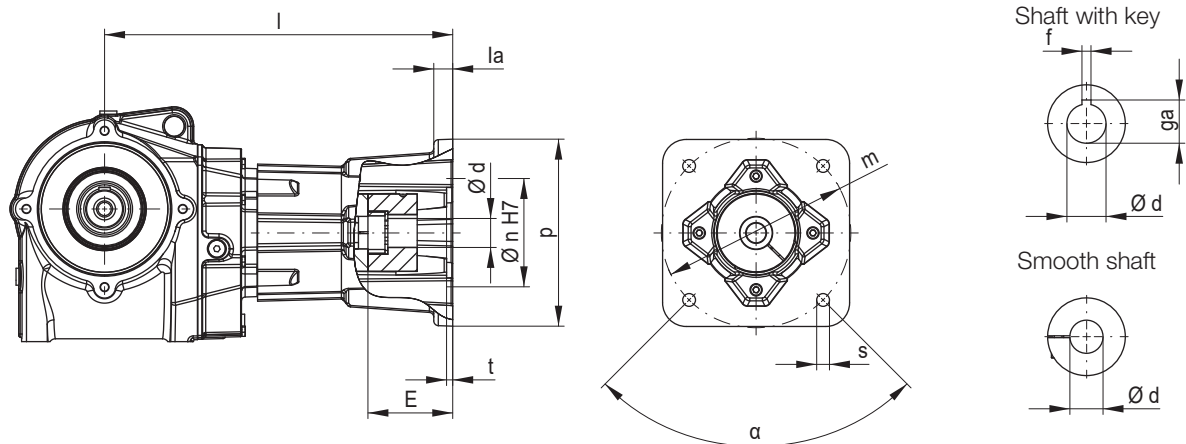
Type	N56	N143/145	N182	N184	N213/215
p	170	170	250	250	300
n	114.3	114.3	215.9	215.9	215.9
la	13	13	10	16.8	10
m	149.225	149.225	184.15	184.15	184.15
t	4.5	4.5	5	3.2	5
s	11	11	14	14	14
α	90	90	90	90	90
α _i	45	45	45	45	45
d	15.875	22.225	28.575	28.575	34.925
f	4.775	4.775	6.350	6.350	7.950
ga	18.008	24.486	31.521	31.521	38.557
E ¹⁾	55	55	67.5	96.8	80.5

¹⁾ Maximum motor shaft length for motors with key

Gear unit size	N56	N143/145	N182	N184	N213/215
	l				
S03	169	169	200	-	-
S04	183	183	214	-	-
S05	184	184	215	-	-
S06	211.5	211.5	242.5	296	307
S07	236.5	236.5	267.5	320.5	331.5

S

SERVO Adapter S92 to S190



Type	S92	S105	S114	S115	S130	S141	S142	S180	S189	S190									
p	101	144	144	144	144	144	144	197	197	197									
n	80	95	95	110	110	110	130	114.3	130	180									
la	17.5	31	31	31	31	31	31	35	32	38									
m	100	115	130	130	145	165	165	200	215	215									
t	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5									
s	M6x12	M8x16	M8x16	M8x16	M8x16	M8x16	M8x16	13.5	15	15									
α	90°	90°	90°	90°	90°	90°	90°	90°	90°	90°									
α ₁	45°	45°	45°	45°	45°	45°	45°	45°	45°	45°									
d ¹⁾	14	16	19	19	19	22	24	28	24	24	32	35	32	38	38				
f	5	5	6	6	6	8	8	8	8	8	10	10	10	10	10				
ga	16.3	18.3	21.8	21.8	21.8	27.3	21.8	27.3	21.8	24.8	27.3	31.3	27.3	27.3	35.3	38.3	35.3	41.3	41.3
E ²⁾	46	46	34	67	67	54	67	54	76	63	63	63	54	63	63	66	74	60	87
E ³⁾	46	46	46	67	67	67	67	67	76	76	76	63	67	76	63	87	74	60	87

¹⁾ Other shaft diameters on request

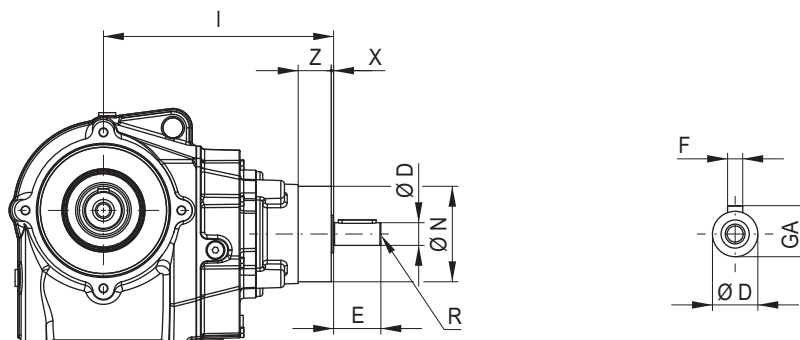
²⁾ Maximum motor shaft length for motors with key

³⁾ Maximum motor shaft length for motors with smooth shaft

Gear unit size	S92	S105	S114	S115	S130	S141	S142	S180	S189	S190
	l									
S03	206.5	254.5	254.5	254.5	254.5	254.5	254.5	-	-	-
S04	220.5	268.5	268.5	268.5	268.5	268.5	268.5	-	-	-
S05	221.5	269.5	269.5	269.5	269.5	269.5	269.5	-	-	-
S06	249	297	297	297	297	297	297	368	362	389
S07	274	322	322	322	322	322	322	392.5	386.5	413.5

Dimensions in mm.

Input Unit U2, U3

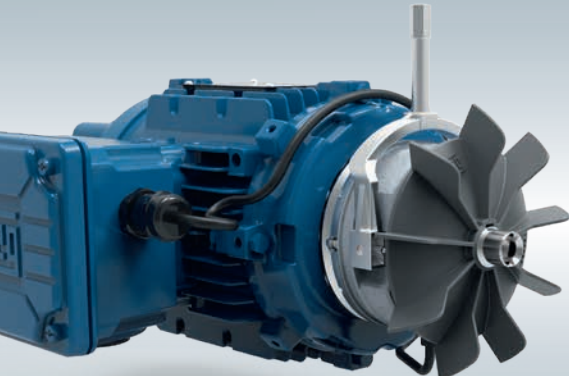


Type	Input shaft [mm]	
	19x40	24x50
	U2	U3
D	19	24
F	6	8
GA	21.5	27
E	40	50
N	73	101
X	2	2.5
Z	3	35
R	M6	M10

Tolerances		
Dimension name	ISO tolerance DIN EN ISO 286-2	
D	< Ø 55 mm	k6

Gear unit size	Input shaft [mm]	
	19x40	24x50
	U2	U3
	I	
S03	169	-
S04	183	-
S05	184	-
S06	211.5	244
S07	236.5	268.5

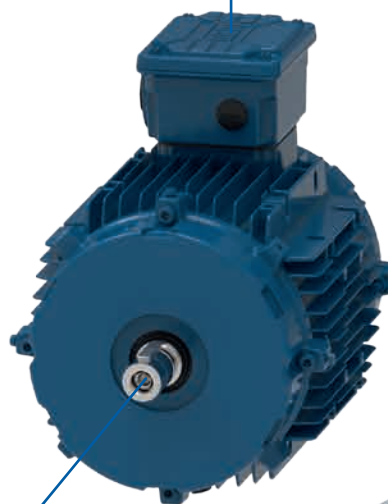
Modular System Motor



M



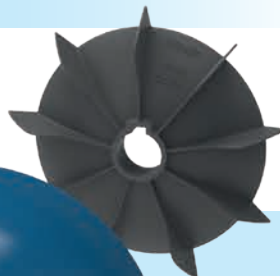
Terminal box designs
page 596



Brake systems
and back stops
page 599



Encoder systems
page 610



Ventilation systems
page 613

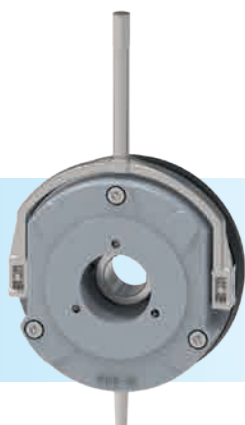




Motor series 14 and 11
with aluminium housing
(frame sizes 63 - 132)



Motor series 22
with cast iron housing
(frame sizes 160 - 280)



The modular motor system

Our motor system is an optimised and modularly designed kit. It includes harmonised modules like brakes, encoders, forced ventilation and connecting systems which are combined to the customer's requirements.

The significant advantage of this concept offers fast and reliable delivery times, not only to our local customers but also internationally, because WEG's competent sales network and assembling centres guarantee the availability of components worldwide.

Detailed description of the motor modules see from page 595.

The modular system motor

Five motor series are used for the modular system motor:

Multi-Voltage-Motor:

Motor series 14P (Aluminium), IEC frame sizes 63 to 80 (up to 0.55 kW)

Advantages

- Efficiency class: IE3
- Voltages:
 - 230/400 V - 50 Hz
 - 265/460 V - 60 Hz
- Frequency inverter operation up to 87/105 Hz
- Ambient temperature -20 bis +40 °C
- Nameplate with 50/60 Hz data
- Flexible adjustment of the terminal box
- Reinforced bearings (integral motor)
- Shaft system for immediate assembling of motor modules, like encoders, brakes, back stop, etc.
- Standard degree of protection IP55
- Thermal protection with bimetal switch and PTC thermistor
- Thermal class F
- System motor, prepared for flexible assembling of motor modules
- Certified for worldwide distribution: CE, UKCA, CSA, UL, EAC, CCC

EUSAS®-Motor:

Motor series 11P (Aluminium), IE3, IEC frame sizes 80 to 132 (0.75 - 9.2 kW)

Motor series 22P (Cast iron), IE3, IEC frame sizes 160 to 225 (11 - 55 kW)

Motor series 11S (Aluminium), IE4, IEC frame sizes 63 to 132 (0.12 - 5.5 kW)

Motor series 22S (Cast iron), IE4, IEC frame sizes 132 to 280 (7.5 - 110 kW)

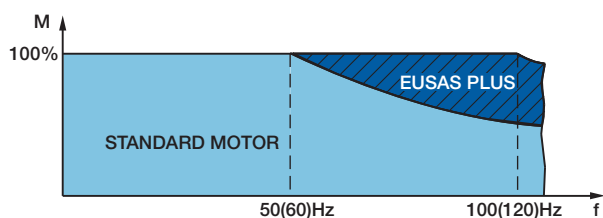
Advantages

- Efficiency class: IE3, IE4
- Wide-range winding
- Voltage switchable to all common world voltages (rated voltage):
 - 115-460 V - 50/60 Hz up to frame size 100
 - 200-690 V - 50/60 Hz frame sizes 112 to 280
- Frequency inverter operation 100/120 Hz
- Ambient temperature -20 bis +40 °C
- Nameplate with 50/60 Hz data
- Flexible adjustment of the terminal box
- Reinforced bearings (integral motor)
- Shaft system for immediate assembling of motor modules, like encoders, brakes, back stop, etc.
- Standard degree of protection IP55
- Thermal protection with bimetal switch and/or PTC thermistor
- Thermal class F
- System motor, prepared for flexible assembling of motor modules
- Certified for worldwide distribution: CE, UKCA, CSA, UL, EAC

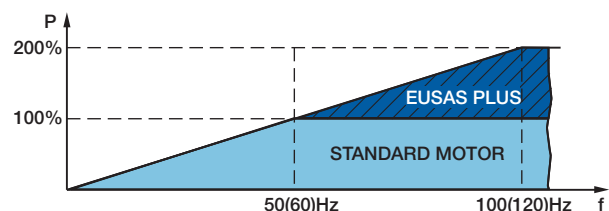
The ideal motor for frequency inverter operation

Switchable to 100/120 Hz. Simply switch over and use the double output.

The excellent combination of the modular system motor and variable speed drives by WEG (type CFW for various applications and decentralised motor drive MW500) enables drive systems with wide speed range.



Rated torque up to double rated speed



Two times rated power at double rated speed

Type code

11P-EX-L100L-04F-LT-TH-SH-K1-KB-MIP-BR..-SG-FL-SD

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- 1** Motor series: 14P = Aluminium motor in energy efficiency class IE3, frame sizes 63 - 80 (up to 0.55 kW)
 11P = Aluminium motor in energy efficiency class IE3, frame sizes 80 - 132 (0.75 - 9.2 kW)
 22P = Cast iron motor in energy efficiency class IE3, frame sizes 160 - 225 (11 - 55 kW)
 11S = Aluminium motor in energy efficiency class IE4, frame sizes 63 - 132 (0.12 - 5.5 kW)
 22S = Cast iron motor in energy efficiency class IE4, frame sizes 132 - 280 (7.5 - 110 kW)
- 2** ATEX execution: when operated in explosive atmospheres, see page 573
- 3** Stator length: L.
 .S
 .S/L
 .S/M
 .M
 .L
- 4** IEC frame size: 63 112 225
 71 132 250
 80 160 280
 90 180
 100 200
- 5** Number of poles: 04 = 4 poles
 06 = 6 poles
- 6** Power indicator: D
 E
 F
 G
- 7** High/Low temperature execution: see page 595
- 8** Temperature control: see page 595
- 9** Anti-condensation heating: see page 595
- 10** Climatic protection: see page 596
- 11** Drain: see page 596
- 12** Terminal box designs: see page 596
- 13** Brake systems, back stop: see page 599
- 14** Encoder systems: see page 610
- 15** Ventilation systems: see page 613
- 16** Additional modules: see page 615



Options

1. Basic execution

Description	Key	Page	IEC frame size														
			63	71	80	90	100	112	132	160	180	200	225	250	280		
Switchable voltage (4 connections)	-	573															
Temperature controller for switch off (+155 °C)	TH	595															
PTC thermistor protection for switch off (+155 °C)	TF	595															
Thermal class F (up to +155 °C)	-	573															
Fixed bearing NDE	-	-															
Fixed bearing DE	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Degree of protection IP55	-	17															
Certifications (CE, UKCA, EAC, UL, CSA: all / *CCC: up to 0.55 kW)	-	-	*	*	*												

2. Electrical options

Description	Key	Page	IEC frame size														
			63	71	80	90	100	112	132	160	180	200	225	250	280		
Special voltage SPECI-Volt	-	573															
Temperature controller for warning and switch off	2TH	595															
PTC thermistor protection for warning and switch off	2TF	595															
Temperature sensor KTY	KTY	595															
Temperature sensor Pt100	-	-															
Anti-condensation heating 230 V	SH	595	-														
Thermal class H (up to +180 °C)	-	-															

3. Mechanical options

Description	Key	Page	IEC frame size														
			63	71	80	90	100	112	132	160	180	200	225	250	280		
Degree of protection IP56	-	17															
Degree of protection IP65	-	17															
Degree of protection IP66	-	17															
Degree of protection IP67	-	17															
High temperature execution (max. +80 °C ambient temperature)	HT	595															
Low temperature execution	LT	595															
ATEX zone 2+22: II 3G Ex ec IIC T3 Gc / II 3D Ex tc IIIC T125°C Dc	EX	573															
Humidity protection K1	K1	596															
Corrosion protection K2	K2	596															
Drain	KB	596															
Multipin box	MIP	596															
Multi-plug-connect systems	MIG..	597															
Multi-plug-connect system for forced ventilation	MIG10-FL	597															
Non-ventilated without NDE shaft end	U	614															
Non-ventilated with NDE shaft end	UW	614															
Different position of the terminal box	-	-															
Relubrication	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

	Standard		Special execution (on request)
	Optional		Not available

4. Options - motor modules

Description	Key	Page	IEC frame size																
			63	71	80	90	100	112	132	160	180	200	225	250	280				
Spring loaded brake - IP55, 24 V	BR..	603																	
Spring loaded brake - IP55, 102 V	BR..	603																	
Spring loaded brake - IP55, 190 V, 195 V	BR..	603																	
Double spring loaded brake in low noise execution	BBRHGD..	604	-																
Totally closed spring loaded brake - IP66	BRGH..	605	-																
Manual release for brake	(BR)H..	603	1)																
Locking device for manual release	(BR)HA..	603	1)																
Corrosion protection IP55 for brake	(BR)R..	603																	
Dust protection IP65 for brake	(BR)S..	603	1)																
Corrosion and dust protection IP65 for brake	(BR)SR..	603	1)																
Brake in low noise execution	(BR)GD..	603	-																
Micro switch	(BR)M	603	2)	2)	2)														
Anti-condensation heating for brakes	-	605	-	-															
Fast excitation rectifier	-	607																	
Back stop KKM	KKM	609					-	-	-	-	-	-	-	-	-	-	-		
Back stop RSM	RSM	609	-	-	-	-													
Encoder outside the fan cover	I.	610																	
Encoder inside the fan cover	S.	610	-																
Encoder (1024 pulses, HTL/TTL, IP66)	.G	610	I.	S.															
Mating plug for encoder without cable	-	-	I.	S.															
Mating plug for encoder with cable	-	-	I.	S.															
SINCOS encoder	.C	610	-	-												I.	S.	I.	S.
Resolver	.R	610	-													-	-	-	
Special encoder	.A	611																	
SSI multiturn encoder	SS	611	-																
Heavy Duty encoder	SV	611	-	-	-														-
Forced ventilation (TEFV)	FL	613																	
Fly wheel fan	ZL	614	-									-	-	-	-	-	-	-	
Hand wheel	HR	615	-																-
Protection cap	SD	615																	
Protection cap for encoders	ID	615	-	-	-														
Second shaft end - module shaft	ZWM	616	-																
Second shaft end - solid shaft	ZWV	616															-	-	-

5. Additional options

Description	Key	Page	IEC frame size																
			63	71	80	90	100	112	132	160	180	200	225	250	280				
Special nameplate (aluminium)	-	-																	
Second nameplate (not fixed, aluminium or stainless steel)	-	-																	
Metal fan	ZM	614																	
Vibration severity grade "B" (reduced) according to DIN IEC 60034-14	-	573																	
Wide range grease (-40 °C to +175 °C)	-	-																	

1) not possible with 2 Nm brake

2) Micro switch not possible for totally closed brakes at 2 and 5 Nm

	Standard		Special execution (on request)
	Optional		Not available

General information - IE3 motors

Frame size	63	71	(L)80	90S/L	(L)100L	112M	(L)132M,S	160M,L	180M,L	200L	225S/M	
Mechanical features												
Mounting form	B14R						B5R					
Housing material	aluminium EN AC-46100						cast iron EN GJL-200					
Degree of protection	IP55											
Grounding	simple grounding - one inside the terminal box									double - in the terminal box and on the frame		
Cooling method	fan - IC411 (TEFC)											
Fan material	polypropylen										aluminium	
Fan cover material	Stahlblech											
Endshields material	aluminium EN AC-46100 *						cast iron EN GJL-200					
Drain	rubber drain plug											
Bearings	Locking	without bearing cap with circlip - NDE						without bearing cap with circlip - DE			internal + external bearing cap and spring washers - NDE	
	DE	6203 ZZ	6204 ZZ	6205 ZZ	6305 ZZ	6207 ZZ	6307 ZZ	6309 ZZ	6309 ZZ-C3	6312 ZZ-C3	6314 ZZ-C3	6314 ZZ-C3
	NDE	6201 ZZ	6203 ZZ	6203 ZZ	6205 ZZ	6206 ZZ	6206 ZZ	6308 ZZ	6209 ZZ-C3	6211 ZZ-C3	6212 ZZ-C3	6314 ZZ-C3
Shaft seal	Type	radial shaft seal										
	DE	17x30x7	20x30x7	25x40x7	25x40x7	35x52x7	35x52x7	45x60x8	45x60x8	60x90x10	60x90x10	60x90x10 / 70x90x10 **
	NDE	12x22x7	17x28x5	17x28x5	25x35x7	30x40x4	30x40x4	40x56x8	45x62x7	55x70x8	60x75x8	70x85x8
	Material	NBR										
Lubrication	Type of grease	Mobil Polyrex EM										
	Grease fitting	without grease fitting										
Terminal block	6 poles					9 poles						
Terminal box material	aluminium EN AC 47000						cast iron EN GJL-200					
Cable entry	Main	2 x M25x1.5				2 x M32x1.5		2 x M40x1.5		2 x M50x1.5	2 x M50x1.5	
	Accessory	2 x M16x1.5										
	Plug	threaded plug for transport and storage; cable gland optional										
Shaft material	1.0511/1.1191 – C40/C45E – AISI 1040/45										1.7225 - 42CrMo4 - AISI 4140	
Direction of rotation	both directions											
Vibration	class A											
Nameplate material	stainless steel 1.4301 (AISI 304)											
Flange	FC-120				FC-160			FR-200 FR-250 FR-300 FR-400 FR-550	FR-250 FR-300 FR-400 FR-550	FR-300 FR-400 FR-550	FR-400 FR-550	

Frame size	63	71	(L)80	90S/L	(L)100L	112M	(L)132M,S	160M,L	180M,L	200L	225S/M											
Electrical features																						
Power [kW] 4 poles	0.12	0.18	0.25	0.37	0.55	0.75	1.1	1.5	2.2	3.0	4.0	5.5	7.5	9.2	11	15	18.5	22	30	37	45	55
Voltage / Frequency	Δ	230 V (50Hz) 265 V (60Hz)						400 V (50 Hz) 460 V (60 Hz)														
	ΔΔ	-			115 V (50 Hz) 132 V (60Hz)			200 V (50 Hz) 230 V (60 Hz)														
	Y	400 V (50 Hz) 460 V (60 Hz)						690 V (50 Hz) -														
	YY	-			200 V (50 Hz) 230 V (60 Hz)			346 V (50 Hz) 400 V (60 Hz)														
Power [kW] 6 poles	0.12	0.18	0.25	0.37	0.55	0.75	1.1	1.5	2.2	3.0	4.0	5.5	-	-	-	-	-	-	-	-	-	-
Voltage / Frequency	Δ	230 V (50Hz) 265 V (60Hz)						400 V (50 Hz) 460 V (60 Hz)					-	-	-	-						
	ΔΔ	-			115 V (50 Hz) 132 V (60Hz)			200 V (50 Hz) 230 V (60 Hz)					-	-	-	-						
	Y	400 V (50 Hz) 460 V (60 Hz)						690 V (50 Hz) -					-	-	-	-						
	YY	-			200 V (50 Hz) 230 V (60 Hz)			346 V (50 Hz) 400 V (60 Hz)					-	-	-	-						
Efficiency class	IE3																					
Design	N																					
Winding	Impregnation	dip										continuous flow impregnation										
	Insulation class	F (DT 80K)																				

* Except frame sizes L100L and L132M: endshield (NDE) made from cast iron EN GJL-200

** 22S-225S/M-04F / 22S-225S/M-04G

General information - IE4 motors

Frame size	63	71	(L)80	(L)90S/L	100L	(L)112M	(L)132M,S	132M/L	160M,L	180M,L	200L	225S/M	250S/M	280S/M											
Mechanical features																									
Mounting form	B14R								B5R																
Housing material	aluminium EN AC-46100								cast iron EN GJL-200																
Degree of protection	IP55																								
Grounding	simple grounding - one inside the terminal box											double - in the terminal box and on the frame													
Cooling method	fan - IC411 (TEFC)																								
Fan material	polypropylen								aluminium		polypropylen		aluminium												
Fan cover material	sheet steel																								
Endshields material	aluminium EN AC-46100 *								cast iron EN GJL-200																
Drain	rubber drain plug																								
Bearings	Locking	without bearing cap with circlip - NDE								without bearing cap with circlip - DE			internal + external bearing cap and spring washers - NDE												
	DE	6203 ZZ	6204 ZZ	6205 ZZ	6305 ZZ	6207 ZZ	6307 ZZ	6309 ZZ	6309 ZZ	6309 ZZ-C3	6312 ZZ-C3	6314 ZZ-C3	6314 ZZ-C3	6316 ZZ-C3	6319 ZZ-C3										
	NDE	6201 ZZ	6203 ZZ	6203 ZZ	6205 ZZ	6206 ZZ	6206 ZZ	6308 ZZ	6308 ZZ	6209 ZZ-C3	6211 ZZ-C3	6212 ZZ-C3	6314 ZZ-C3	6314 ZZ-C3	6316 ZZ-C3										
Shaft seal	Type	radial shaft seal																							
	DE	17x30x7	20x30x7	25x40x7	25x40x7	35x52x7	35x52x7	45x60x8	45x60x8	45x60x8	60x90x10	60x90x10	60x90x10	70x90x10	95x115x13										
	NDE	12x22x7	17x28x5	17x28x5	25x35x7	30x40x4	30x40x4	40x56x8	40x56x8	45x62x7	55x70x8	60x75x8	70x85x8	70x85x8	80x100x10										
	Material	NBR													DE-FKM NDE-NBR										
Lubrication	Type of grease	Mobil Polyrex EM																							
	Grease fitting	without grease fitting																							
Terminal block	9 poles																								
Terminal box material	aluminium EN AC 47000								cast iron EN GJL-200																
Cable entry	Main	2 x M25x1.5				2 x M32x1.5				2 x M40x1.5		2 x M50x1.5		2 x M63x1.5											
	Accessory	2 x M16x1.5																							
	Plug	threaded plug for transport and storage; cable gland optional																							
Shaft material	1.0511/1.1191 – C40/C45E – AISI 1040/45											1.7225 - 42CrMo4 - AISI 4140													
Direction of rotation	both directions																								
Vibration	class A																								
Nameplate material	stainless steel 1.4301 (AISI 304)																								
Flange	FC-120						FC-160				FR-200 FR-250 FR-300 FR-400 FR-550	FR-250 FR-300 FR-400 FR-550	FR-300 FR-400 FR-550	FR-400 FR-550	FR-550	FR-400 FR-550									
Frame size	63	71	(L)80	(L)90S/L	100L	(L)112M	(L)132M,S	132M/L	160M,L	180M,L	200L	225S/M	250S/M	280S/M											
Electrical features																									
Power [kW] 4 poles	0.12	0.18	0.25	0.37	0.55	0.75	1.1	1.5	2.2	3.0	4.0	5.5	7.5	9.2	11	15	18.5	22	30	37	45	55	75	90	110
Efficiency class	IE4																								
Design	N																								
Voltage / Frequency	Δ	230 V (50Hz) 265 V (60Hz)						400 V (50 Hz) 460 V (60 Hz)																	
	ΔΔ	115 V (50 Hz) 132 V (60Hz)						200 V (50 Hz) 230 V (60 Hz)																	
	Y	400 V (50 Hz) 460 V (60 Hz)						690 V (50 Hz) -																	
	YY	200 V (50 Hz) 230 V (60 Hz)						346 V (50 Hz) 400 V (60 Hz)																	
Winding	Im- pregnation	dip											continuous flow impregnation												
	Insulation class	F (DT 80K)																							

* Except frame sizes L132M: endshield (NDE) made from cast iron EN GJL-200

1. Nameplate

The stainless steel plate is fixed on the frame and bears data for 50 Hz and 60 Hz. The information on the nameplate contains all relevant specifications of the product (see examples for motor frame sizes 80, 132 and 180).

W21		EFF(100%) 80Hz 0.918813-2020 80.8 0.2328999001-0020		15687478	
Electric Motor		IEC 60034-1			
~ 3 W21-AL80-04					
IP55	INS	CL F	ΔT	80 K	S1 SF 1.00 AMB 40°C
V	Hz	kW	RPM	A	PF
220 Δ / 380 Y	50	0.55	1430	2.16 / 1.25	0.83
230 Δ / 400 Y	50		1440	2.14 / 1.23	0.80
240 Δ / 415 Y	60		1445	2.13 / 1.23	0.77
- / 460 Y	60		1745	- / 1.09	0.78
IEC 60034-1					
NEMA Eff 81.1% 0.75HP 460 V 60Hz 1745 RPM					
1.09 A PF 0.78 DES A CODE M SF 1.00					
MOBIL POLYREX EM					
11 kg					
2753 Markt Piesting, Austria					

W21		14447191			
Electric Motor					
~ 3 AL132S-04					
IP55	INS	CL F	ΔT	80 K	S1 SF 1.00 AMB 40°C
V	Hz	kW	RPM	A	PF
200 Δ / 346 Y Y	50	5.5	1465	20.6 / 11.9	0.85
400 Δ / 690 Y	50			10.3 / 5.97	
230 Δ / 400 Y Y	60		1765	18.1 / 10.4	0.83
460 Δ / -	60			9.07 / -	
50Hz	IE3	90.7 (100%)	90.7 (75%)	90.0 (50%)	
60Hz		91.7 (100%)	91.0 (75%)	88.5 (50%)	
IEC 60034-1 MOD.TE0IAOX0\$0000302360					
NEMA Eff 91.7% 7.5HP 460 V 60Hz 1765 RPM					
9.07 A PF 0.83 DES A CODE K SF 1.15 CC029A					
MOBIL POLYREX EM					
53 kg					
2753 Markt Piesting, Austria					

W22 Premium		MODEL M430220018G48R30010G							
UKAC E EAC		3PT9 US LISTED							
MOD.TE1BFOX0\$		IEC 60034-1							
~ 3 180L-04 IP55 INS CL F ΔT 80 K S1 SF 1.00 AMB 40°C									
V	Hz	kW	RPM	A	PF	Eff	100%	75%	50%
200 Δ / 346 Y Y	50		1475	82.1 / 47.5	0.83	IE3	93.2	93.0	92.3
400 Δ / 690 Y	50			41.0 / 23.8					
230 Δ / 400 Y Y	60		1780	72.0 / 41.4	0.82		93.6	93.2	92.1
460 Δ / -	60			36.0 / -					
MOBIL POLYREX EM				2753 Markt Piesting, Austria		NEMA Eff 93.6% 30HP 460 V 60Hz 1780 RPM			
MOBIL POLYREX EM						36.0 A PF 0.82 Des A Code K SF 1.00 CC029A			
						Alt 1000 m.a.s.l. 206 kg			

2. Voltage and frequency fluctuations

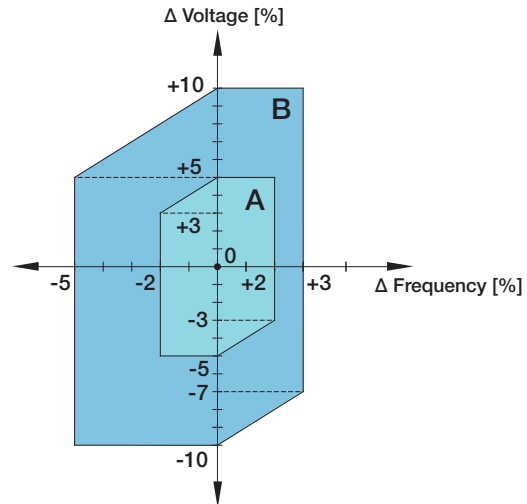
According to DIN EN 60034-1, a distinction is made between range A and range B (outside A) for voltage and frequency fluctuations. Range A and range B describe the permissible range in which frequency and voltage levels are permitted to deviate from the relevant measurement point (see illustration). The coordinate mean point "0" identifies the measurement point for the frequency and voltage in each case. The motor must be able to issue the rated torque in both ranges A and B.

Range A

In continuous operation in range A, the characteristics are permitted to vary from the rated operation, and the heating at the limits of range A can be around 10 K higher.

Range B

The deviations from the characteristics are permitted to be greater than in range A, the heating levels can be higher than at the measurement point. Duration and frequency of operation in range B should be limited. Corrective measures, e.g. power reduction, should be provided. If a machine has multiple rated voltages or a rated voltage range, the permissible voltage and frequency fluctuations apply for each individual value of the rated voltage.



Ranges A and B according to DIN EN 60034-1

3. Modes of operation

Duty type according to DIN EN 60034-1 and VDE 0530-1.

The duty type is designated by the abbreviations S1 to S10. For the duty types S4, S5 and S7 the duty cycles/hour (c/h) and the factor of inertia F_I should also be stated at the bottom.

The factor of inertia F_I is the ratio of the total load moment of inertia (referred to the motor shaft) and the motor moment of inertia, to the motor moment of inertia, i.e.

$$F_I = \frac{\sum J_{\text{ex,red}} + J_{\text{mot}}}{J_{\text{mot}}}$$

Definition		Example
S1	Continuous running duty with constant load	S1
S2	Short-time duty with constant load Duration of operation under rated conditions (recommended values: 10, 30, 60 or 90 min)	S2 10 min
S3	Intermittent periodic duty. Motor temperature not affected by starting operation Cyclic duration factor (recommended values: 15, 25, 40 or 60 %): Cycle duration (10 min unless otherwise stated)	S3 25 % 60 min
S4	Intermittent periodic duty. Motor temperature affected by starting operation Cyclic duration factor (recommended values: 15, 25, 40 or 60 %): Indication of the duty cycles per hour and of the factor of inertia F_I	S4 40 % 200, $F_I=2$
S5	Intermittent periodic duty. Motor temperature affected by starting operation and electric braking Cyclic duration factor (recommended values: 15, 25, 40 or 60 %): Indication of the duty cycles per hour and of the factor of inertia F_I	S5 15 % 300, $F_I=1$
S6	Continuous operation periodic duty. Cyclic duration factor (recommended values: 15, 25, 40 or 60 %): Cycle duration (10 min unless otherwise stated)	S6 25 % 60 min
S7	Continuous operation with starting and electric braking Indication of the duty cycles per hour and of the factor of inertia F_I	S7 200, $F_I=1$
S8	Continuous operation with related load/speed changes (Sequence of similar cycles) Speeds during the duty cycle Periods for which these speeds are maintained during the duty cycle Indication of the factor of inertia F_I	S8 3000 ^{min-1} , 10 min 1500 ^{min-1} , 15 min $F_I=1.5$
S9	Continuous operation duty with unrelated load/speed changes	S9
S10	Duty with discrete constant loads and speed	S10 $F_I=0.6$

Legend see page 606.

4. Rated power according to VDE 0530-1

The listed rated power of the motor corresponds to the output power according to VDE 0530-1 for continuous operation S1, frequency 50/60 Hz, max. ambient temperature +40 °C, max. altitude 1000 m above sea level.

According to this standard at rated values (voltage and frequency) the motors may be overloaded for two minutes by 1.5 times the rated current, without damage of the winding.

The motors are calculated by rated values according to thermal class B, but produced in class F and by operation with rated values fit for higher loads:

- At rated power and rated voltage the ambient temperature may be increased from +40 °C to +60 °C.
- Provided that ambient temperature does not exceed +40 °C, the normal capacity in continuous operation can be increased by appr. 10 %.

All technical data stated applies to rated frequency of 50 Hz and supply voltage of 400 V rated voltage at rated power. If the load changes, the stated values will deviate to higher or lower.

5. Power correction factors

S2			
Time [min]	Motor frame size	Poles	
		2	4-8
15	63 - 132	1.20	1.25
30		1.05	1.10
60		1.00	1.00
15	160 - 200	1.40	1.45
30		1.20	1.25
60		1.10	1.10
15	225 - 280	1.45	1.45
30		1.30	1.30
60		1.15	1.15

- Factors for low voltage safe area motors with insulation class F/B (ΔT_{80K})
 - The breakdown torque should be at least 30 % higher than factors

S3			
DC [%]	Motor frame size	Poles	
		2	4-8
15	63 - 132	1.15	1.40
25		1.10	1.30
40		1.05	1.20
60		1.03	1.10
15	160 - 200	1.30	1.40
25		1.20	1.30
40		1.10	1.20
60		1.05	1.10
15	225 - 280	1.35	1.40
25		1.25	1.30
40		1.15	1.20
60		1.05	1.10

S6			
DC [%]	Motor frame size	Poles	
		2	4-8
15	63 - 132	1.20	1.30
25		1.15	1.25
40		1.10	1.20
60		1.05	1.15
15	160 - 200	1.25	1.30
25		1.20	1.25
40		1.15	1.20
60		1.10	1.15
15	225 - 280	1.30	1.35
25		1.25	1.30
40		1.15	1.25
60		1.10	1.15

6. Torque

The motors are fitted with squirrel-cage rotors suitable for direct online starting. The values of starting torque and breakdown torque, expressed as a multiple of the rated torque, are given in the performance data. A deviation in the voltage from rated value changes the torques as an approximate function of the square of the voltages.

7. Efficiency class

Standard IEC 60034-30 defines uniform efficiency classes, valid for 2, 4, 6 and 8 pole asynchronous motors (50/60 Hz) with output powers of 0.12 kW to 1,000 kW. This standard divides 3-phase induction motors with cage rotor in efficiency classes IE1=standard efficiency, IE2=high efficiency, IE3=premium efficiency and IE4=super premium efficiency. Our motors are labelled with efficiency class and factor on the nameplate.

8. Motor protection

The correct selection of protective equipment determines essentially the operation reliability and service life of motors. Current dependent protection and thermal protective devices are available. Fuses do not protect the motor against overloads, they only protect the supply cables or switchboards against short circuits.

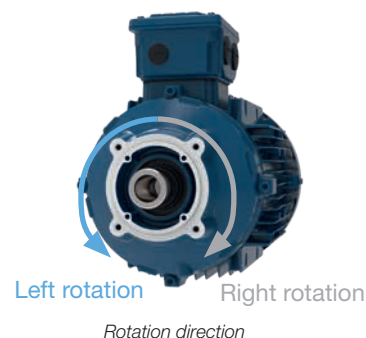
9. Overload protection (protection relay)

It is recommended to use starters with thermal overload protection. The overloads should be adjusted to the rated current shown on the nameplate. Thermal protective devices (thermistors in windings) see page 595.

10. Speed and rotation direction

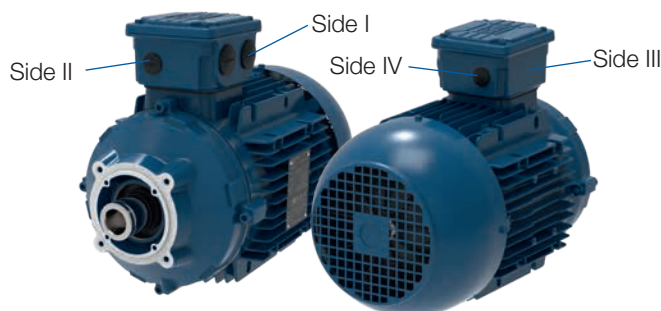
The rated speed is valid for the rated dates (voltage, frequency). The synchronous speed depends on the line frequency.

The motors are able for operation in both directions. By connection of U1, V1, W1 to L1, L2, L3 the rotation will be to the right if you look at the shaft from the drive-side. Left direction can be easily made by changing of two wires.



11. Cable entry

For all frames, the terminal box can be rotated in 90° increments. Terminal boxes are not delivered with cable glands in standard. Motors are supplied with plastic threaded plugs in the cable entries to maintain the degree of protection during transport and storage. In order to guarantee the degree of protection, cable entries must comply with at least the same degree of protection indicated on the motor nameplate.



Side designation for cable entries

12. Motors for the Ex area according to Directive 2014/34/EU

The modular integral motors can be used in both safe area applications and explosion-proof areas. The motors are certified for category 3, zone 2+22.

Zone 2: II 3G Ex ec IIC T3 Gc
 Zone 22: II 3D Ex tc IIIC T125°C Dc

The protection types in this case are increased safety (Ex ec) and protection by means of housing (Ex tc). The motors can be used in a temperature range of -20 to +40 °C.

If temperatures deviate or additional motor options (brakes, encoders, etc.) are required, please contact us beforehand.

13. Cooling

The motors are totally enclosed fan cooled (TEFC) by means of external surface ventilation (IC411, as per IEC 60034-6). Maximum ambient temperature +40 °C. Please check the minimum distance "Y" (see dimension sheets from page 590) between cover and wall by mounting the motor.

▪ Integral fans (TEFC, IC411)

Particular attention has been dedicated to the shape in order to reduce noise and improve the efficiency of the motor. Radial construction has been selected to allow rotation in both directions.

▪ Fan cover

In treated steel plate, properly profiled to improve efficiency and reduce the noise produced by the fan.

▪ Forced ventilation (TEFV, IC416) see also page 613

For special operating conditions, e.g. increased permissible number of operations per hour or variable speed operation, the motors of IEC sizes 63 to 200 can be supplied with forced ventilation by means of a separately fitted fan motor.

14. Insulation

The motors in this catalogue comply with the requirements of thermal class F. All windings are impregnated with varnish with a high mechanical strength. The maximum temperature of the insulation is, according to thermal class F, at +155 °C. The motors are utilised at rated values according to thermal class B (+130 °C). Copper wire insulation and the impregnation varnish have a temperature index class F and therefore there is a large margin of safety in addition to high overload capacity. Motors from frame size 160 are equipped with the WISE® insulation system of the new W22 motor range by WEG.

15. Noise levels

Noise measurements were taken in accordance with standard IEC 60034-9 (see table to the right).

Frame size	Noise level - dB(A), Distance: 1 meter			
	50 Hz		60 Hz	
	4p	6p	4p	6p
63	44	43	48	47
71	43	43	47	47
80	44	43	48	47
90	49	45	51	49
100	53	44	54	53
112	56	52	56	52
132	56	53	58	55
160	61	-	64	-
180	61	-	64	-
200	65	-	68	-
225	66	-	70	-
250	64	-	68	-
280	69	-	73	-

16. Balancing of rotors

Motors comply with vibration strength level "A" according to standard IEC 60034-14. On request, motors may also be balanced according to level "B".

17. Shaft ends

Shaft ends of motors in frame sizes 63 up to 132 are equipped with a conical bore and do not have a key, while the frame sizes 160 to 250 have a shaft with closed end keyway. On the non-driven side, modular motors have a system shaft to mount motor modules, such as brakes, encoders, back stops, etc.

18. Voltage, current and frequency

In standard execution the motors are delivered with following rated voltages: see chapter 19 (basic connection).

Special voltages

Motors for special voltages and/or frequencies are available on request.

Speed and connection

Tolerance of the motor speed according to IEC 60034. Terminal board connection see page 574.

Connection

▪ Direct connection

The starting torque in direct connection amounts to 160 to 330 % of the rated torque, depending on power and number of poles. The starting current is about 2.5 to 8 times of the rated current.

▪ Star-delta starting

The star-delta (Y-D) starting is an easy way to reduce the starting current and starting torque. Motors can be started with this starting method whenever the supply voltage corresponds to the rated voltage of the motors in delta connections. Up from frame size 112 the standard modular motors are supplied with windings designed for this starting method (e.g. 400 V D / 690 V Y). A Y-D-starting is only possible with delta service connection (this shall be considered when selecting a motor!), as the motor is first Y-connected and is changed over to D-connection after the run-up phase. At Y-D-starting, the starting currents and torques will be reduced to about 1/3 of the values produced in case of direct-online starting. Attention should be paid to the fact that a current impulse is produced when changing over to D-connection.

19. Electrical connection

IE3: Motor series 14P (IEC frame sizes 63 to 80)

Possible connection		Rated voltage*		Frequency inverter operation	
		Rated power P_N	Increased rated power $1,2 \times P_N$		
	Delta	230 V at 50 Hz 265 V at 60 Hz	- 265 V at 60 Hz		400 V, 87 Hz
	Star (basic connection)	400 V at 50 Hz 460 V at 60 Hz	- 460 V at 60 Hz	-	-

IE3: Motor series 11P (4 poles: IEC frame sizes 80 to 100; 6 poles: IEC frame sizes 90 to 112)

IE4: Motor series 11S (IEC frame sizes 63 to 100)

Possible connection		Rated voltage*		Frequency inverter operation	
		Rated power P_N	Increased rated power $1,2 \times P_N$		
	Delta	230 V at 50 Hz 265 V at 60 Hz	- 265 V at 60 Hz		400 V, 87 Hz
	Delta - Delta	115 V at 50 Hz 132 V at 60 Hz	- 132 V at 60 Hz		230 V, 100 Hz
	Star (basic connection))	400 V at 50 Hz 460 V at 60 Hz	- 460 V at 60 Hz		400 V, 100 Hz
	Star - Star	200 V at 50 Hz 230 V at 60 Hz	- 230 V at 60 Hz		460 V, 120 Hz

IE3: Motor series 11P and 22P (4 poles: IEC frame sizes 112 to 225; 6 poles: IEC frame size 132)

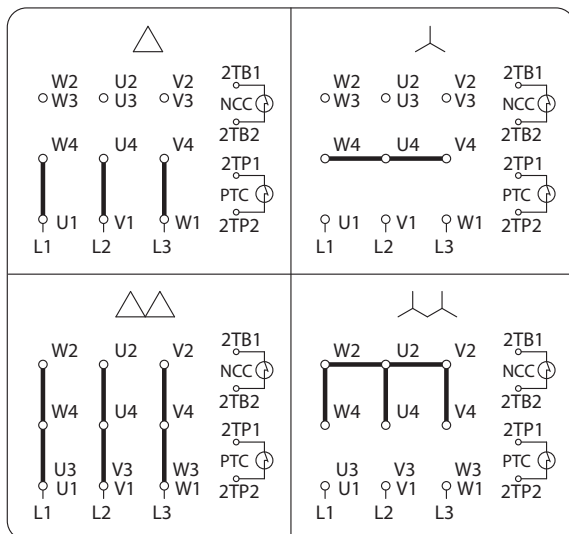
IE4: Motor series 11S and 22S (IEC frame sizes 112 to 280)

Possible connection		Rated voltage*		Frequency inverter operation	
		Rated power P_N	Increased rated power $1,2 \times P_N$		
	Delta (basic connection)	400 V at 50 Hz 460 V at 60 Hz	- 460 V at 60 Hz		400 V, 100 Hz
	Delta - Delta	200 V at 50 Hz 230 V at 60 Hz	- 230 V at 60 Hz		460 V, 120 Hz
	Star	690 V at 50 Hz -	- -		460 V, 120 Hz
	Star - Star	346 V at 50 Hz 400 V at 60 Hz	- 400 V at 60 Hz		460 V, 120 Hz

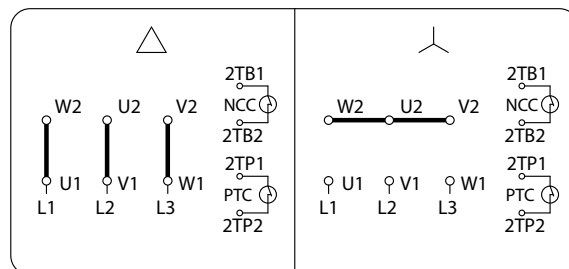
* Tolerances of rated voltages in compliance with range A according to DIN EN 60034-1 (see page 570)

Terminal board connection

Motor series 11P/22P and 11S/22S



Motor series 14P



Bimetal switch (2TB1/2TB2) only available for motor series 11

20. Variable speed drive application

The stator windings of the motors are wound with class F insulation (class H optional) and are suitable for either DOL starting or - regarding the limits shown in the table below - via a variable speed drive.

Rated voltage				
220-240/380-415 V (50 Hz) 400-460 V (60 Hz)				
Motor rated voltage	Voltage spikes	dV/dt *	Rise time *	Time between pulses
	At motor terminals (phase-phase)	At motor terminals (phase-phase)		
$V_{rated} < 460 \text{ V}$	$\leq 1600 \text{ V}$	$\leq 5200 \text{ V}/\mu\text{s}$	$\geq 0.1 \mu\text{s}$	$\geq 6 \mu\text{s}$
$460 \text{ V} \leq V_{rated} < 575 \text{ V}$	$\leq 2000 \text{ V}$	$\leq 6500 \text{ V}/\mu\text{s}$		
$575 \text{ V} \leq V_{rated} \leq 1000 \text{ V}$	$\leq 2400 \text{ V}$	$\leq 7800 \text{ V}/\mu\text{s}$		

* dV/dt and rise time definition according to NEMA MG1 - part 30

Notes:

- In order to protect the motor insulation system, the maximum recommended switching frequency is 5 kHz.
- If one or more of the above conditions is not attended, a filter (load reactor or dV/dt filter) must be installed in the output of the VSD.
- General purpose motors with rated voltage greater than 575 V, which at the time of purchase did not have any indication of operation with VSD, are able to withstand the electrical limits set in the table above for rated voltage up to 575 V. If such conditions are not fully satisfied, output filters must be used.
- General purpose motors of the dual voltage type, for example 400/690 V or 380/660 V, which at the time of purchase did not have any indication of operation with VSD, are able to be driven by a VSD in the higher voltage only if the limits set in the table above for rated voltage up to 460 V are fully attended in the application. Otherwise, a load reactor or a dV/dt filter must be installed in the VSD output.

Electrical basic data

Notes for electrical basic data

The technical data according to selection tables (starting current, torques, power factor, etc.) are valid for the rated values, that means for the rated voltage and rated frequency.

If the motors are running on higher or lower voltage within the wide range voltage, the stator winding will be utilised according to thermal class F. In these cases a power increase in accordance to a. and b. on page 571 is not possible.

The design of the wide range winding permits supply voltage deviations in the indicated wide range voltage of $\pm 5\%$ without reduction of the power.

Series	IEC frame size	Type	1	2	3					4	5	6			7	8	9	10	11	12
			P_N [kW]	n_N [min ⁻¹]	I_N at 115 V [A]	I_N at 200 V [A]	I_N at 230 V [A]	I_N at 400 V [A]	I_N at 690 V [A]	$\frac{I_A}{I_N}$ at 400 V	IE class	η 4/4 [%]	η 3/4 [%]	η 1/2 [%]	$\cos\varphi$	M_N [Nm]	$\frac{M_A}{M_N}$	$\frac{M_K}{M_N}$	J_{mot} [kgm ²]	m [kg]

Type	P_N [kW]	at 380 V						at 420 V						Frequency inverter operation						Brake		
		at 380 V		at 380 V		at 380 V		at 420 V		at 420 V		at 420 V		400 V / 87 Hz		400 V / 100 Hz		M_B	J_B	m		
		I_N [A]	$\frac{M_A}{M_N}$	$\frac{M_K}{M_N}$	I_N [A]	$\frac{M_A}{M_N}$	$\frac{M_K}{M_N}$	I_N [A]	$\frac{M_A}{M_N}$	$\frac{M_K}{M_N}$	P_N [kW]	n_N [min ⁻¹]	I_N [A]	P_N [kW]	n_N [min ⁻¹]	I_N [A]	[Nm]	$\times 10^{-3}$ [kgm ²]	[kg]			

- 1 P_N = Rated power
- 2 n_N = Rated speed
- 3 I_N = Rated current
- 4 I_A/I_N = Ratio of starting current to rated current
- 5 IE class = Efficiency class
- 6 η 4/4 (3/4, 1/2) = Efficiency at rated power, voltage and frequency
- 7 $\cos\varphi$ = Power factor
- 8 M_N = Rated torque
- 9 M_A/M_N = Ratio of starting torque to rated torque
- 10 M_K/M_N = Ratio of sweeping torque to rated torque
- 11 J_{mot} = Motor moment of inertia
- 12 m = Weight of the motor
- 13 M_B = Braking torque
- 14 J_B = Brake moment of inertia
- 15 m = Weight of the motor brake



4 Poles, 1500 min⁻¹, 50 Hz - IE3

Series	IEC frame size	Type	P_N	n_N	I_N	I_N	I_N	I_N	I_N	$\frac{I_A}{I_N}$	IE class	η	η	η	$\cos\varphi$	M_N	$\frac{M_A}{M_N}$	$\frac{M_K}{M_N}$	J_{mot}	m
			[kW]	[min ⁻¹]	at 115 V [A]	at 200 V [A]	at 230 V [A]	at 400 V [A]	at 690 V [A]	at 400 V		4/4 [%]	3/4 [%]	1/2 [%]						
14P	63	14P-63-04E	0.12	1405	-	-	0.68	0.39	-	5.5	IE3	64.8	60.0	53.0	0.68	0.83	2.8	3.5	0.0004	5.8
		14P-63-04F	0.18	1380	-	-	0.90	0.52	-	4.3	IE3	69.9	67.0	65.0	0.72	1.25	2.2	2.2	0.0006	6.0
	71	14P-71-04E	0.25	1380	-	-	1.19	0.68	-	4.8	IE3	73.5	72.0	69.0	0.72	1.76	2.3	2.3	0.0007	6.9
		14P-71-04F	0.37	1395	-	-	1.74	1.00	-	4.8	IE3	77.3	76.8	76.3	0.69	2.53	2.9	3.0	0.0008	7.8
	80	14P-80-04E	0.55	1420	-	-	2.14	1.23	-	6.6	IE3	80.8	79.0	77.0	0.80	3.70	2.8	3.0	0.0026	10.1
11P	80	11P-80-04F	0.75	1430	5.70	3.28	2.85	1.64	-	7.0	IE3	82.5	82.0	80.0	0.80	5.01	3.2	3.4	0.0032	11.6
	90	11P-90S/L-04E	1.1	1455	8.35	4.80	4.17	2.40	-	7.6	IE3	84.8	84.5	83.0	0.78	7.22	2.5	3.3	0.0055	15.8
		11P-90S/L-04F	1.5	1455	11.2	6.42	5.58	3.21	-	7.4	IE3	85.5	85.0	84.0	0.79	9.88	2.6	3.4	0.0066	17.4
	100	11P-100L-04E	2.2	1435	16.3	9.40	8.15	4.70	-	7.6	IE3	86.7	86.5	85.0	0.78	14.6	2.5	3.0	0.0090	27.0
		11P-L100L-04F	3.0	1440	21.9	12.6	11.0	6.31	-	7.8	IE3	88.0	88.0	87.0	0.78	19.9	3.5	3.7	0.0120	33.6
	112	11P-112M-04E	4.0	1450	-	16.4	-	8.20	4.75	7.0	IE3	89.1	89.1	88.7	0.79	26.4	2.3	3.1	0.0182	34.5
	132	11P-132S-04E	5.5	1465	-	20.6	-	10.3	5.97	8.5	IE3	90.7	90.7	90.0	0.85	35.9	2.4	3.4	0.0528	53.4
		11P-L132M-04F	7.5	1465	-	28.4	-	14.2	8.22	8.5	IE3	90.6	90.0	87.5	0.84	48.9	2.5	3.4	0.0638	67.0
		11P-L132M-04G	9.2	1460	-	34.7	-	17.4	10.1	8.5	IE3	91.0	91.0	90.1	0.84	60.2	2.5	3.3	0.0730	72.0
22P	160	22P-160M-04E	11	1470	-	41.8	-	20.9	12.0	7.5	IE3	91.6	91.8	91.1	0.83	71.5	2.8	3.2	0.1191	134
		22P-160L-04F	15	1465	-	55.8	-	27.9	16.2	7.2	IE3	92.3	92.5	92.2	0.84	97.8	2.8	3.1	0.1534	157
	180	22P-180M-04E	18.5	1470	-	70.2	-	35.1	20.4	7.4	IE3	92.8	92.8	92.2	0.82	120	3.0	3.2	0.1740	171
		22P-180L-04F	22	1470	-	82.1	-	41.0	23.8	7.3	IE3	93.2	93.0	92.3	0.83	143	3.4	3.4	0.2097	192
	200	22P-200L-04E	30	1480	-	114	-	57.1	33.1	7.5	IE3	93.7	93.6	92.9	0.81	194	2.8	3.1	0.3202	250
		22P-200L-04F	37	1480	-	144	-	72.0	41.7	8.3	IE3	93.9	93.5	92.5	0.79	239	3.0	3.3	0.3869	277
	225	22P-225S/M-04F	45	1480	-	162	-	80.9	46.9	7.5	IE3	94.4	94.1	93.7	0.85	291	2.8	3.1	0.6733	414
		22P-225S/M-04G	55	1480	-	205	-	102	59.3	8.3	IE3	94.6	94.0	93.5	0.82	355	3.1	3.4	0.7347	462

Legend see page 577


4 Poles, 1500 min⁻¹, 50 Hz - IE3

Type	P _N [kW]	at 380 V			at 420 V			Frequency inverter operation						Brake		
		I _N [A]	$\frac{M_A}{M_N}$	$\frac{M_K}{M_N}$	I _N [A]	$\frac{M_A}{M_N}$	$\frac{M_K}{M_N}$	400 V / 87 Hz			400 V / 100 Hz			M _B [Nm]	J _B x10 ⁻³ [kgm ²]	m [kg]
								P _N [kW]	n _N [min ⁻¹]	I _N [A]	P _N [kW]	n _N [min ⁻¹]	I _N [A]			
14P-63-04E	0.12	0.41	2.5	3.2	0.37	3.1	3.9	0.21	2445	0.72	-	-	-	2	0.015	1.1
14P-63-04F	0.18	0.54	2.0	2.0	0.49	2.4	2.4	0.31	2401	0.94	-	-	-	4	0.015	1.0
14P-71-04E	0.25	0.72	2.1	2.1	0.65	2.5	2.5	0.44	2401	1.25	-	-	-	4	0.015	1.0
14P-71-04F	0.37	1.05	2.6	2.7	0.95	3.2	3.3	0.64	2427	1.83	-	-	-	2	0.015	1.1
14P-80-04E	0.55	1.29	2.5	2.7	1.17	3.1	3.3	0.96	2471	2.25	-	-	-	8	0.061	1.6
11P-80-04F	0.75	1.73	2.9	3.1	1.56	3.5	3.7	1.3	2488	2.99	1.5	2860	3.44	4	0.015	1.0
11P-90S/L-04E	1.1	2.53	2.3	3.0	2.29	2.8	3.6	1.9	2532	4.38	2.2	2910	5.04	16	0.20	3.1
11P-90S/L-04F	1.5	3.38	2.3	3.1	3.06	2.9	3.7	2.6	2523	5.86	3	2900	6.74	8	0.061	1.6
11P-100L-04E	2.2	4.95	2.3	2.7	4.48	2.8	3.3	3.8	2497	8.56	4.4	2870	9.87	32	0.45	4.2
11P-L100L-04F	3.0	6.64	3.2	3.3	6.01	3.9	4.1	5.2	2506	11.6	6	2880	13.3	16	0.20	3.1
11P-112M-04E	4.0	8.63	2.1	2.8	7.81	2.5	3.4	-	-	-	8	2900	17.2	60	0.86	6.3
11P-112M-04F	4.0	8.63	2.1	2.8	7.81	2.5	3.4	-	-	-	8	2900	17.2	32	0.45	4.2
11P-132S-04E	5.5	10.8	2.2	3.1	9.81	2.6	3.7	-	-	-	11	2930	21.6	100	1.22	10.0
11P-L132M-04F	7.5	14.9	2.3	3.1	13.5	2.8	3.7	-	-	-	15	2930	29.8	60	0.86	6.3
11P-L132M-04G	9.2	18.3	2.3	3.0	16.6	2.8	3.6	-	-	-	18.4	2920	36.5	100	1.22	10.0
22P-160M-04E	11	22.0	2.5	2.9	19.9	3.1	3.5	-	-	-	22	2940	43.9	150	2.85	14.7
22P-160L-04F	15	29.4	2.5	2.8	26.6	3.1	3.4	-	-	-	30	2930	58.6	100	6.65	10.0
22P-180M-04E	18.5	36.9	2.7	2.9	33.4	3.3	3.5	-	-	-	37	2940	73.7	250	6.65	21.5
22P-180L-04F	22	43.2	3.1	3.1	39.0	3.7	3.7	-	-	-	44	2940	86.1	150	2.85	14.7
22P-200L-04E	30	60.1	2.5	2.8	54.4	3.1	3.4	-	-	-	60	2960	120	400	19.5	35
22P-200L-04F	37	75.8	2.7	3.0	68.6	3.3	3.6	-	-	-	74	2960	151	250	6.65	21.5
22P-225S/M-04F	45	85.2	2.5	2.8	77.0	3.1	3.4	-	-	-	90	2960	170	400	19.5	35
22P-225S/M-04G	55	107	2.8	3.1	97.1	3.4	3.7	-	-	-	110	2960	214	250	6.65	21.5



Legend see page 577

4 Poles, 1800 min⁻¹, 60 Hz - IE3

Series	IEC frame size	Type	P_N	n_N	I_N	I_N	I_N	I_N	I_N	$\frac{I_A}{I_N}$	IE class	η	η	η	$\cos\varphi$	M_N	$\frac{M_A}{M_N}$	$\frac{M_K}{M_N}$	J_{mot}	m
			[kW]	[min ⁻¹]	at 132 V [A]	at 230 V [A]	at 400 V [A]	at 265 V [A]	at 460 V [A]	at 460 V [A]		[%]	[%]	[%]						
14P	63	14P-63-04E	0.12	1720	-	-	-	0.63	0.36	6.5	IE3	66.0	61.0	53.0	0.63	0.68	3.2	4.2	0.0004	5.8
		14P-63-04F	0.18	1700	-	-	-	0.81	0.47	5.2	IE3	70.0	66.0	62.0	0.69	1.01	2.7	2.8	0.0006	6.0
	71	14P-71-04E	0.25	1700	-	-	-	1.07	0.62	5.3	IE3	74.0	72.0	70.0	0.69	1.43	2.6	2.8	0.0007	6.9
		14P-71-04F	0.37	1710	-	-	-	1.53	0.88	5.6	IE3	78.5	78.0	77.5	0.67	2.07	3.5	3.7	0.0008	7.8
	80	14P-80-04E	0.55	1720	-	-	-	1.89	1.09	7.3	IE3	81.5	80.0	77.0	0.78	3.06	3.4	3.8	0.0026	10.1
11P	80	11P-80-04F	0.75	1740	5.16	2.96	1.71	2.57	1.48	8.3	IE3	83.5	80.0	78.5	0.76	4.12	3.8	4.3	0.0032	11.6
	90	11P-90S/L-04E	1.1	1760	7.32	4.20	2.42	3.65	2.10	8.5	IE3	86.5	84.0	80.0	0.76	5.97	2.9	3.9	0.0055	15.8
		11P-90S/L-04F	1.5	1755	9.86	5.66	3.27	4.91	2.83	8.3	IE3	86.5	85.5	82.5	0.77	8.17	3.0	3.8	0.0066	17.4
	100	11P-100L-04E	2.2	1745	14.1	8.12	4.66	7.02	4.04	9.0	IE3	89.5	88.0	85.0	0.76	12.0	2.8	3.5	0.0090	27.0
		11P-L100L-04F	3.0	1740	19.0	10.9	6.30	9.48	5.46	8.6	IE3	89.5	86.5	84.0	0.77	16.5	4.6	4.8	0.0120	33.6
	112	11P-112M-04E	4.0	1755	-	14.6	8.41	-	7.28	8.0	IE3	89.5	89.5	87.5	0.77	21.8	2.5	3.5	0.0182	34.5
	132	11P-132S-04E	5.5	1765	-	18.1	10.5	-	9.07	8.9	IE3	91.7	91.0	88.5	0.83	29.8	2.6	4.3	0.0528	53.4
		11P-L132M-04F	7.5	1770	-	24.8	14.3	-	12.4	9.0	IE3	91.7	91.5	91.0	0.83	40.5	2.7	4.3	0.0638	67.0
		11P-L132M-04G	9.2	1765	-	30.7	17.8	-	15.4	9.0	IE3	91.7	91.5	90.4	0.82	49.8	2.6	3.8	0.0730	72.0
22P	160	22P-160M-04E	11	1775	-	36.9	21.2	-	18.4	8.2	IE3	92.4	92.2	91.0	0.81	59.2	3.0	3.7	0.1191	134
		22P-160L-04F	15	1775	-	49.4	28.4	-	24.7	7.6	IE3	93.0	92.9	92.0	0.82	80.7	2.9	3.5	0.1534	157
	180	22P-180M-04E	18.5	1775	-	61.3	35.2	-	30.6	7.7	IE3	93.6	93.0	92.0	0.81	99.6	3.4	3.6	0.1740	171
		22P-180L-04F	22	1775	-	72.0	41.4	-	36.0	8.5	IE3	93.6	93.2	92.1	0.82	118	3.5	3.8	0.2097	192
	200	22P-200L-04E	30	1780	-	100	57.5	-	50.0	8.3	IE3	94.1	93.7	92.6	0.80	161	2.9	3.5	0.3202	250
		22P-200L-04F	37	1782	-	124	71.5	-	62.2	9.3	IE3	94.5	94.0	93.0	0.79	198	3.5	3.6	0.3869	277
225	22P-225S/M-04F	45	1782	-	142	81.4	-	70.8	8.6	IE3	95.0	94.5	93.0	0.84	241	3.2	3.5	0.6733	414	
	22P-225S/M-04G	55	1785	-	179	103	-	89.3	9.6	IE3	95.4	94.5	93.8	0.81	294	3.7	4.2	0.7347	462	

Legend see page 577



4 Poles, 1800 min⁻¹, 60 Hz - IE3

Type	P _N [kW]	at 380 V									at 420 V									at 440 V									at 480 V									Frequency inverter operation						Brake		
		at 380 V			at 420 V			at 440 V			at 480 V			460 V / 105 Hz			460 V / 120 Hz			M _B [Nm]	J _B x10 ⁻³ [kgm ²]	m [kg]																								
		I _N [A]	M _A M _N	M _K M _N	I _N [A]	M _A M _N	M _K M _N	I _N [A]	M _A M _N	M _K M _N	I _N [A]	M _A M _N	M _K M _N	P _N [kW]	n _N [min ⁻¹]	I _N [A]	P _N [kW]	n _N [min ⁻¹]	I _N [A]																											
14P-63-04E	0.12	0.44	2.2	2.9	0.40	2.7	3.5	0.38	2.9	3.8	0.35	3.5	4.6	0.21	3010	0.66	-	-	-	2	0.015	1.1																								
14P-63-04F	0.18	0.57	1.8	1.9	0.51	2.3	2.3	0.49	2.5	2.6	0.45	2.9	3.0	0.32	2975	0.85	-	-	-	4	0.015	1.0																								
14P-71-04E	0.25	0.74	1.8	1.9	0.67	2.2	2.3	0.64	2.4	2.6	0.59	2.8	3.0	0.44	2975	1.12	-	-	-	4	0.015	1.0																								
14P-71-04F	0.37	1.07	2.4	2.5	0.97	2.9	3.1	0.92	3.2	3.4	0.85	3.8	4.0	0.65	2993	1.61	-	-	-	2	0.015	1.1																								
14P-80-04E	0.55	1.32	2.3	2.6	1.19	2.8	3.2	1.14	3.1	3.5	1.04	3.7	4.1	0.96	3010	1.98	-	-	-	8	0.061	1.6																								
11P-80-04F	0.75	1.79	2.6	2.9	1.62	3.2	3.6	1.55	3.5	3.9	1.42	4.1	4.7	1.3	3045	2.70	1.5	3480	3.11	4	0.015	1.0																								
11P-90S/L-04E	1.1	2.54	2.0	2.7	2.30	2.4	3.3	2.20	2.7	3.6	2.01	3.2	4.2	1.9	3080	3.83	2.2	3520	4.41	16	0.20	3.1																								
11P-90S/L-04F	1.5	3.43	2.0	2.6	3.10	2.5	3.2	2.96	2.7	3.5	2.71	3.3	4.1	2.6	3071	5.16	3	3510	5.94	8	0.061	1.6																								
11P-100L-04E	2.2	4.89	1.9	2.4	4.42	2.3	2.9	4.22	2.6	3.2	3.87	3.0	3.8	3.9	3054	7.37	4.4	3490	8.48	32	0.45	4.2																								
11P-L100L-04F	3.0	6.61	3.1	3.3	5.98	3.8	4.0	5.71	4.2	4.4	5.23	5.0	5.2	5.3	3045	9.95	6	3480	11.5	16	0.20	3.1																								
11P-112M-04E	4.0	8.81	2.3	3.2	7.97	2.8	3.9	7.61	2.3	3.2	6.98	2.7	3.8	-	-	-	8	3510	15.3	60	0.86	6.3																								
11P-112M-04F	4.0	8.81	2.3	3.2	7.97	2.8	3.9	7.61	2.3	3.2	6.98	2.7	3.8	-	-	-	8	3510	15.3	32	0.45	4.2																								
11P-132S-04E	5.5	10.9	2.3	3.9	9.90	2.9	4.7	9.48	2.4	3.9	8.69	2.8	4.7	-	-	-	11	3530	19.0	60	0.86	6.3																								
11P-L132M-04F	7.5	15.1	2.4	3.9	13.6	3.0	4.7	13.0	2.5	3.9	11.9	2.9	4.7	-	-	-	15	3540	26.0	100	1.22	10.0																								
11P-L132M-04G	9.2	18.6	2.3	3.4	16.9	2.9	4.2	16.1	2.4	3.5	14.8	2.8	4.1	-	-	-	18.4	3530	32.3	60	0.86	6.3																								
22P-160M-04E	11	22.3	2.7	3.3	20.2	3.3	4.1	19.2	2.7	3.4	17.6	3.3	4.0	-	-	-	22	3550	38.6	150	2.85	14.7																								
22P-160L-04F	15	29.9	2.6	3.2	27.0	3.2	3.9	25.8	2.7	3.2	23.7	3.2	3.8	-	-	-	30	3550	51.9	100	6.65	10.0																								
22P-180M-04E	18.5	37.1	3.1	3.2	33.5	3.7	4.0	32.0	3.1	3.3	29.3	3.7	3.9	-	-	-	37	3550	64.3	250	6.65	21.5																								
22P-180L-04F	22	43.6	3.2	3.4	39.4	3.9	4.2	37.6	3.2	3.5	34.5	3.8	4.1	-	-	-	44	3550	75.6	150	2.85	14.7																								
22P-200L-04E	30	60.5	2.6	3.2	54.8	3.2	3.9	52.3	2.7	3.2	47.9	3.2	3.8	-	-	-	60	3560	105	400	19.5	35																								
22P-200L-04F	37	75.3	3.2	3.2	68.1	3.9	4.0	65.0	3.2	3.3	59.6	3.8	3.9	-	-	-	74	3564	131	250	6.65	21.5																								
22P-225S/M-04F	45	85.7	2.9	3.2	77.5	3.5	3.9	74.0	2.9	3.2	67.9	3.5	3.8	-	-	-	90	3564	149	400	19.5	35																								
22P-225S/M-04G	55	108	3.3	3.8	98.1	4.1	4.6	93.4	3.4	3.8	85.6	4.0	4.6	-	-	-	110	3570	188	250	6.65	21.5																								

Legend see page 577



6 Poles, 1000 min⁻¹, 50 Hz - IE3

Series	IEC frame size	Type	P_N	n_N	I_N	I_N	I_N	I_N	I_N	$\frac{I_A}{I_N}$	IE class	η	η	η	$\cos\varphi$	M_N	$\frac{M_A}{M_N}$	$\frac{M_K}{M_N}$	J_{mot}	m
			[kW]	[min ⁻¹]	at 115 V [A]	at 200 V [A]	at 230 V [A]	at 400 V [A]	at 690 V [A]	at 400 V		4/4 [%]	3/4 [%]	1/2 [%]						
14P	63	14P-63-06F	0.12	925	-	-	0.89	0.51	-	3.1	IE3	57.7	55.0	50.0	0.59	1.24	2.1	2.3	0.00070	6.2
	71	14P-71-06E	0.18	900	-	-	1.24	0.71	-	3.2	IE3	63.9	62.0	56.0	0.57	1.91	2.0	2.1	0.00090	8.5
	80	14P-80-06D	0.25	955	-	-	1.29	0.74	-	4.3	IE3	68.8	68.5	63.6	0.71	2.50	1.7	2.4	0.00290	9.2
		14P-80-06E	0.37	925	-	-	1.69	0.97	-	4.5	IE3	73.5	69.5	66.0	0.75	3.82	1.9	2.1	0.00250	11.0
		14P-L80-06F	0.55	945	-	-	2.59	1.49	-	5.1	IE3	77.2	75.2	70.5	0.69	5.56	2.9	3.1	0.00340	12.4
11P	90	11P-90S/L-06E	0.75	940	6.71	3.86	3.35	1.93	-	5.2	IE3	79.0	79.0	76.5	0.71	7.62	2.5	2.8	0.00660	17.8
	100	11P-100L-06D	1.1	960	9.74	5.60	4.87	2.80	-	6.0	IE3	81.0	80.0	77.0	0.70	10.9	2.1	3.2	0.01100	21.6
	112	11P-112M-06D	1.5	960	12.4	7.14	6.21	3.57	-	6.0	IE3	85.5	85.5	84.5	0.71	14.9	2.1	2.8	0.02020	34.4
	132	11P-132S-06D	2.2	975	-	10.9	-	5.46	3.17	6.5	IE3	84.3	84.3	84.0	0.69	21.6	2.2	2.6	0.04910	55.0
		11P-132S-06E	3.0	970	-	13.8	-	6.91	4.01	6.0	IE3	85.8	85.8	85.0	0.73	29.6	1.9	2.5	0.05660	55.0
		11P-132M-06F	4.0	960	-	18.0	-	8.99	5.21	6.5	IE3	86.8	86.8	86.0	0.74	39.8	2.2	2.5	0.05660	56.0
		11P-L132M-06G	5.5	971	-	25.4	-	12.7	7.37	7.3	IE3	88.0	88.4	87.6	0.71	54.1	2.8	3.0	0.07950	71.8

Legend see page 577




6 Poles, 1000 min⁻¹, 50 Hz - IE3

Type	P _N [kW]	at 380 V						at 420 V						Frequency inverter operation						Brake		
		at 380 V			at 420 V			400 V / 87 Hz			400 V / 100 Hz			M _B [Nm]	J _B x10 ⁻³ [kgm ²]	m [kg]						
		I _N [A]	$\frac{M_A}{M_N}$	$\frac{M_K}{M_N}$	I _N [A]	$\frac{M_A}{M_N}$	$\frac{M_K}{M_N}$	P _N [kW]	n _N [min ⁻¹]	I _N [A]	P _N [kW]	n _N [min ⁻¹]	I _N [A]									
14P-63-06F	0.12	0.54	1.9	2.1	0.48	2.3	2.5	0.21	1609.5	0.93	-	-	-	2 4	0.015 0.015	1.1 1.0						
14P-71-06E	0.18	0.75	1.8	1.9	0.68	2.2	2.3	0.31	1566	1.30	-	-	-	4 2	0.015 0.015	1.0 1.1						
14P-80-06D	0.25	0.78	1.5	2.2	0.70	1.9	2.6	0.44	1661.7	1.35	-	-	-									
14P-80-06E	0.37	1.02	1.7	1.9	0.92	2.1	2.3	0.64	1609.5	1.77	-	-	-	8 4	0.061 0.015	1.6 1.0						
14P-L80-06F	0.55	1.57	2.6	2.8	1.42	3.2	3.4	0.96	1644.3	2.72	-	-	-									
11P-90S/L-06E	0.75	2.03	2.3	2.5	1.84	2.8	3.1	1.3	1635.6	3.52	1.5	1880	4.05	16 8	0.20 0.061	3.1 1.6						
11P-100L-06D	1.1	2.95	1.9	2.9	2.67	2.3	3.5	1.9	1670.4	5.11	2.2	1920	5.88	32 16	0.45 0.20	4.2 3.1						
11P-112M-06D	1.5	3.76	1.9	2.5	3.40	2.3	3.1	2.6	1670	6.52	3.0	1920	7.50	60 32	0.86 0.45	6.3 4.2						
11P-132S-06D	2.2	5.75	2.0	2.3	5.20	2.4	2.9	-	-	-	4.0	1950	11.5									
11P-132S-06E	3.0	7.27	1.7	2.3	6.58	2.1	2.8	-	-	-	6	1940	14.5									
11P-132M-06F	4.0	9.46	2.0	2.3	8.56	2.4	2.8	-	-	-	8	1920	18.9	100 60	1.22 0.86	10.0 6.3						
11P-L132M-06G	5.5	13.4	2.5	2.7	12.10	3.1	3.3	-	-	-	11	1942	26.7									

Legend see page 577



6 Poles, 1200 min⁻¹, 60 Hz - IE3

Series	IEC frame size	Type	P_N	n_N	I_N	I_N	I_N	I_N	I_N	$\frac{I_A}{I_N}$	IE class	η	η	η	$\cos\varphi$	M_N	$\frac{M_A}{M_N}$	$\frac{M_K}{M_N}$	J_{mot}	m
			[kW]	[min ⁻¹]	at 132 V [A]	at 230 V [A]	at 400 V [A]	at 265 V [A]	at 460 V [A]	at 460 V [A]		[%]	[%]	[%]						
14P	63	14P-63-06F	0.12	1140	-	-	-	0.78	0.45	3.5	IE3	64.0	59.0	52.0	0.52	1.01	2.5	2.8	0.00070	6.2
	71	14P-71-06E	0.18	1110	-	-	-	1.09	0.63	3.7	IE3	68.0	59.5	57.5	0.53	1.55	2.3	2.7	0.00090	8.5
	80	14P-80-06D	0.25	1165	-	-	-	1.16	0.67	5.1	IE3	72.0	70.5	64.1	0.65	2.05	2.1	3.1	0.00290	9.2
		14P-80-06E	0.37	1140	-	-	-	1.53	0.88	4.9	IE3	75.3	70.0	66.0	0.70	3.10	2.4	2.8	0.00250	11.0
		14P-L80-06F	0.55	1155	-	-	-	2.34	1.35	6.1	IE3	80.0	77.0	71.9	0.64	4.55	3.5	3.9	0.00340	12.4
11P	90	11P-90S/L-06E	0.75	1145	5.82	3.34	-	2.90	1.66	6.2	IE3	82.5	80.0	77.0	0.69	6.26	2.9	3.4	0.00660	17.8
	100	11P-100L-06D	1.1	1165	8.22	4.72	-	4.10	2.36	7.9	IE3	87.5	81.0	76.0	0.67	9.02	2.4	3.8	0.01100	21.6
	112	11P-112M-06D	1.5	1165	10.7	6.16	-	5.35	3.08	6.8	IE3	88.5	86.5	82.5	0.69	12.3	2.3	3.1	0.02020	34.4
	132	11P-132S-06D	2.2	1175	-	8.94	5.14	-	4.47	7.5	IE3	89.5	88.7	78.0	0.69	17.9	2.3	3.0	0.04910	55.0
		11P-132S-06E	3.0	1165	-	12.0	6.91	-	6.00	6.3	IE3	89.5	88.5	85.5	0.70	24.6	1.8	2.9	0.05660	55.0
		11P-132M-06F	4.0	1165	-	15.8	9.09	-	7.90	6.6	IE3	89.5	88.5	85.5	0.71	32.8	1.9	3.0	0.05660	56.0
		11P-L132M-06G	5.5	1175	-	22.0	12.6	-	11.0	8.1	IE3	91.0	89.7	88.5	0.69	44.7	3.1	3.6	0.07950	71.8

Legend see page 577


6 Poles, 1200 min⁻¹, 60 Hz - IE3

Type	P _N [kW]	at 380 V			at 420 V			at 440 V			at 480 V			Frequency inverter operation						Brake		
		I _N [A]	M _A M _N	M _K M _N	I _N [A]	M _A M _N	M _K M _N	I _N [A]	M _A M _N	M _K M _N	I _N [A]	M _A M _N	M _K M _N	460 V / 105 Hz			460 V / 120 Hz			M _B [Nm]	J _B x10 ⁻³ [kgm ²]	m [kg]
														P _N [kW]	n _N [min ⁻¹]	I _N [A]	P _N [kW]	n _N [min ⁻¹]	I _N [A]			
14P-63-06F	0.12	0.55	1.7	1.9	0.50	2.1	2.3	0.47	2.3	2.6	0.43	2.7	3.0	0.21	1995	0.82	-	-	-	2 4	0.015 0.015	1.1 1.0
14P-71-06E	0.18	0.76	1.6	1.8	0.69	1.9	2.3	0.66	2.1	2.5	0.60	2.5	2.9	0.32	1943	1.14	-	-	-	4 2	0.015 0.015	1.0 1.1
14P-80-06D	0.25	0.81	1.4	2.1	0.73	1.8	2.6	0.70	1.9	2.8	0.64	2.3	3.4	0.44	2039	1.22	-	-	-	8 4	0.061 0.015	1.6 1.0
14P-80-06E	0.37	1.07	1.6	1.9	0.96	2.0	2.3	0.92	2.2	2.6	0.84	2.6	3.0	0.65	1995	1.60	-	-	-	16 8	0.20 0.061	3.1 1.6
14P-L80-06F	0.55	1.63	2.4	2.7	1.48	2.9	3.3	1.41	3.2	3.6	1.29	3.8	4.2	0.96	2021	2.46	-	-	-	32 16	0.45 0.20	4.2 3.1
11P-90S/L-06E	0.75	2.01	2.0	2.3	1.82	2.4	2.8	1.74	2.7	3.1	1.59	3.2	3.7	1.31	2004	3.05	1.5	2290	3.49	60 32	0.86 0.45	6.3 4.2
11P-100L-06D	1.1	2.86	1.6	2.6	2.58	2.0	3.2	2.47	2.2	3.5	2.26	2.6	4.1	1.93	2039	4.31	2.2	2330	4.96	100 60	1.22 0.86	10.0 6.3
11P-112M-06D	1.5	3.73	1.6	2.1	3.37	1.9	2.6	3.22	2.1	2.8	2.95	2.5	3.4	2.63	2039	5.62	3	2330	6.47			
11P-132S-06D	2.2	5.41	2.1	2.7	4.90	2.5	3.3	4.67	2.1	2.7	4.28	2.5	3.3	-	-	-	4.4	2350	9.39			
11P-132S-06E	3.0	7.27	1.6	2.6	6.58	2.0	3.2	6.27	1.6	2.7	5.75	2.0	3.2	-	-	-	6	2330	12.6			
11P-132M-06F	4.0	9.57	1.7	2.7	8.66	2.1	3.3	8.26	1.7	2.7	7.57	2.1	3.3	-	-	-	8	2330	16.6			
11P-L132M-06G	5.5	13.3	2.8	3.2	12.0	3.4	4.0	11.5	2.8	3.3	10.5	3.4	3.9	-	-	-	11	2350	23.1			

Legend see page 577



4 Poles, 1500 min⁻¹, 50 Hz - IE4

Series	IEC frame size	Type	P_N	n_N	I_N	I_N	I_N	I_N	I_N	$\frac{I_A}{I_N}$	IE class	η	η	η	$\cos\phi$	M_N	$\frac{M_A}{M_N}$	$\frac{M_K}{M_N}$	J_{mot}	m
			[kW]	[min ⁻¹]	at 115 V [A]	at 200 V [A]	at 230 V [A]	at 400 V [A]	at 690 V [A]	at 400 V		4/4 [%]	3/4 [%]	1/2 [%]						
11S	63	11S-63-04E	0.12	1400	1.18	0.68	0.59	0.34	-	3.7	IE4	69.8	63.9	58.7	0.73	0.82	2.2	2.3	0.0006	6
		11S-63-04F	0.18	1405	1.66	0.95	0.83	0.48	-	3.9	IE4	74.7	68.8	64.7	0.73	1.22	2.5	2.4	0.0007	7
	71	11S-71-04E	0.25	1405	2.37	1.36	1.18	0.68	-	4.7	IE4	77.9	74.2	70.3	0.68	1.70	2.9	2.9	0.0009	10
	80	11S-80-04E	0.37	1445	2.86	1.65	1.43	0.82	-	7.2	IE4	81.1	77.8	74.3	0.80	2.45	3.3	3.5	0.0031	13
		11S-L80-04F	0.55	1439	4.06	2.34	2.03	1.17	-	6.8	IE4	83.9	83.4	82.0	0.81	3.65	2.6	2.9	0.0037	15
	90	11S-90S/L-04E	0.75	1455	5.63	3.24	2.82	1.62	-	7.0	IE4	85.7	85.1	83.2	0.78	4.92	2.6	3.1	0.0055	18
		11S-L90S/L-04F	1.1	1461	8.44	4.86	4.22	2.43	-	8.3	IE4	87.2	86.2	84.0	0.75	7.19	3.4	3.9	0.0076	19
	100	11S-100L-04E	1.5	1455	11.4	6.55	5.69	3.27	-	9.0	IE4	88.2	87.7	85.9	0.75	9.85	4.4	4.0	0.0097	28
	112	11S-L112M-04E	2.2	1469	-	10.1	-	5.07	2.94	8.6	IE4	89.5	89.6	87.8	0.70	14.3	3.4	4.3	0.0206	45
		11S-L112M-04F	3.0	1460	-	12.9	-	6.47	3.75	7.8	IE4	90.4	89.4	88.1	0.74	19.6	2.9	3.6	0.0206	45
132	11S-132S-04E	4.0	1475	-	15.3	-	7.64	4.43	9.2	IE4	91.1	90.1	88.5	0.83	25.9	2.6	3.8	0.0638	60	
	11S-L132M-04F	5.5	1470	-	20.6	-	10.3	5.96	9.2	IE4	91.9	91.2	90.3	0.84	35.7	2.6	3.7	0.0751	66	
22S	132	22S-132M/L-04G	7.5	1471	-	27.8	-	13.9	8.07	10.0	IE4	92.6	91.5	90.3	0.84	48.7	3.2	4.0	0.0788	84
	160	22S-160M-04E	9.2	1480	-	35.3	-	17.6	10.2	8.6	IE4	93.0	92.9	91.9	0.81	59.4	3.0	3.3	0.1398	135
		22S-160M-04F	11	1480	-	42.0	-	21.0	12.2	8.2	IE4	93.3	93.0	92.0	0.81	71.0	3.0	3.5	0.1537	143
	180	22S-180M-04E	15	1480	-	57.6	-	28.8	16.7	7.5	IE4	93.9	93.5	92.5	0.80	96.8	3.3	3.8	0.1906	190
		22S-180L-04F	18.5	1480	-	68.3	-	34.2	19.8	8.2	IE4	94.2	94.2	93.6	0.83	119	3.0	3.4	0.2291	204
	200	22S-200L-04E	22	1485	-	87.3	-	43.6	25.3	8.4	IE4	94.5	94.0	93.0	0.77	142	3.4	3.7	0.3183	230
		22S-200L-04F	30	1485	-	114	-	57.0	33.1	8.6	IE4	94.9	94.7	93.9	0.80	193	3.2	3.3	0.3979	281
	225	22S-225S/M-04E	37	1484	-	135	-	67.6	39.2	8.6	IE4	95.2	95.1	94.6	0.83	238	3.1	3.5	0.7346	436
		22S-225S/M-04F	45	1485	-	168	-	84.1	48.7	9.0	IE4	95.4	95.0	94.2	0.81	289	3.5	3.9	0.7346	440
	250	22S-250S/M-04E	55	1487	-	200	-	100	57.9	9.0	IE4	95.7	95.4	94.9	0.83	353	3.5	3.7	1.2100	550
280	22S-280S/M-04E	75	1490	-	275	-	138	79.7	8.5	IE4	96.0	96.0	95.5	0.82	481	2.8	3.0	2.7800	830	
	22S-280S/M-04F	90	1488	-	322	-	161	93.3	7.9	IE4	96.1	96.0	95.7	0.84	578	2.5	2.8	3.4000	895	
	22S-280S/M-04G	110	1489	-	393	-	196	114	8.6	IE4	96.3	96.0	95.8	0.84	706	2.9	3.0	3.4000	895	

M


4 Poles, 1500 min⁻¹, 50 Hz - IE4

Type	P _N [kW]	at 380 V						at 420 V						Frequency inverter operation						Brake		
		at 380 V		at 420 V		400 V / 87 Hz			400 V / 100 Hz			M _B [Nm]	J _B x10 ⁻³ [kgm ²]	m [kg]								
		I _N [A]	$\frac{M_A}{M_N}$	$\frac{M_K}{M_N}$	I _N [A]	$\frac{M_A}{M_N}$	$\frac{M_K}{M_N}$	P _N [kW]	n _N [min ⁻¹]	I _N [A]	P _N [kW]				n _N [min ⁻¹]	I _N [A]						
11S-63-04E	0.12	0.36	2.0	2.1	0.32	2.4	2.5	0.21	2436	0.62	0.24	2800	0.71	2	0.015	1.1						
11S-63-04F	0.18	0.50	2.3	2.2	0.45	2.8	2.6	0.31	2445	0.87	0.36	2810	1.00	4	0.015	1.0						
11S-71-04E	0.25	0.72	2.6	2.6	0.65	3.2	3.2	0.44	2445	1.24	0.50	2810	1.43	4	0.015	1.0						
11S-80-04E	0.37	0.87	3.0	3.2	0.78	3.6	3.9	0.64	2514	1.50	0.74	2890	1.73	8	0.061	1.6						
11S-L80-04F	0.55	1.23	2.3	2.6	1.11	2.9	3.2	0.96	2504	2.13	1.1	2878	2.46	4	0.015	1.0						
11S-90S/L-04E	0.75	1.71	2.3	2.8	1.54	2.9	3.4	1.3	2532	2.96	1.5	2910	3.40	16	0.20	3.1						
11S-L90S/L-04F	1.1	2.56	3.1	3.5	2.31	3.7	4.3	1.9	2542	4.43	2.2	2922	5.10	8	0.061	1.6						
11S-100L-04E	1.5	3.44	4.0	3.6	3.11	4.9	4.4	2.6	2532	5.97	3	2910	6.87	32	0.45	4.2						
11S-112M-04E	2.2	5.34	3.1	3.9	4.83	3.7	4.7	-	-	-	4.4	2938	10.6	16	0.20	3.1						
11S-L112M-04F	3.0	6.81	2.6	3.2	6.16	3.2	4.0	-	-	-	6	2920	13.6	32	0.45	4.2						
11S-132S-04E	4.0	8.04	2.3	3.4	7.28	2.9	4.2	-	-	-	8	2950	16.0	60	0.86	6.3						
11S-L132M-04F	5.5	10.8	2.3	3.3	9.81	2.9	4.1	-	-	-	11	2940	21.6	60	0.86	6.3						
22S-132M/L-04G	7.5	14.6	2.9	3.6	13.2	3.5	4.4	-	-	-	15	2942	29.2	100	1.22	10.0						
22S-160M-04E	9.2	18.5	2.7	3.0	16.8	3.3	3.6	-	-	-	18.4	2960	37.0	60	0.86	6.3						
22S-160M-04F	11	22.1	2.7	3.2	20.0	3.3	3.9	-	-	-	22	2960	44.1	150	2.85	14.7						
22S-180M-04E	15	30.3	3.0	3.4	27.4	3.6	4.2	-	-	-	30	2960	60.5	100	6.65	10.0						
22S-180L-04F	18.5	36.0	2.7	3.1	32.6	3.3	3.7	-	-	-	37	2960	71.8	250	6.65	21.5						
22S-200L-04E	22	45.9	3.1	3.3	41.5	3.7	4.1	-	-	-	44	2970	91.6	150	2.85	14.7						
22S-200L-04F	30	60.0	2.9	3.0	54.3	3.5	3.6	-	-	-	60	2970	120	400	19.5	35						
22S-225S/M-04E	37	71.2	2.8	3.2	64.4	3.4	3.9	-	-	-	74	2968	142	250	6.65	21.5						
22S-225S/M-04F	45	88.5	3.2	3.5	80.1	3.9	4.3	-	-	-	90	2970	177	400	19.5	35						
22S-250S/M-04E	55	105	3.2	3.3	95.2	3.9	4.1	-	-	-	110	2974	210	1000	45	73						
22S-280S/M-04E	75	145	2.5	2.7	131	3.1	3.3	-	-	-	150	2980	290	400	19.5	35						
22S-280S/M-04F	90	169	2.3	2.5	153	2.8	3.1	-	-	-	180	2976	338	1000	45	73						
22S-280S/M-04G	110	206	2.6	2.7	187	3.2	3.3	-	-	-	220	2978	413	400	19.5	35						



4 Poles, 1800 min⁻¹, 60 Hz - IE4

Series	IEC frame size	Type	P_N	n_N	I_N	I_N	I_N	I_N	I_N	$\frac{I_A}{I_N}$	IE class	η	η	η	$\cos\varphi$	M_N	$\frac{M_A}{M_N}$	$\frac{M_K}{M_N}$	J_{mot}	m
			[kW]	[min ⁻¹]	at 132 V [A]	at 230 V [A]	at 400 V [A]	at 265 V [A]	at 460 V [A]	at 460 V [A]		[%]	[%]	[%]						
11S	63	11S-63-04E	0.12	1704	1.12	0.64	-	0.56	0.32	3.9	IE4	70.0	65.2	59.0	0.67	0.67	2.6	2.8	0.0006	6
		11S-63-04F	0.18	1707	1.59	0.91	-	0.79	0.46	4.3	IE4	74.0	72.2	67.7	0.67	1.01	2.9	3.0	0.0007	7
	71	11S-71-04E	0.25	1712	2.18	1.25	-	1.09	0.63	5.1	IE4	77.0	72.4	67.0	0.65	1.39	3.3	3.4	0.0009	10
	80	11S-80-04E	0.37	1746	2.61	1.50	-	1.30	0.75	8.8	IE4	81.5	77.5	73.0	0.76	2.02	4.0	4.1	0.0031	13
		11S-L80-04F	0.55	1745	3.67	2.11	-	1.83	1.05	8.1	IE4	84.0	82.9	80.1	0.78	3.01	3.1	3.5	0.0037	15
	90	11S-90S/L-04E	0.75	1760	5.12	2.94	-	2.55	1.47	8.2	IE4	85.5	84.8	81.8	0.75	4.07	3.0	3.8	0.0055	18
		11S-L90S/L-04F	1.1	1765	7.64	4.38	-	3.80	2.19	9.6	IE4	87.5	86.0	82.9	0.72	5.95	3.9	4.7	0.0076	19
	100	11S-100L-04E	1.5	1760	10.3	5.91	-	5.13	2.95	10.4	IE4	88.5	87.2	84.4	0.72	8.14	5.0	4.8	0.0097	28
	112	11S-L112M-04E	2.2	1772	-	9.19	5.29	-	4.60	9.3	IE4	91.0	88.9	86.0	0.66	11.9	3.7	5.0	0.0206	45
		11S-L112M-04F	3.0	1766	-	11.7	6.70	-	5.83	8.5	IE4	91.0	89.0	86.6	0.71	16.2	3.1	4.2	0.0206	45
132	11S-132S-04E	4.0	1755	-	13.6	7.83	-	6.81	10.3	IE4	91.0	89.2	86.7	0.81	21.5	2.8	4.4	0.0638	60	
	11S-L132M-04F	5.5	1774	-	18.2	10.5	-	9.11	10.4	IE4	92.4	91.2	89.6	0.82	29.6	2.8	4.3	0.0751	66	
22S	132	22S-132M/L-04G	7.5	1775	-	25.2	14.5	-	12.6	11.0	IE4	92.4	92.4	91.2	0.81	40.4	3.5	4.6	0.0788	84
	160	22S-160M-04E	9.2	1780	-	31.4	18.1	-	15.7	9.0	IE4	93.0	92.4	91.7	0.79	49.4	3.3	4.0	0.1398	135
		22S-160M-04F	11	1785	-	37.8	21.7	-	18.9	9.0	IE4	93.6	93.0	91.7	0.78	58.9	3.3	4.0	0.1537	143
	180	22S-180M-04E	15	1782	-	51.3	29.5	-	25.7	8.8	IE4	94.1	93.7	92.2	0.78	80.4	3.8	4.3	0.1906	190
		22S-180L-04F	18.5	1780	-	60.7	34.9	-	30.3	9.2	IE4	94.5	94.1	93.0	0.81	99.3	2.8	3.8	0.2291	204
	200	22S-200L-04E	22	1787	-	77.9	44.8	-	39.0	9.5	IE4	94.5	94.0	92.5	0.75	118	3.4	4.1	0.3183	230
		22S-200L-04F	30	1785	-	102	58.4	-	50.8	9.5	IE4	95.0	94.5	93.0	0.78	161	3.7	3.8	0.3979	281
	225	22S-225S/M-04E	37	1786	-	119	68.3	-	59.4	9.6	IE4	95.4	94.5	93.0	0.82	198	3.5	4.0	0.7346	436
		22S-225S/M-04F	45	1785	-	148	85.1	-	74.0	10.0	IE4	95.4	95.0	93.6	0.80	241	3.7	4.2	0.7346	440
	250	22S-250S/M-04E	55	1788	-	178	102	-	89.0	10.0	IE4	95.8	95.4	94.1	0.81	294	4.0	4.2	1.2100	550
280	22S-280S/M-04E	75	1791	-	242	139	-	121	9.5	IE4	96.2	95.4	94.5	0.81	400	3.1	3.4	2.7800	830	
	22S-280S/M-04F	90	1790	-	283	163	-	141	8.9	IE4	96.2	95.8	95.0	0.83	480	2.9	3.1	3.4000	895	
	22S-280S/M-04G	110	1790	-	346	199	-	173	9.5	IE4	96.2	96.1	95.8	0.83	587	3.3	3.3	3.4000	895	



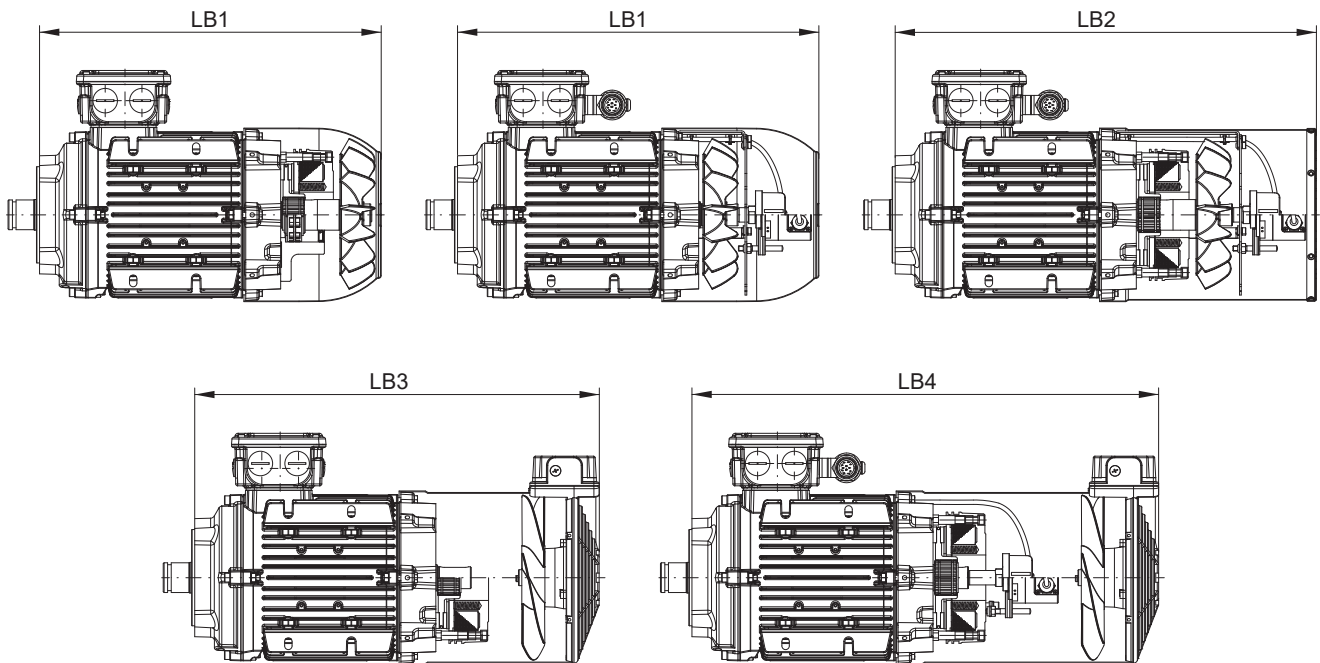
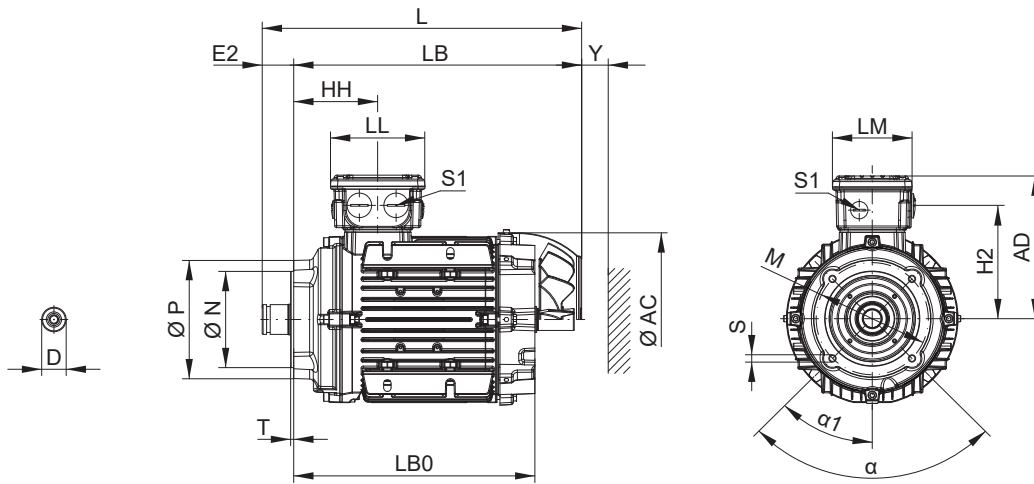
4 Poles, 1800 min⁻¹, 60 Hz - IE4

Type	P _N [kW]	at 380 V			at 420 V			at 440 V			at 480 V			Frequency inverter operation						Brake		
		I _N [A]	M _A M _N	M _K M _N	I _N [A]	M _A M _N	M _K M _N	I _N [A]	M _A M _N	M _K M _N	I _N [A]	M _A M _N	M _K M _N	460 V / 105 Hz			460 V / 120 Hz			M _B [Nm]	J _B x10 ⁻³ [kgm ²]	m [kg]
														P _N [kW]	η _N [min ⁻¹]	I _N [A]	P _N [kW]	η _N [min ⁻¹]	I _N [A]			
11S-63-04E	0.12	0.39	1.8	1.9	0.35	2.2	2.3	0.34	2.4	2.6	0.31	2.8	3.0	0.21	2982	0.58	0.24	3408	0.67	2	0.015	1.1
11S-63-04F	0.18	0.55	2.0	2.0	0.50	2.4	2.5	0.48	2.7	2.7	0.44	3.2	3.3	0.32	2987	0.83	0.36	3414	0.96	4	0.015	1.0
11S-71-04E	0.25	0.76	2.3	2.3	0.69	2.8	2.8	0.66	3.0	3.1	0.60	3.6	3.7	0.44	2996	1.14	0.50	3424	1.32	4	0.015	1.0
11S-80-04E	0.37	0.91	2.7	2.8	0.82	3.3	3.4	0.78	3.7	3.8	0.72	4.4	4.5	0.65	3056	1.37	0.74	3492	1.58	8	0.061	1.6
11S-L80-04F	0.55	1.27	2.1	2.4	1.15	2.6	2.9	1.10	2.8	3.2	1.01	3.4	3.8	0.96	3054	1.92	1.1	3490	2.21	4	0.015	1.0
11S-90S/L-04E	0.75	1.78	2.0	2.6	1.61	2.5	3.2	1.54	2.7	3.5	1.41	3.3	4.1	1.3	3080	2.68	1.5	3520	3.09	16	0.20	3.1
11S-L90S/L-04F	1.1	2.65	2.7	3.2	2.40	3.3	3.9	2.29	3.6	4.3	2.10	4.2	5.1	1.9	3089	3.99	2.2	3530	4.60	8	0.061	1.6
11S-100L-04E	1.5	3.57	3.4	3.3	3.23	4.2	4.0	3.08	4.6	4.4	2.83	5.4	5.2	2.6	3080	5.39	3	3520	6.20	32	0.45	4.2
11S-L112M-04E	2.2	5.57	2.5	3.4	5.04	3.1	4.2	4.81	3.4	4.6	4.41	4.0	5.4	-	-	-	4.4	3544	9.66	16	0.20	3.1
11S-L112M-04F	3.0	7.06	2.1	2.9	6.39	2.6	3.5	6.10	2.8	3.8	5.59	3.4	4.6	-	-	-	6	3532	12.2	32	0.45	4.2
11S-132S-04E	4.0	8.24	2.5	4.0	7.46	3.1	4.9	7.12	2.6	4.0	6.53	3.0	4.8	-	-	-	8	3510	14.3	60	0.86	6.3
11S-L132M-04F	5.5	11.1	2.5	3.9	10.00	3.1	4.7	9.52	2.6	3.9	8.73	3.0	4.7	-	-	-	11	3548	19.1	32	0.45	4.2
22S-132M/L-04G	7.5	15.3	3.2	4.2	13.8	3.9	5.1	13.2	3.2	4.2	12.1	3.8	5.0	-	-	-	15	3550	26.5	100	1.22	10.0
22S-160M-04E	9.2	19.1	3.0	3.6	17.2	3.6	4.4	16.4	3.0	3.7	15.0	3.6	4.4	-	-	-	18.4	3560	33.0	60	0.86	6.3
22S-160M-04F	11	22.8	3.0	3.6	20.7	3.6	4.4	19.8	3.0	3.7	18.1	3.6	4.4	-	-	-	22	3570	39.7	150	2.85	14.7
22S-180M-04E	15	31.1	3.4	3.9	28.1	4.2	4.7	26.9	3.5	3.9	24.6	4.1	4.7	-	-	-	30	3564	54.0	100	6.65	10.0
22S-180L-04F	18.5	36.7	2.5	3.4	33.2	3.1	4.2	31.7	2.6	3.5	29.0	3.0	4.1	-	-	-	37	3560	63.6	250	6.65	21.5
22S-200L-04E	22	47.2	3.1	3.7	42.7	3.7	4.5	40.8	3.1	3.8	37.4	3.7	4.5	-	-	-	44	3574	81.9	150	2.85	14.7
22S-200L-04F	30	61.5	3.3	3.4	55.6	4.1	4.2	53.1	3.4	3.5	48.7	4.0	4.1	-	-	-	60	3570	107	400	19.5	35
22S-225S/M-04E	37	71.9	3.2	3.6	65.0	3.9	4.4	62.1	3.2	3.7	56.9	3.8	4.4	-	-	-	74	3572	125	250	6.65	21.5
22S-225S/M-04F	45	89.6	3.3	3.8	81.0	4.1	4.6	77.4	3.4	3.8	70.9	4.0	4.6	-	-	-	90	3570	155	400	19.5	35
22S-250S/M-04E	55	107	3.6	3.8	97.1	4.4	4.6	93.0	3.7	3.8	85.3	4.4	4.6	-	-	-	110	3576	187	1000	45	73
22S-280S/M-04E	75	146	2.8	3.1	132	3.4	3.7	127	2.8	3.1	116	3.4	3.7	-	-	-	150	3582	254	400	19.5	35
22S-280S/M-04F	90	171.58	2.6	2.8	155.24	3.2	3.4	147.41	2.7	2.8	135.13	3.2	3.4	-	-	-	180	3580	296	1000	45	73
22S-280S/M-04G	110	209.47	3.0	3.0	189.52	3.6	3.6	180.86	3.0	3.0	165.79	3.6	3.6	-	-	-	220	3580	363	400	19.5	35



Dimension sheets

Integral motor frame sizes 63 - 132



Description of the dimensions L, LB, LB0,... see page 594

Tolerances		
Dimension name	ISO tolerance DIN EN ISO 286-2	
D	≤ Ø 30 mm	j6
	> Ø 30 mm to Ø 50 mm	k6
	> Ø 50 mm	m6
N	≤ Ø 250 mm	j6
	> Ø 250 mm	h6

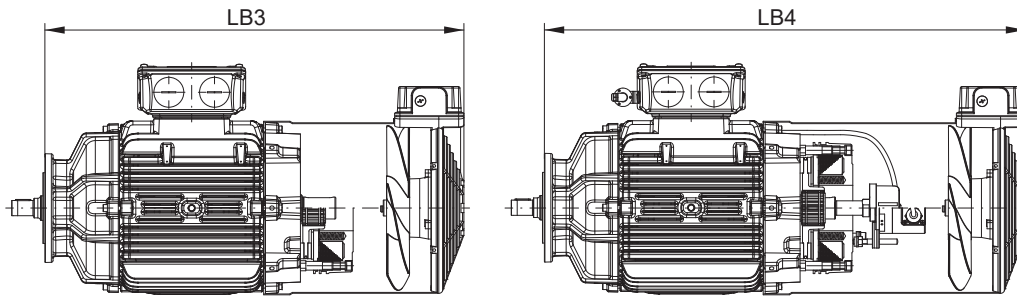
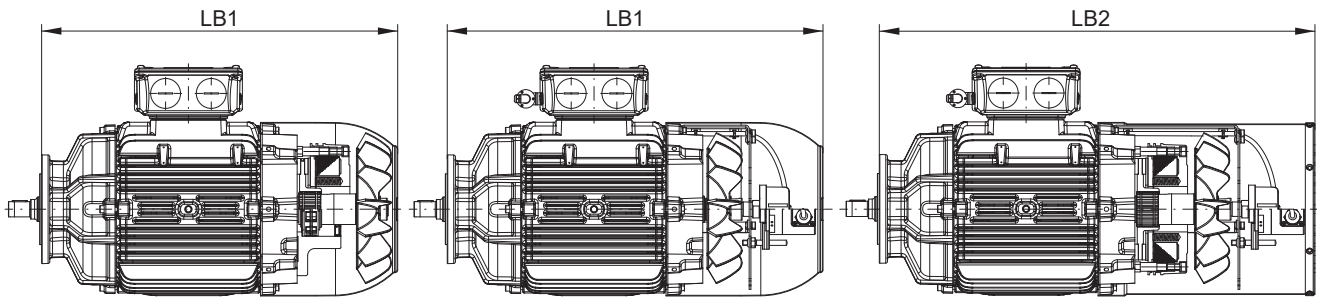
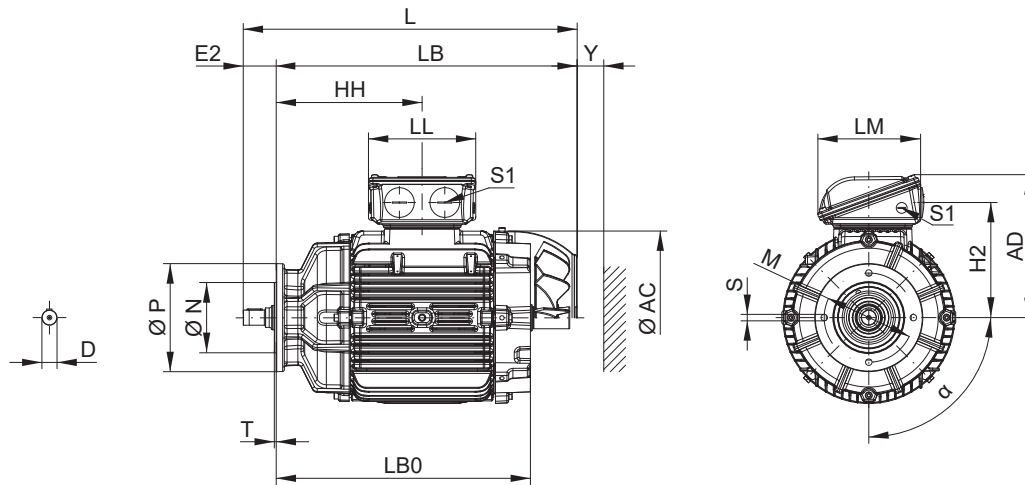
Dimension tolerances		
Dimension name	Dimensions	Permissible deviation
M	up to 200 mm	± 0.25 mm
	more than 200 up to 500 mm	± 0.5 mm
	ore than 500 mm	± 1.0 mm

Dimensions in mm. Motor dimensions are typical values.
Subject to change.

IEC frame size	63	71	80	L80	90	L90	100	L100	112	L112	132	L132
AC	126	141	159	159	178	178	199	199	221	221	261	261
AD	128	136	145	145	155	155	165	165	185	185	205	205
D	16	19	24	24	24	24	34	34	34	34	42	42
E2	26	26	26	26	26	26	26	26	36	36	36	36
HH	83	91	88	88	88	88	107	107	117	117	122	122
H2	91	99	108	108	118	118	128	128	144	144	164	164
LL	108	108	108	108	108	108	108	108	137	137	137	137
LM	92	92	92	92	92	92	92	92	118	118	118	118
M	100	100	100	100	100	100	100	100	100	100	130	130
N	80	80	80	80	80	80	80	80	110	110	110	110
P	94	94	94	94	94	94	94	94	135	135	135	135
S	M6	M6	M6	M6	M6	M6	M6	M6	M6	M6	M8	M8
S1	2 x M25 x 1.5 + 2 x M16 x 1.5							2 x M32 x 1.5 + 2 x M16 x 1.5				
T	3	3	3	3	3	3	3	3	4	4	4	4
Y	25	26	30	30	33	33	36	36	41	41	50	50
α	4 x 90°	4 x 90°	4 x 90°	4 x 90°	4 x 90°	4 x 90°	4 x 90°	4 x 90°	4 x 90°	4 x 90°	4 x 90°	4 x 90°
α_1	45°	45°	45°	45°	45°	45°	45°	45°	45°	45°	45°	45°
L	230	264	272	296	314	345	364	402	384	415	449	487
LB	204	238	246	270	288	319	338	376	348	379	413	451
LB0	173	196	205	229	242	273	285	323	290	321	359	397
LB1	248	287	304	328	361	392	422	460	435	466	531	569
LB2	-	358	381	405	437	468	500	538	511	542	614	652
LB3	322	347	365	389	422	453	476	514	493	524	598	636
LB4	392	417	435	459	485	516	532	570	549	580	650	688



Integral motor frame sizes 160 to 280



M

Description of the dimensions L, LB, LB0,... see page 594

Tolerances		
Dimension name	ISO tolerance DIN EN ISO 286-2	
D	$\geq \text{Ø } 28 \text{ mm}$	n6
N	$\leq \text{Ø } 250 \text{ mm}$	j6
	$> \text{Ø } 250 \text{ mm}$	h6

Dimension tolerances		
Dimension name	Dimensions	Permissible deviation
M	up to 200 mm	$\pm 0.25 \text{ mm}$
	more than 200 up to 500 mm	$\pm 0.5 \text{ mm}$
	more than 500 mm	$\pm 1.0 \text{ mm}$

Dimensions in mm. Motor dimensions are typical values. Subject to change.

IEC frame size	160M					160L				
Motor flange	FR-200	FR-250	FR-300	FR-400	FR-550	FR-200	FR-250	FR-300	FR-400	FR-550
AC	329					329				
AD	266					266				
D	28					28				
E2	61	66	71	84	100	61	66	71	84	100
HH	270	265	260	257	241	270	265	260	257	241
H2	213					213				
LL	199					199				
LM	190					190				
M	165	215	265	300	400	165	215	265	300	400
N	130	180	230	300	450	130	180	230	300	450
P	200	250	300	400	550	200	250	300	400	550
S	12	15	15	19	19	12	15	15	19	19
S1	2 x M40 x 1.5 + 2 x M16 x 1.5					2 x M40 x 1.5 + 2 x M16 x 1.5				
T	3,5	4	4	5	5	3,5	4	4	5	5
Y	65					65				
α	4 x 90°					4 x 90°				
L	606					650				
LB	545	540	535	522	506	589	584	579	566	550
LB0	480	475	470	457	441	524	519	514	501	485
LB1	669	664	659	646	630	713	708	703	690	674
LB2	747	742	737	724	708	791	786	781	768	752
LB3	757	752	747	734	718	801	796	791	778	762
LB4	823	818	813	800	784	867	862	857	844	828

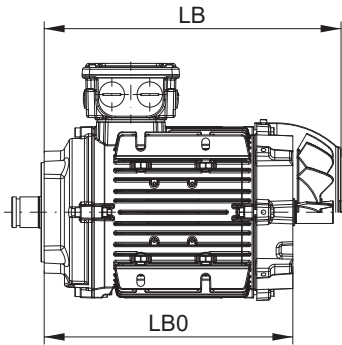
IEC frame size	180M				180L			
Motor flange	FR-250	FR-300	FR-400	FR-550	FR-250	FR-300	FR-400	FR-550
AC	347				347			
AD	281				281			
D	32				32			
E2	66	71	84	100	66	71	84	100
HH	303	298	285	269	303	298	285	269
H2	228				228			
LL	199				199			
LM	190				190			
M	215	265	300	400	215	265	300	400
N	180	230	300	450	180	230	300	450
P	250	300	400	550	250	300	400	550
S	15	15	19	19	15	15	19	19
S1	2 x M40 x 1.5 + 2 x M16 x 1.5				2 x M40 x 1.5 + 2 x M16 x 1.5			
T	4	4	5	5	4	4	5	5
Y	68				68			
α	4 x 90°				4 x 90°			
L	674				712			
LB	608	603	590	574	646	641	628	612
LB0	531	526	513	497	569	564	551	535
LB1	726	721	708	692	764	759	746	730
LB2	839	834	821	805	877	872	859	843
LB3	828	823	810	794	866	861	848	832
LB4	893	888	875	859	931	926	913	897

IEC frame size	200L			225S/M		250S/M	280S/M	
Motor flange	FR-300	FR-400	FR-550	FR-400	FR-550	FR-550	FR-400	FR-550
AC	386			453		482	599	
AD	317			385		403	472	
D	38			38 / 48 *		48	48	
E2	71	84	100	84	100	100	84	100
HH	348	335	319	286	270	261	326	310
H2	260			304		321	319	
LL	230			269		268	314	
LM	218			286		286	312	
M	265	300	400	300	400	400	450	400
N	230	300	450	300	450	450	300	450
P	300	400	550	400	550	550	400	550
S	15	19	19	19	19	19	19	19
S1	2 x M50 x 1.5 + 2 x M16 x 1.5			2 x M50 x 1.5 + 2 x M16 x 1.5		2 x M63 x 1.5 + 2 x M16 x 1.5	2 x M63 x 1.5 + 2 x M16 x 1.5	
T	4	5	5	5	5	5	5	5
Y	78			85		85	108	
α	4 x 90°			8 x 45°		8 x 45°	8 x 45°	
L	804			912		951	1089	1073
LB	733	720	704	828	812	851	989	973
LB0	629	616	600	714	698	737	861	845
LB1	859	846	830	946	930	969	1082	1066
LB2	977	964	948	1062	1046	1085	1183	1167
LB3	929	916	900	1100	1084	1123	1256	1240
LB4	1009	996	980	1100	1084	1123	1256	1240

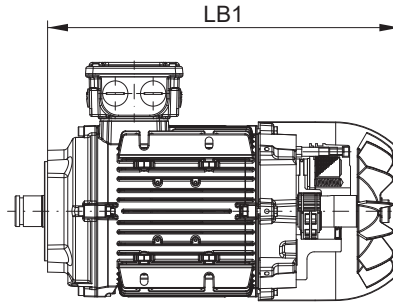
* 22S-225S/M-04F / 22S-225S/M-04G



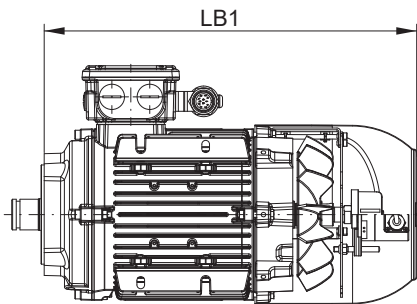
Length description motor modules



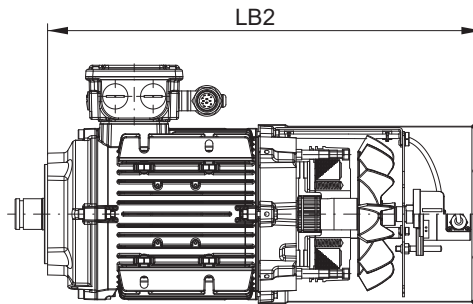
LB Self ventilated
LB0 Non-ventilated



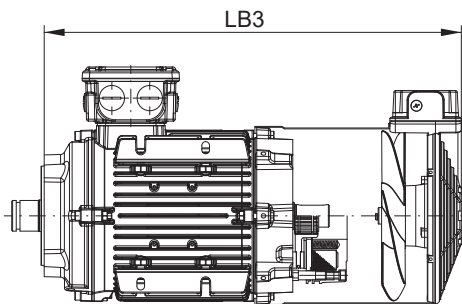
LB1 Self ventilated with brake
 or back stop type RSM



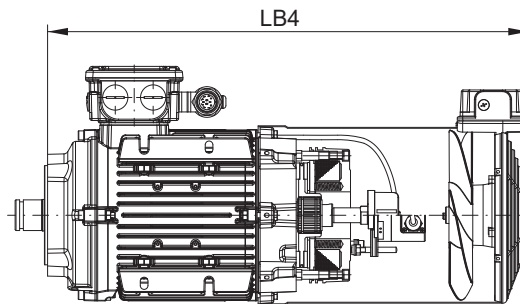
LB1 Self ventilated with standard encoder,
 SSI multiturn encoder or resolver



LB2 Self ventilated with brake and standard encoder,
 SSI multiturn encoder or resolver



LB3 Forced ventilation with or without brake



LB4 Forced ventilation with/without brake and standard encoder,
 SSI multiturn encoder or resolver

M

Motor modules

High / Low temperature execution

HT	High temperature execution
LT	Low temperature execution

To ensure steady operation even at increased or very low ambient temperatures, we offer specially adjusted motor executions with more resistant components.

Temperature control

TH	Bimetal switch for switch off
2TH	Bimetal switch for warning and switch off
TF	PTC thermistor for switch off
2TF	PTC thermistor for warning and switch off
KTY	Temperature sensor

In the standard version, the motors are designed with motor protection in the motor winding. In order to protect the winding of a three-phase induction motor against thermal overloads, resulting for example from overloading and operation with only two phases, one of the following devices can be provided:

TH - Bimetal switch „NC contact“ (+155°C)

The contact is normally closed (NC); the disc opens when the winding's temperature reaches limits dangerous for the insulation system. When a limit temperature is reached, these bimetal switches (NC contacts) can deactivate an auxiliary circuit. The circuit can only be reclosed following a considerable fall in temperature. When the motor current rises quickly (e.g. with a locked rotor), these switches are not suitable due to their large thermal time constants.

TF - PTC thermistor (+155°C)

The most comprehensive protection against thermal overloading caused in starting against heavy masses, heavy alternating load and high frequency starting resp. brake operation or high ambient temperatures of the motor is provided by PTC thermistors installed in the motor winding.

The sensors are temperature sensitive resistors (PTC) which change value almost instantaneously at their response temperature. The switch off level corresponds to the thermal class of the insulation. This characteristic is used in combination with tripping devices (on request) to monitor the temperature of the motor. For warning purposes additional bimetal switches or PTC thermistors with lower switch off temperature can be fitted. These correspond to the key **2TH** and **2TF**.

KTY - Temperature sensor

This sensor is a semiconductor that changes its resistance depending on temperature in accordance with a defined characteristic. The evaluation is made by an extra tripping device (on request). The temperature sensor is embedded in the winding head of the motor in the same manner as a PTC thermistor. Evaluation is performed, for example, in the frequency inverter.

Anti-condensation heating

SH	Anti-condensation heating
-----------	---------------------------

Windings of motors, which are operating at conditions of extreme temperature changes or extreme climatic conditions, are endangered of condensation water. The built in anti-condensation heating warms up the motor windings after switching off and prevents the motor inside from condensation water.

During motor operation the anti-condensation heating must not be switched on. The limit temperature of the winding (+155°C in thermal class F) must not be exceeded! Temperature control is advisable!

The anti-condensation heating must be supplied with a separate voltage.

Supply voltage: 230 V (1~) - Voltage range for IEC frame sizes: 71 to 200: 220 - 240 V, 50/60 Hz

IEC frame size	Heating performance [W]
71	13
80	25
90	
100	
112	50
132	
160	75
180	
200	
225	100
250	
280	

Climatic protection

K1	Humidity protection
K2	Corrosion protection

The following standardised climatic protection executions are available for motors exposed to extreme climatic conditions:

K1 - Humidity protection

Humid warm climate or humid variable climate with max. relative air humidity of 92 %, also for areas on the seaside

K2 - Corrosion protection

Relative air humidity of more than 92 % (extreme formation of condensation water), furthermore against chemically aggressive gases and vapours of increased concentration

Drain

KB	Drain
-----------	-------

In cases of increased air humidity, periodic duty, installation in the open air or when subject to extreme climatic conditions, the motors are endangered by the formation of condensation. The endshields have holes for drainage of water that may condense inside the frame. These holes are supplied with rubber drain plugs, which leave the factory in closed position and must be opened periodically to allow the exit of condensed water.

To determine the correct position of the hole the exact mounting position of the motor must be defined.

Terminal box designs

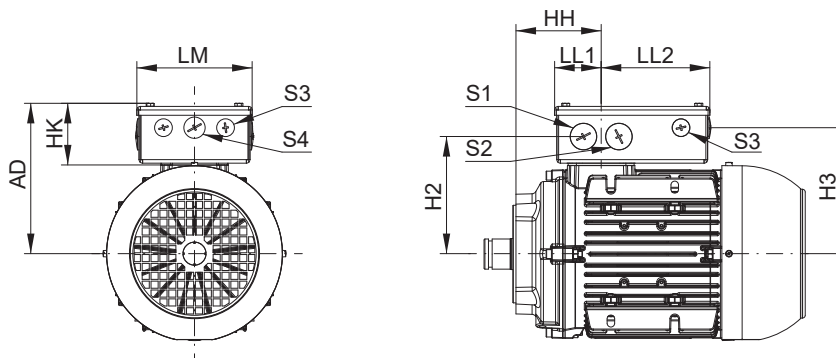
MIP	Multipin box
MIG..	MIG - connect systems

MIP - Multipin box

IEC frame sizes: 63 to 280

This extended terminal box was designed to permit additional options, such as brakes, incremental encoders, thermal elements, anti-condensation heating and the like, to be connected in an orderly fashion in the box.

The terminal box can be equipped with up to 22 sockets, including a brake rectifier. The terminal used are two-wire terminals fitted with cage clamp connectors. These are suitable for single-wire, multi-wire and fine-wire lines with diameters up to 4 mm².



IEC frame size	MIP box												
	AD	HH	HK	H2	H3	LM	LL1	LL2	S1	S2	S3	S4	
63	132	90	69	95	99	130	52	122	2xM25	2xM25	4xM16	1xM20	
71	140	99	69	103	107	130	52	122	2xM25	2xM25	4xM16	1xM20	
80	149	95	69	112	116	130	52	122	2xM25	2xM25	4xM16	1xM20	
90	159	96	69	122	126	130	52	122	2xM25	2xM25	4xM16	1xM20	
100	169	109	69	132	136	130	52	122	2xM25	2xM25	4xM16	1xM20	
112	182	130	70	144	154	140	68	138	2xM32	2xM32	4xM16	1xM25	
132	202	123	70	164	174	140	68	138	2xM32	2xM32	4xM16	1xM25	
160	FR-200	269	270	104	211	220	205	105	171	2xM50	2xM40	4xM16	1xM25
	FR-250		265										
	FR-300		260										
	FR-400		257										
180	FR-550	284	241	104	231	240	205	105	171	2xM50	2xM40	4xM16	1xM25
	FR-250		303										
	FR-300		298										
	FR-400		285										
200	FR-550	300	269	104	250	256	205	105	177	2xM50	2xM40	4xM16	1xM25
	FR-300		348										
	FR-400		335										
225	FR-550	344	319	104	289	295	205	105	177	2xM50	2xM40	4xM16	1xM25
	FR-400		286										
	FR-550		270										
250	FR-400	361	261	104	306	312	205	105	177	2xM50	2xM40	4xM16	1xM25
280	FR-400	427	326	104	372	378	205	105	177	2xM50	2xM40	4xM16	1xM25
	FR-550		310										

Dimensions in mm

MIG - connect system

Models: MIG10B, MIG16, MIG40, MIG10-FL
IEC frame sizes: 63 to 180 (MIG10-FL up to 250)

The MIG (Multiplug) - connect system is a standardised distributed connection system. It is used for the integration of power and control cabling into a single motor connector. The plug is assembled in-house and replaces the terminal box.

Most important advantages:

- Quick installation and service at site
- Avoiding wiring faults
- Motor replacement without electrical manipulation

For motor frame sizes 63 to 180 three MIG types of different power ratings are used. For each MIG model mating connectors are available:

MIG10B:

With 18 PINs and ground this most compact plug enables connection to motors up to a rated current of 10 A with voltages up to 400/690 V and protection degrees up to IP67. Beside the power wires a variety of auxiliary wires can be connected as well.

MIG16:

This MIG for mid-sized motors supports a maximum current of 16 A at 500 V with 10 PINs in total. In case a wider variety of auxiliary PINs is necessary a mixed holding can be offered (6 PINs -16 A; 12 PINs - auxiliary).

MIG40:

To achieve all contacts to be connected with one plug a mixed holding of PINs has to be used in this case. 6 PINs for 40 A at 400/690 V together with 12 PINs auxiliary guarantees full contactability.

For motor frame sizes 63 to 250 with forced ventilation the following MIG type is available:

MIG10-FL:

On demand this MIG can replace the normal forced ventilation connection. Thereby this motor module has all advantages of a MIG - connect plug system. The plug is equipped with 3 PINs and grounding and can be mounted on every forced ventilation size.

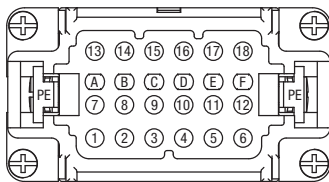


MIG40 execution

MIG - connect system overview table

IEC frame size		63	71	80	90	100	112	132	160	180
400 V, 50 Hz	4p	10B	10B	10B	10B	10B	16	16	40	40
	6p	10B	10B	10B	10B	10B	16	16	40	40
230 V, 50 Hz	4p	10B	10B	10B	10B	16	-	-	-	-
	6p	10B	10B	10B	10B	16	-	-	-	-
400 V, 100 Hz	4p	10B	10B	10B	10B	16	40	40	-	-
	6p	10B	10B	10B	10B	10B	16	40	-	-
460 V, 60 Hz	4p	10B	10B	10B	10B	10B	16	16	40	40
	6p	10B	10B	10B	10B	10B	16	16	40	40
460 V, 120 Hz	4p	10B	10B	10B	10B	16	16	40	-	-
	6p	10B	10B	10B	10B	10B	16	40	-	-

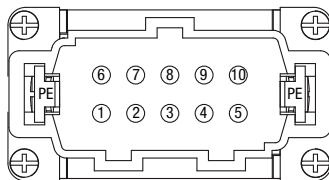
PIN assignment MIG10B



PIN	Assignment
PE	Grounding terminal
1	Winding connection U1
2	Winding connection V1
3	Winding connection W1
4*	Bimetal release 1 TH1
5	Brake heating tape
6	Anti-condensation heating
7	Winding connection W4
8	Winding connection U4
9	Winding connection V4
10*	Bimetal release 1 TH1
11	Brake heating tape
12	Anti-condensation heating

PIN	Assignment
13	Brake
14	Brake
15	Brake microswitch
16	Brake microswitch
17*	Bimetal release 2 TH2
18*	Bimetal release 2 TH2
*alternatively	
4	PTC thermistor 1 TF1
10	PTC thermistor 1 TF1
17	PTC thermistor 2 TF2
17	Resistance thermometer KTY1
18	PTC thermistor 2 TF2
18	Resistance thermometer KTY 1

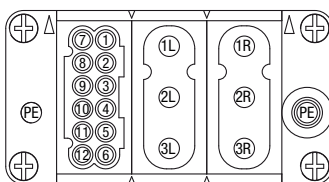
PIN assignment MIG16



PIN	Assignment
PE	Grounding terminal
1	Winding connection U1
2	Winding connection V1
3	Winding connection W1
4*	Brake
5*	Brake
6	Winding connection W4
7	Winding connection U4

PIN	Assignment
8	Winding connection V4
9*	Temperature sensor 1
10*	Temperature sensor 1
*alternatively	
9	Anti-condensation heating
10	Anti-condensation heating
4	Temperature sensor 2
5	Temperature sensor 2

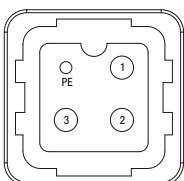
PIN assignment MIG40



PIN	Assignment
PE	Grounding terminal
1R	Winding connection U1
2R	Winding connection V1
3R	Winding connection W1
1L	Winding connection W4
2L	Winding connection U4
3L	Winding connection V4
1	Brake
2	Temperature sensor 1
3	Temperature sensor 2

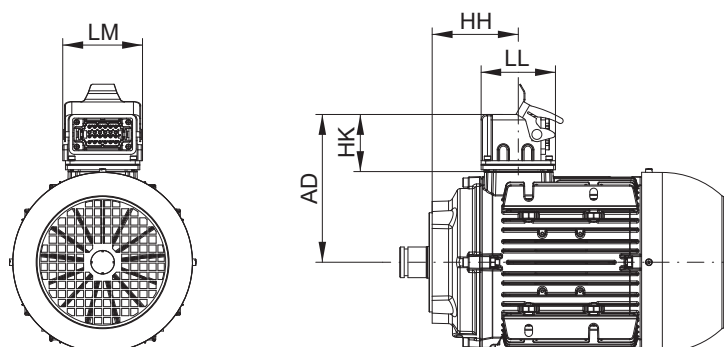
PIN	Assignment
4	Temperature sensor 3
5	Anti-condensation heating
6	
7	Brake
8	Temperature sensor 1
9	Temperature sensor 2
10	Temperature sensor 3
11	Anti-condensation heating
12	

PIN assignment MIG10-FL



PIN	Assignment
PE	Grounding terminal
1	Power connection L1
2	Power connection L2
3	Power connection L3

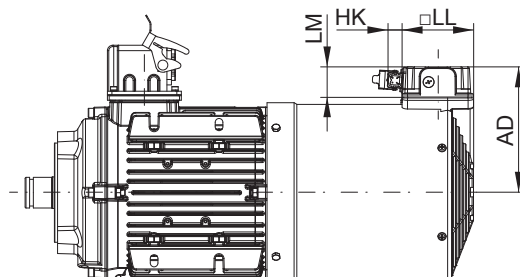
Dimension sheet MIG10B, MIG16, MIG40



IEC frame size	MIG - connect system						
	MIG Type	AD	HH	HK	LL	LM	
63	10B	124	90	61	82	86	
71	10B	132	99	61	82	86	
80	10B	141	95	61	82	86	
90	10B	151	96	61	82	86	
100	10B / 16	161	109	61	82	86	
112	16 / 40	173	130	61	82	86	
132	16 / 40	193	123	61	82	86	
160	FR-200	40	226	270	61	82	86
	FR-250			265			
	FR-300			260			
	FR-400			257			
	FR-550			241			
180	FR-250	40	241	303	61	82	86
	FR-300			298			
	FR-400			285			
	FR-550			269			

Dimensions in mm

Dimension sheet MIG10-FL



IEC frame size	MIG10-FL			
	AD	HK	□LL	LM
63	118	28	107	32
71	124			
80	134			
90	143			
100	152			
112	164			
132	185			
160	211			
180	211			
200	211			
225	211			
250	211			

Dimensions in mm



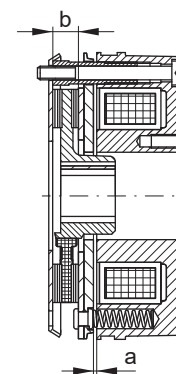
Brake system and Back stop

- BR..** Spring loaded brake
- BBRHGD..** Double spring loaded brake
- BRGH..** Totally closed spring loaded brake (Heavy Duty)
- KKM** Back stop (frame sizes 63 to 90)
- RSM** Back stop (frame sizes 100 to 250)

The mounted spring loaded brake is a single-disc brake with two friction surfaces. It is released electromagnetically and brakes by spring pressure, when the brake is de-energised. The DC-brake coil is supplied from a rectifier which is located in the motor terminal box and will be delivered as standard for AC-side connection.

Product information

- Voltages: Standard: 190 V DC (BR4, 8, 16, 32) or 195 V DC (BR2, 5, 10, 20, 40, 60, 100, 150, 250, 400, 1000)
Optional: 24 V DC
Special execution: 102/103 V DC
- All bare parts corrosion protected
- Short switching times
- Large reserve for abrasion
- Designed for 100 % duty cycle and max. admissible temperature limit of +145 °C
- Degree of protection IP55 (standard)



a air gap
b brake lining thickness

On motors with brake-endshield on the non-driven side subsequent installation of brakes is possible (brake-motor-set available).

Function and adjustment (see illustration below)

When the brake is de-energised, the springs are pressing the armature disc (9) against the brake disc (7) and the friction plate (5). The motor shaft (3) is braked via the brake disc (7) and the gear hub (6). When the brake is energised, a magnetic field is built up and the armature disc (9) is pulled against the magnetic case with the coil (10). When the motor is running, the brake disc (7) can rotate freely from the brake surfaces. In the case of power failure, the brake functions automatically by spring force. A manual release (11) is optionally available (subsequent assembling is also possible).

Braking torque adjustment

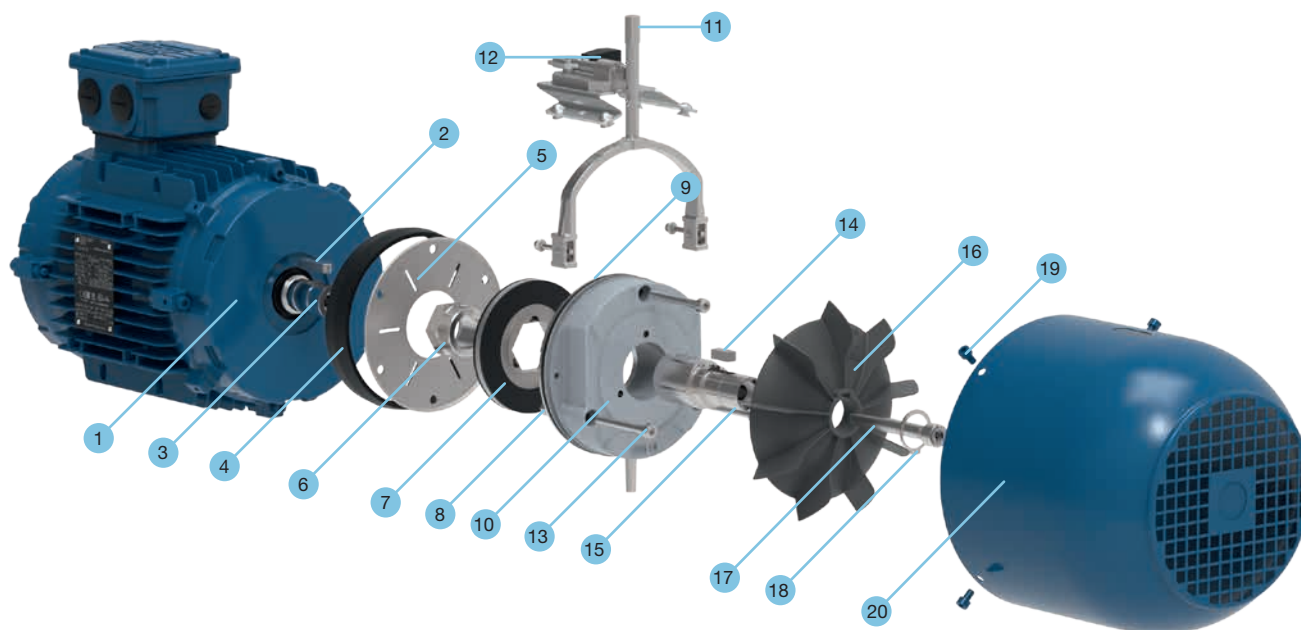
At delivering, the brakes and the brake motors are adjusted to the brake torque M_B . Brake torque reduction is done by removing of springs. Reduced brake torque on request.

Maintenance

Due to abrasion of the friction linings (7) the air gap "a" (see page 389) between magnetic case (10) and armature disc (9) expands. It is necessary to check and readjust the air gap in certain intervals or replace the brake disc (7).

Readjustment of the air gap

First of all the three fixing screws (13) must be loosened half a turn. Now the sleeve screws (8) can be screwed into the magnetic case (10) by turning counter-clockwise. By turning the three fixing screws (13) clockwise, the magnetic case (10) can be moved in direction to the armature disc (9), as long as the nominal air gap a_{normal} (see table on page 602) is obtained. Now the three sleeve screws (8) will be unscrewed clockwise from the magnetic case (10) and the fixing screws (13) will be fixed. Please check the air gap "a" with a feeler gauge, if it is symmetrical and adjust it if necessary.



- | | |
|------------------------------------|------------------------------------|
| 1 Brake endshield | 11 Manual release lever (optional) |
| 2 Key | 12 Locking device |
| 3 Motor shaft | 13 Socket cap screw |
| 4 Dust protection ring | 14 Key |
| 5 Friction plate | 15 Brake shaft extension |
| 6 Gear hub | 16 Fan |
| 7 Brake disc with friction linings | 17 Socket cap screw |
| 8 Sleeve screws | 18 Retaining ring |
| 9 Armature disc | 19 Fan cover screws |
| 10 Magnetic case | 20 Fan cover (brake execution) |

Exploded view: Brake with manual release and locking device, frame size 100

Brake selection

As shown in the following selection table, it is possible to supply brake motors with different brake torques to correspond to the most possible applications. It is also possible to achieve an optimal adaption, by means of the mode of connection of the brake. If exact values about the application are available, we recommend to calculate the braking torque according to the following formulas on page 606, otherwise the proportion between motor rated torque (M_N) and braking torque (M_B) can be taken as an indication for the dimensioning of the brake and check, if the safety factor is sufficient.

For normal applications we recommend sizing the brake 1.5 - 2 times the motor rated torque (M_N), for special applications (lifting gears, switching operation, etc.) 2 - 3 times the motor torque and as holding brake approx. 1 time the rated torque.

Reduced brake torques on request.

- **Execution A - working brake**

M_B approx. 1.5 - 2 times M_N , or applications with medium masses to be accelerated and medium number of starts

- **Execution B - holding brake**

M_B approx. 1 time M_N for drives with small masses to be accelerated and number of starts resp. for keeping the drive stopped

Brake selection table

IEC frame size	BR.. Standard brake		BBRHGD.. Double brake		BRGH.. Totally closed brake	
	Standard Execution A M_B	Execution B M_B	Standard Execution A M_B	Execution B M_B	Standard Execution A M_B	Execution B M_B
63	2 Nm	4 Nm	-	-	-	-
71	4 Nm	2 Nm	2 x 6 Nm	-	5 Nm	-
80	8 Nm	4 Nm	2 x 12,5 Nm	2 x 6 Nm	10 Nm	5 Nm
90	16 Nm	8 Nm	2 x 25 Nm	2 x 12,5 Nm	20 Nm	10 Nm
100	32 Nm	16 Nm	2 x 50 Nm	2 x 25 Nm	40 Nm	20 Nm
112	60 Nm	32 Nm	2 x 75 Nm	2 x 50 Nm	60 Nm	40 Nm
132	100 Nm	60 Nm	2 x 125 Nm	2 x 75 Nm	100 Nm	60 Nm
160	150 Nm	100 Nm	2 x 187 Nm	2 x 125 Nm	150 Nm	100 Nm
180	250 Nm	150 Nm	2 x 300 Nm	2 x 187 Nm	250 Nm	150 Nm
200	400 Nm	250 Nm	2 x 500 Nm	2 x 300 Nm	400 Nm	250 Nm
225	400 Nm	250 Nm	2 x 500 Nm	2 x 300 Nm	400 Nm	250 Nm
250	1000 Nm	400 Nm	2 x 1200 Nm	2 x 500 Nm	1000 Nm	400 Nm
280	1000 Nm	400 Nm	2 x 1200 Nm	2 x 500 Nm	1000 Nm	400 Nm

Spring loaded brake: electrical characteristics																		
U_{2nenn}	U_2	Brake size		2**	4*	5**	8*	10**	16*	20**	32*	40**	60**	100**	150**	250**	400**	1000**
[V]	[V]	M_B	[Nm]	2	4	5	8	10	16	20	32	40	60	100	150	250	400	1000
190* 195**	170-210 162-236	Coil current	[A]	0.13	0.11	0.13	0.13	0.18	0.16	0.20	0.21	0.26	0.32	0.42	0.50	0.65	0.85	0.83
		Power	[W]	26	20	26	25	36	30	38	40	50	63	82	99	127	165	162
		Resistance	[Ω]	1475	1805	1475	1444	1070	1203	990	903	754	600	464	385	300	230	235
24	19-28	Coil current	[A]	1.14	0.83	1.14	1.04	1.44	1.25	1.70	1.66	2.10	2.70	3.30	4.00	5.20	7.30	-
		Power	[W]	27	20	27	25	34	30	41	40	50	65	80	96	125	175	-
		Resistance	[Ω]	21	29	21	23	17	19	14	14	12	8.9	7.2	6.0	4.6	3.3	-
102 1)** 103 1)*	85-133 93-113	Coil current	[A]	0.30	0.19	0.30	0.24	0.38	0.31	0.45	0.39	0.53	0.60	0.85	0.94	1.23	1.76	-
		Power	[W]	31	20	31	25	38	32	46	40	54	60	87	95	125	179	-
		Resistance	[Ω]	340	531	340	424	271	332	228	265	192	174	120	109	83	58	-

■ standard brake

¹⁾ special execution (on demand)

* $U_{2nenn} = 190 / 103 V$ ** $U_{2nenn} = 195 / 102 V$

Spring loaded brake: mechanical characteristics																
Brake size		2	4	5	8	10	16	20	32	40	60	100	150	250	400	1000
M_B	[Nm]	2	4	5	8	10	16	20	32	40	60	100	150	250	400	1000
M_{BS}	[Nm]	-	6	7.5	12	15	24	30	48	60	90	150	225	375	600	1500
P_{20}	[W]	26	20	26	25	36	30	38	40	50	63	82	100	127	165	162
J_B	[kgm ² x10 ⁻³]	0.015	0.015	0.015	0.061	0.045	0.20	0.172	0.45	0.45	0.86	1.22	2.85	6.65	19.5	45
P_R	[J/s]	80	*	80	*	100	*	130	*	160	200	250	300	350	400	450
W_{Rmax}	[Jx10 ³]	3	3	3	7.5	6	12	12	24	25	35	50	75	105	150	200
W_{RN}	[Jx10 ⁷]	5	8.5	5	15.8	12	26.4	20	53	35	60	125	200	340	420	450
a_{normal}	[mm]	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.4	0.4	0.5	0.5	0.6
a_{max}	[mm]	0.6	0.5	0.6	0.5	0.7	0.5	0.8	0.75	0.9	1.0	1.1	1.1	1.2	1.2	1.7
b_{min}	[mm]	4.5	4.5	4.5	5.5	5.5	7.5	7.5	8.0	9.5	11.5	12.5	14.5	16.5	16.5	21
m	[kg]	1.1	1.0	1.1	1.6	1.9	3.1	3.1	4.2	4.6	6.3	10	14.7	21.5	35	73
$t_{2=}$	[ms]	35	45	35	57	45	76	60	115	80	120	160	200	220	300	320
$t_{1≈}$	[ms]	70	*	70	*	95	*	140	*	175	210	280	350	500	800	3000
$t_{1=}$	[ms]	30	28	30	31	45	47	60	53	75	90	120	150	180	200	160
Fits on IEC motor frame size		63, 71	63, 71, 80	63, 71, 80	80, 90	80, 90	90, 100	90, 100	100, 112	100, 112	112, 132	132, 160	160, 180	180, 200, 225	200, 225, 250, 280	250, 280

* on request

	Designation	Unit
Rated torque of spring loaded brake	M_B	[Nm]
Holding torque of the spring loaded brake	M_{BS}	[Nm]
Brake coil power consumption	P_{20}	[W]
Brake moment of inertia	J_B	[kgm ²]
Friction performance	P_R	[J/s]
Friction per switch cycle	W_{Rmax}	[J]
Friction until readjustment	W_{RN}	[J]
Air gap	a	[mm]

	Designation	Unit
Minimum brake rotor thickness	b	[mm]
Mass of moved machine parts	m	[kg]
Engaging time	t_1	[ms]
Release time of brake	t_2	[ms]
Output voltage DC rectifier	$U_{2=}$	[V]
For DC switching	$=$	-
For AC switching	$≈$	-

BR.. - Spring loaded brake

Degree of protection IP55.

<p>BR.. Spring loaded brake without additional options</p> <p>Possible options:</p> <p>BRH.. With manual release</p> <p>BRHA.. With manual release and locking device</p> <p>BRR.. With corrosion protection IP55</p> <p>BRS.. With dust protection IP65</p> <p>BRSR.. With dust and corrosion protection IP65</p> <p>BRGD.. Low noise execution</p>	→	<p>Ordering examples:</p> <p>BR5 Brake 4 Nm</p> <p>BRHASRGD32 Brake 32 Nm with manual release, locking device, dust and corrosion protection and low noise execution</p>
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BRM - Micro switch

When brake release monitoring is necessary, a micro switch (5) can be fitted to indicate brake release. This signal can be used to start the electric motor. When air gap “a” (see page 599) is at its maximum and the armature is no longer attracted to the magnet body the motor will not start and air gap “a” must be adjusted.

The installation of the micro switch is possible for brake sizes 5, 10, 20, 40, 60, 100, 150, 250, 400 and 1000.

BRH.. - Manual release

The installation of the manual release is possible for brakes > 4 Nm. The manual release (1) is necessary for manually releasing the brake in cases of power failure. Brakes will be supplied with manual releases fitted by factory. The adjustment of the manual release may not be changed, not even when air gap “a” (see page 599) is readjusted, as safety can be adversely affected.

BRHA.. - Manual release with locking device

In case of service the manual release can be fastened with a locking device. Take care that in rated condition the brake is released (see illustration on page 604). The 0° position of the manual release with locking device is **only possible** with motor frame sizes 225, 250 and 280.

BRR.. - Corrosion protection

Protection class IP55. Consists of painted brake endshield and friction plate (3), which is made of non-corrosive material.

BRS.. - Dust protection

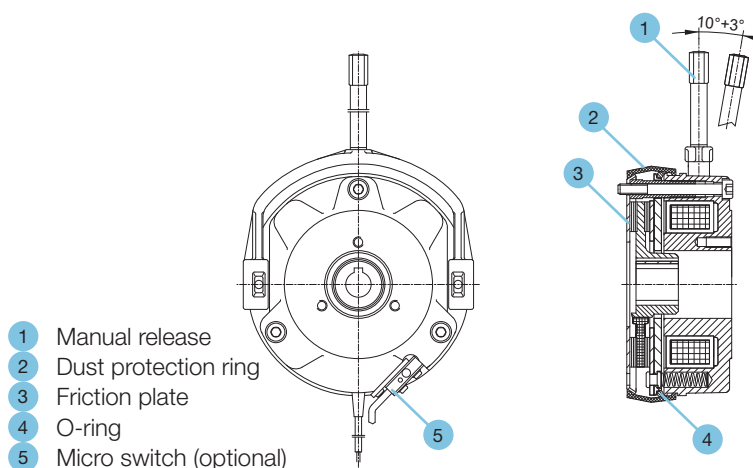
Protection class IP65. Consists of friction plate (3), which is made of non-corrosive material, dust protection ring (2) and shaft seal.

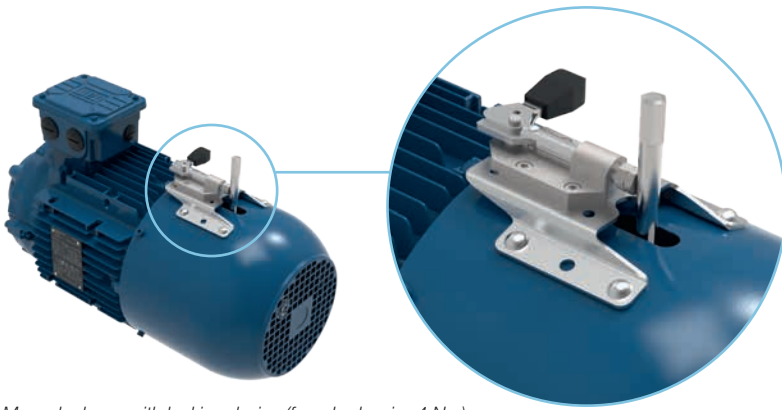
BRSR.. - Corrosion and dust protection

Protection class IP65. Consists of painted brake endshield, friction plate (3), which is made of a non-corrosive material, dust protection ring (2) and shaft seal.

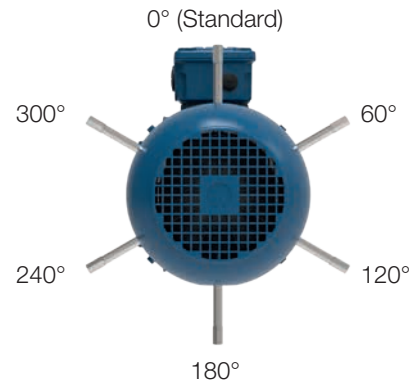
BRGD.. - Low noise execution

To reduce the switching noises of the spring loaded brake, the o-ring (4) can be inserted between armature plate and brake body.





Manual release with locking device (from brake size 4 Nm)



Possible positions of the manual release at the view of the motor fan cover. (The 0° position of the manual release with locking device is only possible with motor frame sizes 225, 250 and 280.)

BBRHGD.. - Double spring loaded brake

Double brakes (from motor frame size 71) are two specially designed low noise brakes working independently of each other meeting high demands on safety.

As option a micro switch (5) is monitoring the function of the brakes. The brakes are executed per default in low noise execution and with manual release.

BBRHGD.. Double brake in low noise execution with manual release (standard)

Possible options:

BBRHSGD.. With dust protection IP65
BBRGD.. Without manual release

Ordering examples:

BBRHGD6 Double brake 2 x 6 Nm in low noise execution with manual release

BBRHSGD187 Double brake 2 x 187 Nm in low noise exec. with man. release and dust protection

BBRM - Micro switch

When brake release monitoring is necessary, a micro switch (5) can be fitted to indicate brake release. This signal can be used to start the electric motor. When air gap "a" (see page 599) is at its maximum and the armature is no longer attracted to the magnet body the motor will not start and air gap "a" must be re-adjusted.

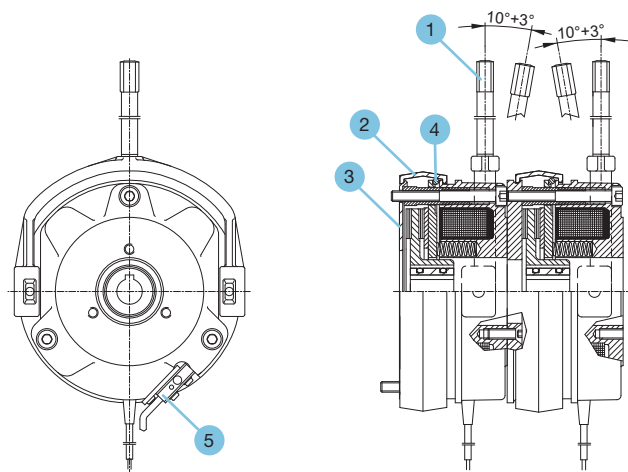
BBRHSGD.. - Dust protection

Protection class IP65. Consists of friction plate (3), which is made of non-corrosive material, dust protection ring (2) and shaft seal.

BBRHGD.. - Manual release

The manual release (1) for manually releasing of the brake in cases of power failure. Brakes will be supplied in standard with manual release fitted by factory. The adjustment of the manual release may not be changed, not even when air gap "a" (see page 599) is readjusted, as security can be adversely affected.

Possible positions of the manual release see on page 604.



- 1 Manual release
- 2 Dust protection ring
- 3 Friction plate

- 4 O-ring
- 5 Micro switch (optional)

BRGH - Totally closed spring loaded brake „heavy duty“

The fully capsulated brake design with dust and waterproof cable glands is in accordance with protection degree IP66. On ventilated motor executions IC411 the shaft passage is sealed by sealings. The brake is executed with manual release in standard. On the brake disc a lining for high loads is fitted. Brake selection table see page 601.

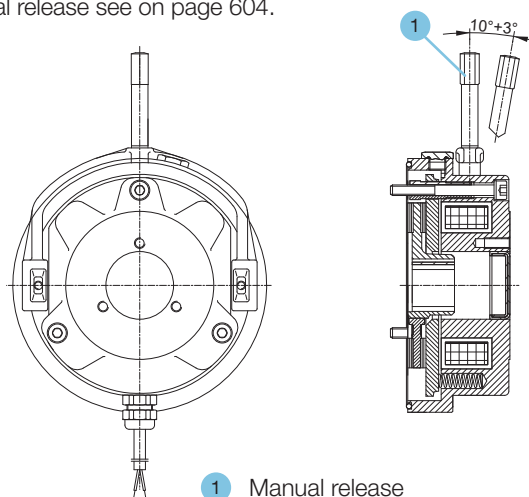
BRGH.. Totally closed spring loaded brake with manual release Possible options: BRGHA.. With manual release and locking device BRG.. Without manual release		Ordering examples: BRGH10 Brake 10 Nm with manual release BRGHA150 Brake 150 Nm with manual release and locking device
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BRGH.. - Manual release

The manual release (1) is necessary for manually releasing the brake in cases of power failure. Brakes will be supplied in standard with manual release fitted by factory.

The adjustment of the manual release may not be changed, not even when air gap "a" (see page 599) is readjusted, as safety can be adversely affected.

Possible positions of the manual release see on page 604.



1 Manual release

Anti-condensation heating for brakes

When operating at conditions of extreme temperature changes or extreme climatic conditions, the windings are endangered of condensation water. The built in anti-condensation heater warms up the magnet windings after switching off and prevents the brakes inside from condensation water.

The anti-condensation heating must be supplied with a separate voltage.

Supply voltage 230 V (1~)

Voltage range: 220 - 230 V, 50/60 Hz

Brake size* [Nm]	Performance [W]
10	16
20	29
40	33
60	35
100	48
150	53
250	70
400	128
1000	131

* The anti-condensation heating for brakes is only available for the brake sizes indicated in the table.

Calculation of the brake torque

If the mass moment of inertia, the rotation speed and the permissible braking time of the machine are known, the torque of the spring loaded brake can be calculated.

	Formula	Unit
Load moment (static load)	$M_L = F \cdot r$	[Nm]
Braking torque (dynamic load) There is a pure dynamic load if fly-wheels, rolls, etc. have to be slowed down and when the static load is very insignificant.	$M_a = 1,046 \cdot 10^2 \cdot J_{ZUS} \cdot \frac{n}{t - t_1}$ $M_{aerf} = M_a \cdot K \leq M_B$	[Nm]
Braking torque (dynamic and static load) In most applications there is also dynamic load in addition to static load.	$M_{aerf} = (M_a \pm M_L) \cdot K$ $M_{aerf} = (1,046 \cdot 10^2 \cdot J_{ZUS} \cdot \frac{n}{t_b} \pm M_L) \cdot K$ $M_{aerf} \leq M_B$	[Nm]
Estimated determination of braking torque	$M_{aerf} = 9,55 \cdot 10^3 \cdot \frac{P}{n} \cdot K$ $M_{aerf} \leq M_B$	[Nm]
Deceleration time	$t = t_B + t_1$	[ms]
Acceleration time	$t_A = \frac{J_{ges} \cdot n_1}{9,55 \cdot (M_A \pm M_L)} + t_2$ $J_{ges} = J_E + J_{ZUS}$	[s] [kgm ²]
Braking time	$t_B = \frac{J_{ges} \cdot n_1}{9,55 \cdot (M_A \pm M_L)}$ $J_{ges} = J_E + J_{ZUS}$	[s] [kgm ²]
The conversion of several mass moments of inertia with different rotation speeds in a mass moment of inertia reduced to the motor shaft	$J_{ZUS} = \frac{J_2 \cdot n_2^2 + J_3 \cdot n_3^2 \dots}{n_1^2}$	[kgm ²]
Conversion of straight-line moved machine parts into a corresponding J on the motor shaft	$J = 91,2 \cdot m \cdot \frac{v^2}{n_1^2}$	[kgm ²]
Friction per switch cycle	$W_R = \frac{J_{ZUS} \cdot n^2}{182,5} \cdot \frac{M_B}{M_B \pm M_L}$ $W_R < W_{Rmax}$	[J]
Friction performance	$P_R = W_R \cdot S$ $P_R < P_{Rmax}$	[J/s]

Designation	Unit	Description
M_L	[Nm]	Load moment Sign + : when the load moment acts decelerating (lifts when going up) Sign - : when the load moment acts accelerating (lifts when going down)
M_{aerf}	[Nm]	Necessary braking torque
M_a	[Nm]	Braking torque
M_A	[Nm]	Starting torque of motor
M_B	[Nm]	Rated torque of spring loaded brake
K	-	Safety factor according to the operating conditions (1...3)
F	[N]	Force
F_I	-	Factor of inertia
r	[m]	Lever arm
m	[kg]	Mass of moved machine parts
J, J_1 , J_2	[kgm ²]	Mass moment of inertia
J_E	[kgm ²]	Proper mass moment of inertia
J_{ges}	[kgm ²]	Total mass moment of inertia
J_{mot}	[kgm ²]	Mass moment of inertia of the motor

Designation	Unit	Description
J_{ZUS}	[kgm ²]	Additional mass moment of inertia
K	-	Safety factor $K \geq 2$
P	[kW]	Power
P_R	[J/s]	Friction performance
P_{Rmax}	[J/s]	Maximum friction performance
n	[min ⁻¹]	Rotation speed
n_1	[min ⁻¹]	Rotation speed of motor
n_2, n_3	[min ⁻¹]	Rotation speeds
t	[ms]	Deceleration time
t_A	[s]	Acceleration time
t_B	[s]	Braking time
t_1	[ms]	Engaging time
t_2	[ms]	Release time of brake
v	[m/s]	Speed
W_R	[J]	Friction work per switch cycle
W_{Rmax}	[J]	Permissible friction per switch cycle
S	[s ⁻¹]	Number of switch cycle per second

Rectifier

Power supply

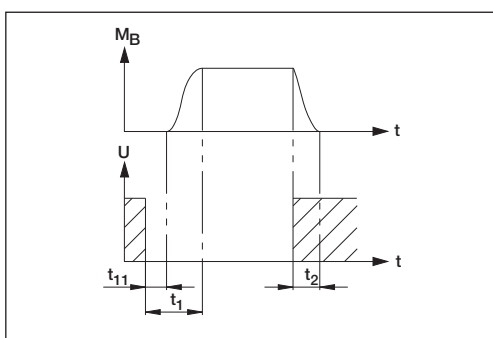
The DC-brake coil is normally supplied by a half wave rectifier incorporated in the motor terminal box and is also available for coil voltages 162-236 V DC, 85-133 V DC or 24 V DC (24 V with block terminal for external power supply!) Corresponding rectifiers and coil voltages are optionally available for all special voltages. The rectifiers are equipped with varistors to protect them against over-voltages.

At number of starts more than 1/s, please contact us for rectifier loading capacity.

Switching modes

By default brake motors will be delivered with connected rectifier for AC-side switching. For DC-side switching the bridge between terminals 5 and 6 must be removed and a switching contact must be connected. Start-up of motor only with connecting brake.

- **AC-side switching** is executed before the rectifier on AC-side. Here the magnetic field is de-energised slowly, the brake interrupts softly with delay. (Release time $t_1 \approx$)
- **DC-side switching** is executed between rectifier and coil. Thereby an extremely low degree of overrunning is achieved. For all gear units, which require exact braking, especially for lifting gears, a DC-side switching of the brake is absolutely required. (Release time $t_1 =$)



	Designation	Unit
Braking torque	M_B	[Nm]
Voltage	U	[V DC]
Engaging time	t_1	[ms]
Response delay (time from switching power off until braking torque increases)	t_{11}	[ms]
Release time (time from switching power on until braking torque begins to decrease)	t_2	[ms]

Rectifier selection

- *Half-wave and bridge rectifier*

The half wave rectifier which halves the supply voltage is the most cost effective. The bridge rectifier produces 90 % DC voltage from the AC supply voltage. Both rectifiers are available for switching on AC or DC side. Varistors in the input and output protect the rectifiers against surge voltages.

Half-wave rectifier: $U_{2=} = 0.45 \times U_{1\sim}$ $I_{max} = 1 \text{ A}$

Bridge rectifier: $U_{2=} = 0.9 \times U_{1\sim}$ $I_{max} = 2 \text{ A}$

- *Fast excitation rectifier*

For motor frame sizes 63-132 this rectifier can't be installed in the standard terminal box.

The high-speed rectifier uses special connections to make different direct voltages available on the terminals. This means that the following brake operating modes can be selected:

1. Rapid response: Brake voltage level equal to the holding voltage of the fast excitation rectifier: The ventilation time of the brake is reduced.
2. Power reduction: Brake voltage level equal to overexcitation voltage of the fast excitation rectifier: reduced performance losses in the brake coil, engage time of the brake is reduced.

Max. connection voltage: $U_{1\sim} = 500 \text{ V AC}$

Max. permissible connections: 600 connections/h

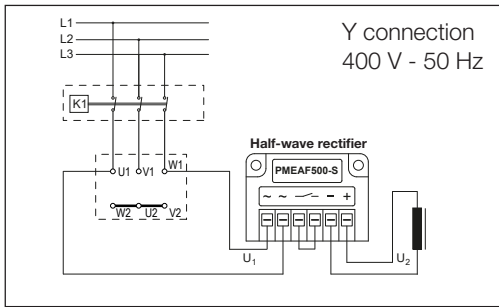
Max. permissible switching capacity: 210 W

Rectifier type	System	U_N [V]	I_N [A]
PMEAF500-S	Half-wave rectifier	500	1
PMBAF400-S	Bridge rectifier	400	2
PMG480-S	Fast excitation rectifier	500	2

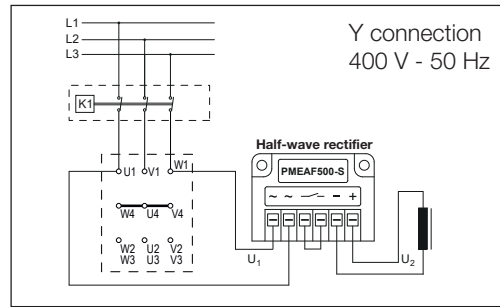
Overexcitation phase (voltage)	$T = 0 - 500 \text{ ms } (\pm 200 \text{ ms})$	$U_{2=} = 0.9 \times U_{1\sim}$	$I_N = 4 \text{ A}$
Holding phase (voltage)	$T > 500 \text{ ms}$	$U_{2=} = 0.45 \times U_{1\sim}$	$I_N = 2 \text{ A}$

Switching diagram for braking motors

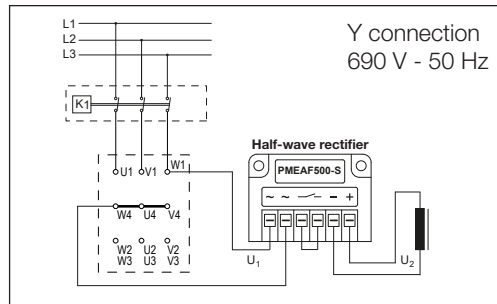
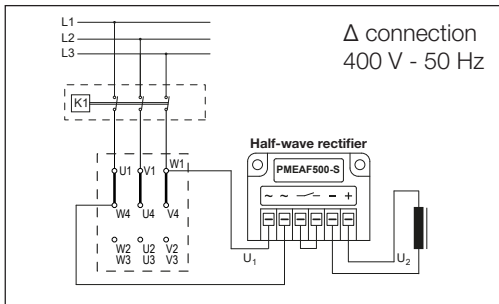
- AC switching - Motor frame sizes 63-80 (Multi-Voltage-Motor)



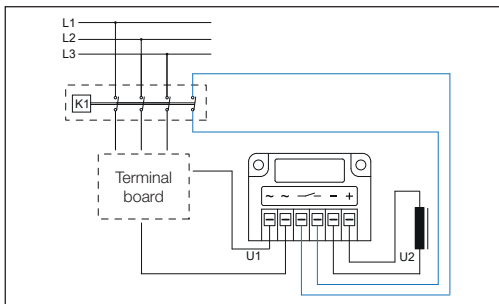
- AC switching - Motor frame sizes 80-100 (EUSAS-Motor)



- AC switching - Motor frame sizes 112-280 (EUSAS-Motor)



- DC switching



Connection examples

Multi-Voltage Motor									
Motor frame size	Connection	50 Hz			60 Hz			Rectifier model	Brake coil voltage [V]
		3~ U _N [V]	U _{1~} [V]	U ₂₌ [V]	3~ U _N [V]	U _{1~} [V]	U ₂₌ [V]		
63-80	Y	400	400	180	460	460	207	PMEAF500-S	195
EUSAS Motor									
Motor frame size	Connection	50 Hz			60 Hz			Rectifier model	Brake coil voltage [V]
		3~ U _N [V]	U _{1~} [V]	U ₂₌ [V]	3~ U _N [V]	U _{1~} [V]	U ₂₌ [V]		
80-100	Y	400	400	180	460	460	207	PMEAF500-S	195
112-280	Δ	400	400	180	460	460	207	PMEAF500-S	195
	Y	690	400	180	-	-	-	PMEAF500-S	195

	Designation	Unit
Maximum rated output current DC rectifier	I _N	[A]
Maximum rated input voltage AC rectifier	U _N	[V]

	Designation	Unit
3~ rated motor voltage	3~ U _N	[V]
Supply voltage AC rectifier	U _{1~}	[V]
Output voltage DC rectifier	U ₂₌	[V]

Back stop

Installing a back stop guarantees that the motor

- a. can start only in one direction
- b. can't be turned in wrong direction from counteract torques

KKM Back stop (IEC frame size 63 to 90)

RSM Back stop (IEC frame size 100 to 250)

The applied free wheels of the clamping bodies are mounted on the motor endshield (NDE) in such a manner, that the standard motor dimension LB up to motor size 90 will not be lengthened. From motor size 100 the motor dimension LB1 is valid.

The back stop has been largely dimensioned and corresponds approx. to the motor starting torque (M_A) to prevent a damage in case of short-time-starting against the back stop at switchings made by error. Nevertheless, the free direction of rotation must be determined first, especially at big motor powers and we recommend for the first starting the star connection and only then the delta connection at correct rotation.

IEC frame size	Back stop type	Torque [Nm]	Motor length dimension (see page 590)
63	KKM	7.4	LB
71	KKM	13.5	LB
80	KKM	40	LB
90	KKM	68	LB
100	RSM	150	LB1
112	RSM	150	LB1
132	RSM	390	LB1
160	RSM	580	LB1
180	RSM	580	LB1
200	RSM	1050	LB1
225	RSM	1050	LB1
250	RSM	2100	LB1

Fields of application:

- Drives for elevators and inclined lifts
- Pumps and fans with backpressure ratchet
- Gearmotors for conveyors with non-reverse characteristic

KKM - Back stop (ball bearing free-wheelings)

The elements have bearing characteristics and are used instead of the bearing on the fan side. The outer dimensions are identical to the deep-groove ball bearings.

Function

Rolling elements and spring loaded clamping bodies are built in between inner and outer ring. The rolling elements and ratchet elements are fixed in a plastic cage. Torque transmitting is made by tight fits on the inner and outer ring. The elements are grease prelubricated. They are maintenance-free for 10,000 to 20,000 hours under normal working conditions.

Mounting

The KKM back stop will be mounted instead of the bearing on the non-driven side.

RSM - Back stop (with centrifugal mechanism)

Because the mounted back stops have no bearing properties, they are mounted directly near the non-drive bearing. Above the lifting speed the centrifugal elements are working contactless and so they are maintenance free under normal conditions.

Mounting

The centrifugal elements are mounted directly near the non-driven side bearing between bearing and fan under the fan cover. The inner ring of the back stop is connected with the shaft with a key DIN 6885-1.

Direction of rotation

The direction of rotation has to be given with the ordering.

Back stop direction

Back stop direction at a view on output shaft right or left.

By turning the entire back stop system by 180°, the back stop direction can be reversed (applies only for RSM!).



Encoder systems

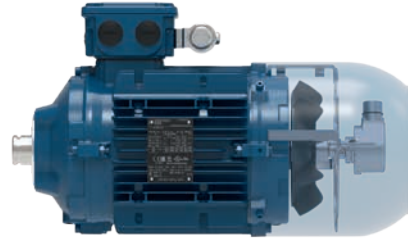
- I. Encoder outside the fan cover
- S. Encoder inside the fan cover



Encoder outside the fan cover



Standard position connector (M23)



Encoder inside the fan cover

Modular design

We are using encoders with hollow shaft (\varnothing 12 mm) open at one end. The modular motor shafts are fit to attach an encoder set. The mounting of encoders therefore is easy and immediately possible. Add-on kits are easy to retrofit.

Mounting of encoders

The encoders are equipped with an integral bearing and connected directly on the non-driven motor shaft side. During angular acceleration of the shaft the stator coupling must absorb only the torque resulting from friction in the bearing.

IG, SG - Standard encoder

Available for IEC motor frame sizes 63 to 250 (IG) / 71 to 280 (SG)

Type: Kübler Sendix 5020

Pulses per revolution: 1024

Output signal: HTL or TTL

Voltage supply: 10-30 V at HTL, 5 V at TTL

Degree of protection: IP66

IG standard: with PIN connector (M23) on the encoder

SG standard: with PIN connector (M23) on the terminal box (mating connector not included in delivery)

Other numbers of pulses per revolution on request.

IC, SC - SINCOS encoder

Available for IEC motor frame sizes 80 to 225 (IC) / 80 to 280 (SC)

Pulses per revolution: 1024

Output signal: Sinus 1VSS

Voltage supply: 10-30 V or 5 V

IC standard: with PIN connector (M23) on the encoder

SC standard: with PIN connector (M23) on the terminal box (mating connector not included in delivery)

Other numbers of pulses per revolution on request.

Encoders in standard mechanical designs can also be implemented as electric SINCOS versions. In this case, signals A and B are available on the output as sinusoidal voltage signals with a signal level of 1 VSS or one 0 pulse once per rotation. These can be used in many different ways in the downstream electronics. Via interpolation of the two signals shifted by 90° , very high resolutions are achieved and can therefore also be used with very slow movements for speed control.

IR, SR - Resolver

Available for IEC motor frame sizes 71 to 200

Degree of protection: IP54 (IP66 on request)

IR standard: with 0.6 m cable (open one way, 6 strands)

SR standard: with 0.6 m cable (open one way, 6 strands)

Resolvers are primarily 2-pole, electromagnetic measuring transducers for converting the angle position of a rotor into an electrical value. Resolvers are wear-free and robust, as the most important elements for acquiring the information consist only of iron core and copper coils. Contamination therefore plays a lesser role.

The configuration consists of 2 stator coils positioned at an offset of 90° (S1/S3 and S2/S4) and a rotating rotor coil (R1/R2). In this process, the rotor coil supply is inductive, in other words, brushless. The R1/R2 rotor coil is excited using a sinusoidal alternating voltage. The amplitudes of the voltages induced in stator coils S1/S3 and S2/S4 depend on the rotor angle.

Input voltage: $E_{(R1/R2)} = E \times \sin(\omega t)$

Output: $E_{(S1/S3)} = T_r \times E_{(R1/R2)} \times \cos(\varphi)$
 $E_{(S2/S4)} = T_r \times E_{(R1/R2)} \times \sin(\varphi)$

Standard input voltage: $E_{(R1/R2)} = 7 \text{ V}$
 Standard transformation ratio: $T_r = 0.5$

SS - SSI multi turn encoder

Available for IEC motor frame sizes 71 to 280
 Digits per revolution: 8192 at 4096 possible rotations
 Output signal: TTL
 Voltage supply: 5 V
 Degree of protection: IP66
 SS standard execution: with PIN connector on the terminal box

The SSI multiturn absolute encoder signals a single exactly defined position to the drive frequency controller. Maximum permissible number of motor revolutions can be 4096. The resolution is 8192 steps per revolution. The serial communication is corresponding to the specification of the SSI-protocol. SSI means Synchronous Serial Interface.

The permissible cable length is 100 m at least if EMC-compatible wiring is guaranteed.

SV - Heavy Duty encoder

Available for IEC motor frame sizes 90 to 250
 Pulses per revolution: 1024
 Output signal: HTL or TTL
 Voltage supply: 10 - 30 V at HTL, 5 V at TTL
 Degree of protection: IP65
 Optional insulation inserts available to protect against shaft currents.

The Heavy Duty encoder boasts a high degree of ruggedness in a very compact design. Its special construction makes it perfect for all applications in very harsh environments.

IA, SA - Special encoder

The mounting of special encoders is possible on request.

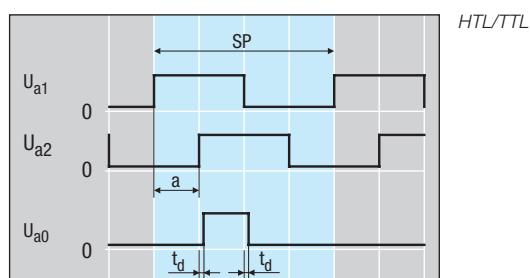
Type of signal

HTL-/TTL - output signal

Encoders with HTL/TTL square-wave output signals incorporate a circuit that digitises scanning signals, providing two 90° (el.) phase-shifted HTL-/TTL square-wave pulse trains U_{a1} and U_{a2} and a reference pulse U_{a0} , which is gated with the incremental signals U_{a1} and U_{a2} .

The integrated electronics also generate the inverse signals of all square-wave pulse trains. The distance between two successive edges of the combined pulse trains U_{a1} and U_{a2} is one measuring step. HTL/TTL square-wave signals can be transmitted to the subsequent electronics (without inverting: max. cable length 100 m; with inverting: 250 m), provided that the specified $5 \text{ V} \pm 5 \%$ supply voltage is maintained at the encoder.

Extended cable length is possible with fiber-optic cable.



HTL signal levels

$U_H \geq 2.1 \text{ V}$ at $I_H = 20 \text{ mA}$
 $U_L \leq 2.8 \text{ V}$ at $I_L = 20 \text{ mA}$
 with power supply +24 V, without cable

TTL signal levels

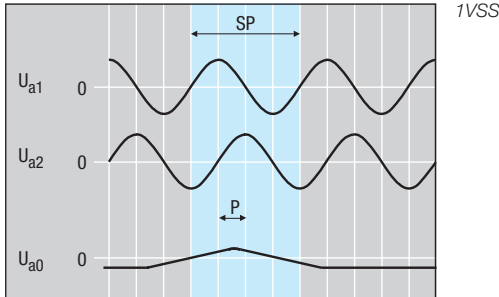
$U_H \geq 2.5 \text{ V}$ at $I_H = 20 \text{ mA}$
 $U_L \leq 0.5 \text{ V}$ at $I_L = 20 \text{ mA}$

▪ **1VPP - output signals**

The sinusoidal incremental signals U_{a1} and U_{a2} are phase-shifted by 90° and have signal levels of approximately 1VPP. The signal peaks from the reference mark signal have a usable component of approximately 0.5 V.

Signal interpolation and digitalisation can be performed by electronics, which output TTL-compatible signals.

Voltage signals can be transmitted to the subsequent electronics unit over cables as long as 50 m, provided that the specified $5\text{ V} \pm 5\%$ supply voltage is maintained at the encoder. Encoders that produce voltage signals have sensor line connections for detection of the supply voltage at the encoder; corresponding control systems in the subsequent electronics can then maintain the voltage tolerance.



	Designation
Encoder signals	U_{a1}, U_{a2}
Reference pulse	U_{a0}
Signal level HIGH	U_H
Signal level LOW	U_L
Edge separation	a
Phase shift	P
Current at signal level HIGH	I_H
Current at signal level LOW	I_L
Signal period	SP
Delay time	t_d

Ventilation systems

FL	Forced ventilation
ZL	Fly wheel fan
ZM	Metal fan
U	Non-ventilated without NDE shaft end
UW	Non-ventilated with NDE shaft end

FL - Forced ventilation (TEFV, IC416)

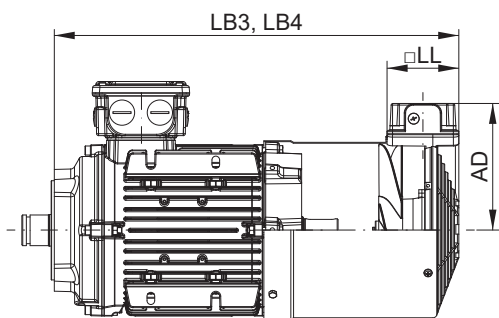
IEC frame sizes: 63 to 280

At applications with high starting frequencies, startings against heavy masses, heavy alternating load and operations with frequency inverters, self ventilation of the motor sometimes will not be sufficient and forced ventilation is necessary. At frequencies under 30 Hz forced ventilation is recommended in order not to thermally overstrain the motor.

Forced ventilation currents (2 pole ventilation motor, 4 pole for frame size 280)

IEC frame size	Phases Connection	Capacitor μF	50 Hz					60 Hz				
			Voltage range V	Current A ¹⁾	Power W ¹⁾	Air current capacity m³/h	Noise level db(A)	Voltage range V	Current A ¹⁾	Power W ¹⁾	Air current capacity m³/h	Noise level dB(A)
63	3~Y	-	346-525	0.09	28	54	47	380-575	0.08	29	69	52
	3~Δ	-	200-303	0.15	28			220-332	0.14	29		
	1~⊥Δ	1.5	230-277	0.18	46			230-277	0.21	54		
71	3~Y	-	346-525	0.09	29	78	51	380-575	0.07	28	99	56
	3~Δ	-	200-303	0.15	29			220-332	0.13	28		
	1~⊥Δ	1.5	230-277	0.18	48			230-277	0.21	56		
80	3~Y	-	346-525	0.09	33	128	54	380-575	0.07	36	151	58
	3~Δ	-	200-303	0.16	33			220-332	0.13	36		
	1~⊥Δ	1.5	230-277	0.19	48			230-277	0.22	59		
90	3~Y	-	346-525	0.22	78	216	59	380-575	0.18	71	258	63
	3~Δ	-	200-303	0.39	78			220-332	0.32	71		
	1~⊥Δ	3.0	220-277	0.29	59			220-277	0.23	61		
100	3~Y	-	346-525	0.21	80	278	60	380-575	0.18	80	328	65
	3~Δ	-	200-303	0.37	80			220-332	0.30	80		
	1~⊥Δ	3.0	220-277	0.29	62			220-277	0.28	73		
112	3~Y	-	346-525	0.20	87	355	62	380-575	0.17	93	418	66
	3~Δ	-	200-303	0.35	87			220-332	0.29	93		
	1~⊥Δ	3.0	220-277	0.27	64			220-277	0.36	88		
132	3~Y	-	346-525	0.37	160	550	67	380-575	0.32	180	650	71
	3~Δ	-	200-303	0.64	160			220-332	0.55	180		
	1~⊥Δ	6.0	230-277	0.52	125			230-277	0.61	163		
160	3~Y	-	346-525	0.74	314	980	73	380-575	0.62	391	1160	77
	3~Δ	-	200-303	1.28	314			220-332	1.08	391		
	1~⊥Δ	12	230-277	1.05	246			230-277	1.52	390		
180	3~Y	-	346-525	0.74	314	980	73	380-575	0.62	391	1160	77
	3~Δ	-	200-303	1.28	314			220-332	1.08	391		
	1~⊥Δ	12	230-277	1.05	246			230-277	1.52	390		
200	3~Y	-	346-525	0.74	314	980	73	380-575	0.62	391	1160	77
	3~Δ	-	200-303	1.28	314			220-332	1.08	391		
	1~⊥Δ	12	230-277	1.05	246			230-277	1.52	390		
225	3~Y	-	346-525	0.74	314	980	73	380-575	0.62	391	1160	77
	3~Δ	-	200-303	1.28	314			220-332	1.08	391		
	1~⊥Δ	12	230-277	1.05	246			230-277	1.52	390		
250	3~Y	-	346-525	0.74	314	980	73	380-575	0.62	391	1160	77
	3~Δ	-	200-303	1.28	314			220-332	1.08	391		
	1~⊥Δ	12	230-277	1.05	246			230-277	1.52	390		
280	3~Y	-	346-525	0.31	154	1283	62	380-575	0.34	223	1467	66
	3~Δ	-	200-400	0.91	238	1337	63	220-400	0.62	247	1580	67

1) maximum permissible values



IEC frame size	AD	□LL
63	118	107
71	124	107
80	134	107
90	143	107
100	152	107
112	164	107
132	185	107
160	211	107
180	211	107
200	211	107
225	211	107
250	211	107
280	247.5	105

Dimensions in mm. Dimensions LB3 and LB4 see drawings from page 590

ZL - Fly wheel fan

IEC frame sizes: 71 to 132 (special execution)

Fly wheel fans increase the inertial moment of the standard motors by a multiple and help to decrease the start up time of the motors. Motors with fly wheel fan often are used at crane drives or machine-systems where a soft start up is required. Available for motor sizes 71 to 132 on request, exchangeable without modification with standard fan, pay attention to the reduced starting frequency! Braking by reversal and driving up against a buffer stop is not permissible.

Motor without brake: $J_{ges} = J_{mot} + J_{ZL}$

Brake motor: $J_{ges} = J_{mot} + J_{ZL} + J_B$

	Designation	Unit
Total mass moment of inertia	J_{ges}	[kgm ²]
Mass moment of motor	J_{mot}	[kgm ²]
Mass moment of brake	J_B	[kgm ²]
Mass moment of fly wheel fan	J_{ZL}	[kgm ²]
Weight of fly wheel fan	m	[kg]

IEC frame size	J_{ZL} [kgm ²] x 10 ⁻³	m [kg]
71	2	1.3
80	2	1.3
90	3	1.6
100	10	3.3
112	10	3.3
132	14	3.8

M

ZM - Metal fan

IEC frame size: 63 to 280

For ambient temperatures which are lesser than or greater than the operation temperatures of the standard plastic fan wheels, the ventilation can be provided via metal fan wheels. These can be manufactured from aluminium, steel plate or cast iron. Using a metal fan can be appropriate in the event of difficult climatic conditions.

U - Non-ventilated without NDE shaft end (TENV)

IEC frame size: 63 to 280

In this version, there is no fan or fan cover. The NDE is completely enclosed. A cover plate is used as the sealing component. This prevents dirt, water, etc. from entering the motor.

UW - Non-ventilated with NDE shaft end (TENV)

IEC frame size: 63 to 280

This design is realised by omitting the fan. The standard fan cover is used as contact protection for the remaining NDE rotating shaft. Motors of these designs are intended for use in systems where fans or fan covers integrated into the motor are not appropriate due to the environmental conditions, for design reasons or at the customer's request.

The motors are therefore designed without integrated fans or fan covers.

In the non-ventilated version, the resulting reduction in nominal motor output must be observed!



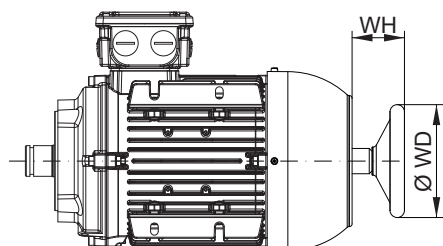
Additional modules

HR	Hand wheel
SD	Protection cap
ID	Protection cap for encoders
ZWM	Second shaft end - module shaft
ZWV	Second shaft end - solid shaft

HR - Hand wheel

IEC frame sizes: 71 to 250

By using a second shaft end it is possible to fit a hand wheel.



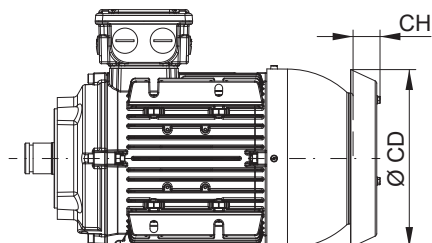
IEC frame size	ØWD	WH
71	125	51
80	125	51
90	125	51
100	125	51
112	125	51
132	200	60
160	200	60
180	200	60
200	200	60
225	200	60
250	200	60

Dimensions in mm.

SD - Protection cap

IEC frame sizes: 63 to 280

When installed vertically with the shaft downward, e.g. IM V1, the air intake opening can be protected against water and foreign substance by means of a protective cap.



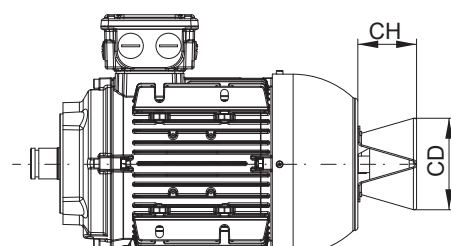
IEC frame size	ØCD	CH
63	124	20
71	139	20
80	157	20
90	176	20
100	197	32
112	219	35
132	254	35
160	266	52
180	310	57
200	380	67
225	427	72
250	427	72
280	547	93

Dimensions in mm.

ID - Protection cap for encoders

IEC frame sizes: 90 to 280

If mounted outside the fan cover, the encoder may be protected against foreign matter and other external influence by a separate protection cap.



Protection cap for	CD	CH
IG standard encoder	74	116
IV Heavy Duty encoder	115	183

Dimensions in mm.

ZW. - Second shaft end

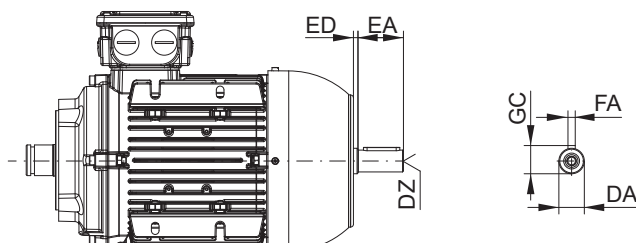
Motors with or without brake can be supplied with a second free shaft end.

ZWM: Module shaft

IEC frame sizes: 71 to 280. This shaft end can be used to transfer half the rated output of the motor.

ZWV: Solid shaft

IEC frame sizes: 63 to 200. Available on request.



IEC frame size	DA	DZ ²⁾	EA	ED	FA	GC
63 ¹⁾	11	M4	23	-	4	12.5
71	14	M5	30	5	5	16
80	14	M5	30	5	5	16
90	19	M6	40	5	6	21.5
100	24	M8	50	5	8	27
112	24	M8	50	5	8	27
132	28	M10	60	5	8	31
160	38	M12	80	5	10	41
180	38	M12	80	5	10	41
200	38	M12	80	5	10	41
225 ²⁾	38	M12	80	5	10	41
250 ²⁾	38	M12	80	5	10	41
280 ²⁾	38	M12	80	5	10	41

Tolerances		
Dimension name	ISO tolerance DIN EN ISO 286-2	
DA	≤ Ø 30 mm	j6
	> Ø 30 mm up to Ø 50 mm	k6

Dimensions in mm. ¹⁾ ZWV only ²⁾ ZWM only ³⁾ centre hole with thread according to DIN 332-1

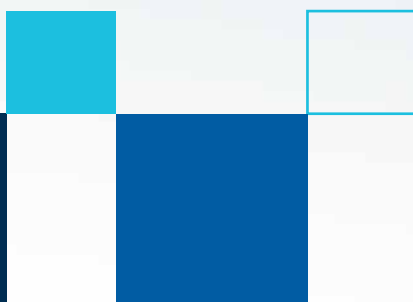
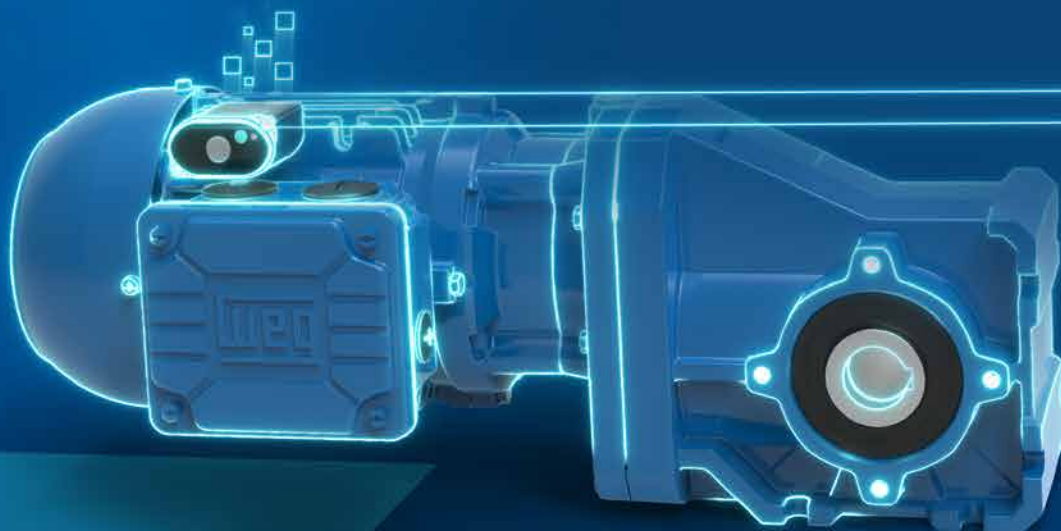
Standards

The motors comply with the competent standards and specifications, especially with the following:

Title	IEC	DIN / EN / VDE
Rotating electrical machines Rating and performance	IEC 60034-1 IEC 60085	DIN EN 60034-1
Standard methods for determining losses and efficiency from tests (excluding machines for traction vehicles)	IEC 60034-2-1	DIN EN 60034-2-1
Degrees of protection provided by integral design of rotating electrical machines (IP Code)	IEC 60034-5	DIN EN 60034-5
Methods of cooling (IC Code)	IEC 60034-6	DIN EN 60034-6
Classification of types of construction, mounting arrangements and terminal box position (IM Code)	IEC 60034-7	DIN EN 60034-7
Terminal markings and direction of rotation	IEC 60034-8	DIN EN 60034-8
Noise limits	IEC 60034-9	DIN EN 60034-9
Starting performance of single-speed three-phase cage induction motors	IEC 60034-12	DIN EN 60034-12
Mechanical vibration of certain machines with shaft heights 56 mm and higher - measurement, evaluation and limits of vibration severity	IEC 60034-14	DIN EN 60034-14
Dimensions and output series for rotating electrical machines	IEC 60072-1	DIN EN 50347
Thermal protection	IEC 60034-11	DIN EN 60034-11
CENELEC standard voltages	IEC 60038	DIN EN 60038

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