

WCR

Worm Gear

Industrial Motors

Commercial &
Appliance Motors

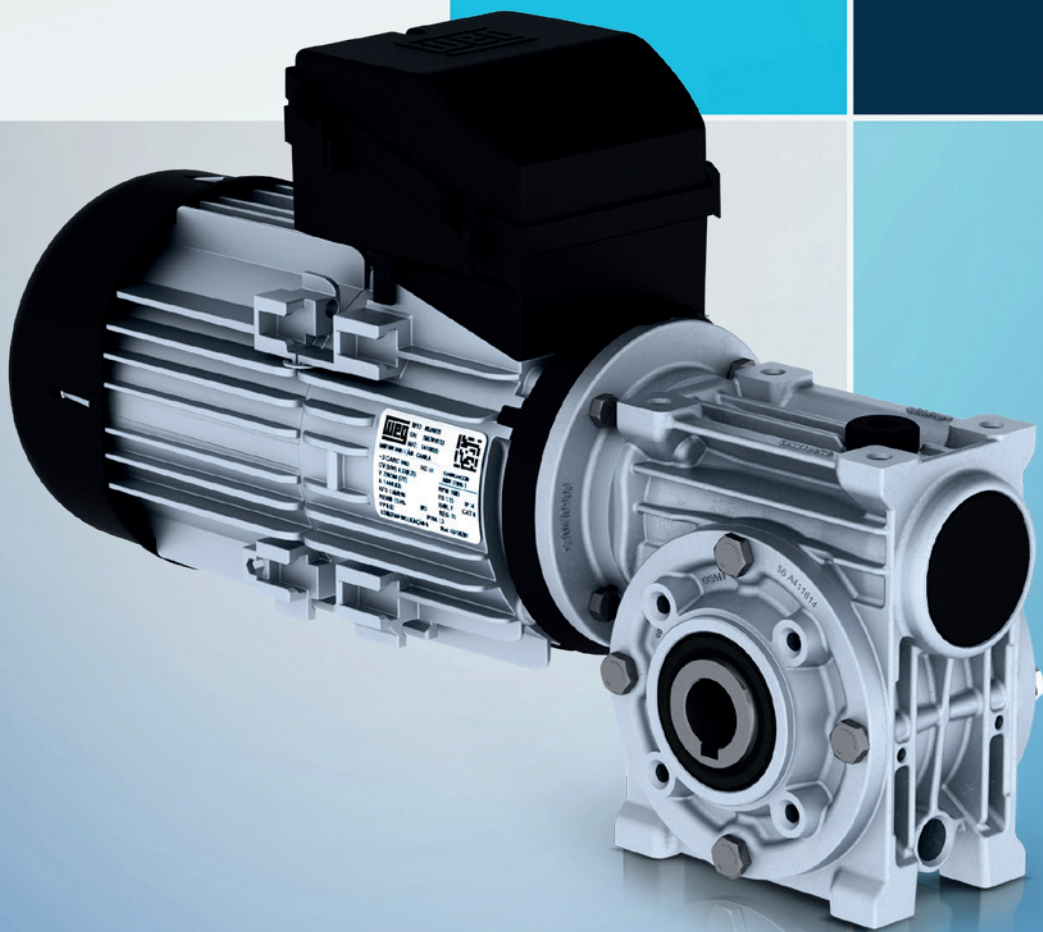
Automation

Digital &
Systems

Energy

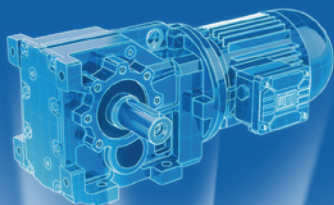
Transmission &
Distribution

Coatings



Driving efficiency and sustainability





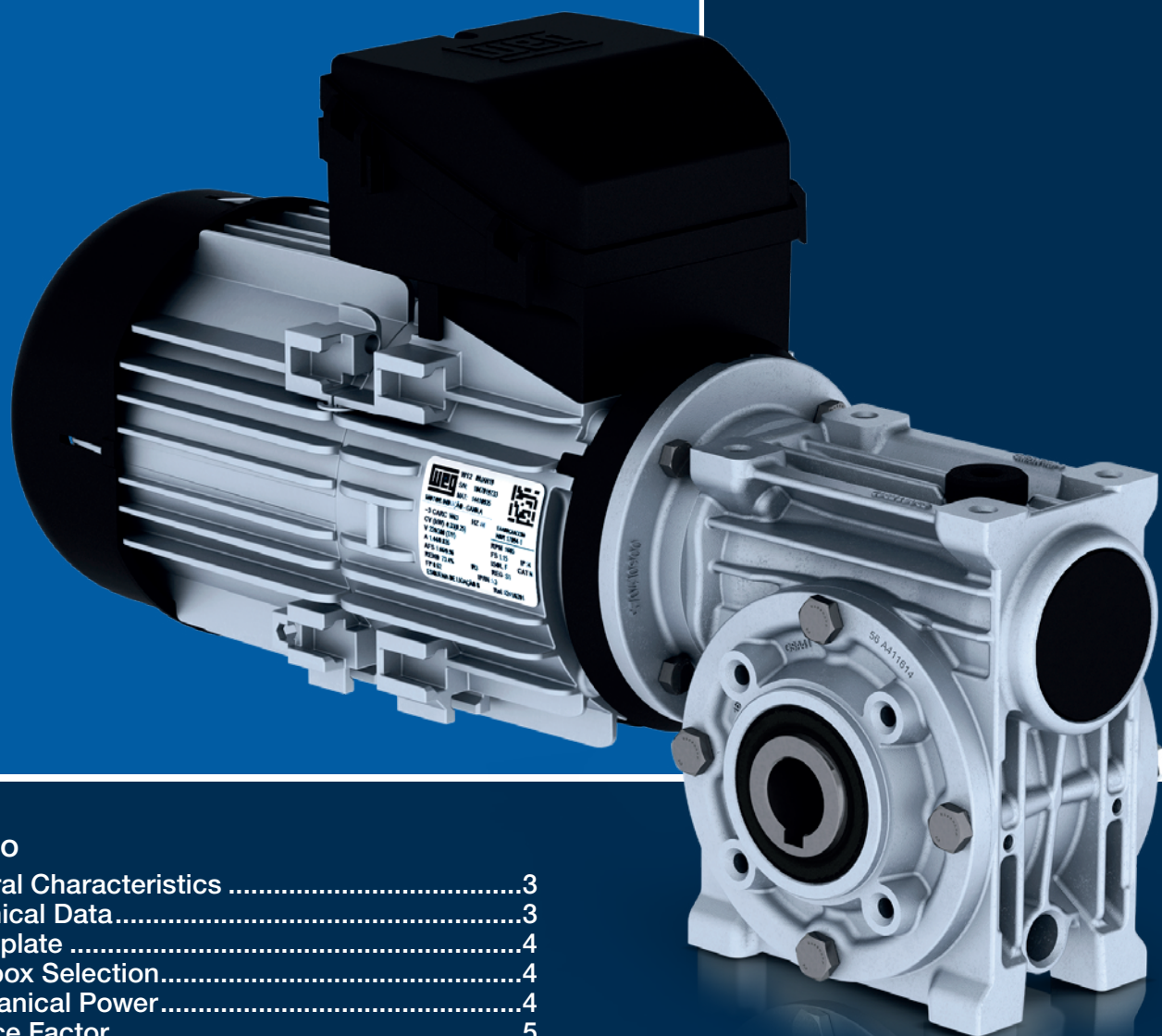
Gear ProSelect

Configure your gearbox
easily and accurately

Access here



gearproselect.weg.net



Sumário

1. General Characteristics	3
2. Technical Data	3
3. Nameplate	4
4. Gearbox Selection	4
5. Mechanical Power	4
6. Service Factor	5
7. Permissible Peak Torque on the Gearbox	6
8. Permissible Radial / Axial Forces	6
9. Product Description	7
10. Mounting Position	7
11. Position of the Connection Box	8
12. Form of Supply	8
13. Lubrication and weight	9
14. Selection Tables (1-stage gearbox)	10
16. Selection Tables (2-stages gearbox)	13
15. Dimensions	19



Driving efficiency and sustainability



1 GENERAL CHARACTERISTICS

The WCR series gear GEARS are right-angle worm gear units designed to drive all types of small- and medium-sized machinery and equipment. The various configurations and accessories allow for installation in different positions, and they take up minimal space due to their compact size.

Output Shafts:

- Hollow
- Solid (single and double)

Input:

- C-DIN Flange
- FF Flange
- Solid Shaft (single and double)

Mounting Accessories

- Output Flange
- Torsion Arm
- Feet

Optional:

- Shafts with optional dimensions
- Duplex Gearbox

HOUSING

With a fully finned outer surface, the housings of WCR gearboxes are made of two types of materials, depending on the size. Up to size 63, they are made of aluminum, and from size 71 onward, they are made of cast iron.

OUTPUT SHAFTS

Solid shafts are made of carbon steel, and hollow shafts are made of nodular cast iron. All shaft seats and output ends are ground to the tolerances specified in this catalog.

GEAR TRAIN

The worm gears are made of case-hardenable chromium-nickel steel, which, after heat treatment, achieves a hardness of 54 to 59 HRC. The ring gear is made of bronze and has a globular shape with helical teeth.

LUBRICATION

Synthetic oil is used for sizes up to 119. For size 160, mineral oil is used.

COOLING

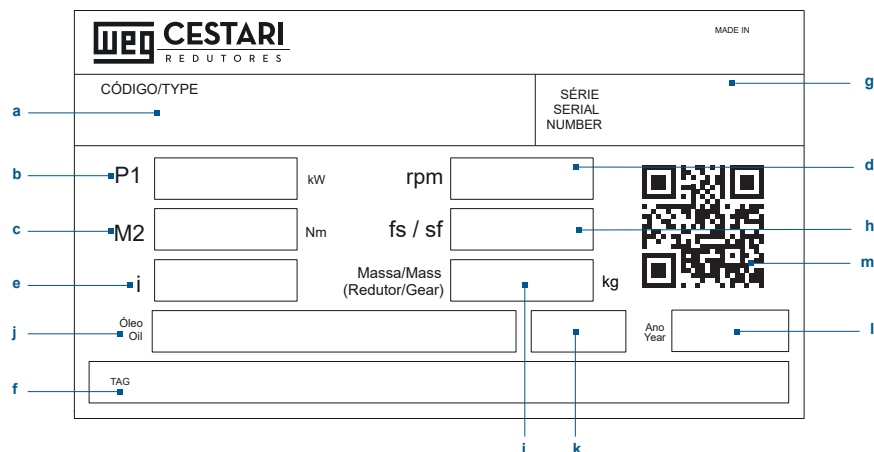
Due to the optimized finned design, cooling is provided by the gearbox housing. This system is sufficient to maintain the proper operating temperature.

2 TECHNICAL DATA

Standard Gearbox										
Housing Size	WCR28	WCR41	WCR51	WCR63	WCR71	WCR84	WCR100	WCR119	WCR160	
Torque	25	50	95	150	275	425	675	1,000	2,000	
Transmission ratio	7.5–60	7.5–80	7.5–100	7.5–100	10–99	10–97	10–99	10–98	15–80	
Number of internships	1	1	1	1	1	1	1	1	1	
Axis Arrangement	Orthogonal									
Housing material	Aluminum					Cast iron				
Duplex gearbox										
Housing size	WCR28 - 28	WCR41 - 28	WCR51 - 41	WCR63 - 41	WCR71 - 41	WCR84 - 51	WCR100 - 51	WCR119 - 63	WCR160 - 71	
Torque	29	64	134	262	361	561	903	1,236	2,800	
Transmission ratio	100–1,600	100–1,600	100–2,400	100–3,000	100–3,920	100–3,840	100–3,920	100–3,920	150–3,000	
Number of stages	2	2	2	2	2	2	2	2	2	
Axis Arrangement	Parallel and Orthogonal									
Housing Material	Aluminum					Cast iron and aluminum				
Features of the complete line										
Solid shaft	Design	With keyway and key (SAE 1045 material) in accordance with DIN 6885.1 for all sizes and threaded bore per DIN 332 only for sizes WCR28, WCR41, WCR51, WCR63, and WCR160.								
	Tolerance	j6				h7				j6
	Material	SAE 1045								
Hollow shaft	Design	With keyway per DIN 6885.1								
	Tolerance	H7								
	Material	GGG40 nodular cast iron								
Infinite thread	Design	Case-hardened with ground tooth flanks								
	Material	Chromium-nickel steel								
Parts toothed		Gravity cast				Cast and centrifugal			Gravity casting	
	Material	C90700 bronze							C95700 bronze	
Retainers Shaft	Design	Type A / AS per DIN 3760								
	Material	NBR (Nitrile)								

3 NAMEPLATE

The nameplate for sizes WCR28 through WCR63 and WCR160 is made of aluminum and measures 39x45 mm. For sizes WCR71 through WCR119, an identification label measuring 40x60 mm is used.



a	Product name
b	Motor power
c	Output torque
d	Output speed
e	Gear ratio
f	TAG
g	Serial number
h	Service factor
i	Mass
j	Amount and type of oil
k	Working position
l	Year of manufacture
m	QR code

4 SELECTING THE GEARBOX

The gearbox transmits power from the primary machine—usually an electric motor—operating at a specific speed to the equipment, reducing the speed and increasing the torque. The power available at the gearbox’s output shaft is equal to the power available at the input shaft, minus losses that are converted into heat.

The service factor quantifies the influence of external conditions on the gearbox’s operation. External conditions include: number of starts per hour, operating time, and the presence of shocks and vibrations, among others. In practice, this means how much additional torque the gearbox must withstand—beyond the torque that is actually being transmitted—in order to handle the daily operating conditions of the driven machine, load variations, and any overloads that may occur.

The data in this catalog refer to the sizing of gearboxes, considering a service factor of 1.00—that is, uniform load, operation up to 8 hours per day, up to 5 starts per hour, ambient temperature of 20 °C, altitude up to 750 m above sea level, a maximum oil temperature of 90 °C, and loads without reversal. For service factor references by application and operating cycle, see the Service Factors table (Page 5). When radial loads are present on the gearbox’s input shaft, consult WEG-CESTARI’s engineering department.

5 MECHANICAL POWER

M2 = allowable torque on the gearbox output shaft (catalog tables); see pages 13 and 14.

T1 = drive torque on the input shaft.

T2 = drive torque on the output shaft.

Pa = operating power (input shaft).

FS = service factor obtained from the catalog table on page 8.

n1 = drive speed (input shaft).

n2 = output shaft speed.

i = gear ratio.

$T1 = 9550 \times Pa / n1$

$T2 = T1 \times i$

■ Unidirectional load and constant torque $M2 \geq T2 \times FS$

■ When there is load reversal with constant torque, $M2 \geq T2 \times FS \times 1.43$

Upon request:

■ Variable torque

■ Service factor greater than 5.00

6 SERVICE FACTORS

Service factor - Fs			
Application	Daily operating time		
	<3 hours	3–10 hours	>10h
Agitators and mixers			
Pure liquids	1.00	1.00	1.25
Liquids and solids	1.00	1.25	1.50
Liquids of varying density	1.00	1.25	1.50
Pumps			
Centrifugal	1.00	1.25	1.50
Reciprocating (single-cylinder)	1.50	1.50	1.75
Reciprocating (multi-cylinder)	1.25	1.50	1.50
Gear-driven rotary machines	1.25	1.25	1.50
Vane-type rotary machines	1.25	1.25	1.50
Helical	1.25	1.25	1.50
Compressors			
Centrifugal	1.25	1.25	1.50
Screw	1.50	1.50	1.75
Reciprocating - multi-cylinder	1.50	1.50	1.75
Reciprocating - single-cylinder	1.75	1.75	2.00
Dredgers			
Pumps	2.00	2.00	2.00
Rotary heads	2.00	2.00	2.00
Winches	1.25	1.25	1.50
Screens	1.75	1.75	2.00
Conveyors	1.25	1.50	1.50
Elevators			
Freight elevators	1.25	1.25	1.50
Passenger elevators	¹⁾	¹⁾	¹⁾
Escalators	1.25	1.25	1.50
Power			
Frequency converters	2.00	2.00	2.00
Hydraulic generators (low speed)	1.75	1.75	1.75
Hydraulic turbines	¹⁾	¹⁾	¹⁾
Extruders			
Plastic	1.50	1.50	1.50
Rubber	1.75	1.75	1.75
Cereal	2.00	2.00	2.00
Food industry			
Centrifuges	1.75	1.75	2.00
Cutters	1.25	1.25	1.50
Grain cookers	1.25	1.25	1.50
Toasting desolventizer (DT)	2.00	2.00	2.00
Mixers	1.25	1.25	1.50
Mills and crushers	1.50	1.50	1.75
Presses	2.00	2.00	2.00
Rotary dryers	1.25	1.25	1.50

Service factor - Fs			
Application	Operating period per day		
	<3 hours	3–10 h	>10h
Sugar and ethanol industry			
Low-speed agitators	1.50	1.50	1.50
High-speed agitators	2.00	2.00	2.00
Crystallizers	1.75	1.75	1.75
Shredders	2.50	2.50	2.50
Range hoods	2.00	2.00	2.00
Choppers	2.50	2.50	2.50
Belt conveyors	1.50	1.50	1.50
Chain conveyors	1.75	1.75	1.75
Rubber industry			
Calenders	1.50	1.50	1.75
Extruders	1.75	1.75	1.75
Mixers	2.00	2.00	2.00
Heating mills	1.50	1.50	1.75
2-in-line cylindrical mills	1.75	1.75	2.00
Cylindrical Mills, 3 in a row	1.50	1.50	1.75
Rolling mills	1.50	1.75	2.00
Trimming machines	1.50	1.75	2.00
Shredders	2.00	2.00	2.00
Ceramics industry			
Clay mixers	1.00	1.25	1.50
Mixers	1.00	1.25	1.50
Clay mills	¹⁾	¹⁾	¹⁾
Brick and tile presses	1.50	1.75	2.00
Cement Industry			
Jaw crusher	2.00	2.00	2.00
Rotary Mill	2.00	2.00	2.00
Ball and roller mill	2.00	2.00	2.00
Rotary kilns	2.00	2.00	2.00
Separators	1.50	1.50	1.50
Roller Shredder	2.00	2.00	2.00
Lumber industry			
Planer feeders	1.25	1.25	1.50
Woodworking Machinery (General)	1.25	1.25	1.50
Saws	1.75	1.75	2.00
Pulp and Paper Industry			
Beaters	1.75	1.75	2.00
Calenders	1.75	1.75	2.00
Peelers	1.50	1.75	2.00
Peelers	1.50	1.75	2.00
Filters	1.75	1.75	2.00
Paper machine	2.00	2.00	2.00
Shredders	1.75	1.75	2.00
Presses	1.75	1.75	1.75
Dryers	1.75	1.75	2.00

Service factor - Fs			
Application	Operating period per day		
	<3h	3–10 h	>10 hours
Metalworking industry			
Rotary disc sheet metal cutters	1.50	1.75	2.00
Blade-type sheet metal cutters	1.50	1.75	2.00
Bending machines	1.50	1.75	2.00
Wire drawing machines	1.25	1.50	1.75
Tension rollers	1.50	1.75	2.00
Cable reel	1.25	1.50	1.50
Rollers	1.50	1.50	1.50
Saws	1.00	1.25	1.50
Winding and unwinding machines	1.50	1.50	1.75
Conveyor table	2.00	2.00	2.00
Shears	2.00	2.00	2.00
Mining			
Rotary drives	1.50	1.50	1.75
Excavators	¹⁾	¹⁾	¹⁾
Crushers	1.75	1.75	2.00
Vibrators	1.75	1.75	2.00
Rotary mills and drums			
Ball and roller mills	2.00	2.00	2.00
Hammer mill	2.00	2.00	2.00
Coal mill	1.50	1.50	1.75
Dryers	1.50	1.50	1.75
Coolers	1.50	1.50	1.75
Crane systems			
Cranes	¹⁾	¹⁾	¹⁾
Freight elevators	¹⁾	¹⁾	¹⁾
Conveyors			
Bucket elevator	1.25	1.25	1.50
Belt conveyors ≤100 kW	1.25	1.25	1.50
Belt conveyors >100 kW	1.25	1.50	1.75
Screw conveyors	1.25	1.25	1.50
Vibrators	1.75	1.75	2.00
Water Treatment and Sanitation			
Aerators	2.00	2.00	2.00
Chemical feeders	1.25	1.25	1.25
Screw pumps	1.25	1.25	1.50
Manifolds	1.25	1.25	1.50
Thickeners	1.50	1.50	1.50
Vacuum filters	1.50	1.50	1.50
Screens	1.50	1.50	1.50
Fans			
Centrifugal	1.00	1.00	1.25
Industrial and mining	1.75	1.75	1.75
Blowers (forced)	1.50	1.50	1.50
Cooling towers	¹⁾	¹⁾	¹⁾
Heat exchangers	1.50	1.50	1.50
Overhead cranes			
-	¹⁾	¹⁾	¹⁾

Notes: 1) Consult WEG-CESTARI.

IMPORTANT: For internal combustion engines, proceed as described below:

Internal combustion engines with 4 or more cylinders: Fs (selection table) + 0.25.

Internal combustion engines with 1 to 3 cylinders: Fs (selection table) + 0.50.

7 MAXIMUM ALLOWABLE TORQUE AT THE GEARBOX R

- For non-reversing loads: $M_{k2adm} = 2.00 \times M_2 / F_f$
- For loads with reversing: $M_{k2adm} = 1.43 \times M_2 / F_f$
- M_2 = allowable torque at the gearbox output shaft (tables on pages 13 and 14)

The maximum peak torque M_{k2max} is the drive torque T_2 multiplied by the starting factor (F_{start}).

$M_{k2max} = T_2 \times F_{start}$, therefore:

M_{k2max} must be less than the permissible value M_{k2adm} .

$M_{k2adm} > M_{k2max}$

Peak factor F_f					
Hourly peak load frequency, sh					
Minimum 1 Maximum 5	Minimum 6 Maximum 20	Minimum 21 Maximum 40	Minimum 41 Maximum 80	Minimum 81 Maximum 160	>160
1.00	1.20	1.30	1.50	1.75	2.00

The gearbox may only be overloaded for short periods of time. Peak loads must not last longer than 10 seconds.

Start factor F_{start} as a function of the start type	
Start-up type	F_{start}
Direct	3.00
Soft-starter	2.0
Frequency inverter ¹⁾	1.5 to 2.0
Start: star/delta	1.30
Fluid coupling without delay chamber	2.00
Fluid coupling with delay chamber	1.60

1) Depending on the configuration

8 PERMISSIBLE RADIAL/AXIAL FORCES

To determine the resulting radial load on transmission elements, the following factors must be considered:

Element Type	Factor (K)
Gear	1.00
Pinion and gear	1.25
V-belt	1.50
Flat belt	2.50

F = effective radial load (N)

P_c = effective power required by the machine (kW)

D_p = pitch diameter of the element (mm)

n_2 = output shaft speed (rpm)

K = correction factor

$$F = \frac{P_c \times 19,100,000 \times K}{D_p \times n_2}$$

The effective radial load (F) must be less than or equal to the allowable radial load. The allowable radial loads on the output shafts are listed in the capacity tables and were calculated assuming the radial load acts at the center of the shaft end. When the load acts off-center, the allowable radial load must be recalculated as shown below. When loads are present on the gearbox input shaft, consult WEG-CESTARI.

Recalculation of Permissible Radial Loads on the Output Shaft

Radial load based on bearing life.

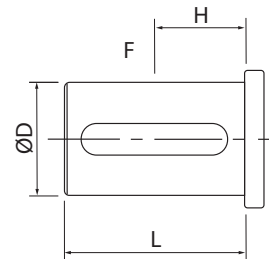
$$FR_v = CR \frac{a}{b + H} \quad (N)$$

CR = Radial load indicated in the capacity tables.

Radial load based on shaft strength.

$$FR_e = \frac{c}{H} \quad (N)$$

The allowable radial load is the lower of the two values.



H = Position of the applied load relative to the shaft end face

Calculation example

Data:

WCR71-size gearbox, 1:10 reduction ratio at 1,750 rpm at the input

Transmission element: gear

Pitch diameter of the gear = 100 mm

Distance from the center of the gear to the shaft shoulder:

$H = 30$ mm

Effective power required by the machine = 3.68 kW

EFFECTIVE RADIAL LOAD

$$F = \frac{3.7 \times 19,100,000}{100 \times 175} \times 1.25 = 5,047.8 \text{ N}$$

$$FR_v = 6,604 \times \frac{131}{131} = 6,604 \text{ N}$$

$$FR_e = \frac{198,090}{30} = 6,603 \text{ N}$$

The allowable load " FR_v " or " FR_e " (whichever is lower) cannot be less than the effective radial load " F ."

In this example, the allowable radial load will be 6603 N.

Size	a	b	C	D	L
WCR28	59.5	45.5	26,250	14	25
WCR41	87	64.5	54,250	19	35
WCR51	95.5	71	102,000	24	40
WCR63	121	89	162,500	28	50
WCR71	162	122	275,000	40	80
WCR84	182	137	398,000	45	90
WCR100	206	156	515,000	50	100
WCR119	241	186	702,000	55	110
WCR160	245	177	1,080,000	60	120

9 PRODUCT NAME



1. Sizes

WCR28 | WCR41 | WCR51 | WCR63 | WCR71 | WCR84 | WCR100 | WCR119 | WCR160

2. Number of Stages

1 = 1-stage GEAR
2 = 2-stage GEAR

3. Mounting

H = Housing
T = Torsion arm
F = B5 flange
G = Feet

4. Output shaft

H = Hollow
S = Solid
B = Solid on both sides (A+B)

5. Input type

U = Solid shaft
D = Solid shaft on both sides (A+B)
C = Motor adapter with DIN C flange
I = Motor adapter with DIN FF flange
H = Solid shaft + DIN C flange on the opposite side
F = Solid shaft + FF flange on the opposite side

Note: Determine the side by considering "Side A" as the left side and "Side B" as the right side, viewing the gearhead from the input side in the M1 operating

position.

6. Motor Housing

56 | 63 | 71 | 80 | 90 | 100 | 112 | 132 | 160

7. Motor power

0.08 kW | 0.12 kW | 0.18 kW | 0.25 kW | 0.37 kW | 0.5 kW | 0.75 kW | 1.1 kW | 1.5 kW | 2.2 kW | 3 kW | 3.7 kW | 4 kW | 4.5 kW | 7.5 kW | 9.2 kW | 11 kW | 15 kW

8. Motor polarity

2P = 2 poles
4P = 4 poles
6P = 6 poles
8P = 8 poles

9. Motor platform

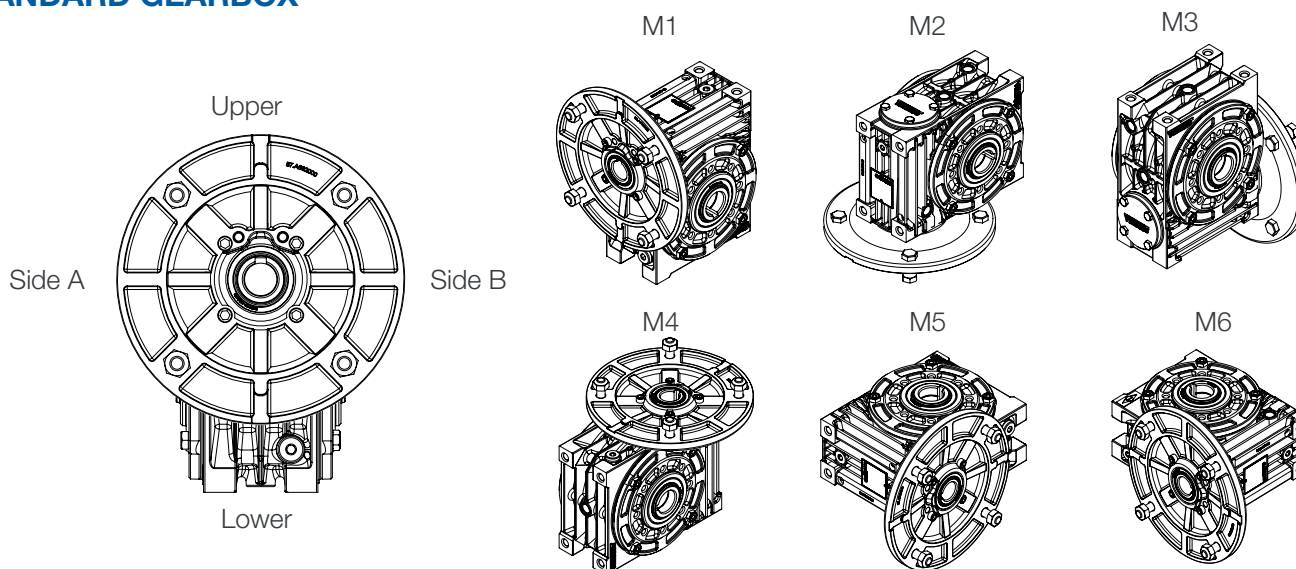
W12 | W21 | W22

10. Specialty indicator

(blank) = Standard S = Special

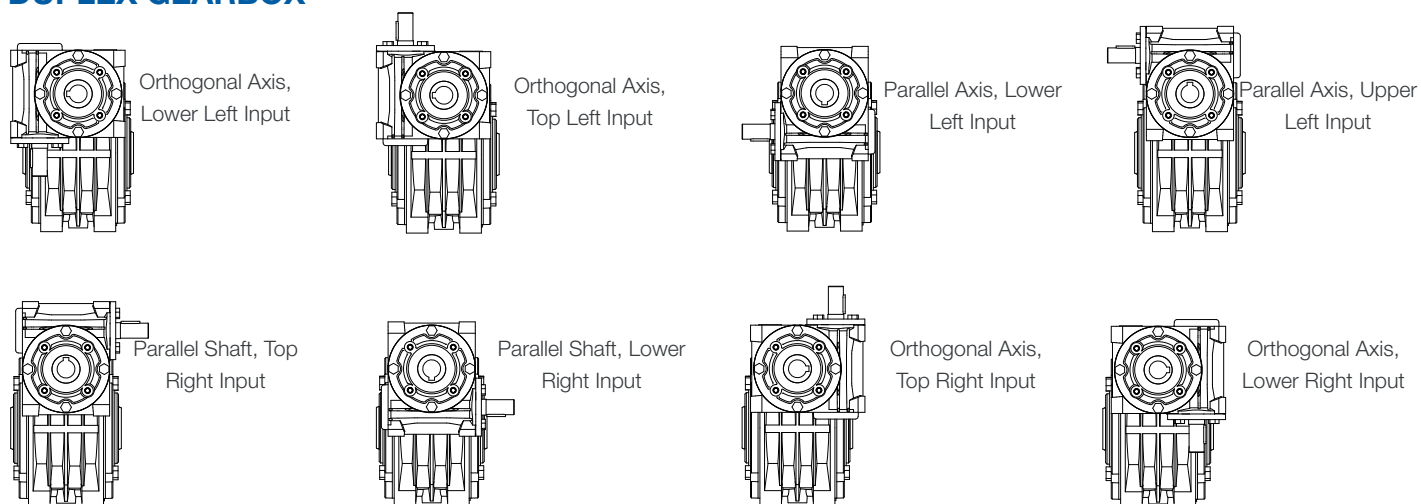
10 OPERATING POSITION

STANDARD GEARBOX



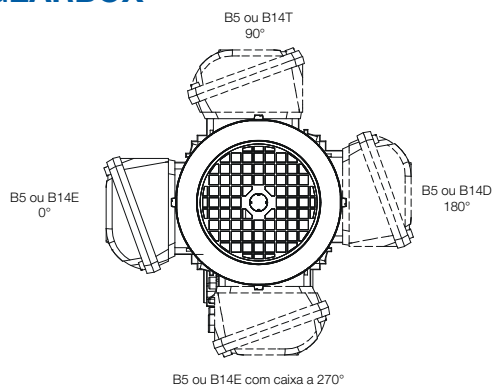
Note: Always orient the accessories and output shaft with reference to the gear GEAR in the "M1" operating position.

DUPLEX GEARBOX



11 CONNECTION BOX POSITION

DUPLEX GEARBOX



Position of the input gearbox	Position of the junction box			
	0°	90°	180°	270°
Parallel axes, top right inlet	X	X	-	X
Parallel axes, bottom right input	-	X	X	X
Orthogonal axes, top right input	-	X	X	X
Orthogonal axes, lower right input	X	X	-	X
Parallel axes, upper left input	-	X	X	X
Parallel axes, lower left input	X	X	-	X
Orthogonal axes, top left input	X	X	-	X
Orthogonal axes, lower left input	-	X	X	X

X	Applicable
-	Consult engineering

Orientation of the motor junction box for:

- Standard Gearbox: Orient according to operating position "M1".
- Duplex gearbox: Orient according to the "M1" operating position of the input gearbox.

12 SCOPE OF SUPPLY

WCR series gearboxes are supplied as standard with lubricating oil. The interior of the housing for sizes WCR71 through WCR160 is coated with oil-resistant paint.

WCR series gearboxes in sizes WCR28 through WCR63 are supplied without exterior paint, while sizes WCR71 through WCR160 are supplied in RAL 5009 and paint scheme 207A. For other paint schemes and colors, consult WEG-CESTARI.

13 LUBRICATION AND WEIGHT

The gears in WCR gear GEARS are lubricated by oil immersion and operate optimally at input speeds between 500 rpm and 1,800 rpm and ambient temperatures between 10 °C and 40 °C.

Lubricant	Model (WCR)
ISO VG 320 Synthetic PAO	28 – 41 – 51 – 63
ISO VG 460 Synthetic PAO	71 – 84 – 100 – 119
ISO VG 460 Mineral CLP	160

* For operating conditions other than those listed above, consult WEG-CESTARI.

Manufacturer	Viscosity ISO VG 320	
	Synthetic PAO	Synthetic PG
KLUBER	KLUBERSYNTH ^{EG4-3201}	KLUBERSYNTH GH6-320
SHELL	OMALA S4 GX 320	OMALA S4 WE 320
FUCHS	GEARMASTER SYN CLP-HC 320	GEARMASTER PGP CLP-PG 320
MOBIL	MOBILGEAR SHC 632	-
IPIRANGA	IPIRANGA SP ULTRATECH SYNTHETIC 320	-
CASTROL	OPTIGEAR SYNTHETIC X 320	-
PETRONAS	PETRONAS GEAR SYN PAO 320	PETRONAS GEAR SYN PAG 320
WHITMORE	DECATHLON F PAO 320	DECATHLON PAG 320
BECEM	BERUSYNTH GP 320 CLP HC	BERUSYNTH EP 320 CLP PG
PETROBRAS	LUBRAX SYNTESYS GEAR PAO 320	-

Manufacturer	Viscosity ISO VG 460		
	Mineral	Synthetic PAO	Synthetic PG
KLUBER	Kluberoil ^{GEM1-460N3}	KLUBERSYNTH ^{EG4-4602}	KLUBERSYNTH GH6-460
SHELL	OMALA S2 G 460	OMALA S4 GX 460	OMALA S4 WE 460
FUCHS	GEARMASTER CLP 460	GEARMASTER SYN CLP-HC 460	GEARMASTER PGP CLP-PG 460
MOBIL	MOBILGEAR 600 XP 460	MOBILGEAR SHC 634	-
IPIRANGA	IPIRANGA SP 460	IPIRANGA SP ULTRATECH SYNTHETIC 460	-
CASTROL	OPTIGEAR BM 460	OPTIGEAR SYNTHETIC X 460	-
PETRONAS	PETRONAS GEAR FL 460	PETRONAS GEAR SYN PAO 460	PETRONAS GEAR SYN PAG 460
WHITMORE	-	-	DECATHLON PAG 460
BECEM	BERUGEAR GS 460 BM CLP	BERUSYNTH GP 460 CLP HC	BERUSYNTH EP 460 CLP PG
PETROBRAS	LUBRAX INDUSTRIAL EGF 460 OS	LUBRAX SYNTESYS GEAR PAO 460	-

1 - Standard lubricating oil used in sizes WCR28 through WCR63

2 - Standard lubricating oil used in sizes WCR71 through WCR119

3 - Standard lubricating oil used in size WCR160

QUANTITIES AND WEIGHTS

Size	Lubricant Quantity (L)						
	Mounting Positions						
	P1	P2	P3	P4	P5	P6	WEIGHT (KG)
WCR28	0.030	0.055	0.035	0.055	0.040	0.040	1.5
WCR41	0.060	0.100	0.100	0.100	0.070	0.070	2.7
WCR51	0.130	0.250	0.180	0.250	0.150	0.150	4.1
WCR63	0.300	0.460	0.460	0.460	0.380	0.380	9.5
WCR71	1.200	1.200	1.200	1,200	1,200	1,200	26.0
WCR84	1,680	1,680	1,680	1,680	1,680	1,680	35.0
WCR100	2,740	2,740	2,740	2,740	2,740	2,740	52.0
WCR119	3,900	3,900	3,900	3,900	3,900	3,900	75.0
WCR160	5,200	6,000	6,500	6,000	5,700	5,700	144.0

14 SELECTION TABLES (STANDARD GEAR GEAR)

LEGEND:

ie_x = Exact transmission ratio

n₁ = Input speed – RPM

n₂ = Output speed – RPM

M₂ = Maximum torque – Nm

Fr = Radial force on the output shaft – N

P₁ = Maximum power – kW

N = Efficiency – %

M_n = Rated torque with limiting motor - Nm

P_n = Rated power with limiting motor – kW

f.s. = Rated power with limiting motor

Size	1800 RPM								
	ie _x	n ₂ (rpm)	M ₂ (Nm)	P ₁ (kW)	M _n (Nm)	P _n (kW)	f.s.	Fr (N)	n (%)
WCR28	7.5	240.0	20.7	0.58	9.0	0.25	2.3	1,600	87
	10	180.0	18.7	0.40	11.6	0.25	1.6	1,600	84
	15	120.0	20.8	0.31	16.5	0.25	1.3	1,600	80
	20	90.0	16.5	0.21	14.5	0.18	1.1	1,600	73
	25	72.0	24.5	0.25	24.5	0.25	1.0	1,850	71
	30	60.0	23.1	0.20	20.5	0.18	1.1	2,100	69
	40	45.0	17.6	0.13	15.9	0.12	1.1	2,100	60
	50	36.0	18.2	0.12	18.2	0.12	1.0	2,100	55
	60	30.0	15.0	0.09	13.8	0.08	1.1	2,100	52
WCR41	7.5	240.0	46.0	1.28	19.8	0.55	2.3	1,800	87
	10	180.0	41.6	0.90	25.5	0.55	1.6	1,800	84
	12	150.0	43.4	0.78	30.6	0.55	1.4	1,800	84
	15	120.0	40.7	0.62	36.4	0.55	1.1	2,000	80
	20	90.0	48.0	0.57	46.7	0.55	1.0	2,500	77
	25	72.0	48.1	0.48	36.7	0.37	1.3	2,700	72
	30	60.0	51.6	0.45	42.8	0.37	1.2	3,000	70
	40	45.0	53.0	0.37	53.0	0.37	1.0	3,100	65
	50	36.0	44.0	0.27	40.6	0.25	1.1	3,100	59
WCR51	60	30.0	45.5	0.25	45.5	0.25	1.0	3,100	55
	80	22.5	42.0	0.19	40.5	0.18	1.0	3,100	51
	7.5	240.0	84.4	2.27	40.9	1.1	2.1	2,500	90
	10	180.0	81.0	1.69	52.7	1.1	1.5	2,500	87
	12	150.0	87.7	1.52	63.3	1.1	1.4	2,800	87
	15	120.0	84.4	1.22	76.4	1.1	1.1	3,200	84
	20	90.0	80.4	0.90	67.0	0.75	1.2	3,500	81
	25	72.0	86.6	0.82	79.6	0.75	1.1	3,700	77
	30	60.0	85.4	0.70	67.3	0.55	1.3	3,900	74
WCR63	40	45.0	86.0	0.57	83.6	0.55	1.0	4,300	69
	50	36.0	87.1	0.49	66.3	0.37	1.3	4,500	65
	60	30.0	76.0	0.38	74.6	0.37	1.0	4,800	61
	80	22.5	68.2	0.27	62.8	0.25	1.1	5,100	57
	100	18.0	63.6	0.23	50.6	0.18	1.3	5,100	51
	7.5	240.0	142.8	3.80	82.7	2.2	1.7	3,400	91
	10	180.0	130.8	2.70	106.7	2.2	1.2	3,400	88
	15	120.0	158.0	2.25	154.6	2.2	1.0	4,000	85
	20	90.0	149.6	1.64	137.2	1.5	1.1	4,500	83
WCR71	25	72.0	163.0	1.50	163.2	1.5	1.0	5,000	79
	30	60.0	155.1	1.23	138.2	1.1	1.1	5,400	76
	40	45.0	157.3	0.98	120.7	0.75	1.3	6,000	73
	50	36.0	150.7	0.82	138.5	0.75	1.1	6,500	67
	60	30.0	141.6	0.67	116.4	0.55	1.2	6,500	64
	80	22.5	107.8	0.41	96.2	0.37	1.1	6,500	59
	100	18.0	95.0	0.31	95*	0.37	1.0	6,500	55

Size	1800 RPM								
	ie _x	n ₂ (rpm)	M ₂ (Nm)	P ₁ (kW)	M _n (Nm)	P _n (kW)	f.s.	Fr (N)	n (%)
WCR71	10	180.0	213	4.60	208	4.5	1.0	5,374	85
	15	120.0	215	3.36	192	3	1.1	6,276	78
	20	90.0	225	2.78	178	2.2	1.3	6,865	74
	25	72.0	258	2.63	216	2.2	1.2	6,865	72
	31	58.1	242	2.28	234	2.2	1.0	6,865	65
	39	46.2	279	2.06	203	1.5	1.4	6,865	62
	49	36.7	265	1.74	228	1.5	1.2	6,865	56
	60	30.0	240	1.38	191	1.1	1.3	6,865	53
	80	22.5	208	1.04	150	0.75	1.4	6,865	46
WCR84	99	18.2	170	0.70	134	0.55	1.3	6,865	45
	10	180.0	335	7.14	258	5.5	1.3	5,953	86
	15.5	116.1	331	5.06	294	4.5	1.1	7,061	80
	20	90.0	349	4.21	307	3.7	1.1	7,767	76
	24.5	73.5	397	3.94	373	3.7	1.1	8,238	74
	31	58.1	363	3.31	329	3	1.1	8,826	67
	39	46.2	435	3.12	418	3	1.0	8,826	64
	48	37.5	412	2.60	349	2.2	1.2	8,826	58
	60	30.0	371	2.06	270	1.5	1.4	8,826	55
WCR100	80	22.5	321	1.53	315	1.5	1.0	8,826	48
	97	18.6	281	1.13	274	1.1	1.0	8,826	47
	10	180.0	477	10.04	261	5.5	1.8	7,061	87
	15.5	116.1	503	7.49	369	5.5	1.4	8,385	82
	20	90.0	533	6.25	469	5.5	1.1	9,277	78
	25	72.0	598	5.77	570	5.5	1.0	9,856	76
	31	58.1	565	4.93	516	4.5	1.1	10,297	70
	40	45.0	673	4.60	658	4.5	1.0	10,297	67
	49	36.7	642	3.86	615	3.7	1.0	10,297	61
WCR119	60	30.0	573	3.02	569	3	1.0	10,297	61
	80	22.5	496	2.23	489	2.2	1.0	10,297	51
	99	18.2	473	1.75	405	1.5	1.2	10,297	50
	10	180.0	704	14.67	264	5.5	2.7	7,845	88
	15	120.0	776	11.28	378	5.5	2.1	9,218	84
	19.5	92.3	809	9.27	480	5.5	1.7	10,268	80
	25	72.0	888	8.34	586	5.5	1.5	11,023	78
	30	60.0	833	7.06	649	5.5	1.3	12,121	72
	39	46.2	1,034	6.77	840	5.5	1.2	12,749	70
WCR160	49	36.7	970	5.55	961	5.5	1.0	12,749	64
	60	30.0	896	4.49	738	3.7	1.2	12,749	61
	80	22.5	772	3.27	708	3	1.1	12,749	54
	98	18.4	723	2.60	612	2.2	1.2	12,749	52
	15	120.0	1705	23.7	791.0	11	2.2	9,000	87
	20	90.0	1,745	18.6	1,030.5	11	1.7	9,000	85
	30	60.0	1,510	11.1	1,491.1	11	1.0	11,000	82
	40	45.0	1,930	11.2	1,891.2	11	1.0	13,000	78
	50	36.0	1,720	8.3	1,549.8	7.5	1.1	14,000	75
WCR160	60	30.0	1,560	6.6	1,309.3	5.5	1.2	16,000	72
	80	22.5	1,349	4.5	1,349.0	4.5	1.0	18,000	68

Size	1,500 RPM								
	ix	n2 (rpm)	M2 (Nm)	P1 (kW)	Mn (Nm)	Pn (kW)	f.s.	Fr (N)	n (%)
WCR28	7.5	200.0	20.7	0.47	7.9	0.18	2.6	1,600	87
	10	150.0	19.2	0.34	10.1	0.18	1.9	1,600	84
	15	100.0	21.7	0.27	14.5	0.18	1.5	1,600	80
	20	75.0	17.6	0.18	17.6	0.18	1.0	1,600	73
	25	60.0	24.5	0.21	21.4	0.18	1.1	1,850	71
	30	50.0	24.9	0.18	16.6	0.12	1.5	2,100	69
	40	37.5	19.3	0.12	19.3	0.12	1.0	2,100	60
	50	30.0	22.1	0.12	22.1	0.12	1.0	2,100	55
	60	25.0	16.7	0.08	16.7	0.08	1.0	2100	52
WCR41	7.5	200.0	46.8	1.07	16.2	0.37	2.9	1,800	87
	10	150.0	43.6	0.78	20.8	0.37	2.1	1,800	84
	12	125.0	45.5	0.67	25.0	0.37	1.8	1,800	84
	15	100.0	41.6	0.52	29.7	0.37	1.4	2000	80
	20	75.0	49.5	0.48	38.1	0.37	1.3	2,500	77
	25	60.0	50.5	0.42	44.6	0.37	1.1	2,700	72
	30	50.0	52.0	0.37	52.0	0.37	1.0	3,000	70
	40	37.5	53.0	0.30	43.5	0.25	1.2	3,100	65
	50	30.0	49.3	0.25	49.3	0.25	1.0	3,100	59
WCR51	7.5	200.0	88.6	1.96	33.9	0.75	2.6	2,500	90
	10	150.0	85.1	1.46	43.7	0.75	1.9	2,500	87
	12	125.0	87.7	1.26	52.4	0.75	1.7	2,800	87
	15	100.0	84.4	1.00	63.2	0.75	1.3	3,200	84
	20	75.0	81.3	0.75	81.3	0.75	1.0	3,500	81
	25	60.0	86.6	0.67	70.8	0.55	1.2	3,700	77
	30	50.0	85.4	0.57	81.7	0.55	1.0	3,900	74
	40	37.5	88.8	0.48	68.3	0.37	1.3	4,300	69
	50	30.0	88.5	0.41	80.5	0.37	1.1	4,500	65
WCR63	7.5	200.0	149.9	3.28	68.5	1.5	2.2	3,400	91
	10	150.0	137.3	2.33	88.3	1.5	1.6	3,400	88
	15	100.0	158	1.85	128.0	1.5	1.2	4,000	85
	20	75.0	157	1.41	122.2	1.1	1.3	4,500	83
	25	60.0	163	1.23	145.4	1.1	1.1	5,000	79
	30	50.0	167.8	1.10	167.8	1.1	1.0	5,400	76
	40	37.5	165.1	0.84	146.5	0.75	1.1	6,000	73
	50	30.0	168.1	0.75	168.1	0.75	1.0	6,500	67
	60	25.0	141.6	0.55	141.3	0.55	1.0	6,500	64
WCR71	10	150.0	221.5	3.89	171	3	1.3	5,374	85
	15	100.0	223.5	2.85	172	2.2	1.3	6,276	78
	20	75.0	233.5	2.36	218	2.2	1.1	6,865	74
	25	60.0	268.5	2.23	265	2.2	1.0	6,865	72
	31	48.4	252	1.87	202	1.5	1.2	6,865	65
	39	38.5	289.5	1.79	243	1.5	1.2	6,865	62
	49	30.6	275	1.50	275	1.5	1.0	6,865	56
	60	25.0	249	1.17	234	1.1	1.1	6,865	53
	80	18.8	216	0.88	185	0.75	1.2	6,865	46

Size	1,200 RPM								
	ix	n2 (rpm)	M2 (Nm)	P1 (kW)	Mn (Nm)	Pn (kW)	f.s.	Fr (N)	n (%)
WCR28	7.5	160.0	22.0	0.43	6.1	0.12	3.6	1,600	87
	10	120.0	20.5	0.31	7.9	0.12	2.6	1,600	84
	15	80.0	22.9	0.24	11.2	0.12	2.0	1,600	80
	20	60.0	18.2	0.16	13.7	0.12	1.3	1,600	73
	25	48.0	25.5	0.18	16.6	0.12	1.5	1,850	71
	30	40.0	24.0	0.15	19.4	0.12	1.2	2,100	69
	40	30.0	18.7	0.10	15.0	0.08	1.2	2,100	60
	50	24.0	20.0	0.09	17.2	0.08	1.2	2,100	55
	60	20.0	21.0	0.09	19.5	0.08	1.1	2100	52
WCR41	7.5	160.0	50.6	0.99	12.7	0.25	4.0	1,800	87
	10	120.0	45.7	0.70	16.4	0.25	2.8	1,800	84
	12	100.0	47.7	0.61	19.7	0.25	2.4	1,800	84
	15	80.0	44.7	0.48	23.4	0.25	1.9	2000	80
	20	60.0	52.7	0.44	30.1	0.25	1.8	2,500	77
	25	48.0	52.9	0.38	35.1	0.25	1.5	2,700	72
	30	40.0	54.6	0.33	41.0	0.25	1.3	3,000	70
	40	30.0	57.2	0.28	50.7	0.25	1.1	3,100	65
	50	24.0	48.4	0.21	41.5	0.18	1.2	3,100	59
	60	20.0	50.0	0.19	46.4	0.18	1.1	3,100	55
WCR51	7.5	160.0	92.8	1.76	29.0	0.55	3.2	2,500	90
	10	120.0	89.1	1.31	37.4	0.55	2.4	2,500	87
	12	100.0	96.5	1.18	44.8	0.55	2.2	2,800	87
	15	80.0	92.8	0.94	54.1	0.55	1.7	3,200	84
	20	60.0	81.4	0.64	69.6	0.55	1.2	3,500	81
	25	48.0	95.2	0.63	82.7	0.55	1.2	3,700	77
	30	40.0	93.9	0.54	64.1	0.37	1.5	3,900	74
	40	30.0	94.6	0.44	79.7	0.37	1.2	4,300	69
	50	24.0	99.0	0.39	93.9	0.37	1.1	4,500	65
	60	20.0	83.6	0.29	71.4	0.25	1.2	4,800	61
WCR63	7.5	160.0	157.1	2.95	58.6	1.1	2.7	3,400	91
	10	120.0	143.9	2.09	75.6	1.1	1.9	3,400	88
	15	80.0	163.8	1.65	109.5	1.1	1.5	4,000	85
	20	60.0	151.0	1.17	142.5	1.1	1.1	4,500	83
	25	48.0	180.0	1.17	169.6	1.1	1.1	5,000	79
	30	40.0	170.6	0.96	133.5	0.75	1.3	5,400	76
	40	30.0	178.0	0.78	171.0	0.75	1.0	6,000	73
	50	24.0	165.7	0.63	143.8	0.55	1.2	6,500	67
	60	20.0	152.1	0.51	110.9	0.37	1.4	6,500	64
	80	15.0	114.0	0.31	92.1	0.25	1.2	6,500	59
	100	12.0	95.0	0.22	95*	0.25	1.0	6,500	55

Size	1,200 RPM								
	ix	n2 (rpm)	M2 (Nm)	P1 (kW)	Mn (Nm)	Pn (kW)	f.s.	Fr (N)	n (%)
WCR71	10	120.0	230	3.31	208	3	1.1	5,374	84
	15	80.0	232	2.42	211	2.2	1.1	6,276	77
	20	60.0	242	2.00	182	1.5	1.3	6,865	73
	25	48.0	279	1.89	221	1.5	1.3	6,865	71
	31	38.7	262	1.64	240	1.5	1.1	6,865	64
	39	30.8	300	1.49	221	1.1	1.4	6,865	61
	49	24.5	285	1.25	251	1.1	1.1	6,865	55
	60	20.0	258	0.99	195	0.75	1.3	6,865	52
	80	15.0	224	0.75	224	0.75	1.0	6865	45
	99	12.1	184	0.51	133	0.37	1.4	6,865	44
WCR84	10	120.0	368	5.14	215	3	1.7	5,953	86
	15.5	77.4	363	3.64	299	3	1.2	7,061	80
	20	60.0	382	3.03	378	3	1.0	7767	76
	24.5	49.0	430	2.84	333	2.2	1.3	8,238	73
	31	38.7	392	2.38	362	2.2	1.1	8,826	66
	39	30.8	478	2.24	469	2.2	1.0	8,826	64
	48	25.0	443	1.88	353	1.5	1.3	8,826	57
	60	20.0	399	1.49	295	1.1	1.4	8,826	54
	80	15.0	344	1.10	344	1.1	1.0	8,826	47
	97	12.4	304	0.82	278	0.75	1.1	8826	46
WCR100	10	120.0	523	7.23	217	3	2.4	7,061	87
	15.5	77.4	551	5.39	307	3	1.8	8,385	82
	20	60.0	583	4.50	389	3	1.5	9,277	78
	25	48.0	647	4.16	467	3	1.4	9,856	75
	31	38.7	610	3.55	515	3	1.2	10,297	69
	40	30.0	726	3.31	658	3	1.1	10,297	66
	49	24.5	692	2.78	548	2.2	1.3	10,297	60
	60	20.0	617	2.17	426	1.5	1.4	10,297	57
	80	15.0	533	1.60	500	1.5	1.1	10,297	50
	99	12.1	508	1.26	443	1.1	1.1	10,297	49
WCR119	10	120.0	772	10.56	219	3	3.5	7,845	88
	15	80.0	849	8.12	314	3	2.7	9,218	84
	19.5	61.5	887	6.67	399	3	2.2	10,268	80
	25	48.0	973	6.00	487	3	2.0	11,023	78
	30	40.0	899	5.08	531	3	1.7	12,121	71
	39	30.8	1,117	4.87	688	3	1.6	12,749	69
	49	24.5	1,045	4.00	784	3	1.3	12,749	63
	60	20.0	966	3.23	897	3	1.1	12,749	60
	80	15.0	830	2.35	777	2.2	1.1	12,749	53
	98	12.2	780	1.88	622	1.5	1.3	12,749	51
WCR160	15	80.0	1,875	18.4	764.1	7.5	2.5	9,000	87
	20	60.0	1919	14.5	995.3	7.5	1.9	9,000	85
	30	40.0	1,584	8.2	1,440.3	7.5	1.1	11,000	82
	40	30.0	2009	8.2	1,826.7	7.5	1.1	13,000	78
	50	24.0	1,771	6.0	1,610.1	5.5	1.1	14,000	75
	60	20.0	1,669	4.9	1,517.6	4.5	1.1	16,000	72
	80	15.0	1,474	3.5	1,274.0	3	1.2	18,000	68

15 SELECTION TABLES (DUPLEX GEAR GEAR)

LEGEND:

iex = Exact transmission ratio

n1 = Input speed – RPM

n2 = Output speed – RPM

M2 = Maximum torque – Nm

Fr = Radial force on the output shaft – N

P1 = Maximum power – kW

N = Efficiency – %

Mn = Rated torque with limiting motor - Nm

Pn = Rated power with limiting motor – kW

f.s. = Rated power with limiting motor

Size	1,800 RPM								
	iex	n2 (rpm)	M2 (Nm)	P1 (kW)	Mn (Nm)	Pn (kW)	f.s.	Fr (N)	n (%)
WCR28	100	18.00	25	0.08*	25*	0.08	1.0	2,100	61
	150	12.00	26	0.08*	26*	0.08	1.0	2,100	57
	200	9.00	25	0.08*	25*	0.08	1.0	2,100	52
	250	7.20	29	0.08*	29*	0.08	1.0	2,100	48
	300	6.00	26	0.08*	26*	0.08	1.0	2,100	47
	375	4.80	29	0.08*	29*	0.08	1.0	2,100	44
	400	4.50	29	0.08*	29*	0.08	1.0	2,100	43
	450	4.00	28	0.08*	28*	0.08	1.0	2,100	43
	500	3.60	29	0.08*	29*	0.08	1.0	2,100	40
	600	3.00	28	0.08*	28*	0.08	1.0	2,100	39
	750	2.40	29	0.08*	29*	0.08	1.0	2,100	37
	900	2.00	28	0.08*	28*	0.08	1.0	2,100	36
	1,000	1.80	29	0.08*	29*	0.08	1.0	2,100	31
	1,200	1.50	28	0.08*	28*	0.08	1.0	2,100	31
	1,600	1.13	18	0.08*	18*	0.08	1.0	2,100	24
WCR41	100	18.00	62	0.18	62	0.18	1.0	3,050	60
	130	13.85	55	0.14	50	0.12	1.1	3,050	59
	150	12.00	61	0.14	55	0.12	1.1	3,050	55
	180	10.00	53	0.10	48	0.08	1.1	3,050	54
	195	9.23	58	0.11	53	0.08	1.1	3,050	54
	200	9.00	56	0.11	51	0.08	1.1	3,050	51
	250	7.20	65	0.11	59	0.08	1.1	3,050	47
	270	6.67	60	0.08*	60*	0.08	1.0	3050	50
	300	6.00	59	0.08*	59*	0.08	1.0	3,050	47
	325	5.54	60	0.08*	60*	0.08	1.0	3050	47
	360	5.00	60	0.08*	60*	0.08	1.0	3050	46
	375	4.80	64	0.08*	64*	0.08	1.0	3050	44
	400	4.50	64	0.08*	64*	0.08	1.0	3050	45
	450	4.00	64	0.08*	64*	0.08	1.0	3050	41
	500	3.60	64	0.08*	64*	0.08	1.0	3050	39
	540	3.33	60	0.08*	60*	0.08	1.0	3050	42
	600	3.00	64	0.08*	64*	0.08	1.0	3050	37
	750	2.40	65	0.08*	65*	0.08	1.0	3050	36
	900	2.00	64	0.08*	64*	0.08	1.0	3050	34
	1,000	1.80	65	0.08*	65*	0.08	1.0	3050	31
	1,200	1.50	64	0.08*	64*	0.08	1.0	3050	29
	1,600	1.13	56	0.08*	56*	0.08	1.0	3,050	26

*Maximum power supported by the gearbox

* Maximum torque supported by the gearbox

Size	1,800 RPM								
	iex	n2 (rpm)	M2 (Nm)	P1 (kW)	Mn (Nm)	Pn (kW)	f.s.	Fr (N)	n (%)
WCR51	100	18.00	113	0.34	83	0.25	1.4	5050	64
	130	13.85	133	0.31	113	0.25	1.2	5050	63
	150	12.00	122	0.26	124	0.25	1.0	5050	60
	180	10.00	132	0.24	105	0.18	1.3	5050	59
	195	9.23	130	0.22	112	0.18	1.2	5050	58
	200	9.00	118	0.20	113	0.18	1.0	5050	57
	250	7.20	136	0.20	131	0.18	1.0	5050	53
	270	6.67	127	0.16	98	0.12	1.3	5050	55
	300	6.00	115	0.15	97	0.12	1.2	5050	49
	325	5.54	132	0.15	110	0.12	1.2	5050	51
	360	5.00	132	0.14	121	0.12	1.1	5050	51
	375	4.80	132	0.14	119	0.12	1.1	5050	48
	390	4.62	134	0.14	121	0.12	1.1	5050	47
	450	4.00	119	0.11	89	0.08	1.3	5050	45
	500	3.60	137	0.11	101	0.08	1.4	5050	46
	540	3.33	129	0.10	105	0.08	1.2	5050	44
	600	3.00	118	0.08*	118*	0.08	1.0	5050	42
	750	2.40	134	0.08*	134*	0.08	1.0	5050	40
	900	2.00	119	0.08*	119*	0.08	1.0	5050	37
	1,000	1.80	134	0.08*	134*	0.08	1.0	5050	37
	1,200	1.50	119	0.08*	119*	0.08	1.0	5050	34
	1,600	1.13	110	0.08*	110*	0.08	1.0	5050	31
	2000	0.90	110	0.08*	110*	0.08	1.0	5050	27
	2,400	0.75	120	0.08*	120*	0.08	1.0	5050	27
WCR63	100	18.00	220	0.65	186	0.55	1.2	6,500	65
	150	12.00	247	0.52	176	0.37	1.4	6,500	61
	200	9.00	246	0.40	227	0.37	1.1	6,500	59
	225	8.00	240	0.36	167	0.25	1.0	6,500	57
	250	7.20	276	0.40	255	0.37	1.1	6,500	53
	300	6.00	247	0.32	195	0.25	1.3	6,500	50
	375	4.80	277	0.29	239	0.25	1.2	6,500	49
	400	4.50	238	0.22	195	0.18	1.2	6,500	52
	450	4.00	250	0.24	190	0.18	1.3	6,500	45
	500	3.60	265	0.22	220	0.18	1.2	6,500	47
	600	3.00	253	0.20	230	0.18	1.1	6,500	41
	625	2.88	245	0.18	168	0.12	1.0	6,500	43
	750	2.40	273	0.17	197	0.12	1.4	6,500	42
	900	2.00	250	0.14	214	0.12	1.2	6,500	38
	1,000	1.80	276	0.13	262	0.12	1.1	6,500	42
	1,200	1.50	252	0.12	262	0.12	1.0	6,500	35
	1,500	1.20	237	0.09	200	0.08	1.2	6,500	32
	1,600	1.13	207	0.08*	207*	0.08	1.0	6,500	36
	2,000	0.90	240	0.08*	240*	0.08	1.0	6,500	30
	3,000	0.60	210	0.08*	210*	0.08	1.0	6,500	24

*Maximum power supported by the gearbox

* Maximum torque supported by the gearbox

Size	1,800 RPM								
	ies	n2 (rpm)	M2 (Nm)	P1 (kW)	Mn (Nm)	Pn (kW)	f.s.	Fr (N)	n (%)
WCR71	100	18.00	253	0.75	186	0.55	1.4	6,865	62
	150	12.00	253	0.56	248	0.55	1.0	6,865	55
	200	9.00	281	0.51	204	0.37	1.4	6,865	50
	250	7.20	321	0.48	247	0.37	1.3	6,865	49
	300	6.00	313	0.40	290	0.37	1.1	6,865	48
	390	4.62	329	0.35	235	0.25	1.4	6,865	44
	465	3.87	318	0.32	248	0.25	1.3	6,865	39
	500	3.60	372	0.34	274	0.25	1.4	6,865	40
	620	2.90	339	0.29	292	0.25	1.2	6,865	35
	750	2.40	361	0.24	271	0.18	1.3	6,865	37
	930	1.94	348	0.22	285	0.18	1.2	6,865	31
	975	1.85	383	0.23	300	0.18	1.3	6,865	31
	1,170	1.54	383	0.21	328	0.18	1.2	6,865	29
	1,500	1.20	369	0.17	260	0.12	1.4	6,865	26
	1,800	1.00	350	0.16	263	0.12	1.3	6,865	22
	2000	0.90	369	0.15	295	0.12	1.3	6,865	23
	2,340	0.77	383	0.15	306	0.12	1.3	6,865	20
	2,940	0.61	361	0.13	333	0.12	1.1	6,865	17
	3,600	0.50	350	0.12*	350*	0.12	1.0	6,865	18
	3,920	0.46	361	0.12*	361*	0.12	1.0	6,865	15
WCR84	100	18.00	381	1.07	267	0.75	1.4	8,826	65
	155	11.61	392	0.80	368	0.75	1.1	8,826	58
	200	9.00	426	0.72	325	0.55	1.3	8,826	54
	245	7.35	482	0.69	384	0.55	1.3	8,826	52
	300	6.00	482	0.59	449	0.55	1.1	8,826	50
	390	4.62	501	0.51	363	0.37	1.4	8,826	46
	465	3.87	485	0.46	390	0.37	1.2	8,826	42
	490	3.67	556	0.49	420	0.37	1.3	8,826	42
	620	2.90	533	0.41	481	0.37	1.1	8,826	38
	735	2.45	561	0.37	561	0.37	1.0	8,826	38
	930	1.94	523	0.31	422	0.25	1.2	8,826	33
	975	1.85	576	0.32	450	0.25	1.3	8,826	34
	1,170	1.54	564	0.29	486	0.25	1.2	8,826	30
	1,470	1.22	550	0.24	413	0.18	1.3	8,826	29
	1,800	1.00	506	0.21	434	0.18	1.2	8,826	25
	2000	0.90	550	0.21	471	0.18	1.2	8,826	24
	2,340	0.77	575	0.20	518	0.18	1.1	8,826	22
	2,880	0.63	539	0.16	404	0.12	1.3	8,826	21
	3,600	0.50	506	0.13	467	0.12	1.1	8,826	20
	3,840	0.47	539	0.15	431	0.12	1.3	8,826	17
WCR100	100	18.00	578	1.60	542	1.5	1.1		66
	155	11.61	591	1.16	560	1.1	1.1		60
	200	9.00	658	1.07	461	0.75	1.4		56
	250	7.20	742	1.03	540	0.75	1.4		53
	300	6.00	746	0.89	629	0.75	1.2		51
	400	4.50	783	0.77	763	0.75	1.0		47
	465	3.87	728	0.65	616	0.55	1.2		44
	500	3.60	881	0.72	673	0.55	1.3		45
	620	2.90	800	0.59	746	0.55	1.1		40
	750	2.40	873	0.54	598	0.37	1.5		39
	930	1.94	821	0.46	660	0.37	1.2		35
	1,000	1.80	905	0.46	728	0.37	1.2		36
	1,200	1.50	915	0.43	787	0.37	1.2		32
	1,500	1.20	903	0.37	903	0.37	1.0		30
	1,800	1.00	794	0.31	640	0.25	1.2		26
	2000	0.90	883	0.31	712	0.25	1.2		26
	2,400	0.75	899	0.27	832	0.25	1.1		25
	2,940	0.61	826	0.24	620	0.18	1.3		21
	3,600	0.50	800	0.21	686	0.18	1.2		19
	3,920	0.46	826	0.20	743	0.18	1.1		19

*Maximum power supported by the gearbox

* Maximum torque supported by the gearbox

Size	1,800 RPM								
	ies	n2 (rpm)	M2 (Nm)	P1 (kW)	Mn (Nm)	Pn (kW)	f.s.	Fr (N)	n (%)
WCR119	100	18.00	838	2.29	805	2.2	1.0		67
	150	12.00	891	1.76	759	1.5	1.2		62
	195	9.23	971	1.57	928	1.5	1.0		58
	250	7.20	1,079	1.40	848	1.1	1.3		56
	292.5	6.15	1,108	1.30	938	1.1	1.2		53
	390	4.62	1,147	1.07	804	0.75	1.4		50
	450	4.00	1,098	0.98	840	0.75	1.3		46
	500	3.60	1,285	0.98	983	0.75	1.3		48
	600	3.00	1,157	0.82	1,058	0.75	1.1		43
	750	2.40	1,275	0.72	974	0.55	1.3		43
	900	2.00	1,157	0.62	1,026	0.55	1.1		38
	975	1.85	1,294	0.60	1,186	0.55	1.1		40
	1,170	1.54	1,265	0.54	867	0.37	1.5		37
	1,500	1.20	1,265	0.47	996	0.37	1.3		33
	1,800	1.00	1,196	0.40	1,106	0.37	1.1		30
	2000	0.90	1,285	0.40	1,189	0.37	1.1		29
	2,340	0.77	1,314	0.37	1,314	0.37	1.0		28
	2,940	0.61	1,177	0.37*	1,177*	0.37	1.0		25
	3,600	0.50	1,216	0.37*	1,216*	0.37	1.0	12749	23
	3,920	0.46	1,236	0.37*	1,236*	0.37	1.0		21
WCR160	150	12.00	2,800	5.2	1,185	2.2	2.4		69
	400	4.50	2,800	2.2	2,748	2.2	1.0		60
	465	3.87	2,800	2.0	2,069	1.5	1.4		57
	500	3.60	2,800	1.9	2,225	1.5	1.3		57
	620	2.90	2,800	1.6	2,614	1.5	1.1		54
	800	2.25	2,800	1.4	2,244	1.1	1.2		49
	930	1.94	2,800	1.2	2,609	1.1	1.1		49
	980	1.84	2,800	1.2	2,637	1.1	1.1		47
	1,240	1.45	2,800	1.0	2,130	0.75	1.3		44
	1,550	1.16	2,800	0.8	2,481	0.75	1.1		41
	1,960	0.92	2,800	0.75*	2,800*	0.75	1.0		39
	2,400	0.75	2,800	0.75*	2,800*	0.75	1.0		36
	3,000	0.60	2,800	0.75*	2,800*	0.75	1.0		35

*Maximum power supported by the gearbox

* Maximum torque supported by the gearbox

Size	1500 RPM								
	ies	n2 (rpm)	M2 (Nm)	P1 (kW)	Mn (Nm)	Pn (kW)	f.s.	Fr (N)	n (%)
WCR28	100	15.00	27	0.08*	27*	0.08	1.0	2,100	61
	150	10.00	28	0.08*	28*	0.08	1.0	2,100	57
	200	7.50	27	0.08*	27*	0.08	1.0	2,100	52
	250	6.00	30	0.08*	30*	0.08	1.0	2,100	48
	300	5.00	28	0.08*	28*	0.08	1.0	2,100	47
	375	4.00	30	0.08*	30*	0.08	1.0	2,100	44
	400	3.75	30	0.08*	30*	0.08	1.0	2,100	43
	450	3.33	29	0.08*	29*	0.08	1.0	2,100	43
	500	3.00	30	0.08*	30*	0.08	1.0	2,100	40
	600	2.50	29	0.08*	29*	0.08	1.0	2,100	39
	750	2.00	30	0.08*	30*	0.08	1.0	2,100	37
	900	1.67	29	0.08*	29*	0.08	1.0	2,100	36
		1.50	30	0.08*	30*	0.08	1.0	2100	31
		1.25	29	0.08*	29*	0.08	1.0	2,100	31
		0.94	18	0.08*	18*	0.08	1.0	2,100	24
WCR41	100	15.00	62	0.15	48	0.12	1.3	3,050	60
	130	11.54	58	0.12*	58*	0.12	1.0	3050	59
	150	10.00	61	0.12*	61*	0.12	1.0	3050	55
	180	8.33	53	0.08	59	0.08	1.0	3050	54
	195	7.69	58	0.08	64	0.08	1.0	3,050	54
	200	7.50	58	0.08*	58*	0.08	1.0	3,050	51
	250	6.00	67	0.08*	67*	0.08	1.0	3,050	47
	270	5.56	63	0.08*	63*	0.08	1.0	3050	50
	300	5.00	62	0.08*	62*	0.08	1.0	3,050	47
	325	4.62	63	0.08*	63*	0.08	1.0	3,050	47
	360	4.17	63	0.08*	63*	0.08	1.0	3,050	46
	375	4.00	67	0.08*	67*	0.08	1.0	3,050	44
	400	3.75	67	0.08*	67*	0.08	1.0	3,050	45
	450	3.33	67	0.08*	67*	0.08	1.0	3,050	41
	500	3.00	67	0.08*	67*	0.08	1.0	3,050	39
	540	2.78	63	0.08*	63*	0.08	1.0	3050	42
	600	2.50	67	0.08*	67*	0.08	1.0	3,050	37
	750	2.00	68	0.08*	68*	0.08	1.0	3,050	36
	900	1.67	67	0.08*	67*	0.08	1.0	3,050	34
		1.50	68	0.08*	68*	0.08	1.0	3,050	31
		1.25	67	0.08*	67*	0.08	1.0	3,050	29
		0.94	59	0.08*	59*	0.08	1.0	3,050	26
WCR51	100	15.00	113	0.28	100	0.25	1.1	5050	64
	130	11.54	133	0.26	92	0.18	1.4	5050	63
	150	10.00	122	0.22	101	0.18	1.2	5050	60
	180	8.33	132	0.20	80	0.12	1.7	5050	59
	195	7.69	130	0.18	85	0.12	1.5	5050	58
	200	7.50	118	0.17	85	0.12	1.4	5050	57
	250	6.00	136	0.16	99	0.12	1.4	5050	53
	270	5.56	127	0.14	111	0.12	1.1	5050	55
	300	5.00	115	0.13	110	0.12	1.0	5050	49
	325	4.62	132	0.13	124	0.12	1.1	5050	51
	360	4.17	132	0.12	138	0.12	1.0	5050	51
	375	4.00	132	0.12	135	0.12	1.0	5050	48
	390	3.85	134	0.12	137	0.12	1.0	5050	47
	450	3.33	119	0.09	101	0.08	1.2	5050	45
	500	3.00	137	0.10	115	0.08	1.2	5050	46
	540	2.78	129	0.09	119	0.08	1.1	5050	44
	600	2.50	124	0.08*	124*	0.08	1.0	5050	42
	750	2.00	141	0.08*	141*	0.08	1.0	5050	40
	900	1.67	125	0.08*	125*	0.08	1.0	5050	37
		1.50	141	0.08*	141*	0.08	1.0	5050	37
		1.25	125	0.08*	125*	0.08	1.0	5050	34
	1600	0.94	116	0.08*	116*	0.08	1.0	5050	31
	2000	0.75	116	0.08*	116*	0.08	1.0	5050	27
		0.63	126	0.08*	126*	0.08	1.0	5050	27

*Maximum power supported by the gearbox

* Maximum torque supported by the gearbox

Size	1500 RPM								
	ies	n2 (rpm)	M2 (Nm)	P1 (kW)	Mn (Nm)	Pn (kW)	f.s.	Fr (N)	n (%)
WCR63	100	15.00	220	0.54	150	0.37	1.5	6,500	65
	150	10.00	247	0.43	211	0.37	1.2	6,500	61
	200	7.50	246	0.33	184	0.25	1.3	6,500	59
	225	6.67	240	0.30	200	0.25	1.2	6,500	57
	250	6.00	276	0.33	207	0.25	1.3	6,500	53
	300	5.00	247	0.26	234	0.25	1.1	6,500	50
	375	4.00	277	0.24	207	0.18	1.0	6,500	49
	400	3.75	238	0.18	234	0.18	1.0	6,500	52
	450	3.33	250	0.20	228	0.18	1.1	6,500	45
	500	3.00	265	0.18	264	0.18	1.0	6,500	47
	600	2.50	253	0.16	184	0.12	1.4	6,500	41
	625	2.40	245	0.15	201	0.12	1.2	6,500	43
	750	2.00	273	0.14	236	0.12	1.2	6,500	42
	900	1.67	256	0.12*	256*	0.12	1.0	6,500	38
		1.50	276	0.11	210	0.08	1.3	6,500	42
WCR71		1.25	252	0.10	210	0.08	1.2	6,500	35
		1.00	252	0.08*	252*	0.08	1.0	6,500	32
		0.94	217	0.08*	217*	0.08	1.0	6,500	36
		0.75	252	0.08*	252*	0.08	1.0	6,500	30
		0.50	221	0.08*	221*	0.08	1.0	6,500	24
	100	15.00	210	0.62	125	0.37	1.7	6,865	62
	150	10.00	210	0.46	169	0.37	1.2	6,865	55
	200	7.50	233	0.42	205	0.37	1.1	6,865	50
	250	6.00	266	0.40	246	0.37	1.1	6,865	49
	300	5.00	259	0.34	190	0.25	1.4	6,865	48
	390	3.85	272	0.29	234	0.25	1.2	6865	44
	465	3.23	263	0.26	253	0.25	1.0	6865	39
	500	3.00	308	0.28	275	0.25	1.1	6,865	40
	620	2.42	281	0.24	211	0.18	1.3	6,865	35
	750	2.00	299	0.20	269	0.18	1.1	6,865	37
	930	1.61	288	0.18	288	0.18	1.0	6,865	31
	975	1.54	318	0.19	301	0.18	1.1	6,865	31
	1,170	1.28	318	0.18	318	0.18	1.0	6,865	29
		1.00	306	0.14	262	0.12	1.2	6,865	26
		0.83	290	0.13	268	0.12	1.1	6,865	22
	2000	0.75	306	0.13	282	0.12	1.1	6,865	23
		0.64	318	0.12	318	0.12	1.0	6,865	20
		0.51	299	0.12*	299*	0.12	1.0	6865	17
		0.42	290	0.12*	290*	0.12	1.0	6865	18
		0.38	299	0.12*	299*	0.12	1.0	6865	15

*Maximum power supported by the gearbox

* Maximum torque supported by the gearbox

Size	1500 RPM								
	iex	n2 (rpm)	M2 (Nm)	P1 (kW)	Mn (Nm)	Pn (kW)	f.s.	Fr (N)	n (%)
WCR84	100	15.00	316	0.89	266	0.75	1.2	8826	65
	155	9.68	325	0.66	271	0.55	1.2	8826	58
	200	7.50	353	0.60	324	0.55	1.1	8,826	54
	245	6.12	399	0.57	385	0.55	1.0	8,826	52
	300	5.00	399	0.49	301	0.37	1.3	8,826	50
	390	3.85	415	0.43	357	0.37	1.2	8,826	46
	465	3.23	402	0.38	391	0.37	1.0	8,826	42
	490	3.06	461	0.40	426	0.37	1.1	8,826	42
	620	2.42	442	0.34	325	0.25	1.4	8,826	38
	735	2.04	465	0.30	388	0.25	1.2	8826	38
	930	1.61	433	0.26	416	0.25	1.0	8826	33
	975	1.54	477	0.26	459	0.25	1.0	8826	34
	1,170	1.28	467	0.24	350	0.18	1.3	8,826	30
		1.02	456	0.20	410	0.18	1.1	8826	29
		0.83	419	0.18	419	0.18	1.0	8826	25
	2000	0.75	456	0.17	322	0.12	1.4	8,826	24
		0.64	476	0.16	357	0.12	1.3	8,826	22
		0.52	447	0.13	413	0.12	1.1	8,826	21
		0.42	419	0.12*	419*	0.12	1.0	8826	20
		0.39	447	0.13	413	0.12	1.1	8,826	17
WCR100	100	15.00	479	1.33	270	0.75	1.8		66
	155	9.68	490	0.96	383	0.75	1.3		60
	200	7.50	545	0.89	459	0.75	1.2		56
	250	6.00	615	0.85	543	0.75	1.1		53
	300	5.00	618	0.74	459	0.55	1.3		51
	400	3.75	648	0.63	566	0.55	1.1		47
	465	3.23	603	0.54	413	0.37	1.5		44
	500	3.00	730	0.60	730	0.6	1.0		45
	620	2.42	663	0.49	501	0.37	1.3		40
	750	2.00	723	0.45	594	0.37	1.2		39
	930	1.61	680	0.38	662	0.37	1.0		35
		1.50	750	0.38	730	0.37	1.0		36
		1.25	758	0.36	526	0.25	1.4		32
		1.00	748	0.30	623	0.25	1.2		30
		0.83	658	0.26	633	0.25	1.0		26
	2000	0.75	731	0.26	703	0.25	1.0		26
		0.63	745	0.23	583	0.18	1.3		25
		0.51	684	0.20	616	0.18	1.1		21
		0.42	663	0.17	468	0.12	1.4		19
		0.38	684	0.16	513	0.12	1.3		19

*Maximum power supported by the gearbox

* Maximum torque supported by the gearbox

Size	1500 RPM								
	iex	n2 (rpm)	M2 (Nm)	P1 (kW)	Mn (Nm)	Pn (kW)	f.s.	Fr (N)	n (%)
WCR119	100	15.00	695	1.90	548.7	1.5	1.3		67
	150	10.00	738	1.46	556.0	1.1	1.3		62
	195	7.69	804	1.30	680.3	1.1	1.2		58
	250	6.00	894	1.16	847.8	1.1	1.1		56
	293	5.13	918	1.08	637.5	0.75	1.4		53
	390	3.85	951	0.89	801.4	0.75	1.2		50
	450	3.33	910	0.81	842.6	0.75	1.1		46
	500	3.00	1,064	0.81	985.2	0.75	1.1		48
	600	2.50	959	0.68	775.7	0.55	1.2		43
	750	2.00	1,056	0.60	968.0	0.55	1.1		43
	900	1.67	959	0.51	695.7	0.37	1.4		38
	975	1.54	1,073	0.50	794.0	0.37	1.4		40
	1,170	1.28	1,048	0.45	861.7	0.37	1.2		37
		1.00	1,048	0.39	994.3	0.37	1.1		33
		0.83	991	0.34	728.7	0.25	1.4		30
		0.75	1,064	0.34	782.4	0.25	1.4		29
		0.64	1,089	0.30	907.5	0.25	1.2		28
		0.51	975	0.25*	975*	0.25	1.0		25
		0.42	1008	0.25*	1008*	0.25	1.0	12749	23
		0.38	1024	0.25*	1024*	0.25	1.0		21
WCR160	150	10.00	2,800	4.3	970	1.5	2.9		69
	400	3.75	2,800	1.9	2,248	1.5	1.2		60
	465	3.23	2,800	1.7	2,483	1.5	1.1		57
	500	3.00	2,800	1.6	2,670	1.5	1.0		57
	620	2.42	2,800	1.3	2,300	1.1	1.2		54
	800	1.88	2,800	1.1	2,693	1.1	1.0		49
	930	1.61	2,800	1.0	2,134	0.75	1.3		49
	980	1.53	2,800	1.0	2,157	0.75	1.3		47
		1.21	2,800	0.8	2,556	0.75	1.1		44
		0.97	2,800	0.75*	2,800*	0.75	1.0		41
		0.77	2,800	0.6	2,626	0.55	1.0		39
		0.63	2,800	0.55*	2,800*	0.55	1.0		36
		0.50	2,800	0.55*	2,800*	0.55	1.0		35

*Maximum power supported by the gearbox

* Maximum torque supported by the gearbox

Size	1200 RPM								
	ies	n2 (rpm)	M2 (Nm)	P1 (kW)	Mn (Nm)	Pn (kW)	f.s.	Fr (N)	n (%)
WCR28	100	12.0	28	0.08*	28*	0.08	1.0	2,100	61
	150	8.0	28	0.08*	28*	0.08	1.0	2,100	57
	200	6.0	28	0.08*	28*	0.08	1.0	2,100	52
	250	4.8	32	0.08*	32*	0.08	1.0	2,100	48
	300	4.0	29	0.08*	29*	0.08	1.0	2,100	47
	375	3.2	32	0.08*	32*	0.08	1.0	2100	44
	400	3.0	33	0.08*	33*	0.08	1.0	2,100	43
	450	2.7	30	0.08*	30*	0.08	1.0	2,100	43
	500	2.4	32	0.08*	32*	0.08	1.0	2,100	40
	600	2.0	30	0.08*	30*	0.08	1.0	2,100	39
	750	1.6	32	0.08*	32*	0.08	1.0	2100	37
	900	1.3	30	0.08*	30*	0.08	1.0	2,100	36
		1.2	32	0.08*	32*	0.08	1.0	2100	31
		1.0	30	0.08*	30*	0.08	1.0	2100	31
		0.8	20	0.08*	20*	0.08	1.0	2100	24
WCR41	100	12.0	62	0.13	59	0.12	1.1	3,050	60
	130	9.2	55	0.08	56	0.08	1.0	3050	59
	150	8.0	61	0.08	61	0.08	1.0	3,050	55
	180	6.7	61	0.08*	61*	0.08	1.0	3,050	54
	195	6.2	70	0.08*	70*	0.08	1.0	3050	54
	200	6.0	63	0.08*	63*	0.08	1.0	3,050	51
	250	4.8	72	0.08*	72*	0.08	1.0	3050	47
	270	4.4	68	0.08*	68*	0.08	1.0	3050	50
	300	4.0	65	0.08*	65*	0.08	1.0	3,050	47
	325	3.7	70	0.08*	70*	0.08	1.0	3050	47
	360	3.3	68	0.08*	68*	0.08	1.0	3,050	46
	375	3.2	72	0.08*	72*	0.08	1.0	3050	44
	400	3.0	67	0.08*	67*	0.08	1.0	3,050	45
	450	2.7	72	0.08*	72*	0.08	1.0	3050	41
	500	2.4	72	0.08*	72*	0.08	1.0	3,050	39
	540	2.2	68	0.08*	68*	0.08	1.0	3,050	42
	600	2.0	72	0.08*	72*	0.08	1.0	3050	37
	750	1.6	73	0.08*	73*	0.08	1.0	3050	36
	900	1.3	72	0.08*	72*	0.08	1.0	3050	34
		1.2	73	0.08*	73*	0.08	1.0	3050	31
		1.0	72	0.08*	72*	0.08	1.0	3050	29
		0.8	61	0.08*	61*	0.08	1.0	3,050	26

*Maximum power supported by the gearbox

* Maximum torque supported by the gearbox

Size	1200 RPM								
	ies	n2 (rpm)	M2 (Nm)	P1 (kW)	Mn (Nm)	Pn (kW)	f.s.	Fr (N)	n (%)
WCR51	100	12.0	125	0.25	125	0.25	1.0	5050	64
	130	9.2	133	0.21	115	0.18	1.2	5050	63
	150	8.0	126	0.18	126	0.18	1.0	5050	60
	180	6.7	132	0.16	99	0.12	1.3	5050	59
	195	6.2	130	0.15	106	0.12	1.2	5050	58
	200	6.0	118	0.13	107	0.12	1.1	5050	57
	250	4.8	136	0.13	124	0.12	1.1	5050	53
	270	4.4	127	0.11	93	0.08	1.4	5050	55
	300	4.0	115	0.10	92	0.08	1.3	5050	49
	325	3.7	132	0.10	104	0.08	1.3	5050	51
	360	3.3	132	0.09	115	0.08	1.2	5050	51
	375	3.2	132	0.09	112	0.08	1.2	5050	48
	390	3.1	134	0.09	114	0.08	1.2	5050	47
	450	2.7	133	0.08*	133*	0.08	1.0	5050	45
	500	2.4	151	0.08*	151*	0.08	1.0	5050	46
	540	2.2	147	0.08*	147*	0.08	1.0	5050	44
	600	2.0	133	0.08*	133*	0.08	1.0	5050	42
	750	1.6	152	0.08*	152*	0.08	1.0	5050	40
	900	1.3	134	0.08*	134*	0.08	1.0	5050	37
		1.2	152	0.08*	152*	0.08	1.0	5050	37
		1.0	134	0.08*	134*	0.08	1.0	5050	34
		0.8	115	0.08*	115*	0.08	1.0	5050	31
	2000	0.6	123	0.08*	123*	0.08	1.0	5050	27
		0.5	126	0.08*	126*	0.08	1.0	5050	27
WCR63	100	12.0	220	0.43	127	0.25	1.7	6,500	65
	150	8.0	247	0.35	179	0.25	1.4	6,500	61
	200	6.0	246	0.27	230	0.25	1.1	6,500	59
	225	5.3	250	0.25	250	0.25	1.0	6,500	57
	250	4.8	276	0.27	259	0.25	1.1	6,500	53
	300	4.0	247	0.21	211	0.18	1.2	6,500	50
	375	3.2	277	0.19	258	0.18	1.1	6,500	49
	400	3.0	238	0.15	195	0.12	1.2	6,500	52
	450	2.7	250	0.16	190	0.12	1.3	6,500	45
	500	2.4	265	0.14	220	0.12	1.2	6,500	47
	600	2.0	253	0.13	230	0.12	1.1	6,500	41
	625	1.9	252	0.12	252	0.12	1.0	6,500	43
	750	1.6	295	0.12	295	0.12	1.0	6,500	42
	900	1.3	250	0.09	214	0.08	1.2	6,500	38
		1.2	276	0.08	262	0.08	1.1	6,500	42
		1.0	262	0.08	262	0.08	1.0	6,500	35
		0.8	271	0.08*	271*	0.08	1.0	6,500	32
		0.8	234	0.08*	234*	0.08	1.0	6,500	36
		0.6	269	0.08*	269*	0.08	1.0	6,500	30
		0.4	236	0.08*	236*	0.08	1.0	6,500	24

*Maximum power supported by the gearbox

* Maximum torque supported by the gearbox

Size	1200 RPM								
	ies	n2 (rpm)	M2 (Nm)	P1 (kW)	Mn (Nm)	Pn (kW)	f.s.	Fr (N)	n (%)
WCR71	100	12.0	280	0.54	130	0.25	2.2	6,865	62
	150	8.0	293	0.43	170	0.25	1.7	6,865	55
	200	6.0	318	0.38	209	0.25	1.5	6,865	50
	250	4.8	351	0.35	251	0.25	1.4	6,865	48
	300	4.0	330	0.28	295	0.25	1.1	6,865	47
	390	3.1	333	0.24	250	0.18	1.3	6,865	43
	465	2.6	340	0.23	266	0.18	1.3	6,865	38
	500	2.4	357	0.21	306	0.18	1.2	6,865	41
	620	1.9	348	0.19	330	0.18	1.1	6,865	36
	750	1.6	369	0.16	277	0.12	1.3	6,865	37
	930	1.3	348	0.15	278	0.12	1.3	6,865	30
	975	1.2	383	0.15	306	0.12	1.3	6,865	32
	1,170	1.0	383	0.14	328	0.12	1.2	6,865	28
		0.8	369	0.12*	369*	0.12	1.0	6865	25
		0.7	350	0.12*	350*	0.12	1.0	6865	19
	2000	0.6	369	0.12*	369*	0.12	1.0	6,865	18
		0.5	383	0.12*	383*	0.12	1.0	6865	16
	2940	0.4	361	0.12*	361*	0.12	1.0	6865	12
		0.3	350	0.12*	350*	0.12	1.0	6865	10
	3920	0.3	361	0.12*	361*	0.12	1.0	6865	9
WCR84	100	12.0	426	0.79	297	0.55	1.4	8,826	65
	155	7.7	445	0.60	408	0.55	1.1	8826	58
	200	6.0	477	0.53	333	0.37	1.4	8,826	54
	245	4.9	538	0.51	390	0.37	1.4	8,826	52
	300	4.0	513	0.41	463	0.37	1.1	8,826	50
	390	3.1	500	0.34	368	0.25	1.4	8,826	45
	465	2.6	511	0.32	399	0.25	1.3	8826	41
	490	2.4	554	0.32	433	0.25	1.3	8826	43
	620	1.9	517	0.26	497	0.25	1.0	8,826	39
	735	1.6	538	0.23	421	0.18	1.3	8,826	38
	930	1.3	523	0.21	448	0.18	1.2	8,826	32
	975	1.2	575	0.21	493	0.18	1.2	8,826	34
	1,170	1.0	575	0.19	545	0.18	1.1	8,826	31
		0.8	550	0.15	440	0.12	1.3	8,826	30
		0.7	506	0.14	434	0.12	1.2	8,826	24
	2000	0.6	550	0.13	508	0.12	1.1	8,826	25
		0.5	575	0.13	531	0.12	1.1	8,826	23
		0.4	539	0.12*	539*	0.12	1.0	8,826	20
		0.3	506	0.12*	506*	0.12	1.0	8826	19
		0.3	539	0.12*	539*	0.12	1.0	8,826	17

*Maximum power supported by the gearbox

* Maximum torque supported by the gearbox

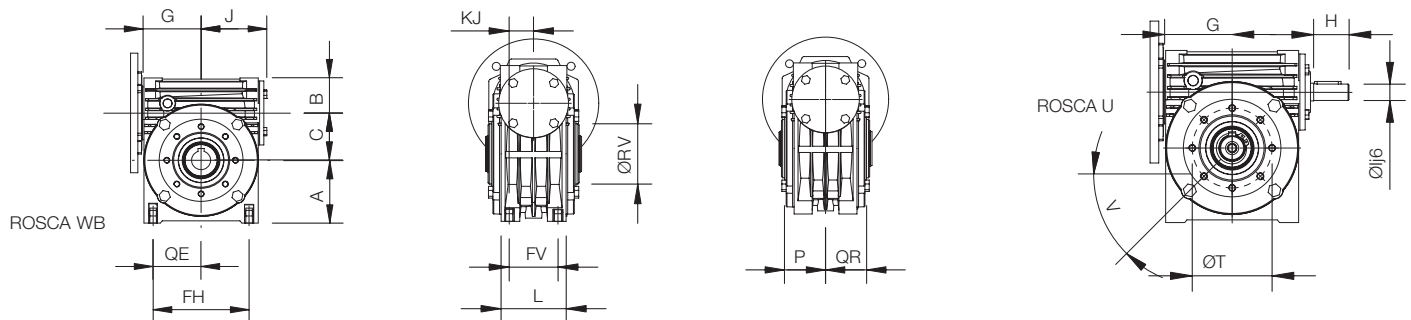
Size	1200 RPM								
	ies	n2 (rpm)	M2 (Nm)	P1 (kW)	Mn (Nm)	Pn (kW)	f.s.	Fr (N)	n (%)
WCR100	100	12.0	653	1.19	302	0.55	2.2		66
	155	7.7	682	0.88	426	0.55	1.6		60
	200	6.0	744	0.80	512	0.55	1.5		56
	250	4.8	839	0.77	599	0.55	1.4		52
	300	4.0	787	0.62	698	0.55	1.1		51
	400	3.0	786	0.51	570	0.37	1.4		46
	465	2.6	795	0.47	626	0.37	1.3		44
	500	2.4	863	0.46	694	0.37	1.2		45
	620	1.9	812	0.40	751	0.37	1.1		39
	750	1.6	870	0.36	604	0.25	1.4		39
	930	1.3	795	0.29	685	0.25	1.2		35
		1.2	897	0.29	773	0.25	1.2		37
	1200	1.0	880	0.27	815	0.25	1.1		33
	1500	0.8	878	0.24	659	0.18	1.3		29
		0.7	800	0.21	686	0.18	1.2		25
	2000	0.6	878	0.21	753	0.18	1.2		25
		0.5	899	0.18	899	0.18	1.0		25
		0.4	826	0.15	661	0.12	1.3		23
		0.3	800	0.13	738	0.12	1.1		21
		0.3	826	0.13	762	0.12	1.1		19
WCR119	100	12.0	946	1.70	612	1.1	1.5		67
	150	8.0	1,000	1.29	853	1.1	1.2		62
	195	6.2	1,108	1.18	1,033	1.1	1.1		58
	250	4.8	1,226	1.05	876	0.75	1.4		56
	293	4.1	1,147	0.89	967	0.75	1.2		53
	390	3.1	1,147	0.71	889	0.55	1.3		50
	450	2.7	1,157	0.67	950	0.55	1.2		46
	500	2.4	1,285	0.64	1,104	0.55	1.2		48
	600	2.0	1,177	0.54	806	0.37	1.5		44
	750	1.6	1,275	0.47	1,004	0.37	1.3		44
	900	1.3	1,138	0.40	1,053	0.37	1.1		38
	975	1.2	1,314	0.40	1,215	0.37	1.1		41
	1,170	1.0	1,255	0.35	896	0.25	1.4		37
		0.8	1,285	0.31	1036	0.25	1.2		33
		0.7	1,245	0.28	1,112	0.25	1.1		30
	2000	0.6	1,226	0.25	1226	0.25	1.0		29
		0.5	1,285	0.24	964	0.18	1.3		28
		0.4	1,236	0.21	1059	0.18	1.2		24
		0.3	1,216	0.18	1216	0.18	1.0		23
		0.3	1236	0.18	1236	0.18	1.0		21
WCR160	150	8.00	2,800	3.5	889	1.1	3.2		69
	400	3.00	2,800	1.5	2,061	1.1	1.4		60
	465	2.58	2,800	1.4	2,276	1.1	1.2		57
	500	2.40	2,800	1.3	2,447	1.1	1.1		57
	620	1.94	2,800	1.1*	2,800*	1.1	1.0		54
	800	1.50	2,800	0.9	2,295	0.75	1.2		49
	930	1.29	2,800	0.8	2,668	0.75	1.0		49
	980	1.22	2,800	0.8	2,697	0.75	1.0		47
		0.97	2,800	0.7	2,343	0.55	1.2		44
		0.77	2,800	0.6	2,729	0.55	1.0		41
	1960	0.61	2,800	0.5	2,208	0.37	1.3		39
		0.50	2,800	0.4	2,496	0.37	1.1		36
		0.40	2,800	0.37*	2,800*	0.37	1.0		35

*Maximum power supported by the gearbox

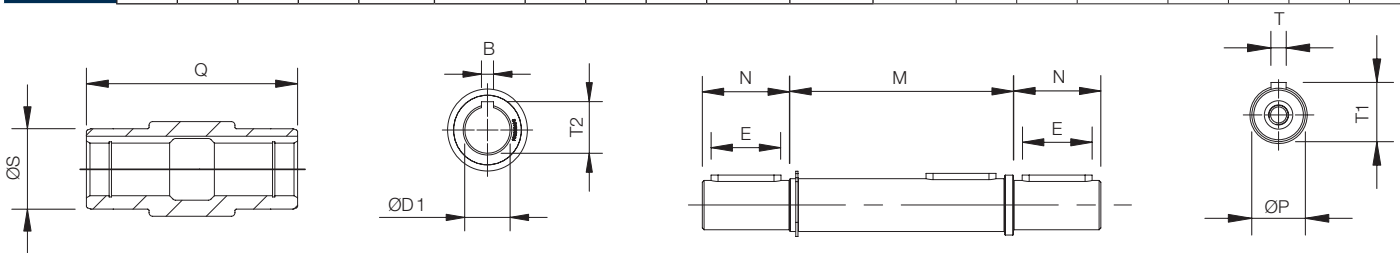
* Maximum torque supported by the gearbox

16 DIMENSIONS

HOUSING

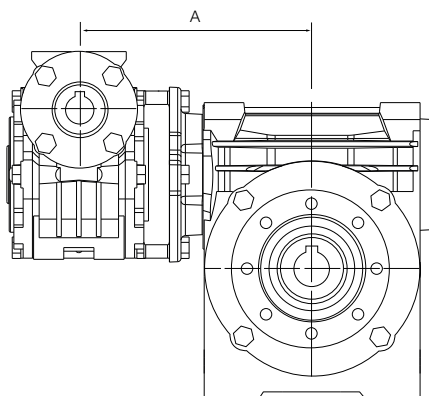


Housing																			
Size	A	B	C	FH	QE	WB	L	FV	ØRV	KJ	P	QR	ØT	V	U	G	J	H	Ølj6
WCR28	36.5	24	28	53	26.5	8 x M6	39	28	50	14	28	28	65	45°	4 x M5	34.5	40.7	23	11
WCR41	50	31	41	76.5	38.25	8 x M6	60	43.5	50	21.75	32.5	32.5	65	45°	4 x M6	47	53.6	30	16
WCR51	63	34	51	97	48.5	8 x M8	72	46	70	23	40	40	85	45°	4 x M8	58	67.5	35	19
WCR63	84	47	63	126	63	8 x M10	82	60	75	30	52	52	90	45°	8 x M8	76	85.5	40	19
WCR71	94	85	71	140	70	8 x M12	110	80	130	40	66.5	65.7	150	45°	8 x M8	101.5	101.5	50	25
WCR84	110	84	96	160	80	8 x M16	120	85	150	42.5	72.5	71.7	170	45°	8 x M8	113	110	56	28
WCR100	125	100	105	185	92.5	8 x M16	135	95	180	47.5	81	81	200	45°	8 x M8	118.5	137	64	32
WCR119	146	119	115	200	100	8 x M20	155	110	210	55	92	92	235	45°	8 x M10	139	155.9	70	35
WCR160	185	83	160	306	153	8 x M20	152	105	145	52.5	99	99	180	45°	8 x M10	183.5	202.5	90	45



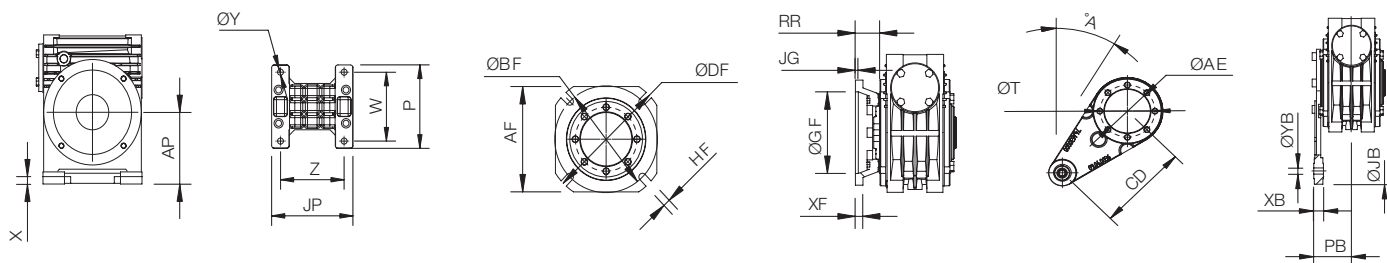
Output Shafts											
Size	Q	ØS	B	T2	ØD1	N	E	M	ØP	T	T1
WCR28	62	25	5	16.3	14	25	20	65.1	14	5	16
WCR41	85	30	6	21.8	19	35	30	90.8	19	6	21.5
WCR51	92	40	8	28.3	25	40	30	98.3	24	8	27
WCR63	118	45	8	33.3	30	50	40	124.5	28	8	31
WCR71	150	70	14	48.8	45	80	76	166	40	12	43
WCR84	165	80	14	53.8	50	90	85	185	45	14	48.5
WCR100	185	90	16	59.3	55	100	95	210	50	14	53.5
WCR119	205	90	18	64.4	60	110	105	244	55	16	59
WCR160	216	90	18	64.4	60	120	100	234	60	18	64.4

DUPLEX GEAR



Size	WCR28	WCR41	WCR51	WCR63	WCR71	WCR84	WCR100	WCR119	WCR160
A	91.5	100	126.5	143.5	194	215	223.6	249	315.9

ACCESSORIES



Size	Outlet Flange								Torsion Arms							Feet						
	ØBF	AF	ØDF	HF	XF	ØGF	JG	RR	ØYB	XB	ØJB	PB	ØT	CD	ØAE	ØY	Z	JP	W	P	X	AP
WCR28	68	70	83	6.5	6	50	5	27	10.5	18	45	42	65	100	50	6.5	53	67	62	81	9	46.5
WCR41	87	90	106	8.5	7	60	5.5	33	10.5	18	45	51.5	65	100	50	9	72	94	86	110	12	66
WCR51	90	100	120	11	8	70	4.5	52.25	10.5	18	45	53	85	100	70	9	91	116	100	120	12	79
WCR63	150	148	180	10.5	11	115	4	35	10.5	18	45	66	90	150	75	11	119	152	124	150	11	102
WCR71	240	220	*275	-	16	205	5	68.5	14	40	46	93	150	180	121	13	155	190	155	190	21	118
WCR84	270	250	*310	-	18	230	6	77.5	17.5	50	37	105	170	210	140	17	180	220	170	210	24	138
WCR100	310	290	*355	-	20	265	6	84	17.5	50	58	120	200	250	170	17	205	250	190	235	26	155
WCR119	350	330	*395	-	22	305	6	88	17.5	50	58	133	235	300	201	22	210	270	220	270	31	181
WCR160	400	400	452	-	25	350	7	98	-	-	-	-	-	-	-	26.5	290	365	235	310	30	223

MOTOR FLANGE INPUT

C-DIN Flange													
Size	Housing	ØRS	ØNH	ØMS	ØTT	GH	LK	B	ØUL	DS	HV	M	JH
WCR28	56	80	65	50	9	6	3.5	1.5	5.5	21.5	10.4	3	14
	63	90	75	60	10	7	4	1.5	5.5	23.5	12.8	4	13

FF Flange													
Size	Housing	ØRS	ØNH	ØMS	ØTT	GH	LK	B	ØUL	DS	HV	M	JH
WCR41	63	140	115	95	11	9	3.5	1	10	23.5	12.8	4	14
	71	160	130	110	14	10	4	2.5	8.5	35.5	16.2	5	16.5
	C-DIN Flange												
	63	90	75	60	11	6	4	1	5.5	23.5	12.8	4	14
	71	105	85	70	14	7	3	1	6.5	34	16.2	5	15

FF Flange													
Size	Housing	ØRS	ØNH	ØMS	ØTT	GH	LK	B	ØUL	DS	HV	M	JH
WCR51	63	140	115	95	11	8	3.5	3.4	10	27.4	12.8	4	14
	71	160	130	110	14	10	4	3.4	8.5	43.4	16.3	5	16.5
	80	200	165	130	19	12	4	2.5	10.5	46.5	21.8	6	18
	C-DIN Flange												
	63	90	75	60	11	6	3	2.4	5.5	26.4	12.8	4	14
	71	105	85	70	14	7	3	1.9	6.5	41.9	16.3	5	15
	80	120	100	80	19	9	4	2.5	6.5	46.5	21.8	6	18

FF Flange													
Size	Housing	ØRS	ØNH	ØMS	ØTT	GH	LK	B	ØUL	DS	HV	M	JH
WCR63	71	160	130	110	14	10	4	2.6	8.5	30	16.3	5	16.5
	80	200	165	130	19	12	4	0.4	10.5	44.4	21.8	6	18
	90	200	165	130	24	12	4	0.3	10.5	50.8	27.3	8	18
	C-DIN Flange												
	71	105	85	70	14	7	3	1.1	6.5	28	16.3	5	15
	80	120.5	100	80	19	9	4	0.4	6.5	44.4	21.8	6	18
	90	140	115	95	24	10	4	0.3	8.5	50.8	27.3	8	18

FF Flange													
Size	Housing	ØRS	ØNH	ØMS	ØTT	GH	LK	B	ØUL	DS	HV	M	JH
WCR71	71	160	130	110	14	12	4.5	-	10	-	16.3	5	32
	80	200	165	130	19	15	4.5	14.5	10.5	38.5	21.8	6	33
	90	200	165	130	24	15	4.5	21.5	10.5	50.5	27.3	8	38
	100/112	250	215	180	28	15	5	15	15	60	31.3	8	40
	C-DIN Flange												
	71	105	85	70	14	9	3.5	-	6.5	-	16.3	5	-
WCR84	80	120	100	80	19	9	4	-	6.5	-	-	6	-
	90	140	115	95	24	9	4	21.5	8.5	50.5	27.3	8	38
	100/112	160	130	110	28	9	4.5	-	8.5	-	-	8	-

FF Flange													
Size	Housing	ØRS	ØNH	ØMS	ØTT	GH	LK	B	ØUL	DS	HV	M	JH
WCR84	71	160	130	110	14	12	4.5	15	10	29	16.3	5	32
	80	200	165	130	19	15	4.5	16	10.5	41	21.8	6	33
	90	200	165	130	24	15	4.5	21	10.5	50	27.3	8	38
	100/112	250	215	180	28	15	5	15	15	60	31.3	8	40
	C-DIN Flange												
	71	105	85	70	14	9	3.5	15	6.5	30	16.3	5	32
WCR100/119	80	120	100	80	19	9	4	16	6.5	41	21.8	6	33
	90	140	115	95	24	9	4	21	8.5	56	27.3	8	38
	100/112	160	130	110	28	9	4.5	15	8.5	60	31.3	8	40

FF Flange													
Size	Housing	ØRS	ØNH	ØMS	ØTT	GH	LK	B	ØUL	DS	HV	M	JH
WCR 100/119	80	200	165	130	19	15	4.5	16	10.5	40	21.8	6	34
	90	200	165	130	24	15	4.5	21	10.5	50	27.3	8	37
	100/112	250	215	180	28	15	5	15	15	60	31.3	8	41

FF Flange													
Size	Housing	ØRS	ØNH	ØMS	ØTT	GH	LK	B	ØUL	DS	HV	M	JH
WCR 160	100/112	250	215	180	28	15	5	0	15	70	31.3	8	184
	132	300	265	230	38	15	5	14.9	15	84	41.3	10	198

SOLID SHAFT INPUT

Line	VG	DS	ZV	Z	ØUL	M	HV
WCR28	30.5	23	15	6	11	4	12.5
WCR41	41	30	20	9.25	16	5	18
WCR51	45	35	30	4	19	6	21.5
WCR63	55.6	40	30	9	19	6	21.5
WCR71	71	50	48	-	25	8	28
WCR84	74.4	56	53	-	28	8	31
WCR100	89.2	64	61	-	32	10	35
WCR119	101	70	67	-	35	10	38
WCR160	114	90	87	-	45	14	48.5

POSSIBLE POSITIONS FOR THE TORSION ARM

Size	0°	45°	60°	90°	120°	135°	180°	225°	240°	270°	300°	315°
WCR28	-	-	-	X	-	X	X	X	-	X	-	-
WCR41	-	-	-	X	-	X	X	X	-	X	-	-
WCR51	-	-	-	X	-	X	X	X	-	X	-	-
WCR63	-	-	-	X	-	X	X	X	-	X	-	-
WCR71	-	-	-	-	X	-	X	-	X	-	-	-
WCR84	-	-	-	X	-	X	X	X	-	X	-	-
WCR100 / WCR119	-	-	-	X	-	X	X	X	-	X	-	-

0° - Consider the arm pointing toward the inlet

90° - Consider the arm pointing toward the upper base of the gearbox inlet at M1

180° - Consider the arm pointing away from the inlet

270° - Consider the arm pointing toward the lower base of the gearbox inlet on M1



For more information
visit our website.



www.wegcestari.com



CESTARI
REDUTORES



+55 16 3244.1000



wegcestari@wegcestari.com



Monte Alto, São Paulo,