

Ampli-Speed™ Magnetic Drives

Horizontal and Vertical Speed



WEG Electric Machinery, WEM, Ampli-Speed™ magnetic drives are a time-tested, reliable solution to your variable speed applications. They can be used with any standard motor or can be matched with any new or existing installation having a suitable motor.



Ranges

Output: 200 to 2,700 HP
Speed: 300 to 1,800 RPM

Experience

WEM has over sixty years of experience in designing, manufacturing and servicing Ampli-Speed™ magnetic drives with over 1,000 units installed worldwide.

Purpose

The Ampli-Speed™ magnetic drive is an adjustable speed general purpose magnetic coupling placed between a motor and a load requiring speed control. It consists of two independently rotating parts, the “ring” and the “magnet”, which are separated by an air gap. The ring is driven by an electric motor and the magnet is connected to the load. By varying the strength of the magnetism, the relative speed of the magnet can be varied to suit load requirements.

The magnetic drive is controlled by a Regutron™ controller which operates in conjunction with the shaft mounted magnetic pickup to maintain precise speed control during steady state operation.

Benefits

The simple, sturdy design of WEM's Ampli-Speed™ magnetic drives offer distinct advantages over solid state electronic variable frequency drive controls. These features improve performance and reduce costs.

- Simple design is easily maintained by your personnel.
- Air-cooled design requires no auxiliary cooling.
- Bracket type construction makes the unit compact and self-contained.
- No torque pulsations are created within the magnetic drive which can cause shaft fatigue and system failure. Eliminates the need for special couplings.
- Output speed can be controlled with a variety of input signals.
- No harmonics to create heat in the motor and cause lower efficiency. No harmonic pollution to distort utility system waveforms. No over-sizing of motor is required to compensate for harmonics. Eliminates the need for costly harmonic studies and filters.
- Fewer system components resulting in greater reliability.

Ampli-Speed™ Magnetic Drives

Horizontal and Vertical for Variable Speed



Vertical Drive with EM Induction Motor

Application

Ampli-Speed™ magnetic drives are particularly suitable for fans, pumps, centrifugal compressors and blowers by matching equipment speeds to meet flow demands.

Enclosures

The standard construction for most indoor applications is an open guarded unit with air intake from the ends and top discharge enclosure to help exhaust the hot air and minimize noise.

For outdoor applications, a protective cover can be provided with screened openings for ventilating air, thus minimizing the entrance of airborne particles into the interior of the magnetic drive.

For more information, please contact:

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Features

WEM Ampli-Speed™ magnetic drives rugged construction includes the following features:

- The salient field poles are dovetailed or bolted to a robust spider to form a sturdy unit which provides years of outstanding service.
- The ring member is made from high quality steel to provide durable, long-lasting service. It has deep grooves to form cooling fins which improve heat dissipation.
- Magnet member coils are insulated with industry-proven Class F insulation. This system promotes long magnetic drive life by providing superior chemical and moisture resistance, superb mechanical integrity and excellent dielectric properties.
- Heavy frame and brackets support the outboard bearings.
- The Regutron™ control accepts manual adjustment by rheostat or a 4-20 mA signal to provide precise speed control.

High Ring Base

High Ring Base is available for vertical machines, frequently mounted on the floor. The high ring base allows access to the coupling on the magnetic drive shaft.



Horizontal Drive in Pump Application

Service, Support & Upgrades

- Installation, commissioning and start-up
- Maintenance and field support
- Spares/replacement parts
- Rebuilds and rewinds
- Refurbishment/replacement
- Technical support.

Bearings

The internal centering bearings are grease lubricated anti-friction bearings of either ball or roller type, depending upon the frame size of the drive. The outer bearings are ring oiled sleeve type except on smaller frames, which have anti-friction bearings. For vertical units, higher thrusts from pump loads can be accommodated with the use of an optional thrust stand containing an anti-friction or tilt pad type oil lubricated bearing.

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