

PRODUCT NOTE

Single-bearing induction motors now available in frame sizes 400-1000



ABB's single-bearing induction motor is a competitive and cost efficient alternative for compressor manufacturers. The design is mainly used for reciprocal compressor applications to shorten the axial train to decrease length and save costs of the complete motor-compressor shaft system. Single-bearing motors are now available in the complete range of motor type AMI, frame sizes 400-1000.

Purpose-designed for compressor applications

ABB has extensive experience in designing and manufacturing single-bearing induction motors. The single-bearing solution was previously available in frame sizes 710-1000. Now it is also available in frame sizes 400-630.

The new single-bearing induction motor in frame sizes 400-630 is based on ABB's long-term technical expertise and application knowledge. It is especially designed for reciprocating compressor applications, in order to optimize dynamic behavior of the complete motor-compressor shaft system.

The single-bearing induction motor offers a number of benefits to compressor manufacturers:

- Shorter motor length, reducing overall compressor skid size
- Lower overall skid weight facilitates easier transport and installation
- Optimized cost of compressor skid providing a more competitive offering
- Better use of motor rotor helps to reduce size and weight of flywheel
- Flange connection eliminates coupling
- Simpler and lighter design of compressor train

Optimized solution

The use of a single bearing results in a shorter motor, which reduces the overall length of the compressor skid package. Compared to a standard two-bearing design, when a single-bearing motor is used the reciprocating compressor can more effectively utilize the weight and inertia of the motor's rotor as part of the flywheel.

The single-bearing solution helps to reduce the size of the compressor flywheel, shaft and bearings. The smaller size and weight of the compressor skid reduce the cost of ownership and makes the installation easier.

Main features

- The single-bearing motor has only one NDE bearing – generally a sleeve bearing; the other bearing is in common with the coupled machine
- The shaft itself is forged in one piece and flanged
- In all other aspects, single-bearing motors are identical to the standard two-bearing design
- Single-bearing motors are typically used for reciprocating compressors and other pulsating loads
- ABB single-bearing motors can be designed for installation in hazardous area

Main specifications

Frame sizes: 400 to 1000

Motor type: AMI

Speed: 250 to 1,000 rpm (direct-on-line)

Number of poles: 6 to 24

Protection class: IP24, IP55

Safe and hazardous area designs

For more information please visit:

www.abb.com/motors&generators

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