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MagnaDrive

Energy efficient Drives & Couplings: this technology uses high power Neodymium-Iron-Boron (rare earth elements) permanent magnets to create an induced electromotive force used for torque transfer.

MagnaDrive replaces the physical connection between motors and loads with a gap of air. A gap that eliminates harmful wear and tear from vibration, enhances energy efficiency, increases motor life and protects equipment from overload damage.

MagnaDrive's Green disconnected torque-transfer technology reduces your total cost of ownership by lowering maintenance and operating costs, increasing process availability, and improving system reliability.



Couplings: FGC, MGE, MGD and MGTL

The MagnaDrive industrial coupling product line is targeted at constant speed applications on 2 to 5,000 horsepower motors with speeds up to 7,000 RPM. Like the MagnaDrive ASD, MagnaDrive Couplings incorporate an air gap to isolate the motor from the load. This eliminates vibration transfer, equipment damage and downtime, and the need for costly and time-consuming laser alignment. Further, MagnaDrive Couplings are virtually maintenance free requiring only an annual inspection that can be performed while the equipment is in operation.

Standard Coupling Family (FGC & MGE)

MagnaDrive's standard coupling family is available in two styles depending upon the particular application. The MagnaGuard First Generation Coupling (FGC) and MagnaGuard Economizer (MGE) both offer significant benefits:

- Lowest Total Cost of Ownership
- Low maintenance
- Efficient torque transfer
- Accepts greater misalignment
- Eliminates vibration transfer between motor and load
- Increases seal and bearing life
- Permits shock loading
- Simple installation
- Meets ANSI B73 Standards (MGE only)
- Meets API 610 Standards (MGE only)

MagnaGuard Delay Coupling Family (MGD)

Some applications, such as bulk handling conveyors, require a delayed-start capability in order to extend system equipment life. MagnaDrive's advanced cushioned start and stop coupling family has all of the benefits of the standard couplings, plus:

- Ability to delay full torque transfer
- Cushioned start and stop

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MagnaGuard Torque Limiting Coupling Family (MGTL)

In torque overload situations, the MGTL automatically disengages, shutting down the system and preventing damage or even destruction of the motor and driven equipment. When the jam is cleared, the coupling automatically resets itself to resume operation. MagnaDrive's advanced overload protection coupling family has all of the benefits of the advanced cushioned start and stop couplings, plus:

- Overload torque protection
- Self-resetting

Adjustable Speed Drives: ASD

The MagnaDrive Adjustable Speed Drive (ASD) is breakthrough speed control technology designed to reduce your total cost of ownership by lowering maintenance and operating costs, increasing process availability, and improving system reliability.

Ideally suited to pump, fan and blower applications, the MagnaDrive ASD is available in sizes ranging from 5 to 4,000 horsepower and speeds up to 3,600 RPM. Lower maintenance and operating costs are a result of transferring torque from motors to driven equipment across an air gap without shaft-to-shaft physical connection. This "disconnected connection" provides reduced vibration that increases bearing and seal life.

Simple, reliable and low cost, the MagnaDrive ASD provides the energy savings of speed control without the problems often associated with Variable Frequency Drives. System complexity is reduced, vibration is minimized and alignment problems disappear. Motor systems can be resized for lower cost and more efficient operation.

Applications currently benefiting from use of the MagnaDrive ASD include: pumps, fans, blowers, centrifuges, and bulk handling equipment. Industries served include: water and wastewater treatment, pulp and paper manufacturing, power generation, oil & gas processing, cement, mining, chemical & food processing, irrigation, maritime and HVAC systems. These installations are demonstrating significant energy savings and reduced system vibration.

MagnaDrive is Ideal for systems using:

- centrifuges
- equipment subject to vibration & misalignment
- fans
- material handling & transport equipment
- pumps
- replacement of VFDs (for smaller footprint and without the need for auxiliary cooling)

Features and Benefits:

Best Total Cost of Ownership

When compared to alternative drives or constant torque couplings, MagnaDrive products offer:

- Increased drive, coupling and system reliability
- Lower maintenance expense on the drive or constant torque coupling, as well as on the motor, load, seals and bearings
- Reduced system operational downtime. The MagnaDrive product family minimizes the need for maintenance, repair and drive or couplings replacement due to longer life. Consequently, the

system requires less capital and operating expense and it is free to generate more revenue for the owner

- Substantial energy savings in operations, depending on system duty cycles
- Longer asset life (motor, load, seal and bearing) due to minimized vibration transfer and the ability to accept some misalignment

Lower Maintenance Costs

More than 80% of all rotary equipment failures are related to vibration. Vibration breaks down the resiliency of seals and increases bearing and equipment temperatures. Studies indicate that 50% to 60% of damaging machine vibrations are the result of shaft misalignment, 30% to 40% of damaging vibrations are the result of equipment unbalance, and up to 20% are the result of resonance.

MagnaDrive's technology offers industry the best solution to damaging machine vibration.

Energy Savings

MagnaDrive's technology saves energy by reducing system inefficiencies. For instance, MagnaDrive Couplings have demonstrated vibration reductions in excess of 80%. This reduced vibration results in less "wasted" energy.

In centrifugal equipment such as pumps, fans and blowers, energy savings with the MagnaDrive Adjustable Speed Drive (ASD) result from slowing the rotational speed of the equipment rather than using flow restriction devices such as control valves, dampers or bypass systems.

Increased Process Availability

MagnaDrive's technology transmits torque across an air gap with no mechanical connection. This "disconnected connection" reduces vibration associated with shaft misalignment, equipment unbalance and resonance. Reductions in vibration from 50% to 85% are the norm.

MagnaDrive's technology can tolerate shaft misalignment up to .200 inch and have no vibration increase. This is over 100 times the misalignment acceptable in most conventional installations.

Studies show that over 80% of all rotary equipment failures are related to vibration. The vibration reduction associated with MagnaDrive's technology offers industry the most effective method of increasing Mean Time between Failure (MTBF). Longer MTBF means increased process availability.

Improved System Reliability

Studies show that over 80% of all rotary equipment failures are related to vibration. Vibration reduction from MagnaDrive's technology offers industry the most effective reliability improvement solution available.

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