MagnaDrive™

The Next Industrial Revolution

"Green" Energy Saving Product

MGE

MagnaGuard Economizer Coupling

1/2 — 500 Hp

Key Features & Benefits:

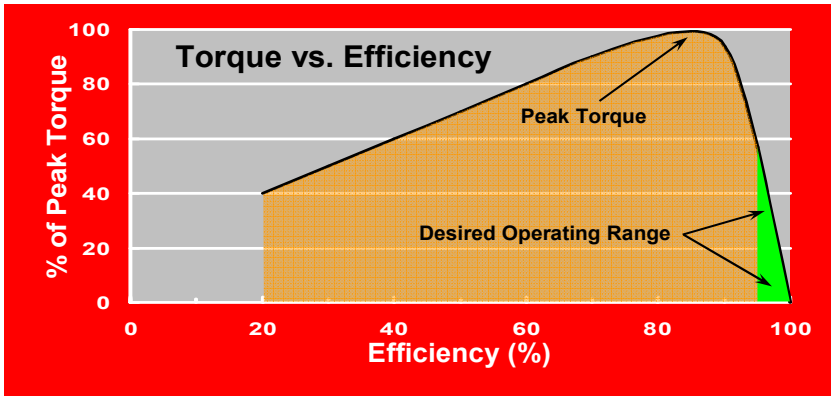
- Substantial Energy Savings
- "Green" Technology
- Lowest Total Cost of Ownership
- Efficient Torque Transfer
- Accepts Misalignment
- Cushioned Start
- Eliminates Vibration Transfer Between Motor and Load
- Low Maintenance
- Simple Installation
- Reduces Maintenance & Operation Costs
- Increases Seal & Bearing Life
- Meets ANSI B73 and API 610 Standards

Ideal for Applications Subject To:

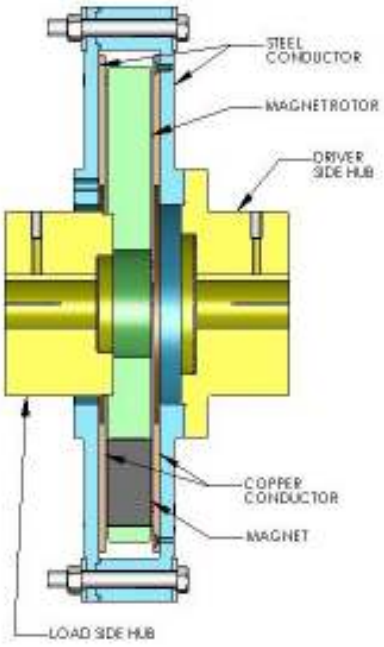
- Vibration
- Periodic Load Seizure
- Pulsating Loads
- Thermal Expansion
- Shock Loading

Principle of Operation

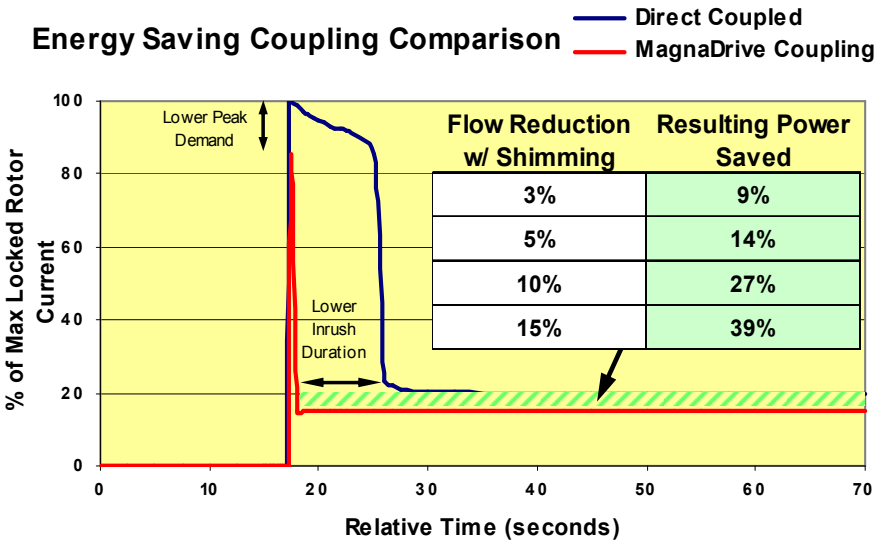
An MGE consists of two separate components that have no physical contact. A precision machined aluminum rotor containing powerful permanent rare-earth-magnets is mounted on one shaft. A conductor consisting of a steel housing with copper rings mounts on the other shaft. The coupling's ability to transmit torque is created by the relative motion between the copper conductor and the magnets. This motion creates a magnetic field in the copper that interacts with the permanent magnets, thus transmitting torque across the air gap. MagnaDrive products are designed to minimize Electro Magnetic Interference (EMI). The flux level from each coupling is lower than the EMI emitted by the associated motor.



Note: The above torque curve is a generalization of various sizes of magnetic couplings. Coupling selection is based on each application's speed, horsepower, and desired efficiency. Please consult MagnaDrive for proper selection based on your application's requirements



MagnaDrive Couplings provide a disconnected, Cushioned Start. Because the motor does not have to overcome load inertia, the Peak Demand Current and duration of Inrush are reduced significantly. This Cushioned Start results in energy savings (see Graph) and reduced equipment wear. For many applications a lower Peak Demand Current may contribute to lower electrical power rates. Also, the Coupling air gap can be adjusted during installation to operate a pump, fan or blower at less than maximum flow, with sizable energy savings based on the centrifugal Affinity Laws.



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.

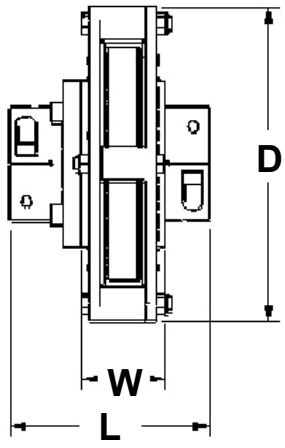
Technical Data

MGE Coupling Specification Data (at standard 0.125" air gap)										
Model	Sample Rating at 1,800 RPM (HP)		Sample Rating at 3,600 RPM (HP)		ANSI Power Rating	Maximum Operating Torque		Peak Torque Rating		Max. RPM
	1.3 Service Factor	1.8 Service Factor	1.3 Service Factor	1.8 Service Factor	HP at 1,800 RPM (1)	ft-lb	in-lb	ft-lb	in-lb	
MGE-01	2.3	1.7	4.5	3	1	3.4	41	8.8	105	5,000
MGE-03	9	6.4	17	12	5	17.1	205	33.8	405	4,000
MGE-07	23	16.5	45	33	18	55	660	87	1,040	6,800
MGE-11	83	60	165	120	72	211	2,537	317	3,800	4,500
MGE-15	221	160	440	320	190	561	6,731	842	10,100	3,600
MGE-19	417	302	na	na	360	1,056	12,672	1,583	19,000	3,000

(1) Based on minimum efficiency of 95% at 1,800 RPM, Power Rating not scalable to other speeds.

MGE Coupling Data				
Model	Weight (less hubs)	Dimensions (inches)		
	lb	D (Diameter)	L (Length overall)	W (Center member width)
MGE-01	5.0	4.75	2.75	1.25
MGE-03	7.5	6.50	4.00	1.25
MGE-07	20	9.25	6.06	2.50
MGE-11	49	13.13	6.60	2.50
MGE-15	83	17.13	10.50	3.00
MGE-19	127	21.13	10.50	3.00

Meets ANSI B73 and API 610 Standards



Standard MGE Hub Data (Special sizes also available)				
Model	Weight (lb) (approx.)	Standard DBSE* range (inches)	Standard shaft diameters (inches)	Maximum shaft diameter
MGE-01				0.875
Motor side	Integral	.25 - 1.50	.375, .500, .625, .750, .875	
Load side	Integral		.375, .500, .625, .750, .875	
MGE-03				1.375
Motor side	1.5	.25 - 2.00	.625, .750, .875, 1.125, 1.375	
Load side	1.5		.625, .750, .875, 1.125, 1.375	
MGE-07				1.750
Motor side	6	.25 - 3.50	.875, 1.125, 1.375, 1.625	
Load side	5		.875, 1.125, 1.625	
MGE-11				2.625
Motor side	11	.25 - 3.50	1.125, 1.375, 1.625, 1.875, 2.125, 2.375	
Load side	9		1.125, 1.375, 1.625	
MGE-15				3.544 (90 mm)
Motor side	23	.25 - 4.50	1.500 to 3.500, increments of 0.125	
Load side	18		1.500 to 3.500, increments of 0.125	
MGE-19				3.544 (90 mm)
Motor side	23	.25 - 4.50	1.500 to 3.500, increments of 0.125	
Load side	18		1.500 to 3.500, increments of 0.125	

* DBSE = Distance Between Shaft Ends

Hubs bored per AGMA Standard 9002-A86 Class 1 clearance fit

Standard hub material is alloy steel

MagnaDrive CORPORATION

MGE Sample Installations

MGE-07, 20HP, 3600RPM, Oil & Gas,
Oil Transfer Pump, Oil Tanker

MGE-15, 150HP, 1800RPM, Power Plant,
Pump – Lime Slurry Scrubber, Becker, MN

MGE-11, 50HP, 3600RPM
HVAC, Hospital, Salt Lake City, UT

MGE-11, 100HP, 3600RPM, Pulp & Paper Plant, Clean
Condensate Pump, St. Helens, OR

About MagnaDrive

MagnaDrive Corporation was founded in 1999, and is based out of Bellevue, WA. The company's breakthrough magnetic technology provides a cost effective solution to increase reliability and lower maintenance expense while achieving energy savings and process control. The impact and potential of the technology was recognized by Industry Week magazine, which selected MagnaDrive as Technology of the Year in 2001. MagnaDrive was selected by Inc. Magazine as one of the 500 fastest growing private companies in the United States. Recently, Deloitte & Touche named MagnaDrive one of the 100 fastest growing technology companies in North America. MagnaDrive offers a family of products to accomplish a broad range of operating objectives: Reliability, Speed Control, Torque Management, Cushioned Start, Vibration Control and Misalignment Tolerance.

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Inc. 500

IndustryWeek Technology of the Year

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