Rex® MagneLink® Coupling

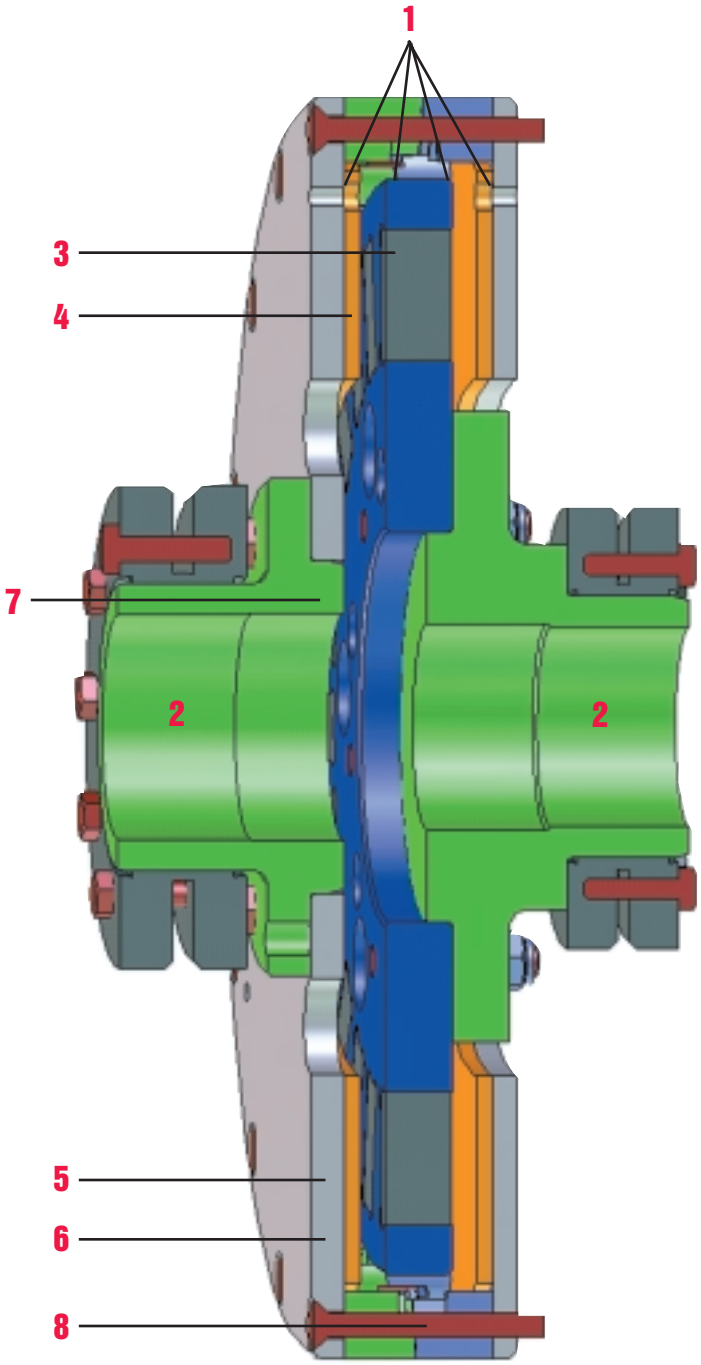
Rexnord

invensys

Rex® MagneLink® Coupling

Rexnord…

is excited and proud to bring this revolutionary new coupling, the Rex MagneLink®, to the marketplace. Virtually every market segment that relies on rotating equipment can realize the benefits this coupling provides. Its patented design consists of two components that never come into contact with each other, allowing torque to be transmitted through the air while eliminating the transfer of vibration.



How does the MagneLink® Coupling Operate?

The coupling works on a fundamental principle of nature involving permanent magnets. The MagneLink® consists of two separate components that have no physical contact. Precision machined aluminum rotors containing high-energy permanent magnets are mounted on one shaft, and a hub 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 through air.

1. **Air gap between magnetic rotor and conductor hubs dampens vibration and avoids resonance**
2. **Laser alignment of shafts is not necessary; just ensure a gap exists between rotors and conductors**
3. **High-energy permanent magnets**
4. **Copper maximizes induction of magnetic fields through motion with magnets**
5. **Steel plates focus the magnetic flux through copper conductors to maximize magnetic fields**
6. **Magnetism does not escape the housing; there is no attraction to tools**
7. **Hub allows many shaft types and sizes while piloting the magnetic rotors**
8. **Precision shoulder bolts provide strength and maintain balance**

Features and Benefits

Features	Benefits
■ Cushion start/stop	Can select coupling for application operating torque. Smaller prime mover. Reduce system cost. Energy savings. Reduce system maintenance cost. Eliminate mechanical shock.
■ Overload protection/slip	Eliminates downtime and expense caused by system lockup and destructive failure. Enhanced operational safety.
■ No shaft-to-shaft physical connection	Extend life of connected equipment by preventing the transfer of system vibrations or other harmful overload torque conditions.
■ No wearing or flexing parts	Save replacement parts cost that occurs with all other coupling designs.
■ Fixed gap optimized to meet application requirements	Eliminate the cost of other mechanical and electrical soft start products. Adjustable spacers fine tune the unit.
■ Near-infinite life (2,000 year half-life)	Product never needs replacement.
■ Accepts misalignment	Coupling does not generate destructive forces that are inherent when conventional coupling designs are misaligned.

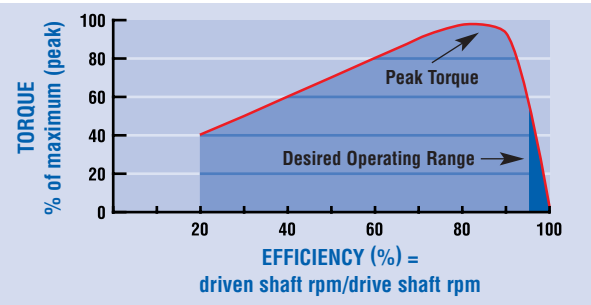
Immediate Benefits

- Highly efficient operation
- Motor and load decoupled
- Vibration isolation
- Laser alignment unnecessary
- "Just Get Close" alignment
- Cushioned start and stop
- Load seizure protection
- No external energy required
- Short-term economic payback

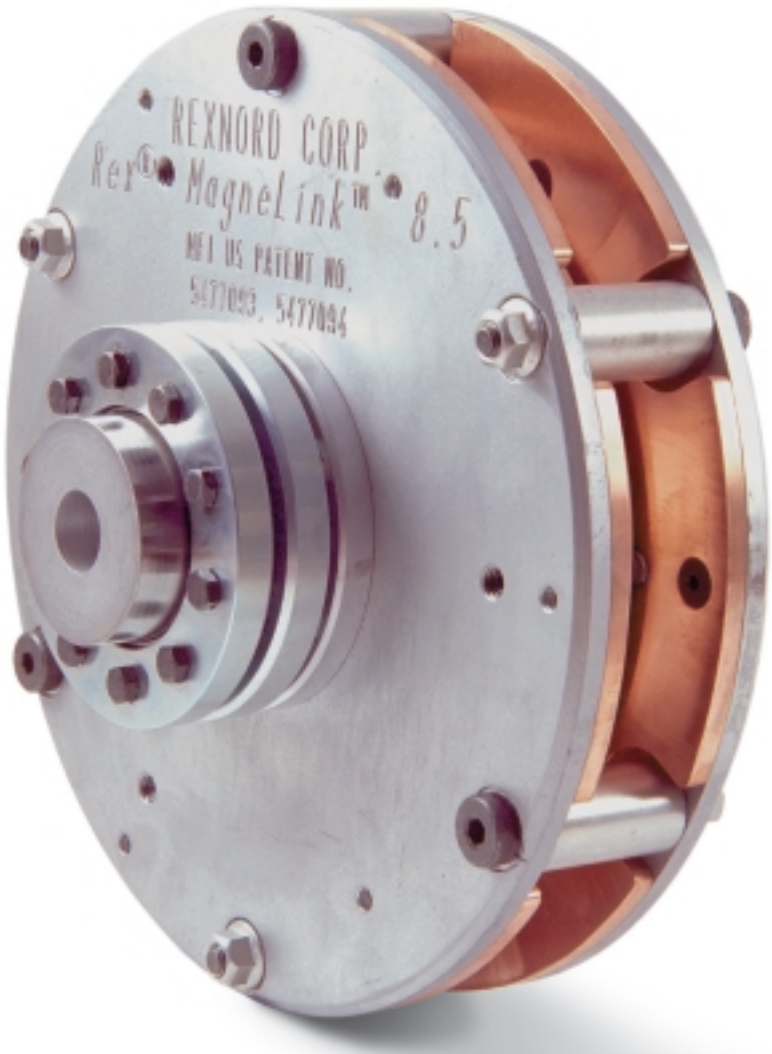
Continuing Benefits

- No wearing parts
- No maintenance required
- No replacement necessary
- Reduce system maintenance
- Increase system reliability and integrity

Torque vs. Efficiency



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 Rexnord for proper selection based on your application's requirements.*



Note: *This picture shows a production model MagneLink size 8.5S.*

Rex® MagneLink® Couplings

MagneLink® is the Future of Power Transmission

Imagine…cushioned start, vibration attenuation, and torque overload protection without:

- Oil
- Wearing parts
- Maintenance

and you align MagneLink® with a flashlight!

MagneLink's HP range is from Fractional to 2500 HP and speeds from 400 RPM to 4500 RPM.

With a warranty for the life of the connected equipment – shouldn't you be using MagneLink®?

MagneLink® transmits torque through air without oil. The following industries have benefited from this technology.

Power

- Air pre-heaters
- Conveyors
- Fans
- Pumps

Cement and Agg

- Conveyors
- Fans
- Pumps
- Bucketwheels
- Crushers
- Pug Mills

Forest Products, Paper and Pulp

- Conveyors
- Fans
- Pumps
- Bucketwheels
- Crushers
- HydroPulpers

Many Others

- Coal
- Iron and Steel
- Petro Chem

Sizing Chart

MagneLink® Selection

The following selection chart can be used to estimate the selection of MagneLink® for your application.

This chart is based simply on speed and HP of the driver. Use of standard materials and no specific start up characteristic is also assumed.

This simple selection can be supplemented with the following additional information about your specific application.

- Machine type
- Inertia of the load
- Motor curve
- Load curve
- Gearbox ratio
- Shaft diameters
- DBSE
- Ambient temperatures
- Duty factors
- and any other relevant information

Call your local authorized distributor, Rexnord Salesman, or Rexnord Service Center with your specific needs.

MagneLink® 112 Series

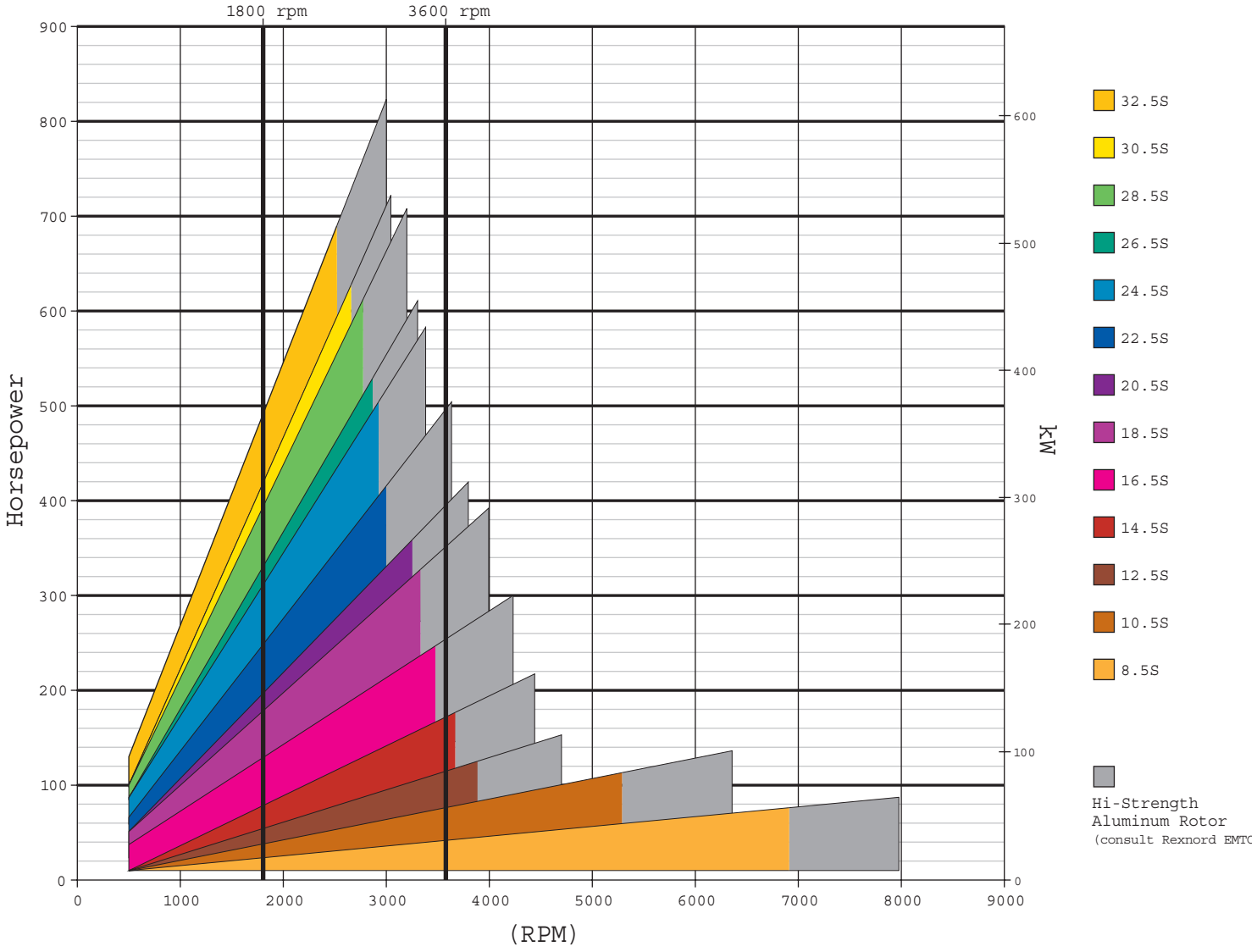
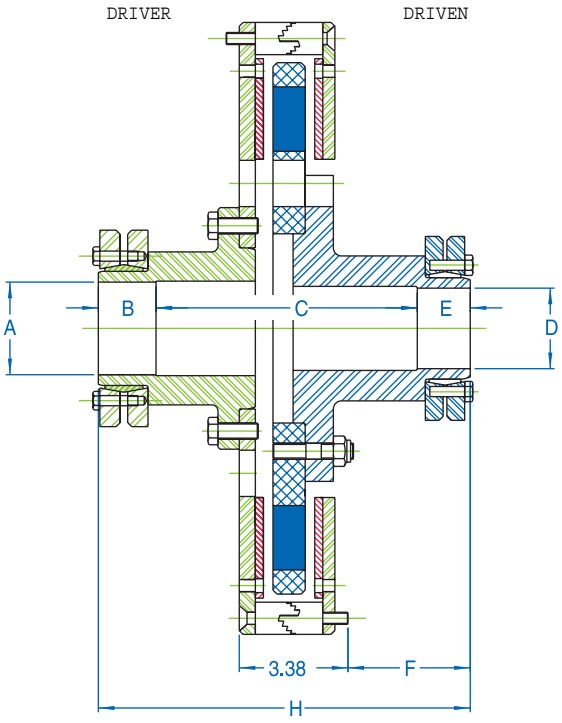
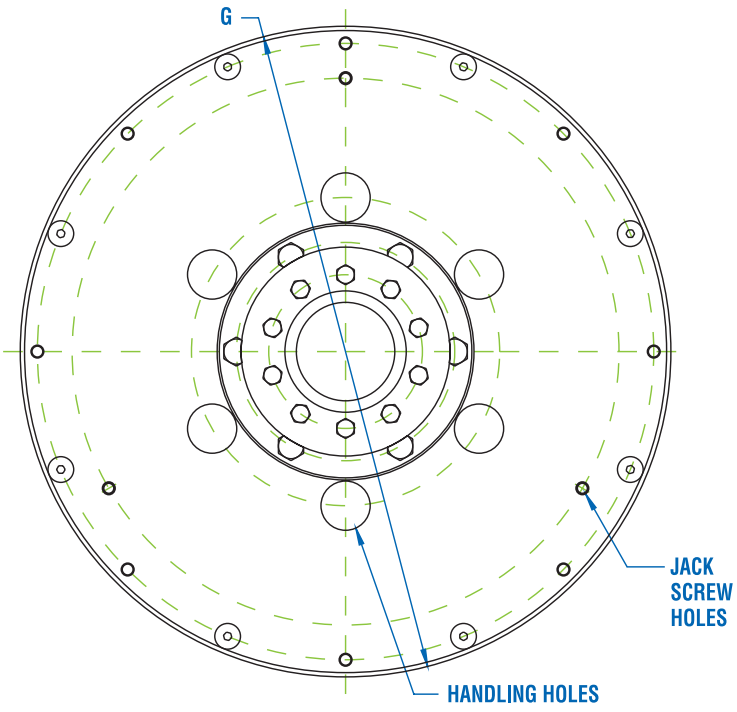


Chart is based on ambient temperature of 70°F and constant operation at minimum air gap.





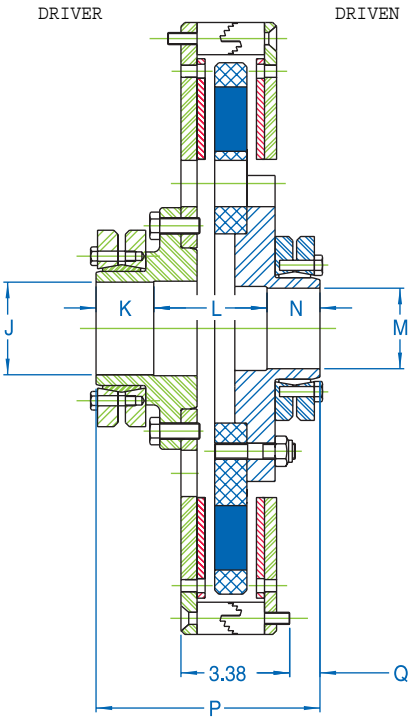
Standard

SIZE	PEAK TORQUE (LB-IN)	A	B	C	DRIVER WEIGHT (LBS)	DRIVER WR² (LB-FT²)	D	E	F	G	H	DRIVEN WEIGHT (LBS)	DRIVEN WR² (LB-FT²)
8.5	1,170	max 2.13 std'd 1.50 min 0.88	1.31	5.47	37	4	max 2.13 std'd 1.44 min 0.88	1.09	1.81	11.00	7.88	11	1
10.5	2,270	max 2.63 std'd 1.94 min 1.63	1.41	8.19	60	9	max 2.50 std'd 1.94 min 1.13	1.41	3.63	13.00	11.00	22	1
12.5	3,520	max 3.00 std'd 2.38 min 1.38	1.56	9.25	72	15	max 3.00 std'd 2.25 min 1.38	1.69	4.63	15.00	12.50	36	3
14.5	5,370	max 3.50 std'd 2.50 min 2.00	1.63	9.31	90	25	max 3.38 std'd 2.19 min 1.75	1.75	4.63	17.00	12.69	49	6
16.5	7,620	max 3.88 std'd 2.88 min 2.88	1.84	13.56	120	38	max 3.38 std'd 2.50 min 2.25	1.63	6.09	19.00	17.03	65	9
18.5	10,300	max 4.25 std'd 2.88 min 2.00	1.84	8.88	140	60	max 4.25 std'd 2.81 min 2.00	1.91	5.63	21.00	12.63	82	13
20.5	11,800	max 4.63 std'd 2.94 min 1.88	2.34	11.00	180	86	max 4.63 std'd 2.69 min 1.88	2.03	6.00	23.00	15.38	90	17
22.5	15,000	max 5.00 std'd 3.19 min 2.88	2.69	9.22	200	116	max 5.00 std'd 3.00 min 2.38	2.88	5.59	25.00	14.78	95	24
24.5	18,500	max 5.38 std'd 3.25 min 3.13	2.63	12.00	220	151	max 5.38 std'd 3.13 min 3.00	2.75	7.72	27.00	17.38	110	33

Hub Design

MagneLink's removable hub design makes installation a snap! Custom hub designs allow MagneLink® to retrofit fluid couplings, accommodate brake shoes, etc. Maximum DBSEs are based on minimum bore diameters.

The close-coupled design provides the best coupling arrangement. This design provides for shorter machine bases and saves money for OEMs and customers alike.



Close Coupled

SIZE	PEAK TORQUE (LB-IN)	J	K	L	DRIVER WEIGHT (LBS)	DRIVER WR² (LB-FT²)	M	N	P	Q	DRIVEN WEIGHT (LBS)	DRIVEN WR² (LB-FT²)
8.5	1,170	max 2.00 std'd 1.50 min 0.88	1.31	3.37	36	4	max 1.69 std'd 1.44 min 0.88	1.10	5.78	0.65	11	1
10.5	2,270	max 2.63 std'd 1.94 min 1.63	1.41	3.72	57	9	max 2.63 std'd 1.94 min 1.13	1.41	6.53	0.91	19	1
12.5	3,520	max 2.94 std'd 2.38 min 1.31	1.56	4.06	70	15	max 2.94 std'd 2.25 min 1.13	1.69	6.78	1.22	28	3
14.5	5,370	max 3.38 std'd 2.50 min 1.38	1.63	3.22	86	25	max 3.38 std'd 2.19 min 1.38	1.75	6.59	0.75	36	5
16.5	7,620	max 3.88 std'd 2.88 min 1.63	1.84	3.53	110	38	max 3.88 std'd 2.50 min 1.63	1.63	7.00	0.78	50	9
18.5	10,300	max 4.25 std'd 2.88 min 1.75	1.84	4.37	140	60	max 4.25 std'd 2.81 min 1.75	2.00	8.21	1.83	60	12
20.5	11,800	max 4.63 std'd 2.94 min 1.88	2.34	4.44	160	86	max 4.63 std'd 2.69 min 1.88	2.04	8.83	2.01	70	16
22.5	15,000	max 5.00 std'd 3.19 min 2.13	2.69	2.72	190	115	max 5.00 std'd 3.00 min 2.13	2.88	8.28	1.63	82	23
24.5	18,500	max 5.38 std'd 3.25 min 2.25	2.63	2.81	210	151	max 5.38 std'd 3.13 min 2.13	2.75	8.19	1.56	90	32

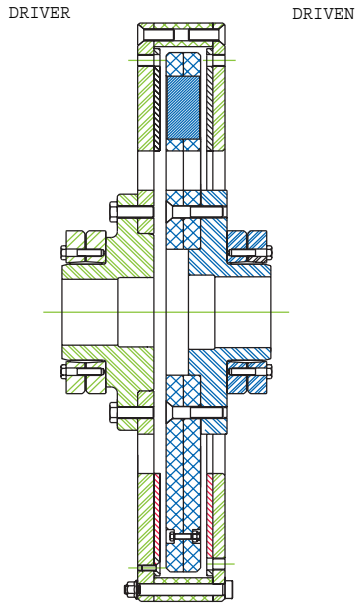
Rex® MagneLink® 224 Series Couplings

Easy Installation

The design allows for removal of coupling hubs for ease of installation and removal of the coupling from the drive train.

Typical applications for the MagneLink® 224 Series include large HP drives, log debarking drums, kiln drives and marine drives. Numerous large motor drives, as well as diesel-driven compressor applications, have realized the tremendous torsion-dampening benefits the MagneLink® family of products have to offer.

Double rotor configuration allows higher torque density in a smaller diameter. Consult Rexnord for details on this product option.



MagneLink® 224 Series

SIZE	TOTAL CONDUCTOR WEIGHT (LBS)	TOTAL ROTOR WEIGHT (LBS)	TOTAL COUPLING WEIGHT (LBS)	TOTAL CONDUCTOR WR² (LB-FT²)	TOTAL ROTOR WR² (LB-FT²)	TOTAL COUPLING WR² (LB-FT²)	PEAK TORQUE (LB-IN)	OUTSIDE DIAMETER (IN)
21.0S	360	170	530	180	40	220	24,120	24.75
25.0S	490	220	710	340	90	430	39,000	28.75
29.0S	590	280	870	550	150	700	60,000	32.75
33.0S	740	380	1,120	860	270	1,130	84,700	36.75
37.0S	1,030	483	1,513	1,320	420	1,740	114,000	40.75

Installation and Commissioning

Tools

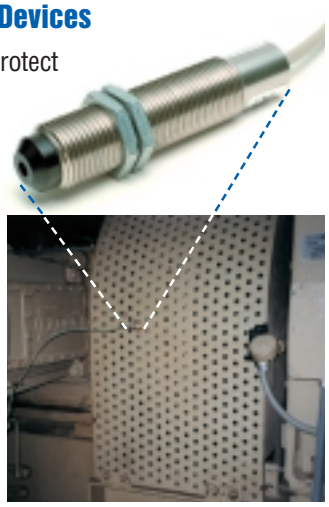
- Instruction manual
- Video
- Torque wrench
- Inch socket set
- Allen wrenches
- 0.0001” increment caliper

No special tooling is required to install MagneLink®. The “drop-in” design allows you to do the installation in a fraction of the time required to install competitive couplings.

Each coupling is shipped to the customer with an instruction manual and the installation video.

Speed and Temperature Sensor Devices

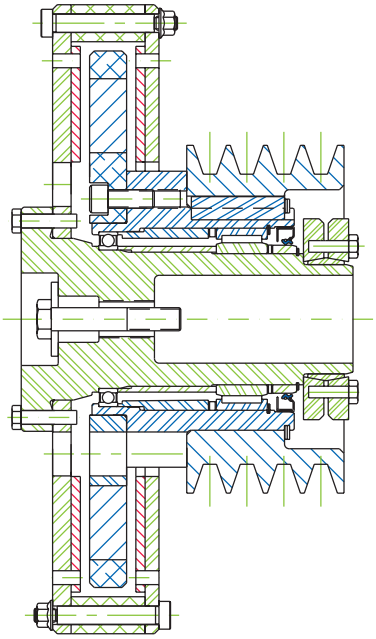
Speed and temperature sensors can protect your investment. MagneLink® will slip to protect the drive package, but if the machine cannot be shutdown manually within a few minutes of the stall condition occurrence, speed and temperature sensors are recommended. An alarm can be sounded, or the motor can be shutdown automatically protecting MagneLink® from possible damage from overheating.



MagneLink® Coupling Options

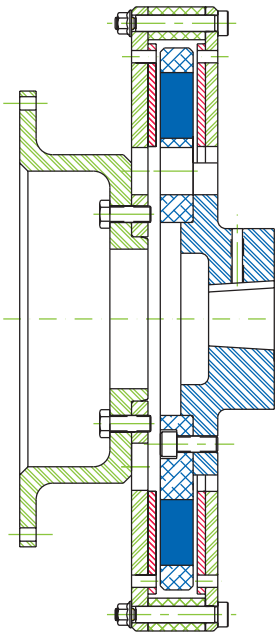
MagneLink® Sheave Coupling

MagneLink® pulley-style coupling. Shaft mount a V-belt sheave, roller chain, sprocket, or other similar device.



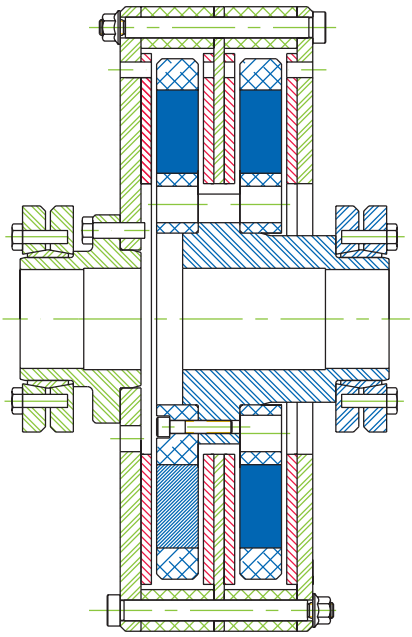
MagneLink® Flywheel Adapter

MagneLink® designed to mount on the flywheel of engines.



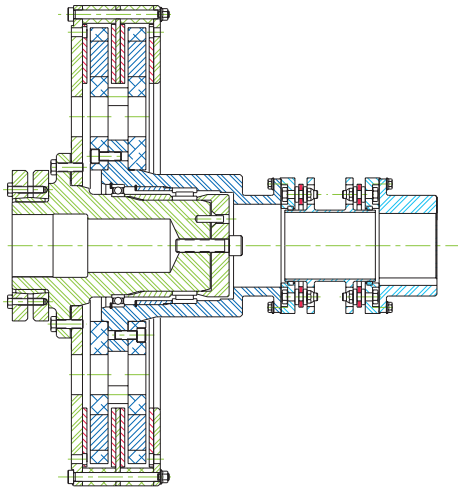
Double Rotor Design

More HP in a compact package. The solution for height-restricted applications.



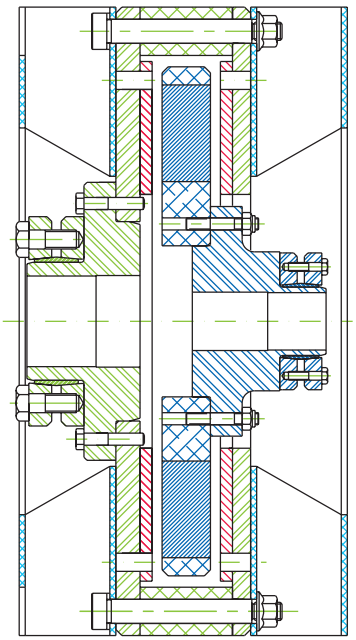
MagneDisc™

MagneLink®, with the ability to handle sleeve bearing applications. MagneDisc also handles those longer DBSE applications.



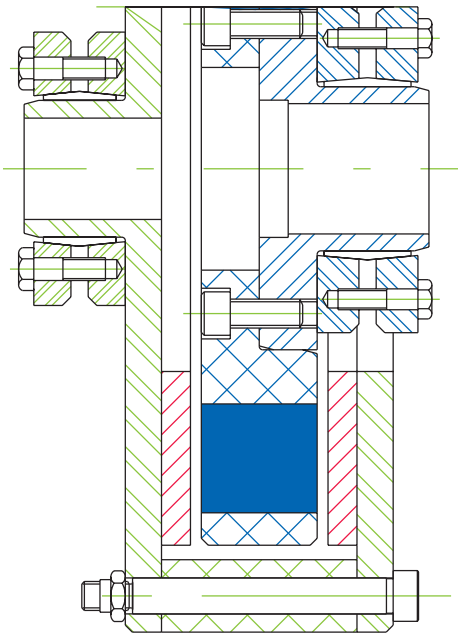
Cooling Fans

Cooling fans can be added to standard designs to allow softer, cooler starts.



SMC

Small Magnet Couplings for fractional HP applications.



Rex® MagneLink® Coupling
Application Data/Request-for-Quote Form

This Quote Request is: **Standard** *(4-6 days)* ☐ **Urgent!** *(24-48 hrs.)* ☐ **Needed by** _____

Customer Information

End User Address _____

_____

Contact _____

Phone No. _____

Fax No. _____

Distributor/OEM Address _____

_____

Contact _____

Phone No. _____

Fax No. _____

Application Data

1. * Application _____
   Driver Equip. *(Motor Fr., etc.)* _____
   Driven Equip. _____
2. * Nameplate Power, hp/kW _____
3. * RPM _____
4. Oper. Power, hp/kW *(see Torque Data also)* _____
   [(Op. Amps/Nameplate FLA) x Power Nameplate]
   Operating Amp Draw _____
   Nameplate Full Load Amp Draw _____
5. Duty Cycle *(starts and stops per hour)* _____
6. Required Start Factor _____
7. * Ambient Temp., °F/°C: Norm. _____ Max. _____
8. * User Preference
   ☐ Operating Efficiency *(Max. Op. Slip=* _____ *)*
   OR
   ☐ Cushioned Start
   ☐ Torque Overload Protection
   (Peak Overload Torque = in-lbs/N-m)
9. New Application ☐ Yes ☐ No
10. Replacing _____
11. Plate/Coat ☐ Yes _____ ☐ No
12. Thermal Growth:
    DBSE: *(Cold)*_____ in/mm *(Hot)*_____ in/mm
13. Axial Shaft End Float _____ in/mm
14. WR^2 at Coupling RPM *(if known)* _____

*(*Minimum information required for quoting purposes)*

Torque Data

	NORM.	MAX.	START	TRIP/OVERLOAD
Power				
RPM				
Torque				

Design Limits/Criteria

Weight ☐ Yes _____ (lbs.kg) ☐ No

O.D. ☐ Yes _____ (in./mm) ☐ No

Misalignment Requirements ☐ Yes ☐ No *(use standard)*

Angular _____ degrees

Parallel Offset _____ in/mm

Axial _____ in/mm

Other _____

Balance Requirement ☐ Yes (Class _____) ☐ No

Shaft Connections:

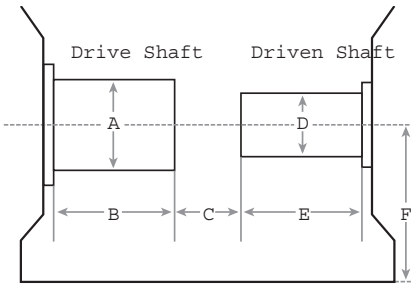
Driver ☐ Shrink Disc ☐ Interference

Driven ☐ Shrink Disc ☐ Interference

Special Notes _____

_____

Dimensional Information Required



A= _____

B= _____

C= _____

D= _____

E= _____

F= _____

Keyway Dimensions Driver _____ Driven _____

For tapered shaft, please provide a drawing and/or the following information:

1. Large diameter of shaft
2. Length of taper – parallel to centerline
3. Taper per foot *(diff. in dia. Per in/mm)*
4. Clearance space for drawing hub up on tapered shaft
5. Keyway – width x depth

Note: All shaft dimensions in in/mm.

Additional Rexnord Coupling Products

The Rexnord Family of Coupling Solutions

In the past 80 years of coupling manufacturing, Rexnord has seen and solved virtually every problem a coupling application can present. Today's buyer gets the benefit of that experience in a broad line of coupling products.

Thomas® Couplings

Thomas Disc Couplings are non-lubricated, metal flexing couplings which utilize non-wearing parts for the transmission of torque and the accommodation of unavoidable misalignment. Thomas invented the disc coupling and continues to offer the most reliable and extensive disc coupling line in the industry.

Rex Omega® Couplings

Rex Omega Couplings require no lubrication and feature a split-in-half flex element design for easy replacement without moving the hubs or connected equipment. The torsionally soft flex element protects connected equipment by cushioning shock loads and reducing vibration caused by unavoidable misalignment.

Rex Viva® Couplings

The new Rex Viva coupling is designed to meet practically any shaft spacing (distance between shaft ends) dimension for general purpose coupling applications. This field adjustable design can be easily installed to meet today's global standards including ANSI, ISO and DIN specifications. This makes Rex Viva an ideal coupling for plant or corporate wide standardization programs to reduce inventory and simplify spare part requirements for your general purpose coupling needs.

Addax® Couplings

Addax Composite Couplings offer a unique solution to long span coupling applications (i.e., cooling towers, vertical pumps, paper machine drives, etc.). The advanced composite materials used in the construction of Duralite Couplings provides a high strength-to-weights ratio, low thermal expansion, corrosion resistance and long coupling span capabilities.

The full family of Thomas, Addax, Rex Omega, Rex Viva and Rex MagneLink® couplings are manufactured for the quality, reliability and easy maintenance you have come to depend on. You can rely on Rexnord to meet the need of your industry's toughest applications.

Worldwide Service Locations

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Automation Systems

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