



## Dynaline Flexible Shaft Couplings



 **Guardian**<sup>®</sup>  
Couplings

An Altra Industrial Motion Company

## Why Choose Guardian?

For more than 70 years, Guardian has been designing and manufacturing world-class couplings and other power transmission components. Utilizing advanced manufacturing technologies and processes, Guardian provides highly-reliable coupling and component solutions to meet the most challenging industrial application requirements.

Guardian provides a wide range of standard and custom products including flywheel couplings, hydraulic pump mounts, bearing supported stub shafts, flexible shaft-to-shaft couplings, motion control couplings as well as compression pipe couplings.

Durable Guardian products are utilized in key industries including mobile hydraulics, farm & ag, tree care, concrete, food & beverage, material handling, automation, power generation, and oil & gas on applications such as skid steers, aerial lifts, harvesters, wood chippers, concrete pumps, dewatering pumps, baggage handlers, conveyors, robotics, compressors, and generator sets.

## DYNALINE FLEXIBLE SHAFT COUPLINGS

Available in 4 sizes, the Dynaline is a single piece rubber-in-shear coupling. These couplings are used in sub-fractional thru 3HP applications, with torque ratings up to 54 IN-LBS. End fittings are made from zinc die castings, and are crimped to the rubber sleeve. Bore sizes up to 3/4" (19mm). The coupling length can be varied to suit many applications.



## FEATURES & ADVANTAGES

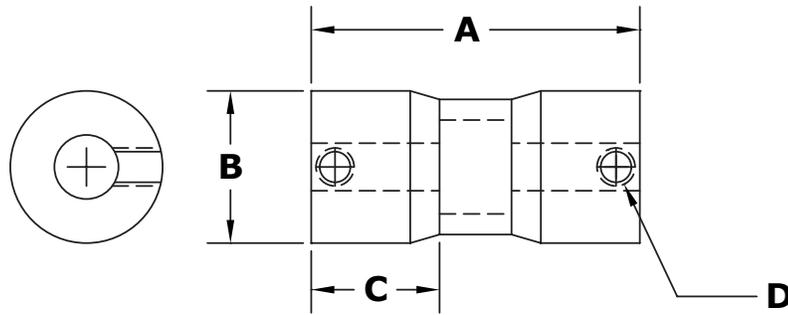
- One-piece construction - No assembly, no wearing surfaces, easier installation.
- Corrosion-resistant end fittings are crimped to a neoprene sleeve to provide a maintenance free and longer life in difficult environments.
- Added length provides maximum angular and parallel misalignment. No need to align driver to driven components.
- Length to customer requirements.
- Neoprene sleeve provides a vibration free coupling which absorbs the shock of start-stop applications and peak overloads.
- Special designs or modifications engineered for the O.E.M. application



## DIMENSIONS

TO ORDER:

Specify overall length (A), both bore sizes (see below) and keyways if required.



### Inches

Bore Range	Keyseat
3/8" to 1/2"	1/8" x 1/16"
5/8" to 7/8"	3/16" x 3/32"

### Millimeters

Bore Range	Keyseat
6-7-8 mm	2 mm
9-10 mm	3 mm
11-12 mm	4 mm
13 thru 17 mm	5 mm
18 thru 22 mm	6 mm

## Coupling Torque Ratings

Series Number	HP @ 3450 RPM	HP @ 1750 RPM	Nominal Torque in. lbs.	Standard Length	Motor Frame Size	Maximum Bore Size
1D	1/2	1/3	12	2-1/4"	48	1/2"
2D	1	1/2	18	2-1/2"	48	1/2"
3D	1-1/2	3/4	27	3"	56	5/8"
4D	3	1-1/2	54	3"	56 w/ Key	3/4"

## Coupling Dimensions

Size	"A" Length		Length		B Diameter		C End Fitting		D Set Screws
	Minimum		Maximum						
1D	1-5/8"	(40 mm)	6"	(150 mm)	1	(25 mm)	11/16"	(18 mm)	1/4-20
2D	2-7/32"	(56 mm)	10"	(250 mm)	1-3/16"	(30 mm)	1"	(25 mm)	5/16-18
3D	2"	(50 mm)	10"	(250 mm)	1-9/32"	(33 mm)	1"	(25 mm)	5/16-18
4D	2-3/8"	(60 mm)	10"	(250 mm)	1-7/16"	(37 mm)	1-1/4"	(32 mm)	5/16-18

Length to customer's requirements, consult factory for high service factor ratings and effect of longer length. Metric set screws available.

## Bore Specifications

Std. Finished Bores	1D	2D	3D	4D
Inches	1/4", 5/16", 3/8", 7/16", 1/2"	1/4", 5/16", 3/8", 7/16", 1/2"	5/16", 3/8", 7/16", 1/2", 9/16", 5/8"	7/16", 1/2", 9/16", 5/8", 3/4"
Metric	8-10-12 mm	8-10-12 mm	10-12-14-16 mm	14-16-18-20 mm
Max. Bore With Keyway	3/8" (10 mm)	3/8" (10 mm)	1/2" (12 mm)	5/8" (16 mm)

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*Belted Drives*  
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**+33 (0)2 41 21 24 24**

*Precision Electric Coils and Electromagnetic Clutches and Brakes*

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**Kilian Manufacturing**

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**Overrunning Clutches**

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*Overrunning Clutches and Holdbacks*  
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**Marland Clutch**

*Roller Ramp and Sprag Type Overrunning Clutches and Backstops*  
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**Stieber Clutch**

*Overrunning Clutches and Holdbacks*  
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For information concerning our sales offices in Asia Pacific check our website [www.altramotion.com.cn](http://www.altramotion.com.cn)

While Guardian Industries makes every effort to ensure the accuracy of the information provided, we make no warranty as to the accuracy or completeness of said information.



[www.guardiancouplings.com](http://www.guardiancouplings.com)

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**FL Flywheel  
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Guardex™  
Type FLD  
Pulley  
Coupling**



 **Guardian®**  
Couplings

An Altra Industrial Motion Company



## FL FLYWHEEL COUPLING FEATURES AND ADVANTAGES

### MINIMUM SPACE

The entire coupling length is normally mounted inside the flywheel housing face requiring only a flat pump mounting plate, saving valuable space inside the equipment frame.

### HEAT STABLE

The glass reinforced nylon flywheel flange is designed to operate in diesel engine ambients without air circulation. It is dimensionally stable to 250° F.

### CROWNED GEAR TEETH

The steel hub gear tooth design provides for angular misalignment, preventing angular forces on the pump shaft bearings and seals.

### FREE AXIAL TRAVEL

The crowned steel hub teeth slide freely in the nylon flywheel gear teeth. Any shaft float is absorbed by the coupling and is not transmitted to the pump.

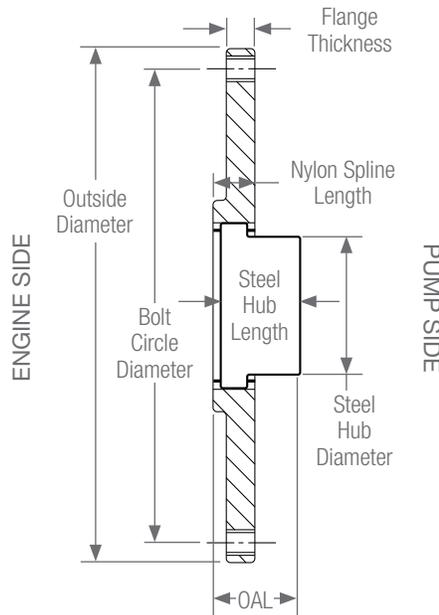
### BLIND ASSEMBLY

In most assemblies, the steel hub gear passes through the pilot hole of the pump mounting plate. This allows for quick assembly without the need for a view or hand ports.



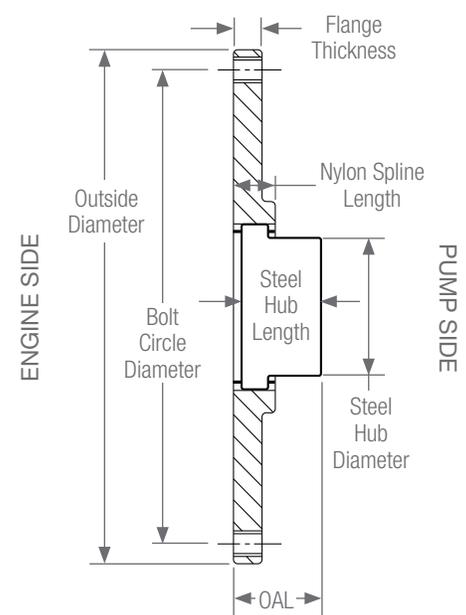
### ARRANGEMENT 1

Typical arrangement for SAE 6-1/2, SAE 7-1/2, and SAE 11-1/2



### ARRANGEMENT 2

Typical arrangement for SAE 8 and SAE 10



\*Consult Guardian for specific product installation instructions!

## Dimensions

Coupling Size	Steel Hub Dimensions					SAE Nylon Flange Dimensions		Coupling Assembly Dimensions	
	Available Bore Range		Steel Hub Length	Steel Hub Diameter	Number of Gear Teeth	Flange Thickness	Nylon Spline Length	Overall Length Arrangement 1	Overall Length Arrangement 2
	Min.	Max.							
FL42	.625" 16mm	1.625" 42mm	1.50" 38.1mm	2.56" 65mm	50	.51" 13mm	.78" 20mm	1.30" 33mm	1.65" 42mm
FL45	.625" 16mm	1.625" 42mm	2.19" 55.6mm	2.56" 65mm	50	.51" 13mm	.78" 20mm	2.00" 51mm	2.36" 60mm
FL48	.625" 16mm	1.875" 48mm	1.80" 45.7mm	2.68" 68mm	50	.51" 13mm	.78" 20mm	1.61" 41mm	1.97" 50mm
FL48\ TSB	.625" 16mm	1.875" 48mm	2.20" 56mm	2.60" 66mm	50	.51" 13mm	.78" 20mm	1.93" 49mm	2.20" 56mm
FL65\ TSB 10	.625" 16mm	2.500" 65mm	2.17" 55mm	3.78" 96mm	42	.82" 21mm	1.05" 27mm	1.90" 49mm	2.20" 55mm
FL65\ TSB 11-1/2	.625" 16mm	2.500" 65mm	1.92" 48.7mm	3.78" 96mm	42	.84" 21.3mm	1.20" 30.5mm	1.89" 48mm	1.92" 48.7mm
FL80\ TSB 11-1/2	.875" 22mm	3.125" 80mm	1.92" 48.7mm	4.88" 124mm	46	.84" 21.3mm	1.20" 30.5mm	1.89" 48mm	1.83" 48.7mm

Interchangeable with other FLE flywheel couplings



## SAE Flanges

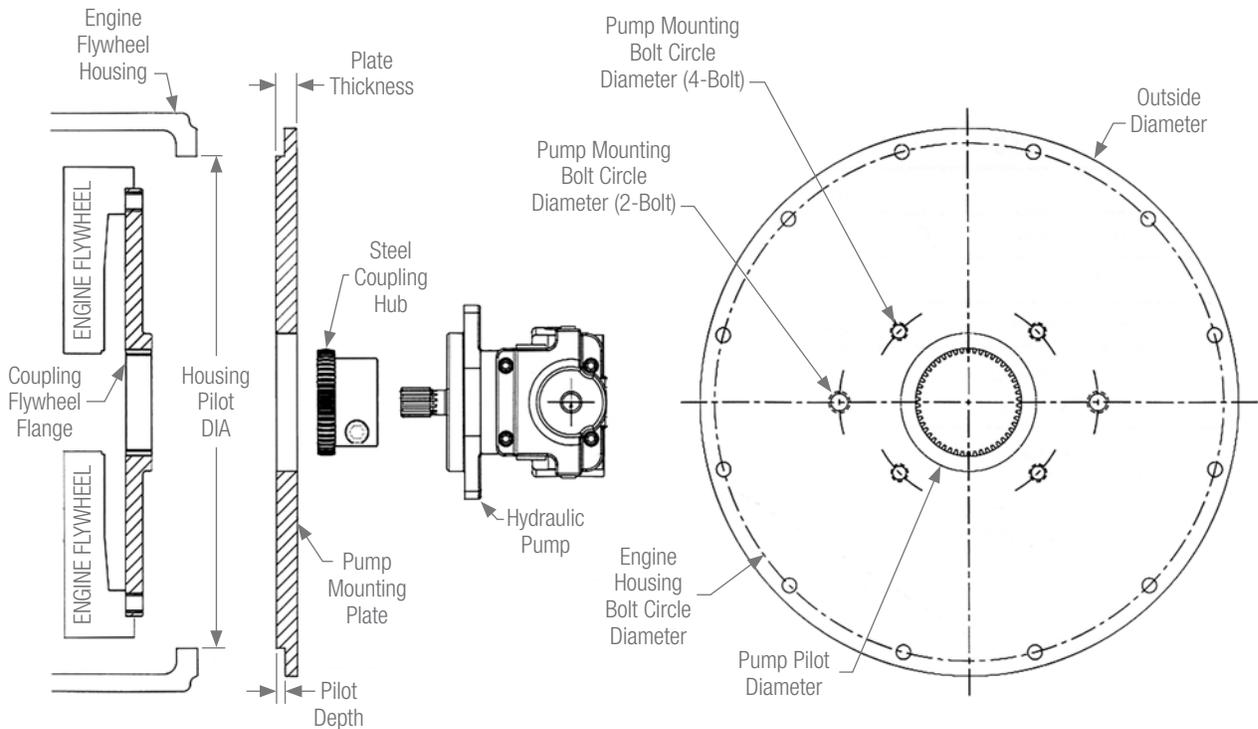
SAE Flywheel Size	Mating Hub Size	Bolt Circle Diameter	Outside Diameter	Number of Bolt Holes	Torque		Max Speed
		(D2)	(D3)		T <sub>KN</sub>	T <sub>Kmax</sub>	RPM
6-1/2	M-42	7.875" 200.02mm	8.500" 215.90mm	6	2,100 in-lbs 237 Nm	5,300 in-lbs 599 Nm	5,000
7-1/2	M-42	8.750" 222.25mm	9.500" 241.30mm	8	2,100 in-lbs 237 Nm	5,300 in-lbs 599 Nm	5,000
8	I-45	9.625" 244.47mm	10.375" 263.52mm	6	2,100 in-lbs 237 Nm	5,300 in-lbs 599 Nm	5,000
10	M-48	11.625" 295.27mm	12.375" 314.32mm	8	2,100 in-lbs 237 Nm	5,300 in-lbs 599 Nm	5,000
10	M-48 TSB	11.625" 295.27mm	12.375" 314.32mm	8	2,700 in-lbs 305 Nm	6,600 in-lbs 745 Nm	5,000
10	M-65	11.625" 295.27mm	12.375" 314.32mm	8	5,700 in-lbs 644 Nm	14,200 in-lbs 1,605 Nm	3,600
10	M-65 TSB	11.625" 295.27mm	12.375" 314.32mm	8	7,000 in-lbs 791 Nm	17,700 in-lbs 2,000 Nm	3,600
11-1/2	M-65	13.125" 333.37mm	13.875" 352.42mm	8	5,700 in-lbs 644 Nm	14,200 in-lbs 1,605 Nm	3,600
11-1/2	M-65 TSB	13.125" 333.37mm	13.875" 352.42mm	8	7,000 in-lbs 791 Nm	17,700 in-lbs 2,000 Nm	3,600
11-1/2	M-80	13.125" 333.37mm	13.875" 352.42mm	8	10,600 in-lbs 1,198 Nm	26,600 in-lbs 3,006 Nm	3,600
11-1/2	M-80 TSB	13.125" 333.37mm	13.875" 352.42mm	8	13,700 in-lbs 1,458 Nm	34,300 in-lbs 3,875 Nm	3,600

## Special & Metric Nylon Flanges

Outside Diameter	Bolt Circle	Number and Size of Bolts	Pilot Diameter	Engines
96mm (3.78")	50mm (1.97")	4 x M10	70mm (2.76")	Hatz-Z788, 789, 790
125mm (4.92")	100mm (3.94")	3 x M10	80mm (3.15") 125mm (4.92")	Deutz F2L511-1338, F1L210 (125mm Pilot) Perkins-4.108, Lister-Petter "ALPHA" Series
135mm (5.32")	100mm (3.94")	3 x M10	135mm (5.32")	Kubota-650, 750, 850, 950, V1100, 1200 and Super 5 Series (905 thru 1505), Perkins 103-10
150mm (5.91")	130mm (5.12")	5 x M8	106mm (4.17")	Kubota-D600B, Z400, D722, V800, WG600, WG750, D902, Z602, WG972 (Super Mini Series), Briggs Daihatsu DM700, DM950, Yanmar 3TNM68, Yanmar 3TNM72
152mm (5.98")	122mm (4.80") 125mm (4.92")	3 x M12 3 x M12	105mm (4.13")	Hatz 573, 673, 780, 786, E71, E75, E79, (122mm B.C.) Perkins 4108 (125mm B.C.), 504-2T/2LR Deutz F2L511 (125mm B.C.)
155mm (6.10")	125mm (4.11")	3 x M12	155mm (6.10")	Perkins 103-12/13/15, 104-22
170mm (6.69")	165mm (6.50")	3 x M16	104mm (4.09")	Yanmar 4TNV88/4TNV99
210mm (8.27")	185mm (7.28")	3 x M16	104mm (4.09")	Isuzu-CC-4JG1PAC, Mitsubishi-M40-EA
210mm/220mm (8.66")	210mm/220mm (8.66")	3 x M10 6 x M12	125mm (4.92") 220mm (8.66")	Kubota Super 3 Series, D1403, D1703, V1903, V2203, V2403
252mm (9.92")	234mm (9.21") 218mm (8.58")	6 x M8 6 x M8	252mm (9.92") 234mm (9.21")	VW-068, 126, 127 (218mm B.C.), Kubota 950
327mm (12.88")	308mm (12.13")	6	287mm (11.30")	John Deere Flywheel 123203
279mm (11.00")	260mm (10.25")	6	260mm (10.25")	Ford LRG425, Ford DSG423

### Notes:

- Several hub lengths are available, or the steel hubs can be machined to specific lengths to meet other mounting dimensions.
- Axial adjustment of the steel gear in flange gear is +/- .08" (+/- 2mm), parallel misalignment to .03", angular misalignment to 2°.
- Steel hub bores are available with shaft keyways, tapers, and SAE or metric splines with cross-bolt clamping.
- The TSB hubs have a wider tooth form than standard hubs and yield approximately 30% greater torque-carrying capacity.



### Steel Pump Mounting Plates

Housing Size	Housing Pilot Diameter	Outside Diameter	Housing Bolt Circle Diameter	Number of Bolt Holes	Plate Thickness	Pilot Depth
SAE 1	20.125"	21.750"	20.875"	12	.625" & .750"	.125"
SAE 2	17.625"	19.250"	18.375"	12	.625" & .750"	.125"
SAE 3	16.125"	17.750"	16.875"	12	.500" & .750"	.125"
SAE 4	14.250"	15.875"	15.000"	12	.500" & .750"	.125"
SAE 5	12.375"	14.000"	13.125"	8	.500"	.125"
SAE 6	10.500"	12.125"	11.250"	8	.500"	.125"

All plates come standard with a black rust preventative finish.

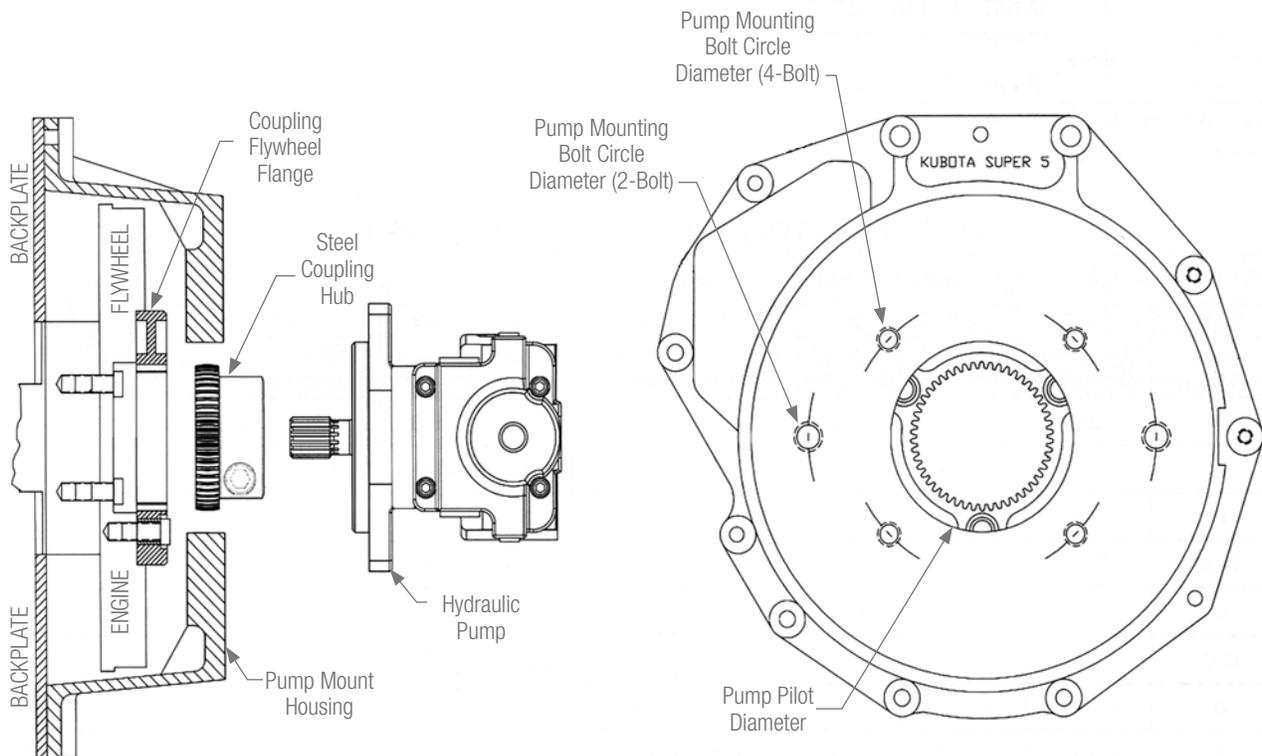
### SAE Standard Pump Pilot & Shaft Data

Typical SAE Pump Flange Mounting Dimensions						Pump Shaft Dimensions (Straight & Splined)					
SAE Pump Designation	SAE Pump Pilot Diameter	2-Bolt Flange		4-Bolt Flange		Straight Shafts		SAE Splined Pump Shafts			
		Bolt Circle Diameter	Typical Bolt Size	Bolt Circle Diameter	Typical Bolt Size	Shaft Diameter	Keyway Width	Major Diameter	No. of Teeth	Diametral Pitch	Pressure Angle
A	3.250"	4.188"	3/8"-16	4.125"	3/8"-16	.625"	.188"	.625"	9	16/32	30°
AH	3.250"	4.188"	3/8"-16	4.125"	3/8"-16	.750"	.188"	.750"	11	16/32	30°
B	4.000"	5.750"	1/2"-13	5.000"	1/2"-13	.875"	.188"	.875"	13	16/32	30°
BB	4.000"	5.750"	1/2"-13	5.000"	1/2"-13	1.000"	.250"	1.000"	15	16/32	30°
C	5.000"	7.125"	5/8"-11	6.375"	1/2"-13	1.250"	.250"	1.250"	14	12/24	30°
CC	5.000"	7.125"	5/8"-11	6.375"	1/2"-13	1.500"	.375"	1.500"	17	12/24	30°
D	6.000"	9.000"	3/4"-10	9.000"	3/4"-10	1.750"	.375"	1.750"	13	8/16	30°
E	6.500"	12.500"	1"-8	12.500"	3/4"-10	1.750"	.375"	1.750"	13	8/16	30°
F	7.000"	13.781"	1"-8	13.781"	1"-8	-	-	2.000"	15	8/16	30°

Other SAE, DIN and JIS spline sizes are available - Inquire!

## Aluminum & Cast Iron Pump Mount Housings

Engine	Reference Information
Deutz L1011/L2011	Used on Deutz engines equipped with housing #0553
Briggs Daihatsu	Used on DM700D, DM950D, DM700G, and DM950G engines.
Cummins B3.3	Used on engines equipped with semi-SAE #4 housings.
Ford	Used on DSG-423 and LRG-425 engines.
GM 3.0/4.3L	Used with GM flywheel #93422872 on GM 3.0L & 4.3L engines.
Isuzu	Used on 4LE2 engines.
John Deere	Used on 3011D, 3015D, 4020D, and 4020T engines.
Kubota Super 3 (B-1 mounting)	Used on D1403, D1703, V1903, and V2203 engines.
Kubota Super 5 (B-1 mounting)	Used on D905, D1005, D1105, V1205, V1305, and V1505 engines.
Kubota Super Mini (B-1 mounting)	Used on Z400, D600, D722, V800, WG600, and WG750 engines.
Kubota Super Mini (K106 NSM series)	Used on WG972, D902, and Z602 engines.
Perkins 103-13-15 Perkins 403C-13-15	Used on these Perkins engines with the rear end plate design.
Perkins 103-9-10 Perkins 403C-10-11	Used on these Perkins engines with the rear end plate design.
Perkins 104-19-22 Perkins 404C-19-22	Used on these Perkins engines with the rear end plate design.
Yanmar	Used on 3TNE78A, 3TNE82A, 3TNE84, 3TNE88, 4TNE84T, and 4TNE88 engines.



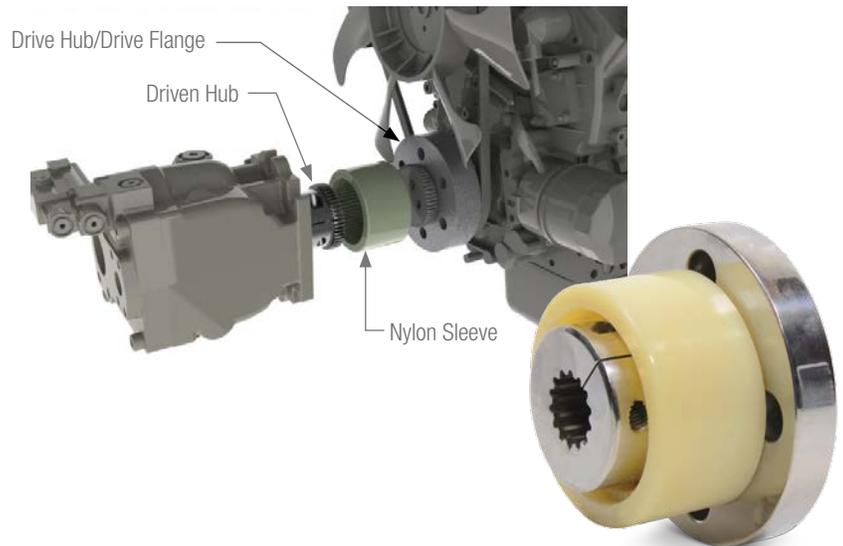
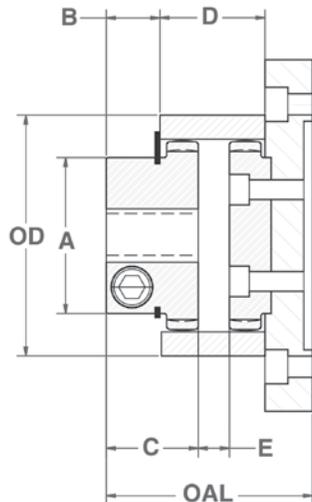
\*Consult Guardian for specific product installation instructions!

## GUARDEX™ TYPE FLD PULLEY COUPLINGS (FOR GAS & DIESEL ENGINE PULLEY-END OPERATION)

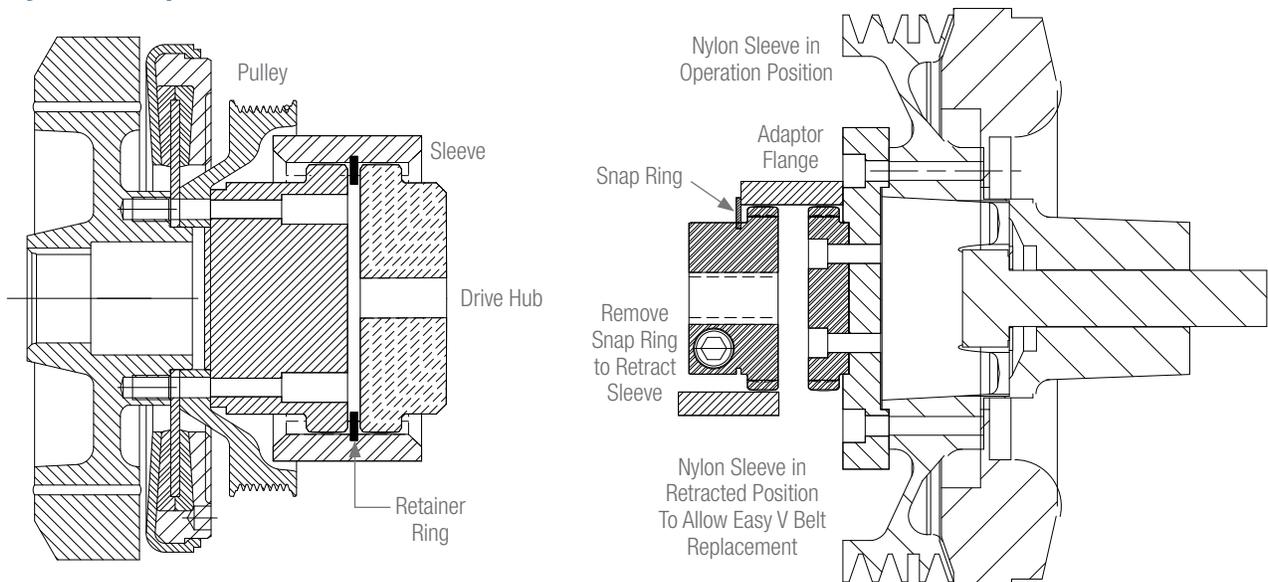
The FLD coupling provides a shiftable sleeve that can be retracted to allow for easy V-belt replacement without disassembling the pump.

Series	Torque IN-LBS		Finish Bore		Dimensions						
	T <sub>KN</sub>	T <sub>Kmax</sub>	Min	Max	OAL	OD	A	B	C	D	E
FLD 28	400	800	.39" 10mm	1.02" 26mm	3.19" 81mm	2.75" 69.8mm	1.73" 43.9mm	.89" 22.5mm	1.40" 35.5mm	1.54" 39mm	.51" 13mm
FLD 32	530	1,060	.47" 12mm	1.18" 30mm	3.19" 81mm	3.31" 84mm	1.95" 49.5mm	.85" 21.5mm	1.40" 35.5mm	1.57" 40mm	.51" 13mm
FLD 45	1,240	2,480	.79" 20mm	1.65" 42mm	3.39" 86mm	3.94" 100mm	2.68" 68mm	.89" 22.5mm	1.80" 45.7mm	1.69" 43mm	.51" 13mm
FLD 65	3,360	6,720	.98" 25mm	2.56" 65mm	4.88" 124mm	5.51" 140mm	3.78" 96mm	1.65" 42mm	2.52" 64mm	2.36" 60mm	.63" 16mm
FLD 80	6,000	12,000	1.18" 30mm	3.15" 80mm	6.38" 162mm	6.89" 175mm	4.88" 124mm	2.30" 58.5mm	3.27" 83mm	2.72" 69mm	.79" 20mm

NOTE: Flange dimensions are made specific to the engine pulley.



### Designed For Minimum Overall Length And Easy V-Belt Replacement





## ABOUT GUARDIAN COUPLINGS

For more than 70 years, Guardian has been designing and manufacturing world-class couplings and other power transmission components. Utilizing advanced manufacturing technologies and processes, Guardian provides highly-reliable coupling and component solutions to meet the most challenging industrial application requirements.

Guardian provides a wide range of standard and custom products including flywheel couplings, hydraulic pump mounts, bearing supported stub shafts, flexible shaft-to-shaft couplings, motion control couplings as well as compression pipe couplings.

Durable Guardian products are utilized in key industries including mobile hydraulics, farm & ag, tree care, concrete, food & beverage, material handling, automation, power generation, and oil & gas on applications such as skid steers, aerial lifts, harvesters, wood chippers, concrete pumps, dewatering pumps, baggage handlers, conveyors, robotics, compressors, and generator sets.



## ALTRA COUPLINGS

Altra Couplings offers the largest selection of industrial couplings available from a single source...worldwide. For over 150 years, TB Wood's, Ameridrives, Bibby Turboflex, Lamiflex, Ameridrives Power Transmission, Guardian and Huco, the industry-leading brands of Altra Couplings have been providing innovative coupling solutions to meet the requirements for a broad variety of drivetrain applications spanning many industries including energy, metals, mining, oil & gas, and food processing. Highly-engineered Altra coupling products represent the latest in coupling technology, featuring superior design and exceptional quality to ensure long-lasting performance in all types of environments.

**Belted Drives and Sheaves**

**TB Wood's**

*Belted Drives*  
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**1-888-829-6637** – Press #5  
*For application assistance:*  
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**Couplings**

**Ameridrives Couplings**

*Mill Spindles, Ameriflex, Ameridisc*  
Erie, PA - USA  
**1-814-480-5000**  
*Gear Couplings*  
San Marcos, TX - USA  
**1-800-458-0887**

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**Bibby Turboflex**

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*Engineered Flywheel Couplings, Engine Housings and Pump Mounts, Flexible Shaft Couplings*  
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**1-219-874-5248**

**Huco Dynatork**

*Precision Couplings and Air Motors*  
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**+44 (0) 1992 501900**  
Chambersburg, PA - USA  
**1-888-829-6637**

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Belvidere, IL - USA  
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*For application assistance:*  
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**Overrunning Clutches**

**Formsprag Clutch**

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**1-800-348-0881** – Press #1  
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**Marland Clutch**

*Roller Ramp and Sprag Type Overrunning Clutches and Backstops*  
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**1-800-216-3515**

**Stieber Clutch**

*Overrunning Clutches and Holdbacks*  
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**+49 (0) 6221-30470**

For information concerning our sales offices in Asia Pacific check our website [www.altramotion.com.cn](http://www.altramotion.com.cn)

While Guardian Industries makes every effort to ensure the accuracy of the information provided, we make no warranty as to the accuracy or completeness of said information.



[www.guardiancouplings.com](http://www.guardiancouplings.com)

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Hertfordshire SG13 7BL - England  
**+44(0)1992 501900**  
Fax: +44 (0)1992 509890



## Gear Grip™



 **Guardian**<sup>®</sup>  
Couplings

An Altra Industrial Motion Company

## GUARDIAN COUPLINGS GEAR GRIP APPLICATIONS

The Gear Grip product is a general use coupling best suited for applications with a large degree of misalignment and is rated up to 50 HP. The Gear Grip coupling is a three-piece highly flexible design which includes two hubs and an elastic sleeve. Guardian offers three different sleeve materials including neoprene, urethane, and reinforced neoprene. Depending on the series, the hubs are typically offered in zinc or sintered steel.



## FEATURES & ADVANTAGES

### ALIGNMENT

By-eye alignment eliminates precise measurement. This allows for a reduced assembly time and requires no special installation tools. Ideally, drive shafts should be aligned to minimize vibration and wear on the coupling and bearings. If excessive misalignment is unavoidable, the Gear Grip offers up to .090" parallel misalignment and 7.5 degrees of angular misalignment.



### TORSIONAL DAMPENING

Neoprene and urethane rubber sleeve compounds provide excellent torsional vibration dampening. The load is distributed evenly over a wide splined contact area. This minimizes rubber deformation and wear while providing minimum backlash and wind-up. The Gear Grip coupling handles the shock, cycling loads, and vibration that produce extreme wear in other style of couplings.

### IN-SHEAR DESIGN

The in-shear design allows the coupling to act as a mechanical fuse in the event of an overload condition. This feature can provide protection to the expensive drive system. If the coupling were to fail, only the coupling sleeve would need to be replaced.

### ADJUSTABLE LENGTH

The coupling length can be adjusted to meet the application requirements. This is obtained by using a longer sleeve. Please note, the torque may be lower for longer sleeve lengths, and the end-user should contact Guardian for proper specification. A wooden dowel or insert may be used for longer lengths to prevent the collapse of the coupling sleeve under the loading. Increased length may decrease the torque capacity, but it will improve the misalignment allowance and dampening.

### ENVIRONMENT

This lightweight and compact coupling is not affected by moisture, dirt, or abrasives. The non-corrosive metal ends and rubber provide a long service life that does not require lubrication or maintenance.

### ELECTRICAL ISOLATION

No possibility of metal-to-metal contact under severe overload, wear, or coupling failure.

## REFERENCE

### HUB REF:

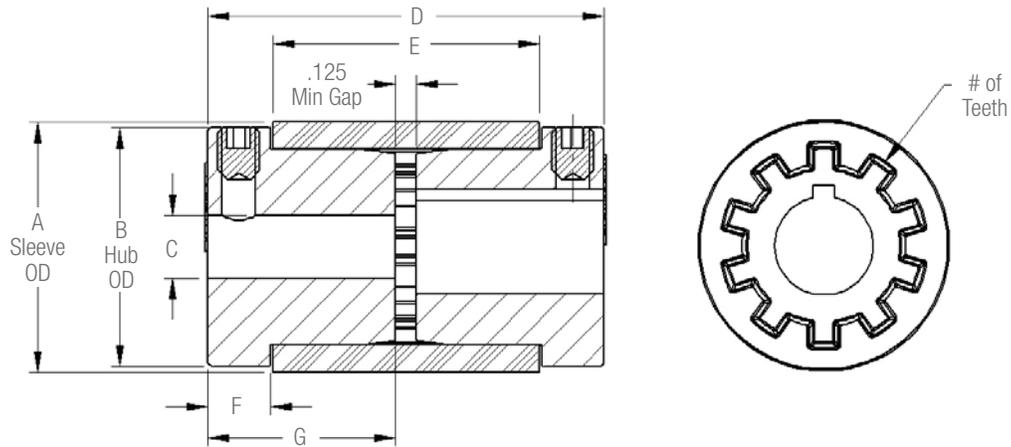
- EZ: Zinc Die Cast End Fitting
- ES: Sintered Steel End Fitting

### SLEEVE REF:

- SM: Molded Rubber (92 Sh A)  
250° F Max
- SR: Neoprene (85 Sh. A)  
250° F Max
- SU: Urethane (95 A)  
175° F Max
- SF: Reinforced Neoprene (85 A)  
250° F Max



## COUPLING DIMENSIONS



Assembly Series	Sleeve Series	Hub Series	A	B	C (Bore)			D	E	F	G	# Of Teeth
					Min	Max w/ Kw/y	Max w/o Kw/y					
11PG	11SR	10 EZ	0.800	0.700	0.125	0.375	0.375	1.000	0.560	0.220	0.500	8
12PG	12SU	10 EZ	0.800	0.700	0.125	0.375	0.375	1.000	0.560	0.220	0.500	8
18PG	18SR	18 EZ	1.200	1.150	0.250	0.500	0.625	1.500	0.850	0.330	0.720	8
19PG	19SU	18 EZ	1.114	1.150	0.250	0.500	0.625	1.500	0.850	0.330	0.720	8
21PG	21SR	20 EZ	1.200	1.150	0.313	0.500	0.625	2.250	1.590	0.330	1.090	8
24PG	24SU	20 EZ	1.114	1.150	0.313	0.500	0.625	2.250	1.590	0.330	1.090	8
31PG	31SR	30 EZ	1.400	1.450	0.375	0.625	0.750	2.375	1.590	0.380	1.140	10
32PG	32SU	30 EZ	1.400	1.450	0.375	0.625	0.750	2.375	1.590	0.380	1.140	10
33PG	33SF	30 EZ	1.560	1.450	0.375	0.625	0.750	2.375	1.590	0.380	1.140	10
41PG	41SR	40 EZ	1.840	1.630	0.375	0.875	1.063	2.375	1.590	0.380	1.140	12
41PGS		40 ES	1.820	1.630	0.375	0.875	1.063	2.375	1.590	0.380	1.140	12
42PG	42SU	40 EZ	1.800	1.630	0.375	0.875	1.063	2.375	1.590	0.380	1.140	12
42PGS		40 ES	1.840	1.630	0.375	0.875	1.063	2.375	1.590	0.380	1.140	12
43PG	43SF	40 EZ	1.820	1.630	0.375	0.875	1.063	2.375	1.590	0.380	1.140	12
43PGS		40 ES	1.800	1.630	0.375	0.875	1.063	2.375	1.590	0.380	1.140	12
54PG	54SU	50 EZ	2.370	2.060	0.500	1.188	1.375	2.500	1.590	0.430	1.190	12
56PG	56SF	50 EZ	2.250	2.060	0.500	1.188	1.375	2.500	1.590	0.430	1.190	12
64PG	64SU	60 ES	3.050	2.760	0.500	1.375	1.875	2.750	1.590	0.560	1.300	12
66PG	64SF	60 ES	2.970	2.760	0.500	1.375	1.875	2.750	1.590	0.560	1.300	12
74PG	74SU	70 EZ	3.500	3.250	0.750	1.625	2.000	3.250	2.125	0.560	1.540	12
74PGS		70 ES	3.500	3.250	0.750	1.625	2.000	3.250	2.125	0.560	1.540	12
76PG	76SF	70 EZ	3.500	3.250	0.750	1.625	2.000	3.250	2.125	0.560	1.540	12
76PGS		70 ES	3.500	3.250	0.750	1.625	2.000	3.250	2.125	0.560	1.540	12
84PG	84SU	80 ES	4.050	3.750	0.875	1.875	2.500	3.440	2.125	0.660	1.660	12
86PG	86SF	80 ES	4.050	3.750	0.875	1.875	2.500	3.440	2.125	0.660	1.660	12

- 1) Dimensions include a minimum clearance between the end fittings of .125".
- 2) Allow a .063" space between end fitting flanges and rubber sleeve for shaft float.
- 3) Sleeve length and outside diameter may vary by +.030".



## TECHNICAL SPECIFICATIONS

Assembly	Torque (In-Lbs) *		Speed (RPM)	HP @ 1750 RPM*	Misalignment		Stiffness (In-Lbs/Rad)
	Nominal	MAX	MAX		Parallel (Inches)	Angular (Degree)	
11PG	4	18	25,000	0.11	0.016	7.5 MAX	28
12PG	13	55	25,000	0.36	0.016	7.5 MAX	57
18PG	16	65	16,800	0.44	0.040	7.5 MAX	124
19PG	40	160	16,800	1.11	0.040	7.5 MAX	183
21PG	30	110	16,500	0.83	0.040	7.5 MAX	107
24PG	50	200	16,500	1.39	0.040	7.5 MAX	115
31PG	45	175	15,500	1.25	0.040	7.5 MAX	270
32PG	60	250	15,500	1.67	0.040	7.5 MAX	134
33PG	72	400	15,500	2.00	0.040	7.5 MAX	225
41PG	108	440	15,000	3.00	0.040	7.5 MAX	630
41PGS	108	440	15,000	3.00	0.040	7.5 MAX	630
42PG	140	580	15,000	3.89	0.040	7.5 MAX	330
42PGS	140	580	15,000	3.89	0.040	7.5 MAX	330
43PG	185	738	15,000	5.14	0.040	7.5 MAX	423
43PGS	185	738	15,000	5.14	0.040	7.5 MAX	423
54PG	200	800	10,000	5.55	0.040	7.5 MAX	1,530
56PG	270	980	10,000	7.50	0.040	7.5 MAX	561
64PG	270	1080	8,000	7.50	0.080	7.5 MAX	3,095
66PG	360	1440	8,000	10.00	0.080	7.5 MAX	3,438
74PG	500	2000	5,600	13.88	0.090	7.5 MAX	9,000
74PGS	500	2000	5,600	13.88	0.090	7.5 MAX	9,000
76PG	1080	4700	5,600	29.99	0.090	7.5 MAX	3,367
76PGS	1080	4700	5,600	29.99	0.090	7.5 MAX	3,367
84PG	1375	5500	5,600	38.18	0.090	7.5 MAX	13,900
86PG	1800	7200	5,600	49.98	0.090	7.5 MAX	10,115

\* Torque and horsepower ratings are based on normal duty cycle at the standard or minimum sleeve length.

## NORMAL DUTY CYCLE

Normal torque motors and multicylinder engines operating less than 10 hrs/day with infrequent starts and stops. No heavy, pulsating loads or clutches to add shock to the drive train.

HP	3500 RPM	1750 RPM	1160 RPM	860 RPM
1/2	11	11	11	12
1/8	11	11	12	12
1/6	11	12	12	12
1/4	11	12	12	18
1/3	12	12	18	19
1/2	18	19	19	19
3/4	18	19	19	24
1	19	19	24	31
1-1/2	21	24	33	41
2	24	33	41	54
3	31	41	54	54
5	41	54	56	64
7-1/2	54	56	66	66
10	54	66	66	76
15	56	66	76	76
20	66	76	86	86
25	66	76	86	86
30	66	76	86	
35	76	76	86	
40	76	86		
50	76	86		

## SEVERE DUTY CYCLE

High torque motors and single cylinder engines operating for more than 10 hrs/day. Frequent starts and stops, heavy pulsating loads or clutches which exceed the normal torque loads.

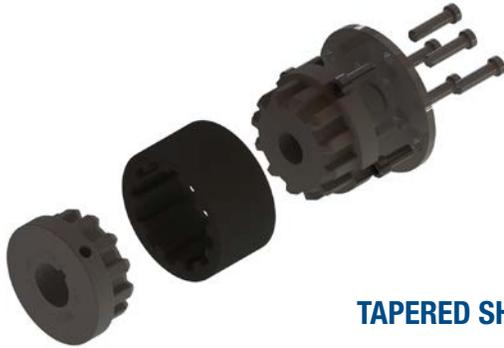
HP	3500 RPM	1750 RPM	1160 RPM	860 RPM
1/2	11	11	11	12
1/8	12	12	12	18
1/6	12	12	18	19
1/4	18	19	24	24
1/3	18	21	24	24
1/2	19	24	24	31
3/4	24	24	31	33
1	24	31	33	43
1-1/2	31	33	43	54
2	31	43	54	54
3	33	54	54	56
5	54	56	64	66
7-1/2	64	64	76	76
10	64	66	76	76
15	66	76	76	86
20	76	86	86	
25	86	86		
30	86	86		
35	86	86		
40	76			

## CUSTOM / SPECIALS

Guardian welcomes custom engineered designs. As part of our standard product offering we manufacture both inch and metric size bores with precision tolerances. Guardian strictly follows ANSI/AGMA 9002-B04 for inch bores and keyways. Metric bores conform to H7 tolerances and Js9 for the metric keyways. We manufacture a variety of custom solutions such as extended length assemblies, custom mounting, tapered bores, and various clamping options.

### EXTENDED LENGTH ASSEMBLIES

Often times standard length couplings don't fit the application and longer lengths are required. The Gear Grip has the ability to work around the application. This coupling is able to extend up to 13.50". This versatile design can be fitted with an internal support to prevent the center from collapsing under load, while handling the power requirement and providing the necessary misalignment.



### CUSTOM MOUNTING

Applications that require a custom mounting such as a pulley flywheel or clutch, the Gear Grip has a solution. Guardian can design and fabricate custom flanges and hubs to fit a variety of mounting systems. These can easily be adapted to the Gear Grip products.

### TAPERED SHAFTS

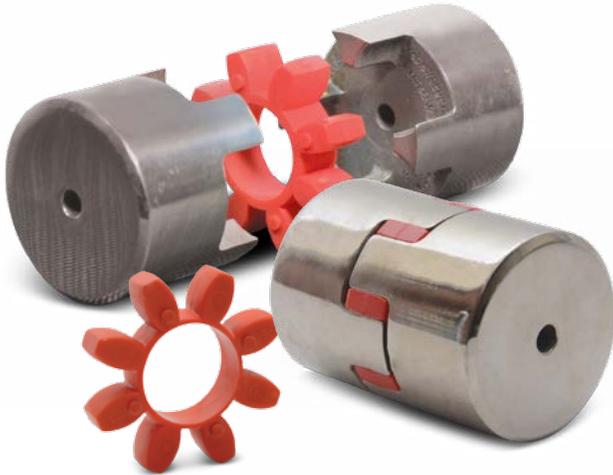
Tapered bores can be machined with a straight or tapered keyway. It can also be fitted with a counterbore at the end of the hub for a locknut and washer if necessary.



### CROSS-CLAMPED HUBS

Cross-clamped hubs can be offered for better clamping force to the shaft. In many cases vibration can lead to set screws backing out. Using Loctite and applying the proper seating torque, this feature can eliminate this common issue. There are several other clamping designs available.

## OTHER GUARDIAN PRODUCTS



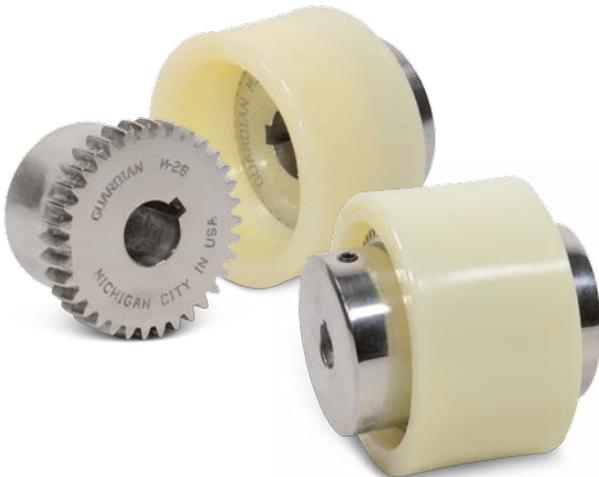
### Curved Jaw Coupling

- Suitable for high torque applications
- Variable durometer urethane elements
- Stainless steel hubs available
- Great misalignment in the torsional, axial, radial and angular directions



### Straight Jaw Coupling

- Perfectly interchangeable with other domestic straight jaw couplings
- Spiders available in a variety of durometers and material types
- Black phosphate treated for superior corrosion resistance
- Change in place spider element available



### M-Style Coupling

- Double crowned tooth provides great parallel and angular misalignment
- Optional I-Style provides excellent axial travel for demag motors (up to .500")
- Different sleeve material options for high temp/high torque applications



### Dynaline

- One-piece construction – No assembly, no wearing surfaces, easier installation
- Corrosion-resistant end fittings are crimped to a neoprene sleeve to provide a maintenance free solution
- Length to customer requirements



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**+33 (0)2 41 21 24 24**

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*Roller Ramp and Sprag Type Overrunning Clutches and Backstops*  
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**1-800-216-3515**

**Stieber Clutch**

*Overrunning Clutches and Holdbacks*  
Heidelberg, Germany  
**+49 (0) 6221-30470**

For information concerning our sales offices in Asia Pacific check our website [www.altramotion.com.cn](http://www.altramotion.com.cn)

While Guardian Industries makes every effort to ensure the accuracy of the information provided, we make no warranty as to the accuracy or completeness of said information.



[www.guardiancouplings.com](http://www.guardiancouplings.com)

300 Indiana Highway 212  
Michigan City, IN 46360 – USA  
219-874-5248  
Fax: 219-879-6643

Merchant Drive, Hertford  
Hertfordshire SG13 7BL - England  
**+44(0)1992 501900**  
Fax: +44 (0)1992 509890



# Guardex™ M & I Style Couplings



 **Guardian**®  
Couplings

An Altra Industrial Motion Company

## GUARDEX™ COUPLING FEATURES & ADVANTAGES

### Double Crowned Tooth Gear Coupling

Double crowned tooth design provides free axial movement, low friction and minimum stress during misalignment. Designs are available with up to 3/8" axial travel.

### Nylon Sleeves, Steel Hubs

Molded nylon sleeve with high torsional stiffness, free from any internal frictional losses or heat build-up. A torsionally stiff coupling with minimum backlash.

Nylon and steel components allow high ambient temperature operation without lubrication or maintenance. Continuous operating ambients in the ranges between (-) 13°F and (+) 180°F. Heat stabilized polyamide available for temperatures up to (+) 250°F.

Nylon sleeves resistant to dirt, moisture, most chemicals and petroleum products. No lubrication, seals or retainers to maintain. Easy clean-up and visual inspection.

Compact and lightweight design with high torque and low inertia. Minimum shaft gap for close-coupled applications.

Precision molded concentric sleeve and hubs for high speed applications. No bolts, pins, flanges or protrusions to affect balance or safety. Smooth exterior surface.

### Blind Assembly

Suitable for assembly in both horizontal and vertical positions. Blind assembly with slip-together components for easy inspection and adjustment without disassembly.

Metric, Standard, Splined bores available.

### Directly Interchangeable With BoWex® Couplings

### Made in U.S.A.

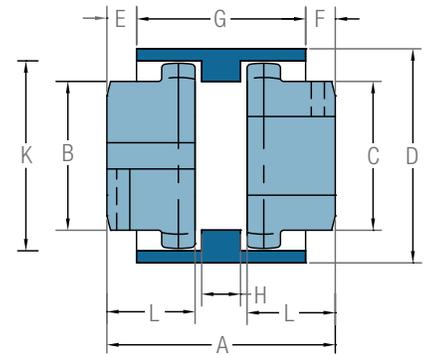
## DIMENSIONS

Type	A	D	B & C	E & F	K	L	G	H	No. of Teeth	Setscrews	lbs	Min./Max. Bore	Bores w/ Keyway	Bores w/o Keyway
M-14	1.77"	1.57"	1.00"	0.14"	1.30"	0.78"	1.45"	0.19"	20	10-24	0.4	0.187"/0.625"	7/16, 1/2, 5/8	1/4, 3/8, 7/16, 1/2, 5/8
M-19	1.96"	1.90"	1.25"	0.25"	1.53"	0.86"	1.45"	0.28"	24	1/4-20	0.6	0.375"/0.750"	1/2, 5/8, 3/4	7/16, 1/2, 5/8, 3/4
M-24	2.07"	2.05"	1.42"	0.25"	1.76"	0.84"	1.60"	0.39"	28	1/4-20	0.8	0.375"/0.945"	1/2, 5/8, 3/4, 7/8	7/16, 1/2
M-28	3.17"	2.58"	1.97"	0.69"	2.12"	1.40"	1.80"	0.37"	34	1/4-20	1.8	0.250"/1.125"	1/2, 5/8, 3/4, 7/8, 1-1/8	7/16, 1/2
M-32	3.15"	3.00"	1.97"	0.63"	2.47"	1.40"	1.92"	0.35"	40	5/16-18	3.2	0.437"/1.26"	1/2, 5/8, 3/4, 7/8, 1-1/8, 1-1/4	7/16, 1/2
M-38	3.15"	3.25"	2.30"	0.65"	2.70"	1.40"	1.90"	0.35"	44	5/16-18	4.0	0.437"/1.50"	1/2, 5/8, 3/4, 7/8, 1-1/8, 1-3/8, 1-1/2	7/16, 1/2
M-42	3.36"	3.63"	2.55"	0.73"	3.06"	1.50"	1.97"	0.36"	50	5/16-18	4.4	0.437"/1.65"	5/8, 3/4, 7/8, 1-1/8, 1-3/8, 1-1/2, 1-5/8	7/16, 1/2
M-48	3.91"	3.88"	2.67"	1.20"	3.06"	1.80"	1.93"	0.31"	50	3/8-16	5.4	0.437"/1.89"	5/8, 3/4, 7/8, 1-1/8, 1-3/8, 1-1/2, 1-5/8, 1-3/4	7/16, 1/2
M-65	5.51"	5.58"	3.80"	1.38"	4.33"	2.76"	2.83"	0.48"	42	3/8-16	15	0.500"/2.56"	1, 1-1/8, 1-3/8, 1-5/8, 1-7/8, 2-1/8, 2-3/8	7/16, 1/2
M-80	7.32"	6.89"	4.88"	1.83"	5.70"	3.54"	3.66"	N/A	46	3/8-16	25	0.98"/3.15"	1-7/8, 2-1/8, 2-3/8, 2-7/8, 3-1/8	7/16, 1/2
M-100	8.98"	8.26"	5.98"	2.48"	6.93"	4.33"	4.02"	N/A	48	1/2-13	45	1.38"/3.94"	As Requested	7/16, 1/2

**Assembly Notes:** 1. Dimension "A" is fully compressed. For best misalignment characteristics, 1/16" gap per hub is recommended.  
2. M-80/M-100 sleeves have internal snap ring provisions.

## GUARDEX™ M-STYLE

- Nylon Sleeve
- Steel Hubs
- Three-Piece Construction



## COUPLING SELECTION

Guardex Coupling No.	Nominal Torque Inch Lbs.	Max. Torque Inch Lbs.	Nominal H.P. @ 1750 RPM	Nominal H.P. @ 1140 RPM	Max. RPM
M-14	86	265	2.5	1.5	14,000
M-19	138	425	3.7	2.5	11,800
M-24	173	531	4.5	3.2	10,600
M-28	390	1,195	10.5	7.0	8,500
M-32	520	1,593	14.5	9.5	7,500
M-38	694	2,124	22.0	12.5	6,700
M-42	868	2,655	24.0	16.0	6,000
M-48	1,215	3,717	30.0	22.0	5,600
M-65	3,298	10,089	90.0	60.0	4,000
M-80	6,000	18,585	165.0	110.0	3,150
M-100	10,600	31,860	294.0	191.0	3,000

1. Nominal torque ratings allow for 180°F ambient, full misalignment and/or maximum RPM.
2. Starting torque and braking loads should not exceed listed maximum torque.
3. Intermittent, transient peak loads should not exceed three times nominal torque.
4. Applications with uniform loading, well-aligned shafts, and low speeds will allow for operation at maximum torque levels.

## INCHES

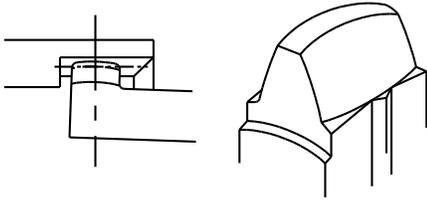
Bore Range	Keyway
3/8" to 7/16"	3/32" x 3/64"
1/2" to 9/16"	1/8" x 1/16"
5/8" to 7/8"	3/16" x 3/32"
15/16" to 1-1/4"	1/4" x 1/8"
1-5/16" to 1-3/8"	5/16" x 5/32"
1-7/16" to 1-3/4"	3/8" x 3/16"
1-13/16" to 2-1/4"	1/2" x 1/4"
2-5/16" to 2-3/4"	5/8" x 5/16"
2-13/16" to 3-1/4"	3/4" x 3/8"
3-5/16" to 3-3/4"	7/8" x 7/16"
3-13/16" to 4-1/2"	1" x 1/2"

**Note:** Additional bores and keyways in both inches and millimeters are available. Please inquire.

## MILLIMETERS

Bore Range	Keyway
6-7-8 mm	2 mm
9-10 mm	3 mm
11-12 mm	4 mm
13 thru 17 mm	5 mm
18 thru 22 mm	6 mm
23 thru 30 mm	8 mm
31 thru 38 mm	10 mm
39 thru 44 mm	12 mm
45 thru 50 mm	14 mm
51 thru 58 mm	16 mm
59 thru 65 mm	18 mm
66 thru 75 mm	20 mm
76 thru 85 mm	22 mm
86 thru 95 mm	25 mm

## DOUBLE CROWNED TOOTH

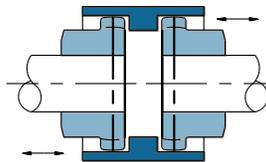


### ALIGNMENT TOLERANCES

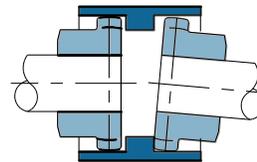
Type	Axial Displacement	Angular Misalignment	Parallel Offset	Recommended Hub Spacer Gap
M-Style (three-piece)	±.040"	1°/hub	.016"/hub	.0625"/hub

- Large contact area to provide low contact pressure and to reduce stress of shaft misalignment.
- Load distributed near the center of the tooth for maximum strength.
- Low friction for a smooth flow of power without the need for lubrication — maintenance free.
- Free axial movement of the coupling parts to compensate for shaft thermal changes and future alignment problems.

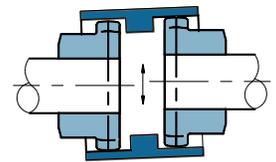
**Axial Displacement**



**Angular Misalignment**

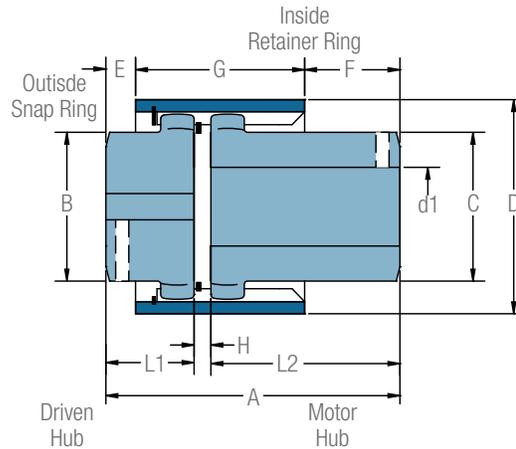


**Parallel Offset**



## GUARDEX™ I-STYLE

- Coupling has additional axial travel for DEMAG brake motors.
- Sleeve held to one hub with snap rings.
- Opposite hub has free axial travel of up to .500".
- Special hub length available. (See L<sub>1</sub> and L<sub>2</sub>)



Guardex Type	Torque Inch Lbs.		Pilot Bore	Finish Bore	
	Nominal	Max.		Min.	Max.
Spec. I-24	173	531	10 mm .393"	10 .393	24 .945
Spec. I-28	390	1,195	7 mm .276"	7 .276	28 1.10
Spec. I-32	694	1,593	12 mm .472"	12 .472	32 1.26
Spec. I-45	1,215	3,717	11 mm .433"	11 .433	45 1.77
Spec. I-65	3,298	10,089	12 mm .472"	12 .472	65 2.56

### DIMENSION

DEMAG Size	Guardex Coupling	Axial Travel	Motor Bore d <sub>1</sub>	A	B & C	D	E	F	G	H	L <sub>1</sub>	L <sub>2</sub>
KBA 71 KBL 71 KBZ 71	Spec. I-24	10 mm .400"	14 mm .551"	54 mm 2.13"	36 mm 1.42"	58 mm 2.28"	2.5 mm .098"	10 mm .393"	51 mm 2.00"	4 mm .157"	21 mm .84"	30 mm 1.80"
KBA 80 KBS 80	Spec. I-24	10 mm .400"	19 mm .748"	71 mm 2.80"	36 mm 1.42"	58 mm 2.28"	2.5 mm .098"	18 mm .700"	56 mm 2.20"	4 mm .157"	21 mm .84"	46 mm 1.80"
KBA 90 KBS 90	Spec. I-28	10 mm .400"	24 mm .945"	89 mm 3.52"	44 mm 1.73"	70 mm 2.75"	13 mm .550"	21 mm .83"	56 mm 2.20"	4 mm .157"	35.5 mm 1.40"	50.5 mm 2.00"
KBA 100 KBS 100 KBA 112 KBS 112 24/10 KS	Spec. I-32	10 mm .400"	28 mm 1.10"	89 mm 3.49"	50 mm 1.97"	84 mm 3.31"	11 mm .420"	21 mm .83"	58 mm 2.28"	4 mm .157"	35.5 mm 1.40"	50.5 mm 2.00"
24/14 KS KBS 125 KBA 125 28/12 KS	Spec. I-45	10 mm .400"	28 mm/1.10" 32 mm/1.26"	96.5 mm 3.80"	65 mm 2.56"	100 mm 3.93"	14 mm .551"	23 mm .900"	60 mm 2.36"	4 mm .157"	38 mm 1.50"	55.5 mm 2.19"
28/17 KS KBS 140 KBA 140	Spec. I-45	10 mm .400"	28 mm/1.10" 38 mm/1.49"	96.5 mm 3.80"	65 mm 2.56"	100 mm 3.93"	14 mm .551"	23 mm .900"	60 mm 2.36"	4 mm .157"	38 mm 1.50"	55.5 mm 2.19"
KBA 160	Spec. I-65	13 mm .500"	42 mm 1.65"	138 mm 5.43"	96 mm 3.78"	140 mm 5.51"	30 mm 1.18"	28.5 mm 1.12"	84 mm 3.31"	4 mm .157"	70 mm 2.76"	64 mm 2.52"
KBA 180	Spec. I-65	13 mm .500"	48 mm 1.89"	138 mm 5.43"	96 mm 3.78"	140 mm 5.51"	30 mm 1.18"	28.5 mm 1.12"	84 mm 3.31"	4 mm .157"	70 mm 2.76"	64 mm 2.52"

- Assembly Notes:**
1. Dimensions A, E, & F are measured fully compressed. For best misalignment characteristics, a 1/16" gap per hub is recommended.
  2. Hubs should be mounted flush with the end of the shaft when possible.
  3. Sleeves should move freely in an axial direction after assembly.

**Belted Drives and Sheaves**

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*Belted Drives*  
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*For application assistance:*  
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**Kilian Manufacturing**

*Engineered Bearing Assemblies*  
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**Gearing**

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*Geared Motors*  
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**Boston Gear**

*Enclosed and Open Gearing, Electrical and Mechanical P.T. Components*  
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**Heavy Duty Clutches and Brakes**

**Industrial Clutch**

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For information concerning our sales offices in Asia Pacific check our website [www.altramotion.com.cn](http://www.altramotion.com.cn)

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[www.guardiancouplings.com](http://www.guardiancouplings.com)

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Merchant Drive, Hertford  
Hertfordshire SG13 7BL - England  
**+44(0)1992 501900**  
Fax: +44 (0)1992 509890

# Residential Oil Burner/ Pump Coupling Line



 **Guardian**<sup>®</sup>  
Couplings

An Altra Industrial Motion Company

## Why Choose Guardian?

For more than 70 years, Guardian has been designing and manufacturing world-class couplings and other power transmission components. Utilizing advanced manufacturing technologies and processes, Guardian provides highly-reliable coupling and component solutions to meet the most challenging industrial application requirements.

Guardian provides a wide range of standard and custom products including flywheel couplings, hydraulic pump mounts, bearing supported stub shafts, flexible shaft-to-shaft couplings, motion control couplings as well as compression pipe couplings.

Durable Guardian products are utilized in key industries including mobile hydraulics, farm & ag, tree care, concrete, food & beverage, material handling, automation, power generation, and oil & gas on applications such as skid steers, aerial lifts, harvesters, wood chippers, concrete pumps, dewatering pumps, baggage handlers, conveyors, robotics, compressors, and generator sets.

## OIL BURNER COUPLINGS

One of the original Guardian products, this product is excellent for older residential heating applications. The NF line fits Sundstrand, BorgWarner, and Webster fuel pumps. The coupling is a three piece design and can be provided as single coupling or as "repair packs" / "repair kits".

### NF Nylon Flange Repair Coupling Pak Consists Of:

- 1 – Plastic tube with instruction label and cap
- 1 – 5" Rubber sleeve section
- 1 – Black: NF 1/2" motor shaft end fitting—fits all standard 1/2" oil burner motor shafts
- 1 – White: NF 7/16" SL (Special Length) nylon extended fuel pump end fittings—fits Sundstrand & Webster fuel pumps
- 1 – Grey: NF 5/16" fiberfill with additive fuel pump end fittings—fits Sundstrand, Webster and Borg-Warner small fuel pumps

### Standard Residential Burner Coupling

Rubber sleeve 1" O.D.

Nylon end fittings with bore flats

Length: 2" to 7"

Bores: 5/16", 7/16", 7/16"-SL (Special Length), & 12"

### NF "6 Pak" Consists Of:

- 6 – 6" Rubber sleeve sections
- 8 – Black NF 1/2" motor shaft end fittings—fits all standard 1/2" oil burner motor shafts
- 6 – White: NF 7/16" SL (Special Length) nylon extended fuel pump end fittings—fits Sundstrand & Webster fuel pumps
- 5 – Grey: NF 5/16" fiberfill fuel pump end fittings—fits Sundstrand, Webster and Borg-Warner small fuel pumps

### NF-Tri-Pak Consists Of:

- 1 – Plastic tube with instruction label and cap
- 1 – 12" Rubber sleeve section
- 3 – Black NF 1/2" motor shaft end fittings
- 3 – White NF 7/16" SL (Special Length) nylon extended fuel pump end fittings—fits Sundstrand & Webster fuel pumps
- 2 – Grey NF 5/16" fiberfilled nylon fuel pump end fittings





**Regular Metal Set Screws**  
(One-Piece Construction)



**1-R Mini-Pump Couplings**  
(One-Piece Construction)

### The Original "Regular" Heavy Duty Oil Burner Coupling

- One piece balanced design compensates for lateral and angular misalignment
- Dampens noise and vibration
- Design eliminates wear of bores, flats and keyways
- Metal ends and hardened cup point set screws
- Balanced rubber sleeves
- Engineered for both 1725 & 3450 motor speeds
- Available 1/6 H.P. to 3 H.P.
- Lengths: 2" to 10"
- Bores: 1/4", 5/16", 3/8", 7/16", 1/2" & 5/8"

### 1-R Mini-Pump Coupling—Regular Style with Metal Ends

- Designed to be fully interchangeable on Sundstrand, Webster & Borg-Warner 5/16" minipump oil burner applications
- Smaller 1" coupling O.D. allows maximum passage of air between motor and pump
- Furnished in correct overall coupling length for 1/2" motor shaft and 5/16" min-pump shaft
- Metal end fittings with set screws
- Balanced rubber sleeves



**GD—Gear Grip Couplings**  
(Three-Piece Construction)



**EJ Molded Rubber Jaw Couplings**  
(One-Piece Construction)

### Heavy Duty Industrial & Commercial Burner Couplings

- Splined tooth metal ends with set screws
- Rubber sleeve with internal splines
- 3/4 H.P. through 3 H.P. 1750-3450 R.P.M.

G2D Diameter: 1-1/8" O.D.  
Length: 2-1/2" to 6"  
Bores: 5/16", 3/8", 7/16", 1/2" & 5/8"

G3D Diameter: 1-7/16" O.D.  
Length: 3" to 8"  
Bores: 7/16", 1/2", 5/8" with keyways

### EJ Molded Rubber Jaw Couplings

- Molded rubber blower end
- Regular set screw pump end
- Bores: 5/16", 3/8", 7/16", 1/2"
- Lengths-Overall: 2-5/8", 3", 3-5/8" & 4-1/8"

**Belted Drives and Sheaves**

**TB Wood's**

*Belted Drives*  
Chambersburg, PA - USA  
**1-888-829-6637** – Press #5  
*For application assistance:*  
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**Couplings**

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1-888-829-6637 – Press #7  
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**Warner Electric**

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*For application assistance:*  
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*Precision Electric Coils and Electromagnetic Clutches and Brakes*

Columbia City, IN - USA  
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**Engineered Bearing Assemblies**

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*Engineered Bearing Assemblies*  
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*Geared Motors*  
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**Nuttall Gear and Delroyd Worm Gear**

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*Pneumatic Clutches and Brakes*  
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**Linear Products**

**Warner Linear**

*Linear Actuators*  
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**Overrunning Clutches**

**Formsprag Clutch**

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**Marland Clutch**

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