



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.

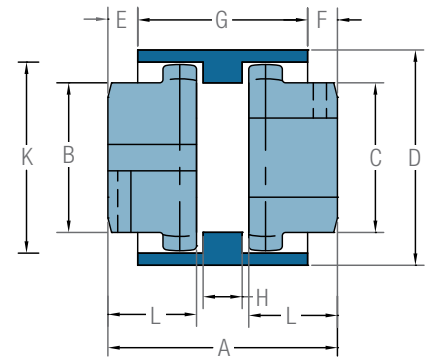
DIMENSIONS

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

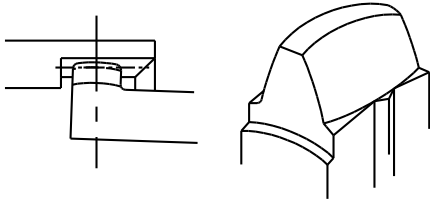
Bore Range	Keyway
3/8" to 7/16"	3/32" x 3/64"
1/2" to 9/16"	1/8" x 1/16"
5/8" to 7/8"	3/16" x 3/32"
15/16" to 1-1/4"	1/4" x 1/8"
1-5/16" to 1-3/8"	5/16" x 5/32"
1-7/16" to 1-3/4"	3/8" x 3/16"
1-13/16" to 2-1/4"	1/2" x 1/4"
2-5/16" to 2-3/4"	5/8" x 5/16"
2-13/16" to 3-1/4"	3/4" x 3/8"
3-5/16" to 3-3/4"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

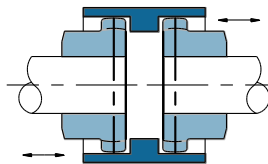


ALIGNMENT TOLERANCES

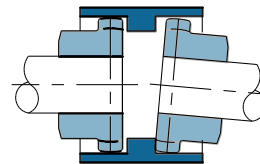
Type	Axial Displacement	Angular Misalignment	Parallel Offset	Recommended Hub Spacer Gap
M-Style (three-piece)	±.040"	1°/hub	.016"/hub	.0625"/hub

- 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.

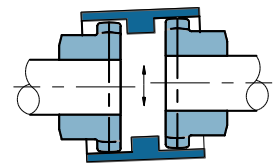
Axial Displacement



Angular Misalignment

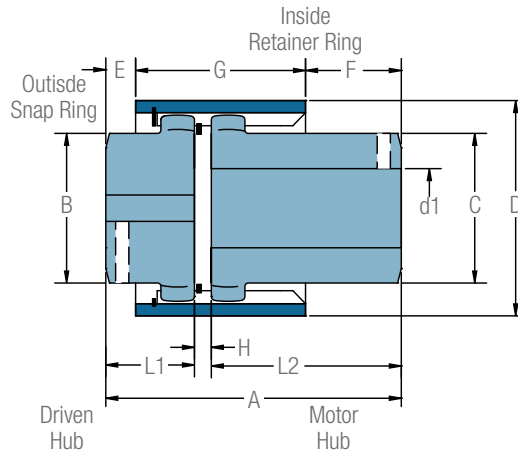


Parallel Offset



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 L₁ and L₂)



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 ₁	A	B & C	D	E	F	G	H	L ₁	L ₂
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

TB Wood's

Belted Drives
Chambersburg, PA - USA
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For application assistance:
1-888-829-6637 – Press #7

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Mill Spindles, Ameriflex, Ameridisc
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Universal Joints, Drive Shafts, Mill Gear Couplings
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1-920-593-2444

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Disc, Gear, Grid Couplings, Overload Clutches
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Boksburg, South Africa
+27(0) 11 918 4270

Guardian Couplings

Engineered Flywheel Couplings, Engine Housings and Pump Mounts, Flexible Shaft Couplings
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Huco Dynatork

Precision Couplings and Air Motors
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+44 (0) 1992 501900
Chambersburg, PA - USA
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Couplings Cont.

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Flexible Couplings, Bearing Isolators, and Coupling Guards
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TB Wood's

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General Purpose Disc Couplings
San Marcos, TX - USA
1-888-449-9439

Electromagnetic Clutches and Brakes

Inertia Dynamics

Spring Set Brakes; Power On and Wrap Spring Clutch/Brakes
New Hartford, CT - USA
1-800-800-6445

Matrix International

Electromagnetic Clutches and Brakes, Pressure Operated Clutches and Brakes
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+44 (0) 1356 602000
New Hartford, CT - USA
1-800-825-6544

Warner Electric

Electromagnetic Clutches and Brakes
New Hartford, CT - USA
1-800-825-6544
For application assistance:
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Saint Barthélemy d'Anjou, France
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Precision Electric Coils and Electromagnetic Clutches and Brakes

Columbia City, IN - USA
1-260-244-6183

Engineered Bearing Assemblies

Kilian Manufacturing

Engineered Bearing Assemblies
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Gearing

Bauer Gear Motor

Geared Motors
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Somerset, NJ - USA
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Boston Gear

Enclosed and Open Gearing, Electrical and Mechanical P.T. Components
Charlotte, NC - USA
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Nuttall Gear and Delroyd Worm Gear

Worm Gear and Helical Speed Reducers
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1-716-298-4100

Heavy Duty Clutches and Brakes

Industrial Clutch

Pneumatic and Oil Immersed Clutches and Brakes
Waukesha, WI - USA
1-262-547-3357

Svendborg Brakes

Industrial Brakes and Brake Systems
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+45 63 255 255

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