MOLINE BEARING Cº

ENGINEERING CATALOG VOL 11

ACCESSIBLE RESPONSIVE FLEXIBLE KNOWLEDGABLE QUALITY PROVEN HUMAN

220 EPC SSO

RALPH GRAVES AND DAVID FAUNTLEROY

MOLINE BEARING CO., BATAVIA, ILLINOIS

BUSINESS

[**biz**-nis] *noun*

The sale of goods and services.

To be of value as a business you need to be the things you say you are. You need to produce a needed product that will exceed your customer's expectations. You need to do this in a friendly, creative and informative way all at a fair price.

4x5 Film


MOLINE
BEARING Co

ANDREA DESCOTEAUX

MOLINE BEARING CO., BATAVIA, ILLINOIS

INTERNATIONAL TRADE

[in-ter-**nash**-*uh*-nl treyd] *adjective*

The exchange of capital, goods, and services between two or more nations.

As a last resort, from time to time when production, price or quality cannot be found here on our shores, and in order to meet customer demands without sacrificing quality, other trade partners are looked at. Currently less then 6% of our components come from over seas with 100% assembly, right here.

SUSTAINABILITY

[*suh*-stey-n*uh*-**bil**-i-tee] *adjective*

To support and maintain local business.

We produce components locally and therefore locally sustainable, which reduces shipping costs, while supplying jobs here. This has strengthened our manufacturing ties and allowed Moline to continually make our products better to meet your demands.

RONNIE SMITH

PERFORMANCE POWDER COATING, NAPERVILLE, ILLINOIS

CUSTOM

[**kuhs**-t*uh*m] *adjective*

Made or done to order for a particular customer.

Getting it your way. When you call and say, “I need it in yellow” we make it happen. Since we are relatively small in size and enjoy manufacturing challenges, we welcome most anything. Just call it, “untethered flexibility.”

RESPONSE TIME

[ri-**spons** tahym] *noun*

The length of time taken for a person or system to react to a given stimulus or event.

When you need it now and we get it to you. Being small in size has its benefits. Benefits such as getting product assembled and out the door same day. This directly places Moline above much larger companies that either can’t or won’t entertain your ordering time line. We are proud of our 96% same-day shipping rate.

4x5 Film

4x5 Film

TONY THRYSELIUS

THRYSELIUS MACHINING, ELBURN, ILLINOIS

CRAFTSMANSHIP

[**krafts**-m*uh*n ship] *noun*

The creation of products and services using specialized skills.

Since 1869 we have strived to better every aspect of our business and the skills we use to bring quality products to you. Our machine shop has been in business since 1946. You can count on their technical skill and accurate machining to ensure the quality products you've come to expect from Moline Bearing.

QUALITY

[**kwol**-i-tee] *noun*

A product of high value or skill that is consistent in nature.

Much of our reputation has to do with the company we keep. We select our manufacturing partners with great care. Mainly because it translates to the end use of our products and the expected performance you require.

GARY VARGYAS

GENE GOODWILLIE INC., MELROSE PARK, ILLINOIS

MARKETING

[**mahr**-ki-ting] *noun*

A promotion that represents the business.

If a box represents your business when it's on the shelf or being delivered, we are well represented! When you are handling a 26-pound bearing, the box that holds it needs to hold up, look good on the shelf, be readable, and be environmentally produced.

MADE IN THE USA

phrase

The mark is a country of origin label indicating the product is "all or virtually all" made in the U.S.

Produced right here! With every effort to be 100% from our soil.

Most of our products and components are produced locally; this goes for our quality boxes as well. The corrugated material is produced in Indiana and printed with environmentally safe inks in Illinois.

4x5 Film


MOLINE

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MOLINE

TYPE E TAPERED ROLLER BEARINGS

Moline Type E Tapered Roller Bearings offer many advantages including high-speed suitability, positive locking to the shaft, ruggedness, and low price.

The housings are as compact as possible without sacrificing their brawny ruggedness. Made in the USA of high quality Class 30 cast iron, they are precision machined to close tolerances.

On each end of the inner race there is a Drive Collar with two headless set screws. These screws extend through clearance holes in the inner race, locking it to the shaft.

Moline uses only genuine Timken® Tapered Roller Bearings. They are made from vacuum degassed steel which gives rollers and races added life, and provides superior load and speed characteristics. A long inner race insures load distribution over a considerable length of shaft. In addition, the arrangements of Timken rollers and races is such that Moline Type E Mounted Bearings will handle slight angular shaft misalignment. These bearings also have high radial and thrust load capacities, and are capable of handling most combinations of loads found in all normal applications.

Moline Type E Pillow Blocks, Flange Bearings, Piloted Flange Bearings, and Wide Slot Take-ups are ready to slip onto the shaft when received, because they are completely assembled, adjusted, sealed and pre-lubricated at the factory. There is no danger of bearing failure resulting from dirt or dust entering the bearing

before or during installation. Such contamination is very difficult to prevent in bearings that are not shaft ready. No time or expense is required for cleaning housings, for adjusting, or for initial lubrication. Therefore, overall installed cost is less in many instances. Operating expense over time is also generally less.

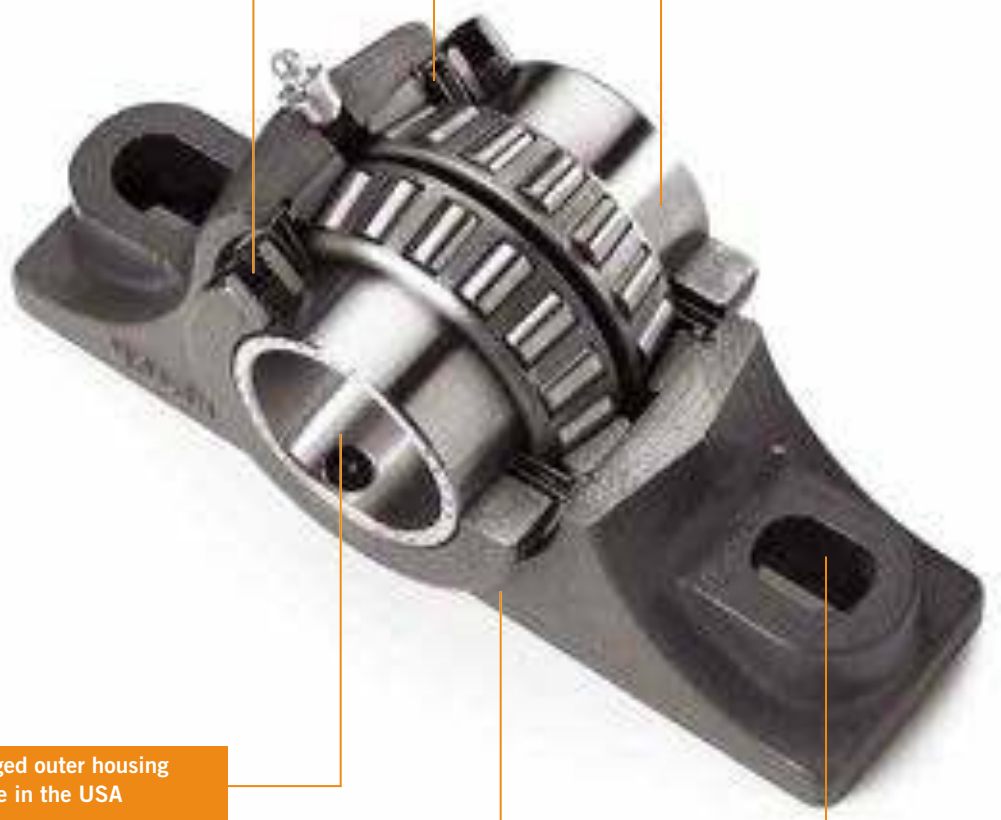
The V-Guard™ contact seal, which is built in at each end of the bearing during factory assembly, effectively seals against loss of lubricant and admission of dust and dirt, both on and off the shaft. Efficiency of the seal is consistent throughout the allowable range of self-alignment.

Bore tolerance is +.001"/-.000" for 3" and smaller bores; +.002"/-.000" for bores larger than 3".

Moline Mounted Type E bearings are available in shaft sizes from 1 3/16" to 7" and 35 to 180mm in Pillow Blocks, 1 3/16" to 4 1/2" and 35 to 115mm in 4-Bolt Flanges, 1 1/2" to 5" and 40 to 125mm in Piloted Flanges, and 1 3/4" to 3 1/2" and 45 to 90mm in Wide Slot Take-ups.

All housings are available in our standard painted finish. Custom Colors, Powder Coating, Stainless Steel Powder coating, Nickel plating, Epoxy coatings and Teflon coatings will be quoted on request.

Moline Type E bearings are carried in warehouse and distributor stocks all over the United States and in Canada.


V-Guard™ Contact Seal for dirt and wet environments
Set screws in collars lock inner race to shaft
Timken Tapered Roller Bearings
Rugged outer housing Made in the USA
Long inner race locked to shaft or both ends
Elongated bolt holes permit adjustment and increased mounting options

FEATURES OF MOLINE TYPE E TAPERED ROLLER BEARINGS

WITH TIMKEN® TAPERED ROLLER BEARINGS

- Available in shaft sizes from 1 3/16" to 7", and 35mm to 180mm
- Easy installation and maintenance
- Supplied from the factory in shaft ready condition
- Assembled, adjusted and pre-lubricated in advance for immediate use
- Dimensionally interchangeable with comparable competitive Type E units
- Tapered roller bearings with double-extended inner race
- Extended inner race has two locking collars
- Available with standard V-Guard™ Nitrile and Teflon Contact Seal or Balanced Labyrinth Seal
- Case hardened rollers and races
- 65° set screw spacing on locking collars
- Timken® tapered roller bearing inserts allow for a combination of radial and thrust loads
- Misalignment = .010" per foot of shaft
- Excellent thrust load capacity
- Close fit oversized collars act as flingers for additional protection in dusty or damp environments
- Rugged housings are made in the USA of Class 30 cast iron
- Standard grease operating temperature is up to 250°
- High temperature grease is available up to 350°
- For custom lubrication, please call the factory for more information
- Housings available in the standard painted finish. Powder coating in RAL or custom colors, Stainless Steel Powder coating, Nickel-plating, Epoxy, Teflon and other coatings are available upon request
- Custom machining and design is available. Please call the factory for further information
- Made in the United States

Standard V-Guard™ Contact Seal made of Nitrile, Teflon and Steel for extreme dirt and wet environments.

Balanced Metal Labyrinth Seal for high speed applications

TYPE E 2-BOLT PILLOW BLOCK

SHAFT SIZE	MOLINE PART #	DIMENSIONS (INCHES)												WEIGHT LBS.
		A	B	C	MIN D	CENTER TO CENTER D	MAX D	F	G	H	J	L	M	
1 3/16 1 1/4	19321103 19321104	2 3/4	6	1 7/8	4 5/8	4 3/4	4 7/8	3/8	19/32	7/8	3	2 1/4	1 1/2	4
1 3/8 1 7/16 35 mm	19321106 19321107 19321035	3	7 3/8	2 1/8	5	5 1/2	6	1/2	1 1/8	1 1/8	3 7/8	2 3/4	1 7/8	6.9
1 1/2 1 5/8 1 11/16 40 mm	19321108 19321110 19321111 19321040	3 3/8	7 7/8	2 3/8	5 5/8	6 1/16	6 1/2	1/2	1 1/16	1 1/4	4 1/4	3 3/16	2 1/8	9.5
1 3/4 1 7/8 1 15/16 2 45 mm 50 mm	19321112 19321114 19321115 19321200 19321045 19321050	3 1/2	8 7/8	2 1/2	6 1/8	6 11/16	7 1/4	5/8	1 5/16	1 5/16	4 1/2	3 3/8	2 1/4	11
2 3/16 55 mm	19321203 19321055	3 3/4	9 5/8	2 5/8	6 11/16	7 3/8	8	5/8	1 7/16	1 1/2	5	3 3/4	2 1/2	14
2 1/4 2 7/16 2 1/2 60 mm 65 mm	19321204 19321207 19321208 19321060 19321065	4	10 1/2	2 7/8	7 1/8	7 7/8	8 5/8	5/8	1 1/2	1 5/8	5 11/16	4	2 3/4	19
2 11/16 2 3/4 2 15/16 3 70 mm 75 mm	19321211 19321212 19321215 19321300 19321070 19321075	4 1/2	12	3	7 7/8	8 13/16	9 3/4	3/4	1 13/16	1 7/8	6 5/16	4 11/16	3 1/8	26
3 3/16 3 1/4 3 7/16 3 1/2 80 mm 85 mm 90 mm	19321303 19321304 19321307 19321308 19321080 19321085 19321090	5	14	3 5/8	9 3/4	10 5/8	11 1/2	7/8	1 7/8	2 1/4	7 1/2	5 15/16	3 3/4	44

*__Note:__ The elongated slots give broader mounting capabilities while still allowing the same center to center, min and max mounting dimensions of the old style Type E.

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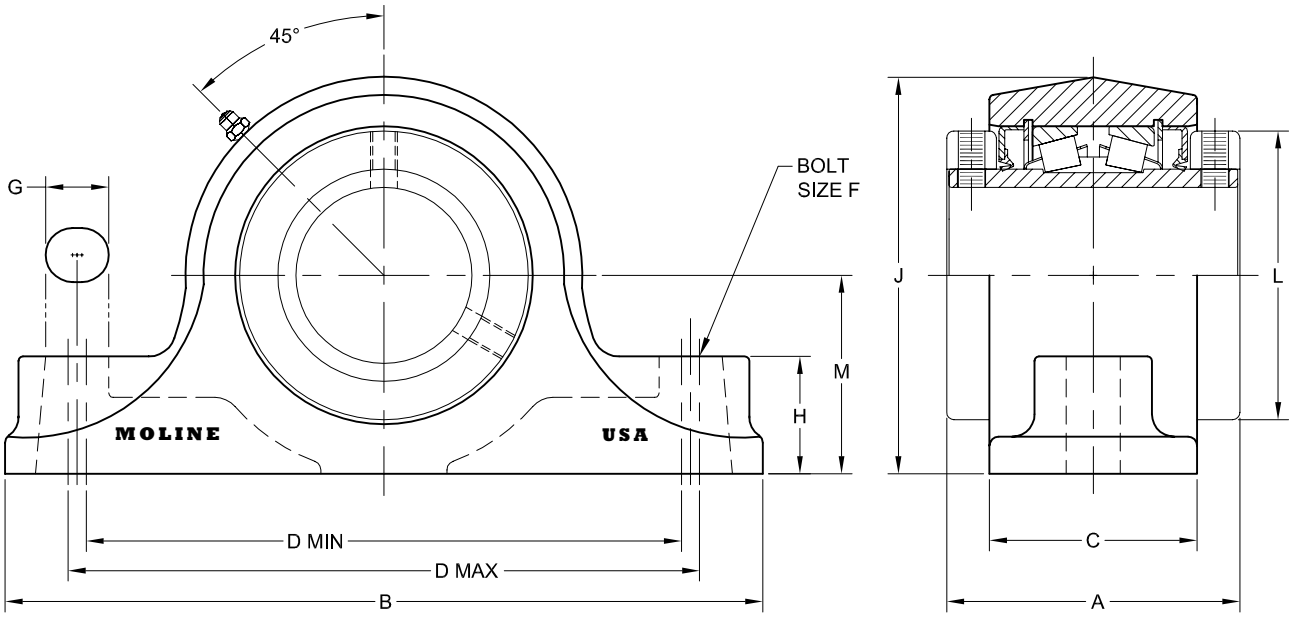
TYPE E 2-BOLT PILLOW BLOCK



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For nomenclature see pages 226 and 227.

TYPE E 4-BOLT PILLOW BLOCK

SHAFT SIZE	MOLINE PART #	DIMENSIONS (INCHES)													WEIGHT LBS.
		A	B	C	MIN D	CENTER TO CENTER D	MAX D	E	F	G	H	J	L	M	
2 1/4 2 7/16 2 1/2 60mm 65mm	19341204 19341207 19341208 19341060 19341065	4	10 1/2	3 1/2	8 5/16	8 1/2	8 11/16	1 7/8	5/8	7/8	1 5/8	5 1/2	4	2 3/4	19
2 11/16 2 3/4 2 15/16 3 70mm 75mm	19341211 19341212 19341215 19341300 19341070 19341075	4 1/2	12	4	9 3/16	9 1/2	9 13/16	2 1/8	5/8	7/8	1 7/8	6 1/4	4 11/16	3 1/8	26
3 3/16 3 1/4 3 7/16 3 1/2 80mm 85mm 90mm	19341303 19341304 19341307 19341308 19341080 19341085 19341090	5	14	4 1/2	10 3/4	11	11 1/4	2 3/8	3/4	1 3/16	2 1/4	7 1/2	5 5/16	3 3/4	44
3 15/16 4 100mm	19341315 19341400 19341100	6 1/4	15 1/4	4 1/2	12 1/4	12 1/2	12 3/4	2 1/4	3/4	1 1/8	2 7/16	8 1/2	5 3/4	4 1/4	65

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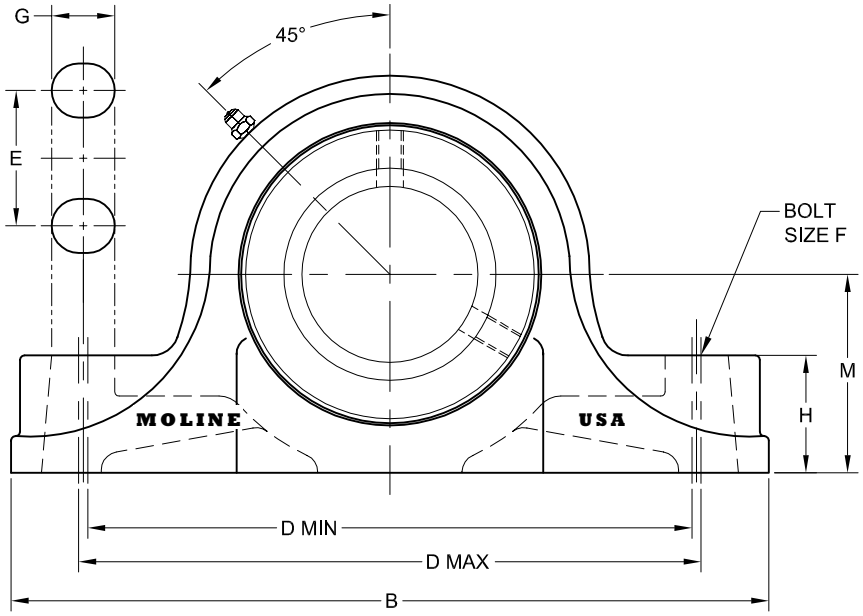

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TYPE E 4-BOLT PILLOW BLOCK CONTINUED

SHAFT SIZE	MOLINE PART #	DIMENSIONS (INCHES)													WEIGHT LBS.
		A	B	C	MIN D	CENTER TO CENTER D	MAX D	E	F	G	H	J	L	M	
4 7/16 4 1/2 110mm 115mm	19341407 19341408 19341110 19341115	6 3/4	16 5/8	4 5/8	13 1/4	13 1/2	13 3/4	2 1/2	3/4	1 3/16	2 3/4	9 3/8	6 1/4	4 3/4	81
4 15/16 5 125mm	19341415 19341500 19341125	7 1/4	18 1/2	5 1/8	15 1/4	15 1/2	15 3/4	2 3/4	7/8	1 1/4	3	10 7/8	7 1/4	5 1/2	132
5 7/16 5 15/16 6 130mm 135mm 140mm 150mm	19341507 19341515 19341600 19341130 19341135 19341140 19341150	9	22	6 1/4	17 3/8	18 1/4	19 1/8	3 3/4	1	2	3 1/4	13 3/16	9 3/8	6 11/16	243
6 7/16 6 1/2 6 15/16 7 160mm 170mm 180mm	19341607 19341608 19341615 19341700 19341160 19341170 19341180	10 1/2	26	7 1/8	21 1/4	22 1/4	23 1/4	4 5/8	1	2 1/8	3 11/16	15	10 7/8	7 1/2	356 350 340 335 340 340 335

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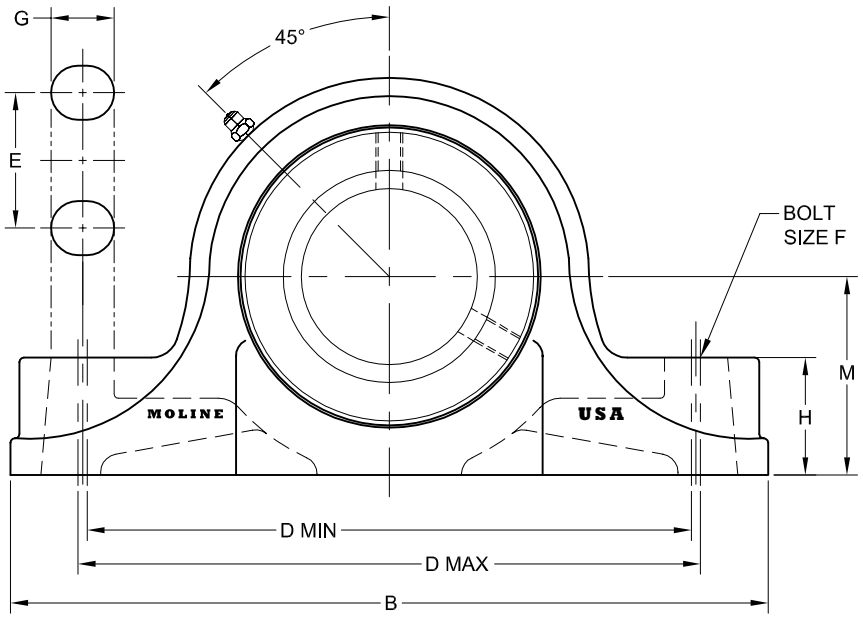

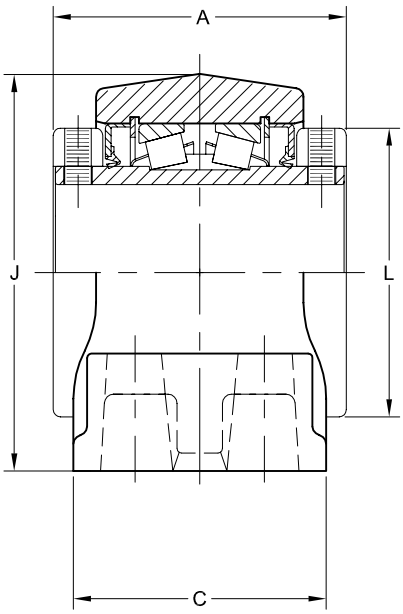

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For nomenclature see pages 226 and 227.

TYPE E 4-BOLT FLANGE

SHAFT SIZE	MOLINE PART #	DIMENSIONS (INCHES)									WEIGHT LBS.
		A	B	C	D	E	F	H	J	L	
1 3/16 1 1/4	19311103 19311104	2 3/4	3 3/4	2 11/32	2 7/8	1/16	3/8	1	2 15/16	2 1/4	4.5
1 3/8 1 7/16 35mm	19311106 19311107 19311035	3	4 5/8	2 19/32	3 1/2	1/16	1/2	1 1/16	3 7/8	2 3/4	6.7
1 1/2 1 5/8 1 11/16 40mm	19311108 19311110 19311111 19311040	3 3/8	5 3/8	2 31/32	4 1/8	1/8	1/2	1 3/16	4 1/4	3 1/8	10
1 3/4 1 7/8 1 15/16 2 45mm 50mm	19311112 19311114 19311115 19311200 19311045 19311050	3 1/2	5 5/8	3 3/32	4 3/8	1/8	1/2	1 3/16	4 1/2	3 3/8	12
2 3/16 55mm	19311203 19311055	3 3/4	6 1/4	3 9/32	4 7/8	1/8	5/8	1 3/8	4 7/8	3 3/4	16
2 1/4 2 7/16 2 1/2 60mm 65mm	19311204 19311207 19311208 19311060 19311065	4	6 7/8	3 9/16	5 3/8	3/16	5/8	1 1/2	5 3/4	4	21

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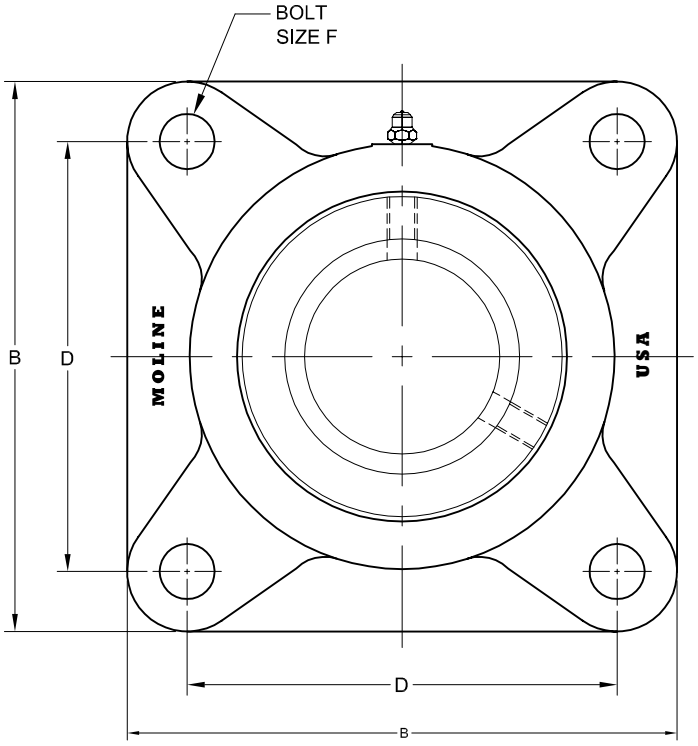

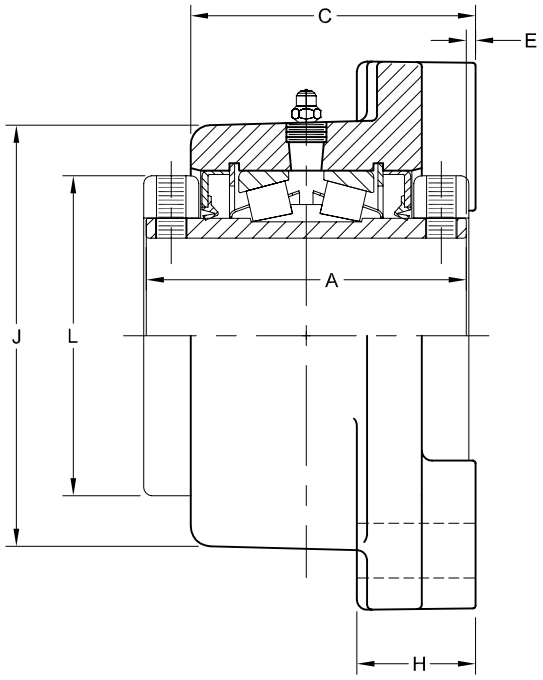

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TYPE E 4-BOLT FLANGE CONTINUED

SHAFT SIZE	MOLINE PART #	DIMENSIONS (INCHES)									WEIGHT LBS.
		A	B	C	D	E	F	H	J	L	
2 11/16 2 3/4 2 15/16 3 70mm 75mm	19311211 19311212 19311215 19311300 19311070 19311075	4 1/2	7 3/4	3 15/16	6	3/16	3/4	1 5/8	6 1/2	4 11/16	28
3 3/16 3 1/4 3 7/16 3 1/2 80mm 85mm 90mm	19311303 19311304 19311307 19311308 19311080 19311085 19311090	5	9 1/4	4 1/2	7	1/4	3/4	1 7/8	7 5/8	5 5/16	51
3 15/16 4 100mm	19311315 19311400 19311100	6 1/4	10 1/4	5 5/8	7 3/4	1/4	7/8	2 1/8	8 7/16	5 3/4	74
4 7/16 4 1/2 110mm 115mm	19311407 19311408 19311110M 19311115M	6 3/4	10 7/8	5 15/16	8 3/4	11/32	7/8	2 7/16	9 1/8	6 1/4	96

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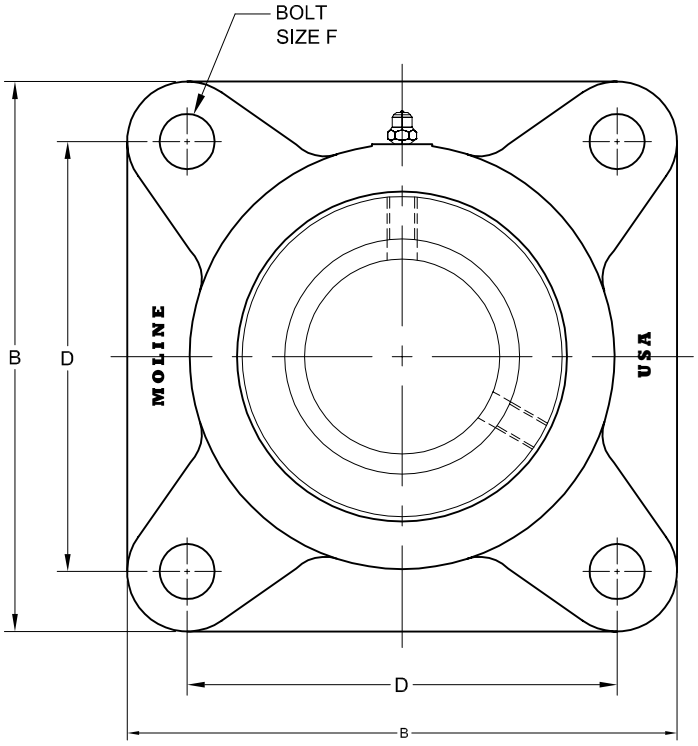

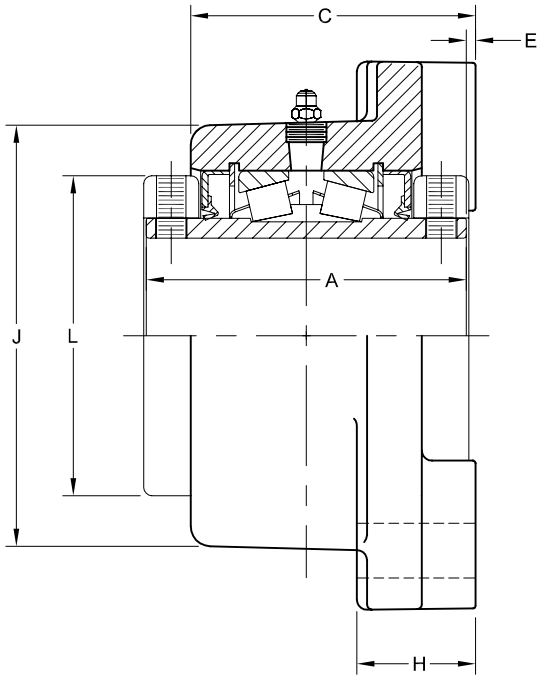

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For nomenclature see pages 226 and 227.

TYPE E PILOTED FLANGE

SHAFT SIZE	MOLINE PART #	DIMENSIONS (INCHES)												WEIGHT LBS.
		A	B	C	D	E	F	G	H	K	L	M	P	
1 1/2 1 5/8 1 11/16 40mm	19331108 19331110 19331111 19331040	3 3/8	6 1/8	2 13/16	5 1/8	1 3/8	7/16	1 9/16	7/16	4 1/4	3 1/8	3.62	1 1/16	9.2
1 3/4 1 7/8 1 15/16 2 45mm 50mm	19331112 19331114 19331115 19331200 19331045 19331050	3 1/2	6 3/8	2 29/32	5 3/8	1 3/16	7/16	1 9/16	9/16	4 1/2	3 3/8	3.80	1 1/32	10.3
2 3/16 55mm	19331203 19331055	3 3/4	7 1/8	3 3/32	6	1 3/16	1/2	1 11/16	9/16	5	3 3/4	4.24	1 3/32	12
2 1/4 2 7/16 2 1/2 60mm 65mm	19331204 19331207 19331208 19331060 19331065	4	7 5/8	3 5/16	6 1/2	1 5/16	1/2	1 13/16	5/8	5 1/2	4	4.60	1 1/4	16
2 11/16 2 3/4 2 15/16 3 70mm 75mm	19331211 19331212 19331215 19331300 19331070 19331075	4 1/2	8 3/4	3 11/16	7 1/2	1 1/2	5/8	2	3/4	6 3/8	4 11/16	5.30	1 1/4	28
3 3/16 3 1/4 3 7/16 3 1/2 80mm 85mm 90mm	19331303 19331304 19331307 19331308 19331080 19331085 19331090	5	10 1/4	4 3/16	8 5/8	1 1/4	3/4	2 7/16	7/8	7 3/8	5 5/16	6.10	1 21/32	43
3 15/16 4 100mm	19331315 19331400 19331100	6 1/4	10 7/8	4 1/2	9 3/8	1 1/2	3/4	2 11/16	15/16	8 1/8	5 3/4	6.63	1 7/8	57
4 7/16 4 1/2 110mm 115mm	19331407 19331408 19331110 19331115M	6 3/4	13 1/2	4 5/8	11 3/4	1 1/2	3/4	3 1/32	1	10 1/4	6 1/4	5.09	2	93
4 15/16 5 125mm	19331415 19331500 19331125	7 1/4	14 3/4	5 1/16	12 3/4	1 3/4	7/8	2 31/32	1 1/4	11	7 1/4	5.52	1 7/8	122

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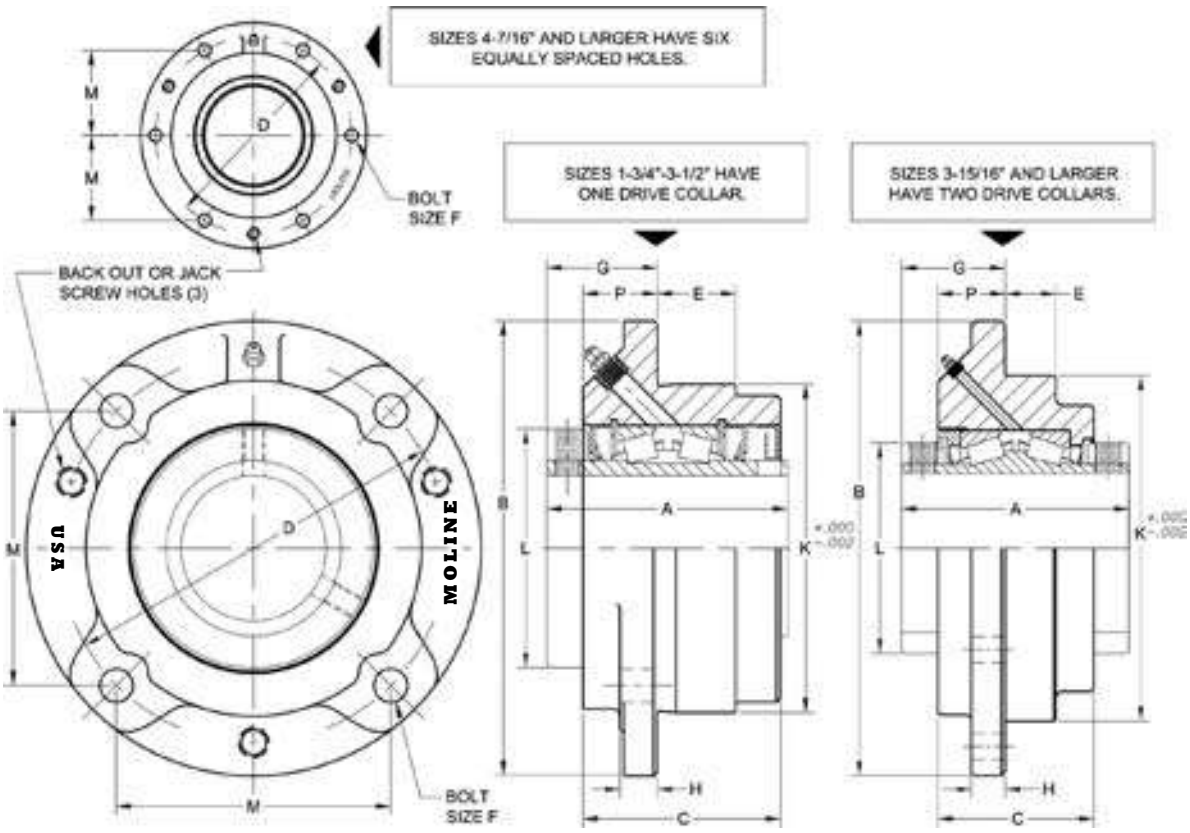
TYPE E PILOTED FLANGE



Note: Sizes 1¾"–3½" have one drive collar.

Sizes 3 15/16" and larger have 2 collars.

Also, sizes 4 7/16" and larger units have 6 equally spaced holes. All other units have 4 holes.

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For nomenclature see pages 226 and 227.

TYPE E WIDE SLOT TAKE-UP

SHAFT SIZE	MOLINE PART #	DIMENSIONS (INCHES)													WEIGHT LBS.
		A	B	C	D	E	F	G	H	J	K	L	M	N	T	
1 3/4 1 7/8 1 15/16 2 45mm 50mm	19351112 19351114 19351115 19351200 19351045 19351050	3 1/2	6 5/16	11/16	3 3/4	3 15/16	1	15/16	3/4	3 5/16	1 15/16	3 3/8	4	4 3/4	2 7/16	12
2 3/16 55mm	19351203 19351055	3 3/4	7 1/8	13/16	3 3/4	4 5/8	1 1/8	1	1	3 7/8	2 1/4	3 3/4	4 1/2	5 1/4	2 9/16	16
2 1/4 2 7/16 2 1/2 60mm 65mm	19351204 19351207 19351208 19351060 19351065	4	7 13/16	1 1/32	4 1/2	5 1/16	1 1/2	1 1/16	1 1/4	4 1/4	2 1/2	4	5 1/8	6	2 3/4	21
2 11/16 2 3/4 2 15/16 3 70mm 75mm	19351211 19351212 19351215 19351300 19351070 19351075	4 1/2	9 1/8	1 25/32	4 3/4	5 7/8	1 1/2	1 3/8	1 1/4	4 7/8	2 3/4	4 11/16	5 15/16	6 3/4	3	30
3 3/16 3 1/4 3 7/16 3 1/2 80mm 85mm 90mm	19351303 19351304 19351307 19351308 19351080 19351085 19351090	5	10 1/4	1 25/32	6	6 3/8	1 3/4	1 1/16	1 5/8	4 7/8	2 7/8	5 5/16	6 13/16	7 13/16	3 13/16	45

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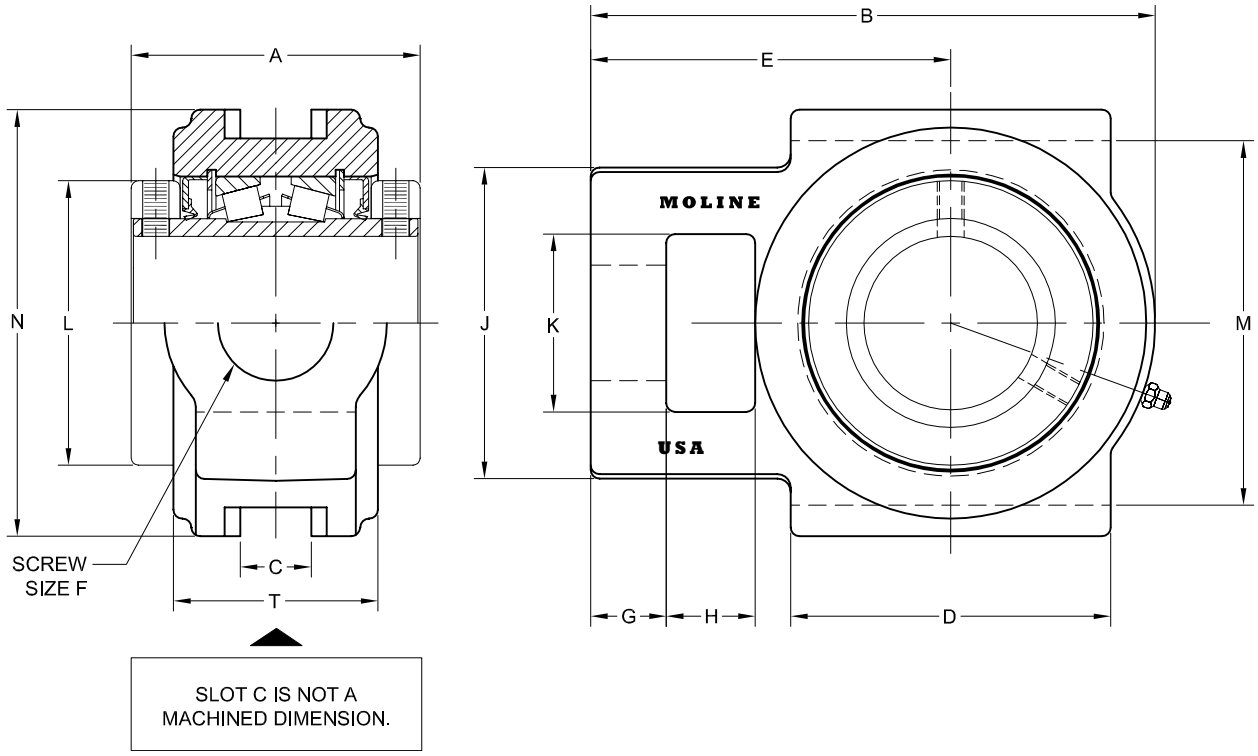
TYPE E WIDE SLOT TAKE-UP



For personal service and special requests, please call us at 800.242.4633.

CAD drawings available upon request at no additional charge.

Furnished in non-expansion type only.

For nomenclature see pages 226 and 227.

TYPE E APPLICATION GUIDE

MOUNTING INSTRUCTIONS

It is critical to the performance of the bearing that it be mounted properly. Failure to follow proper mounting practice may result in reduced bearing life.

For best results, clean the shaft and bore of the bearing. The shaft should be straight, free of burrs and nicks, and the correct size. Lubricate the shaft and bearing bore with grease or oil to facilitate assembly. Slip bearing into position. When light press fit is required, press against the end of the inner ring of bearing. Do not strike or exert pressure on the housings or seals. Bolt the unit to the support, using shims where necessary to align bearing so the inner ring doesn't rub on the housing bore. Use shims that cover across the entire housing base.

Determine the final shaft position and hand tighten set screws firmly onto shaft. If possible, rotate the shaft slowly under load. If there is any strain, or vibration, it could be due to incorrect alignment, a bent shaft or bent supports. Tighten set screws alternately in small increments to the torque value listed below. To ensure full locking of the inner race to the shaft, after 24 hours of operation the set screws should be retightened.

SHAFT DIAMETER	SHAFT TOLERANCES
1 3/16 – 1 1/2 35mm	Plus .0000" to minus .0005" Plus .0000" to minus .013mm
1 5/8 – 4 40mm – 100mm	Plus .0000" to minus .0010" Plus .0000" to minus .025mm
4 7/16 – 6 110mm – 140mm	Plus .0000" to minus .0015" Plus .0000" to minus .038mm
6 7/16 – 7 160mm – 180mm	Plus .0000" to minus .0020" Plus .0000" to minus .051mm

SHAFT SIZE		SET SCREW SIZE	TORQUE IN – LBS
IN	MM		
1 3/16 – 1 11/16	35 – 40	5/16 – 18	165
1 3/4 – 2 1/2	45 – 65	3/8 – 16	290
2 11/16 – 3 1/2	70 – 90	1/2 – 13	620
3 15/16 – 5	100 – 125	5/8 – 18	1325
5 7/16 – 7	130 – 180	3/4 – 10	2150

LUBRICATION INSTRUCTIONS

All Moline bearings are factory lubricated with number 2 consistency lithium base grease that is suitable for most applications. Relubricate with lithium base grease or a grease that is compatible with original lubricant and suitable for roller bearing service. It should be noted that when re-lubricating, adding a small amount of grease on a frequent basis is preferable to a large amount of grease infrequently. In unusual cases consult the factory or a reputable grease supplier.

Storage or Special Shutdown

If exposed to wet or dusty conditions or to corrosive vapors, extra protection is necessary: add grease until it shows at the seals; rotate the bearing to distribute grease; cover the bearing. After storage or idle period, add a little fresh grease before running.

High Speed Operation

In the higher speed ranges, too much grease will cause overheating. The amount of grease that the bearing will take for a particular high-speed application can only be determined by experience (see "Operating Temperature" below). If excess grease in the bearing causes overheating, it will be necessary to remove grease fitting (also drain plug when furnished) to permit excess grease to escape. The bearing has been greased at the factory and is ready to run. When establishing a re-lubrication schedule, note that a small amount of grease at frequent intervals is preferable to a large amount at infrequent intervals.

Operation in Presence of Dust, Water, or Corrosive Vapors

Under these conditions the bearing should contain as much grease as speed will permit, since a full bearing with consequent slight leakage is the best protection against entrance of foreign material. In higher speed ranges too much grease will cause overheating (see "High Speed Operation" above). In lower speed ranges, it is advisable to add extra grease to a new bearing before putting into operation. Bearings should be greased as often as necessary (daily if required) to maintain a slight leakage at the seals.

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TYPE E APPLICATION GUIDE

Normal Operation
The bearing has been greased at the factory and is ready to run. The following table is a general guide for re-lubrication. However, certain conditions may require a change of lubricating periods as dictated by experience. See "High Speed Operation" and "Operation in Presence of Dust, Water, or Corrosive Vapors" above.

Operating Temperature
Abnormal bearing temperature may indicate faulty lubrication. Normal temperature may range from "cool to warm to the touch" up to a point "too hot to touch for more than a few seconds," depending on bearing size and speed, and surrounding conditions. Unusually high temperature accompanied by excessive leakage of grease indicates too much grease. High temperature with no grease showing at the seals, particularly if the bearing seems noisy usually indicates too little grease. Normal temperature and a slight showing of grease at the seals indicate proper lubrication.

Kind of Grease
Many ordinary cup greases will disintegrate at speeds far below those at which Moline bearings will operate successfully if proper grease is used. Moline bearings have been lubricated at the factory with No. 2 consistency lithium base grease that is suitable for normal operating conditions. Re-lubricate with lithium base grease or a grease that is compatible with original lubricant and suitable for roller bearing service. In unusual or doubtful cases, the recommendation of a reputable grease manufacturer should be secured.

Special Operating Conditions
Refer acid, chemical, extreme or other special operating conditions to the Moline Bearing Company, Batavia, Illinois

THRUST LOAD RATINGS

Moline Type E bearings have the capacity to carry heavy radial, thrust, and combined radial/thrust loads. The maximum recommended load which can be applied is limited by various components in the system, such as the bearing, housing, shaft, shaft attachment, speed and life requirements as listed in this catalog.

Select a bearing from the Type E selection chart having a radial load rating at the operating speed equal to or greater than the calculated "Equivalent Radial Load" for a desired L10 life. This simple method is all that is required for the majority of applications and provides for occasional average shock loads. (Equivalent Radial Load = P). L10 Hours of Life is the life that may be expected from at least 90% of a given group of bearings operating under identical conditions.

For L10 Hours of Life other than those listed in the selection chart, multiply the Equivalent radial load by one of the following factors:

for 50,000 L10 Hours of Life use the factor of 1.16;
80,000 - 1.34. Then select a bearing from the bold face (30000) L10 ratings only in the selection chart having a rating equal to or greater than this value.

Lubrication Guide

Read preceding paragraphs before establishing lubrication schedule.

HOURS RUN PER DAY	SUGGESTED LUBRICATION PERIOD IN WEEKS							
	1 TO 250 RPM	251 TO 500 RPM	501 TO 750 RPM	751 TO 1000 RPM	1001 TO 1500 RPM	1501 TO 2000 RPM	2001 TO 2500 RPM	2501 TO 3000 RPM
8	12	12	10	7	5	4	3	2
16	12	7	5	4	2	2	2	1
24	12	5	3	2	1	1	1	1

TYPE E APPLICATION GUIDE CONTINUED

Heavy Service

For heavy shock loads, frequent shock loads or severe vibrations, add up to 50% (according to severity of conditions) to the Equivalent Radial Load to obtain a modified radial load.

Thrust load values shown in the table below are recommended as a guide for normal applications that will give adequate L10 life. Where substantial radial load is also present, it is advisable to calculate the L10 life to assure it meets the requirements. The effectiveness of the shaft attachment to carry thrust load depends on proper tightening of the set screws, shaft tolerance, and shaft deflections. Therefore, it is advisable to use auxiliary thrust carrying devices such as shaft shoulder, snap ring, or a thrust collar to locate the bearing under heavier thrust loads or where extreme reliability is desired.

RPM RANGE	20–200	201–2000	OVER 2000
Recommended Thrust Load	C90/4	C90/8	C90/12

The shaft tolerances recommended are adequate under normal radial, thrust, and combination radial/thrust load applications. The radial load is limited by the attachment to the shaft (see table on following page). Since the allowable load, especially at low speed, is very large, the shaft should be checked to assure adequate shaft strength.

The magnitude and direction of both the thrust and radial load must be taken into account when selecting a housing. When pillow blocks are utilized, heavy loads should be directed through the base. Where a load pulls the housing away from the mounting base, both the hold down bolts and housing must be of adequate strength. Auxiliary load carrying devices such as shear bars are advisable for side or end loading of pillow blocks and radial loads for flange units.

To determine the L10 hours of life for loads and RPM's not listed, use the following equation:

$$L_{10} = \left(\frac{C_{90}}{P}\right)^{10/3} \times \frac{1{,}500{,}000}{RPM}$$

Where:
L_{10} = Life, hours
C_{90} = Dynamic Capacity, lbs. (page 37)
P = Equivalent Radial Load, lbs.

When the load on a two row roller bearing is solely a radial load with no thrust (axial) load, the load is shared equally by both rows of rollers and the equivalent load is the same as the actual load. However, when a thrust (axial) load is applied, the loading on the two rows is shared unequally depending on the ratio of thrust to radial load. The use of the X (radial factor) and Y (thrust) factor from Table 1 convert the actual applied thrust and radial loads to equivalent radial load which has the same effect on the life of a bearing as a radial load of this magnitude.

$$P = XFR + YFA$$

Where:
P = Equivalent radial load, lbs.
FR = Radial load, lbs.—
(see page 37 for allowable slip fit maximum)
FA = Thrust (axial) load, lbs.
e = Thrust load to radial load factor (page 37)
X = Radial load factor (page 37)
Y = Thrust load factor (page 37)

To find X and Y, first calculate FA/FR and compare to e. Determine X and Y from Table 1. Light Thrust FA/FR less than or equal to e or heavy thrust FA/FR greater than e.

Substitute all known values into the equivalent radial load equation. The equivalent radial load (P) thus determined can be used in the L_{10} life formula or compared to the allowable equivalent radial load rating desired in the expanded rating table to select a bearing.

If the calculated value of P is less than FR then use P = FR.

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TYPE E APPLICATION GUIDE

Type E Thrust Factors and Seal Speeds

SHAFT SIZE	E	LIGHT THRUST IF A/FR≤E		HEAVY THRUST IF FA/FR≥E		DYNAMIC CAPACITY C90*		MAXIMUM RPM LABYRINTH SEAL	MAXIMUM RPM CONTACT SEAL	MAXIMUM SLIP FIT RADIAL LOAD FR**
		X	Y	X	Y	LBS.	NEWTONS			
1 3/16 - 1 1/4	.49	.87	1.77	.70	2.14	3010	16948	4490	3800	3100
1 3/8 - 1 7/16 35mm	.46	.87	1.89	.70	2.28	6100	27134	3820	3200	5000
1 1/2 - 1 11/16 40mm	.44	.87	1.96	.70	2.37	7860	34963	3320	2800	6400
1 3/4 - 2 45mm 50mm	.33	.87	2.64	.70	3.18	10300	45817	3050	2650	8400
2 3/16 55mm	.36	.87	2.38	.70	2.87	10900	48486	2730	2300	8900
2 1/4 - 2 1/2 60mm 65mm	.40	.87	2.17	.70	2.63	11600	51599	2420	2100	9500
2 11/16 - 3 70mm 75mm	.46	.87	1.87	.70	2.26	12300	54713	2060	1965	10000
3 3/16 - 3 1/2 80mm 85mm 90mm	.50	.87	1.71	.70	2.07	19600	87185	1640	1640	16000
3 15/16 - 4 100mm	.49	.87	1.77	.70	2.14	26900	119657	1530	1530	22000
4 7/16 - 4 1/2 110mm 115mm	.53	.87	1.63	.70	1.97	33000	146791	1360	1360	27000
4 15/16 - 5 125mm	.47	.87	1.83	.70	2.21	45500	202394	1200	1200	35000
5 7/16 - 6 130mm 135mm 140mm 150mm	.54	.87	1.76	.70	2.12	41412	184210	915	915	42400
6 7/16 - 7 160mm 170mm 180mm	.54	.87	1.61	.70	1.95	70470	313466	790	750	72000

* C90—Dynamic capacity based on a rated life of 90 million revolutions or 3,000 hours at 500 RPM.

** If load exceeds maximum allowable slip fit radial load, snug to light press fit of shaft is required.

TYPE E RADIAL LOAD RATINGS

SHAFT SIZES	MINIMUM HOURS LIFE*	RADIAL LOAD RATINGS AT VARIOUS REVOLUTIONS PER MINUTE									
		50	100	150	250	500	750	1000	1200	1360	1530
1 3/16 1 1/4	10000	5297	4303	3810	3269	2655	2351	2157	2042	1966	1898
	30000	3810	3095	2740	2351	1910	1691	1551	1468	1414	1365
	40000	3495	2839	2514	2157	1752	1551	1423	1347	1297	1252
	60000	3095	2514	2226	1910	1551	1373	1260	1193	1149	1109
	100000	2655	2157	1910	1638	1331	1178	1081	1023	986	951
1 3/8 1 7/16 35mm	10000	8481	6889	6100	5233	4251	3764	3453	3269	3148	3039
	30000	6100	4955	4387	3764	3057	2707	2483	2351	2264	2186
	40000	5596	4545	4024	3453	2804	2483	2278	2157	2077	2005
	60000	4955	4024	3564	3057	2483	2199	2017	1910	1839	1775
	100000	4251	3453	3057	2623	2130	1886	1730	1638	1578	1523
1 1/2 1 5/8 1 11/16 40mm	10000	10928	8877	7860	6743	5477	4850	4449	4212	4057	3916
	30000	7860	6384	5653	4850	3939	3488	3200	3029	2918	2816
	40000	7210	5856	5186	4449	3614	3200	2935	2779	2677	2584
	60000	6384	5186	4592	3939	3200	2833	2599	2461	2370	2288
	100000	5477	4449	3939	3380	2745	2431	2230	2111	2033	1963
1 3/4 1 7/8 1 15/16 2 45mm 50mm	10000	14321	11632	10300	8837	7178	6355	5830	5520	5316	5132
	30000	10300	8366	7408	6355	5162	4571	4193	3970	3824	3691
	40000	9448	7674	6795	5830	4735	4193	3846	3642	3507	3386
	60000	8366	6795	6017	5162	4193	3713	3406	3225	3106	2998
	100000	7178	5830	5162	4429	3597	3185	2922	2766	2664	2572
2 3/16 55mm	10000	15155	12310	10900	9351	7596	6726	6170	5841	5626	5431
	30000	10900	8854	7840	6726	5463	4837	4437	4201	4046	3906
	40000	9999	8121	7191	6170	5011	4437	4070	3854	3712	3583
	60000	8854	7191	6368	5463	4437	3929	3604	3412	3287	3172
	100000	7596	6170	5463	4687	3807	3371	3092	2928	2820	2722
2 1/4 2 7/16 2 1/2 60mm 65mm	10000	16129	13100	11600	9952	8083	7158	6566	6216	5987	5779
	30000	11600	9422	8343	7158	5814	5148	4722	4471	4306	4157
	40000	10641	8643	7653	6566	5333	4722	4332	4101	3950	3813
	60000	9422	7653	6777	5814	4722	4181	3836	3631	3498	3376
	100000	8083	6566	5814	4988	4051	3587	3291	3116	3001	2897
2 11/16 2 3/4 2 15/16 3 70mm 75mm	10000	17102	13891	12300	10552	8571	7590	6962	6591	6348	6128
	30000	12300	9991	8846	7590	6165	5459	5007	4741	4566	4407
	40000	11283	9165	8115	6962	5655	5007	4593	4349	4188	4043
	60000	9991	8115	7186	6165	5007	4434	4067	3851	3709	3580
	100000	8571	6962	6165	5289	4296	3804	3489	3304	3182	3071

Note: The RED load rating values in the table indicate radical loads that exceed the Maximum Allowable Slip Fit Radical Load. Operation at these conditions may require line-to-line or light press fit on the shaft.

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TYPE E RADIAL LOAD RATINGS

SHAFT SIZES	RADIAL LOAD RATINGS AT VARIOUS REVOLUTIONS PER MINUTE								
	1640	1750	2060	2420	2730	3050	3320	3820	4490
1 3/16 1 1/4	1859 1337 1227 1086 932	1823 1311 1203 1065 914	1736 1249 1145 1014 870	1654 1190 1091 966 829	1596 1148 1053 932 800	1543 1110 1018 902 774	1505 1082 993 879 754	1443 1038 952 843 723	1374 988 907 803 689
1 3/8 1 7/16 35mm	2976 2141 1964 1739 1492	2919 2099 1926 1705 1463	2780 1999 1834 1624 1393	2649 1905 1747 1547 1327	2555 1837 1685 1492 1280	2471 1777 1630 1444 1238	2409 1733 1589 1407 1207	2310 1661 1524 1349 1158	----- ----- ----- ----- -----
1 1/2 1 5/8 1 11/16 40mm	3835 2758 2530 2241 1922	3761 2705 2482 2197 1885	3582 2576 2363 2092 1795	3413 2455 2252 1994 1710	3292 2367 2172 1923 1650	3184 2290 2101 1860 1596	3104 2232 2048 1813 1556	----- ----- ----- ----- -----	----- ----- ----- ----- -----
1 3/4 1 7/8 1 15/16 2 45mm 50mm	5026 3615 3316 2936 2519	4929 3545 3252 2879 2470	4694 3376 3097 2742 2352	4472 3217 2951 2613 2241	4313 3102 2846 2520 2162	4172 3001 2753 2437 2091	----- ----- ----- ----- -----	----- ----- ----- ----- -----	----- ----- ----- ----- -----
2 3/16 55mm	5319 3825 3509 3107 2666	5216 3752 3441 3047 2614	4967 3572 3277 2902 2489	4733 3404 3122 2765 2372	4565 3283 3012 2667 2288	----- ----- ----- ----- -----	----- ----- ----- ----- -----	----- ----- ----- ----- -----	----- ----- ----- ----- -----
2 1/4 2 7/16 2 1/2 60mm 65mm	5660 4071 3734 3307 2837	5551 3992 3662 3243 2782	5286 3802 3487 3088 2649	5037 3622 3323 2942 2524	----- ----- ----- ----- -----	----- ----- ----- ----- -----	----- ----- ----- ----- -----	----- ----- ----- ----- -----	----- ----- ----- ----- -----
2 11/16 2 3/4 2 15/16 3 70mm 75mm	6002 4317 3960 3506 3008	5886 4233 3883 3439 2950	5605 4031 3698 3274 2809	----- ----- ----- ----- -----	----- ----- ----- ----- -----	----- ----- ----- ----- -----	----- ----- ----- ----- -----	----- ----- ----- ----- -----	----- ----- ----- ----- -----

Note: Because the allowable loads, especially at low speeds, are extremely high, be sure the shaft strength is adequate and pillow blocks are base loaded. When imposed load is horizontal, be sure hold-down bolts are adequate. If bearings are cap loaded, full details on load, speed and shaft size should be referred to Moline Bearing Company. Consult Moline for speeds and loads greater than listed.

*"Minimum Hours Life" is the life expected from at least 90% of a given group of bearings operating under identical conditions (proper installation, correct alignment and maintenance). Average life will be approximately five times the minimum life.

TYPE E RADIAL LOAD RATINGS CONTINUED

SHAFT SIZES	MINIMUM HOURS LIFE*	RADIAL LOAD RATINGS AT VARIOUS REVOLUTIONS PER MINUTE									
		50	100	150	200	500	750	1000	1200	1360	1530
3 3/16											
3 1/4	10000	27252	22135	19600	16815	13658	12094	11094	10503	10116	9765
3 7/16	30000	19600	15920	14097	12094	9823	8698	7979	7554	7276	7023
3 1/2	40000	17979	14604	12931	11094	9011	7979	7319	6930	6674	6443
80mm	60000	15920	12931	11450	9823	7979	7065	6481	6136	5910	5705
85mm	100000	13658	11094	9823	8428	6845	6061	5560	5264	5070	4894
90mm											
	10000	37401	30379	26900	23078	18745	16598	15226	14415	13884	13402
3 15/16	30000	26900	21850	19347	16598	13482	11938	10951	10368	9986	9639
4	40000	24676	20043	17747	15226	12367	10951	10045	9511	9160	8842
100mm	60000	21850	17747	15715	13482	10951	9697	8895	8421	8111	7829
	100000	18745	15226	13482	11566	9395	8319	7631	7225	6959	6717
4 7/16	10000	45883	37268	33000	28311	22996	20362	18678	17684	17033	-----
	30000	33000	26804	23734	20362	16539	14645	13434	12719	12250	-----
4 1/2	40000	30271	24588	21772	18678	15172	13434	12323	11667	11237	-----
110mm	60000	26804	21772	19278	16539	13434	11895	10912	10331	9950	-----
115mm	100000	22996	18678	16539	14189	11525	10205	9361	8863	8536	-----
	10000	63263	51385	45500	39035	31706	28075	25754	24383	-----	-----
4 15/16	30000	45500	36957	32725	28075	22804	20192	18523	17537	-----	-----
5	40000	41738	33902	30019	25754	20918	18523	16991	16087	-----	-----
125mm	60000	36957	30019	26581	22804	18523	16401	15045	14244	-----	-----
	100000	31706	25754	22804	19564	15891	14071	12907	12220	-----	-----
5 7/16											
5 15/16	10000	57579	46769	41412	35528	28858	25553	23440	-----	-----	-----
6	30000	41412	33637	29784	25553	20755	18378	16858	-----	-----	-----
130mm	40000	37988	30856	27322	23440	19039	16858	15464	-----	-----	-----
135mm	60000	33637	27322	24193	20755	16858	14928	13693	-----	-----	-----
140mm	100000	28858	23440	20755	17806	14463	12807	11748	-----	-----	-----
150mm											
6 7/16											
6 1/2	10000	97981	79585	70470	60457	49107	43482	-----	-----	-----	-----
6 15/16	30000	70470	57239	50684	43482	35319	31274	-----	-----	-----	-----
7	40000	64643	52507	46493	39887	32398	28688	-----	-----	-----	-----
160mm	60000	57239	46493	41168	35319	28688	25402	-----	-----	-----	-----
170mm	100000	49107	39887	35319	30300	24612	21793	-----	-----	-----	-----
180mm											

Note: The RED load rating values in the table indicate radical loads that exceed the Maximum Allowable Slip Fit Radical Load. Operation at these conditions may require line-to-line or light press fit on the shaft.

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TYPE E RADIAL LOAD RATINGS

SHAFT SIZES	RADIAL LOAD RATINGS AT VARIOUS REVOLUTIONS PER MINUTE								
	1640	1750	2060	2420	2730	3050	3320	3820	4490
3 3/16									
3 1/4	9564	-----	-----	-----	-----	-----	-----	-----	-----
3 7/16	6879	-----	-----	-----	-----	-----	-----	-----	-----
3 1/2	6310	-----	-----	-----	-----	-----	-----	-----	-----
80mm	5587	-----	-----	-----	-----	-----	-----	-----	-----
85mm	4793	-----	-----	-----	-----	-----	-----	-----	-----
90mm									
	-----	-----	-----	-----	-----	-----	-----	-----	-----
3 15/16	-----	-----	-----	-----	-----	-----	-----	-----	-----
4	-----	-----	-----	-----	-----	-----	-----	-----	-----
100mm	-----	-----	-----	-----	-----	-----	-----	-----	-----
	-----	-----	-----	-----	-----	-----	-----	-----	-----
	-----	-----	-----	-----	-----	-----	-----	-----	-----
4 7/16	-----	-----	-----	-----	-----	-----	-----	-----	-----
4 1/2	-----	-----	-----	-----	-----	-----	-----	-----	-----
110mm	-----	-----	-----	-----	-----	-----	-----	-----	-----
115mm	-----	-----	-----	-----	-----	-----	-----	-----	-----
	-----	-----	-----	-----	-----	-----	-----	-----	-----
	-----	-----	-----	-----	-----	-----	-----	-----	-----
4 15/16	-----	-----	-----	-----	-----	-----	-----	-----	-----
5	-----	-----	-----	-----	-----	-----	-----	-----	-----
125mm	-----	-----	-----	-----	-----	-----	-----	-----	-----
	-----	-----	-----	-----	-----	-----	-----	-----	-----
5 7/16									
5 15/16	-----	-----	-----	-----	-----	-----	-----	-----	-----
6	-----	-----	-----	-----	-----	-----	-----	-----	-----
130mm	-----	-----	-----	-----	-----	-----	-----	-----	-----
135mm	-----	-----	-----	-----	-----	-----	-----	-----	-----
140mm	-----	-----	-----	-----	-----	-----	-----	-----	-----
150mm									
6 7/16									
6 1/2	-----	-----	-----	-----	-----	-----	-----	-----	-----
6 15/16	-----	-----	-----	-----	-----	-----	-----	-----	-----
7	-----	-----	-----	-----	-----	-----	-----	-----	-----
160mm	-----	-----	-----	-----	-----	-----	-----	-----	-----
170mm	-----	-----	-----	-----	-----	-----	-----	-----	-----
180mm									

Note: Because the allowable loads, especially at low speeds, are extremely high, be sure the shaft strength is adequate and pillow blocks are base loaded. When imposed load is horizontal, be sure hold-down bolts are adequate. If bearings are cap loaded, full details on load, speed and shaft size should be referred to Moline Bearing Company. Consult Moline for speeds and loads greater than listed.

*"Minimum Hours Life" is the life expected from at least 90% of a given group of bearings operating under identical conditions (proper installation, correct alignment and maintenance). Average life will be approximately five times the minimum life.

TYPE E SERIES INTERCHANGE

Type E Series Interchange

MOLINE*	BROWNING*	ROYERSFORD*	SEALMASTER*	TIMKEN*	DODGE
2-Bolt Pillow Block 19321 (Pages 20–21)	PBE920** True Type E	20-02-0 True Type E	EPB-2** True Type E	E-P2B-TRB True Type E	P2BE
4-Bolt Pillow Block 19341 (Pages 22–25)	PBE920F** True Type E	20-04-0 True Type E	EPB-4** True Type E	E-P4B-TRB True Type E	P4BE
4-Bolt Flange 19311 (Pages 26–29)	FBE920 True Type E	20-05-0 True Type E	EFB True Type E	E-4BF-TRB True Type E	F4BE
Piloted Flange 19331 (Pages 30–31)	-----	20-06-0 True Type E	-----	E-PF-TRB True Type E	FCE
Wide Slot Take-Up 19351 (Pages 32–33)	TUE920 True Type E	20-07-0 True Type E	ETU True Type E	E-TU-TRB True Type E	WSTUE

*True Type E = Timken Cup/Cone Assembly (extended sleeve) and double collar.

**Denotes pillow block center to center dimension slightly different.

Type E/Spherical E Interchange

MOLINE	SKF	REX	LINK-BELT	DODGE	SEALMASTER
2-Bolt Pillow Block (Pages 96–97) 29121 (Expansion) 29221 (Non-Expansion)	 SYE SYE-H	 ZEP	 EPE-B22400H EP-B22400H	 EP2B-S2-000RE EP2B-S2-000R	 USRBE5000E USRBE5000
4-Bolt Flange (Pages 98–99) 29111 (Expansion) 29211 (Non-Expansion)	 ----- 	 ZEF	 EFR-B22400H 	 EF4B-S2-000RE EF4B-S2-000R	 USFBE5000E USFBE5000
Piloted Flange (Pages 100–101) 29131 (Expansion) 29231 (Non-Expansion)	 ----- 	 ----- 	 FCB22400H	 ----- 	 USFCE5000E USFCE5000

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TYPE E/INTERCHANGE GUIDE CONTINUED

Type E/Spherical E Interchange

MOLINE	SKF	SEALMASTER	REX	DODGE
2-Bolt Pillow Block (Pages 114–115) 29621 (Expansion) 29721 (Non-Expansion)	 SYE-N SYE-NH	 USRBE5000A USRBE5000	 ZEPS6000 ZEP6000	 EP2B-IP-RE EP2B-IP-R
4-Bolt Flange (Pages 116–117) 29611 (Expansion) 29711 (Non-Expansion)	 ----- 	 USFBE5000A USFBE5000	 ZEF6000	 EF4B-IP-RE EF4B-IP-R
Piloted Flange (Pages 118–119) 29631 (Expansion) 29731 (Non-Expansion)	 ----- 	 USFCE5000A USFCE5000	 ----- 	 EFCIP - 0751 *or* FCIP - 0698

Note: This is a general dimensional interchange.
For exact dimensions and comparison information on inserts and seals, please contact the factory.
For Nomenclature see pages 226–227


MOLINE

M2000 SPHERICAL ROLLER BEARINGS

Moline M2000 Mounted Spherical Roller Bearings are suitable for a wide variety of applications. They work exceptionally well in situations where a high capacity align-able bearing is required. They are available in a wide range of shaft sizes and a variety of popular mounts.

Moline M2000 Pillow Blocks, 4-Bolt Flange Bearings, Piloted Flange Bearings and Wide Slot Take-up Bearings are ready to slip onto the shaft when received because they are completely assembled, adjusted, sealed and pre-lubricated at the factory. The self-aligning feature provides for speedy mounting with a minimum of field adjustment required. The housings are ruggedly designed and made in the USA of Class 30 cast iron. There is no danger of bearing failure resulting from dirt or dust entering the bearing before or during installation. Such contamination is very difficult to prevent in bearings that are not shaft ready. No time or expense is required for cleaning housings or initial lubrication. Therefore, overall cost is less in many instances. Operating expense over time is also generally less.

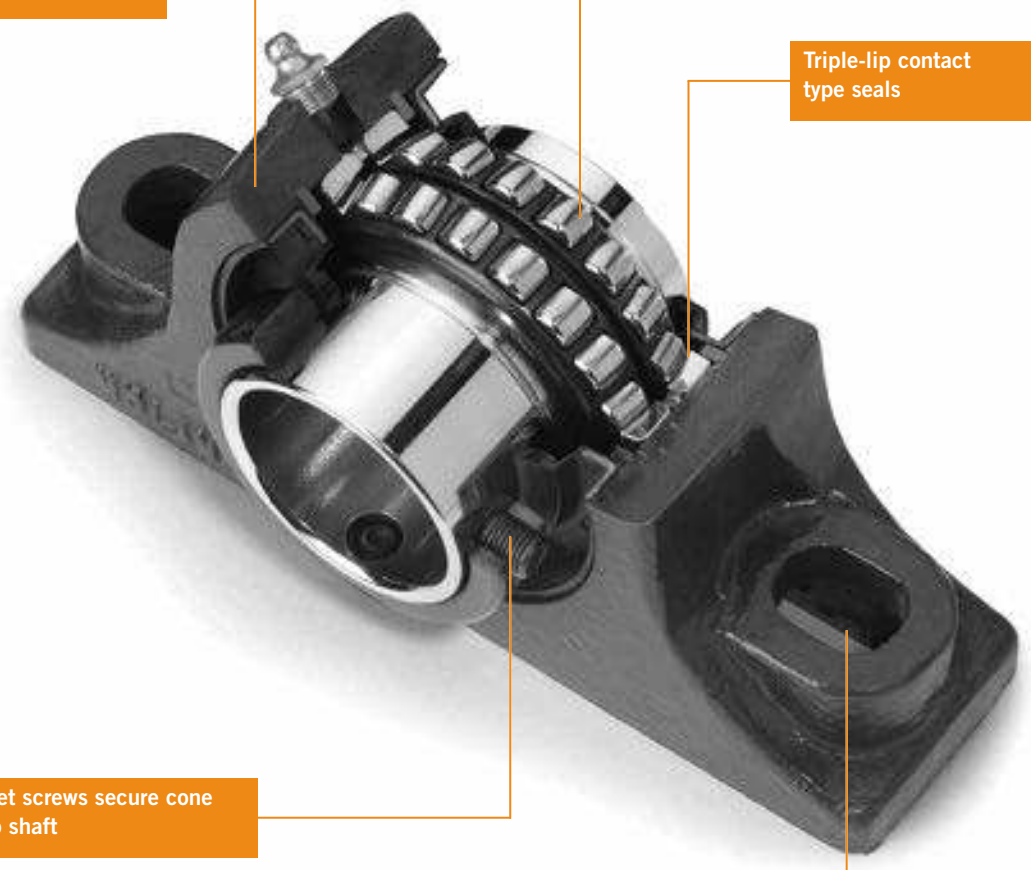
Our M2000 bearings are interchangeable with other collar mounted spherical roller bearings in single piece housings, and are equipped with bearings that have excellent load characteristics.

Standard on all Moline M2000 bearings is a specially designed triple-lip contact seal that prohibits entry of contaminants, retains lubrication and is self-purging. In addition, these bearings are also available with a spring loaded Garter seal for extreme conditions and a balanced Labyrinth seal for high-speed applications.

Moline M2000 bearings are available in expansion (red metal tag) and non-expansion (yellow metal tag) styles. The expansion units have the capacity to move up to .100". The bearings are available in shaft sizes from 1 3/16" up to 5" and 40 to 130mm.

All Moline housings come with a standard paint finish. Custom Colors, Powder Coating, Stainless Steel Powder coating, Nickel plating, Epoxy and Teflon coatings will be quoted on request.

Moline M2000 mounted bearings are carried in Moline warehouses and distributor stocks throughout the United States and in Canada.



MOLINE M2000 SPHERICAL ROLLER BEARINGS

SKF INSERT INSIDE

TIMKEN INSERT INSIDE

FEATURES OF MOLINE M2000 SPHERICAL ROLLER BEARINGS

WITH SKF® OR TIMKEN™ ROLLER BEARINGS

- Available in shaft sizes from 1 3/16 to 5"; and 40 to 130mm
- +/- 1½° misalignment capacity
- Available in Expansion (red tag) and Non-Expansion (yellow tag) styles
- Expansion units have .100" capacity
- Single piece outer race
- 3 lube holes and groove in outer race
- Precision ground contours
- Will accommodate moderate thrust loads
- Permits angular misalignment without loss of capacity
- Long rollers allow for greater contact
- Standard grease operating temperature is up to 250°, high temperature grease is available up to 350°, please call the factory for more information
- Housings available in the standard painted finish. Powder coating in RAL or custom colors, Stainless Steel Powder coating, Nickel plating, Epoxy and Teflon coatings available on request
- Custom machining and design is available upon request, please call the factory for more information
- Rotating center guide ring for least possible friction
- Housings are made in the USA of Class 30 cast iron
- Piloted Flange housings are machined with back-out holes
- Comes with a Triple Lip Contact Seal standard, also available with Labyrinth Seals for high speed applications and with Spring Loaded Garter Seals for dirty and wet applications
- Made in the United States

Standard "Triple Lip" Seal

Spring Loaded Garter Seal for use in extreme wet and dirt conditions

Balanced Metal Labyrinth Seal for high speed applications

M2000 2-BOLT PILLOW BLOCK

SHAFT SIZE	MOLINE PART #		DIMENSIONS (INCHES)													WEIGHT LBS.
	EXP	NON-EXP	A	B	C	MIN D	CENTER TO CENTER D	MAX D	F	G	H	J	L	M	N	
1 3/16 1 1/4 1 7/16 1 1/2	19121103 19121104 19121107 19121108	19221103 19221104 19221107 19221108	2 7/8	6 7/8	2 3/16	4 11/16	5	5 5/16	1/2	15/16	1 3/16	3 7/8	2 1/2	1 7/8	2 3/4	6.5 6.5 6.9 6.9
1 11/16 1 3/4 40mm 45mm	19121111 19121112 19121040 19121045	19221111 19221112 19221040 19221045	3	7 3/8	2 3/16	5 3/16	5 1/2	5 13/16	1/2	15/16	1 5/16	4 1/4	2 5/8	2 1/8	2 7/8	8.1
1 15/16 2 50mm	19121115 19121200 19121050	19221115 19221200 19221050	3	8 3/8	2 3/16	5 15/16	6 1/4	6 9/16	5/8	1	1 3/8	4 9/16	2 7/8	2 1/4	2 7/8	9.1
2 3/16 2 1/4 55mm	19121203 19121204 19121055	19221203 19221204 19221055	3 1/4	8 7/8	2 1/2	6 7/16	6 3/4	7 1/16	5/8	1	1 5/8	5	3 1/4	2 1/2	3 1/8	11.8
2 7/16 2 1/2 60mm 65mm	19121207 19121208 19121060 19121065	19221207 19221208 19221060 19221065	3 1/2	9 1/4	2 3/4	6 13/16	7 1/8	7 7/16	5/8	1	1 3/4	5 11/16	4	2 3/4	3 3/8	16.2
2 11/16 2 3/4 2 15/16 3 70mm 75mm	19121211 19121212 19121215 19121300 19121070 19121075	19221211 19221212 19221215 19221300 19221070 19221075	3 13/16	10 1/2	2 13/16	7 13/16	8 1/8	8 7/16	3/4	1 1/8	2 1/4	6 7/16	4 3/8	3 1/4	3 5/8	22.1
3 3/16 3 7/16 3 1/2 80mm 85mm 90mm	19121303 19121307 19121308 19121080 19121085 19121090	19221303 19221307 19221308 19221080 19221085 19221090	4 1/4	13	3 1/4	9 1/2	10	10 1/2	7/8	1 7/16	2 1/4	7 1/2	5 1/8	3 3/4	4 1/32	31.6
3 11/16 3 15/16 4 100mm	19121311 19121315 19121400 19121100	19221311 19221315 19221400 19221100	4 3/4	14 1/2	3 9/16	10	10 7/8	11 3/4	1	1 15/16	2 1/2	8 3/8	6	4 1/8	4 19/32	45

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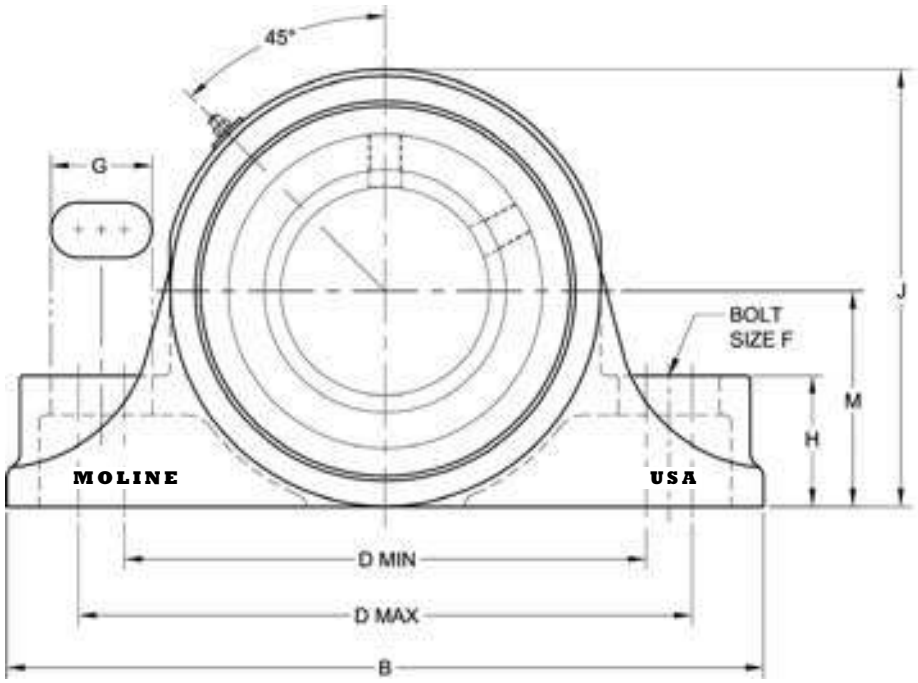
M2000 2-BOLT PILLOW BLOCK



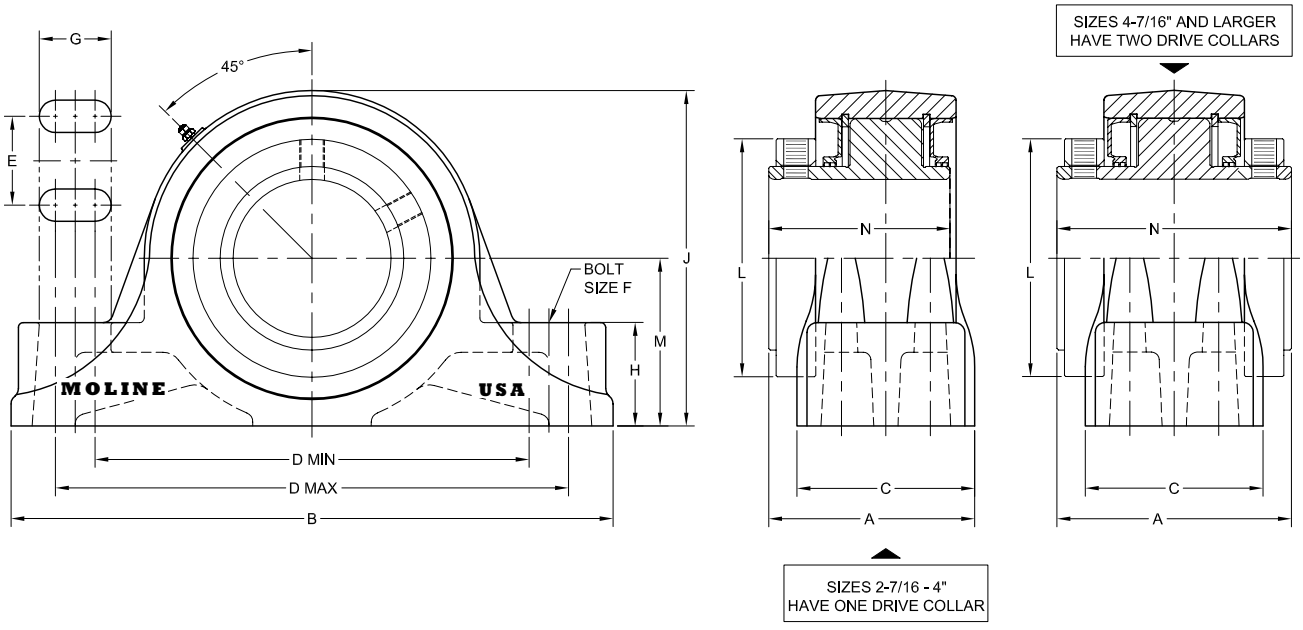
For personal service and special requests, please call us at 800.242.4633.

CAD drawings available upon request at no additional charge.

For nomenclature see pages 226 and 227.

M2000 4-BOLT PILLOW BLOCK

SHAFT SIZE	MOLINE PART #		DIMENSIONS (INCHES)					
	EXP	NON-EXP	A	B	C	MIN D	CENTER TO CENTER D	MAX D
2 7/16 2 1/2 60mm 65mm	19141207 19141208 19141060 19141065	19241207 19241208 19241060 19241065	3 3/4	9 1/4	3 1/4	6 7/8	7 1/4	7 5/8
2 11/16 2 3/4 2 15/16 3 70mm 75mm	19141211 19141212 19141215 19141300 19141070 19141075	19241211 19241212 19241215 19241300 19241070 19241075	4 1/4	10 1/2	3 3/4	7 7/8	8 1/8	8 3/8
3 3/16 3 7/16 3 1/2 80mm 85mm 90mm	19141303 19141307 19141308 19141080 19141085 19141090	19241303 19241307 19241308 19241080 19241085 19241090	4 9/16	13	3 7/8	9 1/4	10	10 3/4



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SHAFT SIZE	DIMENSIONS (INCHES)								WEIGHT LBS.
	E	F	G	H	J	L	M	N	
2 7/16 2 1/2 60mm 65mm	1 3/4	1/2	15/16	1 3/4	5 11/16	4	2 3/4	3 3/8	17
2 11/16 2 3/4 2 15/16 3 70mm 75mm	1 7/8	5/8	15/16	2 1/4	6 7/16	4 3/8	3 1/4	3 5/8	26
3 3/16 3 7/16 3 1/2 80mm 85mm 90mm	2	3/4	1 9/16	2 1/4	7 1/2	5 1/8	3 3/4	4 1/32	38

Note: Sizes 2 7/16"– 4" have one drive collar. For sizes 4 7/16" and larger have 2 drive collars.

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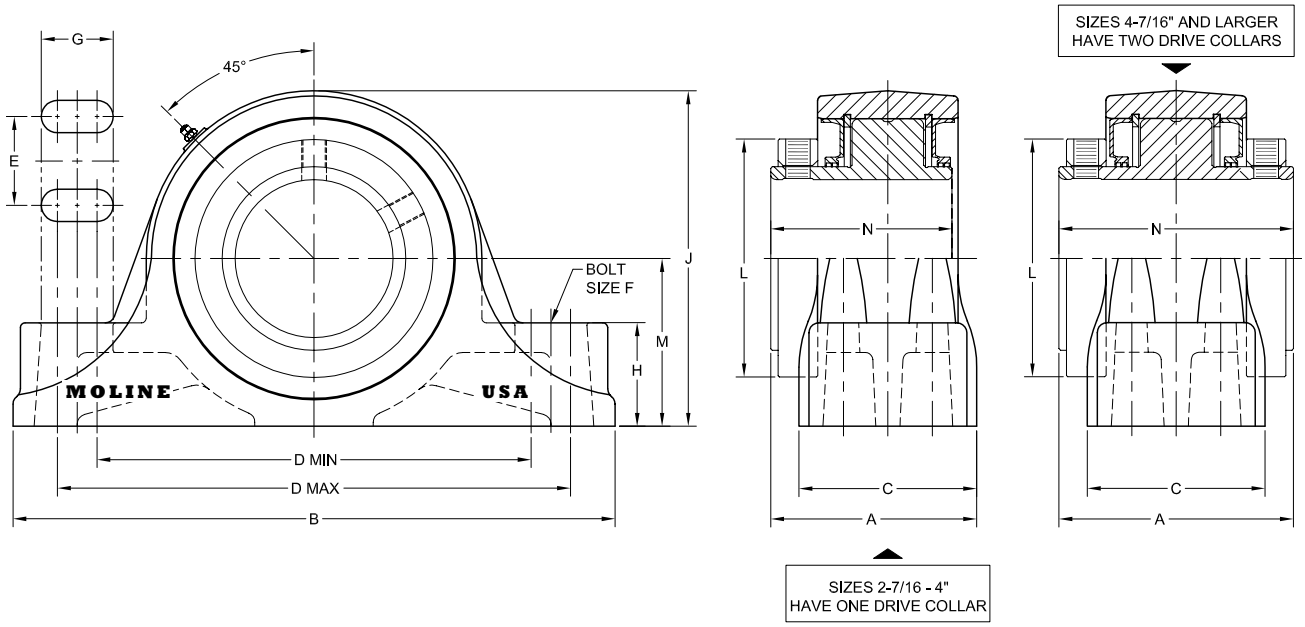
CAD drawings available upon request at no additional charge.

For nomenclature see pages 226 and 227.

M2000 4-BOLT PILLOW BLOCK CONTINUED

SHAFT SIZE	MOLINE PART #		DIMENSIONS (INCHES)					
	EXP	NON-EXP	A	B	C	MIN D	CENTER TO CENTER D	MAX D
3 11/16 3 15/16 4 100mm	19141311 19141315 19141400 19141100	19241311 19241315 19241400 19241100	5 1/4	15 1/4	4 1/2	11	12	13
4 7/16 4 1/2 110mm 115mm	19141407 19141408 19141110 19141115	19241407 19241408 19241110 19241115	6 1/4	16 1/2	4 3/4	13	13 1/2	14
4 15/16 5 125mm 130mm	19141415 19141500 19141125 19141130	19241415 19241500 19241125 19241130	7 7/16	18 5/8	5 3/8	15	15 1/2	16



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M2000 4-BOLT PILLOW BLOCK

SHAFT SIZE	DIMENSIONS (INCHES)								WEIGHT LBS.
	E	F	G	H	J	L	M	N	
3 11/16 3 15/16 4 100mm	2 1/4	3/4	1 13/16	2 5/8	8 1/2	6	4 1/4	4 19/32	50
4 7/16 4 1/2 110mm 115mm	2 1/2	3/4	1 5/16	2 3/4	9 1/2	6 1/8	4 3/4	6 1/4	72
4 15/16 5 125mm 130mm	2 3/4	7/8	1 1/2	3	11 1/8	6 7/8	5 1/2	7 7/16	107

Note: Sizes 2 7/16"– 4" have one drive collar. For sizes 4 7/16" and larger have 2 drive collars.

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For nomenclature see pages 226 and 227.

M2000 4-BOLT FLANGE

SHAFT SIZE	MOLINE PART #		DIMENSIONS (INCHES)										WEIGHT LBS.
	EXP	NON-EXP	A	B	C	D	E	F	H	J	L	N	
1 3/16 1 1/4 1 7/16 1 1/2	19111103 19111104 19111107 19111108	19211103 19211104 19211107 19211108	2 15/16	4 5/8	2 1/4	3 17/32	5	1/2	3/4	3 7/8	2 1/2	2 3/4	7
1 11/16 1 3/4 40mm 45mm	19111111 19111112 19111040 19111045	19211111 19211112 19211040 19211045	3 1/16	5	2 1/4	3 57/64	5 1/2	1/2	3/4	4 1/4	2 5/8	2 7/8	10
1 15/16 2 50mm	19111115 19111200 19111050	19211115 19211200 19211050	3 1/32	5 1/4	2 1/4	4 1/16	5 3/4	1/2	3/4	4 1/2	2 7/8	2 7/8	10.5
2 3/16 2 1/4 55mm	19111203 19111204 19111055	19211203 19211204 19211055	3 9/32	5 7/8	2 7/16	4 1/2	6 3/8	5/8	3/4	5	3 1/4	3 1/8	12.5
2 7/16 2 1/2 60mm 65mm	19111207 19111208 19111060 19111065	19211207 19211208 19211060 19211065	3 9/16	6 1/8	2 3/4	4 25/32	6 3/4	5/8	1	5 3/4	4	3 3/8	16.5
2 11/16 2 3/4 2 15/16 3 70mm 75mm	19111211 19111212 19111215 19111300 19111070 19111075	19211211 19211212 19211215 19211300 19211070 19211075	3 15/16	7 1/4	2 7/8	5 9/16	7 7/8	3/4	1	6 5/8	4 3/8	3 5/8	25
3 3/16 3 7/16 3 1/2 80mm 85mm 90mm	19111303 19111307 19111308 19111080 19111085 19111090	19211303 19211307 19211308 19211080 19211085 19211090	4 11/32	8 3/8	3 1/4	6 23/32	9 1/2	3/4	1 1/8	7 5/8	5 1/8	4 1/32	35
3 11/16 3 15/16 4 100mm	19111311 19111315 19111400 19111100	19211311 19211315 19211400 19211100	4 7/8	9 1/2	3 9/16	7 19/32	10 3/4	7/8	1 3/16	8 3/8	6	4 19/32	48

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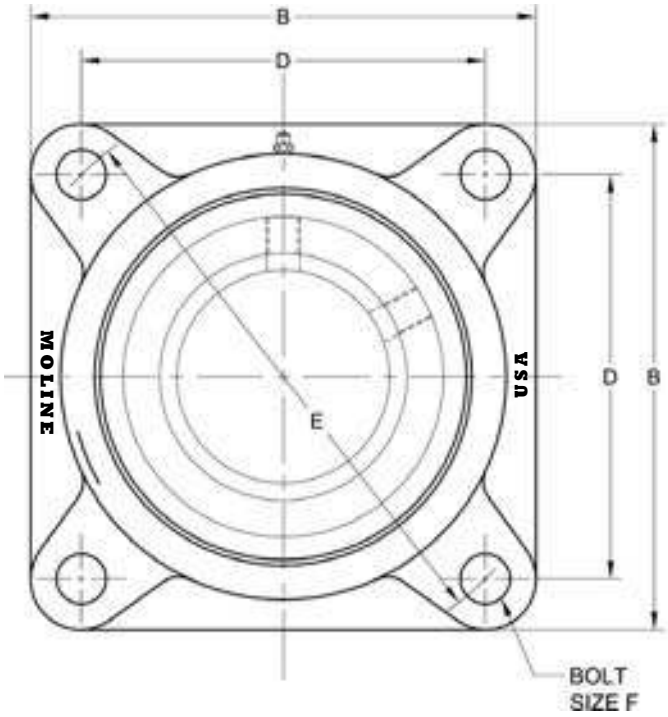
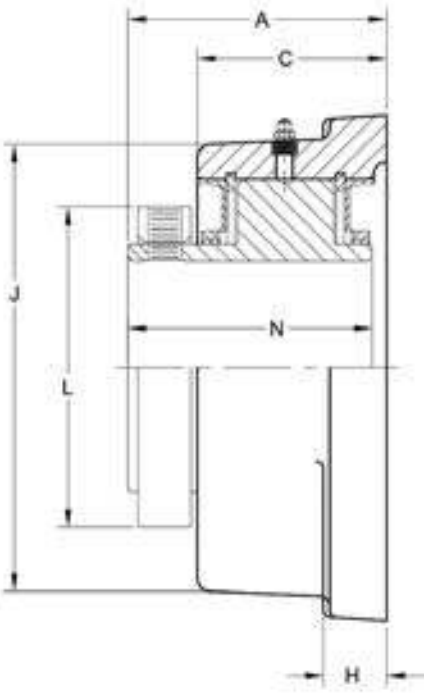
M2000 4-BOLT FLANGE





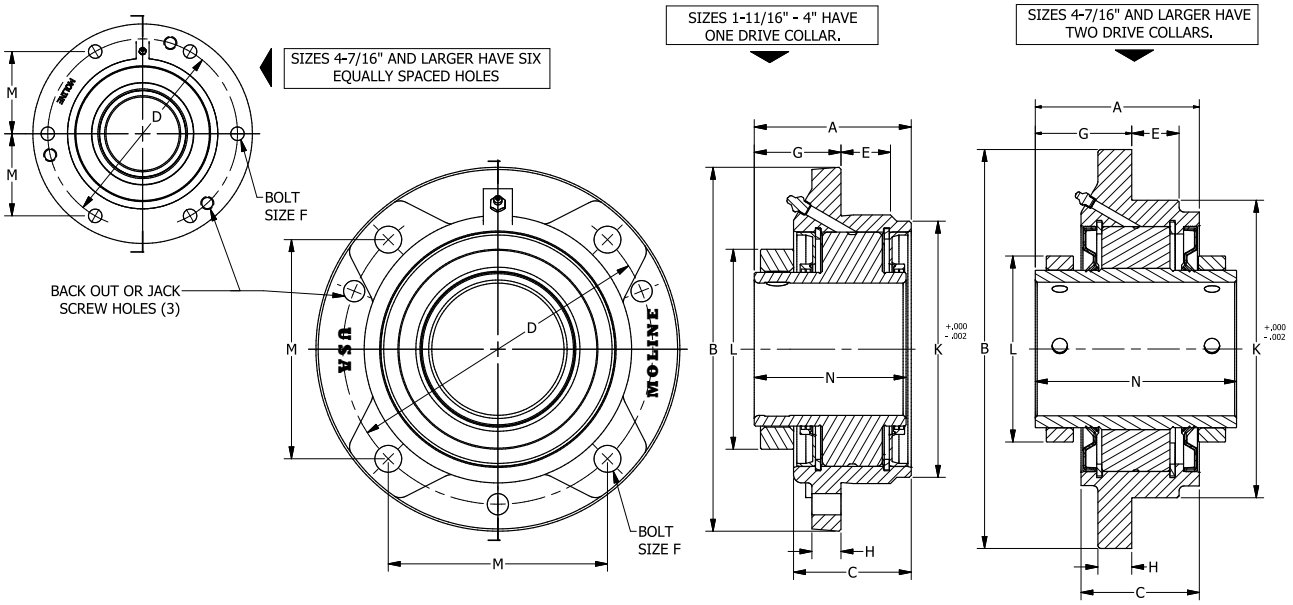
For personal service and special requests, please call us at 800.242.4633.

CAD drawings available upon request at no additional charge.

For nomenclature see pages 226 and 227.

M2000 PILOTED FLANGE CARTRIDGE

SHAFT SIZE	MOLINE PART #		DIMENSIONS (INCHES)												WEIGHT LBS.
	EXP	NON-EXP	A	B	C	D	E	F	G	H	K	L	M	N	
1 3/16 1 1/4 1 7/16 1 1/2	19131103 19131104 19131107 19131108	19231103 19231104 19231107 19231108	2 13/16	5 1/4	2 1/16	4 3/8	1 9/32	3/8	1 9/16	1/2	3 5/8	2 1/2	3 3/32	2 3/4	7
1 11/16 1 3/4 40mm 45mm	19131111 19131112 19131040 19131045	19231111 19231112 19231040 19231045	3	6 1/8	2 3/16	5 1/8	7/8	7/16	1 9/16	1/2	4 1/4	2 5/8	3 5/8	2 7/8	8.5
1 15/16 2 50mm	19131115 19131200 19131050	19231115 19231200 19231050	3	6 3/8	2 3/16	5 3/8	7/8	7/16	1 1/2	1/2	4 1/2	2 7/8	3 51/64	2 7/8	10.5
2 3/16 2 1/4 55mm	19131203 19131204 19131055	19231203 19231204 19231055	3 1/4	7 1/8	2 7/16	6	1	1/2	1 25/32	1/2	5	3 1/4	4 1/4	3 1/8	14.5
2 7/16 2 1/2 60mm 65mm	19131207 19131208 19131060 19131065	19231207 19231208 19231060 19231065	3 1/2	7 5/8	2 11/16	6 1/2	1	1/2	1 7/8	5/8	5 1/2	4	4 19/32	3 3/8	16



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M2000 PILOTED FLANGE CARTRIDGE

SHAFT SIZE	MOLINE PART #		DIMENSIONS (INCHES)												WEIGHT LBS.
	EXP	NON-EXP	A	B	C	D	E	F	G	H	K	L	M	N	
2 11/16 2 3/4 2 15/16 3 70mm 75mm	19131211 19131212 19131215 19131300 19131070 19131075	19231211 19231212 19231215 19231300 19231070 19231075	3 13/16	8 3/4	2 13/16	7 1/2	1 1/4	5/8	2	3/4	6 3/8	4 3/8	5 19/64	3 5/8	22
3 3/16 3 7/16 3 1/2 80mm 85mm 90mm	19131303 19131307 19131308 19131080 19131085 19131090	19231303 19231307 19231308 19231080 19231085 19231090	4 1/4	10 1/4	3 1/4	8 5/8	1 1/4	3/4	2 1/2	15/16	7 3/8	5 1/8	6 3/32	4 1/32	33
3 11/16 3 15/16 4 100mm	19131311 19131315 19131400 19131100	19231311 19231315 19231400 19231100	4 3/4	10 7/8	3 9/16	9 3/8	1 1/2	3/4	2 5/8	1 1/16	8 1/8	6	6 5/8	4 19/32	45
4 7/16 4 1/2 110mm 115mm	19131407 19131408 19131110 19131115M	19231407 19231408 19231110 19231115M	5 5/32	13 1/2	4	11 3/4	1 1/2	3/4	3 3/16	1	10 1/4	6 1/8	5 3/32	6 1/8	72
4 15/16 5 125mm 130mm	19131415 19131500 19131125 19131130	19231415 19231500 19231125 19231130	6 1/16	14 3/4	5 3/4	12 3/4	1 3/4	7/8	3 9/16	1 1/4	11	6 7/8	5 17/32	7 7/16	99

Note: Sizes 2 7/16"– 4" have one drive collar. For sizes 4 7/16" and larger have 2 drive collars.

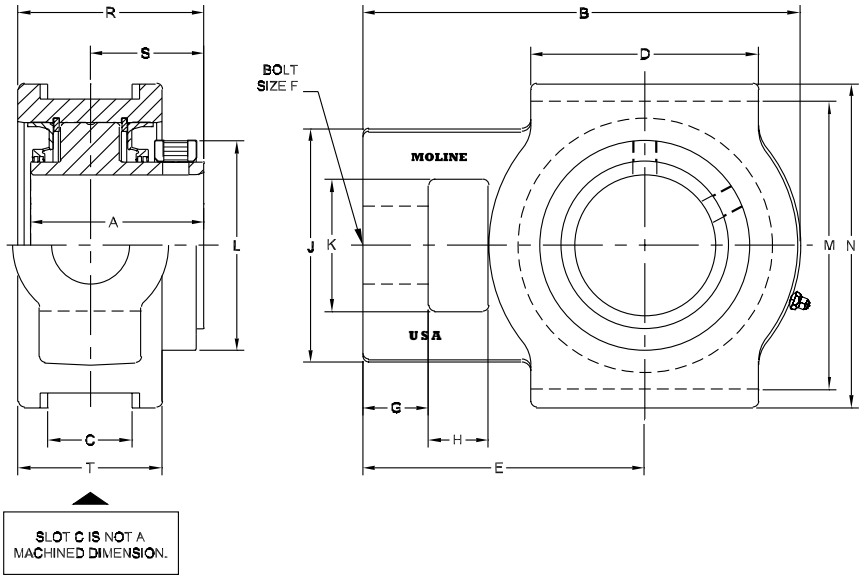
For personal service and special requests, please call us at 800.242.4633.

CAD drawings available upon request at no additional charge.

For nomenclature see pages 226 and 227.

M2000 WIDE SLOT TAKE-UP

SHAFT SIZE	MOLINE PART #		DIMENSIONS (INCHES)							
	EXP.	NON-EXP	A	B	C	D	E	F	G	H
1 15/16 2 50mm	19151115 19151200 19151050	19251115 19251200 19251050	2 7/8	6 5/16	1 1/16	3 3/4	3 15/16	1	15/16	3/4
2 3/16 2 1/4 55mm	19151203 19151204 19151055	19251203 19251204 19251055	3 1/8	7 1/8	1 3/16	3 3/4	4 5/8	1 1/8	1	1
2 7/16 2 1/2 60mm 65mm	19151207 19151208 19151060 19151065	19251207 19251208 19251060 19251065	3 3/8	7 13/16	1 1/32	4 1/2	5 1/16	1 1/2	1 1/16	1 1/4
2 11/16 2 3/4 2 15/16 3 70mm 75mm	19151211 19151212 19151215 19151300 19151070 19151075	19251211 19251212 19251215 19251300 19251070 19251075	3 5/8	9 1/8	1 25/32	4 3/4	5 7/8	1 1/2	1 3/8	1 1/4
3 3/16 3 7/16 3 1/2 80mm 85mm 90mm	19151303 19151307 19151308 19151080 19151085 19151090	19251303 19251307 19251308 19251080 19251085 19251090	4 1/32	10 1/4	1 25/32	6	6 3/8	1 3/4	1 1/16	1 5/8



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M2000 WIDE SLOT TAKE-UP

SHAFT SIZE	DIMENSIONS (INCHES)								WEIGHT LBS.
	J	K	L	M	N	R	S	T	
1 15/16 2 50mm	3 5/16	1 15/16	2 7/8	4	4 3/4	3 1/16	1 7/8	2 7/16	10
2 3/16 2 1/4 55mm	3 7/8	2 1/4	3 1/4	4 1/2	5 1/4	3 1/4	2	2 9/16	12
2 7/16 2 1/2 60mm 65mm	4 1/4	2 1/2	4	5 1/8	6	3 1/2	2 1/8	2 3/4	16
2 11/16 2 3/4 2 15/16 3 70mm 75mm	4 7/8	2 3/4	4 3/8	5 15/16	6 3/4	3 7/8	2 3/8	3	22
3 3/16 3 7/16 3 1/2 80mm 85mm 90mm	4 7/8	2 7/8	5 1/8	6 13/16	7 13/16	4 1/2	2 19/32	3 13/16	38

For personal service and special requests, please call us at 800.242.4633.

CAD drawings available upon request at no additional charge.

For nomenclature see pages 226 and 227.

MOUNTING INSTRUCTIONS

It is critical to the performance of the bearing that it be mounted properly. Failure to follow proper mounting practice may result in reduced bearing life.

SHAFT DIAMETER	SHAFT TOLERANCES
1 3/16 – 1 1/2	Plus .0000˝ to minus .0005"
1 5/8 – 4 40mm - 100mm	Plus .0000˝ to minus .0010"
4 7/16 – 5 110mm - 130mm	Plus .0000˝ to minus .0015"

SHAFT SIZE		SET SCREW SIZE	TORQUE IN – LBS
IN	MM		
1 3/16 – 2 1/4 2 7/16 – 3 1/2 3 15/16 – 5	40 – 55 60 – 90 100 – 130	3/8 – 24 1/2 – 20 5/8 – 18	290 620 1325

INSTALLATION INSTRUCTIONS

Non-Expansion Bearing

1. Clean shaft and bore of bearing. The shaft should be straight, free of burrs and nicks, and the correct size.
2. Lubricate shaft and bearing bore with grease or oil to facilitate assembly. Slip bearing into position. When light press fit is required, press against the end of the inner ring of bearing. Do not strike or exert pressure on the housing or seals.
3. Bolt bearing to support, using shims where necessary to align bearing so inner ring does not rub on housing bore. Use full shims which cover across the entire housing base.
4. Determine final shaft position and hand tighten screws in the locking collar(s) of non-expansion bearing firmly onto the shaft, while the other bearings remain free. If possible, rotate the shaft slowly under load to properly center the rolling elements with respect to the raceways. Tighten set screws alternately in small increments to the torque value specified in Table above. To ensure full locking of the inner race to the shaft, after 24 hours of operation the setscrews should be retightened to the original torque value.
5. Check rotation. If there is any strain, irregular rotational torque or vibration, it could be due to incorrect alignment, bent shaft or bent supports. Installation should be rechecked and correction made where necessary.

M2000 Expansion Bearing Applications

In addition to the requirements listed above, the following additional instructions should be followed. Position the expansion bearing in the housing. For normal expansion conditions, the bearing insert should be positioned in the center of the housing. To center the insert in the housing, move the bearing to the extreme position (-.100" on all expansion units) and mark the shaft. Then move the bearing insert in the opposite direction one-half the total expansion to center the bearing in the housing. If the maximum expansion is required, move the bearing insert to the extreme position in the housing to permit full movement in the direction of the expansion. After the expansion bearing has been positioned in the housing, tighten the set screws securely to the shaft.

Expansion Bearing

1. Same as Non-Expansion Bearing.
2. Same as Non-Expansion Bearing.
3. Same as Non-Expansion Bearing.
4. Position expansion bearing in the housing. For normal expansion conditions, the bearing insert should be positioned in the center of the housing. To center bearing insert in housing, move bearing insert to extreme position and mark shaft. Then using bearing maximums total expansion table, move bearing insert in opposite direction one-half the total expansion to center bearing in the housing. If maximum expansion is required, move bearing insert to the extreme position in the housing to permit full movement in direction of expansion. After expansion bearing has been positioned in the housing, tighten the set screws in the locking collar to the recommended torque.
5. Same as Non-Expansion Bearing.

Bearing Maximum Total Expansion

All Expansion Units have - .100" Capacity
Misalignment Capacity = +/- 1½°

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LUBRICATION INSTRUCTIONS

This bearing is factory lubricated with No. 2 consistency lithium base grease which is suitable for most applications. However, extra protection is necessary if bearing is subjected to excessive moisture, dust, or corrosive vapor. In these cases, bearing should contain as much grease as speed will permit (a full bearing with consequent slight leakage through the seal is the best protection against contaminant entry).

In extremely dirty environments, the bearing should be purged daily to flush out contaminants. For added protection, it is advisable to shroud the bearing from falling material.

High Speed Operation

At higher operating speed, too much grease may cause overheating. In these cases, the amount of lubrication can only be determined by experience. If excess grease in the bearing causes overheating, it will be necessary to remove grease fittings and run for 10 minutes. This will allow excess grease to escape. Then wipe off excess grease and replace grease fittings.

In higher speed applications, a small amount of grease at frequent intervals is preferable to a large amount at long intervals. However, the proper volume and interval of lubrication can best be determined by experience.

The following table is a general guide for normal operating conditions. However, some situations may require a change in lubricating periods as dictated by experience. If the bearing is exposed to unusual operating conditions, consult a reputable grease manufacturer.

LUBRICATION GUIDE

Read preceding paragraphs before establishing lubrication schedule.

Abnormal bearing temperatures may indicate insufficient lubrication. Normal temperature may range from “cool to warm to the touch” up to the point of “too hot to touch for more than a few seconds,” depending on the bearing size and speed, and surrounding conditions. Unusually high temperature accompanied by excessive leakage of grease indicates too much grease. High temperature with no grease showing at the seals, particularly if the bearing seems noisy, usually indicates too little grease. Normal temperature and a slight showing of grease at the seals indicate proper lubrication.

If equipment will be idle for some time, before shutting down, add grease to the bearing until grease purges from the seals. This will ensure protection of the bearing, particularly when exposed to severe environmental conditions. After storage or idle period, add fresh grease to the bearing before starting.

SPECIAL OPERATING CONDITIONS

Refer acid, chemical, extreme or other special operating conditions to the Moline Bearing Company.

Moline spherical bearings have the capacity to carry substantial radial loads, thrust loads or a combined radial and thrust load. The maximum load that can be applied is limited by the various components in the system, and the life requirements listed in this catalog. The factory should be consulted on any application that exceeds the recommendations in the catalog.

Lubrication Guide

Read preceding paragraphs before establishing lubrication schedule.

HOURS RUN PER DAY	SUGGESTED LUBRICATION PERIOD IN WEEKS							
	1 TO 250 RPM	251 TO 500 RPM	501 TO 750 RPM	751 TO 1000 RPM	1001 TO 1500 RPM	1501 TO 2000 RPM	2001 TO 2500 RPM	2501 TO 3000 RPM
8	12	12	10	7	5	4	3	2
16	12	7	5	4	2	2	2	1
24	12	5	3	2	1	1	1	1

M2000 APPLICATION GUIDE CONTINUED

Select a bearing from the M2000 load-rating chart having a radial load rating at the operating speed equal to or greater than the calculated Equivalent Radial Load for a desired L10 life. This simple method is all that is necessary for most general applications and provides for occasional shock loads.

L10 Hours of Life - Is the life that may be expected from at least 90% of a given group of bearings operated under identical conditions. The average life (L50) will be approximately five times the L10 life. To determine the L10 hours of life for loads and RPM's not listed, use the following equation.

$$L_{10} = \left(\frac{C}{P}\right)^{10/3} \times \frac{16667}{RPM}$$

Where: C= Dynamic Capacity (See Table below)
P= Equivalent Radial Load

If the load on a double row spherical bearing is only in a radial direction (no axial load), the Equivalent Radial Load (P) is equal to the actual radial load. In situations where the bearing load consists of radial and thrust loads, the total load must be converted into an Equivalent Radial Load by the equation:

$$P = XF_R + YF_A$$

Where:
FA = Axial (thrust) Load – see page 65 for maximum
FR= Radial Load
X= Radial Load Factor
(page 65)
Y= Thrust Load Factor
(page 65)

To find the X and Y values, first calculate FA/FR. Then use the M2000 Thrust Factors and Seal Speeds table on the following page to determine the appropriate values for X and Y. Substitute all known values into the Equivalent Radial Load equation.

For longer L10 hours other than 30,000 hours and not shown, multiply the Equivalent Radial Load by one of the following factors: for 20,000 L10 hours life, use a factor of .87; for 40,000 L10 hours of live, use 1.25; and for 80,000 L10 hours of live, use 1.38.

In applications that have heavy shock loads, frequent shock or severe vibrations, add up to 50% to the Equivalent Radial Load to obtain a modified Equivalent Radial Load. The amount of load added is relative to the severity of the application. Additional assistance can be obtained by consulting with the factory.

The shaft tolerances noted on page 62 are sufficient for normal applications. As noted in Table 1, extremely heavy radial loads may require a light to snug press fit onto the shaft.

The magnitude and direction of both the thrust and radial load must be taken into account when selecting the housing. When pillow blocks are used, heavy loads should be directed through the base. If the bearing must be used in a situation where the load pulls the housing away from the mounting base, both the hold down bolts and housing must be of adequate strength. Auxiliary load carrying devices such as shear bars are advisable for side or end loading of pillow blocks and radial loads for flange units.

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M2000 Thrust Factors and Seal Speeds

SHAFT SIZE	E	LIGHT THRUST IF FA/FR≤E		HEAVY THRUST IF FA/FR≥E		DYNAMIC CAPACITY C*		SEAL SPEED LIMITS			MAXIMUM SLIP FIT RADIAL LOAD FR**
						LBS.	NEWTONS	STANDARD TRIPLE LIP RPM	LABYRINTH RPM	GARTER SPRING RPM	
		X	Y	X	Y						
1 3/16 – 1 1/2	.28	1.0	2.4	.67	3.6	16500	73600	2800	5300	1700	2000
1 11/16 – 1 3/4 40mm 45mm	.26	1.0	2.6	.67	3.9	17300	77100	2650	4700	1600	2100
1 15/16 – 2 50mm	.24	1.0	2.8	.67	4.2	19000	84500	2400	4250	1450	2300
2 3/16 - 2 1/4 55mm	.23	1.0	2.9	.67	4.3	22400	99500	2150	3800	1300	2700
2 7/16 – 2 1/2 60mm 65mm	.24	1.0	2.8	.67	4.2	33300	148000	1800	3250	1100	4000
2 11/16 – 3 70mm 75mm	.22	1.0	3.1	.67	4.6	34600	158000	1600	2800	950	4200
3 3/16 – 3 1/2 80mm 85mm 90mm	.23	1.0	2.9	.67	4.3	56900	253000	1300	2200	800	6800
3 11/16 – 4 100mm	.24	1.0	2.8	.67	4.2	69900	311000	1200	2000	700	8400
4 7/16 – 4 1/2 110mm 115mm	.25	1.0	2.7	.67	4.1	91700	408000	1150	-----	-----	11000
4 15/16 – 5 125mm 130mm	.26	1.0	2.6	.67	3.9	123000	546000	900	-----	-----	14800

* Comparing Spherical to Tapered Roller Bearings—The dynamic capacity C (Spherical) and C90 (Tapered) are not the same base. To compare basic dynamic capacities, multiply C x .259 and compare to C90.
To select and then compare, use the complete procedure for each bearing and then compare.

** If load exceeds maximum allowable slip fit radial load, snug to light press fit of shaft is required.
For applications that exceed the load ratings above, please contact the factory for assistance.

M2000 RADIAL LOAD RATINGS

NOMINAL SHAFT DIAMETER (IN)	L10 HRS LIFE	RADIAL LOAD RATINGS AT VARIOUS REVOLUTIONS PER MINUTE								
		50	100	200	500	1000	1200	1500	1800	2500
1 7/16 1 ½	5000	7300	5930	4810	3660	2970	2780	2630	2490	2260
	10000	5930	4810	3910	2970	2410	2260	2140	2020	1830
	20000	4810	3910	3180	2410	1960	1830	1740	1640	1490
	50000	3660	2970	2410	1830	1490	1390	1320	1250	1130
	100000	2970	2410	1960	1490	1210	1130	1070	1010	919
1 11/16 1 ¾ 40mm 45mm	5000	7660	6220	5050	3840	3120	2910	2760	2610	2370
	10000	6220	5050	4100	3120	2530	2370	2240	2120	1920
	20000	5050	4100	3330	2530	2060	1920	1820	1720	1560
	50000	3840	3120	2530	1920	1560	1460	1380	1310	1190
	100000	3120	2530	2060	1560	1270	1190	1120	1060	964
1 15/16 2 50mm	5000	7960	6470	5250	3990	3240	3030	2870	2720	-----
	10000	6470	5250	4270	3240	2630	2460	2330	2210	-----
	20000	5250	4270	3470	2630	2140	2000	1890	1790	-----
	50000	3990	3240	2630	2000	1620	1520	1440	1360	-----
	100000	3240	2630	2140	1620	1320	1230	1170	1110	-----
2 3/16 2 ¼ 55mm	5000	9850	8000	6500	4940	4010	3750	3550	3360	-----
	10000	8000	6500	5280	4010	3260	3050	2880	2730	-----
	20000	6500	5280	4290	3260	2650	2470	2340	2220	-----
	50000	4940	4010	3260	2470	2010	1880	1780	1680	-----
	100000	4010	3260	2650	2010	1630	1530	1450	1370	-----
2 7/16 2 ½ 60mm 65mm	5000	14300	11600	9430	7160	5820	5440	5150	4880	-----
	10000	11600	9430	7660	5820	4730	4420	4180	3960	-----
	20000	9430	7660	6220	4730	3840	3590	3400	3220	-----
	50000	7160	5820	4730	3590	2920	2730	2580	2440	-----
	100000	5820	4730	3840	2920	2370	2210	2100	1990	-----

Note: Refer to page 65 for seal speed limits.

For applications that exceed the load ratings above, please contact the factory for assistance.

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M2000 RADIAL LOAD RATINGS

NOMINAL SHAFT DIAMETER (IN)	L10 HRS LIFE	RADIAL LOAD RATINGS AT VARIOUS REVOLUTIONS PER MINUTE								
		50	100	200	500	1000	1200	1500	1800	2500
2 11/16 2 3/4 2 15/16 3 70mm 75mm	5000 10000 20000 50000 100000	15600 12600 10300 7800 6340	12600 10300 8340 6340 5150	10300 8340 6780 5150 4180	7800 6340 5150 3910 3180	6340 5150 4180 3180 2580	5930 4810 3910 2970 2410	5610 4560 3700 2810 2280	----- ----- ----- ----- -----	----- ----- ----- ----- -----
3 3/16 3 7/16 3 1/2 80mm 85mm 90mm	5000 10000 20000 50000 100000	25250 20510 16660 12660 10280	20510 16660 13530 10280 8350	16660 13530 10990 8350 6780	12660 10280 8350 6340 5150	10280 8350 6780 5150 4180	9730 7910 6420 4880 3960	----- ----- ----- ----- -----	----- ----- ----- ----- -----	----- ----- ----- ----- -----
3 11/16 3 15/16 4 100mm	5000 10000 20000 50000 100000	31020 25200 20470 15550 12630	25200 20470 16620 12630 10260	20470 16620 13500 10260 8330	15550 12630 10260 7790 6330	12630 10260 8330 6330 5140	11960 9710 7890 5990 4870	----- ----- ----- ----- -----	----- ----- ----- ----- -----	----- ----- ----- ----- -----
4 7/16 4 1/2 110mm 115mm	5000 10000 20000 50000 100000	40700 33050 26850 20400 16570	33050 26850 21810 16570 13460	26850 21810 17710 13460 10930	20400 16570 13460 10220 8300	16570 13460 10930 8300 6740	----- ----- ----- ----- -----	----- ----- ----- ----- -----	----- ----- ----- ----- -----	----- ----- ----- ----- -----
4 15/16 5 125mm 130mm	5000 10000 20000 50000 100000	54590 44340 36010 27360 22220	44340 36010 29250 22220 18050	36010 29250 23760 18050 14660	27360 22220 18050 13710 11140	22220 18050 14660 11140 9050	----- ----- ----- ----- -----	----- ----- ----- ----- -----	----- ----- ----- ----- -----	----- ----- ----- ----- -----

Note: Refer to page 65 for seal speed limits.
For applications that exceed the load ratings above, please contact the factory for assistance.

M2000 SERIES INTERCHANGE

MOLINE	SKF	DODGE	LINK-BELT	REX	SEALMASTER	BROWNING**	TIMKEN/ QM
2-Bolt Pillow Block (Pages 50-51)							
19121 (Expansion)	SYR	P2BS2000RE	PEB22400H	ZA2000	USRB5000E	SPB1000E	QAPL
19221 (Non-Expansion)	SYR-H	P2BS2000R	PB22400H	ZAS2000	USRB5000	SPB1000NE	
4-Bolt Pillow Block (Pages 52-55)							
19141 (Expansion)	-----	P4BS2000RE	PEB22400FH	ZA2000F	USRBF5000E	SPB1000FE	QAPF
19241 (Non-Expansion)	-----	P4BS2000R	PB22400FH	ZAS2000F	USRBF5000	SPB1000FNE	
4-Bolt Flange (Pages 56-57)							
19111 (Expansion)	FYR	F4BS2000RE*	FEB22400H		USFB5000	SFB1000E	QAFL
19211 (Non-Expansion)	FYR-H	F4BS2000R*	FB22400H	ZB2000*	USFB5000	SFB1000NE	
Piloted Flange (Pages 58-59)							
19131 (Expansion)	FYRP	FCS2000RE			USFC5000E	SFC1000E	QACW
19231 (Non-Expansion)	FYRP-H	FCS2000R	FCB22400H	ZBR2000	USFC5000	SFC1000NE	
Wide Slot Take-Up (Pages 60-61)							
19151 (Expansion)	TBR	WSTUS2000RE			USTU5000E	STU1000E	QATU
19251 (Non-Expansion)	TBR-H	WSTUS2000R	TB22400H	ZT2000	USTU5000	STU1000NE	

* Manufacture square and round 4-bolt flange

** Legacy item, has been discontinued.

Note: This is a general dimensional interchange.

For exact dimensions and comparison information on inserts and seals, please contact the factory.

For Nomenclature see pages 226–227

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MOLINE

M3000 EVEN-LOK™ SPHERICAL ROLLER BEARINGS

The latest addition to the Moline line, the M3000 Even-Lok™ mounted spherical bearing uses a built-in mechanical connector that applies a near 360° concentric grip and almost a 100% interface with the surface of the shaft.

This unique locking mechanism helps eliminate vibration and slippage between the mating surfaces.

An excellent choice for screening and conveying, material and air handling, or industrial laundry applications, where there are problems with fretting corrosion, slippage on the shaft, or vibration, Moline's M3000 Even-Lok™ spherical roller bearing will help.

Save costly down time and expense by using this exciting new bearing.

The M3000 2-Bolt and 4-Bolt Pillow Blocks, 4-Bolt Flange Bearings, Piloted Flange Bearings and Wide Slot Take-up Bearings are ready to slip onto the shaft when received because they are completely assembled, adjusted, sealed and pre-lubricated at the factory. The self-aligning feature provides for speedy mounting with a minimum of field adjustment required. The housings are ruggedly designed and made in the USA of Class 30 cast iron.

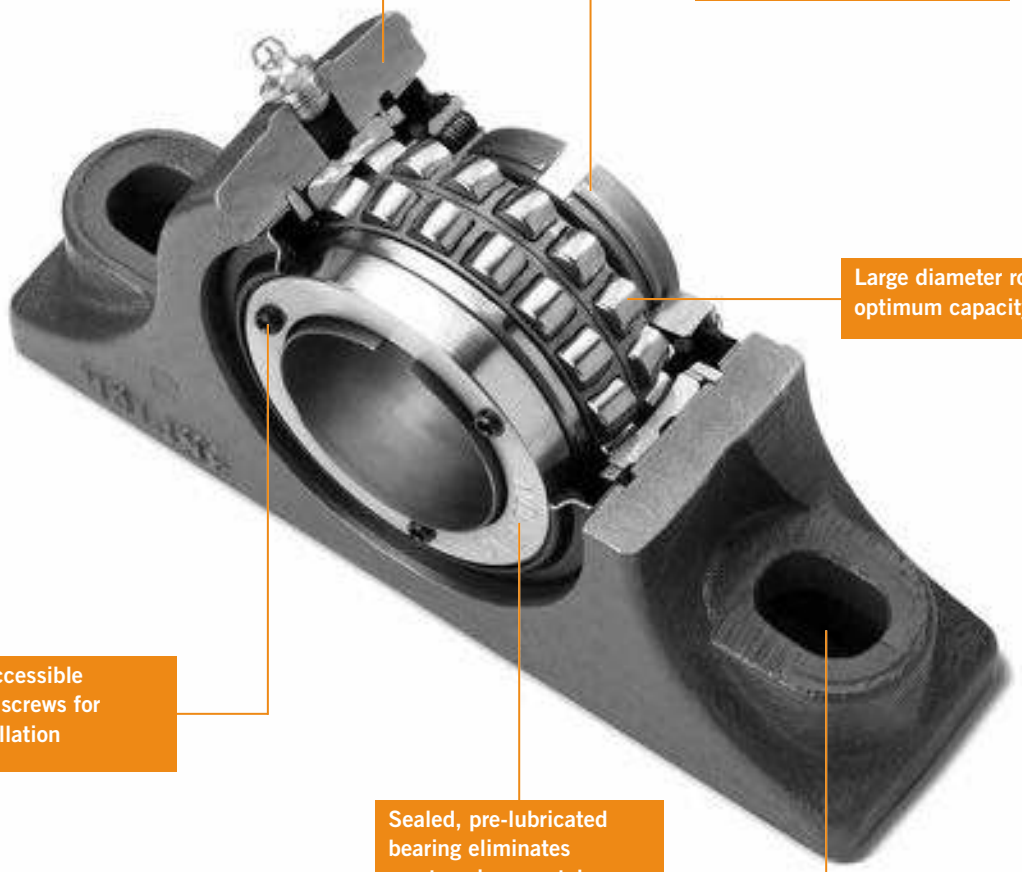
The M3000 Even-Lok™ comes with mounting instructions and an Allen wrench for easy mounting and dismounting.

Our M3000 bearings are comparable to other adapter mounted spherical roller bearings, and are equipped with the SKF Explorer™ Spherical Roller Bearing Insert.

Moline M3000 bearings are available in expansion and non-expansion styles. The expansion units have the capacity to move up to .100". The bearings are available in shaft sizes from 1 7/16" up to 4".

All Moline housings come with a standard paint finish. Custom Colors, Powder Coating, Stainless Powder coating, Nickel plating, Epoxy and Teflon coatings will be quoted on request. Special machining is also available, please call us at the factory for further information.

Moline M3000 Even-Lok™ Spherical Roller Bearings are carried in Moline warehouses and distributor stocks throughout the United States and in Canada.


Solid cast iron housing, with center support Made in the USA
Even-Lok™ bearing provides near 360 degree/100% interface with shaft
Large diameter rollers for optimum capacity
Readily accessible mounting screws for easy installation
Sealed, pre-lubricated bearing eliminates most environmental contamination
Elongated bolt holes permit adjustment and increased mounting options

FEATURES OF MOLINE M3000 EVEN-LOK™ SPHERICAL ROLLER BEARINGS

WITH SKF® ROLLER BEARINGS

- Supplies near 360° concentric locking around the shaft which eliminates slippage due to vibration

Traditional Set Screw Locking

M3000 Even-Lok™

- Compared to traditional set screw locking, concentric locking reduces fretting corrosion
- Excellent choice for screening and conveying, material and air handling, industrial laundry applications, or any application where vibration, slippage or fretting corrosion is a problem
- Distributes locking force equally through Even-Lok™, reducing the risk of local material failure and particle infiltration in the inner sleeve
- Even-Lok™ is reliable, easy and fast to install and dismount
- Units come completely assembled, sealed and pre-lubricated
- Comes with special Allen wrench for easy mounting and dismounting
- Available in shaft sizes from 1 7/16" to 4"
- +/- 1 ½° misalignment capacity
- Available in Expansion (red tag) and Non-Expansion (yellow tag) styles
- Expansion units have .100" capacity or .030" per foot of shaft
- Standard grease operating temperature is up to 250°, high temperature grease is 350°, additional lubrication options are available, please call the factory for more information
- Available with Standard Double Lip Contact Seal made by SKF®
- Housings available in the standard painted finish, Powder coating in RAL or custom colors, Stainless Steel Powder coating, Nickel Plating, Epoxy and Teflon coatings available upon request
- Custom machining and design is available upon request, please call the factory for more information
- Housings are made of Class 30 cast iron in Illinois and Iowa
- Made in the United States

Standard Double Lip Contact Seal made by SKF®

M3000 EVEN-LOK™ 2-BOLT PILLOW BLOCK

SHAFT SIZE	MOLINE PART #		DIMENSIONS (INCHES)											WEIGHT LBS.
	EXP	NON-EXP	A	B	C	MIN D	CENTER TO CENTER D	MAX D	F	G	H	J	M	
1 7/16 1 1/2	19621107 19621108	19721107 19721108	2 11/32	6 7/8	2 3/16	4 11/16	5	5 5/16	1/2	15/16	1 3/16	3 7/8	1 7/8	6.9
1 11/16 1 3/4	19621111 19621112	19721111 19721112	2 11/32	7 3/8	2 3/16	5 3/16	5 1/2	5 13/16	1/2	15/16	1 5/16	4 1/4	2 1/8	8.1
1 15/16 2	19621115 19621200	19721115 19721200	2 11/32	8 3/8	2 3/16	5 15/16	6 1/4	6 9/16	5/8	1	1 3/8	4 9/16	2 1/4	9.1
2 3/16	19621203	19721203	2 11/32	8 7/8	2 1/2	6 7/16	6 3/4	7 1/16	5/8	1	1 5/8	5	2 1/2	11.8
2 7/16 2 1/2	19621207 19621208	19721207 19721208	2 37/64	9 1/4	2 3/4	6 13/16	7 1/8	7 7/16	5/8	1	1 3/4	5 11/16	2 3/4	16.2
2 11/16 2 3/4 2 15/16 3	19621211 19621212 19621215 19621300	19721211 19721212 19721215 19721300	2 37/64	10 1/2	2 13/16	7 13/16	8 1/8	8 7/16	3/4	1 1/8	2 1/4	6 7/16	3 1/4	22.1
3 7/16 3 1/2	19621307 19621308	19721307 19721308	3 9/64	13	3 1/4	9 1/2	10	10 1/2	7/8	1 7/16	2 1/4	7 1/2	3 3/4	31.6
3 15/16 4	19621315 19621400	19721315 19721400	3 9/64	14 1/2	3 9/16	10	10 7/8	11 3/4	1	1 15/16	2 1/2	8 3/8	4 1/8	45

Refer to Mounting and Dismounting Instructions on pages 86 and 87.

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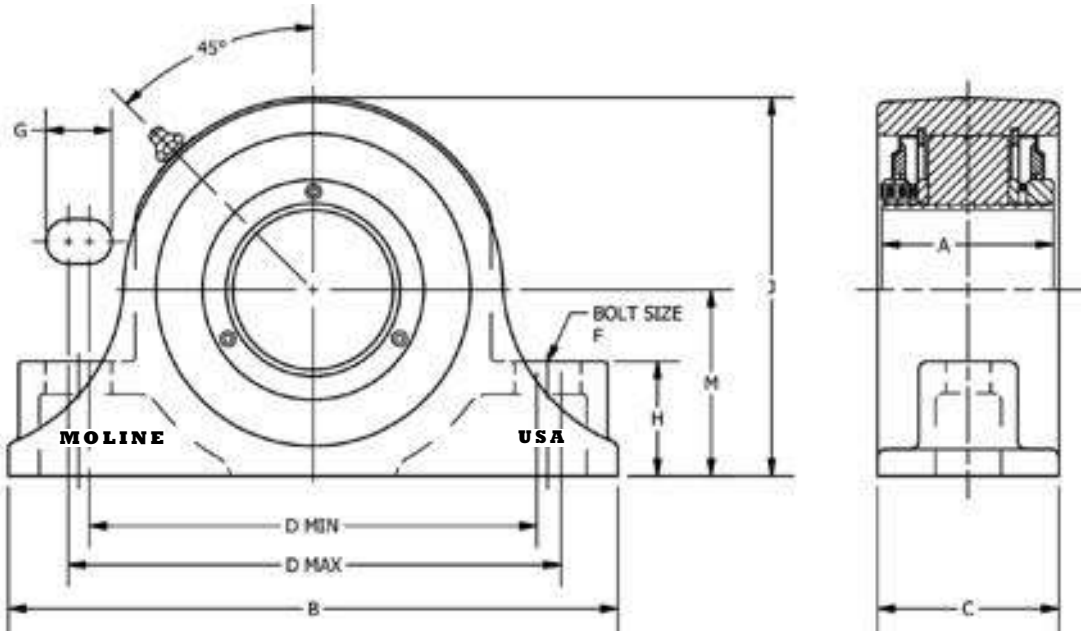
MOLINE BEARING Co

M3000 EVEN-LOK™ 2-BOLT PILLOW BLOCK



For personal service and special requests, please call us at 800.242.4633.

CAD drawings available upon request at no additional charge.

For nomenclature see pages 226 and 227.

M3000 EVEN-LOK™ 4-BOLT PILLOW BLOCK

SHAFT SIZE	MOLINE PART #		DIMENSIONS (INCHES)												WT. LBS.
	EXP	NON-EXP	A	B	C	MIN D	CENTER TO CENTER D	MAX D	E	F	G	H	J	M	
2 7/16 2 1/2	19641207 19641208	19741207 19741208	2 37/64	9 1/4	3 1/4	6 7/8	7 1/4	7 5/8	1 3/4	1/2	15/16	1 3/4	5 11/16	2 3/4	17
2 11/16 2 3/4 2 15/16 3	19641211 19641212 19641215 19641300	19741211 19741212 19741215 19741300	2 37/64	10 1/2	3 3/4	7 7/8	8 1/8	8 3/8	1 7/8	5/8	15/16	2 1/4	6 7/16	3 1/4	26
3 7/16 3 1/2	19641307 19641308	19741307 19741308	3 9/64	13	3 7/8	9 1/4	10	10 3/4	2	3/4	1 9/16	2 1/4	7 1/2	3 3/4	38
3 15/16 4	19641315 19641400	19741315 19741400	3 9/64	15 1/4	4 1/2	11	12	13	2 1/4	3/4	1 13/16	2 5/8	8 1/2	4 1/4	50

Refer to Mounting and Dismounting Instructions on pages 86 and 87.

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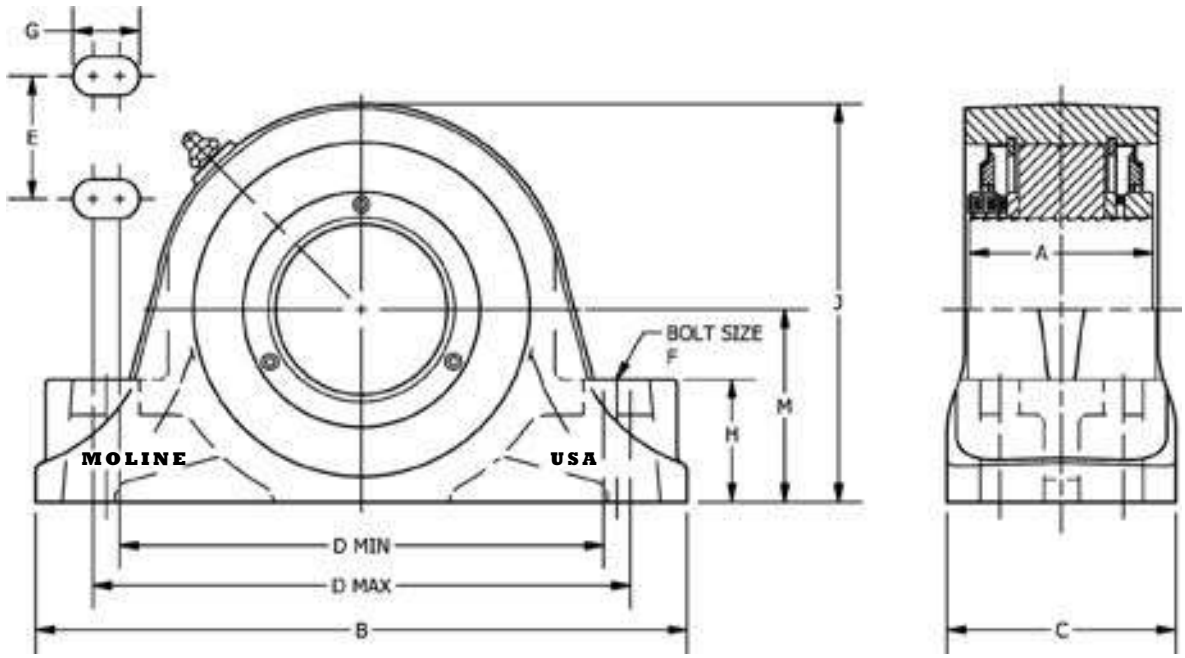

For personal service and special requests, please call us at 800.242.4633.

CAD drawings available upon request at no additional charge.

For nomenclature see pages 226 and 227.

M3000 EVEN-LOK™ 4-BOLT FLANGE

SHAFT SIZE	MOLINE PART #		DIMENSIONS (INCHES)								WEIGHT LBS.
	EXP	NON-EXP	A	B	C	D	E	F	H	J	
1 7/16 1 1/2	19611107 19611108	19711107 19711108	2 11/32	4 5/8	2 1/4	3 17/32	5	1/2	3/4	3 7/8	7
1 11/16 1 3/4	19611111 19611112	19711111 19711112	2 11/32	5	2 1/4	3 57/64	5 1/2	1/2	3/4	4 1/4	10
1 15/16 2	19611115 19611200	19711115 19711200	2 11/32	5 1/4	2 1/4	4 1/16	5 3/4	1/2	3/4	4 1/2	10.5
2 3/16	19611203	19711203	2 11/32	5 7/8	2 7/16	4 1/2	6 3/8	5/8	3/4	5	12.5
2 7/16 2 1/2	19611207 19611208	19711207 19711208	2 37/64	6 1/8	2 3/4	4 25/32	6 3/4	5/8	1	5 3/4	16.5
2 11/16 2 3/4 2 15/16 3	19611211 19611212 19611215 19611300	19711211 19711212 19711215 19711300	2 37/64	7 1/4	2 7/8	5 9/16	7 7/8	3/4	1	6 5/8	25
3 7/16 3 1/2	19611307 19611308	19711307 19711308	3 9/64	8 3/8	3 1/4	6 23/32	9 1/2	3/4	1 1/8	7 5/8	35
3 15/16 4	19611315 19611400	19711315 19711400	3 9/64	9 1/2	3 9/16	7 19/32	10 3/4	7/8	1 3/16	8 3/8	48

Refer to Mounting and Dismounting Instructions on pages 86 and 87.
Please Note: Before mounting, make sure there is sufficient clearance to access dismounting set screws on the back of the housing unit (yellow plastic protection plugs).

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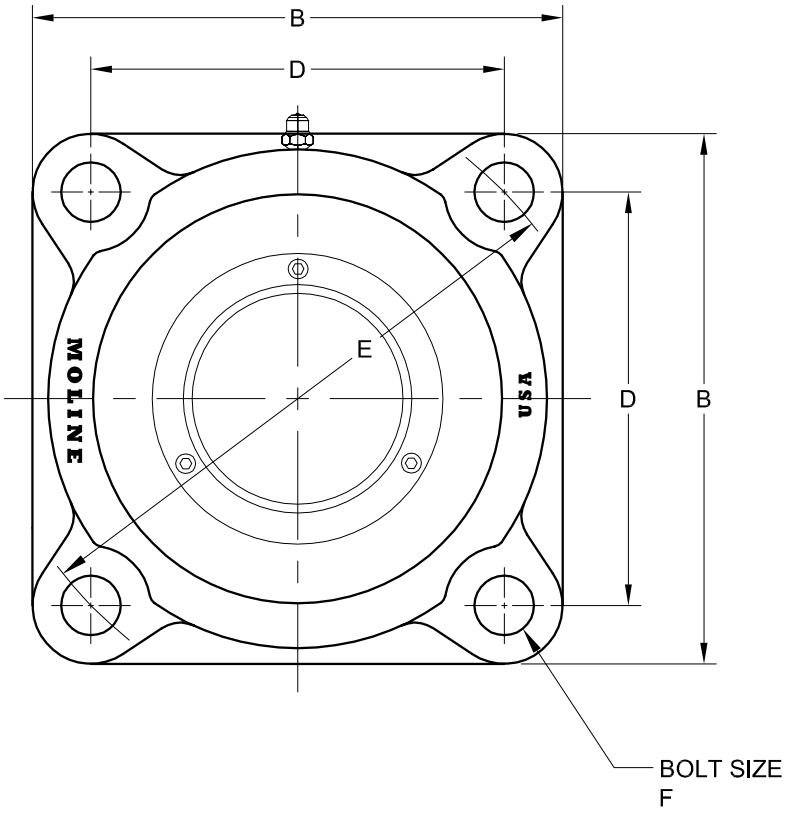
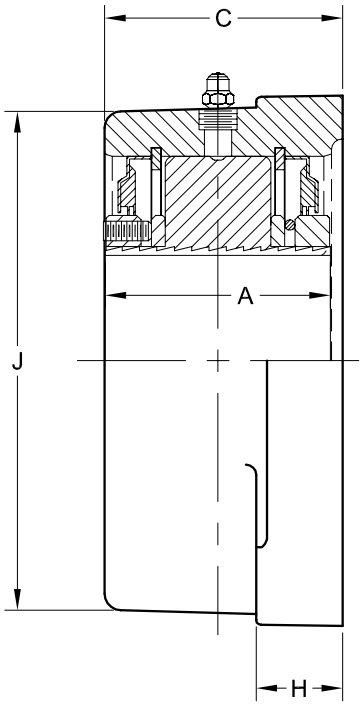
M3000 EVEN-LOK™ 4-BOLT FLANGE





For personal service and special requests, please call us at 800.242.4633.

CAD drawings available upon request at no additional charge.

For nomenclature see pages 226 and 227.

M3000 EVEN-LOK™
PILOTED FLANGE CARTRIDGE

SHAFT SIZE	MOLINE PART #		DIMENSIONS (INCHES)										WEIGHT LBS.
	EXP	NON-EXP	A	B	C	D	E	F	G	H	K	M	
1 7/16 1 1/2	19631107 19631108	19731107 19731108	2 11/32	5 1/4	2 1/16	4 3/8	1 9/32	3/8	13/16	1/2	3 5/8	3 3/32	7
1 11/16 1 3/4	19631111 19631112	19731111 19731112	2 11/32	6 1/8	2 3/16	5 1/8	7/8	7/16	3/4	1/2	4 1/4	3 5/8	8.5
1 15/16 2	19631115 19631200	19731115 19731200	2 11/32	6 3/8	2 3/16	5 3/8	7/8	7/16	11/16	1/2	4 1/2	3 51/64	10.5
2 3/16	19631203	19731203	2 11/32	7 1/8	2 7/16	6	1	1/2	15/16	1/2	5	4 1/4	14.5
2 7/16 2 1/2	19631207 19631208	19731207 19731208	2 37/64	7 5/8	2 11/16	6 1/2	1	1/2	1 1/16	5/8	5 1/2	4 19/32	16
2 11/16 2 3/4 2 15/16 3	19631211 19631212 19631215 19631300	19731211 19731212 19731215 19731300	2 37/64	8 3/4	2 13/16	7 1/2	1 1/4	5/8	1	3/4	6 3/8	5 19/64	22
3 7/16 3 1/2	19631307 19631308	19731307 19731308	3 9/64	10 1/4	3 1/4	8 5/8	1 1/4	3/4	1 1/2	15/16	7 3/8	6 3/32	33
3 15/16 4	19631315 19631400	19731315 19731400	3 9/64	10 7/8	3 9/16	9 3/8	1 1/2	3/4	1 7/16	1 1/16	8 1/8	6 5/8	45

Refer to Mounting and Dismounting Instructions on pages 86 and 87.
Please Note: Before mounting, make sure there is sufficient clearance to access dismounting set screws on the back of the housing unit (yellow plastic protection plugs).

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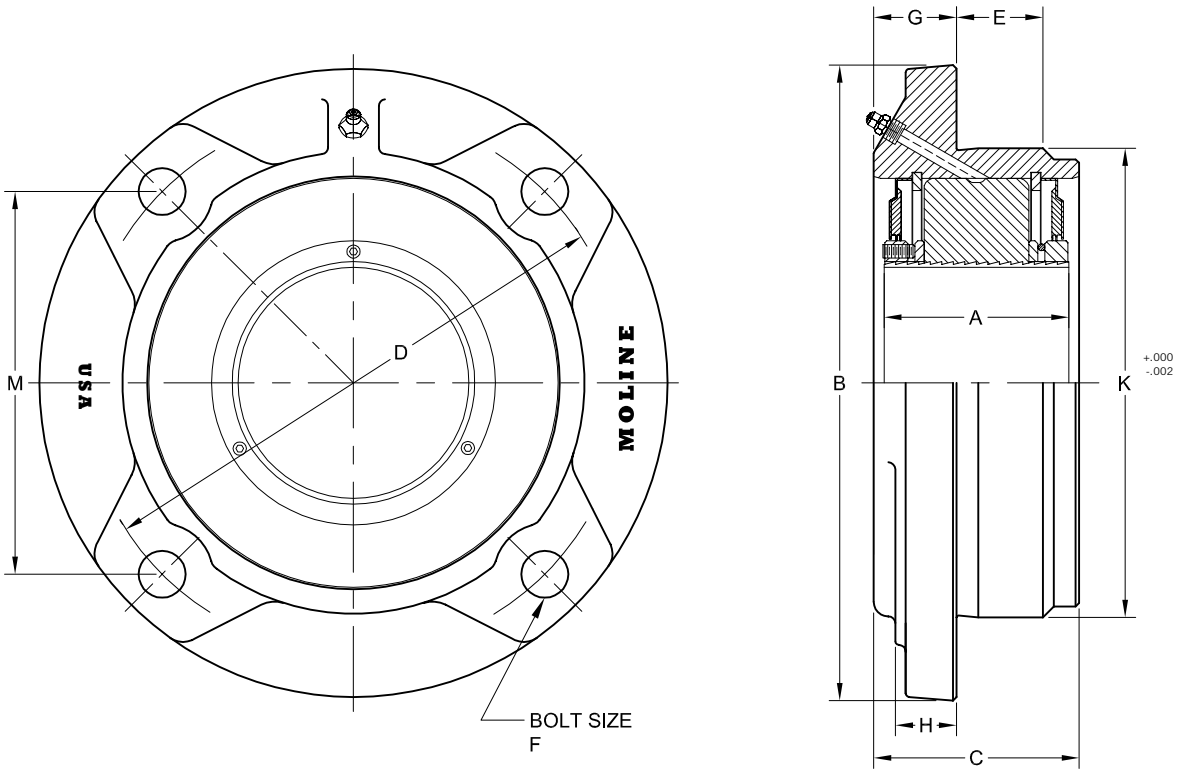
M3000 EVEN-LOK™ PILOTED FLANGE CARTRIDGE



For personal service and special requests, please call us at 800.242.4633.

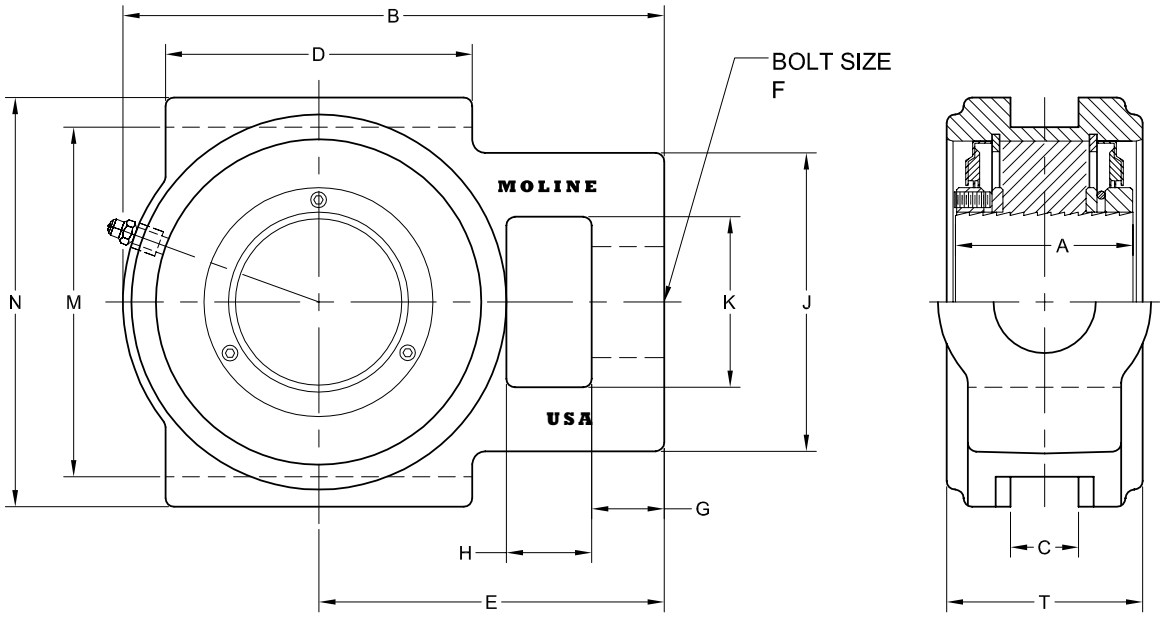
CAD drawings available upon request at no additional charge.

For nomenclature see pages 226 and 227.

M3000 EVEN-LOK™ WIDE SLOT TAKE-UP

SHAFT SIZE	MOLINE PART #		DIMENSIONS (INCHES)				
	EXP	NON-EXP	A	B	C	D	E
1 15/16 2	19651115 19651200	19751115 19751200	2 11/32	6 5/16	11/16	3 3/4	3 15/16
2 3/16	19651203	19751203	2 11/32	7 1/8	13/16	3 3/4	4 5/8
2 7/16 2 1/2	19651207 19651208	19751207 19751208	2 37/64	7 13/16	1 1/32	4 1/2	5 1/16
2 11/16 2 3/4 2 15/16 3	19651211 19651212 19651215 19651300	19751211 19751212 19751215 19751300	2 37/64	9 1/8	1 25/32	4 3/4	5 7/8
3 7/16 3 1/2	19651307 19651308	19751307 19751308	3 9/64	10 1/4	1 25/32	6	6 3/8

Refer to Mounting and Dismounting Instructions on pages 86 and 87.



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M3000 EVEN-LOK™ WIDE SLOT TAKE-UP

SHAFT SIZE	DIMENSIONS (INCHES)								WEIGHT LBS.
	F	G	H	J	K	M	N	T	
1 15/16 2	1	15/16	3/4	3 5/16	1 15/16	4	4 3/4	2 7/16	12
2 3/16	1 1/8	1	1	3 7/8	2 1/4	4 1/2	5 1/4	2 9/16	16
2 7/16 2 1/2	1 1/2	1 1/16	1 1/4	4 1/4	2 1/2	5 1/8	6	2 3/4	21
2 11/16 2 3/4 2 15/16 3	1 1/2	1 3/8	1 1/4	4 7/8	2 3/4	5 15/16	6 3/4	3	30
3 7/16 3 1/2	1 3/4	1 1/16	1 5/8	4 7/8	2 7/8	6 13/16	7 13/16	3 13/16	45

For personal service and special requests, please call us at 800.242.4633.

CAD drawings available upon request at no additional charge.

For nomenclature see pages 226 and 227.

M3000 EVEN-LOK™ APPLICATION GUIDE

At Moline, our goal is to provide you with the most reliable products, helpful service, and expert support. We work to make our mounting instructions clear and easy to understand. But if you have further questions, please feel free to call 800.242.4633 or e-mail support@molinebearing.com. We are here to help.

MOUNTING INSTRUCTIONS

PLEASE NOTE: BEFORE MOUNTING, MAKE SURE THERE IS SUFFICIENT CLEARANCE TO ACCESS DISMOUNTING SET SCREWS ON BACK OF UNIT (YELLOW PLASTIC PROTECTION PLUGS).

- Do not remove plastic end cap or plastic protection plugs inserted in the set screw holes until you are ready to install bearing onto shaft.
- Do not disassemble bearing prior to installation.
- **Do not tighten any mounting screws prior to installation.**
- Use only the supplied Even-lok™ wrench for tightening set screws on bearing. After storage or idle period, add a little fresh grease before running.

For optimum bearing performance, it is important to start the mounting process with a shaft that is free of burrs and dirt. Please review your shaft and file down burrs and wipe clean then lubricate shaft with light oil. Check shaft diameter and review recommended shaft tolerances below:

SHAFT DIAMETER	TOLERANCE
1 7⁄16"–1 15⁄16"	+.000" to -.003"
2"– 4"	+.000" to -.004"

1. Clean the base of the bearing and support surface on which it rests. Be sure the supporting surface is flat. If the bearing elevation must be adjusted by shims, the shims MUST extend the full length and width of the support surface.
2. Slide the bearing, with the mounting side facing outward, on the shaft where the unit is to be secured. Leave 1 ½" minimum housing spacing to allow for insertion of an Allen wrench in the dismounting side set screws. Bolt the housing securely to the support. Note: The mounting side of the bearing is the side which does not have the yellow plastic protection plugs inserted in the set screw holes.
3. The Expansion bearing must be centered in the housing to allow for axial shaft expansion. Move the bearing axially in the housing in both directions as far as it will go and determine the centered position. It will be necessary to relieve the bearing load while moving the assembly.
4. Snug the mounting screws located in the mounting side collar to finger tightness holding the short leg of the supplied Even-lok™ wrench. Tighten the mounting screws a total of ½ turn by alternately tightening in two increments (¼ turn and ¼ turn). Please refer to the following diagram for proper tightening pattern for each bearing size:

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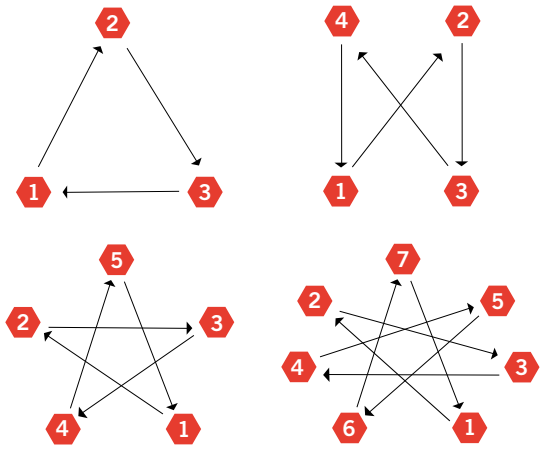
M3000 TIGHTENING PATTERNS

5. Tighten each set screw until the long end of the Even-lok™ wrench bows ½" under finger pressure. **Caution:** Do not use power driven or auxiliary equipment such as a hammer or pipe in tightening the screws.



DISMOUNTING INSTRUCTIONS

1. Retighten the mounting side set screws until the long end of the Even-Lok™ wrench bows ½" under finger pressure only.
2. Loosen the mounting side set screws 1–2 full turns.
3. Using a screw driver or other suitable tool, remove and discard the 2 plastic protection plugs.
4. Alternately tighten the dismounting screws in ¼ turn increments until the bearing is released from the shaft. You should hear a distinctive “pop” indicating release.
5. Loosen the dismounting set screws, unbolt the housing from the support structure and remove the complete assembled unit from the shaft.

Note: If the bearing unit will not slip off the shaft during removal, do not continue to further tighten the dismount set screws. This may tend to reverse tighten the bearing to the shaft. In the unlikely event that reverse tightening occurs, loosen the dismounting screws and retighten the screws on the mounting collar side following instructions. Repeat the dismounting procedure Steps 2 through 5.

LUBRICATION INSTRUCTIONS

This bearing is factory lubricated with No. 2 consistency lithium base grease which is suitable for most applications. However, extra protection is necessary if bearing is subjected to excessive moisture, dust, or corrosive vapor. In these cases, bearing should contain as much grease as speed will permit (a full bearing with consequent slight leakage through the seal is the best protection against contaminant entry).

In extremely dirty environments, the bearing should be purged daily to flush out contaminants. For added protection, it is advisable to shroud the bearing from falling material.

High Speed Operation

At higher operating speed, too much grease may cause overheating. In these cases, the amount of lubrication can only be determined by experience. If excess grease in the bearing causes overheating, it will be necessary to remove grease fittings and run for 10 minutes. This will allow excess grease to escape. Then wipe off excess grease and replace grease fittings.

In higher speed applications, a small amount of grease at frequent intervals is preferable to a large amount at long intervals. However, the proper volume and interval of lubrication can best be determined by experience.

Lubrication Guide

Read preceding paragraphs before establishing lubrication schedule.

HOURS RUN PER DAY	SUGGESTED LUBRICATION PERIOD IN WEEKS							
	1 TO 250 RPM	251 TO 500 RPM	501 TO 750 RPM	751 TO 1000 RPM	1001 TO 1500 RPM	1501 TO 2000 RPM	2001 TO 2500 RPM	2501 TO 3000 RPM
8	12	12	10	7	5	4	3	2
16	12	7	5	4	2	2	2	1
24	12	5	3	2	1	1	1	1

The above table is a general guide for normal operating conditions. However, some situations may require a change in lubricating periods as dictated by experience. If the bearing is exposed to unusual operating conditions, consult a reputable grease manufacturer.

LUBRICATION GUIDE

Read preceding paragraphs before establishing lubrication schedule.

Abnormal bearing temperatures may indicate insufficient lubrication. Normal temperature may range from “cool to warm to the touch” up to the point of “too hot to touch for more than a few seconds,” depending on the bearing size and speed, and surrounding conditions. Unusually high temperature accompanied by excessive leakage of grease indicates too much grease. High temperature with no grease showing at the seals, particularly if the bearing seems noisy, usually indicates too little grease. Normal temperature and a slight showing of grease at the seals indicate proper lubrication.

If equipment will be idle for some time, before shutting down, add grease to the bearing until grease purges from the seals. This will ensure protection of the bearing, particularly when exposed to severe environmental conditions. After storage or idle period, add fresh grease to the bearing before starting.

SPECIAL OPERATING CONDITIONS

Refer acid, chemical, extreme or other special operating conditions to the Moline Bearing Company.

Moline spherical bearings have the capacity to carry substantial radial loads, thrust loads or a combined radial and thrust load. The maximum load that can be applied is limited by the various components in the system, and the life requirements listed in this catalog. The factory should be consulted on any application that exceeds the recommendations in the catalog.

Select a bearing from the M3000 load-rating chart having a radial load rating at the operating speed equal to or greater than the calculated Equivalent Radial Load for a desired L10 life. This simple method is all that is necessary for most general applications and provides for occasional shock loads.

L10 Hours of Life – Is the life that may be expected from at least 90% of a given group of bearings operated under identical conditions. The average life (L50) will be approximately five times the L10 life.

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M3000 Even-Lok™ Thrust Factors and Seal Speed

SHAFT SIZE	E	LIGHT THRUST IF FA/FR≤E		HEAVY THRUST IF FA/FR≥E		DYNAMIC CAPACITY C*		STANDARD SEAL RPM
		X	Y	X	Y	LBS.	NEWTONS	
1 7/16 – 1 1/2	.28	1.0	2.4	.67	3.6	21700	96526	4000
1 11/16 – 1 3/4	.26	1.0	2.6	.67	3.9	23000	102309	3700
1 15/16 – 2	.24	1.0	2.8	.67	4.2	23400	104088	3500
2 3/16	.24	1.0	2.8	.67	4.2	28100	124995	3250
2 7/16 – 2 1/2	.24	1.0	2.8	.67	4.2	43400	193052	2900
2 11/16 – 3	.22	1.0	3.0	.67	4.6	47700	212180	2600
3 7/16 – 3 1/2	.23	1.0	2.8	.67	4.2	73100	325165	2200
3 15/16 – 4	.24	1.0	2.8	.67	4.2	95700	425695	2000

* Comparing Spherical to Tapered Roller Bearings—The dynamic capacity C (Spherical) and C90 (Tapered) are not the same base. To compare basic dynamic capacities, multiply C x .259 and compare to C90.
To select and then compare, use the complete procedure for each bearing and then compare.

M3000 EVEN-LOK™ RADIAL LOAD RATINGS

NOMINAL SHAFT DIAMETER (IN)	L10 HRS LIFE	RADIAL LOAD RATINGS AT VARIOUS REVOLUTIONS PER MINUTE								
		50	200	500	1200	1800	2200	2800	3500	4000
1 7/16 1 1/2	5000	9630	6354	4827	3712	3287	3095	2879	2692	2586
	10000	7822	5161	3920	3015	2670	2514	2338	2187	2101
	20000	6354	4192	3184	2449	2168	2042	1899	1776	1706
	50000	4827	3184	2419	1860	1647	1551	1443	1349	1296
	100000	3920	2586	1965	1511	1338	1260	1172	1096	1053
1 11/16 1 3/4	5000	10207	6734	5116	3934	3483	3280	3051	2853	-----
	10000	8291	5470	4155	3195	2829	2664	2478	2318	-----
	20000	6734	4443	3375	2596	2298	2164	2013	1883	-----
	50000	5116	3375	2564	1972	1746	1644	1529	1430	-----
	100000	4155	2741	2083	1602	1418	1335	1242	1162	-----
1 15/16 2	5000	10385	6851	5205	4002	3544	3337	3104	2903	-----
	10000	8435	5565	4227	3251	2879	2710	2521	2358	-----
	20000	6851	4520	3434	2641	2338	2202	2048	1915	-----
	50000	5205	3434	2609	2006	1776	1672	1556	1455	-----
	100000	4227	2789	2119	1629	1443	1358	1264	1182	-----
2 3/16	5000	12470	8227	6250	4806	4256	4007	3728	-----	-----
	10000	10129	6683	5077	3904	3457	3255	3028	-----	-----
	20000	8227	5428	4123	3171	2808	2644	2459	-----	-----
	50000	6250	4123	3132	2409	2133	2008	1868	-----	-----
	100000	5077	3349	2544	1957	1733	1631	1517	-----	-----
2 7/16 2 1/2	5000	19260	12707	9653	7423	6573	6189	5757	-----	-----
	10000	15644	10321	7841	6030	5339	5027	4676	-----	-----
	20000	12707	8384	6369	4898	4337	4083	3798	-----	-----
	50000	9653	6369	4838	3721	3294	3102	2885	-----	-----
	100000	7841	5173	3930	3022	2676	2520	2344	-----	-----
2 11/16 2 3/4 2 15/16 3	5000	21169	13966	10609	8159	7224	6802	-----	-----	-----
	10000	17194	11344	8618	6627	5868	5525	-----	-----	-----
	20000	13966	9214	7000	5383	4766	4488	-----	-----	-----
	50000	10609	7000	5317	4089	3621	3409	-----	-----	-----
	100000	8618	5685	4319	3321	2941	2769	-----	-----	-----
3 7/16 3 1/2	5000	32441	21403	16259	12503	11071	10425	-----	-----	-----
	10000	26350	17385	13206	10156	8993	8467	-----	-----	-----
	20000	21403	14121	10727	8249	7304	6878	-----	-----	-----
	50000	16259	10727	8149	6267	5549	5225	-----	-----	-----
	100000	13206	8713	6619	5090	4507	4244	-----	-----	-----
3 15/16 4	5000	42470	28020	21286	16369	14494	13647	-----	-----	-----
	10000	34497	22759	17289	13296	11773	11085	-----	-----	-----
	20000	28020	18486	14043	10800	9563	9004	-----	-----	-----
	50000	21286	14043	10668	8204	7264	6840	-----	-----	-----
	100000	17289	11407	8665	6664	5900	5556	-----	-----	-----

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M3000 EVEN-LOK™ SERIES INTERCHANGE

MOLINE	SKF CONCENTRA™	SEALMASTER SLEEVLOC™	REX SHURLOK™ ADAPTOR MOUNTED	DODGE IMPERIAL
2-Bolt Pillow Block (Pages 76-77) 19621 (Expansion) 19721 (Non-Expansion)	 SYR-N SYR-NH	 USRB5000A USRB5000	 ZA6000 ZAS6000	P2BIP *or* 0694
4-Bolt Pillow Block (Pages 78-79) 19641 (Expansion) 19741 (Non-Expansion)	 FSYR-N FSYR-NH	 USRBF5000A USRBF5000	 ZA6000-F ZAS6000-F	P4BIP *or* 0695
4-Bolt Flange (Pages 80-81) 19611 (Expansion) 19711 (Non-Expansion)	 FYR-N* FYR-NH*	 USFB5000A USFB5000	 ZF6000* ZFS6000*	F4SIP *or* 0697
Piloted Flange (Pages 82-83) 19631 (Expansion) 19731 (Non-Expansion)	 FYRP-N FYRP-NH	 USFC5000A USFC5000A	 ZBR6000	FCIP *or* 0698
Wide Slot Take-Up (Pages 84-85) 19651 (Expansion) 19751 (Non-Expansion)	 TBR-N TBR-NH	 USTU5000A USTU5000	 ZT6000	WSTUIP *or* 0693

All units have tapered adaptor style locking mechanism.

*Manufacture square and round 4-bolt flange.

Before mounting, make sure there is sufficient clearance to access dismounting set screws on back of unit.

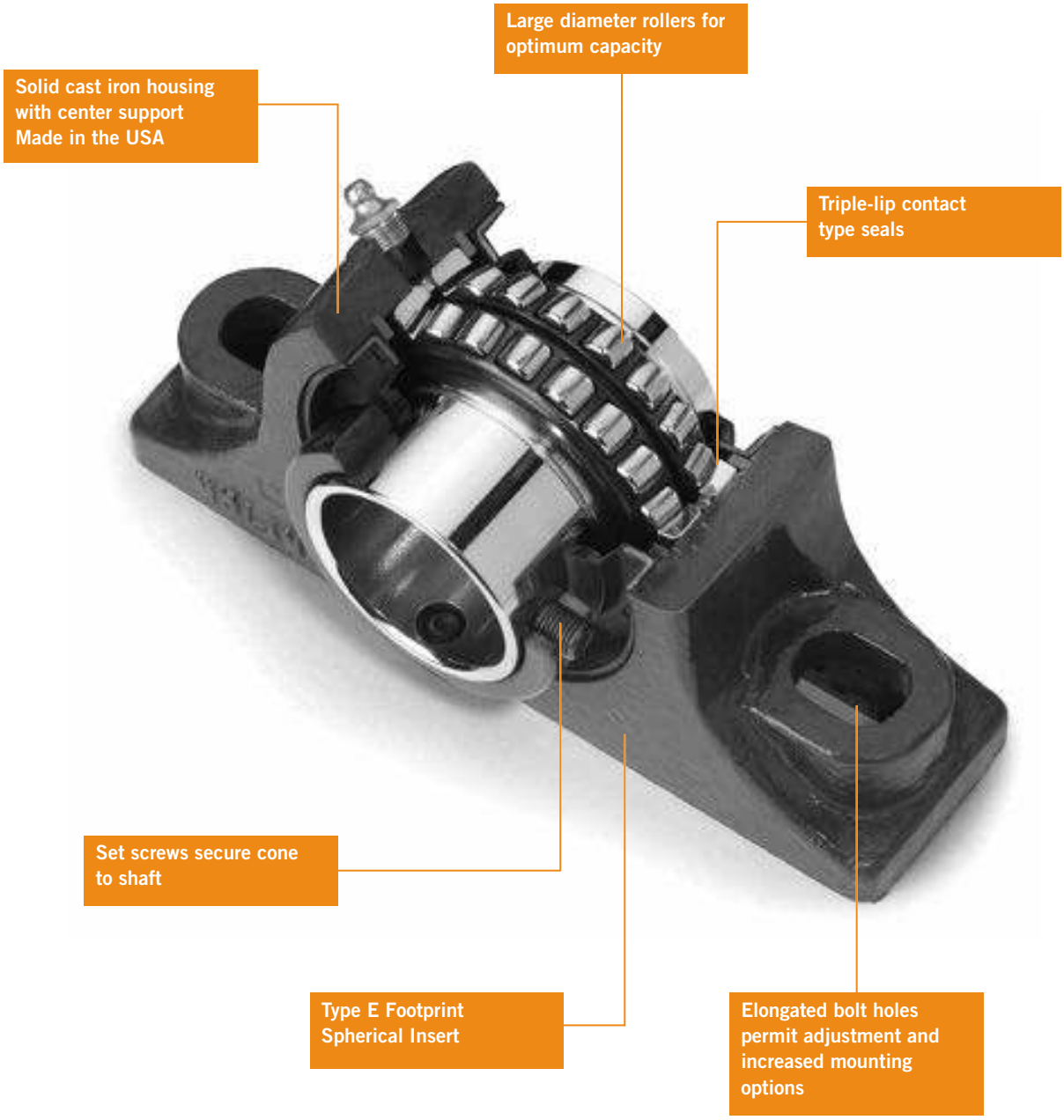
Note: This is a general dimensional interchange.

For exact dimensions and comparison information on inserts and seals, please contact the factory.

For Nomenclature see pages 226–227


MOLINE

ME2000™ SPHERICAL ROLLER BEARINGS WITH TYPE E DIMENSIONS



MOLINE ME2000 SPHERICAL ROLLER BEARINGS
WITH TYPE E DIMENSIONS

SKF INSERT INSIDE

TIMKEN INSERT INSIDE

FEATURES OF MOLINE ME2000 SPHERICAL ROLLER BEARINGS WITH TYPE E DIMENSIONS

WITH TIMKEN™ OR SKF™ SPHERICAL ROLLER BEARINGS

- Available in shaft sizes from 1 7/16 to 4 ½"; and 40 to 130mm
- +/- 1½° misalignment capacity
- Available in Expansion (red tag) and Non-Expansion (yellow tag) styles
- Expansion units have .100" capacity
- Single piece outer race
- 3 lube holes and groove in outer race
- Precision ground contours
- Will accommodate moderate thrust loads
- Permits angular misalignment without loss of capacity
- Long rollers allow for greater contact
- Standard grease operating temperature is up to 250°; high temperature grease is available up to 350°; please call the factory for more information
- Housings available in the standard painted finish. Powder coating in RAL or custom colors, Stainless Steel Powder coating, Nickel plating, Epoxy and Teflon coatings available on request
- Custom machining and design is available upon request, please call the factory for more information
- Rotating center guide ring for least possible friction
- Housings are made in the USA of Class 30 cast iron
- Piloted Flange housings are machined with back-out holes
- Comes with a Triple Lip Contact Seal standard, also available with Labyrinth Seals for high speed applications and with Spring Loaded Garter Seals for dirty and wet applications
- Made in the United States

Standard "Triple Lip" Seal

Spring Loaded Garter Seal for use in extreme wet and dirt conditions

Balanced Metal Labyrinth Seal for high speed applications

ME2000 2-BOLT PILLOW BLOCK WITH TYPE E DIMENSIONS

SHAFT SIZE	MOLINE PART #		DIMENSIONS (INCHES)													WEIGHT LBS.
	EXP	NON-EXP	A	B	C	MIN D	CENTER TO CENTER D	MAX D	F	G	H	J	L	M	N	
1 7/16	29121107	29221107	2 13/16	7 3/8	2 1/8	5	5 1/2	6	1/2	1 1/8	1 1/8	3 7/8	2 1/2	1 7/8	2 3/4	6.9
1 1/2	29121108	29221108	2 15/16										2 1/2		2 3/4	9.1
1 11/16	29121111	29221111	3 1/16	7 7/8	2 1/8	5 5/8	6 1/16	6 1/2	1/2	1 1/16	1 1/4	4 1/4	2 5/8	2 1/8	2 7/8	8.8
40mm	29121040	29221040														
1 3/4	29121112	29221112											2 5/8			11.0
45mm	29121045	29221045														
1 15/16	29121115	29221115	3 1/8	8 7/8	2 7/16	6 1/8	6 11/16	7 1/4	5/8	1 5/16	1 3/8	4 1/2	2 7/8	2 1/4	2 7/8	10.2
2	29121200	29221200														
50mm	29121050	29221050														
2 3/16	29121203	29221203	3 5/16	9 5/8	2 5/8	6 11/16	7 3/8	8	5/8	1 7/16	1 1/2	5	3 1/4	2 1/2	3 1/8	11.8
55mm	29121055	29221055														
2 1/4	29121204	29221204	3 7/16										3 1/4		3 1/8	
2 7/16	29121207	29221207														
2 1/2	29121208	29221208	3 9/16	10 1/2	2 7/8	7 1/8	7 7/8	8 5/8	5/8	1 1/2	1 5/8	5 11/16	4	2 3/4	3 3/8	17.5
60mm	29121060	29221060														
65mm	29121065	29221065														
2 11/16	29121211	29221211														
2 3/4	29121212	29221212														
2 15/16	29121215	29221215	3 7/8	12	3	7 7/8	8 13/16	9 3/4	3/4	1 13/16	1 7/8	6 5/16	4 3/8	3 1/8	3 5/8	23.9
3	29121300	29221300														
70mm	29121070	29221070														
75mm	29121075	29221075														
3 3/16	29121303	29221303														
3 7/16	29121307	29221307														
3 1/2	29121308	29221308	4 7/16	14	3 5/8	9 3/4	10 5/8	11 1/2	7/8	1 7/8	2 1/4	7 1/2	5 1/8	3 3/4	4 1/32	34.5
80mm	29121080	29221080														
85mm	29121085	29221085														
90mm	29121090	29221090														

*__Note:__ The elongated slots give broader mounting capabilities while still allowing the same center to center, min and max mounting dimensions of the old style Type E.

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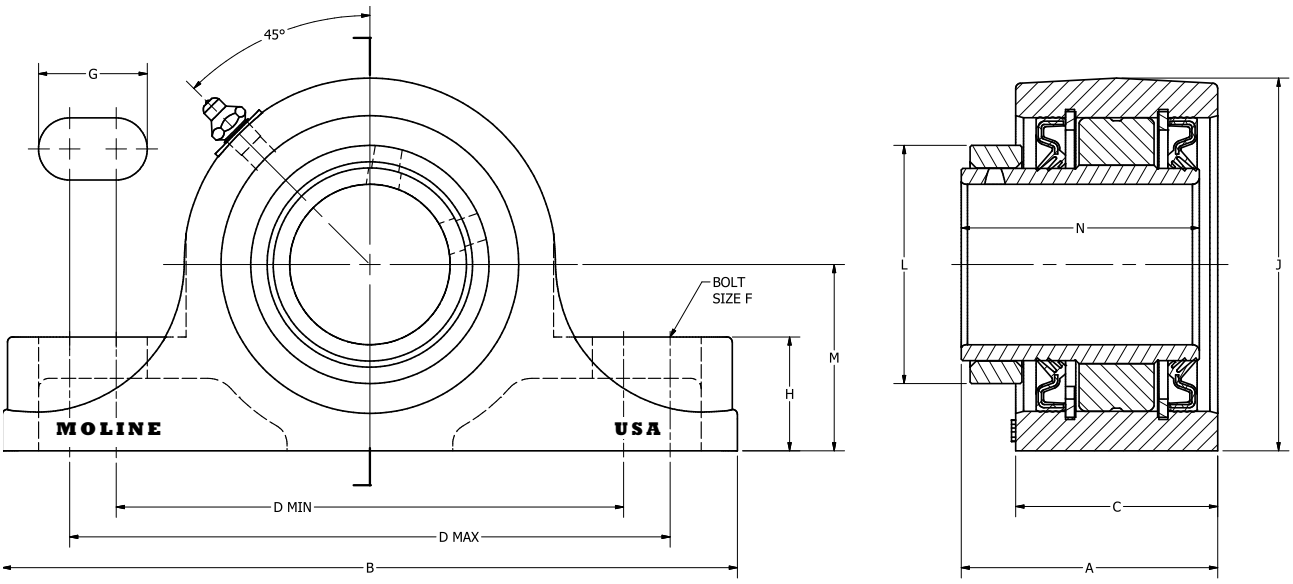
ME2000 2-BOLT PILLOW BLOCK WITH TYPE E DIMENSIONS



For personal service and special requests, please call us at 800.242.4633.

CAD drawings available upon request at no additional charge.

For nomenclature see pages 226 and 227.

ME2000 4-BOLT FLANGE WITH TYPE E DIMENSIONS

SHAFT SIZE	MOLINE PART #		DIMENSIONS (INCHES)									WEIGHT LBS.
	EXP	NON-EXP	A	B	C	D	F	H	J	L	N	
1 7/16	29111107	29211107	2 3/16	4 5/8	2 19/32	3 1/2	1/2	1 1/16	3 7/8	2 1/2	2 3/4	7.2
1 1/2	29111108	29211108	3 1/2	5 3/8	2 21/32	4 1/8	1/2	1 3/16	4 1/4	2 1/2	2 3/4	12.0
1 11/16	29111111	29211111	3 9/16							2 5/8	2 7/8	11.3
40mm	29111040	29211040										
1 3/4	29111112	29111112	3 3/4	5 5/8	3 3/32	4 3/8	1/2	1 3/16	4 1/2	2 7/8	2 7/8	12.6
45mm	29111045	29111045	3 3/4								2 7/8	11.9
1 15/16	29111115	29211115										
2	29111200	29211200										
50mm	29111050	29211050										
2 3/16	29111203	29211203	3 7/8	6 1/4	3 9/32	4 7/8	5/8	1 3/8	4 7/8	3 1/4	3 1/8	14.6
55mm	29111055	29211055										
2 1/4	29111204	29211204	4 1/8	6 7/8	3 9/16	5 3/8	5/8	1 1/2	5 3/4	4	3 1/8	23.5
2 7/16	29111207	29211207	4 5/16								3 3/8	
2 1/2	29111208	29211208										
60mm	29111060	29211060										
65mm	29111065	29211065										
2 11/16	29111211	29211211	4 3/4	7 3/4	3 15/16	6	3/4	1 5/8	6 1/2	4 3/8	3 5/8	31.5
2 3/4	29111212	29211212										
2 15/16	29111215	29211215										
3	29111300	29211300										
70mm	29111070	29211070										
75mm	29111075	29211075										
3 3/16	29111303	29211303	5 5/16	9 1/4	4 1/2	7	3/4	1 7/8	7 5/8	5 1/8	4 1/32	51.5
3 7/16	29111307	29211307										
3 1/2	29111308	29211308										
80mm	29111080	29211080										
85mm	29111085	29211085										
90mm	29111090	29211090										
3 11/16	29111311	29211311	6 9/16	10 1/4	5 5/8	7 3/4	7/8	2 1/8	8 7/16	6	4 19/32	64.8
3 15/16	29111315	29211315										
4	29111400	29211400										
100mm	29111100	29211100										

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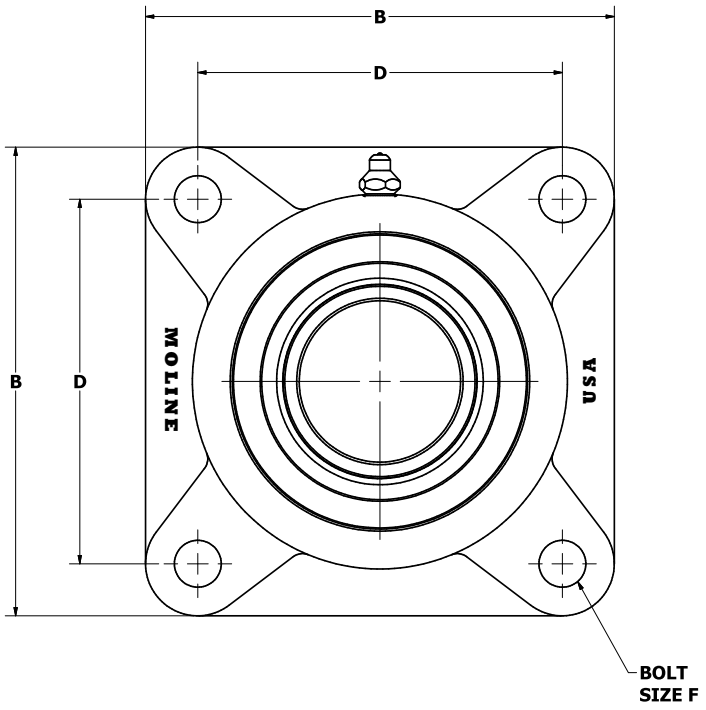
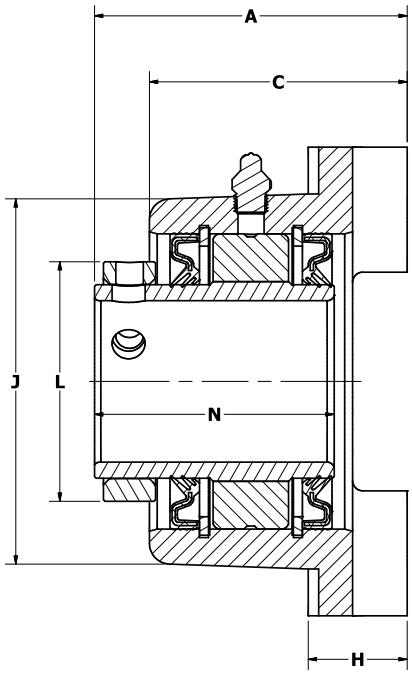
ME2000 4-BOLT FLANGE WITH TYPE E DIMENSIONS





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CAD drawings available upon request at no additional charge.

For nomenclature see pages 226 and 227.

ME2000 PILOTED FLANGE CARTRIDGE WITH TYPE E DIMENSIONS

SHAFT SIZE	MOLINE PART #		DIMENSIONS (INCHES)												WT. LBS
	EXP	NON-EXP	A	B	C	D	E	F	G	H	K	L	M	N	
1 11/16 40mm	29131111 29131040	29231111 29231040	3	6 1/8	2 3/16	5 1/8	7/8	7/16	1 9/16	1/2	4 1/4	2 5/8	3 5/8	2 7/8	8.5
1 15/16 2 50mm	29131115 29131200 29131050	29231115 29231200 29231050	3	6 3/8	2 3/16	5 3/8	7/8	7/16	1 1/2	1/2	4 1/2	2 7/8	3 51/64	2 7/8	10.5
2 3/16 55mm	29131203 29131055	29231203 29231055	3 1/4	7 1/8	2 7/16	6	1	1/2	1 25/32	1/2	5	3 1/4	4 1/4	3 1/8	14.5
2 7/16 2 1/2 60mm 65mm	29131207 29131208 29131060 29131065	29231207 29231208 29231060 29231065	3 1/2	7 5/8	2 11/16	6 1/2	1	1/2	1 7/8	5/8	5 1/2	4	4 19/32	3 3/8	16
2 11/16 2 3/4 2 15/16 3 70mm 75mm	29131211 29131212 29131215 29131300 29131070 29131075	29231211 29231212 29231215 29231300 29231070 29231075	3 13/16	8 3/4	2 13/16	7 1/2	1 1/4	5/8	2	3/4	6 3/8	4 3/8	5 19/64	3 5/8	22
3 3/16 3 7/16 3 1/2 80mm 85mm 90mm	29131303 29131307 29131308 29131080 29131085 29131090	29231303 29231307 29231308 29231080 29231085 29231090	4 1/4	10 1/4	3 1/4	8 5/8	1 1/4	3/4	2 1/2	15/16	7 3/8	5 1/8	6 3/32	4 1/32	33
3 11/16 3 15/16 4 100mm	29131311 29131315 29131400 29131100	29231311 29231315 29231400 29231100	4 3/4	10 7/8	3 9/16	9 3/8	1 1/2	3/4	2 5/8	1 1/16	8 1/8	6	6 5/8	4 19/32	45
4 7/16 4 1/2 110mm 115mm	29131407 29131408 29131110 29131115M	29231407 29231408 29231110 29231115M	5 5/32	13 1/2	4	11 3/4	1 1/2	3/4	3 3/16	1	10 1/4	6 1/8	5 3/32	6 1/8	72
4 15/16 5 125mm 130mm	29131415 29131500 29131125 29131130	29231415 29231500 29231125 29231130	6 1/16	14 3/4	5 3/4	12 3/4	1 3/4	7/8	3 9/16	1 1/4	11	6 7/8	5 17/32	7 7/16	99

Please Note: Before mounting, make sure there is sufficient clearance to access dismounting set screws on the back of the housing unit (yellow plastic protection plugs).

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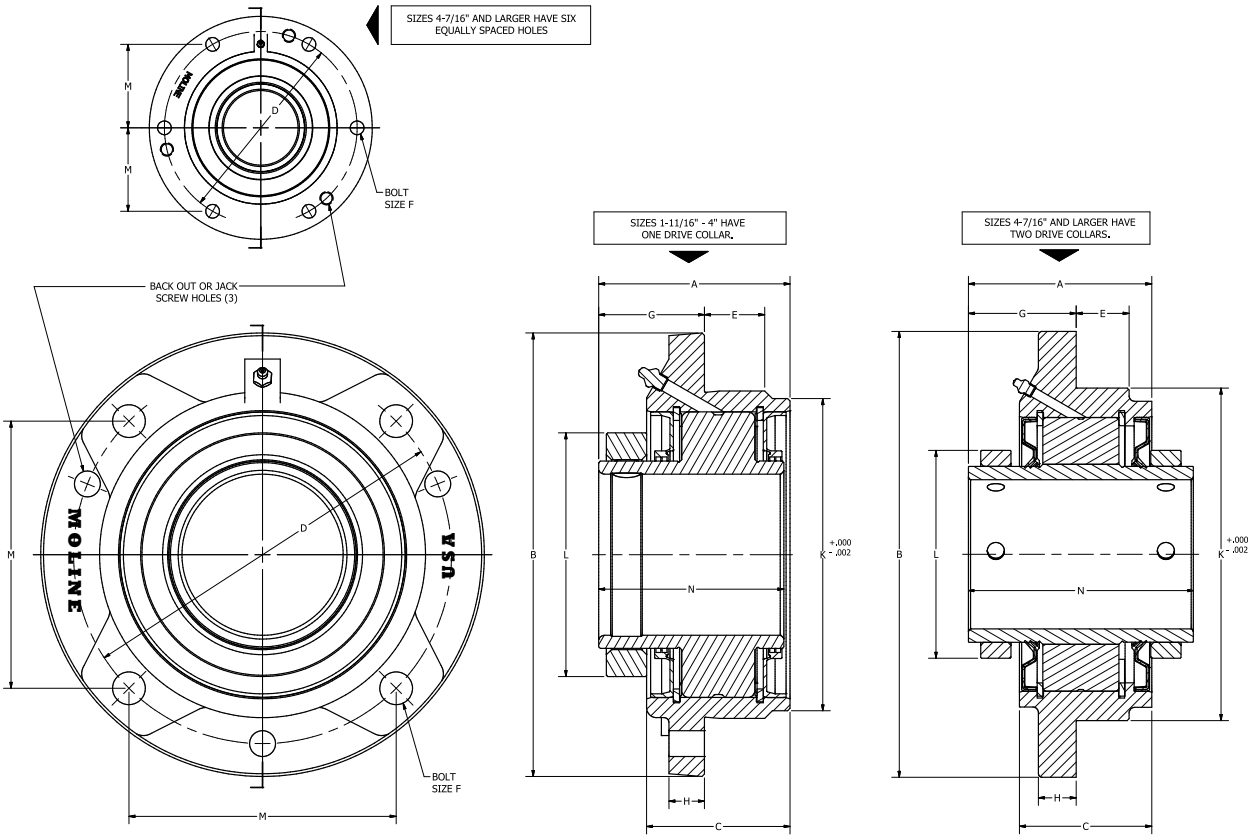
ME2000 PILOTED FLANGE CARTRIDGE WITH TYPE E DIMENSIONS



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For nomenclature see pages 226 and 227.

MOUNTING INSTRUCTIONS

It is critical to the performance of the bearing that it be mounted properly. Failure to follow proper mounting practice may result in reduced bearing life.

SHAFT DIAMETER		SHAFT TOLERANCES
IN	MM	
1 3/16 – 1 1/2	40 – 50	Plus .0000" to minus .0005"
1 11/16 – 4	55 – 100	Plus .0000" to minus .0010"
4 7/16 – 5	110 – 130	Plus .0000" to minus .0015"

SHAFT SIZE		SET SCREW SIZE	TORQUE IN – LBS
IN	MM		
1 3/16 – 2 1/4	40 – 55	3/8 – 24	290
2 7/16 – 3 1/2	60 – 90	1/2 – 20	620
3 11/16 – 5	100 – 130	5/8 – 18	1325

INSTALLATION INSTRUCTIONS

Non-Expansion Bearing

1. Clean shaft and bore of bearing. The shaft should be straight, free of burrs and nicks, and the correct size.
2. Lubricate shaft and bearing bore with grease or oil to facilitate assembly. Slip bearing into position. When light press fit is required, press against the end of the inner ring of bearing. Do not strike or exert pressure on the housing or seals.
3. Bolt bearing to support, using shims where necessary to align bearing so inner ring does not rub on housing bore. Use full shims which cover across the entire housing base.
4. Determine final shaft position and hand tighten screws in the locking collar(s) of non-expansion bearing firmly onto the shaft, while the other bearings remain free. If possible, rotate the shaft slowly under load to properly center the rolling elements with respect to the raceways. Tighten set screws alternately in small increments to the torque value specified in Table above. To ensure full locking of the inner race to the shaft, after 24 hours of operation, the set screws should be retightened to the original torque value.
5. Check rotation. If there is any strain, irregular rotational torque or vibration, it could be due to incorrect alignment, bent shaft or bent supports. Installation should be rechecked and correction made where necessary.

ME2000 Expansion Bearing Applications

In addition to the requirements listed above, the following additional instructions should be followed. Position the expansion bearing in the housing. For normal expansion conditions, the bearing insert should be positioned in the center of the housing. To center the insert in the housing, move the bearing to the extreme position (-.100" on all expansion units) and mark the shaft. Then move the bearing insert in the opposite direction one-half the total expansion to center the bearing in the housing. If the maximum expansion is required, move the bearing insert to the extreme position in the housing to permit full movement in the direction of the expansion. After the expansion bearing has been positioned in the housing, tighten the set screws securely to the shaft.

Expansion Bearing

1. Same as Non-Expansion Bearing.
2. Same as Non-Expansion Bearing.
3. Same as Non-Expansion Bearing.
4. Position expansion bearing in the housing. For normal expansion conditions, the bearing insert should be positioned in the center of the housing. To center bearing insert in housing, move bearing insert to extreme position and mark shaft. Then using bearing maximums total expansion table, move bearing insert in opposite direction one-half the total expansion to center bearing in the housing. If maximum expansion is required, move bearing insert to the extreme position in the housing to permit full movement in direction of expansion. After expansion bearing has been positioned in the housing, tighten the set screws in the locking collar to the recommended torque.
5. Same as Non-Expansion Bearing.

Bearing Maximum Total Expansion

All Expansion Units have - .100" Capacity
Misalignment Capacity = +/- 1½°

LUBRICATION INSTRUCTIONS

This bearing is factory lubricated with No. 2 consistency lithium base grease which is suitable for most applications. However, extra protection is necessary if bearing is subjected to excessive moisture, dust, or corrosive vapor. In these cases, bearing should contain as much grease as speed

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will permit (a full bearing with consequent slight leakage through the seal is the best protection against contaminant entry).

In dirty environments, the bearing should be purged daily to flush out contaminants. For added protection, it is advisable to shroud the bearing from falling material.

High Speed Operation

At higher operating speed, too much grease may cause overheating. In these cases, the amount of lubrication can only be determined by experience. If excess grease in the bearing causes overheating, it will be necessary to remove grease fittings and run for 10 minutes. This will allow excess grease to escape. Then wipe off excess grease and replace grease fittings.

In higher speed applications, a small amount of grease at frequent intervals is preferable to a large amount at long intervals. However, the proper volume and interval of lubrication can best be determined by experience.

The following table is a general guide for normal operating conditions. However, some situations may require a change in lubricating periods as dictated by experience. If the bearing is exposed to unusual operating conditions, consult a reputable grease manufacturer.

LUBRICATION GUIDE

Read preceding paragraphs before establishing lubrication schedule.

Abnormal bearing temperatures may indicate insufficient lubrication. Normal temperature may range from “cool to warm to the touch” up to the point of “too hot to touch for more than a few seconds,” depending on the bearing size and speed, and surrounding conditions. Unusually high temperature accompanied by excessive leakage of grease indicates too much grease. High temperature with no grease showing at the seals, particularly if the bearing seems noisy, usually indicates too little grease. Normal temperature and a slight showing of grease at the seals indicate proper lubrication.

If equipment will be idle for some time, before shutting down, add grease to the bearing until grease purges from the seals. This will ensure protection of the bearing, particularly when exposed to severe environmental conditions. After storage or idle period, add fresh grease to the bearing before starting.

SPECIAL OPERATING CONDITIONS

Refer acid, chemical, extreme or other special operating conditions to the Moline Bearing Company.

Moline spherical bearings have the capacity to carry substantial radial loads, thrust loads or a combined radial and thrust load. The maximum load that can be applied is limited by the various components in the system, and the life requirements listed in this catalog. The factory should be consulted on any application that exceeds the recommendations in the catalog.

Select a bearing from the ME-2000 load-rating chart having a radial load rating at the operating speed equal to or greater than the calculated Equivalent Radial Load for a desired L10 life. This simple method is all that is necessary for most general applications and provides for occasional shock loads.

Lubrication Guide

Read preceding paragraphs before establishing lubrication schedule.

HOURS RUN PER DAY	SUGGESTED LUBRICATION PERIOD IN WEEKS							
	1 TO 250 RPM	251 TO 500 RPM	501 TO 750 RPM	751 TO 1000 RPM	1001 TO 1500 RPM	1501 TO 2000 RPM	2001 TO 2500 RPM	2501 TO 3000 RPM
8	12	12	10	7	5	4	3	2
16	12	7	5	4	2	2	2	1
24	12	5	3	2	1	1	1	1

L10 Hours of Life - Is the life that may be expected from at least 90% of a given group of bearings operated under identical conditions. The average life (L50) will be approximately five times the L10 life. To determine the L10 hours of life for loads and RPM's not listed, use the following equation.

$$L_{10} = \left(\frac{C}{P}\right)^{10/3} \times \frac{16667}{RPM}$$

Where: C= Dynamic Capacity (See Table below)
P= Equivalent Radial Load

If the load on a double row spherical bearing is only in a radial direction (no axial load), the Equivalent Radial Load (P) is equal to the actual radial load. In situations where the bearing load consists of radial and thrust loads, the total load must be converted into an Equivalent Radial Load by the equation:

$$P = XF_R + YF_A$$

Where:
FA = Axial (thrust) Load – see page 105 for maximum
FR= Radial Load
X= Radial Load Factor
(page 105)
Y= Thrust Load Factor
(page 105)

To find the X and Y values, first calculate FA/FR. Then use the ME-2000 Thrust Factors and Seal Speeds table on the following page to determine the appropriate values for X and Y. Substitute all known values into the Equivalent Radial Load equation.

For longer L10 hours other than 30,000 hours and not shown, multiply the Equivalent Radial Load by one of the following factors: for 20,000 L10 hours life, use a factor of .87; for 40,000 L10 hours of live, use 1.25; and for 80,000 L10 hours of live, use 1.38.

In applications that have heavy shock loads, frequent shock or severe vibrations, add up to 50% to the Equivalent Radial Load to obtain a modified Equivalent Radial Load. The amount of load added is relative to the severity of the application. Additional assistance can be obtained by consulting with the factory.

The shaft tolerances noted on page 102 are sufficient for normal applications. As noted in Table 1, extremely heavy radial loads may require a light to snug press fit onto the shaft.

The magnitude and direction of both the thrust and radial load must be taken into account when selecting the housing. When pillow blocks are used, heavy loads should be directed through the base. If the bearing must be used in a situation where the load pulls the housing away from the mounting base, both the hold down bolts and housing must be of adequate strength. Auxiliary load carrying devices such as shear bars are advisable for side or end loading of pillow blocks and radial loads for flange units.

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ME2000 Thrust Factors and Seal Speeds

SHAFT SIZE	E	LIGHT THRUST IF FA/FR≤E		HEAVY THRUST IF FA/FR≥E		DYNAMIC CAPACITY C*		SEAL SPEED LIMITS			MAXIMUM SLIP FIT RADIAL LOAD FR**
						LBS.	NEWTONS	STANDARD TRIPLE LIP RPM	LABYRINTH RPM	GARTER SPRING RPM	
		X	Y	X	Y						
1 7/16 - 1 1/2	.28	1.0	2.4	.67	3.6	16500	73600	2800	5300	1700	2000
1 11/16 - 1 3/4 40mm 45mm	.26	1.0	2.6	.67	3.9	17300	77100	2650	4700	1600	2100
1 15/16 - 2 50mm	.24	1.0	2.8	.67	4.2	19000	84500	2400	4250	1450	2300
2 3/16 - 2 1/4 55mm	.23	1.0	2.9	.67	4.3	22400	99500	2150	3800	1300	2700
2 7/16 - 2 1/2 60mm 65mm	.24	1.0	2.8	.67	4.2	33300	148000	1800	3250	1100	4000
2 11/16 - 3 70mm 75mm	.22	1.0	3.1	.67	4.6	34600	158000	1600	2800	950	4200
3 3/16 - 3 1/2 80mm 85mm 90mm	.23	1.0	2.9	.67	4.3	56900	253000	1300	2200	800	6800
3 11/16 - 4 100mm	.24	1.0	2.8	.67	4.2	69900	311000	1200	2000	700	8400
4 7/16 - 4 1/2 110mm 115mm	.25	1.0	2.7	.67	4.1	91700	408000	1150	-----	-----	11000
4 15/16 - 5 125mm 130mm	.26	1.0	2.6	.67	3.9	123000	546000	900	-----	-----	14800

* Comparing Spherical to Tapered Roller Bearings—The dynamic capacity C (Spherical) and C90 (Tapered) are not the same base.
To compare basic dynamic capacities, multiply C x .259 and compare to C90.
To select and then compare, use the complete procedure for each bearing and then compare.

** If load exceeds maximum allowable slip fit radial load, snug to light press fit of shaft is required.
For applications that exceed the load ratings above, please contact the factory for assistance.
For load requirements higher than those stated above, please contact the factory.
Please Note: Before mounting, make sure there is sufficient clearance to access dismounting set screws on the back of the housing unit (yellow plastic protection plugs).

ME2000 RADIAL LOAD RATINGS

NOMINAL SHAFT DIAMETER (IN)	L10 HRS LIFE	RADIAL LOAD RATINGS AT VARIOUS REVOLUTIONS PER MINUTE								
		50	100	200	500	1000	1200	1500	1800	2500
1 7/16 1 ½	5000	7300	5930	4810	3660	2970	2780	2630	2490	2260
	10000	5930	4810	3910	2970	2410	2260	2140	2020	1830
	20000	4810	3910	3180	2410	1960	1830	1740	1640	1490
	50000	3660	2970	2410	1830	1490	1390	1320	1250	1130
	100000	2970	2410	1960	1490	1210	1130	1070	1010	919
1 11/16 1 ¾ 40mm 45mm	5000	7660	6220	5050	3840	3120	2910	2760	2610	2370
	10000	6220	5050	4100	3120	2530	2370	2240	2120	1920
	20000	5050	4100	3330	2530	2060	1920	1820	1720	1560
	50000	3840	3120	2530	1920	1560	1460	1380	1310	1190
	100000	3120	2530	2060	1560	1270	1190	1120	1060	964
1 15/16 2 50mm	5000	7960	6470	5250	3990	3240	3030	2870	2720	-----
	10000	6470	5250	4270	3240	2630	2460	2330	2210	-----
	20000	5250	4270	3470	2630	2140	2000	1890	1790	-----
	50000	3990	3240	2630	2000	1620	1520	1440	1360	-----
	100000	3240	2630	2140	1620	1320	1230	1170	1110	-----
2 3/16 2 ¼ 55mm	5000	9850	8000	6500	4940	4010	3750	3550	3360	-----
	10000	8000	6500	5280	4010	3260	3050	2880	2730	-----
	20000	6500	5280	4290	3260	2650	2470	2340	2220	-----
	50000	4940	4010	3260	2470	2010	1880	1780	1680	-----
	100000	4010	3260	2650	2010	1630	1530	1450	1370	-----
2 7/16 2 ½ 60mm 65mm	5000	14300	11600	9430	7160	5820	5440	5150	4880	-----
	10000	11600	9430	7660	5820	4730	4420	4180	3960	-----
	20000	9430	7660	6220	4730	3840	3590	3400	3220	-----
	50000	7160	5820	4730	3590	2920	2730	2580	2440	-----
	100000	5820	4730	3840	2920	2370	2210	2100	1990	-----

Note: Refer to page 105 for seal speed limits.

For applications that exceed the load ratings above, please contact the factory for assistance.

For load requirements higher than those stated above, please contact the factory.

Please Note: Before mounting, make sure there is sufficient clearance to access dismounting set screws on the back of the housing unit (yellow plastic protection plugs).

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ME2000 RADIAL LOAD RATINGS

NOMINAL SHAFT DIAMETER (IN)	L10 HRS LIFE	RADIAL LOAD RATINGS AT VARIOUS REVOLUTIONS PER MINUTE								
		50	100	200	500	1000	1200	1500	1800	2500
2 11/16 2 3/4 2 15/16 3 70mm 75mm	5000 10000 20000 50000 100000	15600 12600 10300 7800 6340	12600 10300 8340 6340 5150	10300 8340 6780 5150 4180	7800 6340 5150 3910 3180	6340 5150 4180 3180 2580	5930 4810 3910 2970 2410	5610 4560 3700 2810 2280	----- ----- ----- ----- -----	----- ----- ----- ----- -----
3 3/16 3 7/16 3 1/2 80mm 85mm 90mm	5000 10000 20000 50000 100000	25250 20510 16660 12660 10280	20510 16660 13530 10280 8350	16660 13530 10990 8350 6780	12660 10280 8350 6340 5150	10280 8350 6780 5150 4180	9730 7910 6420 4880 3960	----- ----- ----- ----- -----	----- ----- ----- ----- -----	----- ----- ----- ----- -----
3 11/16 3 15/16 4 100mm	5000 10000 20000 50000 100000	31020 25200 20470 15550 12630	25200 20470 16620 12630 10260	20470 16620 13500 10260 8330	15550 12630 10260 7790 6330	12630 10260 8330 6330 5140	11960 9710 7890 5990 4870	----- ----- ----- ----- -----	----- ----- ----- ----- -----	----- ----- ----- ----- -----
4 7/16 4 1/2 110mm 115mm	5000 10000 20000 50000 100000	40700 33050 26850 20400 16570	33050 26850 21810 16570 13460	26850 21810 17710 13460 10930	20400 16570 13460 10220 8300	16570 13460 10930 8300 6740	----- ----- ----- ----- -----	----- ----- ----- ----- -----	----- ----- ----- ----- -----	----- ----- ----- ----- -----
4 15/16 5 125mm 130mm	5000 10000 20000 50000 100000	54590 44340 36010 27360 22220	44340 36010 29250 22220 18050	36010 29250 23760 18050 14660	27360 22220 18050 13710 11140	22220 18050 14660 11140 9050	----- ----- ----- ----- -----	----- ----- ----- ----- -----	----- ----- ----- ----- -----	----- ----- ----- ----- -----

Note: Refer to page 105 for seal speed limits.
For applications that exceed the load ratings above, please contact the factory for assistance.

ME2000 SERIES INTERCHANGE

ME2000 Spherical E Interchange (with Type E Dimensions)

MOLINE	SKF	REX	LINK-BELT	DODGE	SEALMASTER
2-Bolt Pillow Block (Pages 96–97) 29121 (Expansion) 29221 (Non-Expansion)	SYE SYE-H	ZEP	EPE-B22400H EP-B22400H	EP2B-S2-000RE EP2B-S2-000R	USRBE5000E USRBE5000
4-Bolt Flange (Pages 98–99) 29111 (Expansion) 29211 (Non-Expansion)	-----	ZEF	EFR-B22400H	EF4B-S2-000RE EF4B-S2-000R	USFBE5000E USFBE5000
Piloted Flange (Pages 100–101) 29131 (Expansion) 29231 (Non-Expansion)	-----	-----	FCB22400H	-----	USFCE5000E USFCE5000

Manufacture square and round 4-bolt flange.
Note: This is a general dimensional interchange.
For exact dimensions and comparison information on inserts and seals, please contact the factory.
For Nomenclature see pages 226–227

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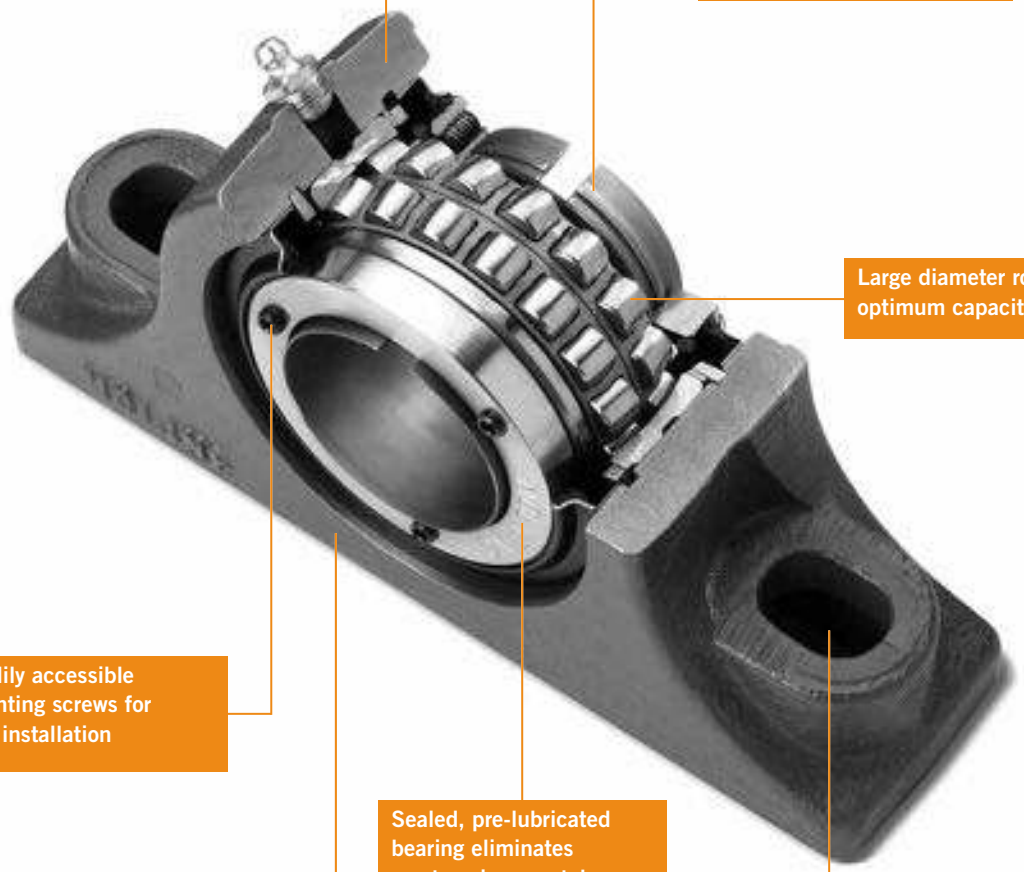
ME3000™ SPHERICAL ROLLER BEARINGS WITH TYPE E DIMENSIONS



Solid cast iron housing, with center support Made in the USA

Even-Lok™ bearing provides near 360 degree/100% interface with shaft

Large diameter rollers for optimum capacity

Readily accessible mounting screws for easy installation

Sealed, pre-lubricated bearing eliminates most environmental contamination

Elongated bolt holes permit adjustment and increased mounting options

Type E Footprint Spherical Insert

MOLINE ME-3000 EVEN-LOK™ SPHERICAL E ROLLER BEARINGS
WITH TYPE E DIMENSIONS

SKF INSERT INSIDE

FEATURES OF MOLINE ME3000 EVEN-LOK™ SPHERICAL ROLLER BEARINGS WITH TYPE E DIMENSIONS

WITH SKF® ROLLER BEARINGS

- Supplies near 360° concentric locking around the shaft which eliminates slippage due to vibration

Traditional Set Screw Locking

M3000 Even-Lok™

- Compared to traditional set screw locking, concentric locking reduces fretting corrosion
- Excellent choice for screening and conveying, material and air handling, industrial laundry applications, or any application where vibration, slippage or fretting corrosion is a problem
- Distributes locking force equally through Even-Lok™, reducing the risk of local material failure and particle infiltration in the inner sleeve
- Even-Lok™ is reliable, easy and fast to install and dismount
- Units come completely assembled, sealed and pre-lubricated
- Comes with special Allen wrench for easy mounting and dismounting
- Available in shaft sizes from 1 7/16" to 4"
- +/- 1 ½° misalignment capacity
- Available in Expansion (red tag) and Non-Expansion (yellow tag) styles
- Expansion units have .100" capacity or .030" per foot of shaft
- Standard grease operating temperature is up to 250°, high temperature grease is 350°, additional lubrication options are available, please call the factory for more information
- Available with Standard Double Lip Contact Seal made by SKF®
- Housings available in the standard painted finish, Powder coating in RAL or custom colors, Stainless Steel Powder coating, Nickel Plating, Epoxy and Teflon coatings available upon request
- Custom machining and design is available upon request, please call the factory for more information
- Housings are made of Class 30 cast iron in Illinois and Iowa
- Made in the United States

Standard Double Lip Contact Seal made by SKF®

ME3000 EVEN-LOK™ 2-BOLT PILLOW BLOCK WITH TYPE E DIMENSIONS

SHAFT SIZE	MOLINE PART #		DIMENSIONS (INCHES)											WT. LBS.
	EXP	NON-EXP	A	B	C	MIN D	CENTER TO CENTER D	MAX D	F	G	H	J	M	
1 7/16	29621107	29721107	2 11/32	7 3/8	2 1/8	5	5 1/2	6	1/2	1 1/8	1 1/8	3 7/8	1 7/8	6.9
1 1/2 1 11/16	29621108 29621111	29721108 29721111	2 11/32	7 7/8	2 3/8	5 5/8	6 1/16	6 1/2	1/2	1 1/16	1 1/4	4 1/4	2 1/8	9.0
1 3/4 1 15/16 2	29621112 29621115 29621200	29721112 29721115 29721200	2 11/32	8 7/8	2 7/16	6 1/8	6 11/16	7 1/4	5/8	1 5/16	1 3/8	4 1/2	2 1/4	10.5
2 3/16	29621203	29721203	2 11/32	9 5/8	2 5/8	6 11/16	7 3/8	8	5/8	1 7/16	1 1/2	5	2 1/2	11.8
2 7/16 2 1/2	29621207 29621208	29721207 29721208	2 37/64	10 1/2	2 7/8	7 1/8	7 7/8	8 5/8	5/8	1 1/2	1 5/8	5 11/16	2 3/4	17.5
2 11/16 2 3/4 2 15/16 3	29621211 29621212 29621215 29621300	29721211 29721212 29721215 29721300	2 37/64	12	3	7 7/8	8 13/16	9 3/4	3/4	1 13/16	1 7/8	6 5/16	3 1/8	24.0
3 7/16 3 1/2	29621307 29621308	29721307 29721308	3 9/64	14	3 5/8	9 3/4	10 5/8	11 1/2	7/8	1 7/8	2 1/4	7 1/2	3 3/4	34.5

Refer to Mounting and Dismounting Instructions on pages 120 and 121.

*__Note:__ The elongated slots give broader mounting capabilities while still allowing the same center to center, min and max mounting dimensions of the old style Type E.

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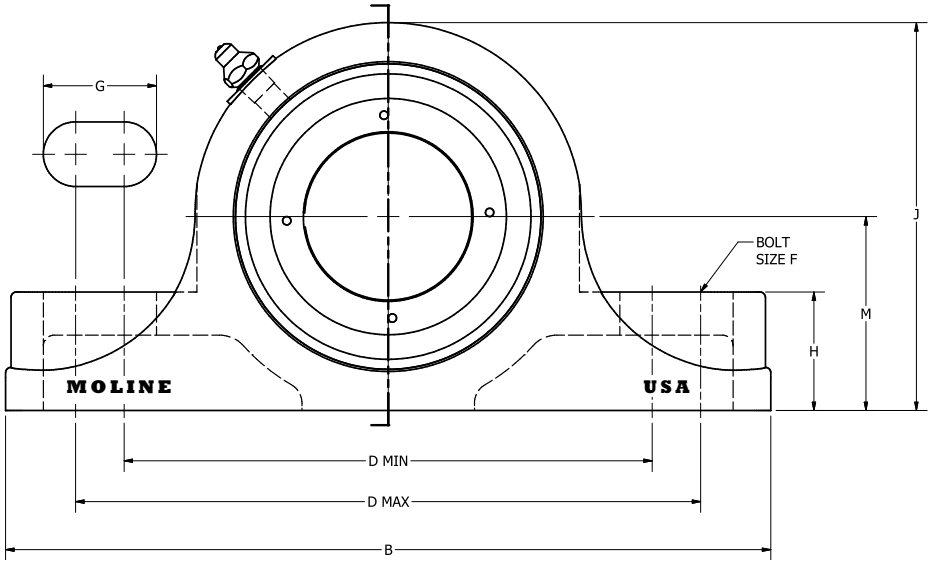
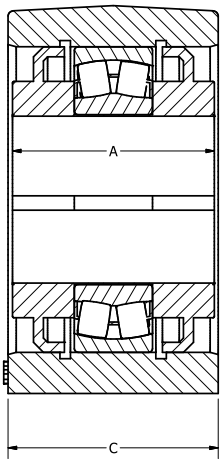
ME3000 EVEN-LOK™ 2-BOLT PILLOW BLOCK WITH TYPE E DIMENSIONS





For personal service and special requests, please call us at 800.242.4633.

CAD drawings available upon request at no additional charge.

For nomenclature see pages 226 and 227.

ME3000 EVEN-LOK™ 4-BOLT FLANGE WITH TYPE E DIMENSIONS

SHAFT SIZE	MOLINE PART #		DIMENSIONS (INCHES)							WEIGHT LBS.
	EXP	NON-EXP	A	B	C	D	F	H	J	
1 7/16	29611107	29711107	2 11/32	4 5/8	2 19/32	3 1/2	1/2	1 1/16	3 7/8	7.2
1 1/2	29611108	29711108	2 11/32	5 5/8	2 31/32	4 1/8	1/2	1 3/16	4 1/4	11.93
1 11/16	29611111	29711111								11.31
1 3/4	29611112	29711112	2 11/32	5 3/8	3 3/32	4 3/8	1/2	1 3/16	4 1/2	12.6
1 15/16	29611115	29711115								
2	29611200	29711200								11.9
2 3/16	29611203	29711203	2 11/32	6 1/4	3 9/32	4 7/8	5/8	1 3/8	4 7/8	14.6
2 7/16	29611207	29711207	2 37/64	6 7/8	3 9/16	5 3/8	5/8	1 1/2	5 3/4	23.5
2 1/2	29611208	29711208								
2 11/16	29611211	29711211	2 37/64	7 3/4	3 15/16	6	3/4	1 5/8	6 1/2	31.5
2 3/4	29611212	29711212								
2 15/16	29611215	29711215								
3	29611300	29711300								
3 3/16	29611303	29711303	3 9/64	9 1/4	4 1/2	7	3/4	1 7/8	7 5/8	51.5
3 7/16	29611307	29711307								
3 1/2	29611308	29711308								
3 15/16	29611315	29711315	3 9/64	10 1/4	5 5/8	7 3/4	7/8	2 1/8	8 7/16	64.8
4	29611400	29711400								

Refer to Mounting and Dismounting Instructions on pages 120 and 121.
For applications that exceed the load ratings above, please contact the factory for assistance.
Please Note: Before mounting, make sure there is sufficient clearance to access dismounting set screws on the back of the housing unit (yellow plastic protection plugs).

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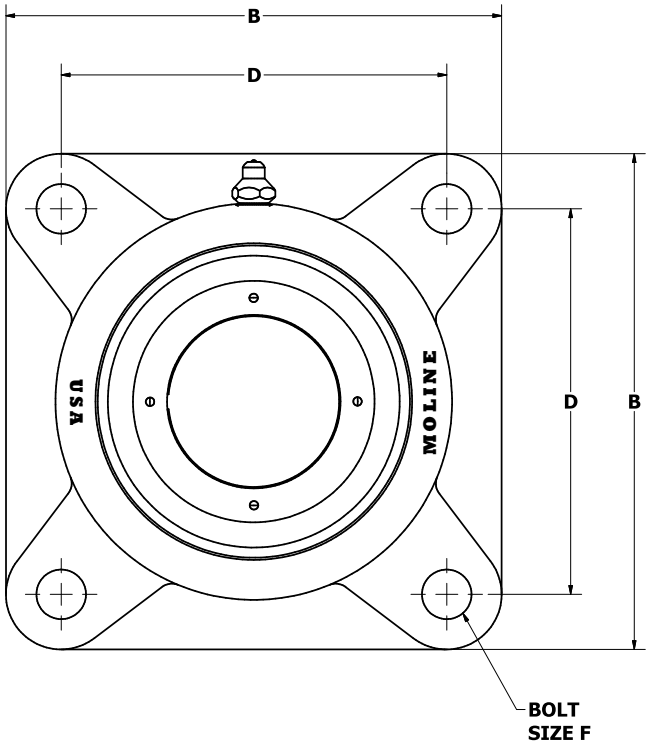
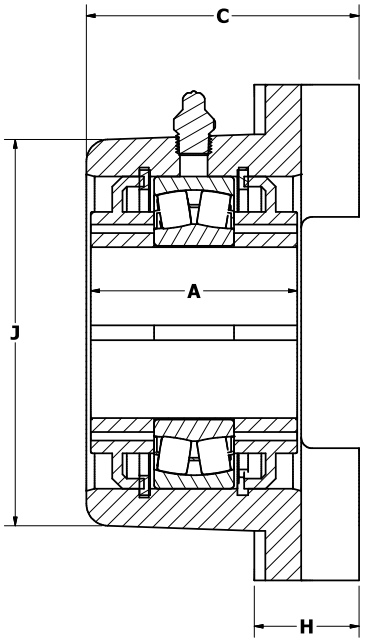
ME3000 EVEN-LOK™ 4-BOLT FLANGE WITH TYPE E DIMENSIONS





For personal service and special requests, please call us at 800.242.4633.

CAD drawings available upon request at no additional charge.

For nomenclature see pages 226 and 227.

ME3000 EVEN-LOK™ PILOTED FLANGE CARTRIDGE WITH TYPE E DIMENSIONS

SHAFT SIZE	MOLINE PART #		DIMENSIONS (INCHES)										WEIGHT LBS.
	EXP	NON-EXP	A	B	C	D	E	F	G	H	K	M	
1 11/16	29631111	29731111	2 11/32	6 1/8	2 3/16	5 1/8	7/8	7/16	3/4	1/2	4 1/4	3 5/8	8.5
1 15/16 2	29631115 29631200	29731115 29731200	2 11/32	6 3/8	2 3/16	5 3/8	7/8	7/16	11/16	1/2	4 1/2	3 51/64	10.5
2 3/16	29631203	29731203	2 11/32	7 1/8	2 7/16	6	1	1/2	15/16	1/2	5	4 1/4	14.5
2 7/16 2 1/2	29631207 29631208	29731207 29731208	2 37/64	7 5/8	2 11/16	6 1/2	1	1/2	1 1/16	5/8	5 1/2	4 19/32	16
2 11/16 2 3/4 2 15/16 3	29631211 29631212 29631215 29631300	29731211 29731212 29731215 29731300	2 37/64	8 3/4	2 13/16	7 1/2	1 1/4	5/8	1	3/4	6 3/8	5 19/64	22
3 7/16 3 1/2	29631307 29631308	29731307 29731308	3 9/64	10 1/4	3 1/4	8 5/8	1 1/4	3/4	1 1/2	15/16	7 3/8	6 3/32	33
3 15/16 4	29631315 29631400	29731315 29731400	3 9/64	10 7/8	3 9/16	9 3/8	1 1/2	3/4	1 7/16	1 1/16	8 1/8	6 5/8	45

Refer to Mounting and Dismounting Instructions on pages 120 and 121.
For applications that exceed the load ratings above, please contact the factory for assistance.
Please Note: Before mounting, make sure there is sufficient clearance to access dismounting set screws on the back of the housing unit (yellow plastic protection plugs).

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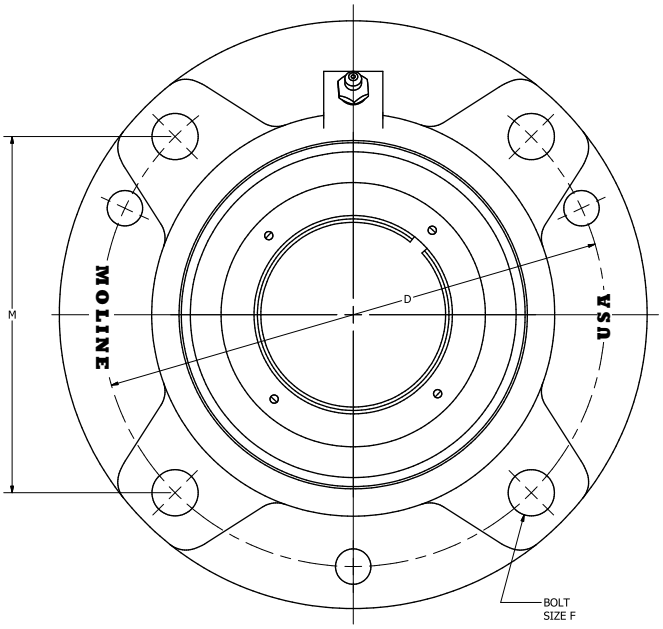
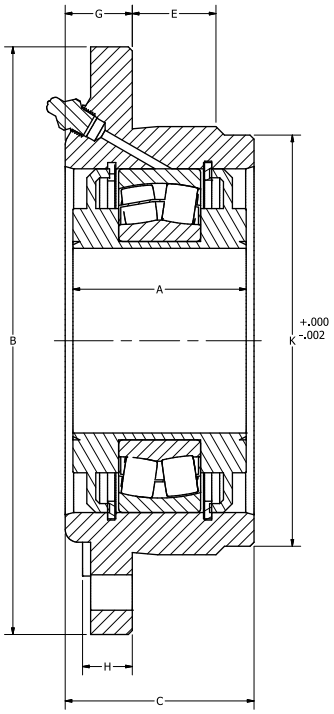
ME3000 EVEN-LOK™ PILOTED FLANGE CARTRIDGE WITH TYPE E DIMENSIONS





For personal service and special requests, please call us at 800.242.4633.

CAD drawings available upon request at no additional charge.

For nomenclature see pages 226 and 227.

ME3000 EVEN-LOK™ APPLICATION GUIDE

At Moline, our goal is to provide you with the most reliable products, helpful service, and expert support. We work to make our mounting instructions clear and easy to understand. But if you have further questions, please feel free to call 800.242.4633 or e-mail support@molinebearing.com. We are here to help.

MOUNTING INSTRUCTIONS

PLEASE NOTE: BEFORE MOUNTING, MAKE SURE THERE IS SUFFICIENT CLEARANCE TO ACCESS DISMOUNTING SET SCREWS ON BACK OF UNIT (YELLOW PLASTIC PROTECTION PLUGS).

- Do not remove plastic end cap or plastic protection plugs inserted in the set screw holes until you are ready to install bearing onto shaft.
- Do not disassemble bearing prior to installation.
- **Do not tighten any mounting screws prior to installation.**
- Use only the supplied Even-lok™ wrench for tightening set screws on bearing. After storage or idle period, add a little fresh grease before running.

For optimum bearing performance, it is important to start the mounting process with a shaft that is free of burrs and dirt. Please review your shaft and file down burrs and wipe clean. Lubricate shaft with light oil. Check shaft diameter and review recommended shaft tolerances below:

SHAFT DIAMETER	TOLERANCE
1 7⁄16"–1 15⁄16"	+.000" to -.003"
2"– 4"	+.000" to -.004"

1. Clean the base of the bearing and support surface on which it rests. Be sure the supporting surface is flat. If the bearing elevation must be adjusted by shims, the shims MUST extend the full length and width of the support surface.
2. Slide the bearing, with the mounting side facing outward, on the shaft where the unit is to be secured. Leave 1 ½" minimum housing spacing to allow for insertion of an Allen wrench in the dismounting side set screws. Bolt the housing securely to the support. Note: The mounting side of the bearing is the side which does not have the yellow plastic protection plugs inserted in the set screw holes.
3. The Expansion bearing must be centered in the housing to allow for axial shaft expansion. Move the bearing axially in the housing in both directions as far as it will go and determine the centered position. It will be necessary to relieve the bearing load while moving the assembly.
4. Snug the mounting screws located in the mounting side collar to finger tightness holding the short leg of the supplied Even-lok™ wrench. Tighten the mounting screws a total of ½ turn by alternately tightening in two increments (¼ turn and ¼ turn). Please refer to the following diagram for proper tightening pattern for each bearing size:

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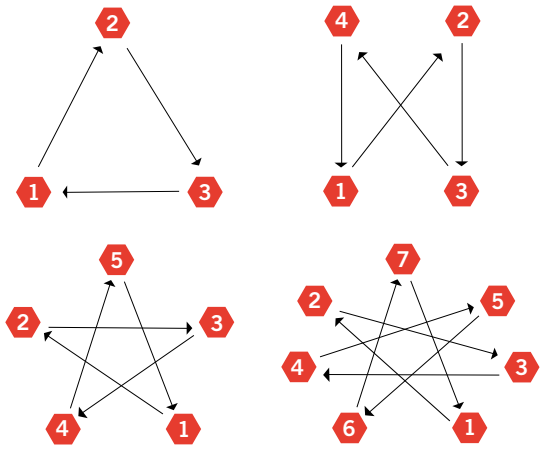
ME3000 TIGHTENING PATTERNS

5. Tighten each set screw until the long end of the Even-lok™ wrench bows ½" under finger pressure. **Caution:** Do not use power driven or auxiliary equipment such as a hammer or pipe in tightening the screws.



DISMOUNTING INSTRUCTIONS

1. Retighten the mounting side set screws until the long end of the Even-Lok™ wrench bows ½" under finger pressure only.
2. Loosen the mounting side set screws 1–2 full turns.
3. Using a screw driver or other suitable tool, remove and discard the 2 plastic protection plugs.
4. Alternately tighten the dismounting screws in ¼ turn increments until the bearing is released from the shaft. You should hear a distinctive “pop” indicating release.
5. Loosen the dismounting set screws, unbolt the housing from the support structure and remove the complete assembled unit from the shaft.

Note: If the bearing unit will not slip off the shaft during removal, do not continue to further tighten the dismount set screws. This may tend to reverse tighten the bearing to the shaft. In the unlikely event that reverse tightening occurs, loosen the dismounting screws and retighten the screws on the mounting collar side following instructions. Repeat the dismounting procedure Steps 2 through 5.

LUBRICATION INSTRUCTIONS

This bearing is factory lubricated with No. 2 consistency lithium base grease which is suitable for most applications. However, extra protection is necessary if bearing is subjected to excessive moisture, dust, or corrosive vapor. In these cases, bearing should contain as much grease as speed will permit (a full bearing with consequent slight leakage through the seal is the best protection against contaminant entry).

In extremely dirty environments, the bearing should be purged daily to flush out contaminants. For added protection, it is advisable to shroud the bearing from falling material.

High Speed Operation

At higher operating speed, too much grease may cause overheating. In these cases, the amount of lubrication can only be determined by experience. If excess grease in the bearing causes overheating, it will be necessary to remove grease fittings and run for 10 minutes. This will allow excess grease to escape. Then wipe off excess grease and replace grease fittings.

In higher speed applications, a small amount of grease at frequent intervals is preferable to a large amount at long intervals. However, the proper volume and interval of lubrication can best be determined by experience.

Lubrication Guide

Read preceding paragraphs before establishing lubrication schedule.

HOURS RUN PER DAY	SUGGESTED LUBRICATION PERIOD IN WEEKS							
	1 TO 250 RPM	251 TO 500 RPM	501 TO 750 RPM	751 TO 1000 RPM	1001 TO 1500 RPM	1501 TO 2000 RPM	2001 TO 2500 RPM	2501 TO 3000 RPM
8	12	12	10	7	5	4	3	2
16	12	7	5	4	2	2	2	1
24	12	5	3	2	1	1	1	1

The following table is a general guide for normal operating conditions. However, some situations may require a change in lubricating periods as dictated by experience. If the bearing is exposed to unusual operating conditions, consult a reputable grease manufacturer.

LUBRICATION GUIDE

Read preceding paragraphs before establishing lubrication schedule.

Abnormal bearing temperatures may indicate insufficient lubrication. Normal temperature may range from “cool to warm to the touch” up to the point of “too hot to touch for more than a few seconds,” depending on the bearing size and speed, and surrounding conditions. Unusually high temperature accompanied by excessive leakage of grease indicates too much grease. High temperature with no grease showing at the seals, particularly if the bearing seems noisy, usually indicates too little grease. Normal temperature and a slight showing of grease at the seals indicate proper lubrication.

If equipment will be idle for some time, before shutting down, add grease to the bearing until grease purges from the seals. This will ensure protection of the bearing, particularly when exposed to severe environmental conditions. After storage or idle period, add fresh grease to the bearing before starting.

SPECIAL OPERATING CONDITIONS

Refer acid, chemical, extreme or other special operating conditions to the Moline Bearing Company.

Moline spherical bearings have the capacity to carry substantial radial loads, thrust loads or a combined radial and thrust load. The maximum load that can be applied is limited by the various components in the system, and the life requirements listed in this catalog. The factory should be consulted on any application that exceeds the recommendations in the catalog.

Select a bearing from the ME-3000 load-rating chart having a radial load rating at the operating speed equal to or greater than the calculated Equivalent Radial Load for a desired L10 life. This simple method is all that is necessary for most general applications and provides for occasional shock loads.

L10 Hours of Life – Is the life that may be expected from at least 90% of a given group of bearings operated under identical conditions. The average life (L50) will be approximately five times the L10 life.

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ME3000 Even-Lok™ Thrust Factors and Seal Speed

SHAFT SIZE	E	LIGHT THRUST IF FA/FR≤E		HEAVY THRUST IF FA/FR≥E		DYNAMIC CAPACITY C*		STANDARD SEAL RPM
		X	Y	X	Y	LBS.	NEWTONS	
1 7/16 – 1 1/2	.28	1.0	2.4	.67	3.6	21700	96526	4000
1 11/16 – 1 3/4	.26	1.0	2.6	.67	3.9	23000	102309	3700
1 15/16 – 2	.24	1.0	2.8	.67	4.2	23400	104088	3500
2 3/16	.24	1.0	2.8	.67	4.2	28100	124995	3250
2 7/16 – 2 1/2	.24	1.0	2.8	.67	4.2	43400	193052	2900
2 11/16 – 3	.22	1.0	3.0	.67	4.6	47700	212180	2600
3 7/16 – 3 1/2	.23	1.0	2.8	.67	4.2	73100	325165	2200
3 15/16 – 4	.24	1.0	2.8	.67	4.2	95700	425695	2000

* Comparing Spherical to Tapered Roller Bearings—The dynamic capacity C (Spherical) and C90 (Tapered) are not the same base. To compare basic dynamic capacities, multiply C x .259 and compare to C90.
To select and then compare, use the complete procedure for each bearing and then compare.

ME3000 EVEN-LOK™ RADIAL LOAD RATINGS

NOMINAL SHAFT DIAMETER (IN)	L10 HRS LIFE	RADIAL LOAD RATINGS AT VARIOUS REVOLUTIONS PER MINUTE								
		50	200	500	1200	1800	2200	2800	3500	4000
1 7/16 1 1/2	5000	9630	6354	4827	3712	3287	3095	2879	2692	2586
	10000	7822	5161	3920	3015	2670	2514	2338	2187	2101
	20000	6354	4192	3184	2449	2168	2042	1899	1776	1706
	50000	4827	3184	2419	1860	1647	1551	1443	1349	1296
	100000	3920	2586	1965	1511	1338	1260	1172	1096	1053
1 11/16 1 3/4	5000	10207	6734	5116	3934	3483	3280	3051	2853	-----
	10000	8291	5470	4155	3195	2829	2664	2478	2318	-----
	20000	6734	4443	3375	2596	2298	2164	2013	1883	-----
	50000	5116	3375	2564	1972	1746	1644	1529	1430	-----
	100000	4155	2741	2083	1602	1418	1335	1242	1162	-----
1 15/16 2	5000	10385	6851	5205	4002	3544	3337	3104	2903	-----
	10000	8435	5565	4227	3251	2879	2710	2521	2358	-----
	20000	6851	4520	3434	2641	2338	2202	2048	1915	-----
	50000	5205	3434	2609	2006	1776	1672	1556	1455	-----
	100000	4227	2789	2119	1629	1443	1358	1264	1182	-----
2 3/16	5000	12470	8227	6250	4806	4256	4007	3728	-----	-----
	10000	10129	6683	5077	3904	3457	3255	3028	-----	-----
	20000	8227	5428	4123	3171	2808	2644	2459	-----	-----
	50000	6250	4123	3132	2409	2133	2008	1868	-----	-----
	100000	5077	3349	2544	1957	1733	1631	1517	-----	-----
2 7/16 2 1/2	5000	19260	12707	9653	7423	6573	6189	5757	-----	-----
	10000	15644	10321	7841	6030	5339	5027	4676	-----	-----
	20000	12707	8384	6369	4898	4337	4083	3798	-----	-----
	50000	9653	6369	4838	3721	3294	3102	2885	-----	-----
	100000	7841	5173	3930	3022	2676	2520	2344	-----	-----
2 11/16 2 3/4 2 15/16 3	5000	21169	13966	10609	8159	7224	6802	-----	-----	-----
	10000	17194	11344	8618	6627	5868	5525	-----	-----	-----
	20000	13966	9214	7000	5383	4766	4488	-----	-----	-----
	50000	10609	7000	5317	4089	3621	3409	-----	-----	-----
	100000	8618	5685	4319	3321	2941	2769	-----	-----	-----
3 7/16 3 1/2	5000	32441	21403	16259	12503	11071	10425	-----	-----	-----
	10000	26350	17385	13206	10156	8993	8467	-----	-----	-----
	20000	21403	14121	10727	8249	7304	6878	-----	-----	-----
	50000	16259	10727	8149	6267	5549	5225	-----	-----	-----
	100000	13206	8713	6619	5090	4507	4244	-----	-----	-----
3 15/16 4	5000	42470	28020	21286	16369	14494	13647	-----	-----	-----
	10000	34497	22759	17289	13296	11773	11085	-----	-----	-----
	20000	28020	18486	14043	10800	9563	9004	-----	-----	-----
	50000	21286	14043	10668	8204	7264	6840	-----	-----	-----
	100000	17289	11407	8665	6664	5900	5556	-----	-----	-----

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MOLINE BEARING Co

ME3000 EVEN-LOK™ SERIES INTERCHANGE

MOLINE	SKF	SEALMASTER	REX	DODGE
2-Bolt Pillow Block (Pages 114–115) 29621 (Expansion) 29721 (Non-Expansion)	 SYE-N SYE-NH	 USRBE5000A USRBE5000	 ZEPS6000 ZEP6000	 EP2B-IP-RE EP2B-IP-R
4-Bolt Flange (Pages 116–117) 29611 (Expansion) 29711 (Non-Expansion)	 ----- 	 USFBE5000A USFBE5000	 ZEF6000	 EF4B-IP-RE EF4B-IP-R
Piloted Flange (Pages 118–119) 29631 (Expansion) 29731 (Non-Expansion)	 ----- 	 USFCE5000A USFCE5000	 ----- 	 EFCIP - 0751 *or* FCIP - 0698

All units have tapered adaptor style locking mechanism.
Before mounting, make sure there is sufficient clearance to access dismounting set screws on back of unit.
Note: This is a general dimensional interchange.
For exact dimensions and comparison information on inserts and seals, please contact the factory.
For Nomenclature see pages 226–227


MOLINE

BEARING END CAPS AND BEARING COVERS


Impact Resistant ABS Plastic End Cap
Custom Gasket design and materials
Specialty seal design and materials
Self-tapping Screws for Secure Mount
Custom designed to suit your application

END CAPS AND BEARING COVERS

Increase the life of your bearings by keeping them clean and free of debris with bearing end caps and bearing covers. Moline offers open and closed end caps, standard bearing covers, and extended shaft bearing covers for all stocked mounted units.

We can custom-design to suit your specific needs for almost any operating environment. Fast turnaround on small runs and *low minimum* quantities are our specialty.

Our covers are available in standard impact resistant black ABS plastic, while other colors and materials also available upon request.

Meets Osha Safety Standards for all Mechanical Transmission Apparatus.

Specialty sealing, gasket and grease fitting options are offered.

Heat and Chemical Resistant
ABS is resistant to most chemical attacks and can withstand 200°F.

Durable
ABS and PETG covers will flex to absorb. They will never rust!

Sterilizable
Plastic covers are especially useful in the pharmaceutical and food processing industries, and can be sterilized with steam and most detergent solutions.

Outdoors Applications
Both Black ABS and Transparent PETG will work in outdoor applications.

For pricing and availability, please call the factory.


MOLINE

SPECIALTY COATINGS


Specialty Coatings can provide longer bearing life
RAL or custom color matching is available
Reduce costs by letting Moline provide your custom painting or coatings
Protective Stainless Steel Powder Coatings for enhanced corrosion resistance

SPECIALTY COATINGS

When you need extra protection for your bearing, or have a unique operating environment, consider using one of our new specialty coatings for your mounted bearings. Let us help you reduce costs by letting Moline handle your coating needs.

While we offer traditional powder coating services, it does not stop there; high temp, ceramic coatings, heat dissipation coatings, Stainless Steel powder coating, anti-microbial epoxy, nickel and teflon coatings are available.

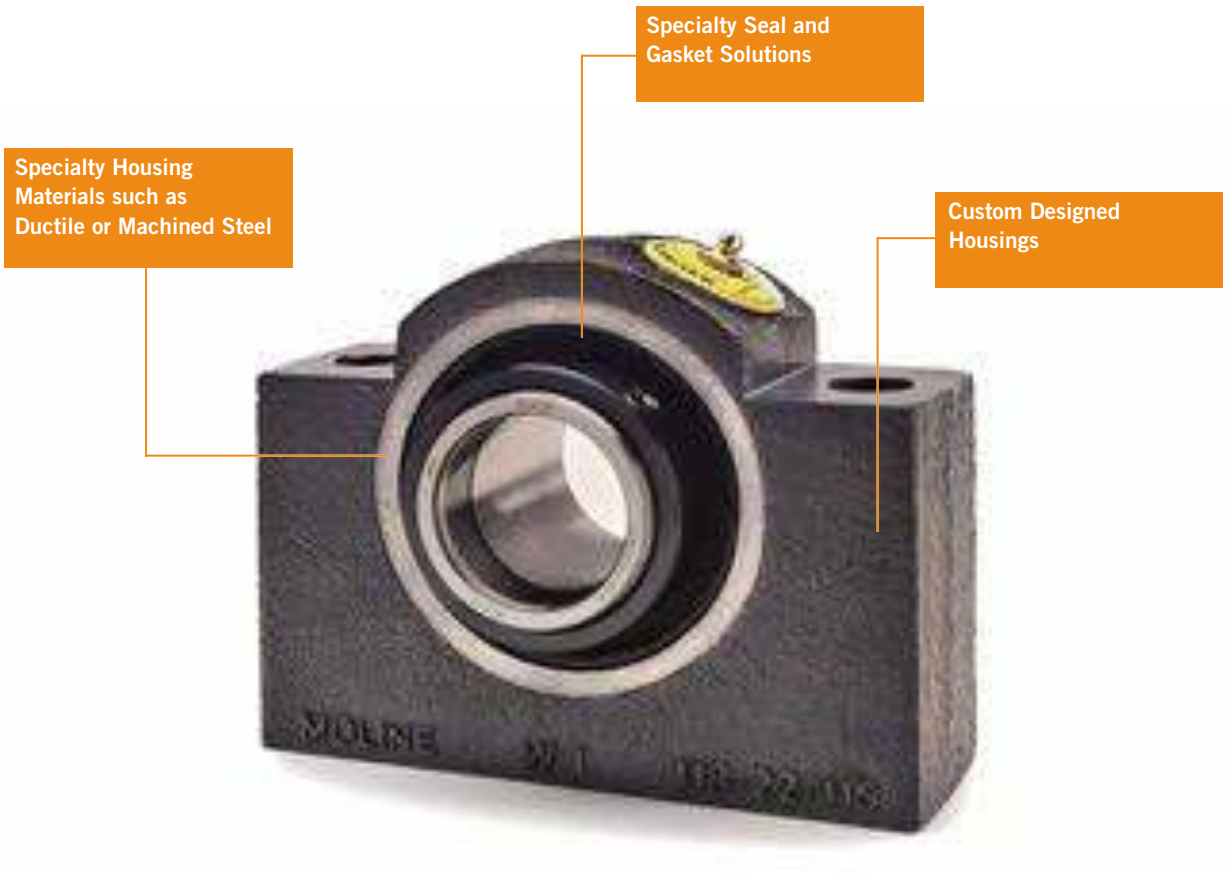
For your OEM customers, all of our coatings exceed customer specifications and requirements, resulting in longer life and a better end product. Custom matching of colors, including small batch runs are no issue, we can apply marine grade as well. Our capabilities include custom formulations, custom colors, UV resistance, and corrosion protection.

Stainless Steel Coating

Moline can provide a patented stainless steel coating that is highly protective, anti-corrosive and so durable, it will handle high detergent/antibacterial wash downs commonly used in the food industry. Moline can offer an “antimicrobial” finish that is direct contact USDA/ FDA Certified for food & consumables.


MOLINE

MACHINING AND ENGINEERING SERVICES



Product	Customer Problem	Moline Solution/Benefit
Grab Roller Bearing	The original cast iron design of this agricultural bearing was breaking. An attempt to use a weldment also failed.	Moline provided this housing in ductile iron and increased the thickness of the bolt pad to allow a larger bolt thus decreasing the chance of housing failure.

MACHINING AND ENGINEERING SERVICES

Has the bearing you need been discontinued?
Is your customer experiencing bearing failure or broken housings?

Moline Engineers are available to custom design or modify existing housings to resolve any design or operating issues you may encounter.

- We offer specialty housing materials such as ductile iron or machined steel.
- In many instances we can modify existing housings to suit a mounting issue or space consideration.
- Moline's Engineering Department can reverse engineer obsoleted mounted units.
- Fast turnaround on small runs and low minimum quantities are our specialty.
- We offer specialty seals and seal design solutions to suit a variety of application environments.
- High-temp, Low-temp, Solid Lube, Food-Grade greases are available upon request.
- We stock Timken™ Gas-powered or electromechanical lubricators that deliver periodic grease to help prevent premature failures.
- Please call the factory for more information, pricing and availability.

Product	Customer Problem	Moline Solution/Benefit	
SealMaster Sleeveloc Discontinued by SealMaster	The customer had welded threaded bolts to their machines that only matched the discontinued Sealmaster 3000 flange unit.	Moline machined a cast iron flange that matched the bolt pattern of the discontinued bearing. The customer was spared the high cost of rework-ing their existing machinery.	
Dodge B1 Double-Interlock	Customer purchased then performed additional modification of this Dodge cartridge unit.	Moline reverse engineered and performed additional machining within a three week period. The customer saved time and cost of additional machining.	
Browning 950 Discontinued by Browning	Customer designed their equipment around the discontinued Browning 950 pillow block. The bolt pattern and pad height were crucial dimensions.	Moline made a casting that matched dimensions and created a part that was less expensive than original unit. Customer did not have to redesign their equipment or create retrofit kit for existing machines.	
Type E 2-Bolt "Miz" Bearing	Standard cast iron housing was breaking and customer needed to order a small quantity.	Machined a steel housing that matched the bolt pattern with a quick turnaround and at a reasonable cost.	


MOLINE

BALL BEARINGS

Moline Bearing's Normal Duty Mounted Ball Bearings consist of a single row deep groove ball bearing and cast iron housings. These are available in wide range of shaft sizes in 2-Bolt Pillow Blocks, 2-Bolt and 4-Bolt Flanges, Piloted Flange and Wide Slot Take-Up units.

The self-contained bearing with a spherical ground outside diameter is assembled into a corresponding spherical seat of the housing, providing full self-alignment of the bearing in the housing at mounting. Moline's Mounted Ball Bearings are supplied from the factory in shaft-ready condition.

For set screw locking units (UC series), the inner rings of the bearing are through hardened in the raceway, while the extended ring where the set screws are installed is metallurgically mild and softened. This unique heat treatment ensures full bearing performance and prevents the set screws from loosening during operation. Thus, the set screws can be tightened as needed without causing cracks on the inner ring.

Moline's eccentric locking units (HC series) are considered the easiest units to install. These units eliminate the need for loc nuts, washers and adapters. Eccentric units grip the shaft securely and self-tighten. The unit is secured to the shaft by rotating the collar relative to the inner ring. A set screw is supplied to allow supplementary locking and to prevent loosening in case of any sudden reverse action. Eccentric locking units should not be used, however, for bi-directional applications.

We sell these bearings as complete units or as separate components (inserts and housings).

All ball bearing housings come with a standard paint finish. Other coatings such as Nickel plating, Epoxy and Teflon coating are also available. Special machining is also available, please call us at the factory for further information.

These Mounted Ball Bearings are carried in Moline warehouses and distributor stocks throughout the United States and in Canada.

FEATURES OF MOLINE NORMAL DUTY MOUNTED BALL BEARINGS

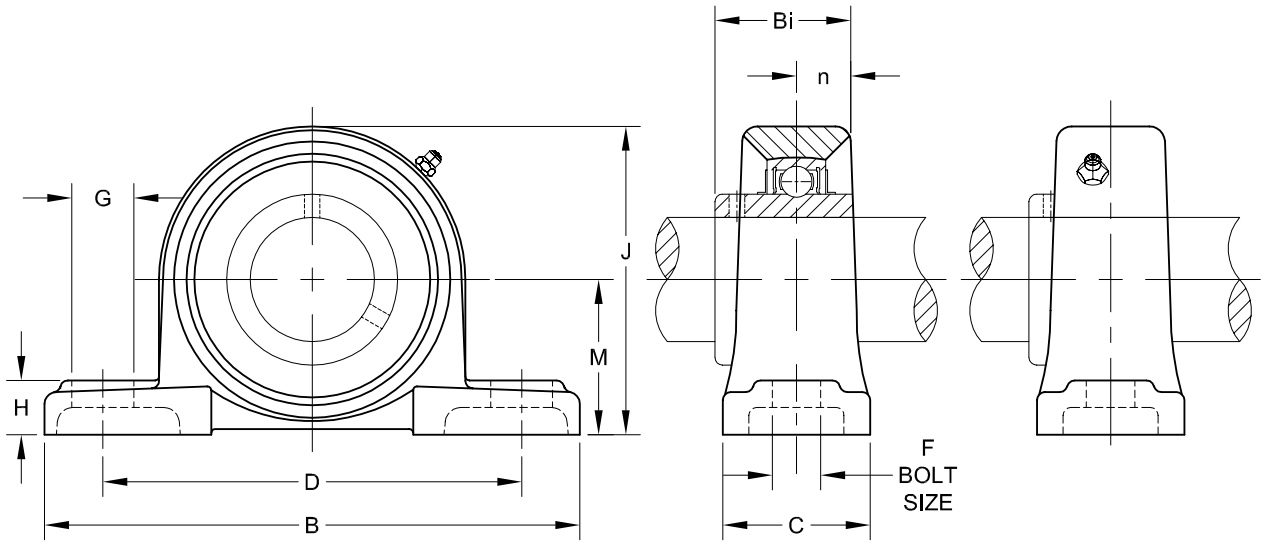
- Available in sizes from ½" to 3 7/16"
- Easy installation and maintenance
- Supplied from factory in shaft-ready condition
- Dimensionally interchangeable with comparable units
- Fully self-aligning
- Standard grease fitting for re-lubrication
- Contact seals are standard
- Wide inner ring for rigidity and more effective set screw locking
- Single piece housings made of Class 30 cast iron
- Operating temperatures up to 200° F
- Housings available in standard painted finish
- Custom colors, Powder Coating, Nickel plating, Epoxy, Teflon and other coatings are available upon request
- Custom machining and design is available
- Available for sale as complete units, inserts and housings

MOUNTED BALL BEARING 2-BOLT PILLOW BLOCK

UCP 200 Series—Normal Duty Set Screw Locking Collar

SHAFT SIZE	MOLINE PART #	UNIT #	DIMENSIONS (INCHES)				
			M	B	D	C	F
½ ⅝ ¾	19421008 19421010 19421012	UCP 201-8 UCP 202-10 UCP 204-12	1 5/16	5	3.779	1.456	½
⅞ 15/16 1	19421014 19421015 19421100	UCP 205-14 UCP 205-15 UCP 205-16	1 7/16	5 ½	4 ⅛	1 ½	½
1 ⅛ 1 3/16 1 ¼	19421102 19421103 19421104-06	UCP 206-18 UCP 206-19 UCP 206-20	1 11/16	6 ¼	4 ¾	1.732	.551
1 ¼ 1 5/16 1 ⅜ 1 7/16	19421104 19421105 19421106 19421107	UCP 207-20 UCP 207-21 UCP 207-22 UCP 207-23	1 ⅞	6 9/16	5	1-7/8	.590
1 ½ 1 9/16	19421108 19421109	UCP 208-24 UCP 208-25	1 15/16	7 ¼	5.354	2.047	.590

For sale as complete units, inserts and housings.



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MOUNTED BALL BEARING 2-BOLT PILLOW BLOCK

SHAFT SIZE	DIMENSIONS (INCHES)					BOLT SIZE (INCHES)	INSERT #	HOUSING #	WEIGHT LBS.
	G	H	J	Bi	n				
½ ⅝ ¾	6 ¼	.551	2.511	1.22	0.500	⅜	UC 201-8 UC 202-10 UC 204-12	P204	1.43
⅞ 15⁄16 1	¾	.590	2.736	1.339	0.563	⅜	UC 205-14 UC 205-15 UC 205-16	P205	1.59
1 ⅛ 1 3⁄16 1 ¼	¾	6 ¼	3.228	1.50	0.626	½	UC 206-18 UC 206-19 UC 206-20	P206	2.54
1 ¼ 1 5⁄16 1 ⅜ 1 7⁄16	¾	.669	3.622	1.689	0.689	½	UC 207-20 UC 207-21 UC 207-22 UC 207-23	P207	3.37
1 ½ 1 9⁄16	13⁄16	.709	3.858	1.937	0.748	½	UC 208-24 UC 208-25	P208	4.14

For personal service and special requests, please call us at 800.242.4633.

CAD drawings available upon request at no additional charge.

Furnished in non-expansion type only.

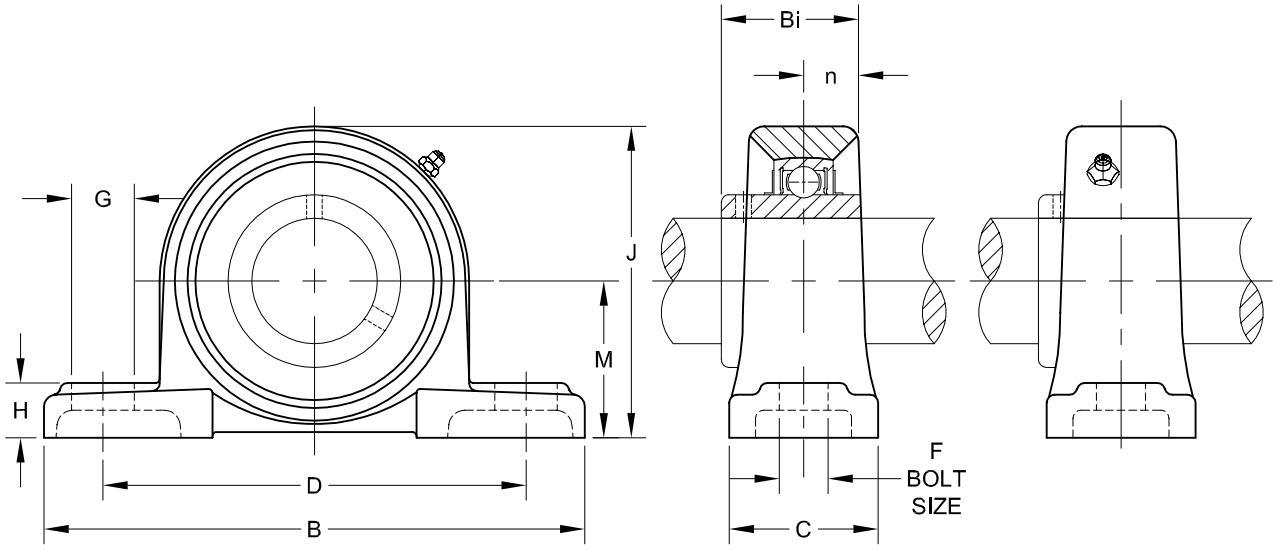
For nomenclature see pages 226 and 227.

MOUNTED BALL BEARING 2-BOLT PILLOW BLOCK CONTINUED

UCP 200 Series—Normal Duty Set Screw Locking Collar

SHAFT SIZE	MOLINE PART #	UNIT #	DIMENSIONS (INCHES)				
			M	B	D	C	F
1 5/8 1 11/16 1 3/4	19421110 19421111 19421112	UCP 209-26 UCP 209-27 UCP 209-28	2 1/8	7.44	5 3/4	2-1/8	.590
1 7/8 1 15/16 2	19421114 19421115 19421200-10	UCP 210-30 UCP 210-31 UCP 210-32	2 1/4	8.031	6 1/4	2.244	3/4
2 2 1/8 2 3/16	19421200 19421202 19421203	UCP 211-32 UCP 211-34 UCP 211-35	2 1/2	8.543	6.771	2-3/8	3/4
2 1/4 2 3/8 2 7/16	19421204 19421206 19421207	UCP 212-36 UCP 212-38 UCP 212-39	2 3/4	9.370	7.323	2.598	3/4
2 1/2	19421208	UCP 213-40	3	10.315	8	2 3/4	.905
2 3/4	19421212	UCP 214-44	3 1/8	10.472	8.268	2.834	.905
2 15/16 3	19421215 19421300	UCP 215-47 UCP 215-48	3 1/4	10.787	8.543	2.913	.984
3 7/16	19421307	UCP 218-55	4	12.835	10.315	3.465	1.05

For sale as complete units, inserts and housings.



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MOUNTED BALL BEARING 2-BOLT PILLOW BLOCK

SHAFT SIZE	DIMENSIONS (INCHES)					BOLT SIZE (INCHES)	INSERT #	HOUSING #	WEIGHT LBS.
	G	H	J	Bi	n				
1 5/8 1 11/16 1 3/4	13/16	.787	4.153	1.937	0.748	1/2	UC 209-26 UC 209-27 UC 209-28	P209	4.63
1 7/8 1 15/16 2	.866	.827	4.417	2.031	0.748	5/8	UC 210-30 UC 210-31 UC 210-32	P210	5.51
2 2 1/8 2 3/16	.866	.866	4.901	2.189	0.874	5/8	UC 211-32 UC 211-34 UC 211-35	P211	7.28
2 1/4 2 3/8 2 7/16	.984	.945	5.394	2.563	1.000	5/8	UC 212-36 UC 212-38 UC 212-39	P212	12.13
2 1/2	1.142	1.023	5.866	2.566	1.000	3/4	UC 213-40	P213	12.35
2 3/4	1.142	1.063	6.102	2.937	1.189	3/4	UC 214-44	P214	14.55
2 15/16 3	1.142	1.102	6.363	3.063	1.311	3/4	UC 215-47 UC 215-48	P215	16.09
3 7/16	1.181	1.30	7.795	3.78	1.563	7/8	UC 218-55	P218	32.40

For personal service and special requests, please call us at 800.242.4633.

CAD drawings available upon request at no additional charge.

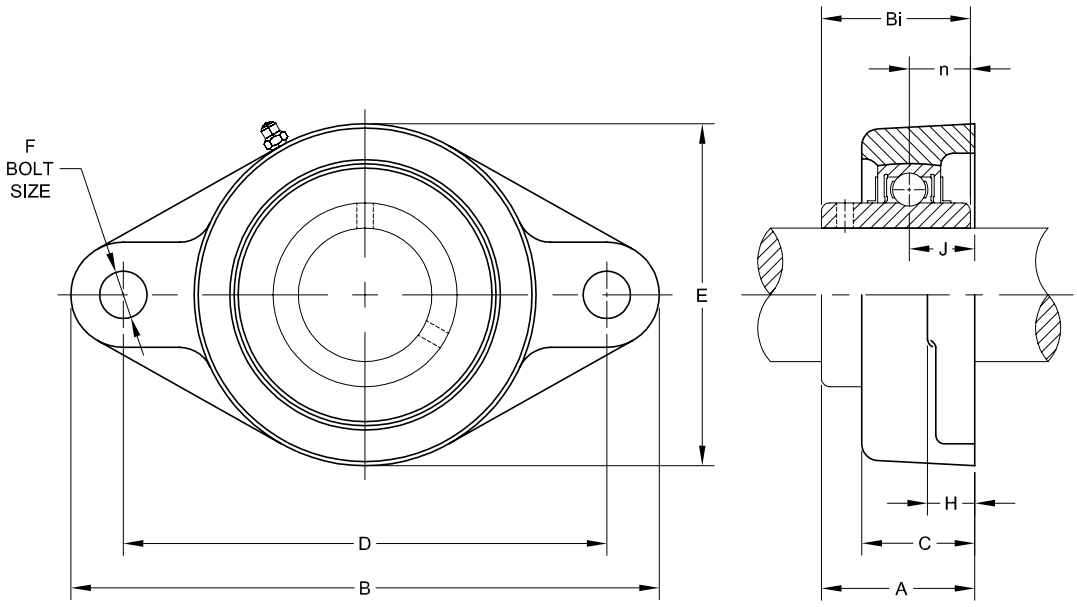
For nomenclature see pages 226 and 227.

MOUNTED BALL BEARING 2-BOLT FLANGE

UCFL 200 Series—Normal Duty Set Screw Locking Collar

SHAFT SIZE	MOLINE PART #	UNIT #	DIMENSIONS (INCHES)					
			B	D	J	H	C	F
½ ⅝ ¾	19401008 19401010 19401012	UCFL 201-8 UCFL 202-10 UCFL 204-12	4.489	3.543	.591	.433	1	.452
⅞ 15⁄16 1	19401014 19401015 19401100	UCFL 205-14 UCFL 205-15 UCFL 205-16	5.118	3.898	.630	.512	1.062	.452
1 ⅛ 1 3⁄16 1 ¼	19401102 19401103 19401104-06	UCFL 206-18 UCFL 206-19 UCFL 206-20	5.827	4.606	.709	.512	1.220	.452
1 ¼ 1 5⁄16 1 ⅜ 1 7⁄16	19401104 19401105 19401106 19401107	UCFL 207-20 UCFL 207-21 UCFL 207-22 UCFL 207-23	6.338	5.118	.748	.551	1.338	.551
1 ½ 1 9⁄16	19401108 19401109	UCFL 208-24 UCFL 208-25	6.890	5.669	.827	.551	1.417	.551
1 ⅝ 1 11⁄16 1 ¾	19401110 19401111 19401112	UCFL 209-26 UCFL 209-27 UCFL 209-28	7.401	5.827	.866	.630	1.496	.709

For sale as complete units, inserts and housings.



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MOUNTED BALL BEARING 2-BOLT FLANGE

SHAFT SIZE	DIMENSIONS (INCHES)				BOLT SIZE (INCHES)	INSERT #	HOUSING #	WEIGHT LBS.
	E	A	Bi	n				
1/2 5/8 3/4	2.362	1.311	1.220	0.500	3/8	UC 201-8 UC 202-10 UC 204-12	FL204	1.06
7/8 15/16 1	2.677	1.406	1.339	0.563	3/8	UC 205-14 UC 205-15 UC 205-16	FL205	1.43
1 1/8 1 3/16 1 1/4	3 1/8	1.583	1.500	0.626	3/8	UC 206-18 UC 206-19 UC 206-20	FL206	2.16
1 1/4 1 5/16 1 3/8 1 7/16	3 9/16	1.748	1.689	0.689	1/2	UC 207-20 UC 207-21 UC 207-22 UC 207-23	FL207	2.76
1 1/2 1 9/16	3 15/16	2.016	1.937	0.748	1/2	UC 208-24 UC 208-25	FL208	3.64
1 5/8 1 11/16 1 3/4	4 1/4	2.055	1.937	0.748	5/8	UC 209-26 UC 209-27 UC 209-28	FL209	4.30

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CAD drawings available upon request at no additional charge.

Furnished in non-expansion type only.

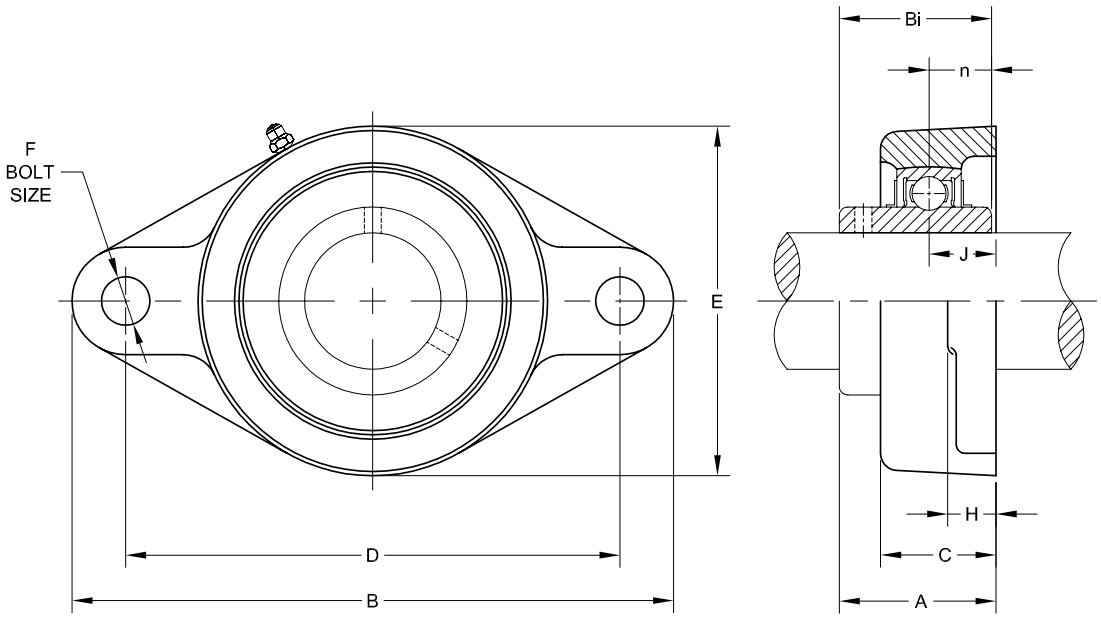
For nomenclature see pages 226 and 227.

MOUNTED BALL BEARING 2-BOLT FLANGE CONTINUED

UCFL 200 Series—Normal Duty Set Screw Locking Collar

SHAFT SIZE	MOLINE PART #	UNIT #	DIMENSIONS (INCHES)					
			B	D	J	H	C	F
1 7/8 1 15/16 2	19401114 19401115 19401200-10	UCFL 210-30 UCFL 210-31 UCFL 210-32	7.756	6.181	.866	.630	1.575	.709
2 2 1/8 2 3/16	19401200 19401202 19401203	UCFL 211-32 UCFL 211-34 UCFL 211-35	8.819	7.244	.984	.709	1.693	.709
2 1/4 2 3/8 2 7/16	19401204 19401206 19401207	UCFL 212-36 UCFL 212-38 UCFL 212-39	9.842	7.953	1.142	.709	1.890	.709
2 1/2	19401208	UCFL 213-40	10.157	8.268	1.181	.787	1.968	.905
2 3/4	19401212	UCFL 214-44	10.433	8.504	1.22	.787	2.126	.905
2 15/16 3	19401215 19401300	UCFL 215-47 UCFL 215-48	10.827	8.858	1.339	.866	2.165	.905
3 7/16	19401307	UCFL 218-55	12.6	10.433	1.575	.906	2.677	.984

For sale as complete units, inserts and housings.



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MOUNTED BALL BEARING 2-BOLT FLANGE

SHAFT SIZE	DIMENSIONS (INCHES)				BOLT SIZE (INCHES)	INSERT #	HOUSING #	WEIGHT LBS.
	E	A	Bi	n				
1 7/8 1 15/16 2	4 1/2	2.150	2.031	0.748	5/8	UC 210-30 UC 210-31 UC 210-32	FL210	4.96
2 2 1/8 2 3/16	5 1/8	2.299	2.189	0.874	5/8	UC 211-32 UC 211-34 UC 211-35	FL211	7.27
2 1/4 2 3/8 2 7/16	5 1/2	2.705	2.563	1.00	5/8	UC 212-36 UC 212-38 UC 212-39	FL212	9.37
2 1/2	6 1/8	2.744	2.563	1.00	3/4	UC 213-40	FL213	11.68
2 3/4	6 5/16	2.969	2.937	1.189	3/4	UC 214-44	FL214	13.23
2 15/16 3	6 1/2	3.091	3.063	1.311	3/4	UC 215-47 UC 215-48	FL215	14.33
3 7/16	8 1/16	3.803	3.791	1.563	7/8	UC 218-55	FL218	27.33

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For nomenclature see pages 226 and 227.

MOUNTED BALL BEARING 4-BOLT FLANGE

UCF 200 Series—Normal Duty Set Screw Locking Collar

SHAFT SIZE	MOLINE PART #	UNIT #	DIMENSIONS (INCHES)					
			B	D	J	H	C	F
½ ⅝ ¾	19411008 19411010 19411012	UCF 201-8 UCF 202-10 UCF 204-12	3.386	2.520	.591	.433	1	.453
⅞ 15⁄16 1	19411014 19411015 19411100	UCF 205-14 UCF 205-15 UCF 205-16	3¾	2¾	.630	.512	1.063	.453
1 ⅛ 1 3⁄16 1 ¼	19411102 19411103 19411104-06	UCF 206-18 UCF 206-19 UCF 206-20	4 ¼	3.267	.709	.512	1.220	.453
1 ¼ 1 5⁄16 1 ⅜ 1 7⁄16	19411104 19411105 19411106 19411107	UCF 207-20 UCF 207-21 UCF 207-22 UCF 207-23	4.606	3.622	.748	.591	1.339	.551
1 ½ 1 9⁄16	19411108 19411109	UCF 208-24 UCF 208-25	5.118	4.016	.827	.591	1.417	.551
1 ⅝ 1 11⁄16 1 ¾	19411110 19411111 19411112	UCF 209-26 UCF 209-27 UCF 209-28	5.394	4.134	.866	.630	1.496	.630

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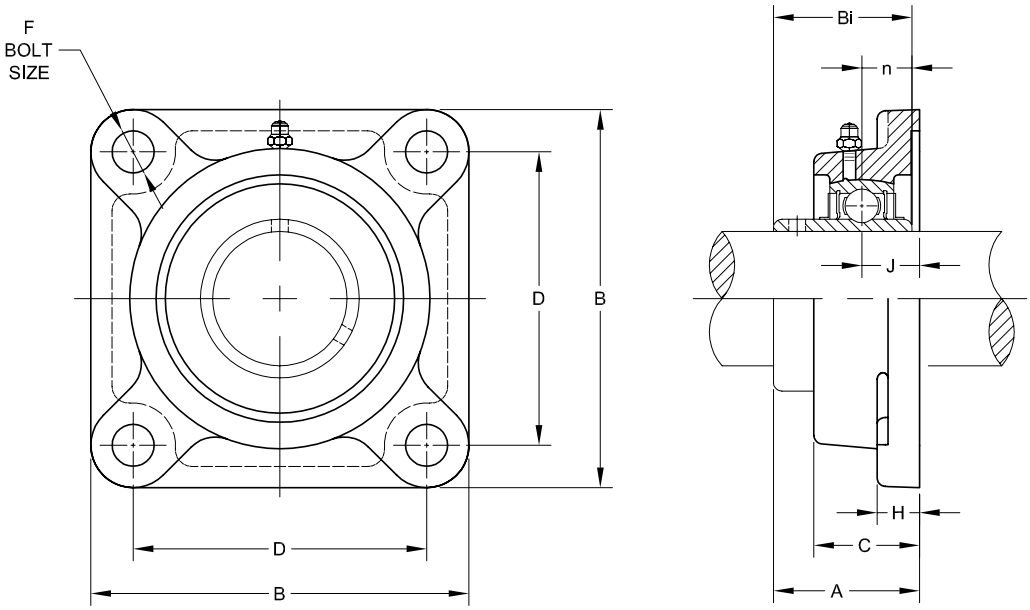

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MOUNTED BALL BEARING 4-BOLT FLANGE

SHAFT SIZE	DIMENSIONS (INCHES)			BOLT SIZE (INCHES)	INSERT #	HOUSING #	WEIGHT LBS.
	A	Bi	n				
½ ⅝ ¾	1.311	1.22	0.500	⅜	UC 201-8 UC 202-10 UC 204-12	F204	1.35
⅞ 15⁄16 1	1.406	1.339	0.563	⅜	UC 205-14 UC 205-15 UC 205-16	F205	1.76
1 ⅛ 1 3⁄16 1 ¼	1.583	1.500	0.626	⅜	UC 206-18 UC 206-19 UC 206-20	F206	2.36
1 ¼ 1 5⁄16 1 ⅜ 1 7⁄16	1.748	1.689	0.689	½	UC 207-20 UC 207-21 UC 207-22 UC 207-23	F207	3.09
1 ½ 1 9⁄16	2.016	1.937	0.748	½	UC 208-24 UC 208-25	F208	3.97
1 ⅝ 1 11⁄16 1 ¾	2.055	1.937	0.748	½	UC 209-26 UC 209-27 UC 209-28	F209	4.85

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For nomenclature see pages 226 and 227.

MOUNTED BALL BEARING 4-BOLT FLANGE CONTINUED

UCF 200 Series—Normal Duty Set Screw Locking Collar

SHAFT SIZE	MOLINE PART #	UNIT #	DIMENSIONS (INCHES)					
			B	D	J	H	C	F
1 7/8 1 15/16 2	19411114 19411115 19411200-10	UCF 210-30 UCF 210-31 UCF 210-32	5.630	4.370	.866	.630	1.574	.709
2 2 1/8 2 3/16	19411200 19411202 19411203	UCF 211-32 UCF 211-34 UCF 211-35	6.378	5.118	.984	.709	1.693	.709
2 1/4 2 3/8 2 7/16	19411204 19411206 19411207	UCF 212-36 UCF 212-38 UCF 212-39	6.890	5.630	1.142	.709	1.890	.709
2 1/2	19411208	UCF 213-40	7.362	5.866	1.181	.866	1.968	.709
2 3/4	19411212	UCF 214-44	7.598	5.984	1.220	.866	2.125	.709
2 15/16 3	19411215 19411300	UCF 215-47 UCF 215-48	7 7/8	6.259	1.339	.866	2.205	.709
3 7/16	19411307	UCF 218-55	9.25	7.362	1.575	.984	2.677	.906

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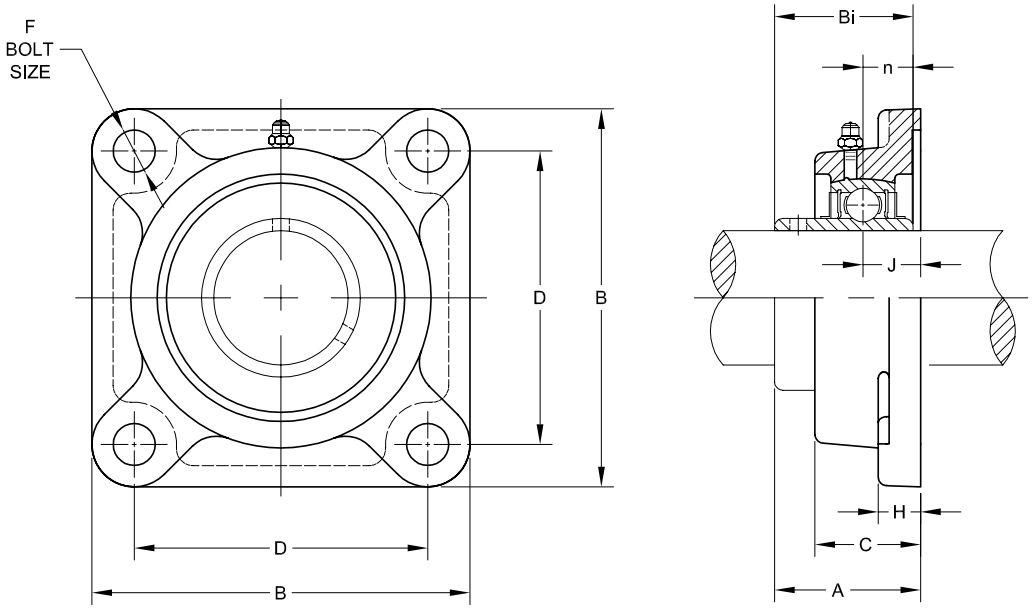

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MOUNTED BALL BEARING 4-BOLT FLANGE

SHAFT SIZE	DIMENSIONS (INCHES)			BOLT SIZE (INCHES)	INSERT #	HOUSING #	WEIGHT LBS.
	A	Bi	n				
1 7/8 1 15/16 2	2.150	2.031	0.748	1/2	UC 210-30 UC 210-31 UC 210-32	F210	5.29
2 2 1/8 2 3/16	2.299	2.189	0.874	5/8	UC 211-32 UC 211-34 UC 211-35	F211	7.27
2 1/4 2 3/8 2 7/16	2.705	2.563	1.000	5/8	UC 212-36 UC 212-38 UC 212-39	F212	9.26
2 1/2	2.744	2.563	1.000	5/8	UC 213-40	F213	11.68
2 3/4	2.969	2.937	1.189	5/8	UC 214-44	F214	13.01
2 15/16 3	3.091	3.063	1.311	5/8	UC 215-47 UC 215-48	F215	13.89
3 7/16	3.791	3.78	1.563	3/4	UC 218-55	F216	25.57

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For nomenclature see pages 226 and 227.

MOUNTED BALL BEARING PILOTED FLANGE

UCFC 200 Series—Normal Duty Set Screw Locking Collar

SHAFT SIZE	MOLINE PART #	UNIT #	DIMENSIONS (INCHES)					
			B	D	M	I	C	F
¾	19431012	UCFC 204-12	3 15/16	3.072	2.169	.394	1	.453
⅞ 15/16 1	19431014 19431015 19431100	UCFC 205-14 UCFC 205-15 UCFC 205-16	4.527	3.543	2.504	.394	1.063	.472
1 ⅛ 1 3/16 1 ¼	19431102 19431103 19431104-06	UCFC 206-18 UCFC 206-19 UCFC 206-20	4.921	3.937	2.783	.394	1.220	.472
1 ¼ 1 5/16 1 ⅜ 1 7/16	19431104 19431105 19431106 19431107	UCFC 207-20 UCFC 207-21 UCFC 207-22 UCFC 207-23	5.315	4.331	3.063	.433	1.338	.551
1 ½ 1 9/16	19431108 19431109	UCFC 208-24 UCFC 208-25	5.709	4.724	3.338	.433	1.417	.551

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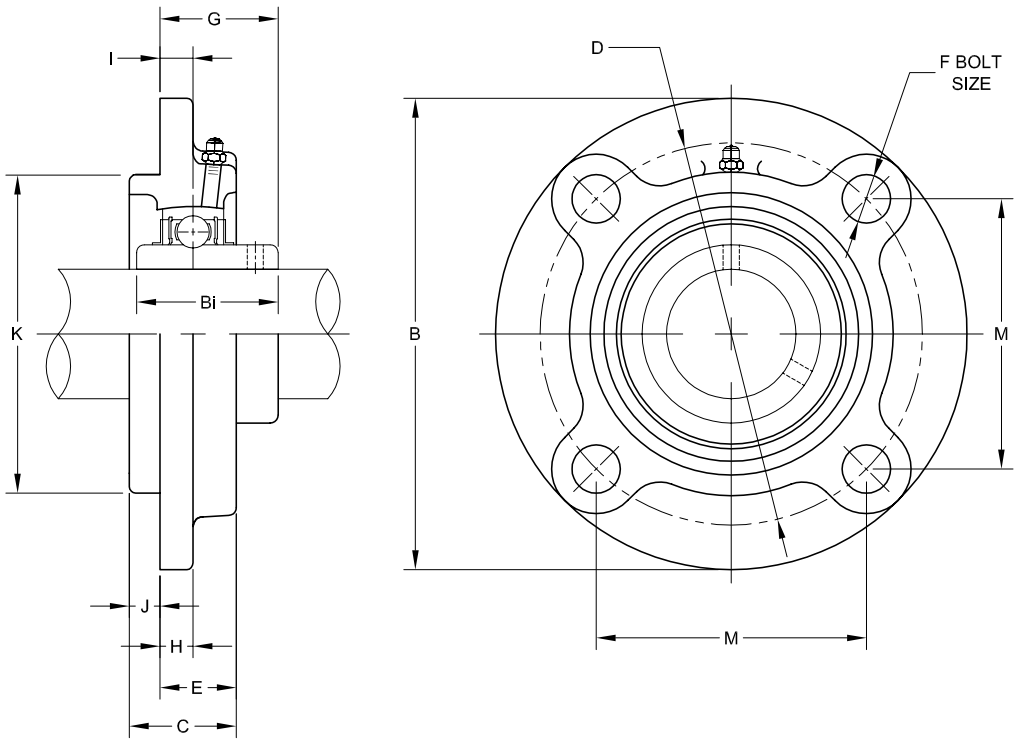

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MOUNTED BALL BEARING PILOTED FLANGE

SHAFT SIZE	DIMENSIONS (INCHES)						BOLT SIZE (INCHES)	INSERT #	HOUSING #	WEIGHT LBS.
	J	H	E	K	G	Bi				
¾	.197	.236	.807	2.4409	1.114	1.2205	⅜	UC 204-12	FC204	1.68
⅞ 15⁄16 1	.236	.275	.827	2.7559	1.169	1.3386	⅜	UC 205-14 UC 205-15 UC 205-16	FC205	2.12
1 ⅛ 1 3⁄16 1 ¼	.315	.315	.905	3.1496	1.268	1.50	⅜	UC 206-18 UC 206-19 UC 206-20	FC206	3.02
1 ¼ 1 5⁄16 1 ⅜ 1 7⁄16	.315	.354	1.023	3.5433	1.433	1.689	7⁄16	UC 207-20 UC 207-21 UC 207-22 UC 207-23	FC207	3.75
1 ½ 1 9⁄16	.394	.354	1.023	3.937	1.622	1.937	7⁄16	UC 208-24 UC 208-25	FC208	4.41

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MOUNTED BALL BEARING PILOTED FLANGE CONTINUED

UCFC 200 Series—Normal Duty Set Screw Locking Collar

SHAFT SIZE	MOLINE PART #	UNIT #	DIMENSIONS (INCHES)					
			B	D	M	I	C	F
1 5/8 1 11/16 1 3/4	19431110 19431111 19431112	UCFC 209-26 UCFC 209-27 UCFC 209-28	6.299	5.197	3.673	.394	1.496	.630
1 7/8 1 15/16 2	19431114 19431115 19431200-10	UCFC 210-30 UCFC 210-31 UCFC 210-32	6.496	5.433	3.842	.394	1.575	.630
2 2 1/8 2 3/16	19431200 19431202 19431203	UCFC 211-32 UCFC 211-34 UCFC 211-35	7.283	5.905	4.177	.512	1.653	.748
2 1/4 2 3/8 2 7/16	19431204 19431206 19431207	UCFC 212-36 UCFC 212-38 UCFC 212-39	7.677	6.299	4.453	.669	1.890	.748
2 1/2	19431208	UCFC 213-40	8.071	6.693	4.732	.630	1.929	.748
2 3/4	19431212	UCFC 214-44	8.465	6.969	4.925	.669	2.126	.748
2 15/16 3	19431215 19431300	UCFC 215-47 UCFC 215-48	8.661	7.244	5.122	.669	2.165	.748

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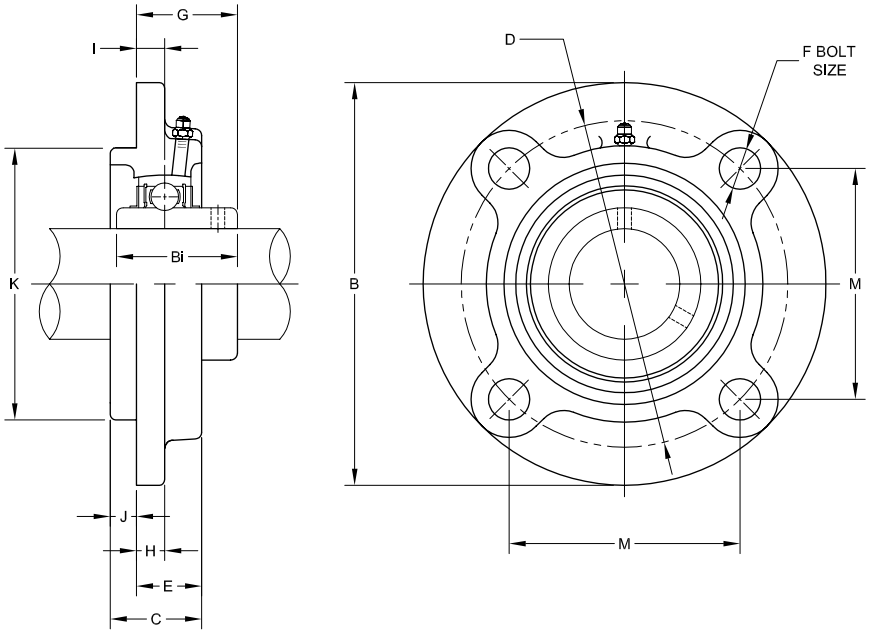

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MOUNTED BALL BEARING PILOTED FLANGE

SHAFT SIZE	DIMENSIONS (INCHES)						BOLT SIZE (INCHES)	INSERT #	HOUSING #	WEIGHT LBS.
	J	H	E	K	G	Bi				
1 5/8 1 11/16 1 3/4	.472	.394	1.023	4.1339	1.583	1.937	1/2	UC 209-26 UC 209-27 UC 209-28	FC209	5.95
1 7/8 1 15/16 2	.472	.551	1.102	4.3307	1.677	2.0315	1/2	UC 210-30 UC 210-31 UC 210-32	FC210	6.39
2 2 1/8 2 3/16	.472	.512	1.181	4.9213	1.827	2.189	5/8	UC 211-32 UC 211-34 UC 211-35	FC211	9.26
2 1/4 2 3/8 2 7/16	.472	.591	1.417	5.315	2.232	2.563	5/8	UC 212-36 UC 212-38 UC 212-39	FC212	10.89
2 1/2	.551	.591	1.378	5.709	2.193	2.563	5/8	UC 213-40	FC213	12.57
2 3/4	.551	.630	1.496	5.905	2.417	2.937	5/8	UC 214-44	FC214	14.99
2 15/16 3	.630	.669	1.535	6.2992	2.461	3.063	5/8	UC 215-47 UC 215-48	FC215	29.76

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For nomenclature see pages 226 and 227.

MOUNTED BALL BEARING
WIDE SLOT TAKE-UP

UCT 200 Series—Normal Duty Set Screw Locking Collar

SHAFT SIZE	MOLINE PART #	UNIT #	DIMENSIONS (INCHES)						
			H	G	J	K	F	D	C
½ ⅝ ¾	19451008 19451010 19451012	UCT 201-08 UCT 202-10 UCT 204-12	⅝	⅜	2	1 ¼	¾	2	15⁄32
⅞ 15⁄16 1	19451014 19451015 19451100	UCT 205-14 UCT 205-15 UCT 205-16	⅝	⅜	2	1 ¼	⅞	2	15⁄32
1 ⅛ 1 3⁄16 1 ¼	19451102 19451103 19451104-06	UCT 206-18 UCT 206-19 UCT 206-20	⅝	⅜	2 3⁄16	1 7⁄16	⅞	2 ¼	15⁄32
1 ¼ 1 5⁄16 1 ⅜ 1 7⁄16	19451104 19451105 19451106 19451107	UCT 207-20 UCT 207-21 UCT 207-22 UCT 207-23	⅝	½	2 ½	1 7⁄16	⅞	2 ½	15⁄32
1 ½ 1 9⁄16	19451108 19451109	UCT 208-24 UCT 208-25	¾	⅝	3 ¼	1 15⁄16	1 ⅛	3 ¼	⅝

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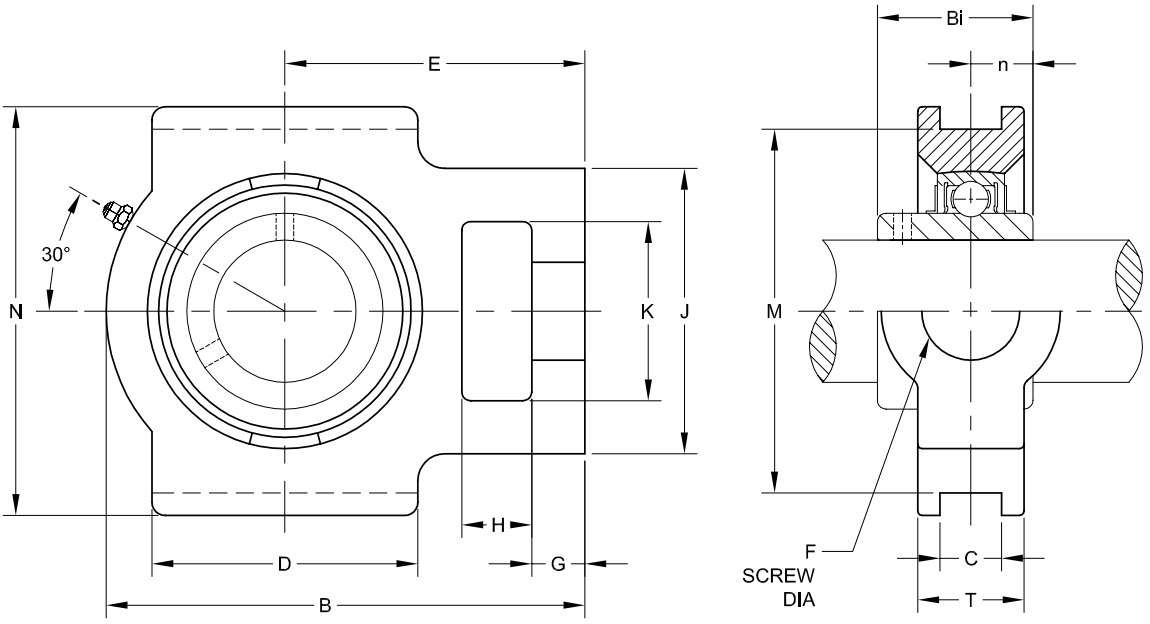

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MOUNTED BALL BEARING WIDE SLOT TAKE-UP

SHAFT SIZE	DIMENSIONS (INCHES)							INSERT #	HOUSING #	WEIGHT LBS.
	M	N	B	T	E	Bi	n			
½ ⅝ ¾	3	3 ½	3 11/16	13/16	2 3/8	1.220	.550	UC 201-8 UC 202-10 UC 204-12	T204	1.85
⅞ 15/16 1	3	3 ½	3 13/16	15/16	2 7/16	1.339	.563	UC 205-14 UC 205-15 UC 205-16	T205	1.76
1 ⅛ 1 3/16 1 ¼	3 ½	4	4 7/16	1 3/32	2 ¾	1.500	.626	UC 206-18 UC 206-19 UC 206-20	T206	2.42
1 ¼ 1 5/16 1 3/8 1 7/16	3 ½	4	5 1/16	1 3/16	3 1/16	1.689	.689	UC 207-20 UC 207-21 UC 207-22 UC 207-23	T207	3.53
1 ½ 1 9/16	4	4 ½	5 11/16	1 5/16	3 ½	1.937	.748	UC 208-24 UC 208-25	T208	5.51

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MOUNTED BALL BEARING WIDE SLOT TAKE-UP CONTINUED

UCT 200 Series—Normal Duty Set Screw Locking Collar

SHAFT SIZE	MOLINE PART #	UNIT #	DIMENSIONS (INCHES)						
			H	G	J	K	F	D	C
1 5/8 1 11/16 1 3/4	19451110 19451111 19451112	UCT 209-26 UCT 209-27 UCT 209-28	3/4	5/8	3 1/4	1 15/16	1 1/8	3 1/4	5/8
1 7/8 1 15/16 2	19451114 19451115 19451200-10	UCT 210-30 UCT 210-31 UCT 210-32	3/4	5/8	3 1/4	1 15/16	1 1/8	3 3/8	11/16
2 2 1/8 2 3/16	19451200 19451202 19451203	UCT 211-32 UCT 211-34 UCT 211-35	1	3/4	4	2 1/2	1 3/8	3 3/4	27/32
2 1/4 2 3/8 2 7/16	19451204 19451206 19451207	UCT 212-36 UCT 212-38 UCT 212-39	1 1/4	3/4	4	2 1/2	1 3/8	4	27/32
2 1/2	19451208	UCT 213-40	1 1/4	13/16	4 3/8	2 3/4	1 1/2	4 3/4	1 1/32
2 3/4	19451212	UCT 214-44	1 5/16	13/16	4 3/8	2 3/4	1 1/2	4 3/4	1 1/32
2 15/16 3	19451215 19451300	UCT 215-47 UCT 215-48	1 1/4	13/16	4 3/8	2 3/4	1 1/2	4 3/4	1 1/32

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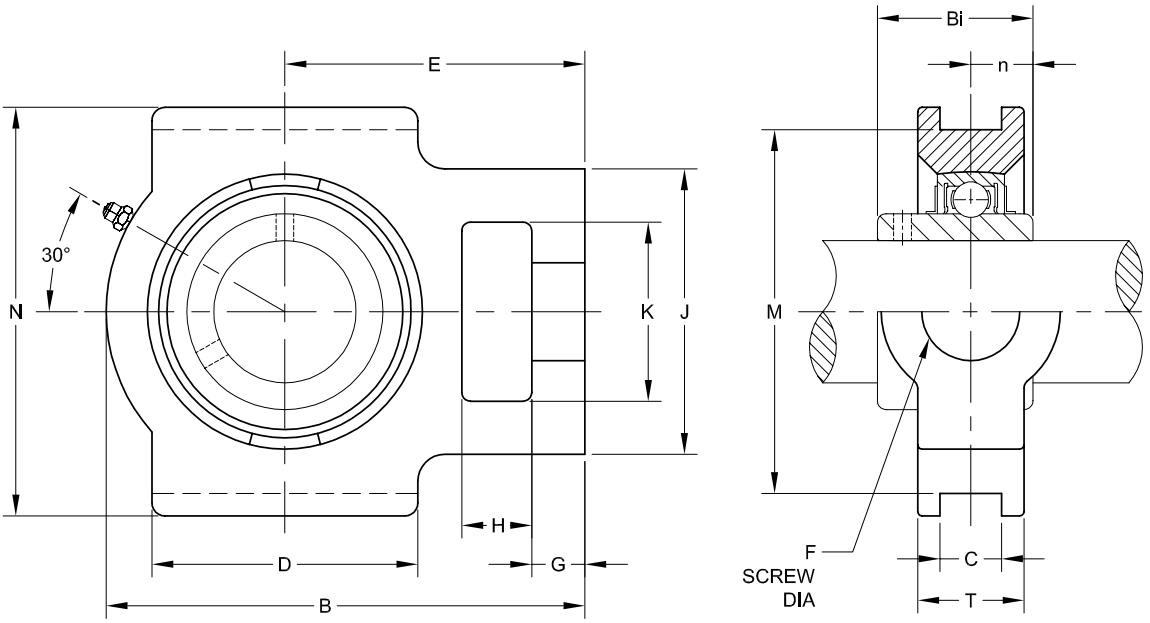

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MOUNTED BALL BEARING WIDE SLOT TAKE-UP

SHAFT SIZE	DIMENSIONS (INCHES)							INSERT #	HOUSING #	WEIGHT LBS.
	M	N	B	T	E	Bi	n			
1 5/8 1 11/16 1 3/4	4	4 5/8	5 11/16	1 3/8	3 7/16	1.937	.748	UC 209-26 UC 209-27 UC 209-28	T209	5.29
1 7/8 1 15/16 2	4	4 5/8	5 7/8	1 15/32	3 9/16	2.031	.748	UC 210-30 UC 210-31 UC 210-32	T210	5.29
2 2 1/8 2 3/16	5 1/8	5 3/4	6 3/4	1 1/2	4 3/16	2.189	.874	UC 211-32 UC 211-34 UC 211-35	T211	9.04
2 1/4 2 3/8 2 7/16	5 1/8	5 3/4	7 5/8	1 21/32	4 11/16	2.563	1.000	UC 212-36 UC 212-38 UC 212-39	T212	11.02
2 1/2	5 15/16	6 9/16	8 13/16	1 3/4	5 3/8	2.563	1.000	UC 213-40	T213	15.43
2 3/4	5 15/16	6 9/16	8 13/16	1 13/16	5 3/8	2.937	1.189	UC 214-44	T214	15.65
2 15/16 3	5 15/16	6 9/16	9 1/8	1 7/8	5 1/2	3.062	1.311	UC 215-47 UC 215-48	T215	16.50

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MOUNTED BALL BEARING
UC 200 SERIES INSERT

SHAFT SIZE	MOLINE PART #	UNIT #	DIMENSIONS (INCHES)							WEIGHT LBS.
			D	Bi	Be	n	m	G	ds	
½ ⅝ ¾	15400008 15400010 15400012	UC 201-8 UC 202-10 UC 204-12	1.8504	1.2205	.6299	.5	.7205	.185	¼-28	.45
⅞ 15⁄16 1	15400014 15400015 15400100	UC 205-14 UC 205-15 UC 205-16	2.0472	1.3386	.6693	.563	.7756	.2165	¼-28	.42
1 ⅛ 1 3⁄16 1 ¼	15400102 15400103 15400104-06	UC 206-18 UC 206-19 UC 206-20	2.4409	1.50	.748	.626	.874	.2165	¼-28	.68
1 ¼ 1 5⁄16 1 ⅜ 1 7⁄16	15400104 15400105 15400106 15400107	UC 207-20 UC 207-21 UC 207-22 UC 207-23	2.8346	1.689	.7874	.689	1.0	.2283	5⁄16-24	1.06
1 ½ 1 9⁄16	15400108 15400109	UC 208-24 UC 208-25	3.1496	1.937	.8268	.748	1.189	.315	5⁄16-24	1.37
1 ⅝ 1 11⁄16 1 ¾	15400110 15400111 15400112	UC 209-26 UC 209-27 UC 209-28	3.3465	1.937	.8661	.748	1.189	.315	5⁄16-24	1.48
1 ⅞ 1 15⁄16 2	15400114 15400115 15400200-10	UC 210-30 UC 210-31 UC 210-32	3.5433	2.0315	.9055	.748	1.2835	.3543	⅜-24	1.72
2 2 ⅛ 2 3⁄16	15400200 15400202 15400203	UC 211-32 UC 211-34 UC 211-35	3.937	2.189	.9843	.874	1.315	.3543	⅜-24	2.27
2 ¼ 2 ⅜ 2 7⁄16	15400204 15400206 15400207	UC 212-36 UC 212-38 UC 212-39	4.3307	2.563	1.063	1.00	1.563	.4134	⅜-24	3.20
2 ½	15400208	UC 213-40	4.7244	2.563	1.1024	1.00	1.563	.4724	⅜-24	3.77
2 ¾	15400212	UC 214-44	4.9213	2.937	1.1811	1.189	1.748	.4724	½-20	4.54
2 15⁄16 3	15400215 15400300	UC 215-47 UC 215-48	5.1181	3.063	1.1811	1.311	1.752	.4724	½-20	4.89
3 7⁄16	15400307	UC 218-55	6.299	3.78	1.457	1.563	2.217	.551	½-20	10.05

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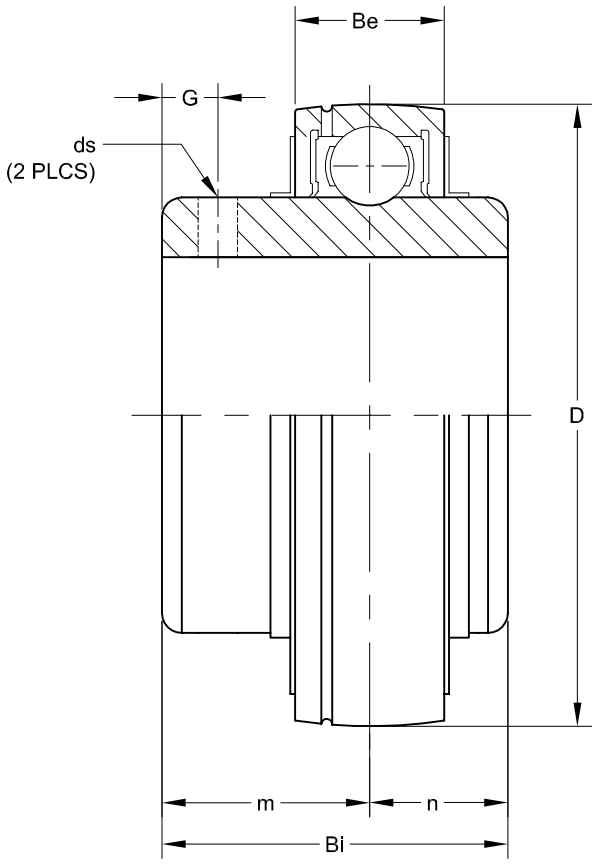
MOUNTED BALL BEARING UC 200 SERIES INSERT



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MOUNTED BALL BEARING 2-BOLT PILLOW BLOCK

HCP 200 Series—Normal Duty Eccentric Locking Collar

SHAFT SIZE	MOLINE PART #	UNIT #	DIMENSIONS (INCHES)					
			M	B	D	C	F	G
¾	19521012	HCP 204-12	1 5/16	5	3.779	1.456	½	.630
⅞ 15/16 1	19521014 19521015 19521100	HCP 205-14 HCP 205-15 HCP 205-16	1 7/16	5 ½	4 ⅛	1 ½	½	¾
1 ⅛ 1 3/16 1 ¼	19521102 19521103 19521104-06	HCP 206-18 HCP 206-19 HCP 206-20	1 11/16	6.30	4 ¾	1.732	.551	¾
1 ¼ 1 5/16 1 ⅜ 1 7/16	19521104 19521105 19521106 19521107	HCP 207-20 HCP 207-21 HCP 207-22 HCP 207-23	1 ⅞	6.575	5	1 ⅞	.590	¾
1 ½ 1 9/16	19521108 19521109	HCP 208-24 HCP 208-25	1 15/16	7.09	5.354	2.047	.590	13/16
1 ⅝ 1 11/16 1 ¾	19521110 19521111 19521112	HCP 209-26 HCP 209-27 HCP 209-28	2 ⅛	7.44	5 ¾	2 ⅛	.590	13/16

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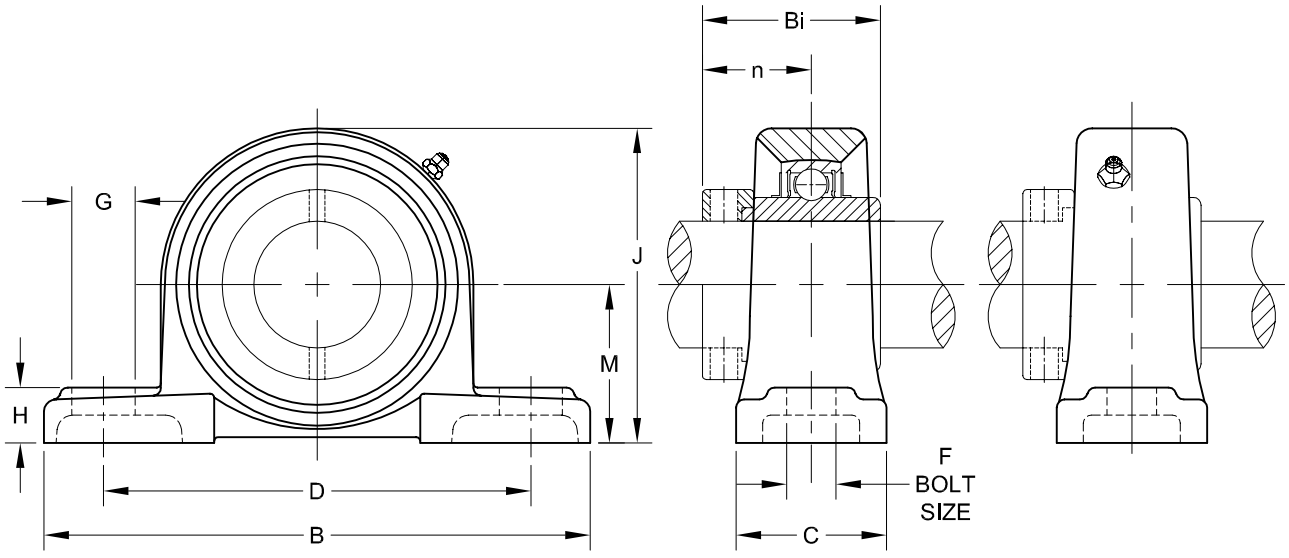

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MOLINE BEARING Co

MOUNTED BALL BEARING 2-BOLT PILLOW BLOCK

SHAFT SIZE					BOLT SIZE (INCHES)	INSERT #	HOUSING #	WEIGHT LBS.
	H	J	Bi	n				
¾	.551	2.511	1.713	0.669	⅜	HC 204-12	P204	1.59
⅞ 15⁄16 1	.590	2.736	1.744	0.685	⅜	HC 205-14 HC 205-15 HC 205-16	P205	1.76
1 ⅛ 1 3⁄16 1 ¼	.630	3.228	1.901	0.626	½	HC 206-18 HC 206-19 HC 206-20	P206	2.98
1 ¼ 1 5⁄16 1 ⅜ 1 7⁄16	.669	3.622	2.012	0.740	½	HC 207-20 HC 207-21 HC 207-22 HC 207-23	P207	3.75
1 ½ 1 9⁄16	.709	3.858	2.216	0.842	½	HC 208-24 HC 208-25	P208	4.41
1 ⅝ 1 11⁄16 1 ¾	.787	4.153	2.216	0.842	½	HC 209-26 HC 209-27 HC 209-28	P209	5.34

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For nomenclature see pages 226 and 227.

MOUNTED BALL BEARING 2-BOLT PILLOW BLOCK CONTINUED

HCP 200 Series—Normal Duty Eccentric Locking Collar

SHAFT SIZE	MOLINE PART #	UNIT #	DIMENSIONS (INCHES)					
			M	B	D	C	F	G
1 7/8 1 15/16 2	19521114 19521115 19521200-10	HCP 210-30 HCP 210-31 HCP 210-32	2 1/4	8.031	6 1/4	2.244	3/4	.866
2 2 1/8 2 3/16	19521200 19521202 19521203	HCP 211-32 HCP 211-34 HCP 211-35	2 1/2	8.543	6.771	2 3/8	3/4	.866
2 1/4 2 3/8 2 7/16	19521204 19521206 19521207	HCP 212-36 HCP 212-38 HCP 212-39	2 3/4	9.370	7.323	2.598	3/4	.984
2 1/2	19521208	HCP 213-40	3	10.315	8	2 3/4	3/4	1.142
2 3/4	19521212	HCP 214-44	3 1/8	10.472	8.268	2.834	3/4	1.142
2 15/16 3	19521215 19521300	HCP 215-47 HCP 215-48	3 1/4	10.787	8.543	2.913	3/4	1.142

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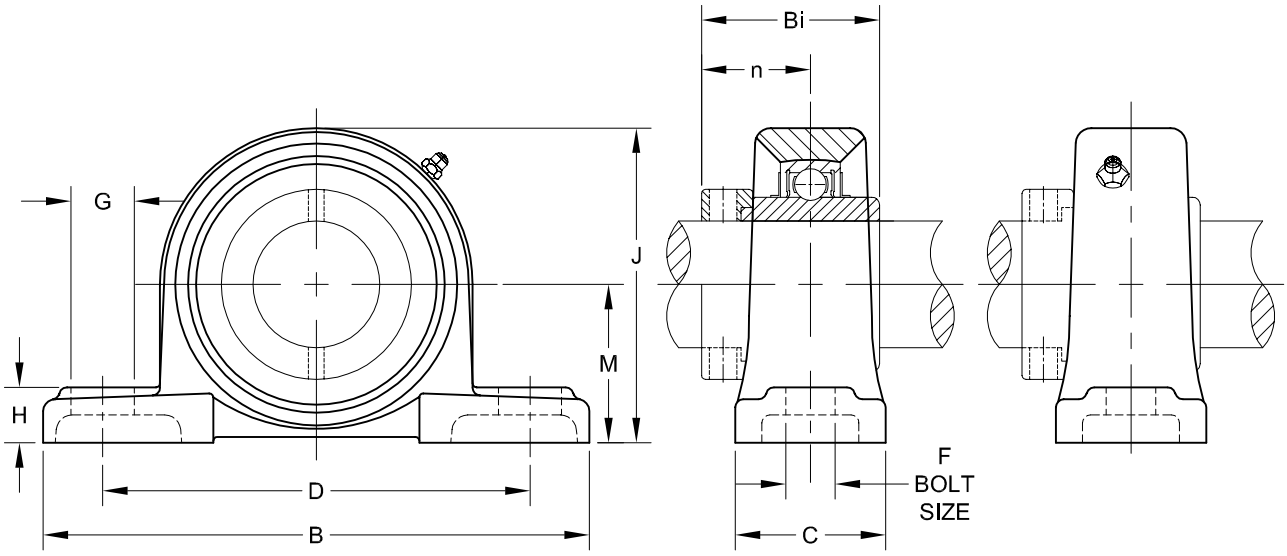

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MOUNTED BALL BEARING 2-BOLT PILLOW BLOCK

SHAFT SIZE	DIMENSIONS (INCHES)				BOLT SIZE (INCHES)	INSERT #	HOUSING #	WEIGHT LBS.
	H	J	Bi	n				
1 7/8 1 15/16 2	.827	4.417	2.468	0.968	5/8	HC 210-30 HC 210-31 HC 210-32	P210	6.06
2 2 1/8 2 3/16	.866	4.901	2.807	1.090	5/8	HC 211-32 HC 211-34 HC 211-35	P211	7.85
2 1/4 2 3/8 2 7/16	.945	5.394	3.059	1.216	5/8	HC 212-36 HC 212-38 HC 212-39	P212	11.46
2 1/2	1.023	5.866	3.374	1.342	3/4	HC 213-40	P213	13.89
2 3/4	1.063	6.102	3.374	1.342	3/4	HC 214-44	P214	15.43
2 15/16 3	1.102	6.363	3.626	1.468	3/4	HC 215-47 HC 215-48	P215	17.20

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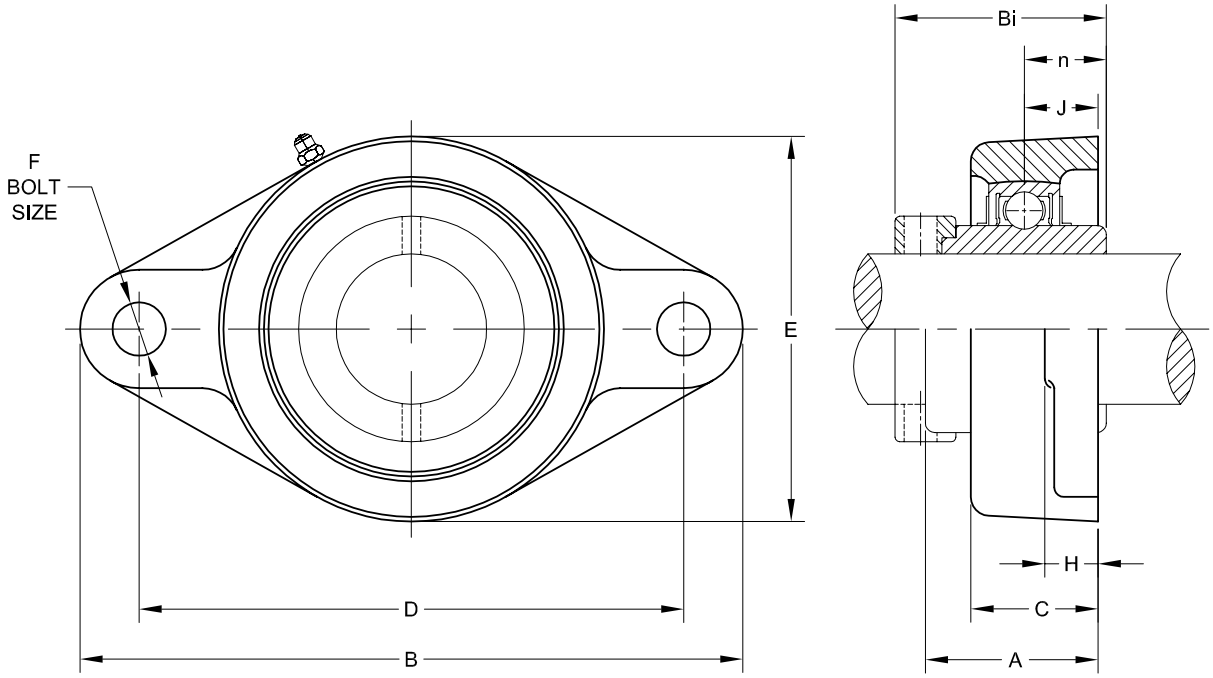
For nomenclature see pages 226 and 227.

MOUNTED BALL BEARING 2-BOLT FLANGE

HCFL 200 Series—Normal Duty Eccentric Locking Collar

SHAFT SIZE	MOLINE PART #	UNIT #	DIMENSIONS (INCHES)					
			B	D	J	H	C	F
¾	19501012	HCFL 204-12	4.489	3.543	.591	.433	1	.452
⅞ 15⁄16 1	19501014 19501015 19501100	HCFL 205-14 HCFL 205-15 HCFL 205-16	5.118	3.898	.630	.512	1.062	.452
1 ⅛ 1 3⁄16 1 ¼	19501102 19501103 19501104-06	HCFL 206-18 HCFL 206-19 HCFL 206-20	5.827	4.606	.709	.512	1.220	.452
1 ¼ 1 5⁄16 1 ⅜ 1 7⁄16	19501104 19501105 19501106 19501107	HCFL 207-20 HCFL 207-21 HCFL 207-22 HCFL 207-23	6.338	5.118	.748	.551	1.338	.551
1 ½ 1 9⁄16	19501108 19501109	HCFL 208-24 HCFL 208-25	6.890	5.669	.827	.551	1.417	.551
1 ⅝ 1 11⁄16 1 ¾	19501110 19501111 19501112	HCFL 209-26 HCFL 209-27 HCFL 209-28	7.401	5.827	.866	.630	1.496	.709

For sale as complete units, inserts and housings.



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MOUNTED BALL BEARING 2-BOLT FLANGE

SHAFT SIZE					BOLT SIZE (INCHES)	INSERT #	HOUSING #	WEIGHT LBS.
	E	A	Bi	n				
¾	2.362	1.311	1.634	.669	⅜	HC 204-12	FL204	1.54
⅞ 15⁄16 1	2.677	1.406	1.689	.685	⅜	HC 205-14 HC 205-15 HC 205-16	FL205	1.76
1 ⅛ 1 3⁄16 1 ¼	3 ⅛	1.583	1.894	.716	⅜	HC 206-18 HC 206-19 HC 206-20	FL206	2.64
1 ¼ 1 5⁄16 1 ⅜ 1 7⁄16	3 9⁄16	1.748	2.020	.740	½	HC 207-20 HC 207-21 HC 207-22 HC 207-23	FL207	3.53
1 ½ 1 9⁄16	3 15⁄16	2.016	2.201	.842	½	HC 208-24 HC 208-25	FL208	4.19
1 ⅝ 1 11⁄16 1 ¾	4 ¼	2.055	2.240	.842	⅝	HC 209-26 HC 209-27 HC 209-28	FL209	5.07

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CAD drawings available upon request at no additional charge.

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For nomenclature see pages 226 and 227.

MOUNTED BALL BEARING 2-BOLT FLANGE CONTINUED

HCFL 200 Series—Normal Duty Eccentric Locking Collar

SHAFT SIZE	MOLINE PART #	UNIT #	DIMENSIONS (INCHES)					
			B	D	J	H	C	F
1 7/8 1 15/16 2	19501114 19501115 19501200-10	HCFL 210-30 HCFL 210-31 HCFL 210-32	7.756	6.181	.866	.630	1.575	.709
2 2 1/8 2 3/16	19501200 19501202 19501203	HCFL 211-32 HCFL 211-34 HCFL 211-35	8.819	7.244	.984	.709	1.693	.709
2 1/4 2 3/8 2 7/16	19501204 19501206 19501207	HCFL 212-36 HCFL 212-38 HCFL 212-39	9.842	7.953	1.142	.709	1.890	.709
2 1/2	19501208	HCFL 213-40	10.157	8.268	1.181	.787	1.968	.905
2 3/4	19501212	HCFL 214-44	10.433	8.504	1.22	.787	2.126	.905
2 15/16 3	19501215 19501300	HCFL 215-47 HCFL 215-48	10.827	8.858	1.339	.866	2.165	.905

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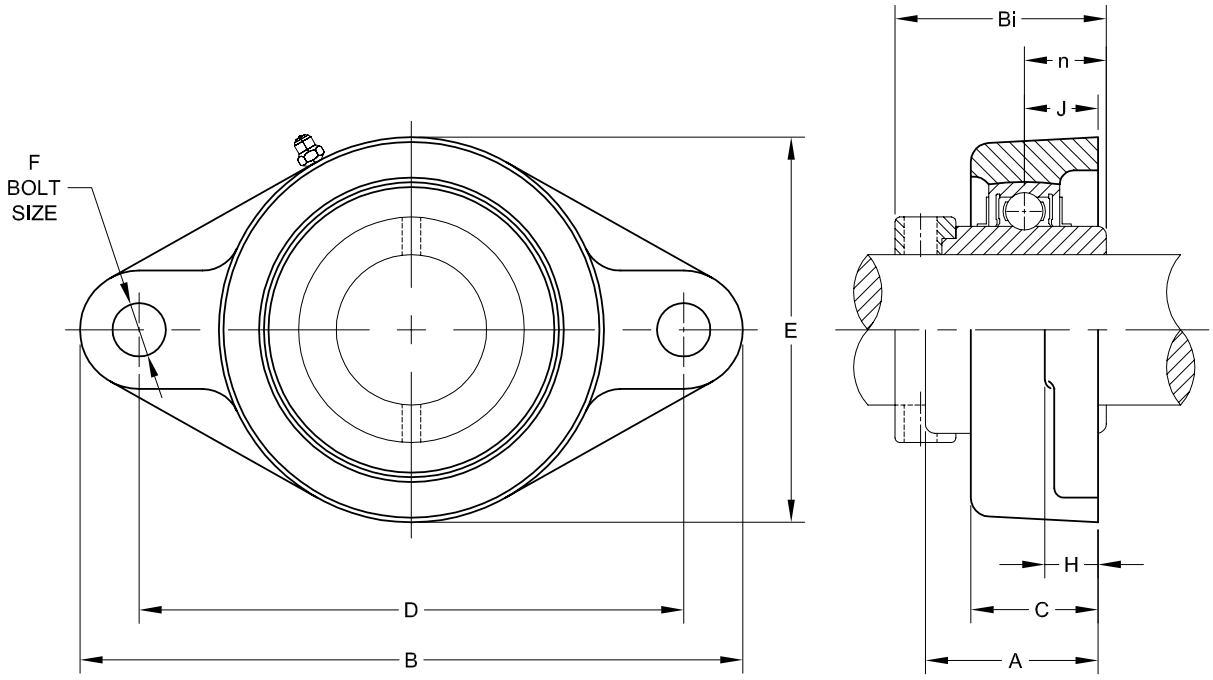

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MOUNTED BALL BEARING 2-BOLT FLANGE

SHAFT SIZE					BOLT SIZE (INCHES)	INSERT #	HOUSING #	WEIGHT LBS.
	E	A	Bi	n				
1 7/8 1 15/16 2	4 1/2	2.150	2.366	.969	5/8	HC 210-30 HC 210-31 HC 210-32	FL210	5.73
2 2 1/8 2 3/16	5 1/8	2.299	2.701	1.091	5/8	HC 211-32 HC 211-34 HC 211-35	FL211	8.38
2 1/4 2 3/8 2 7/16	5 1/2	2.705	2.984	1.216	5/8	HC 212-36 HC 212-38 HC 212-39	FL212	10.58
2 1/2	6 1/8	2.744	3.213	1.342	3/4	HC 213-40	FL213	13.23
2 3/4	6 5/16	2.969	3.252	1.342	3/4	HC 214-44	FL214	13.89
2 15/16 3	6 1/2	3.091	3.496	1.468	3/4	HC 215-47 HC 215-48	FL215	15.87

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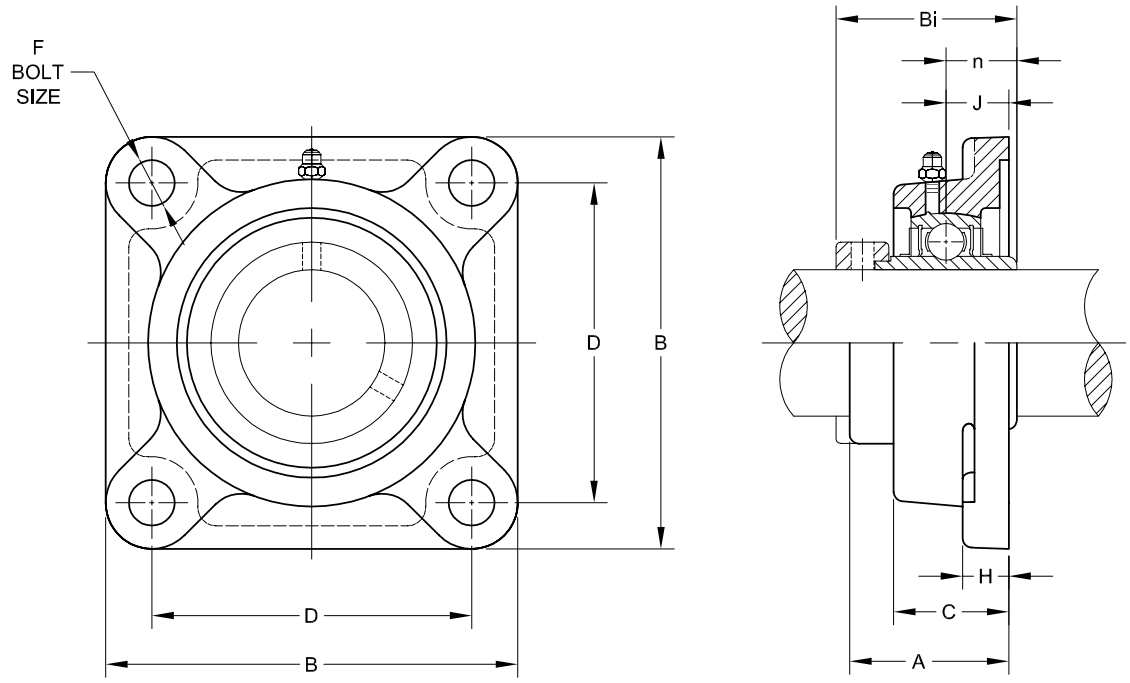
For nomenclature see pages 226 and 227.

MOUNTED BALL BEARING 4-BOLT FLANGE

HCF 200 Series—Normal Duty Eccentric Locking Collar

SHAFT SIZE	MOLINE PART #	UNIT #	DIMENSIONS (INCHES)					
			B	D	J	H	C	F
¾	19511012	HCF 204-12	3.386	2.520	0.591	.433	1	.453
⅞ 15/16 1	19511014 19511015 19511100	HCF 205-14 HCF 205-15 HCF 205-16	3 ¾	2 ¾	.630	.512	1.063	.453
1 ⅛ 1 3/16 1 ¼	19511102 19511103 19511104-06	HCF 206-18 HCF 206-19 HCF 206-20	4 ¼	3.267	.709	.512	1.220	.453
1 ¼ 1 5/16 1 ⅜ 1 7/16	19511104 19511105 19511106 19511107	HCF 207-20 HCF 207-21 HCF 207-22 HCF 207-23	4.606	3.622	.748	.591	1.339	.551
1 ½ 1 9/16	19511108 19511109	HCF 208-24 HCF 208-25	5.118	4.016	.827	.591	1.417	.551
1 ⅝ 1 11/16 1 ¾	19511110 19511111 19511112	HCF 209-26 HCF 209-27 HCF 209-28	5.394	4.134	.866	.630	1.496	.630

For sale as complete units, inserts and housings.



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MOUNTED BALL BEARING 4-BOLT FLANGE

SHAFT SIZE	DIMENSIONS (INCHES)			BOLT SIZE (INCHES)	INSERT #	HOUSING #	WEIGHT LBS.
	A	Bi	n				
¾	1.311	1.634	.669	⅜	HC 204-12	F204	1.39
⅞ 15⁄16 1	1.406	1.689	.685	⅜	HC 205-14 HC 205-15 HC 205-16	F205	1.76
1 ⅛ 1 3⁄16 1 ¼	1.583	1.894	.716	⅜	HC 206-18 HC 206-19 HC 206-20	F206	2.64
1 ¼ 1 5⁄16 1 ⅜ 1 7⁄16	1.748	2.020	.740	½	HC 207-20 HC 207-21 HC 207-22 HC 207-23	F207	3.53
1 ½ 1 9⁄16	2.016	2.201	.842	½	HC 208-24 HC 208-25	F208	4.19
1 ⅝ 1 11⁄16 1 ¾	2.055	2.240	.842	½	HC 209-26 HC 209-27 HC 209-28	F209	5.07

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For nomenclature see pages 226 and 227.

MOUNTED BALL BEARING 4-BOLT FLANGE CONTINUED

HCF 200 Series—Normal Duty Eccentric Locking Collar

SHAFT SIZE	MOLINE PART #	UNIT #	DIMENSIONS (INCHES)					
			B	D	J	H	C	F
1 7/8 1 15/16 2	19511114 19511115 19511200-10	HCF 210-30 HCF 210-31 HCF 210-32	5.630	4.370	.866	.630	1.574	.709
2 2 1/8 2 3/16	19511200 19511202 19511203	HCF 211-32 HCF 211-34 HCF 211-35	6.378	5.118	.984	.709	1.693	.709
2 1/4 2 3/8 2 7/16	19511204 19511206 19511207	HCF 212-36 HCF 212-38 HCF 212-39	6.890	5.630	1.142	.709	1.890	.709
2 1/2	19511208	HCF 213-40	7.362	5.866	1.181	.866	1.968	.709
2 3/4	19511212	HCF 214-44	7.598	5.984	1.220	.866	2.125	.709
2 15/16 3	19511215 19511300	HCF 215-47 HCF 215-48	7-7/8	6.259	1.339	.866	2.205	.709

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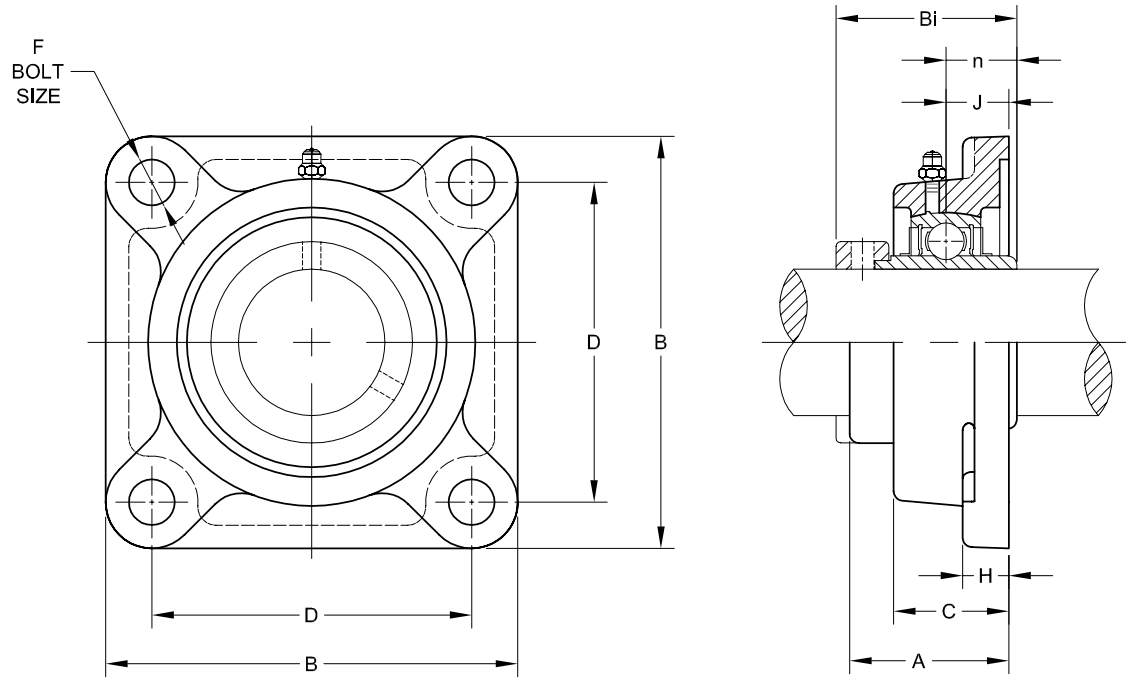

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SHAFT SIZE	DIMENSIONS (INCHES)			BOLT SIZE (INCHES)	INSERT #	HOUSING #	WEIGHT LBS.
	A	Bi	n				
1 7/8 1 15/16 2	2.150	2.366	.969	½	HC 210-30 HC 210-31 HC 210-32	F210	5.73
2 2 1/8 2 3/16	2.299	2.701	1.091	5/8	HC 211-32 HC 211-34 HC 211-35	F211	8.38
2 1/4 2 3/8 2 7/16	2.705	2.984	1.216	5/8	HC 212-36 HC 212-38 HC 212-39	F212	10.58
2 1/2	2.744	3.213	1.342	5/8	HC 213-40	F213	13.23
2 3/4	2.969	3.252	1.342	5/8	HC 214-44	F214	13.89
2 15/16 3	3.091	3.496	1.468	5/8	HC 215-47 HC 215-48	F215	15.87

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For nomenclature see pages 226 and 227.

MOUNTED BALL BEARING PILOTED FLANGE

HCFC 200 Series—Normal Duty Eccentric Locking Collar

SHAFT SIZE	MOLINE PART #	UNIT #	SHAFT SIZE	DIMENSIONS (INCHES)					
				B	D	M	E	C	F
¾	19531012	HCFC 204-12	¾	3 15/16	3.701	2.169	.394	1	.453
⅞ 15/16 1	19531014 19531015 19531100	HCFC 205-14 HCFC 205-15 HCFC 205-16	⅞ 15/16 1	4.527	3.543	2.504	.394	1.063	.472
1 ⅛ 1 3/16 1 ¼	19531102 19531103 19531104-06	HCFC 206-18 HCFC 206-19 HCFC 206-20	1 ⅛ 1 3/16 1 ¼	4.921	3.937	2.783	.394	1.220	.472
1 ¼ 1 5/16 1 ⅜ 1 7/16	19531104 19531105 19531106 19531107	HCFC 207-20 HCFC 207-21 HCFC 207-22 HCFC 207-23	1 ¼ 1 5/16 1 ⅜ 1 7/16	5.315	4.331	3.063	.433	1.338	.551
1 ½ 1 9/16	19531108 19531109	HCFC 208-24 HCFC 208-25	1 ½ 1 9/16	5.709	4.724	3.338	.433	1.417	.551
1 ⅝ 1 11/16 1 ¾	19531110 19531111 19531112	HCFC 209-26 HCFC 209-27 HCFC 209-28	1 ⅝ 1 11/16 1 ¾	6.299	5.197	3.673	.394	1.496	.630

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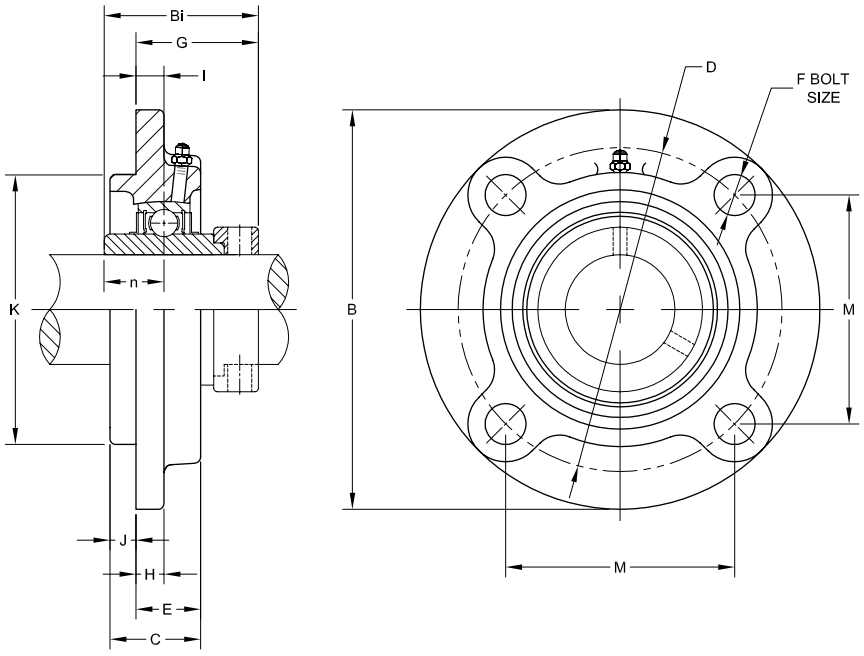

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MOUNTED BALL BEARING PILOTED FLANGE

SHAFT SIZE	DIMENSIONS (INCHES)							BOLT SIZE (IN)	INSERT #	HOUSING #	WEIGHT LBS.
	J	H	I	K	G	Bi	n				
¾	.197	.236	.807	2.4409	1.437	1.712	.6693	⅜	HC 204-12	FC204	1.68
⅞ 15⁄16 1	.236	.275	.827	2.7559	1.453	1.744	.685	⅜	HC 205-14 HC 205-15 HC 205-16	FC205	2.12
1 ⅛ 1 3⁄16 1 ¼	.315	.315	.905	3.1496	1.580	1.901	.7165	⅜	HC 206-18 HC 206-19 HC 206-20	FC206	3.02
1 ¼ 1 5⁄16 1 ⅜ 1 7⁄16	.315	.354	1.023	3.5433	1.705	2.012	.7402	7⁄16	HC 207-20 HC 207-21 HC 207-22 HC 207-23	FC207	3.75
1 ½ 1 9⁄16	.394	.354	1.023	3.937	1.807	2.216	.8425	7⁄16	HC 208-24 HC 208-25	FC208	4.41
1 ⅝ 1 11⁄16 1 ¾	.472	.394	1.023	4.1339	1.768	2.216	.8425	½	HC 209-26 HC 209-27 HC 209-28	FC209	5.95

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For nomenclature see pages 226 and 227.

MOUNTED BALL BEARING PILOTED FLANGE CONTINUED

HCFC 200 Series—Normal Duty Eccentric Locking Collar

SHAFT SIZE	MOLINE PART #	UNIT #	SHAFT SIZE	DIMENSIONS (INCHES)					
				B	D	M	E	C	F
1 7/8 1 15/16 2	19531114 19531115 19531200-10	HCFC 210-30 HCFC 210-31 HCFC 210-32	1 7/8 1 15/16 2	6.496	5.433	3.842	.394	1.575	.630
2 2 1/8 2 3/16	19531200 19531202 19531203	HCFC 211-32 HCFC 211-34 HCFC 211-35	2 2 1/8 2 3/16	7.283	5.905	4.177	.512	1.653	.748
2 1/4 2 3/8 2 7/16	19531204 19531206 19531207	HCFC 212-36 HCFC 212-38 HCFC 212-39	2 1/4 2 3/8 2 7/16	7.677	6.299	4.453	.669	1.890	.748
2 1/2	19531208	HCFC 213-40	2 1/2	8.071	6.693	4.732	.630	1.929	.748
2 3/4	19531212	HCFC 214-44	2 3/4	8.465	6.969	4.925	.669	2.126	.748
2 15/16 3	19531215 19531300	HCFC 215-47 HCFC 215-48	2 15/16 3	8.661	7.244	5.122	.669	2.165	.748

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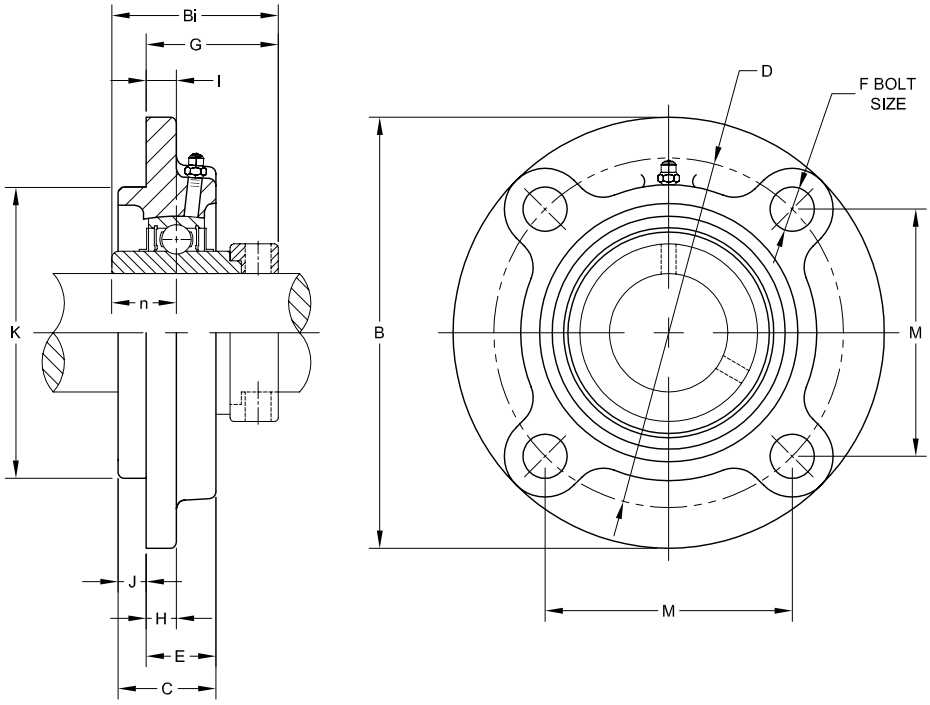

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SHAFT SIZE	DIMENSIONS (INCHES)							BOLT SIZE (IN)	INSERT #	HOUSING #	WEIGHT LBS.
	J	H	I	K	G	Bi	n				
1 7/8 1 15/16 2	.472	.551	1.102	4.3307	1.894	2.468	.9685	½	HC 210-30 HC 210-31 HC 210-32	FC210	6.39
2 2 1/8 2 3/16	.472	.512	1.181	4.9213	2.228	2.811	1.0906	5/8	HC 211-32 HC 211-34 HC 211-35	FC211	9.26
2 1/4 2 3/8 2 7/16	.472	.591	1.417	5.315	2.512	3.063	1.2165	5/8	HC 212-36 HC 212-38 HC 212-39	FC212	10.89
2 1/2	.551	.591	1.378	5.709	2.661	3.374	1.3425	5/8	HC 213-40	FC213	12.57
2 3/4	.551	.630	1.496	5.905	2.701	3.374	1.342	5/8	HC 214-44	FC214	14.99
2 15/16 3	.630	.669	1.535	6.2992	2.866	3.626	1.4685	5/8	HC 215-47 HC 215-48	FC215	29.76

For personal service and special requests, please call us at 800.242.4633.

CAD drawings available upon request at no additional charge.

Furnished in non-expansion type only.

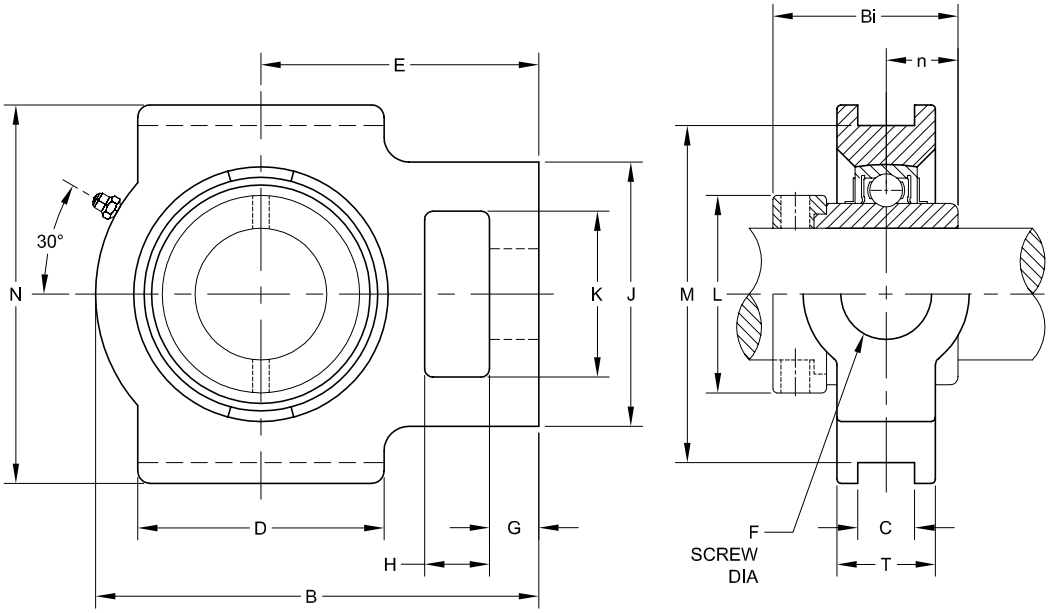
For nomenclature see pages 226 and 227.

MOUNTED BALL BEARING
WIDE SLOT TAKE-UP

HCT 200 Series—Normal Duty Eccentric Locking Collar

SHAFT SIZE	MOLINE PART #	UNIT #	DIMENSIONS (INCHES)						
			H	G	J	K	F	D	C
¾	19551012	HCT 204-12	⅝	⅜	2	1 ¼	¾	2	15⁄32
⅞ 15⁄16 1	19551014 19551015 19551100	HCT 205-14 HCT 205-15 HCT 205-16	⅝	⅜	2	1 ¼	⅞	2	15⁄32
1 ⅛ 1 3⁄16 1 ¼	19551102 19551103 19551104-06	HCT 206-18 HCT 206-19 HCT 206-20	⅝	⅜	2 3⁄16	1 7⁄16	⅞	2 ¼	15⁄32
1 ¼ 1 5⁄16 1 ⅜ 1 7⁄16	19551104 19551105 19551106 19551107	HCT 207-20 HCT 207-21 HCT 207-22 HCT 207-23	⅝	½	2 ½	1 7⁄16	⅞	2 ½	15⁄32
1 ½ 1 9⁄16	19551108 19551109	HCT 208-24 HCT 208-25	¾	⅝	3 ¼	1 15⁄16	1 ⅛	3 ¼	⅝
1 ⅝ 1 11⁄16 1 ¾	19551110 19551111 19551112	HCT 209-26 HCT 209-27 HCT 209-28	¾	⅝	3 ¼	1 15⁄16	1 ⅛	3 ¼	⅝

For sale as complete units, inserts and housings.



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MOUNTED BALL BEARING WIDE SLOT TAKE-UP

SHAFT SIZE	DIMENSIONS (INCHES)								INSERT #	HOUSING #	WEIGHT LBS.
	L	M	N	B	T	E	Bi	n			
¾	1.311	3	3 ½	3 11⁄16	13⁄16	2 3⁄8	1.712	.669	HC 204-12	T204	1.85
7⁄8 15⁄16 1	1.50	3	3 ½	3 13⁄16	15⁄16	2 7⁄16	1.744	.685	HC 205-14 HC 205-15 HC 205-16	T205	2.03
1 1⁄8 1 3⁄16 1 ¼	1.752	3 ½	4	4 7⁄16	1 3⁄32	2 ¾	1.901	.716	HC 206-18 HC 206-19 HC 206-20	T206	3.06
1 ¼ 1 5⁄16 1 3⁄8 1 7⁄16	2.189	3 ½	4	5 1⁄16	1 3⁄16	3 1⁄16	2.012	.740	HC 207-20 HC 207-21 HC 207-22 HC 207-23	T207	4.03
1 ½ 1 9⁄16	2.374	4	4 ½	5 11⁄16	1 5⁄16	3 ½	2.216	.842	HC 208-24 HC 208-25	T208	5.82
1 5⁄8 1 11⁄16 1 ¾	2.752	4	4 5⁄8	5 11⁄16	1 3⁄8	3 7⁄16	2.216	.842	HC 209-26 HC 209-27 HC 209-28	T209	5.89

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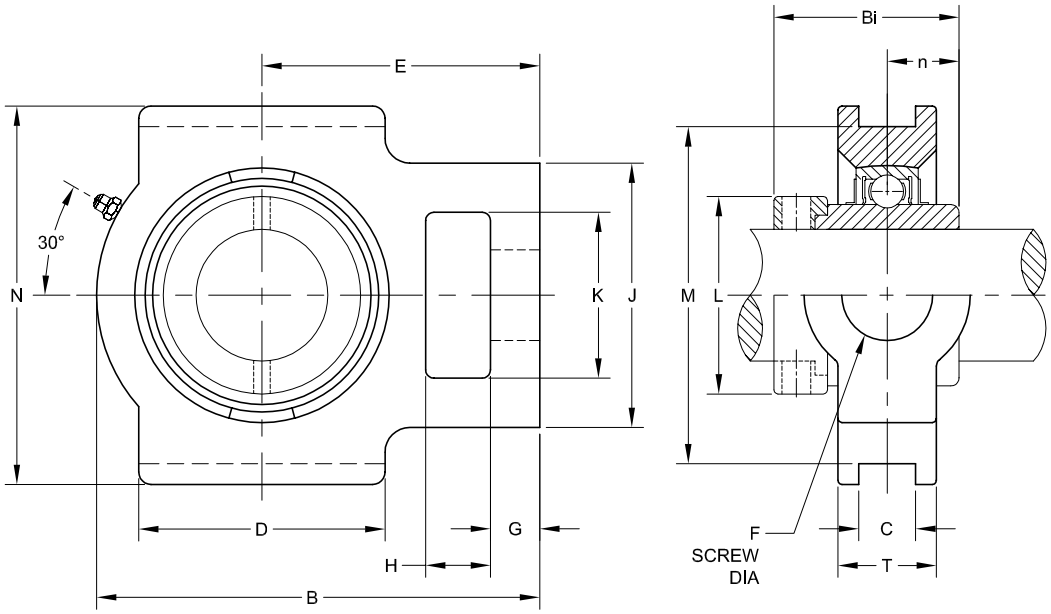
For nomenclature see pages 226 and 227.

MOUNTED BALL BEARING WIDE SLOT TAKE-UP CONTINUED

HCT 200 Series—Normal Duty Eccentric Locking Collar

SHAFT SIZE	MOLINE PART #	UNIT #	DIMENSIONS (INCHES)						
			H	G	J	K	F	D	C
1 7/8 1 15/16 2	19551114 19551115 19551200-10	HCT 210-30 HCT 210-31 HCT 210-32	3/4	5/8	3 1/4	1 15/16	1 1/8	3 3/8	11/16
2 2 1/8 2 3/16	19551200 19551202 19551203	HCT 211-32 HCT 211-34 HCT 211-35	1	3/4	4	2 1/2	1 3/8	3 3/4	27/32
2 1/4 2 3/8 2 7/16	19551204 19551206 19551207	HCT 212-36 HCT 212-38 HCT 212-39	1 1/4	3/4	4	2 1/2	1 3/8	4	27/32
2 1/2	19551208	HCT 213-40	1 1/4	13/16	4 3/8	2 3/4	1 1/2	4 3/4	1 1/32
2 3/4	19551212	HCT 214-44	1 5/16	13/16	4 3/8	2 3/4	1 1/2	4 3/4	1 1/32
2 15/16 3	19551215 19551300	HCT 215-47 HCT 215-48	1 1/4	13/16	4 3/8	2 3/4	1 1/2	4 3/4	1 1/32

For sale as complete units, inserts and housings.



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MOUNTED BALL BEARING WIDE SLOT TAKE-UP CONTINUED

SHAFT SIZE	DIMENSIONS (INCHES)								INSERT #	HOUSING #	WEIGHT LBS.
	L	M	N	B	T	E	Bi	n			
1 7/8 1 15/16 2	2.752	4	4 5/8	5 7/8	1 15/32	3 9/16	2.468	.968	HC 210-30 HC 210-31 HC 210-32	T210	6.19
2 2 1/8 2 3/16	3.0	5 1/8	5 3/4	6 3/4	1 1/2	4 3/16	2.807	1.090	HC 211-32 HC 211-34 HC 211-35	T211	9.41
2 1/4 2 3/8 2 7/16	3.315	5 1/8	5 3/4	7 5/8	1 21/32	4 11/16	3.059	1.216	HC 212-36 HC 212-38 HC 212-39	T212	11.60
2 1/2	3.3858	5 15/16	6 9/16	8 13/16	1 3/4	5 3/8	3.374	1.342	HC 213-40	T213	16.64
2 3/4	3.811	5 15/16	6 9/16	8 13/16	1 13/16	5 3/8	3.374	1.342	HC 214-44	T214	16.80
2 15/16 3	4.0157	5 15/16	6 9/16	9 1/8	1 7/8	5 1/2	3.626	1.468	HC 215-47 HC 215-48	T215	17.92

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For nomenclature see pages 226 and 227.

MOUNTED BALL BEARING
HC 200 SERIES INSERT

Normal Duty Eccentric Locking Collar

SHAFT SIZE	MOLINE #	UNIT #	DIMENSIONS (INCHES)										WEIGHT LBS.
			D	Bi	Be	n	m	i	L	H	G	ds	
¾	15500012	HC 204-12	1.8504	1.7126	.6693	.6693	.6693	.374	1.311	.5315	.189	¼–28	.46
⅞ 15/16 1	15500014 15500015 15500100	HC 205-14 HC 205-15 HC 205-16	2.0472	1.7441	.6693	.685	.685	.374	1.50	.5315	.189	¼–28	.51
1 ⅛ 1 3/16 1 ¼	15500102 15500103 15500104-06	HC 206-18 HC 206-19 HC 206-20	2.4409	1.9016	.748	.7165	.7165	.4685	1.752	.626	.2362	5/16–24	.82
1 ¼ 1 5/16 1 ⅜ 1 7/16	15500104 15500105 15500106 15500107	HC 207-20 HC 207-21 HC 207-22 HC 207-23	2.8346	2.0118	.7874	.7402	.7402	.5315	2.189	.689	.2677	5/16–24	1.32
1 ½ 1 9/16	15500108 15500109	HC 208-24 HC 208-25	3.1496	2.2165	.8268	.8425	.8425	.5315	2.374	.7205	.2677	5/16–24	1.68
1 ⅝ 1 11/16 1 ¾	15500110 15500111 15500112	HC 209-26 HC 209-27 HC 209-28	3.3465	2.2165	.8661	.8425	.8425	.5315	2.752	.7205	.2559	5/16–24	1.74
1 ⅞ 1 15/16 2	15500114 15500115 15500200-10	HC 210-30 HC 210-31 HC 210-32	3.5433	2.4685	.9055	.9685	.9685	.5315	2.752	.7205	.2559	5/16–24	2.01
2 2 ⅛ 2 3/16	15500200 15500202 15500203	HC 211-32 HC 211-34 HC 211-35	3.937	2.811	.9449	1.0906	1.0906	.6299	3.00	.8189	.315	⅜–24	2.78
2 ¼ 2 ⅜ 2 7/16	15500204 15500206 15500207	HC 212-36 HC 212-38 HC 212-39	4.3307	3.063	1.0236	1.2165	1.2165	.6299	3.315	.874	.323	⅜–24	4.12
2 ½	15500208	HC 213-40	4.7244	3.374	1.063	1.3425	1.3425	.689	3.3858	.9252	.315	⅜–24	4.65
2 ¾	15500212	HC 214-44	4.921	3.374	1.181	1.342	1.4685	.689	3.811	.9252	.354	⅜–24	6.02
2 15/16 3	15500215 15500300	HC 215-47 HC 215-48	5.1181	3.626	1.1811	1.4685	1.4685	.689	4.0157	.3546	.3546	⅜–24	6.87

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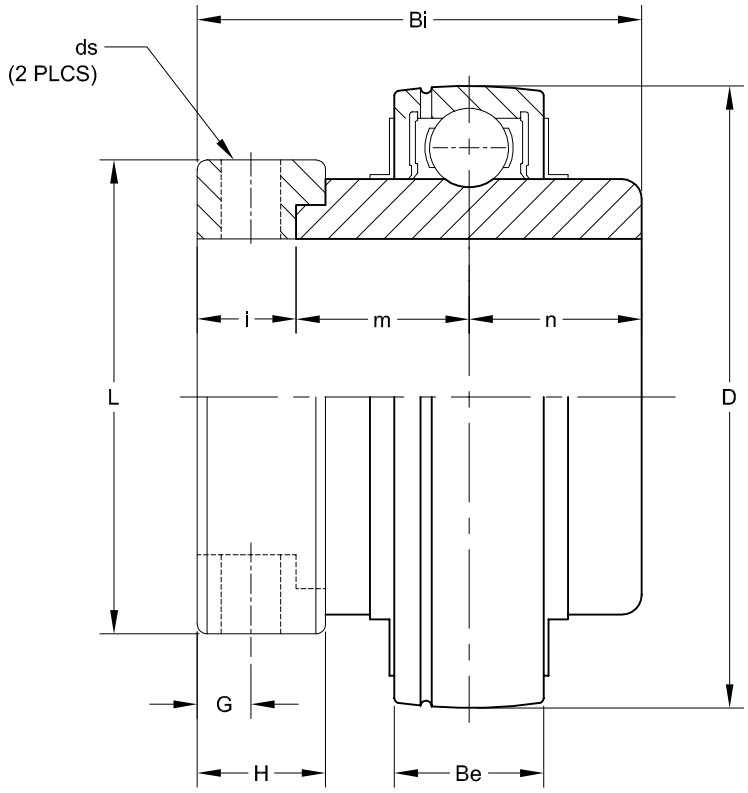
MOUNTED BALL BEARING HC 200 SERIES INSERT



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CAD drawings available upon request at no additional charge.

MOUNTED BALL BEARING APPLICATION GUIDE

MOUNTING INSTRUCTIONS

Proper mounting of ball bearing units is critical to unit performance. Failure to follow accepted mounting practice may result in poor performance and short bearing life.

Good engineering and design practice does not recommend the application of more than two bearings to support any shaft. Where more than two bearings are used to support the same shaft, it is possible to induce heavy bearing overloads. In these cases, extreme care must be taken to line up bearings in both the vertical and horizontal planes. When the recommended two bearings are used, alignment is not as critical. Moline Bearing self-aligning mounted bearing units will compensate for minor differences in mounting structure.

For best results, use turned and ground shafts that are free of rough spots and burrs. If an old shaft is used, mount bearing units on a relatively smooth and unworn section.

Prior to mounting, clean both the shaft and the bearing bore. Coat the shaft with a small amount of oil. Slide the bearing unit on the shaft. Do not hammer the ends of the inner race. If necessary to apply some force in mounting, use a soft metal bar or pipe against the inner race only. Tap the bearing unit into place.

Tighten the two set screws securely to lock the bearing to the shaft. In applications where the bearing is subjected to heavy vibration, shock loads, or heavy thrust loads, then it may be desirable to file the shaft flat or drill the shaft slightly in the area where the set screws will contact.

MAXIMUM SPEED

The maximum speed limits listed for the ball bearings can be found in the load rating table. These numbers should be used as a guide and considered along with other factors affecting bearing operation. Load characteristics, bearing lubrication, and temperature factors all influence bearing operation. It is possible that cataloged speed limits may be exceeded after factory engineers complete a complete application analysis.

LUBRICATION

The proper lubrication of ball bearing units is critical in order to attain maximum bearing life expectancy. Moline ball bearing units need to be lubricated prior to use. They should be re-lubricated periodically, depending on the environment the bearing is exposed to. The following table can be used as a general guide. Experience will determine the best interval for each specific application.

Lubrication Guide

OPERATING CONDITIONS	BEARING TEMPERATURES	GREASE INTERVAL
Clean	32°F to 120°F 120°F to 150°F 150°F to 200°F	6–12 Months 1–3 Months 1–4 Weeks
Dirty	32°F to 150°F 150°F to 200°F	1–4 Weeks Daily–1 Week
Moisture	32°F to 200°F	Daily–1 Week

The amount and type of lubricant used will affect bearing life. Lack of lubricant can lead to premature surface fatigue failures of balls and races. Over lubrication can damage seals and result in premature failure from contamination due to the inability of damaged seals to keep foreign material out of the bearing.

When lubricating bearings add grease slowly while the shaft is rotating. When the first sign of grease appears at the seals, the bearing will contain the correct amount of lubricant.

Bearings should not run in steady operation over 200°F and should not exceed 225°F for intermittent operation.

For unusual lubrication requirements or severe duty applications, contact Moline Bearing engineering for recommendations.

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MOLINE BEARING Co

BEARING SELECTION

Selection of the proper Moline bearing unit for a determined speed and load can be made by referring to the load rating tables. Proper selection is made by finding a bearing having the desired bore size which has a load rating equal to or greater than the radial or equivalent radial load required for the application.

The ratings shown in the rating tables are based on an average bearing life of 2500 hours. Average bearing life is approximately 5 times L10 life and is the life which may be expected from 50% or more of a given group of bearings operating under identical load conditions. Life expectancies for other than 2,500 hours average life may be determined by using the rating modification factors listed.

BEARING LOADS

Radial loads and thrust force in combination are the principal load components of bearing applied loads. Moline ball bearing unit ratings are based upon the radial load capacity of the bearing. For applications where bearings are required to absorb thrust loads in addition to normal radial loads, the following considerations must be made concerning the magnitude of the thrust force.

When thrust loads are less than half the radial load, the equivalent load should be considered to be the same as the radial load. If the thrust load is equal to or greater than ½ the radial load, the equivalent load is determined by adding the two loads together. For thrust loads equal to or greater than the radial load, consult the factory.

EXAMPLE 1: RADIAL LOAD SERVICE LIFE

Select a mounted bearing flange block to meet the following application requirements.

a. Shaft diameter of 1 inch

b. Shaft speed is 1500 RPM

c. Radial load requirement is 300 lbs.

d. Average life requirement is 5000 hours

From the rating table located on the previous page, locate the series bearing corresponding to a one-inch shaft diameter and follow that line to the 1500 RPM column. The load capacity in this case is 860 lbs. These published radial load capacities are based on an average life of 2,500 hours and must be modified to suit the application requirement 5,000 hours average life by using the proper multiplier from the chart below. Calculate the equivalent radial load capacity for 5,000 hours average life expectancy as follows:

860 lbs. radial capacity
x .794 5,000 hours avg. life factor
683 lbs. radial capacity
for 5,000 hours avg. life

EXAMPLE 2: COMBINATION RADIAL AND THRUST LOAD REQUIREMENT

Select a mounted pillow block to meet the following specifications.

a. Shaft diameter of 1 3⁄16

b. A Combination load is applied consisting of

Radial Load of 400 lbs.

Thrust Load is 250 lbs.

c. Shaft speed is 1000 RPM

d. The average life requirement is 2,500 hours

From the load rating table on the previous page, locate the line with the series bearing corresponding to 1 3⁄16 inch shaft size and follow this line to the right to the 1000 RPM column. The radial load capacity for the bearing is 1389 lbs.

Since the application average life is what the catalog rating charts are based on there's no need to apply further modification factors.

Because the applied thrust load of 250 lbs. is more than half of the applied radial load of 400 lbs., these loads must be added together to obtain the equivalent load requirement.

Equivalent load:
400 lbs. + 250 lbs. = 650 lbs.

The equivalent radial requirement of 650 lbs. is less than the rated capacity, so the bearing size desired can be used.

MOUNTED BALL BEARING RADIAL LOAD RATINGS

Radial Load Ratings In Pounds

Information in this table shows load ratings at various RPM based on 500 hours minimum life to 2500 hours average life.

BEARING #	RADIAL LOAD RATING AT VARIOUS RPM											
UC/HC	50	100	250	500	750	1000	1200	1500	2000	2400	3800	5000
201-204	2469	1962	1433	1146	992	904	860	794	727	683	595	529
205	2690	2138	1587	1257	1102	1014	926	860	794	749	639	551
206	3747	2976	2204	1741	1521	1389	1301	1212	1102	1036	904	816
207	4960	3924	2888	2293	2006	1830	1675	1587	1455	1367	1190	-----
208	5600	4453	3285	2601	2271	2072	1940	1808	1631	1543	1345	-----
209	6173	4894	3593	2866	2491	2271	2138	1984	1808	1697	-----	-----
210	6768	5357	3946	3130	2734	2491	2315	2182	1984	1852	-----	-----
211	8333	6614	4872	3924	3593	3064	2888	2690	2447	2293	-----	-----
212	10097	8002	5908	4674	4100	3726	3505	3241	2954	2778	-----	-----
213	11023	8752	6437	5115	4475	4056	3814	3549	3219	-----	-----	-----
214	11971	9502	7010	5555	4850	4409	4144	3858	3505	-----	-----	-----
215	12985	10295	7583	6019	5247	4784	4497	4167	3792	-----	-----	-----
218	18721	14859	10949	8690	7592	6898	6491	6026	5475	-----	-----	-----

Modification Factors for Average Service Life and Load Conditions

LOAD CONDITIONS	AVERAGE LIFE (1,000 HOURS)													
	2.5	3	4	5	6	7	8	10	15	20	25	30	40	50
Steady Load	1.00	.941	.855	.794	.747	.709	.679	.630	.550	.500	.464	.437	.397	.368
Light Shock	.900	.847	.770	.715	.672	.639	.611	.567	.495	.450	.418	.393	.357	.331
Moderate Shock	.700	.659	.599	.556	.523	.500	.475	.441	.385	.350	.325	.306	.278	.258

Factors are used to modify for loads that are not steady or for average life requirements beyond the standard 2500 hours shown in the Radial Load Rating table.

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MOLINE BEARING Co

MOUNTED BALL BEARING INTERCHANGE

Normal Duty—200 Series

MOLINE	DODGE	BROWNING	SEALMASTER	HUB CITY	TIMKEN FAFNIR	FYH
UCP 2-Bolt Pillow Block	SC-1	VPS	RP	PB251	SAS	UCP
HCP 2-Bolt Pillow Block Eccentric	SXR-1	VPE	RPE	PB221	RAS	NAP
UCF 4-Bolt Flange	SC-4	VF4S	RF	FB250	SCJ	UCF
HCF 4-Bolt Flange Eccentric	SXR-4	VF4E	RFE	FB220	RCJ	NANF
UCFL 2-Bolt Flange	SC-2	VF2S	RFT	FB260	SCJT	UCFL
HCFL 2-Bolt Flange Eccentric	SXR-2	VF2E	RFTE	FB230	RCJT	NANFL
UCFC Piloted Flange	FCSC	-----	-----	-----	-----	UCFC2
HCFC Piloted Flange Eccentric	-----	-----	-----	-----	-----	-----
UCT Wide Slot Take-Up	WSTUSC	VTWS	RT	WSTU250	VTU	UCT
HCT Wide Slot Take-Up Eccentric	WSTUSXR	VTWE	RT-E	WSTU220	RTU	NAT

Dimensionally compatible with most mounted ball bearings. However, some dimensional variations may exist. Please verify your engineering data or contact the factory with any questions you may have.


MOLINE

SHAFT COLLARS

SOLID ZINC PLATED AND STAINLESS STEEL SHAFT COLLARS

SHAFT SIZE	OD	WIDTH	ZINC-PLATED COLLAR #	STAINLESS STEEL COLLAR #	SETSCREW SIZE	WEIGHT (OZ.)
1/8	3/8	1/4	LSC2 x 1/8	SSC2 x 1/8	6-32 x 1/8	0.10
3/16	7/16	1/4	LSC3 x 3/16	SSC3 x 3/16	8-32 x 1/8	0.10
1/4	1/2	9/32	LSC4 x 1/4	SSC4 x 1/4	10-32 x 1/8	0.20
5/16	5/8	5/16	LSC5 x 5/16	SSC5 x 5/16	10-32 x 1/8	0.30
3/8	3/4	3/8	LSC6 x 3/8	SSC6 x 3/8	1/4-20 x 3/16	0.50
7/16	7/8	7/16	LSC7 x 7/16	SSC7 x 7/16	1/4-20 x 1/4	0.80
1/2	1	7/16	LSC8 x 1/2	SSC8 x 1/2	1/4-20 x 1/4	1.10
9/16	1	7/16	LSC9 x 9/16	SSC9 x 9/16	1/4-20 x 1/4	1.00
5/8	1 1/8	1/2	LSC10 x 5/8	SSC10 x 5/8	5/16-18 x 1/4	1.50
11/16	1 1/4	9/16	LSC11 x 11/16	SSC11 x 11/16	5/16-18 x 1/4	2.00
3/4	1 1/4	9/16	LSC12 x 3/4	SSC12 x 3/4	5/16-18 x 1/4	1.90
13/16	1 5/16	9/16	LSC13 x 13/16	SSC13 x 13/16	5/16-18 x 1/4	1.70
7/8	1 1/2	9/16	LSC14 x 7/8	SSC14 x 7/8	5/16-18 x 1/4	2.90
15/16	1 1/2	9/16	LSC15 x 15/16	SSC15 x 15/16	5/16-18 x 1/4	2.74
1	1 5/8	5/8	LSC16 x 1	SSC16 x 1	5/16-18 x 1/4	2.78
1 1/16	1 3/4	5/8	LSC17 x 1 1/16	SSC17 x 1 1/16	5/16-18 x 5/16	4.10
1 1/8	1 3/4	5/8	LSC18 x 1 1/8	SSC18 x 1 1/8	5/16-18 x 5/16	3.90
1 3/16	2	11/16	LSC19 x 1 3/16	SSC19 x 1 3/16	3/8-16 x 3/8	6.10
1 1/4	2	11/16	LSC20 x 1 1/4	SSC20 x 1 1/4	3/8-16 x 3/8	5.70
1 5/16	2 1/8	11/16	LSC21 x 1 5/16	SSC21 x 1 5/16	3/8-16 x 3/8	6.60
1 3/8	2 1/8	3/4	LSC22 x 1 3/8	SSC22 x 1 3/8	3/8-16 x 3/8	6.70
1 7/16	2 1/4	3/4	LSC23 x 1 7/16	SSC23 x 1 7/16	3/8-16 x 3/8	7.60
1 1/2	2 1/4	3/4	LSC24 x 1 1/2	SSC24 x 1 1/2	3/8-16 x 3/8	7.20
1 9/16	2 1/2	13/16	LSC25 x 1 9/16	SSC25 x 1 9/16	3/8-16 x 3/8	10.70
1 5/8	2 1/2	13/16	LSC26 x 1 5/8	SSC26 x 1 5/8	3/8-16 x 3/8	10.10
1 11/16	2 1/2	13/16	LSC27 x 1 11/16	SSC27 x 1 11/16	3/8-16 x 3/8	9.50
1 3/4	2 5/8	7/8	LSC28 x 1 3/4	SSC28 x 1 3/4	1/2-13 x 1/2	11.40

LSC = Zinc Plated Steel
SSC = 304 Stainless Steel
Collars come with 1 set screw.

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SOLID ZINC PLATED AND STAINLESS STEEL SHAFT COLLARS

SHAFT SIZE	OD	WIDTH	ZINC-PLATED COLLAR #	STAINLESS STEEL COLLAR #	SETSCREW SIZE	WEIGHT (OZ.)
1 13/16	2 3/4	7/8	LSC29 x 1 13/16	SSC29 x 1 13/16	1/2-13 x 1/2	12.70
1 7/8	2 3/4	7/8	LSC30 x 1 7/8	SSC30 x 1 7/8	1/2-13 x 1/2	12.20
1 15/16	3	7/8	LSC31 x 1 15/16	SSC31 x 1 15/16	1/2-13 x 1/2	15.70
2	3	7/8	LSC32 x 2	SSC32 x 2	1/2-13 x 1/2	14.90
2 1/8	3	7/8	LSC34 x 2 1/8	SSC34 x 2 1/8	1/2-13 x 1/2	13.30
2 3/16	3 1/4	15/16	LSC35 x 2 3/16	SSC35 x 2 3/16	1/2-13 x 1/2	18.60
2 1/4	3 1/4	15/16	LSC36 x 2 1/4	SSC36 x 2 1/4	1/2-13 x 1/2	17.70
2 5/16	3 1/4	15/16	LSC37 x 2 5/16	-----	1/2-13 x 1/2	16.80
2 3/8	3 1/4	15/16	LSC38 x 2 3/8	SSC38 x 2 3/8	1/2-13 x 1/2	15.90
2 7/16	3 1/2	1	LSC39 x 2 7/16	SSC39 x 2 7/16	1/2-13 x 1/2	21.80
2 1/2	3 1/2	1	LSC40 x 2 1/2	SSC40 x 2 1/2	1/2-13 x 1/2	20.80
2 9/16	3 3/4	1	LSC41 x 2 9/16	-----	1/2-13 x 1/2	25.96
2 5/8	4	1 1/8	LSC42 x 2 5/8	SSC42 x 2 5/8	1/2-13 x 1/2	35.49
2 11/16	4	1 1/8	LSC43 x 2 11/16	SSC43 x 2 11/16	1/2-13 x 1/2	34.40
2 3/4	4	1 1/8	LSC44 x 2 3/4	-----	1/2-13 x 1/2	33.50
2 7/8	4 1/4	1 1/8	LSC46 x 2 7/8	SSC46 x 2 7/8	1/2-13 x 1/2	29.70
2 15/16	4 1/4	1 1/8	LSC47 x 2 15/16	SSC47 x 2 15/16	1/2-13 x 1/2	29.30
3	4 1/4	1 1/8	LSC48 x 3	SSC48 x 3	1/2-13 x 1/2	27.70
3 3/16	4 1/4	1 1/8	LSC51 x 3 3/16	SSC51 x 3 3/16	1/2-13 x 1/2	31.00
3 7/16	4 1/4	1 1/8	LSC55 x 3 7/16	SSC55 x 3 7/16	1/2-13 x 1/2	33.00
3 1/2	4 1/2	1 1/8	LSC56 x 3 1/2	SSC56 x 3 1/2	1/2-13 x 1/2	40.70
3 15/16	5	1 1/8	LSC63 x 3 15/16	SSC63 x 3 15/16	1/2-13 x 1/2	37.60
4	5 1/4	1 3/8	LSC64 x 4	SSC64 x 4	1/2-13 x 1/2	39.00
4 1/4	5 1/2	1 3/8	LSC85 x 4 1/4	-----	1/2-13 x 1/2	55.00
4 7/16	6	1 3/8	LSC90 x 4 7/16	-----	1/2-13 x 1/2	41.20
4 15/16	6 3/8	1 3/8	LSC93 x 4 15/16	-----	1/2-13 x 1/2	53.10

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CAD drawings available upon request at no additional charge.

BLACK OXIDE
SINGLE/DOUBLE SPLIT COLLARS

SHAFT SIZE	OD	WIDTH	SINGLE SPLIT PART #	WEIGHT (OZ.)	DOUBLE SPLIT PART #	SETSCREW SIZE	WEIGHT (OZ.)
1/4	11/16	5/16	SCS4 x 1/4	0.40	DSC4 x 1/4	4-40 x 3/8	0.38
5/16	11/16	5/16	SCS5 x 5/16	0.36	DSC5 x 5/16	4-40 x 3/8	0.34
3/8	7/8	11/32	SCS6 x 3/8	0.70	DSC6 x 3/8	6-32 x 3/8	0.71
7/16	15/16	3/8	SCS7 x 7/16	0.81	DSC7 x 7/16	6-32 x 3/8	0.76
1/2	1 1/8	13/32	SCS8 x 1/2	1.30	DSC8 x 1/2	8-32 x 1/2	1.26
9/16	1 1/4	7/16	SCS9 x 9/16	2.00	DSC9 x 9/16	10-32 x 1/2	2.00
5/8	1 5/16	7/16	SCS10 x 5/8	1.80	DSC10 x 5/8	10-32 x 1/2	1.80
11/16	1 3/8	7/16	SCS11 x 11/16	2.90	DSC11 x 11/16	10-32 x 1/2	2.80
3/4	1 1/2	1/2	SCS12 x 3/4	2.70	DSC12 x 3/4	1/4-28 x 5/8	2.60
13/16	1 5/8	1/2	SCS13 x 13/16	3.20	DSC13 x 13/16	1/4-28 x 5/8	3.10
7/8	1 5/8	1/2	SCS14 x 7/8	2.96	DSC14 x 7/8	1/4-28 x 5/8	2.83
15/16	1 3/4	1/2	SCS15 x 15/16	3.51	DSC15 x 15/16	1/4-28 x 5/8	3.40
1	1 3/4	1/2	SCS16 x 1	3.30	DSC16 x 1	1/4-28 x 5/8	3.10
1 1/16	1 7/8	1/2	SCS17 x 1 1/16	3.90	DSC17 x 1 1/16	1/4-28 x 5/8	3.67
1 1/8	1 7/8	1/2	SCS18 x 1 1/8	3.63	DSC18 x 1 1/8	1/4-28 x 5/8	3.50
1 3/16	2 1/16	1/2	SCS19 x 1 3/16	4.70	DSC19 x 1 3/16	1/4-28 x 5/8	4.50
1 1/4	2 1/16	1/2	SCS20 x 1 1/4	4.40	DSC20 x 1 1/4	1/4-28 x 5/8	4.22
1 5/16	2 1/8	9/16	SCS21 x 1 5/16	6.19	DSC21 x 1 5/16	1/4-28 x 5/8	5.90
1 3/8	2 1/4	9/16	SCS22 x 1 3/8	5.90	DSC22 x 1 3/8	1/4-28 x 5/8	5.70
1 7/16	2 1/4	9/16	SCS23 x 1 7/16	5.50	DSC23 x 1 7/16	1/4-28 x 5/8	5.23
1 1/2	2 3/8	9/16	SCS24 x 1 1/2	6.30	DSC24 x 1 1/2	1/4-28 x 5/8	6.06
1 9/16	2 3/8	9/16	SCS25 x 1 9/16	5.90	DSC25 x 1 9/16	1/4-28 x 5/8	5.61
1 5/8	2 5/8	11/16	SCS26 x 1 5/8	9.65	DSC26 x 1 5/8	1/4-28 x 5/8	9.31
1 11/16	2 3/4	11/16	SCS27 x 1 11/16	10.70	DSC27 x 1 11/16	5/16-24 x 1	9.86
1 3/4	2 3/4	11/16	SCS28 x 1 3/4	10.20	DSC28 x 1 3/4	5/16-24 x 1	11.00

SCS and DSC = Black Oxided Steel

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MOLINE BEARING Co

BLACK OXIDE SINGLE/DOUBLE SPLIT COLLARS

SHAFT SIZE	OD	WIDTH	SINGLE SPLIT PART #	WEIGHT (OZ.)	DOUBLE SPLIT PART #	SETSCREW SIZE	WEIGHT (OZ.)
1 13/16	2 7/8	11/16	SCS29 x 1 13/16	10.70	DSC29 x 1 13/16	5/16-24 x 1	12.00
1 7/8	2 7/8	11/16	SCS30 x 1 7/8	10.90	DSC30 x 1 7/8	5/16-24 x 1	10.46
1 15/16	3	11/16	SCS31 x 1 15/16	12.00	DSC31 x 1 15/16	5/16-24 x 1	11.57
2	3	11/16	SCS32 x 2	11.60	DSC32 x 2	5/16-24 x 1	11.00
2 1/16	3 1/8	3/4	-----	-----	DSC33 x 2 1/16	5/16-24 x 1	12.00
2 1/8	3 1/4	3/4	SCS34 x 2 1/8	15.20	DSC34 x 2 1/8	5/16-24 x 1	15.00
2 3/16	3 1/4	3/4	SCS35 x 2 3/16	14.40	DSC35 x 2 3/16	5/16-24 x 1	14.00
2 1/4	3 1/4	3/4	SCS36 x 2 1/4	13.66	DSC36 x 2 1/4	5/16-24 x 1	13.10
2 5/16	3 3/8	3/4	SCS37 x 2 5/16	15.20	DSC37 x 2 5/16	5/16-24 x 1	15.90
2 3/8	3 1/2	3/4	SCS38 x 2 3/8	16.50	DSC38 x 2 3/8	5/16-24 x 1	15.20
2 7/16	3 1/2	3/4	SCS39 x 2 7/16	15.60	DSC39 x 2 7/16	5/16-24 x 1	15.30
2 1/2	3 3/4	7/8	SCS40 x 2 1/2	23.10	DSC40 x 2 1/2	3/8-24 x 1-1/4	22.30
2 9/16	3 7/8	7/8	SCS41 x 2 9/16	22.00	DSC41 x 2 9/16	3/8-24 x 1-1/4	21.00
2 5/8	3 7/8	7/8	-----	-----	DSC42 x 2 5/8	3/8-24 x 1-1/4	24.00
2 11/16	4	7/8	SCS43 x 2 11/16	25.80	DSC43 x 2 11/16	3/8-24 x 1-1/4	25.00
2 3/4	4	7/8	SCS44 x 2 3/4	29.20	DSC44 x 2 3/4	3/8-24 x 1-1/4	24.00
2 13/16	4 1/4	7/8	-----	-----	DSC45 x 2 13/16	3/8-24 x 1-1/4	24.00
2 7/8	4 1/4	7/8	SCS46 x 2 7/8	29.20	DSC46 x 2 7/8	3/8-24 x 1-1/4	29.00
2 15/16	4 1/4	7/8	SCS47 x 2 15/16	28.00	DSC47 x 2 15/16	3/8-24 x 1-1/4	26.50
3	4 1/4	7/8	SCS48 x 3	26.80	DSC48 x 3	3/8-24 x 1-1/4	25.80
3 3/16	4 1/2	7/8	SCS51 x 3 3/16	25.00	DSC51 x 3 3/16	3/8-24 x 1-1/4	28.30
3 7/16	4 1/2	7/8	SCS55 x 3 7/16	25.10	DSC55 x 3 7/16	3/8-24 x 1-1/4	31.00
3 15/16	5 1/4	7/8	SCS63 x 3 15/16	34.00	DSC63 x 3 15/16	3/8-24 x 1-1/4	35.00
4	5 1/4	7/8	SCS64 x 4	33.40	DSC64 x 4	3/8-24 x 1-1/4	33.00
4 7/16	5 3/4	7/8	-----	-----	DSC90 x 4 7/16	3/8-24 x 1-1/4	34.00

SCS and DSC = Black Oxided Steel
For personal service and special requests, please call us at 800.242.4633.
CAD drawings available upon request at no additional charge.

STAINLESS STEEL SINGLE/DOUBLE SPLIT COLLARS

SHAFT SIZE	OD	WIDTH	STAINLESS SINGLE SPLIT PART #	WEIGHT (OZ.)	STAINLESS DOUBLE SPLIT PART #	SETSCREW SIZE	WEIGHT (OZ.)
1/4	11/16	5/16	SSCS4 x 1/4	0.40	SDSC4 x 1/4	4-40 x 3/8	0.38
5/16	11/16	5/16	SSCS5 x 5/16	0.36	SDSC5 x 5/16	4-40 x 3/8	0.34
3/8	7/8	11/32	SSCS6 x 3/8	0.70	SDSC6 x 3/8	6-32 x 3/8	0.71
7/16	15/16	3/8	SSCS7 x 7/16	0.81	SDSC7 x 7/16	6-32 x 3/8	0.76
1/2	1 1/8	13/32	SSCS8 x 1/2	1.30	SDSC8 x 1/2	8-32 x 1/2	1.26
9/16	1 1/4	7/16	SSCS9 x 9/16	2.00	SDSC9 x 9/16	10-32 x 1/2	2.00
5/8	1 5/16	7/16	SSCS10 x 5/8	1.80	SDSC10 x 5/8	10-32 x 1/2	1.80
11/16	1 3/8	7/16	SSCS11 x 11/16	2.90	SDSC11 x 11/16	10-32 x 1/2	2.80
3/4	1 1/2	1/2	SSCS12 x 3/4	2.70	SDSC12 x 3/4	1/4-28 x 5/8	2.60
13/16	1 5/8	1/2	SSCS13 x 13/16	3.20	SDSC13 x 13/16	1/4-28 x 5/8	3.10
7/8	1 5/8	1/2	SSCS14 x 7/8	2.96	SDSC14 x 7/8	1/4-28 x 5/8	2.83
15/16	1 3/4	1/2	SSCS15 x 15/16	3.51	SDSC15 x 15/16	1/4-28 x 5/8	3.40
1	1 3/4	1/2	SSCS16 x 1	3.30	SDSC16 x 1	1/4-28 x 5/8	3.10
1 1/16	1 7/8	1/2	SSCS17 x 1 1/16	3.90	SDSC17 x 1 1/16	1/4-28 x 5/8	3.67
1 1/8	1 7/8	1/2	SSCS18 x 1 1/8	3.63	SDSC18 x 1 1/8	1/4-28 x 3/4	3.50
1 3/16	2 1/16	1/2	SSCS19 x 1 3/16	4.70	SDSC19 x 1 3/16	1/4-28 x 3/4	4.50
1 1/4	2 1/16	1/2	SSCS20 x 1 1/4	4.40	SDSC20 x 1 1/4	1/4-28 x 3/4	4.22
1 5/16	2 1/8	9/16	SSCS21 x 1 5/16	6.19	SDSC21 x 1 5/16	1/4-28 x 3/4	5.90
1 3/8	2 1/4	9/16	SSCS22 x 1 3/8	5.90	SDSC22 x 1 3/8	1/4-28 x 3/4	5.70
1 7/16	2 1/4	9/16	SSCS23 x 1 7/16	5.50	SDSC23 x 1 7/16	1/4-28 x 3/4	5.23
1 1/2	2 3/8	9/16	SSCS24 x 1 1/2	6.30	SDSC24 x 1 1/2	1/4-28 x 3/4	6.06
1 9/16	2 3/8	9/16	SSCS25 x 1 9/16	5.90	SDSC25 x 1 9/16	1/4-28 x 3/4	5.61
1 5/8	2 5/8	11/16	SSCS26 x 1 5/8	9.65	SDSC26 x 1 5/8	5/16-24 x 1	9.31

SSCS and SDSC = 304 Stainless Steel

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STAINLESS STEEL SINGLE/DOUBLE SPLIT COLLARS

SHAFT SIZE	OD	WIDTH	STAINLESS SINGLE SPLIT PART #	WEIGHT (OZ.)	STAINLESS DOUBLE SPLIT PART #	SETSCREW SIZE	WEIGHT (OZ.)
1 11/16	2 3/4	11/16	SSCS27 x 1 11/16	10.70	SDSC27 x 1 11/16	5/16-24 x 1	9.86
1 3/4	2 3/4	11/16	SSCS28 x 1 3/4	10.20	SDSC28 x 1 3/4	5/16-24 x 1	11.00
1 13/16	2 7/8	11/16	SSCS29 x 1 13/16	10.40	SDSC29 x 1 13/16	5/16-24 x 1	10.70
1 7/8	2 7/8	11/16	SSCS30 x 1 7/8	10.90	SDSC30 x 1 7/8	5/16-24 x 1	10.46
1 15/16	3	11/16	SSCS31 x 1 15/16	12.00	SDSC31 x 1 15/16	5/16-24 x 1	11.57
2	3	11/16	SSCS32 x 2	11.60	SDSC32 x 2	5/16-24 x 1	11.00
2 1/8	3 1/4	3/4	SSCS34 x 2 1/8	15.20	SDSC34 x 2 1/8	5/16-24 x 1	15.00
2 3/16	3 1/4	3/4	SSCS35 x 2 3/16	14.40	SDSC35 x 2 3/16	5/16-24 x 1	14.00
2 1/4	3 1/4	3/4	SSCS36 x 2 1/4	13.66	SDSC36 x 2 1/4	5/16-24 x 1	13.10
2 5/16	3 3/8	3/4	SSCS37 x 2 5/16	16.00	SDSC37 x 2 5/16	5/16-24 x 1	15.90
2 3/8	3 1/2	3/4	SSCS38 x 2 3/8	16.50	SDSC38 x 2 3/8	5/16-24 x 1	15.20
2 7/16	3 1/2	3/4	SSCS39 x 2 7/16	15.60	SDSC39 x 2 7/16	5/16-24 x 1	15.30
2 1/2	3 3/4	7/8	SSCS40 x 2 1/2	23.10	SDSC40 x 2 1/2	3/8-24 x 1-1/4	22.30
2 9/16	3 7/8	7/8	SSCS41 x 2 9/16	22.00	SDSC41 x 2 9/16	3/8-24 x 1-1/4	21.00
2 5/8	3 7/8	7/8	-----	-----	SDSC42 x 2 5/8	3/8-24 x 1-1/4	24.00
2 11/16	4	7/8	SSCS43 x 2 11/16	25.80	SDSC43 x 2 11/16	3/8-24 x 1-1/4	25.00
2 3/4	4	7/8	SSCS44 x 2 3/4	29.20	SDSC44 x 2 3/4	3/8-24 x 1-1/4	24.00
2 7/8	4 1/4	7/8	SSCS46 x 2 7/8	29.20	SDSC46 x 2 7/8	3/8-24 x 1-1/4	29.00
2 15/16	4 1/4	7/8	SSCS47 x 2 15/16	28.00	SDSC47 x 2 15/16	3/8-24 x 1-1/4	26.50
3	4 1/4	7/8	SSCS48 x 3	26.80	SDSC48 x 3	3/8-24 x 1-1/4	25.80
3 3/16	4 1/2	7/8	SSCS51 x 3 3/16	25.00	SDSC51 x 3 3/16	3/8-24 x 1-1/4	28.30
3 7/16	4 1/2	7/8	SSCS55 x 3 7/16	33.00	SDSC55 x 3 7/16	3/8-24 x 1-1/4	31.00
3 1/2	4 3/4	7/8	-----	-----	SDSC56 x 3 1/2	3/8-24 x 1-1/4	32.00

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MOLINE

QD,TAPERED AND D BUSHINGS

FEATURES OF THE MOLINE QD BUSHING

WHAT'S THE DIFFERENCE BETWEEN A TAPER AND A QD BUSHING?

The main difference in the two is that the QD style bushing has a flange around the outside diameter, while the taper lock bushing has straight sides on the OD which is meant to mount flush. Many people refer to both types as a "taper lock" because they both use the tapered wedging action to lock to the shaft. The taper bushing, with it's straight sides, uses a set screw to drive the bushing into the bore of the component being installed (sheave, sprocket, etc.). Be careful when installing these screws. The holes with threads on the bushing are for removal only. Also be aware that the appearance of a flange on the outside of the bushing doesn't necessarily mean it's a QD style. Split Taper bushing also has a flange, and the two are not interchangeable. The QD style has a split that continues through the flange.

QD BUSHINGS

- Compact Design
- A proven industry standard
- Reverse or Conventional Mounting
- Easy on and off design
- Secure and tight mounting to shaft
- Runs true with no wobble
- Superior performance
- Broad acceptance and availability

Used in an extremely wide range of shaft mounted products and housings

- Pulleys/Sheaves
- Sprockets
- Couplings
- Roller Chain Sprockets
- Flexible Cushion Couplings

The Steel QD (Quick Disconnect) Type bushing offers flexible and easy installation while providing exceptional holding power. QD Bushings are used thought out the industry offering convenience and design flexibility. They are precision machined of quality Steel and are installed by tightening several cap screws. This draws the bushing into the taper bore of the product which compresses the bore of the bushing. QD bushings are easily removed by using the cap screws as jack-screws.

Double drilled holes are furnished in QD Bushings permitting mounting of product in the conventional or reverse positions. This allows cap screws to be installed through product hub or bushing flange whichever is most convenient. A significant benefit in installation, cap screws are always inserted from the outside where they are easily accessible.

Moline QD Bushings are available from stock with all popular bores within the range of each size bushing.

Moline Quick Disconnect Bushings are manufactured in quality Grey Steel

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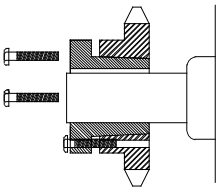
MOLINE BEARING Co

QD BUSHING APPLICATION GUIDE

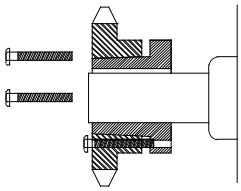
INSTRUCTIONS

At Moline, our goal is to provide you with the most reliable products, helpful service, and expert support. To ensure that the bushing performs as specified, it must be installed properly: But if you have further questions, please contact us directly.

Conventional



Reverse



TO INSTALL

1. Be sure the tapered cone surfaces of the bushing and the inside of the sprocket hub are clean.
2. Place bushing in or on the desired mounting component.
3. Put the cap screws and lock washers loosely in the pull-up holes. The bushing remains fully expanded to assure sliding fit on the shaft.
4. With key on shaft, slide sprocket to the desired position on the shaft. Be sure the heads of the cap screws are on the outside.
5. Align the sprocket. Tighten the screws alternately and progressively—until they are pulled up tight. To increase leverage, use a wrench or length of pipe (see wrench torque chart below). Do not allow the sprocket to be drawn in contact with the flange of the bushing; there should be a gap from ⅛" to ¼".

CAUTION

When mounting screws, apply pressure by hand only. If extreme tightening forces are applied, bursting pressures will be created in the sprocket hub. There should be a gap of ⅛" to ¼" between the face of the sprocket hub and the flange of the QD bushing. This gap must not be closed. If the gap is closed under normal tightening, the shaft is seriously undersized.

REMOVAL

1. Loosen and remove cap screws.
2. Insert cap screws in tapped removal holes.
3. Tighten inserted screws until sprocket is loose on shaft.
4. Remove sprocket from shaft.

Wrench Torque Values for Tightening Bushings

QD BUSHING	TORQUE CAP (IN - LBS.)	WRENCH LENGTH (IN)	WRENCH PULL (LBS.)
JA	60	4	15
SH	108	4	27
SDS	108	4	27
SD	108	4	27
SK	180	6	30
SF	360	6	60
E	720	12	60
F	900	12	75
J	1,350	12	113
M	1,800	15	120
N	2,250	15	150
P	3,300	18	183

BUSHING INSTALLATION TORQUE

When a wrench or length of pipe is used to increase leverage in tightening the bushing screws, it is imperative to adhere to the wrench torque values given in the chart above. Following the recommended torque in mounting the bushing is important because the tightening force on the screws is multiplied many times by the wedging action of the tapered surface. This action compresses the bushing for a snug fit on the shaft. The bushing screws should always be tightened alternately and progressively.

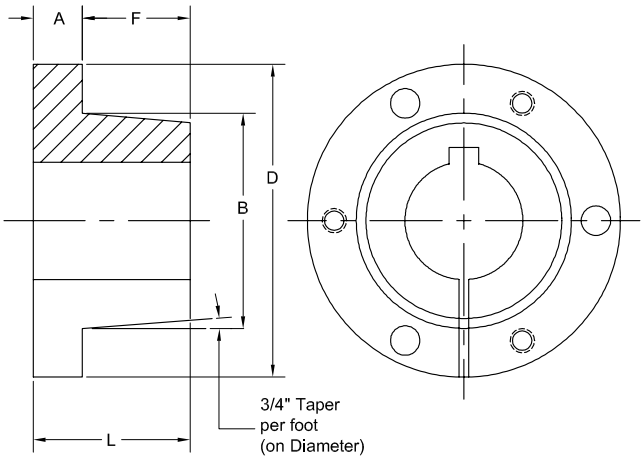
IMPORTANT!

Do not use lubricants or anti-seize compounds on tapered bore or bushing surfaces.

QD BUSHING DIMENSIONS

QD BUSHING	A	B	D	F	L	BOLT CIRCLE DIA	NUMBER & SIZE OF CAP SCREWS REQUIRED	BUSHING BORE DIAMETER				
								MINIMUM BORE	KEYWAY - MAXIMUM BORE			AVG WGT (AP-PROX)
									FULL	SHALLOW	NO KEYWAY	
JA	5/16	1 3/8	2	9/16	1	1.66	3 - (10-24 x 1)	1/2	1	1 3/16	1 1/4	0.9
SH	7/16	1 7/8	2 5/8	3/4	1 5/16	2 1/4	3 - (1/4-20 x 1 1/4)	1/2	1 3/8	1 5/8	1 11/16	1.0
SDS	7/16	2 3/16	3 1/8	3/4	1 5/16	2 11/16	3 - (1/4-20 x 1 1/4)	1/2	1 5/8	1 15/16	2	1.0
SD	7/16	2 3/16	3 1/8	1 1/4	1 13/16	2 11/16	3 - (1/4-20 x 1 7/8)	1/2	1 5/8	1 15/16	2	1.5
SK	9/16	2 3/16	3 7/8	1 1/4	1 15/16	3 5/16	3 - (5/16-18 x 2)	1/2	2 1/8	2 1/2	2 5/8	2.0
SF	5/8	3 1/8	4 5/8	1 1/4	2 1/16	3 7/8	3 - (3/8-16 x 2)	1/2	2 5/16	2 13/16	2 15/16	3.0
E	7/8	3.834	6	1 5/8	2 3/4	5	3 - (1/2-13 x 2 3/4)	7/8	2 7/8	3 1/2	-----	10.0
F	1	4 7/16	6 5/8	2 1/2	3 3/4	5 5/8	3 - (9/16-12 x 3 5/8)	1	3 15/16	3 15/16	4	11.5
J	1 1/8	5 9/64	7 1/4	3 3/16	4 5/8	6 1/4	3 - (5/8 x 4 1/2)	1 1/2	3 3/4	4 1/2	-----	18.0
M	1 1/4	6 1/2	9	5 3/16	6 3/4	7 7/8	4 - (3/4 x 6 3/4)	2	4 3/4	5 1/2	-----	46.0
N	1 1/2	7	10	6 1/4	8 1/8	8 1/2	4 - (7/8 x 8)	2 7/16	5	5 7/8	-----	70.0
P	1 3/4	8 1/4	11 3/4	7 1/4	9 3/8	10	4 - (1 x 9 1/2)	2 15/16	5 15/16	7	-----	133.0

QD Bushings are 1045 Steel.



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MOLINE BEARING Co

QD BUSHINGS STOCK BORES AND KEYWAYS

BORE	BUSHING KEYWAY	SHAFT KEYSEAT	QD BUSHINGS STOCKED
1/2	1/8 x 1/16	1/8 x 1/16	JA SH SDS SD SK SF
9/16	1/8 x 1/16	1/8 x 1/16	JA SH SDS SD SK SF
5/8	3/16 x 3/32	3/16 x 3/16	JA SH SDS SD SK SF
11/16	3/16 x 3/32	3/16 x 3/16	JA SH SDS SD SK SF
3/4	3/16 x 3/32	3/16 x 3/16	JA SH SDS SD SK SF
13/16	3/16 x 3/32	3/16 x 3/16	JA SH SDS SD SK SF
7/8	3/16 x 3/32	3/16 x 3/16	JA SH SDS SD SK SF E
15/16	1/4 x 1/8	1/4 x 1/8	JA SH SDS SD SK SF E
1	1/4 x 1/8	1/4 x 1/8	JA SH SDS SD SK SF E F
1 1/16	1/4 x 1/16*	1/4 x 1/8	JA
1 1/16	1/4 x 1/8	1/4 x 1/8	SH SDS SD SK SF
1 1/8	1/4 x 1/16*	1/4 x 1/8	JA
1 1/8	1/4 x 1/8	1/4 x 1/8	SH SDS SD SK SF E F
1 3/16	1/4 x 1/16*	1/4 x 1/8	JA
1 3/16	1/4 x 1/8	1/4 x 1/8	SH SDS SD SK SF E F
1 1/4	NONE	NONE	JA
1 1/4	1/4 x 1/8	1/4 x 1/8	SH SDS SD SK SF E F
1 5/16	5/16 x 5/32	5/16 x 5/32	SH SDS SD SK SF E F
1 3/8	5/16 x 5/32	5/16 x 5/32	SH SDS SD SK SF E F
1 3/8	3/8 x 3/16	5/16 x 5/32	SH SF E
1 3/8	5/16 x 3/16	5/16 x 3/16	SF
1 7/16	3/8 x 1/16*	3/8 x 3/16	SH
1 7/16	3/8 x 3/16	3/8 x 3/16	SDS SD SK SF E F
1 1/2	3/8 x 1/16	3/8 x 3/16	SH
1 1/2	3/8 x 3/16	3/8 x 3/16	SDS SD SK SF E F
1 9/16	3/8 x 1/16	3/8 x 3/16	SH
1 9/16	3/8 x 3/16	3/8 x 3/16	SDS SD SK SF E F
1 5/8	3/8 x 1/16*	3/8 x 3/16	SH
1 5/8	3/8 x 3/16	3/8 x 3/16	SDS SD SK SF E F
1 11/16	NONE	NONE	SH
1 11/16	3/8 x 1/8*	3/8 x 3/16	SDS SD
1 11/16	3/8 x 3/16	3/8 x 3/16	SK SF E F

BORE	BUSHING KEYWAY	SHAFT KEYSEAT	QD BUSHINGS STOCKED
1 3/4	3/8 x 1/8*	3/8 x 3/16	SDS SD
1 3/4	3/8 x 3/16	3/8 x 3/16	SD SK SF E F
1 3/4	NONE	NONE	SH
1 13/16	1/2 x 1/16*	1/2 x 1/4	SDS SD
1 13/16	1/2 x 1/4	1/2 x 1/4	SK SF E F
1 7/8	1/2 x 1/16*	1/2 x 1/4	SDS SD
1 7/8	1/2 x 1/4	1/2 x 1/4	SK SF E F
1 15/16	1/2 x 1/16*	1/2 x 1/4	SDS SD
1 15/16	1/2 x 1/4	1/2 x 1/4	SK SF E F
2	NONE	NONE	SDS SD
2	1/2 x 1/4	1/2 x 1/4	SK SF E F
2 1/16	1/2 x 1/4	1/2 x 1/4	SK SF E F
2 1/8	1/2 x 1/4	1/2 x 1/4	SK SF E F
2 3/16	1/2 x 1/4	1/2 x 1/4	E F
2 3/16	1/2 x 3/16*	1/2 x 1/4	SK
2 1/4	1/2 x 3/16*	1/2 x 1/4	SK
2 1/4	1/2 x 1/4	1/2 x 1/4	SF E F
2 5/16	5/8 x 1/16*	5/8 x 5/16	SK
2 5/16	5/8 x 5/16	5/8 x 5/16	SF E F
2 3/8	5/8 x 1/16*	5/8 x 5/16	SK SF
2 3/8	5/8 x 5/16	5/8 x 5/16	E F
2 7/16	5/8 x 1/16*	5/8 x 5/16	SK SF
2 7/16	5/8 x 5/16	5/8 x 5/16	E F
2 1/2	5/8 x 1/16*	5/8 x 5/16	SK SF
2 1/2	5/8 x 5/16	5/8 x 5/16	E F
2 9/16	NONE	NONE	SK
2 9/16	5/8 x 1/16	5/8 x 5/16	SF
2 9/16	5/8 x 5/16	5/8 x 5/16	E F

Bushings are supplied with cap screws only.

* Denotes shallow key.

QD BUSHINGS STOCK BORES AND KEYWAYS

BORE	BUSHING KEYWAY	SHAFT KEYSEAT	QD BUSHINGS STOCKED
2 5/8	NONE	NONE	SK
2 5/8	5/8 x 1/16*	5/8 x 5/16	SF
2 5/8	5/8 x 5/16	5/8 x 5/16	E F
2 11/16	5/8 x 1/16*	5/8 x 5/16	SF
2 11/16	5/8 x 5/16	5/8 x 5/16	E F
2 3/4	5/8 x 1/16*	5/8 x 5/16	SF
2 3/4	5/8 x 5/16	5/8 x 5/16	E F
2 13/16	3/4 x 1/16*	3/4 x 3/8	SF
2 13/16	3/4 x 3/8	3/4 x 3/8	E F
2 7/8	NONE	NONE	SF
2 7/8	3/4 x 3/8	3/4 x 3/8	E F
2 15/16	NONE	NONE	SF
2 15/16	3/4 x 1/8*	3/4 x 3/8	E
2 15/16	3/4 x 3/8	3/4 x 3/8	F J
3	3/4 x 1/8*	3/4 x 3/8	E
3	3/4 x 3/8	3/4 x 3/8	F J
3 1/16	3/4 x 1/8*	3/4 x 3/8	E
3 1/8	3/4 x 1/8*	3/4 x 3/8	E
3 1/8	3/4 x 3/8	3/4 x 3/8	F
3 3/16	3/4 x 1/8*	3/4 x 3/8	E
3 3/16	3/4 x 3/8	3/4 x 3/8	F
3 1/4	3/4 x 1/8*	3/4 x 3/8	E
3 1/4	3/4 x 3/8	3/4 x 3/8	F
3 5/16	7/8 x 1/8*	7/8 x 7/16	E F
3 3/8	7/8 x 3/16*	7/8 x 7/16	F
3 3/8	7/8 x 1/16	7/8 x 7/16	E
3 7/16	7/8 x 1/16	7/8 x 7/16	E
3 7/16	7/8 x 3/16*	7/8 x 7/16	F
3 7/16	7/8 x 7/16	7/8 x 7/16	M

BORE	BUSHING KEYWAY	SHAFT KEYSEAT	QD BUSHINGS STOCKED
3 1/2	7/8 x 1/16*	7/8 x 7/16	E
3 1/2	7/8 x 3/16*	7/8 x 7/16	F
3 1/2	7/8 x 7/16	7/8 x 7/16	J
3 9/16	7/8 x 3/16*	7/8 x 7/16	F
3 5/8	7/8 x 3/16*	7/8 x 7/16	F J
3 11/16	7/8 x 3/16*	7/8 x 7/16	F J
3 3/4	7/8 x 3/16*	7/8 x 7/16	F J
3 7/8	1 x 1/8*	1 x 1/2	F J
3 15/16	1 x 1/8*	1 x 1/2	F J M
4	1 x 1/8*	1 x 1/2	J
4	NONE	NONE	F
4 1/4	1 x 1/8*	1 x 1/2	J
4 7/16	1 x 1/8*	1 x 1/2	J
4 7/16	1 x 1/2*	1 x 1/2	M N
4 15/16	1 1/4 x 1/4	1 1/4 x 5/8	M
4 15/16	1 1/4 x 5/8	1 1/4 x 5/8	N
5 1/4	1 1/4 x 1/4*	1 1/4 x 5/8	N
5 7/16	1 1/4 x 1/4*	1 1/4 x 5/8	M
5 7/16	1 1/4 x 5/8	1 1/4 x 5/8	P
5 3/4	1 1/2 x 1/8*	1 1/2 x 3/4	N
5 7/8	1 1/2 x 1/8*	1 1/2 x 3/4	N
5 15/16	1 1/2 x 3/4	1 1/2 x 3/4	N
5 15/16	1 1/2 x 3/4	1 1/2 x 3/4	P
6 7/16	1 1/2 x 1/4	1 1/2 x 3/4	P
6 15/16	1 3/4 x 1/8	1 3/4 x 3/4	P

Bushings are supplied with cap screws only.

* Denotes shallow key.

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MOLINE BEARING Co

FEATURES OF THE MOLINE TAPER BUSHINGS

TAPER BUSHINGS

- Compact Design
- A proven industry standard
- Easy on and off design
- Secure and tight mounting
- Runs true with no wobble
- Superior performance
- Broad acceptance and availability

Bushing Nomenclature

Maximum Bore of Bushing (2.5 inches)

25 17

Length through Bore (1.7 inches)

Used in a extremely wide range of housings and products

- Dry-Fluid Drives
- Gear Couplings
- Flexible Disc Couplings
- Roller Chain Sprockets
- Flexible Cushion Couplings
- Rigid Couplings
- Chain Couplings
- Synchronous Pulleys
- V-Belt Sleeves
- Conveyor Pulleys

With millions in use, Moline Taper bushings have become a standard mounting method throughout the industry. This is an interchangeable bushing system that provides bore selection in standard shaft sizes, easy installation, extremely secure fit on the shaft, excellent concentricity, a clean flush appearance and easy removal and installation.

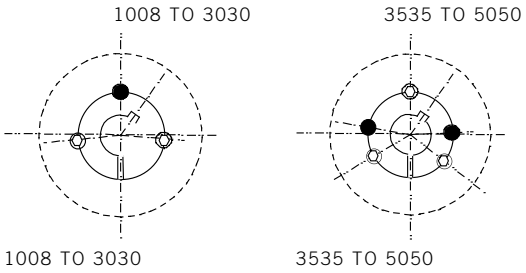
The interchangeability of Moline Taper bushings saves in inventory. Advantages of such standardization are immediately apparent to maintenance and purchasing departments. It makes possible the transfer of Taper bushing units from one size shaft to another and therefore the interchangeability of various sizes of a unit to one size shaft. This makes the use of many different products interchangeable with the use of Taper Bushings.

Manufactured in Class 30, Cast Iron.

TAPER BUSHING APPLICATION GUIDE

INSTRUCTIONS

At Moline, our goal is to provide you with the most reliable products, helpful service, and expert support. We work to make our instruction sheets clear and easy to understand. But if you have further questions, please contact us directly.



TO INSTALL

1. Clean shaft, bore and outside of bushing, and bore of hub (taking bushing from hub if already assembled). Remove any oil, lacquer or dirt. Place bushing in hub and match half holes to make complete holes (each complete hole will be threaded one side only).
2. Oil thread and point of set screws or thread and under head of cap screws. Place screws loosely in holes that are threaded on hub side—as shown in diagrams below and above.

3. Make sure bushing is free in hub. Slip assembly onto shaft and locate in position desired.
4. Tighten screws alternately and evenly until all are pulled up very tightly. Use a piece of pipe on wrench to increase leverage. (see table for wrench torque)
5. The screws go into the blind holes in the bushing that are threaded in the installed component.
6. When the drive has been operating under load for a short period (half to one hour), check and ensure that the screws remain at the appropriate tightening torque.
7. In order to eliminate the ingress of dirt fill all empty holes with grease.

IMPORTANT!

Do not use lubricants or anti-seize compounds on tapered bore or bushing surfaces.

Recommended Wrench Torque

TAPER BUSHING	SET SCREWS	WRENCH LENGTH (IN - LBS.)
1008	1/4	55
1210	3/8	175
1610	3/8	175
2012	7/16	280
2517	1/2	430
3020	5/8	800
3030	5/8	800
3535	1/2	1000
4040	5/8	1700
4545	3/4	2450
5050	7/8	3100

TO REMOVE

1. Remove all screws. Oil thread and point of set screws or thread and under head of cap screws.
2. Insert screws in holes that are threaded on bushing side (shown above in diagram and represented as the black circle below). Note that one screw is left over and is not used in this loosening operation as shown in diagrams above.

3. Tighten screws alternately until bushing is loosened in hub. If bushing does not loosen immediately, tap on hub.

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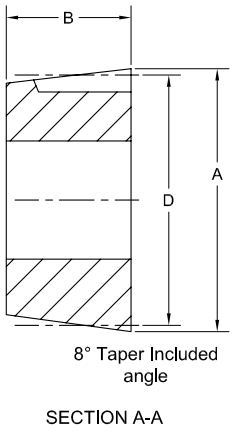
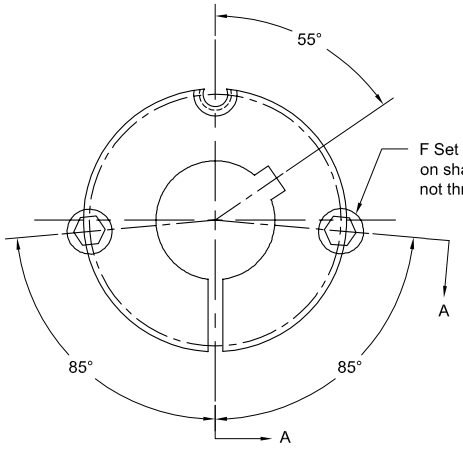
TAPERED BUSHINGS #1008 TO 1210

BUSHING #	BORE	BUSHING KEYWAY	SHAFT KEYSEAT	A	B	D	F	WRENCH TORQUE LBS. –IN.	TORQUE CAP. LBS. –IN.	WEIGHT
1008	1/2, 9/16	1/8 x 1/16	1/8 x 1/16	1.386	7/8	1 21/64	1/4 x 1/2	55	1,200	.27
	5/8, 11/16, 3/4, 13/16, 7/8	3/16 x 3/32	3/16 x 3/32							.21
	15/16*, 1*	1/4 x 1/16	1/4 x 1/8							.16
1108	1/2, 9/16	1/8 x 1/16	1/8 x 1/16	1.511	7/8	1 29/64	1/4 x 1/2	11	1,300	.33
	5/8, 11/16, 3/4, 13/16, 7/8	3/16 x 3/32	3/16 x 3/32							.27
	15/16, 1	1/4 x 1/8	1/4 x 1/8							.22
	1 1/16*, 1 1/8*	1/4 x 1/16	1/4 x 1/8							.17
1210	1/2, 9/16	1/8 x 1/16	1/8 x 1/16	1 7/8	1	1 3/4	3/8 x 5/8	175	3,600	.61
	5/8, 11/16, 3/4, 13/16, 7/8	3/16 x 3/32	3/16 x 3/32							.55
	15/16, 1, 1 1/16, 1 1/8, 1 3/16, 1 1/4	1/4 x 1/8	1/4 x 1/8							.49

*Denotes shallow key, keystock included. Bushings supplied with set screws made of Class 30 cast iron.





TAPERED BUSHINGS #1215 TO 1610

BUSHING #	BORE	BUSHING KEYWAY	SHAFT KEYSEAT	A	B	D	F	WRENCH TORQUE LBS. –IN.	TORQUE CAP. LBS. –IN.	WEIGHT
1215	1/2, 9/16	1/8 x 1/16	1/8 x 1/16	1 7/8	1 1/2	1 3/4	3/8 x 5/8	175	3.550	.8
	5/8, 11/16, 3/4, 13/16, 7/8	3/16 x 3/32	3/16 x 3/32							.7
	15/16, 1, 1 1/16, 1 1/8, 1 3/16, 1 1/4	1/4 x 1/8	1/4 x 1/8							.6
1310	1/2, 9/16	1/8 x 1/16	1/8 x 1/16	2	1	1 7/8	3/8 x 5/8	175	3.850	.7
	5/8, 11/16, 3/4, 13/16, 7/8	3/16 x 3/32	3/16 x 3/32							.7
	15/16, 1, 1 1/16, 1 1/8, 1 3/16, 1 1/4	1/4 x 1/8	1/4 x 1/8							.6
	1 5/16, 1 3/8	5/16 x 5/32	5/16 x 5/32							.6
1610	1/2, 9/16	1/8 x 1/16	1/8 x 1/16	2 1/4	1	2 1/8	3/8 x 5/8	175	4.300	.9
	5/8, 11/16, 3/4, 13/16, 7/8	3/16 x 3/32	3/16 x 3/32							.8
	15/16, 1, 1 1/16, 1 1/8, 1 3/16, 1 1/4	1/4 x 1/8	1/4 x 1/8							.7
	1 5/16, 1 3/8	5/16 x 5/32	5/16 x 5/32							.7
	1 7/16, 1 1/2	3/8 x 3/16	3/8 x 3/16							.6
	1 9/16*, 1 5/8*	3/8 x 1/8	3/8 x 3/16							.5

*Denotes shallow key, keystock included. Bushings supplied with set screws made of Class 30 cast iron.

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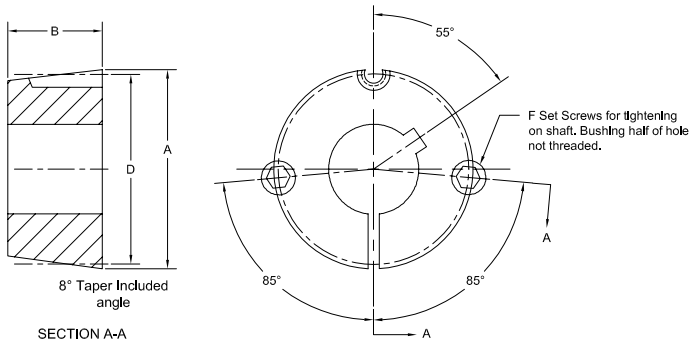
MOLINE BEARING Co

TAPERED BUSHINGS #1615 TO 2012

BUSHING #	BORE	BUSHING KEYWAY	SHAFT KEYSEAT	A	B	D	F	WRENCH TORQUE LBS. –IN.	TORQUE CAP. LBS. –IN.	WEIGHT
1615	1/2, 9/16	1/8 x 1/16	1/8 x 1/16	2 1/4	1 1/2	2 1/8	3/8 x 5/8	175	4,300	1.2
	5/8, 11/16, 3/4, 13/16, 7/8	3/16 x 3/32	3/16 x 3/32							1.1
	15/16, 1, 1 1/16, 1 1/8, 1 3/16, 1 1/4	1/4 x 1/8	1/4 x 1/8							1.0
	1 5/16, 1 3/8	5/16 x 5/32	5/16 x 5/32							.8
	1 7/16, 1 1/2	3/8 x 3/16	3/8 x 3/16							.7
	1 9/16*, 1 5/8*, 1 11/16	3/8 x 3/16	3/8 x 3/16							.6
2012	1/2, 9/16	1/8 x 1/16	1/8 x 1/16	2 3/4	1 1/4	2 5/8	7/16 x 7/8	280	7,150	1.7
	5/8, 11/16, 3/4, 13/16, 7/8	3/16 x 3/32	3/16 x 3/32							1.6
	15/16, 1, 1 1/16, 1 1/8, 1 3/16, 1 1/4	1/4 x 1/8	1/4 x 1/8							1.5
	1 5/16, 1 3/8	5/16 x 5/32	5/16 x 5/32							1.4
	1 7/16, 1 1/2, 1 9/16, 1 5/8, 1 11/16, 1 3/4	3/8 x 3/16	3/8 x 3/16							1.2
	1 13/16, 1 7/8	1/2 x 1/4	1/2 x 1/4							1.0
	1 15/16*, 2*	1/2 x 3/16	1/2 x 1/4							1.0

*Denotes shallow key, keystock included. Bushings supplied with set screws made of Class 30 cast iron.



TAPERED BUSHINGS #2517 TO 2525

BUSHING #	BORE	BUSHING KEYWAY	SHAFT KEYSEAT	A	B	D	F	WRENCH TORQUE LBS. –IN.	TORQUE CAP. LBS. –IN.	WEIGHT
2517	1/2, 9/16	1/8 x 1/16	1/8 x 1/16	3 3/8	1 3/4	3 1/4	1/2 x 1	430	11,600	3.5
	5/8, 11/16, 3/4, 13/16, 7/8	3/16 x 3/32	3/16 x 3/32							3.4
	15/16, 1, 1 1/16, 1 1/8, 1 3/16, 1 1/4	1/4 x 1/8	1/4 x 1/8							3.3
	1 5/16, 1 3/8	5/16 x 5/32	5/16 x 5/32							3.2
	1 7/16, 1 1/2, 1 9/16, 1 5/8, 1 11/16, 1 3/4	3/8 x 3/16	3/8 x 3/16							3.0
	1 13/16, 1 7/8, 1 15/16, 2, 2 1/16, 2 1/8, 2 3/16, 2 1/4	1/2 x 1/4	1/2 x 1/4							2.4
	2 5/16*, 2 3/8*, 2 7/16*, 2 1/2*	5/8 x 3/16	5/8 x 3/16							1.9
2525	3/4, 13/16, 7/8	3/16 x 3/32	3/16 x 3/32	3 3/8	2 1/2	3 1/4	1/2 x 1	430	11,300	4.9
	15/16, 1, 1 1/16, 1 1/8, 1 3/16, 1 1/4	1/4 x 1/8	1/4 x 1/8							4.7
	1 5/16, 1 3/8	5/16 x 5/32	5/16 x 5/32							4.5
	1 7/16, 1 1/2, 1 9/16, 1 5/8, 1 11/16, 1 3/4	3/8 x 3/16	3/8 x 3/16							4.2
	1 13/16, 1 7/8, 1 15/16, 2, 2 1/16, 2 1/8, 2 3/16, 2 1/4	1/2 x 1/4	1/2 x 1/4							3.3
	2 5/16, 2 3/8, 2 7/16, 2 1/2*	5/8 x 3/16	5/8 x 5/16							2.5

*Denotes shallow key, keystock included. Bushings supplied with set screws made of Class 30 cast iron.

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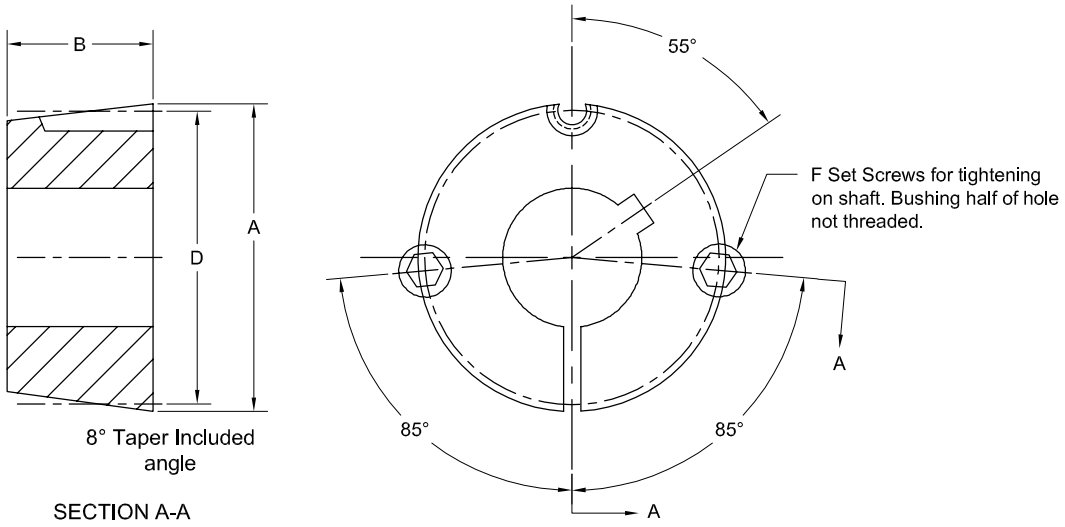
MOLINE BEARING Co

TAPERED BUSHINGS #3020

BUSHING #	BORE	BUSHING KEYWAY	SHAFT KEYSEAT	A	B	D	F	WRENCH TORQUE LBS. –IN.	TORQUE CAP. LBS. –IN.	WEIGHT
3020	7/8	3/16 x 3/32	3/16 x 3/32	4 1/4	2	4	5/8 x 1 1/4	800	24,000	6.5
	15/16, 1, 1 1/16, 1 1/8, 1 3/16, 1 1/4	1/4 x 1/8	1/4 x 1/8							6.3
	1 5/16, 1 3/8	5/16 x 5/32	5/16 x 5/32							6.0
	1 7/16, 1 1/2, 1 9/16, 1 5/8, 1 11/16, 1 3/4	3/8 x 3/16	3/8 x 3/16							6.0
	1 13/16, 1 7/8, 1 15/16, 2, 2 1/8, 2 3/16, 2 1/4	1/2 x 1/4	1/2 x 1/4							5.3
	2 5/16, 2 3/8, 2 7/16, 2 1/2, 2 9/16, 2 5/8, 2 11/16, 2 3/4	5/8 x 5/16	5/8 x 5/16							4.5
	2 7/8, 2 15/16, 3*	3/4 x 1/4	3/4 x 1/4							3.9

*Denotes shallow key, keystock included. Bushings supplied with set screws made of Class 30 cast iron.



TAPERED BUSHINGS #3030

BUSHING #	BORE	BUSHING KEYWAY	SHAFT KEYSEAT	A	B	D	F	WRENCH TORQUE LBS. –IN.	TORQUE CAP. LBS. –IN.	WEIGHT
3030	15/16, 1, 1 1/16, 1 1/8, 1 3/16, 1 1/4	1/4 x 1/8	1/4 x 1/8	4 1/4	3	4	5/8 x 1 1/4	800	24,000	9.2
	1 5/16, 1 3/8	5/16 x 5/32	5/16 x 5/32							8.9
	1 7/16, 1 1/2, 1 9/16, 1 5/8, 1 11/16, 1 3/4	3/8 x 3/16	3/8 x 3/16							8.6
	1 13/16, 1 7/8, 1 15/16, 2, 2 1/8, 2 1/16, 2 3/16, 2 1/4	1/2 x 1/4	1/2 x 1/4							7.6
	2 5/16, 2 3/8, 2 7/16, 2 1/2, 2 9/16, 2 5/8, 2 11/16, 2 3/4, 2 13/16	5/8 x 5/16	5/8 x 5/16							6.2
	2 7/8, 2 15/16, 3	3/4 x 1/4	3/4 x 3/8							5.0

*Denotes shallow key, keystock included. Bushings supplied with set screws made of Class 30 cast iron.

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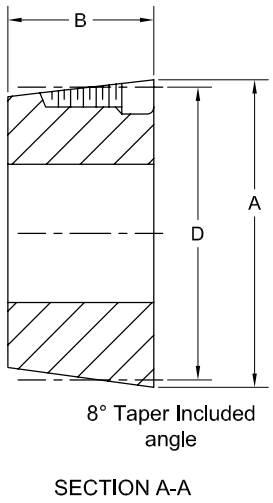
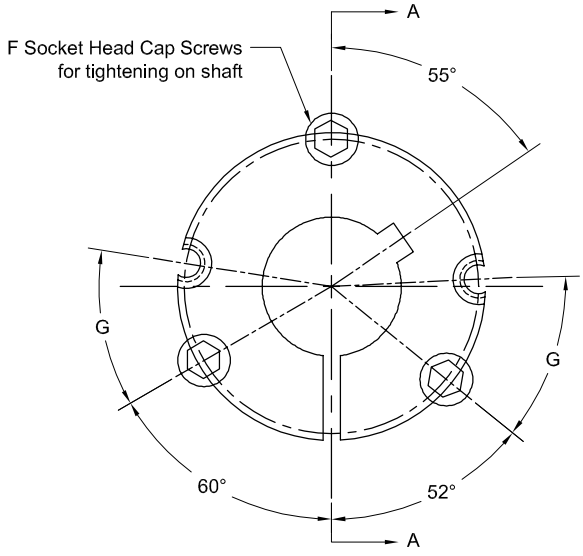
MOLINE BEARING Co

TAPERED BUSHINGS #3535

BUSHING #	BORE	BUSHING KEYWAY	SHAFT KEYSEAT	A	B	D	F	G	WRENCH TORQUE LBS. –IN.	TORQUE CAP. LBS. –IN.	WEIGHT
3535	1 3/16, 1 1/4	1/4 x 1/8	1/4 x 1/8	5	3 1/2	4.83	1/2 x 1 1/2	39°	1,000	44,800	14
	1 5/16, 1 3/8	5/16 x 5/32	5/16 x 5/32								14
	1 7/16, 1 1/2, 1 9/16, 1 5/8, 1 11/16, 1 3/4	3/8 x 3/16	3/8 x 3/16								13
	1 3/16, 1 7/8, 1 15/16, 2, 2 1/8, 2 3/16, 2 1/4	1/2 x 1/4	1/2 x 1/4								12
	2 5/16, 2 3/8, 2 7/16, 2- 1/2, 2 9/16, 2 5/8, 2 11/16, 2 3/4	5/8 x 5/16	5/8 x 5/16								11
	2 3/16, 2 7/8, 2 15/16, 3, 3 1/8, 3 3/16, 3 1/4	3/4 x 3/8	3/4 x 3/8								9
	3 5/16*, 3 3/8*, 3 7/16*, 3 1/2*	7/8 x 1/4	7/8 x 7/16								8

*Denotes shallow key, keystock included. Bushings supplied with set screws made of Class 30 cast iron.





TAPERED BUSHINGS #4040

BUSHING #	BORE	BUSHING KEYWAY	SHAFT KEYSEAT	A	B	D	F	G	WRENCH TORQUE LBS. –IN.	TORQUE CAP. LBS. –IN.	WEIGHT
4040	1 7/16, 1 1/2, 1 5/8, 1 11/16, 1 3/4	3/8 x 3/16	3/8 x 3/16	5 3/4	4	5.54	5/8 x 1 3/4	40°	2,450	110,000	22
	1 7/8, 1 15/16, 2, 2 1/8, 2 3/16, 2 1/4	1/2 x 1/4	1/2 x 1/4								21
	2 3/8, 2 7/16, 2 1/2, 2 5/8, 2 11/16, 2 3/4	5/8 x 5/16	5/8 x 5/16								19
	2 7/8, 2 15/16, 3, 3 1/8, 3 3/16, 3 1/4	3/4 x 3/8	3/4 x 3/8								17
	3 3/8, 3 7/16, 3 1/2, 3 5/8	7/8 x 7/16	7/8 x 7/16								15
	3 11/16, 3 3/4	7/8 x 1/4	7/8 x 7/16								14
	3 7/8*, 3 15/16*, 4, 4 1/8*, 4 3/16*, 4 1/4*, 4 3/8*, 4 7/16*	1 x 1/4	1 x 1/2								13

*Denotes shallow key, keystock included. Bushings supplied with set screws made of Class 30 cast iron.

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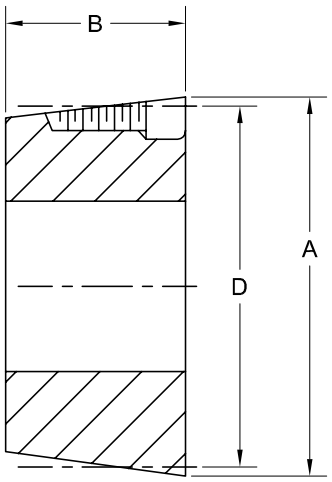
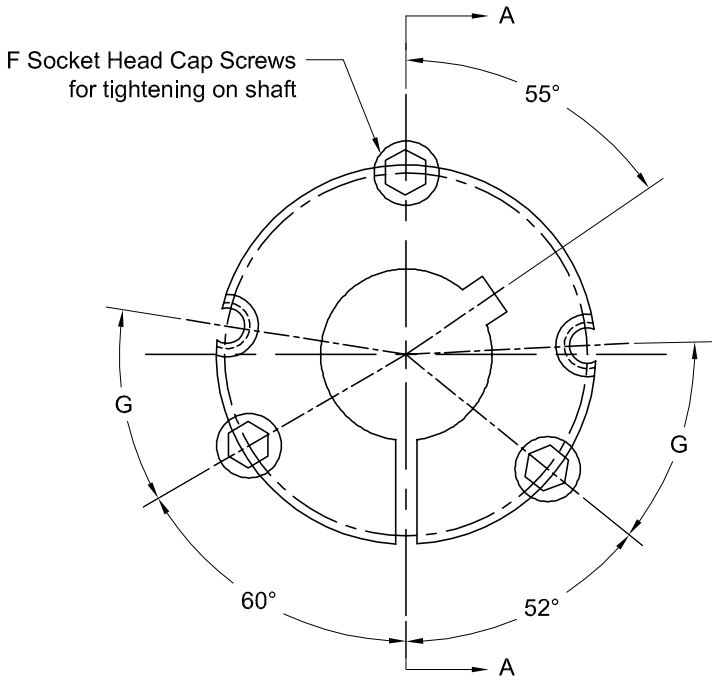
MOLINE BEARING Co

TAPERED BUSHINGS #4545 TO 5050

BUSHING #	BORE	BUSHING KEYWAY	SHAFT KEYSEAT	A	B	D	F	G	WRENCH TORQUE LBS. –IN	TORQUE CAP. LBS. –IN.	WEIGHT
4545	1 15/16, 2, 2 1/8, 2 3/16, 2 1/4	1/2 x 1/4	1/2 x 1/4	6 3/8	4 1/2	6.13	3/4 x 2	40°	2,450	126,000	30
	2 5/16, 2 3/8, 2 7/16, 2 1/2, 2 9/16, 2 5/8, 2 11/16, 2 3/4	5/8 x 5/16	5/8 x 5/16								28
	2 13/16, 2 7/8, 2 15/16, 3, 3 3/16, 3 1/4	3/4 x 3/8	3/4 x 3/8								26
	3 5/16, 3 3/8, 3 7/16, 3 1/2, 3 9/16, 3 5/8, 3 11/16, 3 3/4	7/8 x 7/16	7/8 x 7/16								23
	3 13/16, 3 7/8, 3 15/16, 4, 4 1/8, 4 3/16, 4 1/4	1 x 1/2	1 x 1/2								20
	4 5/16, 4 3/8*, 4 7/16*, 4 1/2*	1 x 1/4	1 x 1/2								16
	4 15/16*	1 1/4 x 1/4	1 1/4 x 5/8								13
5050	2 7/16	5/8 x 5/16	5/8 x 5/16	7	5	6.72	7/8 x 2 1/4	40°	3,100	126,000	38.7
	2 15/16	3/4 x 3/8	3/4 x 3/8								36.2
	3 3/8, 3 7/16, 3 5/8	7/8 x 7/16	7/8 x 7/16								32
	3 7/8, 3 15/16, 4, 4 1/4, 4 3/8, 4 7/16, 4 1/2	1 x 1/2	1 x 1/2								26
	4 7/8*, 4 15/16*, 5*	1 1/4 x 7/16*	1 1/4 x 5/8								20.5

*Denotes shallow key, keystock included. Bushings supplied with set screws made of Class 30 cast iron.





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MOLINE BEARING Co

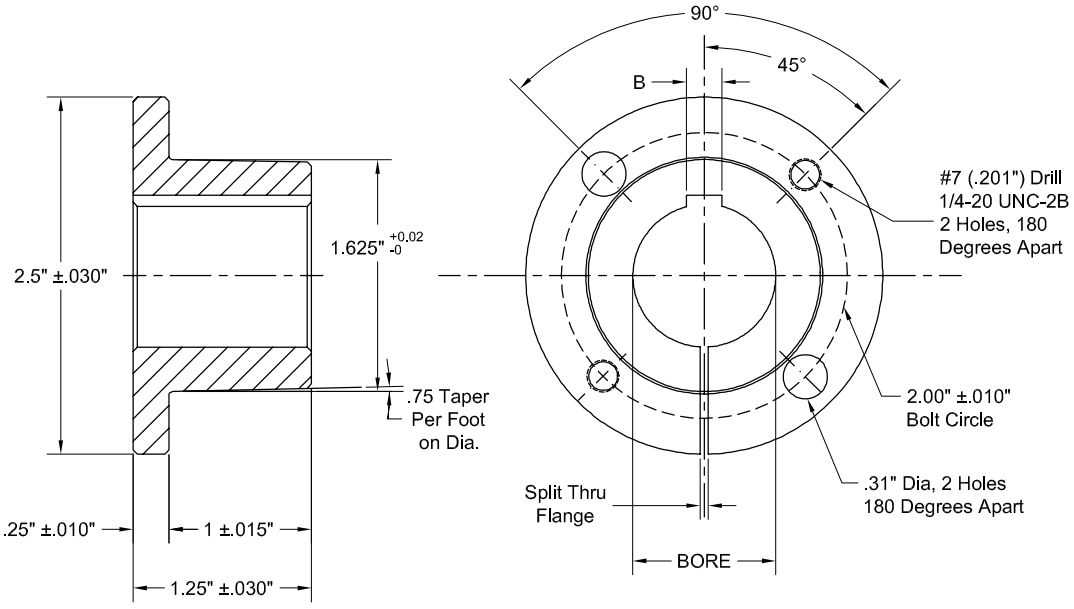
D BUSHINGS

STOCK BORE (INCHES)	MOLINE PART #	KEYSEAT
1/2	D 1/2	1/8 X 1/16
5/8	D 5/8	3/16 X 3/32
11/16	D 11/16	3/16 X 3/32
3/4	D 3/4	3/16 X 3/32
7/8	D 7/8	3/16 X 3/32
15/16	D 15/16	1/4 X 1/8
1	D 1	1/4 X 1/8
1 1/8	D 1 1/8	1/4 X 1/8
1 3/16	D 1 3/16	1/4 X 1/8
1 1/4	D 1 1/4	1/4 X 1/8
1 5/16	D 1 5/16	5/16 X 1/16*
1 3/8	D 1 3/8	5/16 X 1/16*
1 7/16	D 1 7/16	3/8 X 1/16*
1 1/2	D 1 1/2	3/8 X 1/16*

Some metric bores stocked, please call factory for availability.

* Denotes shallow key, keystock is included.

Note: D bushings are comparable to H bushings made by other manufacturers.



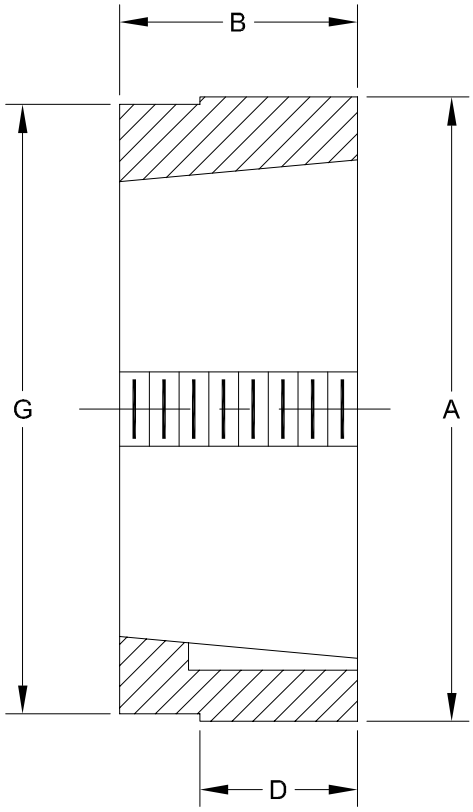

MOLINE

WELD-ON HUBS

TYPE S—TAPERED WELD-ON HUBS

PART NUMBER	FOR USE WITH BUSHING	MAX BORE OF BUSHING	A	G	B	D	WEIGHT LBS.
S16-4-1610	1610	1 5/8	3.0	2 7/8	1.0	.725	.9
S16-6-1610	1610	1 5/8	3.0	2 7/8	1.0	.56	.9
S20-6-2012	2012	2	3 9/16	3 7/16	1 1/4	.8	1.8
S20-8-2012	2012	2	3 9/16	3 7/16	1 1/4	.68	1.4
S25-6-2517	2517	2 1/2	4 1/4	4.125	1 3/4	1.3	2.6
S25-8-2517	2517	2 1/2	4 1/4	4.125	1 3/4	1.185	2.6
S25-10-2517	2517	2 1/2	4 1/4	4 1/8	1 3/4	1.065	2.5
S25-16-2517	2517	2 1/2	4 1/4	4 1/8	1 3/4	.66	2.4
S30-10-3020	3020	3	5 1/4	5 1/8	2	1.325	4.3
S30-16-3020	3020	3	5 1/4	5 1/8	2	.91	4.2
S35-3535	3535	3 1/2	6 1/2	6 3/8	3 1/2	2.34	12.8

Type S Tapered Weld-On Hubs are 1035 Steel.



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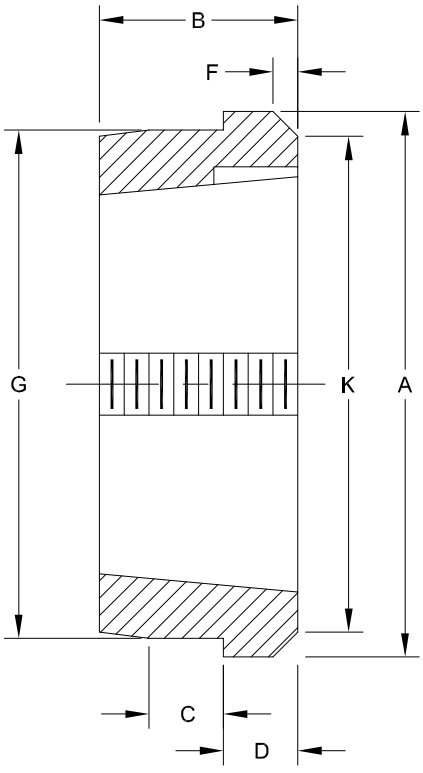
TYPE W—TAPERED WELD-ON HUBS

PART NUMBER	FOR USE WITH BUSHING	MAX BORE OF BUSHING	A	G	B	C	D	F	K	WEIGHT LBS.
W-12-1210	1210	1 1/4	2 7/8	2 1/2	1	3/8	5/8	3/8	2 5/8	1.1
W-12-1215	1210 1215	1 1/4	2 7/8	2 1/2	1 1/2	3/8	5/8	3/8	2 5/8	1.3
W-16-1610	1610	1 5/8	3 1/4	2 7/8	1	3/8	5/8	3/8	3	1.25
W-16-1615	1610 1615	1 5/8	3 1/4	2 7/8	1 1/2	3/8	5/8	3/8	3	1.5
W-25-2517	2517	2 1/2	4 7/8	4 3/8	1 3/4	1/2	3/4	3/8	4 5/8	4.0
WA-30-3020	3020	3	5 1/2	5 1/8	2	3/4	3/4	1/4	5	4.4
WA-30-3030	3020 3030	3	5 1/2	5 1/8	3.0	3/4	3/4	1/4	5	6.4
WA-35-3535	3535	3 1/2	6 3/4	6 1/4	3 1/2	1 1/4	1.0	3/8	6	13
WA-40-4040	4040	4	7 3/4	7 1/4	4.0	1 1/2	1.0	3/8	7	29
WA-45-4545	4545	4 1/2	8 3/4	8.0	4 1/2	1 3/4	1.0	3/8	8	42
WA-50-5050	5050	5	9 1/2	8 3/4	5	1 3/4	1.0	5/8	8 3/4	57

Type W Tapered Weld-On Hubs are 1035 Steel.



QD WELD-ON HUBS

QD Weld-On Hubs JA to P-A

PART NUMBER	D	L	B	BC	L1	P	DRILLING TYPE	WEIGHT (LBS)
JA-A	2.25	9/16	1.375	1 21/32	-----	-----	1	.4
SH-A	3.0	13/16	1.871	2 1/4	-----	-----	1	1
SDS-A	3.5	3/4	2.188	2 11/16	-----	-----	1	1.25
SK-A	4.375	1 1/4	2.813	3 5/16	-----	-----	1	3
SF-A	5.0	1 1/4	3.125	3 7/8	-----	-----	1	4
E-A	6.25	1 5/8	3.832	5	-----	-----	1	9
F-A	7.0	2 1/2	4.437	5 5/8	-----	-----	1	16
J-A	7.75	3 3/16	5.14	6 1/4	-----	-----	1	22.5
M-A	9.5	5 5/16	6.494	7 7/8	3 9/16	9.250	2	50
N-A	10.5	6 1/4	6.99	8 1/2	4 1/2	10.250	2	75
P-A	15.5	7 1/4	8.24	10	-----	-----	2	155

QD Weld-On Hubs are 1035 Steel.

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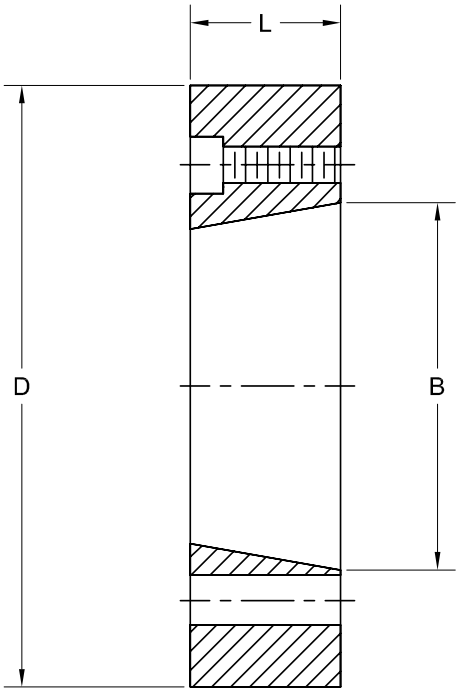
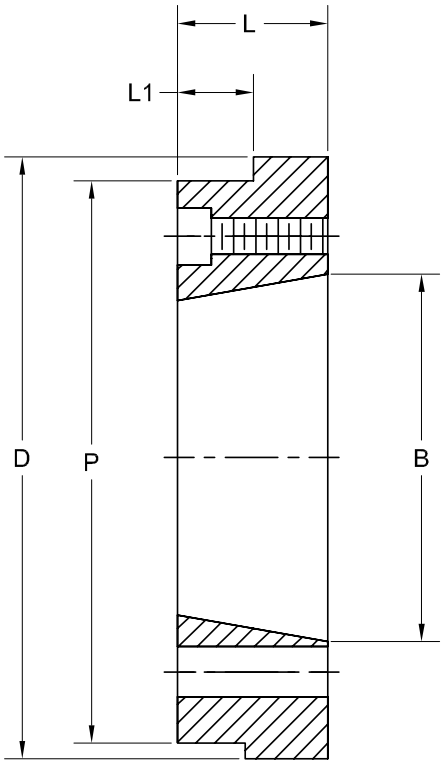
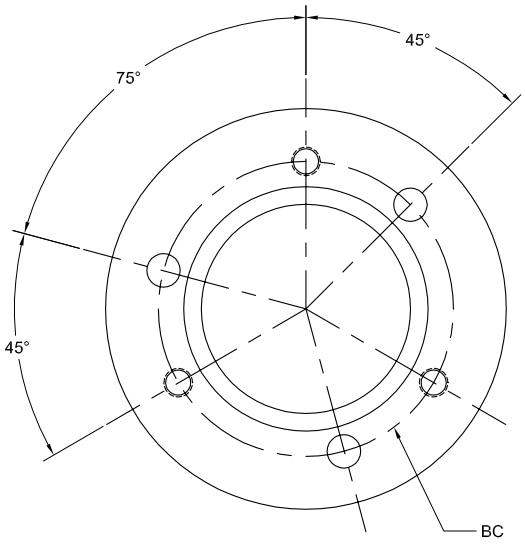
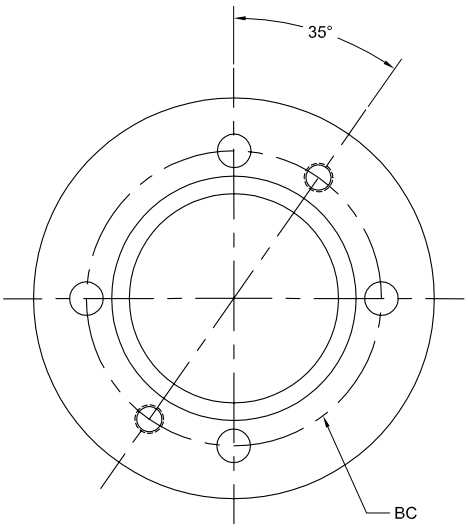


TYPE 1 (standard or reverse mount)



TYPE 2 (standard mount only)






MOLINE

NOMENCLATURE AND MASTER INTERCHANGE

NOMENCLATURE

2-BOLT FLANGE

4-BOLT FLANGE

2-BOLT PILLOW BLOCK

MOUNTED UNIT NOMENCLATURE

Moline Part Number

000 00 000 0

Bearing Type/Series

191 = M2000 Spherical Roller Bearing - Expansion
192 = M2000 Spherical Roller Bearing – Non Expansion
193 = Type E Tapered Roller Bearing
194 = 200 Series Normal Duty Set Screw Locking
195 = 200 Series Normal Duty Eccentric Locking
196 = M3000 Spherical Roller Bearing with Even-Lok™ – Expansion
197 = M3000 Spherical Roller Bearing with Even-Lok™ – Non Expansion
291 = ME2000 Spherical E Roller Bearing - Expansion
292 = ME2000 Spherical E Roller Bearing – Non Expansion
296 = ME3000 Spherical E Roller Bearing with Even-Lok™ – Expansion
297 = ME3000 Spherical E Roller Bearing with Even-Lok™ – Non Expansion

Housing Type/Style

01 = 2-Bolt Flange
11 = 4-Bolt Flange
21 = 2-Bolt Pillow Block
31 = Piloted Flange
41 = 4-Bolt Pillow Block
51 = Wide Slot Take-Up

Bearing/Shaft Size

Standard

X = Inches
XX = 16th's of an inch
Example: 207 = 2 7/16

Metric

XXX = mm
Example: 085 = 85mm

Suffix

E = Epoxy Finished Housing
N = Nickel Plated Housing
T = Teflon Coated Housing
L = Labyrinth Seal
G = Spring Loaded Garter Seal
SS = Stainless Steel Coating
No suffix = standard contact seal

Example: 19321300 = Type E, 2-Bolt Pillow Block, 3" shaft size

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MOLINE BEARING Co

NOMENCLATURE

PILOTED FLANGE CARTRIDGE

4-BOLT PILLOW BLOCK

WIDE SLOT TAKE-UP

HOUSING IDENTIFICATION

Moline Housing Number

000-00-000

Housing Type

110 = 2-Bolt Flange

111 = 4-Bolt Flange

112 = 2-Bolt Pillow Block

113 = Piloted Flange Cartridge

114 = 4-Bolt Pillow Block

115 = Wide Slot Take-Up

Bearing Type/Series

01 = Type E Tapered Roller Bearing ME2000 Spherical E Roller Bearing and ME3000 Spherical E Roller Bearing with Even-Lok™

21 = M2000 Spherical Roller Bearing and M3000 Spherical Roller Bearing with Even-Lok™

31 = 200 Series Normal Duty Ball Bearing

Bearing/Shaft Size

A range of inserts with similar bore can fit in the same housing.

X = Inches

XX = 16th's of an inch

Example: 207 = 2 7/16

Example: 111-01-215 = 4-Bolt Flange, Type E, 215 Housing which houses 2 11/16, 2 3/4, 2 15/16, 3, 70mm and 75mm bearing shaft sizes

MASTER INTERCHANGE

Type E Series Interchange

PAGE	MOLINE*	BROWNING*	ROYERSFORD*	SEALMASTER*	TIMKEN*	DODGE
20	2-Bolt Pillow Block 19321	PBE920** True Type E	20-02-0 True Type E	EPB-2** True Type E	E-P2B-TRB True Type E	P2BE
22	4-Bolt Pillow Block 19341	PBE920F** True Type E	20-04-0 True Type E	EPB-4** True Type E	E-P4B-TRB True Type E	P4BE
26	4-Bolt Flange 19311	FBE920 True Type E	20-05-0 True Type E	EFB True Type E	E-4BF-TRB True Type E	F4BE
30	Piloted Flange 19331	-----	20-06-0 True Type E	-----	E-PF-TRB True Type E	FCE
32	Wide Slot Take-Up 19351	TUE920 True Type E	20-07-0 True Type E	ETU True Type E	E-TU-TRB True Type E	WSTUE

*True Type E = Timken Cups/Cone Assembly (extended sleeve) and double collar, made in the USA.

**Denotes pillow block center to center dimension slightly different.

M2000 Series Interchange

PAGE	MOLINE	SKF	DODGE	LINK-BELT	REX	SEALMASTER	BROWNING**	TIMKEN QM
50	2-Bolt Pillow Block 19121 (Expansion) 19221 (Non-Expansion)	SYR SYR-H	P2BS2000RE P2BS2000R	PEB22400H PB22400H	ZA2000 ZAS2000	USRB5000E USRB5000	SPB1000E SPB1000NE	QAPL
52	4-Bolt Pillow Block 19141 (Expansion) 19241 (Non-Expansion)	----- -----	P4BS2000RE P4BS2000R	PEB22400FH PB22400FH	ZA2000F ZAS2000F	USRBF5000E USRBF5000	SPB1000FE SPB1000FNE	QAPF
56	4-Bolt Flange 19111 (Expansion) 19211 (Non-Expansion)	FYR FYR-H	F4BS2000RE* F4BS2000R*	FEB22400H FB22400H	----- ZB2000*	USFB5000 USFB5000	SFB1000E SFB1000NE	QAFL
58	Piloted Flange 19131 (Expansion) 19231 (Non-Expansion)	FYRP FYRP-H	FCS2000RE FCS2000R	----- FCB22400H	----- ZBR2000	USFC5000E USFC5000	SFC1000E SFC1000NE	QACW
60	Wide Slot Take-Up 19151 (Expansion) 19251 (Non-Expansion)	TBR TBR-H	WSTUS2000RE WSTUS2000R	----- TB22400H	----- ZT2000	USTU5000E USTU5000	STU1000E STU1000NE	QATU

*Manufactures square and round 4-bolt flange.

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ME-2000 Spherical E Interchange (with Type E Dimensions)

PAGE	MOLINE	SKF	REX	LINK-BELT	DODGE	SEALMASTER
96	2-Bolt Pillow Block 29121 (Expansion) 29221 (Non-Expansion)	 SYE SYE-H	 ----- ZEP	 EPE-B22400H EP-B22400H	 EP2B-S2-000RE EP2B-S2-000R	 USRBE5000E USRBE5000
98	4-Bolt Flange 29111 (Expansion) 29211 (Non-Expansion)	 ----- -----	 ----- ZEF	 EFR-B22400H -----	 EF4B-S2-000RE EF4B-S2-000R	 USFBE5000E USFBE5000
100	Piloted Flange 29131 (Expansion) 29231 (Non-Expansion)	 ----- -----	 ----- -----	 ----- FCB22400H	 ----- -----	 USFCE5000E USFCE5000

Note: This is a general dimensional interchange.
For exact dimensions and comparison information on inserts and seals, please contact the factory.

M3000 Series Interchange

PAGE	MOLINE	SKF CONCENTRA™	SEALMASTER SLEEVLOC™	REX SHURLOK™ ADAPTOR MOUNTED	DODGE IMPERIAL
76	2-Bolt Pillow Block 19621 (Expansion) 19721 (Non-Expansion)	 SYR-N SYR-NH	 USRB5000A USRB5000	 ZA6000 ZAS6000	P2BIP *or* 0694
78	4-Bolt Pillow Block 19641 (Expansion) 19741 (Non-Expansion)	 FSYR-N FSYR-NH	 USRBF5000A USRBF5000	 ZA6000-F ZAS6000-F	P4BIP *or* 0695
80	4-Bolt Flange 19611 (Expansion) 19711 (Non-Expansion)	 FYR-N* FYR-NH*	 USFB5000A USFB5000	 ZF6000* ZFS6000*	F4SIP *or* 0697
82	Piloted Flange 19631 (Expansion) 19731 (Non-Expansion)	 FYRP-N FYRP-NH	 USFC5000A USFC5000A\	 ----- ZBR6000	FCIP *or* 0698
84	Wide Slot Take-Up 19651 (Expansion) 19751 (Non-Expansion)	 TBR-N TBR-NH	 USTU5000A USTU5000	 ----- ZT6000	WSTUIP *or* 0693

*Manufactures square and round 4-bolt flange.
All units have tapered adaptor style locking mechanism.
Before mounting, make sure there is sufficient clearance to access dismounting set screws on back of unit.

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MASTER INTERCHANGE

ME-3000 Spherical E Interchange (with Type E Dimensions)

PAGE	MOLINE	SKF	SEALMASTER	REX	DODGE
114	2-Bolt Pillow Block 29621 (Expansion) 29721 (Non-Expansion)	 SYE-N SYE-NH	 USRBE5000A USRBE5000	 ZEPS6000 ZEP6000	 EP2B-IP-RE EP2B-IP-R
116	4-Bolt Flange 29611 (Expansion) 29711 (Non-Expansion)	 ----- -----	 USFBE5000A USFBE5000	 ----- ZEF6000	 EF4B-IP-RE EF4B-IP-R
118	Piloted Flange 29631 (Expansion) 29731 (Non-Expansion)	 ----- -----	 USFCE5000A USFCE5000	 ----- -----	 EFCIP - 0751 *or* FCIP - 0698

All units have tapered adaptor style locking mechanism.
Before mounting, make sure there is sufficient clearance to access dismounting set screws on back of unit.

Mounted Ball Bearing Interchange Normal Duty—200 Series

PAGE	MOLINE	DODGE	BROWNING	SEALMASTER	HUB CITY	TIMKEN FAFNIR	FYH
142	UCP 2-Bolt Pillow Block 1942	SC-1	VPS	RP	PB251	SAS	UCP
164	HCP 2-Bolt Pillow Block Eccentric 1952	SXR-1	VPE	RPE	PB221	RAS	NAP
150	UCF 4-Bolt Flange 1941	SC-4	VF4S	RF	FB250	SCJ	UCF
172	HCF 4-Bolt Flange Eccentric 1951	SXR-4	VF4E	RFE	FB220	RCJ	NANF
146	UCFL 2-Bolt Flange 1940	SC-2	VF2S	RFT	FB260	SCJT	UCFL
168	HCFL 2-Bolt Flange Eccentric 1950	SXR-2	VF2E	RFTE	FB230	RCJT	NANFL
154	UCFC Piloted Flange 1943	FCSC	-----	-----	-----	-----	UCFC2
176	HCFC Piloted Flange Eccentric 1953	-----	-----	-----	-----	-----	-----
158	UCT Wide Slot Take-Up 1945	WSTUSC	VTWS	RT	WSTU250	VTU	UCT
180	HCT Wide Slot Take-Up Eccentric 1955	WSTUSXR	VTWE	RT-E	WSTU220	RTU	NAT

Note: This is a general dimensional interchange.
For exact dimensions and comparison information on inserts and seals, please contact the factory.

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TERMS AND CONDITIONS OF SALE

PRICES & ACCEPTANCE

All orders are for prompt acceptance only by Moline Bearing Company's (Company) home office in Batavia, Illinois. In the event of an increase or decrease in the Company's prices, the price on any order or contract will be the one in effect at the time of shipment.

TAXES

Any sales, use, consumption or other taxes, customs duties taxes and custom brokerage fees applicable to sale, purchase or use of the products is not included in the price shown on this order and will be paid by the purchaser whenever due.

TERMS

Payment terms are net cash within 30 days from the date of the invoice. Acceptance of all orders is subject to approval of the Company's credit department.

MINIMUM CHARGE

The minimum charge on any order will be $25.00/U.S. net; parcel post, freight or express charges will be added.

SHIPMENTS

Shipments will be routed to incur the lowest available transportation charges. All premium rate shipping services such as express (air or rail); air freight, etc. will be utilized when requested by the purchaser. The Company will add any additional service charges to the invoice. All shipments, unless otherwise specified, are FOB factory. Claims for shortages, damage or non-delivery in transit will be made by the consignees to the carrier. Request for proof of delivery must be submitted within 90 days from the date of the shipment.

RETURNED GOODS

Goods may be returned within six months of the purchase date, with prior permission and an applicable RGA number. Credits will be issued against the original invoice for future purchases only. A minimum of a 25% restock charge as well as freight both ways will be deducted from the credit. Goods must be returned in unused, undamaged and "resaleable condition." All credits must be used within six months from the date of issue, or they will be voided.

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All orders are considered firm contracts. If the Company is unable to meet the requested delivery requirements and/or expected shipment dates, the Company will not be liable for any claims for delays beyond the Company's control, nor will the Company accept cancellation or suspension unless mutually agreed upon in writing.

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Additional charges will be applied to cover the costs of extra packing, special engineering or servicing, or other unusual cost elements such as overtime work authorized by the purchaser which have not been contemplated.

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The Company warrants that products furnished will be free from defects in materials and workmanship under normal use and service for 90 days after delivery of products by the Company.

THE COMPANY'S SOLE OBLIGATION UNDER THIS WARRANTY WILL BE TO REPAIR OR REPLACE ANY DEFECTIVE PRODUCT OR PART WHICH IS RETURNED. TRANSPORTATION WILL BE PREPAID WITHIN THE PERIOD MENTIONED ABOVE WHERE EXAMINATION PROVES TO THE SATISFACTION OF THE COMPANY THAT THE PART OR PRODUCT IS DEFECTIVE.

THIS WARRANTY WILL NOT APPLY TO ANY PRODUCT OR PART WHICH HAS BEEN SUBJECTED TO MISUSE, NEGLIGENCE OR ACCIDENT. THIS WARRANTY, AS SET FORTH ABOVE, IS IN LIEU OF ALL OTHER WARRANTIES EXPRESSED OR IMPLIED, INCLUDING WITHOUT LIMITATION WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

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