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AURORA
BEARING COMPANY

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SPECIALISTS IN BEARINGS, FLUID & MECHANICAL POWER TRANSMISSION

The Motion-Transfer Specialists

Contents

AURORA BEARING COMPANY . . . Manufacturer and worldwide supplier of the highest quality rod ends and spherical bearings — *anywhere!*

General Information

In 1971 a new company entered the rod end and spherical bearing marketplace. This new firm, Aurora Bearing Company, soon became a major force in the rod end industry.

Known primarily for a high quality product and a strong commitment to customer service, the firm dramatically increased its market coverage and now serves nearly every major industrial and aerospace market. These markets include among others: textile and packaging machinery, machine tools, business machines, recreation and exercise equipment, agricultural and off-highway vehicles, commercial transportation and high performance racing vehicles as well as military equipment and commercial air and space craft.

Over the years, Aurora Bearing has retained its original business philosophy of furnishing a quality product at competitive prices. In addition, the company's initial goals of providing prompt delivery and furnishing service with a personal touch have been rigidly maintained.

Aurora Bearing offers a complete line of standard rod end and spherical bearings. We also design and manufacture special bearings to meet a variety of applications that require custom engineered units or special materials.

Now marketing products worldwide, Aurora Bearing fields a very competent sales force that is available to assist and provide you with practical and sound solutions to rod end and spherical bearing application problems and challenges.

Product Information— Engineering Data

ROD ENDS

Aurora Bearing Company rod ends are manufactured utilizing two construction styles. They are of the two or three piece type. Both are made with the solid, or one piece, race construction method and feature the advantages of metal-to-metal contact between bearing components.

The standard two piece style consists of a body and precision ground oil impregnated sintered steel ball. This type of construction allows the rod end body to carry a greater radial static load and the oil impregnated ball is self lubricating under normal operating conditions. This unit also offers greater misalignment capabilities. A variety of materials and plating options for the component parts in this series is available. Any cold-formable steel in the stainless and alloy steel categories can be specified for the body, and all hardenable alloys such as 52100 and 440C stainless steel may be employed as options for the ball component.

The three piece style consists of a body, ball and race. This type of unit, offering fully swaged bearing construction, features the advantages of maximum spherical conformity between the ball and race. It also offers flexibility in that many different types of materials can be interchanged in each component part, providing combinations that can be tailored to meet just about any application requirement.

Consult our engineering department for materials to fit your special application. Materials used in the standard catalog items are outlined on the appropriate detail page.

SPHERICAL BEARINGS

These bearings incorporate the single piece race type construction, also providing excellent ball-to-race conformity. They can be relubricated through an annular groove in the outer race with two interconnecting holes positioned at 180 degrees. Various metals may also be substituted in these types of units to meet special requirements. Recommended housing bores are given on the detail page 30.

PTFE LINED ROD ENDS AND SPHERICAL BEARINGS

PTFE (bonded coated PTFE liner) lined races are available in all three piece bearing units. The steel race has a self-lubricating liner, a PTFE impregnated woven fabric, chemically bonded to the inner diameter of the race. Aurora Bearing offers two major liner style options: both are maintenance free and offer improved frictional characteristics.

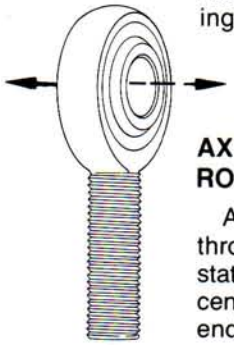
AT 1100 is supplied as the standard liner in all except the military specification bearings. It is designed primarily to satisfy the demands of the commercial/industrial market as well as most high performance applications. This liner can be used in temperatures ranging from −65° to +250°F.

AT3200 is an ultra-high performance liner fully qualified to MIL-B-81820, developed for military and aircraft/aerospace applications. This liner offers higher load carrying capacity as well as greatly increased dynamic wear characteristics and can be used in temperatures ranging from -65° to +325°F. This liner is now standard on all military specification bearings manufactured by Aurora Bearing. It can also be specified on other lined products manufactured by Aurora Bearing where demanding applications require its superior performance characteristics.

RADIAL STATIC LOAD CAPACITY— ROD ENDS

These loads are maximum static based upon the minimum mechanical properties of the design configuration in the stressed areas. Operating loads for Aurora rod ends are based on the radial static load rating, incorporating appropriate safety factors utilized to suit the application. When a rod end is to be applied in full rotation, up to a maximum of 100 RPM, the operating load should not exceed 10% of the radial static load.

Load ratings listed in the standard detail pages are applicable to rod ends supplied without grease fittings. Load ratings for units employing fittings may be affected due to the lighter cross section in the stressed area. For information on rod end radial static load ratings with fittings and other specific load rating information, consult the Aurora Bearing engineering department.



AXIAL STATIC LOAD CAPACITY— ROD ENDS

Axial static load is the force that is applied through the bore of the ball. Maximum axial static load capacity is recommended at 15 percent of radial static load for Aurora two piece rod ends, 10 percent for three piece rod ends.

RADIAL STATIC LOAD CAPACITY— SPHERICAL BEARINGS

Radial static loads are maximum static based on minimum permanent set in the bearing race of 0.2% of the ball diameter. If greater permanent set can be allowed or if alternate race materials are used consult our engineering department for change factors. Operating loads are based on the Radial Static Load Rating and appropriate safety factors should be utilized to suit the application.

Max Axial load is recommended at 20 percent of the Radial Static Load. Extreme care should be used in selecting a sufficiently strong housing to accept this type of bearing.

BEARING MISALIGNMENT

A rod end or spherical bearing's ability to misalign is measured by the degree of angle the ball can accommodate without interference.

The angle of misalignment in a rod end is limited by the ball width and head diameter as shown in figure 1. This arrangement is called a clevis mount, and is the type represented in the standard rod end detail pages. If added misalignment is necessary, this can be accomplished by utilizing spacers between the clevis mounting and ball face, or by using special rod ends designed to meet specific requirements.

Misalignment angle in a spherical bearing is limited by the ball and race width with respect to the ball diameter, illustrated in figure 3. This is the mounting type represented in the standard detail pages for spherical bearings.

Mounting arrangements for spherical bearings such as shown in figures 2 through 4 are also used with rod ends. The misalignment angle is then calculated by selecting the proper formula.

Angle of Misalignment

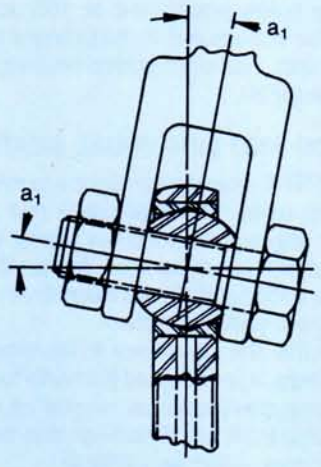


FIGURE 1

$$a_1 = \text{Sin}^{-1}\frac{W}{D} - \text{Sin}^{-1}\frac{H}{D}$$

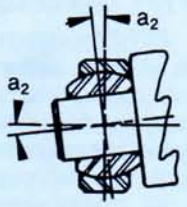


FIGURE 2

$$a_2 = \text{Sin}^{-1}\frac{W}{A} - \text{Sin}^{-1}\frac{H}{A}$$

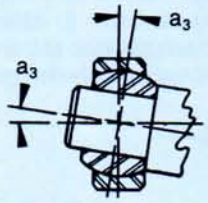


FIGURE 3

$$a_3 = \text{Sin}^{-1}\frac{W}{R} - \text{Sin}^{-1}\frac{H}{R}$$

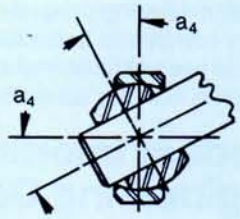


FIGURE 4

$$a_4 = \text{Cos}^{-1}\frac{B}{R} - \text{Sin}^{-1}\frac{H}{R}$$

Reference Letters

B – Ball Bore
M – Outer Race Chamfer
D – Head Diameter or Outer Race Diameter
R – Ball Diameter
H – Housing Width

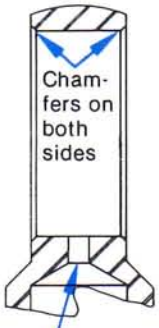
A – $\sqrt{(D - 2M)^2 + H^2}$
W – Ball Width

3-PIECE and 2-PIECE BEARING DESIGN

3-Piece A & M Series Unit

Ball component is heat-treated alloy steel, precision ground and hard chrome plated.

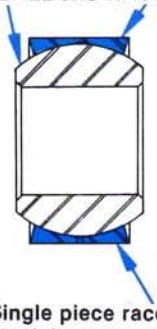
HOUSING



NOTE — Re-Lube hole for lubrication through shank of housing.

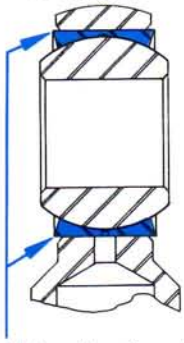
INSERT

Consists of BALL and RACE.



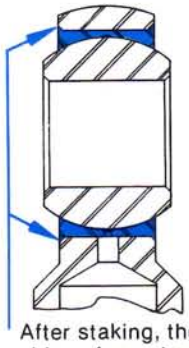
Single piece race, steel, heat treated (optional), features swaged construction for maximum performance. Alternate race materials available to suit your application.

ASSEMBLED HOUSING AND INSERT IN PRE-STAKING POSITION



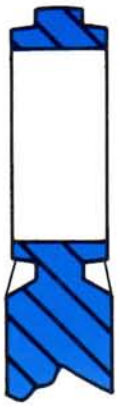
Note extension of race beyond width of housing in the pre-staking position.

ASSEMBLED HOUSING AND INSERT IN STAKED POSITION

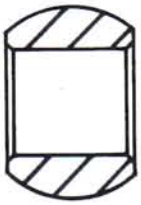


After staking, the sides of race have been upset into chamfers. Ball is subsequently loosened holding close tolerance fits between ball and race.

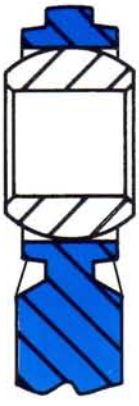
2-Piece C Series Unit



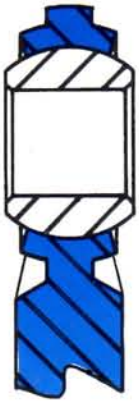
Housing ready for swaging.



Precision ground ball — (available in alternate materials) - for close tolerance fits.

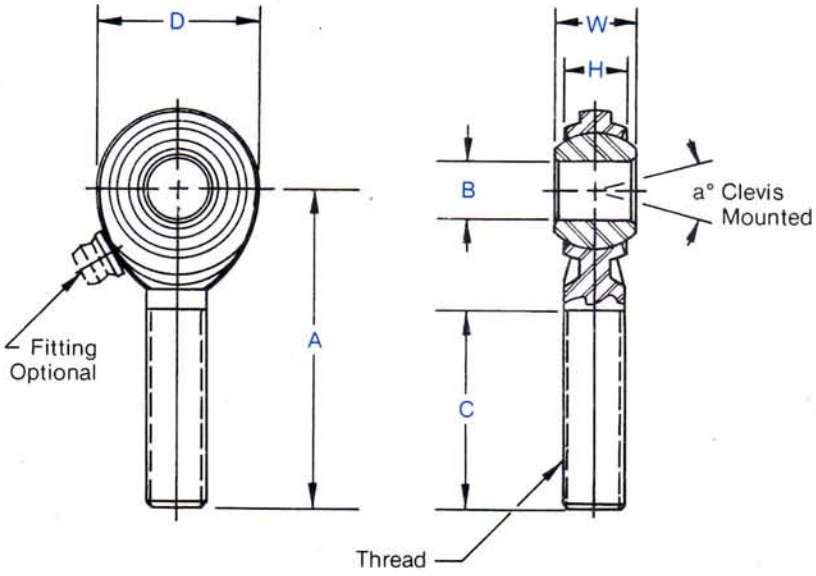


Housing and ball in pre-swaging position



Sides of housing are closed around ball for maximum strength unit.

CM & CB Series
Male Rod Ends
General Purpose · Economy



SPECIFICATIONS

BODY — Low carbon steel, protective coated for corrosion resistance.

BALL — Sintered steel, heat treated, oil impregnated.

ALTERNATE BALL — Alloy steel, heat treated, hard chrome plated.

Rod End No.		DIMENSIONS IN INCHES										
Right Hand	Left Hand	B +.0025 -.0005	W ±.005	H Ref.	A ±.015	D ±.010	Ball Dia. Ref.	C +.062 -.031	Thread UNF-3A	a° Misalign. Angle	Radial Static Load Capacity Lbs.	Approx. Brg. Wt. Lbs.
CM-3*	CB-3*	.1900	.312	.234	1.250	.625	.437	.750	10-32	20	1,204	.03
CM-4*	CB-4*	.2500	.375	.250	1.562	.750	.500	1.000	1/4-28	27	2,212	.04
CM-5*	CB-5*	.3125	.437	.312	1.875	.875	.625	1.250	5/16-24	22	3,577	.07
CM-6	CB-6	.3750	.500	.359	1.938	1.000	.719	1.250	3/8-24	22	5,068	.11
CM-7	CB-7	.4375	.562	.406	2.125	1.125	.812	1.375	7/16-20	21	6,345	.15
CM-8	CB-8	.5000	.625	.453	2.438	1.312	.937	1.500	1/2-20	20	8,338	.24
CM-10	CB-10	.6250	.750	.484	2.625	1.500	1.125	1.625	5/8-18	26	9,713	.36
CM-12	CB-12	.7500	.875	.593	2.875	1.750	1.312	1.750	3/4-16	24	14,207	.57

Rod End No.		DIMENSIONS IN MILLIMETERS										
Right Hand	Left Hand	B +.0635 -.0127	W ±.127	H Ref.	A ±.381	D ±.254	Ball Dia. Ref.	C +1.574 -.787	Thread UNF-3A	a° Misalign. Angle	Radial Static Load Capacity Kilograms	Approx. Brg. Wt. Grams
CM-3*	CB-3*	4.83	7.92	5.94	31.75	15.88	11.10	19.05	10-32	20	546	14
CM-4*	CB-4*	6.35	9.53	6.35	39.67	19.05	12.70	25.40	1/4-28	27	1,003	18
CM-5*	CB-5*	7.94	11.10	7.92	47.63	22.23	15.88	31.75	5/16-24	22	1,623	32
CM-6	CB-6	9.53	12.70	9.12	49.23	25.40	18:26	31.75	3/8-24	22	2,299	50
CM-7	CB-7	11.11	14.27	10.31	53.98	28.58	20.62	34.93	7/16-20	21	2,878	68
CM-8	CB-8	12.70	15.88	11.50	61.93	33.32	23.80	38.10	1/2-20	20	3,782	109
CM-10	CB-10	15.88	19.05	12.29	66.68	38.10	28.58	41.28	5/8-18	26	4,406	163
CM-12	CB-12	19.05	22.23	15.06	73.03	44.45	33.32	44.45	3/4-16	24	6,444	259

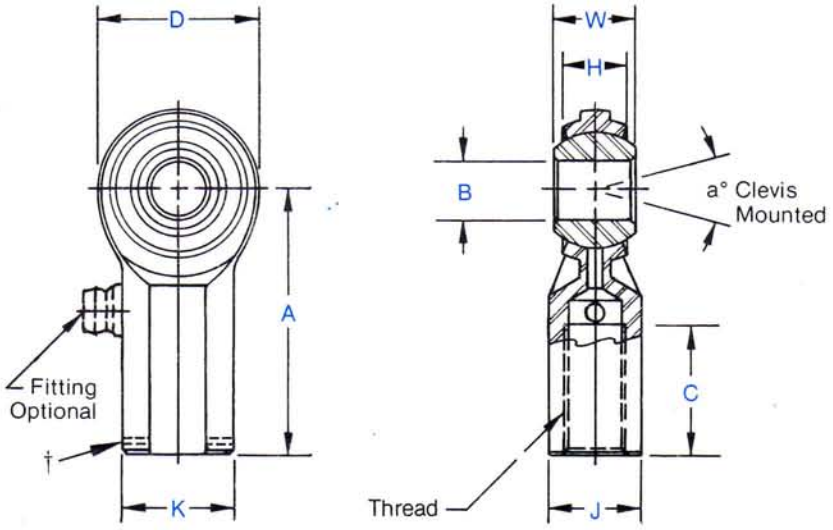
Load ratings apply only to rod ends without grease fittings. For load ratings with fittings, please consult our engineering department.

*Grease fittings not supplied on these sizes. Units are supplied without grease fittings. When grease fittings are required, specify by adding suffixes as designated.

Z Zerk type fitting Ex: CM-6Z

F Flush type fitting Ex: CM-6F

CW & CG Series
Female Rod Ends
General Purpose - Economy



SPECIFICATIONS

BODY — Low carbon steel, protective coated for corrosion resistance.

BALL — Sintered steel, heat treated, oil impregnated.

ALTERNATE BALL — Alloy steel, heat treated, hard chrome plated.

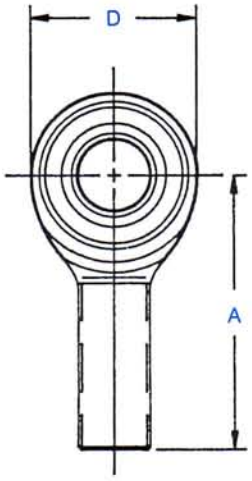
Rod End No.		DIMENSIONS IN INCHES												
Right Hand	Left Hand †	B +.0025 -.0005	W ±.005	H Ref.	A ±.015	D ±.010	K ±.010	J ±.010	Ball Dia. Ref.	C +.062 -.031	Thread UNF-2B	a° Misalign. Angle	Radial Static Load Cap. Lbs.	Approx. Brg. Wt. Lbs.
CW-3*	CG-3*	.1900	.312	.234	1.062	.625	.406	.312	.437	.500	10-32	20	2,079	.04
CW-4	CG-4	.2500	.375	.250	1.312	.750	.469	.375	.500	.687	1/4-28	27	3,208	.05
CW-5	CG-5	.3125	.437	.312	1.375	.875	.500	.437	.625	.687	5/16-24	22	3,824	.08
CW-6	CG-6	.3750	.500	.359	1.625	1.000	.687	.562	.719	.812	3/8-24	22	5,087	.13
CW-7	CG-7	.4375	.562	.406	1.812	1.125	.750	.625	.812	.937	7/16-20	21	6,385	.18
CW-8	CG-8	.5000	.625	.453	2.125	1.312	.875	.750	.937	1.062	1/2-20	20	9,096	.29
CW-10	CG-10	.6250	.750	.484	2.500	1.500	1.000	.875	1.125	1.375	5/8-18	26	9,713	.43
CW-12	CG-12	.7500	.875	.593	2.875	1.750	1.125	1.000	1.312	1.562	3/4-16	24	14,207	.65

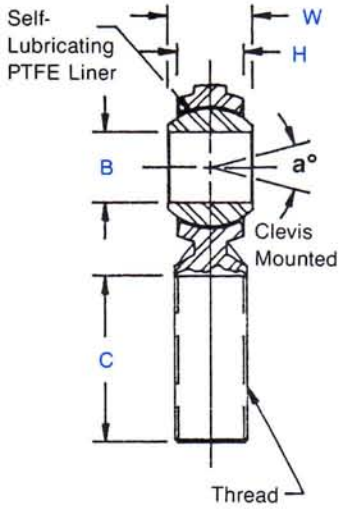
Rod End No.		DIMENSIONS IN MILLIMETERS												
Right Hand	Left Hand †	B +.0635 -.0127	W ±.127	H Ref.	A ±.381	D ±.254	K ±.254	J ±.254	Ball Dia. Ref.	C +1.574 -.787	Thread UNF-2B	a° Misalign. Angle	Radial Static Load Cap. Kilograms	Approx. Brg. Wt. Grams
CW-3*	CG-3*	4.83	7.92	5.94	26.97	15.88	10.31	7.92	11.10	12.70	10-32	20	943	18
CW-4	CG-4	6.35	9.53	6.35	33.32	19.05	11.91	9.53	12.70	17.45	1/4-28	27	1,455	23
CW-5	CG-5	7.94	11.10	7.92	34.93	22.23	12.70	11.10	15.88	17.45	5/16-24	22	1,735	36
CW-6	CG-6	9.53	12.70	9.12	41.28	25.40	17.45	14.27	18.26	20.62	3/8-24	22	2,307	59
CW-7	CG-7	11.11	14.27	10.31	46.02	28.58	19.05	15.88	20.62	23.80	7/16-20	21	• 2,896	82
CW-8	CG-8	12.70	15.88	11.50	53.98	33.32	22.23	19.05	23.80	26.97	1/2-20	20	4,126	132
CW-10	CG-10	15.88	19.05	12.29	63.50	38.10	25.40	22.23	28.58	34.93	5/8-18	26	4,406	195
CW-12	CG-12	19.05	22.23	15.06	73.03	44.45	28.58	25.40	33.32	39.67	3/4-16	24	6,444	295

†Left hand units have identification groove near end of shank.

*Grease fittings not supplied on these sizes. Units are supplied without grease fittings. When grease fittings are required, specify by adding suffixes as designated.
Z Zerk type fitting Ex: CW-6Z
F Flush type fitting Ex: CW-6F

VCM & VCB Series
Male Rod Ends
General Purpose — Economy — Self-Lubricating





SPECIFICATIONS

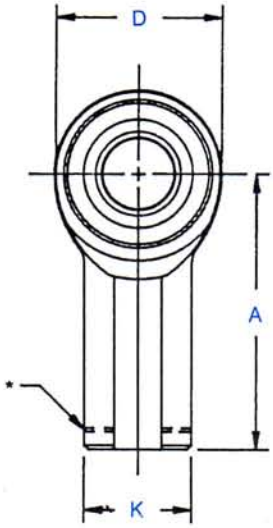
BODY — Low carbon steel, protective coated for corrosion resistance, PTFE lined.

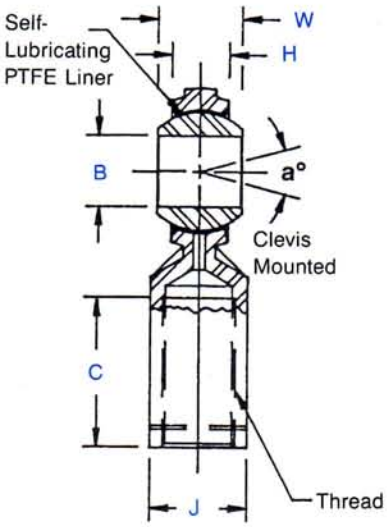
BALL — Sintered steel, heat treated, oil impregnated.

ROD END NO.		DIMENSIONS IN INCHES									
RIGHT HAND	LEFT HAND	B +.0025 −.0005	W ±.005	H REF.	A ±.015	D ±.010	BALL DIA. REF.	C +.062 −.031	THREAD UNF-3A	a° MISALIGN. ANGLE	RADIAL STATIC LOAD CAP. POUNDS
VCM-5	VCB-5	.3125	.437	.312	1.875	.875	.593	1.250	5/16-24	22°	2,623
VCM-6	VCB-6	.3750	.500	.359	1.938	1.000	.687	1.250	3/8-24	22°	3,643
VCM-7	VCB-7	.4375	.562	.406	2.125	1.125	.781	1.375	7/16-20	21°	4,464
VCM-8	VCB-8	.5000	.625	.453	2.438	1.312	.875	1.500	1/2-20	20°	7,229
VCM-10	VCB-10	.6250	.750	.484	2.625	1.500	1.062	1.625	5/8-18	26°	8,204
VCM-12	VCB-12	.7500	.875	.593	2.875	1.750	1.250	1.750	3/4-16	24°	12,280

ROD END NO.		DIMENSIONS IN MILLIMETERS									
RIGHT HAND	LEFT HAND	B +.0635 −.0127	W ±.127	H REF.	A ±.381	D ±.254	BALL DIA. REF.	C +1.574 − .787	THREAD UNF-3A	a° MISALIGN. ANGLE	RADIAL STATIC LOAD CAP. KILOGRAMS
VCM-5	VCB-5	7.94	11.10	7.92	47.63	22.23	15.06	31.75	5/16-24	22°	1,190
VCM-6	VCB-6	9.53	12.70	9.12	49.23	25.40	17.45	31.75	3/8-24	22°	1,652
VCM-7	VCB-7	11.11	14.27	10.31	53.98	28.58	19.84	34.93	7/16-20	21°	2,025
VCM-8	VCB-8	12.70	15.88	11.50	61.93	33.32	22.23	38.10	1/2-20	20°	3,278
VCM-10	VCB-10	15.88	19.05	12.29	66.68	38.10	26.97	41.28	5/8-18	26°	3,721
VCM-12	VCB-12	19.05	22.23	15.06	73.03	44.45	31.75	44.45	3/4-16	24°	5,570

VCW & VCG Series
Female Rod Ends
General Purpose — Economy — Self-Lubricating





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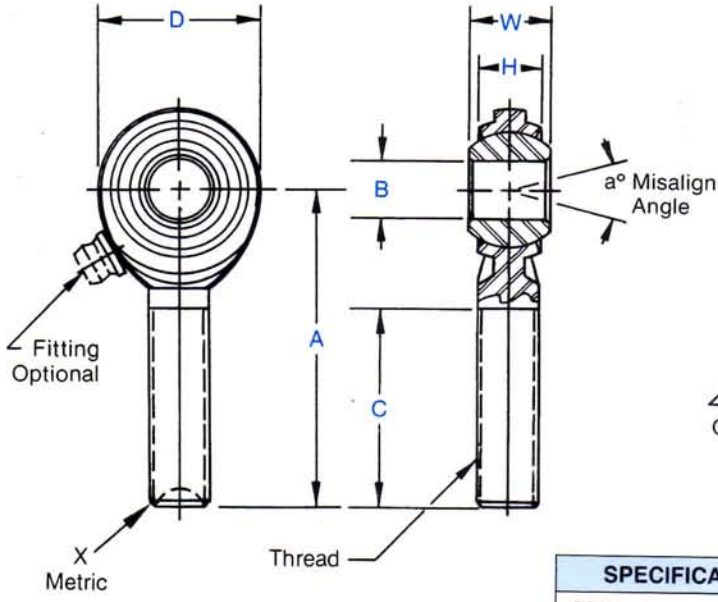
BALL — Sintered steel, heat treated, oil impregnated.

ROD END NO.		DIMENSIONS IN INCHES											
RIGHT HAND	LEFT HAND	B +.0025 −.0005	W ±.005	H REF.	A ±.015	D ±.010	K ±.010	J ±.010	BALL DIA. REF.	C +.062 −.031	THREAD UNF-2B	a° MISALIGN. ANGLE	RADIAL STATIC LOAD CAP. POUNDS
VCW-5	VCG-5	.3125	.437	.312	1.375	.875	.500	.437	.593	.687	5/16-24	22°	2,623
VCW-6	VCG-6	.3750	.500	.359	1.625	1.000	.687	.562	.687	.812	3/8-24	22°	3,643
VCW-7	VCG-7	.4375	.562	.406	1.812	1.125	.750	.625	.781	.937	7/16-20	21°	4,464
VCW-8	VCG-8	.5000	.625	.453	2.125	1.312	.875	.750	.875	1.062	1/2-20	20°	7,229
VCW-10	VCG-10	.6250	.750	.484	2.500	1.500	1.000	.875	1.062	1.375	5/8-18	26°	8,204
VCW-12	VCG-12	.7500	.875	.593	2.875	1.750	1.125	1.000	1.250	1.562	3/4-16	24°	12,280

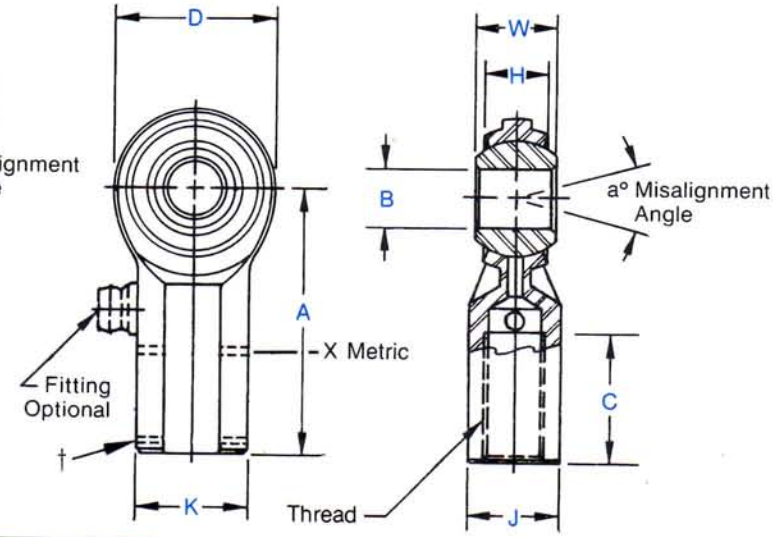
ROD END NO.		DIMENSIONS IN MILLIMETERS											
RIGHT HAND	LEFT HAND	B +.0635 −.0127	W ±.127	H REF.	A ±.381	D ±.254	K ±.254	J ±.254	BALL DIA. REF.	C +1.574 − .787	THREAD UNF-2B	a° MISALIGN. ANGLE	RADIAL STATIC LOAD CAP. KILOGRAMS
VCW-5	VCG-5	7.94	11.10	7.92	34.93	22.23	12.70	11.10	15.06	17.45	5/16-24	22°	1,190
VCW-6	VCG-6	9.53	12.70	9.12	41.28	25.40	17.45	14.27	17.45	20.62	3/8-24	22°	1,652
VCW-7	VCG-7	11.11	14.27	10.31	46.02	28.58	19.05	15.88	19.84	23.80	7/16-20	21°	2,025
VCW-8	VCG-8	12.70	15.88	11.50	53.98	33.32	22.23	19.05	22.23	26.97	1/2-20	20°	3,278
VCW-10	VCG-10	15.88	19.05	12.29	63.50	38.10	25.40	22.23	26.97	34.93	5/8-18	26°	3,721
VCW-12	VCG-12	19.05	22.23	15.06	73.03	44.45	28.58	25.40	31.75	39.67	3/4-16	24°	5,570

*Left-hand units have identification groove near end of shank

CM-M & CB-M Series
Male Rod Ends—Metric
General Purpose—Economy



CW-M & CG-M Series
Female Rod Ends—Metric
General Purpose—Economy



SPECIFICATIONS
BODY — Low carbon steel, protective coated for corrosion resistance.
BALL — Sintered steel, heat treated, oil impregnated.

Male

	Rod End No.		DIMENSIONS IN MILLIMETERS								Misalign. Angle**			Radial Static Load Cap. Kgs.	Approx. Brg. Wt. Grams
	Right Hand	Left Hand	B +.065 −.012	W ±.12	H Ref.	A ±.40	D ±.38	Ball Dia. Ref.	C ±1.00	Thread	a_1	a_3	a_4		
*	CM-M3	CB-M3	3	6	4.25	27	12.5	7.93	15	M3 × 0.5	23	34	71	181	7
	CM-M5	CB-M5	5	8	5.75	33	16	11.10	20	M5 × 0.8	22	30	64	527	12
	CM-M6	CB-M6	6	9	6.25	36	19	12.70	22	M6 × 1.0	23	31	65	744	18
	CM-M8	CB-M8	8	12	8.0	42	22.25	15.88	25	M8 × 1.25	28	38	59	1,386	31
	CM-M10	CB-M10	10	14	9.5	48	27	19.05	29	M10 × 1.5	26	35	57	2,144	68
	CM-M12	CB-M12	12	16	10.75	54	30	22.23	33	M12 × 1.75	27	34	57	2,633	78
*	CM-M14	CB-M14	14	19	12.25	60	34.75	25.40	36	M14 × 2.0	30	39	55	3,591	118
	CM-M16	CB-M16	16	21	12.75	66	38	28.58	40	M16 × 2.0	33	42	59	3,813	173
*	CM-M18	CB-M18	18	23	14.75	72	42	31.75	44	M18 × 1.5	30	37	56	4,885	260
	CM-M20	CB-M20	20	25	16.25	78	46	34.93	47	M20 × 1.5	29	36	55	5,823	290

*Check for availability. **See Page 4.

Z Zerk type fitting—CM-M10Z (Not available 3, 5, 6, 8)

Female

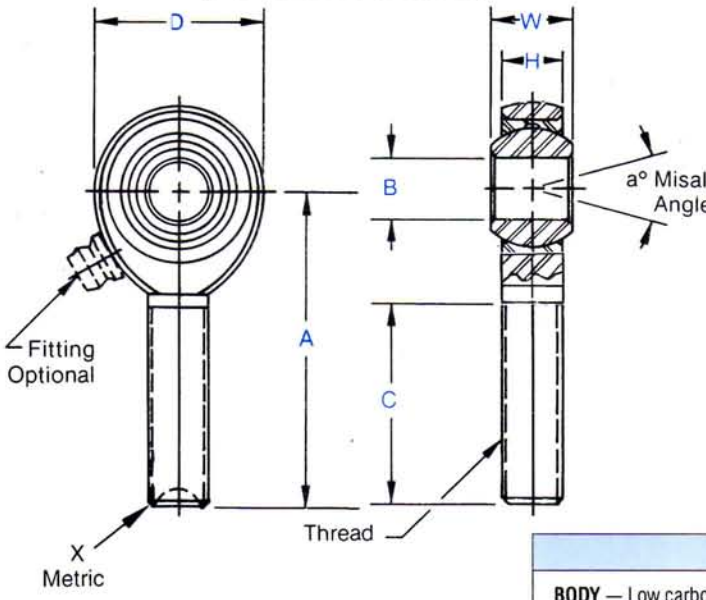
	Rod End No.		DIMENSIONS IN MILLIMETERS										Misalign. Angle			Radial Static Load Cap. Kgs.	Aprx. Brg. Wt. Grams
	Right Hand	Left Hand	B +.065 −.012	W ±.12	H Ref.	A ±.40	D ±.38	K ±.25	J ±.25	Ball Dia. Ref.	C ±1.00	Thread	a_1	a_3	a_4		
*	CW-M3	CG-M3	3	6	4.25	21	12.5	8	7	7.93	10	M3 ×0.5	23	34	71	586	10
	CW-M5	CG-M5	5	8	5.75	27	16	11	9	11.10	14	M5 ×0.8	22	30	64	841	18
	CW-M6	CG-M6	6	9	6.25	30	19	13	11	12.70	14	M6 ×1.0	23	31	65	1,213	25
	CW-M8	CG-M8	8	12	8.0	36	22.25	16	14	15.88	17	M8 ×1.25	28	38	59	1,549	40
	CW-M10	CG-M10	10	14	9.5	43	27	19	17	19.05	21	M10×1.5	26	35	57	2,320	80
	CW-M12	CG-M12	12	16	10.75	50	30	22	19	22.23	24	M12×1.75	27	34	57	2,633	95
*	CW-M14	CG-M14	14	19	12.25	57	34.75	25	22	25.40	27	M14×2.0	30	39	55	3,591	160
	CW-M16	CG-M16	16	21	12.75	64	38	27	22	28.58	33	M16×2.0	33	42	59	3,813	215
*	CW-M18	CG-M18	18	23	14.75	71	42	31	27	31.75	36	M18×1.5	30	37	56	4,885	300
	CW-M20	CG-M20	20	25	16.25	77	46	34	30	34.93	40	M20×1.5	29	36	55	5,823	350

*Check for availability.
X Designates metric threads.

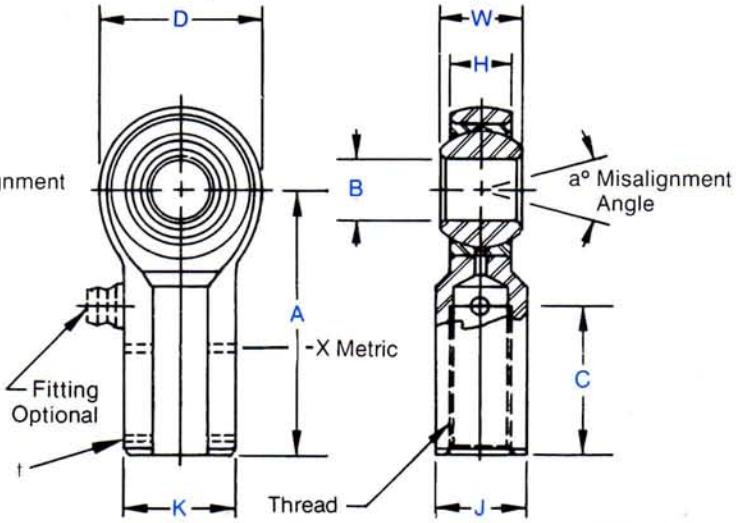
†Left hand units have identification groove near end of shank.

Z Zerk type fitting—CW-M10Z (Not available 3, 5)

MM-M & MB-M Series
Male Rod Ends—Metric
General Purpose—Precision
(PTFE Liner Available)



MW-M & MG-M Series
Female Rod Ends—Metric
General Purpose—Precision
(PTFE Liner Available)



SPECIFICATIONS		
BODY — Low carbon steel, protective coated for corrosion resistance.	**RACE** — Low carbon steel, protective coated for corrosion resistance.	**BALL** — Alloy steel, heat treated, hard chrome plated.

Male

	Rod End No.		DIMENSIONS IN MILLIMETERS								Misalign. Angle**			Radial Static Load Cap.	Approx. Brg. Wt.
	Right Hand	Left Hand	B +.065 −.012	W ±.12	H ±.12	A ±.40	D ±.38	Ball Dia. Ref.	C ±1.00	Thread	a_1	a_3	a_4	Kgs.	Grams
*	MM-M3	MB-M3	3	6	4.75	27	12.5	7.93	15	M3 × 0.5	13	25	62	181	7
	MM-M5	MB-M5	5	8	6.25	33	16	11.10	20	M5 × 0.8	14	24	58	527	13
	MM-M6	MB-M6	6	9	7.0	36	19	12.70	22	M6 × 1.0	13	23	57	744	18
	MM-M8	MB-M8	8	12	8.75	42	22.25	15.88	25	M8 × 1.25	18	31	53	1,386	31
	MM-M10	MB-M10	10	14	10.5	48	27	19.05	29	M10 × 1.5	17	28	50	1,789	68
	MM-M12	MB-M12	12	16	12.0	54	30	22.23	33	M12 × 1.75	17	27	49	1,886	78
*	MM-M14	MB-M14	14	19	13.5	60	34.75	25.40	36	M14 × 2.0	21	33	49	3,043	118
	MM-M16	MB-M16	16	21	14.25	66	38	28.58	40	M16 × 2.0	23	35	52	3,286	173
*	MM-M18	MB-M18	18	23	16.25	72	42	31.75	44	M18 × 1.5	21	31	49	4,212	260
	MM-M20	MB-M20	20	25	18.0	78	46	34.93	47	M20 × 1.5	20	29	48	5,196	290
*	MM-M22	MB-M22	22	28	19.5	86	50	38.10	51	M22 × 1.5	22	33	48	6,294	315
*	MM-M25	MB-M25	25	31	22.0	95	60	42.86	57	M24 × 2.0	19	31	47	10,650	500
*	MM-M30	MB-M30	30	37	25.5	105	70	50.80	66	M30 × 2.0	21	33	47	15,015	1,090

*Check for availability. **See Page 4.

Z Zerk type fitting—MM-M10Z

Female

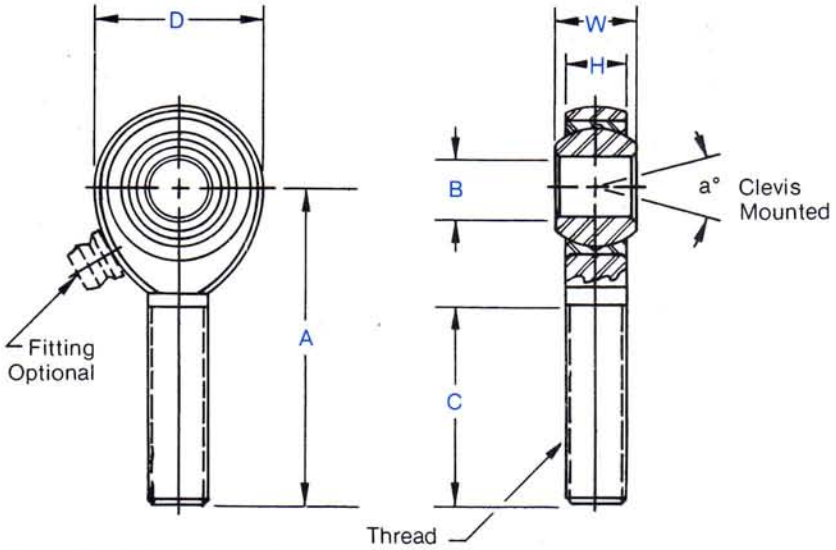
	Rod End No.		DIMENSIONS IN MILLIMETERS										Misalign. Angle			Radial Static Load Cap.	Aprx. Brg. Wt.
	Right Hand	Left Hand	B +.065 −.012	W ±.12	H ± .12	A ±.40	D ±.38	K ±.25	J ±.25	Ball Dia. Ref.	C ±1.00	Thread	a_1	a_3	a_4	Kgs.	Grams
*	MW-M3	MG-M3	3	6	4.75	21	12.5	8	7	7.93	10	M3 ×0.5	13	25	62	507	10
	MW-M5	MG-M5	5	8	6.25	27	16	11	9	11.10	14	M5 ×0.8	14	24	58	723	17
	MW-M6	MG-M6	6	9	7.0	30	19	13	11	12.70	14	M6 ×1.0	13	23	57	1,125	25
	MW-M8	MG-M8	8	12	8.75	36	22.25	16	14	15.88	17	M8 ×1.25	18	31	53	1,435	40
	MW-M10	MG-M10	10	14	10.5	43	27	19	17	19.05	21	M10×1.5	17	28	50	1,789	80
	MW-M12	MG-M12	12	16	12.0	50	30	22	19	22.23	24	M12×1.75	17	27	49	1,886	95
*	MW-M14	MG-M14	14	19	13.5	57	34.75	25	22	25.40	27	M14×2.0	21	33	49	3,043	160
	MW-M16	MG-M16	16	21	14.25	64	38	27	22	28.58	33	M16×2.0	23	35	52	3,286	215
*	MW-M18	MG-M18	18	23	16.25	71	42	31	27	31.75	36	M18×1.5	21	31	49	4,212	300
	MW-M20	MG-M20	20	25	18.0	77	46	34	30	34.93	40	M20×1.5	20	29	48	5,196	350
*	MW-M22	MG-M22	22	28	19.5	86	50	37	32	38.10	43	M22×1.5	22	33	48	6,294	390
*	MW-M25	MG-M25	25	31	22.0	95	60	42	36	42.86	48	M24×2.0	19	31	47	10,650	700
*	MW-M30	MG-M30	30	37	25.5	105	70	50	41	50.80	56	M30×2.0	21	33	47	15,015	970

*Check for availability.
X Designates metric threads.

†Left hand units have identification groove near end of shank.

Z Zerk type fitting—MW-M10Z
T PTFE Liner—MW-M10T

MM & MB Series
Male Rod Ends
General Purpose · Precision



SPECIFICATIONS

BODY — Low carbon steel, protective coated for corrosion resistance. No. 16 series standard body is 4130 steel not heat treated.

RACE — Low carbon steel, protective coated for corrosion resistance.

BALL — Alloy steel, heat treated, hard chrome plated.

NOTES

Drilled hole in shank not available in 2, 3, 4, 5, 14 and 16 bore sizes. All sizes available with studs upon request.

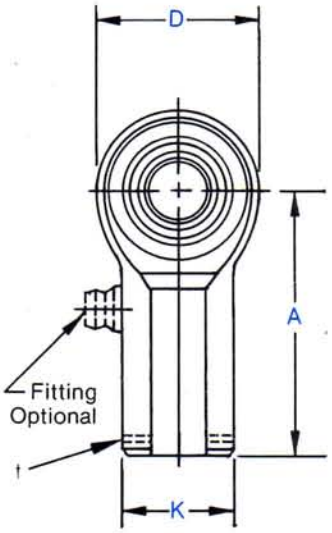
	Rod End No.		DIMENSIONS IN INCHES										
	Right Hand	Left Hand	B +.0015 −.0005	W +.000 −.005	H ±.005	A ±.015	D ±.010	Ball Dia. Ref.	C +.062 −.031	Thread UNF-3A	a° Misalign. Angle	Radial Static Load Capacity Lbs.	Approx. Brg. Wt. Lbs.
**	MM-2	MB-2	.1250	.250	.187	.937	.500	.312	.562	6-32[3]	16	502	.013
	MM-3	MB-3	.1900	.312	.250	1.250	.625	.437	.750	10-32	13	1,169	.028
	MM-4	MB-4	.2500	.375	.281	1.562	.750	.500	1.000	1/4-28	16	2,158	.043
	MM-5	MB-5	.3125	.437	.344	1.875	.875	.625	1.250	5/16-24	14	2,784	.072
	MM-6	MB-6	.3750	.500	.406	1.938	1.000	.719	1.250	3/8-24	12	3,915	.112
	MM-7	MB-7	.4375	.562	.437	2.125	1.125	.812	1.375	7/16-20	14	4,218	.160
	MM-8	MB-8	.5000	.625	.500	2.438	1.312	.937	1.500	1/2-20	12	6,660	.249
	MM-10	MB-10	.6250	.750	.562	2.625	1.500	1.125	1.625	5/8-18	16	7,364	.382
	MM-12	MB-12	.7500	.875	.687	2.875	1.750	1.312	1.750	3/4-16	14	11,518	.602
*	MM-14-1	MB-14-1	.8750	.875	.687	3.375	2.000	1.312	1.875	7/8-14	12	22,843	.906
1	MM-16	MB-16	1.0000	1.375	1.000	4.125	2.750	1.875	2.125	1 1/4-12	17	43,541	2.406
1	MM-16-1	MB-16-1	1.0000	1.375	1.000	4.125	2.750	1.875	2.125	1-14	17	43,541	2.127
1	MM-16-2	MB-16-2	1.0000	1.375	1.000	4.125	2.750	1.875	2.125	1-12	17	43,541	2.127

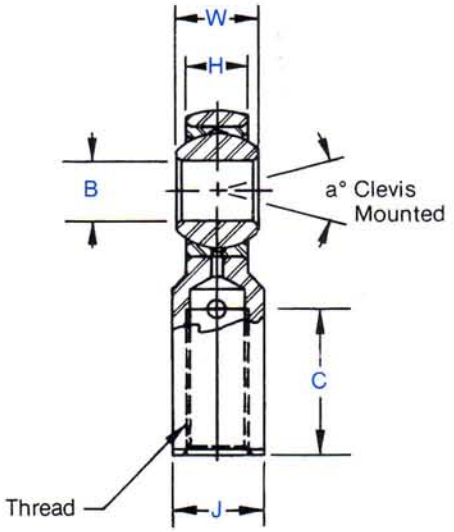
	Rod End No.		DIMENSIONS IN MILLIMETERS										
	Right Hand	Left Hand	B +.0381 −.0127	W +.000 −.127	H ±.127	A ±.381	D ±.254	Ball Dia. Ref.	C +1.574 −.787	Thread UNF-3A	a° Misalign. Angle	Radial Static Load Capacity Kilograms	Approx. Brg. Wt. Grams
**	MM-2	MB-2	3.18	6.35	4.75	23.81	12.70	7.92	14.27	6-32[3]	16	228	6
	MM-3	MB-3	4.83	7.92	6.35	31.75	15.88	11.10	19.05	10-32	13	530	13
	MM-4	MB-4	6.35	9.53	7.14	39.67	19.05	12.70	25.40	1/4-28	16	979	20
	MM-5	MB-5	7.94	11.10	8.74	47.63	22.23	15.88	31.75	5/16-24	14	1,263	33
	MM-6	MB-6	9.53	12.70	10.31	49.23	25.40	18.26	31.75	3/8-24	12	1,776	51
	MM-7	MB-7	11.11	14.27	11.10	53.98	28.58	20.62	34.93	7/16-20	14	1,913	73
	MM-8	MB-8	12.70	15.88	12.70	61.93	33.32	23.80	38.10	1/2-20	12	3,021	113
	MM-10	MB-10	15.88	19.05	14.27	66.68	38.10	28.58	41.28	5/8-18	16	3,340	173
	MM-12	MB-12	19.05	22.23	17.45	73.03	44.45	33.32	44.45	3/4-16	14	5,225	273
*	MM-14-1	MB-14-1	22.23	22.23	17.45	85.73	50.80	33.32	47.63	7/8-14	12	10,361	411
2	MM-16	MB-16	25.40	34.93	25.40	104.78	69.85	47.63	53.98	1 1/4-12	17	19,750*	1,091
2	MM-16-1	MB-16-1	25.40	34.93	25.40	104.78	69.85	47.63	53.98	1-14	17	19,750	965
2	MM-16-2	MB-16-2	25.40	34.93	25.40	104.78	69.85	47.63	53.98	1-12	17	19,750	965

*Check for availability.
**Grease fitting not available.
1 Tolerance variation: "D" ±.020, "A" ±.020, "B" +.0035, −.0005
2 Tolerance variation: "D" ±.508, "A" ±.508, "B" +.0889, −.0127
3 Threads 6-32 UNC.

Units are supplied without grease fittings. When grease fittings are required, specify by adding suffix as designated.
Z Zerk type fitting Ex: MM-6Z
F Flush type fitting Ex: MM-6F
Load ratings apply only to rod ends without grease fittings. For load ratings with fittings, please consult our engineering department.
Solid shank add suffix "Y". Ex: MM-6Y.

MW & MG Series
Female Rod Ends
General Purpose · Precision





SPECIFICATIONS

BODY — Low carbon steel, protective coated for corrosion resistance. No. 16 series standard body is 4130 steel not heat treated.

RACE — Low carbon steel, protective coated for corrosion resistance.

BALL — Alloy steel, heat treated, hard chrome plated.

NOTES

All sizes available with studs upon request.

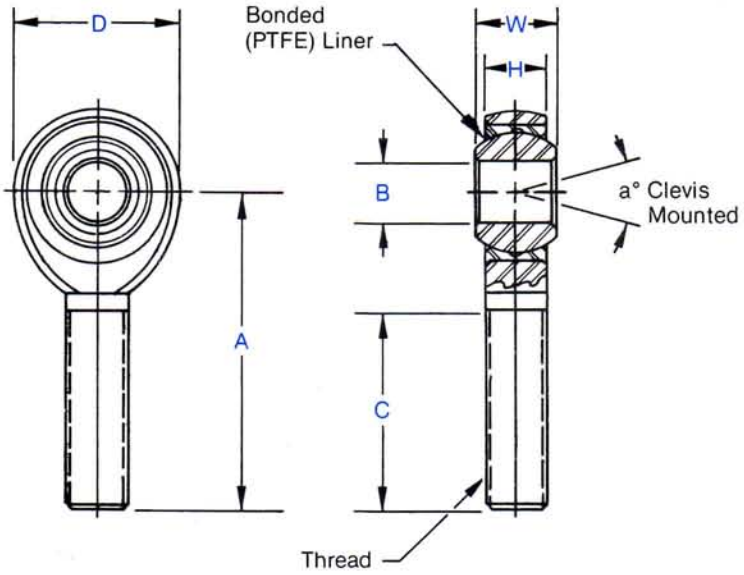
	Rod End No.		DIMENSIONS IN INCHES												
	Right Hand	Left Hand †	B +.0015 −.0005	W +.000 −.005	H ±.005	A ±.015	D ±.010	K ±.010	J ±.010	Ball Dia. Ref.	C +.062 −.031	Thread UNF-2B	a° Misalign. Angle	Radial Static Load Cap. Lbs.	Approx. Brg. Wt. Lbs.
**	MW-2	MG-2	.1250	.250	.187	.812	.500	.312	.250	.312	.437	6-32[3]	16	1,202	.019
	MW-3	MG-3	.1900	.312	.250	1.062	.625	.406	.312	.437	.562	10-32	13	1,531	.038
	MW-4	MG-4	.2500	.375	.281	1.312	.750	.469	.375	.500	.750	1/4-28	16	2,539	.059
	MW-5	MG-5	.3125	.437	.344	1.375	.875	.500	.437	.625	.750	5/16-24	14	3,133	.092
	MW-6	MG-6	.3750	.500	.406	1.625	1.000	.687	.562	.719	.937	3/8-24	12	3,915	.152
	MW-7	MG-7	.4375	.562	.437	1.812	1.125	.750	.625	.812	1.062	7/16-20	14	4,218	.198
	MW-8	MG-8	.5000	.625	.500	2.125	1.312	.875	.750	.937	1.187	1/2-20	12	6,660	.329
	MW-10	MG-10	.6250	.750	.562	2.500	1.500	1.000	.875	1.125	1.500	5/8-18	16	7,364	.477
	MW-12	MG-12	.7500	.875	.687	2.875	1.750	1.125	1.000	1.312	1.750	3/4-16	14	11,518	.723
*	MW-14-1	MG-14-1	.8750	.875	.687	3.500	2.000	1.312	1.187	1.312	1.812	7/8-14	12	22,843	1.030
1	MW-16	MG-16	1.0000	1.375	1.000	4.125	2.750	1.625	1.500	1.875	2.125	1 1/4-12	17	43,541	2.125
1	MW-16-1	MG-16-1	1.0000	1.375	1.000	4.125	2.750	1.625	1.500	1.875	2.125	1-14	17	43,541	2.410
1	MW-16-2	MG-16-2	1.0000	1.375	1.000	4.125	2.750	1.625	1.500	1.875	2.125	1-12	17	43,541	2.410

	Rod End No.		DIMENSIONS IN MILLIMETERS												
	Right Hand	Left Hand †	B +.0381 −.0127	W +.000 −.127	H ±.127	A ±.381	D ±.254	K ±.254	J ±.254	Ball Dia. Ref.	C +1.574 −.787	Thread UNF-2B	a° Misalign. Angle	Radial Static Load Cap. Kilograms	Approx. Brg. Wt. Grams
**	MW-2	MG-2	3.18	6.35	4.75	20.62	12.70	7.92	6.35	7.92	11.10	6-32[3]	16	545	9
	MW-3	MG-3	4.83	7.92	6.35	26.97	15.88	10.31	7.92	11.10	14.27	10-32	13	694	17
	MW-4	MG-4	6.35	9.53	7.14	33.32	19.05	11.91	9.53	12.70	19.05	1/4-28	16	1,152	27
	MW-5	MG-5	7.94	11.10	8.74	34.93	22.23	12.70	11.10	15.88	19.05	5/16-24	14	1,421	42
	MW-6	MG-6	9.53	12.70	10.31	41.28	25.40	17.45	14.27	18.26	23.80	3/8-24	12	1,776	69
	MW-7	MG-7	11.11	14.27	11.10	46.02	28.58	19.05	15.88	20.62	26.97	7/16-20	14	1,913	90
	MW-8	MG-8	12.70	15.88	12.70	53.98	33.32	22.23	19.05	23.80	30.15	1/2-20	12	3,021	149
	MW-10	MG-10	15.88	19.05	14.27	63.50	38.10	25.40	22.23	28.58	38.10	5/8-18	16	3,340	216
	MW-12	MG-12	19.05	22.23	17.45	73.03	44.45	28.58	25.40	33.32	44.45	3/4-16	14	5,225	328
*	MW-14-1	MG-14-1	22.23	22.23	17.45	88.90	50.80	33.32	30.15	33.32	46.02	7/8-14	12	10,361	467
2	MW-16	MG-16	25.40	34.93	25.40	104.78	69.85	41.28	38.10	47.63	53.98	1 1/4-12	17	19,750	964
2	MW-16-1	MG-16-1	25.40	34.93	25.40	104.78	69.85	41.28	38.10	47.63	53.98	1-14	17	19,750	1,093
2	MW-16-2	MG-16-2	25.40	34.93	25.40	104.78	69.85	41.28	38.10	47.63	53.98	1-12	17	19,750	1,093

*Check for availability.
**Grease fitting not available.
†Left hand units have identification groove near end of shank.
1 Tolerance variation: "D" ±.020, "A" ±.020, "B" +.0035, −.0005
2 Tolerance variation: "D" ±.508, "A" ±.508, "B" +.0889, −.0127
3 Threads 6-32 UNC.

Units are supplied without grease fittings. When grease fittings are required, specify by adding suffix as designated.
Z Zerk type fitting Ex: MW-6Z
F Flush type fitting Ex: MW-6F

MM-T & MB-T Series
Male Rod Ends (PTFE) Lined
General Purpose - Precision - Self-Lubricating



SPECIFICATIONS

BODY — Low carbon steel, protective coated for corrosion resistance. No. 16 series standard body is 4130 steel not heat treated.

RACE — Low carbon steel, protective coated for corrosion resistance.

BALL — Alloy steel, heat treated, hard chrome plated.

NOTES

Drilled hole in shank not available in 2, 3, 4, 5, and 16 bore sizes.

All sizes available with studs upon request.

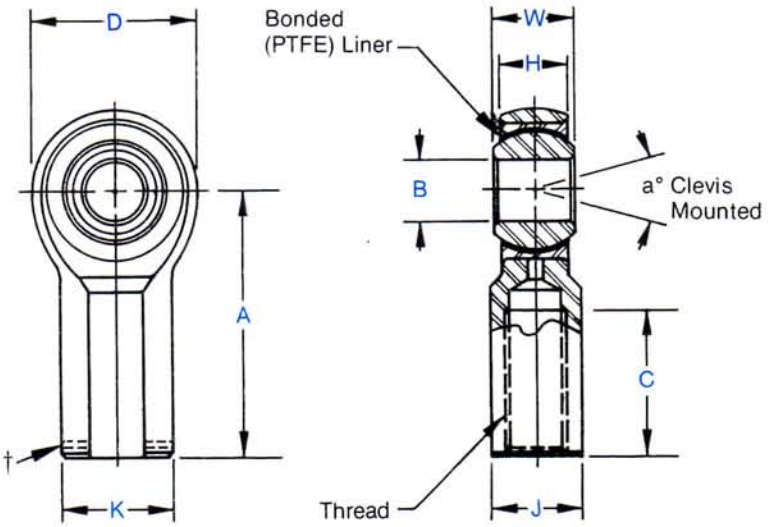
	Rod End No.		DIMENSIONS IN INCHES										
	Right Hand	Left Hand	B +.0015 -.0005	W +.000 -.005	H ±.005	A ±.015	D ±.010	Ball Dia. Ref.	C +.062 -.031	Thread UNF-3A	a° Misalign. Angle	Radial Static Load Capacity Lbs.	Approx. Brg. Wt. Lbs.
	MM-3T	MB-3T	.1900	.312	.250	1.250	.625	.437	.750	10-32	13	1,169	.028
	MM-4T	MB-4T	.2500	.375	.281	1.562	.750	.500	1.000	1/4-28	16	2,158	.043
	MM-5T	MB-5T	.3125	.437	.344	1.875	.875	.625	1.250	5/16-24	14	2,784	.072
	MM-6T	MB-6T	.3750	.500	.406	1.938	1.000	.719	1.250	3/8-24	12	3,915	.112
	MM-7T	MB-7T	.4375	.562	.437	2.125	1.125	.812	1.375	7/16-20	14	4,218	.160
	MM-8T	MB-8T	.5000	.625	.500	2.438	1.312	.937	1.500	1/2-20	12	6,660	.249
	MM-10T	MB-10T	.6250	.750	.562	2.625	1.500	1.125	1.625	5/8-18	16	7,364	.382
	MM-12T	MB-12T	.7500	.875	.687	2.875	1.750	1.312	1.750	3/4-16	14	11,518	.602
1	MM-16T	MB-16T	1.0000	1.375	1.000	4.125	2.750	1.875	2.125	1 1/4-12	17	43,541	2.406
1	MM-16T-1	MB-16T-1	1.0000	1.375	1.000	4.125	2.750	1.875	2.125	1-14	17	43,541	2.127
1	MM-16T-2	MB-16T-2	1.0000	1.375	1.000	4.125	2.750	1.875	2.125	1-12	17	43,541	2.127

	Rod End No.		DIMENSIONS IN MILLIMETERS										
	Right Hand	Left Hand	B +.0381 -.0127	W +.000 -.127	H ±.127	A ±.381	D ±.254	Ball Dia. Ref.	C +1.574 - .787	Thread UNF-3A	a° Misalign. Angle	Radial Static Load Capacity Kilograms	Approx. Brg. Wt. Grams
	MM-3T	MB-3T	4.83	7.92	6.35	31.75	15.88	11.10	19.05	10-32	13	530	13
	MM-4T	MB-4T	6.35	9.53	7.14	39.67	19.05	12.70	25.40	1/4-28	16	979	20
	MM-5T	MB-5T	7.94	11.10	8.74	47.63	22.23	15.88	31.75	5/16-24	14	1,263	33
	MM-6T	MB-6T	9.53	12.70	10.31	49.23	25.40	18.26	31.75	3/8-24	12	1,776	51
	MM-7T	MB-7T	11.11	14.27	11.10	53.98	28.58	20.62	34.93	7/16-20	14	1,913	73
	MM-8T	MB-8T	12.70	15.88	12.70	61.93	33.32	23.80	38.10	1/2-20	12	3,021	113
	MM-10T	MB-10T	15.88	19.05	14.27	66.68	38.10	28.58	41.28	5/8-18	16	3,340	173
	MM-12T	MB-12T	19.05	22.23	17.45	73.03	44.45	33.32	44.45	3/4-16	14	5,225	273
2	MM-16T	MB-16T	25.40	34.93	25.40	104.78	69.85	47.63	53.98	1 1/4-12	17	19,750	1,091
2	MM-16T-1	MB-16T-1	25.40	34.93	25.40	104.78	69.85	47.63	53.98	1-14	17	19,750	965
2	MM-16T-2	MB-16T-2	25.40	34.93	25.40	104.78	69.85	47.63	53.98	1-12	17	19,750	965

1 Tolerance variation: "D" ±.020, "A" ±.020, "B" +.0035, −.0005
2 Tolerance variation: "D" ±.508, "A" ±.508, "B" +.0889, −.0127

Load ratings apply only to rod ends without grease fittings. For load ratings with fittings, please consult our engineering department.
Solid shank add suffix "Y". Ex: MM-6TY.

MW-T & MG-T Series
Female Rod Ends (PTFE) Lined
General Purpose - Precision - Self-Lubricating



SPECIFICATIONS

BODY — Low carbon steel, protective coated for corrosion resistance. No. 16 series standard body is 4130 steel not heat treated.

RACE — Low carbon steel, protective coated for corrosion resistance.

BALL — Alloy steel, heat treated, hard chrome plated.

NOTES

All sizes available with studs upon request.

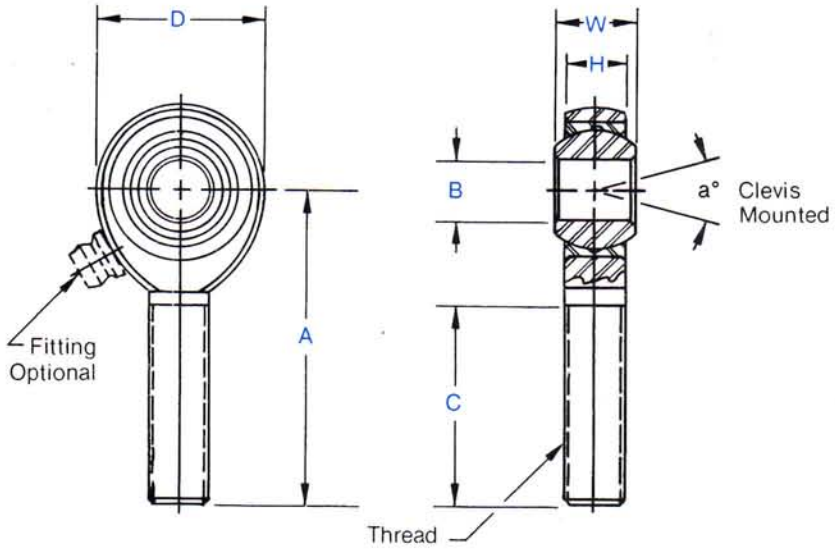
	Rod End No.		DIMENSIONS IN INCHES												
	Right Hand	Left Hand †	B +.0015 -.0005	W +.000 -.005	H ±.005	A ±.015	D ±.010	K ±.010	J ±.010	Ball Dia. Ref.	C +.062 -.031	Thread UNF-2B	a° Misalign. Angle	Radial Static Load Cap. Lbs.	Approx. Brg. Wt. Lbs.
	MW-3T	MG-3T	.1900	.312	.250	1.062	.625	.406	.312	.437	.562	10-32	13	1,531	.038
	MW-4T	MG-4T	.2500	.375	.281	1.312	.750	.469	.375	.500	.750	1/4-28	16	2,539	.059
	MW-5T	MG-5T	.3125	.437	.344	1.375	.875	.500	.437	.625	.750	5/16-24	14	3,133	.092
	MW-6T	MG-6T	.3750	.500	.406	1.625	1.000	.687	.562	.719	.937	3/8-24	12	3,915	.152
	MW-7T	MG-7T	.4375	.562	.437	1.812	1.125	.750	.625	.812	1.062	7/16-20	14	4,218	.198
	MW-8T	MG-8T	.5000	.625	.500	2.125	1.312	.875	.750	.937	1.187	1/2-20	12	6,660	.329
	MW-10T	MG-10T	.6250	.750	.562	2.500	1.500	1.000	.875	1.125	1.500	5/8-18	16	7,364	.477
	MW-12T	MG-12T	.7500	.875	.687	2.875	1.750	1.125	1.000	1.312	1.750	3/4-16	14	11,518	.723
1	MW-16T	MG-16T	1.0000	1.375	1.000	4.125	2.750	1.625	1.500	1.875	2.125	1 1/4-12	17	43,541	2.125
1	MW-16T-1	MG-16T-1	1.0000	1.375	1.000	4.125	2.750	1.625	1.500	1.875	2.125	1-14	17	43,541	2.410
1	MW-16T-2	MG-16T-2	1.0000	1.375	1.000	4.125	2.750	1.625	1.500	1.875	2.125	1-12	17	43,541	2.410

	Rod End No.		DIMENSIONS IN MILLIMETERS												
	Right Hand	Left Hand †	B +.0381 -.0127	W +.000 -.127	H ±.127	A ±.381	D ±.254	K ±.254	J ±.254	Ball Dia. Ref.	C +1.574 - .787	Thread UNF-2B	a° Misalign. Angle	Radial Static Load Cap. Kilograms	Approx. Brg. Wt. Grams
	MW-3T	MG-3T	4.83	7.92	6.35	26.97	15.88	10.31	7.92	11.10	14.27	10-32	13	694	17
	MW-4T	MG-4T	6.35	9.53	7.14	33.32	19.05	11.91	9.53	12.70	19.05	1/4-28	16	1,152	27
	MW-5T	MG-5T	7.94	11.10	8.74	34.93	22.23	12.70	11.10	15.88	19.05	5/16-24	14	1,421	42
	MW-6T	MG-6T	9.53	12.70	10.31	41.28	25.40	17.45	14.27	18.26	23.80	3/8-24	12	1,776	69
	MW-7T	MG-7T	11.11	14.27	11.10	46.02	28.58	19.05	15.88	20.62	26.97	7/16-20	14	1,913	90
	MW-8T	MG-8T	12.70	15.88	12.70	53.98	33.32	22.23	19.05	23.80	30.15	1/2-20	12	3,021	149
	MW-10T	MG-10T	15.88	19.05	14.27	63.50	38.10	25.40	22.23	28.58	38.10	5/8-18	16	3,340	216
	MW-12T	MG-12T	19.05	22.23	17.45	73.03	44.45	28.58	25.40	33.32	44.45	3/4-16	14	5,225	328
2	MW-16T	MG-16T	25.40	34.93	25.40	104.78	69.85	41.28	38.10	47.63	53.98	1 1/4-12	17	19,750	964
2	MW-16T-1	MG-16T-1	25.40	34.93	25.40	104.78	69.85	41.28	38.10	47.63	53.98	1-14	17	19,750	1,093
2	MW-16T-2	MG-16T-2	25.40	34.93	25.40	104.78	69.85	41.28	38.10	47.63	53.98	1-12	17	19,750	1,093

1 Tolerance variation: "D" ±.020, "A" ±.020, "B" +.0035, −.0005
2 Tolerance variation: "D" ±.508, "A" ±.508, "B" +.0889, −.0127

†Left hand units have identification groove near end of shank.

KM & KB Series
Male Rod Ends
General Purpose · Precision · Wear Resistant



SPECIFICATIONS

BODY — Low carbon steel, protective coated for corrosion resistance. No. 16 series standard body is 4130 steel not heat treated.

RACE — Steel alloy, heat treated, protective coated for corrosion resistance.

BALL — Alloy steel, heat treated, hard chrome plated.

NOTES

Drilled hole in shank not available in 3, 4, 5 and 16 bore sizes.

All sizes available with studs upon request.

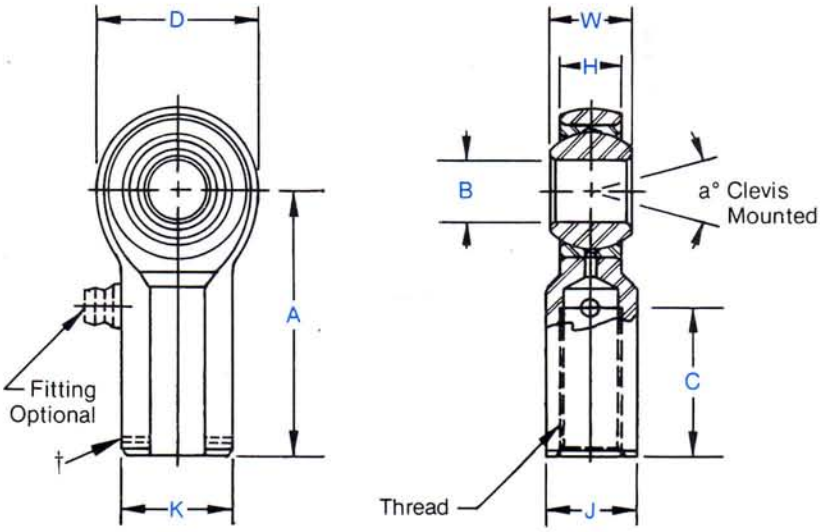
	Rod End No.		DIMENSIONS IN INCHES										
	Right Hand	Left Hand	B +.0015 -.0005	W +.000 -.005	H ±.005	A ±.015	D ±.010	Ball Dia. Ref.	C +.062 -.031	Thread UNF-3A	a° Misalign. Angle	Radial Static Load Capacity Lbs.	Approx. Brg. Wt. Lbs.
	KM-3	KB-3	.1900	.312	.250	1.250	.625	.437	.750	10-32	13	1,169	.028
	KM-4	KB-4	.2500	.375	.281	1.562	.750	.500	1.000	1/4-28	16	2,158	.043
	KM-5	KB-5	.3125	.437	.344	1.875	.875	.625	1.250	5/16-24	14	2,784	.072
	KM-6	KB-6	.3750	.500	.406	1.938	1.000	.719	1.250	3/8-24	12	3,915	.112
	KM-7	KB-7	.4375	.562	.437	2.125	1.125	.812	1.375	7/16-20	14	4,218	.160
	KM-8	KB-8	.5000	.625	.500	2.438	1.312	.937	1.500	1/2-20	12	6,660	.249
	KM-10	KB-10	.6250	.750	.562	2.625	1.500	1.125	1.625	5/8-18	16	7,364	.382
	KM-12	KB-12	.7500	.875	.687	2.875	1.750	1.312	1.750	3/4-16	14	11,518	.602
1	KM-16	KB-16	1.0000	1.375	1.000	4.125	2.750	1.875	2.125	1 1/4-12	14	43,541	2.406
1	KM-16-1	KB-16-1	1.0000	1.375	1.000	4.125	2.750	1.875	2.125	1-14	14	43,541	2.127
1	KM-16-2	KB-16-2	1.0000	1.375	1.000	4.125	2.750	1.875	2.125	1-12	14	43,541	2.127

	Rod End No.		DIMENSIONS IN MILLIMETERS										
	Right Hand	Left Hand	B +.0381 -.0127	W +.000 -.127	H ±.127	A ±.381	D ±.254	Ball Dia. Ref.	C +1.574 -.787	Thread UNF-3A	a° Misalign. Angle	Radial Static Load Capacity Kilograms	Approx. Brg. Wt. Grams
	KM-3	KB-3	4.83	7.92	6.35	31.75	15.88	11.10	19.05	10-32	13	530	13
	KM-4	KB-4	6.35	9.53	7.14	39.67	19.05	12.70	25.40	1/4-28	16	979	20
	KM-5	KB-5	7.94	11.10	8.74	47.63	22.23	15.88	31.75	5/16-24	14	1,263	33
	KM-6	KB-6	9.53	12.70	10.31	49.23	25.40	18.26	31.75	3/8-24	12	1,776	51
	KM-7	KB-7	11.11	14.27	11.10	53.98	28.58	20.62	34.93	7/16-20	14	1,913	73
	KM-8	KB-8	12.70	15.88	12.70	61.93	33.32	23.80	38.10	1/2-20	12	3,021	113
	KM-10	KB-10	15.88	19.05	14.27	66.68	38.10	28.58	41.28	5/8-18	16	3,340	173
	KM-12	KB-12	19.05	22.23	17.45	73.03	44.45	33.32	44.45	3/4-16	14	5,225	273
2	KM-16	KB-16	25.40	34.93	25.40	104.78	69.85	47.63	53.98	1 1/4-12	14	19,750	1,091
2	KM-16-1	KB-16-1	25.40	34.93	25.40	104.78	69.85	47.63	53.98	1-14	14	19,750	965
2	KM-16-2	KB-16-2	25.40	34.93	25.40	104.78	69.85	47.63	53.98	1-12	14	19,750	965

1 Tolerance variation: "D" ±.020, "A" ±.020, "B" +.0035, −.0005
2 Tolerance variation: "D" ±.508, "A" ±.508, "B" +.0889, −.0127

Units are supplied without grease fittings. When grease fittings are required, specify by adding suffix as designated.
Z Zerk type fitting Ex: KM-6Z
F Flush type fitting Ex: KM-6F
Load ratings apply only to rod ends without grease fittings. For load ratings with fittings, please consult our engineering department.
Solid shank add suffix "Y". Ex: KM-6Y.

KW & KG Series
Female Rod Ends
General Purpose · Precision · Wear Resistant



SPECIFICATIONS

BODY — Low carbon steel, protective coated for corrosion resistance. No. 16 series standard body is 4130 steel not heat treated.

RACE — Steel alloy, heat treated, protective coated for corrosion resistance.

BALL — Alloy steel, heat treated, hard chrome plated.

NOTES

All sizes available with studs upon request.

	Rod End No.		DIMENSIONS IN INCHES												
	Right Hand	Left Hand †	B +.0015 −.0005	W +.000 −.005	H ±.005	A ±.015	D ±.010	K ±.010	J ±.010	Ball Dia. Ref.	C +.062 −.031	Thread UNF-2B	a° Misalign. Angle	Radial Static Load Cap. Lbs.	Approx. Brg. Wt. Lbs.
	KW-3	KG-3	.1900	.312	.250	1.062	.625	.406	.312	.437	.562	10-32	13	1,531	.038
	KW-4	KG-4	.2500	.375	.281	1.312	.750	.469	.375	.500	.750	1/4-28	16	2,539	.059
	KW-5	KG-5	.3125	.437	.344	1.375	.875	.500	.437	.625	.750	5/16-24	14	3,133	.092
	KW-6	KG-6	.3750	.500	.406	1.625	1.000	.687	.562	.719	.937	3/8-24	12	3,915	.152
	KW-7	KG-7	.4375	.562	.437	1.812	1.125	.750	.625	.812	1.062	7/16-20	14	4,218	.198
	KW-8	KG-8	.5000	.625	.500	2.125	1.312	.875	.750	.937	1.187	1/2-20	12	6,660	.329
	KW-10	KG-10	.6250	.750	.562	2.500	1.500	1.000	.875	1.125	1.500	5/8-18	16	7,364	.477
	KW-12	KG-12	.7500	.875	.687	2.875	1.750	1.125	1.000	1.312	1.750	3/4-16	14	11,518	.723
1	KW-16	KG-16	1.0000	1.375	1.000	4.125	2.750	1.625	1.500	1.875	2.125	1 1/4-12	14	43,541	2.125
1	KW-16-1	KG-16-1	1.0000	1.375	1.000	4.125	2.750	1.625	1.500	1.875	2.125	1-14	14	43,541	2.410
1	KW-16-2	KG-16-2	1.0000	1.375	1.000	4.125	2.750	1.625	1.500	1.875	2.125	1-12	14	43,541	2.410

	Rod End No.		DIMENSIONS IN MILLIMETERS												
	Right Hand	Left Hand †	B +.0381 −.0127	W +.000 −.127	H ±.127	A ±.381	D ±.254	K ±.254	J ±.254	Ball Dia. Ref.	C +1.574 −.787	Thread UNF-2B	a° Misalign. Angle	Radial Static Load Cap. Kilograms	Approx. Brg. Wt. Grams
	KW-3	KG-3	4.83	7.92	6.35	26.97	15.88	10.31	7.92	11.10	14.27	10-32	13	694	17
	KW-4	KG-4	6.35	9.53	7.14	33.32	19.05	11.91	9.53	12.70	19.05	1/4-28	16	1,152	27
	KW-5	KG-5	7.94	11.10	8.74	34.93	22.23	12.70	11.10	15.88	19.05	5/16-24	14	1,421	42
	KW-6	KG-6	9.53	12.70	10.31	41.28	25.40	17.45	14.27	18.26	23.80	3/8-24	12	1,776	69
	KW-7	KG-7	11.11	14.27	11.10	46.02	28.58	19.05	15.88	20.62	26.97	7/16-20	14	1,913	90
	KW-8	KG-8	12.70	15.88	12.70	53.98	33.32	22.23	19.05	23.80	30.15	1/2-20	12	3,021	149
	KW-10	KG-10	15.88	19.05	14.27	63.50	38.10	25.40	22.23	28.58	38.10	5/8-18	16	3,340	216
	KW-12	KG-12	19.05	22.23	17.45	73.03	44.45	28.58	25.40	33.32	44.45	3/4-16	14	5,225	328
2	KW-16	KG-16	25.40	34.93	25.40	104.78	69.85	41.28	38.10	47.63	53.98	1 1/4-12	14	19,750	964
2	KW-16-1	KG-16-1	25.40	34.93	25.40	104.78	69.85	41.28	38.10	47.63	53.98	1-14	14	19,750	1,093
2	KW-16-2	KG-16-2	25.40	34.93	25.40	104.78	69.85	41.28	38.10	47.63	53.98	1-12	14	19,750	1,093

†Left hand units have identification groove near end of shank.

1 Tolerance variation: "D" ±.020, "A" ±.020, "B" +.0035, −.0005

2 Tolerance variation: "D" ±.508, "A" ±.508, "B" +.0889, −.0127

Units are supplied without grease fittings. When grease fittings are required, specify by adding suffix as designated.

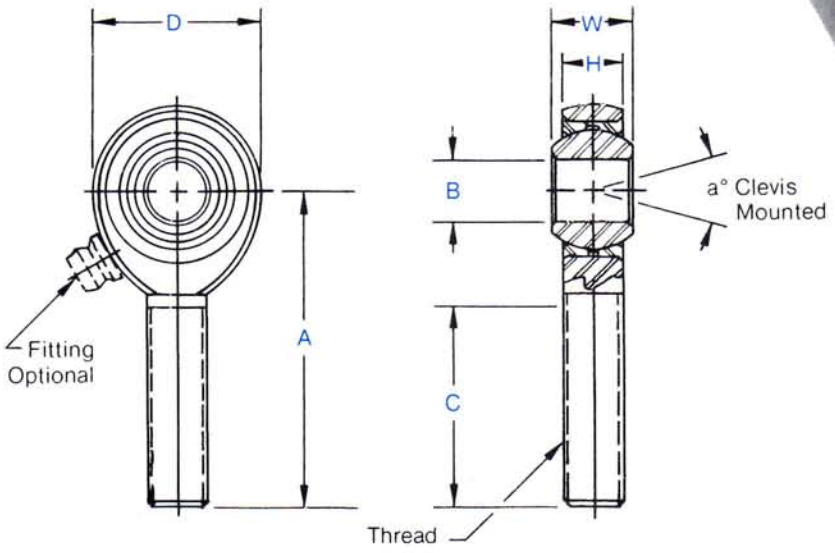
Z Zerk type fitting Ex: KW-6Z

F Flush type fitting Ex: KW-6F

Large Bore KM-Series
Male Rod Ends
General Purpose — Precision — Wear Resistant
(PTFE Liners Available)

ROD ENDS

1¼", 1½" and 2" SIZES



SPECIFICATIONS
BODY — Steel alloy, protective coated for corrosion resistance.
RACE — 52100 steel, heat treated — MOS_2 coated.
BALL — 52100 steel, heat treated — MOS_2 coated.

Rod End No.		DIMENSIONS IN INCHES										
Right Hand	Left Hand	B + .0000 − .0005	W + .000 − .005	H ± .010	A ± .020	D ± .020	Ball Dia. Ref.	C + .062 − .031	Thread UNF-3A	a° Misalign. Angle	Radial Static Load Capacity Lbs.	Approx. Brg. Wt. Lbs.
KM-20-1	KB-20-1	1.2500	1.093	.937	4.125	2.750	1.795	2.125	1 1/4-12	7.0	44,500	2.406
KM-24-1	KB-24-1	1.5000	1.312	1.125	5.375	3.500	2.155	3.000	1 1/2-12	6.5	96,510	4.75
KM-32-1	KB-32-1	2.0000	1.750	1.500	8.000	5.000	2.875	4.625	2-12	6.0	225,457	14.25

Rod End No.		DIMENSIONS IN MILLIMETERS										
Right Hand	Left Hand	B + .0000 − .0127	W + .000 − .127	H ± .254	A ± .508	D ± .508	Ball Dia. Ref.	C + 1.574 − .787	Thread UNF-3A	a° Misalign. Angle	Radial Static Load Capacity Kilograms	Approx. Brg. Wt. Kilograms
KM-20-1	KB-20-1	31.75	27.76	23.80	104.78	69.85	45.60	53.98	1 1/4-12	7.0	20,185	1.091
KM-24-1	KB-24-1	38.10	33.32	28.57	136.52	88.90	54.73	66.67	1 1/2-12	6.5	43,776	2.16
KM-32-1	KB-32-1	50.80	44.45	38.10	203.20	127.00	73.02	101.60	2-12	6.0	102,265	6.48

Consult factory for PTFE lined bearing dimensions.

Units are supplied without grease fittings. When grease fittings are required, specify by adding suffix as designated.

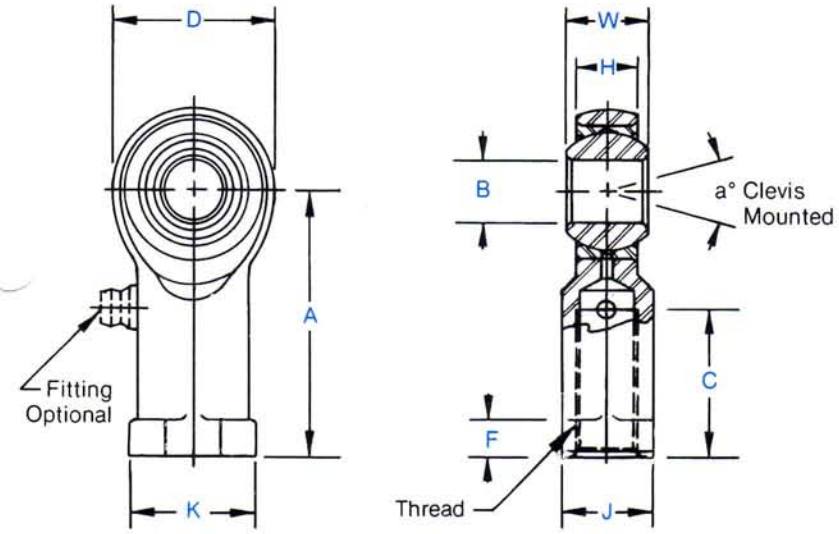
Z Zerk type fiting Ex: KM-24Z-1
F Flush type fitting Ex: KM-24F-1

Load ratings apply only to rod ends without grease fittings. For load ratings with fittings, please consult our engineering department.

Large Bore KW-Series
Female Rod Ends
General Purpose — Precision — Wear Resistant
(PTFE Liners Available)

ROD ENDS

1¼", 1½" and 2" SIZES



SPECIFICATIONS
BODY — Steel alloy, protective coated for corrosion resistance.
RACE — 52100 steel, heat treated — MOS_2 coated
BALL — 52100 steel, heat treated — MOS_2 coated.

Rod End No.		DIMENSIONS IN INCHES													
Right Hand	Left Hand	B +.0000 −.0005	W +.000 −.005	H ±.010	A ±.020	D ±.020	K ±.030	J ±.030	F ±.030	Ball Dia. Ref.	C +.062 −.031	Thread UNF-2B	a° Misalign. Angle	Radial Static Load Lbs.	Approx. Brg. Wt. Lbs.
KW-20-1	KG-20-1	1.2500	1.093	.937	4.125	2.750	1.625	1.500	.500	1.795	2.125	1 1/4-12	7.0	44,500	2.125
KW-24-1	KG-24-1	1.5000	1.312	1.125	5.375	3.500	2.250	2.000	.875	2.155	2.625	1 1/2-12	6.5	96,510	6.50
KW-32-1	KG-32-1	2.0000	1.750	1.500	8.000	5.000	3.125	2.750	2.062	2.875	4.000	2-12	6.0	225,457	15.00

Rod End No.		DIMENSIONS IN MILLIMETERS													
Right Hand	Left Hand	B +.0000 −.0127	W +.000 −.127	H ±.254	A ±.508	D ±.508	K ±.762	J ±.762	F ±.762	Ball Dia. Ref.	C +1.574 −.787	Thread UNF-2B	a° Misalign. Angle	Radial Static Load Cap. Kilograms	Approx. Brg. Wt. Kilograms
KW-20-1	KG-20-1	31.75	27.76	23.80	104.78	69.85	41.28	38.10	12.70	45.60	53.98	1 1/4-12	7.0	20,185	.964
KW-24-1	KG-24-1	38.10	33.32	28.57	136.52	88.90	57.15	50.80	22.22	54.73	66.67	1 1/2-12	6.5	43,776	2.950
KW-32-1	KG-32-1	50.80	44.45	38.10	203.20	127.00	79.37	69.85	52.37	73.02	101.60	2-12	6.0	102,265	6.820

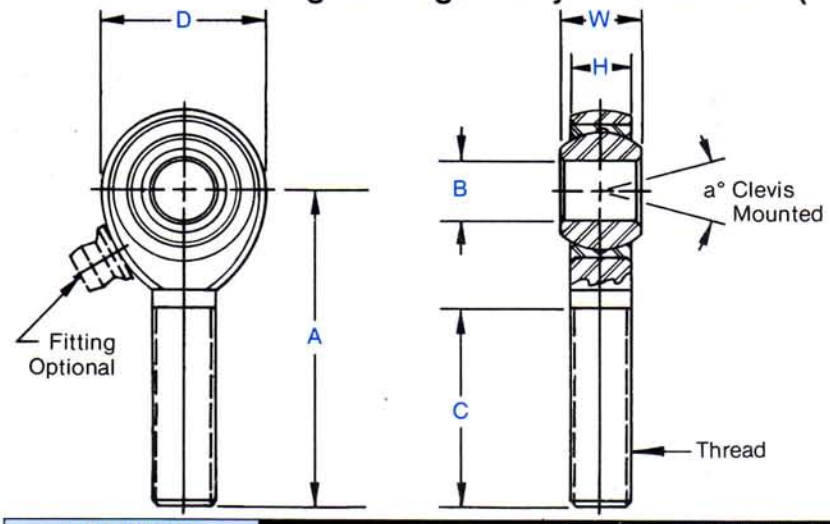
Consult factory for PTFE lined bearing dimensions.

Units are supplied without grease fittings. When grease fittings are required, specify by adding suffix as designated.

Z Zerk type fiting Ex: KW-24Z-1
F Flush type fitting Ex: KW-24F-1

AM & AB Series Male Rod Ends

High Strength Alloy — Precision (PTFE Liners Available)



SPECIFICATIONS

BODY — Steel alloy heat treated, protective coated for corrosion resistance.

RACE — Steel alloy heat treated, protective coated for corrosion resistance. (Low carbon steel with PTFE liners.)

BALL — Alloy steel, heat treated, hard chrome plated.

NOTES

Units in this series will be magnafluxed on special request only.

	Rod End No.		DIMENSIONS IN INCHES										
	Right Hand	Left Hand	B +.0015 −.0005	W +.000 −.005	H ±.005	A ±.010	D ±.010	Ball Dia. Ref.	C +.062 −.031	Thread UNF-3A	a° Misalign. Angle	Radial Static Load Capacity Lbs.	Approx. Brg. Wt. Lbs.
	AM-3	AB-3	.1900	.312	.250	1.250	.625	.437	.750	10-32	13	2,851	.028
	AM-4	AB-4	.2500	.375	.281	1.562	.750	.500	1.000	1/4-28	16	5,260	.043
	AM-5	AB-5	.3125	.437	.344	1.875	.875	.625	1.250	5/16-24	14	7,639	.072
	AM-6	AB-6	.3750	.500	.406	1.938	1.000	.719	1.250	3/8-24	12	9,544	.112
	AM-7	AB-7	.4375	.562	.437	2.125	1.125	.812	1.375	7/16-20	14	10,285	.160
	AM-8	AB-8	.5000	.625	.500	2.438	1.312	.937	1.500	1/2-20	12	16,238	.249
	AM-10	AB-10	.6250	.750	.562	2.625	1.500	1.125	1.625	5/8-18	16	17,955	.382
	AM-12	AB-12	.7500	.875	.687	2.875	1.750	1.312	1.750	3/4-16	14	28,081	.602
	AM-12-20	AB-12-20	.7500	.875	.687	2.875	1.750	1.312	1.750	7/8-14	14	28,081	.720
	AM-14-1	AB-14-1	.8750	.875	.687	3.375	2.000	1.312	1.875	7/8-14	12	55,692	.906
1	AM-16	AB-16	1.0000	1.375	1.000	4.125	2.750	1.875	2.125	1-1/4-12	17	76,200	2.406
1	AM-16-1	AB-16-1	1.0000	1.375	1.000	4.125	2.750	1.875	2.125	1-14	17	76,200	2.127
1	AM-16-2	AB-16-2	1.0000	1.375	1.000	4.125	2.750	1.875	2.125	1-12	17	76,200	2.127
2	AM-20-1	AB-20-1	1.2500	1.093	.937	4.125	2.750	1.795	2.125	1-1/4-12	7	79,728	2.406
2	AM-24-1	AB-24-1	1.5000	1.312	1.125	5.375	3.500	2.155	3.000	1 1/2-12	6.50	138,826	4.750

	Rod End No.		DIMENSIONS IN MILLIMETERS										
	Right Hand	Left Hand	B +.0381 −.0127	W +.000 −.127	H ±.127	A ±.254	D ±.254	Ball Dia. Ref.	C +1.574 −.787	Thread UNF-3A	a° Misalign. Angle	Radial Static Load Capacity Kilograms	Approx. Brg. Wt. Grams
	AM-3	AB-3	4.83	7.92	6.35	31.75	15.88	11.10	19.05	10-32	13	1,293	13
	AM-4	AB-4	6.35	9.53	7.14	39.67	19.05	12.70	25.40	1/4-28	16	2,386	20
	AM-5	AB-5	7.94	11.10	8.74	47.63	22.23	15.88	31.75	5/16-24	14	3,465	33
	AM-6	AB-6	9.53	12.70	10.31	49.23	25.40	18.26	31.75	3/8-24	12	4.329	51
	AM-7	AB-7	11.11	14.27	11.10	53.98	28.58	20.62	34.93	7/16-20	14	4,665	73
	AM-8	AB-8	1270	15.88	12.70	61.93	33.32	23.80	38.10	1/2-20	12	7,366	113
	AM-10	AB-10	15.88	19.05	14.27	66.68	38.10	28.50	41.28	5/8-18	16	8.144	173
	AM-12	AB-12	19.05	22.23	17.45	73.03	44.45	33.32	44.45	3/4-16	14	12,738	273
	AM-12-20	AB-12-20	22.23	22.23	17.45	73.03	44.45	33.32	44.45	7/8-14	14	12,738	273
	AM-14-1	AB-14-1	22.23	22.23	17.45	85.73	50.80	33.32	47.63	7/8-14	12	25,258	421
3	AM-16	AB-16	25.40	34.93	25.40	104.78	69.85	47.63	53.98	1-1/4-12	17	34,564	1,091
3	AM-16-1	AB-16-1	25.40	34.93	25.40	104.78	69.85	47.63	53.98	1-14	17	34,564	965
3	AM-16-2	AB-16-2	25.40	34.93	25.40	104.78	69.85	47.63	53.98	1-12	17	34,564	965
4	AM-20-1	AB-20-1	31.75	27.76	23.80	104.78	69.85	45.60	53.98	1-1/4-12	7	36,165	1,091
4	AM-24-1	AB-24-1	38.1000	33.324	28.575	136.525	88.900	54.737	66.675	1-1/2-12	6.50	62.971	2,160

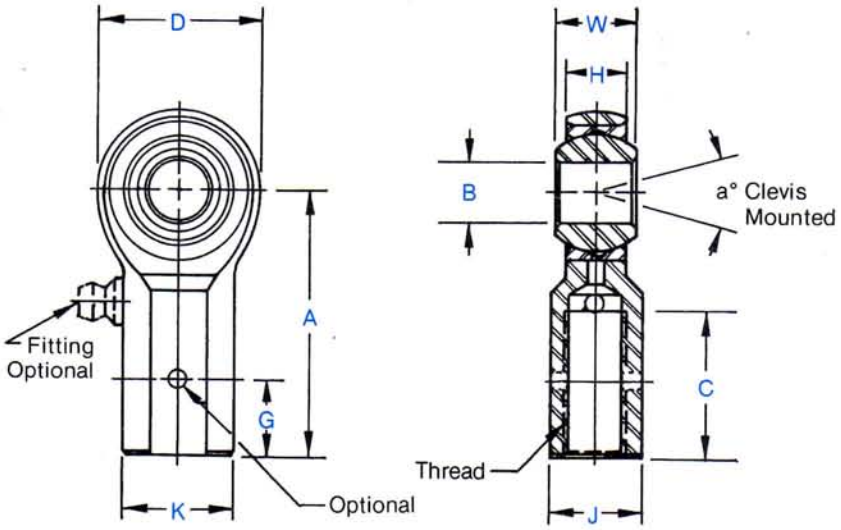
1 Tolerance variation: "D" ±.020, "A" ±.020, "B" +.0035, −.0005 Check for availability.
2 Tolerance variation: "D" ±.020, "A" ±.020, "B" +.0000, −.0010 Check for availability.
3 Tolerance variation: "D" ±.508, "A" ±.508, "B" +.0889, −.0127
4 Tolerance variation: "D" ±.508, "A" ±.508, "B" +.0000, −.0254

Units are supplied without grease fittings. When grease fittings are required, specify by adding suffix as designated.

Z	Zerk type fiting	Ex: AM-6Z
F	Flush type fitting	Ex: AM-6F
T	PTFE liner	Ex: AM-6T

Load ratings apply only to rod ends without grease fittings. For load ratings with fittings, please consult our engineering department.

AW & AG Series Female Rod Ends
High Strength Alloy — Precision (PTFE Liners Available)



SPECIFICATIONS

BODY — Steel alloy heat treated, protective coated for corrosion resistance.

RACE — Steel alloy heat treated, protective coated for corrosion resistance. (Low carbon steel with PTFE liners.)

BALL — Alloy steel, heat treated, hard chrome plated.

NOTES

Units in this series will be magnafluxed on special request only.

	Rod End No.		DIMENSIONS IN INCHES													
	Right Hand	Left Hand	B +.0015 −.0005	W +.000 −.005	H ±.005	A ±.010	D ±.010	K ±.010	J ±.010	G ±.010	Ball Dia. Ref.	C +.062 −.031	Thread UNF-3B	a° Misalign. Angle	Radial Static Load Cap. Lbs.	Approx. Brg. Wt. Lbs.
	AW-3	AG-3	.1900	.312	.250	1.062	.625	.406	.312	.312	.437	.562	10-32	13	3,733	.038
	AW-4	AG-4	.2500	.375	.281	1.312	.750	.469	.375	.312	.500	.750	1/4-28	16	6,190	.059
	AW-5	AG-5	.3125	.437	.344	1.375	.875	.500	.437	.406	.625	.750	5/16-24	14	7,639	.092
	AW-6	AG-6	.3750	.500	.406	1.625	1.000	.687	.562	.469	.719	.937	3/8-24	12	9,544	.152
	AW-7	AG-7	.4375	.562	.437	1.812	1.125	.750	.625	.531	.812	1.062	7/16-20	14	10,285	.198
	AW-8	AG-8	.5000	.625	.500	2.125	1.312	.875	.750	.594	.937	1.187	1/2-20	12	15,336	.329
	AW-10	AG-10	.6250	.750	.562	2.500	1.500	1.000	.875	.750	1.125	1.500	5/8-18	16	17,955	.477
	AW-12	AG-12	.7500	.875	.687	2.875	1.750	1.125	1.000	.875	1.312	1.750	3/4-16	14	28,081	.723
1	AW-16	AG-16	1.0000	1.375	1.000	4.125	2.750	1.625	1.500	1.250	1.875	2.125	1 1/4-12	17	76,200	2.125
1	AW-16-1	AG-16-1	1.0000	1.375	1.000	4.125	2.750	1.625	1.500	1.250	1.875	2.125	1-14	17	76,200	2.410
1	AW-16-2	AG-16-2	1.0000	1.375	1.000	4.125	2.750	1.625	1.500	1.250	1.875	2.125	1-12	17	76,200	2.410
2	AW-20-1	AG-20-1	1.2500	1.093	.937	4.125	2.750	1.625	1.500	1.250	1.795	2.125	1 1/4-12	7	79,728	2.125
2	AW-24-1	AG-24-1	1.5000	1.312	1.125	5.375	3.500	2.250	2.000	1.500	2.155	2.625	1 1/2-12	6.50	138,826	6.500

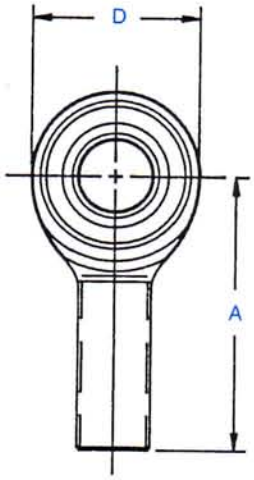
	Rod End No.		DIMENSIONS IN MILLIMETERS													
	Right Hand	Left Hand	B +.0381 −.0127	W +.000 −.127	H ±.127	A ±.254	D ±.254	K ±.254	J ±.254	G ±.254	Ball Dia. Ref.	C +1.574 −.787	Thread UNF-3B	a° Misalign. Angle	Radial Static Load Cap. Kilograms	Approx. Brg. Wt. Grams
	AW-3	AG-3	4.83	7.92	6.35	26.97	15.88	10.31	7.92	7.92	11.10	14.27	10-32	13	1,693	17
	AW-4	AG-4	6.35	9.53	7.14	33.32	19.05	11.91	9.53	7.92	12.70	19.05	1/4-28	16	2,808	27
	AW-5	AG-5	7.94	11.10	8.74	34.93	22.23	12.70	11.10	10.31	15.88	19.05	5/16-24	14	3,465	42
	AW-6	AG-6	9.53	12.70	10.31	41.28	25.40	17.45	14.27	11.91	18.26	23.80	3/8-24	12	4,329	69
	AW-7	AG-7	11.11	14.27	11.10	46.02	28.58	19.05	15.88	13.49	20.62	26.97	7/16-20	14	4,665	90
	AW-8	AG-8	12.70	15.88	12.70	53.98	33.32	22.23	19.05	15.09	23.80	30.15	1/2-20	12	6,956	149
	AW-10	AG-10	15.88	19.05	14.27	63.50	38.10	25.40	22.23	19.05	28.58	38.10	5/8-18	16	8,144	216
	AW-12	AG-12	19.05	22.23	17.45	73.03	44.45	28.58	25.40	22.23	33.32	44.45	3/4-16	14	12,738	328
3	AW-16	AG-16	25.40	34.93	25.40	104.78	69.85	41.28	38.10	31.75	47.63	53.98	1 1/4-12	17	34,564	964
3	AW-16-1	AG-16-1	25.40	34.93	25.40	104.78	69.85	41.28	38.10	31.75	47.63	53.98	1-14	17	34,564	1,093
3	AW-16-2	AG-16-2	25.40	34.93	25.40	104.78	69.85	41.28	38.10	31.75	47.63	53.98	1-12	17	34,564	1,093
4	AW-20-1	AG-20-1	31.75	27.76	23.80	104.78	69.85	41.28	38.10	31.75	45.60	53.98	1 1/4-12	7	36,165	964
4	AW-24-1	AG-24-1	38.1000	33.324	28.575	136.525	88.900	57.150	50.800	38.10	54.737	66.675	1 1/2-12	6.50	62,971	2,950

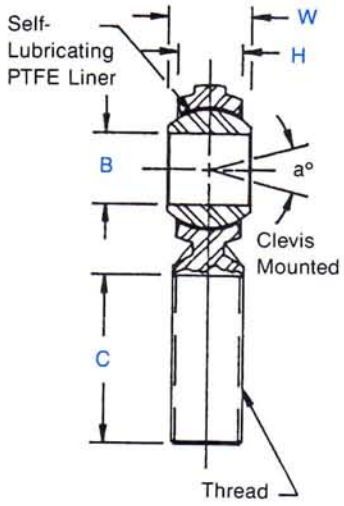
1 Tolerance variation: "D" ±.020, "A" ±020, "B" +.0035, −.0005 Check for availability.
2 Tolerance variation: "D" ±.020, "A" ±020, "B" +.0000, −.0010 Check for availability.
3 Tolerance variation: "D" ±.508, "A" ±508, "B" +.0889, −.0127
4 Tolerance variation: "D" ±.508, "A" ±508, "B" +.0000, −.0254
5 Above Notes 1, 2, 3, 4 all have 2B threads.

Units are supplied without grease fittings. When grease fittings are required, specify by adding suffix as designated.

Z	Zerk type fiting	Ex: AW-6Z
F	Flush type fitting	Ex: AW-6F
T	PTFE liner	Ex: AW-6T

CM-ET & CB-ET Series
Stainless Steel Male Rod Ends (PTFE) Lined
Corrosion Resistant — Precision — Self-Lubricating





SPECIFICATIONS

BODY — 17-4 PH stainless steel (AMS 5342).

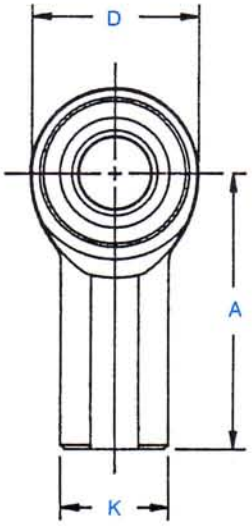
BALL — 440 C stainless steel (AMS 5630) heat treated, chrome plated.

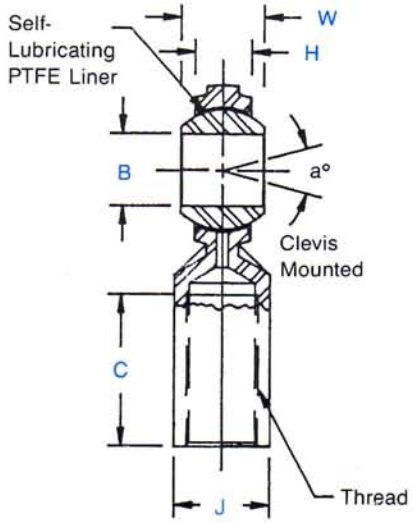
Rod End No.		DIMENSIONS IN INCHES									
Right Hand	Left Hand	B + .0000 − .0005	W + .000 − .005	H Ref.	A ± .015	D Ref.	Ball Dia. Ref.	C + .062 − .031	Thread UNF-3A	a° Misalign. Angle	Radial Static Load Capacity Lbs.
CM-5ET*	CB-5ET*	.3125	.437	.312	1.875	.875	.593	1.250	5/16-24	22	6,451
CM-6ET*	CB-6ET*	.3750	.500	.359	1.938	1.000	.687	1.250	3/8-24	22	8,627
CM-7ET*	CB-7ET*	.4375	.562	.406	2.125	1.125	.781	1.375	7/16-20	21	9,370
CM-8ET	CB-8ET	.5000	.625	.453	2.438	1.312	.875	1.500	1/2-20	20	15,130
CM-10ET	CB-10ET	.6250	.750	.484	2.625	1.500	1.062	1.625	5/8-18	26	16,922
CM-12ET	CB-12ET	.7500	.875	.593	2.875	1.750	1.250	1.750	3/4-16	24	25,549

Rod End No.		DIMENSIONS IN MILLIMETERS									
Right Hand	Left Hand	B + .0000 − .0127	W + .000 − .127	H Ref.	A ± .381	D ± .254	Ball Dia. Ref.	C + 1.574 − .787	Thread UNF-3A	a° Misalign. Angle	Radial Static Load Capacity Kilograms
CM-5ET*	CB-5ET*	7.94	11.10	7.92	47.63	22.23	15.06	31.75	5/16-24	22	2,926
CM-6ET*	CB-6ET*	9.53	12.70	9.12	49.23	25.40	17.45	31.75	3/8-24	22	3,913
CM-7ET*	CB-7ET*	11.11	14.27	10.31	53.98	28.58	19.84	34.93	7/16-20	21	4,250
CM-8ET	CB-8ET	12.70	15.88	11.50	61.93	33.32	22.23	38.10	1/2-20	20	6,863
CM-10ET	CB-10ET	15.88	19.05	12.29	66.68	38.10	26.97	41.28	5/8-18	26	7,676
CM-12ET	CB-12ET	19.05	22.23	15.06	73.03	44.45	31.75	44.45	3/4-16	24	11,589

*Check for availability

CW-ET & CG-ET Series
Stainless Steel Female Rod Ends (PTFE) Lined
Corrosion Resistant — Precision — Self-Lubricating





SPECIFICATIONS

BODY — 17-4 PH stainless steel (AMS 5342).

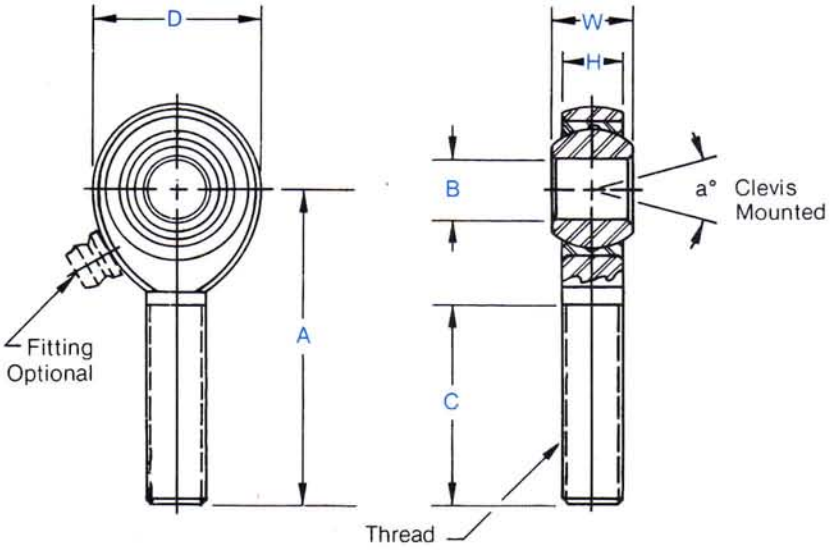
BALL — 440 C stainless steel (AMS 5630) heat treated, chrome plated.

Rod End No.		DIMENSIONS IN INCHES											
Right Hand	Left Hand	B + .0000 − .0005	W + .000 − .005	H Ref.	A ± .015	D Ref.	K ± .010	J ± .010	Ball Dia. Ref.	C + .062 − .031	Thread UNF-3B	a° Misalign. Angle	Radial Static Load Capacity Lbs.
CW-5ET*	CG-5ET*	.3125	.437	.312	1.375	.875	.500	.437	.593	.687	5/16-24	22	6,451
CW-6ET*	CG-6ET*	.3750	.500	.359	1.625	1.000	.687	.562	.687	.812	3/8-24	22	8,627
CW-7ET*	CG-7ET*	.4375	.562	.406	1.812	1.125	.750	.625	.781	.937	7/16-20	21	9,370
CW-8ET	CG-8ET	.5000	.625	.453	2.125	1.312	.875	.750	.875	1.062	1/2-20	20	15,130
CW-10ET	CG-10ET	.6250	.750	.484	2.500	1.500	1.000	.875	1.062	1.375	5/8-18	26	16,922
CW-12ET	CG-12ET	.7500	.875	.593	2.875	1.750	1.125	1.000	1.250	1.562	3/4-16	24	25,549

Rod End No.		DIMENSIONS IN MILLIMETERS											
Right Hand	Left Hand	B + .0000 − .0127	W + .000 − .005	H Ref.	A ± .381	D ± .254	K ± .254	J ± .254	Ball Dia. Ref.	C + 1.574 − .787	Thread UNF-3B	a° Misalign. Angle	Radial Static Load Capacity Kilograms
CW-5ET*	CG-5ET*	7.94	11.10	7.92	34.93	22.23	12.70	11.10	15.06	17.45	5/16-24	22	2,926
CW-6ET*	CG-6ET*	9.53	12.70	9.12	41.28	25.40	17.45	14.27	17.45	20.62	3/8-24	22	3,913
CW-7ET*	CG-7ET*	11.11	14.27	10.31	46.02	28.58	19.05	15.88	19.84	23.80	7/16-20	21	4,250
CW-8ET	CG-8ET	12.70	15.88	11.50	53.98	33.32	22.23	19.05	22.23	26.97	1/2-20	20	6,863
CW-10ET	CG-10ET	15.88	19.05	12.29	63.50	38.10	25.40	22.23	26.97	34.93	5/8-18	26	7,676
CW-12ET	CG-12ET	19.05	22.23	15.06	73.03	44.45	28.58	25.40	31.75	39.67	3/4-16	24	11,589

*Check for availability

SM & SB Series
Male Rod Ends
(Corrosion Resistant — PTFE Liners Available)



SPECIFICATIONS

BODY — Low carbon steel — Electroless nickel plated.

RACE — Stainless steel heat treated.

BALL — Alloy steel heat treated, hard chrome plated.

NOTES

Drilled hole in shank not available in 3, 4, 5 and 16 bore sizes.

All sizes available with studs upon request.

Rod End No.		DIMENSIONS IN INCHES										
Right Hand	Left Hand	B +.0015 -.0005	W +.000 -.005	H ±.005	A ±.015	D ±.010	Ball Dia. Ref.	C +.062 -.031	Thread UNF-3A	a° Misalign. Angle	Radial Static Load Capacity Lbs.	Approx. Brg. Wt. Lbs.
SM-3	SB-3	.1900	.312	.250	1.250	.625	.437	.750	10-32	13	1,169	.028
SM-4	SB-4	.2500	.375	.281	1.562	750	.500	1.000	1/4-28	16	2,158	.043
SM-5	SB-5	.3125	.437	.344	1.875	.875	.625	1.250	5/16-24	14	2,784	.072
SM-6	SB-6	.3750	.500	.406	1.938	1.000	.719	1.250	3/8-24	12	3,915	.112
SM-7	SB-7	.4375	.562	.437	2.125	1.125	.812	1.375	7/16-20	14	4,218	.160
SM-8	SB-8	.5000	.625	.500	2.438	1.312	.937	1.500	1/2-20	12	6,660	.249
SM-10	SB-10	.6250	.750	.562	2.625	1.500	1.125	1.625	5/8-18	16	7,364	.382
SM-12	SB-12	.7500	.875	.687	2.875	1.750	1.312	1.750	3/4-16	14	11,518	.602

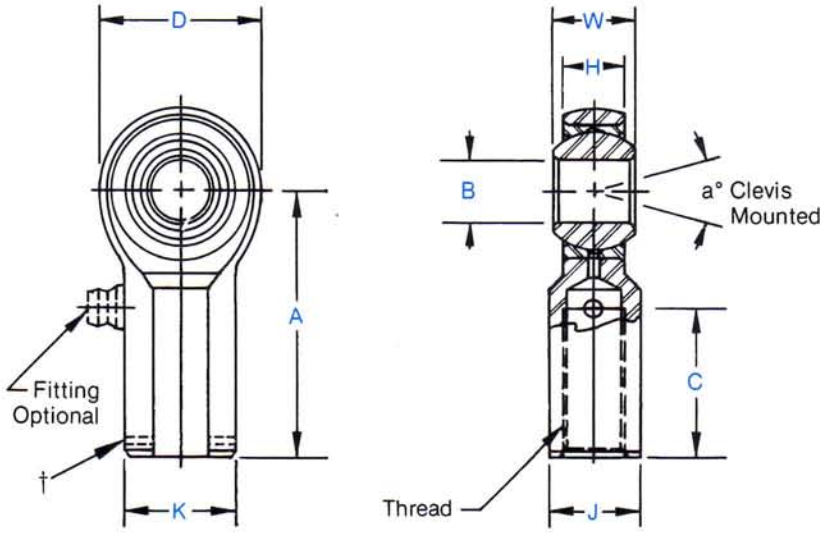
Rod End No.		DIMENSIONS IN MILLIMETERS										
Right Hand	Left Hand	B +.0381 -.0127	W +.000 -.127	H ±.127	A ±.381	D ±.254	Ball Dia. Ref.	C +1.574 -.787	Thread UNF-3A	a° Misalign. Angle	Radial Static Load Capacity Kilograms	Approx. Brg. Wt. Grams
SM-3	SB-3	4.83	7.92	6.35	31.75	15.88	11.10	19.05	10-32	13	530	13
SM-4	SB-4	6.35	9.53	7.14	39.67	19.05	12.70	25.40	1/4-28	16	979	20
SM-5	SB-5	7.94	11.10	8.74	47.63	22.23	15.88	31.75	5/16-24	14	1,263	33
SM-6	SB-6	9.53	12.70	10.31	49.23	25.40	18.26	31.75	3/8-24	12	1,776	51
SM-7	SB-7	11.11	14.27	11.10	53.98	28.58	20.62	34.93	7/16-20	14	1,913	73
SM-8	SB-8	12.70	15.88	12.70	61.93	33.32	23.80	38.10	1/2-20	12	3,021	113
SM-10	SB-10	15.88	19.05	14.27	66.68	38.10	28.58	41.28	5/8-18	16	3,340	173
SM-12	SB-12	19.05	22.23	17.45	73.03	44.45	33.32	44.45	3/4-16	14	5,225	273

Load ratings apply only to rod ends without grease fittings. For load ratings with fittings, please consult our engineering department.
Solid shank add suffix "Y". Ex: SM-6Y

Units are supplied without grease fittings. When grease fittings are required, specify by adding suffix as designated.

Z	Zerk type fiting	Ex: SM-6Z
F	Flush type fitting	Ex: SM-6F
T	PTFE liner	Ex: SM-6T

SW & SG Series
Female Rod Ends
(Corrosion Resistant — PTFE Liners Available)



SPECIFICATIONS
BODY — Low carbon steel — Electroless nickel plated.
RACE — Stainless steel, heat treated.
BALL — Alloy steel, heat treated, hard chrome plated.
NOTES
All sizes available with studs upon request.

Rod End No.		DIMENSIONS IN INCHES												
Right Hand	Left Hand †	B +.0015 -.0005	W +.000 -.005	H ±.005	A ±.015	D ±.010	K ±.010	J ±.010	Ball Dia. Ref.	C +.062 -.031	Thread UNF-2B	a° Misalign. Angle	Radial Static Load Cap. Lbs.	Approx. Brg. Wt. Lbs.
SW-3	SG-3	.1900	.312	.250	1.062	.625	.406	.312	.437	.562	10-32	13	1,531	.038
SW-4	SG-4	.2500	.375	.281	1.312	.750	.469	.375	.500	.750	1/4-28	16	2,539	.059
SW-5	SG-5	.3125	.437	.344	1.375	.875	.500	.437	.625	.750	5/16-24	14	3,133	.092
SW-6	SG-6	.3750	.500	.406	1.625	1.000	.687	.562	.719	.937	3/8-24	12	3,915	.152
SW-7	SG-7	.4375	.562	.437	1.812	1.125	.750	.625	.812	1.062	7/16-20	14	4,218	.198
SW-8	SG-8	.5000	.625	.500	2.125	1.312	.875	.750	.937	1.187	1/2-20	12	6,660	.329
SW-10	SG-10	.6250	.750	.562	2.500	1.500	1.000	.875	1.125	1.500	5/8-18	16	7,364	.477
SW-12	SG-12	.7500	.875	.687	2.875	1.750	1.125	1.000	1.312	1.750	3/4-16	14	11,518	.723

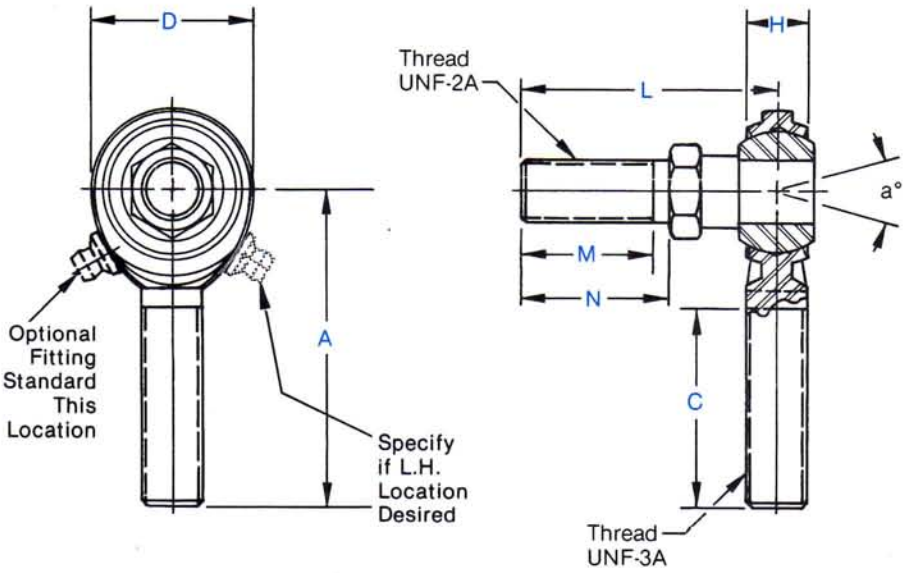
Rod End No.		DIMENSIONS IN MILLIMETERS												
Right Hand	Left Hand †	B +.0381 -.0127	W +.000 -.127	H ±.127	A ±.381	D ±.254	K ±.254	J ±.254	Ball Dia. Ref.	C +1.574 -.787	Thread UNF-2B	a° Misalign. Angle	Radial Static Load Cap. Kilograms	Approx. Brg. Wt. Grams
SW-3	SG-3	4.83	7.92	6.35	26.97	15.88	10.31	7.92	11.10	14.27	10-32	13	694	17
SW-4	SG-4	6.35	9.53	7.14	33.32	19.05	11.91	9.53	12.70	19.05	1/4-28	16	1,152	27
SW-5	SG-5	7.94	11.10	8.74	34.93	22.23	12.70	11.10	15.88	19.05	5/16-24	14	1,421	42
SW-6	SG-6	9.53	12.70	10.31	41.28	25.40	17.45	14.27	18.26	23.80	3/8-24	12	1,776	69
SW-7	SG-7	11.11	14.27	11.10	46.02	28.58	19.05	15.88	20.62	26.97	7/16-20	14	1,913	90
SW-8	SG-8	12.70	15.88	12.70	53.98	33.32	22.23	19.05	23.80	30.15	1/2-20	12	3,021	149
SW-10	SG-10	15.88	19.05	14.27	63.50	38.10	25.40	22.23	28.58	38.10	5/8-18	16	3,340	216
SW-12	SG-12	19.05	22.23	17.45	73.03	44.45	28.58	25.40	33.32	44.45	3/4-16	14	5,225	328

†Left hand units have identification groove near end of shank.

Units are supplied without grease fittings. When grease fittings are required, specify by adding suffix as designated.

Z	Zerk type fiting	Ex: SW-6Z
F	Flush type fitting	Ex: SW-6F
T	PTFE liner	Ex: SW-6T

CM-S & CB-S Series
Male Rod Ends With Studs
General Purpose - Economy



SPECIFICATIONS

BODY — Low carbon steel, protective coated for corrosion resistance.

BALL — Sintered steel, heat treated, oil impregnated.

STUD — Low carbon steel, coated black oxide. Right hand thread standard.

NOTES

Studs are available on all rod end series. 2s available in "M" series. (E.G.—MM 2s.)

Optional grease fitting is supplied, standard, in **right hand** location as illustrated (with stud facing you). Specify if **left hand** location is desired.

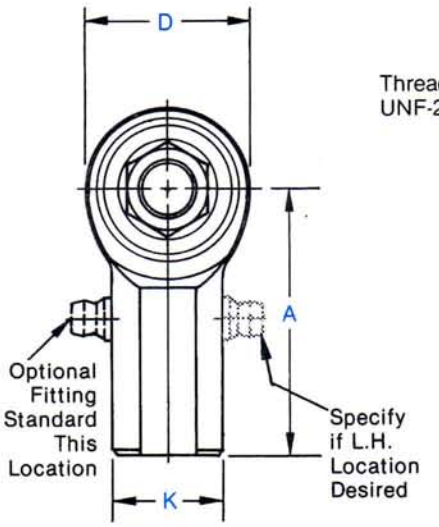
Rod End No.		DIMENSIONS IN INCHES										
Right Hand	Left Hand	H Ref.	A ± .015	D ± .010	C +.062 -.031	L ± .015	N ± .010	M Ref.	Thread UNF-3A	a° Misalign. Angle	Radial Static Load Capacity Lbs.	Approx. Brg. Wt. Lbs.
CM-3S*	CB-3S*	.234	1.250	.625	.750	1.000	.500	.437	10-32	45	CONSULT AURORA BEARING ENGR. DEPT.	.04
CM-4S*	CB-4S*	.250	1.562	.750	1.000	1.031	.562	.500	1/4-28	40		.05
CM-5S*	CB-5S*	.312	1.875	.875	1.250	1.219	.687	.593	5/16-24	42		.10
CM-6S	CB-6S	.359	1.938	1.000	1.250	1.562	.906	.812	3/8-24	46		.15
CM-7S	CB-7S	.406	2.125	1.125	1.375	1.750	1.062	.937	7/16-20	44		.24
CM-8S	CB-8S	.453	2.438	1.312	1.500	2.000	1.125	1.000	1/2-20	48		.35
CM-10S	CB-10S	.484	2.625	1.500	1.625	2.500	1.500	1.375	5/8-18	52		.61
CM-12S	CB-12S	.593	2.875	1.750	1.750	3.000	1.812	1.625	3/4-16	46		1.03

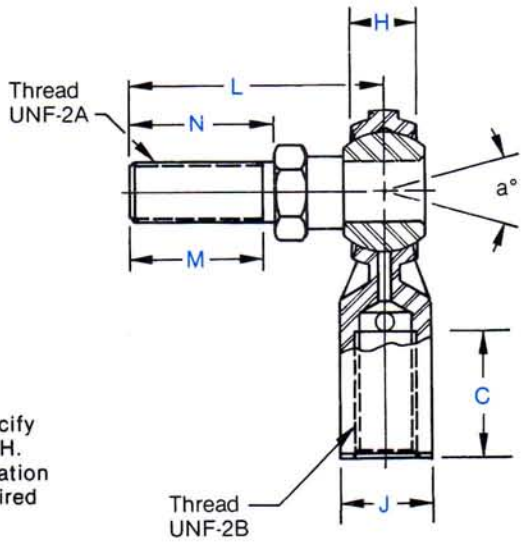
Rod End No.		DIMENSIONS IN MILLIMETERS										
Right Hand	Left Hand	H Ref.	A ± .381	D ± .254	C +1.574 - .787	L ± .381	N ± .254	M Ref.	Thread UNF-3A	a° Misalign. Angle	Radial Static Load Capacity Kilograms	Approx. Brg. Wt. Grams
CM-3S*	CB-3S*	5.94	31.75	15.88	19.05	25.40	6.35	11.10	10-32	45	CONSULT AURORA BEARING ENGR. DEPT.	18
CM-4S*	CB-4S*	6.35	39.67	19.05	25.40	26.19	14.27	12.70	1/4-28	40		23
CM-5S*	CB-5S*	7.92	47.63	22.23	31.75	30.96	17.45	15.06	5/16-24	42		45
CM-6S	CB-6S	9.12	49.23	25.40	31.75	39.67	23.01	20.62	3/8-24	46		68
CM-7S	CB-7S	10.31	53.98	28.58	34.93	44.45	26.97	23.80	7/16-20	44		109
CM-8S	CB-8S	11.50	61.93	33.32	38.10	50.80	28.58	25.40	1/2-20	48		159
CM-10S	CB-10S	12.29	66.68	38.10	41.28	63.50	38.10	34.93	5/8-18	52		277
CM-12S	CB-12S	15.06	73.03	44.45	44.45	76.20	46.02	41.28	3/4-16	46		467

Load ratings apply only to rod ends without grease fittings. For load ratings with fittings, please consult our engineering department.

*Grease fittings not supplied on these sizes.
Units are supplied without grease fittings. When fittings are required, specify by adding suffix as designated.
CM-6SZ Zerk type fitting (shown)
CM-6SF Flush type fitting

CW-S & CG-S Series
Female Rod Ends With Studs
General Purpose - Economy





SPECIFICATIONS
BODY — Low carbon steel, protective coated for corrosion resistance.
BALL — Sintered steel, heat treated, oil impregnated.
STUD — Low carbon steel, coated black oxide. Right hand thread standard.
NOTES
Studs are available on all rod end series. 2s available in "M" series. (E.G.—MM 2s.)

Optional grease fitting is supplied, standard, in **right hand** location as illustrated (with stud facing you). Specify if **left hand** location is desired.

Rod End No.		DIMENSIONS IN INCHES												
Right Hand	Left Hand †	H Ref.	A ±.015	D ±.010	K ±.010	J ±.010	C +.062 −.031	L ±.015	N ±.010	M Ref.	Thread UNF-2B	a° Misalign. Angle	Radial Static Load Cap. Lbs.	Approx. Brg. Wt. Lbs.
CW-3S*	CG-3S*	.234	1.062	.625	.406	.312	.500	1.000	.500	.437	10-32	45	CONSULT AURORA BEARING ENG. DEPT.	.05
CW-4S	CG-4S	.250	1.312	.750	.469	.375	.687	1.031	.562	.500	1/4-28	40		.06
CW-5S	CG-5S	.312	1.375	.875	.500	.437	.687	1.219	.687	.593	5/16-24	42		.11
CW-6S	CG-6S	.359	1.625	1.000	.687	.562	.812	1.562	.906	.812	3/8-24	46		.17
CW-7S	CG-7S	.406	1.812	1.125	.750	.625	.937	1.750	1.062	.937	7/16-20	44		.27
CW-8S	CG-8S	.453	2.125	1.312	.875	.750	1.062	2.000	1.125	1.000	1/2-20	48		.40
CW-10S	CG-10S	.484	2.500	1.500	1.000	.875	1.375	2.500	1.500	1.375	5/8-18	52		.68
CW-12S	CG-12S	.593	2.875	1.750	1.125	1.000	1.562	3.000	1.812	1.625	3/4-16	46		1.11

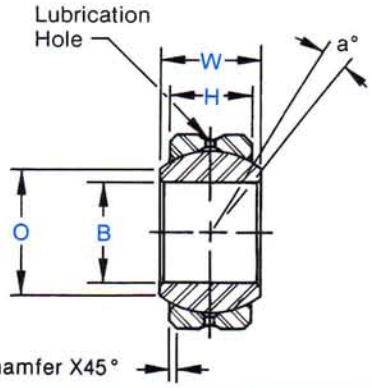
Rod End No.		DIMENSIONS IN MILLIMETERS												
Right Hand	Left Hand †	H Ref.	A ±.381	D ±.254	K ±.254	J ±.254	C +1.574 −.787	L ±.381	N ±.254	M Ref.	Thread UNF-2B	a° Misalign. Angle	Radial Static Load Cap. Kilograms	Approx. Brg. Wt. Grams
CW-3S*	CG-3S*	5.94	26.97	15.88	10.31	7.92	12.70	25.40	6.35	11.10	10-32	45	CONSULT AURORA BEARING ENG. DEPT.	23
CW-4S	CG-4S	6.35	33.32	19.05	11.91	9.53	17.45	26.19	14.27	12.70	1/4-28	40		27
CW-5S	CG-5S	7.92	34.93	22.23	12.70	11.10	17.45	30.96	17.45	15.06	5/16-24	42		50
CW-6S	CG-6S	9.12	41.28	25.40	17.45	14.27	20.62	39.67	23.01	20.62	3/8-24	46		77
CW-7S	CG-7S	10.31	46.02	28.58	19.05	15.88	23.80	44.45	26.97	23.80	7/16-20	44		122
CW-8S	CG-8S	11.50	53.98	33.32	22.23	19.05	26.97	50.80	28.58	25.40	1/2-20	48		181
CW-10S	CG-10S	12.29	63.50	38.10	25.40	22.23	34.93	63.50	38.10	34.93	5/8-18	52		308
CW-12S	CG-12S	15.06	73.03	44.45	28.58	25.40	39.67	76.20	46.02	41.28	3/4-16	46		504

†Left hand units have identification groove near end of shank.

*Grease fittings not supplied on these sizes. Units are supplied without grease fittings. When fittings are required, specify by adding suffix as designated.
CW-6SZ Zerk type fitting (shown)
CW-6SF Flush type fitting

COM & HCOM Series

Spherical Bearings (PTFE Liners Available)[2]



SPECIFICATIONS

RACE —
Com Series — Low carbon steel, I.D. protective coated for corrosion resistance, unit oil coated. Alternate materials available.
Hcom Series — Low carbon steel, I.D. protective coated for corrosion resistance, unit oil coated.

BALL — Through hardened steel heat treated, hard chrome plated.

SEE P. 30 FOR SUGGESTED HOUSING BORES

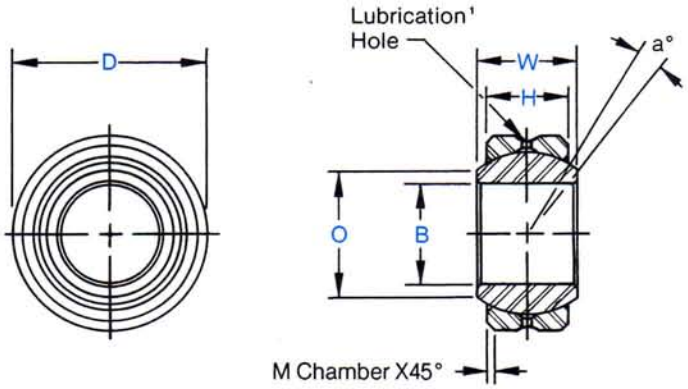
Bearing No.	DIMENSIONS IN INCHES							a° Total Misalignment	Radial Static Load Capacity Lbs.	Approx. Brg. Wt. Lbs.
	B +.0015 −.0005	D +.0000 −.0007	H ±.005	W ±.005	O Flat Dia. Ref.	M Chamfer Ref.	Ball Dia. Ref.			
COM-3	.1900	.5625	.218	.281	.293	.015	.406	11	3,250	.014
COM-4	.2500	.6562	.250	.343	.364	.022	.500	13.5	4.950	.022
COM-5	.3125	.7500	.281	.375	.419	.032	.562	12	6,475	.030
COM-6	.3750	.8125	.312	.406	.516	.032	.656	10	8,400	.038
COM-7	.4375	.9062	.343	.437	.530	.032	.687	8	9,453	.047
COM-8	.5000	1.0000	.390	.500	.640	.032	.813	9.5	13,250	.065
COM-9	.5625	1.0937	.437	.562	.710	.032	.906	9.5	16,630	.086
COM-10	.6250	1.1875	.500	.625	.780	.032	1.000	8.5	21,280	.110
COM-12	.7500	1.4375	.593	.750	.920	.044	1.187	9	31,920	.204
COM-14	.8750	1.5625	.703	.875	.980	.044	1.312	9.5	41,960	.263
*COM-16	1.0000	1.7500	.797	1.000	1.118	.044	1.500	10	55,200	.386
HCOM-16	1.0000	2.0000	.781	1.000	1.360	.032	1.687	9	70,820	.553
✓HCOM-19	1.1875	2.3750	.937	1.187	1.610	.032	2.000	8.5	100,730	.895
HCOM-20	1.2500	2.3750	.937	1.187	1.610	.032	2.000	8.5	100,730	.895
HCOM-24	1.5000	2.7500	1.094	1.375	1.860	.032	2.312	8.5	135,950	1.358
HCOM-28	1.7500	3.1250	1.250	1.562	2.110	.044	2.625	8	176,370	1.948
HCOM-32	2.0000	3.5000	1.375	1.750	2.360	.044	2.937	8.5	217,060	2.650

Bearing No.	DIMENSIONS IN MILLIMETERS							a° Total Misalignment	Radial Static Load Capacity Kilograms	Approx. Brg. Wt. Grams
	B +.0381 −.0127	D +.0000 −.0177	H ±.127	W ±.127	O Flat Dia. Ref.	M Chamfer Ref.	Ball Dia. Ref.			
COM-3	4.83	14.29	5.54	7.14	7.44	.381	10.31	11	1,475	6
COM-4	6.35	16.67	6.35	8.71	9.25	.560	12.70	13.5	2,245	10
COM-5	7.94	19.05	7.14	9.53	10.64	.81	14.27	12	2,937	14
COM-6	9.53	20.64	7.92	10.31	13.11	.81	16.66	10	3,810	17
COM-7	11.11	23.02	8.71	11.10	13.46	.81	17.45	8	4,288	21
COM-8	12.70	25.40	9.91	12.70	16.26	.81	20.65	9.5	6,010	29
COM-9	14.29	27.78	11.10	14.27	18.03	.81	23.01	9.5	7,543	39
COM-10	15.88	30.16	12.70	15.88	19.81	.81	25.40	8.5	9,653	50
COM-12	19.05	36.51	15.06	19.05	23.37	1.12	30.15	9	14,479	93
COM-14	22.23	39.69	17.86	22.23	24.89	1.12	33.32	9.5	19,033	119
*COM-16	25.40	44.45	20.24	25.40	28.40	1.12	38.10	10	25,039	175
HCOM-16	25.40	50.80	19.84	25.40	34.54	.81	42.85	9	32,124	251
✓HCOM-19	30.16	60.33	23.80	30.15	40.89	.81	50.80	8.5	45,691	406
HCOM-20	31.75	60.33	23.80	30.15	40.89	.81	50.80	8.5	45,691	406
HCOM-24	38.10	69.85	27.79	34.93	47.24	.81	58.72	8.5	61,667	616
HCOM-28	44.45	79.38	31.75	39.67	53.59	1.12	66.68	8	80,001	884
HCOM-32	50.80	88.90	34.93	44.45	59.94	1.12	74.60	8.5	98,458	1,198

*Bore tolerance on these items is as follows: +.0025 −.0005
✓ Check for availability

[2]PTFE Liners use suffix T — Ex: COM-6T
(PTFE liners have no lubrication holes or groove in race)

AIB, SIB, MIB and MIB-T Series
Spherical Bearings
(PTFE Liners Available)



SPECIFICATIONS		
SERIES	BALL	RACE (OUTER MEMBER)
MIB-	Through hardened steel, heat treated, hard chrome plated.	Low carbon steel, I.D. protective coated for corrosion resistance, oil coated.
MIB-T¹	Through hardened steel, heat treated, hard chrome plated.	Low carbon steel, PTFE lined.
AIB-	Alloy steel, heat treated, hard chrome plated.	Steel alloy, heat treated, I.D. protective coated for corrosion resistance, oil coated.
SIB-	Through hardened steel, heat treated, hard chrome plated.	Stainless steel, heat treated, oil coated.

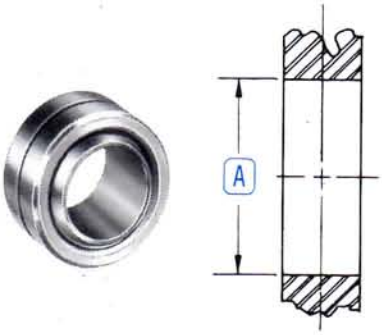
SEE P. 30 FOR SUGGESTED HOUSING BORES

BEARING NO.				DIMENSIONS IN INCHES							a° Total Misalignment	Radial Static Load Capacity Lbs.		Approx. Brg. Wt. Lbs.
				B +.0015 −.0005	D +.0000 −.0007	H ±.005	W ±.005	O Flat Dia. Ref.	M Chamfer Ref.	Ball Dia. Ref.		MIB-MIB-T	AIB-SIB	
AIB-3	SIB-3	MIB-3	MIB-3T	.1900	.5312	.250	.312	.307	.020	.437	10.5	4,370	6,555	.016
AIB-4	SIB-4	MIB-4	MIB-4T	.2500	.6094	.281	.375	.331	.020	.500	14.5	5,620	8,430	.023
AIB-5	SIB-5	MIB-5	MIB-5T	.3125	.7500	.344	.437	.448	.020	.625	11.0	8,600	12,900	.039
AIB-6	SIB-6	MIB-6	MIB-6T	.3750	.8437	.406	.500	.516	.020	.719	9.5	11,677	17,516	.059
AIB-7	SIB-7	MIB-7	MIB-7T	.4375	1.0000	.437	.562	.587	.020	.812	11.0	14,194	21,291	.079
AIB-8	SIB-8	MIB-8	MIB-8T	.5000	1.0937	.500	.625	.699	.020	.937	9.5	18,740	28,110	.110
AIB-10	SIB-10	MIB-10	MIB-10T	.6250	1.3125	.562	.750	.839	.030	1.125	12.0	25,290	37,935	.165
AIB-12	SIB-12	MIB-12	MIB-12T	.7500	1.5000	.687	.875	.978	.030	1.312	10	32,448	48,672	.252
AIB-16*	SIB-16*	MIB-16*	MIB-16T*	1.0000	2.1250	1.000	1.375	1.275	.060	1.875	15	60,000	90,000	.788

BEARING NO.				DIMENSIONS IN MILLIMETERS							a° Total Misalignment	Radial Static Load Capacity Kilograms		Approx. Brg. Wt. Grams
				B +.0381 −.0127	D +.0000 −.0177	H ±.127	W ±.127	O Flat Dia. Ref.	M Chamfer Ref.	Ball Dia. Ref.		MIB-MIB-T	AIB-SIB	
AIB-3	SIB-3	MIB-3	MIB-3T	4.82	13.49	6.35	7.92	7.79	.50	11.10	10.5	198	297	7.26
AIB-4	SIB-4	MIB-4	MIB-4T	6.35	15.47	7.13	9.52	8.40	.50	12.70	14.5	254	382	10.44
AIB-5	SIB-5	MIB-5	MIB-5T	7.93	19.05	8.73	11.10	11.37	.50	15.87	11.0	390	585	17.71
AIB-6	SIB-6	MIB-6	MIB-6T	9.52	21.43	10.31	12.70	13.10	.50	18.26	9.5	529	794	26.79
AIB-7	SIB-7	MIB-7	MIB-7T	11.11	25.40	11.10	14.27	14.91	.50	20.62	11.0	643	965	35.87
AIB-8	SIB-8	MIB-8	MIB-8T	12.70	27.78	12.70	15.87	17.75	.50	23.80	9.5	850	1,274	49.94
AIB-10	SIB-10	MIB-10	MIB-10T	15.87	33.33	14.27	19.05	21.31	.76	28.57	12.0	1,147	1,720	74.91
AIB-12	SIB-12	MIB-12	MIB-12T	19.05	38.10	17.45	22.22	24.84	.76	33.32	10.0	1,471	2,207	114.41
AIB-16*	SIB-16*	MIB-16*	MIB-16T*	25.40	53.97	25.40	34.92	32.38	1.52	47.62	15.0	2,721	4,081	357.75

*Bore tolerance on this item is as follows: +.0035 −.0005

¹(PTFE liners have no lubrication holes or groove in race)



Suggested Housing Bores
Spherical Bearings

COM & HCOM Series

Bearing Series COM HCOM	DIMENSIONS IN INCHES — A Suggested Housing Bore For Press Fit of Spherical Bearings				
	Bearing Outside Diameter +.0000 −.0007	Steel Housing		Aluminum Housing	
		Max.	Min.	Max.	Min.
3	.5625	.5619	.5614	.5618	.5612
4	.6562	.6556	.6551	.6555	.6549
5	.7500	.7494	.7489	.7493	.7487
6	.8125	.8119	.8114	.8118	.8112
7	.9062	.9056	.9051	.9055	.9049
8	1.0000	.9994	.9989	.9993	.9987
9	1.0937	1.0931	1.0925	1.0930	1.0923
10	1.1875	1.1869	1.1863	1.1868	1.1861
12	1.4375	1.4369	1.4363	1.4368	1.4361
14	1.5625	1.5619	1.5613	1.5618	1.5611
16	1.7500	1.7494	1.7486	1.7493	1.7485
16	2.0000	1.9994	1.9986	1.9993	1.9985
19	2.3750	2.3744	2.3736	2.3743	2.3735
20	2.3750	2.3744	2.3736	2.3743	2.3735
24	2.7500	2.7494	2.7486	2.7493	2.7485
28	3.1250	3.1244	3.1236	3.1243	3.1235
32	3.5000	3.4994	3.4986	3.4993	3.4985

Bearing Series COM HCOM	DIMENSIONS IN MILLIMETERS — A Suggested Housing Bore For Press Fit of Spherical Bearings				
	Bearing Outside Diameter +.0000 −.018	Steel Housing		Aluminum Housing	
		Max.	Min.	Max.	Min.
3	14.288	14.272	14.260	14.270	14.255
4	16.667	16.652	16.640	16.650	16.634
5	19.050	19.035	19.022	19.032	19.017
6	20.638	20.622	20.610	20.620	20.604
7	23.018	23.002	22.990	23.000	22.985
8	25.400	25.385	25.372	25.382	25.367
9	27.780	27.765	27.750	27.762	27.744
10	30.162	30.147	30.132	30.145	30.127
12	36.512	36.497	36.482	36.495	36.477
14	39.688	39.672	39.657	39.670	39.652
16	44.450	44.435	44.414	44.432	44.412
16	50.800	50.785	50.764	50.782	50.762
19	60.325	60.310	60.289	60.307	60.287
20	60.325	60.310	60.289	60.307	60.287
24	69.850	69.835	69.814	69.832	69.812
28	79.375	79.360	79.339	79.357	79.337
32	88.900	88.885	88.864	88.882	88.862

Dimensions given in the above tables are for bearings fabricated of standard race materials. Should other materials be used, consult our engineering department for modification of these dimensions.

RADIAL STATIC LOAD CAPACITY

These loads are maximum static based on minimum permanent set in the bearing race of 0.2% of the ball diameter. If a greater permanent set can be allowed or if alternate race materials are used consult our engineering department for change factors.

AXIAL LOAD CAPACITY

These loads are approximately 20% of the radial loads listed when the load bearing surfaces are properly supported.

ALTERNATE RACE AND BALL MATERIALS

Materials other than those listed can be incorporated in bearings manufactured by Aurora Bearing Company. Stainless steels to improve corrosion resistance and heat treated alloy steels to increase wear life are frequently used in special applications.

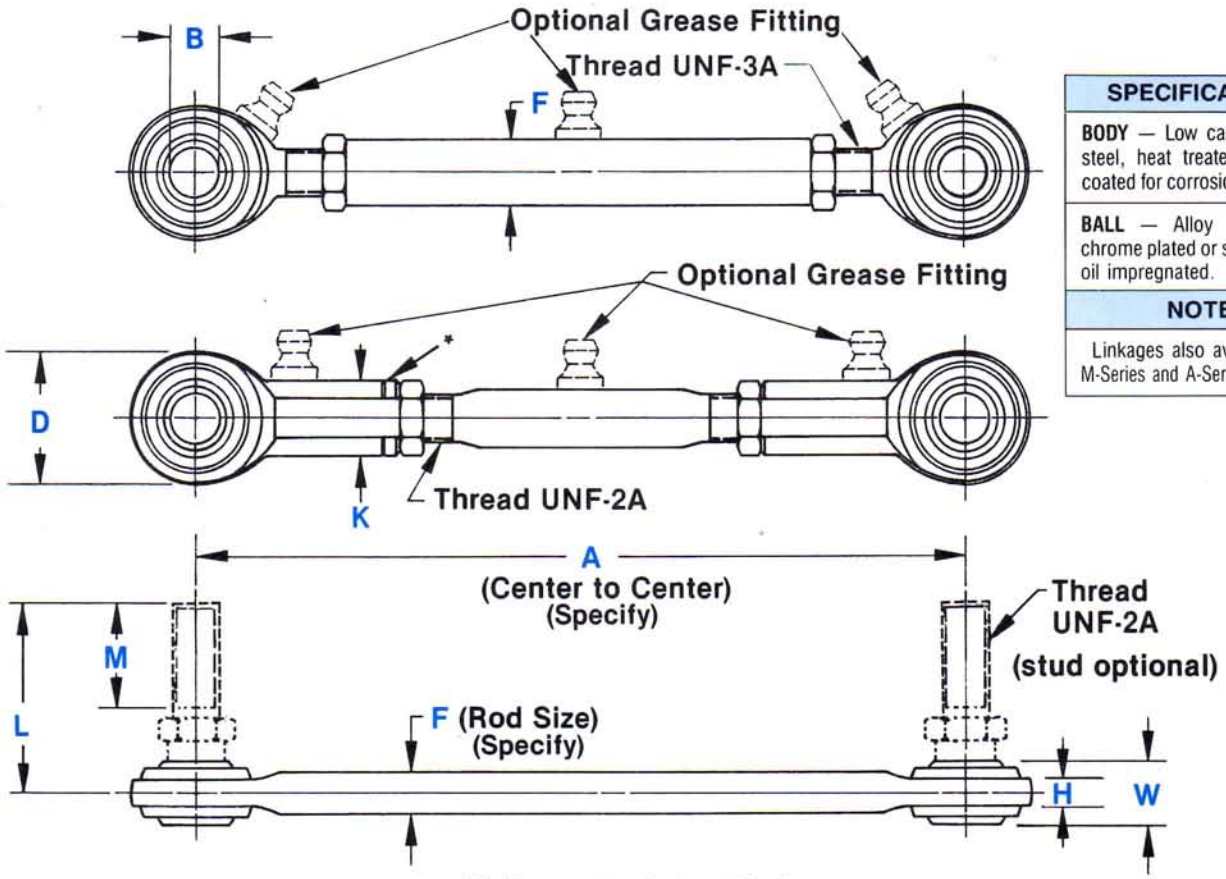
PTFE liner lined races are also available in this series to provide service requiring no relubrication and improved frictional characteristics.

MIB, AIB, SIB and MIB-T Series

Bearing Series MIB AIB SIB MIB-T	DIMENSIONS IN INCHES — A Suggested Housing Bore For Press Fit of Spherical Bearings				
	Bearing Outside Diameter +.0000 −.0007	Steel Housing		Aluminum Housing	
		Max.	Min.	Max.	Min.
3	.5312	.5306	.5301	.5305	.5299
4	.6094	.6088	.6083	.6087	.6081
5	.7500	.7494	.7489	.7493	.7487
6	.8437	.8431	.8426	.8430	.8424
7	1.0000	.9994	.9989	.9993	.9987
8	1.0937	1.0931	1.0925	1.0930	1.0923
10	1.3125	1.3119	1.3113	1.3118	1.3111
12	1.5000	1.4994	1.4988	1.4993	1.4986
16	2.1250	2.1244	2.1236	2.1243	2.1235

Bearing Series MIB AIB SIB MIB-T	DIMENSIONS IN MILLIMETERS — A Suggested Housing Bore For Press Fit of Spherical Bearings				
	Bearing Outside Diameter +.000 −.008	Steel Housing		Aluminum Housing	
		Max.	Min.	Max.	Min.
3	13.492	13.477	13.465	13.475	13.460
4	15.479	15.464	15.451	15.461	15.446
5	19.050	19.035	19.022	19.032	19.017
6	21.430	21.415	21.402	21.412	21.397
7	25.400	25.385	25.372	25.382	25.367
8	27.780	27.765	27.750	27.762	27.744
10	33.338	33.322	33.307	33.320	33.302
12	38.100	38.085	38.070	38.082	38.064
16	53.975	53.960	53.939	53.957	53.937

Rod End Linkages
Fixed or Adjustable Centers



SPECIFICATIONS
BODY — Low carbon or alloy steel, heat treated, protective coated for corrosion resistance.
BALL — Alloy heat treated chrome plated or sintered steel, oil impregnated.
NOTES
Linkages also available with M-Series and A-Series rod ends.

(Units are made to order)

**Link No.	DIMENSIONS IN INCHES										Misalignment Angle	
	B +.0025 −.0005	W ±.005	H ±.005	A	D ±.010	K Ref.	F	L ±.015	M Ref.	Thread UNF-2A	Clevis Mtd.	Stud Mtd.
CL-3-	.1900	.312	.250		.625	.406		1.000	.437	10-32	13	45
CL-4-	.2500	.375	.281		.750	.469		1.031	.500	¼-28	16	40
CL-5-	.3125	.437	.344		.875	.500		1.219	.593	5/16-24	14	42
CL-6-	.3750	.500	.406		1.000	.687		1.562	.812	⅜-24	12	46
CL-7-	.4375	.562	.437		1.125	.750		1.750	.937	7/16-20	14	44
CL-8-	.5000	.625	.500		1.312	.875		2.000	1.000	½-20	12	48

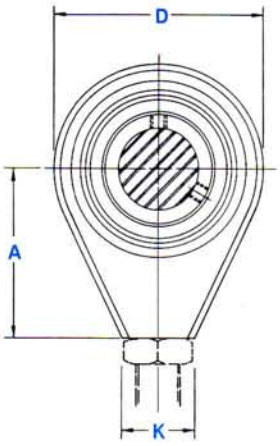
**Link No.	DIMENSIONS IN MILLIMETERS										Misalignment Angle	
	B +.0635 −.0127	W ±.127	H ±.127	A	D ±.254	K Ref.	F	L ±.381	M Ref.	Thread UNF-2A	Clevis Mtd.	Stud Mtd.
CL-3-	4.83	7.92	6.35		15.88	10.31		25.40	11.10	10-32	13	45
CL-4-	6.35	9.53	7.14		19.05	11.91		26.19	12.70	¼-28	16	40
CL-5-	7.94	11.10	8.74		22.23	12.70		30.96	15.06	5/16-24	14	42
CL-6-	9.53	12.70	10.31		25.40	17.45		39.67	20.62	⅜-24	12	46
CL-7-	11.11	14.27	11.10		28.58	19.05		44.45	23.80	7/16-20	14	44
CL-8-	12.70	15.88	12.70		33.32	22.23		50.80	25.40	½-20	12	48

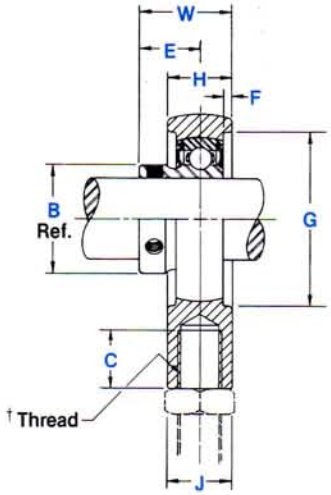
*Female left hand units have identification groove near end of shank.

**Suffix number will be added for "A" and "F" optional dimensions.

Units are supplied without grease fittings. When grease fittings are required, specify by adding suffix as designated.
Z Zerk type fitting Ex: CL-6Z
F Flush type fitting Ex: CL-6F

HB Series
Ball Bearing, Self-aligning Rod Ends





HOUSING MATERIAL —
DUCTILE IRON

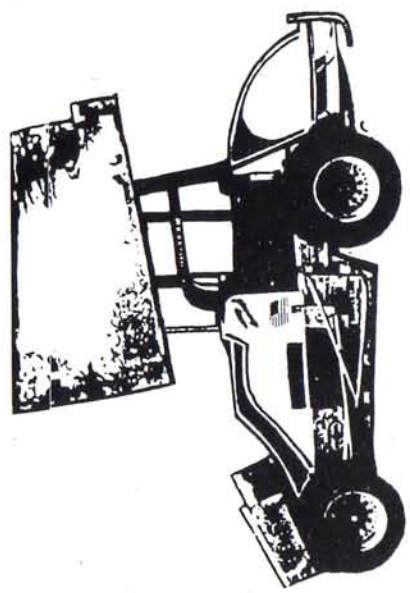
Shaft Dia.	Unit No.	DIMENSIONS IN INCHES												Approx. Wt. Lbs.
		A	B Ref.	C	D	E	F	G	H	J	K	W	Thread Size	
1/2''	HB-8	1 3/4	.961	5/8	2 1/16	5/8	7/64	1 11/16	11/16	11/16	3/4	31/32	1/2-20 UNF	.625
5/8''	HB-10													
11/16''	HB-11													
3/4''	HB-12	1 13/16	1.165	1/2	2 1/4	23/32	3/32	1 15/16	3/4	3/4	13/16	1 3/32	1/2-13 UNC	.750
7/8''	HB-14*	2 1/8	1.335	3/4	2 5/8	49/64	7/64	2 11/64	13/16	15/16	15/16	1 11/64	5/8-11 UNC	
15/16''	HB-15*													
1''	HB-16*													

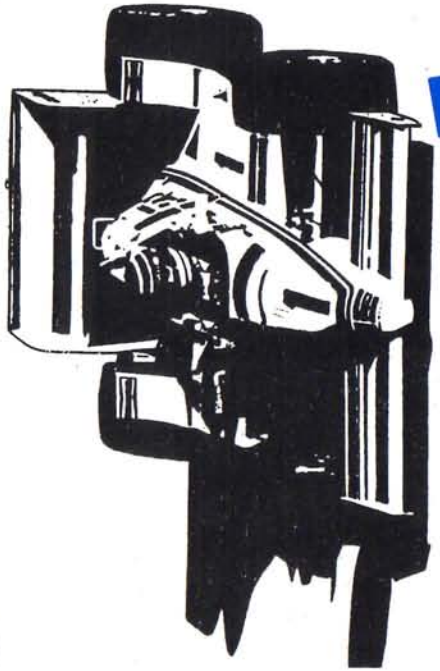
Consult our Engineering Department for load ratings and RPM information.

Shaft Dia.	Unit No.	DIMENSIONS IN MILLIMETERS												Approx. Wt. Grams
		A	B Ref.	C	D	E	F	G	H	J	K	W	Thread Size	
1/2''	HB-8	44.45	24.41	15.88	52.37	15.88	2.78	42.86	17.46	17.46	19.05	24.61	1/2-20 UNF	284
5/8''	HB-10													
11/16''	HB-11													
3/4''	HB-12	46.04	29.59	12.70	57.15	18.26	2.38	49.21	19.05	19.05	20.64	27.78	1/2-13 UNC	341
7/8''	HB-14*	53.98	33.91	19.05	66.68	19.45	2.78	55.17	20.64	23.81	23.81	29.77	5/8-11 UNC	
15/16''	HB-15*													
1''	HB-16*													

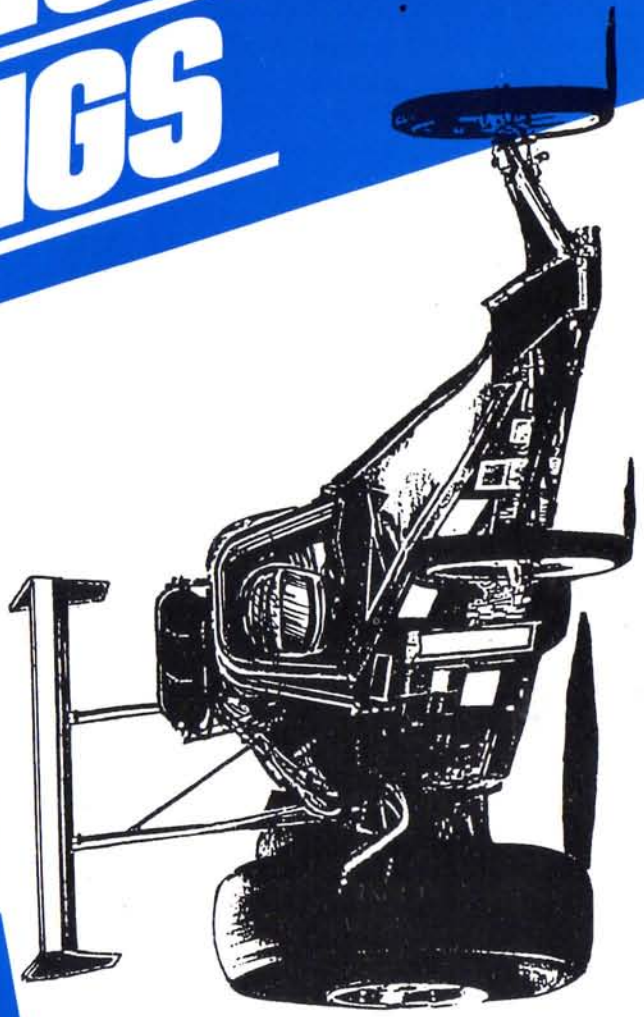
*Check for availability
†Threaded rods can be supplied to your specs.

HIGH PERFORMANCE RACE CAR BEARINGS





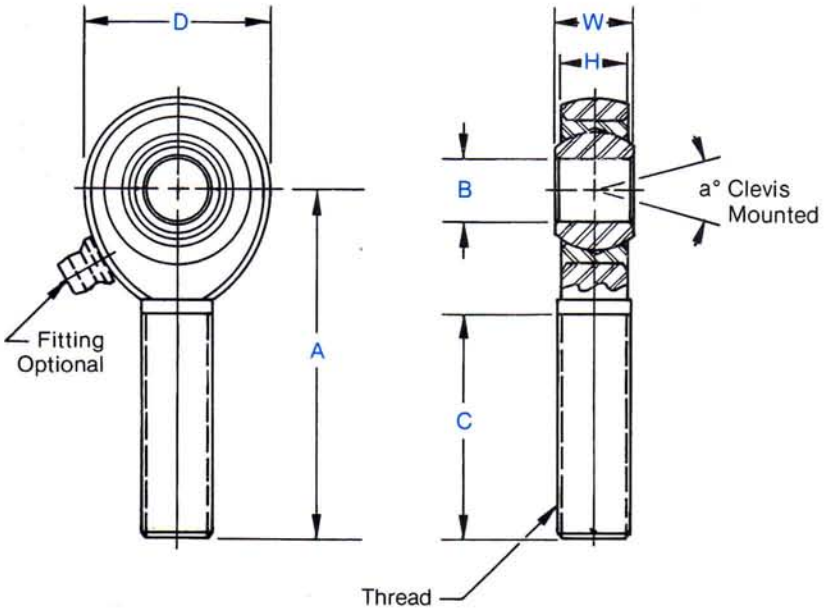
NEW!



AURORA®

XM & XB Series Male Rod Ends

Extra Strength - Heavy Duty Shank
(PTFE Liners Available)



SPECIFICATIONS

BODY — Low carbon steel, protective coated for corrosion resistance.

RACE — Steel alloy heat treated, protective coated for corrosion resistance. (Low carbon steel with PTFE liners.)

BALL — Alloy steel, heat treated, hard chrome plated.

NOTES

All sizes available with studs upon request.
All sizes are solid shank type.

Rod End No.		DIMENSIONS IN INCHES										
Right Hand	Left Hand	B +.0015 −.0005	W +.000 −.005	H ±.005	A ±.015	D ±.010	Ball Dia. Ref.	C +.062 −.031	Thread UNF-3A	a° Misalign. Angle	Radial Static Capacity Lbs.	Approx. Brg. Wt. Lbs.
XM-3	XB-3	.1900	.312	.250	1.562	.750	.437	1.000	1/4-28	10	2,158	.043
XM-4	XB-4	.2500	.375	.281	1.875	.875	.500	1.250	5/16-24	13	3,467	.072
XM-5	XB-5	.3125	.437	.344	1.938	1.000	.625	1.250	3/8-24	12	5,323	.112
XM-6	XB-6	.3750	.500	.406	2.125	1.125	.719	1.375	7/16-20	10	7,180	.160
XM-7	XB-7	.4375	.562	.437	2.438	1.312	.812	1.500	1/2-20	12	9,620	.249
XM-8	XB-8	.5000	.625	.500	2.625	1.500	.937	1.625	5/8-18	10	12,807	.382
XM-10	XB-10	.6250	.750	.562	2.875	1.750	1.125	1.750	3/4-16	13	16,565	.602
XM-12	XB-12	.7500	.875	.687	3.375	2.000	1.312	1.875	7/8-14	12	22,803	.918
XM-12-1*	XB-12-1*	.7500	.875	.687	3.375	2.000	1.312	1.875	3/4-16	12	22,803	.918
XM-14-1	XB-14-1	.8750	.875	.687	3.375	2.000	1.312	1.875	7/8-14	12	22,803	.918

Rod End No.		DIMENSIONS IN MILLIMETERS										
Right Hand	Left Hand	B +.0381 −.0127	W +.000 −.127	H ±.127	A ±.381	D ±.254	Ball Dia. Ref.	C +1.574 −.787	Thread UNF-3A	a° Misalign. Angle	Radial Static Capacity Kilograms	Approx. Brg. Wt. Grams
XM-3	XB-3	4.83	7.92	6.35	39.67	19.05	11.10	25.40	1/4-28	10	979	20
XM-4	XB-4	6.35	9.53	7.14	47.63	22.23	12.70	31.75	5/16-24	13	1,573	33
XM-5	XB-5	7.94	11.10	8.74	49.23	25.40	15.88	31.75	3/8-24	12	2,415	51
XM-6	XB-6	9.53	12.70	10.31	53.98	28.58	18.26	34.93	7/16-20	10	3,257	73
XM-7	XB-7	11.11	14.27	11.10	61.93	33.32	20.62	38.10	1/2-20	12	4,364	113
XM-8	XB-8	12.70	15.88	12.70	66.68	38.10	23.80	41.28	5/8-18	10	5,809	173
XM-10	XB-10	15.88	19.05	14.27	73.02	44.45	28.58	44.45	3/4-16	13	7,514	273
XM-12	XB-12	19.05	22.23	17.45	85.73	50.80	33.32	47.63	7/8-14	12	10,343	427
XM-12-1*	XB-12-1*	19.05	22.23	17.45	85.73	50.80	33.32	47.63	3/4-16	12	10,343	427
XM-14-1	XB-14-1	22.23	22.23	17.45	85.73	50.80	33.32	47.63	7/8-14	12	10,343	427

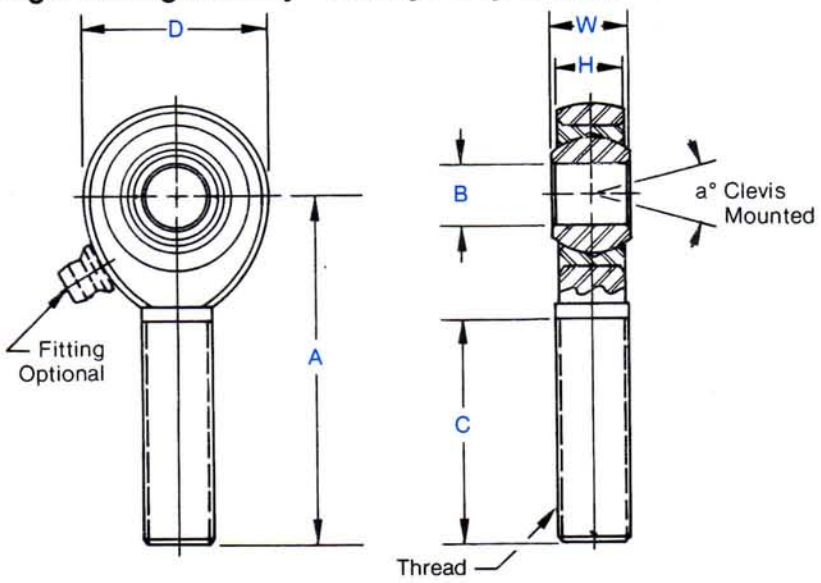
Load ratings apply only to rod ends without grease fittings. For load ratings with fittings, please consult our engineering department.
*Check for availability.

Units are supplied without grease fittings. When grease fittings are required, specify by adding suffix as designated.

Z	Zerk type fitting	Ex: XM-6Z
F	Flush type fitting	Ex: XM-6F
T	PTFE Liner	Ex. XM-6T

XAM & XAB Series
Male Rod Ends
(PTFE Liners Available)

High Strength Alloy - Heavy Duty Shank



SPECIFICATIONS

BODY — Steel alloy heat treated, protective coated for corrosion resistance.

RACE — Steel alloy heat treated, protective coated for corrosion resistance. (Low carbon steel with PTFE liners.)

BALL — Alloy steel, heat treated, hard chrome plated.

NOTES

All sizes available with studs upon request.
All sizes are solid shank type.

	Rod End No.		DIMENSIONS IN INCHES								a° Misalign. Angle	Radial Static Load Capacity Lbs.	Approx. Brg. Wt. Lbs.
	Right Hand	Left Hand	B +.0015 −.0005	W +.000 −.005	H ±.005	A ±.015	D ±.010	Ball Dia. Ref.	C +.062 −.031	Thread UNF-3A			
	XAM-3	XAB-3	.1900	.312	.250	1.562	.750	.437	1.000	1/4-28	10	5,260	.043
	XAM-4	XAB-4	.2500	.375	.281	1.875	.875	.500	1.250	5/16-24	13	8,452	.072
	XAM-5	XAB-5	.3125	.437	.344	1.938	1.000	.625	1.250	3/8-24	12	12,978	.112
	XAM-6	XAB-6	.3750	.500	.406	2.125	1.125	.719	1.375	7/16-20	10	17,508	.160
	XAM-7	XAB-7	.4375	.562	.437	2.438	1.312	.812	1.500	1/2-20	12	23,452	.249
	XAM-8	XAB-8	.5000	.625	.500	2.625	1.500	.937	1.625	5/8-18	10	31,390	.382
	XAM-10	XAB-10	.6250	.750	.562	2.875	1.750	1.125	1.750	3/4-16	13	40,572	.602
	XAM-12	XAB-12	.7500	.875	.687	3.375	2.000	1.312	1.875	7/8-14	12	55,692	.918
1	XAM-16	XAB-16	1.0000	1.375	1.000	4.125	2.750	1.875	2.125	1-1/4-12	14	76,200	2.406
2	XAM-20-1	XAB-20-1	1.2500	1.093	.937	4.125	2.750	1.795	2.250	1-1/2-12	7	79,728	2.625
2	XAM-24-1	XAB-24-1	1.5000	1.312	1.125	5.375	3.500	2.155	3.000	1-3/4-12	6.5	138,826	6.062

1 B+.0035-.0005; A ± .020; D ± .020. Same as AM-16.
2 B+.0000-.0005; A ± .020; D ± .020. Check for availability.

	Rod End No.		DIMENSIONS IN MILLIMETERS								a° Misalign. Angle	Radial Static Load Capacity Kilograms	Approx. Brg. Wt. Grams
	Right Hand	Left Hand	B +.0381 −.0127	W +.000 −.127	H ±.127	A ±.381	D ±.254	Ball Dia. Ref.	C +1.574 −.787	Thread UNF-3A			
	XAM-3	XAB-3	4.83	7.92	6.35	39.67	19.05	11.10	25.40	1/4-28	10	2,386	20
	XAM-4	XAB-4	6.35	9.53	7.14	47.63	22.23	12.70	31.75	5/16-24	13	3,834	33
	XAM-5	XAB-5	7.94	11.10	8.74	49.23	25.40	15.88	31.75	3/8-24	12	5,887	51
	XAM-6	XAB-6	9.53	12.70	10.31	53.98	28.58	18.26	34.93	7/16-20	10	7.942	73
	XAM-7	XAB-7	11.11	14.27	11.10	61.93	33.32	20.62	38.10	1/2-20	12	10,638	113
	XAM-8	XAB-8	12.70	15.88	12.70	66.68	38.10	23.80	41.28	5/8-18	10	14,239	173
	XAM-10	XAB-10	15.88	19.05	14.27	73.02	44.45	28.58	44.45	3/4-16	13	18,403	273
	XAM-12	XAB-12	19.05	22.23	17.45	84.73	50.80	33.32	47.63	7/8-14	12	25,262	427
3	XAM-16	XAB-16	25.40	34.93	25.40	104.78	68.85	47.63	53.98	1-1/4-12	14	34,564	1,091
4	XAM-20-1	XAB-20-1	31.75	27.76	23.80	104.78	68.85	45.59	57.15	1-1/2-12	7	36,165	1,191
4	XAM-24-1	XAB-24-1	38.10	33.32	28.58	136.53	88.90	54.74	76.20	1-3/4-12	6.5	62.971	2,750

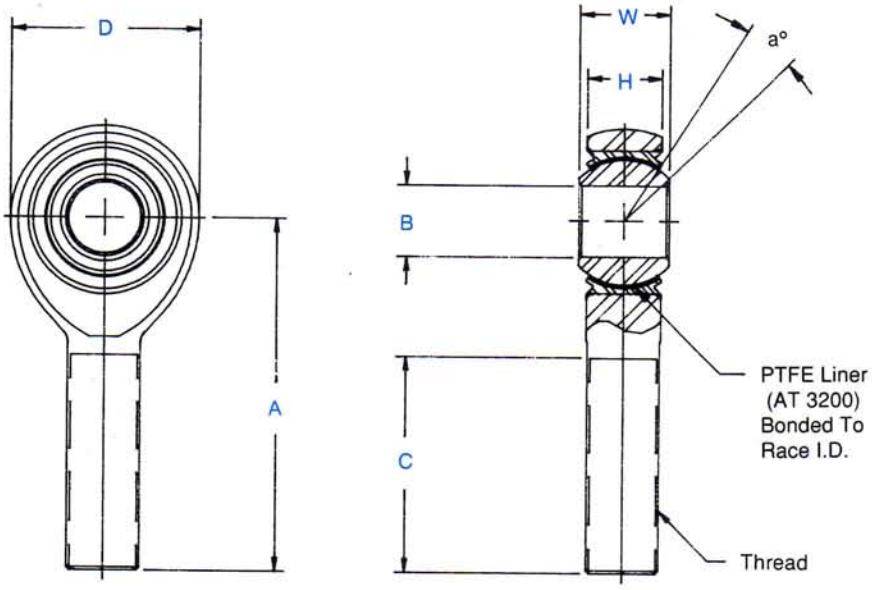
3 B+.0889-.0127; A ± .508; D ± .020. Check for availability.
4 B+.0000-.0127; A ± .508; D ± .020. Check for availability.

Load ratings apply only to rod ends without grease fittings. For load ratings with fittings, please consult our engineering department.

Units are supplied without grease fittings. When grease fittings are required, specify by adding suffix as designated.

Z	Zerk type fiting	Ex: XAM-6Z
F	Flush type fitting	Ex: XAM-6F
T	PTFE liner	Ex: XAM-6T

PERFORMANCE RACING ROD ENDS
PRM-T and PRXM-T Series
Male Rod Ends — PTFE Lined



SPECIFICATIONS*
BODY — 4340 steel, heat treated, protective coated for corrosion resistance.
BALL — 52100 steel (AMS 7440) heat treated, hard chrome plated.
RACE — Stainless steel (17-4 PH per AMS 5643) heat treated, PTFE lined.
PTFE LINER — (AT 3200) Permanently Bonded to Race Inside Diameter. Qualified to MIL-B-81820.

PRM-T — Performance Racing Series

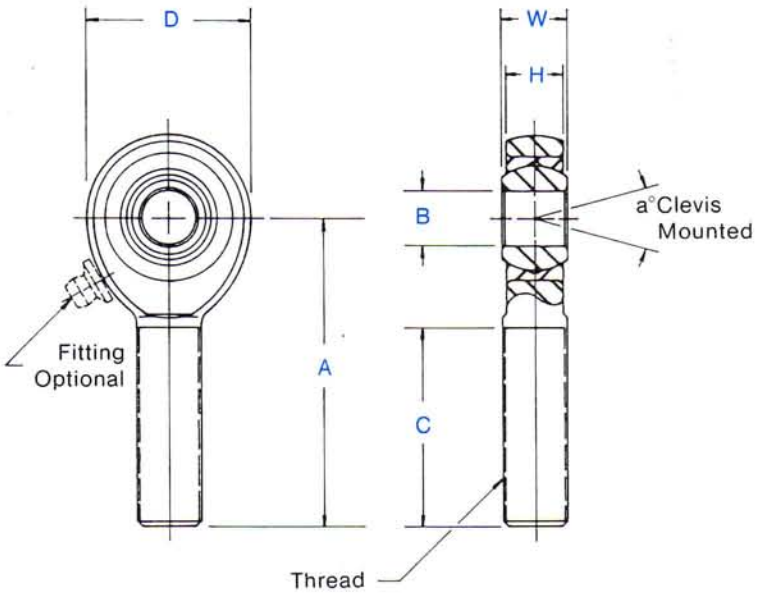
Rod End No.		DIMENSIONS IN INCHES										
Right Hand	Left Hand	B +.0000 −.0005	W +.000 −.005	H ±.005	A ±.010	D +.010 −.010	Ball Dia. Ref.	C +.031 −.031	Thread UNJF-3A	a° Misalign. Angle	Radial Static Load Capacity Lbs.	No Load Pivotal Breakaway Torque In-Lbs.
PRM-5T	PRB-5T	.3125	.437	.327	1.875	.900	.593	1.187	5/16-24	14	8,300	2 - 10
PRM-6T	PRB-6T	.3750	.500	.416	1.938	1.025	.687	1.187	3/8-24	8	10,946	2 - 10
PRM-7T	PRB-7T	.4375	.562	.452	2.125	1.150	.781	1.281	7/16-20	10	14,049	5 - 15
PRM-8T	PRB-8T	.5000	.625	.515	2.438	1.337	.875	1.468	1/2-20	9	23,310	5 - 15
PRM-10T	PRB-10T	.6250	.750	.577	2.625	1.525	1.062	1.562	5/8-18	12	25,909	5 - 15
PRM-12T	PRB-12T	.7500	.875	.640	2.875	1.775	1.250	1.687	3/4-16	13	34,319	5 - 15

PRXM-T — Performance Racing — Heavy Duty Shank Series

Rod End No.		DIMENSIONS IN INCHES										
Right Hand	Left Hand	B +.0000 −.0005	W +.000 −.005	H ±.005	A ±.010	D +.010 −.010	Ball Dia. Ref.	C +.031 −.031	Thread UNJF-3A	a° Misalign. Angle	Radial Static Load Capacity Lbs.	No Load Pivotal Breakaway Torque In-Lbs.
PRXM-5T	PRXB-5T	.3125	.437	.327	1.875	.900	.593	1.187	3/8-24	14	9,135	2 - 10
PRXM-6T	PRXB-6T	.3750	.500	.416	1.938	1.025	.687	1.187	7/16-20	8	10,946	2 - 10
PRXM-7T	PRXB-7T	.4375	.562	.452	2.125	1.150	.781	1.281	1/2-20	10	14,049	5 - 15
PRXM-8T	PRXB-8T	.5000	.625	.515	2.438	1.337	.875	1.468	5/8-18	9	23,310	5 - 15
PRXM-10T	PRXB-10T	.6250	.750	.577	2.625	1.525	1.062	1.562	3/4-16	12	25,909	5 - 15

*Check for availability.

RAM, RAB, RXAM, RXAB Series
Male Rod Ends
(PTFE Liners Available)



SPECIFICATIONS
BODY—Steel alloy heat treated, bright nickel or chrome plate.
RACE — Steel alloy heat treated, bright nickel plated.
BALL — Alloy steel, heat treated, hard chrome plated.

RAM — Heavy Duty

Rod End No.		DIMENSIONS IN INCHES										
Right Hand	Left Hand	B +.0015 −.0005	W +.000 −.005	H ±.005	A ±.010	D ±.000 −.020	Ball Dia. Ref.	C +.062 −.031	Thread UNJF-3A	a° Misalign. Angle	Radial Static Load Capacity Lbs.	Approx. Brg. Wt. Lbs.
RAM-3	RAB-3	.1900	.312	.250	1.250	.625	.437	.750	10-32*	13	2,851	.028
RAM-4	RAB-4	.2500	.375	.281	1.562	.750	.500	1.000	1/4-28	16	5,260	.043
RAM-5	RAB-5	.3125	.437	.344	1.875	.875	.625	1.187	5/16-24	14	7,125	.072
RAM-6	RAB-6	.3750	.500	.406	1.938	1.000	.719	1.187	3/8-24	12	8,939	.112
RAM-7	RAB-7	.4375	.562	.437	2.125	1.125	.812	1.312	7/16-20	14	9,653	.160
RAM-8	RAB-8	.5000	.625	.500	2.438	1.312	.937	1.437	1/2-20	12	15,500	.249
RAM-10	RAB-10	.6250	.750	.562	2.625	1.500	1.125	1.562	5/8-18	16	17,148	.382
†RAM-10-12	RAB-10-12	.6250	.875	.687	2.875	1.750	1.312	1.687	3/4-16	14	27,021	.602
RAM-12	RAB-12	.7500	.875	.687	2.875	1.750	1.312	1.687	3/4-16	14	27,021	.602

RXAM — Extra Heavy Duty

Rod End No.		DIMENSIONS IN INCHES										
Right Hand	Left Hand	B +.0015 −.0005	W +.000 −.005	H ±.005	A ±.010	D ±.000 −.020	Ball Dia. Ref.	C +.062 −.031	Thread UNJF-3A	a° Misalign. Angle	Radial Static Load Capacity Lbs.	Approx. Brg. Wt. Lbs.
RXAM-3	RXAB-3	.1900	.312	.250	1.562	.750	.437	1.000	1/4-28	10	5,260	.043
RXAM-4	RXAB-4	.2500	.375	.281	1.875	.875	.500	1.187	5/16-24	13	8,452	.072
RXAM-5	RXAB-5	.3125	.437	.344	1.938	1.000	.625	1.187	3/8-24	12	12,978	.112
RXAM-6	RXAB-6	.3750	.500	.406	2.125	1.125	.719	1.312	7/16-20	10	17,508	.160
RXAM-7	RXAB-7	.4375	.562	.437	2.438	1.312	.812	1.437	1/2-20	12	22,760	.249
RXAM-8	RXAB-8	.5000	.625	.500	2.625	1.500	.937	1.562	5/8-18	10	30,579	.382
RXAM-10	RXAB-10	.6250	.750	.562	2.875	1.750	1.125	1.687	3/4-16	13	39,674	.602

Load ratings apply only to rod ends without grease fittings. For load ratings with fittings, please consult our engineering department.

*UNF-3A

†Check for availability

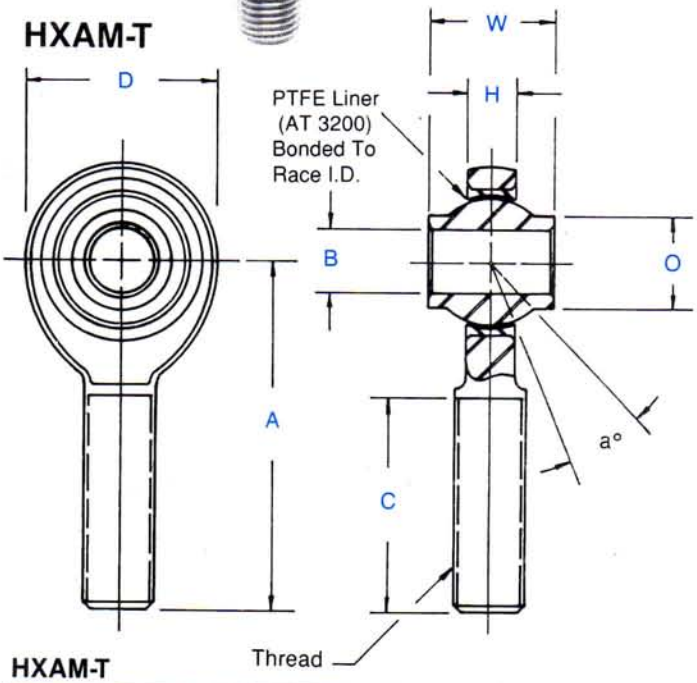
Units are supplied without grease fittings. When grease fittings are required, specify by adding suffix as designated.

Z	Zerk type fiting	Ex: RAM-6Z
F	Flush type fitting	Ex: RAM-6F
T	PTFE liner	Ex: RAM-6T

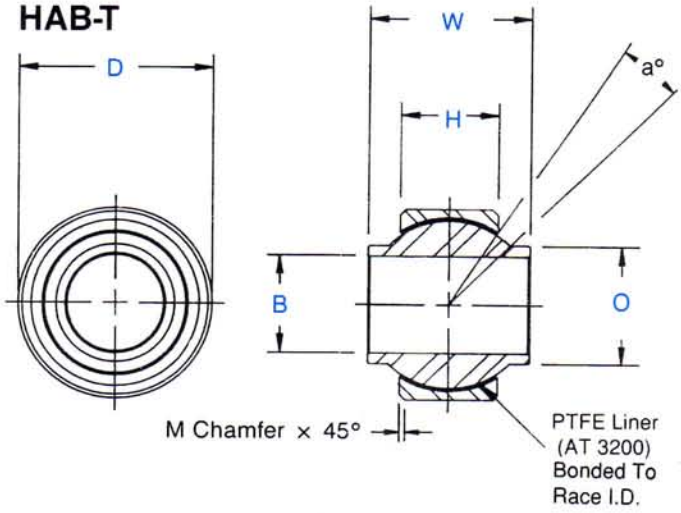
High Misalignment Series Male Rod Ends & Spherical Bearings

SPECIFICATIONS*
BODY — 4340 steel, heat treated, protective coated for corrosion resistance.
BALL — 52100 steel (AMS 7440) heat treated, hard chrome plated.
RACE — Steel Alloy heat treated, protective coated for corrosion resistance. PTFE Lined.
PTFE LINER — (AT 3200) Permanently Bonded to Race Inside Diameter. Qualified to MIL-B-81820.

HXAM-T



HAB-T



HXAM-T

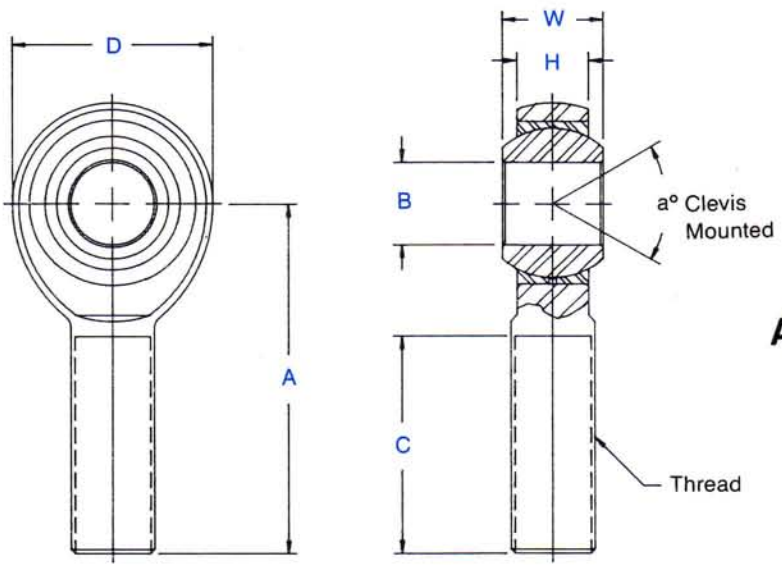
Rod End No.		DIMENSIONS IN INCHES											
Right Hand	Left Hand	B +.0000 −.0005	W +.000 −.005	H +.005 −.005	A +.010 −.010	D +.010 -.010	Ball Dia. Ref.	C +.031 -.031	Thread UNJF-3A	O Shoulder Dia.	a° Misalign. Angle	Radial Static Load Capacity Lbs.	Approx. Bearing Weight Lbs.
HXAM-4T*	HXAB-4T*	.2500	.593	.265	1.938	1.025	.593	1.187	3/8-24	.390	23	10,789	.12
HXAM-5T*	HXAB-5T*	.3125	.813	.355	2.125	1.150	.781	1.281	7/16-20	.512	22	11,781	.16
HXAM-6T	HXAB-6T	.3750	.813	.355	2.125	1.150	.781	1.281	7/16-20	.512	22	11,781	.15
HXAM-7T	HXAB-7T	.4375	.875	.355	2.438	1.337	.875	1.468	1/2-20	.618	21	17,105	.24
HXAM-8T	HXAB-8T	.5000	.937	.411	2.625	1.525	1.000	1.562	5/8-18	.730	19	23,720	.39
HXAM-10T	HXAB-10T	.6250	1.200	.577	2.875	1.775	1.250	1.687	3/4-16	.856	19	32,067	.60
HXAM-12T*	HXAB-12T*	.7500	1.280	.630	3.375	2.025	1.375	2.000	7/8-14	.970	18	38,660	.89

HAB-T

Bearing No.	DIMENSIONS IN INCHES								Static Limit Load	Approx. Bearing Weight Lbs.
Plain Series	B +.0000 −.0005	D +.0000 −.0005	W +.000 −.005	H ±.005	M REF.	O REF.	Ball Diameter Ref.	a°	Radial Lbs.	
HAB-4T*	.2500	.7400	.593	.255	.020	.390	.593	24	7,560	.036
HAB-5T*	.3125	.9060	.813	.345	.030	.512	.781	23	16,975	.068
HAB-6T	.3750	.9060	.813	.345	.030	.512	.781	23	16,975	.068
HAB-7T	.4375	1.0000	.875	.345	.030	.618	.875	22	19,018	.095
HAB-8T	.5000	1.1250	.937	.401	.030	.730	1.000	20	25,263	.160
HAB-10T	.6250	1.3750	1.200	.567	.030	.856	1.250	20	44,651	.245
HAB-12T*	.7500	1.5625	1.280	.620	.035	.970	1.375	18	53,707	.315

*Check for availability.

ALM & ALB Series
XALM & XALB Series
Male Rod Ends
(PTFE Liners Available)



SPECIFICATIONS
BODY — Aluminum 7075-T651, anodized.
RACE — Low carbon steel, protective coated for corrosion resistance.
BALL — Alloy steel, heat treated, hard chrome plated.

ALM — ALUMINUM SERIES

Rod End No.		DIMENSIONS IN INCHES										
Right Hand	Left Hand	B +.0015 −.0005	W +.000 −.005	H ±.005	A ±.015	D ±.010	Ball Dia. Ref.	C +.062 −.031	Thread UNF-3A	a° Misalign. Angle	Radial Static Load Capacity Lbs.	Approx. Bearing Weight Lbs.
ALM-8	ALB-8	.5000	.625	.500	2.438	1.250	.875	1.437	1/2-20*	13	7,596	.140
ALM-10	ALB-10	.6250	.750	.562	2.625	1.500	1.125	1.625	5/8-18	16	8,516	.240
ALM-12	ALB-12	.7500	.875	.687	2.875	1.750	1.312	1.750	3/4-16	14	13,319	.380

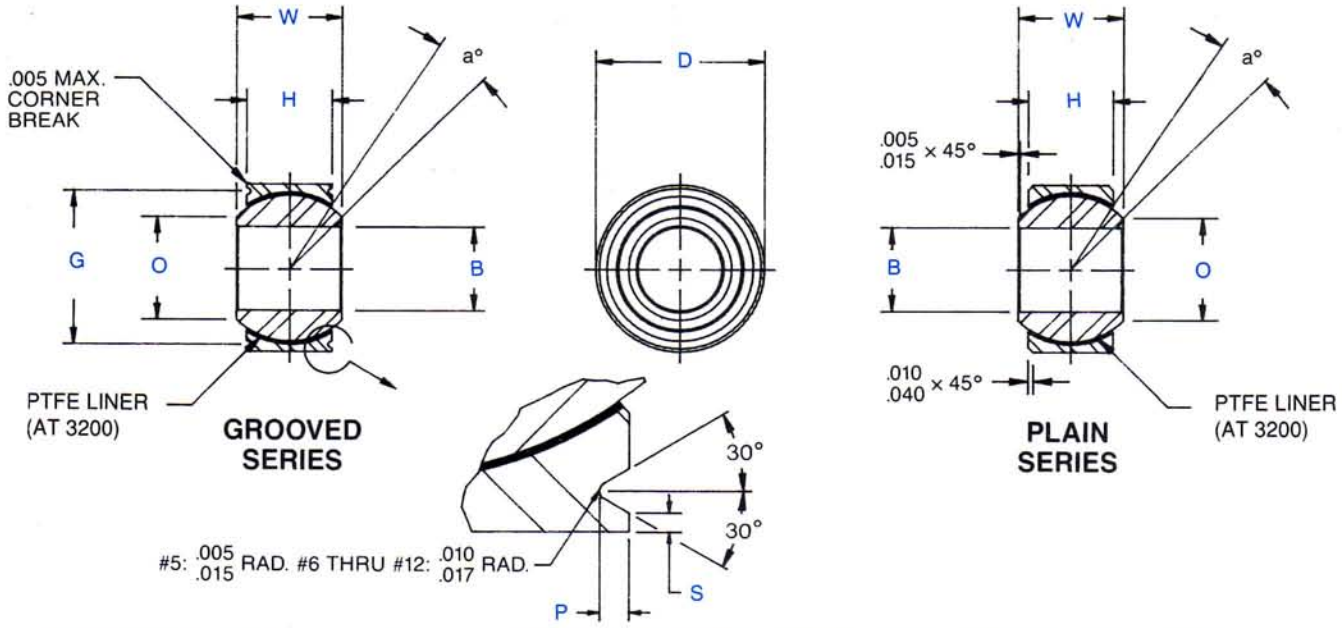
XALM — EXTRA STRENGTH ALUMINUM SERIES

Rod End No.		DIMENSIONS IN INCHES										
Right Hand	Left Hand	B +.0015 −.0005	W +.000 −.005	H ±.005	A ±.015	D ±.010	Ball Dia. Ref.	C +.062 −.031	Thread UNF-3A	a° Misalign. Angle	Radial Static Load Capacity Lbs.	Approx. Bearing Weight Lbs.
XALM-8	XALB-8	.5000	.625	.500	2.625	1.500	.937	1.625	5/8-18	10	14,889	.200
XALM-10	XALB-10	.6250	.750	.562	2.875	1.750	1.125	1.750	3/4-16	13	19,243	.310

*Threads are 1/2-2OUNJF-3A

PTFE liner — XALM-8T

PERFORMANCE RACING SERIES
PNB-TG & PNB-T Series
PWB-TG & PWB-T Series
Spherical Bearings — PTFE Lined



SPECIFICATIONS		
BALL — 52100 steel (AMS 7440) heat treated, hard chrome plated.	**RACE** — Stainless steel (17-4 PH per AMS 5643) heat treated, PTFE lined.	**PTFE LINER** — (AT 3200) Permanently Bonded to Race Inside Diameter. Qualified to MIL-B-81820.

PNB-TG & PNB-T — Performance Racing Spherical Narrow Series

Bearing No.		DIMENSIONS IN INCHES										Static Limit Load		No Load Pivotal Breakaway Torque In-Lbs.
Grooved	Plain	B +.0000 −.0005	D +.0000 −.0005	W +.000 −.005	H ±.005	O Min.	P +.000 −.010	S Min.	G +.000 −.008	Ball Dia. Ref.	a°	Radial Lbs.	Axial Lbs.	
PNB-5TG	PNB-5T	.3125	.7500	.375	.281	.419	.035	.020	.650	.562	10	8,750	700	1-8
PNB-6TG	PNB-6T	.3750	.8125	.406	.312	.475	.035	.020	.712	.625	9	10,540	1,100	1-8
PNB-7TG	PNB-7T	.4375	.9062	.437	.343	.530	.035	.020	.806	.687	8	13,200	1,400	3-12
PNB-8TG	PNB-8T	.5000	1.0000	.500	.390	.600	.055	.020	.876	.781	8	17,900	2,100	3-12
PNB-9TG*	PNB-9T*	.5625	1.0937	.562	.437	.670	.060	.020	.972	.875	8	23,200	3,680	3-12
PNB-10TG	PNB-10T	.6250	1.1875	.625	.500	.739	.055	.020	1.063	.968	8	30,500	4,720	3-12
PNB-12TG	PNB-12T	.7500	1.4375	.750	.593	.920	.055	.020	1.313	1.187	8	46,400	6,750	3-12

PWB-TG & PWB-T — Performance Racing Spherical Wide Series

Bearing No.		DIMENSIONS IN INCHES										Static Limit Load		No Load Pivotal Breakaway Torque In-Lbs.
Grooved	Plain	B +.0000 −.0005	D +.0000 −.0005	W +.000 −.005	H ±.005	O Min.	P +.000 −.010	S Min.	G +.000 −.008	Ball Dia. Ref.	a°	Radial Lbs.	Axial Lbs.	
PWB-5TG	PWB-5T	.3125	.6875	.437	.317	.401	.025	.010	.625	.593	14	9,400	1,640	1-8
PWB-6TG	PWB-6T	.3750	.8125	.500	.406	.466	.035	.020	.712	.687	8	13,700	2,630	1-8
PWB-7TG	PWB-7T	.4375	.9375	.562	.442	.537	.035	.020	.837	.781	10	20,700	3,650	3-12
PWB-8TG	PWB-8T	.5000	1.0000	.625	.505	.607	.035	.020	.900	.875	9	21,400	4,970	3-12
PWB-9TG*	PWB-9T*	.5625	1.1250	.687	.536	.721	.040	.020	1.027	1.000	10	26,600	5,370	3-12
PWB-10TG	PWB-10T	.6250	1.1875	.750	.567	.747	.035	.020	1.087	1.062	12	29,000	6,130	3-12
PWB-12TG	PWB-12T	.7500	1.3750	.875	.630	.887	.055	.020	1.251	1.250	13	37,000	7,730	3-12

*Check for availability.

MILITARY SPECIFICATION BEARINGS

General Information

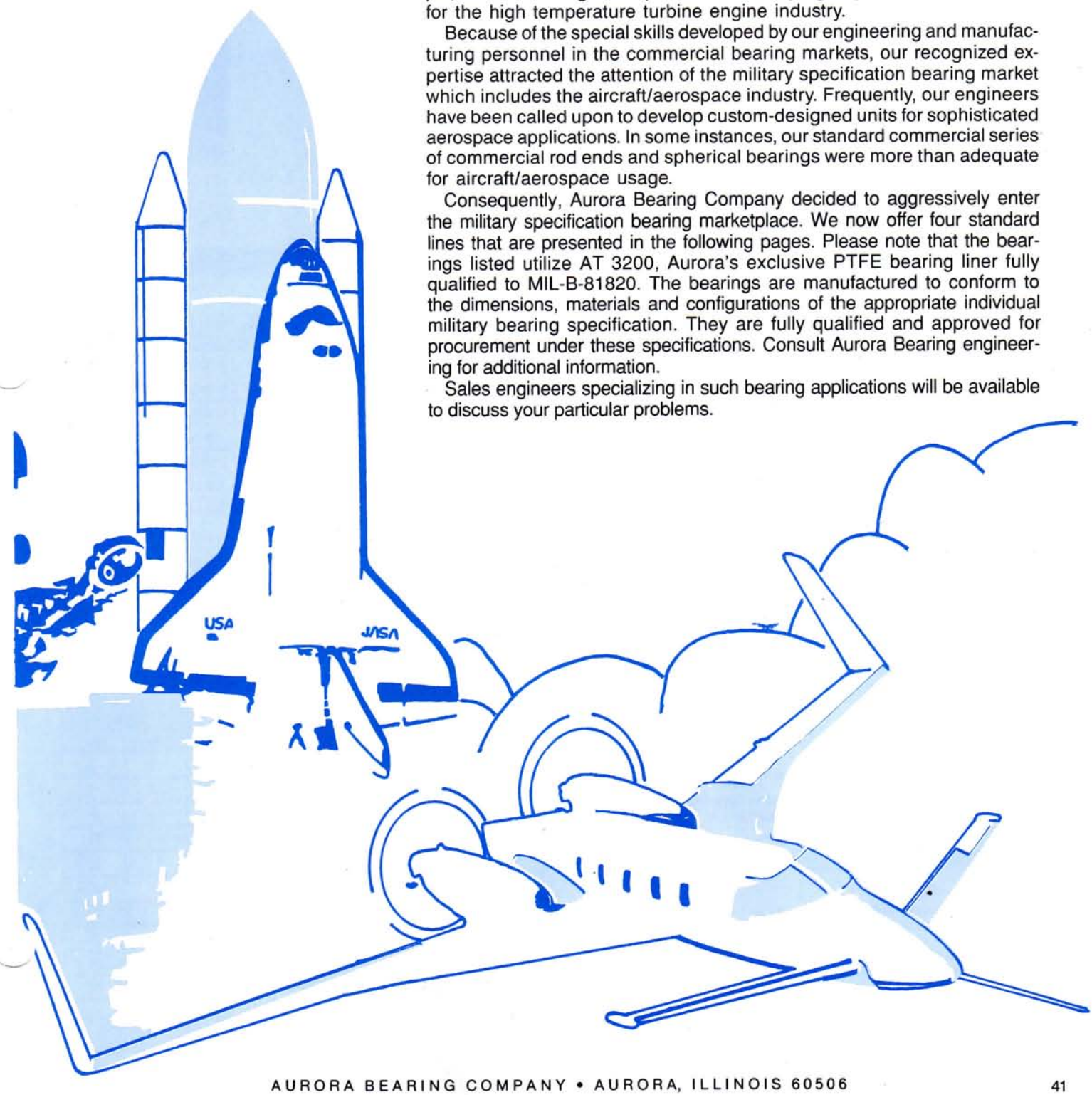
Aurora Bearing Company's reputation for designing and producing high quality commercial rod ends and spherical bearings has grown extensively since the inception of the organization. The Company has rapidly expanded its various product lines and now serves virtually every major industrial market.

In all of these markets, Aurora Bearing has consistently demonstrated its reputation for furnishing a reliable product. As a result, more and more firms sought help from our engineers and manufacturing specialists to solve difficult application problems in high performance equipment. For example, Aurora Bearing was a pioneer in developing a special line of rod ends for the high temperature turbine engine industry.

Because of the special skills developed by our engineering and manufacturing personnel in the commercial bearing markets, our recognized expertise attracted the attention of the military specification bearing market which includes the aircraft/aerospace industry. Frequently, our engineers have been called upon to develop custom-designed units for sophisticated aerospace applications. In some instances, our standard commercial series of commercial rod ends and spherical bearings were more than adequate for aircraft/aerospace usage.

Consequently, Aurora Bearing Company decided to aggressively enter the military specification bearing marketplace. We now offer four standard lines that are presented in the following pages. Please note that the bearings listed utilize AT 3200, Aurora's exclusive PTFE bearing liner fully qualified to MIL-B-81820. The bearings are manufactured to conform to the dimensions, materials and configurations of the appropriate individual military bearing specification. They are fully qualified and approved for procurement under these specifications. Consult Aurora Bearing engineering for additional information.

Sales engineers specializing in such bearing applications will be available to discuss your particular problems.



ASM-T & ASB-T Male Rod Ends

High Strength - Aerospace Series

M81935/1

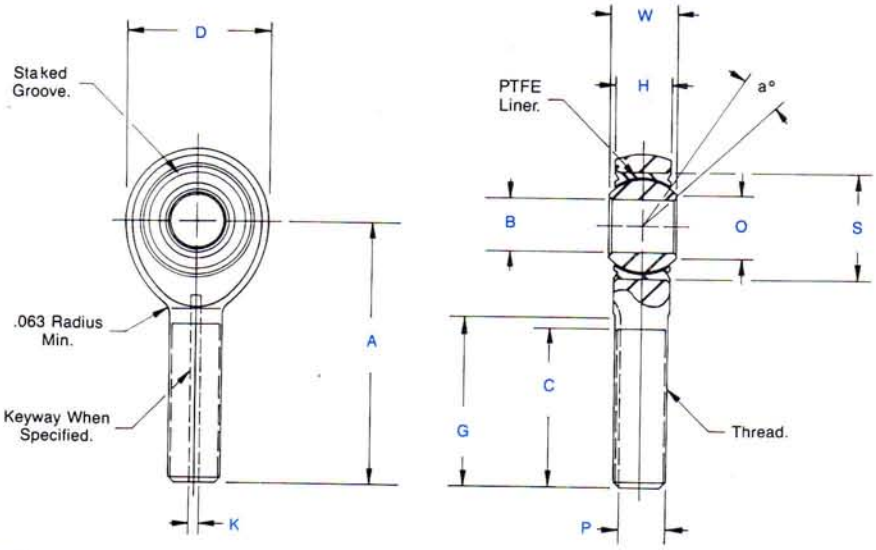


TABLE I

Rod End No.		DIMENSIONS IN INCHES														
Right Hand	Left Hand	B +.0000 −.0005	W +.000 −.002	H ±.005	A ±.010	D ±.010	O Min.	S Max. Housing I.D.	Ball Dia. Ref.	G +.000 −.020	K +.005 −.000	P +.000 −.005	C ±.031	Thread UNJF-3A	a° Misalign. Angle Min.	Approx. Brg. Wt. Lbs.
ASM-3T	ASB-3T	.1900	.437	.337	1.562	.806	.300	.6250	.531	.980	.062	.268	.968	5/16-24	15	.072
ASM-4T	ASB-4T	.2500	.437	.337	1.562	.806	.300	.6250	.531	.980	.062	.268	.968	5/16-24	15	.072
ASM-5T	ASB-5T	.3125	.437	.327	1.875	.900	.360	.6875	.593	1.270	.062	.268	1.187	5/16-24	14	.087
ASM-6T	ASB-6T	.3750	.500	.416	1.938	1.025	.470	.8125	.687	1.235	.093	.319	1.187	3/8-24	8	.136
ASM-7T	ASB-7T	.4375	.562	.452	2.125	1.150	.540	.9062	.781	1.402	.093	.383	1.281	7/16-20	10	.183
ASM-8T	ASB-8T	.5000	.625	.515	2.438	1.337	.610	1.0000	.875	1.589	.093	.445	1.468	1/2-20	9	.278
ASM-10T	ASB-10T	.6250	.750	.577	2.625	1.525	.750	1.1875	1.062	1.683	.125	.541	1.562	5/8-18	12	.424
ASM-12T	ASB-12T	.7500	.875	.640	2.875	1.775	.850	1.3750	1.250	1.808	.125	.663	1.687	3/4-16	13	.639
ASM-14T	ASB-14T	.8750	.875	.765	3.375	2.025	1.000	1.6250	1.375	2.121	.156	.777	2.000	7/8-14	6	.963
ASM-16T	ASB-16T	1.0000	1.375	1.015	4.125	2.775	1.270	2.1250	1.875	2.464	.187	1.136	2.343	1-1/4-12	12	2.546

SPECIFICATIONS	
Body	4340 Alloy Steel (MIL-S-5000) Heat Treated Cadmium Plated
Ball	440C Stainless Steel (AMS 5630) Heat Treated Hard Chrome Plated
Race	17-4PH Stainless Steel (AMS 5643) Heat Treated
Liner	AT3200 Bearing Liner. Permanently Bonded to Race I.D. Qualified to MIL-B-81820

Temperature Range: –65°F to +325°F

*No load rotational breakaway torque can be varied to meet specific application requirements.

Add letter "K" to prefix to designate keyway. Example: ASMK-6T

As applicable, keyway will conform to MIL-B-81935/3 or NAS 559.

All threads are rolled after heat treatment, and conform to UNJF-3A per MIL-S-8879.

AT3200 Bearing Liner System is qualified for procurement under MIL-B-81820.

Rod end bearings listed are manufactured to conform to the dimensions, materials and configurations of MIL-B-81935, and are approved for procurement under this specification. Consult factory for additional information.

TABLE II

Rod End No.		Ult. Static Radial Load Lbs.	Fatigue Load Lbs.	Axial Proof Load Lbs.	No Load Rotational Breakaway Torque* In-Lbs.	
Right Hand	Left Hand				Min.	Max.
ASM-3T	ASB-3T	2,360	1,470	1,000	.5	6
ASM-4T	ASB-4T	4,860	2,380	1,000	.5	6
ASM-5T	ASB-5T	7,180	2,770	1,100	1	15
ASM-6T	ASB-6T	8,550	3,570	1,660	1	15
ASM-7T	ASB-7T	12,000	4,800	1,850	1	15
ASM-8T	ASB-8T	19,500	7,680	2,040	1	15
ASM-10T	ASB-10T	21,900	9,180	2,430	1	15
ASM-12T	ASB-12T	29,300	11,600	2,810	1	15
ASM-14T	ASB-14T	34,500	13,100	3,320	1	24
ASM-16T	ASB-16T	80,300	30,400	4,340	1	24

THESE BEARINGS NOT NORMALLY STOCKED — CHECK FOR AVAILABILITY

ASW-T & ASG-T Female Rod Ends

High Strength - Aerospace Series

M81935/2

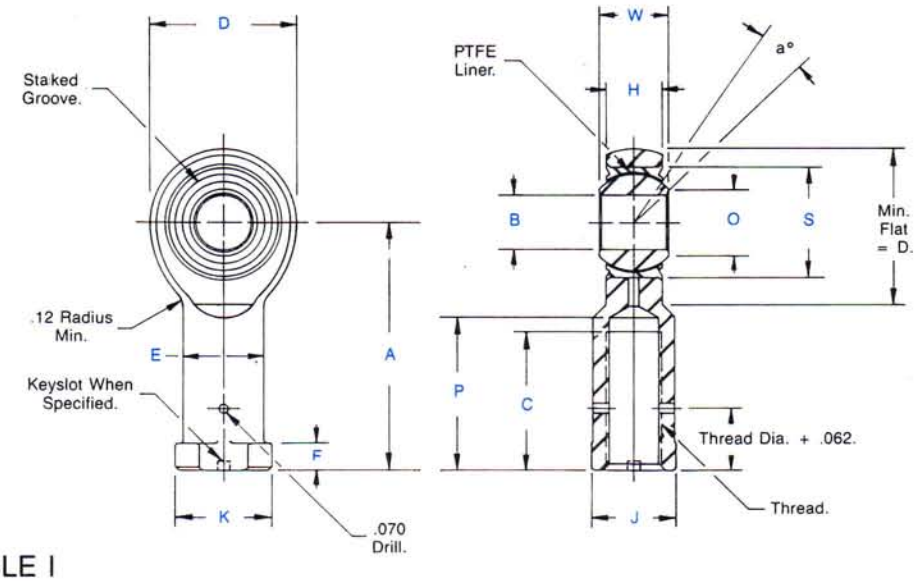


TABLE I

Rod End No.		DIMENSIONS IN INCHES																
Right Hand	Left Hand	B +.0000 −.0005	W +.000 −.002	H ±.005	A ±.010	D ±.010	O Min.	S Max. Hsg. I.D.	E ±.010	K Ref. Dia.	J +.002 −.010	F +.010 −.062	Ball Dia. Ref.	P Max.	C Min.	Thread UNJF-3B	a° Misalign. Angle Min.	Approx. Brg. Wt. Lbs.
ASW-3T	ASG-3T	.1900	.437	.337	1.375	.806	.300	.6250	.422	.500	.437	.188	.531	.875	.750	5/16-24	15	.080
ASW-4T	ASG-4T	.2500	.437	.337	1.469	.806	.300	.6250	.422	.500	.437	.188	.531	.875	.750	5/16-24	15	.084
ASW-5T	ASG-5T	.3125	.437	.327	1.625	.900	.360	.6875	.485	.580	.500	.250	.593	1.000	.875	3/8-24	14	.102
ASW-6T	ASG-6T	.3750	.500	.416	1.812	1.025	.470	.8125	.547	.660	.562	.250	.687	1.125	1.000	3/8-24	8	.161
ASW-7T	ASG-7T	.4375	.562	.452	2.000	1.150	.540	.9062	.610	.720	.625	.250	.781	1.250	1.125	7/16-20	10	.212
ASW-8T	ASG-8T	.5000	.625	.515	2.250	1.337	.610	1.0000	.735	.880	.750	.250	.875	1.375	1.250	1/2-20	9	.325
ASW-10T	ASG-10T	.6250	.750	.577	2.500	1.525	.750	1.1875	.860	1.020	.875	.375	1.062	1.500	1.375	5/8-18	12	.481
ASW-12T	ASG-12T	.7500	.875	.640	2.875	1.775	.850	1.3750	.985	1.160	1.000	.375	1.250	1.750	1.625	3/4-16	13	.673
ASW-14T	ASG-14T	.8750	.875	.765	3.375	2.025	1.000	1.6250	1.110	1.300	1.125	.500	1.375	2.062	1.875	7/8-14	6	.959
ASW-16T	ASG-16T	1.0000	1.375	1.015	4.125	2.775	1.270	2.1250	1.688	2.020	1.750	.563	1.875	2.312	2.125	1-1/4-12	12	2.717

SPECIFICATIONS	
Body	4340 Alloy Steel (MIL-S-5000) Heat Treated Cadmium Plated
Ball	440C Stainless Steel (AMS 5630) Heat Treated Hard Chrome Plated
Race	17-4PH Stainless Steel (AMS 5643) Heat Treated
Liner	AT3200 Bearing Liner. Permanently Bonded to Race I.D. Qualified to Mil-B-81820

Temperature Range: –65°F to +325°F

*No load rotational breakaway torque can be varied to meet specific application requirements.
Add letter "K" to prefix to designate keyway. Example: ASWK-6T
As applicable, keyway will conform to MIL-B-81935/3 or NAS 559.
All threads conform to UNJF-3B per MIL-S-8879.
AT3200 Bearing Liner System is qualified for procurement under MIL-B-81820.
Rod end bearings listed are manufactured to conform to the dimensions, materials and configurations of MIL-B-81935, and are approved for procurement under this specification. Consult factory for additional information.

TABLE II

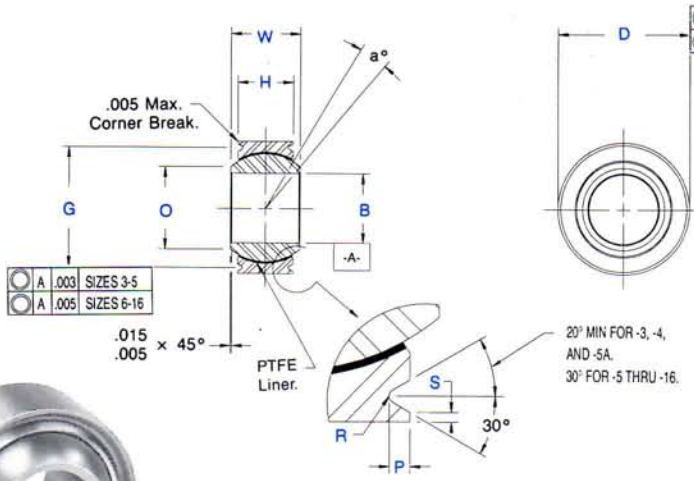
Rod End No.		Ult. Static Radial Load Lbs.	Fatigue Load Lbs.	Axial Proof Load Lbs.	No Load Rotational Breakaway Torque* In-Lbs.	
Right Hand	Left Hand				Min.	Max.
ASW-3T	ASG-3T	2,360	1,470	1,000	.5	6
ASW-4T	ASG-4T	4,860	2,380	1,000	.5	6
ASW-5T	ASG-5T	7,180	3,020	1,100	1	15
ASW-6T	ASG-6T	8,550	3,570	1,660	1	15
ASW-7T	ASG-7T	12,000	4,800	1,850	1	15
ASW-8T	ASG-8T	19,500	8,260	2,040	1	15
ASW-10T	ASG-10T	21,900	9,180	2,430	1	15
ASW-12T	ASG-12T	29,300	11,600	2,810	1	15
ASW-14T	ASG-14T	34,500	13,100	3,320	1	24
ASW-16T	ASG-16T	80,300	30,400	4,340	1	24

THESE BEARINGS NOT NORMALLY STOCKED — CHECK FOR AVAILABILITY.

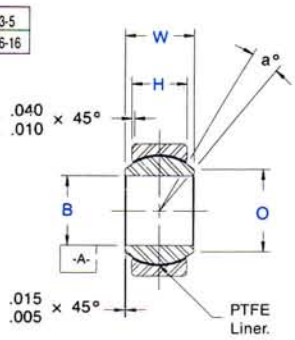
ANC-TG & ANC-T Spherical Bearings

Narrow - Aerospace Series

MS 14101 and MS 14104



Grooved Series



Plain Series

Bearing No.		DIMENSIONS IN INCHES											Static Limit Load		Oscil-lating Load Lbs.	No-Load Rotational Breakaway Torque* In-Lbs.	Approx. Brg. Wt. Lbs.
Grooved	Plain	B +.0000 −.0005	D +.0000 −.0005	W +.000 −.002	H ±.005	O Min.	P +.000 - .010	S Min.	G +.000 - .008	R +.002 - .005	Ball Dia. Ref.	a°	Radial Lbs.	Axial Lbs.			
ANC-3TG	ANC-3T	.1900	.5625	.281	.218	.293	.025	.010	.500	.010	.406	10	3,975	150	1,500	0.25 - 5.0	.020
ANC-4TG	ANC-4T	.2500	.6562	.343	.250	.364	.025	.010	.594	.010	.500	10	6,040	430	3,320	0.25 - 5.0	.020
ANC-5TG	ANC-5T	.3125	.7500	.375	.281	.419	.035	.020	.650	.010	.562	10	8,750	700	5,460	0.25 - 8.0	.030
ANC-6TG	ANC-6T	.3750	.8125	.406	.312	.475	.035	.020	.712	.015	.625	9	10,540	1,100	6,600	0.25 - 8.0	.040
ANC-7TG	ANC-7T	.4375	.9062	.437	.343	.530	.035	.020	.806	.015	.687	8	13,200	1,400	8,050	0.25 - 8.0	.050
ANC-8TG	ANC-8T	.5000	1.0000	.500	.390	.600	.055	.020	.876	.015	.781	8	17,900	2,100	10,400	0.25 - 8.0	.070
ANC-9TG	ANC-9T	.5625	1.0937	.562	.437	.670	.055	.020	.970	.015	.875	8	23,200	3,680	13,000	0.25 - 8.0	.090
ANC-10TG	ANC-10T	.6250	1.1875	.625	.500	.739	.055	.020	1.063	.015	.968	8	30,500	4,720	16,450	0.25 - 8.0	.120
ANC-12TG	ANC-12T	.7500	1.4375	.750	.593	.920	.055	.020	1.313	.015	1.187	8	46,400	6,750	23,600	0.25 - 8.0	.210
ANC-14TG	ANC-14T	.8750	1.5625	.875	.703	.980	.055	.020	1.438	.015	1.312	8	62,200	9,350	30,250	0.25 -12.0	.270
ANC-16TG	ANC-16T	1.0000	1.7500	1.000	.797	1.118	.055	.020	1.626	.015	1.500	9	82,200	12,160	38,000	0.25 -12.0	.390

SPECIFICATIONS	
Ball	440C Stainless Steel (AMS 5630) Heat Treated Hard Chrome Plated.
Race	17-4PH Stainless Steel (AMS 5643) Heat Treated
Liner	AT3200 Bearing Liner. Permanently Bonded to Race I.D. Qualified to MIL-B-81820.

THESE BEARINGS NOT NORMALLY STOCKED — CHECK FOR AVAILABILITY.

Temperature Range: –65°F to +325°F

*No load rotational breakaway torque can be varied to meet specific application requirements.

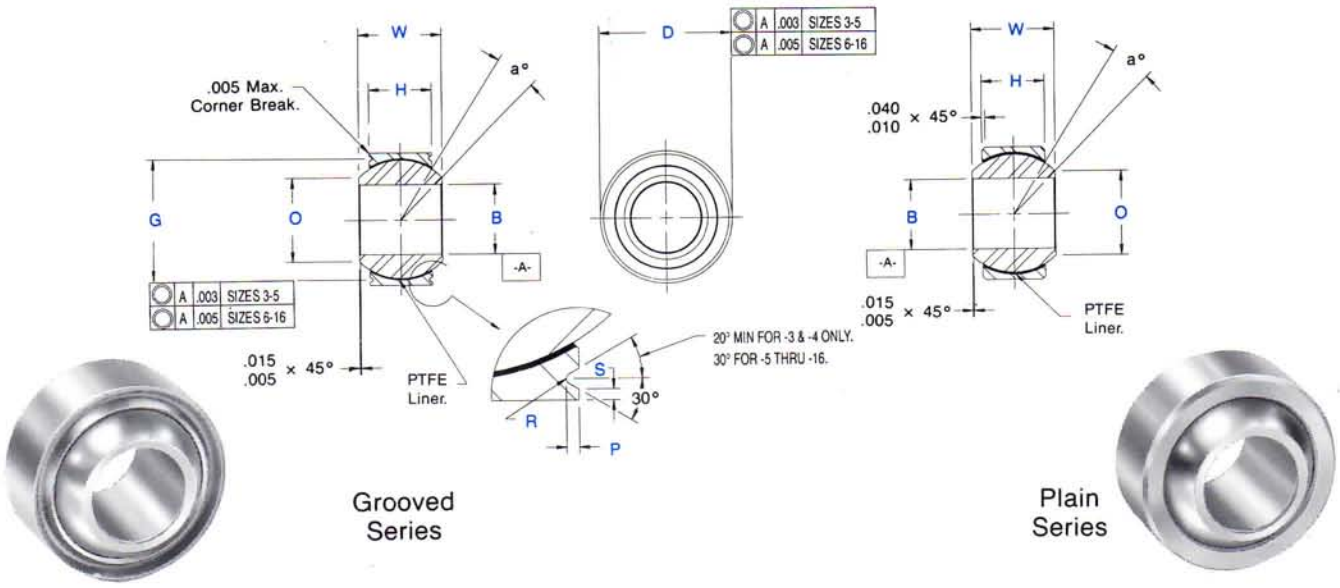
AT3200 Bearing Liner System is qualified for procurement under MIL-B-81820.

Bearings listed are manufactured to conform to the dimensions, materials and configurations of Military Specifications MS 14101 (grooved) and MS 14104 (plain), and are approved for procurement under these specifications. Consult factory for addltional information.

AWC-TG & AWC-T Spherical Bearings

Wide - Aerospace Series

MS 14102 and MS 14103



Bearing No.		DIMENSIONS IN INCHES											Static Limit Load					
Grooved	Plain	B +.0000 −.0005	D +.0000 −.0005	W +.000 −.002	H ±.005	O Min.	P +.000 - .010	S Min.	G +.000 - .008	R +.002 - .005	Ball Dia. Ref.	a°	Radial Lbs.	Axial Lbs.	Oscillating Load Lbs.	No-Load Rotational Breakaway Torque* In-Lbs.	Approx. Brg. Wt. Lbs.
AWC-3TG	AWC-3T	.1900	.6250	.437	.327	.300	.025	.010	.563	.010	.531	15	2,500	1,770	4,900	0.25 - 5.0	.031
AWC-4TG	AWC-4T	.2500	.6250	.437	.327	.300	.025	.010	.563	.010	.531	15	5,500	1,770	4,900	0.25 - 5.0	.031
AWC-5TG	AWC-5T	.3125	.6875	.437	.317	.360	.025	.010	.625	.010	.593	14	9,400	1,640	6,050	0.25 - 8.0	.035
AWC-6TG	AWC-6T	.3750	.8125	.500	.406	.466	.035	.020	.712	.015	.687	8	13,700	2,630	8,310	0.25 - 8.0	.060
AWC-7TG	AWC-7T	.4375	.9375	.562	.442	.537	.035	.020	.837	.015	.781	10	20,700	3,650	11,750	0.25 - 8.0	.080
AWC-8TG	AWC-8T	.5000	1.0000	.625	.505	.607	.035	.020	.900	.015	.875	9	21,400	4,970	14,950	0.25 - 8.0	.100
AWC-9TG	AWC-9T	.5625	1.1250	.687	.536	.721	.035	.020	1.025	.015	1.000	10	26,600	5,370	18,100	0.25 - 8.0	.135
AWC-10TG	AWC-10T	.6250	1.1875	.750	.567	.747	.035	.020	1.087	.015	1.062	12	29,000	6,130	20,250	0.25 - 8.0	.160
AWC-12TG	AWC-12T	.7500	1.3750	.875	.630	.845	.055	.020	1.251	.015	1.250	13	37,000	7,730	26,200	0.25 - 8.0	.240
AWC-14TG	AWC-14T	.8750	1.6250	.875	.755	.995	.055	.020	1.501	.015	1.375	6	65,200	10,800	33,600	0.25 -12.0	.350
AWC-16TG	AWC-16T	1.0000	2.1250	1.375	1.005	1.269	.055	.020	2.001	.015	1.875	12	104,000	19,300	56,250	0.25 -12.0	.970

SPECIFICATIONS	
Ball	440C Stainless Steel (AMS 5630) Heat Treated Hard Chrome Plated.
Race	17-4PH Stainless Steel (AMS 5643) Heat Treated
Liner	AT3200 Bearing Liner. Permanently Bonded to Race I.D. Qualified to MIL-B-81820.

THESE BEARINGS NOT NORMALLY STOCKED — CHECK FOR AVAILABILITY.

Temperature Range: –65°F to +325°F

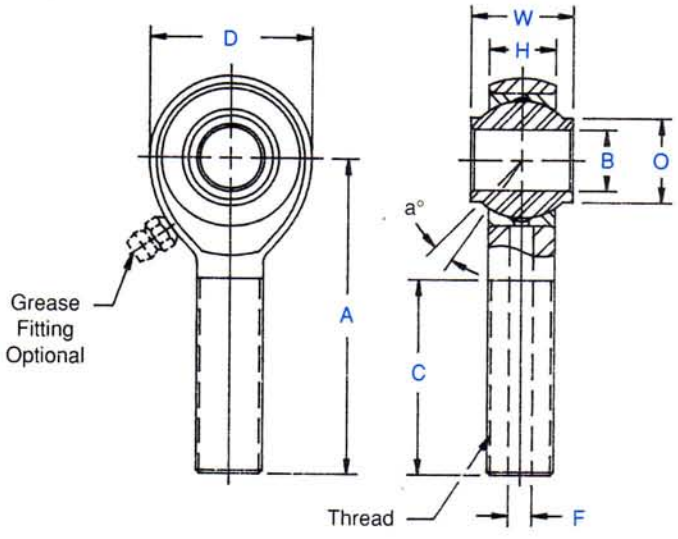
*No load rotational breakaway torque can be varied to meet specific application requirements.

AT3200 Bearing Liner System is qualified for procurement under MIL-B-81820.

Bearings listed are manufactured to conform to the dimensions, materials and configurations of Military Specifications MS 14103 (grooved) and MS 14102 (plain), and are approved for procurement under these specifications. Consult factory for additional information.

GMM-M & GMB-M Series
Male Rod Ends
General Aviation — Precision

DETAIL "A"



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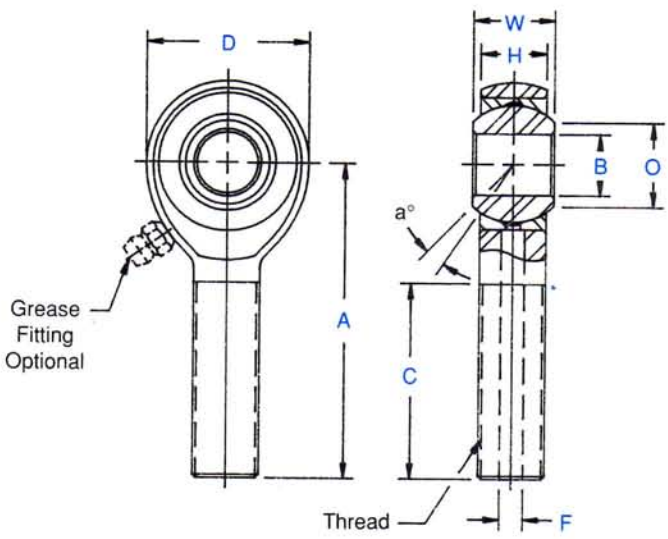


DETAIL "A"

SPECIFICATIONS	
Body	Low carbon steel, protective coated for corrosion resistance.
Race	Low carbon steel, protective coated for corrosion resistance.
Ball	Alloy steel, heat treated, hard chrome plated.

Note: Units are magnetic particle inspected after assembly.

DETAIL "B"

Rod End No.		DIMENSIONS IN INCHES														
Right Hand	Left Hand	Ball Shoulder Configuration	B +.0015 −.0005	W +.000 −.005	H ±.005	A ±.015	D +.010	O Shoulder Dia. Ref.	Ball Dia. Ref.	C Min.	F Drilled Hole Dia. Ref.	Thread UNF-3A	a° Misalign. Angle	Radial Static Load Capacity Lbs.	Approx. Brg. Wt. Lbs.
GMM-3M-470	GMB-3M-470	See Detail "A"	.1900	.437	.281	1.562	.750	.315	.500	.969	—	1/4-28	17	2,158	.05
GMM-3M-570	GMB-3M-570	See Detail "A"	.1900	.437	.328	1.375	.875	.315	.500	.750	.113	5/16-24	10	2,823	.07
GMM-3M-670	GMB-3M-670	See Detail "A"	.1900	.437	.328	1.375	.750	.315	.500	.750	.113	3/8-24	10	2,850	.08
GMM-3M-680	GMB-3M-680	See Detail "B"	.1900	.500	.375	1.812	.833	.319	.593	1.062	.136	3/8-24	18	3,269	.09
GMM-4M-470	GMB-4M-470	See Detail "B"	.2500	.437	.304	1.562	.812	.353	.562	.969	—	1/4-28	18	2,158	.07
GMM-4M-675	GMB-4M-675	See Detail "B"	.2500	.484	.335	2.312	.875	.395	.625	1.500	.136	3/8-24	18	3,160	.11
GMM-4M-680	GMB-4M-680	See Detail "B"	.2500	.500	.335	2.062	.875	.375	.625	1.500	.159	3/8-24	21	2,985	.10

Load ratings apply only to rod ends without grease fittings. For load ratings with fittings, please consult our engineering department.

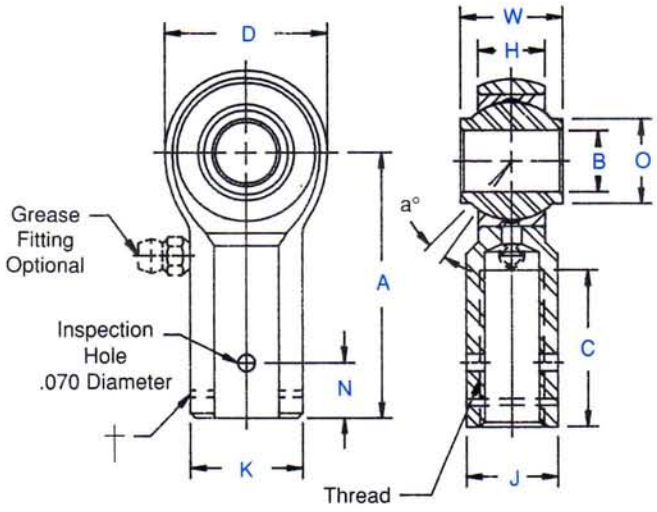
Units are supplied without grease fittings. When grease fittings are required, specify by adding suffix as designated.

Z Zerk type fitting EX: GMM-3MZ-470

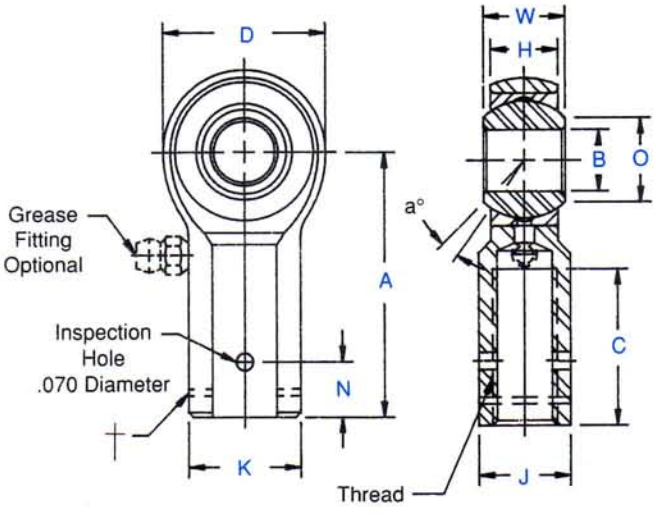
F Flush type fitting EX: GMM-3MF-470

GMW-M & GMG-M Series
Female Rod Ends
General Aviation — Precision

DETAIL "A"



DETAIL "B"



DETAIL "A"

SPECIFICATIONS	
Body	Low carbon steel, protective coated for corrosion resistance.
Race	Low carbon steel, protective coated for corrosion resistance.
Ball	Alloy steel, heat treated, hard chrome plated.

Note: Units are magnetic particle inspected after assembly.

DETAIL "B"

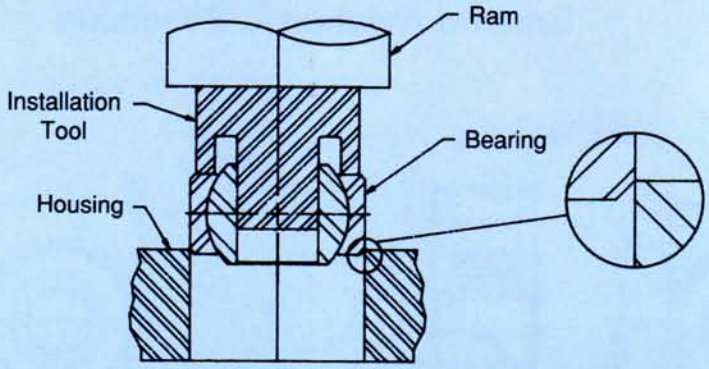
Rod End No.		DIMENSIONS IN INCHES																
Right Hand	Left Hand	Ball Shoulder Configuration	B +.0015 −.0005	W +.000 −.005	H ±.005	A ± .015	D ±.010	K ±.010	J ±.010	N ±.005	O Shoulder Dia. Ref.	Ball Dia. Ref.	C +.062 −.031	Thread UNF-3B	a° Misalign. Angle	Radial Static Load Capacity Lbs.	Approx. Brg. Wt. Lbs.
GMW-3M-470	GMG-3M-470	See Detail "A"	.1900	.437	.328	1.375	.750	.468	.375	.312	.315	.500	.750	1/4-28	10	2,881	.06
GMW-3M-471	GMG-3M-471	See Detail "A"	.1900	.437	.328	1.062	.750	.375	–	–	.315	.500	.437	1/4-28	10	2,881	.05
GMW-3M-480	GMG-3M-480	See Detail "A"	.1900	.500	.375	1.375	.812	.468	.375	.312	.312	.562	.750	1/4-28	15	3,152	.08
GMW-3M-570	GMG-3M-570	See Detail "A"	.1900	.437	.328	1.375	.750	.500	.437	.312	.315	.500	.750	5/16-24	10	2,881	.07
GMW-4M-470	GMG-4M-470	See Detail "B"	.2500	.437	.304	1.375	.812	.468	.375	.312	.353	.562	.750	1/4-28	18	2,950	.08
GMW-4M-595	GMG-4M-595	See Detail "A"	.2500	.593	.406	1.469	.938	.500	–	.312	.485	.687	.844	5/16-24	10	3,359	.10

† Left hand units have identification groove near end of shank.

Units are supplied without grease fittings. When grease fittings are required, specify by adding suffix as designated.
Z Zerk type fitting EX: GMW-3MZ-470
F Flush type fitting EX: GMW-3MF-470
Load ratings apply only to rod ends without grease fittings.
For load ratings with fittings, please consult our engineering department.

INSTALLATION OF SPHERICAL BEARING

FIGURE 1

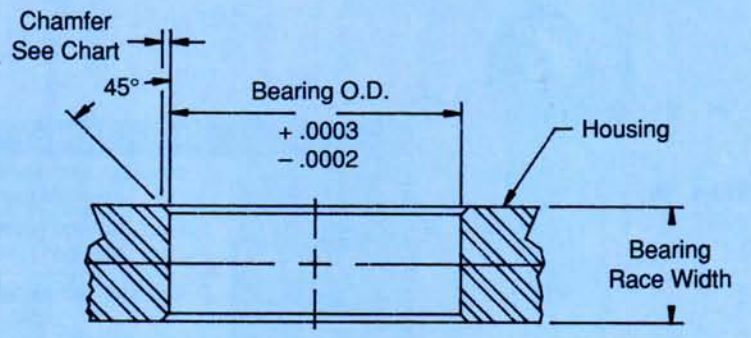


SPHERICAL BEARING INSTALLATION

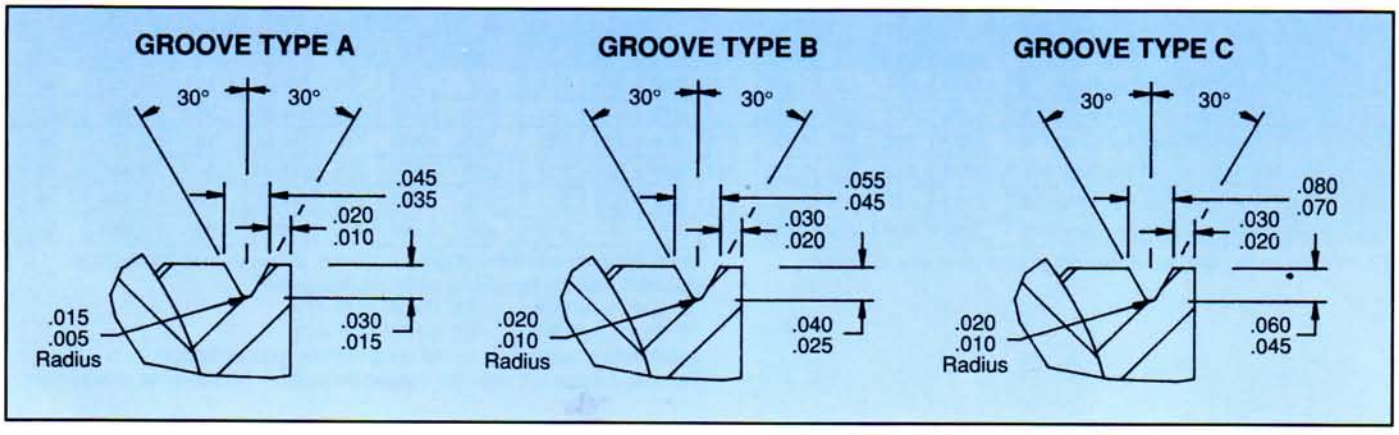
Proper installation of the bearing is important to prevent bearing failure as well as housing damage. Under no circumstances should a tool that induces shock or impact to the bearing be used. The use of an arbor press or hydraulic press is recommended. A tool as shown above (Figure 1) is advised. All force is to be applied on bearing race face (not on ball). A lead chamfer or radius on the bearing and/or housing is vital.

HOUSING CHAMFER — GROOVED BEARINGS

CHAMFER FOR GROOVE TYPES	
GROOVE TYPE A	.020 ± .005
GROOVE TYPE B	.030 ± .005
GROOVE TYPE C	.050 ± .005

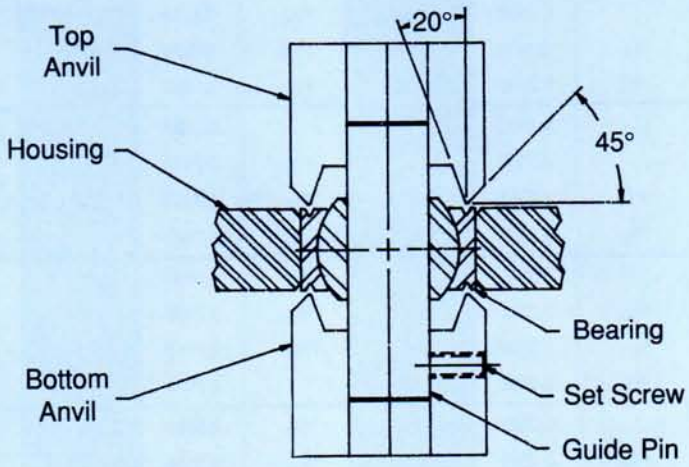


STAKING GROOVE TYPES



INSTALLATION OF SPHERICAL BEARING WITH STAKING GROOVES TOOLS AND STAKING METHODS

FIGURE 2

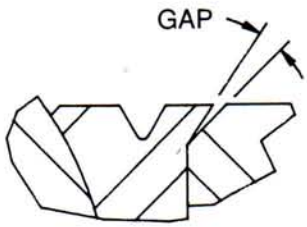


SPHERICAL BEARING INSTALLATION WITH STAKING GROOVE

The bearings have grooves in each side of the bearing race face, leaving a small lip. Staking tools (as shown in Figure 2) are then used to stake the lip over the chamfer edges of the housing. A typical arrangement consists of two identical anvils and one guide pin which is secured by a set screw in the bottom anvil.

PROCEDURES:

1. Install bearing into housing as shown in Figure 1 and position bearing symmetrical about housing centerline.
2. Align bearing with staking tool and guide pin as shown in Figure 2.
3 A trial stake assembly should be made to determine staking force necessary to meet thrust load requirements. Proper staking force is required because excessive pressure could result in bearing distortion along with life.
4 Pressure established by trial assembly is to be applied. After first stake is completed rotate assembly 90° and re-apply. Repeat operation through a minimum of three rotations to insure 360° uniformity of stake.
5 After staking, a slight gap may exist between race lip and housing chamfer. This slight gap (shown below) may not be cause for rejection if bearing meets or exceeds thrust loads.



INCH/METRIC CONVERSION TABLE

INCH			INCH			INCH			INCH		
FRACT.	DECIMAL	mm	FRACT.	DECIMAL	mm	FRACT.	DECIMAL	mm	FRACT.	DECIMAL	mm
	0.00004	0.001	17/64	0.2656	6.746		0.6693	17.		1.3780	35.
	0.00039	0.01		0.2756	7.	43/64	0.6719	17.066		1.4173	36.
	0.0010	0.025	9/32	0.2812	7.1437	11/16	0.6875	17.4625	1½	1.5000	38.1
	0.0020	0.051	19/64	0.2969	7.5406	45/64	0.7031	17.859		1.5354	39.
	0.0030	0.0762	5/16	0.3125	7.9375		0.7086	18.		1.5748	40.
	0.00394	0.1		0.3150	8.	23/32	0.7187	18.256		1.6535	42.
	0.0050	0.1270	21/64	0.3281	8.334	47/64	0.7344	18.653	1¾	1.7500	44.45
	0.00984	0.25	11/32	0.3437	8.731		0.7480	19.		1.7717	45.
	0.0100	0.254		0.3543	9.	3/4	0.7500	19.05		1.8898	48.
1/64	0.0156	0.396	23/64	0.3594	9.1281	49/64	0.7656	19.446		1.9685	50.
1/32	0.0312	0.793	3/8	0.3750	9.525	25/32	0.7812	19.843	2	2.0000	50.8
	0.03937	1.	25/64	0.3906	9.9219		0.7874	20.		2.0472	52.
3/64	0.0469	1.191		0.3937	10.	51/64	0.7969	20.240		2.1654	55.
	0.0591	1.5	13/32	0.4062	10.318	13/16	0.8125	20.6375		2.2047	56.
1/16	0.0625	1.5875	27/64	0.4219	10.716		0.8268	21.	2¼	2.2500	57.15
5/64	0.0781	1.984		0.4331	11.	53/64	0.8281	21.034		2.3622	60.
	0.0787	2.	7/16	0.4375	11.1125	27/32	0.8437	21.431	2½	2.5000	63.5
3/32	0.0937	2.381	29/64	0.4531	11.509	55/64	0.8594	21.828		2.5197	64.
	0.0984	2.5	15/32	0.4687	11.906		0.8661	22.	2¾	2.7500	69.85
	0.1000	2.54		0.4724	12.	7/8	0.8750	22.225		2.8346	72.
7/64	0.1094	2.778	31/64	0.4844	12.303	57/64	0.8906	22.621		2.9528	75.
	0.1181	3.	1/2	0.5000	12.7		0.9055	23.	3	3.0000	76.2
1/8	0.1250	3.175		0.5118	13.	29/32	0.9062	23.018		3.1496	80.
	0.1378	3.5	33/64	0.5156	13.096	59/64	0.9219	23.416	3¼	3.2500	82.55
9/64	0.1406	3.571	17/32	0.5312	13.493	15/16	0.9375	23.8125	3½	3.5000	88.9
5/32	0.1562	3.968	35/64	0.5469	13.891		0.9449	24.		3.5433	90.
	0.1575	4.		0.5512	14.	61/64	0.9531	24.209	3¾	3.7500	95.25
11/64	0.1719	4.366	9/16	0.5625	14.2875	31/32	0.9687	24.606		3.9370	100.
	0.1772	4.5	37/64	0.5781	14.684		0.9843	25.	4	4.0000	101.6
3/16	0.1875	4.7625		0.5906	15.	63/64	0.9844	25.003	4¼	4.2500	107.95
	0.1969	5.	19/32	0.5937	15.081	1	1.0000	25.4		4.3307	110.
13/64	0.2031	5.159	39/64	0.6094	15.478		1.0630	27.	4½	4.5000	114.3
7/32	0.2187	5.556	5/8	0.6250	15.875		1.1024	28.		4.7244	120.
15/64	0.2344	5.953		0.6299	16.		1.1811	30.	4¾	4.7500	120.65
	0.2362	6.	41/64	0.6406	16.271	1¼	1.2500	31.75	5	5.0000	127.
¼	0.2500	6.35	21/32	0.6562	16.668		1.2992	33.	5½	5.5000	139.7

INCH/METRIC CONVERSION FACTORS

Inches	x 25.4	= Millimeters	Pounds	x .4536	= Kilograms	Pounds (Force) x 4.448	= Newtons
Millimeters	x .03937	= Inches	Kilograms	x 2.2046	= Pounds	Newtons x .2248	= Pounds (Force)
Sq. Inches	x 6.4515	= Sq. Centimeters	Lbs. per In.²	x .0703	= kg per cm²	Temperature Conversion (Approximate)	
Sq. Centimeters	x .155	= Sq. Inches	kg per cm²	x 14.2231	= Lbs. per In.²	Degrees C = (Degrees F – 32)(.5556)	
						Degrees F = (Degrees C) (1.8) + 32	

PIPE AND TUBING DIMENSIONS AND WEIGHTS

Nominal Pipe Size	Diameters		Thickness	Weight Per Foot	Nearest standard sizes of Shelby Seamless Tubing			
	External	Internal						
Inches	Inches	Inches	Inches	Lbs.	O.D.	Thickness	I.D.	Weight
1/8 Std.	.405	.269	.068	.24	13/32	16 Ga.	.276	.237
1/8 X	.405	.215	.095	.31		13 Ga.	.216	.316
1/4 Std.	.540	.364	.088	.42	17/32	14 Ga.	.365	.397
1/4 X	.540	.302	.119	.53		11 Ga.	.290	.527
3/8 Std.	.675	.493	.091	.56	11/16	13 Ga.	.498	.602
3/8 X	.675	.423	.126	.73		1/8	.438	:752
1/2 Std.	.840	.622	.109	.85	27/32	12 Ga.	.626	.855
1/2 X	.840	.546	.147	1.08		5/32	.531	1.146
1/2 XX	.840	.252	.294	1.71		5/16	.219	1.773
3/4 Std.	1.050	.824	.113	1.13	1 1/16	12 Ga.	.845	1.111
3/4 X	1.050	.742	.154	1.47		5/32	.750	1.511
3/4 XX	1.050	.434	.308	2.44		5/16	.338	2.507
1 Std.	1.315	1.049	.133	1.67	1 5/16	10 Ga.	1.045	1.687
1 X	1.315	.957	.179	2.17		3/16	.938	2.259
1 XX	1.315	.599	.358	3.65		3/8	.563	3.757
1 1/4 Std.	1.660	1.380	.140	2.27	1 11/16	9 Ga.	1.392	2.434
1 1/4 X	1.660	1.278	.191	2.99		3/16	1.313	3.012
1 1/4 XX	1.660	.896	.382	5.21		3/8	.938	5.259
1 1/2 Std.	1.900	1.610	.145	2.71	1 7/8	9 Ga.	1.579	2.730
1 1/2 X	1.900	1.500	.200	3.63		7/32	1.438	3.873
1 1/2 XX	1.900	1.100	.400	6.40		13/32	1.063	6.372
2 Std.	2.375	2.067	.154	3.65	2 3/8	5/32	2.063	3.697
2 X	2.375	1.939	.218	5.02		7/32	1.938	5.043
2 XX	2.375	1.503	.436	9.02		7/16	1.500	9.061
2 1/2 Std.	2.875	2.469	.203	5.79	2 7/8	7/32	2.438	6.212
2 1/2 X	2.875	2.323	.276	7.66		9/32	2.313	7.785
2 1/2 XX	2.875	1.771	.552	13.69		9/16	1.750	13.90
3 Std.	3.500	3.068	.216	7.57	3 1/2	7/32	3.063	7.674
3 X	3.500	2.900	.300	10.25		5/16	2.875	10.65
3 XX	3.500	2.300	.600	18.58		5/8	2.250	19.19
3 1/2 Std.	4.000	3.548	.226	9.10	4	1/4	3.500	10.01
3 1/2 X	4.000	3.364	.318	12.50		5/16	3.375	12.33
3 1/2 XX	4.000	2.728	.636	22.85		5/8	2.750	22.53
4 Std.	4.500	4.026	.237	10.79	4 1/2	1/4	4.000	11.35
4 X	4.500	3.826	.337	14.98		11/32	3.813	15.27
4 XX	4.500	3.152	.674	27.54		11/16	3.125	28.01
5 Std.	5.563	5.047	.258	14.61	5 9/16	9/32	5.000	15.86
5 X	5.563	4.813	.375	20.78		3/8	4.713	20.77
5 XX	5.563	4.063	.750	38.55		3/4	4.063	38.54
6 Std.	6.625	6.065	.280	18.97	6 5/8	9/32	6.063	19.04
6 X	6.625	5.761	.432	28.57		7/16	5.750	28.94
6 XX	6.625	4.897	.864	53.16		7/8	4.875	53.73
8 Std.	8.625	8.071	.277	24.69	8 5/8	9/32	8.063	25.04
8 Std.	8.625	7.981	.322	28.55		11/32	7.938	30.42
8 X	8.625	7.625	.500	43.38		1/2	7.625	43.39
8 XX	8.625	6.875	.875	72.42		7/8	6.875	72.42
10 Std.	10.750	10.192	.279	31.20	10 3/4	9/32	10.188	31.42
10 Std.	10.750	10.136	.307	34.24		5/16	10.125	34.89
10 Std.	10.750	10.020	.365	40.48		3/8	10.000	41.55
10 X	10.750	9.750	.500	54.74		1/2	9.750	54.74
12 Std.	12.750	12.090	.330	43.77				
12 Std.	12.750	12.000	.375	49.56				
12 X	12.750	11.750	.500	65.41				

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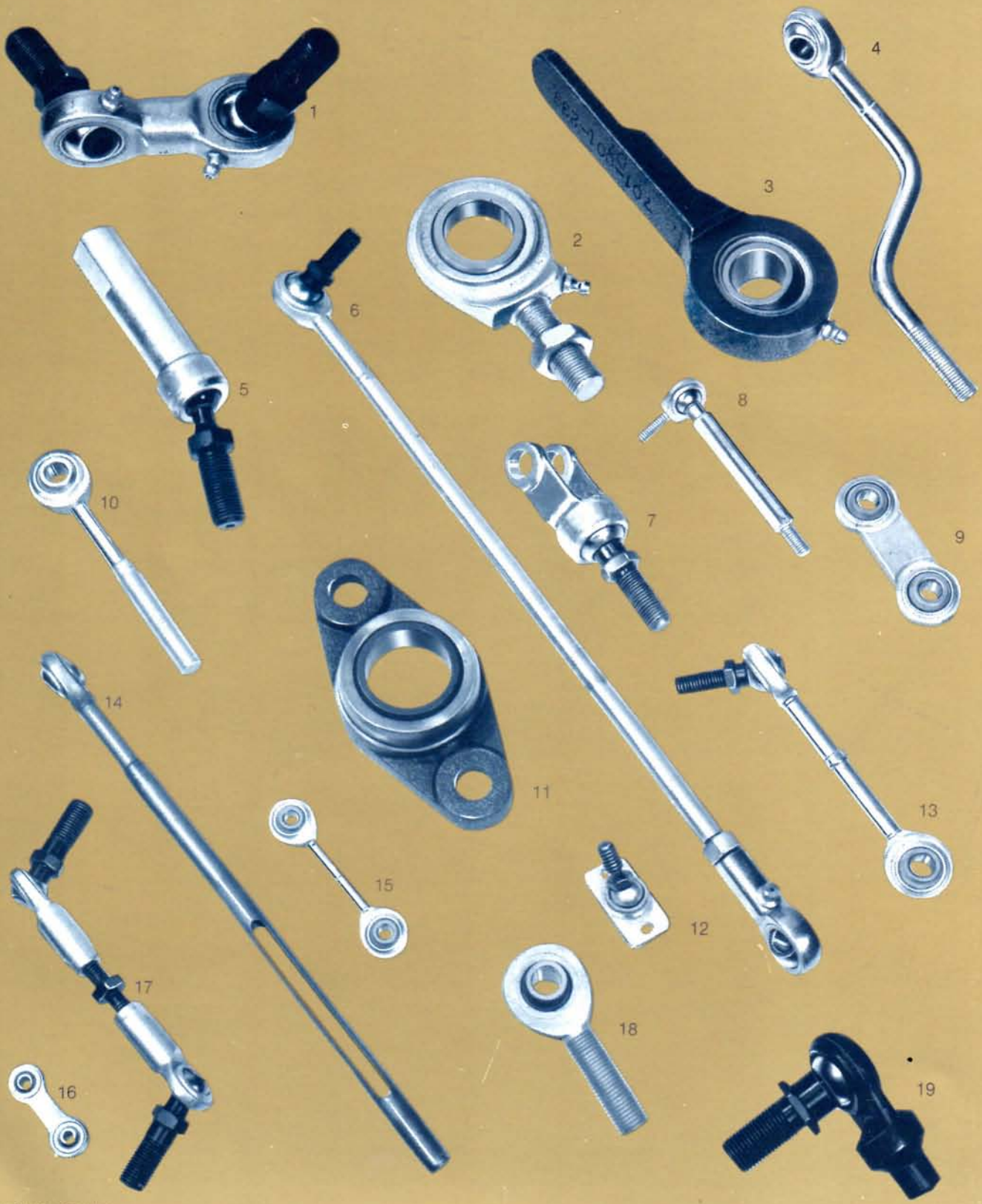

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