

TIMKEN®

“AP” Bearings for
Industrial
Applications



THE TIMKEN COMPANY

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Introduction

When The Timken Company introduced its revolutionary AP™ (All-Purpose) railroad bearings in 1954, it was a railroad industry milestone. Four decades and more than 10 million “AP” bearings later, The Timken Company, the world’s largest manufacturer of tapered roller bearings, continues to lead in advancing bearing technology through continuous research and development.

In addition to railroad applications, “AP” bearings are successfully being used in more and more types of industrial applications. This can be attributed to many factors including the bearing’s low cost, high load carrying capacity and its adaptability to a wide variety of applications.

Consider These Advantages/Features of Timken “AP” Bearings:

- **Self-contained unit** provides substantial cost savings in design and installation. Many mounting parts are available with the bearing assembly.
- **Pregreased unit** reduces installation costs.
- **Preassembled bearing** reduces the number of separate parts to be applied and helps reduce the chance of incorrect assembly.
- **High quality, tested and improved radial lip seals** provide exceptional protection, minimum relubrication and low maintenance.
- **Positive alignment of rollers** is maintained in the bearing due to its basic tapered roller construction. This distributes the load over the entire roller length, and prevents rollers from skewing.
- **On-apex design** provides true rolling motion with a minimum of friction and maximum resistance to wear.



- **Case-carburized and hardened cones, cups and rollers** put hardness where it is needed - at the working surfaces. The core of these parts, being more ductile, resists the propagation of fatigue cracks and spalls.
- **Adaptability to a wide range of applications** in new designs and changeovers from other bearing types. “AP” bearings range in bore size from 101.6 to 203.2 mm (4 to 8”). Optional auxiliary parts can be added to suit a wide range of mounting configurations.

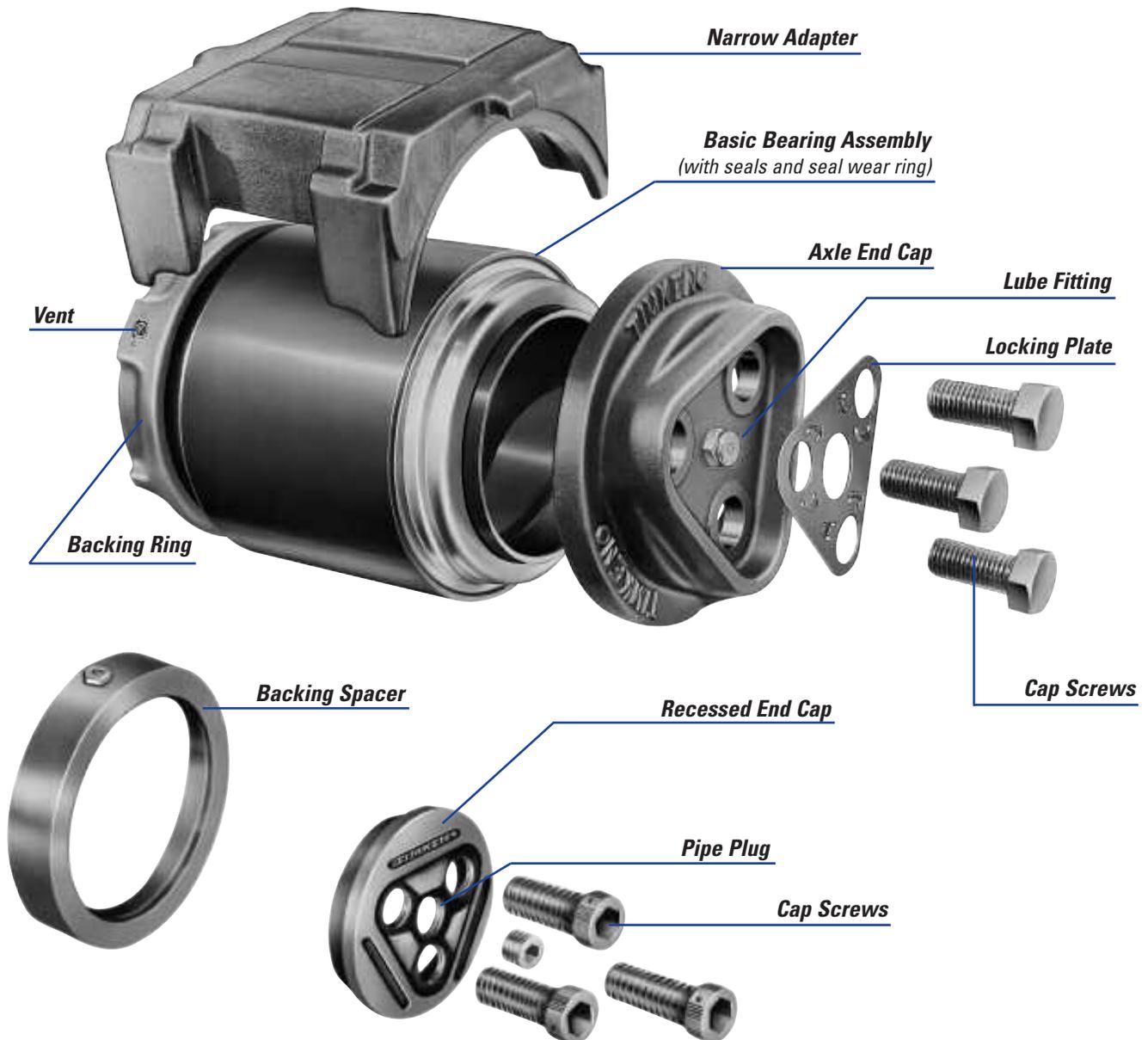
Bearing Reconditioning

Rail Bearing Service Corporation, a wholly-owned subsidiary of The Timken Company, reconditions bearings and related parts used in railroad rolling stock and other equipment. Its reconditioning capabilities are integral to the company’s further growth in railroad bearing markets.

Timken "AP" Bearing Assembly

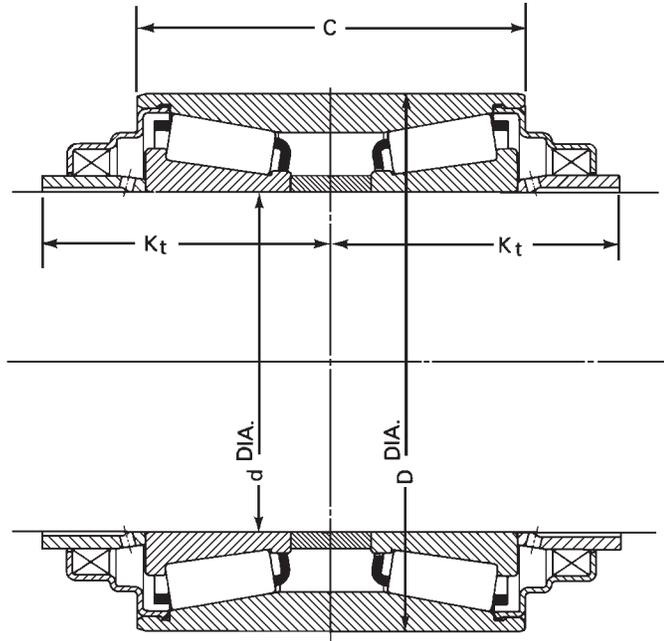
Description of Parts

- The narrow adapter (shown below), available from The Timken Company, can be used in many applications. Another type of mounting, not available from The Timken Company, utilizes a full bore housing (see page 21).
- The bearing assembly is pressed on the axle as a completely sealed unit. The axle end cap, cap screws and locking plate can be applied to the axle as a unit. When the axle end cap, as shown in the photograph (below) is used, the locking plate provided locks the cap screws.
- The recessed end cap, (shown below), reduces the overall bearing assembly width. A piece of soft wire is required to lock the drilled cap screw heads. A backing spacer can be used in place of a backing ring.



Introduction

Basic Bearing Assembly Dimensions and Ratings



CLASS	Inner Race (Cone) Number Outer Race (Cup) Number	Bore d *	Outside Diameter D **	K _t	Outer Race Width C	Rating @ 500 RPM For 3000 hr L10		
						Radial N lbf	Thrust N lbf	Factor K
B (4 1/4 x 8)	HM120848- HM120817XD	101.600 4.0000	165.100 6.5000	91.3 3.59	114.300 4.5000	120000 26900	31000 7000	2.21
C (5 x 9)	HM124646- HM124618XD	119.062 4.6875	195.262 7.6875	108.7 4.28	142.875 5.6250	172000 38600	44500 10000	2.21
D (5 1/2 x 10)	HM127446- HM127415XD	131.750 5.1870	207.962 8.1875	113.5 4.47	152.400 6.0000	186000 41800	48500 10900	2.21
E (6 x 11)	HM129848- HM129814XD	144.450 5.6870	220.662 8.6875	120.6 4.75	163.512 6.4375	195000 43800	50700 11400	2.21
F (6 1/2 x 12)	HM133444- HM133416XD	157.150 6.1870	252.412 9.9375	136.5 5.38	184.150 7.2500	266000 59700	69000 15500	2.21
G (7 x 12) G (7 x 14)	HM136948- HM136916XD	177.787 6.9995	276.225 10.8750	134.9 5.31	185.725 7.3120	305000 68600	79200 17800	2.21
GG (7)	H337846- H337816XD	177.787 6.9995	301.701+ 11.8780+	139.7 5.50	196.850 7.7500	388000 87300	132110 29700	1.69
K (8)	M241547- M241513XD	203.200 8.0000	301.625 11.8750	108.0 4.25	140.097 5.5156	266000 59700	86800 19500	1.76

* Cone Bore Tolerance (+ 0.025 - 0.000mm) + .0010" - .0000"

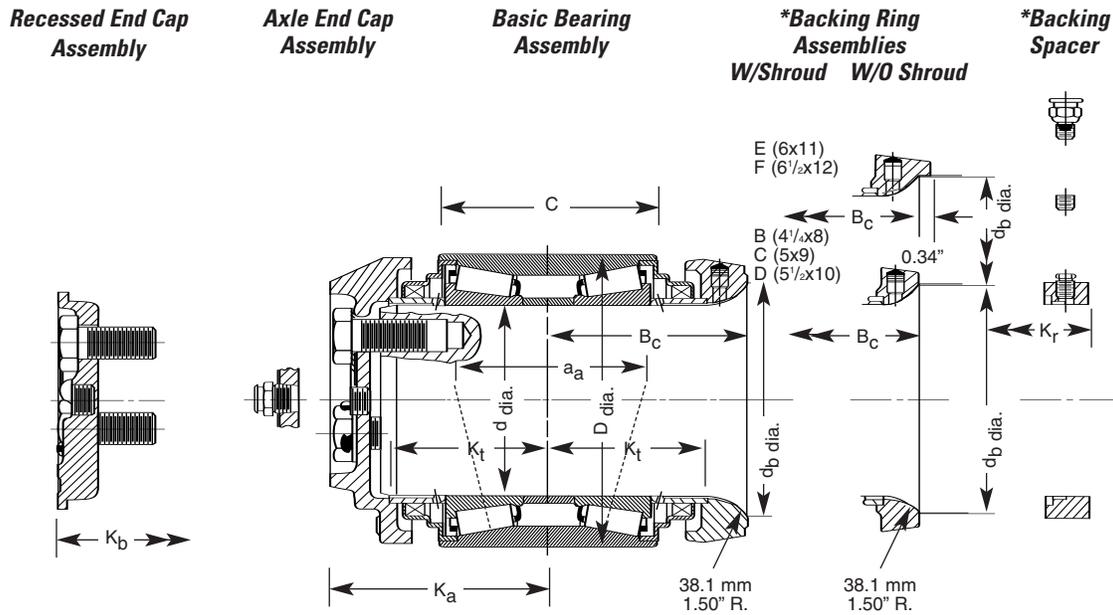
** Cup OD Tolerance (+ 0.127 - 0.000mm) + .0050" - .0000"

+ Cup H337816XD OD Tolerance is (+0.127 + 0.076mm) + .0050" + .0030"
Special Cup OD Tolerance (+0.102 + 0.076mm) + .0040" + .0030" also available.

METRIC SYSTEM (millimetres & newtons)

ENGLISH SYSTEM (inches & pounds)

Overall Dimensions for "AP" Bearings



* Backing Ring Assemblies and/or Backing Spacer may be used on either side of the bearing.

CLASS	d	D	B _c	K _t	K _a (Max)	K _b (Max)	K _r	C	d _b		a _a
									Backing Ring		
									w/Shrd	w/o Shrd	
B (4 1/4 x 8)	101.600 4.0000	165.100 6.5000	117.5 4.62	91.3 3.59	158.2*** 6.23	99.0 3.90	119.9 4.72	114.300 4.5000	127.0 5.00	127.0 5.00	79.8 3.14
C (5 x 9)	119.062 4.6875	195.262 7.6875	134.9 5.31	108.7 4.28	163.8*** 6.45	116.5 4.59	137.3 5.41	142.875 5.6250	149.2 5.88	149.2 5.88	105.7 4.16
D (5 1/2 x 10)	131.750 5.1870	207.962 8.1875	139.7 5.50	113.5 4.47	158.2*** 6.23	122.9 4.84	142.1 5.59	152.400 6.0000	161.9 6.38	161.9 6.38	116.8 4.60
E (6 x 11)	144.450 5.6870	220.662 8.6875	150.8 5.94	120.6 4.75	169.7 6.68	130.0 5.12	149.2 5.88	163.512 6.4375	177.8 7.00	178.56 7.03	127.5 5.02
F (6 1/2 x 12)	157.150 6.1870	252.412 9.9375	163.5 6.44	136.5 5.38	181.6 7.15	145.9 5.74	165.1 6.50	184.150 7.2500	190.5 7.50	191.26 7.53	143.3 5.64
G (7x12)	177.787 6.9995	276.225 10.8750	150.8 5.94	134.9 5.31	180.0 7.09	144.3 5.68	163.5 6.44	185.725 7.3120	203.2 8.00	—	144.8 5.70
G (7x14)	177.787 6.9995	276.225 10.8750	163.5 6.44	134.9 5.31	180.0 7.09	144.3 5.68	163.5 6.44	185.725 7.3120	203.2 8.00	—	144.8 5.70
GG (7)	177.787 6.9995	301.701 11.8780+	155.6 6.12	139.7 5.50	184.8 7.28	149.1 5.87	168.3 6.62	196.850 7.7500	203.2 8.00	—	154.9 6.10
K (8)	203.200 8.0000	301.625 11.8750	—	108.0 4.25	—	122.2 4.81	—	140.097 5.5156	—	—	115.8 4.56

***On classes B, C, and D the lubricant fitting extends beyond the axle end cap. Dimensions given include the lubricant fitting.

METRIC SYSTEM (millimetres & newtons)

ENGLISH SYSTEM (inches & pounds)

How To Identify Part Numbers and Assembly Numbers

Bearing Assembly Numbers

In order to facilitate the identity of groups of parts, as listed to the right, a “bearing assembly number” system is used. “AP” bearings are each assigned a five digit numeric code that follows the cone part number to describe the individual component parts, prelubrication, performance codes, and internal clearance of the pre-set assembly. In some cases the code may be alphanumeric, although the first digit is always “9”.

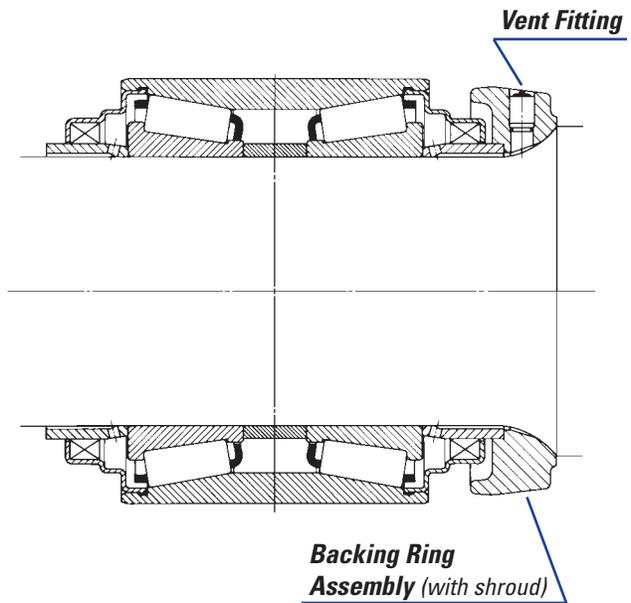
For new applications an assembly number is assigned on receipt of the first order. It is very important for the correct fitting and functioning of the bearing that the same assembly number is quoted for all subsequent replacement orders for that specific bearing position. Standard and supplemental assembly numbers are listed in this booklet starting on page 39. The Timken Company should be consulted if additional information is needed on any combination of parts or if questions arise about the correct assembly number for a specific application.

See page 39 to 41 for basic “AP” bearing assembly numbers.

See page 43 to 69 for supplemental and special assembly numbers.

The “assembly number,” shown below, identifies an assembly consisting of:

- 2 - HM120848 cones
- 1 - HM120817XD cup
- 1 - HM120848XA cone spacer
(fitted for normal internal clearance)
- 2 - K86890 seal wear rings
- 2 - K86895 seal assemblies
- 1 - K86874-90010 backing ring assembly consisting of:
 - 1 - K86874 backing ring
 - 1 - K89716 vent fitting

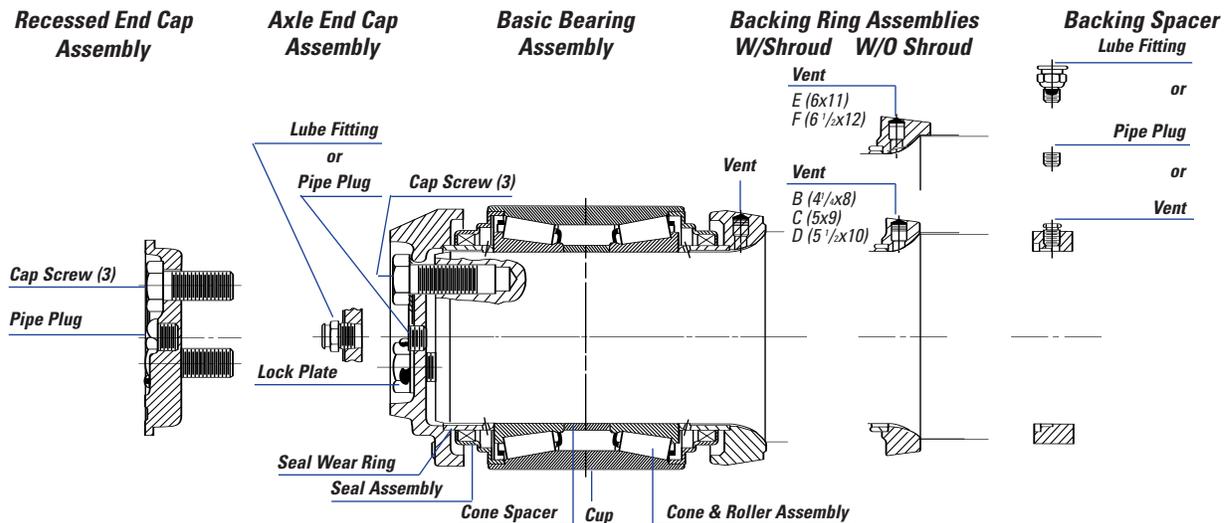


HM120848 - 90012
 └───┬───┘ └───┬───┘
 Inner Race + 9XXXX
 (Cone) No.
 ↓
ASSEMBLY NUMBER

How To Identify Part Numbers and Assembly Numbers

Standard Parts for Timken "AP" Bearings

Bearing Class	Inner Race (Cone)	Outer Race (Cup)	Cone Spacer	Seal Wear Ring	Seal Assembly	Backing Ring		
						With Shroud	Without Shroud	Vent
B (4 1/2x8)	HM120848	HM120817XD	HM120848XA	K86890	K86895	K86874	K127203	K89716
C (5x9)	HM124646	HM124618XD	HM124646XA	K86002	K85600	K85588	K127204	K89716
D (5 1/2x10)	HM127446	HM127415XD	HM127446XA	K85507	K86860	K85525	K127205	K89716
E (6x11)	HM129848	HM129814XD	HM129848XA	K85508	K86861	K85095	K127206	K89716
F (6 1/2x12)	HM133444	HM133416XD	HM133444XA	K85509	K85520	K85516	K125685	K89716
G (7x12)	HM136948	HM136916XD	HM136948XA	K147767	K96501	–	K153497	K89716
G (7x14)	HM136948	HM136916XD	HM136948XA	K147767	K96501	K95200	–	K89716
GG (7" bore)	H337846	H337816XD	H337846XA	K147767	K99424	–	K153497	K89716
K (8" bore)	M241547	M241513XD	M241547XA	K504074	K504073	–	–	–



Bearing Class	Backing Spacer				Axle End Cap					Recessed End Cap			Adapter**	
	Backing Spacer	Vent	Pipe Plug	Lube Fitting	Axle End Cap	Lock Plate	Cap Screw	Lube Fitting	Pipe Plug	Recessed End Cap	Cap Screw	Pipe Plug	Narrow	Wide
B	K118891	K83093	K46462	K78880	K86877	K84326	K53399	K399065	K86891	K399069	K344077	K75801	K86888	K87124
C	K120198	K83093	K46462	K78880	K86003	K84325	K44434	K399065	K86891	K399070	K344077	K75801	K85581	K86019
D	K120178	K83093	K46462	K78880	K85521	K80511	K44434	K49022	K75801	K399071	K33003	K75801	K85530	K85526
E	K120190	K83093	K46462	K78880	K85510	K80596	K84354	K49022	K75801	K399072	K74600	K75801	K85073	K85513
F	K120160	K83093	K46462	K78880	K85517	K84324	K84351	K49022	K75801	K399073	K74600	K75801	K85524	K85531
G (7x12)	K118866	K83093	K46462	K78880	K95199	K84701	K84398	K49022	K75801	K399074	K74588	K75801	K83138	–
G (7x14)	K118866	K83093	K46462	K78880	K412057	K84701	K84398	K49022	K75801	K399074	K74588	K75801	K83138	–
GG	K118866	K83093	K46462	K78880	K462064*	K84701	K462063	K49022	K75801	K399074	K74588	K75801	–	–
K	–	–	–	–	–	–	–	–	–	K504075	K74588	K75801	K522803	–

* Not Available - Consult The Timken Company

** Not Shown

Mounting Designs

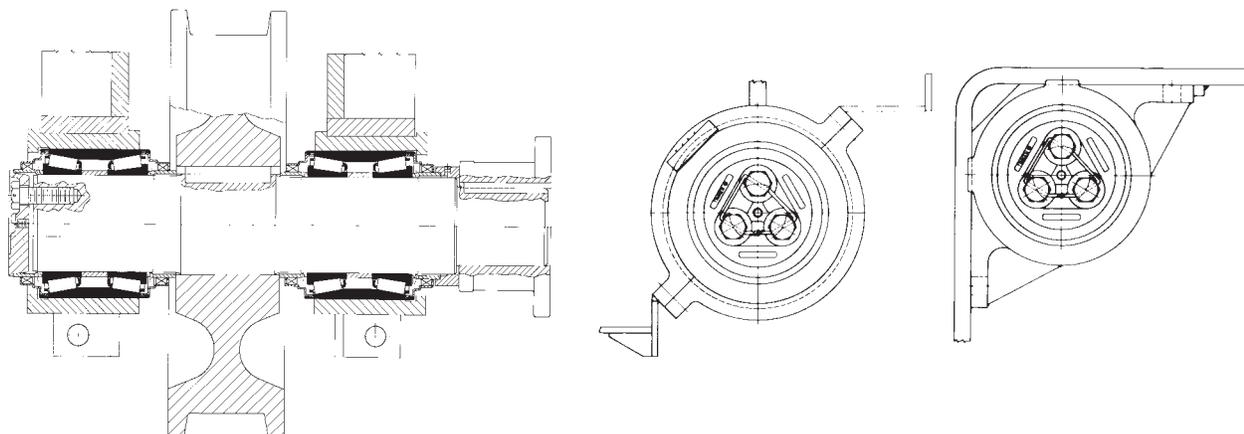
Typical Applications

Listed below are some of the various applications on which “AP” bearings are presently being used. Photographs and/or line drawings of some of these designs are shown on the following pages.

- | | | | |
|--|---|---|--|
| <ul style="list-style-type: none"> Apron Feeder Auto Shredder Band Saw Barking Drum – Thrust Rollers Billet Ejector Bucket Unloader Calender Rolls Cam Roller Cars Billet Grinder Cars Cable Cars Cane Cars Charging Box Cars Coke Guide Cars Coke Quench Cars Coke Screening Cars Furnace Cars Furnace Heat Shield Cars Hot Metal Cars Ingot Cars Ingot Transfer Cars Ladle Transfer Cars Larry Cars Loop Cars Manipulator Cars Ore Transfer Cars Orienter Cars Scale Cars Scrap Charging Cars Sheet Piler Cars Shot Blast Cars Sintering Pallet Cars Skip Cars Slab Return Cars Slag Pot Cars Transfer Cars Transformer Cars Tundish Cars | <ul style="list-style-type: none"> Weight Cars Workroll Changer Cars X-Ray Cars Chippers Chopper – Land Clearing Clay Gun Carriage Coal Crushing Machine Breaker Shaft Conveyor Drum Eccentric Shaft Coal Pulverizer Compactor Press Backshaft Flywheel Continuous Casters Apron Guide Rollers Runout Table Rolls Cut Off Conveyor Continuous Miner Drive Cutter Head Trackwheel Sprocket Conveyors Head and Tail Drums Crane Bridge Wheels Trolley Wheels Drum Supports Davit – Anchor Digester Dock – Loader and Unloader Dragline Drum Hoists Dynamometer Feeders Film Evaporators Flanging Machine Furnace Roof Swing Guide | <ul style="list-style-type: none"> Walking Beam Wheels Rotary Gearless Elevator Grate Bar Rapper House Moving Dolly Jaw Crushers Laminators Levellers Line Shaft Line Tension Drum Locomotives Locomotive Cranes Log Rolls Missile Transporter Mobile Charger Moveable Stadium Stands Muckers Paper Mill Rolls Paper Reelers Pig Casting Machine Pillow Blocks Pinch Rolls Plate Bender Press Back Shaft Fly Wheel Press Rolls Pulp Beaters Pumping Unit Saddle Equalizer Radiation Chamber Door Ram Rollers Reeler Bar Rod Mill Roll Necks Rotary Wheels Saw Mill Carriage Shear | <ul style="list-style-type: none"> Sheaves Elevator Fairlead Hoisting Idler Mine Head Ski Lift Slab Extractor Soaking Pit Cover Stackers Axles Conveyor Drums Hopper Car Triple Cable Table Rolls Bar Mills Billet Mills Blooming Mills Furnace Feed Merchant Mills Pipe Conveyor Rod Mills Slab Mills Strip Mills Structural Mills Table Roll Line Shaft Target Transporter Temper Mill 2 Stand Trunnion Rollers Barking Drum Copper Converter Dryer Kiln Scrubber Turntables Water Purification Drum Welding Positioners Wire Spool Support Heads |
|--|---|---|--|

Crane Bridge and Trolley Axle

This illustrates a typical “AP” bearing mounting for crane bridge and trolley axle using recessed end cap. This clamped wheel design is shown on a drive axle. The idler axle design is similar except both bearings are clamped in the same manner as the left-hand assembly shown in the drawing on the left. The drawings on the right show typical full bore housing designs for crane wheel applications.



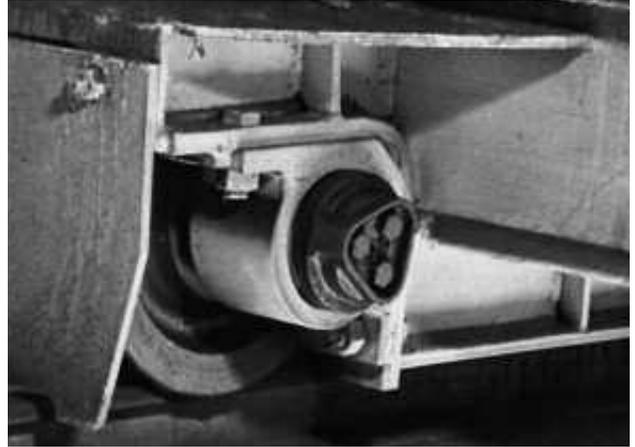
Mounting Designs

Crane Bridge and Trolley Axle

These bridge and trolley wheel applications illustrate both recessed and standard end caps.



Recessed End Cap



Standard End Cap

Moveable Stadium Stands

Timken “AP” bearings enable a section of stands of this stadium to be moved to provide better viewing angles for baseball and football games.

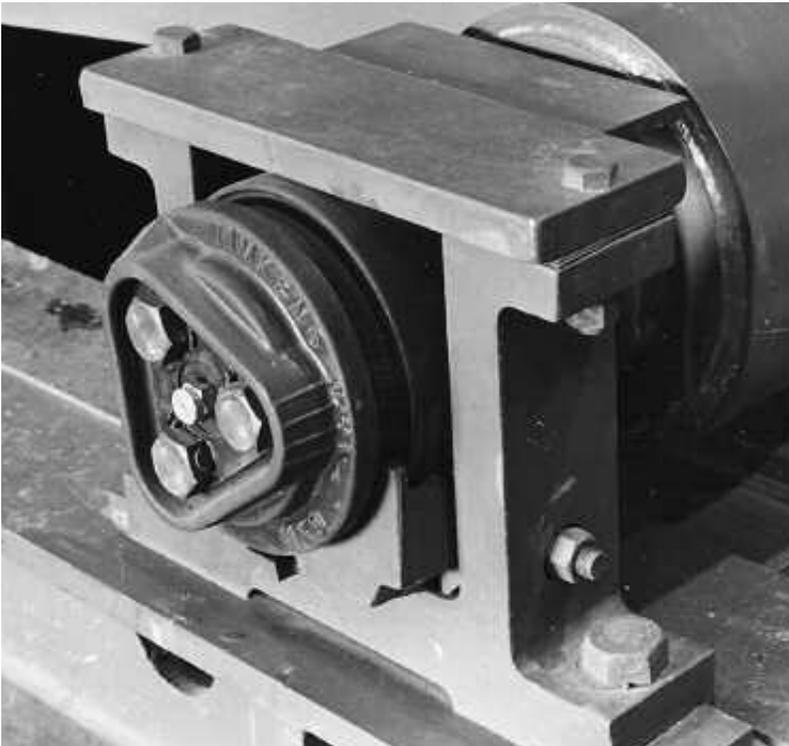


Wide Adapter Shown

Mounting Designs

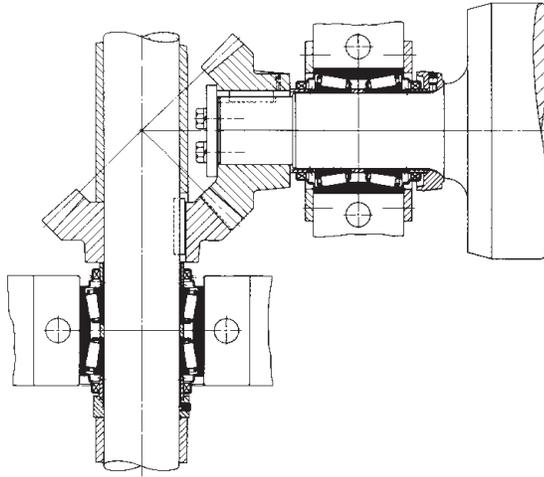
TABLE ROLLS

Narrow Adapter Mounting



A single standard narrow adapter is used on each end of this table roll to support the “AP” bearing. The adapter is mounted in a fabricated housing that provides both radial and axial positioning.

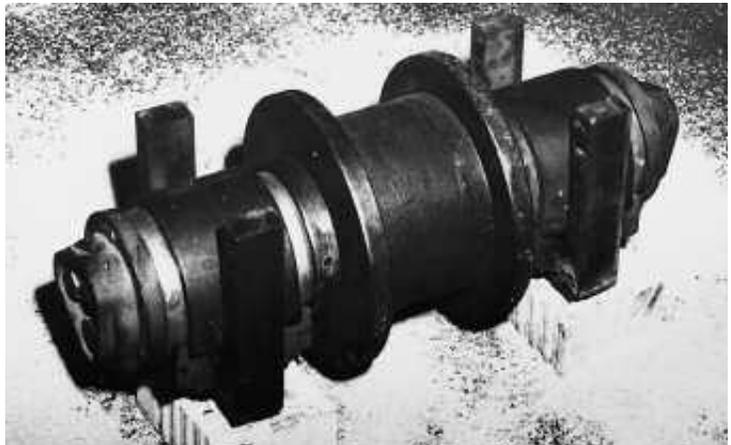
TABLE ROLLS
Line Shaft Drive
Full Bore Housing



Ram Roller - Adapter Mounting

A standard narrow adapter is used at both positions to insure positive radial location of the “AP” bearing cups.

A close clearance is provided between thrust lugs and the sides of the adapters to keep axial movement of the shaft to a minimum.

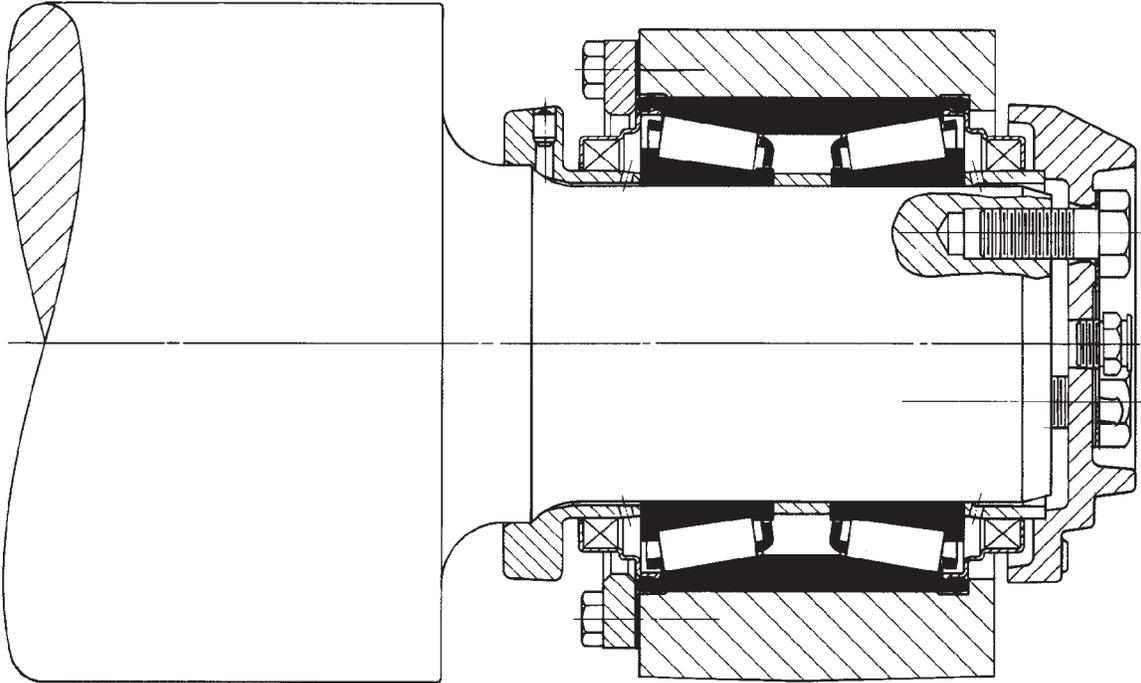


Mounting Designs

Continuous Casting Machine Guide Rollers

Used successfully on both original and conversion guide roller applications, “AP” bearings provide a maintenance free, economical mounting arrangement.

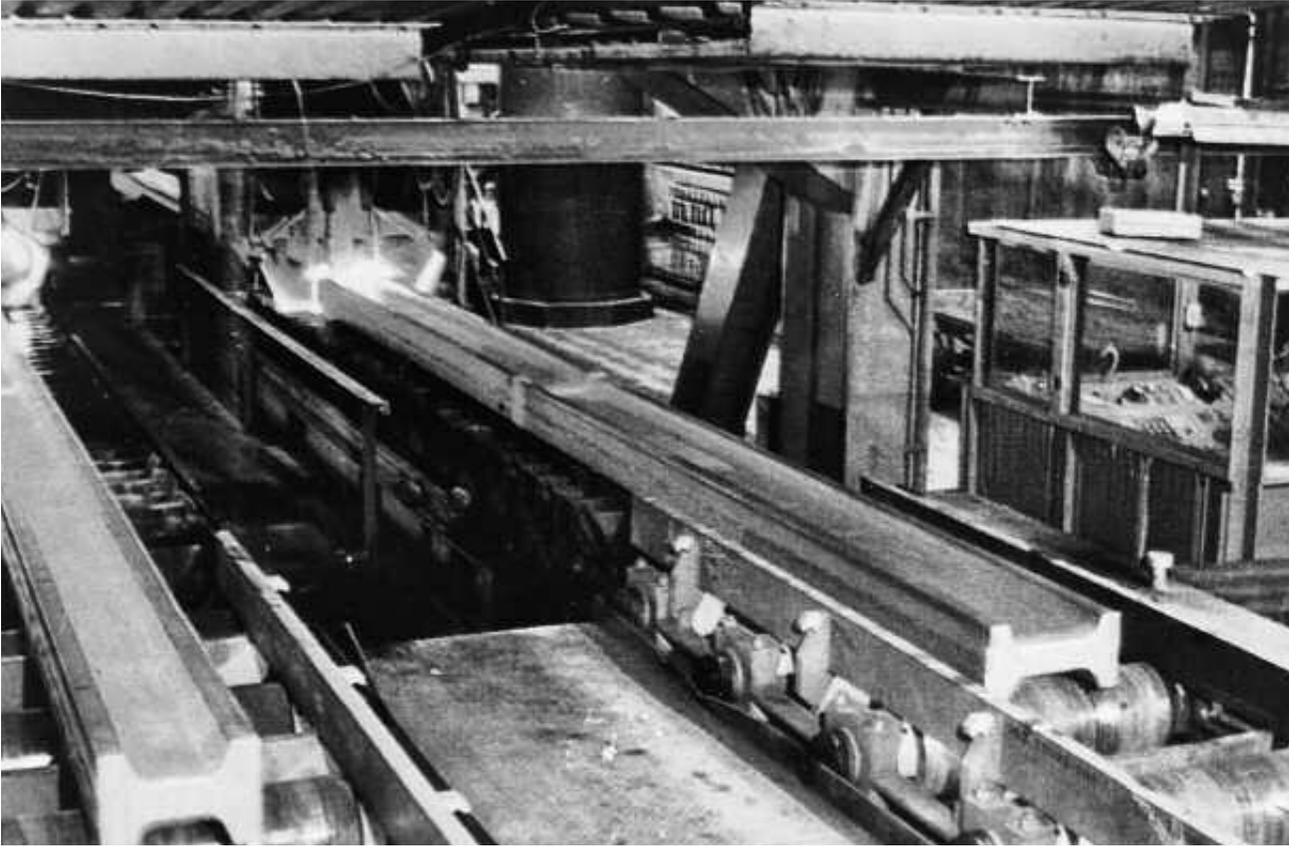
Close tolerance adapters are used in the lower design.



Mounting Designs

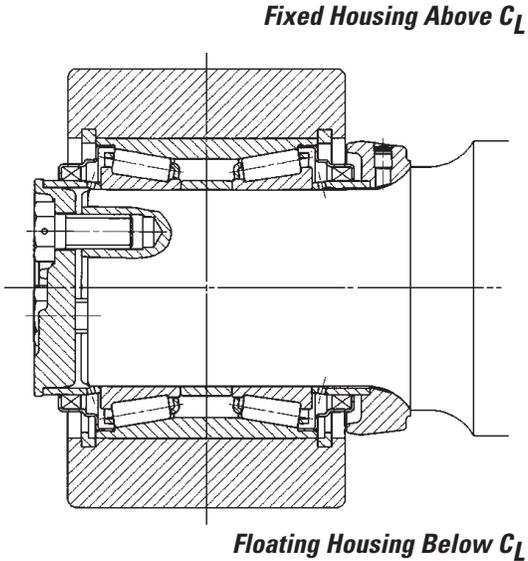
Continuous Casting Machine Runout Tables

Continuous cast shapes roll on “AP” bearing equipped runout tables.



Pillow Block

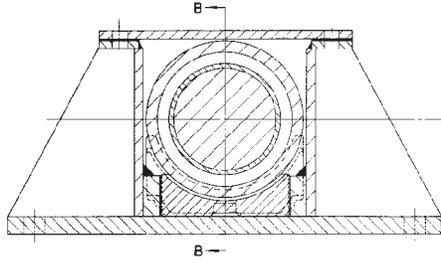
Greasing systems are not required with the prelubricated “AP” bearing used in this pillow block application. This assures a substantial savings in initial cost as well as subsequent maintenance.



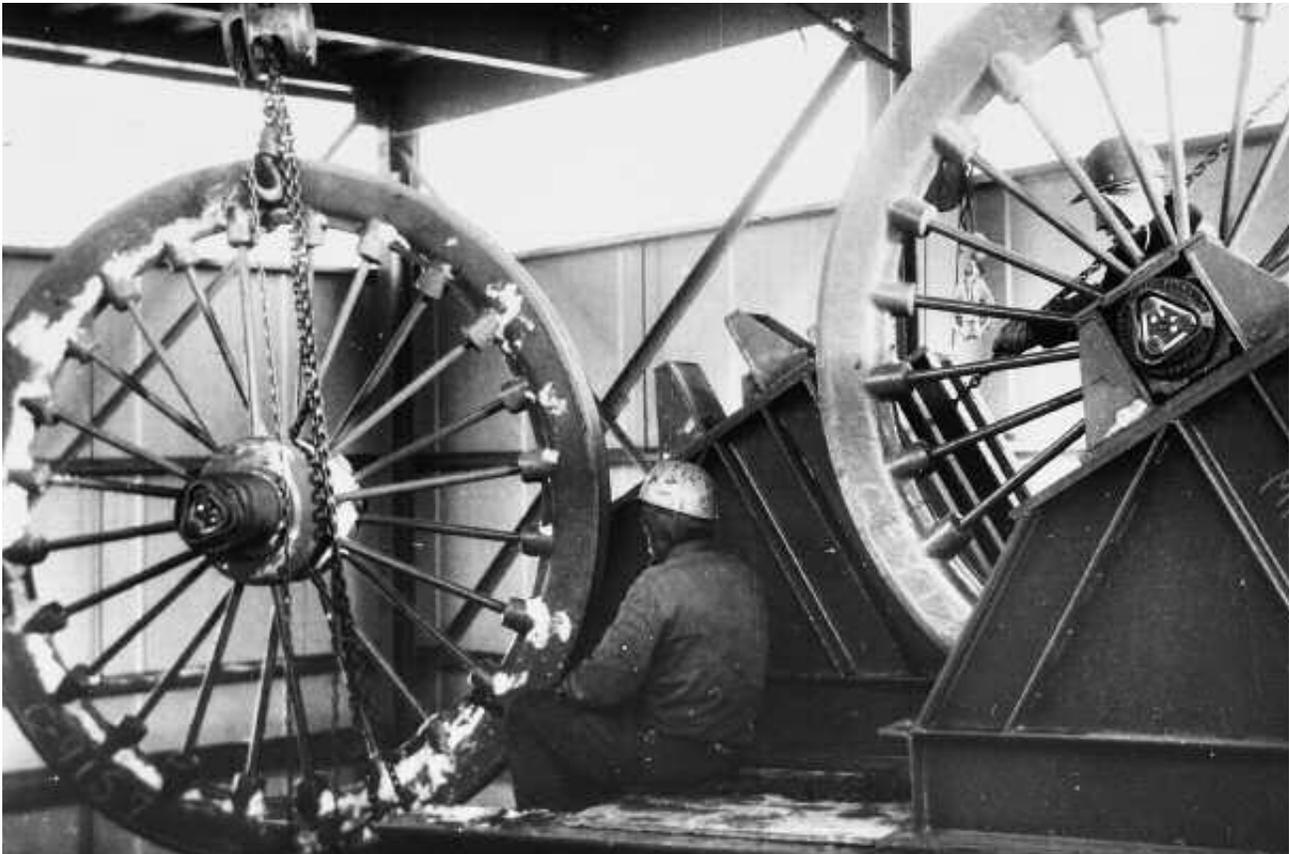
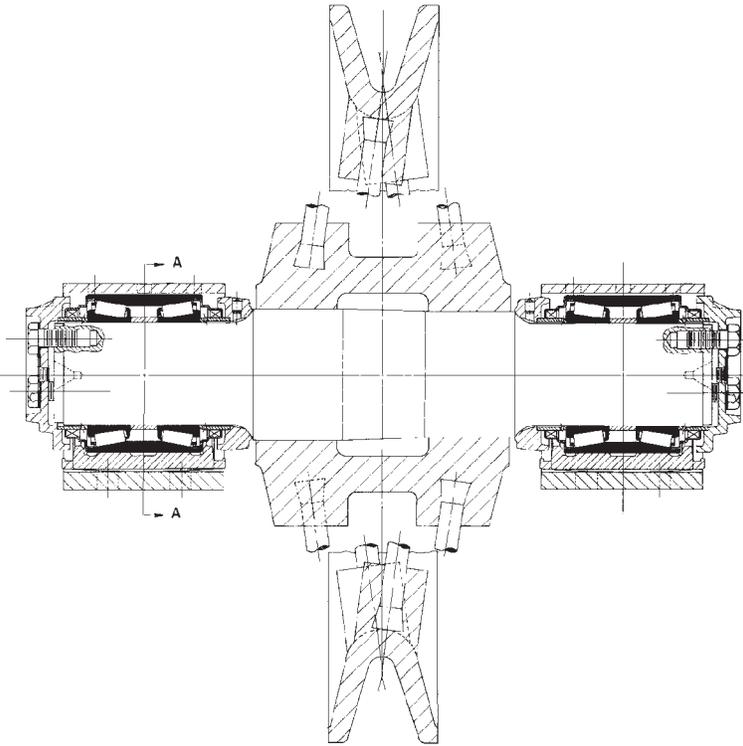
Mounting Designs

Hoisting Sheave

Section A-A



Section B-B

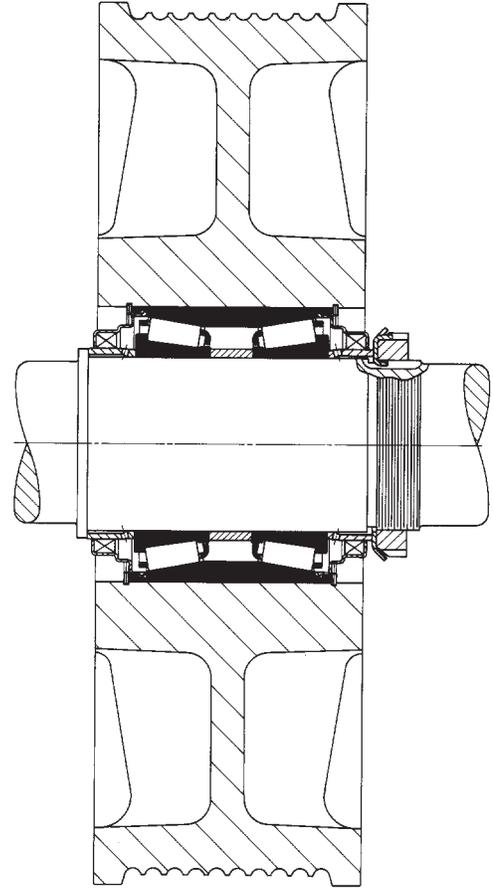


This mine head sheave is Timken Class C & E “AP” bearing equipped.

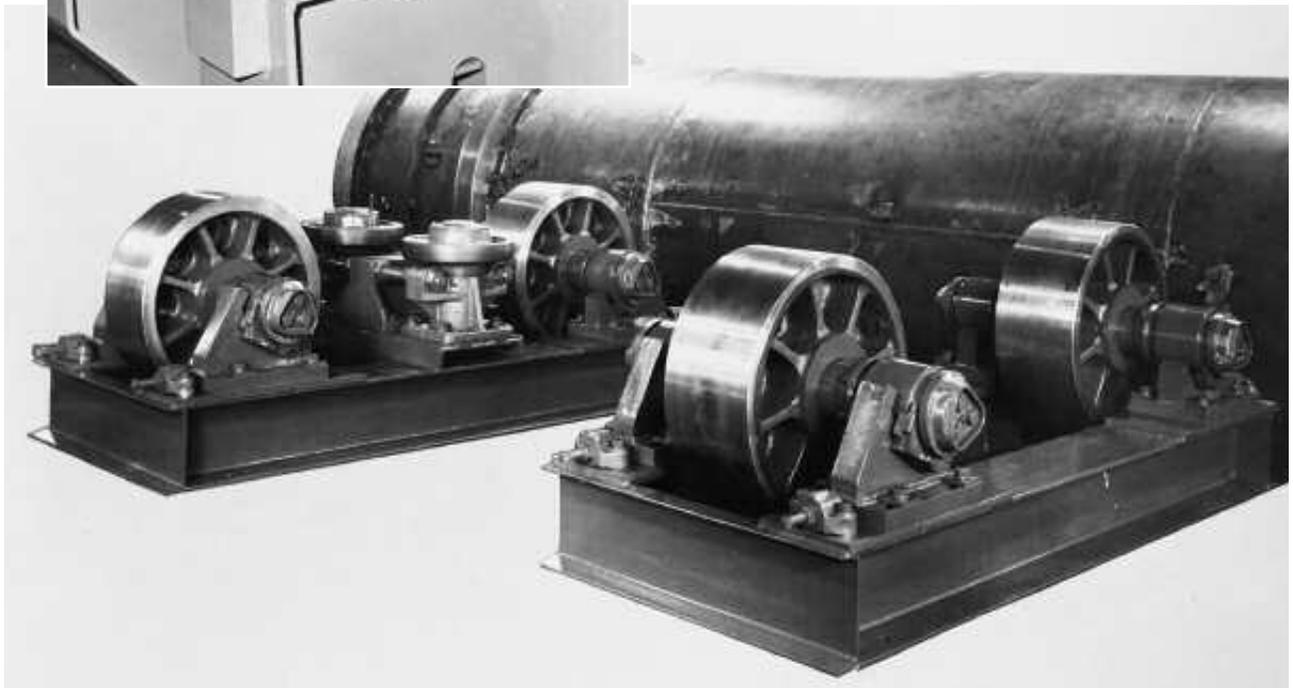
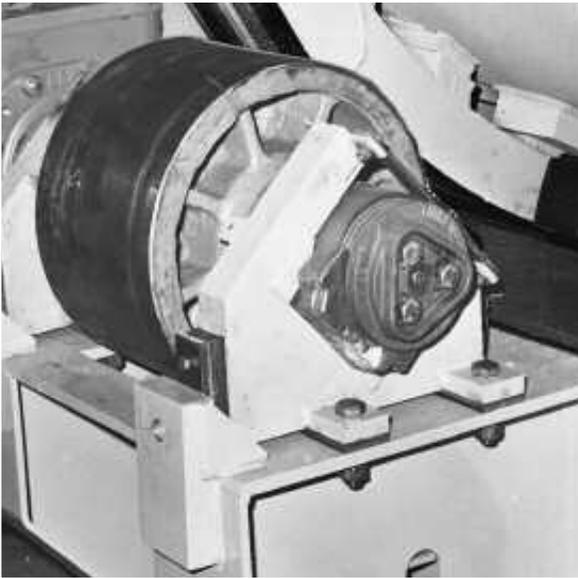
Elevator Sheave

The cup of this “AP” bearing is mounted directly into the sheave hub with a tight fit. Snap rings are required because of elevator safety regulations.

No provision for relubrication is made in this application. Some builders prefer to completely fill the bearing with grease at assembly while others depend on the initial charge of grease as supplied in a new bearing. Either practice is completely satisfactory for this application.



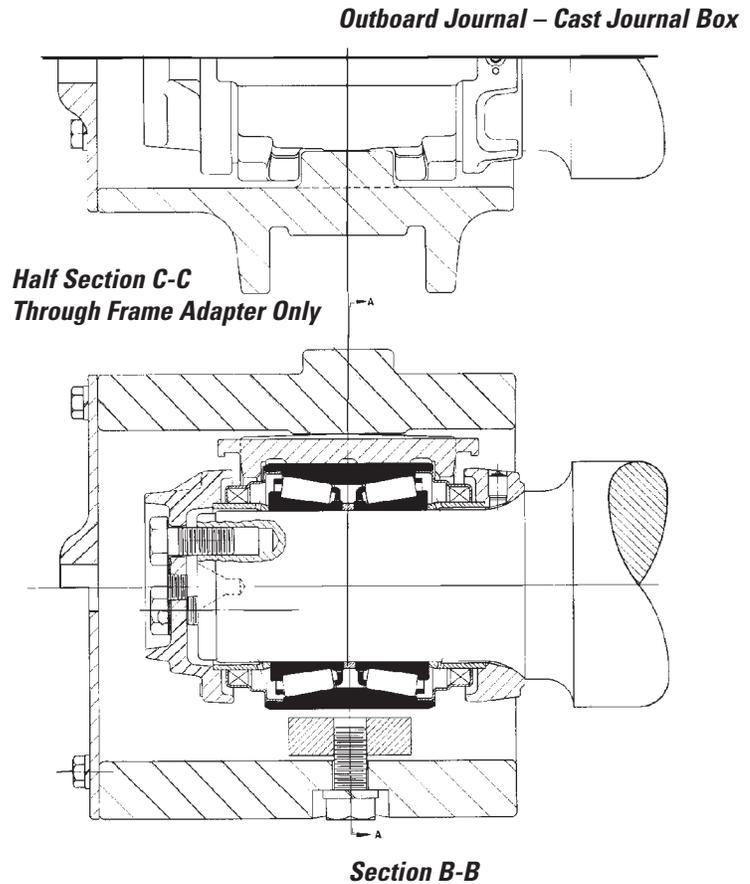
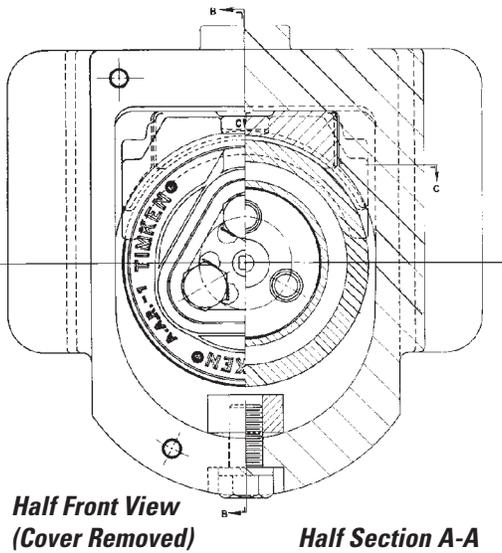
Trunnion Rollers



Mounting Designs

Ingot Cars

Thousands of “AP” bearing-equipped ingot cars in various capacity ratings are in service in steel plants around the world. Maintenance costs for these cars are negligible. Minimum relubrication attention is required when compared to cars equipped with other types of bearings.



The “AP” bearing with standard narrow adapter has been incorporated into cast journal box with a splash cover.



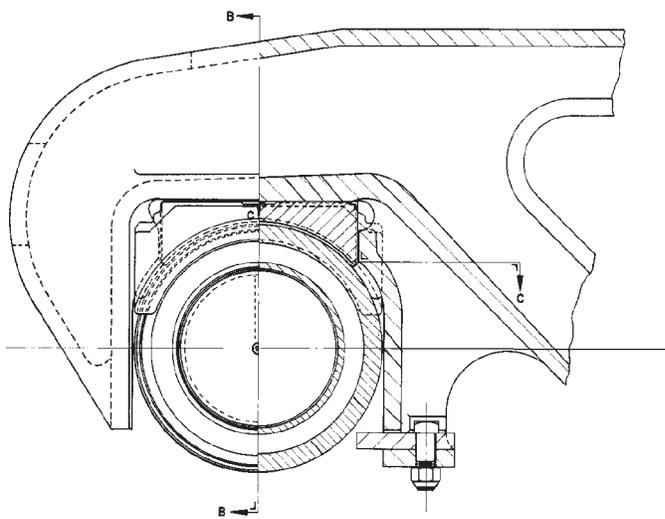
Outboard Journal – Fabricated Side Frame



Outboard Journal - Cast Side Frame

The cones in this inboard design are clamped on the shaft by the press fit of the wheel hub.

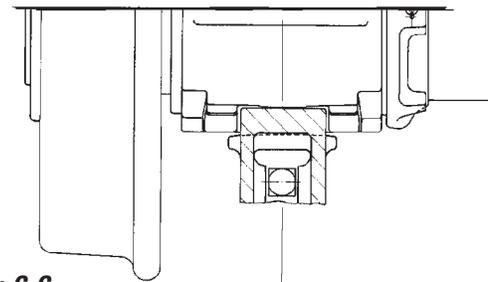
The adapter is mounted in a cast side frame and is restricted from axial movement as shown in Section C-C.



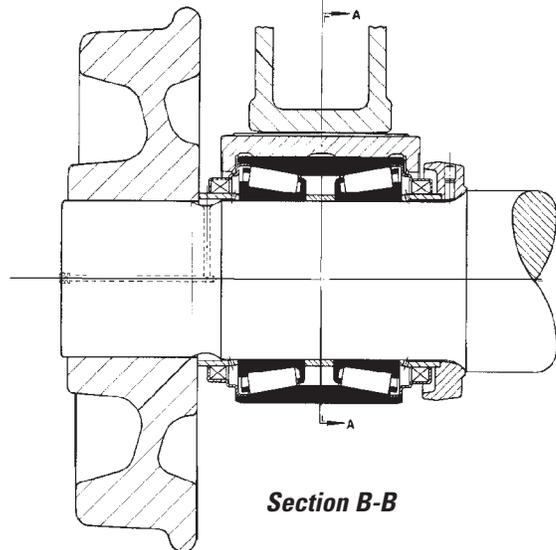
**Half Front View
(Wheel Removed)**

Half Section A-A

Inboard Journal - Cast Side Frame



**Section C-C
Through Frame Only**



Section B-B

Mounting Designs

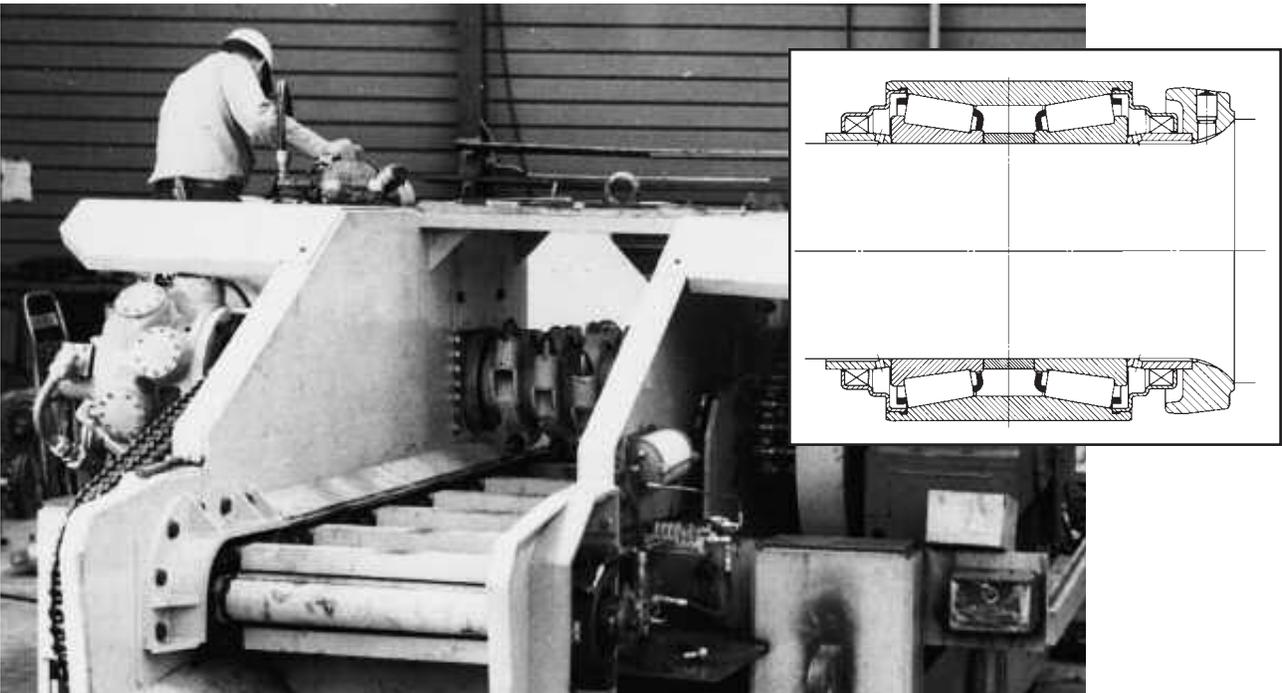
Sintering Car Wheel

This application illustrates the effectiveness of the “AP” bearing seals in excluding the abrasive material from the bearing elements.



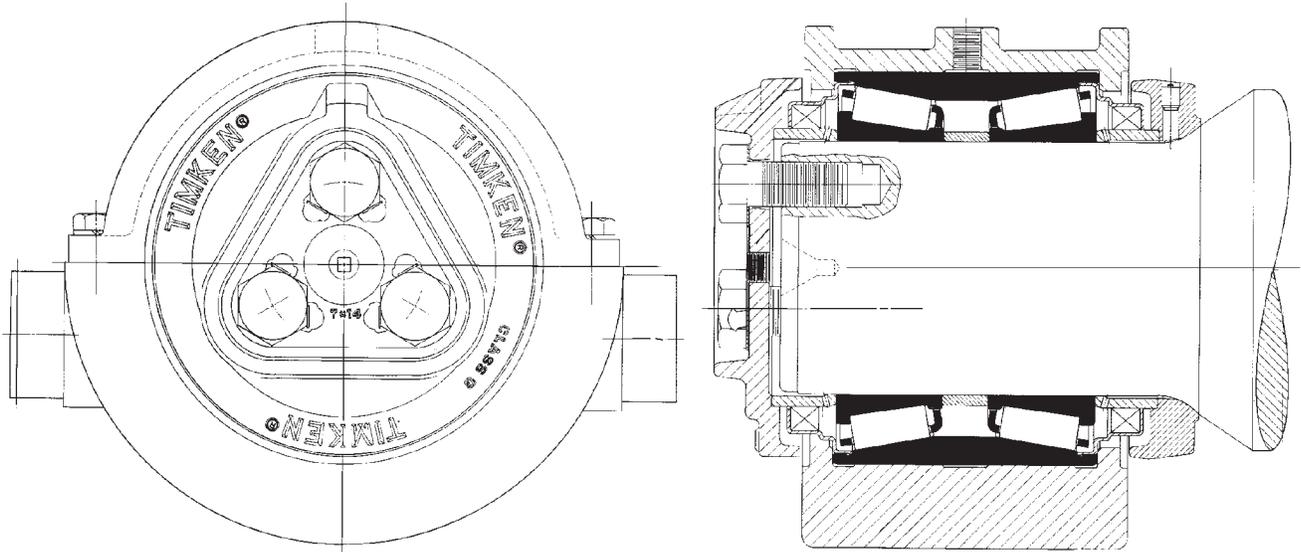
Coal Crusher

“AP” bearings are used on the breaker shaft (insert) as well as in the conveyor drive head and tail drums of this coal crusher.



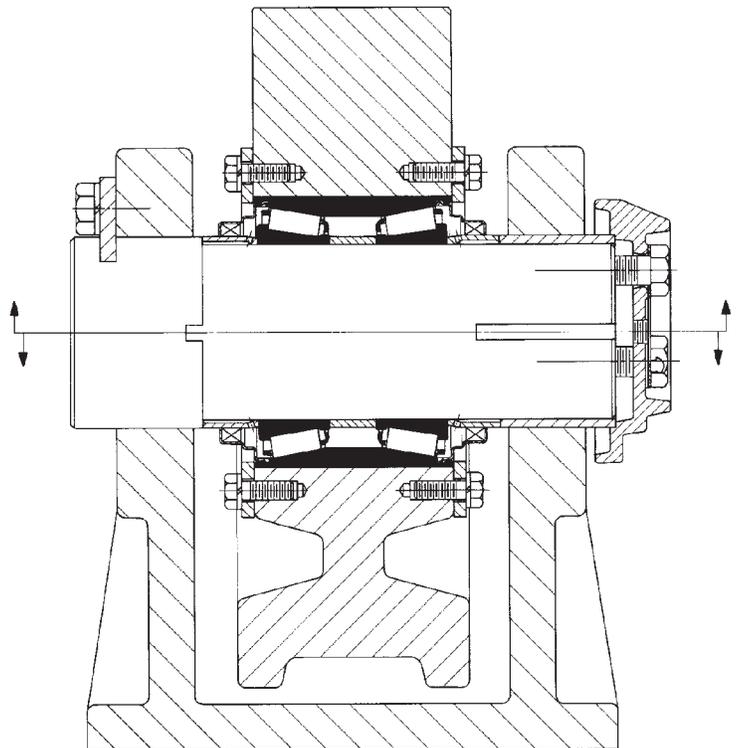
Wood Pulp Beater Spindle

This beater spindle uses all standard parts of the “AP” bearing unit with exception of the special housing. A clearance can be provided between the faces of the cup and housing shoulders to provide axial float as required. Note that this design uses a split housing.



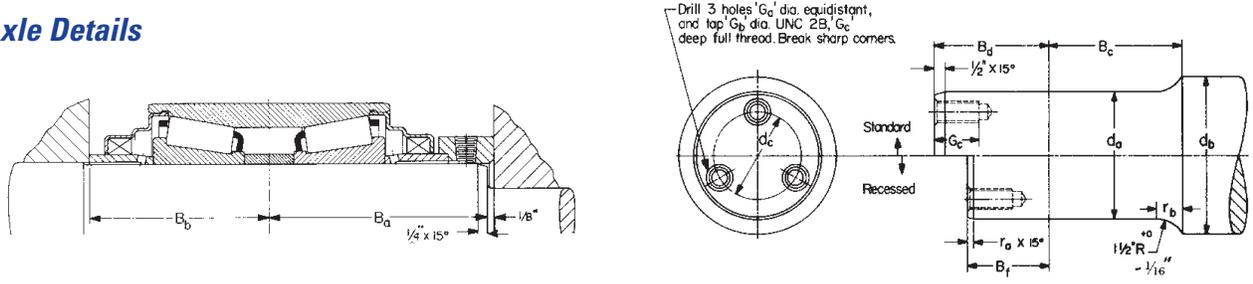
Furnace Wheel

This design still takes advantage of the “package” portion of the “AP” bearing – seal wear ring to seal wear ring. The use of both the adapter and backing ring is eliminated. the end cap is applied after insertion of a special spacer backing against the seal wear ring to completely clamp up the bearing assembly.



Technical Support

Axle Details



CLASS	d _a **	Bkg. Spacer		Backing Rings			
		B _a	B _b	d _b W/Shroud	d _b W/O Shroud	B _c	r _b
B (4 1/4 x8)	101.702-101.676 4.0040-4.0030	116.7 4.59	91.3 3.59	127.0 5.00	127.0 5.00	117.5 4.62	28.40 1.118
C (5x9)	119.164-119.138 4.6915-4.6905	134.1 5.28	108.7 4.28	149.2 5.88	149.2 5.88	134.9 5.31	30.35 1.195
D (5 1/2 x10)	131.864-131.838 5.1915-5.1905	138.9 5.47	113.5 4.47	161.9 6.38	161.9 6.38	139.7 5.50	30.35 1.195
E (6x11)	144.564-144.538 5.6915-5.6905	146.0 5.75	120.6 4.75	177.8 7.00	178.61-178.56 7.032-7.030	150.8 5.94	31.50 1.240
F (6 1/2 x12)	157.264-157.238 6.1915-6.1905	161.9 6.38	136.5 5.38	190.5 7.50	191.31-191.26 7.532-7.530	163.5 6.44	31.50 1.240
G (7x12)	177.902-177.876 7.0040-7.0030	160.3 6.31	134.9 5.31	-	203.25-203.20 8.002-8.000	150.8 5.94	28.40 1.118
G (7x14)	177.902-177.876 7.0040-7.0030	160.3 6.31	134.9 5.31	203.2 8.00	-	163.5 6.44	28.40 1.118
GG (7)	177.902-177.876 7.0040-7.0030	165.1 6.50	139.7 5.50	-	203.25-203.20 8.002-8.000	155.6 6.12	28.40 1.118
K (8)	203.327-203.301 8.0050-8.0040	-	108.0 4.25	-	-	-	-

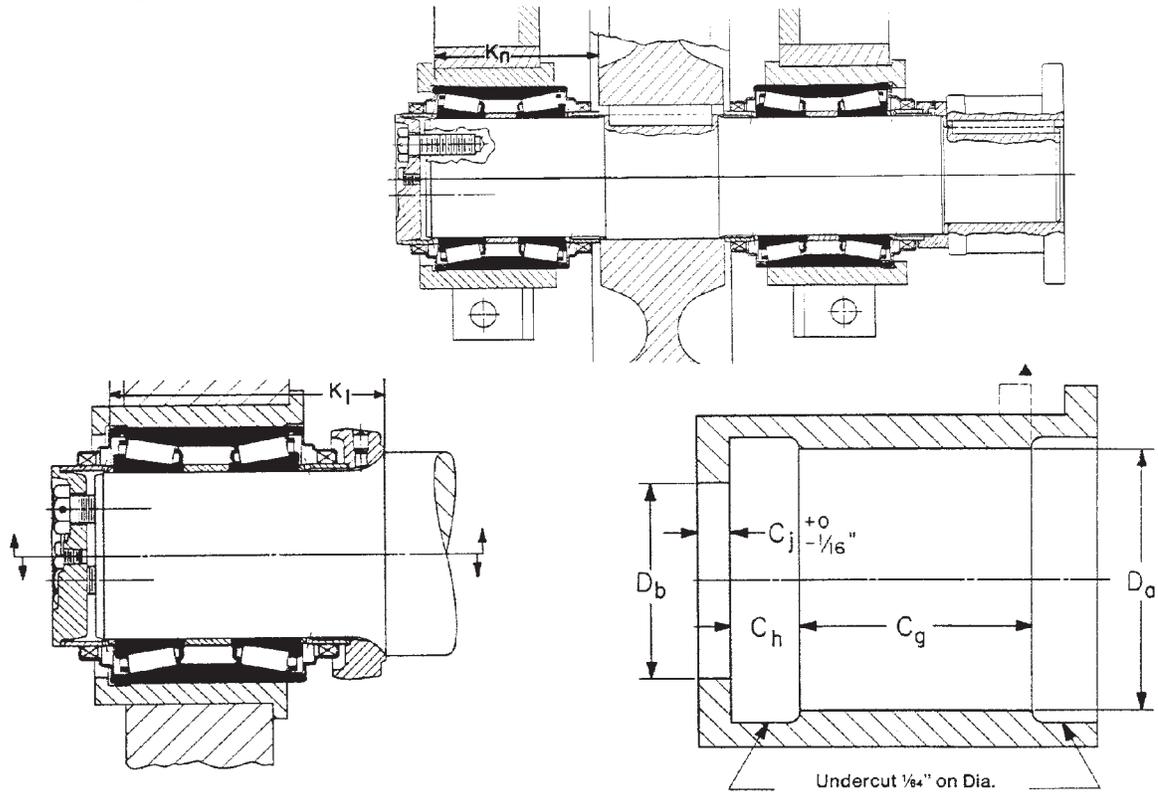
CLASS	Axle End Cap						Recessed End Cap						
	B _d	d _c	G _a	G _b	G _c	Torque N-m/lb-ft	B _f	r _a	d _c	G _a	G _b	G _c	Torque N-m/lb-ft
B (4 1/4 x8)	101.6 4.00	61.9 2.44	17 .656	3/4-10	41.3 1.62	149-163 110-120	68.3 2.69	6.4 .25	60.3 2.38	13 .531	5/8-11	38.1 1.50	149-163 110-120
C (5x9)	112.7 4.44	76.2 3.00	19 .766	7/8-9	47.6 1.88	190-203 140-150	84.1 3.31	6.4 .25	76.2 3.00	13 .531	5/8-11	38.1 1.50	149-163 110-120
D (5 1/2 x10)	115.9 4.56	88.9 3.50	19 .766	7/8-9	47.6 1.88	190-203 140-150	88.9 3.50	6.4 .25	76.2 3.00	19 .766	7/8-9	47.6 1.88	190-203 140-150
E (6x11)	127.0 5.00	98.4 3.88	22 .875	1-8	50.8 2.00	339-366 250-270	92.1 3.62	6.4 .25	82.6 3.25	22 .875	1-8	50.8 2.00	339-366 250-270
F (6 1/2 x12)	134.9 5.31	108.0 4.25	25 .984	1 1/8-7	54.0 2.12	488-529 360-390	106.4 4.19	6.4 .25	88.9 3.50	22 .875	1-8	50.8 2.00	339-366 250-270
G (7x12)	130.2 5.12	117.5 4.62	28 1.109	1 1/4-7	57.2 2.25	583-624 430-460	103.2 4.06	4.8 .19	101.6 4.00	25 .984	1 1/8-7	54.0 2.12	488-529 360-390
G (7x14)	130.2 5.12	117.5 4.62	28 1.109	1 1/4-7	57.2 2.25	583-624 430-460	103.2 4.06	4.8 .19	101.6 4.00	25 .984	1 1/8-7	54.0 2.12	488-529 360-390
GG (7)	134.9 5.31	117.5 4.62	28 1.109	1 1/4-7	57.2 2.25	583-624 430-460	108.0 4.25	4.8 .19	101.6 4.00	25 .984	1 1/8-7	54.0 2.12	488-529 360-390
K (8)	-	-	-	-	-	-	77.8 3.06	4.8 .19	123.8 4.88	25 .984	1 1/8-7	54.0 2.12	488-529 380-390

** For normal rotating shaft applications. For other conditions, see fitting practice tables on page 27

METRIC SYSTEM (millimetres & newtons)

ENGLISH SYSTEM (inches & pounds)

Full Bore Housing Dimensions



CLASS	C_g	C_h	C_j	D_a^*	D_b	K_l^{**} +1.02mm/+0.040" -0	K_n^{**} +0.76mm/+0.030" -0
B (4 1/4x8)	85.7 3.38	15.9 .62	12.7 .50	165.328 – 165.379 6.5090 – 6.5110	154.0 6.06	174.231 6.8595	148.044 5.8285
C (5x9)	114.3 4.50	15.9 .62	12.7 .50	195.490 – 195.541 7.6965 – 7.6985	182.6 7.19	205.994 8.1100	179.807 7.0790
D (5 1/2x10)	123.8 4.88	15.9 .62	12.7 .50	208.190 – 208.241 8.1965 – 8.1985	196.8 7.75	215.544 8.4860	189.357 7.4550
E (6x11)	133.4 5.25	15.9 .62	14.3 .56	220.890 – 220.941 8.6965 – 8.5985	209.6 8.25	232.212 9.1422	202.062 7.9552
F (6 1/2x12)	152.4 6.00	19.0 .75	14.3 .56	252.640 – 252.691 9.9465 – 9.9485	238.1 9.38	255.270 10.0500	228.270 8.9870
G (7x12)	152.4 6.00	19.0 .75	14.3 .56	276.453 – 276.504 10.8840 – 10.8860	261.1 10.28	243.177 9.5739	–
G (7x14)						256.045 10.0805	227.470 8.9555
GG (7)	155.6 6.12	•• –	14.3 .56	301.853 – 301.904 11.8840 – 11.8860	284.2 11.19	253.469 9.9791	237.762 9.3607
K (8)	98.4 3.88	•• –	14.3 .56	301.777 – 301.828 11.8810 – 11.8830	284.2 11.19	–	177.820 7.0008

▲ Outer undercut can be eliminated if housing is shortened to end of the "C_g" dimension.

* See page 27 for complete fitting practice information.

** Bearing width dimensions.

•• Relief machined on cup OD; housing undercut not required.

NOTE: Full bore housings are not furnished by The Timken Company

METRIC SYSTEM (millimetres & newtons)

ENGLISH SYSTEM (inches & pounds)

Technical Support

ADAPTERS AND MOUNTING DESIGNS

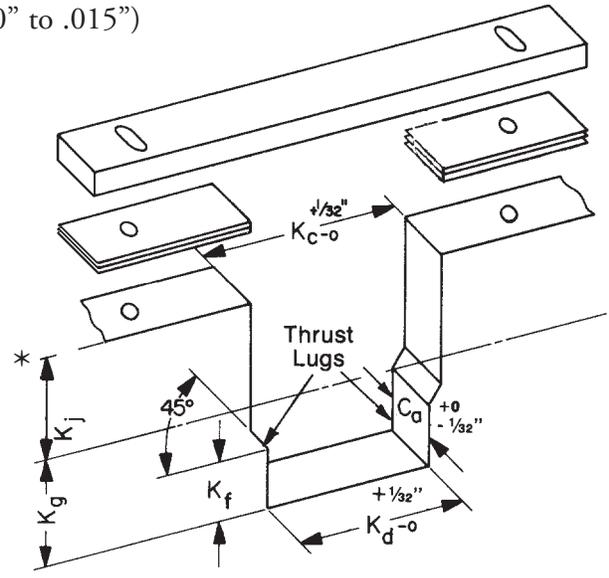
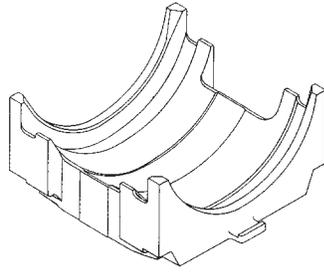
Mounting Dimensions for Narrow Adapter

NOTE: All drawings are shown in inch dimensions.

1. Thrust lugs could be welded or machined into opening.
2. Class G and K adapter do not require thrust lugs.
- 3.* Provide shim to give 0.25 mm to 0.38 mm (.010" to .015")

clearance between tie plate and cup OD.

If cup turning in the adapter should occur a resilient pad may be used between the tie plate and the cup OD to lightly hold the cup from turning.



BEARING CLASS and NARROW ADAPTER PART NUMBER	K _c	K _d	K _f	K _g	K _h [•]	K _j	K _k [•]	C _a		C _b [•]	C _c [•]
								Fixed	Float		
B (4 1/4x8) K 86888	169.9 6.69	125.4 4.94	36.5 1.44	101.6 4.00	85.7 3.38	82.6 3.25	124.6 4.91	68.3 2.69	60.3 2.38	68.3 2.69	117.5 4.62
C (5x9) K 85581	200.0 7.88	144.5 5.69	42.9 1.69	117.5 4.62	100.8 3.97	97.6 3.84	143.7 5.66	74.6 2.94	66.7 2.62	74.6 2.94	146.0 5.75
D (5 1/2x10) K 85530	212.7 8.38	157.2 6.19	46.0 1.81	123.8 4.88	107.2 4.22	104.0 4.09	156.4 6.16	74.6 2.94	66.7 2.62	74.6 2.94	155.6 6.12
E (6x11) K 85073	225.4 8.88	182.6 7.19	58.7 2.31	136.5 5.38	113.5 4.47	110.3 4.34	181.8 7.16	96.8 3.81	88.9 3.50	96.8 3.81	166.7 6.56
F (6 1/2x12) K 85524	257.2 10.12	195.3 7.69	60.3 2.38	152.4 6.00	129.4 5.09	126.2 4.97	194.5 7.66	96.8 3.81	88.9 3.50	96.8 3.81	187.3 7.38
G (7x12) G (7x14) K 83138	281.0 11.06	- -	- -	168.3 6.62	141.3 5.56	138.1 5.44	279.4 11.00	181.0 7.12	171.4 6.75	181.0 7.12	189.7 7.47
K (8) K 522803	306.4 12.06	- -	- -	196.8 7.75	154.0 6.06	150.8 5.94	304.8 12.00	142.9 5.62	133.4 5.25	142.9 5.62	142.9 5.62

• See opposite page

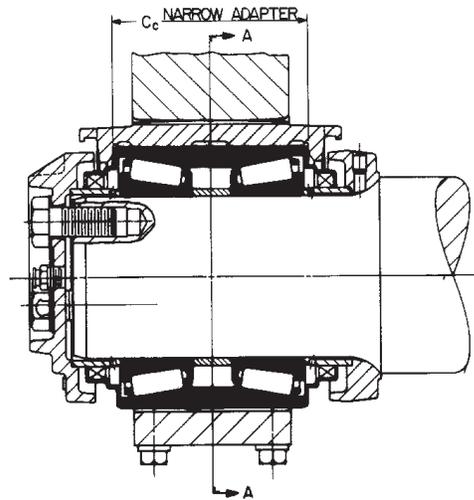
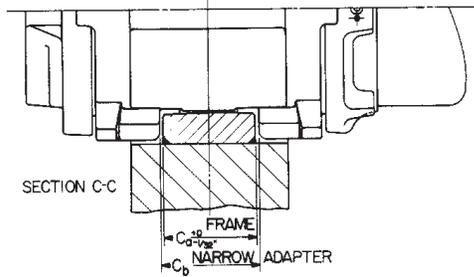
** Adapter with thrust lugs at top - see opposite page

NOTE: If existing frame design will not accommodate a narrow adapter, consult The Timken Company for possible use of a wide adapter – see page 9 for application photos.

METRIC SYSTEM (millimetres & newtons)

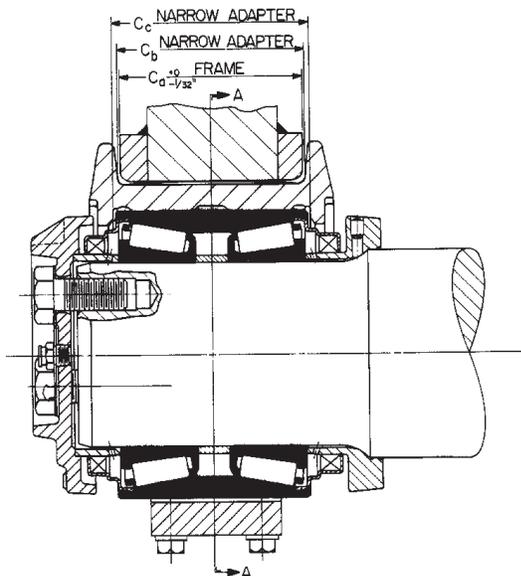
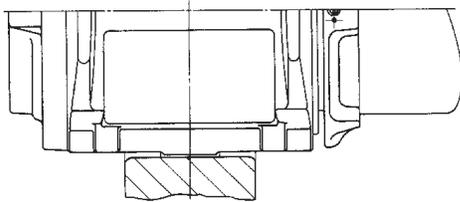
ENGLISH SYSTEM (inches & pounds)

Class B, C, D, E, and F Narrow Adapter

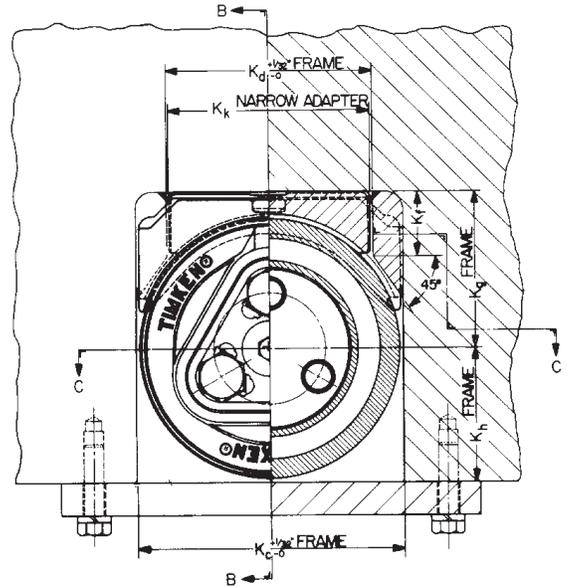


Section B-B

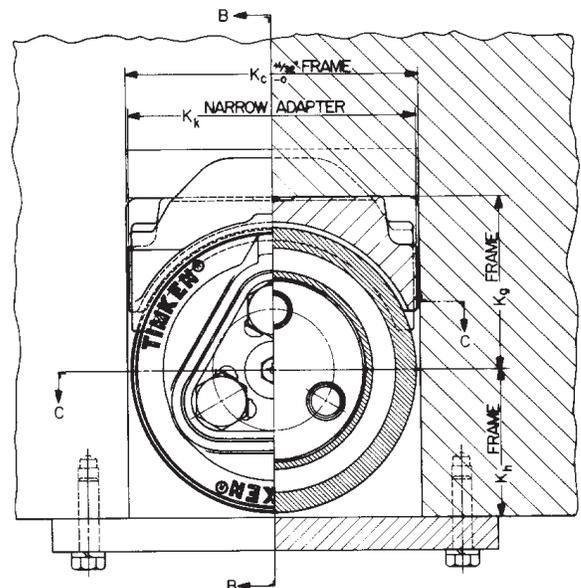
Class G and K Narrow Adapter



Section B-B



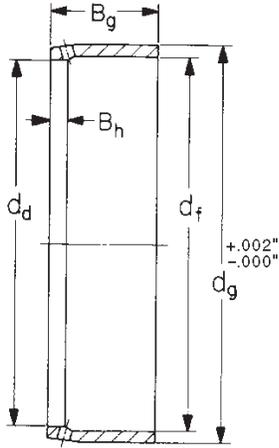
Half Front View - Half Section A-A



Half Front View - Half Section A-A

Auxiliary Parts Detail Dimensions

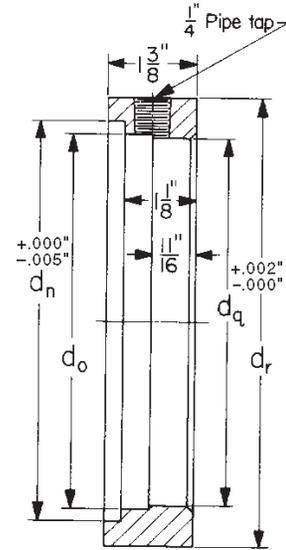
Seal Wear Ring



Seal Case



Backing Spacer

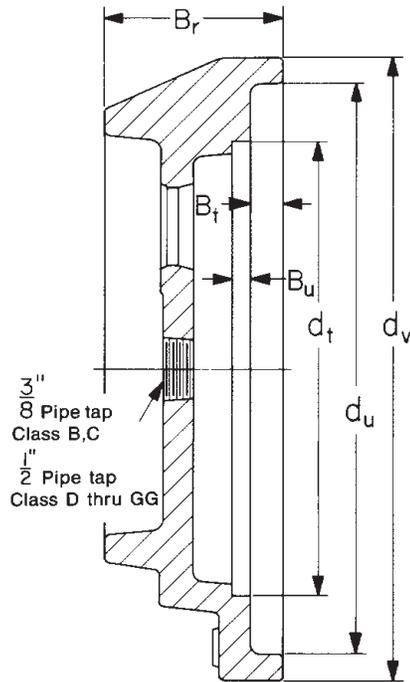


CLASS	Seal Wear Ring						Seal Case			Backing Spacer					
	Part Number	dd	df	dg	Bg	Bh	Part Number	Dd	Ck	Cl	Part Number	dn	do	dq	dr
B (4 1/4x8)	K86890	101.600 4.0000	104.8 4.12	112.70 4.437	37.85 1.490	4.78 .188	K86895	141.66 5.577	38.10 1.500	12.57 .495	K118891	113.64 4.474	104.65 4.120	101.676 4.0030	133.4 5.25
C (5x9)	K86002	119.045 4.6868	122.2 4.81	131.75 5.187	40.23 1.584	5.56 .219	K85600	164.95 6.494	40.87 1.609	12.37 .487	K120198	132.69 5.224	122.10 4.807	119.139 4.6905	152.4 6.00
D (5 1/2x10)	K85507	131.732 5.1863	134.9 5.31	144.45 5.687	40.23 1.584	5.56 .219	K86860	177.65 6.994	40.87 1.609	12.37 .487	K120178	145.39 5.724	134.80 5.307	131.839 5.1905	165.1 6.50
E (6x11)	K85508	144.419 5.6858	147.6 5.81	157.15 6.187	42.62 1.678	6.35 .250	K86861	188.77 7.432	41.63 1.639	13.16 .518	K120190	158.09 6.224	147.50 5.807	144.539 5.6905	177.8 7.00
F (6 1/2x12)	K85509	157.107 6.1853	160.3 6.31	173.02 6.812	47.40 1.866	9.52 .375	K85520	212.90 8.382	47.98 1.889	13.97 .550	K120160	173.96 6.849	160.20 6.307	157.239 6.1905	190.5 7.50
G (7x12)	K147767	177.724 6.9970	181.0 7.12	195.25 7.687	44.22 1.741	6.35 .250	K96501	239.88 9.444	46.81 1.834	14.17 .558	K118866	196.19 7.724	180.85 7.120	177.876 7.0030	209.6 8.25
G (7x14)	K147767	177.724 6.9970	181.0 7.12	195.25 7.687	44.22 1.741	6.35 .250	K96501	239.88 9.444	46.81 1.834	14.17 .558	K118866	196.19 7.724	180.85 7.120	177.876 7.0030	209.6 8.25
GG (7)	K147767	177.724 6.9970	181.0 7.12	195.25 7.687	44.22 1.741	6.35 .250	K99424	261.32 10.288	49.58 1.952	18.92 .745	K118866	196.19 7.724	180.85 7.120	177.876 7.0030	209.6 8.25
K (8)	K504074	203.098 7.9960	206.4 8.12	219.08 8.625	45.24 1.781	7.95 .313	K504073	261.32 10.288	49.58 1.952	18.92 .745	-	-	-	-	-

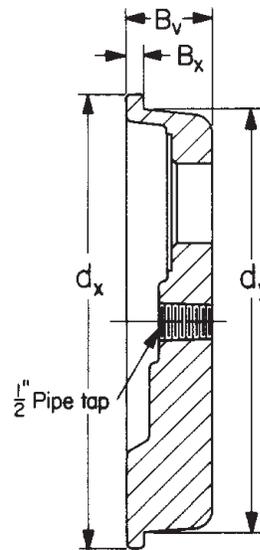
METRIC SYSTEM (millimetres & newtons)
ENGLISH SYSTEM (inches & pounds)

Auxiliary Parts Detail Dimensions

Axle End Cap



Recessed End Cap



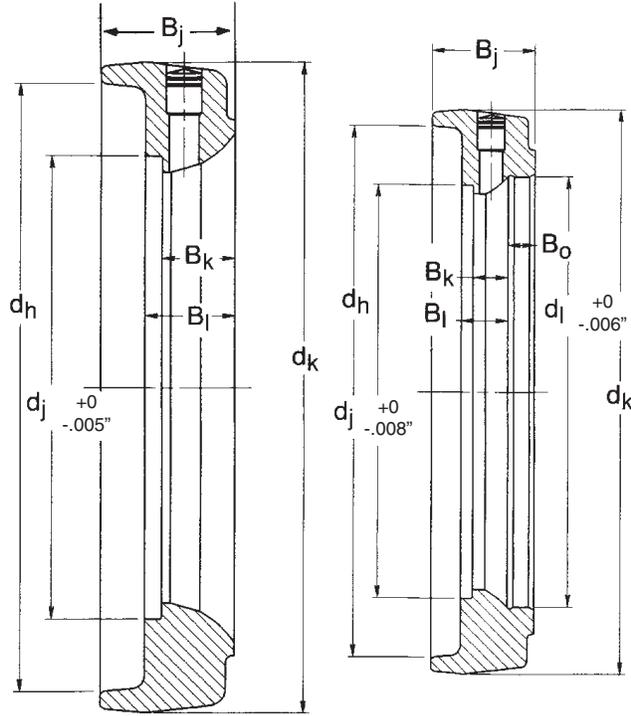
CLASS	Axle End Cap							Recessed End Cap				
	Part Number	d_t	d_u	d_v max	B_r	B_t	B_u	Part Number	d_x	d_y	B_v	B_x
B (4 1/4x8)	K86877	113.64 4.474	146.0 5.75	158.0 6.22	58.7 2.31	7.9 .31	5.6 .22	K399069	114.3 4.50	104.0 4.09	23.8 .94	4.8 .19
C (5x9)	K86003	132.69 5.224	173.0 6.81	188.1 7.41	57.2 2.25	11.1 .44	5.5 .22	K399070	133.4 5.25	121.4 4.78	25.4 1.00	4.8 .19
D (5 1/2x10)	K85521	145.39 5.724	185.7 7.31	200.8 7.91	55.6 2.19	11.1 .44	5.6 .22	K399071	146.0 5.75	134.1 5.28	27.0 1.06	6.4 .25
E (6x11)	K85510	158.09 6.224	198.4 7.81	216.7 8.53	61.9 2.44	11.1 .44	6.4 .25	K399072	158.8 6.25	146.8 5.78	30.2 1.19	6.4 .25
F (6 1/2x12)	K85517	173.96 6.849	225.4 8.88	243.7 9.59	63.5 2.50	16.7 .66	6.4 .25	K399073	177.8 7.00	159.5 6.28	31.8 1.25	6.4 .25
G (7x12)	K95199	196.19 7.724	250.8 9.88	269.9 10.62	57.2 2.25	11.1 .44	5.6 .22	K399074	196.8 7.75	180.2 7.09	33.3 1.31	6.4 .25
G (7x14)	K412057	196.19 7.724	250.8 9.88	269.9 10.62	57.2 2.25	11.1 .44	5.6 .22	K399074	196.8 7.75	180.2 7.09	33.3 1.31	6.4 .25
GG (7)	-	196.19 7.724	250.8 9.88	269.9 10.62	57.2 2.25	11.1 .44	5.6 .22	K399074	196.8 7.75	180.2 7.09	33.3 1.31	6.4 .25
K (8)	-	-	-	-	-	-	-	K504075	222.2 8.75	205.6 8.09	34.9 1.38	11.9 .47

METRIC SYSTEM (millimetres & newtons)
ENGLISH SYSTEM (inches & pounds)

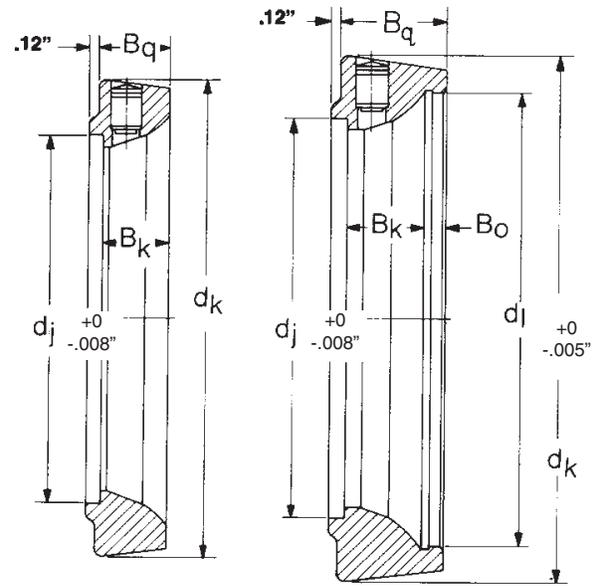
Technical Support

Auxiliary Parts Detail Dimensions

Backing Rings With Shroud



Backing Rings Without Shroud



Class B thru F and G (7 & 14) Class G (7 x 12) and GG (7)
All drawings are shown in inch dimensions.

Class B, C, D

Class E, F, G

		Backing Rings														
		Backing Ring with Shroud							Backing Ring Without Shroud							
CLASS	Part Number	d _h	d _j	d _k max.	B _j	B _k	B _l	B _o	Part Number	d _j	d _k max.	d _i	B _k	B _n	B _o	B _g
B (4 1/4x8)	K86874	146.0 5.75	112.67 4.436	157.2 6.19	39.7 1.56	26.19 1.031	31.8 1.25	-	* -	112.67 4.436	153.2 6.03	-	26.19 1.031	-	-	28.6 1.12
C (5x9)	K85588	173.8 6.84	131.72 5.188	187.3 7.38	42.9 1.69	26.19 1.031	31.8 1.25	-	* -	131.72 5.186	176.2 6.94	-	26.19 1.031	-	-	28.6 1.12
D (5 1/2x10)	K85525	185.7 7.31	144.42 5.686	200.0 7.88	42.9 1.69	26.19 1.031	31.8 1.25	-	K127205	144.42 5.686	188.9 7.44	-	26.19 1.031	-	-	28.6 1.12
E (6x11)	K85095	199.2 7.84	157.12 6.186	215.9 8.50	47.6 1.88	30.15 1.187	36.5 1.44	-	K127206	157.12 6.186	208.0 8.19	178.51 7.028	30.15 1.187	-	8.7 .34	42.1 1.66
F (6 1/2x12)	K85516	227.0 8.94	173.00 6.811	242.9 9.56	50.0 1.97	27.00 1.063	33.3 1.31	-	K125685	173.00 6.811	220.7 8.69	191.21 7.528	27.00 1.063	-	8.7 .34	38.9 1.53
G (7x12) GG (7)	K147766	250.8 9.88	195.22 7.686	266.7 10.50	48.3 1.90	15.85 .624	-	12.7 .50	K153497	195.22 7.686	266.7 10.50	203.10 7.996	-	60.45 2.380	12.7 .50	33.3 1.31
G (7x14)	K95200	250.8 9.88	195.22 7.686	266.7 10.50	48.4 1.91	28.58 1.125	34.1 1.34	-	-	-	-	-	-	-	-	-
K (8)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

METRIC SYSTEM (millimetres & newtons)

ENGLISH SYSTEM (inches & pounds)

• Consult The Timken Company for availability

Industrial Equipment – Fitting Practice For “AP” Bearings (Micrometres, µm)

CLASS	Bearing Part Number		Cone Fitting Practices						Cup Fitting Practices			
			Rotating Cone				Stationary Cone		•Stationery Cup		**Rotating Cup	
			Heavy Loads Moderate Speeds		Hot Applications, Table Rolls, Etc.							
Cone	Cup	Cone Seat d _a	Resultant Fit	Cone Seat d _a	Resultant Fit	Cone Seat d _a	Resultant Fit	Cup Seat D _a	Resultant Fit	Cup Seat D _a	Resultant Fit	
B (4 1/4 x 8)	HM120848	HM120817XD	101.702	102T	101.676	76T	101.575	25L	165.328	102L	165.100	102T
			101.676	51T	101.650	25T	101.549	76L	165.379	279L	**165.125	51T
C (5 x 9)	HM124646	HM124618XD	119.164	102T	119.138	76T	119.037	25L	195.490	102L	195.262	102T
			119.138	51T	119.112	25T	119.011	76L	195.541	279L	**195.287	51T
D (5 1/2 x 10)	HM127446	HM127415XD	131.864	114T	131.838	89T	131.737	13L	208.190	102L	207.962	102T
			131.838	64T	131.812	38T	131.711	64L	208.241	279L	**207.987	51T
E (6 x 11)	HM129848	HM129814XD	144.564	114T	144.538	89T	144.437	13L	220.890	102L	220.662	102T
			144.538	64T	144.512	38T	144.411	64L	220.941	279L	**220.687	51T
F (6 1/2 x 12)	HM133444	HM133416XD	157.264	114T	157.238	89T	157.137	13L	252.640	102L	252.412	102T
			157.238	64T	157.212	38T	157.111	64L	252.691	279L	**252.437	51T
G (7)	HM136948	HM136916XD	177.902	114T	177.876	89T	177.775	13L	276.453	102L	276.225	102T
			177.876	64T	177.850	38T	177.749	64L	276.504	279L	**276.250	51T
GG (7)	H337846	H337816XD	177.902	114T	177.876	89T	177.775	13L	301.853	25L	301.701	102T
			177.876	64T	177.850	38T	177.749	64L	*301.904	127L	*301.726	51T
K (8)	M241547	M241513XD	203.327	127T	203.302	102T	203.175	25L	301.777	25L	301.625	102T
			203.302	76T	203.276	51T	203.149	76L	*301.828	203L	*301.650	51T

* Cup OD Tolerance +0.127 to -0.000 (cup no. H337816XD OD tolerances is +0.127 to +0.076: (T) - Tight (L) - Loose

** Rotating cup applications require 0.025 cup OD tolerance +0.102 +0.076 (Consult The Timken Company for availability).

Industrial Equipment – Fitting Practice For “AP” Bearings (Inches)

CLASS	Cone	Cup	Cone Fitting Practices						Cup Fitting Practices			
B (4 1/4 x 8)	HM120848	HM120817XD	4.0040	0.0040T	4.0030	0.0030T	3.9990	0.0010L	6.5090	0.0040L	6.5000	0.0040T
			4.0030	0.0020T	4.0020	0.0010T	3.9980	0.0030L	6.5110	0.0110L	**6.5010	0.0020T
C (5 x 9)	HM124646	HM124618XD	4.6915	0.0040T	4.6905	0.0030T	4.6865	0.0010L	7.6965	0.0040L	7.6875	0.0040T
			4.6905	0.0020T	4.6895	0.0010T	4.6855	0.0030L	7.6985	0.0110L	**7.6885	0.0020T
D (5 1/2 x 10)	HM127446	HM127415XD	5.1915	0.0045T	5.1905	0.0035T	5.1865	0.0005L	8.1965	0.0040L	8.1875	0.0040T
			5.1905	0.0025T	5.1895	0.0015T	5.1855	0.0025L	8.1985	0.0110L	**8.1885	0.0020T
E (6 x 11)	HM129848	HM129814XD	5.6915	0.0045T	5.6905	0.0035T	5.6865	0.0005L	8.6965	0.0040L	8.6875	0.0040T
			5.6905	0.0025T	5.6895	0.0015T	5.6855	0.0025L	8.6985	0.0110L	**8.6885	0.0020T
F (6 1/2 x 12)	HM133444	HM133416XD	6.1915	0.0045T	6.1905	0.0035T	6.1865	0.0005L	9.9465	0.0040L	9.9375	0.0040T
			6.1905	0.0025T	6.1895	0.0015T	6.1855	0.0025L	9.9485	0.0110L	**9.9385	0.0020T
G (7)	HM136948	HM136916XD	7.0040	0.0045T	7.0030	0.0035T	6.9990	0.0005L	10.8840	0.0040L	10.8750	0.0040T
			7.0030	0.0025T	7.0020	0.0015T	6.9980	0.0025L	10.8860	0.0110L	**10.8760	0.0020T
GG (7)	H337846	H337816XD	7.0040	0.0045T	7.0030	0.0035T	6.9990	0.0005L	11.8840	0.0010L	11.8780	0.0050T
			7.0030	0.0025T	7.0020	0.0015T	6.9980	0.0025L	*11.8860	0.0050L	*11.8790	0.0020T
K (8)	M241547	M241513XD	8.0050	0.0050T	8.0040	0.0040T	7.9990	0.0010L	11.8810	0.0010L	11.8750	0.0040T
			8.0040	0.0030T	8.0030	0.0020T	7.9980	0.0030L	*11.8830	0.0080L	*11.8760	0.0020T

* Cup OD Tolerance +0.0050 to -0.0000 (cup no. H337816XD OD tolerances is +0.0050 to +0.0030: suitable for rotating cup applications.)
(T) - Tight (L) - Loose

** Rotating cup applications require 0.0010 cup OD tolerance +0.0040 +0.0030 (Consult The Timken Company for availability).

METRIC SYSTEM (millimetres & newtons)

ENGLISH SYSTEM (inches & pounds)

Technical Support

Press Fit Force Required to Apply Collars, Gears, or Couplings Used to Retain an "AP" Bearing

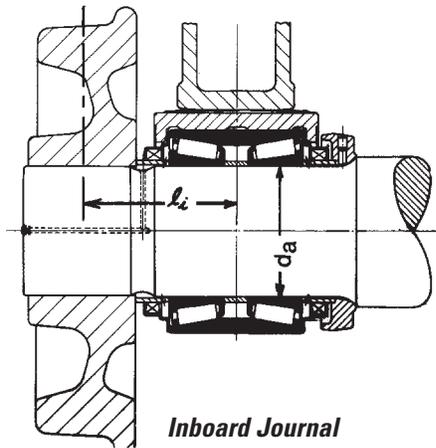
The clamping force resulting from a press fit is equal to:

$$F = \frac{1}{2} \pi f L \delta E [1 - (b/c)^2]$$

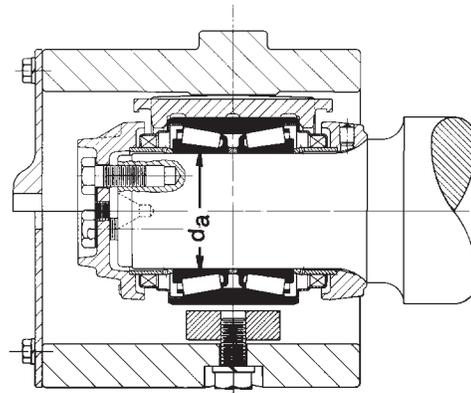
Where: F = Clamping Force - newton (lb)
 f = Coefficient of Friction - .17
 L = Length of Clamping Part - metre (in)
 δ = Fit on Dia - metre (in)
 E = 2.068x10¹¹ pascal (30x10⁶ lb/in²)
 b = ID of Clamping Part - metre (in)
 c = OD of Clamping Part - metre (in)

Bearings Class	Force (Min)	
	Tons	Kilonewtons
B & C	30-40	267-356
D, E, & F	50-60	445-534
G & GG	60-70	534-623
K	50	445

Axle Stress Calculation for Cars and Rolling Stock



Inboard Journal



Outboard Journal

$$S = \frac{10.2 \times P \times \ell}{(d_a)^3}$$

Where: S = Axle Stress - MPa (lb/in²)
 P = Bearing Load - newton (lb)
 d_a = Cone Seat - mm (in)
 ℓ_i, ℓ_o = Moment Arm - mm (in)

Inboard Journal - ℓ_i = Distance from bearing centerline to wheel load centerline

Outboard Journal - ℓ_o = Distance from bearing centerline to point on d_a tangent to shaft radius

CLASS	d _a	(d _a) ³	ℓ _o
B (4 1/4 x 8)	101.600 4.0000	105x10 ⁴ 64	89.2 3.51
C (5 x 9)	119.062 4.6875	169x10 ⁴ 103	104.6 4.12
D (5 1/2 x 10)	131.750 5.1870	229x10 ⁴ 140	109.5 4.31
E (6 x 11)	144.450 5.6870	301x10 ⁴ 184	119.4 4.70
F (6 1/2 x 12)	157.150 6.1870	388x10 ⁴ 237	132.1 5.20
G (7 x 12)	177.787 6.9995	562x10 ⁴ 343	122.4 4.82
G (7 x 14)	177.787 6.9995	562x10 ⁴ 343	135.1 5.32
GG (7)	177.787 6.9995	562x10 ⁴ 343	127.3 5.01
K (8)	203.200 8.0000	839x10 ⁴ 512	100.8 3.97

METRIC SYSTEM (millimetres & newtons)
 ENGLISH SYSTEM (inches & pounds)

Basic "AP" Bearing Dimensions and Ratings

Class	Bearing Part No.		Cone Bore	Cup OD	Cup Width	Cone Length	Spacer Length	Rating @ 500 RPM For 3000 Hr L-10		Factor K
								Radial	Thrust	
	Cone Cone Spacer	Cup	d	D	C	B	B ₁	N lbf	N lbf	
B (4 1/4 x 8)	HM120848 HM120848XA	HM120817XD	101.600 4.0000	165.100 6.5000	114.300 4.5000	49.212 1.9375	7.925 .3120	120000 26900	31000 7000	2.21
C (5 x 9)	HM124646 HM124646XA	HM124618XD	119.062 4.6875	195.262 7.6875	142.875 5.6250	57.150 2.2500	22.225 .8750	172000 38600	44500 10000	2.21
D (5 1/2 x 10)	HM127446 HM127446XA	HM127415XD	131.750 5.1870	207.962 8.1875	152.400 6.0000	57.150 2.2500	31.750 1.2500	186000 41800	48500 10900	2.21
E (6 x 11)	HM129848 HM129848XA	HM129814XD	144.450 5.6870	220.662 8.6875	163.512 6.4375	58.738 2.3125	38.100 1.5000	195000 43800	50700 11400	2.21
F (6 1/2 x 12)	HM133444 HM133444XA	HM133416XD	157.150 6.1870	252.412 9.9375	184.150 7.2500	69.850 2.7500	38.100 1.5000	266000 59700	69000 15500	2.21
G (7 x 12) G (7 X 14)	HM136948 HM136948XA	HM136916XD	177.787 6.9995	276.225 10.8750	185.725 7.3120	74.612 2.9375	31.750 1.2500	305000 68600	79200 17800	2.21
GG (7)	H337846 H337846XA	H337816XD	177.787 6.9995	301.701 11.8780	196.850 7.7500	87.312 3.4375	15.875 .6250	388000 87300	132110 29700	1.69
K (8)	M241547 M241547XA	M241513XD	203.200 8.0000	301.625 11.8750	140.097 5.5156	57.944 2.2812	9.525 .3750	266000 59700	87600 19700	1.76

Bearing Loading Analysis Formulae

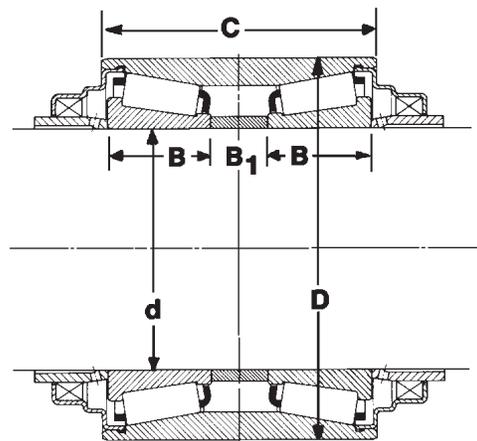
$$L_{10} = \left(\frac{C_{90}}{P} \right)^{10/3} \left(\frac{1.5 \times 10^6}{n} \right)$$

Where:

L_{10} = Rated Life in Hours
(life expectancy associated with
90% reliability)

C_{90} = Rating at 500 RPM for 3000 hr L10

P = Dynamic equivalent radial load from a
combination of radial and thrust loads.



Technical Support

ASSEMBLY AND DISASSEMBLY

Bearing Installation

Bearing assemblies should be stored in a clean dry place and should be protected from moisture and kept dry until they are installed on the axle.

Bearing assemblies should not be removed from the shipping package nor should the protective wrapping be removed until time of application.

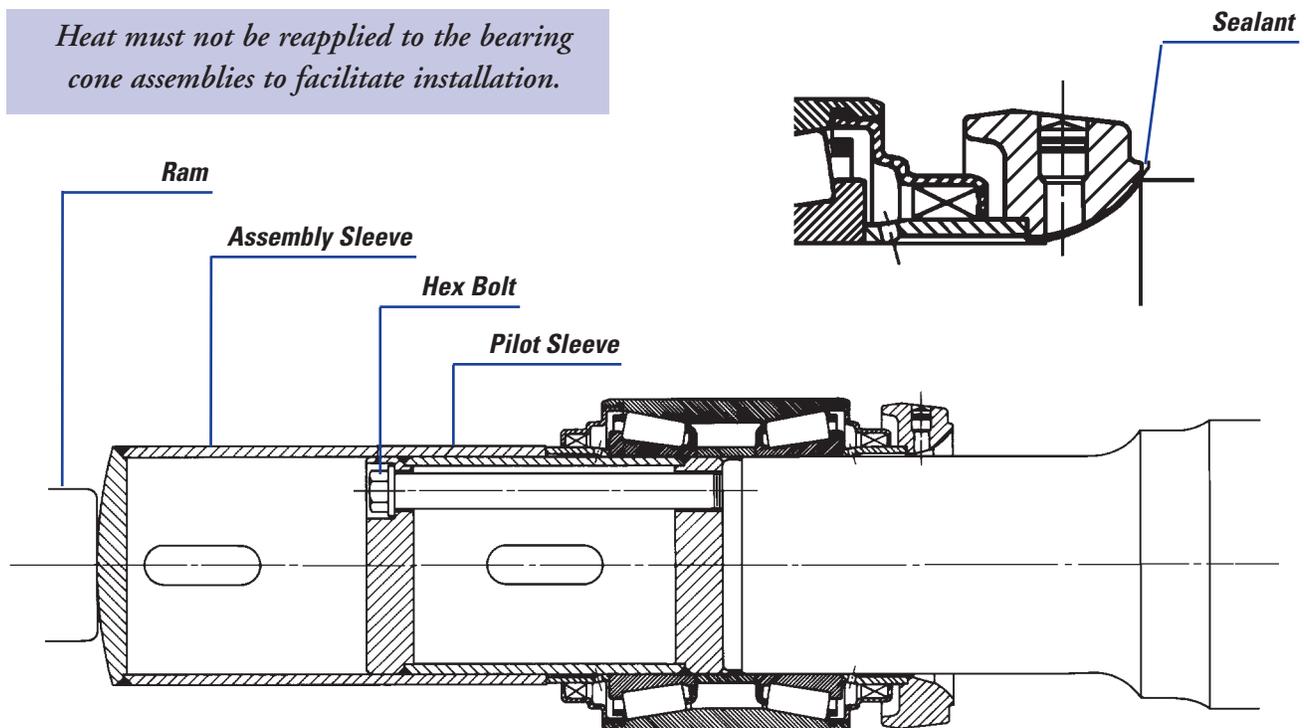
Do not remove the cardboard insert from the bore of the bearing assembly. This insert will hold the cone spacer in alignment with the bearing cones when installing the bearing assembly on the pilot sleeve.

Pressing Bearing Assemblies on Axles

The amount of press fit of the bearing on the axle is predetermined by the dimensional tolerances of the axle and bearing cones. Neither bearings nor axle need be selected for fit.

Tools designed for roller bearing installation and removal should be used.

Heat must not be reapplied to the bearing cone assemblies to facilitate installation.



Separate Sleeve Method of Applying "AP" Bearings to an Axle.

Timken "AP" bearings may be installed or removed with a bearing press, wheel press, or with portable fixtures depending on production requirements.

Coat the bearing seats of the axle with castor oil, heavy mineral oil, or a molybdenumdisulphide and oil mixture. *Do not use white lead.* Lead compounds may be detrimental to lubricating greases by acting as an oxidation catalyst.

A thin coating of rust preventive can be applied to the axle fillet if the standard backing ring as shown below is used. The rust preventive used must not contain lead or other compounds which may be detrimental to lubricating greases.

The bearing assemblies are shipped with a protective coating of grease over the vent fitting. Care should be taken to see that the grease is not wiped off when the bearings are applied to the axles.

A pilot sleeve should be used to keep the cone spacer in alignment with the bores of the cones and to guide the bearing assembly on the axle. (page 30)

An assembly sleeve which contacts the seal wear ring outer face and telescopes over the pilot sleeve is used to press the bearing on the axle.

When the bearing assembly is slipped on the pilot sleeve and the cardboard insert is ejected, the seal wear ring should be held in place to prevent it from sliding out of the enclosure seal.

If the seal wear rings does slip out of the assembly it must be inserted into the enclosure seal correctly and carefully, chamfered end first, so that the outer lip of the seal does not turn under when the seal lips are expanded over the seal wear ring.

Do not insert any tool or other instrument between the seal element lips and seal wear ring. This may damage the seal element lips or scratch the seal wear ring resulting in bearing lubricant leakage.

To make sure that the bearings are firmly seated against the axle fillet, the forces shown in the following table should be applied to the bearings after the surge of the pressure gage indicates that the bearings have contacted the axle fillet.

Bearing Installation Force

Bearings Class	Clamping Force	
	Tons	Kilonewtons
B & C	30-40	267-356
D, E, & F	50-60	445-534
G & GG	60-70	534-623
K	50	445

Due to the rubbing type seals, the bearing assembly will not rotate freely at initial application. New bearing assemblies are pre-set at the factory. No adjustment is necessary at installation.

Applying The Axle End Cap

Remove the axle end cap assembly from the carton and remove the cardboard cap screw retainer.

Apply the axle end cap, locking plate, and cap screws to the end of the axle as a unit.

A ratchet wrench or an impact wrench may be used to run up the cap screws.

Tighten the cap screws with a torque wrench to the torque specified in the table below. Recheck each cap screw several times until the specified torque is obtained for each cap screw.

Cap Screw Tightening Torque

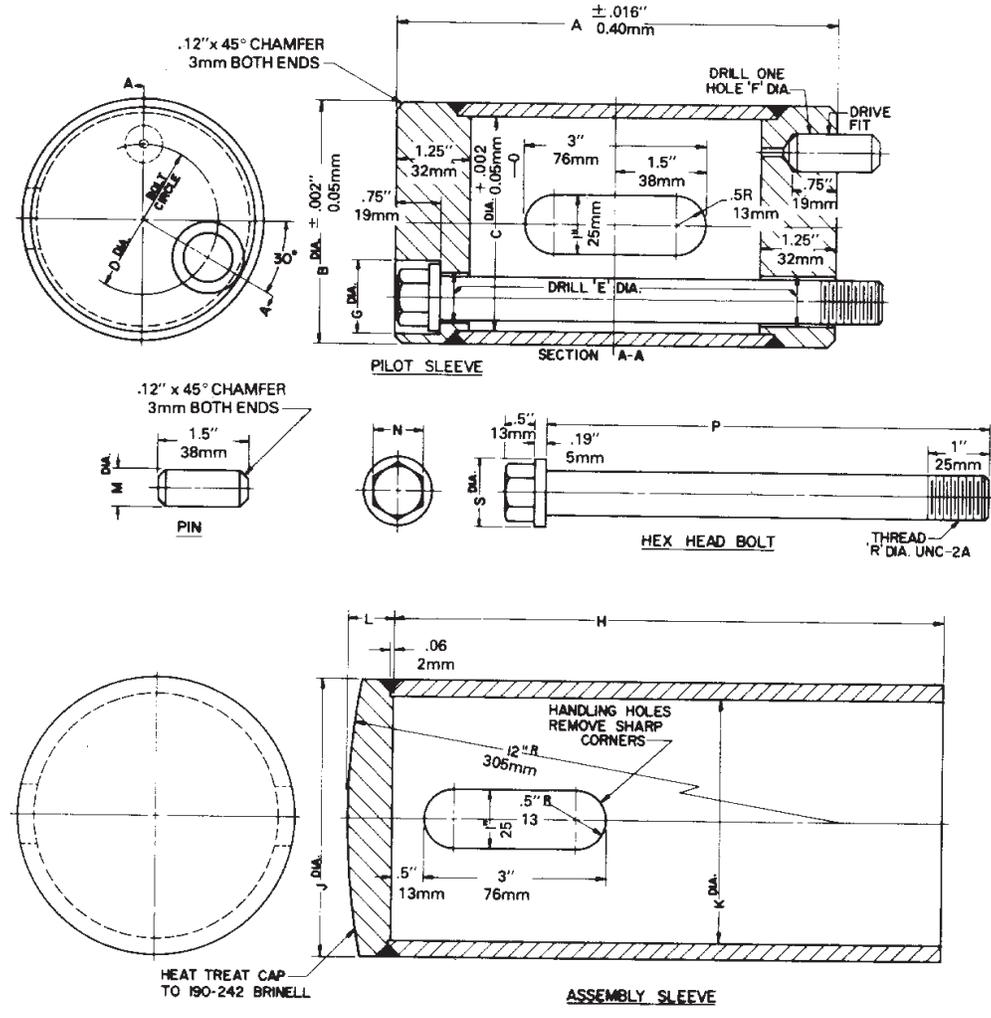
Cap Screw Size	Torque	
	lb-ft	N-m
5/8"	110-120	149-163
3/4"	110-120	149-163
7/8"	140-150	190-203
1"	250-270	339-366
1 1/8"	360-390	488-529
1 1/4"	430-460	583-624

Lock the cap screws by bending all tabs of the locking plate flat against the sides of the cap screw heads. For the recessed end cap, simply wire the heads together.

If water or humid conditions exist, a bead of sealant can be applied around the joint of the backing ring and shaft, after the bearing assembly is pressed in place (not required for backing rings press fitted on shaft step).

Technical Support

Equipment For Bearing Installation and Removal

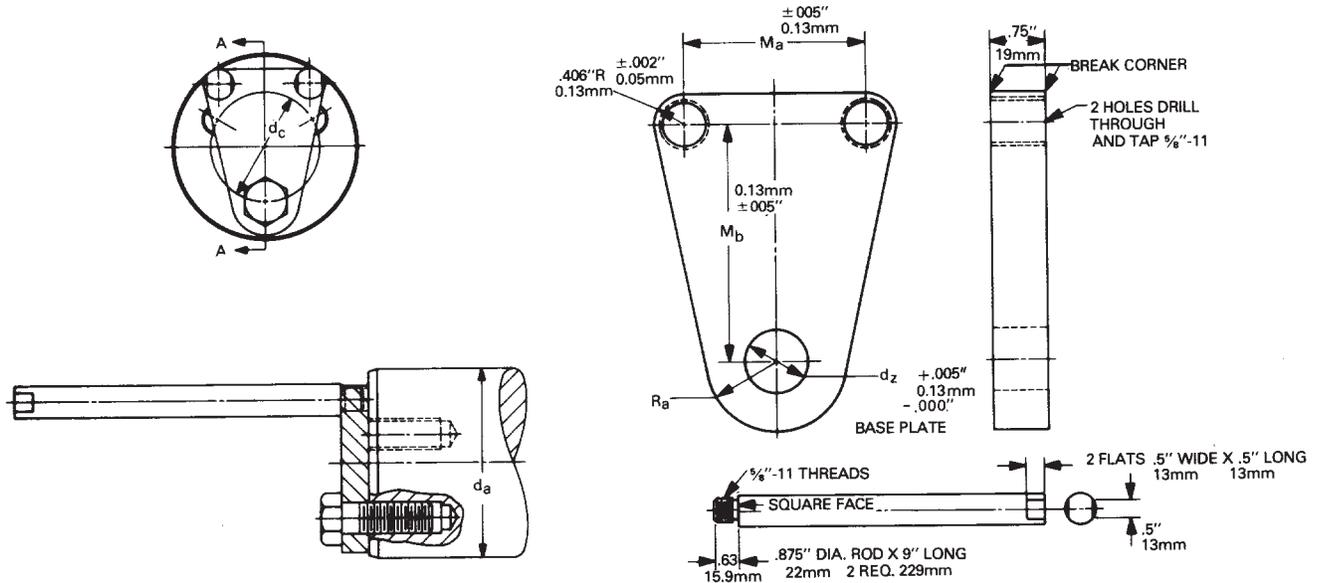


End Cap	Pilot Sleeve							Assembly Sleeve					Pin					Hex Head Bolt						
	A	B	C	D	E	F	G	D	E	F	G	H	J	K	L	M	N	P	R	S	M	N	P	R
B (4 1/2 x 8)	184 7.25	101.04 3.978	88.90 3.500	61.9 2.44	20 .781	16 .625	30 1.19	60.3 2.38	17 .656	13 .500	27 1.06	229 9	116 4.56	101.88 4.011	19 .75	16 .625	16 .812	184 7.25	3/4-10 1.12	29 .500	13 .625	184 7.25	5/8-11 1.00	25 1.00
C (5x9)	216 8.5	118.49 4.665	106.35 4.187	7.62 3.00	23 .906	19 .734	33 1.31	76.2 3.00	17 .656	13 .500	27 1.06	254 10	133 5.25	119.33 4.698	19 .75	19 .734	19 .875	216 8.5	7/8-9 1.25	32 .500	13 .625	216 8.5	5/8-11 1.00	25 1.00
D (5 1/2 x 10)	216 8.5	131.19 5.165	119.05 4.687	88.9 3.50	23 .906	19 .734	33 1.31	76.2 3.00	23 .906	19 .734	33 1.31	260 10.25	146 5.75	132.03 5.198	19 .75	19 .734	19 .875	216 8.5	7/8-9 1.25	32 .734	19 .875	216 8.5	7/8-9 1.25	32 1.25
E (6x11)	238 9.38	143.89 5.665	131.75 5.187	98.4 3.88	26 1.031	21 .844	37 1.44	82.6 3.25	26 1.031	21 .84	37 1.44	279 11	159 6.25	144.73 5.698	19 .75	21 .844	21 .938	238 9.38	1-8 1.38	35 .844	21 .938	238 9.38	1-8 1.38	35 1.38
F (6 1/2 x 12)	260 10.25	156.59 6.165	144.45 5.687	108.0 4.25	30 1.156	24 .953	40 1.56	88.9 3.50	26 1.031	21 .844	37 1.44	279 11	171 6.75	157.43 6.198	25 1	24 .953	24 1	260 10.25	1 1/8-7 1.50	38 .844	21 .938	260 10.25	1-8 1.38	35 1.38
G (7x12)	260 10.25	177.24 6.978	165.10 6.500	117.5 4.62	33 1.281	27 1.078	43 1.69	101.6 4.00	30 1.156	24 .953	40 1.56	283 11.12	192 7.56	178.10 7.012	32 1.25	27 1.078	27 1.125	260 10.25	1 1/4-7 1.62	41 .953	24 1.000	260 10.25	1 1/8-7 1.50	38 1.50
GG (7)	260 10.25	177.24 6.978	165.10 6.500	117.5 4.62	33 1.281	27 1.078	43 1.69	101.6 4.00	30 1.156	24 .953	40 1.56	283 11.12	192 7.56	178.10 7.012	32 1.25	27 1.078	27 1.125	260 10.25	1 1/4-7 1.62	41 .953	24 1.000	260 10.25	1 1/8-7 1.50	38 1.50
K (8)	203 8	202.64 7.978	190.50 7.500					123.8 4.88	30 1.156	24 .953	40 1.56	216 8.5	222 8.75	203.50 8.012	38 1.5					24 .953	1.000	203 8	1 1/8-7 1.50	38 1.50

Details of the pilot sleeve and the assembly sleeve used for applying Timken "AP" bearing assemblies to an axle with a wheel press or bearing press.

METRIC SYSTEM (millimetres & newtons)
ENGLISH SYSTEM (inches & pounds)

Equipment For Bearing Installation and Removal (Limited Production)



CLASS	d _a *	M _a	Axle End Cap				Recessed End Cap			
			M _b	R _a	d _c	d _z	M _b	R _a	d _c	d _z
B (4 1/4 x 8)	101.702-101.676 4.0040-4.0030	50.80 2.000	61.44 2.419	16.8 .66	61.9 2.44	.750	60.66 2.388	17.5 .69	60.3 2.38	.625
C (5 x 9)	119.164-119.138 4.6915-4.6905	63.50 2.500	74.65 2.939	18.3 .72	76.2 3.00	.875	74.65 2.939	18.3 .72	76.2 3.00	.625
D (5 1/2 x 10)	131.864-131.838 5.1915-5.1905	63.50 2.500	89.08 3.507	18.3 .72	88.9 3.50	.875	82.73 3.257	24.6 .97	76.2 3.00	.875
E (6 x 11)	144.564-144.538 5.6915-5.6905	69.85 2.750	99.36 3.912	19.8 .78	98.4 3.88	1.000	91.41 3.599	27.7 1.09	82.6 3.25	1.000
F (6 1/2 x 12)	157.264-157.238 6.1915-6.1905	76.20 3.000	109.65 4.317	21.3 .84	108.0 4.25	1.125	100.13 3.942	31.0 1.22	88.9 3.50	1.000
G (7 x 12) G (7 X 14)	177.902-177.876 7.0040-7.0030	88.90 3.500	122.56 4.825	26.9 1.06	117.5 4.62	1.250	114.63 4.513	35.1 1.38	101.6 4.00	1.125
GG (7)	177.902-177.876 7.0040-7.0030	88.90 3.500	122.58 4.826	26.9 1.06	117.5 4.62	1.250	114.63 4.513	35.1 1.38	101.6 4.00	1.125
K (8)	203.327-203.302 8.0050-8.0040	101.60 4.000	-	-	-	-	136.78 5.385	36.6 1.44	123.8 4.88	1.125

*Axle size for rotating cone applications

For those applications where a limited quantity of bearings are to be mounted, the assembly tool shown above can be economically fabricated.

METRIC SYSTEM (millimetres & newtons)
ENGLISH SYSTEM (inches & pounds)

Technical Support

SIMPLIFIED INSTALLATION OF "AP" BEARINGS FOR INDUSTRIAL EQUIPMENT

What does the operator of a machine do when his machine, located in a remote area away from any sophisticated tools, needs a bearing replaced? The Timken Company suggests using the following procedures for installing "AP" bearings when sophisticated tools are not available. These methods for installing "AP" bearings are valuable ways of saving time and money.

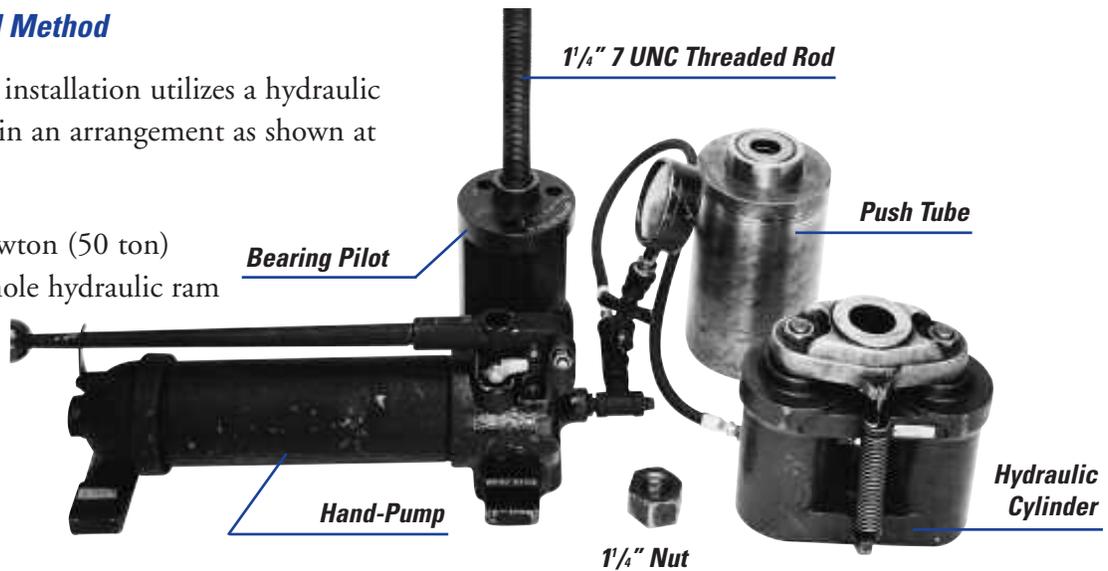
Installation Methods

Unlike other tapered roller bearing installations where the individual components are installed separately, the complete "AP" bearing assembly should be installed simultaneously.

Hydraulic RAM Method

One method of installation utilizes a hydraulic pump and ram in an arrangement as shown at right.

The 445 kilonewton (50 ton) capacity centerhole hydraulic ram is used for the Class "D" (5½ x 10) bearing.

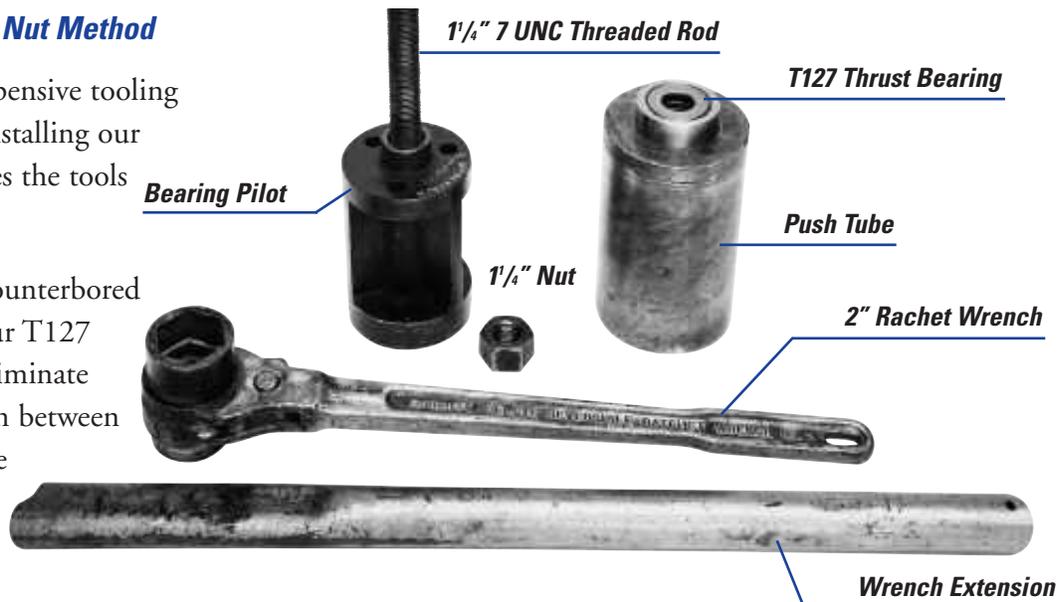


Hydraulic RAM Method

Threaded Rod and Nut Method

One of the least expensive tooling arrangements for installing our "AP" bearing utilizes the tools shown in at right.

The push tube is counterbored to accommodate our T127 thrust bearing to eliminate much of the friction between the nut face and the push tube.



Threaded Rod and Nut Method

Tooling

Both installation methods used a 1-1/4”-7 UNC threaded rod (SAE 4340 steel, hardened 48-53 Rc) threaded into a bearing pilot as shown at right. Both methods use a push tube, nut, and cap screws.

Three cap screws are then used to bolt the bearing pilot to the end of the shaft.

Lubricant is applied to the shaft before pressing on the bearing.

Required installation clamping force for each size of “AP” bearing may be obtained from page 31.

Comparison of Methods

If the user does not own a hydraulic pump and ram, the “threaded rod and nut” method would probably be less expensive. However, the threaded rod and nut method requires slightly more time and effort to install the bearing.

In many instances an operator already has a hydraulic pump and ram which he uses for routine maintenance. If this is the case, the hydraulic pump and ram method would be less expensive than the threaded rod and nut method. The hydraulic method is slightly faster and requires less effort than the threaded rod and nut method.

Regardless of the method used for installing the bearing assembly, it should be made certain that all components are properly seated. A distinctive metallic ping occurs at the instant all the components are seated.



Tooling Methods

WARNING

Proper bearing maintenance and handling practices are critical. Failure to follow correct installation instructions can result in equipment failure, creating a risk of serious bodily harm.

Technical Support

Bearing Removal (Axle)

The bearing assemblies may be removed with a press or with portable fixtures. A force of 356-534 kilonewtons (forty to sixty tons) pressure is normally required to break the bearing fit.

When it is desirable to remove the bearing without removing a wheel or other adjacent backing part, a pulling shoe is used, similar to that shown below.

Make sure that the pulling shoe is of the correct size for the bearing to be removed. Proper contact with the backing ring and puller alignment are necessary for efficient bearing removal.

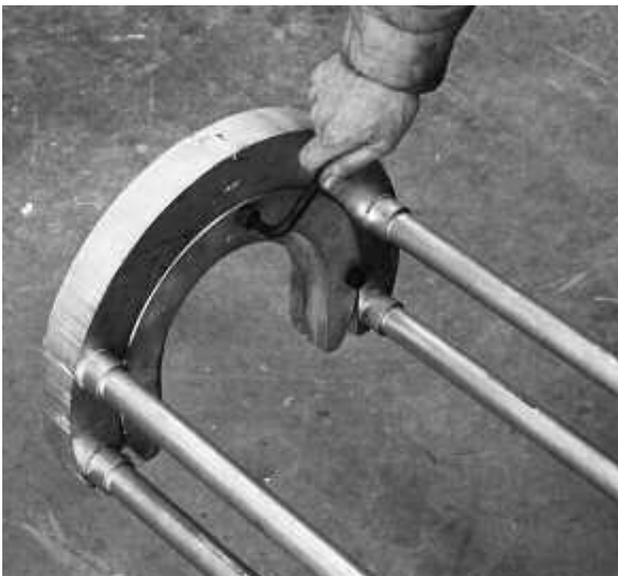
Position the pulling shoe behind the backing ring. The pulling shoe contact surface of the backing ring is very narrow. Therefore, it is necessary to hold the pulling shoe down in position behind the backing ring as shown below until the initial pressure has been applied to insure proper contact with the backing ring. Extend the ram to remove the bearing from the axle.

If bearings are to be removed along with wheels, make sure that the wheel hub will contact the backing ring or seal wear ring if a backing ring is not used. If the axle has large wheel seats, a suitable shoe or blocks must be used to make contact between the wheel hub and backing ring.

When bearings are removed from the axle, a pilot sleeve or guide tube should be fastened to the end of the axle or to the press ram to keep the bearing parts together and protect them from damage. Do not drop the bearing when removing it from the pilot sleeve.

After the bearing assembly is removed from the pilot sleeve, a tube similar to the cardboard insert or a similar device should be inserted in the bore of the bearing assembly to hold the internal bearing parts in place. Particular attention should be given to keeping the seal wear ring in place in the enclosure seals.

Whenever bearing assemblies are removed from the axles, the bearings should be disassembled, cleaned and inspected.



Pulling Shoe



Holding the Pulling Shoe Down

Lubrication of “AP” Bearings

Timken “AP” bearings are furnished prelubricated approximately half full with greases approved by the Association of American Railroads (AAR) Specification M942-78.

To help prevent the ingress of contamination, it is often advantageous for the customer to fill the “AP” bearing completely full of grease, particularly in low and moderate speed applications. The grease used to fill the bearing should be compatible with the factory fill grease. That is, any grease added to the factory grease should not result in grease softening and consequent leakage around the seals. A lithium 12 hydroxy stearate soap grease with added rust and oxidation inhibitors is suggested. The viscosity of the base oil should be in a range from 150-220 cSt at 40°C (60-100 SUS at 210°F). An NLGI No. 2 grease is preferred; however, if there is a problem of pumping an NLGI No. 2 grease in cold weather, an NLGI No. 1 grease can be considered.

In industrial applications, factory fill greases are generally satisfactory up to 93°C (200°F) on a continuous basis and up to 121 °C (250°F) on an intermittent operation basis. For higher temperature operating environments and grease temperatures up to 177°C (350°F), a high temperature grease should be used to fill the “AP” bearing, as well as for further relubrication. In these instances, products utilizing a urea, or complex, thickener should be considered. The grease selected should also have rust and oxidation inhibitors and a minimum base oil viscosity of 150 cSt at 40°C (60 SUS at 210°F). Frequent relubrication may be required even with higher temperature capability greases.

WARNING

Proper bearing maintenance and handling practices are critical. Failure to follow correct installation instructions can result in equipment failure, creating a risk of serious bodily harm.

Grease Capacities of “AP” Bearings

Class	Normal Initial Charge*	Additional Grease Required to Fill*		Total Additional Grease Required to Completely Fill Assembly*
		Bearing	Axle End Cap	
B (4¼ x 8)	8	7.8	3.2	11
C (5 x 9)	12	14.2	3.4	17.6
D (5½ x 10)	16	15.7	4.7	20.4
E (6 x 11)	16	20.9	6.3	27.2
F (6½ x 12)	24	33.8	6.4	40.2
G (7 X 12) G (7 x 14)	32	36.5	7.3	43.8
GG (7)	32	51.8	14.6	66.4
K (8)	27	27	8	35

* Ounces of grease

1 Pint of grease = .95 pounds (.55 oz./in.³)

How To Order

“AP” BEARING ORDERING PROCEDURE

Bearing assemblies may be ordered by two different methods.

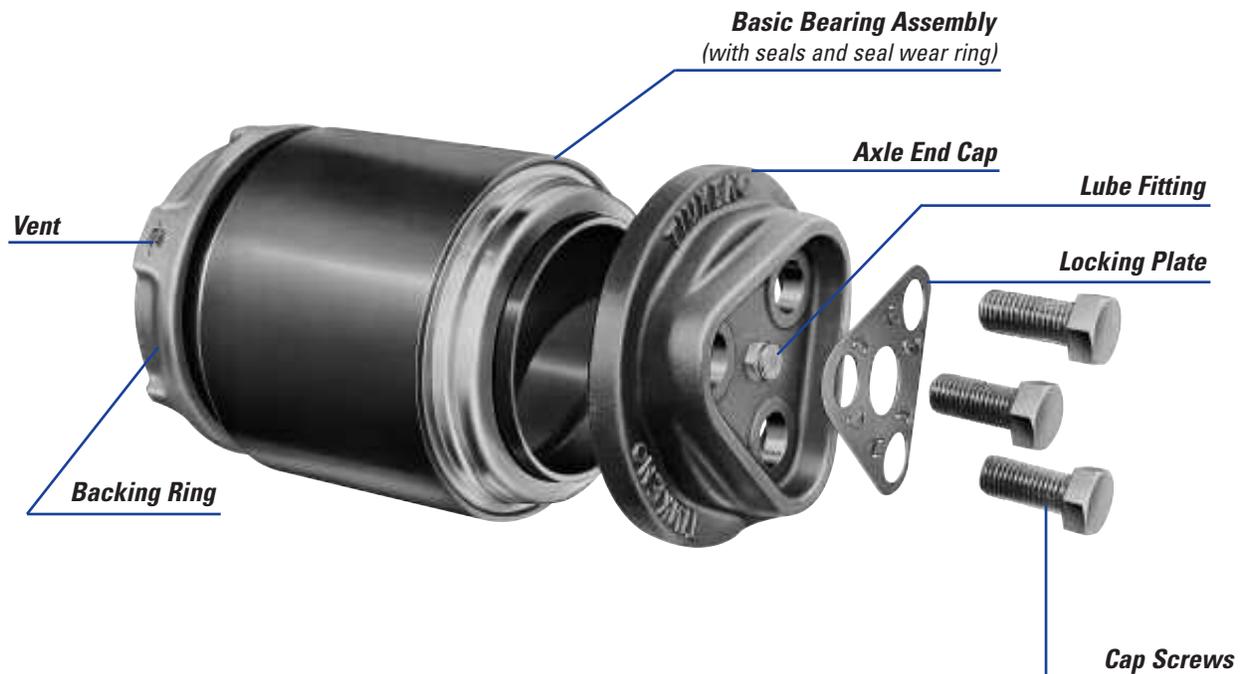
Method 1

Purchase one of the two “Basic” bearing mounting arrangements shown on page 40, plus the required auxiliary parts shown on page 41.

Method 2

Purchase an entire assembly or kit using the overall bearing assembly number as shown in the “Supplemental and Special Assembly Number” lists on pages 43 to 69. This overall assembly number includes all needed auxiliary parts.

Adapters are not part of the bearing assembly and should be ordered separately giving:
Quantity - bearing class - part number (page 43).



Basic "AP" Bearing Ordering Procedure:

To facilitate order entry, identify the bearing assembly and required auxiliary parts by specifying the following details from the tables shown on pages 40 and 41. Also specify the quantity of each sub-assembly required to make up the assembly to suit your application. See page 6 for a detailed explanation of assembly numbers.

Quantity - "AP" bearing class (Page 40)

Each consisting of:

Cone number - assembly number- quantity per bearing (page 40)

Axle end cap part number - assembly number - quantity per bearing (page 41)

Backing spacer number - quantity per bearing (page 41)

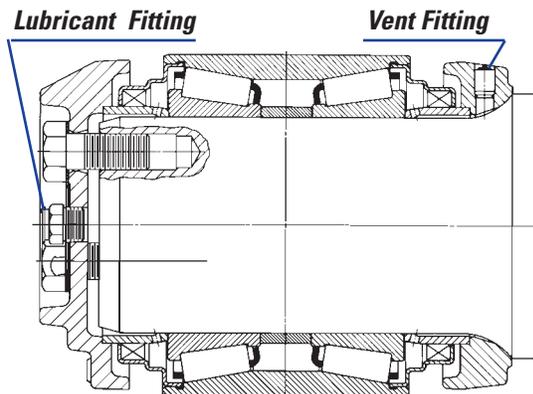
Pipe plug - quantity per bearing

or Lubricant fitting - quantity per bearing

or Vent fitting - quantity per bearing

EXAMPLES:

1. To order eight of the assemblies shown in class D:



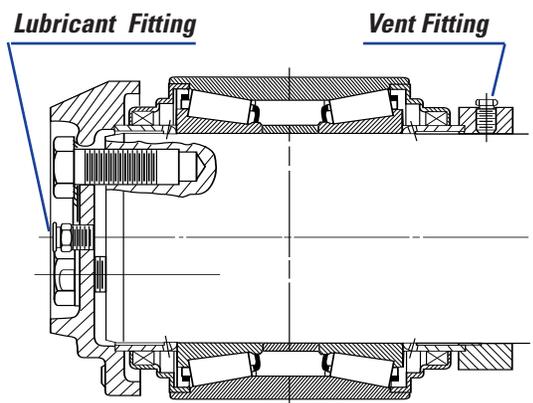
Eight "AP" bearing assembly class D

Each consisting of:

HM127446 90012 - one per bearing (page 40)

K85521 90011 axle end cap assembly -
one per bearing (page 41)

2. To order ten of the assemblies shown in class D:



Ten - "AP" bearing assembly class D

Each consisting of:

HM127446 90048 - one per bearing (page 40)

K85521 90011 axle end cap assembly -
one per bearing (page 41)

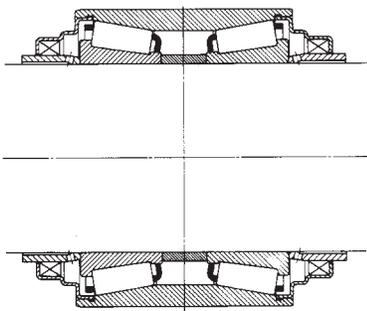
K120178 backing spacer - one per bearing (page 41)

K83093 vent fitting - one per bearing (page 41)

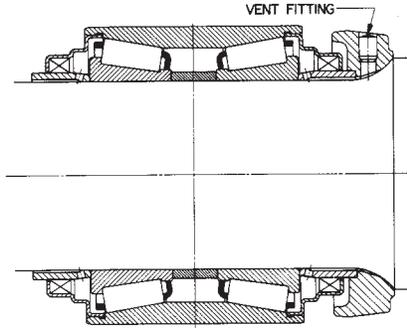
How To Order Method 1

Basic Bearing Assembly Numbers

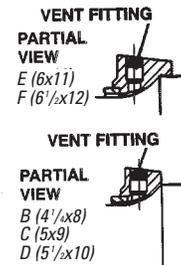
Basic "AP" Bearing



Basic "AP" Bearing with Backing Ring Pressed On*
w/shroud



Backing Ring Assembly
without shroud



* Specify Backing Ring With or Without Shroud. Backing Rings Without Shroud have reduced OD to facilitate assembly in some housing designs. Backing Rings With Shroud provide added seal protection where required.

Determine Basic "AP" Bearing Assembly required and specify from the following table (include CONE NUMBER as shown with bearing Class):

EXAMPLE: If a Class D bearing with a backing ring with shroud is required, specify:
"AP" bearing class D HM127446-90012.

Class Cone Number	Basic "AP" Bearing Assembly Number	Basic "AP" Bearing with Backing Ring Pressed on (Assembly Number)	
		Backing Ring With Shroud	Backing Ring Without Shroud
B (4 1/4x8) HM120848	90014	90012	90124
C (5x9) HM124646	90056	90014	N.A. **
D (5 1/2x10) HM127446	90048	90012	90318
E (6x11) HM129848	90054	90012	90308
F (6 1/2x12) HM133444	90076	90012	90424
G (7x12) HM136948	N.A.	90320	N.A.
G (7x14) HM136948	90226	90228	N.A.
GG (7) H337846	90248	90262	N.A.
K (8) M241547	90028	N.A.	N.A.

N.A. Not Available

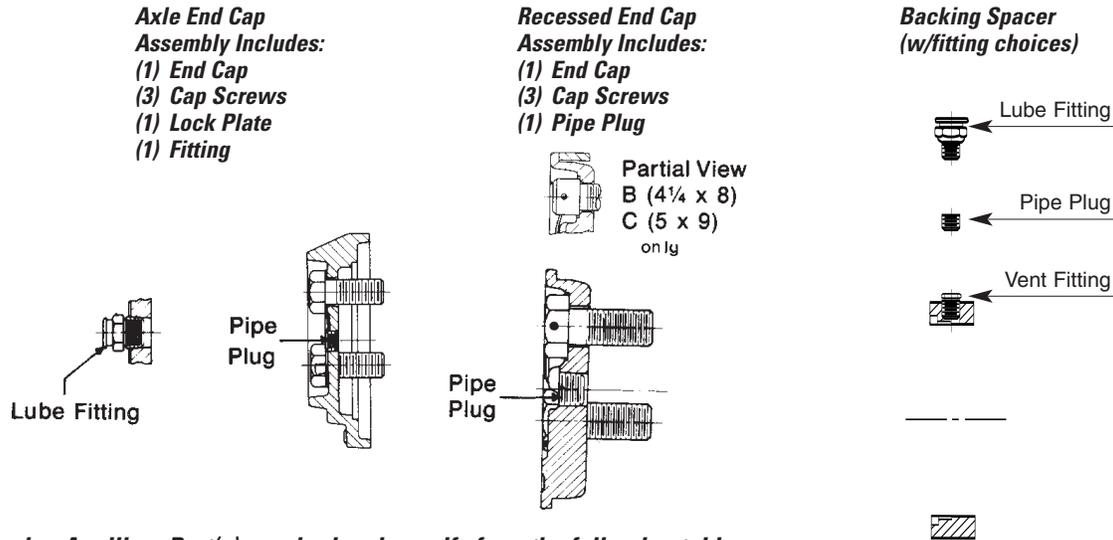
**Consult The Timken Company for availability.

NOTE: Cup OD tolerances of 0.025 mm (.0010"), reduced width assemblies, assemblies with provision for relubrication through the center of the cup, and assemblies without seal parts are available in some bearing classes. Consult The Timken Company for availability.

Auxiliary Parts

Add Auxiliary Parts to Basic “AP” Bearings required.

NOTE: Provide for relubrication on one side of bearing with vent at opposite side. If an Auxiliary Part is not used, these provisions should be made in parts adjacent the bearing.



Determine Auxiliary Part(s) required and specify from the following table:

CLASS	Axle End Cap Assembly			Recessed End Cap Assembly		Backing Spacer	Lube Pipe Plug Vent Fitting
	Part No	Assy No	Incl. Pipe Plug Incl. Lube Fitting	Part No	Assy No		
B (4¼x8)	K86877	90010	Incl. Pipe Plug	K399069	90010	K118891	K78880 K46462 K83093
	K86877	90012	Incl. Lube Fitting				
C (5x9)	K86003	90010	Incl. Pipe Plug	K399070	90010	K120198	K78880 K46462 K83093
	K86003	90015	Incl. Lube Fitting				
D (5½X10)	K85521	90010	Incl. Pipe Plug	K399071	90010	K120178	K78880 K46462 K83093
	K85521	90011	Incl. Lube Fitting				
E (6x11)	K85510	90010	Incl. Pipe Plug	K399072	90010	K120190	K78880 K46462 K83093
	K85510	90011	Incl. Lube Fitting				
F (6½x12)	K85517	90010	Incl. Pipe Plug	K399073	90010	K120160	K78880 K46462 K83093
	K85517	90012	Incl. Lube Fitting				
G (7x12)	K95199	90010	Incl. Pipe Plug	K399074	90010	K118866	K78880 K46462 K83093
	K95199	90011	Incl. Lube Fitting				
G (7x14)	K412057	90010	Incl. Pipe Plug	K399074	90010	K118866	K78880 K46462 K83093
	K412057	90011	Incl. Lube Fitting				
GG (7)	**	— 90010	Incl. Pipe Plug Incl. Lube Fitting	K399074	90010	K118866	K78880 K46462 K83093
K (8)	N.A.			K504075	90010	N.A.	

N.A. - Not Available ** Consult The Timken Company for availability.

SUPPLEMENTAL AND SPECIAL ASSEMBLY NUMBERS

Typical “AP” Bearing Mounting Arrangements

The following illustrations on pages 46 to 69 show typical combinations of basic “AP” bearings, and auxiliary parts. See page 6 for a detailed explanation of assembly numbers. When these overall assemblies are used with the adapters shown below, bearing mounting kits are formed.

When making up a mounting arrangement, a provision for relubrication should be made on one side of the bearing, with a vent on the opposite side. If an auxiliary part is not used, these provisions should be made in the parts adjacent the bearing.

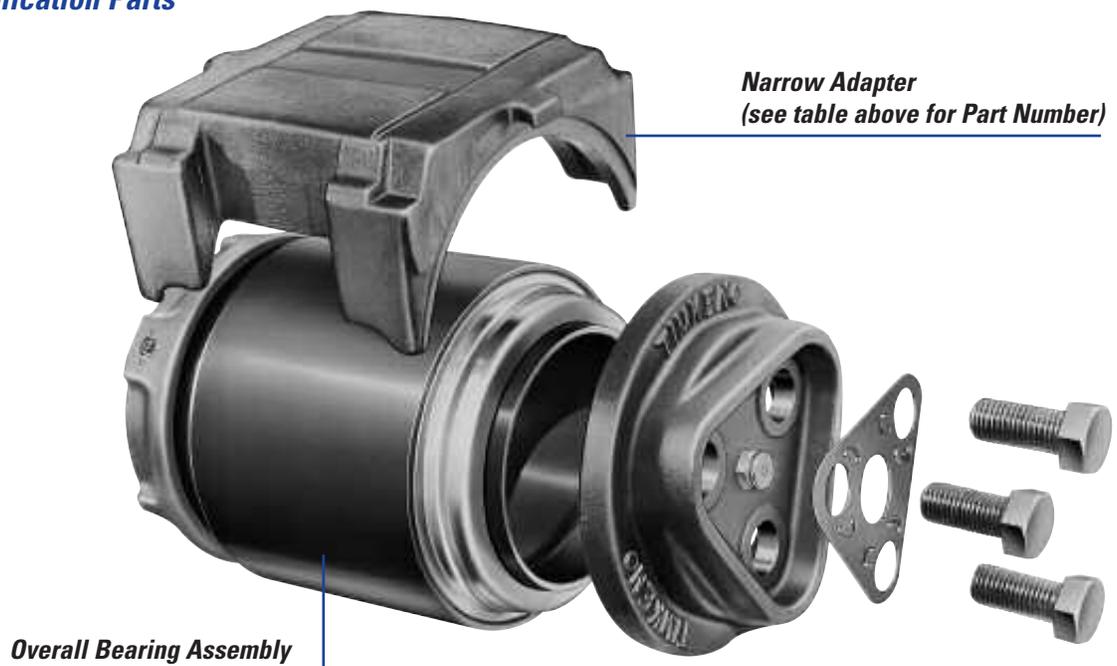
Also it is important when designing an “AP” bearing into an application, the bearing must always be securely clamped through the cones. Depending on the mounting arrangement used, this may require additional parts, such as spacers, which are not furnished by The Timken Company.

Adapter Part Numbers

Bearing Class	Narrow Adapter	Wide Adapter*
B	K86888	K87124
C	K85581	K86019
D	K85530	K85526
E	K85073	K85513
F	K85524	K85531
G(7 x 12)	K83138	—
G(7 x 14)	K83138	—
GG(7)	—	—
K	K522803	—

*Not shown

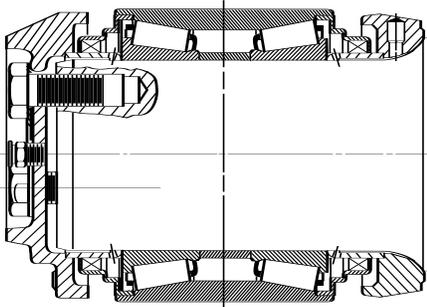
Typical Application Parts



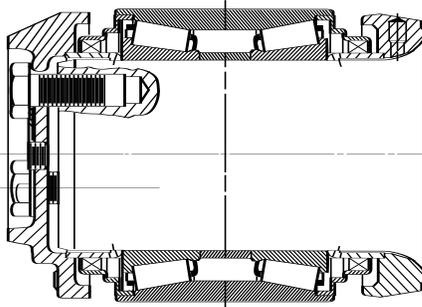
How To Order

Method 2

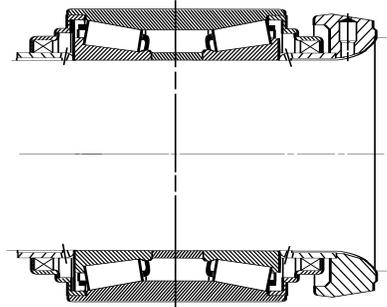
Mounting Arrangements are shown in sequential order.
See following pages for ordering information.



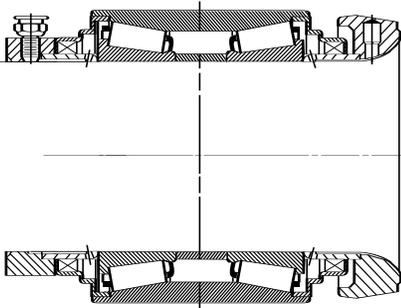
1



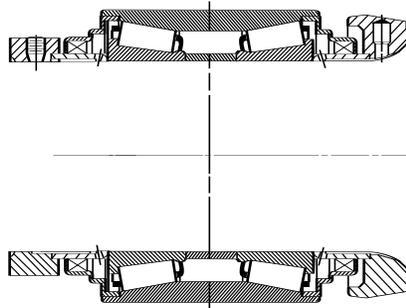
1-A



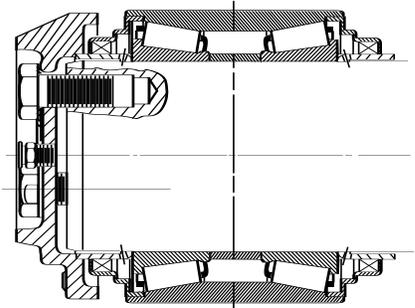
2



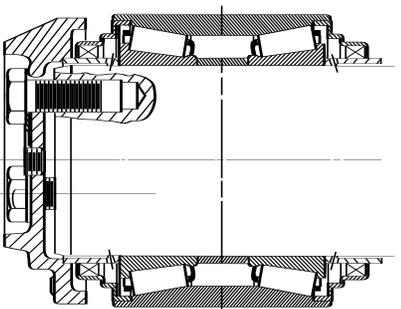
2-A



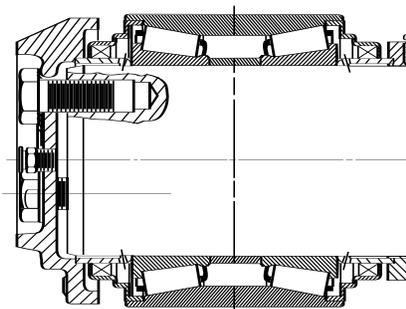
2-B



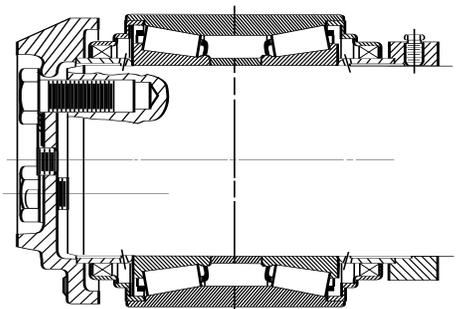
3



3-A



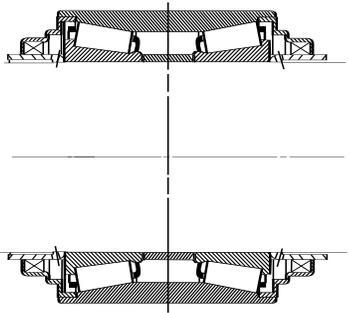
3-B



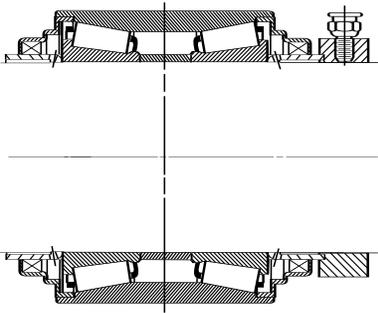
3-C

How To Order

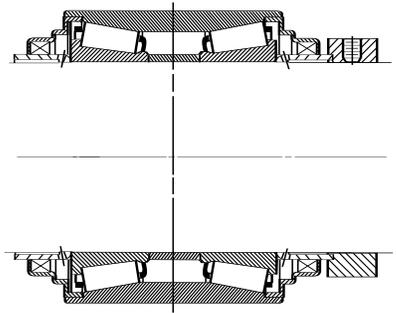
Method 2



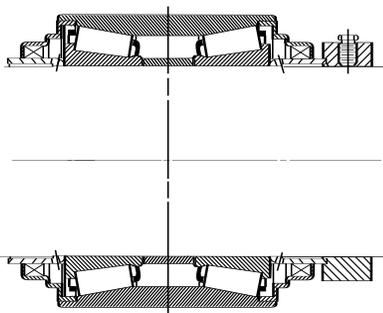
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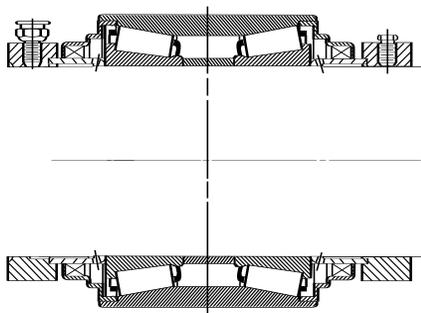
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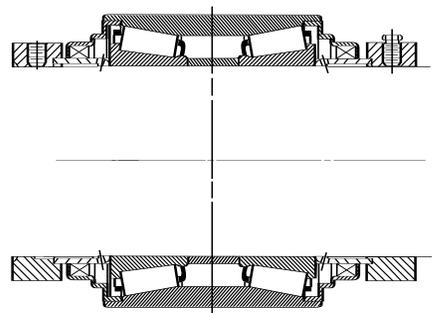
5-A



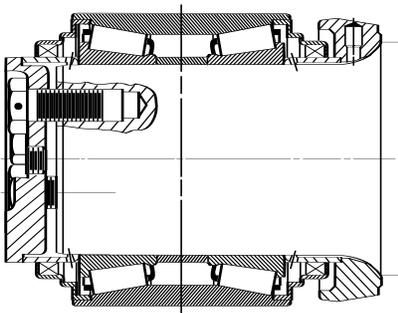
5-B



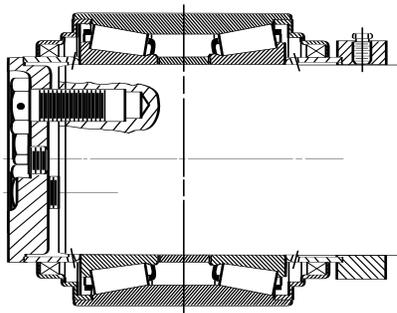
5-C



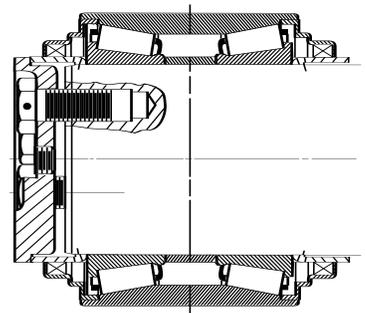
5-D



6



6-A



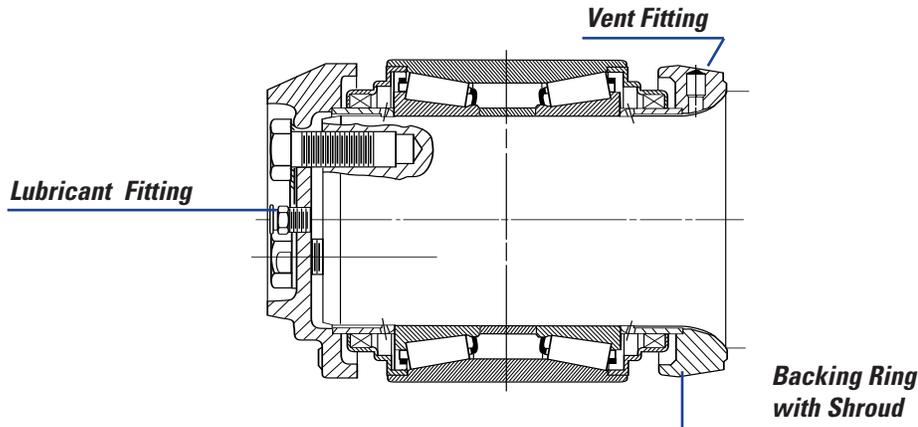
6-B

How To Order

Method 2

SUPPLEMENTAL AND SPECIAL ASSEMBLY NUMBERS

Bearing Mounting Arrangement 1



Class	Overall Assembly Standard	Overall Assembly Code 350*	Auxiliary Parts*** Sub Assemblies
B	HM120848 - 90023	HM120848 -	Axle end cap K86877-90012 Backing ring K86874-90010
C	HM124646 - 90047	HM124646 -	Axle end cap K86003-90015 Backing ring K85588-90010
D	HM127446 - 90011	HM127446 - 90211	Axle end cap K85521-90011 Backing ring K85525-90010
E	HM129848 - 90011	HM129848 - 90125	Axle end cap K85510-90011 Backing ring K85095-90010
F	HM133444 - 90015	HM133444 - 90211	Axle end cap K85517-90012 Backing ring K85516-90010
G (7 x 12)	HM136948 - 90359	HM136948 - 90355	Axle end cap K95199-90011 Backing ring K147766-90010
G (7 x 14)	HM136948 - 90251	HM136948 -	Axle end cap K412057-90011 Backing ring K95200-90010
GG(7)	H337846 -	H337846 -	Axle end cap K462064** Backing ring K147766-90010
K	M241547 -	M241547 -	Axle end cap Backing ring

* Code 350 provides a cup OD tolerance of $+.003 +.004$ " and is used in applications requiring a press fit for the cup.

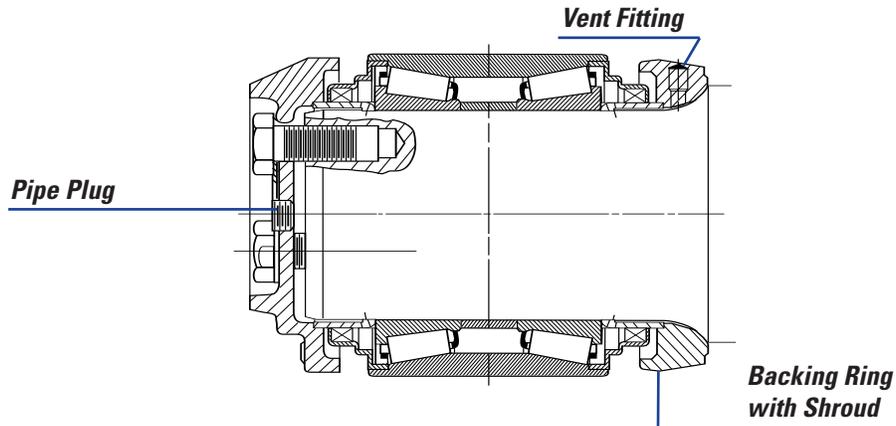
** K462064 not currently available, class G(7 x 12) axle end cap K95199 may be substituted.

*** For Reference Only.

Auxiliary parts are supplied with the overall assembly number – see pages 64 to 67 for listing of component parts.

SUPPLEMENTAL AND SPECIAL ASSEMBLY NUMBERS

Bearing Mounting Arrangement 1A



Class	Overall Assembly Standard	Overall Assembly Code 350*	Auxiliary Parts*** Sub Assemblies
B	HM120848 -90011	HM120848 - 90059	Axle end cap K86877-90010 Backing ring K86874-90010
C	HM124646 -90013	HM124646 -	Axle end cap K86003-90010 Backing ring K85588-90010
D	HM127446 -90013	HM127446 -	Axle end cap K85521-90010 Backing ring K85525-90010
E	HM129848 -90013	HM129848 -	Axle end cap K85510-90010 Backing ring K85095-90010
F	HM133444 -90011	HM133444 -	Axle end cap K85517-90010 Backing ring K85516-90010
G (7 x 12)	HM136948 -90327	HM136948 -	Axle end cap K95199-90010 Backing ring K147766-90010
G (7 x 14)	HM136948 -90243	HM136948 -	Axle end cap K412057-90010 Backing ring K95200-90010
GG(7)	H337846 -	H337846 -	Axle end cap K462064** Backing ring K147766-90010
K	M241547 -	M241547 -	Axle end cap Backing ring

* Code 350 provides a cup OD tolerance of $+.003 +.004$ " and is used in applications requiring a press fit for the cup.

** K462064 not currently available, class G(7 x 12) axle end cap K95199 may be substituted.

*** For Reference Only.

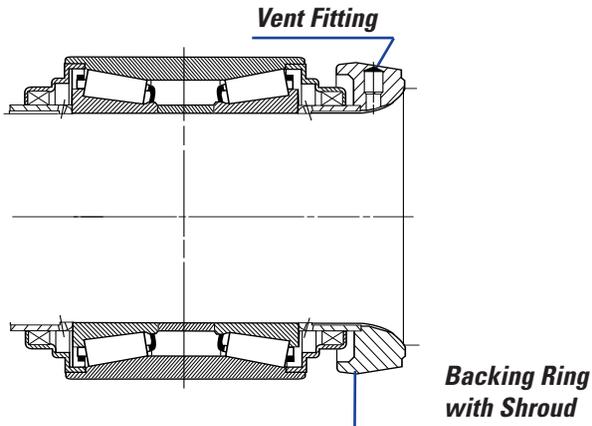
Auxiliary parts are supplied with the overall assembly number – see pages 64 to 67 for listing of component parts.

How To Order

Method 2

SUPPLEMENTAL AND SPECIAL ASSEMBLY NUMBERS

Bearing Mounting Arrangement 2



Class	Overall Assembly Standard	Overall Assembly Code 350*	Auxiliary Parts*** Sub Assemblies
B	HM120848 -90012	HM120848 - 90060	Backing ring K86874-90010
C	HM124646 -90014	HM124646 - 90180	Backing ring K85588-90010
D	HM127446 -90012	HM127446 - 90098	Backing ring K85525-90010
E	HM129848 -90012	HM129848 - 90114	Backing ring K85095-90010
F	HM133444 -90012	HM133444 - 90212	Backing ring K85516-90010
G (7 x 12)	HM136948 -90320	HM136948 - 90334	Backing ring K146677-90010
G (7 x 14)	HM136948 -90228	HM136948 - 90254	Backing ring K95200-90010
GG(7)	H337846 -90262	H337846 - 90270	Backing ring K147766-90010
K	M241547 -	M241547 -	Backing ring

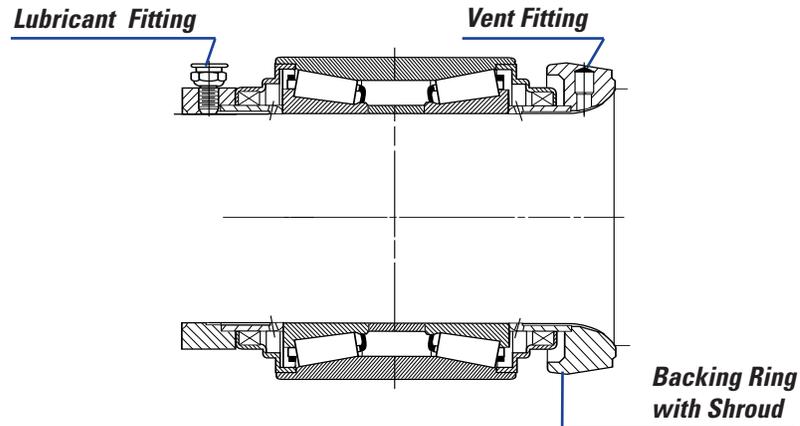
* Code 350 provides a cup OD tolerance of $+0.003 +0.004$ " and is used in applications requiring a press fit for the cup.

*** For Reference Only.

Auxiliary parts are supplied with the overall assembly number – see pages 64 to 67 for listing of component parts

SUPPLEMENTAL AND SPECIAL ASSEMBLY NUMBERS

Bearing Mounting Arrangement 2A



Class	Overall Assembly Standard	Overall Assembly Code 350*	Auxiliary Parts*** Sub Assemblies
B	HM120848 -90080	HM120848 -	Backing spacer K118891 Lube fitting K78880 Backing ring K86874-90010
C	HM124646 -90086	HM124646 - 90098	Backing spacer K120198 Lube fitting K78880 Backing ring K85588-90010
D	HM127446 -90120	HM127446 -	Backing spacer K120178 Lube fitting K78880 Backing ring K85525-90010
E	HM129848 -90142	HM129848 - 90212	Backing spacer K120190 Lube fitting K78880 Backing ring K85095-90010
F	HM133444 -90124	HM133444 -	Backing spacer K120160 Lube fitting K78880 Backing ring K85516-90010
G (7 x 12)	HM136948 -90124	HM136948 - 90354	Backing spacer K118866 Lube fitting K78880 Backing ring K147766-90010
G (7 x 14)	HM136948 -90170	HM136948 -	Backing spacer K118866 Lube fitting K78880 Backing ring K95200-90010
GG (7)	H337846	H337846 -	Backing spacer K118866 Lube fitting K78880 Backing ring K147766-90010
K	M241547 -	M241547 -	Backing spacer Lube fitting Backing ring

* Code 350 provides a cup OD tolerance of $+.003 +.004$ " and is used in applications requiring a press fit for the cup.

*** For Reference Only.

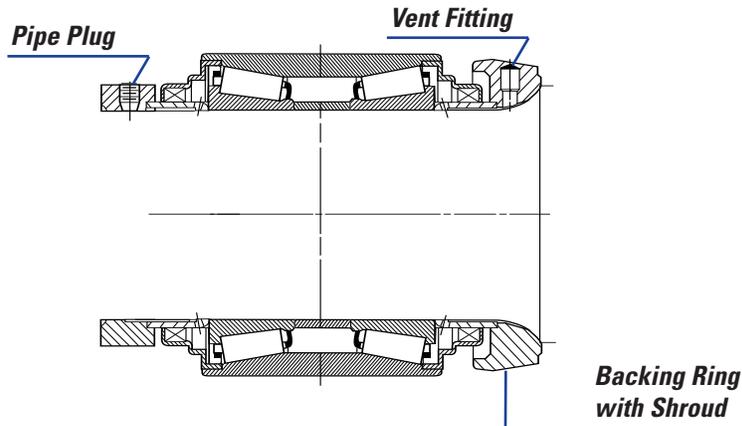
Auxiliary parts are supplied with the overall assembly number – see pages 64 to 67 for listing of component parts

How To Order

Method 2

SUPPLEMENTAL AND SPECIAL ASSEMBLY NUMBERS

Bearing Mounting Arrangement 2B



Class	Overall Assembly Standard	Overall Assembly Code 350*	Auxiliary Parts*** Sub Assemblies
B	HM120848 -90086	HM120848 -	Backing spacer K118891 Pipe plug K46462 Backing ring K86874-90010
C	HM124646 -90078	HM124646 -	Backing spacer K120198 Pipe plug K46462 Backing ring K85580-90010
D	HM127446 -90118	HM127446 -	Backing spacer K120178 Pipe plug K46462 Backing ring K85525-90010
E	HM129848 -90126	HM129848 -	Backing spacer K120190 Pipe plug K46462 Backing ring K85095-90010
F	HM133444 -90122	HM133444 -	Backing spacer K120160 Pipe plug K46462 Backing ring K85516-90010
G (7 x 12)	HM136948 -90350	HM136948 -	Backing spacer K118866 Pipe plug K46462 Backing ring K147766-90010
G (7 x 14)	HM136948 -90266	HM136948 -	Backing spacer K118866 Pipe plug K46462 Backing ring K95200-90010
GG(7)	H337846 -	H337846 -	Backing spacer K118866 Pipe plug K46462 Backing ring K147766-90010
K	M241547 -	M241547 -	Backing spacer Pipe plug Backing ring

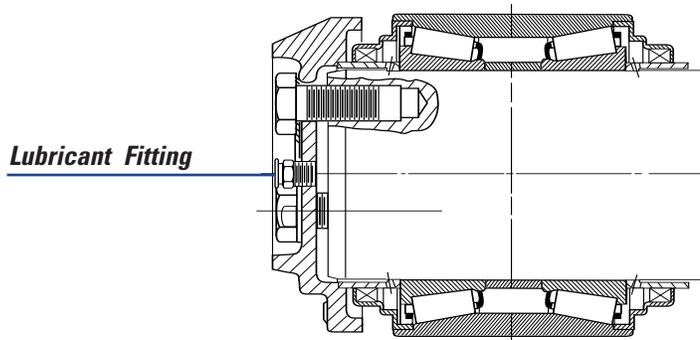
* Code 350 provides a cup OD tolerance of $+0.003 +0.004$ " and is used in applications requiring a press fit for the cup.

*** For Reference Only.

Auxiliary parts are supplied with the overall assembly number – see pages 64 to 67 for listing of component parts

SUPPLEMENTAL AND SPECIAL ASSEMBLY NUMBERS

Bearing Mounting Arrangement 3



Class	Overall Assembly Standard	Overall Assembly Code 350*	Auxiliary Parts*** Sub Assemblies
B	HM120848 -90091	HM120848 - 90097	Axle end cap K86877-90012
C	HM124646 -90085	HM124646 -	Axle end cap K86003-90015
D	HM127446 -90093	HM127446 -	Axle end cap K85521-90011
E	HM129848 -90169	HM129848 - 90105	Axle end cap K85510-90011
F	HM133444 -90107	HM133444 - 90175	Axle end cap K85517-90012
G (7 x 12)	HM136948 -	HM136948 -	Axle end cap
G (7 x 14)	HM136948 -90283	HM136948 -	Axle end cap K412057-90011
GG(7)	H337846 -	H337846 -	Axle end cap K462064**
K	M241547 -	M241547 -	Axle end cap

* Code 350 provides a cup OD tolerance of $+.003 +.004$ " and is used in applications requiring a press fit for the cup.

** K462064 not currently available, class G(7 x 12) axle end cap K95199 may be substituted.

*** For Reference Only.

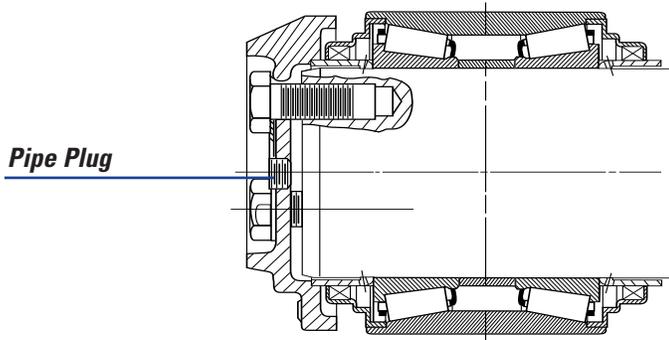
Auxiliary parts are supplied with the overall assembly number – see pages 64 to 67 for listing of component parts

How To Order

Method 2

SUPPLEMENTAL AND SPECIAL ASSEMBLY NUMBERS

Bearing Mounting Arrangement 3A



Class	Overall Assembly Standard	Overall Assembly Code 350*	Auxiliary Parts*** Sub Assemblies
B	HM120848 -90121	HM120848 - 90099	Axle end cap K86877-90010
C	HM124646 -90083	HM124646 -	Axle end cap K86003-90010
D	HM127446 -	HM127446 - 90107	Axle end cap K85521-90010
E	HM129848 -	HM129848 -	Axle end cap K85510-90010
F	HM133444 -	HM133444 - 90141	Axle end cap K85517-90010
G (7 x 12)	HM136948 -	HM136948 -	Axle end cap
G (7 x 14)	HM136948 -	HM136948 - 90263	Axle end cap K412057-90010
GG(7)	H337846 -	H337846	Axle end cap K462064**
K	M241547 -	M241547 -	Axle end cap

* Code 350 provides a cup OD tolerance of $+.003 +.004$ " and is used in applications requiring a press fit for the cup.

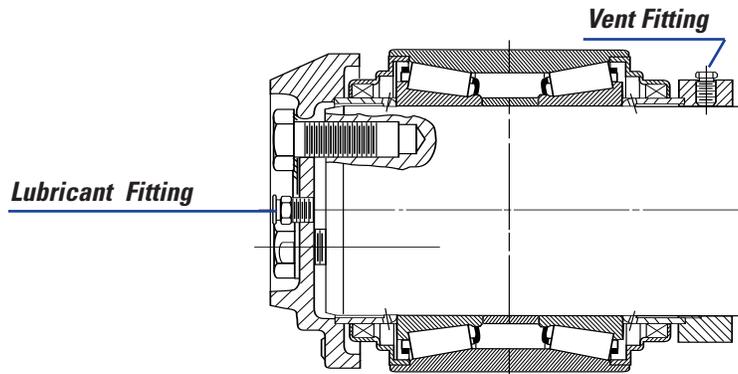
** K462064 not currently available, class G(7 x 12) axle end cap K95199 may be substituted.

*** For Reference Only.

Auxiliary parts are supplied with the overall assembly number – see pages 64 to 67 for listing of component parts

SUPPLEMENTAL AND SPECIAL ASSEMBLY NUMBERS

Bearing Mounting Arrangement 3B



Class	Overall Assembly Standard	Overall Assembly Code 350*	Auxiliary Parts*** Sub Assemblies
B	HM120848 -90115	HM120848 -	Axle end cap K86877-90012 Backing spacer K118891 Vent fitting K83093
C	HM124646 -90089	HM124646 - 90185	Axle end cap K86003-90015 Backing spacer K120198 Vent fitting K83093
D	HM127446 -90167	HM127446 - 90189	Axle end cap K85521-90011 Backing spacer K120178 Vent fitting K83093
E	HM129848 -90155	HM129848 -	Axle end cap K85510-90011 Backing spacer K120190 Vent fitting K83093
F	HM133444 -90221	HM133444 -	Axle end cap K85517-90012 Backing spacer K120160 Vent fitting K83093
G (7 x 12)	HM136948 -	HM136948 -	Axle end cap Backing spacer Vent fitting
G (7 x 14)	HM136948 -90291	HM136948 -	Axle end cap K412057-90011 Backing spacer K118866 Vent fitting K83093
GG(7)	H337846 -	H337846 -	Axle end cap K462064** Backing spacer K118866 Vent fitting K83093
K	M241547 -	M241547 -	Axle end cap Backing spacer Vent fitting

* Code 350 provides a cup OD tolerance of $+.003 +.004$ " and is used in applications requiring a press fit for the cup.

** K462064 not currently available, class G(7 x 12) axle end cap K95199 may be substituted.

*** For Reference Only.

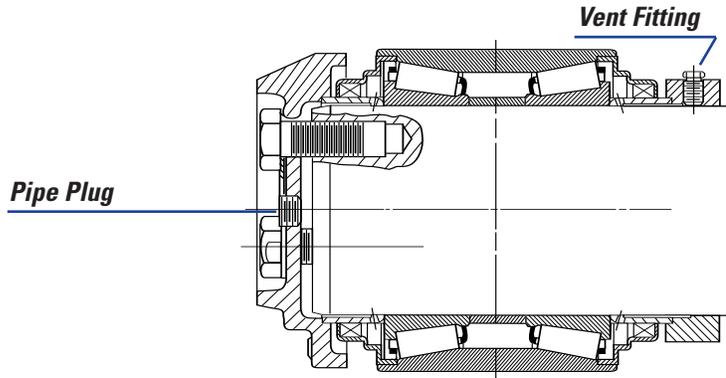
Auxiliary parts are supplied with the overall assembly number – see pages 64 to 67 for listing of component parts

How To Order

Method 2

SUPPLEMENTAL AND SPECIAL ASSEMBLY NUMBERS

Bearing Mounting Arrangement 3C



Class	Overall Assembly Standard	Overall Assembly Code 350*	Auxiliary Parts*** Sub Assemblies
B	HM120848 -90083	HM120848 - 90161	Axle end cap K86877-90010 Backing spacer K118891 Vent fitting K83093
C	HM124646 -	HM124646 -	Axle end cap K86003-90010 Backing spacer K120198 Vent fitting K83093
D	HM127446 -	HM127446 -	Axle end cap K85521-90010 Backing spacer K120178 Vent fitting K83093
E	HM129848 -	HM129848 -	Axle end cap K85510-90010 Backing spacer K120190 Vent fitting K83093
F	HM133444 -	HM133444 -	Axle end cap K85517-90010 Backing spacer K120160 Vent fitting K83093
G (7 x 12)	HM136948 -	HM136948 -	Axle end cap Backing spacer Vent fitting
G (7 x 14)	HM136948 -	HM136948 -	Axle end cap K412057-90010 Backing spacer K118866 Vent fitting K83093
GG(7)	H337846 -	H337846 -	Axle end cap K462064** Backing spacer K118866 Vent fitting K83093
K	M241547 -	M241547	Axle end cap Backing spacer Vent fitting

* Code 350 provides a cup OD tolerance of $+0.003 +0.004$ " and is used in applications requiring a press fit for the cup.

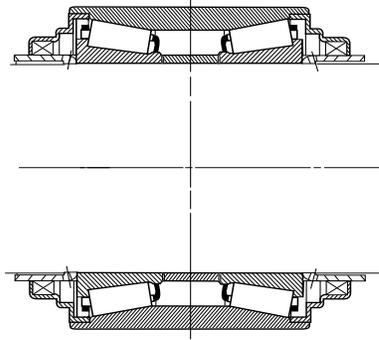
** K462064 not currently available, class G(7 x 12) axle end cap K95199 may be substituted.

*** For Reference Only.

Auxiliary parts are supplied with the overall assembly number – see pages 64 to 67 for listing of component parts

SUPPLEMENTAL AND SPECIAL ASSEMBLY NUMBERS

Bearing Mounting Arrangement 4



Class	Overall Assembly Standard	Overall Assembly Code 350*	Auxiliary Parts Sub Assemblies
B	HM120848 -90014	HM120848 - 90078	
C	HM124646 -90056	HM124646 - 90068	
D	HM127446 -90048	HM127446 - 90106	
E	HM129848 -90054	HM129848 - 90104	
F	HM133444 -90076	HM133444 - 90128	
G (7 x 12)	HM136948 -	HM136948 -	
G (7 x 14)	HM136948 -90226	HM136948 - 90256	
GG(7)	H337846 -90248	H337846 - 90246	
K	M241547 -90028	M241547 - 90050	

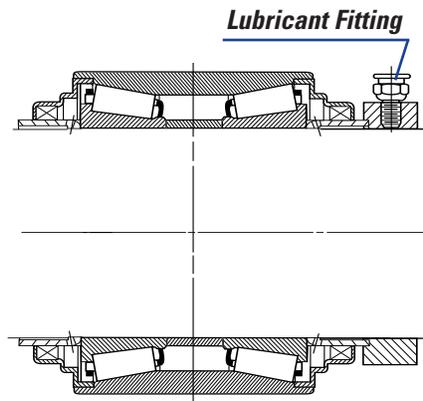
* Code 350 provides a cup OD tolerance of $+.003 +.004$ " and is used in applications requiring a press fit for the cup.

How To Order

Method 2

SUPPLEMENTAL AND SPECIAL ASSEMBLY NUMBERS

Bearing Mounting Arrangement 5



Class	Overall Assembly Standard	Overall Assembly Code 350*	Auxiliary Parts*** Sub Assemblies
B	HM120848 -90074	HM120848 -	Backing spacer K118891 Lube fitting K78880
C	HM124646 -90108	HM124646 -	Backing spacer K120198 Lube fitting K78880
D	HM127446 -90168	HM127446 -	Backing spacer K120178 Lube fitting K78880
E	HM129848 -90154	HM129848 -	Backing spacer K120190 Lube fitting K78880
F	HM133444 -90184	HM133444 -	Backing spacer K120160 Lube fitting K78880
G (7 x 12)	HM136948 -	HM136948 -	Backing spacer Lube fitting
G (7 x 14)	HM136948 -90284	HM136948 -	Backing spacer K118866 Lube fitting K78880
GG(7)	H337846 -	H337846 -	Backing spacer K118866 Lube fitting K78880
K	M241547 -	M241547 -	Backing spacer Lube fitting

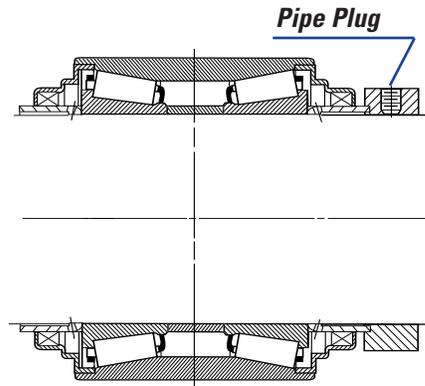
* Code 350 provides a cup OD tolerance of $+.003 +.004$ " and is used in applications requiring a press fit for the cup.

*** For Reference Only.

Auxiliary parts are supplied with the overall assembly number – see pages 64 to 67 for listing of component parts

SUPPLEMENTAL AND SPECIAL ASSEMBLY NUMBERS

Bearing Mounting Arrangement 5A



Class	Overall Assembly Standard	Overall Assembly Code 350*	Auxiliary Parts*** Sub Assemblies
B	HM120848 -90088	HM120848 -	Backing spacer K118891 Pipe plug K46462
C	HM124646 -90084	HM124646 -	Backing spacer K120198 Pipe plug K46462
D	HM127446 -90114	HM127446 -	Backing spacer K120178 Pipe plug K46462
E	HM129848 -90120	HM129848 -	Backing spacer K120190 Pipe plug K46462
F	HM133444 -90126	HM133444 -	Backing spacer K120160 Pipe plug K46462
G (7 x 12)	HM136948 -	HM136948 -	Backing spacer Pipe plug
G (7 x 14)	HM136948 -90238	HM136948 -	Backing spacer K118866 Pipe plug K46462
GG(7)	H337846 -	H337846 -	Backing spacer K118866 Pipe plug K46462
K	M241547 -	M241547 -	Backing spacer Pipe plug

* Code 350 provides a cup OD tolerance of $+.003 +.004$ " and is used in applications requiring a press fit for the cup.

*** For Reference Only.

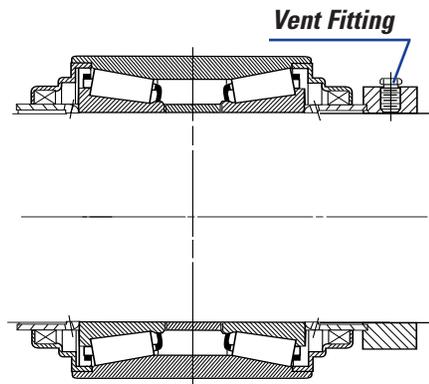
Auxiliary parts are supplied with the overall assembly number – see pages 64 to 67 for listing of component parts

How To Order

Method 2

SUPPLEMENTAL AND SPECIAL ASSEMBLY NUMBERS

Bearing Mounting Arrangement 5B



Class	Overall Assembly Standard	Overall Assembly Code 350*	Auxiliary Parts*** Sub Assemblies
B	HM120848 -90082	HM120848 - 90160	Backing spacer K118891 Vent fitting K83093
C	HM124646 -90092	HM124646 - 90184	Backing spacer K120198 Vent fitting K83093
D	HM127446 -90138	HM127446 - 90188	Backing spacer K120178 Vent fitting K83093
E	HM129848 -90156	HM129848 -	Backing spacer K120190 Vent fitting K83093
F	HM133444 -90220	HM133444 -	Backing spacer K120160 Vent fitting K83093
G (7 x 12)	HM136948 -	HM136948 -	Backing spacer Vent fitting
G (7 x 14)	HM136948 -90292	HM136948 -	Backing spacer K118866 Vent fitting K83093
GG(7)	H337846 -	H337846 -	Backing spacer K118866 Vent fitting K83093
K	M241547 -	M241547 -	Backing spacer Vent fitting

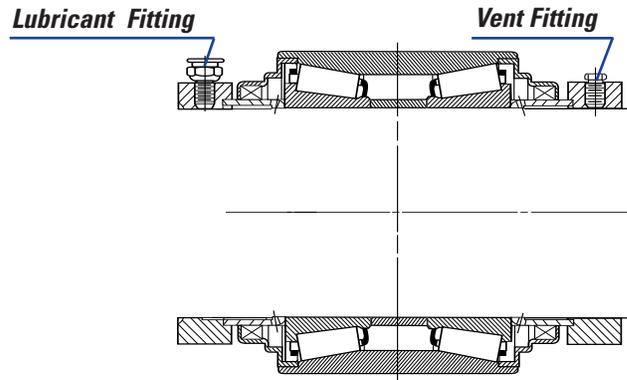
* Code 350 provides a cup OD tolerance of $+0.003 +0.004$ " and is used in applications requiring a press fit for the cup.

*** For Reference Only.

Auxiliary parts are supplied with the overall assembly number – see pages 64 to 67 for listing of component parts

SUPPLEMENTAL AND SPECIAL ASSEMBLY NUMBERS

Bearing Mounting Arrangement 5C



Class	Overall Assembly Standard	Overall Assembly Code 350*	Auxiliary Parts*** Sub Assemblies
B	HM120848 -90106	HM120848 - 90138	Backing spacer K118891 (2) Lube fitting K78880 Vent fitting K83093
C	HM124646 -90090	HM124646 -	Backing spacer K120198 (2) Lube fitting K78880 Vent fitting K83093
D	HM127446 -90170	HM127446 -	Backing spacer K120178 (2) Lube fitting K78880 Vent fitting K83093
E	HM129848 -90248	HM129848 -	Backing spacer K120190 (2) Lube fitting K78880 Vent fitting K83093
F	HM133444 -	HM133444 - 90236	Backing spacer K120160 (2) Lube fitting K78880 Vent fitting K83093
G (7 x 12)	HM136948 -	HM136948 -	Backing spacer Lube fitting Vent fitting
G (7 x 14)	HM136948 -	HM136948 -	Backing spacer K118866 (2) Lube fitting K78880 Vent fitting K83093
GG (7)	H337846 -	H337846 -	Backing spacer K118866 (2) Lube fitting K78880 Vent fitting K83093
K	M241547 -	M241547 -	Backing spacer Lube fitting Vent fitting

* Code 350 provides a cup OD tolerance of $+.003 +.004$ " and is used in applications requiring a press fit for the cup.

*** For Reference Only.

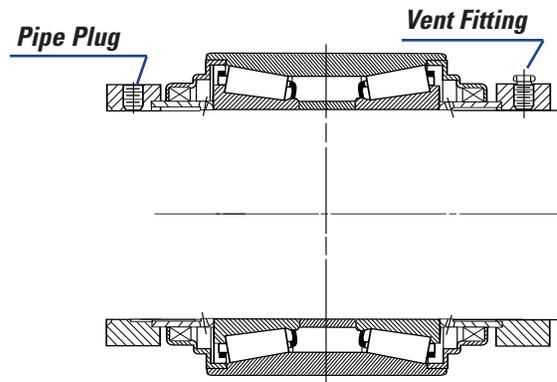
Auxiliary parts are supplied with the overall assembly number – see pages 64 to 67 for listing of component parts

How To Order

Method 2

SUPPLEMENTAL AND SPECIAL ASSEMBLY NUMBERS

Bearing Mounting Arrangement 5D



Class	Overall Assembly Standard	Overall Assembly Code 350*	Auxiliary Parts*** Sub Assemblies
B	HM120848 -90084	HM120848 - 90098	Backing spacer K118891 (2) Pipe plug K46462 Vent fitting K83093
C	HM124646 -	HM124646 -	Backing spacer K120198 (2) Pipe plug K46462 Vent fitting K83093
D	HM127446 -90166	HM127446 -	Backing spacer K120178 (2) Pipe plug K46462 Vent fitting K83093
E	HM129848 -90122	HM129848 -	Backing spacer K120190 (2) Pipe plug K46462 Vent fitting K83093
F	HM133444 -90270	HM133444 -	Backing spacer K120160 (2) Pipe plug K46462 Vent fitting K83093
G (7 x 12)	HM136948 -	HM136948 -	Backing spacer Pipe plug Vent fitting
G (7 x 14)	HM136948 -	HM136948 -	Backing spacer K118866 (2) Pipe plug K46462 Vent fitting K83093
GG(7)	H337846 -	H337846 -	Backing spacer K118866 (2) Pipe plug K46462 Vent fitting K83093
K	M241547 -	M241547	Backing spacer Pipe plug Vent fitting

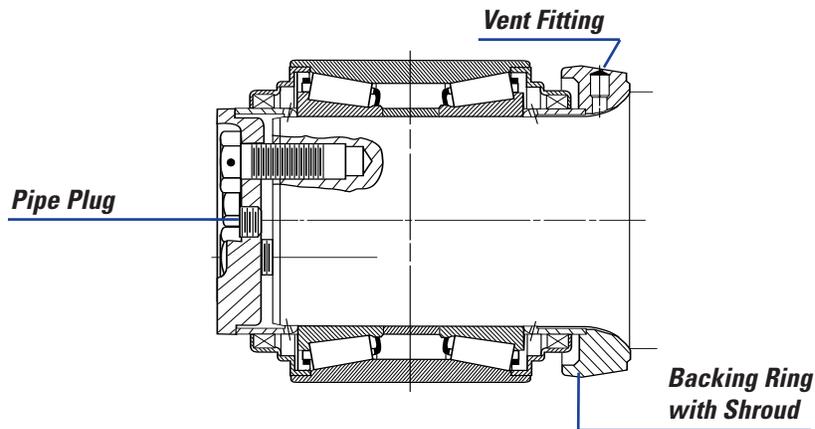
* Code 350 provides a cup OD tolerance of $+.003 +.004$ " and is used in applications requiring a press fit for the cup.

*** For Reference Only.

Auxiliary parts are supplied with the overall assembly number – see pages 64 to 67 for listing of component parts

SUPPLEMENTAL AND SPECIAL ASSEMBLY NUMBERS

Bearing Mounting Arrangement 6



Class	Overall Assembly Standard	Overall Assembly Code 350*	Auxiliary Parts*** Sub Assemblies
B	HM120848 -90065	HM120848 -90105	Recessed end cap K399069-90010 Backing ring K86874-90010
C	HM124646 -90065	HM124646 -	Recessed end cap K399070-90010 Backing ring K85588-90010
D	HM127446 -90101	HM127446 -90099	Recessed end cap K399071-90010 Backing ring K85525-90010
E	HM129848 -90109	HM129848 -90199	Recessed end cap K399072-90010 Backing ring K85095-90010
F	HM133444 -90117	HM133444 -	Recessed end cap K399073-90010 Backing ring K85516-90010
G (7 x 12)	HM136948 -90331	HM136948 -	Recessed end cap K399074-90010 Backing ring K147766-90010
G (7 x 14)	HM136948 -90265	HM136948 -90253	Recessed end cap K399074-90010 Backing ring K95200-90010
GG(7)	H337846 -	H337846 -	Recessed end cap K399074-90010 Backing ring K147766-90010
K	M241547 -	M241547 -	Recessed end cap Backing ring

* Code 350 provides a cup OD tolerance of $+.003 +.004$ " and is used in applications requiring a press fit for the cup.

*** For Reference Only.

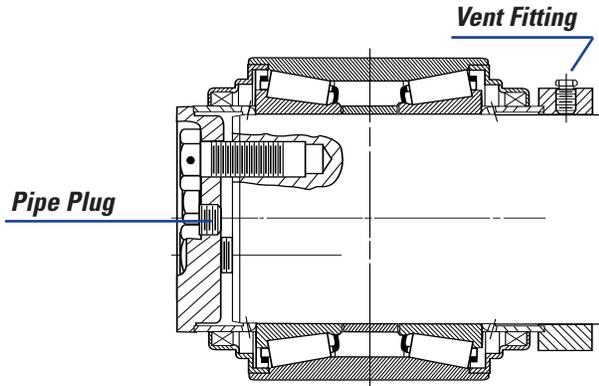
Auxiliary parts are supplied with the overall assembly number – see pages 64 to 67 for listing of component parts

How To Order

Method 2

SUPPLEMENTAL AND SPECIAL ASSEMBLY NUMBERS

Bearing Mounting Arrangement 6A



Class	Overall Assembly Standard	Overall Assembly Code 350*	Auxiliary Parts*** Sub Assemblies
B	HM120848 -90081	HM120848 -	Recessed end cap K399069-90010 Backing spacer K118891 Vent fitting K83093
C	HM124646 -	HM124646 -	Recessed end cap K399070-90010 Backing spacer K120198 Vent fitting K83093
D	HM127446 -90157	HM127446 -	Recessed end cap K399071-90010 Backing spacer K120178 Vent fitting K83093
E	HM129848 -90171	HM129848 -	Recessed end cap K399072-90010 Backing spacer K120190 Vent fitting K83093
F	HM133444 -	HM133444 -	Recessed end cap K399073-90010 Backing spacer K120160 Vent fitting K83093
G (7 x 12)	HM136948 -	HM136948 -	Recessed end cap Backing spacer Vent fitting
G (7 x 14)	HM136948 -90295	HM136948 -	Recessed end cap K399074-90010 Backing spacer K118866 Vent fitting K83093
GG(7)	H337846 -	H337846 -	Recessed end cap K399074-90010 Backing spacer K118866 Vent fitting K83093
K	M241547 -	M241547 -	Recessed end cap Backing spacer Vent fitting

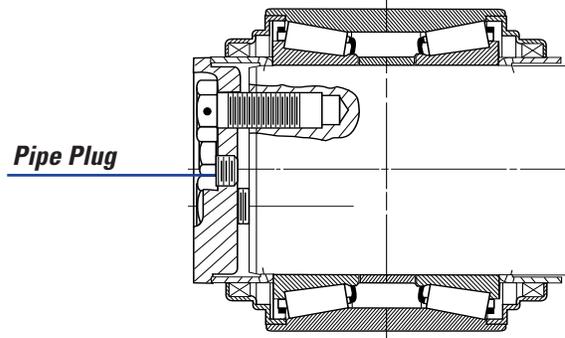
* Code 350 provides a cup OD tolerance of $+0.003 +0.004$ " and is used in applications requiring a press fit for the cup.

*** For Reference Only.

Auxiliary parts are supplied with the overall assembly number – see pages 64 to 67 for listing of component parts

SUPPLEMENTAL AND SPECIAL ASSEMBLY NUMBERS

Bearing Mounting Arrangement 6B



Class	Overall Assembly Standard	Overall Assembly Code 350*	Auxiliary Parts*** Sub Assemblies
B	HM120848 -90037	HM120848 -90077	Recessed end cap K399069-90010
C	HM124646 -90057	HM124646 -90069	Recessed end cap K399070-90010
D	HM127446 -90083	HM127446 -90181	Recessed end cap K399071-90010
E	HM129848 -90101	HM129848 -	Recessed end cap K399072-90010
F	HM133444 -90087	HM133444 -90169	Recessed end cap K399073-90010
G (7 x 12)	HM136948 -	HM136948 -	Recessed end cap
G (7 x 14)	HM136948 -90241	HM136948 -	Recessed end cap K399074-90010
GG(7)	H337846 -90247	H337846 -	Recessed end cap K399074-90010
K	M241547 -90029	M241547 -	Recessed end cap K504075-90010

* Code 350 provides a cup OD tolerance of $+.003 +.004$ " and is used in applications requiring a press fit for the cup.

*** For Reference Only.

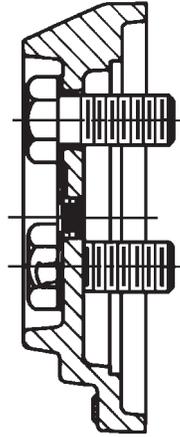
Auxiliary parts are supplied with the overall assembly number – see pages 64 to 67 for listing of component parts

How To Order

Method 2

SUPPLEMENTAL AND SPECIAL ASSEMBLY NUMBERS

Axle End Cap Assemblies

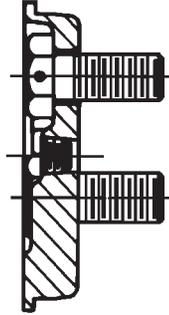


Class	Assembly No	End Cap Part No	Cap Screw(3)		Lock Plate	Pipe Plug		Lube Fitting
			Size	Part No		Size	Part No	
B	K86877-90010	K86877	3/4"	K53399	K84326	3/8"	K86891	K399065
	K86877-90012	K86877	3/4"	K53399	K84326			
C	K86003-90010	K86003	7/8"	K44434	K84325	3/8"	K86891	K399065
	K86003-90015	K86003	7/8"	K44434	K84325			
D	K85521-90010	K85521	7/8"	K44434	K80511	1/2"	K75801	K49022
	K85521-90011	K85521	7/8"	K44434	K80511			
E	K85510-90010	K85510	1"	K84354	K80596	1/2"	K75801	K49022
	K85510-90011	K85510	1"	K84354	K80596			
F	K85517-90010	K85517	1 1/8"	K84351	K84324	1/2"	K75801	K49022
	K85517-90012	K85517	1 1/8"	K84351	K84324			
G (7 x 12)	K95199-90010	K95199	1 1/4"	K84398	K84701	1/2"	K75801	K49022
	K95199-90011	K95199	1 1/4"	K84398	K84701			
G (7 x 14)	K412057-90010	K412057	1 1/4"	K84398	K84701	1/2"	K75801	K49022
	K412057-90011	K412057	1 1/4"	K84398	K84701			
GG(7)	K95199-90010	K95199	1 1/4"	K84398	K84701	1/2"	K75801	K49022
	K95199-90011	K95199	1 1/4"	K84398	K84701			
	** K462064-90010	K462064	1 1/4"	K462063	K84701	1/2"	K75801	K49022
	** K462064	K462064	1 1/4"	K462063	K84701			
K	Not Available							

** K462064 not currently available, class G(7 x 12) axle end cap K95199 may be substituted.

SUPPLEMENTAL AND SPECIAL ASSEMBLY NUMBERS

Recessed End Cap Assemblies



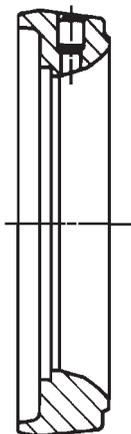
Class	Assembly No	End Cap Part No	Cap Screw(3)		Pipe Plug	
			Size	Part No	Size	Part No
B	K399069-90010	K399069	5/8"	K344077	1/2"	K75801
C	K399070-90010	K399070	5/8"	K344077	1/2"	K75801
D	K399071-90010	K399071	7/8"	K33003	1/2"	K75801
E	K399072-90010	K399072	1"	K74600	1/2"	K75801
F	K399073-90010	K399073	1"	K74600	1/2"	K75801
G (7 x 12)	K399074-90010	K399074	1-1/8"	K74588	1/2"	K75801
G (7 x 14)	K399074-90010	K399074	1-1/8"	K74588	1/2"	K75801
GG(7)	K399074-90010	K399074	1-1/8"	K74588	1/2"	K75801
K	K504075-90010	K504075	1-1/8"	K74588	1/2"	K75801

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SUPPLEMENTAL AND SPECIAL ASSEMBLY NUMBERS

Backing Ring with Shroud



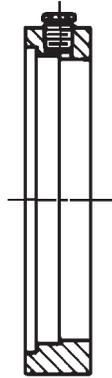
Class	Assembly No	Backing Ring Part No	Vent Fitting Part No
B	K86874-90010	K86874	K89716
C	K85588-90010	K85588	K89716
D	K85525-90010	K85525	K89716
E	K85095-90010	K850095	K89716
F	K85516-90010	K85516	K89716
G (7 x 12)	K147766-90010	K147766	K89716
G (7 x 14)	K95200-90010	K95200	K89716
GG (7)	K147766-90010	K147766	K89716
K	Not available		

How To Order

Method 2

SUPPLEMENTAL AND SPECIAL ASSEMBLY NUMBERS

Backing Spacer



Class	Backing Spacer Part No	With One Of The Following					
		Vent Fitting		Pipe Plug		Lube Fitting	
		Size	Part No	Size	Part No	Size	Part No
B	K118891	1/4"	K83093	1/4"	K46462	1/4"	K78880
C	K120198	1/4"	K83093	1/4"	K46462	1/4"	K78880
D	K120178	1/4"	K83093	1/4"	K46462	1/4"	K78880
E	K120190	1/4"	K83093	1/4"	K46462	1/4"	K78880
F	K120160	1/4"	K83093	1/4"	K46462	1/4"	K78880
G (7 x 12)	K118866	1/4"	K83093	1/4"	K46462	1/4"	K78880
G (7 x 14)	K118866	1/4"	K83093	1/4"	K46462	1/4"	K78880
GG(7)	K118866	1/4"	K83093	1/4"	K46462	1/4"	K78880
K	Not available						

How To Order

Method 2

SUPPLEMENTAL AND SPECIAL ASSEMBLY NUMBERS

Assemblies with Special Cup for Relubrication to Center of the Bearing

Class	Assembly No	Mounting Arrangement	Cup Number	Remarks
B	HM120848-90090	style 4	HM120817D	oil hole and groove on cup - special clearance - E29536
	HM120848-90136	style 4	HM120817D	oil hole and groove on cup - E31318
	HM120848-90150	style 5B	HM120817D	oil hole and groove on cup - no dwg
	HM120848-90154	style 4	HM120817YD	2-1/4" NPT holes in cup - E33239
	HM120848-90155	style 6B	HM120817YD	2-1/4" NPT holes in cup - E34745
	HM120848-90156	style 5B	HM120817YD	2-1/4" NPT holes in cup - E34746
	HM120848-90158	style 2	HM120817YD	2-1/4" NPT holes in cup - E34750
C	HM124646-90158	style 4	HM124618YD	2-1/4" NPT holes in cup - E33239
D	HM127446-90153	style 1A	HM127415D	oil hole and groove on cup - E30994
	HM127446-90152	style 2	HM127415D	oil hole and groove on cup - E30994
	HM127446-90270	style 2	HM127415D	oil hole and groove on cup - special clearance - no dwg
	HM127446-90172	style 4	HM127415D	oil hole and groove on cup - E31318
	HM127446-90216	style 5B	HM127415D	oil hole and groove on cup - E33227
E	HM129848-90174	style 2	HM129814D	oil hole and groove on cup - E31319
	HM129848-90210	style 5B	HM129814D	oil hole and groove on cup - no dwg
F	HM133444-90177	style 1A	HM133416D	oil hole and groove on cup - E30994
	HM133444-90176	style 2	HM133416D	oil hole and groove on cup - E30994
	HM133444-90248	style 4	HM133415YD	2-1/4" NPT holes in cup - E33239
G	HM136948-90345	style 1A (7 x 12)	HM136916D	oil hole and groove on cup - E30994
	HM136948-90344	style 2 (7 x 12)	HM136916D	oil hole and groove on cup - E30994
	HM136948-90304	style 2 (7 x 14)	HM136916D	oil hole and groove on cup - E31319
	HM136948-90296	style 4 (7 x 14)	HM136916D	oil hole and groove on cup - E31318
K	M241547-90070	style 4	M241513D	oil hole and groove on cup - E37462

How To Order

Method 2

SUPPLEMENTAL AND SPECIAL ASSEMBLY NUMBERS

Assemblies with Non-Standard - Reduced Width

Class	Assembly No	Mounting	Cup Number	Remarks
C	HM124646-90132	style 2	HM124616XD	Cone spacer HM124646XC Backing ring K85588-90010
	HM124646-90116	style 4	HM124616XD	Cone spacer HM124646XC
	HM124646-90140	style 4	HM124616XD	Cone spacer HM124646XC Code 350 tolerances
	HM124646-90133	style 6	HM124616XD	Cone spacer HM124646XC Recessed end cap K399070-90010 Backing ring K85588-90010
D	HM127446		HM127417XD	Cone spacer HM127446XB
E	HM129848-90218	style 2	HM129813XD	Cone spacer HM129848XB Backing ring K85095-90010
	HM129848-90176	style 4	HM129813XD	Cone spacer HM129848XB
	HM129848-90219	style 6	HM129813XD	Cone spacer HM129848XB Recessed end cap K399072-90010 Backing ring K85095-90010
	HM129848-90177	style 6B	HM129813XD	Cone spacer HM129848XB Recessed end cap K399072-90010
F	HM133444-90190	style 2	HM133413XD	Cone spacer HM133444XE Backing ring K85516-90010 Code 350 tolerances

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