Link-Belt® A20000 Series Unmounted Bearings

INSTALLATION INSTRUCTIONS
A20000, A20000M, & A20000S

Bearing Mounting Procedure

WARNING: These instructions should be read entirely and followed carefully before attempting to install or remove Link Belt A20000, A20000M, and A20000S bearings. Failure to do so can result in improper installation which could cause bearing performance problems as well as serious personal injury.

ALL UNITS

Inspect shaft size and bearing seat (refer to latest edition of bearing catalog). Clean shaft and mounting surface as needed.

A20000 & A20000M Units

1. Coat housing bearing seat with oil and insert one outer ring thick edge first (Figure 1).
2. Insert shaft in bearing if it cannot be done later. Coat shaft with oil and press inner ring and roller assembly squarely on shaft (Figure 2).
3. Install and tighten locknut and lockwasher or other holding device securely.
4. Insert remaining outer ring of A20000 or spacer then outer ring of A20000M bearing (Figure 3). Press outer ring squarely against spacer and rotate shaft slowly to properly align the outer ring.
5. *Adjust clearance:*

   A20000 – Tighten locking device in the housing until a slight drag is felt when rotated. Back off locking device an amount equal to the axial clearance listed in Table 1 to the right. Tap the end of the shaft to shift inner ring outward to obtain the adjusted clearance.

   A20000M – Tighten locking device in the housing securely against the bearing outer ring. The A20000M bearing is preadjusted and only requires locking in position.

A20000S Units

A20000S series bearings are mounted either inner ring adjustable or outer ring adjustable.

Adjustable Inner Ring Mounting (Figure 4, page 2)

1. Insert the outer ring in housing bore thick end first against housing shoulder or other restraining device.
2. Insert shaft through housing if it cannot be done later. Apply pressure against inner ring only. Only a very light press fit will permit adjustment of the inner ring.
3. Install and tighten locknut and lockwasher or other holding device. Repeat this procedure for the other A20000S bearing. Adjust the locking device until there is a slight drag as shaft is rotated. Back off adjusting device the amount of the axial clearance listed in Table 1 to the right. Tap the shaft to shift inner ring outward to obtain the adjusted clearance.

Adjustable Outer Ring Mounting (Figure 5, page 2)

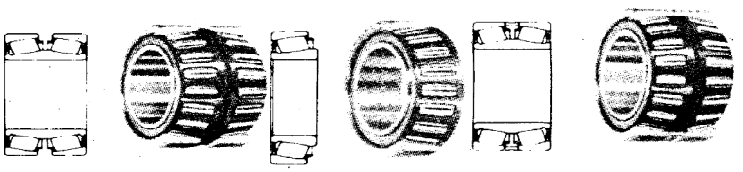
1. Insert shaft through housing if it cannot be done later. Coat shaft with oil and press inner ring and roller assembly squarely on shaft. Apply pressure to inner ring only.
2. Install outer ring in housing or press into outer ring carrier.
3. Tighten adjusting cover or outer ring carrier. Repeat this process for other bearing. Adjust the locking device until there is a slight drag as shaft is rotated. Back off adjusting device the amount of the axial clearance listed in Table 1 to the right. Tap the shaft to shift inner ring outward to obtain the adjusted clearance.

ADDITIONAL INSTALLATION COMMENTS

1. Position housings for accessibility of grease fittings.
2. These bearings usually require ground shaft journals for tight fits and precision housing bores for line fits.
3. Clean bearing with synthetic lubricant if needed.
4. Bearings may be shrink fitted for ease of mounting by heating evenly in oil to 250°F max. Slip thoroughly heated assembly onto shaft and hold in position until assembly cools and shrinks onto shaft.

Table 1 – Clearance Adjustment

Bearing No.	Axial Clearance, Inches		
	Low Speed	Normal Speed	High Speed
A22100 A22112	.0016	.0031	.0062
A22118 A22125	.0016	.0033	.0066
A22137	.0018	.0036	.0071
A22177	.0035	.0052	.0090
A22196	.0039	.0058	.0097
A22262	.0041	.0083	.0145
A22275 A22295	.0041	.0082	.0144
A22343 A22351	.0054	.0091	.0163
A22354 A22362	.0062 .0054	.0124 .0091	.0206 .0163
A22400 A22413	.0062	.0124	.0206
A23196	.0035	.0052	.0105
A23200 A23225	.0039	.0058	.0116
A23262 A23275	.0037 .0038	.0075 .0077	.0131 .0154
A23300 A23334	.0040	.0081	.0162
A23393 A23472	.0064 .0063	.0116 .0126	.0193 .0230
A24196 A24236	.0032 .0041	.0089 .0082	.0098 .0144
A24362 A24374	.0064	.0116	.0193



A20000 DOUBLE ROW ADJUSTABLE

A20000S SINGLE ROW ADJUSTABLE

A20000M DOUBLE ROW PREADJUSTED

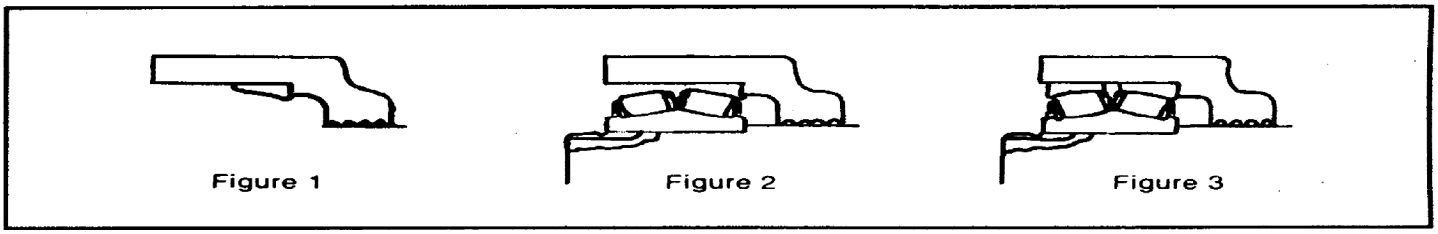


Figure 1 Figure 2 Figure 3

Grease Lubrication

Select one of the greases (or equivalent) listed in the table below. Rotate shaft slowly, if possible, when lubricating with grease gun. Fill housing for low speed or dirty applications. Reduce amount of grease for higher speeds.

Ambient conditions		Operating conditions		Bearing operating temperature		Suggested greasing interval**	Use these greases or equivalent
Dirt	Moisture	Load	Speed	Low	High		
Clean	Dry	Light to medium	Slow to medium	0	120	2 to 6 months	High quality NLGI #1 or 2 multi-purpose bearing greases are generally satisfactory. Consultation with a reputable lubricant supplier is recommended.
				120	200	1 to 2 months	
Moderate to Dirty	Dry	Light to medium	Slow to medium	0	120	1 to 4 weeks	
				120	200	1 to 7 days	
Extreme Dirt	Dry	Light to medium	Slow to medium	0	200	Daily-flushing out dirt	
*	High humidity Direct water splash	Light to heavy	Slow to medium	32	200	1 to 4 weeks grease at shutdowns	Mobil Oil Co., Mobilith AW2 Texaco Inc., RB2 Shell Oil Co., Alvania EP2
		Heavy to very heavy	Slow	0	200	1 to 8 weeks	Shell Oil Co., Alvania EP2
				−20	120	1 to 8 weeks	Mobil Oil Corp., Mobiltemp 78
		Light	High speed	100	200	1 to 8 weeks	Imperial Oil & Grease Co., Molub-Alloy No. 2 Gulf Oil Corp., Gulfcrown No. 2 Texaco Inc., Molytex No. 2
	Possible frost	Light to heavy	Slow to medium	−65	+250	1 to 4 weeks grease at shutdown	Esso, Beacon 325 Texaco Inc., 2346EP Low Temp Shell Oil Co., Aeroshell 7A
Clean to moderate	Dry	Light to medium	Slow to medium	80	250	1 to 8 weeks	Union Oil Co., Unoba EP No. 2 Texaco Inc., 1999 Hi-Temp
Clean to dirty	Dry	Light	Slow	80	300	1 to 4 weeks	Keystone Lubricants Co., No. 89 Dow Chemical Co., DC44

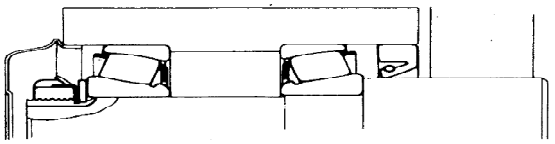


Figure 4) Adjustable Inner Ring with adjusting nut

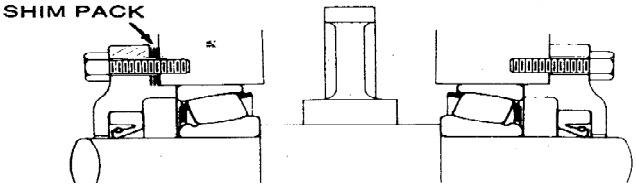


Figure 5) Adjustable Outer Ring with shim packs

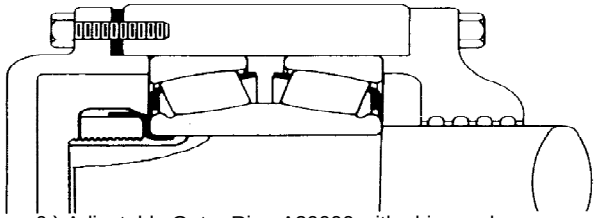


Figure6) Adjustable Outer Ring A20000 with shim packs

Oil Lubrication

Oil Cup or Oil Bath Lubrication – Oil cups can be applied for use as a self-contained oil bath system. Oil bath lubrication is not recommended for speeds above the catalog oil speed limits, where excessive oil churning or misting occurs, or where there is air flow across the housing, which will pull oil out through the seals due to different pressures.

Oil levels are controlled by sight gages, oil cups, etc. These should be used in conjunction with a vent or breather cap. Proper static oil levels are shown in Table 5. Cups or sight gages should be carefully marked.

Circulating Oil Lubrication – Oil circulation systems can be used under a wider variety, or under more extreme operating conditions than any other lubrication method. They are especially valuable for high speed and high temperature service to provide better lubrication and cooler operation.

A complete circulation system includes the use of pressure pump, a heat exchanger (or a method of cooling oil), an adequate sump, a filter to remove particles over 20 micron in size and safety devices such as pressure and temperature warning devices and filter bypasses. It is also best to tap oversize drain holes in the housing or to provide a suction pump to positively remove oil from the housing. Oil should be removed from both sides of the housing, but where speeds are not high one side may be sufficient.

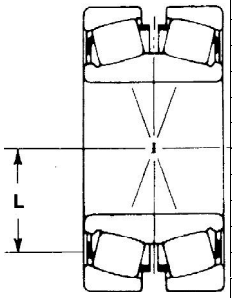
Oil Viscosity – The required viscosity for good lubrication depends on starting temperatures, operating temperatures, and speed. The recommended viscosity level for bearings operating within catalog speed limits is between 100 and 150 Saybolt seconds (SSU) at operating temperature for oil exit temperature on circulating systems. Slow speed heavily loaded bearings require much higher viscosities. Consult Rexnord Bearing Division.

Where starting temperatures are very low compared to operating temperatures, heaters may be necessary to provide oil flow in the lines or to provide adequate lubrication at start-up.

Maintenance and Lubrication:

Oil cup or oil bath systems require close attention because of the limited amount of oil in the system. Frequent changing of oil is necessary in these systems to avoid lubricant breakdown. Oil circulating systems, properly equipped with safety devices, require minimum attention after they are once satisfactorily adjusted. Frequency of changing the oil in the system depends upon the severity of the operation and size of the reservoir. Also, summer and winter grades of oil may be required, to stay within the recommended viscosity limits for good lubrication.

Table 5 – Static Oil Level

Static Oil Level				
	**Bearing Number**	**Static Oil Level Below Shaft Centerline, L (in)**	**Bearing Number**	**Static Oil Level Below Shaft Centerline, L (in)**
	A22100	7/8	A23196	1 31/64
	A22112	7/8	A23200	1 9/16
	A22118	63/64	A23225	1 9/16
	A22125	63/64	A23262	1 29/32
	A22137	1 1/16	A23275	2 11/64
	A22177	1 17/64	A23300	2 15/64
	A22196	1 25/64	A23334	2 11/32
	A22262	1 3/4	A23393	2 3/4
	A22275	2 1/64	A23482	3 23/64
	A22295	2 1/64	A24196	1 39/64
	A22343	2 13/32	A24236	1 23/32
	A22351	2 13/32	A24362	2 3/4
	A22354	3	A24374	2 3/4
	A22362	2 13/32	…	…
	A22400	3	…	…
	A22413	3	…	…

LIMITED WARRANTY – LIABILITY
A. IT IS EXPRESLY AGREED THAT THE FOLLOWING WARRANTY IS GIVEN IN LIEU OF ALL OTHER WARRANTIES, WHETHER EXPRESSLY IMPLIED OF STATUTORY. INCLUDING THOSE OF **MERCHANTABILITY** AND FITNESS FOR A PATICULAR PURPOSE, AND OF ANY OTHER OBLIGATION OR LIABILITY ON OR PART OF ANY KIND OR NATURE WHATSOEVER.

No representative of ours has any authority to waive, alter, vary, or add to the terms hereof without prior approval in writing, to our customer, signed by an officer of our company. It is expressly agreed that the entire warranty given to the customer is embodied in this writing. This writing constitutes the final expression of the parties agreement with respect to warranties, and that it is a complete and exclusive statement of the terms of the warranty.

We warrant to our customers that all Products manufactured by us will be free from defects in material and workmanship at the time of shipment to our customer for a period of one (1) year from the date of shipment. All warranty claims must be submitted to us within ten days of discovery of defects within the warranty period, or shall be deemed waived. As to Products or parts thereof that are proven to have been defective at the time of shipment, and that were not damaged in shipment, the sole and exclusive remedy shall be repair or replacement of the defective parts or repayment of the proportionate purchase price for such Products or part, at our option. Replacement parts shall be shipped free of charge f.o.b. from our factory.

This warranty shall not apply to any Product which has been subject to misuse; misapplication, neglect (including but not limited to improper maintenance and storage); accident, improper installation, modification (including but not limited to use of unauthorized parts or attachments), adjustment, repair or lubrication. Misuse also includes, without implied limitation, deterioration in the Product or part caused by chemical reaction, wear caused by the presence of abrasive materials, and improper lubrication. Identifiable items manufactured by others but installed in or affixed to our Products are not warranted by use but, bear only those warranties, express or implied, given by the manufacturer of that item, if any. Responsibility for system design to insure proper use and application of Link-Belt Products within their published specifications and ratings rests solely with customer. This includes without implied limitation analysis of loads created by torsional vibrations within the entire system regardless of how induced.

B. It is expressly agreed that our liability for any damage arising out of or related to this transaction, or the use of our Products, whether in contract or in tort, is limited to the repair or replacement of the Products, or the parts thereof by use, or to a refund of the proportionate purchase price. We will not be liable for any other injury, loss, damage, or expense, whether direct or consequential, including but not limited to use, income, profit, production, or increased cost of operation, or spoilage of or damage to material, arising in connection with the sale, installation, use of, inability to use, or the replacement of, or late delivery of, our Products.
production, or increased cost of operation, or spoilage of or damage to material, arising in connection with the sale, installation, use of, inability to use, or the replacement of, or late delivery of, our Products.