

⚠ WARNING Indicates a hazard which, if not avoided, could result in serious injury or death.

GENERAL SAFETY INSTRUCTIONS

⚠ WARNING

These instructions should be read entirely and followed carefully before attempting to install or remove Link-Belt A300 Ball Bearings. Failure to do so can result in improper installation which could cause bearing performance problems as well as serious personal injury.

BEARING MOUNTING PROCEDURE

INSTALLATION — ONE FIXED AND ONE EXPANSION UNIT

- Inspect shaft size (see shaft tolerance table, **Table 1**). Shaft must be to correct size. Clean shaft and mounting surface as needed.
- Loosen setscrews in locknut then rotate locknut counterclockwise until there is about one thread left before sliding bearing on shaft. The Locknut Sleeve assembly should not be removed from bearing. If this happens, refer to **comment 2** in the Additional Installation Comments.
- Slide the bearings on the shaft to their intended positions and loosely bolt the housings to the structure. Where shimming is required, use full shims across the housing base, not just at the bolt holes.
- Tighten the adapter assembly of the fixed bearing first — make sure the shaft is locked so as not to rotate. Hand tighten the locknut then use a hook-type spanner wrench to bring the locknut to a snug fit. Snug fit is defined when the locknut has been tightened enough to remove the clearance between the shaft, adapter sleeve and inner ring. This is almost like a dead stop when applying pressure to the spanner wrench.
 - If the adapter sleeve begins to slip around the shaft, then retain the sleeve using a second hook-type spanner wrench. Engage the second spanner wrench into the split area of the adapter sleeve. Position the wrench in the opposing direction of the first spanner wrench that is engaged in the locknut (**Figure 1**). Continue tightening until the adapter sleeve will no longer slip around the shaft.
- Mark the position of the locknut relative to the shaft with a grease pencil or dark marker at the top of the locknut, sleeve and shaft (**Figure 2**).
- Begin to tighten the locknut using one of these methods:
 - The special SHURLOK style-wrench installation tool (**Table 2**) with a ½ or ¾" drive breaker bar
 - The special SHURLOK impact-style installation tool (**Table 2**) and a hammer
 - A soft steel drift pin and a hammer
 - A chain wrench
- Tighten the locknut clockwise the required revolutions as shown in **Table 3**. When tightening the locknut, be sure to check the sleeve to make sure it does not turn on shaft.
- Tighten the two set screws to the recommended seating torque from **Table 4**. If one of the set screws is lined up with the slot in the adapter sleeve, tighten the locknut clockwise until the set screw clears the slot.

TABLE 1 — Recommended Shaft Tolerance

Nominal Shaft Sizes (inches)	Commercial Shaft Tolerance (Cold Finished Steel, Low Carbon)	Recommended Shaft Tolerances
1 7/16 - 1 15/16	+0.000-.003"	+0.000-.003"
2 3/16 - 3 15/16	+0.000-.004"	+0.000-.004"

Figure 1 — Wrench positioning to prevent sleeve from slipping



Figure 2 — Position of Locknut relative to shaft



TABLE 2 — SHURLOK Installation Tools

Bearing Size	Wrench Style Part Number (Figure 4)	Impact Style Part Number (Figure 5)
319	N6103-SPN	N6103-IMP
323	N6107-SPN	N6107-IMP
327	N6111-SPN	N6111-IMP
331	105-90420-11	105-90425-11
335	105-90420-21	105-90425-21
339	105-90420-31	105-90425-31
343-347	105-90420-41	105-90425-41
351-355	105-90420-51	105-90425-51
363	105-90420-61	105-90425-61

Figure 4 — Wrench



Figure 5 — Impact Style



9. Tighten the expansion bearing — center the expansion bearing cartridge in the housing. Tighten the bearing to the shaft following the same procedure for the fixed bearing.
10. Align the bearings and secure to mounting structure.

INSTALLATION — TWO FIXED UNITS

If you are installing two fixed pillow block units, tighten the mounting bolts of the first unit, and then install it as shown in the INSTALLATION section. Install the second bearing as normal, and then tighten its mounting bolts last.

If you are installing two fixed flange units, tighten the mounting bolts of the first unit and install as normal. Snug up the mounting bolts on the second unit. Now go through the INSTALLATION procedure to take out the adapter assembly looseness for the second bearing, Step 4. After reaching a snug fit for the locknut, loosen the mounting bolts enough to allow for housing movement away from the mounting base. Housing movement should equal the required shim stock thickness shown in **Table 5**. Now complete the installation of the second bearing. Once the second bearing has been mounted, place shim stock underneath each bolt pad between the housing base and the structure. Place the shim stock adjacent to each bolt on two sides about the shaft of the bolt to allow for uniform pressure under each bolt pad. Tighten housing mounting bolts to complete the installation.

ADDITIONAL INSTALLATION COMMENTS

1. Position housings for accessibility of grease fittings.
2. The adapter assembly is shipped inside the bearing. The adapter components do not need to be removed. If you should happen to remove the adapter sleeve from the bearing during installation, you must align the adapter sleeve slot with its mating spline in the inner ring bore as shown in **Figure 3**.
3. When pillow blocks are mounted on an inclined plane or the work force is parallel with the base, either lateral bolts or welded stop blocks should be used to prevent shifting.
4. Avoid direct hammer blows to the bearing and its components by using a soft drift or block.
5. Do not coat the shaft & bearing bore with grease or oil to facilitate assembly.
6. If an Allen wrench is used as a torque wrench, place a length of pipe over the long end and pull until the wrench begins to twist.

Figure 3 — If sleeve is removed from inner ring align spline with slot in sleeve to reinstall



LUBRICATION INFORMATION

Standard bearings come pre-lubricated from the factory with Mobil™** Ronex™** MP Grease. Mobil Ronex MP is an NLGI Grade 2 EP (extreme pressure) grease with a lithium complex thickener. It can be used for high loads, and in some cases at

TABLE 3 — Minimum and Maximum Locknut Adjustment

Shaft Size Range (in)		Minimum Locknut Adjustment (Turn)	Maximum Locknut Adjustment (Turn)
From	To		
1 3/16	3 15/16	1	1 1/4

TABLE 4 — Set Screw Tightening Torque

Shaft Size (in)	Seating Torque (in-lbs / N-m)
1 3/16	87-92 / 9.8-10.4
1 7/16	
1 11/16	
1 15/16	
2 3/16	
2 7/16	165-185 / 18.6-20.9
2 11/16 - 2 15/16	
3 3/16 - 3 7/16	
3 15/16	290-325 / 32.8-36.7

TABLE 5 — Shim Stock Thickness for Two Fixed Flange Units

Shaft Size Range (in)		Shim Stock (in / mm)
From	To	
1 3/16	1 11/16	.042 / 1.07
1 15/16	2 3/16	.063 / 1.60
2 3/8	2 15/16	.070 / 1.80
3 3/16	3 15/16	.080 / 2.03

TABLE 6 — Recommended Lubrication Schedule*

Shaft Size (in)	Grease WT. Required (OZ.)	Recommended Number of Months at Given Shaft Speed			
		Months			
		6	4	2	1
1 3/16	0.15	3620	5610	8145	10860
1 7/16	0.22	3285	5095	7395	9860
1 11/16	0.41	2640	4225	6060	8100
1 15/16	0.52	2310	3850	5580	7315
2 3/16	0.70	2045	3410	4945	6480
2 7/16	0.83	1830	2990	4320	5815
2 11/16 - 2 3/4	1.25	1660	2580	3865	5155
2 15/16	1.50	1550	2410	3620	4825
3 3/16	1.80	1370	2225	3420	4450
3 7/16	2.42	1350	2025	3040	4050
3 15/16	3.27	1200	1885	2740	3600

* Reduce lubrication intervals by half for vertical shaft applications.

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temperatures as low as -40°F or as high as +225°F. For high speeds, other special service conditions, or for inquiries on other acceptable greases, please consult your local Rexnord® representative or the Rexnord Bearing Engineering Department. Oil lubrication is not recommended.

RELUBRICATION

Bearings should be re-lubricated at regular intervals. The frequency and amount of lubricant will be determined by the type of service. General guidelines for re-lubrication frequency and amount are based upon average application conditions. See LUBRICATION **Table 6**. Oil lubrication is not recommended.

At high temperatures, greases tend to degrade more rapidly and thus require fresh grease more frequently. In general, small amounts of grease added frequently provide better lubrication. When equipment will not be in operation for some time, grease should be added to provide corrosion protection. This is particularly important for equipment exposed to severe weather.

AUTOMATIC LUBRICATION SYSTEMS

A variety of automatic re-lubrication systems are available for use with Roller bearings. Key considerations are:

1. NLGI grade of grease used, consistent with system layout.
2. An amount/frequency combination necessary to replenish the grease.

MIXING OF GREASES

Mixing of two greases should be checked with the lubricant manufacturer. If the grease bases are different, they should never be mixed.

BEARING REMOVAL FROM SHAFT

Back out the locknut setscrews, and then loosen the locknut in a counter-clockwise direction until the adapter assembly becomes completely loose. The bearing should slide freely along the shaft.

DISASSEMBLY OF BEARING INSERT

1. Remove shaft locking device (Locknut Sleeve Assembly) and slide off shaft.
2. Place in vice.
3. With a shaft or bar, misalign bearing 90 degrees in housing and remove through slots.
4. Clean and inspect housing. Do not re-use worn housing.

TABLE 7 — Locknut Torque Limit

Shaft Size (in)	Torque Limit (ft-lbs / N-m)
1 3/16	75 / 102
1 7/16	95 / 129
1 11/16	115 / 156
1 15/16	145 / 197
2 3/16	205 / 278
2 3/8 - 2 7/16	315 / 427
2 11/16 - 2 15/16	395 / 536
3 3/16 - 3 7/16	480 / 650
3 11/16 - 3 15/16	510 / 692

REASSEMBLY OF BEARING INSERT

1. Insert new bearing into loading slots.
2. Torque bearing 90 degrees and make sure lube holes in bearing are on the same side as the lube groove in the housing. Fit should be snug.
3. Install bearing via steps on **page 1**.

LIMITED WARRANTY — LIABILITY

A. IT IS EXPRESSLY 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 PARTICULAR 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.

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