

Link-Belt® Ball Bearing Screw Conveyor Trough End

INSTALLATION INSTRUCTIONS FF200 Series

Bearing Mounting Procedure

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

ALL UNITS

1. Inspect shaft size (see shaft tolerance table below). Shaft must be to correct size. Clean shaft and mounting surface as needed.
2. Machine snap ring grooves in shaft at each end of unit or groove at outer end of shouldered shaft for positive location of unit. See Table 4 on Page 2.
3. Coat the shaft and bearing bore to facilitate assembly.
4. Position bearings on the shaft, applying all driving pressure to the face of the inner ring. Do NOT strike or exert pressure on housing or seals. Thrust must be transmitted to the bearing through the snap ring, shaft shoulder, or some other method other than set screws.
5. Install snap rings and thrust washers on shaft and bolt unit securely to support. SAE Grade 5 mounting bolts are recommended.
6. Lock bearings to the shaft with the set screws tighten to the proper value listed in TABLE 2 below.

Table 1) Shaft Tolerance Table

SHAFT TOLERANCE TABLE – INCHES		
Shaft Size (Inches)	Series	Tolerance Nominal to:
1 1/2 – 2	224-232	-0.0005"
2 3/16 – 3 7/16	235-255	-0.001"
Recommended shaft tolerances are generally satisfactory for loads up to 15% of C (see load ratings in catalog). High load applications will require a press fit to the shaft.		

Table 2) Set Screw Torque Values

RECOMMENDED SCREW TIGHTENING TORQUE		
Series	Shaft Size (in.)	Tightening Torque (Inch- Pounds)
208	1 1/2	165 – 185
211	2	290 – 325
	2 3/16	
212	2 7/16	290 – 325
	2 3/4	
215	2 15/16	620 – 680
	3	
217	3 7/16	620 – 680

ADDITIONAL INSTALLATION COMMENTS

1. Position housings for accessibility of grease fittings.
2. Spot drill or mill flats on shaft for increased holding power of set screws or ease of removal.
3. When an eccentric load condition exists, position set screws directly opposite from eccentric weight.
4. Shaft shoulders are recommended to support vertical shafts and high thrust loads. The shoulder diameter should not exceed the outside diameter of the inner ring.
5. Avoid direct hammer blows to the bearing and its components by using a soft drift or block.
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.

LUBRICATION INFORMATION

Standard bearings come pre-lubricated from the factory with Exxon Ronex MP grease. Exxon 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 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 on page 2. 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 ball 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 any 2 greases should be checked with the lubricant manufacturer. If the grease bases are different they should never be mixed.

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Table 3) Lubrication Information

LUBRICATION TABLE – Trough End Ball Bearings			
Operating Conditions		Bearing Operating Temperature	Greasing Interval (1)
Dirt Exposure	Moisture Exposure		
Slight	None	32°F to 120°F	6 months
Moderate to Heavy		120°F to 160°F	2-4 months
		160°F to 200°F	1-2 months
		32°F to 160°F	1-4 weeks
		160°F to 200°F	1 week
Slight to Heavy	Direct water splash or exposure to outdoor environment	32°F to 200°F	Daily to 1 week or as determined by inspection of installation
Slight	None	-60°F to 32°F	Determined by inspection of installation
		Above 200°F	

(1) Frequency of regreasing will vary, depending on the hours of operation, temperatures and surrounding conditions.

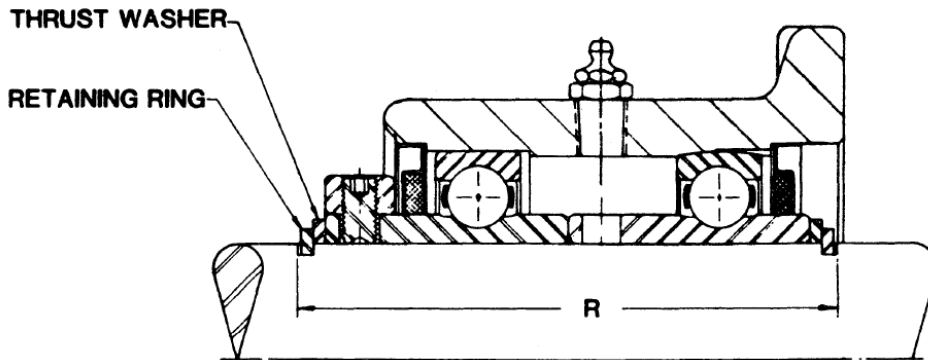


Table 4) Thrust Washer and Retaining Ring Detail

THRUST WASHER AND RETAINING RING					
SHAFT SIZE - INCHES	R (INCHES)	Heavy Series Retaining Ring Eaton Number	Sharp Cornered Thrust Washer		
			Bore (in)	O.D. (in)	Width (in)
1 1/2	4 7/32	344-1	(1/64 over the shaft diameter)	2	.0625
2 – 2 3/16	5 1/32	1071		2 1/2	.125
2 7/16	5 17/32	1227		3	.125
2 3/4 – 3	6 9/32	5224		3 1/2	.125
3 7/16	7 23/32	5531		4 1/16	.140

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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