



# Rex® Mounted Roller Bearings Installation Instructions for 2000, 3000, 5000, and 9000 Series

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**FORM**

**BR3-001  
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**⚠ WARNING** Indicates a hazard which, if not avoided, could result in serious injury or death.

**⚠ CAUTION** Indicates a hazard which, if not avoided, could result in minor or moderate personal injury.

**⚠ WARNING**

- Read and follow all instructions carefully, failure to do so could result in death or serious injury.
- Disconnect and lock out power before installation and maintenance. Working on or near energized equipment can result in severe injury or death.
- Do not operate equipment without guards in place. Exposed equipment can result in severe injury or death.

**⚠ CAUTION**

- Periodic inspections should be performed. Failure to perform proper maintenance can result in minor or moderate personal injury or property damage

## Bearing Mounting procedure

**WARNING!** These instructions should be read entirely and followed carefully before attempting to install or remove Rex roller 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 **Table 3**). Shaft must be to correct size. Clean shaft and mounting surface as needed.
2. 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.
3. Align the bearing housing to its mounting base by measuring from the face of the inner ring to the face of the threaded cover. Measure at the 12, 3, 6 & 9 o'clock positions. All four measurements must be within .060" of one another. Where shimming is required — use full shims across the housing base — not just at the bolt holes.
4. Position and loosely bolt housing to mounting base.
5. Lock bearing to the shaft. If one unit is an expansion type, lock the fixed bearing first.

### Set Screw Lock Units (2000 & 5000 Series)

Tighten the collar set screws on the bearing to the proper tightening torque which can be found in **Table 2**. Alternate torquing the screws to prevent unequal loading. See Comment 8 in Additional Installation Comments.

### Eccentric Cam Lock Units (3000 Series)

Slide collar over the shaft until it rests over the cam of the inner ring. Rotate the collar in the direction of normal shaft rotation until snug. Utilizing a hammer and punch, rotate the collar until tight. Tighten set screws securely. Utilize torque values from **Table 2**. See comment 8 in Additional Installation Comments.

## Adapter Mount Units (9000 Series)

**A-Zero Shaft Fit** — Take a large flat blade screw driver to wedge between the bearing's face and lock washer. Use the screwdriver to draw the bearing's sleeve through the inner ring until you achieve a snug fit and then finger tighten the locknut (See **Figure 1**). Use a spanner wrench to bring locknut a snug fit. This zero's out the clearance between bore and shaft.



**Figure 1 —**  
Zero Shaft Fit

Pry against housing to draw adapter sleeve through bearing. Sleeve should not be protruding out the backside of the inner ring.

**B-Final Tightening** — Mark position of locknut and sleeve relative to the shaft. Using a soft steel drift pin and hammer drive against the face of the locknut to relieve thread pressure. Tighten locknut with spanner wrench ¾ turn. When tightening make sure sleeve doesn't turn on shaft

**C-Secure Locknut** — Bend one of the lock washer tangs into one of the slots on the outside diameter of locknut. If necessary, slightly tighten locknut to line up with closest tang.

**D-Installing Two Fixed Adapter Units** — When installing 2 fixed pillow blocks, tighten the mounting bolts on the 1st unit and install as shown in the steps A-C. Install the 2nd bearing as normal, then tighten up mounting bolts last. If installing two fixed flange units, tighten the mounting bolts on the 1st unit and install as normal. Snug up the mounting bolts on the 2nd unit with the proper shim stock between the mounting surface and housing base shown in **Table 1**. Then find zero fit (step A). Next, loosen bolts enough to pull out the shim stock. Install 2nd unit as normal (steps B & C), then tighten mounting bolts last. Fully Tighten down housing bolts.

- Rotate the shaft a few revolutions to locate remaining bearings position on the shaft.

**Table 1 — Shim Thickness**

Basic Size	Shim Thickness
9115 - 9208	.042" (1.07mm)
9211 - 9500	.063" (1.60mm)
9503 - 9507	.094" (2.40mm)

- Set Screw & Eccentric Cam Lock Units** — Torque down set screws in remaining bearings using procedure in Step 5.  
**Adapter Mount Units** — Secure remaining bearing using procedure in Step 5.

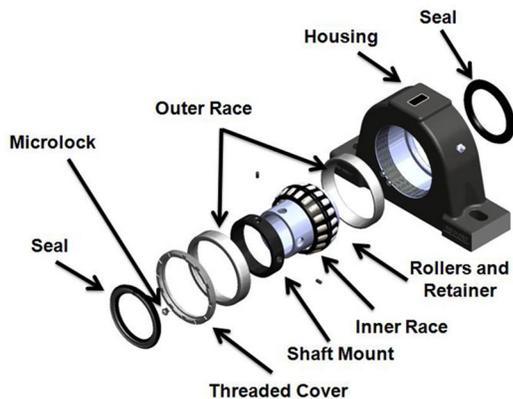
**EXPANSION UNITS ONLY**

- Center cartridge in outer housing. If maximum expansion capability is required, place cartridge in extreme position of housing to permit full movement of the cartridge in direction of expansion.
- The remainder of the installation is the same as Fixed units.

**ADDITIONAL INSTALLATION COMMENTS**

- Position housings for:
  - Accessibility of grease fittings.
  - If thrust is present — direct thrust force through internal housing shoulder, not through back side of threaded cover side.
- Spot drill or mill flats on shaft for increased holding power of set screws or ease of removal.

**Figure 1 — Exploded View of 2000 Series Bearing**



- When an eccentric load condition exists, position set screws directly opposite from eccentric weight.
- 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.
- 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.

- Avoid direct hammer blows to the bearing and its components by using a soft drift or block.
- New seals should be used whenever a bearing is rebuilt.
- 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.
- For Auxiliary Cap Installation, See Page 5.**

**Table 2 — Set Screw Torque**

Normal Duty 2000 Series	Normal Duty 3000 Series	Heavy Duty 5000 Series	Set Screw Size (in)	Tightening Torque (in-lbs / N-m)
2012 - 2104	3107	—	5/16	185 / 21
2107 - 2200	3111 - 3115	5107 - 5115	3/8	325 / 37
2203 - 2204	3203 - 3315	5200 - 5203	7/16	460 / 52
2206 - 2308	—	5207 - 5307	1/2	680 / 77
2311 - 2400	—	5311 - 5600	5/8	1350 / 153
—	—	5607 - 5700	3/4	1600 / 181

For more detailed instructions refer to latest REXNORD Catalog

**Table 3 — Shaft Tolerance — Inches**

Nominal Shaft Sizes (Inches)		Commercial Shaft Tolerance* (Cold Finished Steel, Low Carbon)	RECOMMENDED SHAFT TOLERANCES*		
Over	Incl.		Set Collar & Cam Mounting	Adapter Mounting	Press Fit Mounting
1	2	+0.00 - .003	+0.00 - .001	+0.00 - .003	Consult Regal Rexnord
2	4	+0.00 - .004	+0.00 - .001	+0.00 - .004	
4	6	+0.00 - .005	+0.00 - .0015	+0.00 - .005	
6	7	+0.00 - .006	+0.00 - .0015	+0.00 - .006	

\* 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.

**DISASSEMBLY OF BEARING INSERT**

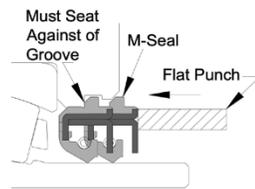
- Remove shaft locking device (collar or adapter assembly).
- Remove seals. Z, K, and G are held in with snap ring. M is pressed in so it must be pried out with screwdriver.
- Remove MICROLOCK screw and key. (Do not lose nylon washer).
- Remove threaded cover by turning counter clockwise.
- Place housing threaded cover side down on arbor press with spacer blocks under housing.
- Place a soft metal bar or wood block on face of inner ring and press bottom outer ring and inner ring assembly from housing.
- To remove the back outer ring, large bore bearings 4 7/16" thru 7" have drive pin holes. The back outer ring of smaller size units may be removed with a bearing puller or hammer and drift.

**REASSEMBLY OF BEARING INSERT**

- Place housing threaded cover side up on arbor press with spacer blocks under housing.
- Remove shaft locking Device (collar or adapter assembly).
- Press in back outer ring and seat against housing shoulder.
- Insert inner ring – roller assembly and rotate to seat rollers against back outer ring.



5. Press in front outer ring. Do not bottom out outer race on rollers.
6. Install threaded cover, turning clockwise until inner ring resists rotation or misalignment.
7. Back off threaded cover the required degrees per Table 5 and Table 6) — align cover slot with the nearest counter bored hole in housing. Note: 2 holes in housing are 15° apart and slots in threaded cover are 30° apart.
8. Install microlock key with nylon washer under the head of the screw. **NOTE:** Expansion style units that utilize the microlock key incorporate a nylon patch setscrew, so the nylon washer is not included.
9. Using arbor press, press on inner ring face on the side opposite the threaded cover to seat front outer ring against threaded cover face. Alternate method: Turn housing over and provide support so inner race on threaded cover side sits above table. Remove seal opposite threaded cover. Place a soft piece of steel or block of wood that just fits over the face of the inner ring. Using a hammer, strike the block with several sharp blows. Inner ring assembly should rotate and misalign freely.
10. Install seals. **Z-Seal** — Place centering spring in seal groove with fingers facing up. Place U-shaped element on fingers. Place centering ring on element with raised tab face up. Install snap ring so the tab on centering ring is between ends of snap ring. **K & G-Seal** — Place seal into the seal groove with the raised tab sticking up. Install snap ring so that the tab is between the snap ring ends. **M-Seal** — Place seal into seal groove with spring facing out. A hammer and flat punch will be required. See illustration to right. Go around seal face with punch until completely seated. Make sure seal is seated firmly. No snap ring is required with **M-Seal**.
11. Install shaft locking device (collar or adapter assembly).
12. Lubricate bearing with amount of grease shown in **Table 4**. Rotate inner ring assembly during lubrication to distribute grease in bearing.



## 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. When rebuilding Rexnord bearings for use in average operating conditions, the bearing should be lubricated with the amount of grease by weight as shown in the **Table 4**. Oil lubrication is not recommended.

\* Ronex is believed to be the trademark and/or trade name of Exxon Mobile Corporation, and is not owned or controlled by Regal Rexnord Corporation.

## 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 **Table 4**. 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 any 2 greases should be checked with the lubricant manufacturer. If the grease bases are different, they should never be mixed.

## CLEARANCE ADJUSTMENT

To increase the clearance for high speed use:

1. Remove microlock assembly.
2. With soft steel drift pin/punch and hammer, rotate the threaded cover counter-clockwise the additional amount listed in Table 5 or Table 6. **NOTE:** Each screw hole is separated by 15° and every threaded cover slot is separated by 30°.
3. Install microlock assembly with nylon washer (if included) under head of screw.

**NOTICE** If increase in degrees does not match up to listed change, always go to the higher setting if possible.

4. Using arbor press, press on inner ring face on the side opposite the threaded cover to seat front outer ring against threaded cover face. Alternate method: Turn housing over and provide support so inner race on threaded cover side sits above table. Remove seal opposite threaded cover. Place a soft piece of steel or block of wood that just fits over the face of the inner ring on inner ring face. Using a hammer, strike the block with several sharp blows. Inner ring assembly should rotate and misalign freely.

**Table 4 – Lubrication**

SHAFT SIZE – INCHES			GREASE WT. REQUIRED (OZ)		RECOMMENDED NUMBER OF MONTHS BETWEEN RELUBRICATION* (BASED ON 24/7 OPERATION)				
					Relube Interval				
Single Collar 2000, 3000 Series	Double Collar 5000 Series	Adapter 9000 Series	To Lubricate Rebuilt Units	To Relubricate Units	6 Months	4 Months	2 Months	1 Month	2 Weeks
3/4 - 1	—	—	0.4	0.20	1400	2200	3400	5000	6500
1 1/8 - 1 1/4	—	—	0.5	0.25	1150	1800	2800	4500	5750
1 7/16 - 1 1/2	1 7/16	—	0.6	0.30	1000	1550	2400	3800	5250
1 11/16 - 1 3/4	1 1/2 - 1 11/16	—	0.8	0.40	870	1350	2100	3300	4450
1 15/16 - 2	1 15/16	—	0.9	0.45	700	1100	1700	2700	4050
2 3/16 - 2 1/4	2 - 2 3/16	1 15/16 - 2	1.1	0.55	630	1000	1500	2400	3650
2 3/8 - 2 1/2	2 7/16	2 3/16	1.5	0.65	580	910	1400	2250	3300
2 11/16 - 3	2 1/2 - 2 15/16	2 7/16 - 2 1/2	2.8	1.20	460	730	1100	1800	2800
3 3/16 - 3 1/2	3 3/16 - 3 7/16	2 11/16 - 3	3.7	2.00	410	640	1000	1550	2400
3 11/16 - 4	3 11/16 - 4	3 3/16 - 3 7/16	6.9	2.90	350	550	850	1150	1850
—	4 3/16 - 4 1/2	3 11/16 - 4	8.4	3.25	280	440	740	1050	1600
—	4 15/16 - 5	4 3/16 - 4 7/16	14.3	5.00	50	100	300	500	1000
—	5 7/16	4 15/16 - 5	22.1	8.40	50	100	300	500	1000
—	5 15/16 - 6	5 3/16 - 5 7/16	25.3	13.50	50	100	300	500	1000
—	6 7/16 - 7	5 15/16 - 6 7/16	30.0	15.00	50	100	300	500	1000
					Shaft Speed in RPM				

\* Relubrication amounts and frequencies shown in the table are based on standard clearance, moderate loads, etc., which yield housing temperatures of 150°F or less. Lubrication practices indicate that the relubrication frequency should be doubled for every 20°F above that level

\*Reduce lubrication intervals by half for vertical shaft applications

**Table 5 – Adjustment (Axial and Radial Clearances) – 2000, 3000, 5000 Series**

Size Code	SHAFT SIZE – INCHES			STANDARD FACTORY ADJUSTMENT (Average Speed and Temperature)	RECOMMENDED ADJUSTMENT HIGH SPEEDS		CLEARANCE ADJUSTMENT (Inches per 15 Degrees)	
	2000 Series	3000 Series	5000 Series	Standard Degrees Adjust.	Speed Over	High Speed Degrees Adjust.	Radial	Axial
2	3/4 - 1			45	2000	+15°	.0008	.0026
3	1 1/8 - 1 1/4			50	2000	+15°	.0008	.0026
4	1 7/16 - 1 1/2	1 7/16	1 7/16	55	2000	+15°	.0008	.0027
5	1 11/16 - 1 3/4	1 11/16	1 1/2 - 1 11/16	60	1500	+15°	.0008	.0029
6	1 15/16 - 2	1 15/16	1 15/16	85	1500	+15°	.0007	.0025
7	2 3/16 - 2 1/4	2 3/16	2 - 2 3/16	60	1250	+15°	.0009	.0034
8	2 3/8 - 2 1/2	2 7/16 - 2 1/2	2 7/16	65	1250	+15°	.0008	.0034
9	2 11/16 - 3	2 11/16 - 2 15/16	2 1/2 - 2 15/16	80	1250	+15°	.0009	.0035
10	3 3/16 - 3 1/2	3 7/16 - 3 1/2	3 3/16 - 3 7/16	100	1000	+30°	.0009	.0034
11	3 11/16 - 4	3 15/16	3 11/16 - 4	120	1000	+30°	.0008	.0034
12			4 3/16 - 4 1/2	80	750	+15°	.0013	.0051
13			4 15/16 - 5	90	750	+30°	.0013	.0054
14			5 7/16	90	500	+30°	.0014	.0057
15			5 15/16 - 6	120	500	+30°	.0012	.0054
16			6 7/16 - 7	150	500	+30°	.0011	.0050

**Table 6 – Adjustment (Axial and Radial Clearances) – 9000 Series**

Size Code	SHAFT SIZE (INCHES)	STANDARD FACTORY ADJUSTMENT (Average Speed and Temperature)	RECOMMENDED ADJUSTMENT HIGH SPEEDS		CLEARANCE ADJUSTMENT (Inches per 15 Degrees)	
	9000 Series	Standard Degrees Adjust.	Speed Over	High Speed Degrees Adjust.	Radial	Axial
7	1 15/16 - 2	75	1250	+15°	.0009	.0034
8	2 3/16	80	1250	+15°	.0008	.0034
9	2 7/16 - 2 1/2	100	1250	+15°	.0009	.0035
10	2 11/16 - 2 15/16	125	1000	+15°	.0009	.0034
11	3 3/16 - 3 7/16	150	1000	+15°	.0008	.0034
12	3 11/16 - 4	100	750	+15°	.0013	.0051
13	4 3/16 - 4 7/16	115	750	+15°	.0013	.0054
14	4 15/16 - 5	120	500	+30°	.0014	.0057
15	5 3/16 - 5 7/16	150	500	+30°	.0012	.0054
16	5 15/16 - 6 7/16	180	500	+45°	.0011	.0050



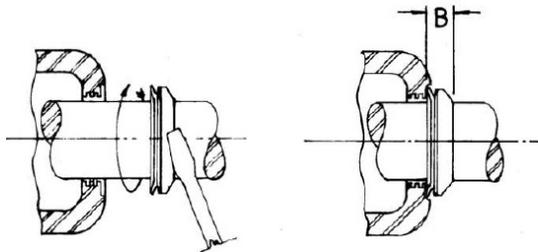
## AUXILIARY CAP INSTALLATION

### SEAT V-RING AND LUBRICATE

1. Position open caps such that the grease fitting will be in the most convenient location. Line up cap, gasket and housing holes and bolt the cap in place.

**NOTE:** For closed caps ("B" suffix or prefix) no special alignment is required, simply line up the holes with those in gasket and housing and tighten bolts.

2. The shaft should be lightly sanded and cleaned in the V-ring seal location to remove any loose dirt or rust
3. Slide V-ring along the shaft by applying pressure and rotating shaft slowly, preferably by hand, in a direction away from point of tool. Tool should be lubricated to protect V-ring.
4. Adjust to obtain "B" dimension for optimum lip pressure from Table 7.



**Table 3 – Shaft Tolerance – Inches**

Shaft Size	"B"	Tolerance
Thru 1 1/2"	11/32	± 1/32
1 9/16" - 2 5/8"	7/16	± 1/32
2 11/16" - 4 1/8"	17/32	± 1/32
4 3/16" - 6"	5/8	± 1/16
6 1/8" - 7"	23/32	± 1/16

5. After the seal has been properly positioned it is recommended that SCOTCH-GRIP 847 be used to more effectively retain this position. A 1/16" to 1/8" bead of glue should be applied at the mating surface of the shaft and the seal (opposite the contacting lip side). Once this has been wiped to insure glue contact with both surfaces do not attempt to move the seal

6. Care should be taken to keep the glue away from the contact lip of the seal at all times. Cleanup can be accomplished with methyl ethyl ketone or acetone. Scotch-Grip 847 is a fast-drying adhesive that will more securely retain the correct position of the V-ring seal. The machinery can be started within minutes of the glue application
7. Once the caps are installed the caps can be filled with grease to provide a grease seal. The open cap should be purged with grease as often as practical keeping in mind that the cap cavity is unrelated to the bearing internal cavity. See the bearing installation instructions for bearing lubrication procedures

### DRILLING AND TAPPING HOLES FOR AUXILIARY CAPS

Standard units do not come pre-drilled to accept auxiliary caps. The following is the housing drilling and tapping specifications and locations for auxiliary cap mounting holes.

### LOCATION OF HOLES

The holes are to be equally spaced and located at true position within a 0.010" diameter tolerance zone. The number of holes and angle between the holes are given in the table below.

The holes should be oriented so that one hole is 45° in the clockwise direction, based on the side of the housing being drilled, from the grease fitting hole except in the following cases:

- A. The minimum distance between centerline of the cap mounting holes and the centerline of the microlock holes shall be: 9/16" for size codes 4 through 8; 11/16" for size codes 9 through 10; and 7/8" for size codes 11 through 16. The minimum centerline distance between G-lock holes and cap mounting holes shall be 1/2". In cases where this occurs, the cap holes can be rotated in either direction to achieve minimum distance.
- B. Housings where the drawing specifies mounting hole location.

Size Code	Tap Drill	Thread UNC-2B	FIXED HOUSINGS			EXPANSION HOUSINGS			No. of Holes	Angle Between Holes
			Drill Depth +.125 - .000 (in)	Total Thread Depth Min. (in)	Hole Location Radius (in)	Drill Depth +.125 - .000 (in)	Total Thread Depth Min. (in)	Hole Location Radius (in)		
4	#22	10 - 24	.88	.56	1.594	.81	.50	1.969	3	120
5	#22	10 - 24	.88	.56	1.906	.81	.50	2.188	3	120
6	#22	10 - 24	.94	.62	1.969	.81	.50	2.313	3	120
7	#22	10 - 24	.75	.44	2.188	.81	.50	2.500	3	120
8	#22	10 - 24	.88	.56	2.375	.81	.50	2.750	3	120
9	#7	1/4 - 20	1.00	.75	2.813	1.00	.62	3.250	3	120
10	#7	1/4 - 20	1.00	.62	3.250	1.00	.62	3.688	3	120
11	#7	1/4 - 20	1.00	.62	3.813	1.00	.75	4.406	3	120
12	F	5/16 - 18	1.00	.62	4.234	1.00	.62	4.750	4	90
13	F	5/16 - 18	1.00	.62	4.938	1.00	.62	5.750	6	60
14	F	5/16 - 18	1.12	.75	5.750	1.00	.62	6.188	6	60
15	F	5/16 - 18	1.00	.62	6.188	1.00	.62	6.562	6	60
16	5/16	3/8 - 16	1.12	.75	6.813	1.12	.75	7.281	6	60

## RETROFITTING BEARING TO INCLUDE END CAP

1. Remove microlock assembly.
2. With soft steel drift pin/punch and hammer, rotate the existing threaded cover counter-clockwise to remove completely.
3. Install the new threaded cover, turning clockwise until inner ring resists rotation or misalignment.
4. Back off new threaded cover the required degrees per Clearance Adjustment Table 5 or Table 6. Align cover slot with the nearest counter bored hole in housing. NOTE: Each screw hole is separated by 15° and every threaded cover slot is separated by 30°.
5. Install microlock key with nylon washer under the head of the screw.

**Figure 3** — Proper O-Ring Installation



6. Turn housing over and provide support so inner race on threaded cover side sits above table. Place a soft piece of steel or block of wood that just fits over the face of the inner ring. Using a soft blow hammer, strike the block with several sharp blows, inner ring assembly should rotate and misalign freely.
7. Install o-ring over threaded cover. The o-ring should be seated at the base of the threaded cover and will overlap the head of the setscrew (Figure 3).

**Figure 4** — Cap Installation



8. Press cap over threaded cover. Using a rubber mallet apply force to the cap to properly seat cap over the threaded cover. Some deformation of the cap around the microlock assembly is to be expected (Figure 4).

\* For standard loose fit outer rings.

\*\* For press fit outer rings which are designated with an "R" in the part number of Rex spherical roller bearings, please call Rexnord Engineering.

\*\*\* Cannot install on some expansion units.

## 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.