



The Bearing

Field Guide



Rex Nomenclature

Symbol	Description	Z	A	2	207	F				
Z	Clearance seal									
K	Light contact seal									
M	Heavy contact seal									
G	Triple lip seal									
A	Pillow block, fixed									
AF	Pillow block, fixed SAF interchange									
P	Pillow block, fixed									
EP	Pillow block, fixed Type E interchange									
B	Flanged block, fixed 4-bolt									
EF	Flange block, fixed 4 bolt Type E interchange									
F	Flanged block, fixed 4- or 6-bolt									
BR	Flanged cartridge block, fixed 4-bolt round									
2	2000 Series, single set collar									
3	3000 Series, eccentric locking collar									
5	5000 Series, double set collar									
6	6000 Series, Shurlok® tapered adapter sleeve									
9	9000 Series, tapered adapter sleeve									
207	2 7/16" – last two digits in 16th of an inch									
F	Four bolt housing (pillow blocks only)									

Link-Belt Nomenclature

Symbol	Description	P	-B22	4	39	F	H
EF	Flange unit; 4-bolt square	 	 	 	 	 	
EP	Pillow block; cast iron						
F	Flanged unit; 3- and 4-bolt						
FC	Flanged cartridge unit; 4-bolt round						
P	Pillow block						
B22	Spherical roller bearing; extended inner ring separable outer rings	 	 	 	 	 	
4	400 series designation (one locking collar)						
5	500 series designation (two locking collars)						
6	600 series designation (adapter mounted)	 	 	 	 	 	
39	Shaft diameter in 16ths of an inch						
F	Four bolt base pillow block	 	 	 	 	 	
H	Floating labyrinth seal						
E	Spring-loaded lip seal						
E7	Triple lip seal	 	 	 	 	 	

Interchange

Use the charts below to find the corresponding Rex or Link-Belt roller bearing nomenclature between another company's housing style. If you are unsure of the components of your bearing, contact one of our many trained Rexnord Customer Care Specialists today for assistance.

Housing Style					
Bearing Type	Pillow Block - Standard 2 bolt	Pillow Block - Standard 4 bolt	Pillow Block - Type 'E'	Flange Block - 4 bolt	Flange Block - Type 'E'
Rex	ZA ^{XXX}	ZA ^{XXX} F	ZEP ^{XXX}	ZB ^{XXX}	ZEF ^{XXX}
Link-Belt	PB22 ^{XXX} H	PB22 ^{XXX} FH	EPB22 ^{XXX} H	FB22 ^{XXX} H	EFB22 ^{XXX} H
Dodge	P2B-S2 ^{XXX}	P4B-S2 ^{XXX}	P2B-E ^{XXX}	FB-S2 ^{XXX}	FB-E ^{XXX}
SKF	SYR ^X	FSYR ^X	SYE ^X	FYR ^X	FYE ^X
Browning	SPB100NE ^X	SPB100FNE ^X	PBE920 ^X	SFB100NE ^X	FBE920 ^X
Sealmaster	RPB ^{XXX} 2	RPB ^{XXX} 4	ERP ^{XXX} 2	RFBA ^{XXX}	RFB ^{XXX}

Housing Style					
Bearing Type	A Piloted Flange	B Flange Bracket	C Takeup-Center Pull	D Takeup-Protected Screw	E Takeup Frame-Protected Screw
Rex	ZBR ^{XXX}	N/A	ZT ^X ^{XXX} ZT ^{XX} ^{XXX}	ZN ^X ^{XXX} ZN ^{XX} ^{XXX}	N/A
Link-Belt	FCB22 ^{XXX} H	FBB22 ^{XXX} H	TB22 ^{XXX} H	DSB22 ^{XXX} H	LHD
Dodge	FC-S2 ^{XXX}	NONE	WSTU-S2 ^{XXX}	TPHU-S2 ^{XXX}	HD
SKF	FYRP ^X	NONE	TBR ^X	TRH ^X	TFT
Browning	SFC100NE ^X	NONE	STU100NE ^X TUE920 ^X	TU900 ^X	T2000
Sealmaster	RFPA ^{XXX}	NONE	STU ^{XXX} USTU5000 ^X	NONE	NONE

*XXX - Indicates Series/shaft size

Seals

Rex® Seals*



Rex K Seal Light
Contact Seal



Rex M Seal Heavy
Contact Seal



Rex G Seal
Triple Lip Seal



Rex Z Seal
Non-Contact Seal

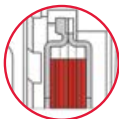
Link-Belt® Seals**



Link-Belt E Seal
Heavy Contact Seal



Link-Belt E7 Seal
Triple Lip Seal



Link-Belt H Seal
Non-Contact Seal

**Additional Rex seal options available. Contact a Rexnord Customer Care Specialist for more information*

***Three proven seal choices*

Bearing Seal Replacement Guide

Step A: Applies to Seals Z, K, H, G, and E7 Replacement

Tools Needed: Safety glasses, screwdrivers (very small flathead to remove snap ring and seal, large flat or Phillips to remove Micro-Lok), tools to remove shaft locking device.



Safety Glasses



Phillips Screwdriver



Flathead Screwdriver



Drift / Flat-Nosed Punch



Ball Peen Hammer



1. Remove shaft-locking device.



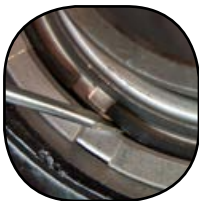
2. Place pillow block on face (lay flat on back).



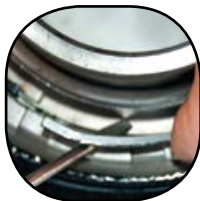
3. Remove Micro-Lok key, washer and screw. Keep washer in screw and do not lose.



4. Mark Micro-Lok position by marking slot in threaded cover and hole in housing.



5. Remove snap ring. Place small flathead screwdriver tip behind the bend of the snap ring; place hand over the face of the bearing to maintain control of the snap ring. Refer to page 12 for step 5 if replacing an M or E seal.





6. Walk seal out of bearing past inner race hubs using small flathead screwdriver.



7. Place Z,K,H,G, or E7 seal in place
- Make sure raised indent on seal is in front.
 - Slide over inner race hub until back face of seal hits seal groove face.
 - If installing M or E seal, go to **Step B**.



Note: Raised indent and final position of snap ring.



8. Replace snap ring. Start snap ring into housing groove up against raised tab in seal. Wind snap ring into place until completely seated in groove. Use flathead screw driver to push on snap ring to make sure it has popped into the seal groove all the way around. Make sure raised tab of seal is between the two snap ring ends. If not, use flathead screwdriver to move seal tab between ends of snap ring.

9. Replace Micro-Lok key, screw and washer into marked position. If threaded cover has rotated during seal installation, rotate back to marked position. Make sure compression washer is between screw head and key, and that the bend is down on the Micro-Lok key. Tighten screw until washer is compressed.

Caution: Do not overtighten.



Step B: If Replacing Z, K, H, G, or E7 with M or E Seal

Placing an M or E Seal in the Bearing
Follow Steps 1 – 7 in **Step A**;
Continue steps 10 – 12 below.

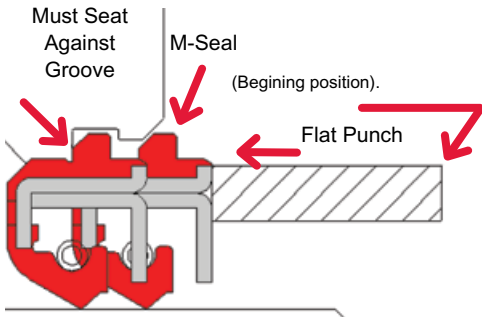
Tools Needed: Safety glasses, flat nosed punch, ball peen hammer.



- 10.** With the metal side out, push M or E over inner race hub until it rests on housing.



- 11.** Place flat nose punch over junction of two metal pieces. Begin bumping the seal free while moving punch around seal in 90° increments until seal is completely seated in seal groove of housing. Refer to diagram at top of next page.



Key is making sure the rubber is seated all the way into the groove.

12. Replace Micro-Lok key, screw and washer into marked position. If threaded cover has rotated during seal installation, rotate back to marked position. Make sure compression washer is between screw head and key, and the bend is down on the Micro-Lok key. Tighten screw until washer is compressed.

Caution: Do not overtighten.



How to Remove M or E Seal

Tools Needed: Safety glasses, large flathead screwdriver.



1. Place screwdriver between the junction of the metal and rubber at the outside diameter of the seal.




2. Pry seal using a rotating motion of the screwdriver until seal pops out of housing groove. Will need to pry in several locations to completely pop seal out of groove in housing. Refer to page 10 for installation of new seal.

Rexnord Setting Clearance

Steps A – C (i, ii, iii)


NOTE: *Tight* settings are to the left.
Loose settings are to the right.



Setting Clearance

PART NO Roller Bearing		REV 8	PROCESS NAME Setting clearance				
BUSINESS UNIT Assembly	PROCESS Set clearance	W/C Roller	MACH #	PART TYPE roller	WFO APPROVAL J. Peek	DATE 12/15/2010	
PROCESS DESCRIPTION Watson axial clearance settings						QC APPROVAL J. Peek	DATE 12/15/2010

Size Code	REX (DG) SHAFT SIZE			LINK-BEARING FAMILY SIZE		Clearance Symbol						
	2000, 3000 6000	5000	9000	B22400	B22500	2	0	3	4	5	6	
2	012 - 100	-----	-----	12 - 17		25	35	45	55	65	75	
3	102 - 104	-----	-----	18 - 20		30	40	50	60	75	85	
4	107 - 108	107	-----	21 - 24	23	35	45	55	65	80	95	
5	111 - 112	108-111	-----	25 - 28	24 - 27	40	50	60	70	95	115	
6	115 - 200	115	-----	29 - 32	28 - 31	45	65	85	105	115	135	
7	203 - 204	200-203	115 - 200	33 - 36	32 - 35	30	45	60	75	85	95	
8	206 - 208	207	203	37 - 40	36 - 39	35	50	65	80	95	105	
9	211 - 300	208-215	207 - 208	41 - 48	40 - 47	40	60	80	100	120	145	
10	303 - 308	303-307	211 - 300	49 - 56	48 - 55	50	75	100	125	140	160	
11	311 - 400	311-400	303 - 307	57 - 64	56 - 64	60	90	120	150	170	190	
12	403 - 408	403-408	311 - 400		65 - 72	40	60	80	100	115	135	
13	415 - 500	415-500	403 - 407		73 - 80	50	75	90	115	135	155	
14	507	507	415 - 500			88	55	80	90	120	145	165
15	515 - 600	515 - 600	503 - 507		96	70	95	120	150	180	210	
16	607 - 700	607 - 700	515 - 607		112	80	110	150	180	220	255	



Set clearance to nearest notch.

- A.** You must know what brand, series, shaft size or size code. The example we are using is Rex 2000 series 2 7/16" shaft, size code 8.

Clearance Symbol				
	Link Bel (STD)	REX (DG) (STD)	6000 & 9000 Series (STD)	
2	0	3	4	5
25	35	45	55	65
30	40	50	60	75
35	45	55	65	80
40	50	60	70	95
45	55	65	75	95

- B. Review **"REX (STD)."** (STD) means standard clearance setting from factory.

	REX (DG) SHAFT SIZE		
Size Code	2000, 3000 6000	5000	9000
2	012 - 100	----	----
3	102 - 104	----	----
4	107 - 108	107	----
5	111 - 112	108-111	----
6	115 - 200	115	----
7	203 - 204	200-203	115 - 200
8	206 - 208	207	203
9	211 - 300	208-215	207 - 208
10	303 - 308	303-307	211 - 300

- C. In this example find size code 8.

- i. Move across chart to column Rex (STD) and note the angle of rotation; in this case, 65°.

Size Code	2000, 3000 6000	5000	9000	B22400
2	012 - 100	-----	-----	12 - 17
3	102 - 104	-----	-----	18 - 20
4	107 - 108	107	-----	21 - 24
5	111 - 112	108-111	-----	25 - 28
6	115 - 200	115	-----	29 - 32
7	203 - 204	200-203	115 - 200	33 - 36
8	207 - 208	207	203	37 - 40
9	211 - 300	208-215	207 - 208	41 - 48
10	303 - 308	303-307	211 - 300	49 - 56
11	311 - 400	311-400	303 - 307	57 - 64
12	403 - 408	403-408	311 - 400	
13	415 - 500	415-500	403 - 407	
14	507	507	415 - 500	
15	515 - 600	515 - 600	503 - 507	

i.

i.

- ii. Looser settings are to the right. Move one column to right and note angle; in this case, 80°.

PART NO.		REV.		PROCESS NAME	
Subst. Name		E		Section Clearance	
NUMBER UNIT	PROCESS	SEC	BACKS	PLAN	DATE
Assembly	Set clearance	Roller		J. Park	12/18/2010
PROCESS DESCRIPTION					APP. NO.
Watson axial clearance settings					J. Park 12/18/2010
Clearance Symbol					
REX (DG) SHAFT SIZE		LINK-BELT FAMILY SIZE		Link (STD)	Link (STD) Series (R10)
Size Code	3000, 3000 6000	5000	9000	B22400	B22500
2	012 - 100	----	----	12 - 17	25 35 45 55 65 75
3	102 - 104	----	----	18 - 20	30 40 50 60 70 85
4	107 - 108	107	----	21 - 24	23 35 45 55 65 80 95
5	111 - 112	108-111	----	25 - 28	24 - 27 40 50 60 70 95 115
6	115 - 200	115	----	29 - 32	28 - 31 45 65 85 105 115 135
7	203 - 204	200-203	115 - 200	33 - 36	32 - 35 30 45 60 75 85 95
8	207 - 208	207	203	37 - 40	36 30 34 65 80 95 105
9	211 - 300	208-215	207 - 208	41 - 48	40 - 47 40 60 80 100 120 145
10	303 - 308	303-307	211 - 300	49 - 56	48 - 55 50 75 100 125 140 160
11	311 - 400	311-400	303 - 307	57 - 64	56 - 64 60 90 120 150 170 190
12	403 - 408	403-408	311 - 400	65 - 72	40 60 80 100 115 135
13	415 - 500	415-500	403 - 407	73 - 80	50 75 90 115 145
14	507	507	415 - 500	88	55 80 90 120 145 165
15	515 - 600	515 - 600	503 - 507	96	70 95 120 150 180 210
16	607 - 700	607 - 700	515 - 607	112	80 110 150 180 220 255

Set clearance to nearest notch.

ii.

iii.

- iii. Subtract the two angles ($80 - 65 = 15^\circ$). This is the amount of rotation counterclockwise to loosen threaded cover.

Loosening

When to Adjust

Looser Clearance

- High-speed
- High-temperature

Tools Needed: Safety glasses, screwdriver (Phillips & flathead), hammer, dead-blow hammer, Rexnord setting clearance chart, block of wood to support bearing housing unit.

REXNORD Setting Clearance

Watson axial clearance settings

REX (DG) SHAFT SIZE	LINK-BELT FAMILY SIZE	Clearance (microns)						
		2	3	4	5	6	8	
1 200-300	1000	12-17	25	30	40	50	60	75
2 200-300	1000	18-20	30	40	50	60	75	90
3 200-300	1000	21-24	35	45	55	65	80	95
4 200-300	1000	25-28	40	50	60	70	85	100
5 200-300	1000	29-32	45	55	65	75	90	105
6 200-300	1000	33-36	50	60	70	80	95	110
7 200-300	1000	37-40	55	65	75	85	100	115
8 200-300	1000	41-45	60	70	80	90	105	120
9 200-300	1000	46-50	65	75	85	95	110	125
10 200-300	1000	51-55	70	80	90	100	115	130
11 200-300	1000	56-60	75	85	95	105	120	135
12 200-300	1000	61-65	80	90	100	110	125	140
13 200-300	1000	66-70	85	95	105	115	130	145
14 200-300	1000	71-75	90	100	110	120	135	150
15 200-300	1000	76-80	95	105	115	125	140	155
16 200-300	1000	81-85	100	110	120	130	145	160
17 200-300	1000	86-90	105	115	125	135	150	165
18 200-300	1000	91-95	110	120	130	140	155	170
19 200-300	1000	96-100	115	125	135	145	160	175

110°

Rexnord Setting Clearance Chart



Safety Glasses



Flathead Screwdriver



Ball Peen Hammer



Phillips Screwdriver



Drift / Flat-Nosed
Punch



Dead-Blow
Hammer



Supports for
Bearing Back



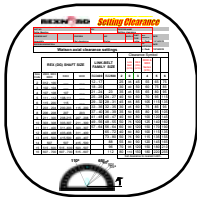
1. Remove shaft-locking device.



2. Remove Micro-Lok key, screw and washer. Make sure not to lose washer.



3. Mark position on threaded cover and housing.



4. To adjust one setting loose, reference "**Rexnord Setting Clearance Chart**" for Steps A – C (i, ii, iii).

After reviewing “Rexnord Setting Clearance Chart” continue onto steps 5-12.



- 5.** Noting the original marks, loosen threaded cover 15° using a hammer and flat screwdriver. For reference, the holes in the housing are spaced at 15° , and slots in the threaded cover are spaced at 30° .



- 6.** Re-mark the new position for future reference.



- 7.** Turn housing over and provide supports so inner race on opposite side sits above table.



- 8.** Remove seal per seal removal instructions.

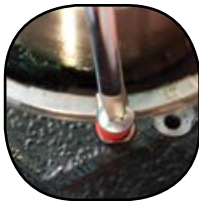


9. Place a block of wood, which just fits over the face of the inner ring, on the inner ring face.
10. Using a hammer, hit the block of wood with several sharp blows, trying to keep inner race square to housing. This procedure moves the outer race up against the threaded cover, which was just loosened.



11. After hitting, turn bearing over and try to rotate threaded cover clockwise by hand. If it does not move, clearance has been set properly. If threaded cover moves, move it back to loosened position and repeat steps **9** and **10** until threaded cover will not rotate clockwise by hand. *(In some cases, an arbor press may be required to perform steps 9 and 10).*

12. Once clearance is set, install Micro-Lok assembly, making sure compression washer is between screw head and key, and the bend is down on the Micro-Lok key. Tighten screw until washer is compressed.



Tightening

When to Adjust

Tightening Clearance

- Impact or shock loads
- Minimize shaft movement or run-out
- Noise reduction in vibratory applications



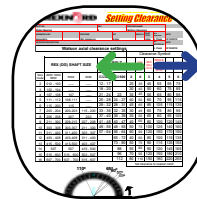
1. Remove shaft-locking device.



2. Remove Micro-Lok key, screw and washer. Make sure not to lose washer.



3. Mark position on threaded cover and housing.



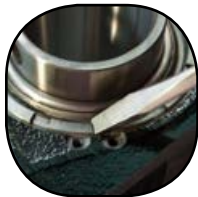
4. To adjust one setting tight, reference **“Rexnord Setting Clearance Chart”** for Steps A – C (i, ii). See iii on next page. **NOTE:** Tight settings are to the left. Loose settings are to the right.

PART NO		REV		PROCESS NAME		
Roller Bearing				Setting clearance		
REVISED BY	PROCESS	ENC	CHECKED	DATE	2013	
APPROVED	Set clearance	Roller	DATE	J. Park	12-19-2010	
PROCESS DESCRIPTION					APPROVAL	
Watson axial clearance settings					J. Park	
					12-19-2010	
	REX (DG) SHAFT SIZE				Clearance Symbol	
	LINK-BELT FAMILY SIZE				2	3
Size Code	3000-3000 8000	5000	9000	S22400	S22900	2 3 4 5 6
2	012 - 100	----	----	12 - 17	----	25 35 45 55 65 75
3	102 - 104	----	----	18 - 20	----	30 40 50 60 75 85
4	107 - 108	107	----	21 - 24	23	35 45 55 65 80 95
5	111 - 112	108-111	----	25 - 28	24 - 27	40 50 60 70 95 115
6	115 - 200	115	----	29 - 32	28 - 31	45 65 85 105 115 135
7	203 - 204	200-203	115 - 200	33 - 36	32 - 35	30 45 60 75 85 95
8	305 - 306	607	500	37 - 40	36 - 39	35 65 80 105
9	211 - 300	208-215	207 - 208	41 - 48	40 - 47	40 60 80 100 120 145
10	303 - 308	303-307	211 - 300	49 - 56	48 - 55	50 75 100 125 140 160
11	311 - 400	311-400	303 - 307	57 - 64	56 - 64	60 90 120 150 170 190
12	403 - 408	403-408	311 - 400	65 - 72	40 - 60	65 80 100 115 135
13	415 - 500	415-500	403 - 407	73 - 80	50 - 75	80 115 135 155
14	507	507	415 - 500	88	55 - 80	80 90 120 145 165
15	515 - 600	515 - 600	503 - 603	96	70 - 95	120 150 180 210
16	607 - 700	607 - 700	515 - 607	112	80 - 110	150 180 220 255

Set clearance to nearest notch.

- iii. Subtract the two angles. $65 - 50 = 15^\circ$. This is the amount of rotation clockwise to tighten threaded cover.

After reviewing "Rexnord Setting Clearance Chart, i., ii.," continue onto steps 5-6.



5. Noting the original marks, tighten threaded cover 15° using a hammer and flat screwdriver. For reference, the holes in the housing are spaced at 15° , and slots in the threaded cover are spaced at 30° .



6. Once clearance is set, install Micro-Lok assembly, making sure compression washer is between screw head and key, and the bend is down on the Micro-Lok key. Tighten screw until washer is compressed.

Bearing Installation Guide

Centrik-Lok

Tools Needed: Safety glasses, torque wrench, proper size hex key.



Safety Glasses



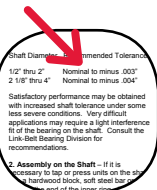
Torque Wrench



Proper Size
Hex Key



1. Review service instructions: **Link-Belt® Series CL 200 Centrik-Lok® (B-BBU-20-A.)**



2. Make sure shaft is clean, round, and free of burrs and nicks; check size per installation instructions.
3. Slide bearings onto shaft and position. Lightly bolt housings to mounting structure.



Recommended Collar Screw Torque

Shaft Size (in)	Screw Size	Socket Size	Inch-Pounds
3/4 - 1 3/16	#10	5/32	65 - 72
1 1/4 - 1 3/4	1/4	3/16	151 - 168
1 7/8 - 2 7/16	5/8	1/4	313 - 348

- 4.** Align bearing units and securely fasten to mounting structure.
- 5.** Find collar screw torque in service instructions.



- 6.** Set torque wrench to proper torque.



- 7.** Snug both collar screws.

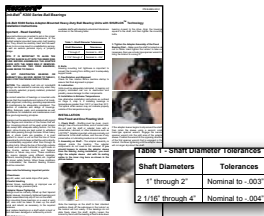


- 8.** Incrementally tighten collar screws by tightening one screw slightly more than the other until the specified torque is reached.

Bearing Installation Guide

SHURLOK®

Tools Needed: Safety glasses, proper size hex key for set screw in nut, impact SHURLOK tool, “C” type SHURLOK tool with breaker bar or hammer and drift.



1. Review service instructions: ***Link-Belt A300 Series Ball Bearings Installation Instructions BR3-008*** or ***Rex Shurlok 6000 series Installation Instructions BR3-002***.
2. Make sure shaft is clean, round, and free of burrs and nicks and on size, per installation instructions.



3. Loosen set screws in SHURLOK locknut.
4. Back-off locknut so bearing will slide onto shaft easily. Make sure locknut is still engaged with threads on inner ring.

5. In general when mounting SHURLOK product, fixed and expansion bearings are used.



6. Slide bearings onto shaft and position. Fixed bearing generally is positioned closest to drive.
7. Tighten mounting bolts to mounting structure. This assumes the use of fixed and expansion bearings. Refer to service instructions for two fixed bearings.



8. Tighten adapter assembly of fixed unit first.
9. Hand-tighten locknut to take out the looseness, then snug using SHURLOK installation tools or hook spanner. This process removes the clearance between the shaft, sleeve and inner race.



- 10.** Once snug, mark position of the locknut, sleeve and shaft with a marker.



- 11.** Rotate locknut clockwise $\frac{1}{2}$ turn using SHURLOK tools or a hammer and drift.



- 12.** Using the impact spanner, the "C" tool, breaker bar or hammer and drift, tighten locknut in $\frac{1}{8}$ turn increments.

13. Check set screw location to make sure they are not over the slot in the adapter sleeve. If they are, tighten locknut until screw clears slot.



14. Tighten set-screws using the torque table in the service instructions or use a hex key and tighten until hex key yields.
15. Repeat process for expansion unit, only make sure to center expansion cartridge in center of housing.



866-REXNORD
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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.



Link-Belt® Ball Bearing Screw Conveyor Trough End

INSTALLATION INSTRUCTIONS FF200 Series

Table 3) Lubrication Information

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.

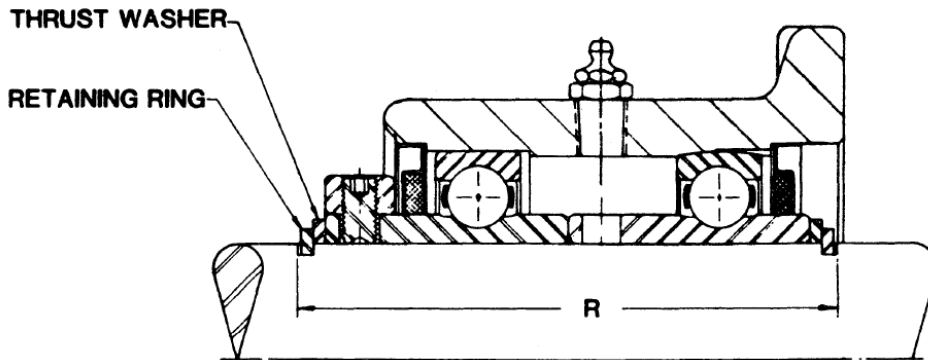


Table 4) Thrust Washer and Retaining Ring Detail

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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Link-Belt® Klean-Gard Bearing Units

INSTALLATION INSTRUCTIONS KLCBSS200, KLFSS200, KLCXSS200, & KLPSS200 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. The recommended shaft tolerance is nominal to minus (-) 0.0005". Shaft must be to correct size. Clean shaft and mounting surface as needed.
2. Coat the shaft and bearing bore with grease or oil to facilitate assembly.
3. 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.
4. Where shimming is required – use full shims across the housing base – not just at the bolt holes. Position and loosely bolt housing to mounting base. SAE Grade 2 mounting bolts are recommended.
5. Establish the final shaft position. Align bearings by hand or rubber mallet if required. Securely bolt units to the mounting structure by correctly torquing the bolts to the proper value listed in TABLE 2 below.
6. *Lock bearings to the shaft.* Tighten the set screws on the bearing to the proper tightening torque which can be found in the SET SCREW TORQUE TABLE below. Alternate torquing the screws to prevent unequal loading. See comment 7 in Additional Installation Comments.
7. *Installing Orange Safety Cap* – With the rubber O-ring placed inside the cap, press cap onto set screw side of housing. Cap will snap on.

NOTE: All units come with an orange plastic pipe plug in box. If lube for life bearing is required, removed the grease fitting in the housing and replace with plastic pipe plug.

Table 1) Inner Ring Setscrew Tightening Torque Values

RECOMMENDED SET SCREW TIGHTENING TORQUE			
Set Screw Size in.	Series	Shaft Size (in.)	Set Screw Seating Torque (Inch- Pounds)
1/4	212 – 2E20	3/4 – 1 1/4	87 – 92
5/16	220 – 224	1 1/4 – 1 1/2	165 – 185

Table 2) Housing Mounting Bolt Size & Torque Values

HOUSING BOLT RECOMMENDATIONS				
Shaft size in (mm)	Flange Housings		Pillow Block Housings	
	Bolt Size (in)	Tightening Torque (lb-ft)	Bolt Size (in)	Tightening Torque (lb-ft)
3/4" 20mm	3/8	20	3/8	20
1" 25mm	3/8	30	3/8	20
1 3/16", 1 1/4" 30mm	3/8	30	1/2	50
1 1/4", 1 3/8", 1 7/16" 35mm	3/8	30	1/2	50
1 1/2" 40mm	3/8	30	1/2	50

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. 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.
6. Avoid direct hammer blows to the bearing and its components by using a soft drift or block.
7. 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 Mobil FM 222 grease. Mobil FM 222 is a NLGI Grade 2 grease with an aluminum complex thickener. It can be used a wide range of speed, loads, and temperatures ranging from freezers to ovens. 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.



Link-Belt® Klean-Gard Bearing Units

INSTALLATION INSTRUCTIONS KLFBS200, KLFSS200, KLFXSS200, & KLPSS200

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 120°F to 160°F	6 months 2-4 months
Moderate to Heavy		32°F to 160°F	1-4 weeks
Slight to Heavy	Direct water splash or exposure to outdoor environment	32°F to 160°F	Daily to 1 week or as determined by inspection of installation
Slight	None	-5°F to 32°F	Determined by inspection of installation

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

Table 4) Relubrication Amount

RECOMMENDED LUBRICATION AMOUNTS		
Shaft Size	Volume Cubic In.	Volume Ounces
3/4" 20mm	.12	.06
1" 25mm	.12	.06
1 3/16", 1 1/4" 30mm	.30	.15
1 1/4", 1 3/8", 1 7/16" 35mm	.30	.15
1 1/2" 40mm	.45	.23

TECHNICAL INFORMATION

Components

- Reinforced Polypropylene Housing.
- AISI 440 Stainless Steel Bearing.
- AISI 304 Seal, Retainer and Set Screws.
- Standard Nitrile Rubber Seals. Viton available upon request.
- Rust Resistant Grease Fitting.
- Plastic pipe plug.
- Orange Safety Caps available upon request.

Self-Alignment

Maximum misalignment between housing and shaft: $\pm 2^\circ$.

Continuous Operating Temperatures

Bearing units can withstand temperatures in the range of -5°F to +160°F. At the maximum temperature, the housing still maintains a high dimensional stability.



Table 5) Cap and Seal Part Numbers

KLEAN-GARD ASSESSORY KIT PART NUMBERS				
Shaft Size	Basic Unit #	DC – Closed Cap w/ O-ring	D – Open Cap w/ Seal and O-Ring*	Rear Auxiliary Seal *
3/4"	212	K2126	K2126D	K212E
20mm	2M20	K2126	K2M206D	K2M20E
1"	216	K2166	K2166D	K216E
25mm	2M25	K2166	K2M256D	K2M25E
1 3/16"	219	K2196	K2196D	K219E
1 1/4"	2E20	K2196	K2E206D	K2E20E
30mm	2M30	K2196	K2M306D	K2M30E
1 1/4"	220	K2236	K2206D	K220E
1 3/8"	222	K2236	K2226D	K222E
1 7/16"	223	K2236	K2236D	K223E
35mm	2M35	K2236	K2M356D	K2M35E
1 1/2"	224	K2256	K2246D	K224E
40mm	2M40	K2256	K2M406D	K2M40E

* For open cap kit (D) or Rear Auxiliary seal in Viton material, add an "L" after the "K". Example: KL2166D and KL216E.

Table 6) Bearing Load Ratings

RECOMMENDED LOAD RATINGS		
Size Code	Bearing Load Ratings	
	Dynamic C	Static Co
204	1960 lb	1480 lb
	8730 N	6590 N
205	2130 lb	1760 lb
	9500 N	7830 N
206	2970 lb	2530 lb
	13190 N	11300 N
207	3900 lb	3340 lb
	17340 N	15300 N
208	4430 lb	4460 lb
	19710 N	19900 N

Table 7) RESISTANCE TO CHEMICAL AGENTS

Chemical Agent	Polypropylene Housing			Rubber						Stainless Steel									
				Standard Nitrile Seal			Optional Viton Seal			AISI 304			AISI 440						
	Note	Conc. %	23°C	Note	Conc. %	23°C	Note	Conc. %	23°C	Note	Conc. %	23°C	Note	Conc. %	23°C				
Acetic Acid		40	A			D			20	D			20	B			25	A	
Acetone			A			D				D			25	A				B	
Aluminum Chloride				Sol.		A	Sol.		Sat.	A			20	D			20	D	
Ammonia		30	A	Sol.		C	Sol.			C			100	A			100	A	
Ammonium Chloride				Sol.		A	Sol.		Sat.	A				A				A	
Amyl Alcohol			A							A				A				A	
Beer			A			A				A				A				A	
Benzoic Acid		Sat.	A	Sol.		A	Sol.			A			100	A				A	
Benzol			C			D				C				A					
Boric Acid		Sat.	A	Sol.		A	Sol.		Sat.	A			Sat.	A			Sat.	A	
Butter			A			A				A				B					
Butyl Alcohol			A			C				A								A	
Calcium Chloride	Sol.	50	A	Sol.		A	Sol.		Sat.	A				A				C	
Carbon Sulphide			A			D				A				A					
Carbon Tetrachloride			D			D				A				B				A	
Chloroform			C			D				A				A				A	
Citric Acid		10	A	Sol.		A			Sat.	A			25	A				A	
Copper Sulphate				Sol.		A	Sol.		Sat.	A			100	A					
Distilled Water			A																
Ethyl Acetate			A			D				D				A				A	
Ethyl Alcohol		96	A			C				A								A	
Ethyl Chloride			D											A				A	
Ethyl Ether			A							D									
Ferric Chloride			A	Sol.		A	Sol.		Sat.	A				D				D	
Food Oils and Fats			A			A				A									
Formaldehyde	Sol.	40	A						40	A								A	
Freon 12						A				C								A	
Gasoline			C			C				A				A				A	
Glycerine			A			A				A				A				A	
Hydrochloric Acid	Sol.	30	A	Sol.	10	C	Sol.	37	A					D			75	D	
Hydrofluoric Acid		40	A			65	D			48	A			20	D			20	D
Hydrogen peroxide		30	A	Sol.	80	D				90	A			10	C				
Lactic Acid	Sol.	20	A	Sol.		A				A				A				C	
Linseed Oil			A			A				A								A	
Magnesium Chloride	Sol.	Sat.	A	Sol.		A	Sol.		Sat.	A				B				A	
Mercury						A				A				A				A	
Methyl Alcohol			A			C				C								A	
Methylene Chloride			C			D				C				B					
Milk			A			A				A				A				A	
Mineral Oil			A			A				A				A				A	
Nitric Acid	Sol.		A	Sol.	10	D				70	A			50	A			50	A
Oleic Acid		98	A			C				C				A				B	
Petroleum						A				A				A				A	
Petroleum Ether			A											A					
Phenol			A			D				A				A				A	
Phosphoric Acid		85	A	Sol.	20	C				85	A			40	B			40	A
Potassium Hydroxide				Sol.		C	Sol.			A				50	B			50	B
Sea Water			A			A				A				A				A	
Silicone Oil			A			A				A								A	
Silver Nitrate	Sol.		A	Sol.		C	Sol.			A				A				A	
Sodium Chloride	Sol.	Sat.	A	Sol.		A	Sol.		Sat.	A				B				B	
Sodium Carbonate	Sol.	Sat.	A	Sol.		A	Sol.			A				100	A			B	
Sodium Hydroxide		52	A	Sol.		C				45	A			20	A			20	A
Sodium Hypochlorite	Sol.	20	A	Sol.		D				5	A			20	C			20	C
Sodium Silicate				Sol.		A								100	A			A	
Sodium Sulphate				Sol.		A	Sol.			A				100	A				
Suds	Sol.		A	Sol.		A				A									
Sulphuric Acid		98	A	Sol.		D				95	A								
Tartaric Acid	Sol.	10	A	Sol.		A				A				50	A			B	
Tetralin			D			D				A									
Tincture of Iodine			A																
Transformer Oil			C			A				A									
Trichloroethylene			C			D				A								A	
Vaseline						A				A								A	
Vinegar			A			C				D				A				A	
Whisky and Wine			A			A				A				A				A	
Xylol			D			D				A				A				A	
Zinc Chloride	Sol.	20	A	Sol.		A	Sol.		Sat.	A				D				B	

Legend
A-No Effect
B-Minor Effect
C-Moderate Effect
D-Severe Effect

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.

