DODGE® SLEEVOIL® RTL SPHERICAL PILLOW BLOCKS
Sizes 2-15/16" through 12"

This manual is only for RTL pillow blocks with "SPHERICAL HOUSING" indicated on the housing name tag. Otherwise use RTL manual MN3060.

These instructions must be read thoroughly before installation or operation. This instruction manual was accurate at the time of printing. Please see **baldor.com** for updated instruction manuals.

Note! The manufacturer of these products, Baldor Electric Company, became ABB Motors and Mechanical Inc. on March 1, 2018. Nameplates, Declaration of Conformity and other collateral material may contain the company name of Baldor Electric Company and the brand names of Baldor-Dodge and Baldor-Reliance until such time as all materials have been updated to reflect our new corporate identity.

WARNING: To ensure the drive is not unexpectedly started, turn off and lock-out or tag power source before proceeding. Failure to observe these precautions could result in bodily injury.

WARNING: All products over 25 kg (55 lbs) are noted on the shipping package. Proper lifting practices are required for these products.

CAUTION: RTL Spherical housings are not compatible with pre-2014 RTL liners, (See Figure 1).

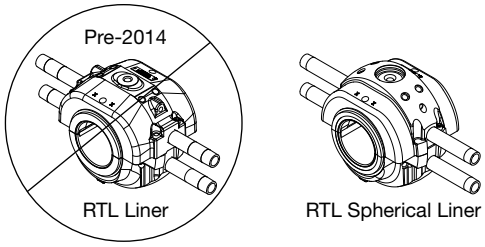


Figure 1 - Compatibility

NOTE: RTL Spherical liners are backwards compatible with all RTL housings. Use RTL manual MN3060 when installing RTL Spherical liner in an old housing (pre-2014).

CAUTION: Do not scrape, rebabbitt or otherwise alter this product. Such action adversely affects bearing performance and may result in damage to or destruction of equipment.

WARNING: Because of the possible danger to person(s) or property from accidents which may result from the improper use of products, it is important that correct procedures be followed. Products must be used in accordance with the engineering information specified in the catalog. Proper installation, maintenance and operation procedures must be observed. The instructions in the instruction manuals must be followed. Inspections should be made as necessary to assure safe operation under prevailing conditions. Proper guards and other suitable safety devices or procedures as may be desirable or as may be specified in safety codes should be provided, and are neither provided by ABB nor are the responsibility of ABB. This unit and its associated equipment must be installed, adjusted and maintained by qualified personnel who are familiar with the construction and operation of all equipment in the system and the potential hazards involved. When risk to persons or property may be involved, a holding device must be an integral part of the driven equipment beyond the speed reducer output shaft.

SLEEVOIL RTL Spherical pillow blocks are a direct replacement for RTL pillow blocks. The RTL Spherical design incorporates a spherical seat on both halves of the housing, gripping the liner on all sides. The major benefits are additional liner stability and improved life when rotor balance, alignment and vibration are less than ideal.

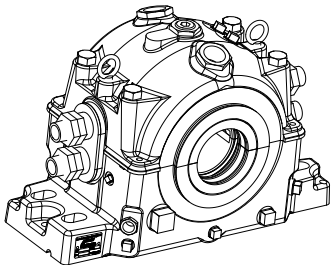


Figure 2 - RTL Spherical Pillow Block

RTL Spherical pillow blocks are available as non-expansion and expansion types. Non-expansion pillow blocks require a thrust plate kit and thrust collar, as shown in Figure 3. Dodge offers a replaceable split thrust collar. All RTL Spherical pillow blocks come standard with two trapezoidal oil rings.

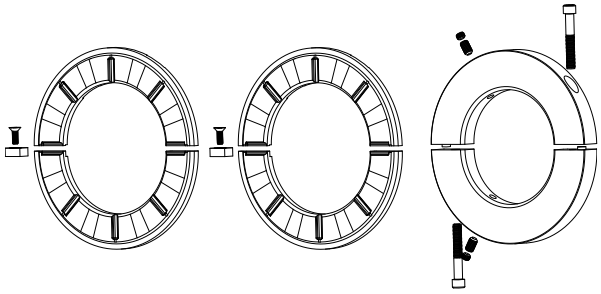


Figure 3 - Thrust Plates and Split Thrust Collar

PRE-ASSEMBLY INSTRUCTIONS

Refer to applicable contract/assembly drawings to verify that all parts are available prior to assembly. Disassemble and thoroughly clean all parts of the pillow block (including pipe plugs). The installer is the last person to inspect all parts for fit, damage and cleanliness. Care MUST be taken to avoid contaminating the internal surfaces of the bearing. Flush bearing with equipment manufacturer's recommended oil prior to use.

WARNING: Rust preventatives and solvents can be toxic and/or flammable. Follow directions and safety procedures recommended by their manufacturers.

WARNING: Liner assembly has critical machined surfaces which are easily damaged. Use care in handling to protect these surfaces. Liner parts should be placed on a soft, CLEAN surface.

For ease of installation, the housings and liners are split and match-marked. The split halves are machined together and must not be interchanged. The match-mark on the housing is found near the joint in the grommet area. The match-mark on the liner is found on the outer diameter of the pilot on one end of the liner. The match-mark locations can be seen in Figure 4.

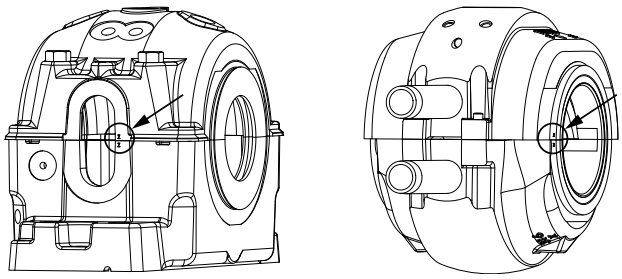


Figure 4 - Housing and Liner Match-Marks

INSTALLATION OF BASES

WARNING: To ensure that drive is not unexpectedly started. Turn off and lock out or tag power source before proceeding. Failure to observe these precautions could result in bodily injury.

Inspect shaft to insure it is smooth (32 micro-inch or better), and free of burrs and rough spots. Standard shaft diametrical tolerance should be nominal +.000/-.002" unless otherwise specified on shaft detail drawing.

NOTE: Liner has been machined to close tolerances. Do not scrape liner bore.

Check mounting structure to insure it is rigid, level and well supported. Position housing base on pedestal so oil gauge is in position specified on construction drawing, as shown in Figure 5. **Do NOT torque down housing base to pedestal.**

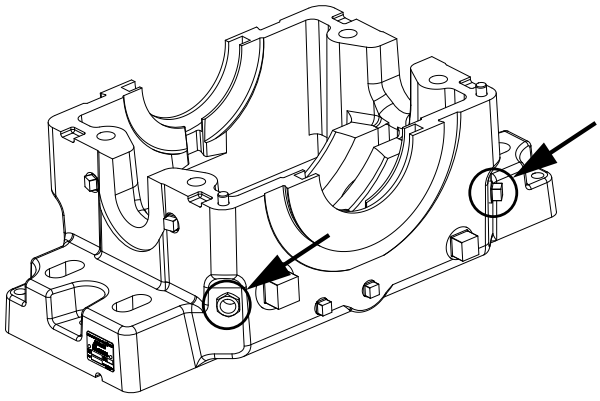


Figure 5 - Oil Gauge Locations

Apply oil to the spherical seats of the housing base, as shown in Figure 6.

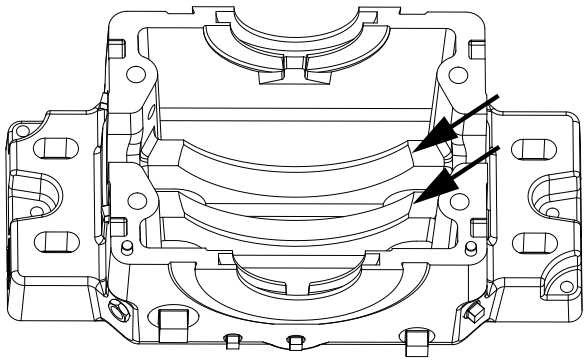


Figure 6 - Spherical Seats

Set liner base in housing base. **Make sure the two thermocouple/RTD holes in the liner are aligned with the two thermocouple/RTD holes in the housing (see Figure 7).** If the shaft is already supported in place, the liner can be rolled around the shaft into the housing seat. To do this, remove one of the water pipes from the liner base. Plug the water pipe hole with clean rag to prevent contaminants from entering the housing. Apply oil to the liner bearing surface and roll the liner around the shaft into place. It may be necessary to bolt the housing base down to allow the liner to slip into the housing seat. Remove the rag and reinstall water pipe using pipe sealant.

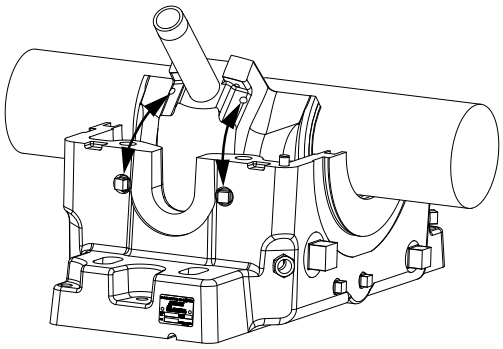


Figure 7 - Align Thermocouple/RTD Holes

Oil shaft liberally in the bearing area and CAREFULLY set shaft in place.

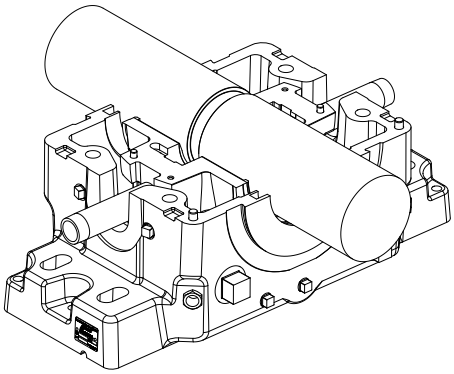


Figure 8 - Liner Base Installed

INSTALLATION OF THRUST COLLAR (for non-expansion bearings only)

NOTE: For integral thrust collars, please refer to ABB drawing B4289.

If bearing is non-expansion (fixed) type, check thrust collar for burrs and scratches. Use crocus cloth (NOT emery) to smooth any scratches on the thrust collar faces.

If a split thrust collar is used, make sure joints of the collar are clean. Place both halves of the thrust collar into shaft groove and tighten clamp screws alternately and evenly to torque value specified in Table 1.

NOTE: Set and jam screws are shipped separately.

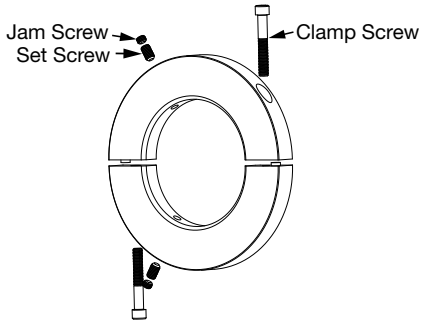


Figure 9 - Split Thrust Collar

The collar faces must be smooth with no offset at the split lines.

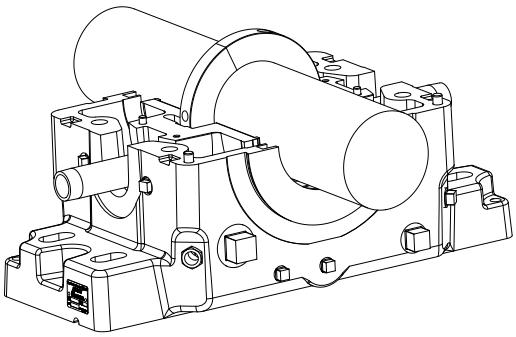


Figure 10 - Thrust Collar Installed

Install and tighten set screws to value specified in Table 1. **Install and tighten jam screws 1/10 of torque specified for set screws.**

Table 1 - Thrust Collar Torque Values

RTL SLEEVOIL SIZE	THRUST COLLAR			
	CLAMP SCREW		SET SCREW	
	SCREW SIZE (SOC. HEX)	WRENCH TORQUE (IN.-LBS.)	SCREW SIZE (SOC. HEX)	WRENCH TORQUE (IN.-LBS.)
2-15/16 RTL	¼ - 20NC	160	5/16 - 24NF	160
3-7/16 RTL	¼ - 20NC	160	5/16 - 24NF	160
3-15/16 RTL	¼ - 20NC	160	5/16 - 24NF	160
4-7/16 RTL	¼ - 20NC	160	5/16 - 24NF	160
4-15/16 RTL	5/16 - 18NC	325	5/16 - 24NF	160
5-7/16 RTL	3/8 - 16NC	580	3/8 - 16NC	275
6 RTL	½ - 13NC	1425	3/8 - 16NC	275
7 RTL	½ - 13NC	1425	3/8 - 16NC	275
8 RTL	½ - 13NC	1425	5/8 - 11NC	1200
9 RTL	5/8 - 11NC	2800	5/8 - 11NC	1200
10 RTL	¾ - 10NC	5000	5/8 - 11NC	1200
12 RTL	¾ - 10NC	5000	5/8- 11NC	1200

INSTALLATION OF OIL RINGS

Oil rings are shipped disassembled with 2 extra screws. Place oil rings around outside of liner base and over shaft, as shown in Figure 11.

NOTE: Oil ring halves are match-marked and MUST NOT be interchanged.

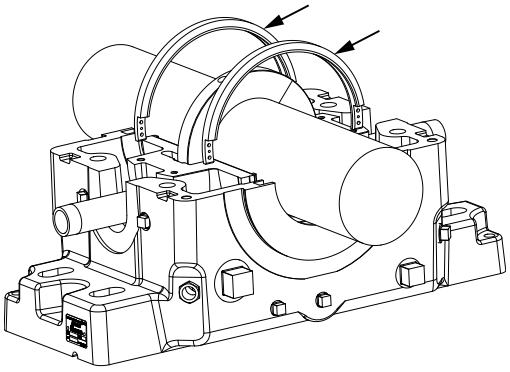


Figure 11 - Oil Ring Installation

Install and tighten the four screws securely in each oil ring using low strength threadlocker, as shown in Figure 12.

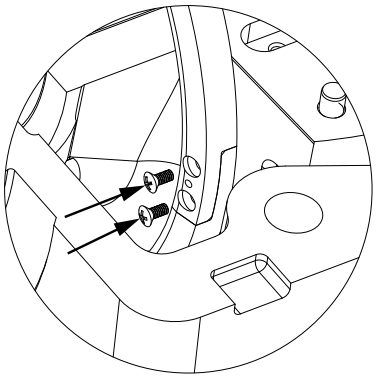


Figure 12 - Oil Ring Screws

Make sure oil rings rotate freely on shaft.

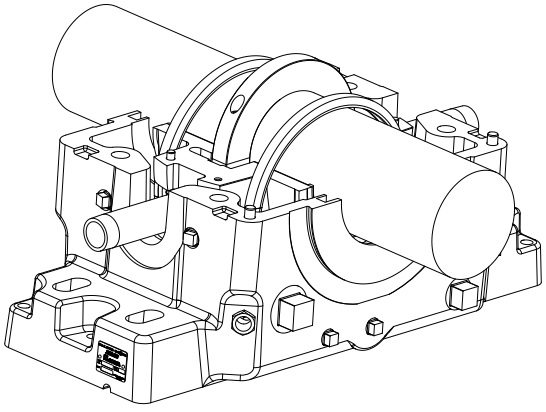


Figure 13 - Oil Rings Installed

INSTALLATION OF THRUST PLATES (for non-expansion bearings)

Install the two retainer washers into the slots in liner base, as shown in Figure 14.

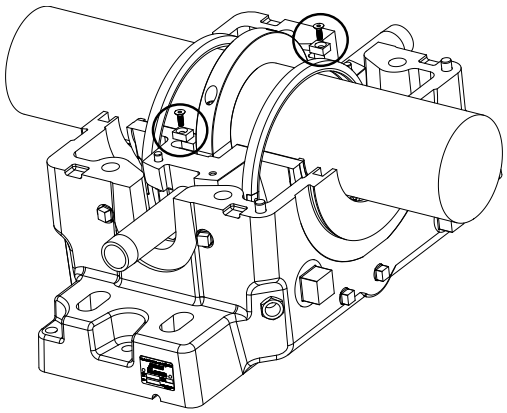


Figure 14 - Retainer Washer Installation

NOTE: Thrust plates are shipped in protective wax with the babbitted faces on the outside. Be careful not to damage the babbitted faces when peeling off the wax.

NOTE: Thrust plate halves are match-marked and MUST NOT be interchanged.

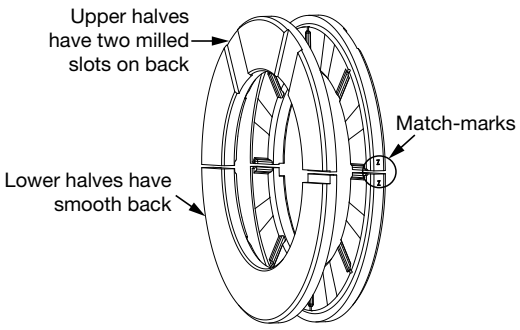


Figure 15 - Thrust Plate Set

Clean one set of thrust plates and oil plate halves liberally.

Install the lower plate half first (without the two milled slots on the steel back). Press the babbitted face against the thrust collar and rotate plate around shaft into liner cavity. Rotate plate until stopped by retainer washer, as shown in Figure 16.

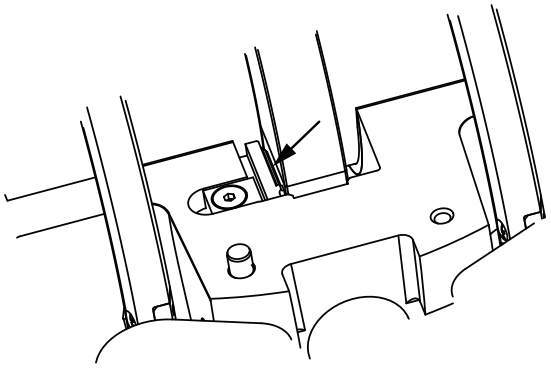


Figure 16 - Thrust Plate Installation

Place the matching upper thrust plate half (the half with two milled slots on steel back) against thrust collar, making sure the babbitted face is against the thrust collar.

Clean and oil the second thrust plate set and install in same manner. It may be necessary to move the shaft or housing slightly to obtain enough clearance in the liner cavity to install the second plate set.

NOTE: Total axial clearance between thrust plates and thrust collar is .015 - .030".

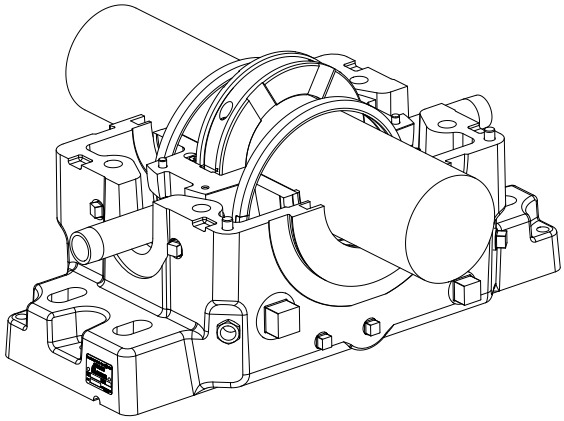


Figure 17 - Thrust Plates Installed

INSTALLATION OF LINER CAP

Apply oil to the bearing area of liner cap.

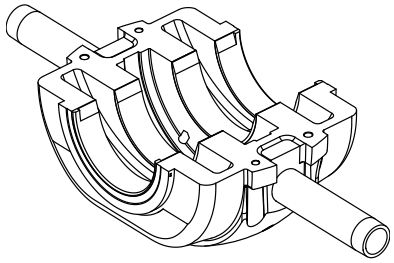


Figure 18 - Liner Cap

WARNING: Whenever removing the liner cap, make certain that both upper thrust plate halves remain in place next to the thrust collar. If a plate half should remain in the liner cap, it can drop from the liner and cause injury.

CAREFULLY locate liner cap on liner base. These SLEEVOIL liners have match-marks permanently stamped on the pilot outside diameter on one end. These match marks ensure that halves stay paired and are oriented correctly. Make sure oil rings rotate freely. End faces of liner should have no appreciable offset.

NOTE: If liner cap on non-expansion bearing will not drop into place, remove cap and reposition thrust plates tightly against thrust collar. Reinstall liner cap.

Install cap screws and tighten alternately to torque given in Table 2, as shown in Figure 19.

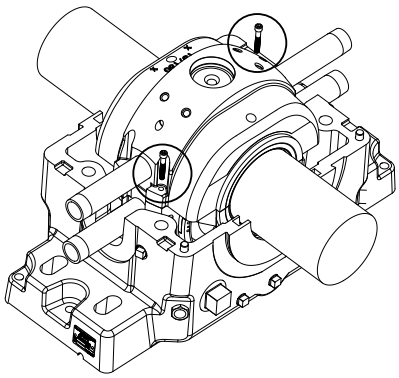


Figure 19 - Liner Cap Installation

Table 2 - Liner Cap Torque Values

RTL SLEEVOIL SIZE	LINER CAP BOLTS	
	THREAD SIZE	TORQUE (IN-LBS)
2-15/16	5/16 – 18	132
3-7/16	5/16 – 18	132
3-15/16	5/16 – 18	132
4-7/16	5/16 – 18	132
4-15/16	5/16 – 18	132
5-7/16	5/16 – 18	132
6	3/8 – 16	240
7	1/2 – 13	600
8	1/2 – 13	600
9	1/2 – 13	600
10	3/4 – 10	2100
12	3/4 – 10	2100

Check alignment of pillow block by checking the clearance between housing and shaft in three places at each end of the housing, as shown in Figure 20. Clearance should be uniform within 1/32" (0.8mm). Shim bearing pedestal where possible; otherwise, use full length shims under base as required. Alignment of pillow block should be accurate to prevent the seals from rubbing.

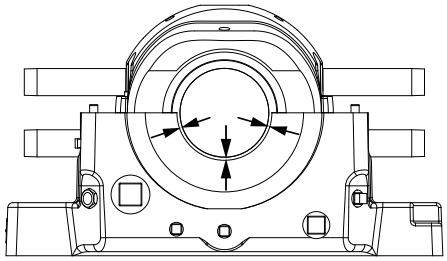


Figure 20 - Alignment Check

Tighten the four pedestal bolts to torque value given in Table 3. Shaft should rotate freely.

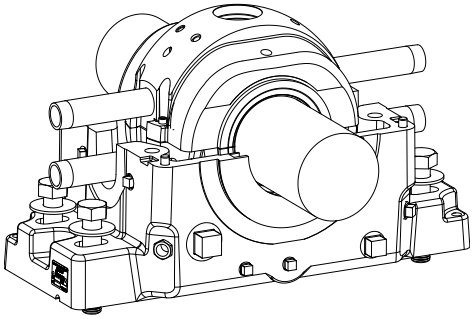


Figure 21 - Pedestal Bolt Installation

INSTALLATION OF OIL SEALS

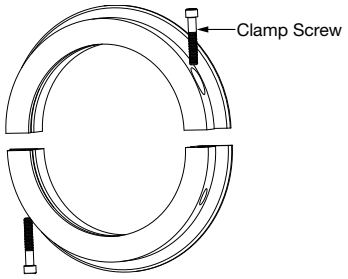


Figure 22 - Oil Seal Assembly (O-ring not shown)

Cut the O-ring (rubber cord) and wrap it around the shaft inside the seal groove, as shown in Figure 23. If the O-ring is too large, cut it to fit the shaft. For most effective sealing, ends of O-ring must meet. Cement or glue the ends together. Lubricate O-ring with oil or grease.

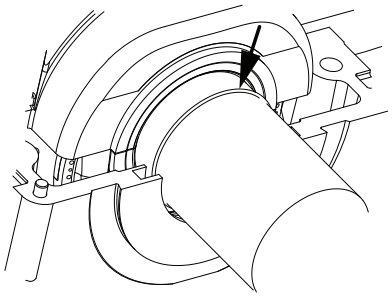


Figure 23 - O-ring Installation

Apply a thin coat of heavy oil or light grease in the housing seal grooves to extend seal life.

Disassemble one seal and place one half on shaft with flinger facing liner, as shown in Figure 24 . Locate O-ring in O-ring groove and rotate seal half around shaft into housing seal groove.

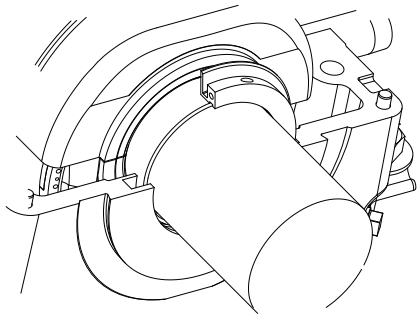


Figure 24 - Seal Installation

Install other half of seal and tighten screws to torque given in Table 3. **Check to make sure the seal will slide along the shaft with minimum effort to allow for shaft expansion.** Align the seal in the middle of the seal groove.

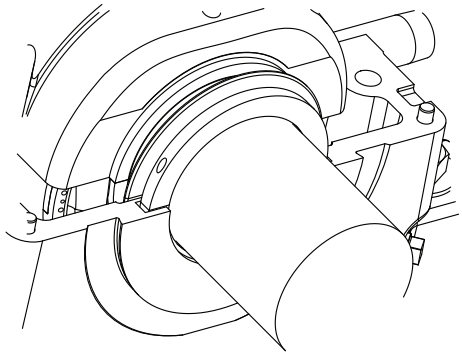


Figure 25 - Seal Installed

Install second seal in same manner. If end cap kit is to be used, the neoprene disc is to be installed on one end at this time instead of the bearing seal. Consult construction drawing.

Table 3 - Seal Assembly Torque Values

RTL SLEEVOIL SIZE	HOUSING/PEDESTAL BOLTS		SEAL CLAMP SCREWS	
	THREAD SIZE	TORQUE (IN.-LBS.)	THREAD SIZE	TORQUE (IN.-LBS.)
2-15/16 3-7/16 3-15/16	3/4 3/4 7/8	2100 2100 2040	10–24 10–24 10–24	12 12 12
4-7/16 4-15/16	1 1	3000 3000	10–24 10–24	12 12
5-7/16 6	1-1/8 1-1/4	4200 6000	1/4–20 1/4–20	33 33
7 8	1-1/2 1-3/4	10000 11500	5/16–18 5/16–18	65 65
9 10 12	1-3/4 2 2	11500 15000 15000	3/8–16 3/8–16 3/8–16	120 120 120

INSTALLATION OF HOUSING CAP

Back off the plunger screw as far as possible.

Along the outer contour of the housing base, apply the supplied LOCTITE® 515 or an equivalent gasket eliminator to the joint. CAREFULLY place the housing cap on the base, and take special precautions to prevent seal damage, as shown in Figure 27.

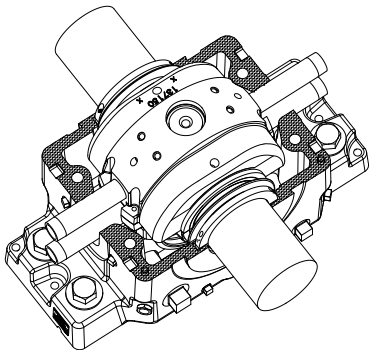


Figure 26 - Gasket Eliminator Application Area

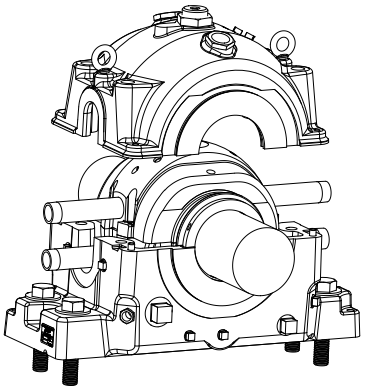


Figure 27 - Housing Cap Installation

The plunger screw must remain loose until the housing bolts have been tightened.

Apply RTV or a non-hardening sealant (not supplied) around each of the four housing bolt holes. This will prevent water from entering the bolt hole cavities.

NOTE: Follow all instructions and precautions shown by LOCTITE or the equivalent product's manufacturer.

Table 4 - Housing Cap Torque Values

RTL SLEEVOIL SIZE	PLUNGER SCREW		HOUSING CAP BOLT	
	WRENCH SIZE (SOC. HEX)	TORQUE (IN.-LB.)	THREAD SIZE	TORQUE (IN.-LB.)
2-15/16 3-7/16 3-15/16	3/8 3/8 3/8	425 425 425	3/4 - 10 3/4 - 10 3/4 - 10	1920 1920 1920
4-7/16 4-15/16	1/2 5/8	630 1250	7/8 - 9 7/8 - 9	2280 2280
5-7-16 6	5/8 5/8	1250 1250	1 - 8 1 - 8	2640 2640
7 8	5/8 3/4	1250 1800	1-1/8 - 7 1-1/8 - 7	3600 3600
9 10 12	3/4 3/4 3/4	1800 2400 2400	1-1/4 - 7 1-1/4 - 7 1-1/2 - 6	5040 5040 8880

NOTE: The plunger screw torque values have been reduced for RTL Spherical pillow blocks due to the upper spherical seat design.

CAP LOADED BEARINGS:

Only follow cap loaded tightening procedure on bearings that accept a vertical-upward load in over-hung (bearing - bearing - rotor) fan applications. For center hung (bearing - rotor - bearing) fan applications, proceed to the base loaded tightening procedure.

For cap loaded bearings, tighten the four cap bolts alternately to torque given in Table 4 while shaft is held down, as shown in Figure 28 (Plunger screw should not be making contact with liner when tightening cap bolts.)

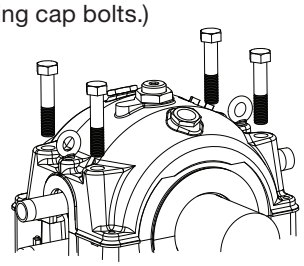


Figure 28 - Housing Cap Bolt Installation

Loosen all four cap bolts one turn and loosen shaft hold down so that the shaft rests on the liner cap. This will allow the liner to self-align with the shaft.

Re-torque all four cap bolts alternately to value given in Table 4.

Remove shaft hold down.

Tighten the plunger screw to torque given in Table 4 and tighten plunger screw locknut, as shown in Figure 29.

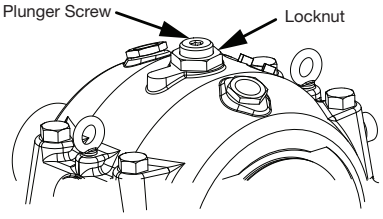


Figure 29- Plunger Screw Installation

NOTE: Do NOT tighten the cap bolts or plunger screw on accompanying base loaded bearing until cap loaded bearing has been installed and shaft hold down removed.

BASE LOADED BEARINGS:

Tighten the four housing cap bolts alternately to torque given in Table 4. **(Plunger screw should not be making contact with liner when tightening cap bolts.)** Next, tighten the plunger screw to torque given in Table 4 and tighten the plunger screw locknut. Wipe off any excess sealant and RTV/gasket material.

INSTALLATION OF GROMMETS AND OIL GAUGE

Install grommet and grommet plates over coolant pipes, as shown in Figure 30. **Apply a non-hardening sealant (not supplied) on the housing grommet area and between the grommet and grommet plates, and around coolant pipes.**

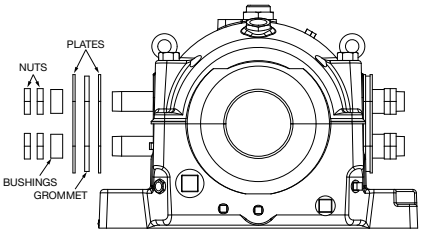


Figure 30 - Grommet Installation

Install bushings and nuts on pipes (snug not tight).

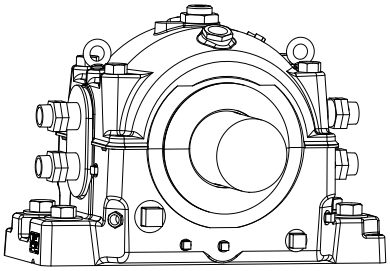


Figure 31 - Grommets Installed

Oil level gauge may be located any distance from the pillow block by use of a coupling and pipe of desired length. The extended pipe must be supported so that it remains straight and level with no offsets (use a spirit level—do not guess). Use pipe sealant on all connections.

When pillow block is arranged for circulating oil, the oil level is controlled by the drain system and the oil level gage is not needed.

AUXILIARY SEAL OPTIONS

When pillow block is arranged for circulating oil, a circulating oil inlet kit is required.

Table 5 - Circulating Oil Inlet Kit

Circulating Oil Inlet Kit	Part Number
RTL 2-15/16" thru 5-7/16" Circulating Oil Inlet Kit	132203
RTL 6" thru 12" Circulating Oil Inlet Kit	132205

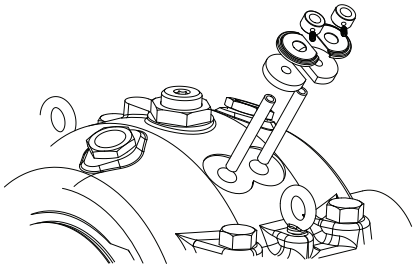


Figure 32 - Circulating Oil Inlet Kit Installation

Insert the two small pipe nipples through the holes in the housing cap and screw them tightly into the liner. Install grommet, grommet plate and collar over each inlet pipe. Press down on collar and tighten collar set screw.

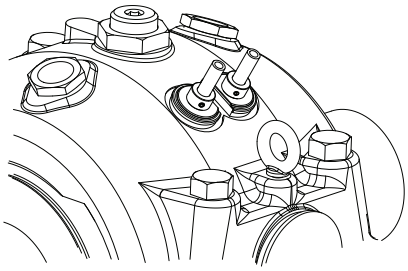


Figure 33 - Circulating Oil Inlet Kit Installed

NOTE: ALL plumbing (oil and water) should be cleaned and flushed before being connected to the pillow block. These systems should be tested before the bearing is put into operation.

Connect circulating oil supply lines so that each inlet receives an equal amount of oil. A flow control valve and oil flow indicator are recommended on the inlet line. Oil flow must be adjusted to the rate recommended by the equipment manufacturer. Connect the drain lines to both circulating oil drain holes (NOT the housing drain), as shown in Figure 34. The drain piping should be vented and must be of maximum size to remove the oil at the specified flow rate. The housing drain must be directed straight down into a return drain sloping away at a 15º or greater angle. The oiling system should have a means of filtering the oil to remove any contaminating particles. A 25 micron filter or better is recommended.

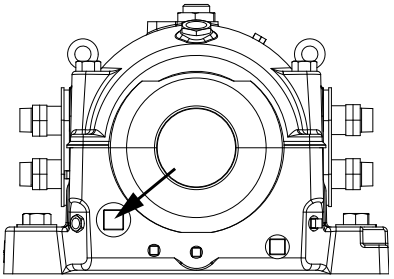


Figure 34 - Circulating Oil Drain Holes

It is strongly recommended to use thermocouples or RTDs to monitor the bearing bore temperature during operation. Probe diameters should be a maximum of 1/4". There are 2 designated thermocouple/RTD holes machined in the housing base next to the water pipe grommets. These 2 holes should align with the 2 thermocouple/RTD holes drilled into the liner. Install 2 RTDs/ thermocouples in each bearing, as shown in Figure 35. Make sure the probe tips contact the end of the drilled holes in the liner. Use sealant on all threaded connections.

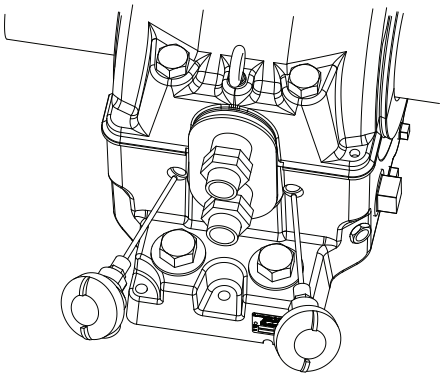


Figure 35 - Thermocouple/RTD Installation

Check construction drawings to determine if coolant (water or air) is to be supplied to the bearings. Do not connect coolant lines to bearings unless construction drawings and/or equipment instructions call for this. If no connection is required, pipes can be left open.

If coolant lines are to be connected, make sure that all pipe lengths are correct and unions are well aligned. Careless fitting will result in serious preloading of the bearing. Lengths of flexible hose between the pillow block and rigid piping are recommended to avoid preloading of the bearing. A regulating valve should be placed ahead of the inlet and a sight drain at the outlet for liquid coolants.

The recommended method of pipe connection for liquid coolants is to connect the inlet to the top pipe and the outlet to the bottom pipe on the same side of the bearing. A crossover pipe or hose is then used to connect the two pipes on the other side of the bearing, as shown in Figure 36. Adjust coolant flow to rate specified on construction drawing or to suit conditions. Anti-freeze type additives may be used in cold operating environments, otherwise purge all coolant from liner by blowing out with compressed air or steam anytime coolant is subject to freezing. Bearing rating is generally based on a maximum water inlet temperature of 90°F. The interior pressure of the liner should never exceed 120 psi. For deviations see construction drawings or contact equipment manufacturer.

NOTE: If coolant temperature can fluctuate below 70°F during low ambient conditions, then an oil sump heater/ thermostat should be installed to ensure proper oil temperature is maintained.

CAUTION: Water pressure should never exceed 120 P.S.I.

CAUTION: Do not stand on water pipes.

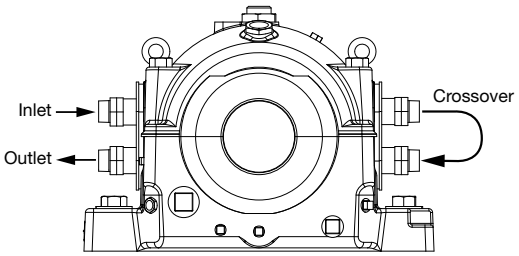


Figure 36 - Water Cooling Flow Arrangement

When using air as the cooling medium, connect an inlet to each pipe on one side of the bearing and an outlet to the pipes on the other side, as shown in Figure 37. Adjust flow to rate specified on construction drawing or to suit conditions.

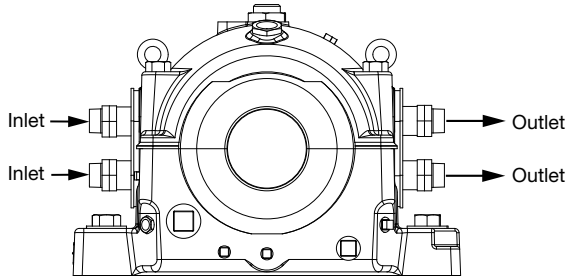


Figure 37 - Air Cooling Flow Arrangement

Remove and reinstall all pipe plugs using pipe sealant.

Prior to placing the bearings into operation check for cooling pipe leaks by placing the cooling water system into operation at normal operating pressure and flow rate. If a leak is detected, remove and reinstall the coolant pipes with pipe sealant and check again.

To install auxiliary seals, apply a thin layer of oil to the inner surface of the HNBR seal where it contacts the shaft to allow axil movement and wrap HNBR seal around the shaft next to pillow block. Wrap seal retainer around the seal. Slide the free end of the seal retainer through the clasp and pull tightly, as shown in Figure 38. Cut off excess retainer material and push down on the clasp lip - if lip breaks, discard it. The seal retainer may be disengaged before installation by straightening a paper clip, inserting it between the bands (on each side of the serrations) and through the clasp.

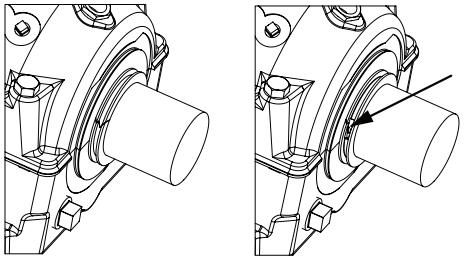


Figure 38 - Auxiliary Seal and Retainer

Then pull the free end of the retainer back out of the clasp. Remove the protective covering from the gaskets to expose the pressure sensitive adhesive tape. Place one gasket on each auxiliary seal housing half. Position auxiliary seal housing halves on pillow block pilot so that “UP” is at the top and tighten bolts while tapping auxiliary seal housing toward pillow block. This assures proper seating of the taper, as shown in Figure 39. Torque bolts to 130 in-lbs.

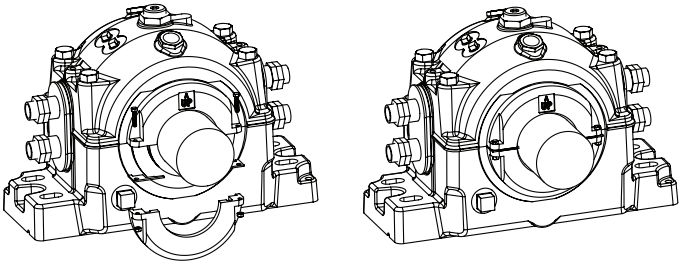


Figure 39 - Auxiliary Seal Housing

Other Accessories/Options Available:

- Combination Heater/Thermostat Assembly
- Oil Sump Thermometer
- Auxiliary Seal Kit
- Isolator Seal Kit
- End Cap Kit
- Vibration Detector Mounting Kit
- Coolant Hose Kit
- RTD Kit
- OLF-2
- Cool Lube 2

LUBRICATION AND OPERATION

Since the satisfactory operation of the pillow block depends almost entirely on the oil film being maintained between the shaft and bearing liner surface, the use of a high quality oil from a reputable manufacturer is recommended. Use a high grade straight mineral oil with rust and oxidation (R & O) inhibitors and anti-foam agents. Check construction drawings or equipment instruction manual for proper oil. Oil viscosity is determined by the equipment manufacturer and normally specified on the construction drawing. Information regarding qualities and properties of specific oils should be referred to the lubricant manufacturer.

If bearings do not have circulating oil, fill pillow block with oil approximately 2/3 of the way up the oil level gauge.

Table 6 - Oil Volume

RTL Sleevoil Size	Oil Volume ①②		
	Fluid Ounces Approximate	Quarts Approximate	Liters Approximate
2-15/16	56	1.75	1.66
3-7/16	56	1.75	1.66
3-15/16	64	2	1.89
4-7/16	80	2.5	2.37
4-15/16	128	4	3.79
5-7/16	152	4.75	4.49
6	224	7	6.62
7	336	10.5	9.94
8	416	13	12.3
9	608	19	17.98
10	896	28	26.5
12	1440	45	42.59

① Volume of oil required to fill pillow block to top of CENTER CIRCLE of oil gauge.
② 32 fluid ounces = 1 quart = 0.946 Liters

Use inspection covers to make sure oil rings are bringing up oil. Operation should be checked frequently during the first few days. If noise develops, check alignment of the housings, seals and all torque values. Check all points and re-torque bolts and plunger screws after several days operation. Maintain oil level between top and midpoint of the oil level gauge at all times while unit is in operation. Oil will leak out the shaft seals if the bearings are overfilled with oil.

NOTE: Bearings should NOT be stored outdoors before installation. For extended or outdoor storage, contact equipment manufacturer for special storage instructions.

NOTE: Bearings (and shafts) allowed to set idle for extended periods MUST be protected against corrosion. If the unit cannot be run for several minutes at least once a week, consult equipment manufacturer for special lubrication instructions.

Oil Maintenance Schedule

Drain, flush, and refill with oil after 2 to 3 weeks of initial break-in operation. Flushing should be done with the same oil used for operation. Since the satisfactory operation of the bearing depends entirely on an oil film being maintained between the shaft and the bearing liner surface, it is recommended that an oil analysis be performed at these regular intervals:

- Every 3 months for 24 hour/day service
- Every 6 months for 8 hour/day service

Acceptability of oil should be determined by the lubricant manufacturer. If oil quality is acceptable then repeat this procedure in 3 month intervals. Visually check oil for contamination between oil analysis checks. Oil service life depends upon several factors such as ambient conditions, operating temperature and frequency of bearing starts and stops. It is recommended that the oil be changed at least once per year for unfiltered static applications. Removing contaminants through the use of either the OLF 2 (Oil Level and Filtration 2) Unit or a circulating oil system can extend oil service life. Consult equipment manufacturer for more information.

Any questions about installation, maintenance, and arrangement of coolant or oil connections should be referred to the equipment manufacturer.

NOTE: Isolators or Auxiliary seals are recommended for outdoor applications, contaminated atmospheres, and where high volumes of air are flowing over the bearing.

Temperature

The bearing temperature will increase after start-up until its normal operating point is reached. The normal operating temperature should not exceed 180°F. Make sure to check with the OEM for the specified normal operating temperature. **An alarm temperature should be set at 15°F above the normal operating temperature. A shut-down temperature should be set at 30°F above the normal operating temperature.** Some fluctuation due to ambient temperature change is normal.

Low ambient and operating temperatures can be as harmful to the bearing as high temperatures. The Dodge heater/thermostat can be used in these low ambient conditions.

The Dodge heater/thermostat turns on at 70°F and turn off at 100°F to ensure proper oil sump temperature during operation. Refer to instruction manual MN3078 for proper installation instructions.

NOTE: The recommended oil temperature at start-up is 70°F MINIMUM.

CAUTION: If heaters are used, be sure heaters are off when oil is removed from bearing.

WARNING: When installing heater/thermostat, follow directions and safety procedures recommended by the manufacturer. Install wiring in accordance with the National Electrical Code and local codes. Failure to observe these guidelines could result in electrical shock.

Vibration

Any significant vibration or imbalance MUST be corrected. Check with equipment manufacturer for acceptable conditions.

RTL Spherical bearings now include provisions for proximity probes. For mounting information, see drawing at the end of the manual. Follow proximity probe manufacturers instructions.

Pillow Block Material Details

Housing:	Class 30 Gray Cast Iron
Liner:	Class 30 Gray Cast Iron
Babbitt:	Lead or Tin Based Babbitt
Oil Rings:	Bronze
Aluminum Seal:	Sand Cast Aluminum
O-ring:	Elastomer Compound
Aux. Seal:	HNBR with Stainless Steel Retainer
Grommet:	Synthetic Rubber
Grommet Plate:	Carbon Steel
Pipe Nipple:	Carbon Steel
Oil Gauge:	Stainless Steel, Polypropylene
Hardware:	Carbon Steel
Plunger Screw:	Carbon Steel
Gasket Eliminator:	LOCTITE 515 Sealant

This Sleevoil pillow block could contain lead in the bearing Babbitt material, please exercise proper precautions in the use, installation, dismantling and recycling of this unit.

Other Notes:

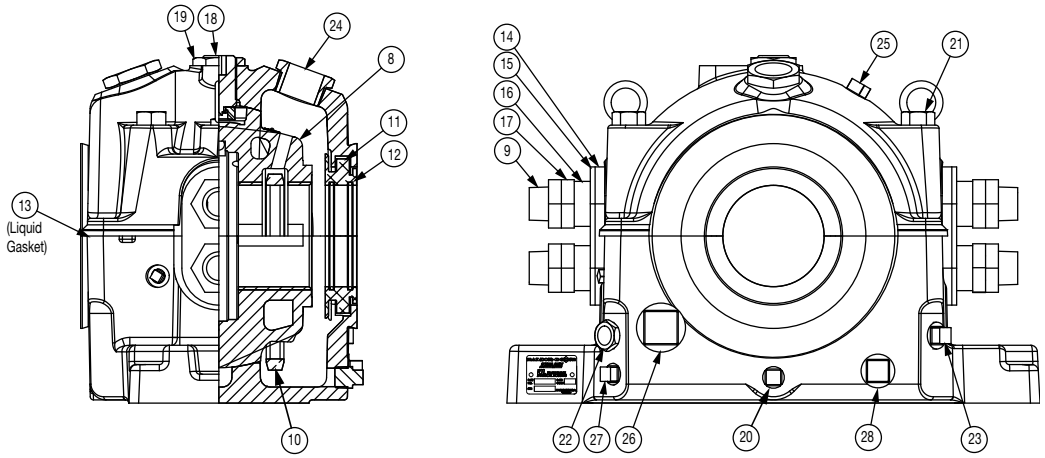
CAUTION: This product is not to be used for person moving applications.

NOTE: Care has been taken to keep instruction manuals accurate and timely. The most recent version of the instruction manual can be found on our website: www.baldor.com

Weights:

Table 7 - Weight of RTL Sleevoil

RTL SLEEVOIL Size	Approximate Weights (lbs.)		
	Non-Expansion Pillow Block	Expansion Pillow Block	Liner Assembly
2-15/16	195	190	47
3-7/16	195	190	47
3-15/16	238	230	65
4-7/16	311	300	82
4-15/16	441	425	113
5-7/16	521	500	144
6	854	825	182
7	1018	978	257
8	1368	1310	412
9	1738	1650	623
10	2262	2150	955
12	3670	3500	1405

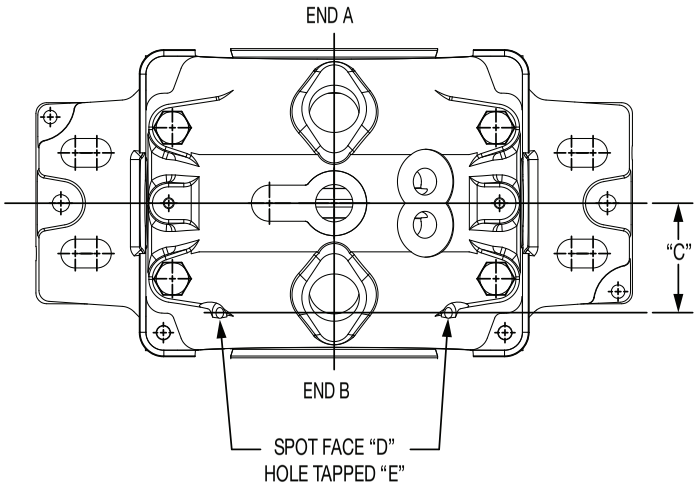


Sleevoil RTL Spherical Pillow Blocks - Parts Diagram

Item	Description	No. Req.	Replacement Part Number											
			2–15/16	3–7/16	3–15/16	4–7/16	4–15/16	5–7/16	6	7	8	9	10	12
	④RTL Expansion Pillow Block		132447	132474	132475	132476	132477	132383	132384	132385	132386	132387	132388	132389
	RTL Modular Housing		132448	132373	132374	132397	132398	132399	132411	132412	132413	132414	132437	132438
8	①RTL Liner Assembly	1	132439	132420	132421	132422	132423	132424	132425	132426	132427	132428	132429	132430
9	②RTL Coolant Pipe	4	....	....	....	....	....	....	....	....	....	....	....	....
③	②Dowel Pin	2	420064	420064	420064	420064	420064	420064	420064	420088	420088	420088	420118	420118
③	②Cap Screw	2	417330	417330	417095	417330	417330	417330	417117	417184	417184	417184	417260	417260
10	Trapezoidal Oil Ring Assembly	2	135290	135290	135291	135292	135293	135294	135295	135296	135297	135298	135299	135135
	①RTL Seal Kit	1	435000	435081	435082	435003	435004	435005	435006	435007	435008	435009	435010	435011
11	②Clamp Seal Assembly	2	....	....	....	....	....	....	....	....	....	....	....	....
12	②O-Ring	2	....	....	....	....	....	....	....	....	....	....	....	....
13	②Gasket Eliminator-515	varies	427359	427359	427359	427359	427359	427359	427359	427359	427359	427359	427359	427359
	①RTL Grommet Kit	1	435027	435027	435028	435028	435029	435029	435029	435029	435030	435030	435031	435032
14	②RTL Grommet	2	....	....	....	....	....	....	....	....	....	....	....	....
15	②RTL Grommet Plate	4	....	....	....	....	....	....	....	....	....	....	....	....
16	②RTL Bushing (Locktube)	4	....	....	....	....	....	....	....	....	....	....	....	....
17	②RTL Locknut	8	....	....	....	....	....	....	....	....	....	....	....	....
9	②RTL Coolant Pipe	4	....	....	....	....	....	....	....	....	....	....	....	....
13	②Gasket Eliminator-515	varies	427359	427359	427359	427359	427359	427359	427359	427359	427359	427359	427359	427359
	①Plunger Screw Kit	1	435012	435012	435083	435013	435014	435015	435015	435016	435017	435018	435019	435019
18	②Plunger Screw Assembly	1	....	....	....	....	....	....	....	....	....	....	....	....
19	②Plunger Screw Locknut	1	....	....	....	....	....	....	....	....	....	....	....	....
20	Drain Plug	1	430012	430012	430012	430012	430012	430012	430012	430012	430012	430014	430014	430014
21	Housing Bolt	4	411189	411189	411190	411196	411197	411205	411205	411224	411227	411228	411229	411230
22	Oil Level Gauge	1	430135	430135	430135	430135	430135	430135	430135	430135	430135	430135	430135	430135
23	Oil Level Plug	1	430014	430014	430014	430014	430014	430014	430014	430014	430014	430014	430014	430014
24	Inspection Cover	2	432198	432198	432198	432198	432198	432198	432198	432198	432198	432198	432198	432198
25	Circulating Oil Inlet Plug	2	430014	430014	430014	430014	430014	430014	430016	430016	430016	430016	430016	430016
26	Circulating Oil Drain Plug	2	430018	430018	430018	430018	430019	430019	430019	430019	430019	430019	430022	430022
27	1/2" NPT Thermometer Plug	1	430012	430012	430012	430012	430012	430012	430012	430012	430012	430012	430012	430012
28	Heater Plug	1	430014	430014	430016	430016	430017	430017	430017	430017	430017	430017	430017	430017
	Non-Expansion Accessories													
③	⑤Hi Capacity Thrust Plate Kit	1	137101	137101	137102	137103	137104	137105	137106	137107	137108	137109	137110	137111
③	⑤Split Thrust Collar	1	132162	132151	132152	132153	132154	132155	132156	132157	132158	132159	132160	132161
	Optional Accessories													
③	Auxiliary Seal Kit	2	132823	132811	432181	432184	432187	133932	133933	133937	133938	132814	132816	132819
③	⑥Replacement Auxiliary Seal Gasket	4	133998	133998	133998	133998	133998	134024	134024	134024	134024	132830	132830	132831
③	⑦Dust Seal Kit	1	389839	389827	389828	389829	389830	389831	389832	389833	389834	389835	389836	389837
③	Sleevoil Isolator	2	435230	434706	434707	434708	434709	434710	434711	434712	434713	434714	434715	434716
③	Housing End Cap Kit	1	435217	435217	435218	435336	435337	435338	435339	435340	435341	435342	435343	435344
③	Circulating Oil Inlet Kit	1	132203	132203	132203	132203	132203	132203	132205	132205	132205	132205	132205	132205
③	Vibration Detector Adapter Kit	1	430153	430153	430153	430153	430153	430153	430153	430153	430153	430153	430153	430153
③	Coolant Hose Kit	1	434770	434770	434771	434771	434772	434772	434772	434772	434773	434773	434774	434775
③	110V Heater / Thermostat Combo	1	434721	434721	434725	434725	434727	434727	434727	434729	434729	434729	434729	434735
③	220V Heater / Thermostat Combo	1	434722	434722	434726	434726	434728	434728	434728	434730	434730	434730	434730	434736
③	RTD Kit	2	435147	435147	435147	435147	435147	435147	435147	435147	435147	435147	435147	435147
③	Proximity Probe Adapter Kit ⑧	1	....	....	....	432287	432287	432287	432287	432287	432287	432287	432287	432287

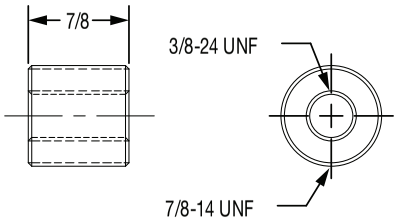
①These parts are assemblies and include the parts listed below them.
②These parts make up the assembles under which they are listed.
③Not shown on drawing.
④Expansion Pillow Block includes modular housing and liner assembly. Order thrust collar (if replaceable) and thrust plate kit to turn into non- expansion bearing.
⑤Required for Non-Expansion Pillow Block.
⑥Each auxiliary seal requires 2 gaskets.
⑦Dust Seal Kit includes dust seals and retainers for 2 auxiliary seals.
⑧See next page for details

STANDARD RTL SPHERICAL PROXIMTY PROBE LOCATIONS

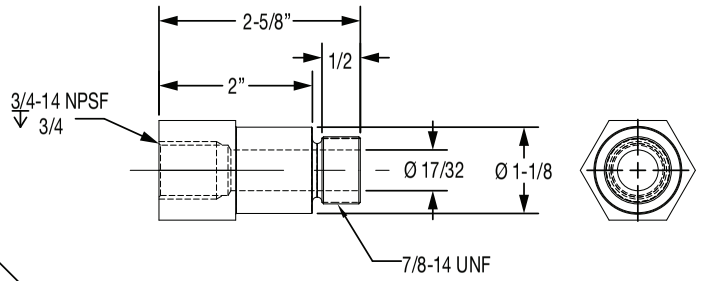


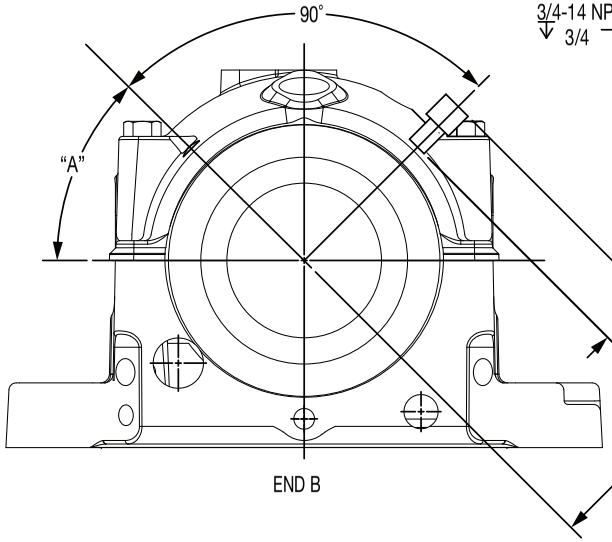
PROXIMITY PROBE ADATPER KIT,
PART NUMBER 432287
INCLUDES (2) 3/8 - 24 UNF ADAPTERS
AND (2) 3/4-14 NPT ADAPTERS
SHOWN BELOW

3/8-24 UNF TO 7/8-14 UNF ADAPTER:



3/4-14 NPT TO 7/8-14 UNF ADAPTER:





2" LENGTH FROM SPOTFACE
TO ADAPTOR END
3/4-14 NPT ADAPTER ONLY

"B"
LENGTH FROM BORE CENTER
TO SPOTFACE

SIZE	A	B	C	D	E [3]
2-15/16 [2]	45°	5-1/16	3-1/2	1	3/8-24 UNF
3-7/16 [2]	45°	5-1/16	3-1/2	1	3/8-24 UNF
3-15/16	45°	5-5/8	3-13/16	3/4	3/8-24 UNF
4-7/16	45°	5-5/8	4-5/16	1-1/4	7/8-14 UNF
4-15/16 [4]	45°	6-11/16 [4]	4-3/4	1-1/4 [4]	7/8-14 UNF
5-7/16	45°	7-1/8	5-3/8	1-1/4	7/8-14 UNF
6	45°	7-11/16	5-13/16	1-1/4	7/8-14 UNF
7	45°	8-9/16	6-3/4	1-1/4	7/8-14 UNF
8	15°	9-15/16	7-5/8	1-1/4	7/8-14 UNF
9	15°	11-3/16	8-7/8	1-1/4	7/8-14 UNF
10	15°	12-3/4	9-5/8	1-1/4	7/8-14 UNF
12	15°	14-1/4	11-1/2	1-1/4	7/8-14 UNF

NOTES:
1. FOR R-SERIES HOUSINGS, SEE C6751, SHEET 1
2. 2-15/16 AND 3-7/16 RTL LINERS MUST BE MACHINED TO ACCOMODATE CLEARANCE FOR PROBES.
3. FOR HOUSINGS WITH 7/8-14 UNF HOLES, ADAPAPTER KITS ARE AVAILABLE TO ACCOMODATE SMALLER PROBE SIZES. SPECIAL HOLE SIZES ARE AVAILABLE AS A MODIFICATION.
4. 4-15/16 RTL REQUIRES ADDITIONAL MACHINING ADD A 1-1/2 SPOTFACE, OFFSET 7-7/16 FROM BORE CENTER.

E.C.R. NO. | REV. | REV. DATE | BY | APP'D | REVISION DESCRIPTION

MATERIAL | DIMENSION TOLERANCE UNLESS OTHERWISE SPECIFIED | PRODUCT | DIST

CASTING OR FORGING NO. | INCHES | PART: PROXIMTY PROBE MOUNTING FOR RTL SLEEVOIL PILLOW BLOCKS

TREATMENT | DRAWN BY | CHECKED BY | APPROVED BY | SCALE: 1:4 | ORDER NUMBER | SIZE: B

DATE | DATE | DATE | SUPERSEDES | ESTIMATE NUMBER | SHEET NUMBER: 2 OF 2

BALDOR • DODGE | DRAWING NUMBER: C6751 | REV: L

Sleevoil Accessories

The following accessories are available for Sleevoil bearing to enhance operation and extend bearing life. For compatibility and technical information contact DODGE product support.

OIL LEVEL AND FILTRATION (OLF-2) SYSTEM

- Increase bearing longevity and reliability.
- One OLF-2 system supplies two bearings with a continuous flow of filtered oil.
- The oil is supplied directly to the circulating oil inlets on the bearings, which helps minimize wear during startups and shutdowns.

DODGE SLEEVOIL BEARING ISOLATOR

- Fully split multi-labyrinth sealing system.
- Provides outstanding protection in harsh and dirty environments.
- IP56 rated

RTD KIT

- Prevent catastrophes by accurately measuring bearing temperature.
- Features a field-cuttable stainless steel probe, a platinum sensing element and a spring-loaded fitting with an oil seal.

COOL LUBE 2

- All the features of the OLF-2 system plus a built-in heat exchanger for continuous oil cooling and adjustable oil flow controls.
- Particularly well suited in applications where bearing operating temperatures and speeds approach the maximum permissible levels.

HEATER/THERMOSTAT

- The bearing sump heater and thermostat have been combined into one user-friendly unit.
- Sump heaters are a necessity to ensure safe startups when bearings are exposed to ambient temperatures below 70°F.

THERMOMETER

- Dial thermometer for convenient monitoring of the oil sump temperature
- All stainless steel construction with glass face

COOLANT HOSE KIT

- An easy to install solution for connecting coolant lines to your Sleevoil bearing.
- Durable flexible hoses are composed of a synthetic rubber inner tube reinforced with fiber and steel braids.

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