

INSTRUCTION MANUAL for All-Steel Pillow Blocks

INSTALLATION INSTRUCTIONS Follow All Instructions Carefully

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.

TO LOCATE BEARING ON SHAFT

1. Shaft should be within commercial tolerances, straight, smooth and clean. Apply a light coating of oil or other rust inhibitor to the shaft in the bearing area.
2. Loosen lockscrews (75) in adapter nuts (65) and (70) to prevent damage to adapter (9). (If necessary to expand adapter (9), loosen knurled adapter nut (70) at closed end of housing approximately two turns and tap on end of this nut.)
3. Slide bearing on shaft and locate where wanted.
4. DO NOT BOLT OUTER HOUSING TO SUPPORT UNTIL BEARING IS TIGHTENED ON SHAFT.
5. BLOCK UP SHAFT TO REMOVE WEIGHT FROM BEARING. This is extremely important where the bearing and shaft are large; also, where heavy equipment is mounted on shaft.

TO TIGHTEN BEARING ON SHAFT start with the non-expansion bearing and follow Steps 6 thru 11 then move to the expansion bearing, repeating Steps 6 thru 11.

6. Loosen (turn counterclockwise) nut (65) one full turn. MAKE SURE THIS NUT DOES NOT TOUCH END OF BEARING (35) OR (40) DURING TIGHTENING OPERATION. (See Arrow "A" on Drawing.) Tighten (turn clockwise) KNURLED nut (70) at closed end of housing one turn. Repeat the loosening of nut (65) and the tightening of KNURLED nut one turn at a time until adapter (9) is snug on shaft and considerable effort is required to turn KNURLED nut (70).

THEN USE SLEDGE AND BRASS BAR AS SHOWN IN ILLUSTRATIONS. KEEP TIGHTENING KNURLED NUT WITH BARRING ROD OR SPANNER WRENCH WHILE HITTING ON BRASS BAR.

THE ADAPTER NUT IS NEARLY TIGHT WHEN A SOLID SOUND OR RING, SUCH AS MADE BY HITTING DIRECTLY ON THE END OF A SOLID SHAFT, DEVELOPS IN THE ADAPTER NUT. IF POSSIBLE, TIGHTEN MORE BY HITTING ON THE BARRING ROD OR SPANNER WRENCH AND THE BRASS BAR SIMULTANEOUSLY.

7. TIGHTEN (turn clockwise) NUT (65) AT OPEN END OF HOUSING UNTIL IT IS TIGHT AGAINST END OF BEARING (35) or (40). FURTHER TIGHTEN SMOOTH NUT WITH SLEDGE AND BRASS BAR AS FOLLOWS:

WARNING: Because of the possible danger to persons(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 Baldor Electric Company nor are the responsibility of Baldor Electric Company. 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.

BALDOR

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IMPORTANT NOTICE

When installing the bearing, it is very important that the split tapered adapter (bearing sleeve) be drawn down on the shaft as tight as possible. Use one of the following illustrated methods to overcome friction between the tapered adapter and the taper-bored cone and between the threads of the adapter and the adapter nut. The sudden jar developed by the sledge and brass bar (while the tightening force is being applied to the adapter nut) helps to overcome the friction, allowing the nut to be tightened to a greater degree than otherwise possible.

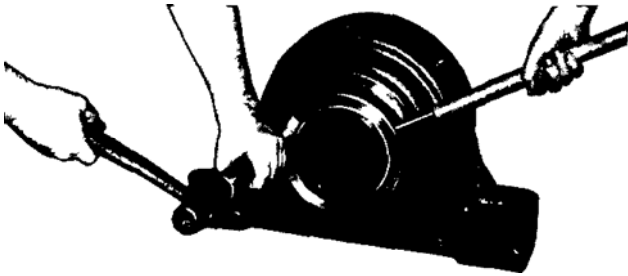


Figure 1 – PREFERRED METHOD – Hitting directly on face of adapter nut, with brass bar parallel to shaft, while applying torque with barring rod to tighten nut. ♣

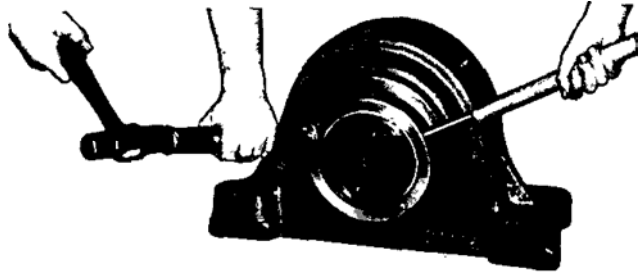


Figure 2 – Hitting on nut at an angle where unable to hit at right angle to face. This method is not as effective as the method shown in Figure 1. ♣

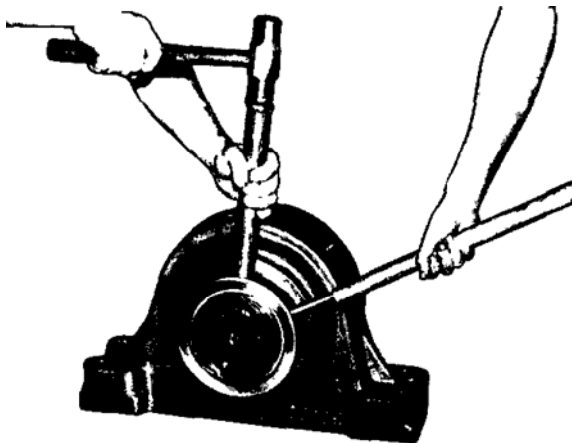


Figure 3 – Hitting on O.D. of nut with brass bar held at right angle to shaft. This method is not as effective as the methods shown in Figures 1 or 2. ♣

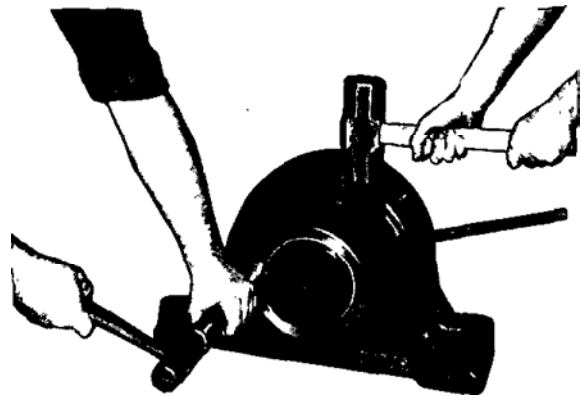


Figure 4 – This is an alternate method to those shown in Figures 1, 2 and 3 in that a spanner wrench is used in place of the barring rod. ♣

- ★ For 3½" and smaller shaft sizes the brass bar should not be less than 1" diameter; for 3¹⁵/₁₆" to 5" shaft sizes not less than 1¼" diameter; for 5⁷/₁₆" to 7" shaft sizes not less than 1½" diameter, for 7½" to 10" shaft sizes not less than 2" diameter.
 - ▲ A 12" length of drill rod which is 1/64" less in diameter than the barring pockets is recommended for use as barring rod. Pipe should be used as shown for additional leverage.
 - Pin in spanner wrench should be 1/64" less in diameter than the barring pockets.
8. Loosen nut (65) and retighten knurled nut as in step 6.
 9. Retighten smooth nut as in step 7.
 10. Tighten lock screws to torque shown on Table 1. Lock washers may not line up with adaptor slots. It is

acceptable to have lock screws bottom onto threaded portion of adaptor.

11. Check hold-down bolts in outer housing to see that they are loose and free. (If too tight, an excessive thrust load could be imposed on bearing.) If bolts are tight in bolt holes, bearing should be moved slightly on shaft to provide looseness. On expansion bearings locate to allow expansion in proper direction. When center groove on smooth nut is set flush with end of housing equal expansion in either direction is provided. Where unusual expansion is likely, set to either side of center groove as required to allow expansion in proper direction. Outside grooves indicate extreme limits when unit is accurately aligned. Tighten hold-down bolts.

**TABLE 1
SETSCREWS TORQUE VALUES**

Setscrew Size	Tightening Torque Pound-Inches
$\frac{5}{16} - 18 \times \frac{3}{8}$	156
$\frac{3}{8} - 16 \times \frac{1}{2}$	273
$\frac{7}{16} - 14 \times \frac{1}{2}$	428
$\frac{1}{2} - 13 \times \frac{5}{8}$	615
$\frac{1}{2} - 13 \times \frac{3}{4}$	615
$\frac{5}{8} - 11 \times \frac{3}{4}$	1,315
$\frac{3}{4} - 10 \times 1$	2,150
$1 - 8 \times 1$	7,010

- After a short run make sure adapter (9) is tight as follows: loosen lockscrews (75); loosen hold-down bolts; perform Steps 5 to 11 inclusive.

TO REMOVE BEARING FROM SHAFT

- Loosen lockscrews (75) in both adapter nuts (68) or (65) and (70) and loosen hold-down bolts. Block up shaft to remove weight from bearing.
- Loosen (turn counterclockwise) KNURLED adapter nut (70) at closed end of housing approximately two turns.
- Tighten (turn clockwise) large end adapter nut (65) at open end of housing. Use sledge and brass bar as in Step 6 to break the cones loose on the adapter, thus allowing the adapter to loosen on shaft.

LUBRICATION INSTRUCTIONS

Storage or Special Shutdown – If exposed to wet or dusty conditions or to corrosive vapors, extra protection is necessary. Add grease until it shows at the seals; rotate the bearing to distribute grease; cover the bearing. After storage or idle period, add a little fresh grease before running.

High Speed Operation – In the higher speed ranges too much grease will cause overheating. The amount of grease that the bearing will take for a particular high speed application can only be determined by experience – see “Operating Temperature” below. If excess grease in the bearing causes overheating, it will be necessary to remove grease fitting (also drain plug when furnished) to permit excess grease to escape. The bearing has been greased at the factory and is ready to run. When establishing a relubrication schedule, note that a small amount of grease at frequent intervals is preferable to a large amount at infrequent intervals.

Operating in Presence of Dust, Water or Corrosive Vapors – Under these conditions the bearing should contain as much grease as speed will permit, since a full bearing with consequent slight leakage is the best protection against entrance of foreign material. In the higher speed ranges too much grease will cause overheating – see “High Speed Operation” above. In the lower speed ranges it is advisable to add extra grease to a new bearing before putting into operation. Bearings should be greased as often as necessary (daily if required) to maintain a slight leakage at the seals.

Average Operation – This bearing has been greased at the factory and is ready to run. The following table is a general guide for relubrication. However, certain conditions may require a change of lubricating periods as dictated by experience. See “High Speed Operation” and “Operation in Presence of Dust, Water or Corrosive Vapors” above.

Operating Temperature – Abnormal bearing temperature may indicate faulty lubrication. Normal temperature may range from “cool to warm to the touch” up to a point “too hot to touch for more than a few seconds,” depending on bearing size and speed and surrounding conditions. Unusually high temperature accompanied by excessive leakage of grease indicates too much grease. High temperature with no grease showing at the seals, particularly if the bearing seems noisy, usually indicates too little grease. Normal temperature and a slight showing of grease at the seals indicate proper lubrication.

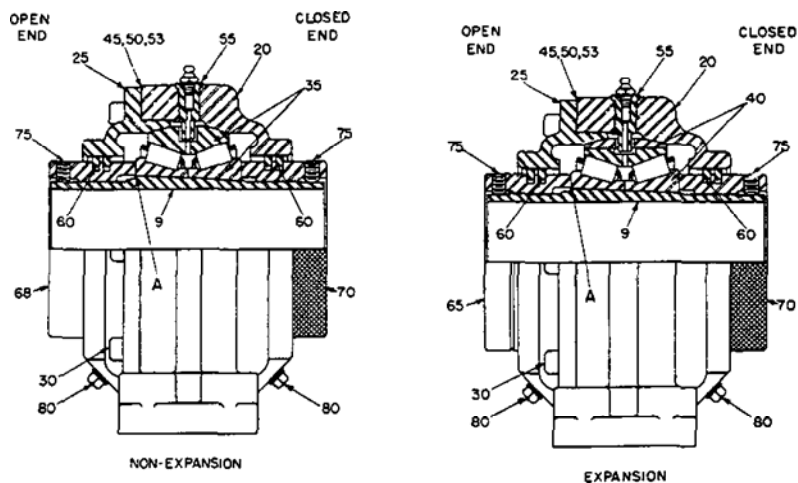
Lubrication Guide

Read Preceding Paragraph Before Establishing Lubrication Schedule.

Hours Run Per Day	Suggested Lubrication Period in Weeks				
	1 to 250 RPM	251 to 500 RPM	501 to 750 RPM	751 to 1000 RPM	1001 to 1250 RPM
8	12	12	10	7	5
16	12	7	5	4	2
24	10	5	3	2	1

Kind of Grease – Many ordinary cup greases will disintegrate at speeds far below those at which DODGE bearings will operate successfully if proper grease is used. DODGE bearings have been lubricated at the factory with No. 2 consistency lithium-base grease which is suitable for normal operating conditions. Relubricate with lithium-base grease or a grease which is compatible with original lubricant and suitable for roller bearing service. In unusual or doubtful cases the recommendation of a reputable grease manufacturer should be secured.

Special Operating Conditions – Refer acid, chemical, extreme or other special operating conditions to Baldor Electric Company Power Systems, Greenville, South Carolina.



NOTE: The two-digit numbers are for reference only. Order parts using the six-digit part numbers in the Parts List. Each six-digit number is a complete identification of the part or assembly.

Parts for All-Steel Pillow Blocks

Reference	Name of Part	No. Req'd.	Part Number for Various Shaft Sizes									
			2 ¹¹ / ₁₆ 2 ¹⁵ / ₁₆ 3	3 ¹ / ₄ 3 ⁷ / ₁₆ 3 ¹ / ₂	3 ¹⁵ / ₁₆ 4	4 ⁷ / ₁₆ 4 ¹ / ₂	4 ¹⁵ / ₁₆ 5	5 ⁷ / ₁₆	5 ¹⁵ / ₁₆ 6	6 ⁷ / ₁₆ 6 ¹ / ₂ 6 ¹⁵ / ₁₆ 7	7 ¹ / ₂ 7 ¹⁵ / ₁₆ 8	10
20	Housing	1	063100	063120	063140	063160	063180	063200	063220	063260	063300	063340
25	End Plate	1	063102	063122	063142	063162	063182	063202	063222	063262	063301	063343
30	End Plate Cap Screw	★	417102	417141	417141	417168	417168	417178	417214	417214	417214	417270
35	Non-Expansion Bearing Complete	1	390721	390723	390725	390727	425024	425025	425026	391986	425028	425029
40	Expansion Bearing Complete	1	390722	390724	390726	390728	425005	425006	425007	391987	452009	425010
45	.010" End Plate Shim	★★	427010	427011	427012	427013	427014	427015	427016	427017	427018	427020
50	.007" End Plate Shim	★★	427025	427026	427027	427028	427029	427030	427031	427032	427033	427035
53	.015" End Plate Shim	★★	427040	427041	427042	427043	427044	427045	427046	427047	427048
55	Locking Pin	1	063109	063129	063149	063169	063189	063189	063229	063229	063309	063349
60	Piston Ring Seal	4	410070	410072	410074	410076	410042	410080	410082	410084	410048	410088
65	Large End Adapter Nut	1	063111	063131	063151	063171	063191	063211	063231	063271	063311	063351
70	Small End Adapter Nut	1	063110	063130	063150	063170	063190	063210	063230	063270	063310	063350
9	Adapter	1	See table below for part numbers.									
75	Adapter Nut Lock Screw	4	400050	400086	400118	400142	400146	400178	400178	400222	400222	400266
80	Drain Plug	2	430008	430010	430010	430012	430012	430012	430012	430014	430016	430016
...	Lubrication Fitting	1	405015	405015	405015	405015	405015	405015	405015	405015	405015	405015

- ★ 6 required for 2¹⁵/₁₆" to 6" sizes; 8 for 6⁷/₁₆" to 10" sizes.
 ★★ Normally shims having a total thickness of about 1/32" will be required to give the proper fit of bearing in the housing.

Adapter Part Numbers

Shaft Size	2 ¹¹ / ₁₆	2 ¹⁵ / ₁₆	3	3 ¹ / ₄	3 ⁷ / ₁₆	3 ¹ / ₂	3 ¹⁵ / ₁₆	4	4 ⁷ / ₁₆	4 ¹ / ₂	4 ¹⁵ / ₁₆	5
Adapter Part No.	063105	063106	063108	063125	063126	063127	063144	063146	063164	063165	063183	063184
Shaft Size	5 ⁷ / ₁₆	5 ¹⁵ / ₁₆	6	6 ⁷ / ₁₆	6 ¹ / ₂	6 ¹⁵ / ₁₆	7	7 ¹ / ₂	7 ¹⁵ / ₁₆	8	10
Adapter Part No.	063203	063223	063224	063243	063244	063263	063264	063284	063303	063304	063342