

Instruction Manual for DODGE® ALL-STEEL Pillow Blocks

These instructions must be read thoroughly before installation or operation.

INSTALLATION INSTRUCTIONS

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 in adapter nuts and to prevent damage to adapter. (If necessary to expand adapter, loosen knurled adapter nut at closed end of housing approximately two turns and tap on end of this nut.)
3. Slide bearing on shaft to desired location
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 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 through 11 then move to the expansion bearing, repeating steps 6 through 11.

6. Loosen (turn counterclockwise) nut one full turn. Make sure this nut does not touch end of bearing or during tightening operation. Tighten (turn clockwise) knurled nut at closed end of housing one turn. Repeat the loosening of nut and the tightening of knurled nut one turn at a time until adapter is snug on shaft and considerable effort is required to turn knurled nut.

Use sledge and brass bar. 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 at open end of housing until it is tight against end of bearing. Further tighten smooth nut with sledge and brass bar.

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 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 fail safe device must be an integral part of the driven equipment beyond the speed reducer output shaft.

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

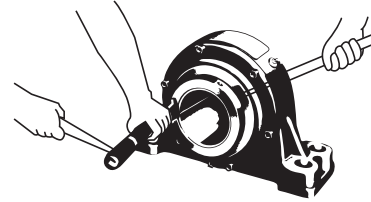


Figure 1 - Preferred Method - Method 1

Hitting directly on face of adapter nut with brass bar parallel to shaft, while applying torque with barring rod to tighten nut. ①②

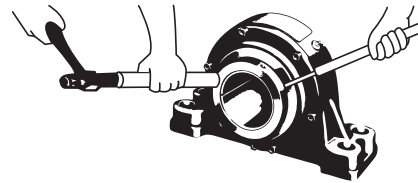


Figure 2 - Method 2

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. ①②

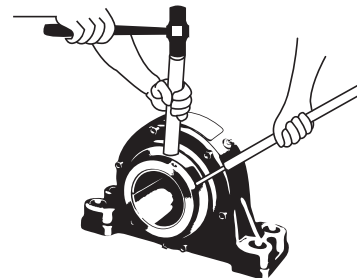


Figure 3 - Method 3

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. ①②

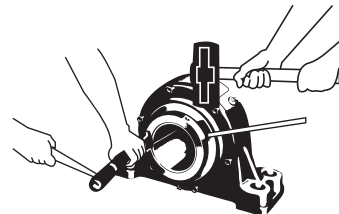


Figure 4 - Method 4

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. ①③

NOTES:

- ① For 3-1/2" and smaller shaft sizes, brass bar should not be less than 1" diameter; for 3-15/16" to 5" shaft sizes not less than 1-1/4" diameter.
- ② A 12" length of drill rod which is 1/64" less in diameter than barring pockets is recommended for use as barring rod. Pipe should be used as shown for additional leverage.
- ③ Pin in spanner wrench should be 1/64" less in diameter than barring pockets.

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8. Loosen nut and retighten knurled nut as in step 6.
9. Retighten smooth nut as in step 7.
10. Tighten lockscrews to torque shown in Table 1. Lockwashers may not line up with adaptor slots. It is acceptable to have lockscrews bottom onto threaded portion of adaptor.

Setscrew Size	Tightening Torque (lb-ins)
5/16 – 18 × 3/8	156
3/8 – 16 × 1/2	273
7/16 – 14 × 1/2	428
1/2 – 13 × 5/8	615
1/2 – 13 × 3/4	615
5/8 – 11 × 3/4	1,315

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.
12. After a short run make sure adaptor is tight: loosen lock screws; loosen hold-down bolts; perform steps 5 to 11 inclusive.

TO REMOVE BEARING FROM SHAFT

1. Loosen lock screws in both adaptor nuts and loosen hold-down bolts. Block up shaft to remove weight from bearing.
2. Loosen (turn counterclockwise) knurled adaptor nut at closed end of housing approximately two turns.
3. Tighten (turn clockwise) large adaptor nut at open end of housing. Use sledge and brass bar as in step 6 to break bearing cones loose on adaptor, thus allowing adaptor 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 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.” 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.

Operation 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 of the seals.

Normal Operation—This bearing has been greased at the factory and is ready to run. Table 2 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.

Hours Run per Day	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	2	2	1

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 slight showing of grease at the seals indicate proper lubrication.

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 an NLGI #2 lithium complex base grease. Relubricate with lithium or lithium complex base grease, or a grease which is compatible with the 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, Dodge Bearing Engineering, Greenville, SC at 864-284-5700.



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