

Double Interlock® Flange B-1, S-1 and D Unit Bearings 1-3/8" to 5" Instruction Manual

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

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.

INSTALLATION INSTRUCTIONS

1. Clean shaft and bore of bearing. Lubricate with light coat of oil or anti-seize compound.
2. Slip bearing in position noting Step 3.
3. **Expansion Bearings:** Bolt outer housing to support. Expansion-type outer housing should be located so inner unit can move freely in either direction. Outer housing shims provide a proper fit and must not be removed.

Non-Expansion Bearings: Loosen cap bolts in outer housing a little so inner unit is free to align in outer housing. The hold-down bolts should be loose in the bolt holes. If the bolts are tight in the bolt holes, the unit should be moved slightly on the shaft to provide looseness. This will help prevent preloading or inducing an initial thrust on bearings. Tighten nut on hold down bolts. Retighten cap bolts. Outer housing shims provide a proper fit and must not be removed.
4. Tighten setscrews to the torque values shown in Table 1.
5. The effort required to turn the shaft should be the same before and after bolting bearings to the support.

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 Dodge® nor are the responsibility of Dodge. 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.

REPLACING A UNIT IN A PILLOW BLOCK

1. Match cap and base of each outer housing before removing cap. When reassembling pillow blocks make sure match marks on caps and bases match.
2. Fit each unit to its outer housing before putting on shaft.
3. Add or remove shims between cap and base as required to obtain snug fit of unit in outer housing with cap bolts drawn down securely.
4. Check fit by prying against lubrication stud in unit through the lubrication hole in housing cap with a screwdriver or small pinch bar depending upon size of the pillow blocks.

The snug fit becomes a matter of judgment. A loose or sloppy fit may allow a unit to move in its outer housing thus wearing the mating surfaces. Too tight a fit will not allow the unit to move and compensate for misalignment and for shaft deflection caused by belt pull and dead weight.
5. Install bearings per steps 1 to 4 above.

Table 1—Setscrew Torque

Bore Size	Setscrew Size	In. - lbs.
1-3/16 - 1-11/16	5/16	165
1-3/4 - 2-1/2	3/8	290
2-11/16 - 3-1/2	1/2	620
3-15/16 - 5	5/8	1325

Table 2—Bolts Tightening Torque

Bolt Size	Torque ft. - lbs.
3/8-16	20
1/2-13	50
5/8-11	100
3/4-10	175
7/8-9	170
1-8	250
1-1/8-7	350

LUBRICATION GUIDELINES

This bearing is factory lubricated with a lithium or lithium complex base grease which is suitable for most applications. However, extra protection is necessary if the bearing is subjected to excessive moisture, dust, corrosive vapor or other harsh environments. In these cases, the bearing should contain as much grease as speed will permit (a full bearing with consequent slight leakage through the seal is the best protection against contaminant entry).

For relubrication, select a grease that is compatible with a lithium or lithium complex grease. The following table is a general guide for normal operating conditions. However, some situations may require a change in lubricating periods as dictated by experience.

LUBRICATION GUIDE

NOTE: Read preceding paragraphs before establishing lubrication schedule.

Table 3—Lubrication Guide

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 1500 RPM	1501 to 2000 RPM	2001 to 2500 RPM	2501 to 3000 RPM
8	12	12	10	7	5	4	3	2
16	12	7	5	4	2	2	2	1
24	10	5	3	2	1	1	1	1

Lubrication recommendations are intended for standard products applied in normal operating conditions. For modified products, high temperature environments and other anomalous applications, contact product engineering at (864)284-5700.

Normal Operation: This bearing has been greased at the factory and is ready to run. Table 3 is a general guide for relubrication. However, certain conditions may require a change of lubricating periods as dictated by experience. See sections for “High Speed Operation” and “Operating in Presence of Dust, Water, or Corrosive Vapors.”

High Speed Operation: High speed operation is 70% of maximum catalog speed and above. 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 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 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.” 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.

Operating Temperature: Abnormal bearing temperature may indicate faulty lubrication. Normal temperature may range from a few degrees up to 100°F above ambient, depending on bearing size, speed, loading and environmental conditions. Unusually high temperature, in this range, accompanied by excessive leakage of grease indicates too much grease. In the circumstance that there is excess grease in the bearing, remove the grease fitting to allow the excess grease to purge. When purging ceases, wipe excess grease with a clean rag and screw fitting back into the bearing. 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.

Special Operating Conditions: Refer acid, chemical, extreme or other special operating conditions to Dodge Industrial Product Support in Greenville SC at (864)284-5700.

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 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.

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.

Successful operation is dependent upon adequate lubrication. Precaution should be taken during handling and recycling grease, oil or water glycol mixtures.

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