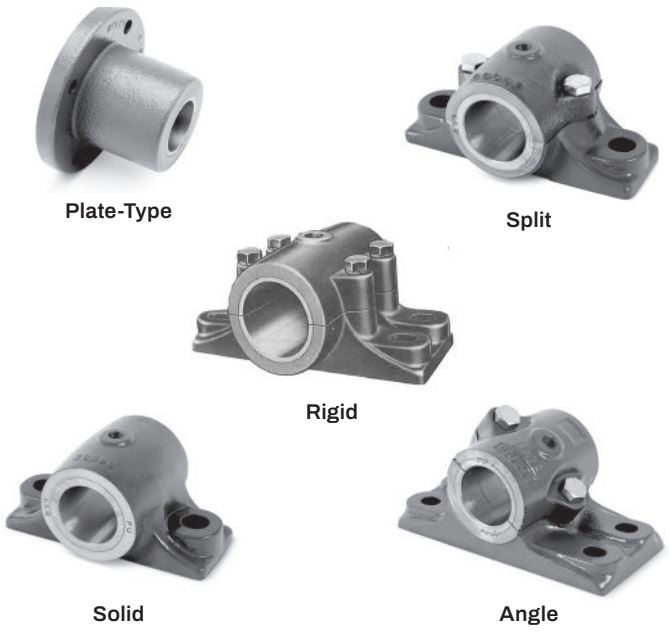
# Babbitted Bearings
## Instruction Manual

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.**




This manual applies to various types of Dodge Babbitted Bearings.

**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.**

## INSTALLATION

1. The shaft journal surface finish must be equal to that of commercial steel shafting (about 32 micro inches). It must be without nicks and burrs and the shaft diameter within the tolerance of +0.000/ -0.002. The shaft must be straight.
2. Position bearing when possible so that grease groove is opposite the most heavily loaded surface of bearing bore. Direction of load should not be closer than 30 degrees to grease groove or closer than 30 degrees to the joint between cap and base.
3. Remove cap from base of bearing and clean shaft and bore of bearing. Coat bore with grease.

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

4. Assemble bearing on shaft. Install cap on base. Torque cap bolts to value listed in table(s).
5. Line up bearings accurately with shaft. Torque bearing mounting bolts to value given in table(s). Maintain proper bearing alignment for uniform distribution of load under all operating conditions. A feeler gauge must be used to establish the correct pillow block bore to shaft alignment or equal clearance at all four points.
6. Ambient temperature should not exceed 130 degrees Fahrenheit. If the shaft transmits heat from a source such as an oven, the shaft temperature at the bearing should not exceed 130 degrees Fahrenheit.
7. Bearings should be protected against adverse operating conditions.
8. Normal running loads must not exceed ratings shown in load tables (see catalog). Starting and occasional peak loads should not exceed ratings by more than 100%.

## LUBRICATION

Bearings are designed for grease lubrication using grease cup or pressure lubrication fitting. In placing a new bearing in operation, add grease until it shows at both ends of bearing. During the run-in period while shaft is seating in bearing, it is especially necessary to provide frequent and ample lubrication. Add grease frequently, each time adding grease until there is little or no discoloration of the grease forced out ends of bearing.

After the run-in period a regular schedule of greasing should be set up. The required lubrication period of a bearing depends upon speed, load and other conditions of the particular installation and can best be determined by observation. Add grease at each lubrication until a little grease is forced out at ends of bearing.

**Table 1–Recommended Grease Properties (if not otherwise specified)**

| Grease Base | Grease Melting Point F° | Water Resistance |
|---|---|---|
| Calcium | 130–220 | Good |
| Sodium | 325–375 | Poor |
| Lithium | 360–570 | Good |
| Bentonite | Non-melting | Excellent |
| Aluminum | 475–500 | Excellent |

**Table 2–Lubrication Fittings**

| 1/8 Grease Fitting | 405015 |
|---|---|
| **Reducer Bushings** | |
| 1/2 × 1/8 | 430081 |
| 3/8 × 1/8 | 430086 |
| 1/4 × 1/8 | 430087 |
| 3/8 × 1/4 | 430085 |
| 1/2 × 1/4 | 430088 |

**Table 3–Split Babbitted Bearings**

| Bearing Size | Mounting Bolt | | Brg. Cap Bolt | |
|---|---|---|---|---|
| | Size | Torque (in-lb) | Size | Torque (in-lb) |
| 1/2, 5/8, 3/4 | 5/16 | 130 | 5/16 | 100 |
| 7/8, 15/16, 1 | 3/8 | 240 | 5/16 | 100 |
| 11/16, 1-1/8, 1-3/16, 1-1/4 | 3/8 | 240 | 3/8 | 180 |
| 5/16, 1-3/8, 1-7/16, 1-1/2, 1-5/8, 1-11/16, 1-3/4 | 1/2 | 600 | 7/16 | 280 |
| 1-15/16, 2, 2-3/16, 2-1/4 | 5/8 | 1200 | 1/2 | 420 |
| 2-7/16, 2-1/2 | 5/8 | 1200 | 5/8 | 900 |
| 2-11/16 | 3/4 | 2100 | 5/8 | 900 |
| 2-15/16, 3 | 3/4 | 2100 | 3/4 | 1560 |
| 3-7/16 | 7/8 | 2040 | 3/4 | 1560 |
| 3-15/16 | 1 | 3000 | 7/16 | 1500 |

**Table 4–Solid Babbitted Bearings**

| Bearing Size | Mounting Bolt | |
|---|---|---|
| | Size | Torque (in-lb) |
| 1/2 | 5/16 | 100 |
| 5/8,3/4 | 5/16 | 100 |
| 7/8, 15/16, 1 | 3/8 | 180 |
| 11/8, 1-3/16, 1-1/4 | 3/8 | 180 |
| 15/16, 1-3/8, 1-7/18, 1-1/2 | 1/2 | 420 |
| 1-11/16, 1-3/4 | 1/2 | 420 |
| 1-15/16, 2 | 5/8 | 900 |
| 2-3/16 | 5/8 | 900 |
| 2-7/16 | 3/4 | 1560 |
| 2-11/16 | 3/4 | 1560 |
| 2-15/16 | 3/4 | 1560 |
| 3-3/16, 3-7/16 | 7/8 | 1500 |

**Table 5–Angle Babbitted Bearings**

| Bearing Side | Mounting Bolt | | Brg. Cap Bolt | |
|---|---|---|---|---|
| | Size | Torque (in-lb) | Size | Torque (in-lb) |
| 1-15/16, 2-3/16 | 1/8 | 600 | 1/2 | 420 |
| 2-7/16, 2-11/16, 2-15/16 | 5/8 | 1200 | 5/8 | 900 |
| 3-7/16, 3-15/16 | 3/4 | 2100 | 3/4 | 1560 |
| 4-7/16, 4-15/16 | 7/8 | 2040 | 7/8 | 1500 |
| 5-7/16 | 1 | 3000 | 1 | 2280 |
| 5-15/16 | 1-1/8 | 4200 | 1 | 2280 |
| 6-1/2 | 1-1/8 | 4200 | 1-1/4 | 4560 |
| 7 | 1-1/4 | 6000 | 1-1/4 | 4560 |
| 8 | 1-3/8 | 8040 | 1-1/4 | 4560 |

**Table 6–Plate-Type Babbitted Flange Bearings**

| Bearing Size | Mounting Bolt | |
|---|---|---|
| | Size | Torque (in-lb) |
| 15/16, 1 | 3/8 | 180 |
| 13/16, 1-1/4 | 3/8 | 180 |
| 17/16, 1-1/2 | 1/2 | 420 |
| 1-11/16 | 1/2 | 420 |
| 1-15/16, 2 | 1/2 | 420 |
| 2-3/16 | 5/8 | 900 |
| 2-7/16 | 5/8 | 900 |
| 2-11/16 | 3/4 | 1560 |
| 2-15/16 | 3/4 | 1560 |
| 3-7/16 | 3/4 | 1560 |
| 3-15/16 | 3/4 | 1560 |
| 4-7/16 | 7/8 | 1500 |
| 4-15/16 | 1 | 2280 |

**Table 7–Rigid Babbitted Bearings**

| Bearing Size | Mounting Bolt | | Brg. Cap Bolt | |
|---|---|---|---|---|
| | Size | Torque (in-lb) | Size | Torque (in-lb) |
| 1-15/16, 2, 2-3/16, 2-1/4 | 1/2 | 600 | 1/2 | 420 |
| 2-7/16, 2-1/2, 2-11/16 | 5/8 | 1200 | 5/8 | 900 |
| 2-15/16, 3 | 5/8 | 1200 | 3/4 | 1560 |
| 3-3/16, 3-7/16, 3-1/2, 3-15/16 | 3/4 | 2100 | 3/4 | 1560 |
| 4-7/16, 4-15/16 | 7/8 | 2040 | 7/8 | 1500 |
| 5-7/16 | 1 | 3000 | 11/8 | 3240 |
| 5-15/16 | 1-1/8 | 4200 | 11/8 | 3240 |
| 6-1/2 | 1-1/8 | 4200 | 11/4 | 4560 |
| 7 | 1-1/4 | 6000 | 11/4 | 4560 |
| 7-1/2, 8 | 1-3/8 | 8040 | 11/4 | 4560 |

**Dodge Industrial, Inc.**
1061 Holland Road
Simpsonville, SC 29681
+1 864 297 4800

*30510222*

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MN3051 REV-A 02/22