

# Instruction Manual

## DODGE® BLO Mono Block

These instructions must be read thoroughly before installation or operation.

### DESCRIPTION

The BLO Mono Block bearing series incorporates a floating NU style cylindrical roller bearing and a locating ball bearing. The bearings are oil lubricated by means of a flinger ring (P/N 5) which is immersed in oil sump. The seals on the unit are of a labyrinth design and the seal rings which are located on the shaft have machined V-grooves to prevent oil leakage. Ingress of contamination can be further avoided by relubricatable grease chamber located in covers (P/N 17).

### 1) Mounting Preparations:

Prior to mounting check the following:

- All mating parts conform to drawing
- The shaft meets the dimensional requirements
- All parts are clean and free of machining chips or molding sand
- The corrosion preventive must be cleaned from machined housing face
- All burrs have been removed, sharp edges have been broken
- The designation of the bearing inserts and accessories must comply with the data indicated on drawing

### 2) Mounting of Bearings onto Shaft

Bearings can be mounted in either cold or warm condition. The mounting type preferred depends on the bearing size. Rolling bearings are commonly mounted in a warm condition using the following equipment (Induction heater, oil bath, hot plate or oven).

Prior to mounting the roller bearing inner ring and ball bearing onto shaft the flinger ring shaft support rings (P/N 6) are slipped onto the shaft until they abut the shaft shoulder. The inner ring of the roller bearing and the ball bearing are then heated to 175°F–195°F prior to mounting. Bearing temperature not to exceed 250°F.

The cylindrical roller bearing inner ring and the ball bearing should be placed in correct position. Ball bearing on fixed end and cylindrical on float end. Fixed end typically is located on thread bearing seat. Slide warm bearings into position and mount lockwasher and locknut onto shaft applying pressure to bearing face. Once bearings have cooled down retighten the locknut and bend lockwasher tang into locknut slot.

**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 risks 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.**

### 3) Mounting of Housing

Mount snap rings into housing bore. Press outer ring of cylindrical roller bearing into housing bore until it abuts the snap ring. To facilitate mounting, the housing bore can be heated. Take care that the bearing ring is not tilted during mounting. If necessary apply slight blows onto the outer ring face by means of a plastic hammer. The cage must not be damaged during this procedure.

Subsequently the housing must be placed onto the face of the floating bearing end so the shaft can be inserted from the top end. This bearing seat must be heated by means of a hot plate placed onto housing face of the locating bearing end. Heat to approximately 120°F–140°F. Insert flinger rings (P/N 5) into housing cavity thru the top plate opening (P/N 4). Take pre-mounted shaft and bearings and carefully insert into the housing making sure the flinger rings are inserted through shaft. During shaft insertion slowly rotate until the outer ring of the ball bearing contacts the snap ring in the housing bore.

During insertion of the shaft into the housing the flinger rings (P/N 5) must be brought into the housing through the opening provided at the housing top. The shaft must go thru these flinger rings (P/N 5) during insertion into housing. Pay attention to orientation of the rings, the mounting screws of each ring should be facing each other during shaft insertion (Ref Drawing). Secure flinger ring (P/N 5) to shaft sleeves (P/N 6) using screws (P/N 22) prior to mounting the top cover plate (P/N 4). Refer to Table 2 for the appropriate torque value for flinger ring screws based on BLO size. Once screws (P/N 22) are secure punch screw head with center punch.

Bring housing into horizontal position.

Bolt on covers (P/N's 2 & 3).

Slide on seal spacers (P/N's 13 & 14) and torque seal speed setscrew.

Place top plate cover (P/N 4) with gasket material (P/N 8) between housing surface.

Attach vent plug (P/N 16), drain plug (P/N 19 & 20) & oil level sight glass (P/N 15 & 23).

After completing assembly of the shaft, bearings, seals & housing, the fan wheel and coupling can be mounted. If blows are necessary to mount fan wheel or coupling, support shaft in order to have impact blows not transmitted through bearing inserts.

### 4) Lubrication

Fill oil through vent plug (P/N 16) until oil level is half way up the oil sight glass then replace the vent plug. Sealing grease shall be inserted thru grease fittings until it is seen escaping at the shaft gap. During this procedure the fan shaft shall be slowly rotated by hand. The grease should be compatible with the oil being used within the housing. Under normal operating conditions a Lithium base grease of a consistency class 3 would be suitable as a sealing grease.

## 5) Shipping

If BLO units are supplied with shafting as an assembly from Baldor Electric Company, they will arrive without oil. Units need to be filled with oil prior to start up to the static oil level indicated as the center of the static oil sight window (P/N 23) located on the side of the housing. The following are approximate oil quantities in liters and should be used only as reference.

**Table 1 - Oil Quantity**

Unit Size	Oil Qty. (Liters)
BLO-40A	0.9 L
BLO-45A	0.9 L
BLO-50A	1.5 L
BLO-55A	1.5 L
BLO-60A	2.2 L
BLO-65A	2.2 L
BLO-70A	3.0 L
BLO-75A	3.0 L
BLO-80A	4.0 L
BLO-85A	4.0 L
BLO-90A	6.0 L
BLO-95A	6.0 L
BLO-100A	6.0 L
BLO-110A	6.0 L

If BLO units are mounted with fan wheel and coupling assembly, ship unit with oil fill volume of 1/8 of the listed volume in Table 1. Upon installation drain oil from housing and follow above oil fill instructions.

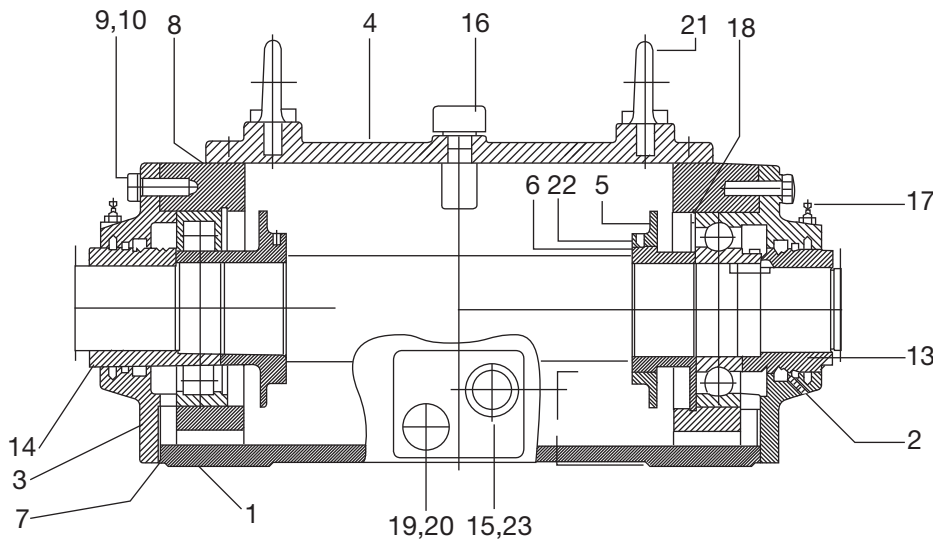
## 6) Maintenance

Check oil level on regular intervals in static condition.

Drain oil after first 300 to 500 hours of operation and examine condition of oil. The test results will be an indication for the relubrication interval. Fresh air fans require oil change after 6 months of operation. Hot gas fans require oil change after 3 months of operation.

**Table 2 - Torque Value for Flinger Ring Screws**

Unit Size	Screw Torque (ft-lbs)
BLO-40A	5.6 ft-lbs
BLO-45A	5.6 ft-lbs
BLO-50A	5.6 ft-lbs
BLO-55A	5.6 ft-lbs
BLO-60A	5.6 ft-lbs
BLO-65A	5.6 ft-lbs
BLO-70A	5.6 ft-lbs
BLO-75A	5.6 ft-lbs
BLO-80A	9 ft-lbs
BLO-85A	9 ft-lbs
BLO-90A	13 ft-lbs
BLO-95A	13 ft-lbs
BLO-100A	13 ft-lbs
BLO-110A	13 ft-lbs



**Figure 1 - BLO Mono Block Reference Drawing**

**BALDOR**  
A MEMBER OF THE ABB GROUP

P.O. Box 2400, Fort Smith, AR 72902-2400 U.S.A., Ph: (1) 479.646.4711, Fax (1) 479.648.5792, International Fax (1) 479.648.5895

**Dodge Product Support**

6040 Ponders Court, Greenville, SC 29615-4617 U.S.A., Ph: (1) 864.297.4800, Fax: (1) 864.281.2433

[www.baldor.com](http://www.baldor.com)

© Baldor Electric Company  
MN3072 (Replaces 499309)



All Rights Reserved. Printed in USA.  
06/2013 Printshop 100