

## SERVICE GUIDE

WD [145 & 146] AND WP [155 & 156] SERIES MOTORS

ENGINEERING  
TOMORROW



For Use With Seal Kit: 155222001

AX00000317en-US0101 | PI155001

dimensions: mm [in]

**IMPORTANT NOTE:** The WD & WP Series Motors depend on the correct orientation of parts as well as correct internal timing for proper motor operation. Before disassembling the motor, it is highly recommended that paint or a marker be used to make a “V” shaped set of lines from the endcover to the housing. This will aid in reassembling the motor components properly. It is also important that the steps involving internal parts timing be followed carefully to insure proper motor operation.

- A)** Remove all shaft related components from shaft (14) (i.e. keys, nuts). To aid in reassembly of the motor, make a “V” shaped set of lines from the endcover (10) to the housing using either paint or a marker. With shaft facing down, secure motor in vise by clamping on to the housing (6).
- B)** Loosen and remove seven bolts (13) with washers (12) holding motor assembly together. Remove endcover (10). Remove rotor set assembly (9), drive link spacer (16) & wear plate (8). **NOTE: Some WD & WP models do not use a drive link spacer (16).** Remove body seals (5) from rotor assembly (9) and housing (6) and discard seals. Remove drive link (7) and thrust bearing (4) from motor and lay aside. **NOTE: The WD does not use the thrust bearing between the shaft and wear plate.**
- C)** Gently tap shaft (14) upward through housing (6) and remove through rear of housing. Remove housing (6) from vise. Collect thrust bearing (4) and thrust washer (3) from the rear of the housing while turning the housing over and discard thrust washer (3). Secure the housing in the vise with the flange end facing up. Gently pry dust seal (1) from housing using a small screwdriver and a hammer. Gently remove shaft seal (2) with a small screwdriver and discard it.

At this point, all parts should be cleaned in an oil-based solvent and dried using compressed air (For safety, observe all OSHA safety guidelines). All new seals should be lightly coated in clean oil prior to installation.

- D)** Place shaft (14) on a clean flat surface with output end facing up. Place thrust bearing (4) then thrust washer (3) on the shaft. Install shaft seal (2) down onto shaft (14) making sure that lip on seal faces down. (See Figure 1 for shaft component orientation).

**NOTE:** To return the WD & WP Series Motors to proper operation, the rotation code of the motor must be known. The rotation code of the motor is 145 or 155 (clockwise) 146 or 156 (counter-clockwise) – the first 3 digits of the model code. If the rotational code is not known, and if port ‘A’ is pressurized, motors that are to have the shafts turning clockwise (as viewed from the shaft end) should be timed using the “145” or “155” series and motors that are to have the shafts turning counterclockwise (as viewed from shaft end) should be timed using the “146” or “156” series.

- E)** Turn shaft (14) over so that output end of the shaft faces down. Lower drive link (7) into shaft making sure that the timing mark end of drive link faces up and that the timing mark on the end of the drive link (7) is aligned to the left of any open slot when viewing from the top of the shaft (14). See Figure 3 for proper shaft / drive link timing.
- F)** Turn housing (6) over so that the pilot of housing faces down and secure housing (6) in vise. Without disturbing the shaft seal (2), and drive link (7), carefully lower shaft assembly into housing. Apply pressure using an arbor press or a rubber mallet to make sure that the shaft end is slightly lower than the housing bolt hole surface to allow for the rear thrust bearing (4). For WD series motors the shaft will be flush with the rear of the housing.
- G)** Place a body seal (5) in groove in the rear surface of the housing (6). Place thrust bearing (not used in WD series motors) in the housing (6) on top of shaft (14). Place wear plate (8) on housing. Make sure that the seven valving slots on the wear plate line up with the seven bolt holes on the housing (6).
- H)** Place a body seal (5) in the grooves on both sides of the rotor assembly (9). With the seal groove surface on the rotor assembly facing wear plate, lower rotor assembly (9) onto drive link (7) making sure that the timing mark on drive link is aligned with a peak on the rotor (9) for 146 or 156 series, or with a valley on the rotor (9) for 145 or 155 series (See Figure 2). After assembling the rotor assembly on the drive link rotate the rotor assembly to line up the assembly bolt holes.
- I)** Place drive link spacer, (16) **if used**, inside rotor assembly on top of the drive link (7). Place endcover (10) onto motor. There is no specific orientation to assemble the end cover on the motor.
- J)** Install one washer (12) on each bolt (13) from the threaded end side. Insert seven assembly bolts (13) with washers (12) into bolt holes and pre-torque to 13.6 Nm [10 ft. lb.]. Using a crisscross pattern, final torque bolts to 35-40 Nm [25-30 ft. lb.].
- K)** Remove motor from vise and place on work surface with shaft (14) facing up. Making sure that lip on dust seal (1) faces up, place dust seal (1) over shaft (14). Using a sleeve and hammer, carefully drive dust seal (1) into place.

# SERVICE GUIDE

WD [145 & 146] AND WP [155 & 156] SERIES MOTORS

ENGINEERING  
TOMORROW

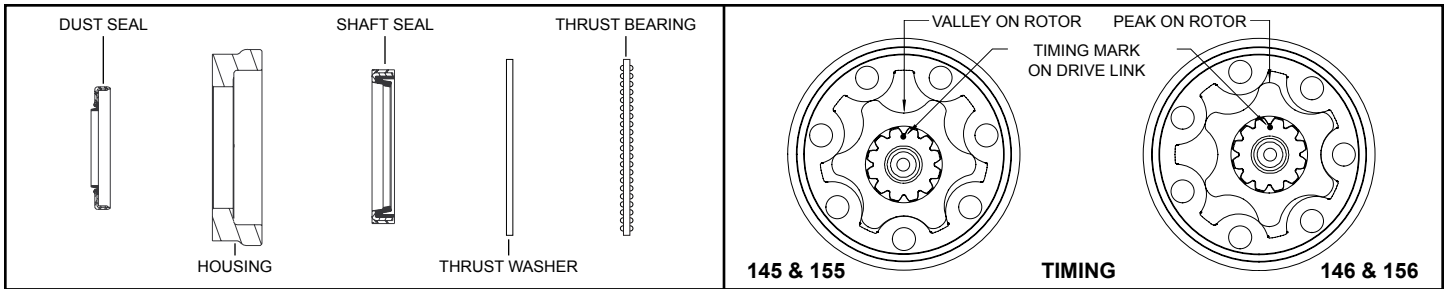


FIGURE 1

FIGURE 2

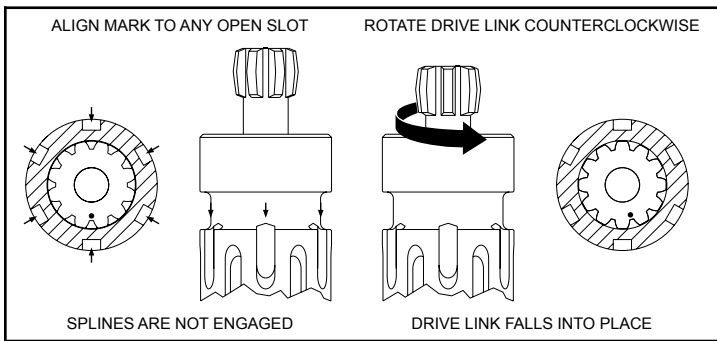


FIGURE 3

# SERVICE GUIDE

WD [145 & 146] AND WP [155 & 156] SERIES MOTORS

ENGINEERING  
TOMORROW



## EXPLODED VIEW DIAGRAM

- 1. \* Dust Seal
  - 2. \* Shaft Seal
  - 3. \* Thrust Washer
  - 4. \* Thrust Bearings (2)
  - 5. \* Body Seals (3)
  - 6. Housing
  - 7. Drive Link
  - 8. Wear Plate
  - 9. Rotor Assembly
  - 10. Endcover
  - 11. Endcover Plug
  - 12. Assembly Bolt Washers (7)
  - 13. Assembly Bolts (7)
  - 14. Shaft
  - 15. Shaft Key
  - 16. Drive Link Spacer
- \* Contained in Seal Kit 155222001

