

**SERVICE INSTRUCTIONS FOR THE DR [630] SERIES MOTORS**

For Use With Seal Kit: 600555100

dimensions: mm [in]

**NOTE:** Housing and body seals on products manufactured after July 1, 2016 are o-ring seals. Prior to this date these seals were square cut seals. It is recommended that if the product being serviced has square seals to replace with the square seals in this kit, likewise if the product has o-ring seals, replace with the o-ring seals in this kit.

- A) Remove all shaft related components from shaft (31) (i.e. keys, wire rings, nuts). To aid in reassembly of the motor, make a "V" shaped set of lines from the endcover to the housing using either paint or a marker. With shaft facing up, secure motor in vise by clamping on to housing (18).
- B) Using a small screwdriver, pry dust seal (1) from front of housing (18). Remove retaining snap ring (12) from groove in pilot of housing (18). Remove motor from vise. Reposition motor with shaft facing down and secure motor in vise.
- C) Loosen and remove seven bolts (30) holding motor assembly together. Remove endcover (28) carefully as piston (26) and spring (27) may fall out. If piston does not come out, carefully pry piston (26) out of endcover (28) and lay aside. Remove O-ring seal (10) and white backup seal (11) from endcover and discard seals. Remove spring (27) and lay aside.
- D) Lift commutator container and commutator (25) from motor and lay aside. Place commutator on a flat, clean surface with the seal (9) facing up. Place the tip of a small screwdriver on the seal (9) and gently tap until opposite side of seal lifts from groove. Remove seal (9) and discard.
- E) Remove manifold (24), rotor set (23) and divider plate (22) from motor. Remove all seals (7 & 8) from components and discard. (Caution - Do not allow rolls to drop from rotor assembly (23) when removing rotor assembly from motor.)
- F) Using a clean rag, grasp output end of shaft (31) as close to housing as possible. While maintaining grasp on shaft, use a rubber mallet to gently tap downwards on drive link (21) until shaft (31) comes free from housing (18). Remove drive link (21) from shaft (31) and lay aside. Without changing grip on shaft (31), set shaft onto a clean, flat surface with output end of shaft facing up. Remove thrust bearing (20) from rear of housing.

**Caution: Although shaft bearing (14) can be removed from shaft for inspection, the rollers are not held in place by the bearing cage. If bearing is removed from shaft, the rollers will come out of the race. If no bearing problems are suspected, it is recommended that shaft bearing and thrust bearing (17) and thrust washers (16) be left on shaft.**

- G) Remove seal carrier (13) from shaft (31). Using a thin, flat bladed screwdriver, carefully pry shaft seal (5), backup seal (4) and metal backup shim (3) from seal carrier (13) and discard. Remove high pressure seal (2) from housing (18) and discard.

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 with clean oil prior to installation.

- H) Place housing (31) on a clean, flat surface with shaft end of housing facing up. Install high pressure seal (2) into groove in pilot of housing (18). Place shaft on a clean, flat surface with output end facing up. NOTE: If bearings were not removed from shaft, go to next step. Place thrust washer (16), thrust bearing (17) and second thrust washer (16) onto shaft (31). Place bearing spacer (15) onto shaft. Coat all parts of shaft bearing (14) in bearing grease and reassembly rollers into bearing (14). Making sure that side of bearing with snap ring faces up, lower bearing (4) onto shaft (31).
- I) Being careful not to cut seal on keyway, place shaft seal (5) over shaft (31) making sure that lip on seal faces down (See Figure 1). Repeat process for backup seal (4) making sure that lip faces down. Place metal backup shim (3) over shaft (31). With flat side facing up, place seal carrier (13) down over shaft. Using an arbor press, carefully press down on seal carrier (13) to press seal assembly (3-5) into seal carrier (13).
- J) Place shaft (31) assembly into housing (14). If necessary, gently tap downward on shaft with a rubber mallet. Install retaining snap ring (12) into groove in housing pilot (18). (NOTE: It may be necessary to lightly tap the retaining snap ring (12) to allow it to seat properly.) Using a clean rag, grasp shaft (31) and lift housing from work surface. Position housing/shaft assembly in vise with shaft facing down and secure motor in vise by clamping on to housing.
- K) Install housing seal (6) into groove in housing (18). Place drive link (21) into end of shaft (31) and gently tap downwards with rubber mallet to seat seal carrier (13) against retaining ring (12). Place thrust bearing (20) over drive link (21) and onto end of shaft (31). Place divider plate (22) onto housing (18) aligning bolt holes. Place body seals (7) in grooves in both sides of rotor (23). Place rotor (23) onto divider plate (22) with side of rotor with chamfer in splines facing divider plate (22). After engaging drive link splines, it may be necessary to rotate rotor (23) to align bolt holes. Place manifold (24) over rotor (23) with seal groove side up. Install manifold seal (8).
- L) Install the commutator seal (9) into the commutator (25) with the metal side facing up. Use finger pressure to press the seal down flush with the surface of the commutator. Place the commutator container onto the manifold (24) and then place the commutator onto the protruding end of the drive link (21) making sure that the seal side faces up.

M) Install the remaining body seal (7) in the groove in the face of the endcover (28). Install piston spring (27) into endcover (28), then the white backup seal (11) followed by the O-ring seal (10). Lining up the alignment pin with the hole in the endcover, press piston (26) into the endcover (28). While holding the piston (26) in the endcover, lower the endcover assembly onto the motor. Check to make sure that the endcover ports are in their original position.

N) Install the seven assembly bolts (20) and pre-torque to 13,6 Nm [10 ft. lb.]. Using the bolt torque pattern in Figure 2 final torque all bolts to to 69,8 ± 7,5 Nm [51.5 ± 5.5 ft. lb.]. Remove motor from vise and place on work surface with shaft facing up. Install dust seal (1) into bore in housing pilot. Replace shaft related components (i.e. keys, wire rings, nuts).

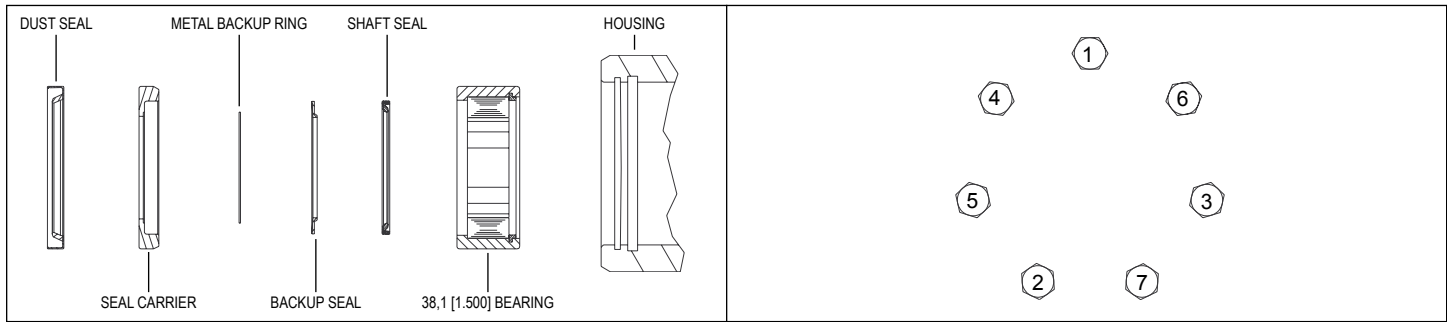


FIGURE 1

FIGURE 2

- 1. \* Dust Seal
- 2. \* High Pressure Seal
- 3. \* Metal Backup Shim
- 4. \* Backup Seal
- 5. \* Shaft Seal
- 6. \* Rear Housing Seal
- 7. \* Body Seals (3)
- 8. \* Manifold Seal
- 9. \* Commutator Seal
- 10. \* O-Ring Seal
- 11. \* Backup Seal
- 12. Retaining Snap Ring
- 13. Seal Carrier
- 14. 1.5" Bearing
- 15. Bearing Spacer
- 16. Thrust Washers (2)
- 17. Front Thrust Bearing
- 18. Housing
- 19. Rear Housing Bearing
- 20. Rear Thrust Bearing
- 21. Drive Link
- 22. Divider Plate
- 23. Rotor
- 24. Manifold
- 25. Commutator Assembly
- 26. Endcover Piston
- 27. Piston Spring
- 28. Endcover
- 29. I.D. Tag Assembly
- 30. Bolts (7)
- 31. Shaft
- 32. Key
- 33. Shaft Nut

\* Contained in Seal Kit 600555100

