

SERVICE INSTRUCTIONS FOR THE RE [530 & 531] SERIES MOTORS

For Use With Seal Kits: 500444004 & 700666000

dimensions: mm [in]

Housing/shaft disassembly and assembly

NOTE - These instructions are intended to service all RE motors with 1.5" Bearings. However, there are slight differences in the bearing/seal assemblies of these motors. It is important that you determine which motor type you have before servicing so that you can turn to the appropriate section. The section headings list each housing flange type. The housing number is the 7th - 9th alpha-numeric digit in the model code, which is located on the tag on the rear of the motor. If the tag is missing, the exploded views may be used to determine which housing type you have.

SECTION 1. "R" FLANGE MOTORS (ex. 530300R3131AAAAA)

- A)** Remove all shaft related components from shaft (26) (i.E. Keys, wire rings, nuts, etc.). Secure motor in vise by clamping onto housing. Remove retaining snap ring (9) from groove in pilot of housing (14). Lift shaft/bearing assembly from housing (14) then remove bearing spacer (10), bearing (11), thrust bearing (13) and two thrust washers (12) from shaft (26).
- B)** Being careful not to drop any rolls from bearing (11), pry out shaft seal (5), backup seal (4), metal backup shim (3a), metal backup ring (3) and dust seal (1) from bearing assembly (11). (Note: metal backup ring (3) may or may not come out of bearing (11). It is not necessary to remove the metal backup ring (3) from the bearing (11) to service the motor.) Remove high pressure seal (2) from groove in pilot of housing (14) discard shaft seal (5), backup seal (4) dust seal (1) and high pressure seal (2).

At this point, all parts should be cleaned in a 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.

- C)** Install high pressure seal (2) into groove in pilot of housing (14). Place shaft (26) on a clean, flat surface with output end facing up. Place thrust washer (12), thrust bearing (13) and second thrust washer (12) over shaft (26). Being careful not to cut seal on key-way, place shaft seal (5) over shaft (26) 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 (3a) over shaft. If metal backup ring (3) came out of bearing (11), place over shaft (26) making sure that large O.D. side faces down. Lightly grease bearing (11) if needed. Place bearing (11) over shaft making sure that the large O.D. side faces down. Using an arbor press, carefully press bearing (11) down to press seal assembly (3-5) into bearing (11).
- D)** Place shaft (26) assembly into housing (14). Install dust seal (1) over shaft (26) with lip facing up (see figure 1) and carefully press the seal down to seat it in the bearing (11). Place bearing spacer (10) over shaft (26) and push down until snap ring groove is visible. Install retaining snap ring (9) into groove in housing pilot (14). (Note: it may be necessary to lightly tap the retaining snap ring (9) and bearing spacer (10) to allow the retaining snap ring (9) to seat properly.) Replace all shaft related components (i.e. keys, wire rings, nuts).
- E)** See section 4 for motor disassembly and assembly.

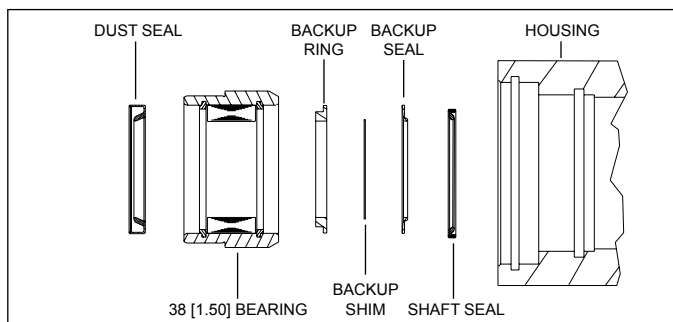
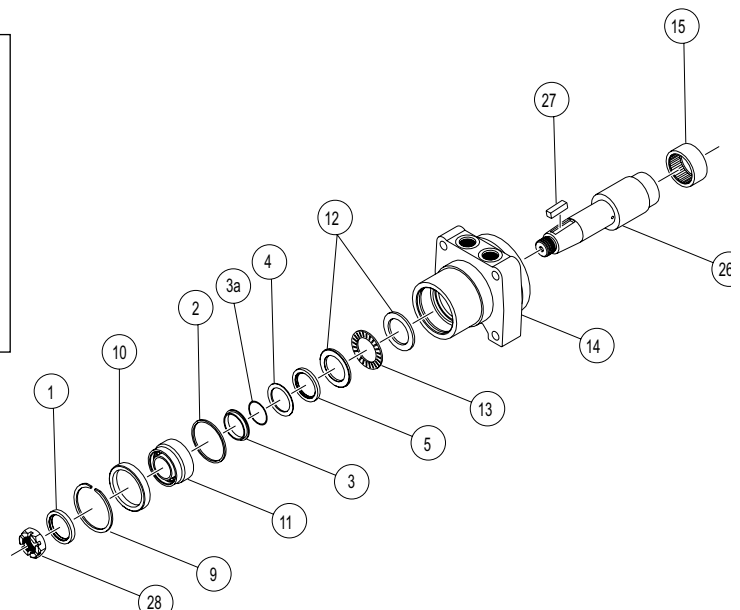


FIGURE 1

- | | |
|-------------------------|--------------------------|
| 1. * Dust Seal | 12. Thrust Washers (2) |
| 2. * High Pressure Seal | 13. Thrust Bearing |
| 3. * Metal Backup Ring | 14. Housing |
| 3a. * Metal Backup Shim | 15. Rear Housing Bearing |
| 4. * Backup Seal | 26. Shaft |
| 5. * Shaft Seal | 27. Shaft Key |
| 9. Retaining Snap Ring | 28. Shaft Nut |
| 10. Bearing Spacer | |
| 11. 1.5" Bearing | |
- * Contained in Seal Kit 700666000



SECTION 2. "A" FLANGE MOTORS (ex. 530300A5130AAAAA)

A) Remove all shaft related components from shaft (26) (i.e. keys, wire rings, nuts, etc.). Secure motor in vise by clamping onto housing. Remove retaining snap ring (9) from groove in pilot of housing (14). Lift shaft/bearing assembly from housing (14) then remove bearing (10), seal carrier (11), thrust bearing (13) and two thrust washers (12) from shaft (26).

B) Using a small thin bladed screwdriver, pry out shaft seal (5), backup seal (4) and metal backup shim (3) from seal carrier (11). Also pry dust seal (1) from bearing (10). Remove high pressure seal (2) from groove in pilot of housing (14) discard shaft seal (5), backup seal (4), metal backup shim (3), dust seal (1) and high pressure seal (2).

At this point, all parts should be cleaned in a oil-based solvent and dried using compressed air (for safety, observe all Osha Safety Guidelines). All new seal should be lightly coated with clean oil prior to installation.

C) Install high pressure seal (2) into groove in pilot of housing (14). Place shaft on a clean, flat surface with output end facing up. Place thrust washer (12), thrust bearing (13) and second thrust washer (12) over shaft (26). Being careful not to cut seal on key-way, place shaft seal (5) over shaft (26) making sure that lip on seal faces down (see figure 2). Repeat process for backup seal (4) making sure that lip faces down. Place metal backup shim (3) over shaft (26). With flat side facing up, place seal carrier (11) down over shaft. Using an arbor press, carefully press down on seal carrier (11) to press seal assembly (3-5) into seal carrier (11). Lightly grease bearing (10) if needed. Place bearing (10) over shaft making sure that side of bearing with snap ring against bearing rolls faces down.

D) Place shaft (26) assembly into housing (14). Install dust seal (1) over shaft (26) with lip facing up (see figure 2) and carefully press the seal down to seat it in the bearing (10). Install retaining snap ring (9) into groove in housing pilot (14). (Note: It may be necessary to lightly tap the retaining snap ring (9) to allow it to seat properly.) Replace all shaft related components (i.e. keys, wire rings, nuts).

E) See section 4 for motor disassembly and assembly.

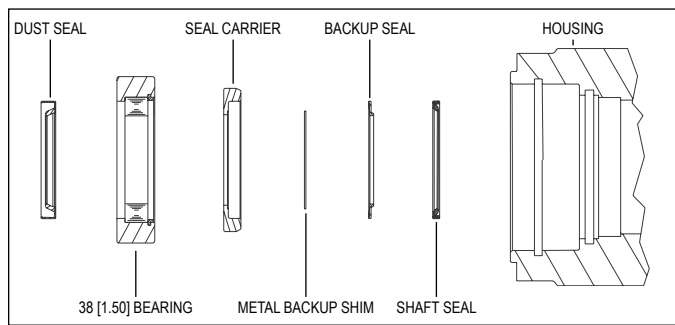
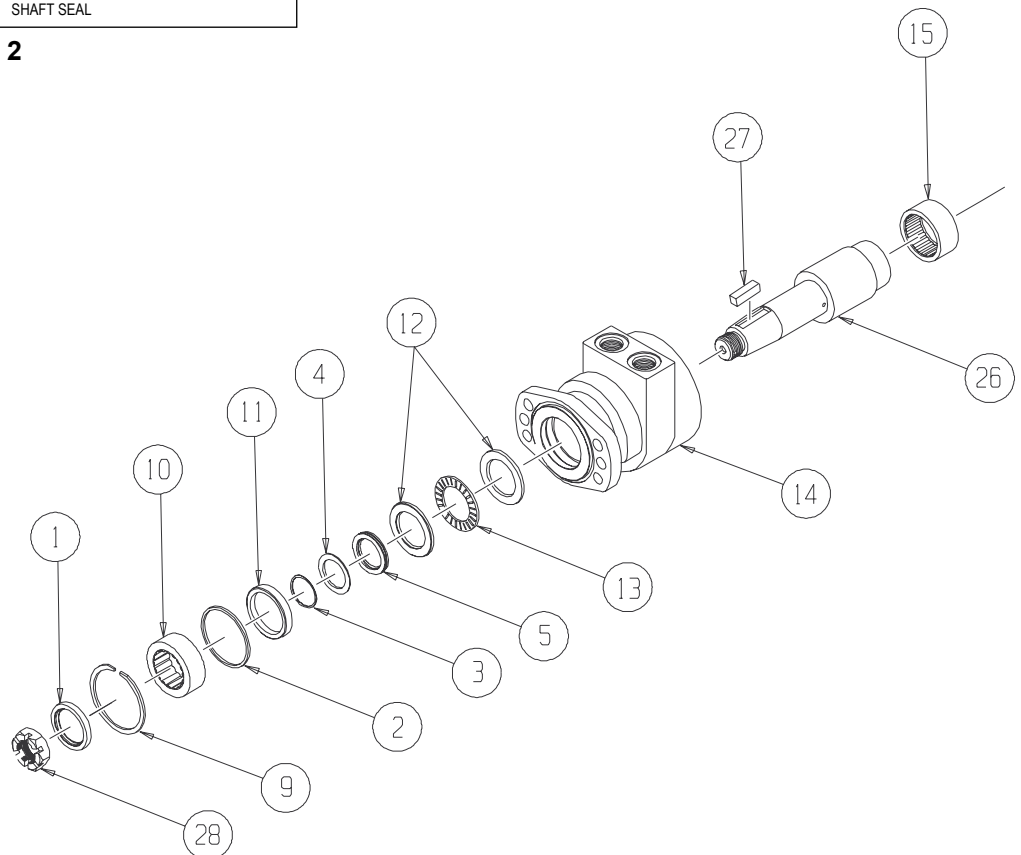


FIGURE 2

- 1. * Dust Seal
- 2. * High Pressure Seal
- 3. * Metal Backup Ring
- 4. * Teflon Backup Seal
- 5. * Shaft Seal
- 9. Retaining Snap Ring
- 10. 1.5" Bearing
- 11. Seal Carrier
- 12. Thrust Washers (2)
- 13. Thrust Bearing
- 14. Housing
- 15. Rear Housing Bearing
- 26. Shaft
- 27. Shaft Key
- 28. Shaft Nut

* Contained in Seal Kit 700666000



SECTION 3. "W" FLANGE MOTORS (ex. 530750W3131AAAAA)

A) Remove all shaft related components from shaft (28) (i.e. keys, wire rings, nuts, etc.). Secure motor in vise by clamping onto housing. Using a small thin blade screwdriver, pry dust seal (1) from housing (15) and discard. Remove retaining ring (9) from groove in pilot of housing (15). Lift shaft/bearing assembly from housing (15) then remove seal carrier assembly (10), bearing (11), bearing spacer (12), thrust bearing (14) and two thrust washers (13) from shaft (28).

B) Using a small thin bladed screwdriver, pry out shaft seal (5), backup seal (4) and metal backup shim (3) from seal carrier (10). Remove high pressure seal (2) from groove in pilot of housing (15) discard shaft seal (5), backup seal (4), metal backup shim (3) and high pressure seal (2).

At this point, all parts should be cleaned in a oil-based solvent and dried using compressed air (for safety, observe all Osha Safety Guidelines). All new seal should be lightly coated with clean oil prior to installation.

C) Install high pressure seal (2) into groove in pilot of housing (15). Place shaft on a clean, flat surface with output end facing up. Place thrust washer (13), thrust bearing (14) and second thrust washer (13) over shaft (28). Place bearing spacer (12) over shaft (26). Place seal carrier (10) on a clean flat surface with the flat side facing down. Install metal backup shim (3) into seal carrier (10). Making sure that lips on both seals face up (see figure 3), install backup seal (4) into seal carrier (10) followed by shaft seal (5). Using an arbor press, carefully press down on shaft seal (5) to press seal assembly (3-5) into seal carrier (10). With shaft seal (5) facing down, carefully lower seal carrier assembly down onto shaft making sure to not cut seal lip on keyway.

D) Place shaft (28) assembly into housing (15). Install retaining snap ring (9) into groove in housing pilot (15). (Note: it may be necessary to lightly tap the retaining snap ring (9) to allow it to seat properly.) Replace all shaft related components (i.e. keys, wire rings, nuts). Install dust seal (1) over shaft (25) with lip facing up (see figure 3) and carefully press the seal down to seat it in the housing (15).

E) See section 4 for motor disassembly and assembly.

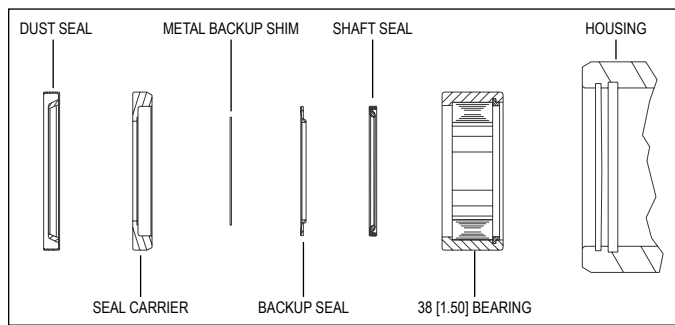
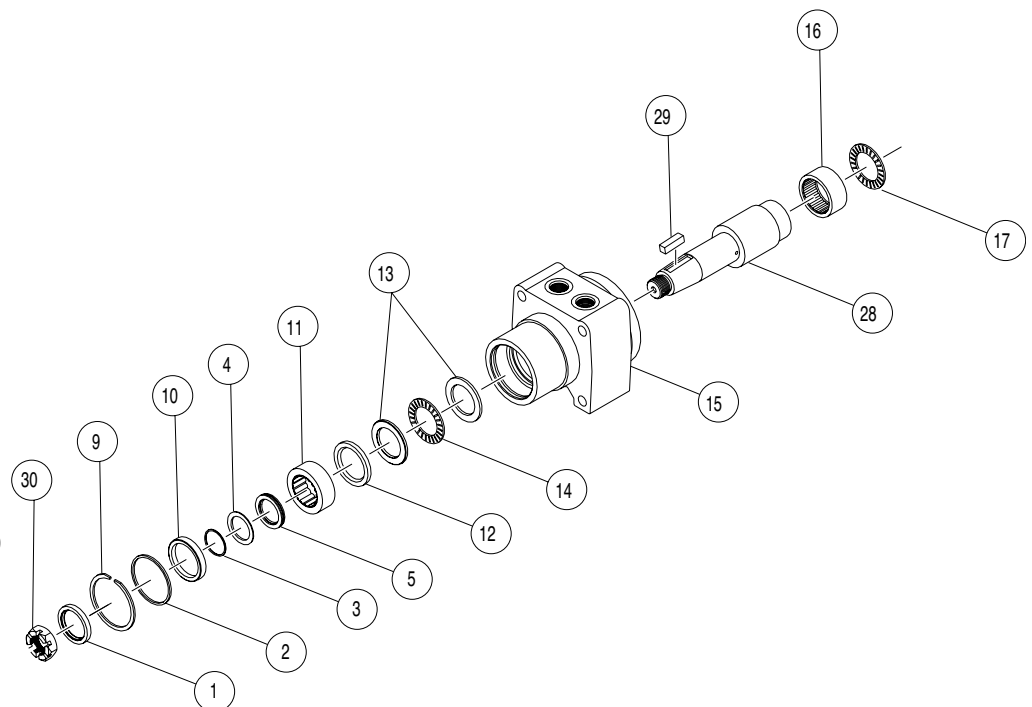


FIGURE 3

- 1. * Dust Seal
- 2. * High Pressure Seal
- 3. * Metal Backup Ring
- 4. * Backup Seal
- 5. * Shaft Seal
- 9. Retaining Snap Ring
- 10. Seal Carrier
- 11. 1.5" Bearing
- 12. Bearing Spacer
- 13. Thrust Washers (2)
- 14. Thrust Bearing
- 15. Housing
- 16. Rear Housing Bearing
- 17. Thrust Bearing
- 28. Shaft
- 29. Shaft Key
- 30. Shaft Nut

* Contained in Seal Kit 700666000



SECTION 4. MOTOR SECTION DISASSEMBLY & ASSEMBLY FOR “A”, “R”, & “W” FLANGE HOUSINGS

- A)** Loosen and remove seven bolts (31) holding motor assembly together. Remove end cover (22) and body seal (8). Discard seal. Remove balance plate (20) taking care not to drop the three steel balls (21) located in the three holes in the balance plate (20). Remove rotor assembly (19), manifold (17), drive link spacer (18) (note: some motors do not use spacer), and drive link (16). Remove body seals (7) from rotor assembly (19) and housing seal (6) from housing and discard seals.

At this point, all parts should be cleaned in a oil-based solvent and dried using compressed air (for safety, observe all osha safety guidelines). All new seal should be lightly coated with clean oil prior to installation.

- B)** If applicable, install thrust washer (17) onto end of shaft (Not shown in this Section. See the exploded view drawing in Section 3. Not all 530 Series motors use this thrust washer). Place drive link (16) into shaft making sure that end of drive link with crowned splines goes into shaft. Place manifold (17) onto housing aligning bolt holes. (Note: manifold side with only seven valving holes goes toward housing.)
- C)** Install a body seal (7) into the seal groove in both sides of rotor assembly (19). Making sure that side of rotor (19) with chamfer in splines faces down, place rotor assembly (19) on manifold (17) engaging drive link splines. Turn rotor assembly (19) to align bolt holes.
- D)** If motor came with spacer (18), place spacer on end of drive link (16). Place balance plate (20) onto the rotor assembly (19) with three holes for steel balls (21) facing up. Install three steel balls (21) into the holes in the balance plate (20).
- E)** Install endcover seal (8) into endcover (22). Place endcover (22) onto the balance plate (20) and align bolt holes. Insert seven bolts (31) into motor assembly. Pre-torque bolts to 13,6 Nm [10 ft. lb.]. Using the bolt pattern in Figure 4 final torque the bolts to 69,8 ± 7,5 Nm [51.5 ± 5.5 ft. lb.].

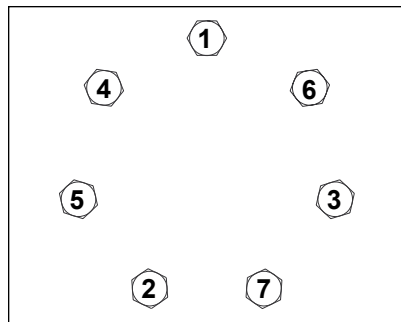
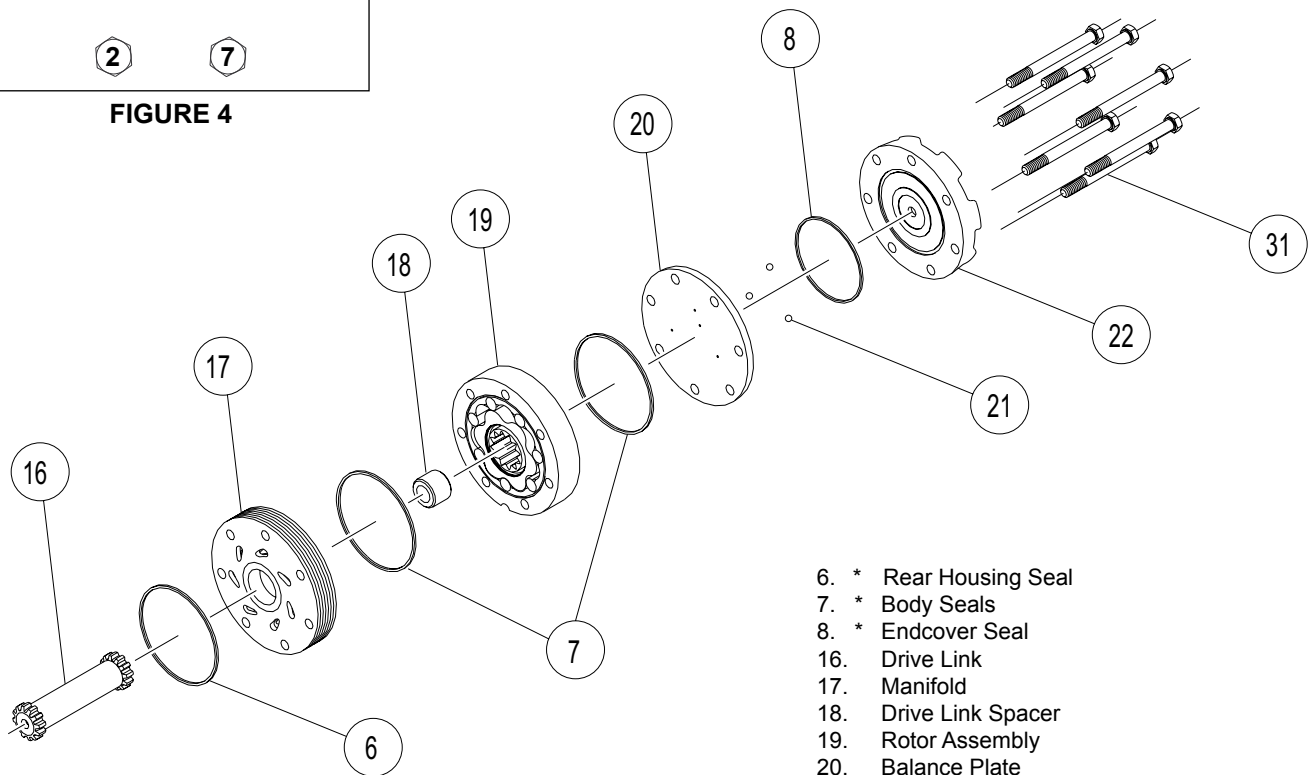


FIGURE 4



- 6. * Rear Housing Seal
- 7. * Body Seals
- 8. * Endcover Seal
- 16. Drive Link
- 17. Manifold
- 18. Drive Link Spacer
- 19. Rotor Assembly
- 20. Balance Plate
- 21. Steel Balls (3)
- 22. Endcover
- 31. Assembly Bolts (7)

* Contained in Seal Kit 700666000

SECTION 5. "T" FLANGE MOTORS (ex. 530540T3828AAAAA)

- A) Remove all shaft related components from shaft (23) (i.e. keys, nuts). To aid in reassembly of the motor, make a "V" shaped set of lines from the endcover (21) to the housing using either paint or a marker. With shaft facing down, secure motor in vise by clamping on to housing (10).
- B) Loosen and remove seven bolts (22) holding motor assembly together. Remove endcover (21) and endcover seal (7). Discard seal. Remove balance plate (19) taking care not to drop the three steel balls (20) located in the three holes in the balance plate (19). Remove rotor assembly (18), manifold (17), drive link spacer (16) (NOTE: Some motors do not use spacer), drive link (15) and thrust bearing (14). Remove body seals (6) from rotor assembly (18) and housing seal (2) from housing (10) and discard seals.
- C) Gently tap shaft (23) upward from housing (10) and remove through rear of housing and lay aside. Remove housing (10) from vise and turn over. Pry dust seal (1) from housing and discard.
- D) Using a slide and hammer bearing puller (see Figure 1) remove rear housing bearing (8) through rear of housing.
- E) Remove the thrust washer (13), front thrust bearing (12), front thrust washer (11), shaft seal (5), back-up seal (4), back-up shim (3a), and back-up ring (3) from housing. Discard items (3, 3a, 4, & 5).

At this point, all parts should be cleaned in an oil-base 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.

- F) Place shaft (23) on a clean flat surface with output end facing up. Place on shaft, thrust washer (13), then thrust bearing (12), then front thrust washer (11). Lightly coat seal area of shaft with clean oil and place shaft seal (5) down onto shaft (23) making sure that lip on seal faces down (See Figure 2 for correct seal orientation) until it contacts thrust washer (11). Carefully install the back-up seal (4) onto the shaft (23) with the flat side up and the seal lip facing the shaft seal (5). Place the metal back-up shim (3a) onto the shaft, then place the back-up ring onto the shaft with the flat side against the backup shim (3a).
 - G) Place housing (10) onto shaft assembly. Place housing shaft assembly back in vise with output shaft facing down. Install rear housing bearing (8) into rear of housing until bearing (8) contacts the stop in the housing (flat side of bearing (8) should face upward away from housing).
 - H) Install drive link (15) in shaft end (crowned splines goes into shaft end). Place thrust bearing (14) over drive link (15). If shaft assembly is properly seated in housing (10), thrust bearing (14) will be flush or countersunk with rear surface of housing (10).
 - I) Install housing seal (2) into groove in housing (10). Place manifold (17) onto housing, (10) side with only seven holes facing housing (10). Place body seals (6) in grooves in both sides of rotor (18). Place rotor (18) onto manifold (17) with side of rotor with chamfer in splines facing manifold (17). If motor used a drive link spacer (16), place spacer (16) on top of drive link (15).
 - J) Install balance plate (19) onto rotor (18) making sure holes for steel balls (20) faces up. Install three steel balls (20) in holes in balance plate (19). Install endcover seal (7) into groove in endcover (21) and place endcover onto balance plate (19). Install seven assembly bolts (22) and pre-torque to 10 ft. lbs. Using the bolt torque sequence shown in Figure 3, final torque all bolts to 50 ft. lbs.
- Remove motor from vise and place on work surface with shaft (23) facing up. Making sure that lip on seal (1) faces up, place dust seal (1) over shaft (23). Using a sleeve and a hammer, carefully drive dust seal (1) into place.
- K)

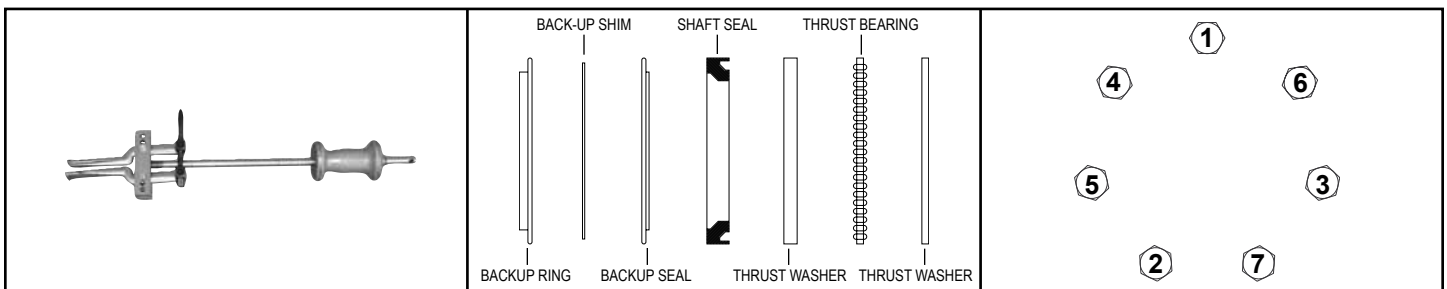


FIGURE 1

FIGURE 2

FIGURE 3

SECTION 5. "T" FLANGE MOTORS - continued

- 1. * Dust Seal
- 2. * Housing Seal
- 3. * Back Up Ring
- 3a. * Back Up Shim
- 4. * Back Up Seal
- 5. * Shaft Seal
- 6. * Body Seals (2)
- 7. * Endcover Seal
- 8. * Rear Housing Bearing
- 9. Front Housing Bearing
- 10. Housing
- 11. Front Thrust Washer
- 12. Front Thrust Bearing
- 13. Thrust Washer
- 14. Rear Thrust Bearing
- 15. Drive Link
- 16. Drive Link Spacer
- 17. Manifold
- 18. Rotor Assembly
- 19. Balance Plate
- 20. Steel Balls (3)
- 21. Endcover
- 22. Assembly Bolts (7)
- 23. Shaft
- 24. Shaft Key
- 25. Shaft Nut

* Contained in Seal Kit 500444004

