

**SERVICE INSTRUCTIONS FOR THE RE [520 & 521] SERIES MOTORS**

For Use With Seal Kits: 500444001 & 500444002

dimensions: mm [in]

- A)** Remove all shaft related components from shaft (27) (i.e. keys, wire rings, nuts). To aid in reassembly of the motor, make a "V" shaped set of lines from the endcover (24) to the housing using either paint or a marker. With shaft facing down, secure motor in vise by clamping on to housing (16).
- B)** Loosen and remove seven bolts (26) holding motor assembly together. Remove endcover (24) and endcover seal (10). Discard seal. Remove balance plate (22) taking care not to drop the three steel balls (23) located in the three holes in the balance plate (22). Remove rotor assembly (21), manifold (20), drive link spacer (19) (NOTE: Some motors do not use spacer), drive link (18) and thrust bearing (15). Remove body seals (9) from rotor assembly (21) and housing seal (8) from housing (16) and discard seals. (NOTE: Compare old housing seal (8) to the two housing seals included in kit to determine which one to use.)
- C)** Gently tap shaft (27) upward from housing (16) and remove through rear of housing and lay aside. Turn housing over and remove retaining snap ring (11) from inner core of housing. Turn housing over again. Using a drift punch through the rear of the housing, tap against the inner race of the 72mm bearing (12) to remove the bearing through the top of the housing. Pry dust seal (1) from bearing (12). Then turn housing over again and push the seal carrier (13), thrust washer (14) and thrust bearing (15) down until you can get to the wire ring (2).
- D)** Remove wire ring (2), steel backup shim (3) and high pressure seal (4) from inner bore groove with a small screwdriver. Lift the seal carrier (13), thrust washer (14) and thrust bearing (15) from the housing bore. Carefully pry shaft seal (7), backup seal (6), and metal backup shim (5) from seal carrier (13) and discard. Lay seal carrier (13), thrust washer (14) and thrust bearing (15) aside. (NOTE: If a new thrust washer (14) and seal carrier (13) is included in kit, old items may be discarded).

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.

- E)** Place shaft (27) on a clean flat surface with output end facing up. Place thrust bearing (15) (NOTE: If thrust bearing has integral washer, make sure washer surface faces down) over the shaft. Then thrust washer (14) on shaft (See Technical Bulletin PI444004 to determine correct thrust washer to use). Lightly coat seal area of shaft with clean oil and place plastic installation sleeve with shaft seal (7) down onto shaft covering all splines, keyways and wire ring grooves. Slide shaft seal (7) down onto shaft (27) making sure that lip on seal faces down (See Figure 1 for correct seal orientation) until it contacts thrust washer (12). Remove plastic installation sleeve. Carefully install the backup seal (6) onto the shaft (27) with the flat side up and the seal lip facing the shaft seal (7). Place the metal backup shim (5) onto the shaft and against the backup seal (6). Place the seal carrier (13) onto the shaft (large end down) and carefully press the seal carrier (13) down onto the seal assembly using an arbor press and sleeve to compress the seal into the carrier.
- F)** With pilot side facing up, place housing (16) on spacers to raise housing approximately 6,4 [.250] above work surface (NOTE: Spacers should allow shaft to contact work surface). Place shaft/seal carrier assembly into housing (16). Install high pressure seal (4) into groove in housing. Install metal backup shim (3) against high pressure seal (4) in groove in housing bore by squeezing the shim (3) between thumb and forefinger to bow shim. While maintaining bow in shim, start the shim into the groove and use a small screwdriver to push the shim into groove. Install wire ring (2) into the groove, making sure that the ends are butted.
- G)** While holding shaft into housing, place housing/shaft assembly in vise with shaft end down. Making sure that end of drive link (18) with crowned splines goes into shaft end, install drive link (18) into shaft and tap lightly to seat the seal carrier against the wire ring (2). Place thrust bearing (15) over drive link (18). If seal carrier (13) is properly seated against wire ring (2), thrust bearing (15) will be flush with rear surface of housing.
- H)** Install housing seal (8) into groove in housing (16). Place manifold (20) onto housing (16) with side with only seven holes facing housing (16). Place body seals (9) in grooves in both sides of rotor (21). Place rotor (21) onto manifold (20) with side of rotor with chamfer in splines facing manifold (20).
- I)** Install balance plate (22) onto rotor (21) making sure holes for steel balls (23) faces up. Install three steel balls (23) in holes in balance plate (22). Install endcover seal (10) into groove in endcover (24) and place endcover onto balance plate (22). Install seven assembly bolts (26) and pre-torque to 10 ft. lbs. Using the bolt torque sequence shown in Figure 2, final torque all bolts to 67,8 Nm [50 ft. lbs.]
- J)** Remove motor from vise and place on work surface with shaft (27) facing up. Place 72mm bearing (12)(Making sure that side of bearing with internal retaining ring faces down) over the shaft (27). Using a sleeve and hammer, carefully drive bearing into housing making sure the top of the bearing falls below the groove in the housing for retaining ring installation. **(Caution: Driving the bearing down with excessive force may cause seal carrier to interfere with bearing performance. This could lead to product overheating and may shorten the life of bearing and motor. Bearing only need be tapped into place.)** Install the retaining ring (11) in the groove in the housing, making sure that the ring snaps into place. Place dust seal (1) over shaft (27) making sure side with lip faces up. Using a sleeve and hammer, carefully drive dust seal into place.

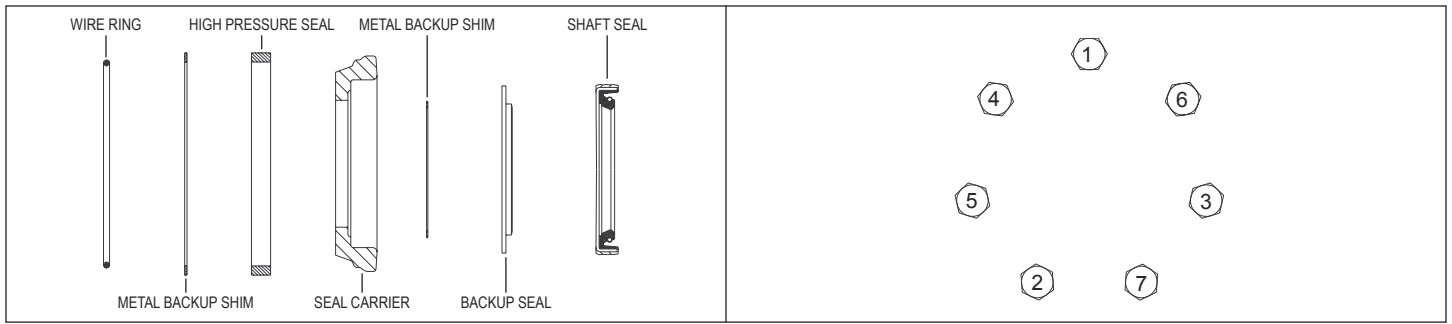
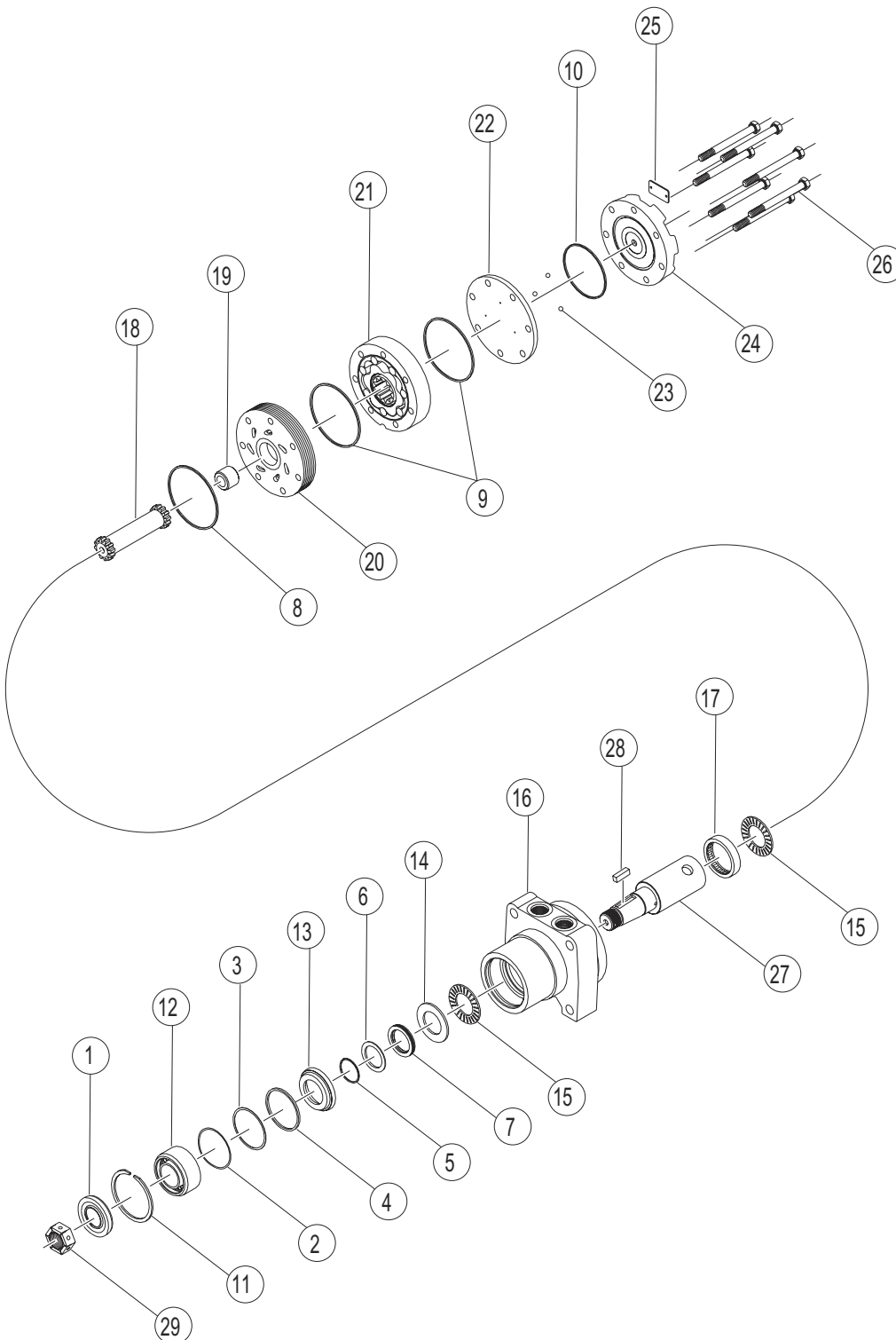


FIGURE 1

FIGURE 2



- 1. *† Dust Seal
- 2. *† Split Wire Ring
- 3. *† Metal Backup Shim
- 4. *† High Pressure Seal
- 5. *† Metal Backup Shim
- 6. *† Backup Seal
- 7. *† Shaft Seal
- 8. *† Housing Seal
- 9. *† Body Seals (2)
- 10. *† Endcover Seal
- 11. Retaining Snap Ring
- 12. 72mm Bearing
- 13. * Seal Carrier
- 14. * Thrust Washer
- 15. Thrust Bearing
- 16. Housing
- 17. Rear Housing Bearing
- 18. Drive Link
- 19. Drive Link Spacer
- 20. Manifold
- 21. Rotor Assembly
- 22. Balance Plate
- 23. Steel Balls (3)
- 24. Endcover
- 25. I.D. Tag Assembly
- 26. Assembly Bolts (7)
- 27. Shaft
- 28. Shaft Key
- 29. Shaft Nut

* Contained in Seal Kit 500444001
 † Contained in Seal Kit 500444002