

SERVICE INSTRUCTIONS FOR THE WS [360] SERIES MOTORS

For Use With Seal Kit: 360360001

dimensions: mm [in]

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 the shaft facing down, secure the motor in a vise by clamping on the housing (8).

- A) Loosen and remove four bolts (22) holding the motor assembly together. Remove the endcover assembly (21).
- B) Flip the endcover assembly over. Using needle nose pliers or two screwdrivers, lift the piston (17), from the endcover (21). Remove both the large piston seal (6) and small piston seal (7) from piston (17) and discard seals.
- C) Remove spacer (18) and wave spring (20) from endcover and set aside. Also remove the commutator (16) and driver (15) from assembly and set components aside.
- D) Remove manifold (13) from motor. Remove body seal (5) from manifold and discard seal. Make sure both balls (14) remain in manifold and set aside.
- E) Remove rotor set (12) and wear plate (10) and drive link (11). **(Caution: Do not allow rolls to drop from rotor assembly when removing rotor assembly from motor)**. Remove and discard body seal (5) from rotor set, body seal and butterfly seal (4) from wear plate and housing seal (3) from housing (8).
- F) To aid in reassembly of the shaft sub-assembly, make a “V” shaped set of lines across the bottom of the housing (8) and over the shaft lock nut (9) using either paint or a marker.
- G) Remove the housing from the vice and flip over. Remove any shaft components from the shaft assembly (23) such as bolts, washers, keys, etc. and set aside.
- H) Using a press, carefully press the shaft assembly (23) out the rear of the housing (8). Remove the shaft seal (2) from the inner bore in housing and the dust seal (1) from the outer bore and discard both seals.

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

- I) Install dust seal (1) into housing (8) with the lip facing up using a press and flat surface tool until seal stops. Flip the housing over and install the shaft seal (2) with flat side of seal facing down and press seal in with a flat surface tool until seal stops. Next, press the shaft assembly (23) into housing (8) lining up the “V” set of lines on the bottom of the housing and shaft assembly.
- J) Install the housing seal (3) into the seal groove in housing (8). Place drive link (11), timing mark side facing up, into shaft assembly (23) making sure the drive link splines engage the internal shaft splines.
- K) Install the butterfly seal (4) into the wear plate (10) and place the wear plate over drive link (11) and onto the housing (8). Place a new body seal (5) into groove in the wear plate (10).
- L) Place the rotor set (12) onto wear plate (10). For proper timing make sure the timing mark on drive link (11) is aligned with a lobe on the rotor set (12). See Figure 1 for proper orientation. Place a body seal (5) into seal groove in rotor set (12).
- M) Place the driver (15) onto the drive link (11) making sure the timing mark position of the driver matches that of the drive link. Lower manifold (13) onto the rotor set (12). The side with the round holes should be facing the rotor set and the groove with the two balls (14) should be facing up. Place the last body seal (5) into the groove in the manifold.
- N) Place the commutator (16) onto the manifold (13) making sure the timing mark on the driver (15) aligns with a notch in the commutator. See Figure 2 for proper orientation. Place the spacer (18) onto the center of the driver (15).
- O) Place the endcover (21) on a flat clean surface with cavity facing up. Install the wave spring (20) into the endcover (21). Install the large piston seal (6) and small piston seal (7) onto piston (17). Using a press, install the piston (17) into the endcover (21) making sure to align the notch in the piston with the pin (19). See Figure 3 for proper orientation.
- P) Turn over the endcover sub-assembly and place on top of manifold (13) lining up the motor bolt holes.
- Q) Install assembly bolts (22) into endcover. Pre-torque to 13,6 Nm [10 ft. lb.]. Final torque all bolts to 70 ± 5 Nm [51.5 ± 3.5 ft. lb.]. If the unit was timed correctly the motor will operate as shown in Figure 4.

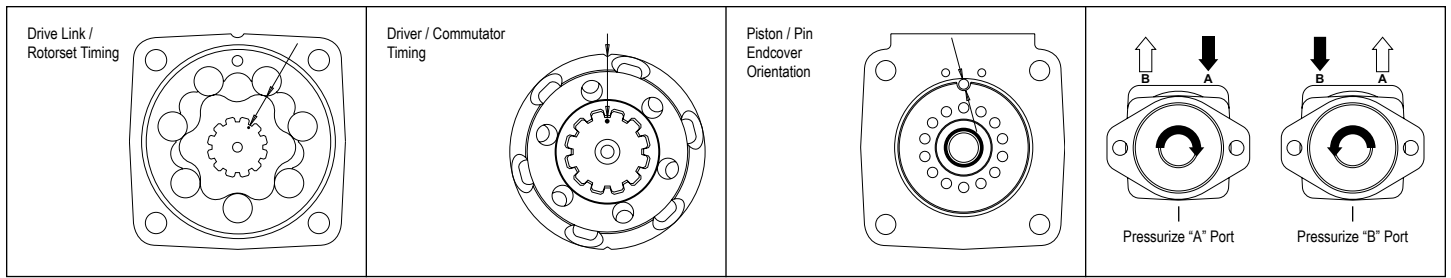
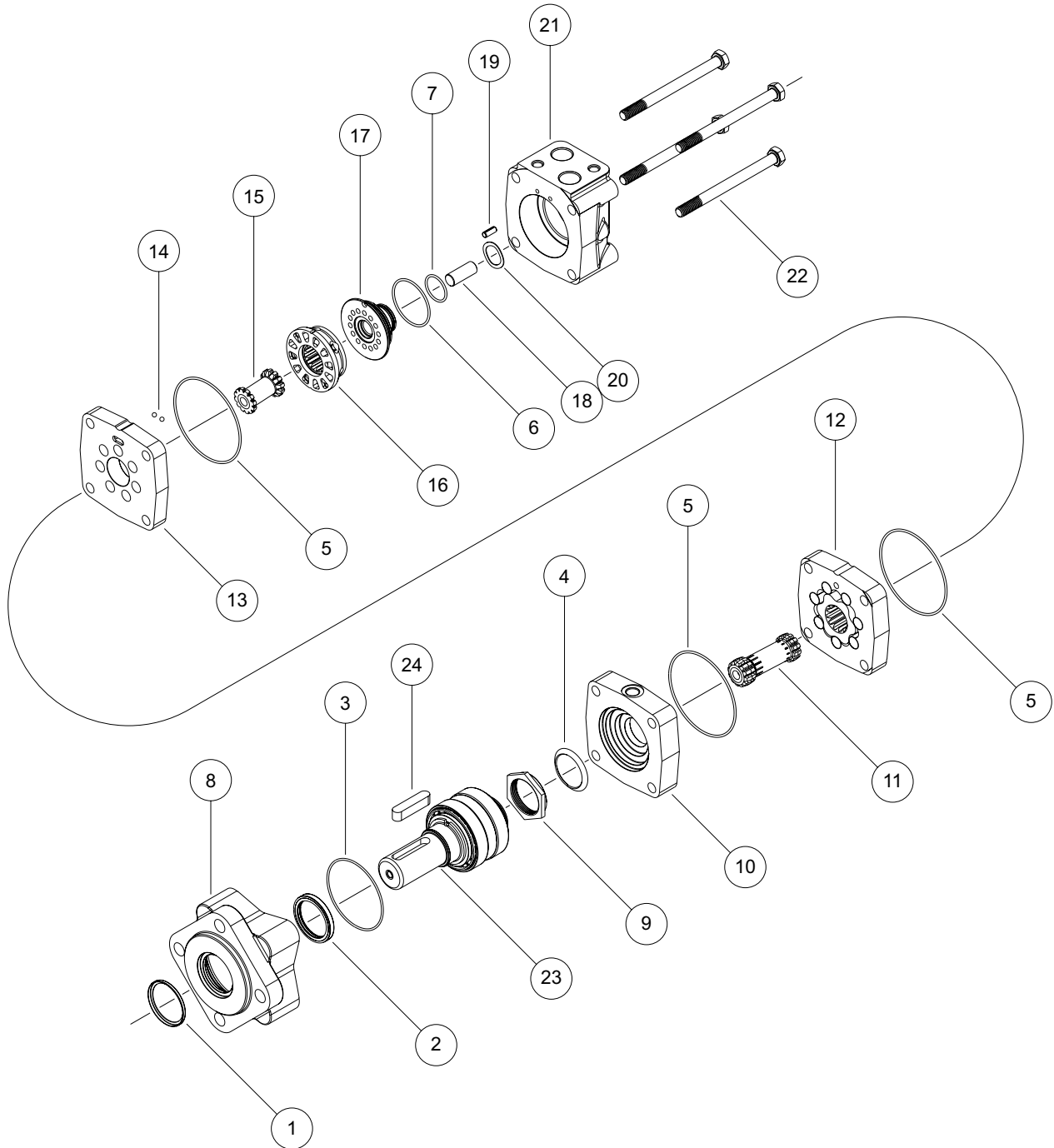


FIGURE 1

FIGURE 2

FIGURE 3

FIGURE 4



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|---------------------|------------------------|----------------|-----------------|-----------------------|
| 1. * Dust Seal | 6. * Large Piston Seal | 11. Drive Link | 16. Commutator | 21. Endcover |
| 2. * Shaft Seal | 7. * Small Piston Seal | 12. Rotor Set | 17. Piston | 22. Assembly Bolt (4) |
| 3. * Housing Seal | 8. Housing | 13. Manifold | 18. Spacer | 23. Shaft Assembly |
| 4. * Butterfly Seal | 9. Lock Nut | 14. Ball (2) | 19. Pin | 24. Shaft Key |
| 5. * Body Seal (3) | 10. Wear Plate | 15. Driver | 20. Wave Spring | |

* Contained in Seal Kit 360360001