

# STEERING VALVE



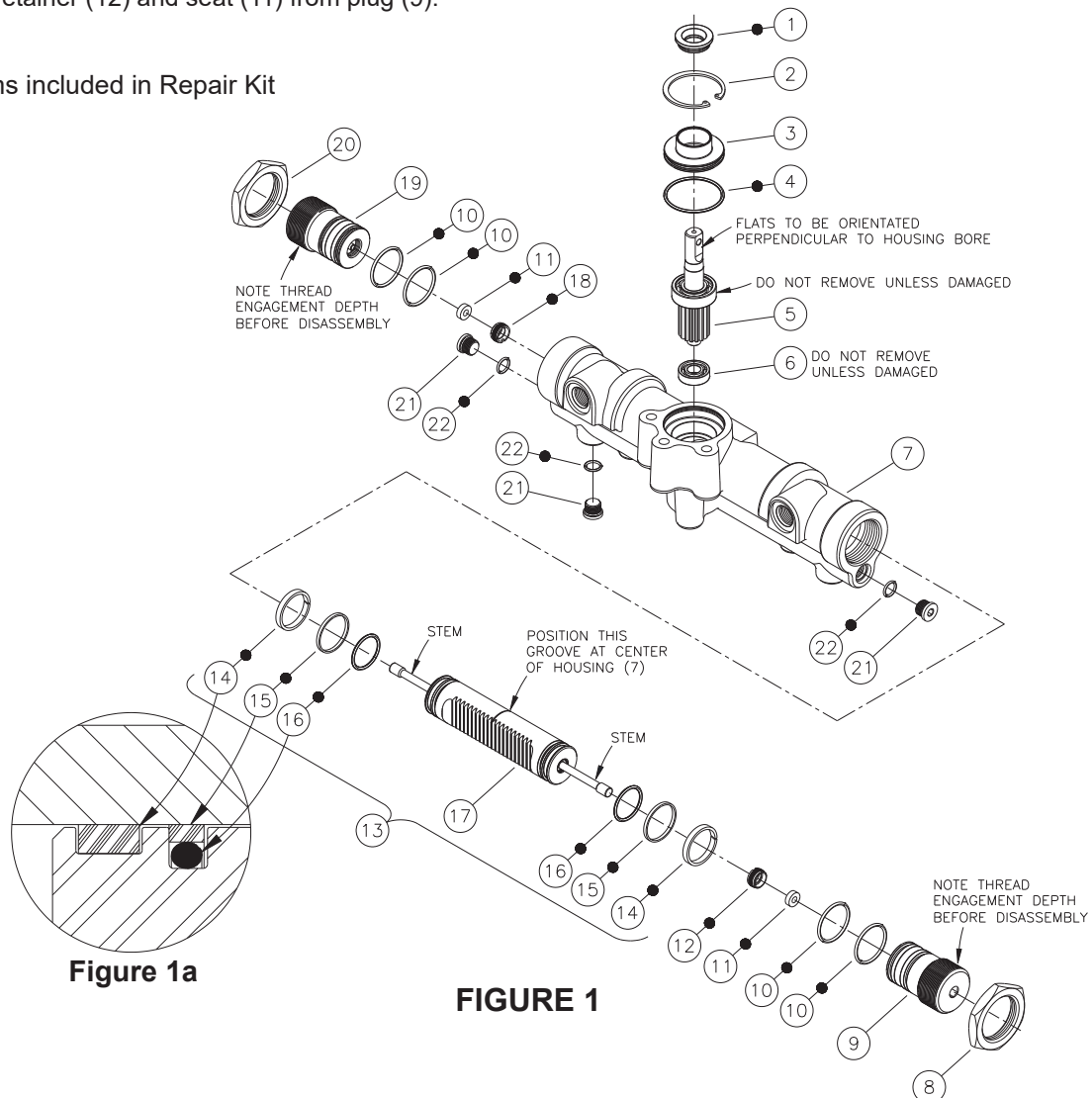
## Service Instructions

### DISASSEMBLY

(Refer to Figure 1)

1. Remove retaining ring (2) from housing (7).
2. Note orientation of flats on gear (5) shaft. Remove gear (5), seal (1), and retainer (3) from housing (7). Bearing (6) need not be removed from housing (7) unless damaged.
3. Remove seal (1) and o-ring (4) from retainer (3). Bearing on gear (5) need not be removed unless it is damaged.
4. Use a hex key wrench to hold plug (9) from turning while removing nut (8). Note and record thread engagement depth of plug (9) into housing (7) before removing plug (9). Remove plug (9) from housing (7).
5. Remove two o-rings (10) from plug (9).
6. Remove retainer (12) and seat (11) from plug (9).
7. Use a hex key wrench to hold plug (19) from turning while removing nut (20). Note and record thread engagement depth of plug (19) into housing (7) before removing plug (19). Remove plug (19) from housing (7).
8. Remove two o-rings (10) from plug (19).
9. Remove retainer (18) and seat (11) from plug (19).
10. Remove piston assembly (13) from housing (7).  
**NOTE: Be careful not to damage piston (13) or housing (7) bore.**
11. Carefully remove rings (14), rings (15) and o-rings (16) from piston (17). **NOTE: Be careful not to damage piston (17). Stems and springs inside piston (17) need not be removed unless damaged.**
12. Remove three plugs (21) from housing (7). Remove o-rings (22) from plugs (21).

#### • Items included in Repair Kit



## ASSEMBLY

(Refer to Figures 1 and 2)

CLEAN ALL PARTS THOROUGHLY WITH CLEAN SOLVENT AND ALLOW TO DRY. LUBRICATE ALL RUBBER COMPONENTS FROM REPAIR KIT WITH CLEAN TYPE FLUID USED IN THE SYSTEM. BE SURE THE ENTIRE ASSEMBLY PROCEDURE IS DONE USING CONTAMINATION FREE METHODS.

1. Install new o-rings (16), new rings (15), and new rings (14) on piston (17). See Figure 2. **NOTE: Be careful not to damage piston (17).**
2. Install piston assembly (13) in housing (7) bore. Position as shown with groove in piston (17) at the center of housing (7).
3. Install gear (5) in housing (7) by pressing against inner race of the bearing on gear (5) as necessary until properly seated. Be sure flats on gear (5) are positioned as shown in Figure 1 and piston assembly (13) remains in position.
4. Install new o-ring (4) on retainer (3). Install retainer (3) and new retaining ring (2) in housing (7). Note direction of retainer (3).
5. Install new seal (1) on shaft of gear (5) and press into retainer (3). Note direction of seal (1).
6. Install new seat (11) in new retainer (12). Install new retainer (12) in plug (9) and torque 11.3-13.6 N·m (100-120 lb·in).
7. Install two new o-rings (10) on plug (9).
8. Thread plug (9) into housing (7) to the depth recorded during disassembly.
9. Apply two drops of Loctite 242 on threads of nut (8). Install nut (8) on plug (9). Use a hex key wrench to hold plug (9) from turning while torquing nut (8) 149.2-162.7 N·m (110-120 lb·ft).
10. Install new seat (11) in new retainer (18). Install new retainer (18) in plug (19) and torque 11.3-13.6 N·m (100-120 lb·in).
11. Install two new o-rings (10) on plug (19).
12. Thread plug (19) into housing (7) to the depth recorded during disassembly.
13. Apply two drops of Loctite 242 on threads of nut (20). Install nut (20) on plug (19). Use a hex key wrench to hold plug (19) from turning while torquing nut (20) 149.2-162.7 N·m (110-120 lb·ft).
14. Install new o-rings (22) on plugs (21). Install three plugs (21) in housing (7) and torque 24.4-32.5 N·m (18-22 lb·ft).

This publication is not subject to any update service. Information contained in this publication was in effect at the time the publication was approved for printing and is subject to change without notice or liability. ZF Off-Highway Solutions Minnesota Inc. reserves the right to revise the information presented or to discontinue the production of parts described at any time.

