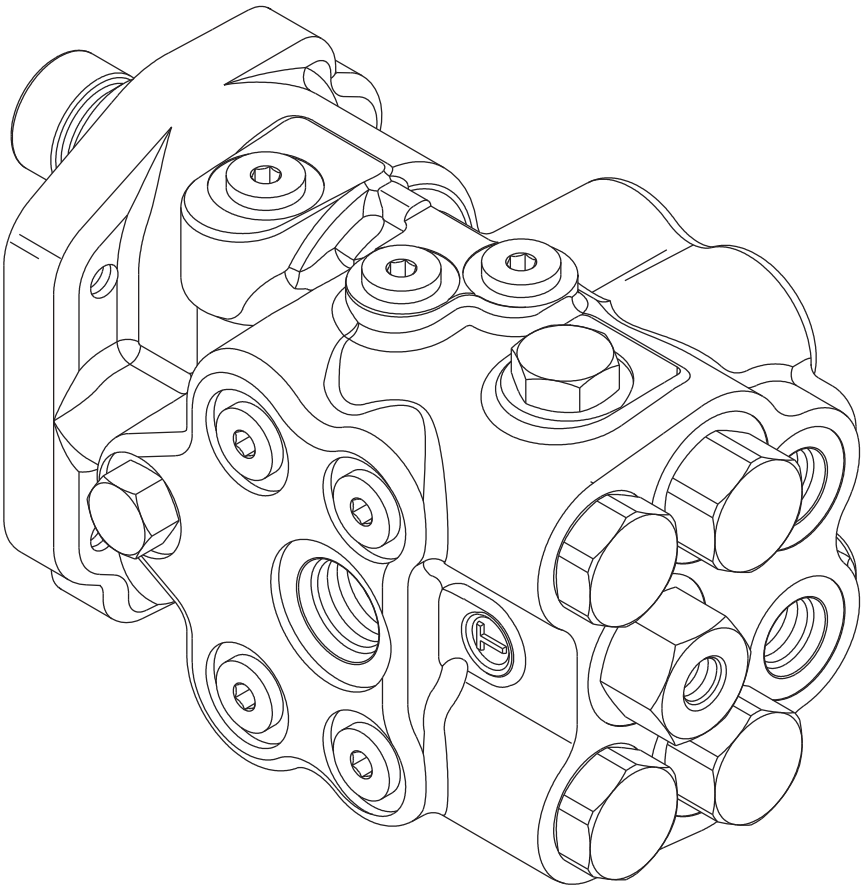


# DUAL STEERING ASSIST VALVE



## Service Instructions



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REFER TO VEHICLE MANUFACTURE PROCEDURES AND RECOMMENDATIONS BEFORE REMOVING THE VALVE FROM THE VEHICLE.

### NOTE

For reassembly purposes, arrange the parts in the order in which they are removed while disassembling this valve. Each part is specific to the housing bore from which it is removed. **DO NOT INTERMIX SIMILAR PARTS.** This literature services various models of dual steering assist valves. The components shown in Figure 1 may appear different than what is found in your valve.

### DISASSEMBLY

(Refer to Figure 1)

1. Remove piston (1), springs (2 & 3), shim(s) (4), retainer (5), spring (6), and retainer (7) from housing (41).  
**NOTE: Be aware of the number of shim(s) removed.**
2. Remove piston (9), springs (10 & 11), shim(s) (12), retainer (13), spring (14), and retainer (15) from housing (41). **NOTE: Be aware of the number of shim(s) removed.**
3. Carefully remove quad-rings (8) from housing (41) bores. **NOTE: Be careful not to scratch or mar housing bores.**
4. Remove end plug (20) from housing (41). Remove o-ring (19) from end plug.
5. Remove retainer (18), spring (17), and spool (16) from housing. **NOTE: Be careful not to damage spool (16) or housing bore.**

### ▲ CAUTION

Spool (16) and housing (41) bore are manufactured as a matched set and cannot be intermixed with other parts.

6. Remove end plug (24) from housing (41). Remove o-ring (19) from end plug.
7. Remove retainer (23), spring (22) and spool (21) from housing. **NOTE: Be careful not to damage spool (21) or housing bore.**

### ▲ CAUTION

Spool (21) and housing (41) bore are manufactured as a matched set and cannot be intermixed with other parts.

8. Remove check valve (25) from housing (41). Remove o-rings (26 & 19) from check valve (25). **NOTE: Check valve (25) is not field serviceable. Do not tamper with check valve setting.**
9. Remove check valve (27) from housing (41). Remove o-rings (26 & 19) from check valve (27). **NOTE: Check valve (27) is not field serviceable. Do not tamper with check valve setting.**
10. Remove adaptor (28) from housing (41). Remove o-ring (19) from adaptor (28). **NOTE Some models use a plug in place of adaptor (28).**
11. Remove end plug (29) and ball (32) from housing (41). Remove o-rings (31 & 30) from end plug (29).
12. Remove end plug (33) from housing (41). Remove o-rings (31 & 30) from end plug (33).
13. Remove plug (34) and ball (36) from housing (41). Remove o-ring (35) from plug (34).
14. Remove plug (37) from housing (41). Remove o-ring (19) from plug (37). **NOTE: Not all models use plug (37) or o-ring (19).**
15. Remove nine plugs (38). Remove nine o-rings (35) from plugs (38).
16. Remove plug (39) from housing (41). Remove o-ring (40) from plug (39).

### ASSEMBLY

(Refer to Figure 1)

LUBRICATE ALL RUBBER COMPONENTS FROM REPAIR KIT WITH CLEAN TYPE FLUID USED IN THE SYSTEM. FOR EASE OF REASSEMBLY, SEPARATE AND MATCH NEW O-RINGS TO OLD O-RINGS. USE TABLE 1 TO IDENTIFY O-RING SIZES.

1. Thoroughly clean housing and all parts with clean solvent and allow to dry before proceeding. Lubricate all parts and housing bores with clean type fluid used in the system.
2. Install new o-ring (40) on plug (39) and install plug (39) in housing. Torque 5.1-6.2 N·m (45-55 lb·in).
3. Install nine new o-rings (35) on nine plugs (38). Install plugs (38) in housing (41) and torque 13.6-20.3 N·m (120-180 lb·in).
4. Install new o-ring (19) on plug (37). Install plug (37) in housing (41) and torque 47.5-54.2 N·m (35-40 lb·ft).  
**Note: Not all models use plug (37) or o-ring (19).**
5. Install new o-ring (35) on plug (34). Install ball (36) and plug (34) in housing (41). Torque plug 13.6-20.3 N·m (120-180 lb·in).
6. Install new o-rings (30 & 31) on plug (33). Install plug (33) in housing (41) and torque 27.1-32.5 N·m (20-24 lb·ft).
7. Install new o-rings (30 & 31) on plug (29). Install ball (32) and plug (29) in housing (41). Torque plug 27.1-32.5 N·m (20-24 lb·ft).
8. Install new o-ring (19) on adaptor (28). Install adaptor in housing (41) and torque 47.5-54.2 N·m (35-40 lb·ft).  
**NOTE: Some models use a plug in place of adaptor.**
9. Install new o-rings (19 & 26) on check valve (27). Install check valve in housing (41) and torque 47.5-54.2 N·m (35-40 lb·ft).
10. Install new o-rings (19 & 26) on check valve (25). Install check valve in housing (41) and torque 47.5-54.2 N·m (35-40 lb·ft).
11. Install new o-ring (19) on end plug (24). Carefully install spool (21), spring (22), retainer (23), and end plug (24) in housing (41). Torque end plug 47.5-54.2 N·m (35-40 lb·ft). Note direction of spool (21). **NOTE: Spool must slide freely into housing bore. If either the spool or housing bore are damaged, a new valve assembly may be required.**

### ▲ CAUTION

Spool (21) and housing (41) bore are manufactured as a matched set and cannot be intermixed with other parts.

12. Install new o-ring (19) on end plug (20). Carefully install spool (16), spring (17), retainer (18), and end plug (20) in housing (41). Torque end plug 47.5-54.2 N·m (35-40 lb·ft). Note direction of spool (16). **NOTE Spool must slide freely into housing bore. If either the spool or housing bore are damaged, a new valve assembly may be required.**

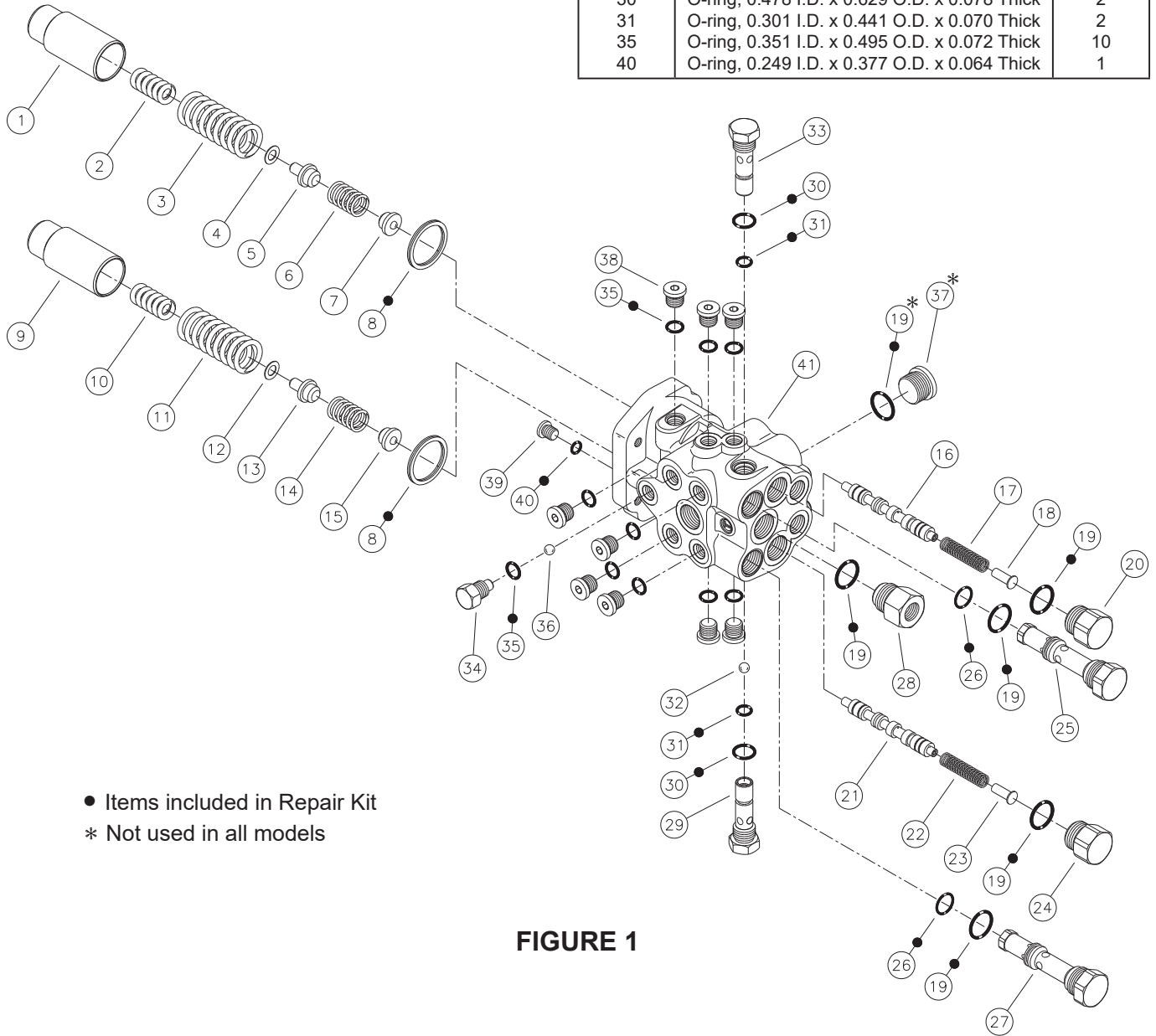
### ▲ CAUTION

Spool (16) and housing (41) bore are manufactured as a matched set and cannot be intermixed with other parts.

13. Carefully install new quad rings (8) in housing (41) bores. **NOTE: Be careful not to scratch or mar housing bores.**
14. Install retainer (15), spring (14), retainer (13), shim(s) (12), springs (10 & 11), and piston (9). Be sure to install the same number of shim(s) as were removed.

**TABLE 1 O-ring Identification**

Item Number	Description	Quantity
19	O-ring, 0.644 I.D. x 0.818 O.D. x 0.087 Thick	5
26	O-ring, 0.489 I.D. x 0.629 O.D. x 0.070 Thick	2
30	O-ring, 0.478 I.D. x 0.629 O.D. x 0.078 Thick	2
31	O-ring, 0.301 I.D. x 0.441 O.D. x 0.070 Thick	2
35	O-ring, 0.351 I.D. x 0.495 O.D. x 0.072 Thick	10
40	O-ring, 0.249 I.D. x 0.377 O.D. x 0.064 Thick	1



- Items included in Repair Kit
- \* Not used in all models

**FIGURE 1**

15. Install retainer (7), spring (6), retainer (5), shim(s) (4), springs (2 & 3), and piston (1). Be sure to install the same number of shim(s) as were removed.
16. Properly reinstall valve on machine. Be sure all fluid lines are properly connected and do not leak. Hold and prevent the machine from moving. See machine manufactures recommendations for start up. Be sure brakes and valve are fully operational in accordance with machine manufacture recommendations before moving the machine.