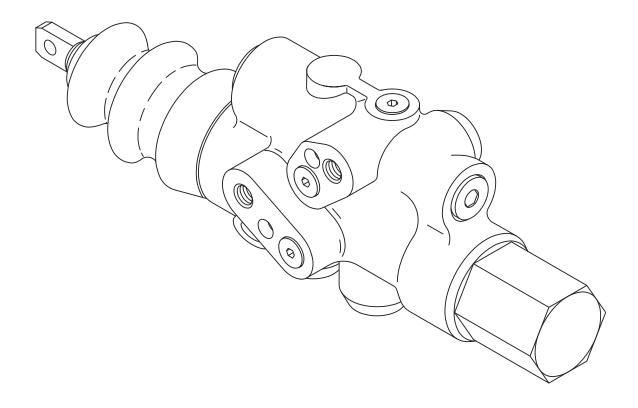
# PARK BRAKE VALVE (with auto apply)



# Service Instructions



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ZF Off-Highway Solutions Minnesota Inc.

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### NOTE

This literature services various models in this valve series. The components shown in Figure 1 may appear different than what is found in your valve.

Models: 06-464-936 06-464-982 06-464-978 06-464-986

# DISASSEMBLY

(Refer to Figure 1)

### NOTE

Housing (32) and spools (9 & 23) are manufactured as a matched set and must not be intermixed with other parts.

- 1. Remove two plugs (26), springs (28) and balls (29) from housing (32). Remove o-rings (27) from plugs (26).
- 2. Remove three plugs (30) from housing (32). Remove o-rings (31) from plugs (30).
- 3. Remove boot (16) from plug (12) and push rod (11).
- 4. Carefully remove end plug (1) from housing (32). Remove spring (3) and spool (6) from housing (32). Remove o-ring (2) from end plug (1). **NOTE: End plug (1) is under tension of spring (3).**
- 5. Remove back-up rings (4 & 8) and o-rings (5 & 7) from spool (6).
- 6. Carefully remove plug (12)and push rod (11)/spool (9) assembly from housing (32) bore. **NOTE: Be** careful not to scratch or mar spool (9) or housing (32) bore.
- 7. Remove plug (12) from push rod (11)/spool (9) assembly. Separation of push rod (11) and spool (9) is not necessary if parts are in good condition.
- 8. Remove o-ring (2), retaining ring (15), washer (14), and seal (13) from plug (12).
- 9. Remove plug (17) from housing (32) bore. Remove o-ring (18) from plug (17). **NOTE: Plug (17) is under tension of spring (20).**
- Remove ball (19), spring (20), shim(s) (21), and retainer assembly (22) from housing (32) bore.
  NOTE: Be aware of the number of shim(s) being removed from housing. Not all models use ball (19).
- 11. Remove plug (25) from housing (32) bore. Remove o-ring (24) from plug (25).
- 12. Remove spool (23) from housing (32) bore. A wooden dowel will help in the removal of spool (23).

NOTE: Be careful not to scratch or mar spool (23) or housing (32) bore.

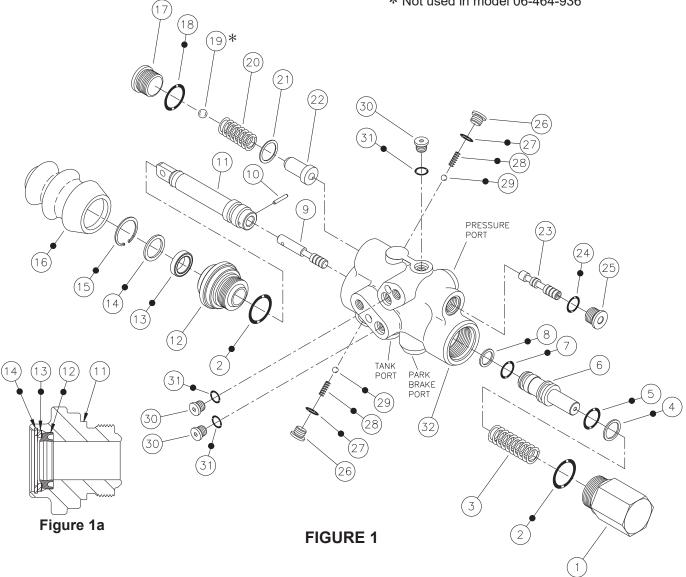
# **ASSEMBLY**

(Refer to Figure 1)

LUBRICATE ALL RUBBER COMPONENTS FROM REPAIR KIT AND SPOOLS (9 & 23) WITH CLEAN TYPE FLUID USED IN THE SYSTEM.

- 1. Clean all parts thoroughly before assembling.
- 2. Install new o-ring (24) on plug (25).
- 3. Carefully insert spool (23) in housing (32). Note direction of spool (23). NOTE: Spool must slide freely in housing bore. Resistance indicates damage to the spool or housing bore.
- 4. Install plug (25) into housing (32) and torque 27.1-32.5 N·m (20-24 lb·ft).
- 5. Install new o-ring (18) on plug (17).
- Install shim(s) (21) on retainer (22) and carefully install retainer (22), spring (20) and ball (19) in housing (32). Note direction of retainer (22).
  NOTE: Be sure to install the same number of shim(s) as were removed. Not all models use ball (19).
- 7. Install plug (17) in housing (32) bore and torque 54.2-61.0 N·m (40-45 lb·ft).
- 8. Install new o-ring (2) on plug (12). Install new seal (13), new washer (14), and new retaining ring (15) in plug (12). Note direction of seal (13) and order of components. See Figure 1a.
- 9. Slide plug (12) onto stem of push rod (11).
- 10. Carefully insert spool (9)/push rod (11) assembly and plug (12) into housing (32) bore. Torque plug (12) 54.2-61.0 N·m (40-45 lb·ft). NOTE: Be careful not to scratch or mar spool (9) or housing (32) bore. Spool must slide freely in housing bore. Resistance indicates damage to the spool or housing bore.
- 11. Install new o-rings (5 & 7) and new back-up rings (4 & 8) on spool (6). Note order of components.
- 12. Install spool (6) and spring (3) into housing (32) bore. Note direction of spool (6).
- 13. Install new o-ring (2) on end plug (1). Install end plug (1) into housing (32) and torque 54.2-61.0 N·m (40-45 lb·ft).
- 14. Install new o-rings (31) on three plugs (30). Install three plugs (30) in housing (32) and torque 5.1-5.7 N·m (45-50 lb·in).
- 15. Install new o-rings (27) on two plugs (26).
- 16. Insert two new balls (29) and two new springs (28) into housing (32) bores. Install two plugs (26) in housing (32) and torque 5.1-5.7 N·m (45-50 lb·in).
- 17. Install new boot (16).
- 18. See Testing Instructions on page 4.

- Items included in Repair Kit 06-400-201
- \* Not used in model 06-464-936



### TESTING INSTRUCTIONS

- 1. Make connection from the pressure source to the pressure port of the valve with a pressure gauge at the pressure source.
- 2. Install a pressure gauge to the park brake port of the valve.
- 3. Make connection from the tank port to the reservoir.
- 4. Slowly increase pressure to the valve until operating pressure is reached. There should be no external leakage from the valve at this point. Move push rod inward and take a pressure reading at the park brake port. This reading should be equal to that of the supply pressure gauge. Pull push rod outward and verify that park brake gauge reads zero PSI.
- 5. Move push rod inward. Slowly decrease pressure to the pressure port, while monitoring both gauges. At 34.5-41.4 bar (500-600 PSI) the park brake gauge should drop to zero PSI and the push rod should automatically shift to the outward position.
- 6. Repeat steps 4 and 5 to verify the results. If the valve will not function according to these instructions review the assembly and test instructions.