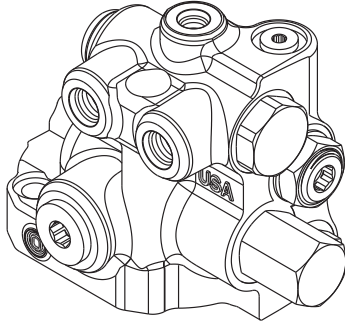




DUAL ACCUMULATOR CHARGING VALVE with Internal Relief Valve

Product Explanation, Operating Information, and Service Instructions

PRODUCT EXPLANATION

The accumulator charging valve is designed for installation directly on an external gear pump or subplate in an open center hydraulic system with secondary hydraulic devices.

The accumulator charging valve supplies oil on demand to the accumulators from the open center circuit and isolates the pressure at each of its accumulator ports from one another. Accumulator charging is accomplished at a preset rate (GPM) and is relatively constant within the preset pressure limits.

The flow to downstream secondary hydraulic devices will be reduced fractionally for a short time when the accumulators are charging. This does not noticeably affect the operation of these components. Full system pressure is available to the downstream secondary hydraulic devices at all times provided oil delivery and pressure from the pump is not impeded.

The accumulator charging valve incorporates an internal relief valve to limit the maximum pressure in the hydraulic system at machine startup only. The relief valve directs oil to the excess flow port.

The accumulator charging flow rate, upper and lower accumulator pressure limits, and relief valve setting are set at the time of manufacture.

OPERATING INFORMATION

End user must provide proper maintenance of valve, should it become inoperable, by replacing the valve, or servicing it with the proper repair kit. See TABLE 1 on page 3 for the proper repair kit number. Observe the service instruction procedures on the following pages. See Warnings A, B, C and D below.

IMPORTANT INFORMATION

A **WARNING**

Due to allowable operating temperature of accumulator charging valve avoid contact or burn injury may occur.

C **WARNING**

Relief valve is preset at the factory. DO NOT READJUST or system damage or failure may occur.

B **WARNING**

Be sure system energy is relieved from accumulator charging valve before removing from machine. See machine operating instructions for procedures to relieve system energy.

D **WARNING**

Do not exceed the high limit pressure setting indicated in TABLE 1 or system damage or failure may occur.

NOTE

Locate the part number on the accumulator charging valve and compare it to the part number in TABLE 1. Be sure you have the proper service instructions.

SERVICE INSTRUCTIONS

⚠ WARNING

Be sure system energy is relieved from accumulator charging valve before removing from machine. See machine operating instructions for procedures to relieve system energy and to remove charging valve from machine.

NOTE

The mounting surface of the accumulator charging valve functions as a sealing surface. Be careful not to damage sealing surface while servicing this valve.

Disassembly

(Refer to Figure 1)

1. Remove plug (29) from housing (42) and remove o-ring (13) from plug (29).
2. BEFORE moving screw (27), ACCURATELY MEASURE ITS DEPTH from the end of housing (42) and record for reassembly purposes. Remove screw (27) from housing (42).
3. Remove spring (26), retainer (25) and ball (24) from housing (42). **NOTE: Be sure to keep ball (24) separate from ball (19) for reassembly purposes.**
4. Remove pin (28) from screw (27) using a drive pin punch. Be careful not to damage screw threads.
5. Remove plug (16) from housing (42) and remove o-ring (13) from plug (16).
6. Remove spring (17), stop (18) and ball (19) from housing (42).
7. Using a 6.35 mm (0.25 in) diameter wooden or plastic dowel, carefully remove insert (21) and spool (20) from housing (42). Insert (21) must come out plug (16) end of housing (42). **NOTE: Be careful not to scratch or mar valve seats on insert (21).**
8. Remove spool (20) from insert (21). Remove o-rings (23 & 22) from insert (21).
9. Remove end plug (30) from housing (42) and remove o-ring (31) from end plug (30).
10. Remove spring (32), poppet (33), sleeve (35), poppet (37), and spring (38). Remove o-rings (34 & 36) from sleeve. **NOTE: Be careful not to scratch or mar housing bore or sleeve.**
11. Remove end plug (1) from housing (42) and remove o-ring (2) from plug (1). **NOTE: End plug is under spring tension.**
12. Remove spring (3) from housing (42).
13. Remove end plug (7) from housing (42) and remove o-ring (2) from end plug (7).
14. Using a 6.35 mm (0.25 in) diameter wooden or plastic dowel, carefully remove relief valve (6) and stop (4) from housing (42). Relief valve (6) and stop (4) must come out plug (1) end of housing (42). Remove o-ring (5) from relief valve (6). **NOTE: Removal of relief valve (6) from plug (7) end of housing will result in damage to o-ring (5). Do not tamper with relief valve setting. Be careful not to scratch or mar relief valve or housing bore.**

⚠ WARNING

Relief valve is preset at the factory. DO NOT READJUST or system damage or failure may occur.

15. Loosen nut (8) and remove screw assembly (9) from housing (42). Remove o-ring (2) from screw assembly (9).
16. Remove spring (10), poppet (11), seat (12), o-ring (13), washer (14) and filter (15) from housing (42).
17. Remove plug (39) from housing (42) and remove o-ring (2) from plug (39). **NOTE: Plug (39) may be located on opposite side of housing than shown in Figure 1.**
18. Remove plug (40) from housing (42) and remove o-ring (41) from plug (40).

Assembly

(Refer to Figure 1)

NOTE

Observe torque specifications as indicated in assembly procedures or system damage or failure may occur.

WASH ALL PARTS WITH CLEAN SOLVENT AND ALLOW TO DRY. LUBRICATE ALL RUBBER PARTS WITH CLEAN SYSTEM FLUID PRIOR TO ASSEMBLY. BE SURE THE ENTIRE ASSEMBLY PROCEDURE IS DONE USING CONTAMINATION FREE METHODS.

1. Install new filter (15), washer (14), and new o-ring (13) into housing (42). Be sure o-ring (13) seats properly against washer (14).
2. Install seat (12), new poppet (11) and spring (10) into housing (42).
3. Install new o-ring (2) on screw assembly (9) and install screw assembly (9) into housing (42). Torque screw assembly (9) 24.4-29.8 N·m (18-22 lb·ft). Then torque nut (8) 43.3-51.5 N·m (32-38 lb·ft).
4. Install new o-ring (2) on end plug (7) and install end plug (7) into housing (42). Torque end plug (7) 54.2-61.0 N·m (40-45 lb·ft).
5. Install new o-ring (5) on relief valve (6) and install relief valve (5) in housing (42) from plug (1) end of housing. Note direction of relief valve (6). **NOTE: Installing relief valve from plug (7) end of housing will result in damage to o-ring (5). Do not tamper with relief valve setting.**

⚠ WARNING

Relief valve is preset at the factory. DO NOT READJUST or system damage or failure may occur.

6. Install stop (4) and spring (3) in housing (42).
7. Install new o-ring (2) on end plug (1) and install end plug (1) in housing. Torque end plug (1) 54.2-61.0 N·m (40-45 lb·ft).
8. Install new o-rings (34 & 36) on sleeve (35). Install spring (38), new poppet (37), sleeve (35), new poppet (33) and spring (32) into housing (42).
9. Install new o-ring (31) on end plug (30) and install end plug (30) in housing (42). Torque end plug (30) 54.2-61.0 N·m (40-45 lb·ft).
10. Install new o-rings (22 & 23) on insert (21).
11. Install spool (20) into insert (21). Note direction of insert (21) and spool (20). See Figure 1a. Carefully install insert (21) into housing (42) bore from plug (16) side of housing (42).
12. Install new o-ring (13) on plug (16).
13. Install ball (19), stop (18), spring (17) and plug (16) into housing (42). Torque plug (16) 47.5-54.2 N·m (35-40 lb·ft).
14. Turn housing (42) so plug (29) is vertically upward. Install ball (24) in housing (42). Be sure ball (24) is centered in bottom of housing (42). Place retainer (25) and spring (26) into housing (42).
15. Insert new pin (28) in screw (27). Be sure pin (28) is properly aligned and evenly driven into screw (27). **NOTE: Be careful not to damage threads.**
16. Thread screw (27) into housing (42) TO THE DEPTH RECORDED during disassembly.
17. Install new o-ring (13) on plug (29) and install plug (29) in housing (42). Torque plug (29) 47.5-54.2 N·m (35-40 lb·ft).
18. Install new o-ring (2) on plug (39) and install plug (39) in the same housing (42) port from which it was removed. Torque plug (39) 54.2-61.0 N·m (40-45 lb·ft). **NOTE: Plug (39) may be located on opposite side of housing than shown in Figure 1.**
19. Install new o-ring (41) on plug (40) and install plug (40) in housing (42). Torque plug (40) 13.6-19.0 N·m (10-14 lb·ft).

NOTE
Do not adjust or tamper with relief valve (6) during disassembly or assembly procedures.

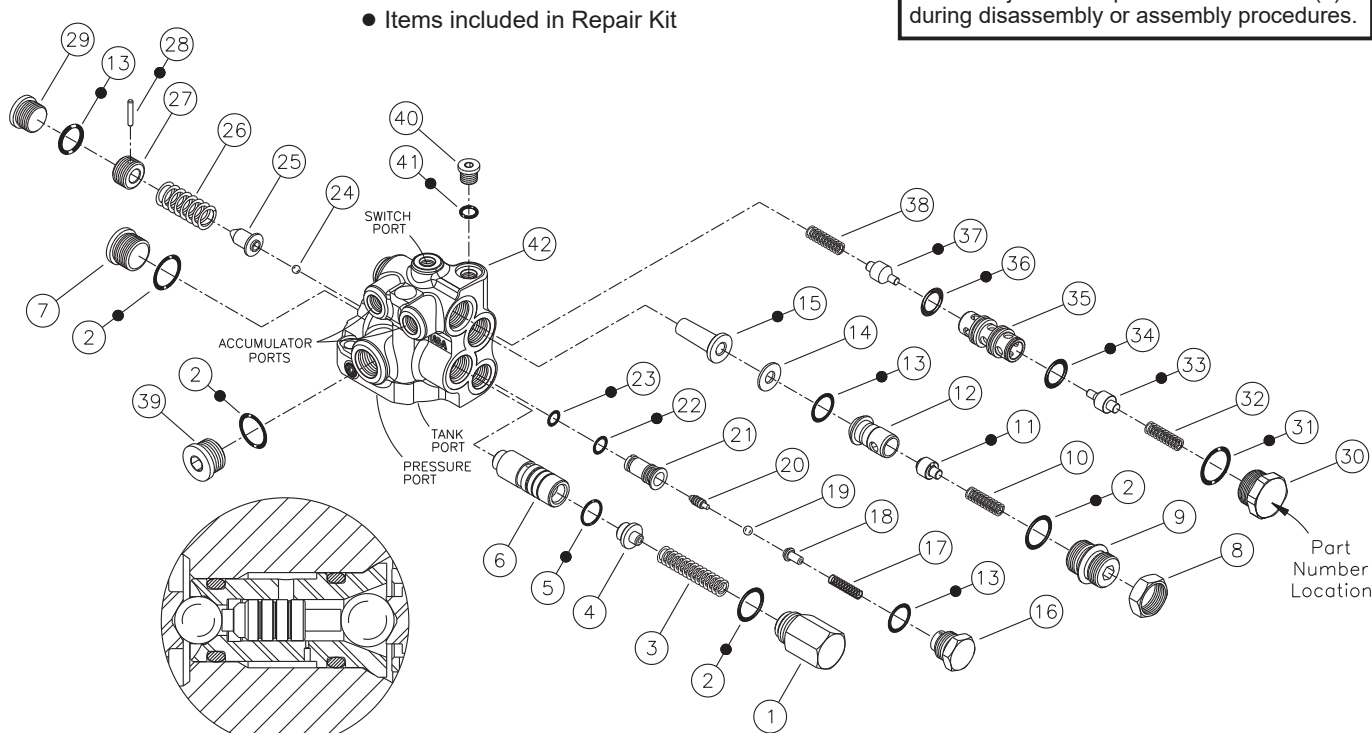


Figure 1a

FIGURE 1

TABLE 1 (Specifications)

Model Number	Repair Kit Number	Nominal High Limit (cut out)		Nominal Low Limit (cut in)	
		bar	(PSI)	bar	(PSI)
06-463-606	06-400-263	158.6 ± 3.5	(2300 ± 50)	96.5 ± 3.5	(1400 ± 50)
06-463-608	06-400-263	158.6 ± 3.5	(2300 ± 50)	96.5 ± 3.5	(1400 ± 50)
06-463-614	06-400-263	158.6 ± 3.5	(2300 ± 50)	96.5 ± 3.5	(1400 ± 50)

Accumulator Charging Valve Adjustment

(Refer to Figure 1)

NOTE

The mounting surface of the accumulator charging valve functions as a sealing surface. When reinstalling the valve on machine, be sure sealing surface is not damaged and is free of contamination which could interfere with the proper sealing function.

1. See machine servicing instructions to properly reinstall accumulator charging valve. Tee an accurate pressure gauge on an accumulator line.
2. Start pump and allow approximately one minute for charging to start (pressure in gauge will read accumulator precharge plus). If valve does not begin to charge, stop pump and remove

end plug (29) and turn screw (27) in 1/4 turn or less. Be sure to reinstall plug (29) before starting pump. Check the high limit specifications (see TABLE 1). Repeat adjustment procedure until the high limit setting is met. This pressure can be checked correctly only if after each adjustment of screw (27) the accumulator pressure is reduced below the low limit setting and the system recharges the accumulator pressure to its high limit. **NOTE: Be sure to reinstall plug (29) before starting pump.**

⚠ WARNING

Do not exceed the high limit pressure setting indicated in TABLE 1 or system damage or failure may occur.

3. Torque end plug (29) 47.5-54.2 N·m (35-40 lb·ft).