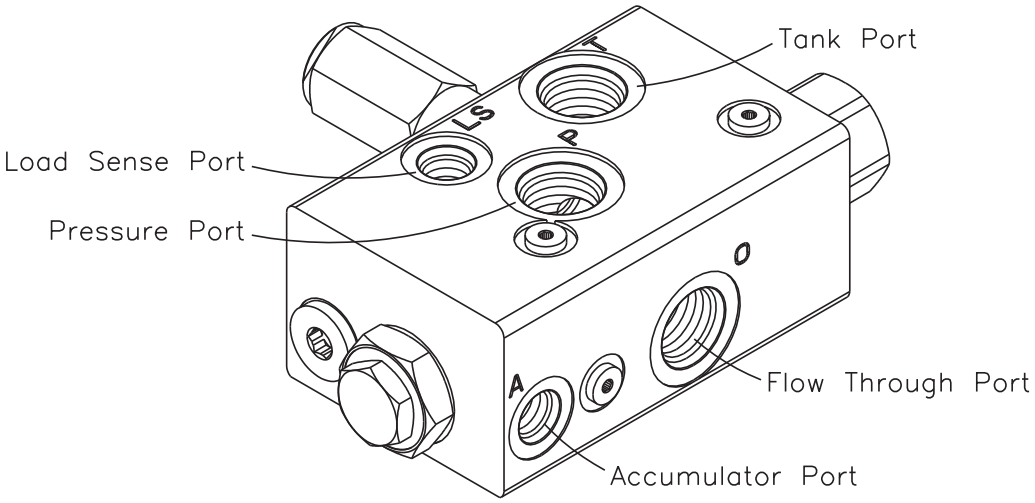
ACCUMULATOR CHARGING VALVE with EXTERNAL RELIEF VALVE

Service Instructions



Form No. 81-463-039 Revised 2004-07-14

DISASSEMBLY
(Refer to Figure 1)

1. Remove plug (1), spring (3) and piston assembly (4) from sleeve (5). Remove o-ring (2) from plug (1).
2. Remove sleeve (5) from housing (11). Remove o-ring (10), back-up rings (9 & 8) and o-rings (7 & 6) from sleeve (5). Note order of components.
3. Remove end plug (19) and spring (17) from housing (11). Remove o-ring (6) from end plug (19).
4. Remove stop (16), piston (15), and o-ring (14) from housing (11). **NOTE: O-ring (14) was not used on earlier designs. However, when installing the repair kit, o-ring (14) will now be installed on all designs. Do not loosen or remove plug from inside piston (15).**
5. Remove plug (20), shim(s) (21), spring (22), and retainer (23) from housing (11). Remove o-ring (2) from plug (20).
6. Remove plug (32), spool (31), sleeve (30), o-ring (29), and seal (28) from housing (11). Remove o-ring (2) from plug (32). **NOTE: Be careful not to scratch or mar spool (31) or housing bore.**
7. Use a deep socket and remove relief valve (24) from housing (11). Remove o-rings (27 & 25) and back-up ring (26) from relief valve (24). Note order of components. **NOTE: Be careful not to damage grooves on relief valve (24).**
8. Remove four plugs (13) from housing (11). Remove four o-rings (12) from plugs (13).

ASSEMBLY
(Refer to Figure 1)

LUBRICATE ALL RUBBER COMPONENTS FROM REPAIR KIT WITH CLEAN TYPE FLUID USED IN THE SYSTEM.

1. Thoroughly wash housing and all parts with clean solvent and allow to dry before proceeding. Lubricate all components and housing bores with clean type fluid used in the system.
2. Install new o-rings (25 & 27) and new back-up ring (26) on relief valve (24) in the order shown. **NOTE: Be careful not to damage grooves on relief valve (24).**
3. Install new o-ring (2) on plug (32).
4. Install new seal (28), new o-ring (29), sleeve (30), spool (31), and plug (32) in housing (11). Note the direction of sleeve (30). Torque plug (32) 45.7-54.2 N·m (35-40 lb·ft). **NOTE: Be careful not to scratch or mar spool (31) or housing bore.**
5. Install retainer (23) and spring (22) in housing (11).
6. Install new o-ring (2) and shim(s) (21) on plug (20). Be sure to install the same number of shim(s) as were removed. Install plug (20) in housing (11). Torque plug (20) 47.5-54.2 N·m (35-40 lb·ft).
7. Install new o-rings (6 & 7), new back-up rings (8 & 9), and new o-ring (10) on sleeve (5). Note the order and direction of the components.
8. Install sleeve (5) in housing (11). Torque sleeve (5) 94.9-101.7 N·m (70-75 lb·ft).
9. Install new o-ring (2) on plug (1). Install piston assembly (4), spring (3) and plug (1) in sleeve (5). Torque plug (1) 47.5-54.2 N·m (35-40 lb·ft). Note direction of piston assembly (4).
10. Install new o-ring (14) on piston (15). Install stop (16) in piston (15). Carefully install piston (15) and spring (17) in housing bore. Note direction of piston (15). **NOTE: O-ring (14) was not used on earlier designs. However, when installing the repair kit, o-ring (14) will now be installed on all designs. Do not loosen or remove plug from inside piston (15).**
11. Install new o-ring (6) on end plug (19) and install end plug (19) in housing (11). Torque end plug (19) 94.9-101.7 N·m (70-75 lb·ft).
12. Install new o-rings (12) on four plugs (13). Install plugs (13) in housing (11) and torque 3.4-6.8 N·m (30-60 lb·in).

ACCUMULATOR CHARGING VALVE ADJUSTMENT
(Refer to Figure 1 and Table 2)

1. 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 begin (pressure in gauge will read accumulator precharge plus). Check the low limit specifications (Table 2) and add or remove shims (21) until the low limit setting is met. Reinstall end plug (20). This pressure can be checked correctly only if after each shim adjustment the accumulator pressure is reduced below the low limit setting and the accumulator pressure to its high limit. Repeat process until low pressure setting is accurately adjusted. **NOTE: Be sure pump is shut off and pressure in the accumulator(s) is fully discharged when adjustment is made. Reinstall plug (20) before starting pump.**
3. Torque end plug (20) 47.5-54.2 N·m (35-40 lb·ft).

NOTE
Do not remove plug from inside of piston (15).

TABLE 1 (Items Included in Repair Kit)

Item Number	Description	Quantity
2	O-Ring, .644 I.D. x .818 O.D. x .087 Thick	3
6	O-Ring, .924 I.D. x 1.156 O.D. x .116 Thick	2
7	O-Ring, .739 I.D. x .879 O.D. x .070 Thick	1
8	Back-up Ring, .768 I.D. x .874 O.D. x .049 Thick	1
9	Back-up Ring, .705 I.D. x .811 O.D. x .049 Thick	1
10	O-Ring, .676 I.D. x .816 O.D. x .070 Thick	1
12	O-Ring, .239 I.D. x .367 O.D. x .064 Thick	4
14	O-Ring, .549 I.D. x .755 O.D. x .103 Thick	1
25	O-Ring, .755 I.D. x .949 O.D. x .097 Thick	1
26	Back-up Ring, .518 I.D. x .624 O.D. x .049 Thick	1
27	O-Ring, .489 I.D. x .629 O.D. x .070 Thick	1
28	Seal	1
29	O-Ring, .364 I.D. x .504 O.D. x .070 Thick	1

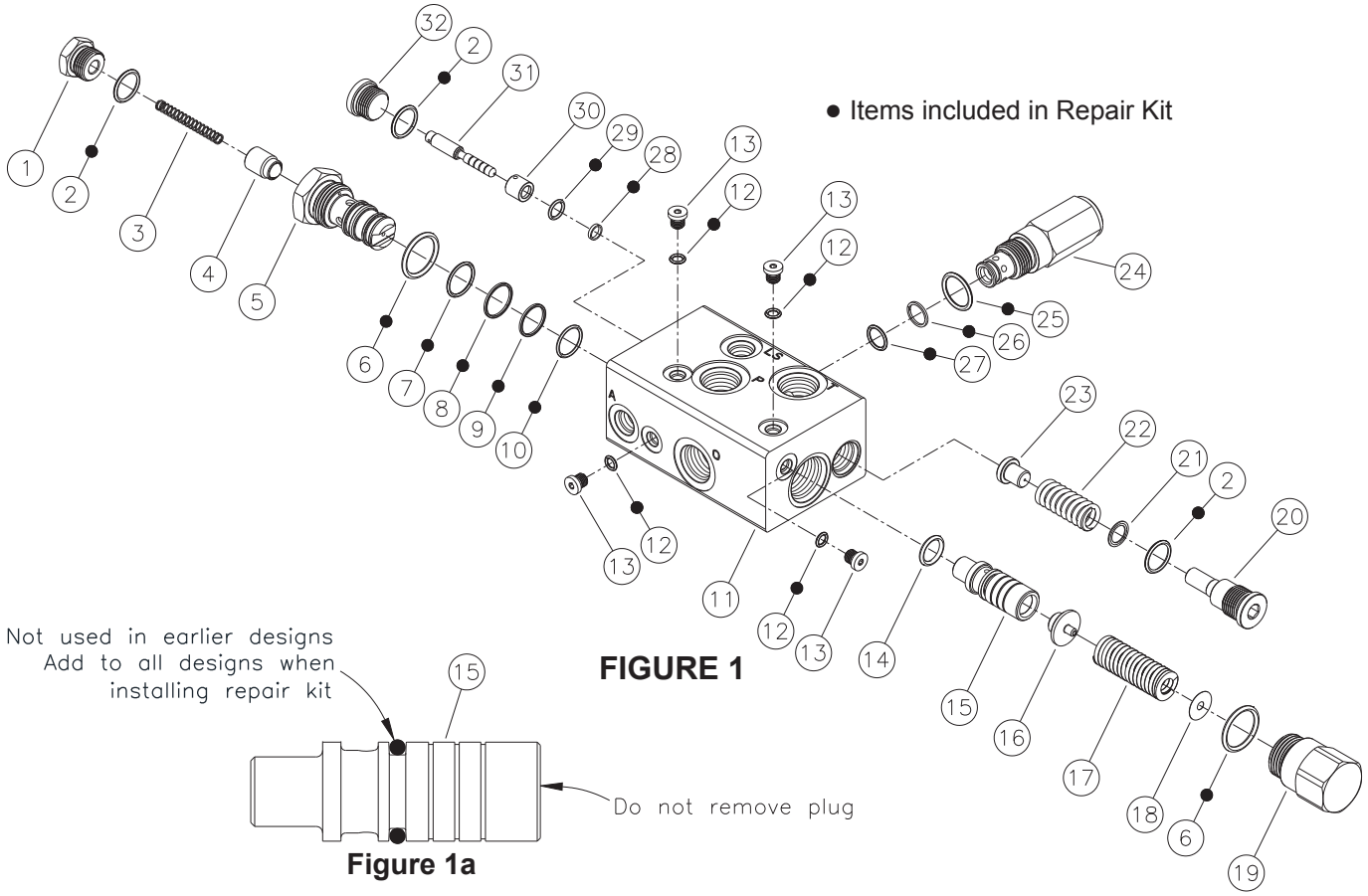


FIGURE 1

Figure 1a

TABLE 2 (Specifications)

Caterpillar Part Number	Minimum Accumulator High Limit (cut out)		Accumulator Low Limit (cut in)		Steering Pressure Maximum Setting	
	bar	(PSI)	bar	(PSI)	bar	(PSI)
234-5120	131.0	(1900)	68.9 ± 6.9	(1000 ± 100)	206.9 ± 6.9	(3000 ± 100)