

1. HIGH FLOW CONTROL VALVE

2. HIGH FLOW GEAR PUMP

95XT SKID STEER HIGH FLOW COMPONENTS WITH GEAR PUMP

GM99F106

HIGH FLOW GEAR PUMP (IF EQUIPPED)

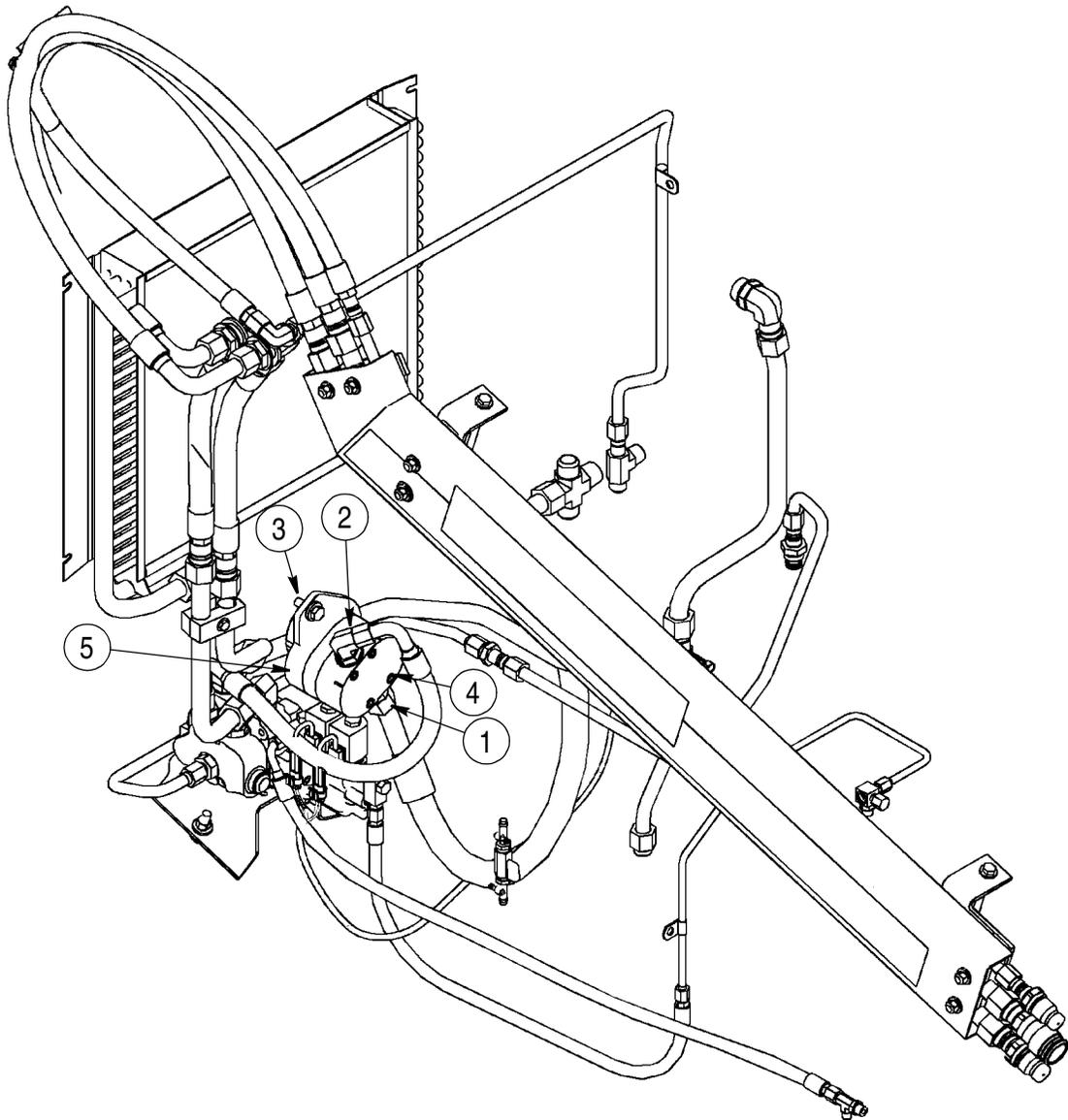
NOTE: Refer to the illustration on page 19 for the following procedures.

Removal

1. Remove the cover and hardware from the front side of the engine timing gear housing.
2. Remove the cap from the hydraulic reservoir. Connect a vacuum pump to the hydraulic reservoir.
3. Start the vacuum pump.
4. Tag and remove the suction hose (1) from the fitting on the high flow pump.
5. Tag and disconnect the pressure hose (2) from the pressure port on the high flow pump.
6. Install caps on the fittings and plugs in the hoses.
7. Stop the vacuum pump.
8. Loosen and remove the upper mounting bolt (3) and the lower mounting bolt (4).
9. Remove the high flow pump (5) from the engine.
10. Remove and discard the seal between the high flow pump and the engine.

Installation

1. If the drive gear was removed from the pump shaft, install the drive gear onto the shaft. Tighten the mounting nut to a torque of 128 to 144 Nm (94 to 106 pound-feet).
2. Lightly lubricate the new seal with clean hydraulic oil and install the seal on the high flow pump.
3. Install the high flow pump (5) in the mounting location. Rotate the high flow pump until it aligns with the mating gear.
4. Apply Loctite 243 to the bolts (3 and 4).
5. Install the upper (3) and lower (4) mounting bolts. Tighten the upper (3) and lower (4) mounting bolts to a torque of 46 to 52 Nm (34 to 38 pound-feet).
6. Start the vacuum pump.
7. Remove the caps from the fittings and the plugs from the hoses. Install the suction hose (1) and the pressure hose (2) to the pump. Tighten the fittings to a torque of 77 to 85 Nm (57 to 63 pound-feet).
8. Stop the vacuum pump and remove the vacuum pump from the hydraulic reservoir. Install the cap on the hydraulic reservoir.
9. Install the cover and hardware to the front side of the engine timing gear housing.
10. Start the engine and run at low idle. Check for leaks.
11. Stop the engine and check the oil level in the reservoir. Add oil as required.



- 1. SUCTION HOSE
- 2. PRESSURE HOSE
- 3. UPPER MOUNTING BOLT

- 4. LOWER MOUNTING BOLT
- 5. HIGH FLOW PUMP

GM99F230

85/90/95XT SKID STEER GEAR PUMP MOUNTING

HIGH FLOW PISTON PUMP (IF EQUIPPED)

Removal

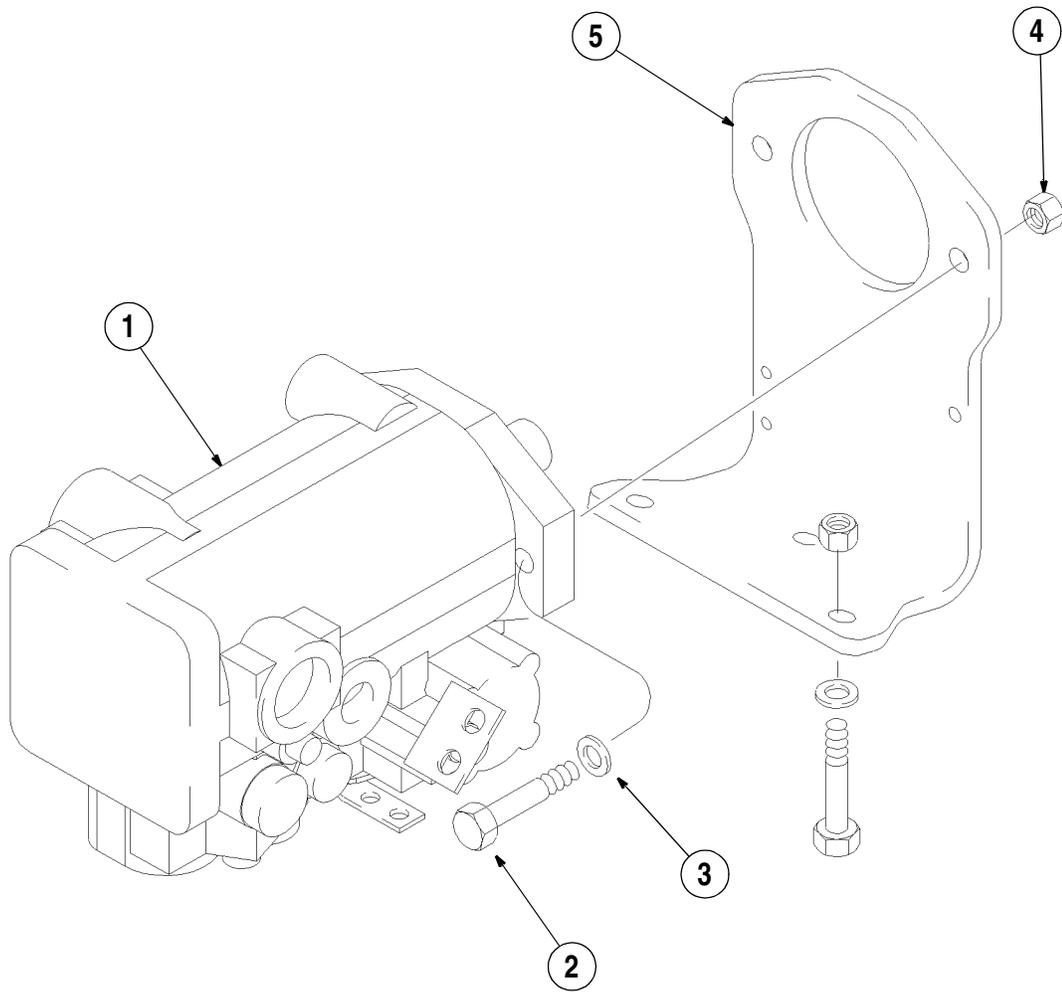
1. Place a shop towel under the high flow piston pump (1).
2. Remove the cap from the hydraulic reservoir.
3. Connect a vacuum pump to the hydraulic reservoir.
4. Start the vacuum pump.
5. Tag and disconnect the hoses from the fittings at the suction and pressure ports of the high flow piston pump (1).
6. Install plugs in the hoses and caps on the fittings.
7. Stop the vacuum pump.
8. Remove the bolts (2), washers (3) and nuts (4) that secure the high flow piston pump (1) to the bracket (5).
9. Remove the high flow piston pump (1) from the bracket (5) and linkage.

Installation

1. Hold the high flow piston pump (1) against the bracket (5). Rotate the high flow piston pump shaft until it aligns with the linkage.
2. Apply Loctite 243 to the bolts (2). Install bolts (2), washers (3) and nuts (4), and tighten bolts (2).
3. Start the vacuum pump.
4. Connect the hoses to the suction port and pressure port side of the high flow piston pump (1).
5. Stop the vacuum pump. Disconnect the vacuum pump from the hydraulic reservoir.
6. Clean up any hydraulic fluid from equipment or floor.
7. Start and run the engine at idle.
8. Stop the engine.
9. Check for oil leakage.
10. Check the level of the oil in the hydraulic reservoir. Add oil as required.
11. Install the cap on the hydraulic reservoir.

Hydraulic Start Up Procedure

1. Install a charge pressure gauge in the charge pressure test port.
2. Make sure the pump case is filled with hydraulic fluid before start up, as internal leakage is not sufficient to provide start up lubrication. Fill the pump directly through the upper case drain port with filtered hydraulic oil.
3. Jog the engine until charge pressure is obtained. Start the engine and maintain low idle for five minutes without cycling the pump. This will allow the system to fill properly.
4. Check the hydraulic fluid level in the reservoir and add hydraulic oil if necessary.
5. Cycle the pump control to the forward and then the reverse position. Operate the machine in the normal operating mode. Stop the machine and turn the key switch to the OFF position.
6. Remove the gauge and install the charge pressure plug. Check the hydraulic fluid level in the reservoir and add hydraulic oil if necessary.



- 1. HIGH FLOW PISTON PUMP
- 2. BOLT
- 3. WASHER

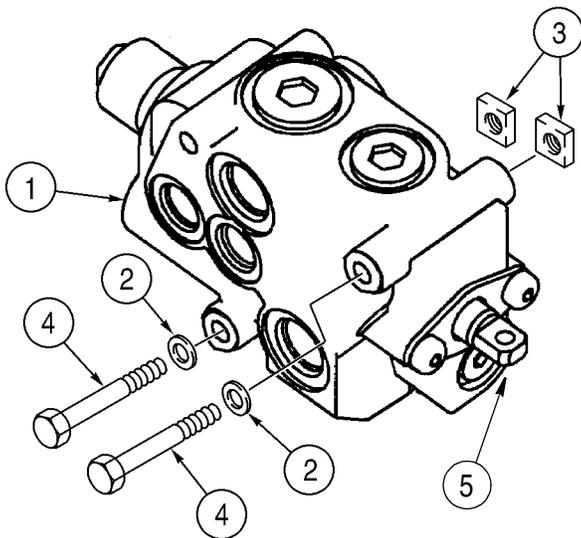
- 4. NUT
- 5. BRACKET

GM99F095

90XT AND 95XT SKID STEER HIGH FLOW PISTON PUMP MOUNTING

AUXILIARY VALVE

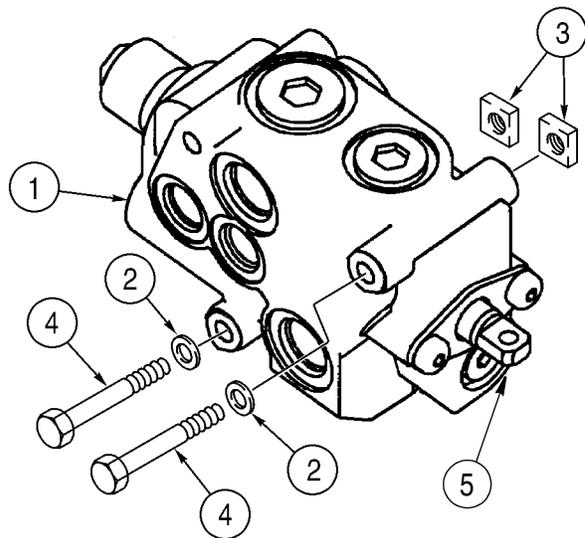
Removal



BS01K069

1. Remove the cap from the hydraulic reservoir. Connect a vacuum pump to the hydraulic reservoir. Start the vacuum pump.
2. Loosen and remove all of the hydraulic connections to the auxiliary valve (1). Install caps on the fittings and plugs in the lines. Stop the vacuum pump.
3. Remove the cotter pin from the clevis pin and remove the clevis pin from the control cable clevis. Remove the control cable from the auxiliary valve control rod (5).
4. Loosen and remove the 2 mounting bolts (4) and washers (2) which mount the auxiliary valve (1) to the chassis. Remove the auxiliary valve (1) from the chassis.

Installation



BS01K069

1. Install the auxiliary valve (1) into the chassis mounting location. Install the 2 mounting bolts (4) and washers (2) and tighten the 2 mounting bolts (4) which fasten the auxiliary valve (1) to the chassis.
2. Install the control cable clevis onto the end of the auxiliary valve control rod (5). Install the clevis pin into the clevis. Install the cotter pin into the clevis pin.
3. Start the vacuum pump.
4. Remove the plugs from the lines and the caps from the fittings. Install the hydraulic lines to the auxiliary valve connections. Tighten the hydraulic connections.
5. Stop the vacuum pump and remove the vacuum pump from the hydraulic reservoir. Install the cap on the hydraulic reservoir.
6. Start the engine and run at low idle. Check for leaks. Stop the engine and check the hydraulic oil level in the reservoir.

NOTES

LOADER CONTROL VALVE (2 SPOOL)

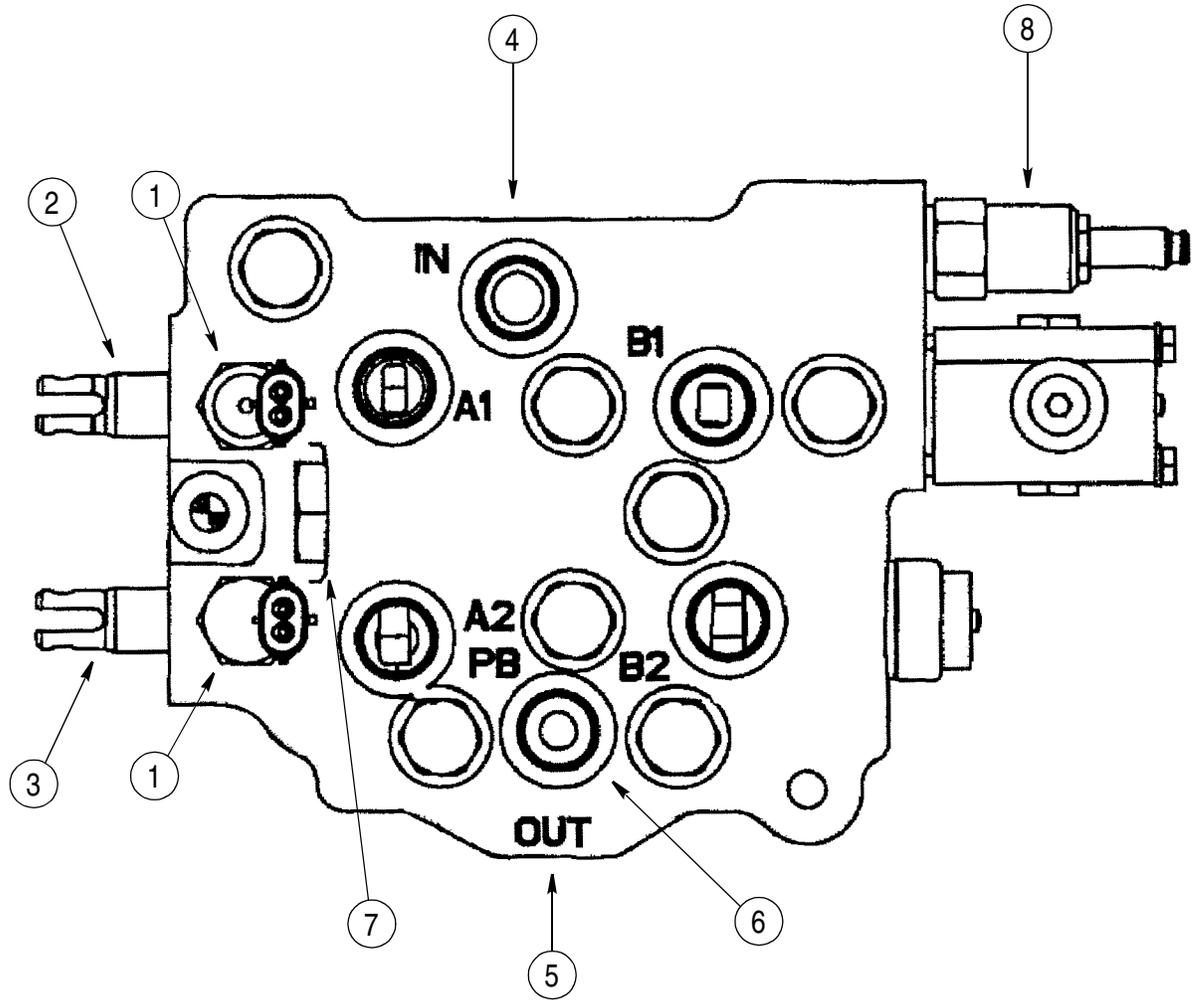
NOTE: Refer to the illustration on page 25 for the following procedure.

Removal

1. Place a shop towel under the loader control valve.
2. Remove the cap from the hydraulic reservoir.
3. Connect a vacuum pump to the hydraulic reservoir.
4. Start the vacuum pump.
5. Tag and disconnect all hoses from the loader control valve.
6. Install plugs in the hoses and caps on the fittings.
7. Tag and disconnect any electrical connections from the loader control valve.
8. Remove the bolts, washers, square nuts, and loader control valve from the chassis.
9. Stop the vacuum pump.

Installation

1. Apply Loctite 243 to the bolts. Install the loader control valve, square nuts washers, and bolts to the chassis. Refer to the illustration on the following page for loader control valve mount locations.
2. Install all electrical connections to the loader control valve.
3. Start the vacuum pump.
4. Connect all hoses to the loader control valve.
5. Stop the vacuum pump. Disconnect the vacuum pump from the hydraulic reservoir.
6. Clean up any hydraulic fluid from equipment or floor.
7. Start and run the engine at idle.
8. Operate the loader controls to completely extend and retract the lift and bucket cylinders in order to remove any air from the hydraulic system.
9. Lower the loader bucket to the floor.
10. Stop the engine.
11. Check for oil leakage.
12. Check the level of the oil in the hydraulic reservoir. Add oil as required.
13. Install the cap on the hydraulic reservoir.



- 1. SPOOL LOCK SOLENOID
- 2. LIFT SPOOL
- 3. BUCKET SPOOL
- 4. INLET PORT

- 5. RETURN PORT
- 6. POWER BEYOND PORT
- 7. COUNTERBALANCE PLUG
- 8. RELEIF VALVE

BS03E138

LOADER CONTROL VALVE (2 SPOOL)

LOADER CONTROL VALVE (BI-DIRECTIONAL SELF LEVELING) (IF EQUIPPED)

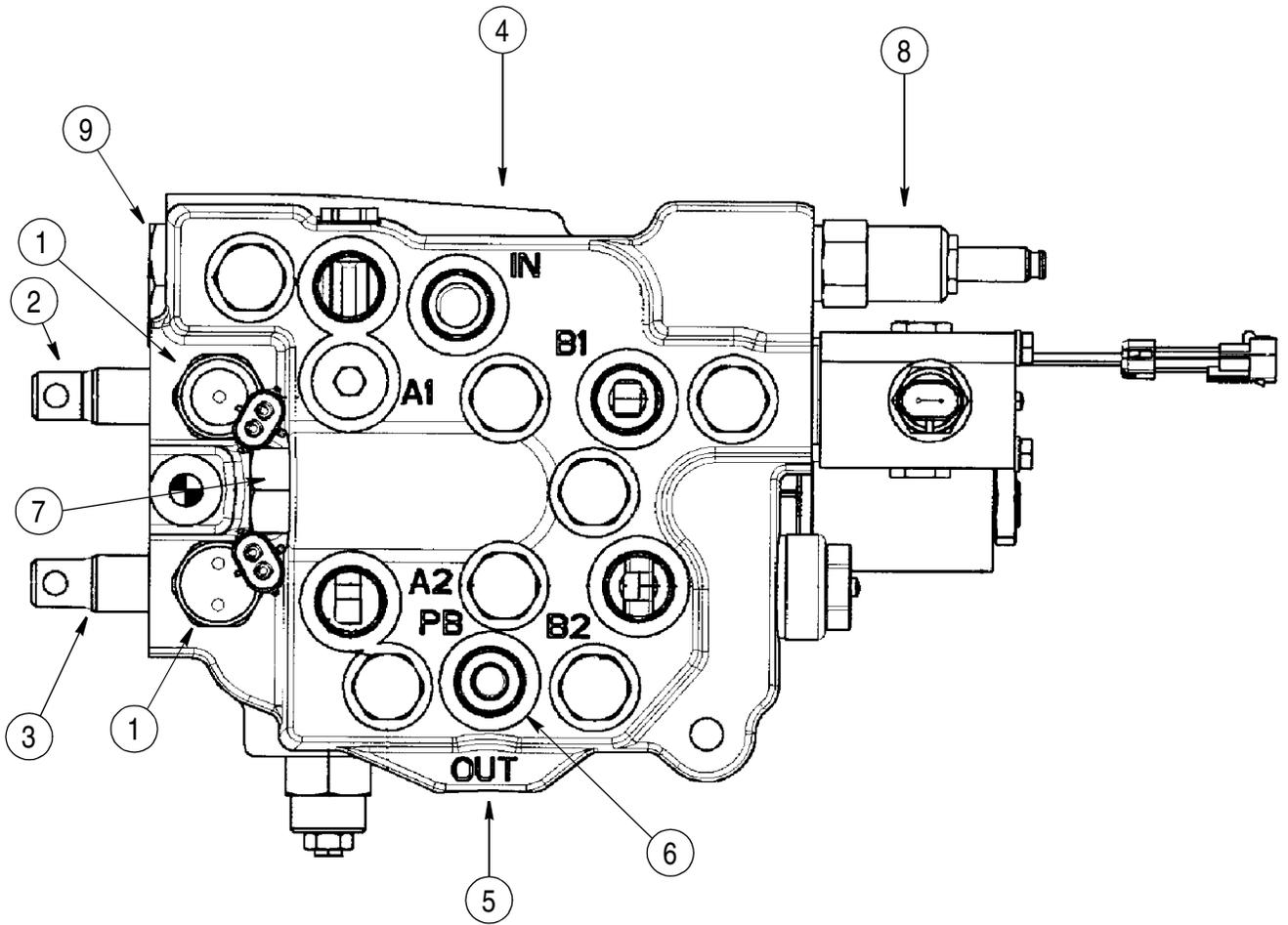
NOTE: Refer to the illustration on page 27 for the following procedure.

Removal

1. Place a shop towel under the loader control valve.
2. Remove the cap from the hydraulic reservoir.
3. Connect a vacuum pump to the hydraulic reservoir.
4. Start the vacuum pump.
5. Tag and disconnect all hoses from the loader control valve.
6. Install plugs in the hoses and caps on the fittings.
7. Tag and disconnect any electrical connections from the loader control valve.
8. Remove the bolts, washers, square nuts, and loader control valve from the chassis.
9. Stop the vacuum pump.

Installation

1. Apply Loctite 243 to the bolts. Install the loader control valve, square nuts washers, and bolts to the chassis. Refer to the illustration on the following page for loader control valve mount locations.
2. Install all electrical connections to the loader control valve.
3. Start the vacuum pump.
4. Connect all hoses to the loader control valve.
5. Stop the vacuum pump. Disconnect the vacuum pump from the hydraulic reservoir.
6. Clean up any hydraulic fluid from equipment or floor.
7. Start and run the engine at idle.
8. Operate the loader controls to completely extend and retract the lift and bucket cylinders in order to remove any air from the hydraulic system.
9. Lower the loader bucket to the floor.
10. Stop the engine.
11. Check for oil leakage.
12. Check the level of the oil in the hydraulic reservoir. Add oil as required.
13. Install the cap on the hydraulic reservoir.



- 1. SPOOL LOCK SOLENOID
- 2. LIFT SPOOL
- 3. BUCKET SPOOL
- 4. INLET PORT
- 5. RETURN PORT

- 6. POWER BEYOND PORT
- 7. LOWER COUNTERBALANCE CARTRIDGE
- 8. RELIEF VALVE
- 9. FLOW DIVIDER CARTRIDGE

BS03E137

LOADER CONTROL VALVE (BI-DIRECTIONAL SELF LEVELING)

HYDRAULIC FILTER BASE ASSEMBLY

Removal

1. Place a shop towel under the hydraulic filter.
2. Remove the cap from the hydraulic reservoir.
3. Connect a vacuum pump to the hydraulic reservoir.
4. Start the vacuum pump.
5. Tag and disconnect all hoses from the hydraulic filter.
6. Install plugs in the hoses and caps on the fittings.
7. Tag and disconnect electrical connection from the hydraulic filter bypass switch assembly.
8. Remove the bolts, washers, and hydraulic filter from the bracket.
9. Stop the vacuum pump.

Inspection

1. Inspect the hydraulic filter head and bypass switch assembly for damage. Replace all damaged parts.
2. Inspect the hydraulic filter mounting bracket for corrosion or damage. Replace all damaged parts.

Installation

1. Install the hydraulic filter, washers, and bolts to the bracket.
2. Install the electrical connection to the hydraulic filter bypass switch assembly.
3. Start the vacuum pump.
4. Connect all hoses to the hydraulic filter.
5. Stop the vacuum pump. Disconnect the vacuum pump from the hydraulic reservoir.
6. Clean up any hydraulic fluid from equipment or floor.
7. Start and run the engine at idle.
8. Operate the loader controls to completely extend and retract the lift and bucket cylinders in order to remove any air from the hydraulic system.
9. Lower the loader bucket to the floor.
10. Stop the engine.
11. Check for oil leakage.
12. Check the level of the oil in the hydraulic reservoir. Add oil as required.
13. Install the cap on the hydraulic reservoir.