

Equipment Requirements

The following equipment is necessary to properly check the steering circuit

- Hydraulic schematic, refer to Section R.
- Three 0-34 474 kPa (0-5000 psi) calibrated pressure gauges and hoses.
- Two 0-25 579 kPa (0-4000 psi) calibrated pressure gauges and hoses.

NOTE: A data sheet for recording test pressures is located at the rear of the chapter. Record all pressure checks on this sheet.

Installation Of Gauges

1. Install a 0-34 474 kPa (0-5000 psi) pressure gauge at test port (6, Figure 10-1) on the bleed-down manifold.
2. Install two 0-34 474 kPa (0-5000 psi) pressure gauges onto the pressure ports on the steering cylinder manifold (2, Figure 10-5) below the horsecollar.
3. Install a 0-25 579 kPa (0-4000 psi) pressure gauge onto the hoist pump outlet pressure port. Install another 0-25 579 kPa (0-4000 psi) pressure gauge at the brake cooling outlet pressure port.

Initial Startup And Flushing

4. Disconnect the steering supply and return lines from the bleeddown manifold. The supply hose is connected to check valve (5, Figure 10-1) and return to tank (3) is located directly below the supply.

Using the necessary fittings, connect the supply line to the return line to create a complete circuit. Install a 6.4 mm (0.25 in.) orifice between the lines to create back pressure.

5. Remove the case drain line from the top of the steering pump. Fill the pump with clean hydraulic oil, and install the case drain back on the pump.

WARNING

It is essential that the pump case is full of oil prior to starting the engine. Refer to Steering Circuit Component Repair, Steering and Brake Pump in this section for instructions.

6. Fill the hydraulic tank to the upper sight glass.
7. Place the hoist control in the FLOAT position.

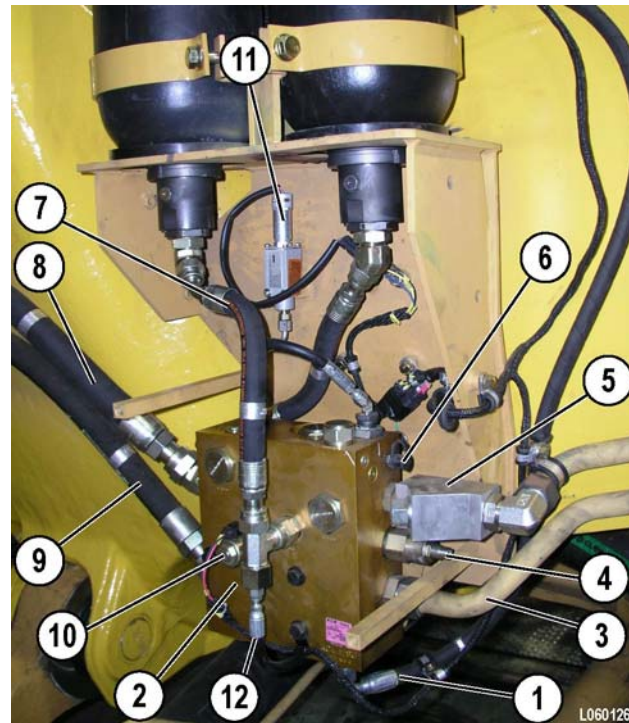


FIGURE 10-1. BLEEDDOWN MANIFOLD

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|--|-------------------------------------|
| 1. Brake Circuit Supply | 8. To Flow Amplifier |
| 2. Bleeddown Manifold | 9. From Flow Amplifier |
| 3. Return to Tank | 10. Accumulator Bleed-Down Solenoid |
| 4. Pressure Relief Valve | 11. Low Steering Pressure Switch |
| 5. Supply From Steering Pump (Check Valve) | 12. Auto-Lube Supply |
| 6. Test Port | |
| 7. From Accumulator | |

8. Turn the key switch to the ON position, but do not start the engine. Verify that the low steering accumulator pressure warning is not displayed. If the indicator lamp illuminates, the accumulators are not properly charged. Charge the accumulators accordingly. Refer to Section L, Steering Circuit Component Repair, Steering Accumulator Charging for steering accumulator charging instructions.
9. Start the engine and allow it to operate at low idle. Do not increase engine speed.
10. Check the pressure at the hoist and brake cooling pumps. Pressure at both hoist pumps should be 689 kPa (100 psi) with the oil temperature at 21° C (70° F). Pressure at both brake cooling pumps should be 241 kPa (35 psi) with the oil temperature at 21° C (70° F).
11. If pressures are within range, increase engine speed to 1500 rpm for 20 minutes to flush the system.
12. After 20 minutes, stop the engine. Depressurize all accumulators and return the steering circuit hoses to their proper locations.
13. After the circuit is installed properly, start the engine to flush the accumulators. Allow the engine to operate until the pressure gauge at the bleeddown manifold reaches $18\ 100 \pm 862$ kPa (2625 ± 125 psi). Do not apply the brakes or move the steering wheel during accumulator flushing.
14. Stop the engine and depressurize all accumulators. Verify no pressure exists on the pressure gauge on the bleeddown manifold. Record the pressure.
15. Open the needle valves in the brake cabinet to depressurize the brake accumulators. Check and record the pressure.

Repeat Steps 14 and 15 four more times. Record the pressure after each cycle.
16. Start the engine and allow the accumulators to fully charge. Rotate the steering wheel from lock to lock a minimum of 10 times.
17. Stop the engine. Check the level of the hydraulic tank and add oil if necessary.

Component Checkout And Adjustment

18. Adjust the steering pump compensator for testing of the steering shock valves. Compensator (2, Figure 10-2) must be set to $22\ 753 \pm 689$ kPa (3300 ± 100 psi) for this test.

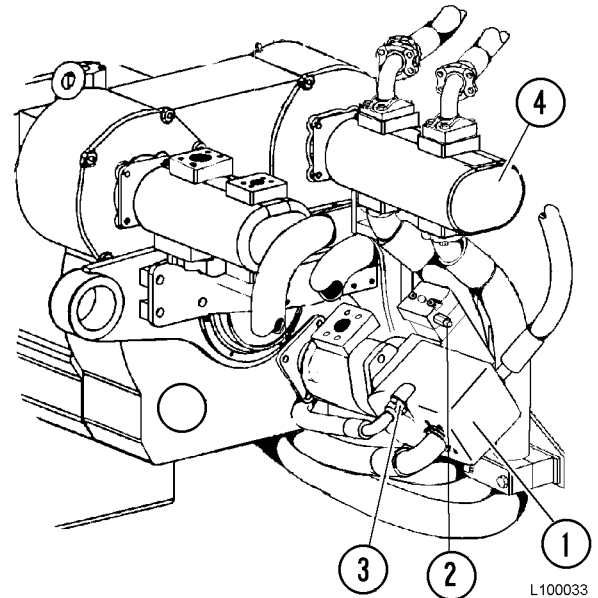


FIGURE 10-2. PUMP PRESSURE CONTROL

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|---------------------------|--------------------|
| 1. Steering Pump | 3. Case Drain Line |
| 2. Compensator Adjustment | 4. Hoist Pump |

19. Raise the steering relief valve setting to allow testing of the shock valves. To adjust the relief valve, perform the following:
 - a. Remove plug (2, Figure 10-3) on flow amplifier (1) to access the relief valve.
 - b. Gently bottom out the adjustment screw by turning clockwise.
20. Start the engine and allow the steering system to pressurize.

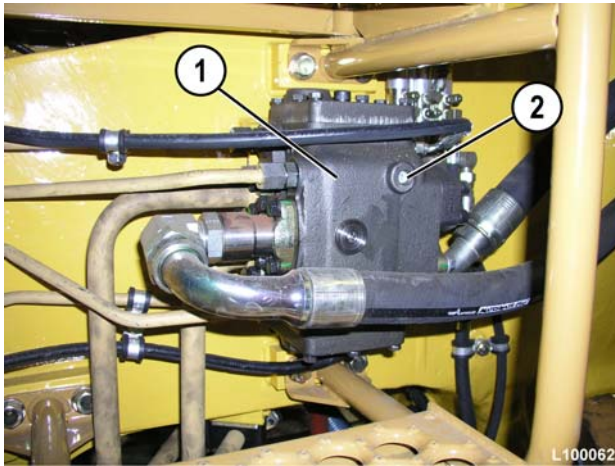


FIGURE 10-3. FLOW AMPLIFIER RELIEF VALVE

1. Flow Amplifier 2. Plug

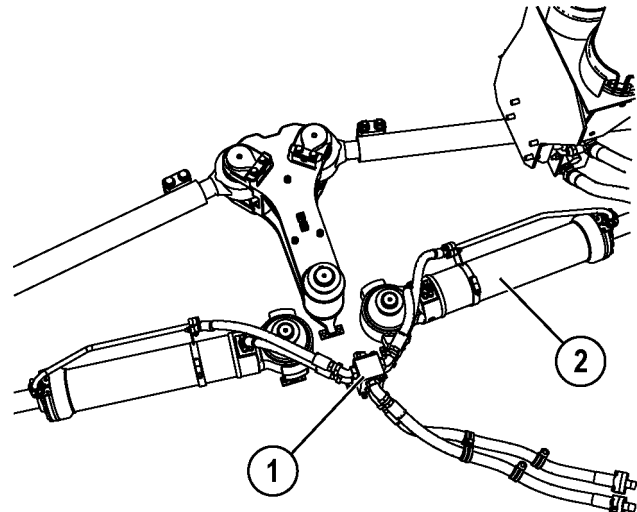


FIGURE 10-4. STEERING DISTRIBUTION MANIFOLD

1. Steering Distribution Manifold 2. Steering Cylinder

21. While observing the two gauges installed on the steering manifold, steer the truck against the left stop. Pressure on one of the gauges should be $22\,442 \pm 1069$ kPa (3255 ± 155 psi). Record the measurement.

Steer the truck to the opposite stop. The other gauge should be $22\,442 \pm 1069$ kPa (3255 ± 155 psi). Record the measurement.

22. After checking the shock valves, lower the steering relief valve setting back to $18\,961 \pm 345$ kPa (2750 ± 50 psi).

- a. Steer full left or right and maintain a slight pressure against the steering wheel.
- b. Adjust the steering relief valve until $18\,961$ kPa (2750 psi) is obtained on the pressure gauge.

23. After adjustment is complete, install plug (2).

24. Record the relief valve adjustment pressure.

25. Turn the steering pump pressure compensator adjustment screw counterclockwise to reduce pressure while steering the truck to lower accumulator pressure. Adjust the compensator to temporarily allow circuit pressure to drop to approximately $17\,237 \pm 690$ kPa (2500 ± 100 psi).

26. After adjusting, steer the truck to verify the pressure is maintained at $17\,237 \pm 690$ kPa (2500 ± 100 psi).

27. Without steering the wheels, turn the pressure compensator adjustment screw clockwise to obtain $18\,961 \pm 345$ kPa (2750 ± 50 psi) on the gauge at the bleddown manifold test port.