

HYDROSTATIC CIRCUITRY

(Figure 84):

Fluid from the hydraulic system enters the hydrostatic system at the hydraulic fluid filter (A). It flows to the charge pumps (B). The charge pumps in turn keep the hydrostatic pumps (C) and hydrostatic motors (D) supplied with fluid. Any excess fluid is passed through the hydrostatic pump case, then through to the oil cooler (E), and finally returns to the reservoir.

WARNING

Tampering with the hydrostatic pump or motors by unauthorized personnel will nullify warranty.

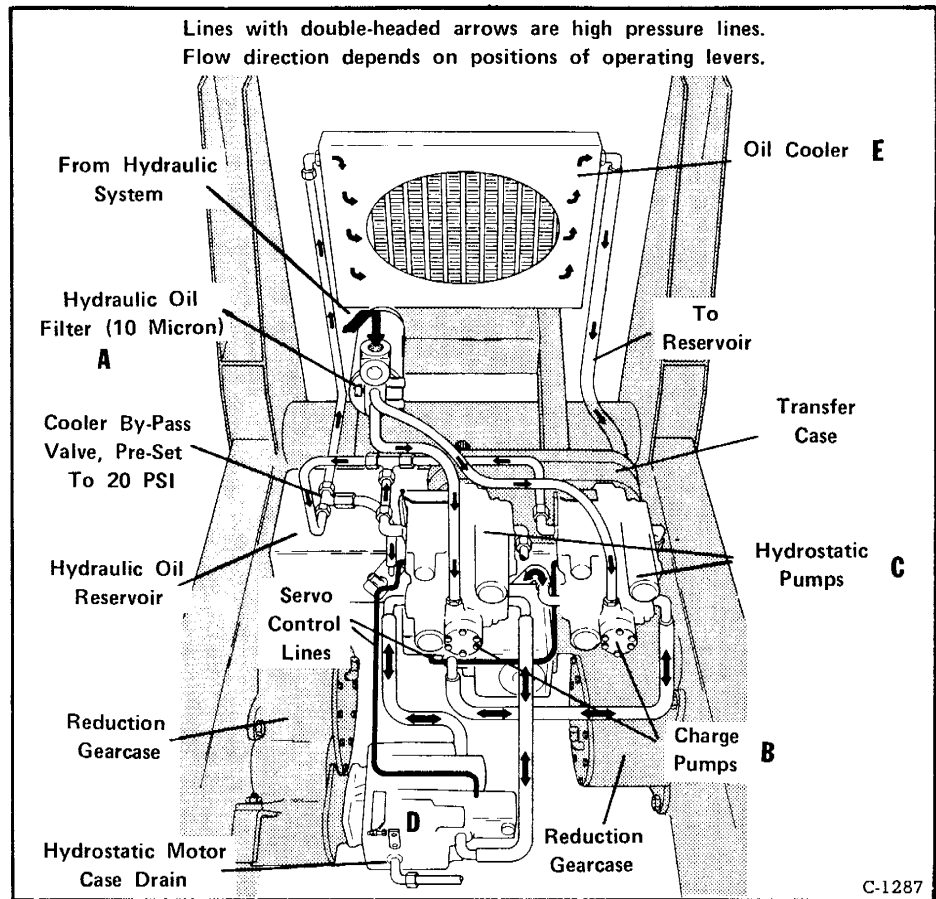


Fig. 84 Hydrostatic Circuitry

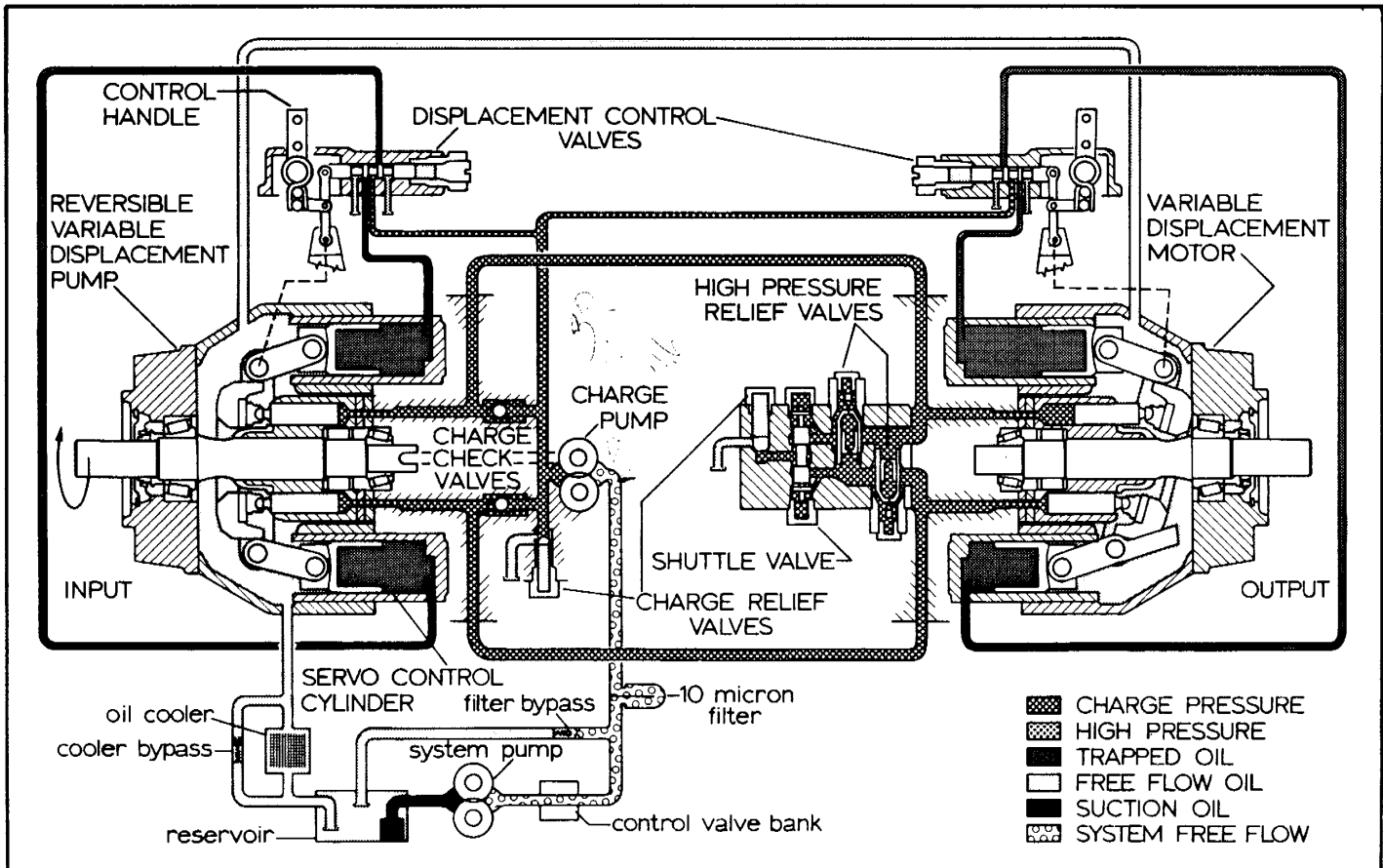


Fig. 85 Hydrostatic Circuitry (Neutral)

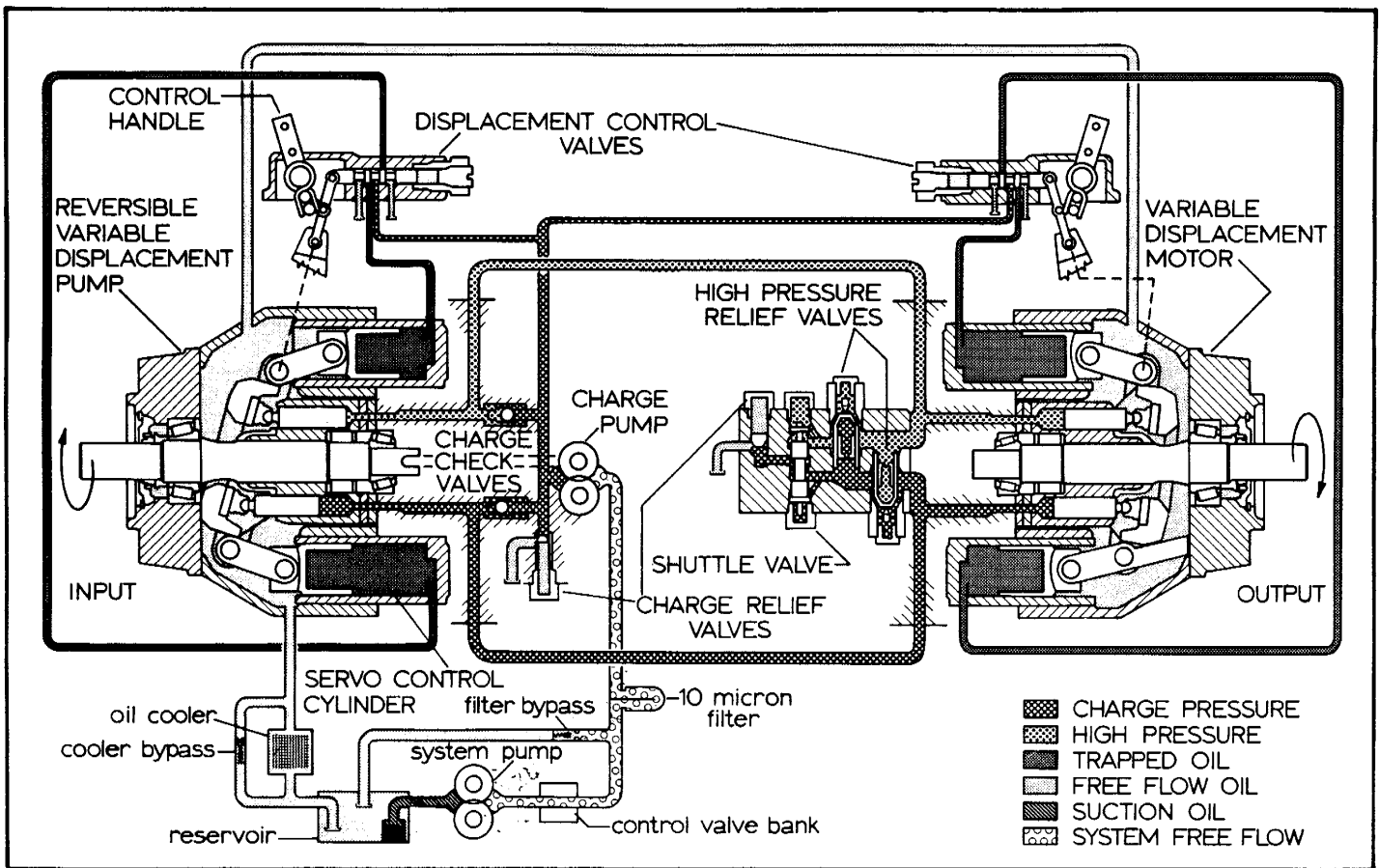


Fig. 86 Hydrostatic Drive Circuitry (Forward)

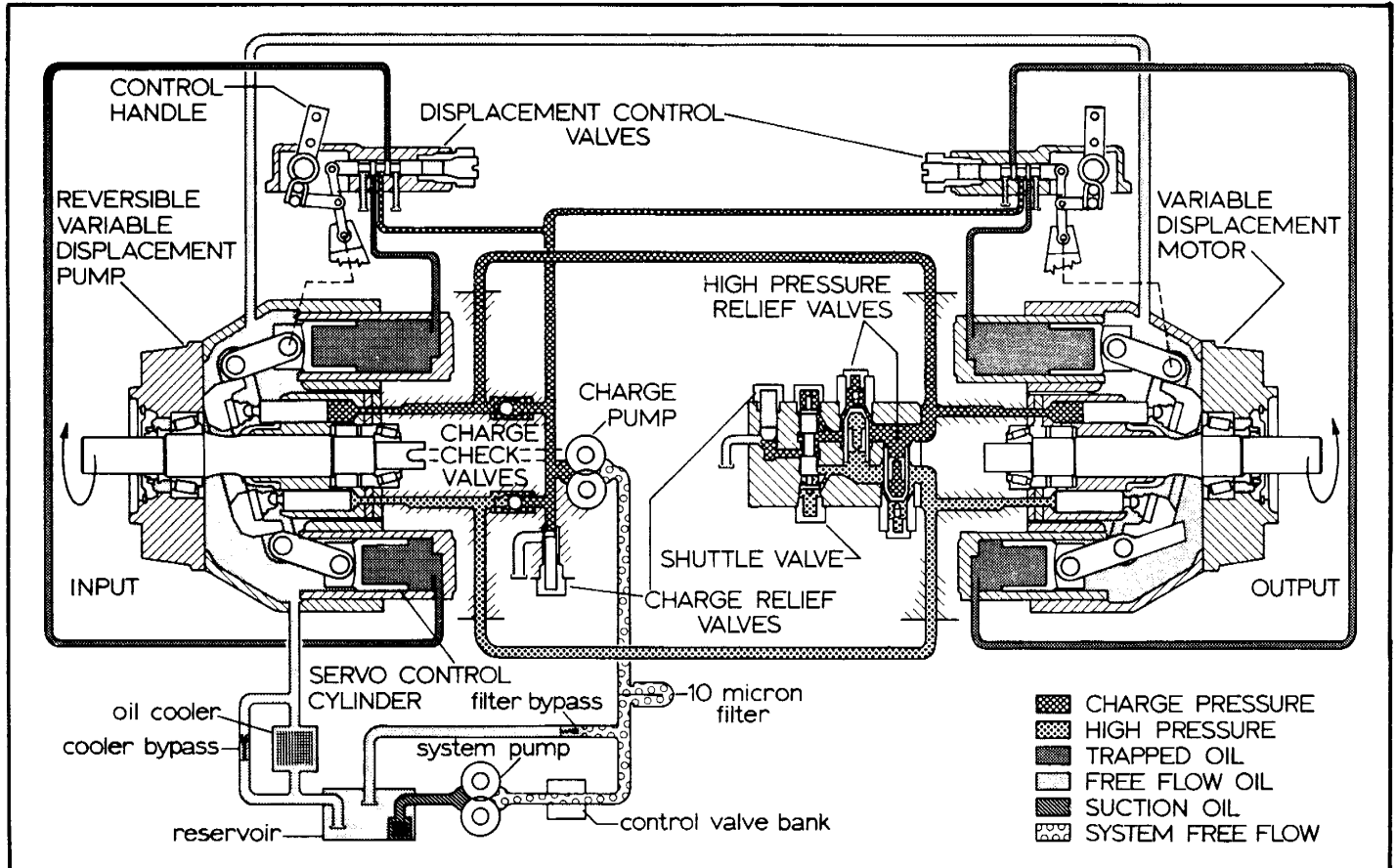


Fig. 87 Hydrostatic Drive Circuitry (Reverse)

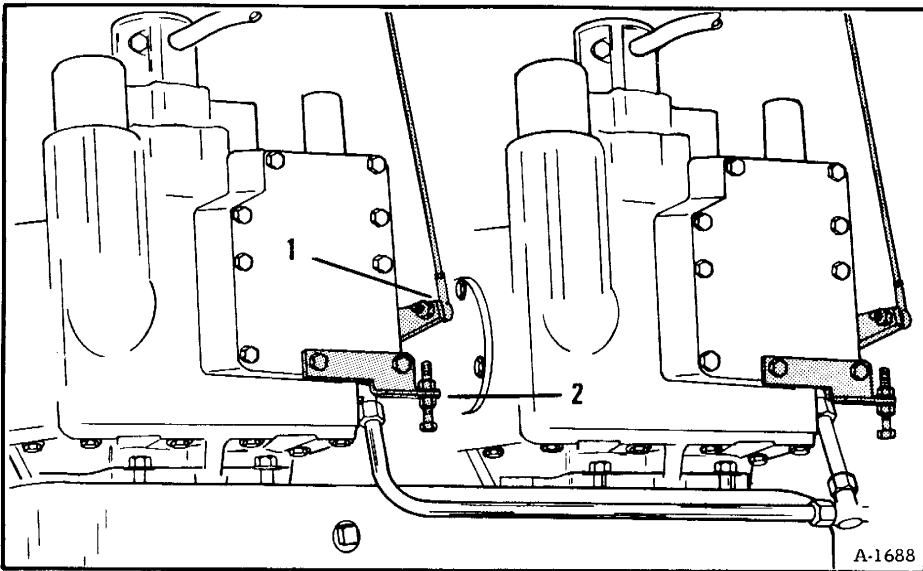


Fig. 88 Control Arm Linkage

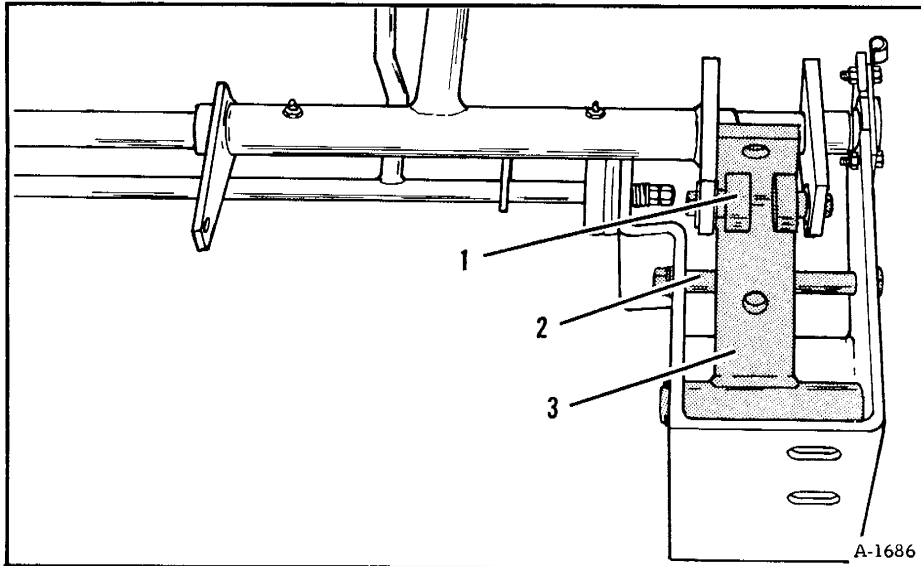


Fig. 89 Directional Control Mechanism

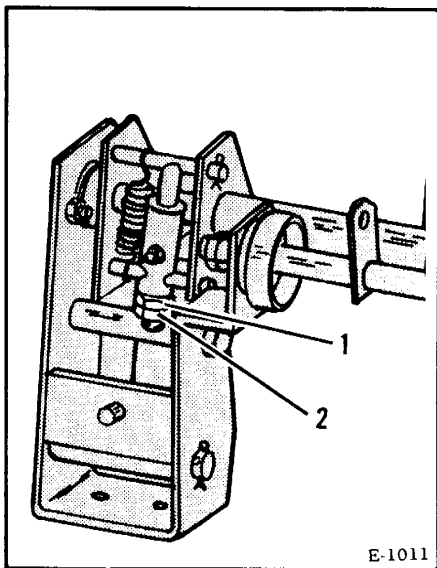


Fig. 90 Directional Control Mechanism

DIRECTIONAL CONTROL ADJUSTMENT

To adjust the steering lever control linkage:

1. Raise the machine so that all four wheels are off the floor, and block.
2. Disconnect the servo control arm linkage at the pumps (Figure 88, Item 1).
3. Loosen the control arm stops on the pumps (Figure 88, Item 2) and back them off, away from the control arms.
4. Move one of the control arms back, toward the stop, as far as it will travel. While holding it in this position, adjust the stop so that it just contacts the control arm. Tighten the stop lock nut. Make the same adjustment to the other control arm.
5. Loosen each roller cam mounting nut and position the rollers (Figure 89, Item 1) so they are in full contact with the roller plate (Item 3); Hold the rollers in place and tighten the lock nuts.
6. Connect the control lever linkage to the pump control arms. (There should be a perfect fit when connecting the swivels to the control arms. Adjust the swivels, if necessary.) Do not over-tighten the swivel bolts.
7. Adjust the limiting rod (Figure 89 Item 2) by placing the levers all the way forward with the limiting rod loose. Tap the rod until it is against the roller plate. Back off on the steering levers slightly and tap the

limiting rods again until it contacts the roller plate. Then tighten the limiting rod nuts.

8. Hold one of the steering levers in neutral and place the other lever fully forward. While holding the levers in this position adjust the differential limiting rod adjusting nut (Figure 90, Item 1) until it just contacts the sleeve of the differential limiting rod. Tighten the lock nut (Item 2).

CONTROL ASSEMBLY REMOVAL

To remove the control assembly:

1. Disconnect the two linkage rods and speed range control cable from the operating levers.
2. Disconnect the throttle control linkage and choke control at the carburetor.
3. Remove the four mounting nuts and remove the control assembly.

To reinstall the controls assembly:

1. Locate the assembly over the mounting studs on the main frame. Tighten the mounting nuts securely.

2. Reconnect the choke control cable and throttle linkage.
3. Reinstall speed range control and linkage rods. Adjust linkage if necessary.

NOTE: Make any adjustments necessary. Refer to Control Lever (Operating Lever) Adjustment.

PUMP AND MOTOR CONTROL ADJUSTMENT

To correctly adjust the transmissions so that wheels on both sides of the machine turn at the same rate:

1. Raise machine so all four wheels are off the ground, block, and perform the "Hydrostatic Control Lever Adjustment" if this has not already been done.
2. Put a white chalk mark on one of the wheels on each side of the machine. Start engine and run at maximum RPM. Fully engage the steering levers at low range and count the wheel RPM. Wheel RPM should be 55 - 58 on each side of the machine. If it is not, check the pump control linkage adjustment.
3. With the right operating lever, shift the transmission into high range by twisting the hand grip counterclockwise. The hydrostatic motor control arms (on the motors) should travel 3/8 of an inch before the arm contacts the stops.
4. With the engine at maximum RPM, fully engage the steering lever. Count the wheel RPM. They should turn 78 - 82 RPM on each side of the machine.
5. If the wheel RPM is not the same on both sides of the machine, adjust the motor control arm stop on one of the motors until wheel RPM is the same for both sides of the machine. Turning the control arm stop in (towards the control arm) will increase wheel RPM. Turning the stop out, will decrease the RPM. (It may also be necessary to adjust the cable linkage at the range control steering lever.)

HYDROSTATIC CHARGE PUMP

Fluid returning from the implement circuit valve bank passes through a filter and on to the inlet of the charge pump. The charge pump is mounted on the hydrostatic pump and is driven at the same speed as the hydrostatic pump. The purpose of the charge pump is to provide a flow of fluid through the transmission for cooling purposes, to supply fluid under pressure to the low pressure side of the closed pump/motor circuit, to provide sufficient oil under pressure for control purposes and for internal leakage makeup.

CHECKING CHARGE PRESSURE

NOTE: Use the following procedure to check the condition of the charge pump and to check the worn hydrostatic pump or motor.

To check the charge pressure:

1. With the engine shut off, disconnect the charge pump displacement line (located below the displacement control valve. Plug the line with a 1/4" SAE plug.
2. Install a 0 - 250 PSI pressure gauge at the displacement line port on the pump (Figure 91).
3. Start the engine and observe the charge pressure on the gauge. If it reads 180 - 220 PSI, the charge pump is functioning properly in neutral.
4. Set engine throttle at full RPM and place a load on the drive system by butting the bucket against a stationary structure. (Be sure the structure will withstand the force exerted by the loader.)
5. Fully stroke the steering lever and observe the pressure gauge. It should drop to 150 - 190 PSI. If the charge pressure drops considerable, (less than 100 PSI) the hydrostatic pump or motor is probably excessively worn.

NOTE: If the charge pressure falls below 100 PSI, shut the engine down and troubleshoot. If the pressure does not drop, check for sticky shuttle valve.

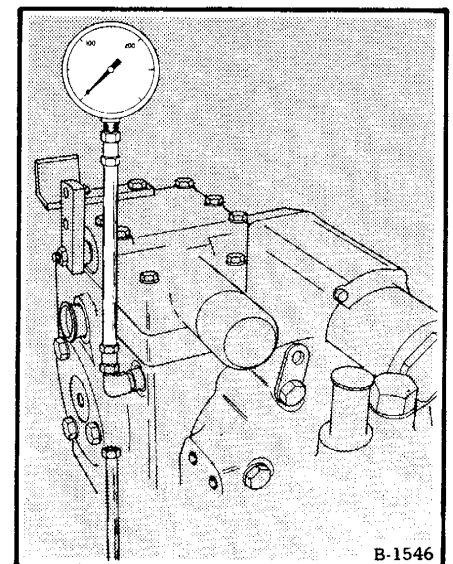


Fig. 91 Checking Charge Pump Pressure