

piston against the forward end of the cylinder. After making the adjustment, the clearance at the sleeve in the pedal should be on the rear side of the pin (1, Figure 83 and A, Figure 85).

TESTING BOOSTER SYSTEM FOR LEAKAGE

To test the entire system for efficiency, install a vacuum gauge in the line between the check valve and the control valve. Start the engine and note the amount of vacuum shown on the gauge. If approximately 18 to 21 inches of vacuum* (27 inches on Diesel trucks) shows on the gauge with the engine running, stop the engine. If the vacuum does not drop faster than 2 inches per minute with the brakes released, or more than 8 inches after the engine is stopped and the brakes are applied and held on for 1 minute, the booster system will operate efficiently. The amount of drop in vacuum when the brakes are applied will increase with excessive brake pedal travel, therefore, the brake shoes must be properly adjusted and the hydraulic brake lines free from air when this test is made.

With the engine running and the brakes released, a maximum vacuum reading of less than 18 to 21 inches (27 inches on Diesel trucks) would indicate leaks in the system, insufficient engine vacuum, or a faulty vacuum pump on Diesel models.

If the vacuum reading is low, and the vacuum drops faster than 2 inches per minute after releasing the brakes and stopping the engine, there is a leak somewhere in the system. If the vacuum reading is low, and the vacuum does *not* drop faster than 2 inches per minute after releasing the brakes and stopping the engine, insufficient vacuum is being created by the engine or vacuum pump or there are air leaks between the check valve and engine (pump on Diesel trucks).

In case the maximum vacuum, with the engine running and the brakes released, is *not* less than 18 to 21 inches (27 inches on Diesel Trucks) and does *not* drop faster than 2 inches per minute when the engine is stopped, but does drop more than 8 inches when the brakes are applied and held on for 1 minute, there is excessive leakage past the vacuum cylinder piston or the control valve when the brakes are applied.

CHECK VALVE (Testing)

To test the check valve, connect a vacuum gauge to the port leading to the control valve and start the engine. After stopping the engine the gauge reading should remain constant for a reasonable length of time unless the valve leaks.

CONTROL VALVE (Testing)

To test the control valve, remove both hoses, place finger over the port leading to the check valve and suck on the opposite port. If no air can be drawn through, the valve does not leak.

*Diesels are equipped with vacuum pump.

VACUUM CYLINDER AND PISTON ASSEMBLY

(Testing)

To test for leakage past the piston sealing cup, disconnect the hose at the front end of the cylinder. Plug the end of the hose and start the engine. Then install a vacuum gauge in the open port of the cylinder and if the reading builds up rapidly there is excessive leak past the piston and the cylinder should be serviced.

To test for leakage past the piston rod seal, disconnect the hose from the front end of the cylinder and install a vacuum gauge in the end of the hose. Start the engine and take a vacuum reading. Then reconnect the hose with the vacuum gauge installed in the line and take another reading. If there is no leakage past the piston sealing cup, any difference in the two readings would indicate leakage past the piston rod or at the front of the cylinder.

VACUUM LINES

All connections must be sufficiently tight to prevent even the slightest leak. Hose connections should be sealed with shellac.

VACUUM PUMP (DIESEL TRUCKS)

The vacuum pump (Figure 86) is of the rotary type and is belt driven. It is lubricated by the engine oiling system and will require little attention other than maintenance of proper drive belt adjustment. To adjust belt, loosen the two lower hinge bolt nuts and turn adjustment screw. After adjustment is made to the vacuum pump drive belt, the generator drive belts must be readjusted.

To test the vacuum pump efficiency, disconnect the vacuum line from the pump and install a vacuum gauge in the port of the pump. A normal pump will create approximately 27 inches of vacuum at idling engine speed, but it is not expected that the pump will maintain 27 inches of vacuum in the system if the brakes are repeatedly applied and released in rapid succession.

MAINTENANCE

When installing the booster unit, care should be exercised to make certain that it is in perfect alignment. The connecting link should line up perfectly with the operating lever and it should not have to be sprung in order to assemble the clevis pin.

The booster brake unit should be lubricated every 6000 miles with ice machine oil, shock absorber fluid or transformer oil. This is accomplished by removing the hose at the front end of the cylinder and pouring in about an ounce of the recommended oil. An ounce of oil should also be added through the vacuum line connection at the rear end of the cylinder.

Periodic lubrication of the booster unit will keep the piston packing and the piston rod seal in good condition and will insure efficient operation at all times.