Remote Power Brake Assembly

(Part#: 805220)

Location:

Pick a place to mount the booster where it will be free from excessive road dust and dirt. It should be mounted away from excessive heat source. The bleeder screw should be accessible for bleeding after installation. The hydraulic lines and vacuum connections should be accessible to aid in installation and removal if necessary. Mount the remote vacuum reservoir where it is easily accessible.

Bleeding:

To bleed the assembly and brake system you must fill the Master Cylinder with proper brake fluid. Do not allow the level in the master cylinder to fall below half when bleeding. Loosen bleeder screw 3/4 turn and pump pedal slowly, continue bleeding until all air is expelled from power brake unit. Tighten bleeder screw.

Vacuum Tank:

We have furnished a remote vacuum tank. This will assist in reserve vacuum for the brake booster as well as more vacuum for the vacuum wiper if you vehicle is so equipped. This should be installed in between the vacuum source and the booster.

Questions about this Installation?
Call us Toll Free at:
1-888-648-4923
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Installation of Hydropower

(Part#: 805220)

TYPICAL INSTALLATION (FIG. 7)

The Hydropower range for passenger cars and light commercial vehicles is normally mounted with the centreline of the slave cylinder pointing slightly up from the horizontal (approximately ¼'') to assist bleeding of the slave cylinder. The bleeder screw located at the end of slave cylinder should always be uppermost.

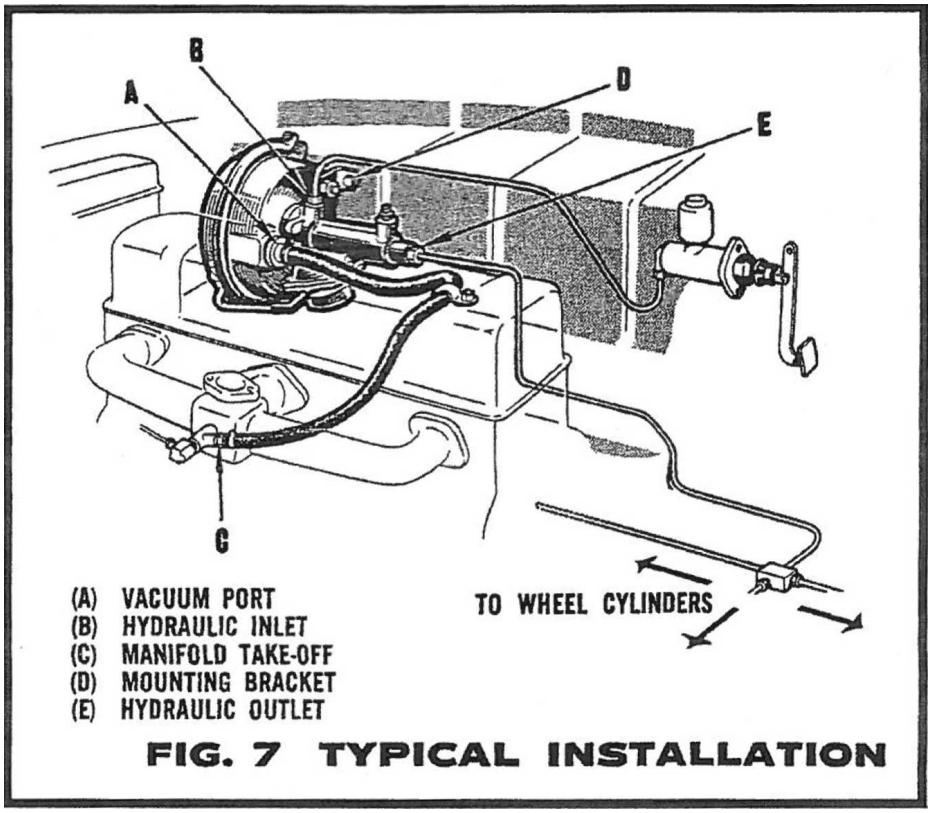


FIG. 7 TYPICAL INSTALLATION

SELECTING LOCATION

There is no fixed position for the location of the Hydropower in the vehicle. However, the position when selected should be made, if possible, with regard to the following recommendations:

1. The location should be at a point which is free from excessive road dust and dirt. If a unit is to operate under extremely dusty conditions, it is recommended that a remote air cleaner be fitted. (See page 16.)

2. The Hydropower should be mounted away from excessive manifold heat to prevent damage to the diaphragm.

3. The bleeder screw should be accessible for bleeding after installation.

4. Hydraulic line connections and vacuum connections should be accessible to aid installation and removal, if necessary, from vehicle.

5. Before attempting to fit the Hydropower, the vehicle must be road tested and brakes checked. If brakes "grab" or do not release, or pedal travel is excessive, refer to Trouble Shooting, Section 12 . Check hydraulic system for leaks. Hydropower must not be fitted until brake defects, if any, are corrected.

6. When fitting the Hydropower to brake systems not fitted with residual valve, the selected mounting position must be such that the highest point of the unit (i.e., bleeder screw) is below the normal brake fluid level in the master cylinder reservoir. If such a position cannot be found, a reservoir extension can be fitted or a GS380 line valve must be mounted at Inlet of the unit.

HYDRAULIC CONNECTIONS
(FIGS. 8C and 8D)

Generally, similar types of connections (as illustrated in Figures 8c and 8d) apply to all makes and models of cars to be fitted with Hydropower. However, before making any hydraulic connections, the following recommendations should be kept in mind:

1. BRAKE FLUID: Dirty or congealed brake fluid must be pumped from the master cylinder.

2. HYDRAULIC LINES (new connections): Pipes should be of the same diameter as the existing hydraulic pipes on the vehicle, but should be kept as short as possible. Pipes must be of good quality (either steel or copper) and flares must be sound and free from cracks. After cutting and flaring pipes, blow out the air. (Refer Figure 8e, for flare details.) Hydraulic lines should be protected from corrosion (under battery), chafing, vibration, etc.

3. FLEXIBLE HOSE (hydraulic): If flexible hose is used, ensure that it is a hydraulic brake hose (see Kits and Fittings List on page 9 for available hoses).

Installation of Hydropower (Continued)

(Part#: 805220)

FITTINGS

To assist in the installation of the Hydropower, when a fitting kit is not supplied, a list of hose and pipe connections available is listed in Section 6.

VACUUM CONNECTIONS

(FIGS. 8A and 8B)

When making connection from unit to intake manifold, do not use anything other than vacuum hose as premature collapse of hose will render the unit inoperative. (The rubber used in P.B.R. Vacuum Hose is resistant to petrol or petrol vapour)

Although vacuum connections vary with the makes and models of vehicles, one of the five methods listed below can be employed on the vehicle.

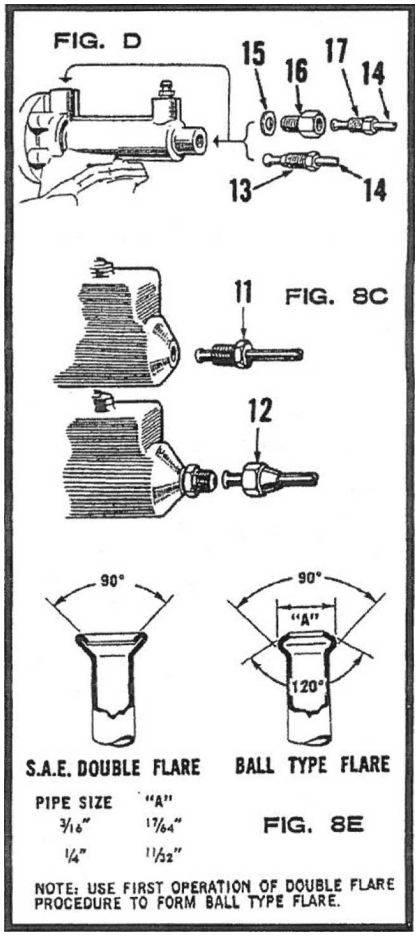
1. Most modern vehicles have a vacuum take-off on the manifold. Modification will enable hose fitting to tee into the existing fitting. (Fig. 8a.)

2. Where the manifold is already drilled and tapped, remove the plug and fit a reducing bush and/ or hose nipple. (Fig. 8a.)

3. Where the carburetor spacer block is used, remove spacer block and replace with manifold adaptor. (Fig. 8b.) Manifold adaptor with 1/8" B.S.P. tapping can be supplied to suit 1¼" and 1 5/16" bore carburetors.

4. If none of the above-mentioned can be adapted, the manifold must be drilled and tapped ¼" B.S.P. Coat drill and tap with grease to prevent chips falling into manifold. Drill hole on top of manifold. This will reduce the possibility of petrol entering the Hydropower. Chips which may have fallen into manifold can be easily removed with a small diameter rod, coated with grease.

All vacuum hose connecfions must rise at least 3" from vacuum source to prevent petrol draining into the unit. (This occurs mainly when engine is cold and backfiring occurs through the carburetor.)



CONNECTING THE UNIT

Having installed the Hydropower unit in a suitable location on the vehicle, the following procedure should be adopted:

1. Make ready the new hydraulic pipe for fitting between the master cylinder and Hydropower inlet.

2. Make ready the new hydraulic pipe for fitting between Hydropower outlet and chassis tee.

3. Hold brake pedal depressed (approximately 1") with brake pedal depressor or suitable piece of wood.

4. Remove existing hydraulic pipe from master cylinder to chassis tee. A piece of rag or cotton waste may be used to absorb waste fluid.

5. With the pedal depressor still In position, connect the new hydraulic pipe from master cylinder to inlet of Power Brake Unit

6. Connect the new hydraulic pipe from outlet of Hydropower to chassis tee but do not tighten. (This will facilitate bleeding later.}

7. Now make the vacuum connection to the Hydropower at the check valve and to hose nipple at intake manifold. (See Figs. 8a and 8b.)

SURGE BLEEDING WITHOUT PRESSURE BLEEDER PUMP

Connect flexible hose to bleeder screw on wheel cylinder as above. Hold maxi- mum foot pressure on brake pedal and open bleeder screw. Close bleeder screw before pedal is released and repeat operation until air is removed.

The above operations are methods of bleeding air from braking system when air cannot be removed in the normal manner. This applies generally to hydraulic systems not fitted with residual line valve.

Installation of Hydropower (Continued)

(Part#: 805220)

BLEEDING

It is recommended that a Pressure Bleeder be used for bleeding operations. If this equipment is not available, the following method should be used:

1. Fill master cylinder reservoir with P.B.R. Brake Fluid, and do not allow the level to fall below half full during bleeding operations.

2. Remove pedal depressor.

3. Attach bleeder tube to bleeder valve on Power Brake Unit by pushing end of tube over bleeder valve.

4. Submerge other end of tube in a receptacle containing a small amount of brake fluid.

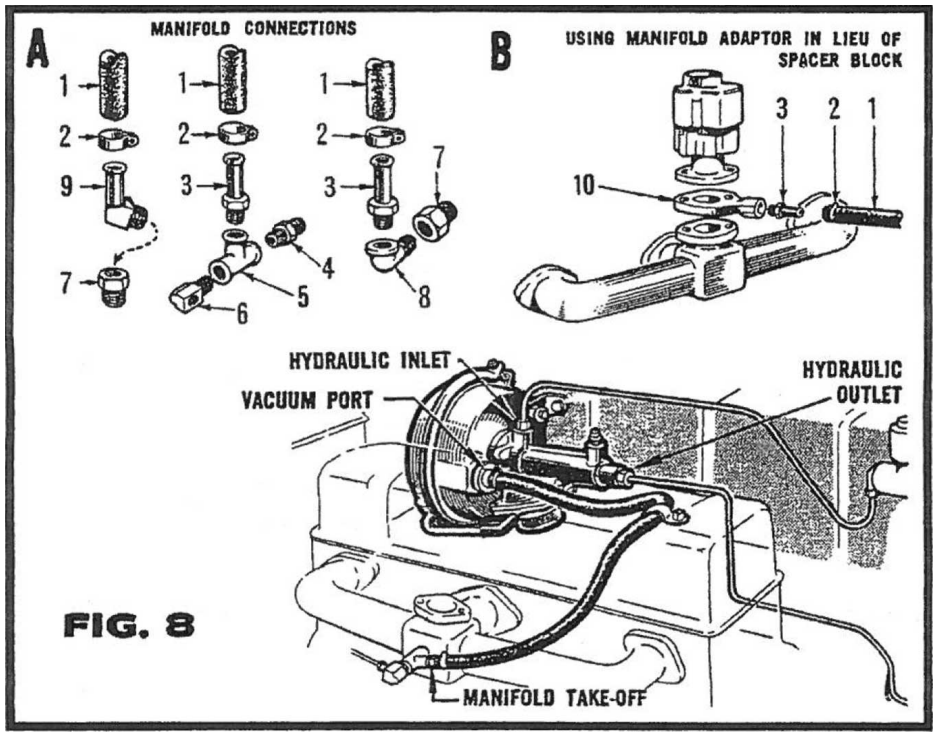


FIG. 8

5. Loosen bleeder valve three-quarter turn and pump brake pedal slowly.

6. Continue bleeding until all air is expelled from Power Brake Unit and then close bleeder valve while pedal is depressed.

7. Loosen pipe from Power Brake Unit at chassis tee.

8. Pump pedal slowly until fluid flows from loosened connection at chassis tee. (A piece of cotton waste or cloth will absorb waste fluid.)

9. To ensure that no air is in additional hydraulic fittings, take one more pump and toward end of stroke, tighten pipe connection.

10. Firmly depress brake pedal and check all pipe connections and bleeder valve for leaks.

If these instructions are followed correctly, it should not be necessary to bleed the brakes at the wheels or disturb the remainder of the hydraulic system.

MASTER CYLINDER

Displacement type master cylinders fitted to many English vehicles will not always bleed in the conventional manner. If the cylinder has been permitted to drain dry, it may be necessary to remove the master cylinder from the vehicle to “prime” it. When all air has been expelled, plug the outlet port, replace master cylinder on the vehicle, remove plug and connect hydraulic line.

AIR TRAPPED IN HYDRAULIC PIPES

Hydraulic lines which rise vertically with small radii bends downward are usually air traps in brake systems not fitted with residual line valves, and air may be removed by “surge bleeding” (see below).

WHEEL CYLINDERS

Air traps exist in some types of twin-leading shoe design, where wheel cyl- inders are fitted vertically to the back plate. Air may be removed by adjusting brake shoes to the full “off” position, and “surge bleeding” (see below).

CAUTION: Surge bleeding should only be used after normal bleeding has failed to remove air from system.

IMPORTANT

During bleeding operations, check master cylinder reservoir regularly. As fluid level goes down, keep topping up with P.B.R. Heavy Duty Brake Fluid 70R3.

SURGE BLEEDING WITH PRESSURE BLEEDER PUMP

Connect pressure bleeder to master cylinder reservoir. Regulate bleeder to 15-20 p.s.i. Connect flexible hose to wheel cylinder bleeder screw, with open end in container as in normal bleeding. Open bleeder screw. At regular intervals give the brake pedal a quick application. Repeat several times until all air is removed from hydraulic system.

Installation of Hydropower (Continued)

(Part#: 805220)

HYDROPOWER PERFORMANCE TEST

Three quick Hydropower Vacuum Tests:

1. With engine stopped and transmission in neutral, pump brake pedal several times to destroy all vacuum in unit. Hold foot pressure on brake pedal and start engine. When vacuum system is working properly, brake pedal will move towards floor slightly. If no movement is felt, vacuum system is not operating.

2. With engine running, place palm of hand over the air cleaner. Have the pedal depressed and suction should be felt on the hand as brakes are being applied.

3. Remove vacuum hose from Hydropower and plug end of hose. Pump brake pedal several times to destroy vacuum. Road test car and note pedal pressure required to give a normal service stop. Reconnect vacuum hose and again road test car, checking pedal pressure required to obtain equivalent degree of retardation as before. Pedal pressure should be consid· erably less with second test

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