

Fitting instructions for Remote Vacuum Servo Units #REMSERV (For single line braking systems)

Note: Not for use on vehicles with tandem or dual line braking systems except for specific applications where twin servo units are fitted. In this instance, units must be replaced in pairs to maintain the correct brake balance.

Important: Fitting a brake servo unit will not make faulty brakes reliable. Any fault in the vehicle braking system must be rectified. Therefore before fitting the new servo unit, ensure that the braking system is in good working order.



General fitting instructions

Prior to fitment of the brake servo unit or removal of an existing servo installation, thoroughly clean the outer surfaces of the unit (where applicable) and around all relevant hydraulic pipe connections using methylated spirit as a solvent. Do not use petroleum based products for cleaning braking system components, i.e. petrol or paraffin. On the majority of vehicles a 3-way adaptor is used into which are coupled the supply pipe from the master cylinder outlet port and the pipes feeding both front and rear brake assemblies.

Removing existing installation (if applicable)

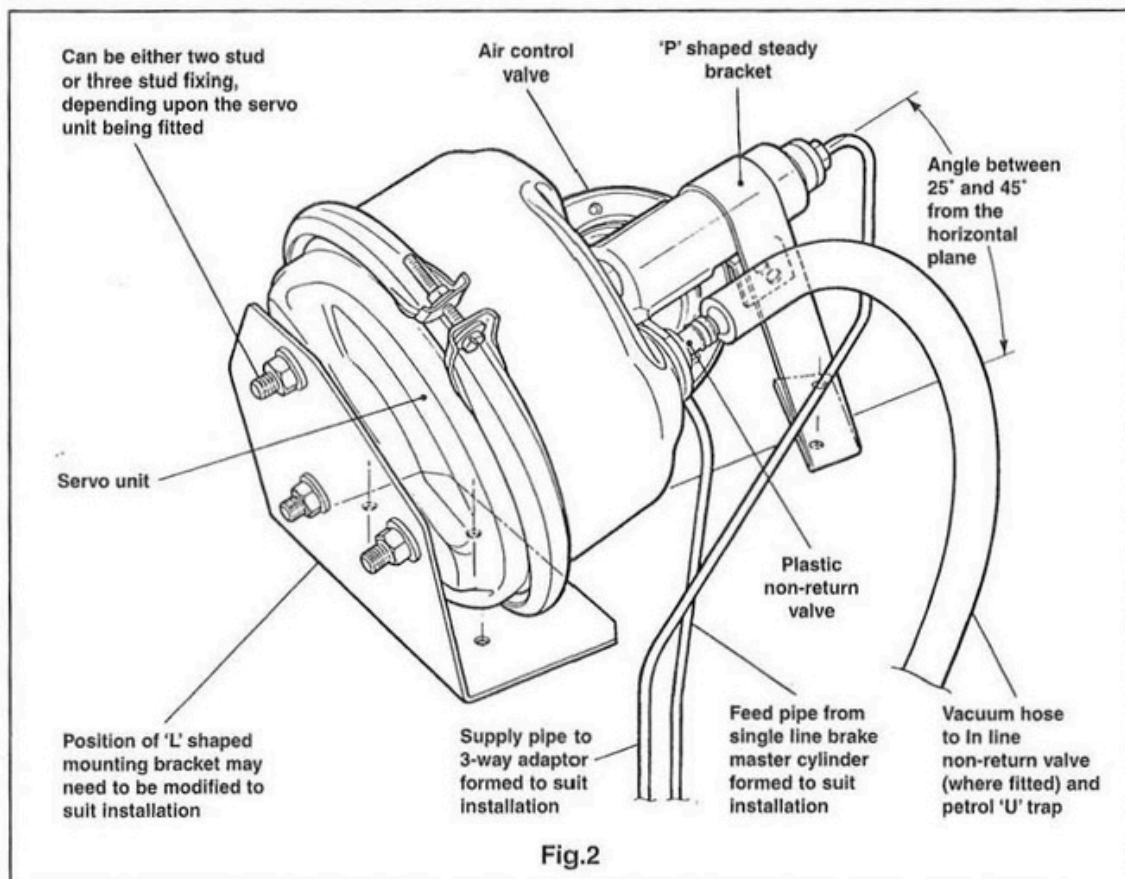
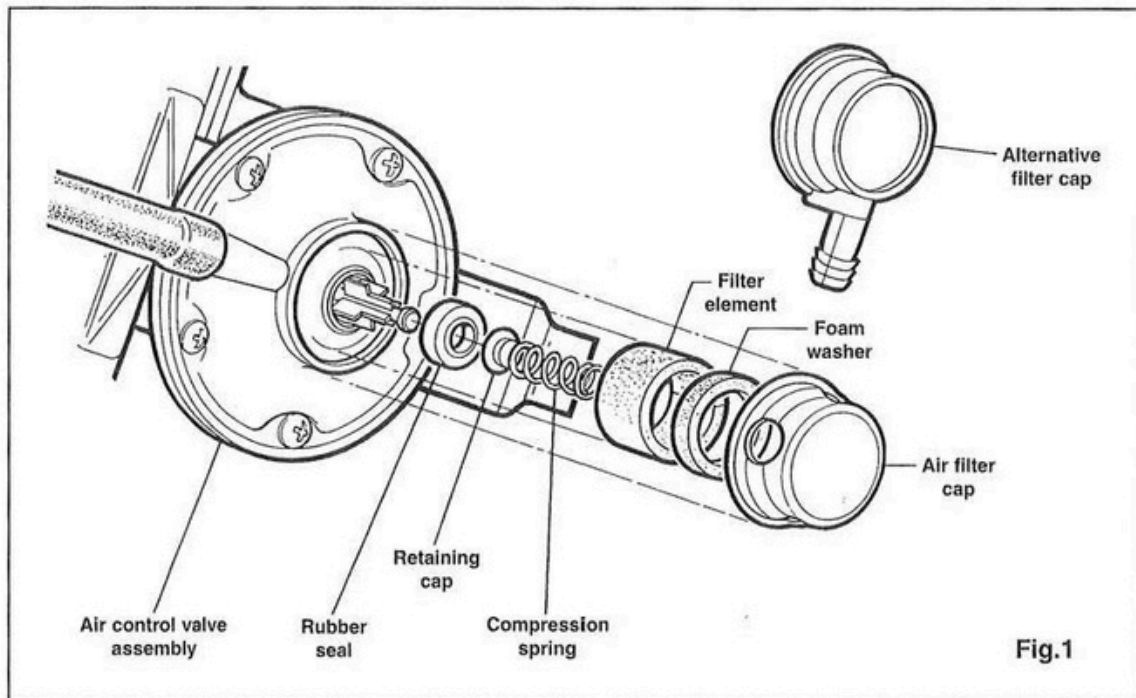
1. Disconnect the battery.
2. Disconnect and remove the vacuum hose pipe that connects the servo unit to the vacuum pump/manifold.
3. Disconnect, remove and discard the hydraulic feed pipe from the master cylinder outlet port to the 3-way adaptor. Seal of the hydraulic connection points to prevent loss of brake fluid and ingress of foreign matter.
4. Unbolt the existing servo unit together with any mounting brackets, where applicable, and remove from the vehicle.

Note: Brake fluid is corrosive to paintwork, therefore when removing the servo unit from the vehicle care should be taken to ensure that no fluid is spilt onto the painted surface of the bodywork. Should fluid spillage occur, wash off immediately with clean water.

Location of new servo unit and brackets

1. It is essential that the servo unit is securely mounted to prevent the brake pipes being subject to vibration or flexing.
2. It is an advantage to locate the servo within the engine compartment whenever possible to safeguard the unit and to keep the hydraulic pipe runs to a minimum length.

3. Ensure the hydraulic slave cylinder is at least six inches away from any part of the vehicle exhaust system, otherwise fluid vaporisation from local heat could occur.
4. The servo unit need not be mounted below the level of the brake fluid reservoir, but keep the difference in height to a minimum.
5. With the aid of the mounting brackets and fixings provided in the kit install the servo unit with the hydraulic slave cylinder outlet port inclined upwards between 25° and 45° from the horizontal plane. (See Fig.2). This will ensure easy bleeding after installation.



The air control valve should be situated at least 30° below the centre line to assist when bleeding the hydraulic system. (See Fig.3).

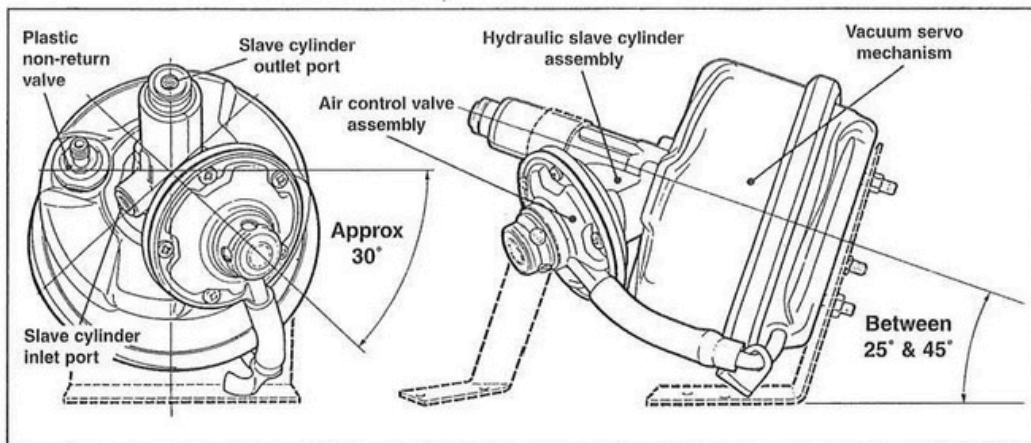


Fig.3

Fitting hydraulic piping

With all relevant connection points clean and free from ingress of foreign matter, using the new Bundy piping supplied in the kit:

1. Connect up the feed pipe from the brake master cylinder to the servo slave cylinder inlet port.
2. Connect up the supply pipe from the servo slave cylinder outlet port to the 3-way adaptor. When bending brake pipes to shape, great care must be taken to avoid kinking. The best way to obtain a good curve is to bend the pipes smoothly round a mandrel of suitable diameter. Using clips, ensure pipes are properly secured and cannot chafe or foul other components. Where a long length of piping is fitted e.g. from one side of the vehicle to the other via the bulkhead, secure the pipe to the bulkhead to avoid vibration. Additional pipe clips are available for use where necessary. On some vehicles where space is limited, it will be helpful to use banjo and bolt fittings in the tappings of the servo slave cylinder to avoid a severe bend in the brake pipe. (See Fig.4).

Note: No attempt should be made to cut and re-flare existing brake pipes in situ, as problems could arise with contamination through ingress of foreign matter, i.e. swarf.

Vacuum hose, In line non-return valve (where fitted), and fittings

The servo unit must be connected via a vacuum hose, running from the plastic non-return valve located in the servo shell to a suitable vacuum source e.g. the engine induction manifold or vacuum pump. On some vehicles the manifold is already tapped and fitted with a removable plug, otherwise it will be necessary to drill and tap the manifold.

Attach the vacuum hose from the kit, securing with one of the hose clips provided. In a convenient position, preferably at the highest point in the vacuum hose run, an in line non-return valve is advisable on high performance vehicles. Cut the hose and connect up the two sections to the valve unit, secure with hose clips supplied. Ensure that when fitted the arrow on the non-return valve is pointing towards the servo. (See Fig.4).

Important: To protect the servo unit and non-return valve from fuel contamination, especially on a petrol engine vehicle, a U trap must be formed in the vacuum hose route. It is essential the vacuum hose inclines downwards from the servo and that the U trap is formed below the level of the servo and the in line non-return valve (where fitted), i.e. by looping it between the inlet manifold and non-return valve so that point 'X' is lower than points 'Y' and 'Z' as shown (see Fig.4). Where the vacuum hose traverses the engine secure in position with plastic ties. Secure hose connection at the servo with the remaining hose clip.

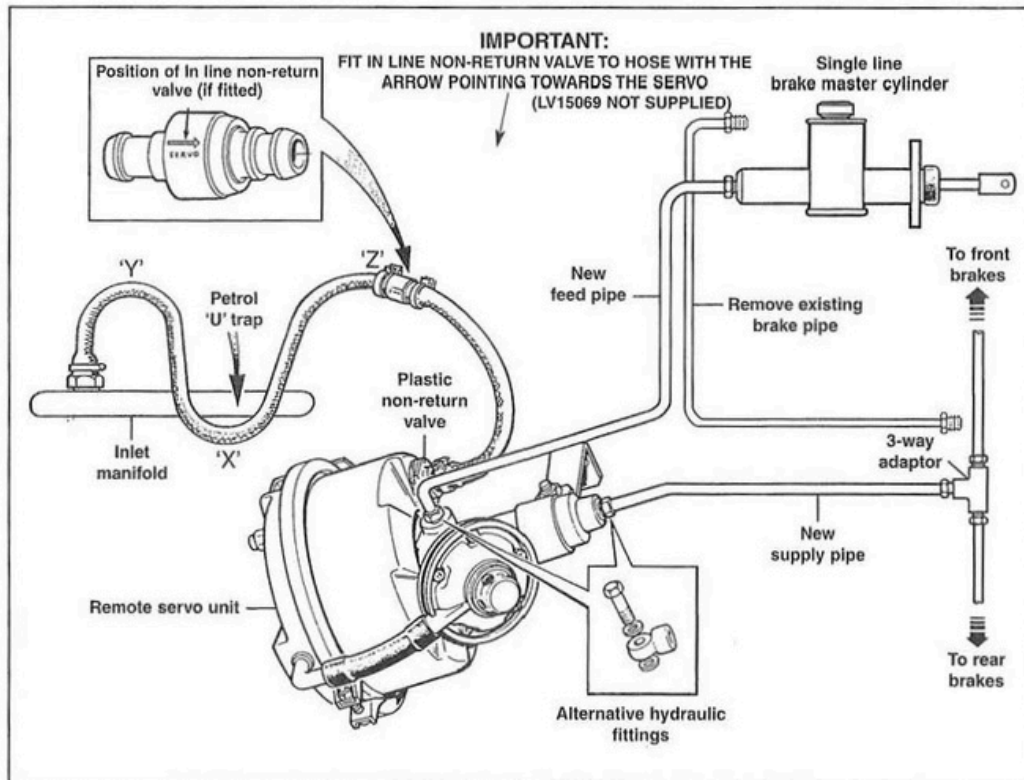


Fig.4 Schematic layout of brake servo unit and relative components

Bleeding and testing system

1. Reconnect the battery.
2. Using fluid as recommended by the vehicle manufacturer (conforming to SAE J1703 specification) bleed the braking system in accordance with the appropriate vehicle manufacturer's workshop manual. With the system properly bled, firm resistance should be felt at the brake pedal, if difficulty is experienced in achieving a "good bleed", then the bleeding process will be assisted by "cracking open" the brake pipe tube nut at the servo outlet connection whilst depressing the brake pedal. Surround this connection with clean "fluff free" cloth to capture escaping brake fluid. When the pedal is fully depressed retighten tube nut, repeat this process several times if necessary. When completed, top up the fluid reservoir to the correct level.
3. Start the engine and apply the brakes several times. Whilst an assistant depresses the brake pedal, recheck for fluid leaks particularly where new connections have been made. Road test the vehicle, and finally check again for fluid leaks.

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