



**Subject: Clutch Master Cylinder**

**Application: All 9000 Models**

CATEGORY		<b>Transmission</b>	
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ISSUE	<b>05/93-0329</b>	CODE	<b>412</b>

A variety of clutch operating complaints can be caused by problems in the hydraulic portion of the system.

The return port in the master cylinder may be blocked off due to a swollen seal. This will cause a pressure build up in the system, and result in one or more of the following complaints:

- Pedal feels soft, or poor pedal "feel"
- Pedal goes to the floor
- Pedal must be depressed almost to the floor before the clutch will disengage
- Clutch slips during normal cruising speeds
- Replacement clutch disc begins to slip soon after installation

A swollen seal may have several causes:

- Smooth rubber supply hose emits a plasticizer similar to mineral oil, which causes the seal to swell
- Seal swells due to effects of heat
- Mineral oil may have been added to reservoir, contaminating system.

A new master cylinder has been introduced in production from VIN N1048794 to address this problem. Please check the parts list below for the correct application on earlier vehicles.

**Cars Affected:**

All 9000 Models

**Parts:**

Supply hose	P/N 41 21 562
Master Cylinder (-89), Figure 1	P/N 43 85 001
Master Cylinder (90-), Figure 2	P/N 43 84 079

**Action:**

On cars suffering from this problem the master cylinder must be replaced. The customer should be interviewed to discover any past instances of poor clutch pedal operations before making any clutch repairs.

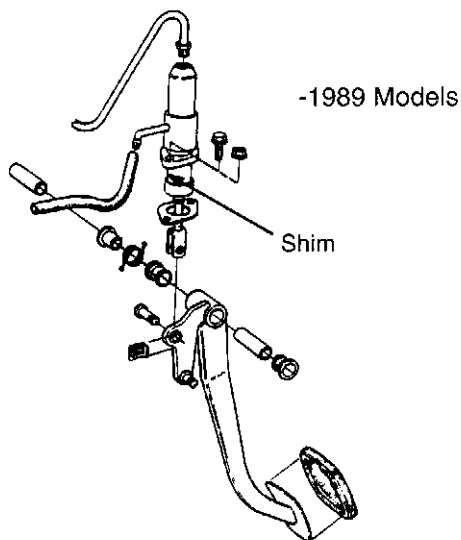
If the supply hose is a smooth type, instead of a braided type, it must be changed. The brake fluid in the reservoir, pressure hose and slave cylinder must be changed. On -M89 vehicles you may need to cut the hose to size. The fluid should be drained at the master cylinder to avoid contaminating the rest of the system, especially the seals in the slave cylinder.

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FILE	CIRCULATE			

## PSI 05/93-0329

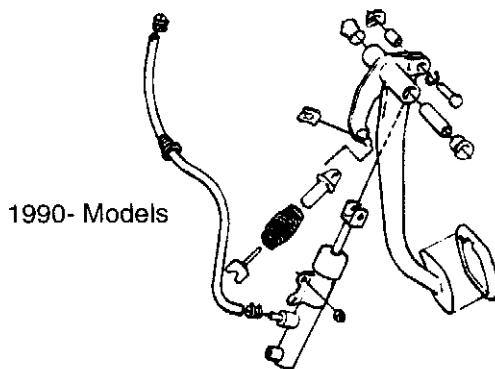
### NOTE

On -M89 cars (Figure 1), it is important to ensure that the cylinder is fitted straight relative to the pushrod. If the cylinder is not in alignment with the pushrod, adjust it by placing a 1mm shim between the front mounting lug and the bulkhead. Make sure that the cylinder is sealed against the bulkhead after adjustment.



**Figure 1.** Master Cylinder Replacement – 1989 and earlier.

On M90- cars (Figure 2), be sure to properly lubricate the pedal pivot. Also refer to PSI 07/90-0012 "Clutch Pedal Return" for further information.



**Figure 2.** Master Cylinder Replacement – 1990 Models and later.

### Warranty Information:

For warranty repairs, use failure coding 41229-37-5-01-06. Labor time allowance is op. no. 41222 (0.6 hour, 1990-)