

## **CLUTCH-02, Clutch Slave Cylinder Replacement and Bleeding**



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### **Introduction**

Replacing the clutch slave cylinder on a 944 is a fairly simple procedure. The difficult part of the job is bleeding the slave cylinder. This procedure will describe the slave cylinder replacement and provide some tips that will hopefully save you some time.

### **Tools**

- Metric Wrench Set
- Metric Socket Set
- Bucket
- Rags
- DOT 4 Brake Fluid

### **Other Procedures Needed**

- [ELECT-02](#), Starter Removal and Installation

### **Procedure**

1. Using [ELECT-02](#), remove the starter.
2. Remove the two retaining bolts that hold the slave cylinder into the clutch housing.
3. Slide the slave cylinder out of the clutch housing.
4. Have the new slave cylinder ready to install and a bucket / rags ready to catch any brake fluid that spills.
5. Disconnect the fluid supply line from the old slave cylinder and connect it to the new slave cylinder.

### **NOTE**

There are several methods of bleeding the slave cylinder. One is done prior to installing the slave cylinder into the clutch housing and can be done by one person. The other is the more common method of bleeding the slave cylinder. It is done after the slave cylinder is installed in the clutch housing and requires an assistant.

### **NOTE**

Regardless of which method of bleeding the slave cylinder you choose, it is always important to ensure that the master cylinder reservoir remains full. This is especially true when bleeding the slave cylinder as its supply line taps off of a high point on the master cylinder. Check the master cylinder reservoir level frequently during the bleeding procedure.

6. Bleed the slave cylinder using one of the following methods:

#### Bleeding Method 1

- a. Raise the rear of the vehicle as high as possible above the front of the vehicle.
- b. With the slave cylinder not yet installed in the clutch housing, raise the end of the slave cylinder with the bleed nipple as high as possible.
- c. Open the bleed nipple and use the slave cylinder operating shaft as a pump to bleed the slave cylinder. Have some rags and a bucket ready to catch any brake fluid that spills.
- d. When bubbles stop coming out, close the bleed nipple.
- e. Install the slave cylinder in the clutch housing using the two retaining bolts.

#### Bleeding Method 2

- f. Install the slave cylinder into the clutch housing.
- g. Raise the rear of the vehicle as high as possible above the front of the vehicle.
- h. Have an assistant depress the clutch pedal and hold it to the floor.
- i. Open the bleed nipple on the slave cylinder. Have a bucket and rags ready to catch any brake fluid that spills. When fluid / air stops coming out, close the bleed nipple.
- j. Have the assistant release the clutch pedal. The first few times the slave cylinder is vented, the clutch pedal will have to be pulled off the floor.
- k. Repeat steps c, d, and e until clutch pedal operation feels normal.

#### Bleeding Method 3

- l. Install the slave cylinder into the clutch housing.
  - m. Raise the rear of the vehicle as high as possible above the front of the vehicle.
  - n. Have an assistant depress the clutch pedal. It should stay on the floor.
  - o. Connect a mityvac (hand vacuum pump) to the bleed nipple on the slave cylinder. Open the bleed nipple and draw brake fluid from the slave cylinder using the vacuum pump until the fluid flows clear with no air bubbles. Ensure that the brake reservoir remains full during the bleeding.
  - p. Close the slave cylinder bleed nipple.
  - q. Slowly pull the clutch pedal off the floor. This will draw fluid into the master cylinder. Check the brake fluid reservoir for proper level.
  - r. Repeat Step "d" to remove any additional air.
  - s. At this point the clutch pedal should operate normally. Pump the clutch pedal a few times to see if it feels spongy. If it does repeat Step "b" as necessary.
7. Using [ELECT-02](#), install the starter.