



Bleeding Procedure for Clutch Hydraulic Systems with no Bleeder Valves

By Patrick McCleish

Many modern clutch hydraulic systems are not equipped with bleeder valves on either the master cylinder or the slave cylinder. Use this procedure to bleed these types of systems when individual components are to be replaced. An assistant will be helpful in this procedure. If the slave cylinder is being replaced and the replacement part has plastic straps to retain the pushrod, DO NOT cut the straps, disconnect them for the bleeding procedure, and then reconnect them before installation into the bellhousing. The straps will break when the clutch pedal is depressed the first time.

1. Connect line between clutch master cylinder and slave cylinder, do not attach slave cylinder to transmission.
2. Fill Clutch Master Cylinder reservoir with new, clean brake fluid from a sealed container.
3. Holding the slave cylinder at an angle so that the line connection is at the highest point, manually compress the slave cylinder pushrod and release slowly.
4. Have an assistant watch the fluid in the master cylinder reservoir. Air bubbles will rise through the reservoir as the slave cylinder is compressed. Repeat step 3 until no air bubbles can be seen rising through fluid in the reservoir.
5. When no more air bubbles are present, all the air has been purged from the system and bleeding is complete. Reattach slave cylinder and check for proper operation.

If your vehicle master cylinder is mounted to the firewall on an angle...

The master cylinder must be level in order for all the air to be properly bled from the hydraulic system. On some vehicles (ie: ford and Chrysler SUVs) the clutch master cylinder is mounted on an angle, so that the end mounted to the firewall is positioned higher than the line connection to the slave cylinder. In cases like this, air will become trapped at the highest point in the system. To bleed these systems, the master cylinder must be leveled by either raising one end of the vehicle or disconnecting the master cylinder from the firewall and pedal linkage so that it can sit level while bleeding the system. Once the master cylinder is level, the above procedure can be used to bleed the hydraulic system. Reattach Master Cylinder to the firewall, reconnect pedal linkage, and check for proper operation.