

# NEW MASTER CYLINDER – BENCH BLEEDING INSTRUCTIONS



## WARNING

To ensure proper installation & operation of this New Master Cylinder the Original Equipment Manufacturer **REQUIRES** that this New Master Cylinder must be **BENCH BLED PRIOR TO INSTALLATION!**

It is highly recommended that you consult a Service Manual for your vehicle to ensure & that you follow the proper installation procedure for this New Master Cylinder as well as the correct bleeding procedures for all related Braking Systems.

**WARNING: Do not attempt to install this master cylinder without bench bleeding it prior to installation on the vehicle. Failure to do so will result in unsatisfactory brake performance!**

*The illustrations in this instruction sheet are for demonstration purposes only. Your master cylinder may vary in size and shape.*

**CAUTION: Use only NEW Brake Fluid which meets your Vehicle Manufacturer's specification**

- 1.) Disconnect all electrical lead(s) from the master cylinder, if so equipped.
- 2.) Clean the area where the brake lines connect to the old master cylinder.
- 3.) Disconnect the brake lines from the master cylinder and proportioning valves, if so equipped. Cover or plug the lines to prevent dirt from entering and contaminating the brake system. Caution: **DO NOT** allow brake fluid to contact painted surfaces as the fluid damages paint. If contact occurs, immediately flush the affected area with water.
- 4.) Remove the nuts/bolts securing the master cylinder to the firewall or power brake booster. Do not remove power brake booster.
- 5.) Remove the master cylinder from the vehicle. CAREFULLY remove and save any fittings, gaskets or components (including brake warning switches and proportioning valves) for installation on the replacement unit as necessary. Take note of the order of removal. If the replacement master is supplied without the reservoir, you must remove and transfer the reservoir from the original master cylinder to the replacement unit. Be sure to flush and thoroughly clean the reservoir inside and out before transferring it to the replacement unit.
- 6.) Transfer proportioning valves, switches, or other components to the replacement master cylinder as necessary.
- 7.) After properly Bench Bleeding your New Master Cylinder, refer to Original Equipment Manufacturers Installation Instructions for your specific application.

## Preferred Master Cylinder Bench Bleeding Method

A.) **Bench Bleeding utilizing Outlet Port Plugs** (*Included with the New Master Cylinder*)



*Follow Link for Bench Bleeding Instructional Video*

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## Master Cylinder Bench Bleeding Instructions (Continued)

- a. Clamp New Master Cylinder securely by mounting flange in a bench vise.
- b. Remove and discard factory installed protective plugs from the outlet ports and place : master cylinder.
- c. Fill the reservoir with new Brake Fluid. When the fluid begins to drip from the outlet port (s), securely install threaded plug. His provides lubrication to the piston seal prior to bleeding.
- d. Using a bleeding tool or suitable blunt stroking tool, begin slowly depressing the master cylinder piston using<sup>3</sup>/<sub>4</sub> to 1-inch strokes. NOTE: For quick-take-up or step-bore master cylinders, WAIT 15 SECONDS BETWEEN STROKES to avoid aeration of the fluid. Continue the procedure until the piston cannot be depressed more than 1/8 inch and no air bubbles are visible in the fluid reservoir.
- e. Remove the master cylinder from the vise and install on the vehicle, leaving the plugs installed.
- f. Remove one plug at a time and connect the steel brake lines from the vehicle to the master cylinder.
- g. The wheel cylinders and calipers must now be bled to remove any remaining air from the system. Refer to the Vehicle Service Manual or a bleeding sequence guide for the proper bleeding procedure.

**CAUTION: Take care to avoid spaying brake fluid with open reservoir**

### Notes:

- i.) When bleeding the master cylinder while mounted on the vehicle, be sure the master cylinder is level, it may be necessary to raise the back end of the vehicle to get the master cylinder level.
- ii.) If the instrument panel brake warning light is illuminated with the ignition switch on, depress brake pedal several times. If warning light does not go out, bleed system again.

**CAUTION: After Bench Bleeding & Installing your New Master Cylinder you will need to Bleed the entire Braking System in Accordance with the Original Equipment Manufactures Requirements**

## Methods of Bleeding Entire Braking System

1. **Vacuum Bleeding:** Attach a Vacuum Bleeder to the Bleeder Screw, open it drawing the fluid & air into the container attached Vacuum Bleeder.

**CAUTION: Be sure to follow all the instructions that pertain to the specific vacuum bleeder you are using!!**

2. **Pressure Bleeding:** Put a container under the Bleeder Screw with a hose to the Bleeder Screw & open it. Using a Pressure Bleeder push fluid and air from the master cylinder through the system and out into the container.

**CAUTION: Be sure to follow all the instructions that pertain to the specific Pressure Bleeder you are using!!**

3. **Manual Bleeding:** Put a container under the Bleeder Screw & open it while an **Assistant** Slowly “pumps” the Brake Pedal & holds it at the floorboard. Close the Bleeder Screw & have the Assistant release the pedal. Attaching a hose from the Bleeder Screw to the container will help. Repeat this process until the Brake Pedal is firm & there is no more air in the system.

4. **Gravity:** Put a container under the Bleeder Screw, open the Bleeder Screw and allow brake the fluid to flow into the container. Close the Bleeder Screw when all the Air is out of the system. The Brake Fluid may drip or get onto other parts under the vehicle that are between the bleeder and the container.