



## \*STEP BORE\* BRAKE MASTER BLEEDING INSTRUCTIONS

**ATTENTION** - Refer to the appropriate service manual for your vehicle to obtain specific service procedures for this part. If you do not have a service manual or lack the skill to install this part, it is recommended that you seek the services of a qualified technician. Pay special attention to all cautions and warnings included in the service manual! Read and follow all instructions carefully! ABS equipped cars may require special bleeding and installation procedures! Consult the service manual for specific procedures.

**WARNING!** This Brake Master Cylinder **MUST** be bench-bled before installation on the vehicle! This process will remove air from the cylinder bore. Failure to bench bleed the cylinder will result in air being introduced into the rest of the brake system. **DO NOT OPERATE VEHICLE UNTIL NORMAL BRAKE OPERATION IS OBTAINED!**

**WARNING!** Use only new brake fluid from a sealed container! Do not reuse old brake fluid! **DO NOT USE DOT 5 rated brake fluid in ABS equipped vehicles!** Foaming of the brake fluid will take place during ABS operation. Do not mix different DOT rated brake fluids! Flush the entire brake system to remove all contaminated fluid.

### STEP BORE BRAKE MASTER CYLINDER BENCH BLEEDING INSTRUCTIONS

1. Secure the master cylinder in a vise by firmly clamping the mounting flange on the casting. **DO NOT CLAMP THE BORE AREA OF THE CYLINDER! DISTORTION OF THE BORE CASTING WILL OCCUR!**
2. If the outlet ports have non-threaded protective caps installed, replace with the provided threaded solid bleeder plugs. Tighten bleeder plugs by hand to seat. **Note: The plugs must be tightened enough to keep air from entering the master cylinder through the ports, but over tightening will result in stripping the plastic threads and rendering them useless.**
3. Fill the reservoir with the appropriate brake fluid.
4. Using a blunt instrument or wooden dowel to avoid piston damage, slowly depress the piston into the bore using no more than 1 inch stroke. **Do not bottom out piston.**
5. Slowly release the piston to rest position. **Wait 15 seconds to avoid fluid aeration.**
6. Repeat steps 4 and 5 until air bubbles cease to appear in both reservoir chambers and the piston cannot be depressed any more than 1/8 inch.
7. The unit is finished with the bench bleeding process. Ensure reservoir lid is secure and release the master cylinder from the vise. Proceed to installation instructions.

**TECH TIP:** Gently tapping the casting (not the reservoir) with a plastic screwdriver handle or a wooden dowel will encourage the air bubbles to escape from the bore during the bleeding process.

### BRAKE MASTER CYLINDER INSTALLATION INSTRUCTIONS

**IMPORTANT:** When bleeding step bore design master cylinders, you must wait 15 seconds after releasing piston to avoid fluid aeration.

8. Leave the bleeder plugs in the ports and install the master cylinder on the vehicle.
9. Tighten brake line nuts to the specification found in the service manual. Do not over-tighten! Damage to threads may occur!
10. After installing the master cylinder, flush the entire brake system with fresh fluid from a sealed container.
11. Refer to the service manual for specific bleeding/flushing procedures, especially when dealing with split-diagonal brake systems and ABS-equipped vehicles.
12. Check for leaks and repair if found. Maintain proper fluid level in reservoir.
13. Check for proper brake operation before driving the vehicle.

#### TECH TIPS

- When bleeding the brake system, ensure the master cylinder is level. The rear of the vehicle may have to be raised if the master cylinder is mounted on an angle.
- Use caution when handling brake fluid. Prevent contact with skin, face, eyes, and painted surfaces.
- **DO NOT**, under any circumstances, introduce any petroleum based fluids (gas, engine oil, power steering fluid, transmission fluid, etc.), to the brake system! Failure (swelling) of the all rubber components will occur!
- Brake fluid absorbs moisture. Never reuse old brake fluid! Always use fresh brake fluid from a sealed container.
- If bench bleeding the master cylinder was successful, and brake pedal becomes softer after installing to the vehicle, verify the entire brake system. The issue is not the master cylinder.