



BRAKE BOOSTER AND MASTER INSTALLATION

- Master Cylinder Bleeding
 - Master cylinder is to be mounted in a vice or similar
 - Lines must be run from the ports to the reservoir of the cylinder and be under the level of fluid
 - Use short, slow strokes of the master cylinder until all air is expelled from the master cylinder
 - Lines should be premade in car so master cylinder is installed as soon as possible after bleeding
 - Brakes must be bled from furthest away brakes to closest
 - Bleeders must have clear line attached for bleeding
- Brake Bleeding
 - Only new fluid must be used
 - Master cylinder must be bench bleed before installation
 - Cleanliness is very important when working with brake fluid and bleeding brakes
 - Fluid level must not drop below roughly half way during bleeding
 - Calipers must be mounted so bleed nipple is at highest possible point
 - Always clean up brake fluid spills – fluid is corrosive
 - Fluid level should be roughly $\frac{3}{4}$ full when finished – overfilled reservoirs can cause leaks and dragging brakes
- Installation of Brake Booster
 - If converting from manual brakes to power brakes, pedal ratio may have to be modified
 - In general, manual brakes operate at 5-7:1 and power brakes 4-5:1
 - Generally 1-1 $\frac{1}{2}$ " lower than the factory mounting point
 - This is very important to get the correct assistance and pedal feel
 - Engine must have a minimum of 18in vacuum otherwise an electric vacuum pump may be necessary
 - Correctly adjust pedal clevis to have roughly $\frac{1}{4}$ " free play
 - Torque booster to firewall nuts to 20-25ft-lb
- Installation of Master Cylinder
 - Master cylinder should be installed as soon as possible after bench bleeding to ensure no air enters system and for easy bleeding
 - Torque master cylinder to booster nuts to 20-25ft-lb
 - Adjust booster pushrod to have .020" clearance between pushrod and master cylinder piston – supplied master cylinder insert may be required
 - No sealing tape is required on any brake fittings
 - Correct line flares must be used – double flare vs single

BRAKE SYSTEM TROUBLE SHOOTING

- Hard Pedal
 - Insufficient vacuum
 - Too small of booster
 - Faulty booster/vacuum valve
 - Incorrect pedal ratio
 - Too large master cylinder bore
- Soft Pedal
 - Air in system
 - Incorrectly adjusted shoes on drum brakes
 - Leaking wheel cylinder/caliper/master cylinder
 - Residual valves may be required – normally with master cylinder under floor
 - Poor condition brake lines
 - Too small master cylinder bore
 - Faulty booster
 - Warped rotors/misaligned caliper
- Too Much Pedal Play/Low Pedal
 - Incorrectly adjusted booster pushrod, brake pedal pushrod or drum brakes
 - Incorrect pedal ratio
- Dragging Brakes
 - Incorrect pedal/booster pushrod or brake adjustment
 - Faulty brake booster
 - Seized caliper/wheel cylinder
 - Overfilled master cylinder

ADJUSTABLE PROPORTIONING VALVE INSTRUCTIONS



WARNING

Proper operation of your brakes is essential for your safety and the safety of others. Any brake service should be performed **ONLY** by persons experienced in the installation and proper operation of brake systems. It is the responsibility of the person installing any brake component or kit to determine the suitability of the component or kit for the particular application. **DO NOT DRIVE WITH UNTESTED BRAKES!**

Markings on the block are:

FI= Front IN

FO=Front OUT

RI=Rear IN

RO=Rear OUT

FITTINGS

The 3/8-24 supplied tube nuts are intended to be flared onto 3/16" brake line. If you have 1/4" rear brake lines, use the adapter included in the kit. One front outlet can be plugged if needed.

ADJUSTING PRESSURE BETWEEN THE FRONT AND REAR BRAKES

1. After installing valve you will need to bleed your brake system.
2. If the master cylinder is new or was dry at any time, please refer to the instructions that came with the master cylinder and bench bleed the unit.
3. Bleed the system by bleeding the caliper or drum cylinder at each wheel until you see no air bubbles. Start with the wheel furthest from the master cylinder and work your way to the front of the car.
4. Once complete, you should have consistent pedal pressure.
5. Double check your fittings for leaks.

ADJUSTING PRESSURE BETWEEN THE FRONT AND REAR BRAKES

1. Start with the valve in full open position by turning the knob counter clockwise as far as it will go.
2. Make several stops from 30 M.P.H. If the rear brakes lock up before the front decrease the rear pressure by turning it counter-clockwise one full rotation at a time.
3. Retest by making several stops at 30 M.P.H. and repeat step 2 until you reach the correct balance between the front and rear brakes.
4. Test again at 50 M.P.H. and make any more adjustments as necessary.