

1973-1987 FORD TRUCK POWER BRAKE BOOSTER CONVERSION ADJUSTABLE VALVE



YOUR KIT MAY LOOK SLIGHTLY DIFFERENT BUT THE INSTALL PROCESS IS THE SAME.

UNBOXING YOUR KIT:

1. Remove all parts from their boxes and inspect the parts.
2. New boosters come with a protective plastic or rubber boot over the front pin area for shipping purposes. Remove this before the installation.
3. This kit features a booster that has the short pin pre-installed in the front of the booster. There is also a long pin in the box. You will not need the long pin for this installation but may be kept if you ever decide to change the master cylinder that has a deep bore. The new master cylinder will have a **piston adapter** to convert it from deep to shallow hole. Do not loose the piston adapter. We will be using this later in the installation.



Piston Adapter

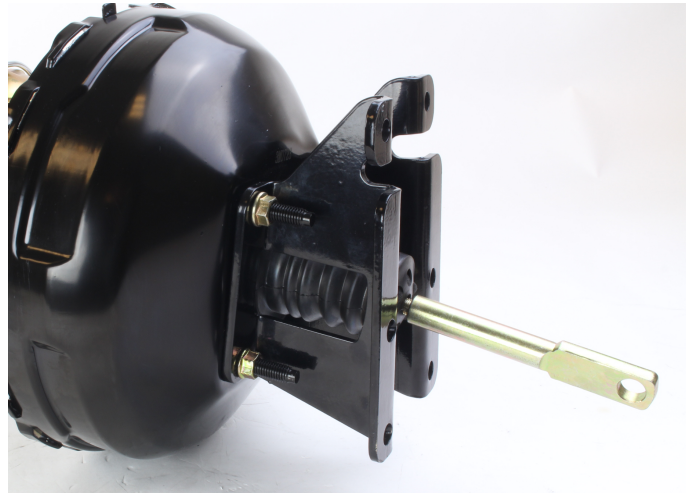
REMOVING AN OLD MASTER CYLINDER:

4. Perform brake work on a level surface. Chock the wheels, set the emergency brake and put the transmission in Park.
5. Protect painted surfaces from brake fluid and place absorbent materials such as rags under the master cylinder. Since brake fluid is caustic to paint, use a fender cover mat.
6. Spray the master cylinder nuts and fittings with penetrating spray.
7. Mark which lines connect to which port on the master cylinder and which supplies fluid to the front and rear wheels respectively. (If you have the ability to take a digital picture for reference before disassembling the lines from the valve this would be a good time to do so.)
8. Make a note of the brake pedal ride height inside the cab of the vehicle. Use a wooden block to rest the pedal on so you will have a reference when you set it back up. (If you have the ability to take a digital picture for reference before disassembling the lines from the valve this would be a good time to do so)
9. Use flare nut wrenches to loosen the master cylinder nuts. On stubborn fittings, sometimes attempting to tighten them before loosening them helps break them free. Be careful with the tube nut hex heads and tubes themselves if you are re-using them.
10. Again, to protect important painted surfaces you might cover the master cylinder with a plastic trash bag and or wrap it with shop rags or towels. Consider removing all of the old brake fluid from master cylinder first.
11. Inside the car, disconnect the master cylinder rod's clevis from the brake pedal swing arm and note which hole it was connected to.

PREP & INSTALL PEDAL

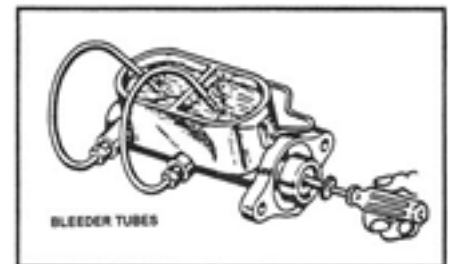
12. Clean the firewall where the master cylinder was mounted, and grind down any welded areas, re-paint if necessary. The bracket has to mount flush to the firewall. Note orientation of bracket with tabs facing upward.
13. Place the new bracket assembly on to the brake booster. Use provided hardware to attach the brake booster to the firewall. Make sure to use the lock washer on every bolt. Hand tighten these for now.
14. Inside the cabin area of the truck, locate the brake pedal and test fit length to the pedal. You will need to adjust the rod to the desired length.
15. Using a wooden block or similar object, position the foot pad at the desired ride height versus the floor pan.
16. make final adjustments to the brake pedal rod and attach with the clevis & pin.
17. See next steps for bench bleeding master cylinder. We will come back later to install the master cylinder on the power brake booster & provided proportioning valve kit.

Note: Tabs on bracket facing up.



BLEEDING MASTER CYLINDER

- Mount the master cylinder in a vice and fill with DOT 3 or DOT 4 brake fluid. Use the plastic clip to secure the hoses that return into the reservoir so that the hose ends are below the fluid line. **The hose tips must be submerged under the fluid level.**
- Using a blunt tool or punch, push the pistons $\frac{3}{4}$ "-1" in with a series of steady strokes to expel air bubbles. This may take several cycles to expel all of the bubbles. Do this until it cannot be compressed more than $\frac{1}{8}$ ", & no air bubbles are visible.
- Remove the bleeder kit. Install the lid.
- Wipe off any excess brake fluid
- Position & place clean shop rags or towels in the engine compartment of the car to protect painted surfaces.
- If mounting the master on a power brake unit with a short pin, install the piston adapter to make the shallow hole. If using a long pin, no adapter.
- If you have yet to do so, remove the protective cover from the front of the booster to expose the front pin.
- Mount the master cylinder on to the booster. Don't drop the adapter.
- Torque the hex nuts to 20-25ft. lbs.



ASSEMBLE AS SHOWN



**3/8 BRAKE LINE
FITTINGS X 5**



**BRAKE LIGHT
SWITCH COVER**



BRAKE LIGHT SWITCH WIRE

INSTALLING PROPORTIONING VALVE KIT

Verify that you have the following: 1 valve, 2 lines, 1 bracket, 2 wire harness connector, 1 bag that contains 2 bolts, 4 washers and 2 nuts

- Place the valve on its' edge with the knob facing you on your work bench and position the valve as shown with the brake light switch pointed toward your left
- Place the bracket and valve in the position shown.
- Position the bracket on top of the valve and line up the bolt holes.
- Next locate the small bag with the bolts and washers, and empty the parts onto the work bench.
- Pick up both bolts and place a lock washer and then a flat washer onto each.
- Be sure to have the bracket and valve in a position that allows you to insert the bolts through the valve and through the bracket.
- Push each bolt through the valve and bracket and secure the hex nuts. Hand tighten.
- Locate the brake lines.
- Identify which line will connect to which port on your master cylinder.
- If you have a dual bail wire master cylinder, the lines will mount side by side.
- Next hand tighten the brake lines as shown onto the valve.
- The next step can be done with the master cylinder either on or off of the brake booster or firewall.
- As a unit position the valve and bracket assembly up to the ports of the master cylinder.
- Hand tighten each line (Do Not Use Teflon tape) as you place the brackets on to their mounting studs which are in front of the master cylinder mounting ears.
- Use a flare nut or box end wrench to tighten the tube nuts on the brake lines.
- Once satisfied with the brake line positions, finish tightening the valve's brackets bolts and nuts.
- Place the mounting nuts onto the studs which the proportioning valve bracket mounts & tighten it down.
- Push the wire through the brake light switch boot . Connect brake light fittings to the switch and fit the boot snug.

TECH TIP

This master cylinders is equipped with a piston adapter making more versatile. This allows the masters to be used for power brake and manual brake applications. When installing the master on power brakes, insert the piston adapter with the concave pocket facing the booster pin. On manual brake applications remove the piston adapter. (If the booster being used has a long front pin, remove the piston adapter.)



Piston Adapter



ADJUSTING PROCEDURE

FITTINGS

The 3/8-24 supplied tube nuts are intended to be flared onto 3/16" brake line.

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.

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!