

# WHAT TO DO IF YOU SUSPECT YOUR BOOSTER IS NOT WORKING

**It is rare that one of our kits will contain a defective power booster, but if you suspect that your booster is not functioning correctly perform the following tests:**

## **BASIC TEST:**

1. With the engine off depress and release the brake pedal several times to eliminate vacuum from the power section.
2. Depress the pedal and hold down with light pressure, 15 to 20 pounds.
3. Start engine.
4. If the power unit is operating the pedal will drop slightly. Less pressure will be needed to hold the pedal down.

## **IF BOOSTER IS NOT OPERATING, GIVING A VERY HARD PEDAL**

1. Disconnect the vacuum hose from the booster check valve and check the vacuum level at this point, with engine running, with a vacuum gauge. You should have atleast 18" vacuum to the booster. Anything lower will begin to give a hard pedal. If the vacuum level is below 18" you may need to tune the engine and bring the vacuum level up to that level. If the vacuum level is around 16" the addition of a vacuum reserve canister will improve the braking. If the vacuum is below 16" you will need to add an electric vacuum assist pump to supplement the engine vacuum.
2. If your vacuum level at the check valve is 18" check that the booster check valve is working. Disconnect the vacuum hose at the check valve and attach a piece of tubing. Blow into the valve. If air passes through the valve, it is defective and must be replaced. Also look into the hose attachment neck on the check valve and be sure there is no obstruction inside the valve.
3. Check your booster for a vacuum leak. With everything hooked up run the engine at moderate speed. Release the accelerator and turn the engine off. Wait 90 seconds and apply the brakes. If the brake applications are power assisted there is no leak. If there is no power assist the booster is defective and must be replaced.

## **IF THE BOOSTER IS OPERATING BUT YOU STILL HAVE A HARD PEDAL**

1. Your combination valve may have tripped shutting off fluid flow to front or rear brakes. This condition will produce a very hard pedal. Check that fluid passes through the valve to both the front and rear by cracking a bleeder screw and observing a good flow of fluid. If one half of the system does not have flow, re-center the valve.
2. You may have frozen rear wheel cylinders or frozen caliper pistons. If these components freeze you can get a very hard pedal.
3. Your pedal ratio may be too low. Check your pedal ratio. It must be between 4:1 to 5:1. Some of the older cars that had power brakes used a ratio of almost 1:1. If you add a vacuum booster to this type of car you will have a very hard pedal. Typically we are talking about late 50's cars. Adjust ratio as necessary.
4. Your booster may be undersized for the weight of the vehicle or the size of the master. If you try to use a small diameter booster such as a 7" street rod booster for a heavy car you will get a very hard pedal. Compounding the problem is an attempt to use a large bore master (1 1/4" or larger) on a small booster.

## **IF YOUR BRAKE PEDAL IS VERY SENSITIVE AND THE BRAKES GRAB**

1. Your pedal ratio may be too high. Power brakes will require a 4:1 to 5:1 ratio. If your ratio is around 6:1 you are getting too much mechanical advantage making the brakes extremely sensitive. Adjust the ratio to correct level.
2. The booster may be too large for the weight of the vehicle. Lightweight vehicles with large boosters gives "touchy brakes." This effect may be dampened somewhat by going to a larger bore master.
3. Too large a booster for the front drum brakes. Drum brakes do not require as much pressure as disc brakes (500 psi vs. 1,000 psi.) If your booster is very large (11") and you have drum brakes, you are overboosted. Do a pressure test to determine what you have.
4. The booster has a cracked internal hub. When there is a crack in the phenolic hub inside the booster it will be either totally on or totally off. Any slight pressure to the pedal will cause the brakes to lock up. The booster must be replaced.

**MASTER POWER BRAKES 888-533-1199**