

**" THIS ARTICLE IS INTENDED FOR YOUR REFERENCE ONLY.**

**ACTUAL PARTS, YEARS AND BODY STYLES CONTAINED**

**IN THIS ARTICLE MAY DIFFER SLIGHTLY FROM YOUR APPLICATION. "**

## 1955-72 POWER BRAKE VACUUM AND PRESSURE DIAGNOSIS

Good brakes are directly related to good brake pressure. For power brake cars, good brakes require proper vacuum. Non-power and power systems must develop 1200 to 1400 lbs. of pressure at the calipers or wheel cylinders to work properly. Low brake pressure can occur when the wrong master cylinder is installed, the wrong size brake lines are used, the brake booster is bad or there is low vacuum supplied to the brake booster. There are several ways to check to see where the problem lies. The first item to check is how much brake pressure is being delivered to the calipers or wheel cylinders. A simple pressure gauge can be used to test brake pressure. This gauge is screwed into the brake bleeder hole on the caliper or wheel cylinder.

**Photo #1:** Our '55 project car has a fairly firm brake pedal, but no matter how hard we stand on the brakes, they will not lock up. First, we checked the brake pressure at each wheel. The front calipers had 800 lbs and the rear drums had 850 lbs. This low reading may be the result of the wrong master cylinder, a bad brake booster or low vacuum to the booster. We'll check it out.



#20-212



#49-200



### Parts Needed:

49-200 Brake Pressure Testing Gauge  
20-212 Brake Electric Vacuum Pump

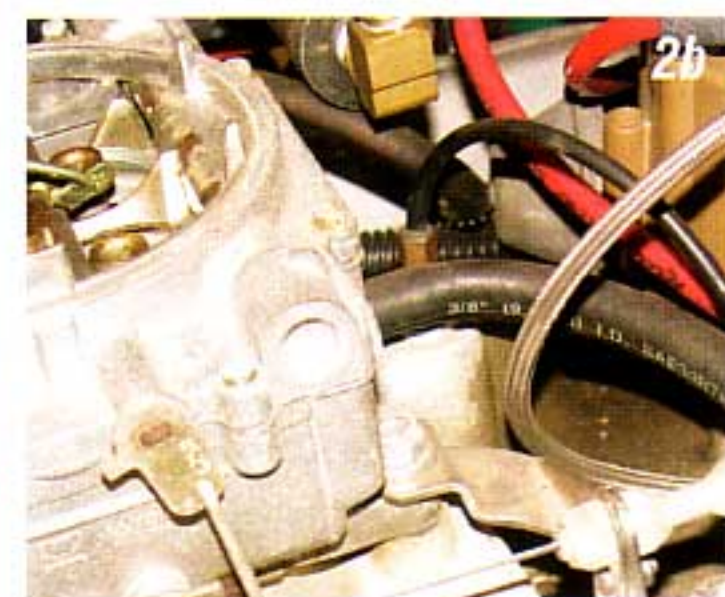
To order parts call 1-800-456-1957 or visit [ClassicChevy.com](http://ClassicChevy.com)

### Tools Needed:

3/8" Wrench  
7/16" Wrench  
Cutters  
Vacuum Gauge  
Wire Crimpers  
Electric Drill  
1/4" Drill Bit

### Time Frame:

3 Hours



**Photo #2a & 2b:** The power brake booster operates using vacuum from the engine at the intake manifold or the carburetor base plate. This setup will supply full intake vacuum to the booster. As a rule, most brake boosters require a minimum of 18 inches of vacuum to work properly. Anything less than 18 inches of vacuum will result in a hard brake pedal, the inability to lock the brakes and low brake pressure at the wheels. In other words, the brakes will be poor!



**Photo #3a & 3b:** To test manifold vacuum, a vacuum gauge should be connected to the base of the carburetor or to a vacuum port on the intake manifold. At idle, the reading should be at least 18 inches. If a low reading is obtained, check or loose or missing vacuum hoses at all locations. Ignition timing can also affect manifold vacuum. Our car has a fairly high-lift camshaft with a lot of duration so the engine only had 8 inches of vacuum at an idle! This is probably why we have low brake pressure at the calipers and wheel cylinders.

# YOU CAN DO IT EASY UPGRADES



**Photo #4:** Unless you want to change the camshaft or convert to non-power brakes, a simple way to go is to install remote vacuum pump P/N 20-212. Our vacuum pump will

generate 21 inches of vacuum at all times, more than enough to operate the brake system.

**Photo #5:** The vacuum pump can be mounted anywhere on the car. A clean, out of the way place to mount it is may be the trunk area. A 3/8" vacuum hose can be run to the rear of the car along the frame or under the carpet and sill area. Be sure to use a good quality hose so that the hose does not collapse or kink.



**Photo #6:** We decided to install our vacuum pump on the trunk ledge right behind the rear seat. For wagons, if the stock spare tire well is not being used this is a great place to hide the pump. Our project car has 18" wheels with wide tires

that will not fit in the spare tire well so it has been turned into a storage compartment. Or if you wish, install the pump in the engine compartment hidden behind an inner fender.

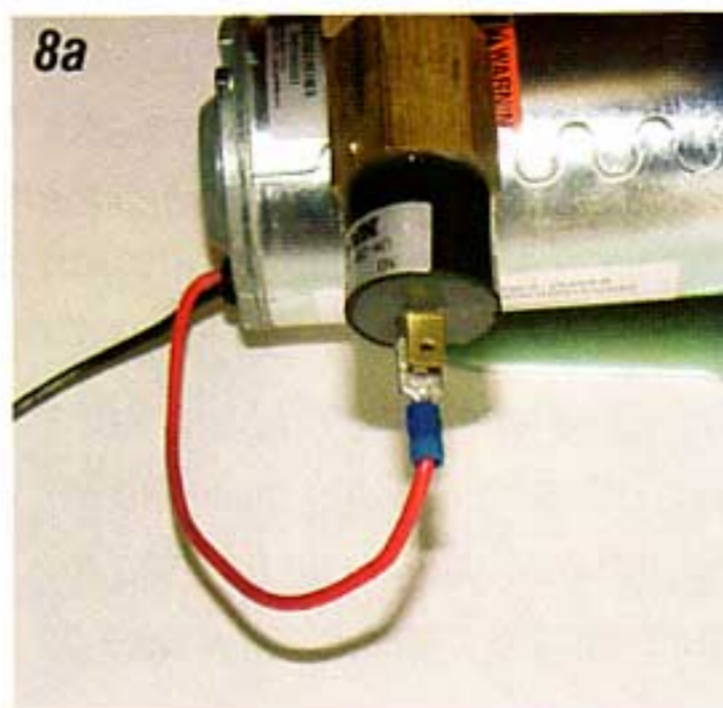


7a

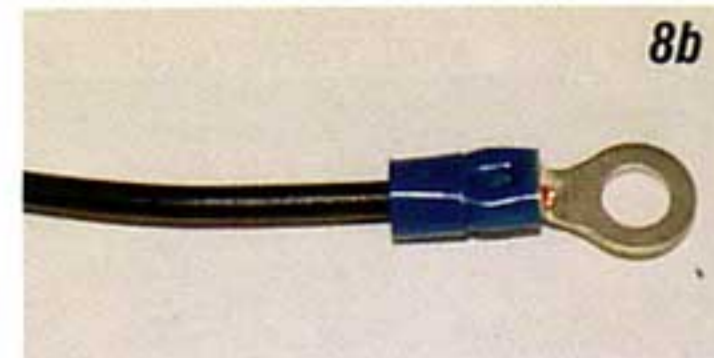


7b

**Photo #7a & 7b:** The vacuum pump P/N 20-212 has a 1/8" pipe plug inlet where the supplied inlet filter should be installed. Using thread sealer, install the filter on the pump, only tightening by hand.



8a



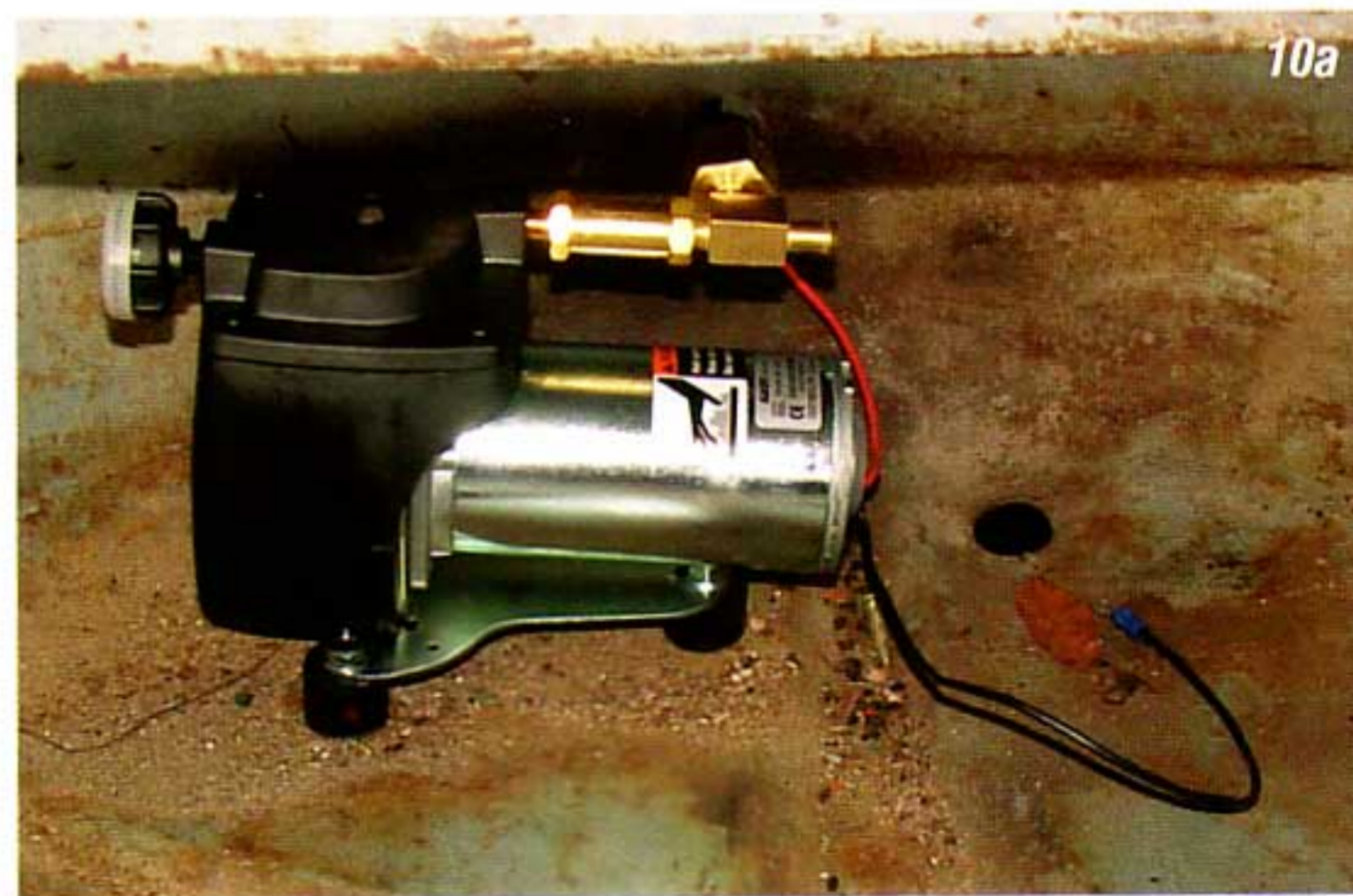
8b

**Photo #8a & 8b:** There is a red and a black wire on the pump motor. The red wire connects to the low pressure switch on the vacuum pump.

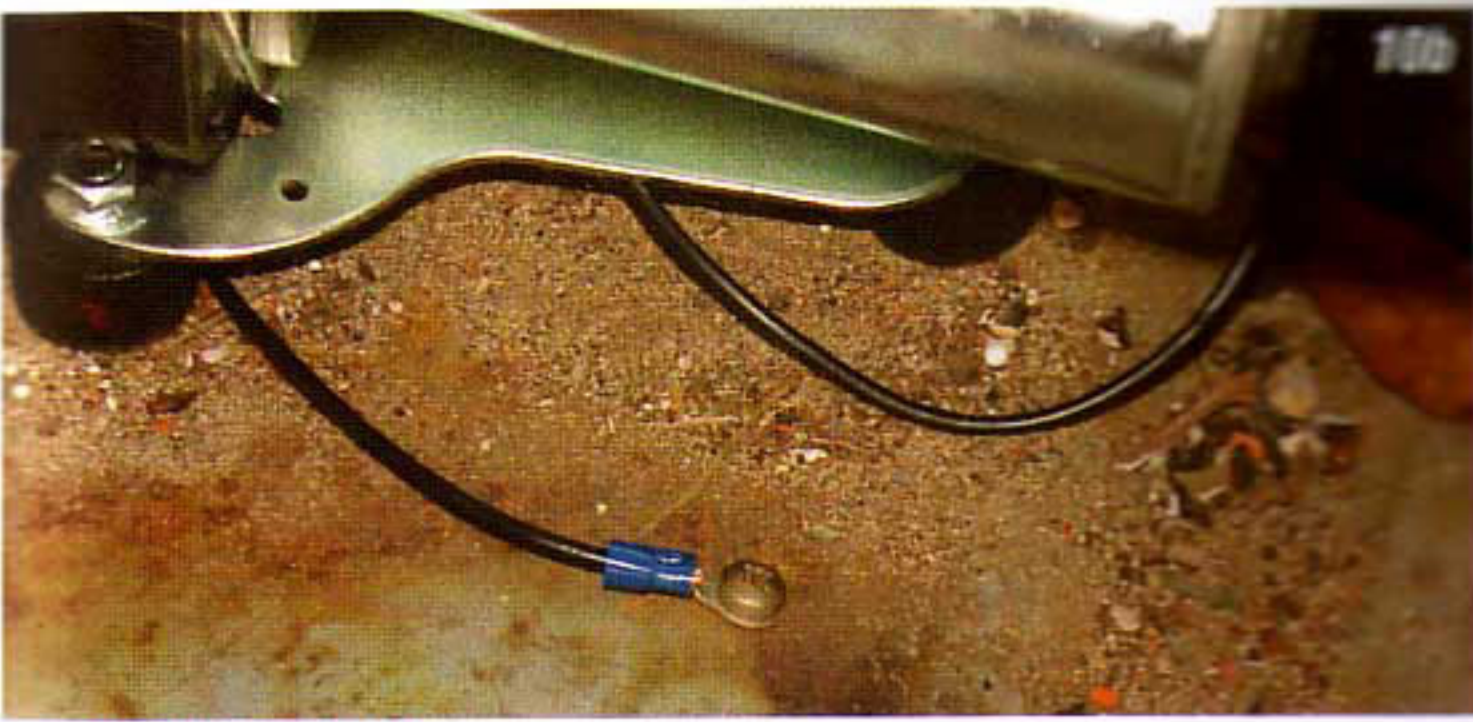
The black wire should be connected to a good body ground.



**Photo #9:** The vacuum pump may be mounted with three 1/4" studded insulators provided. This will keep the pump very quiet.



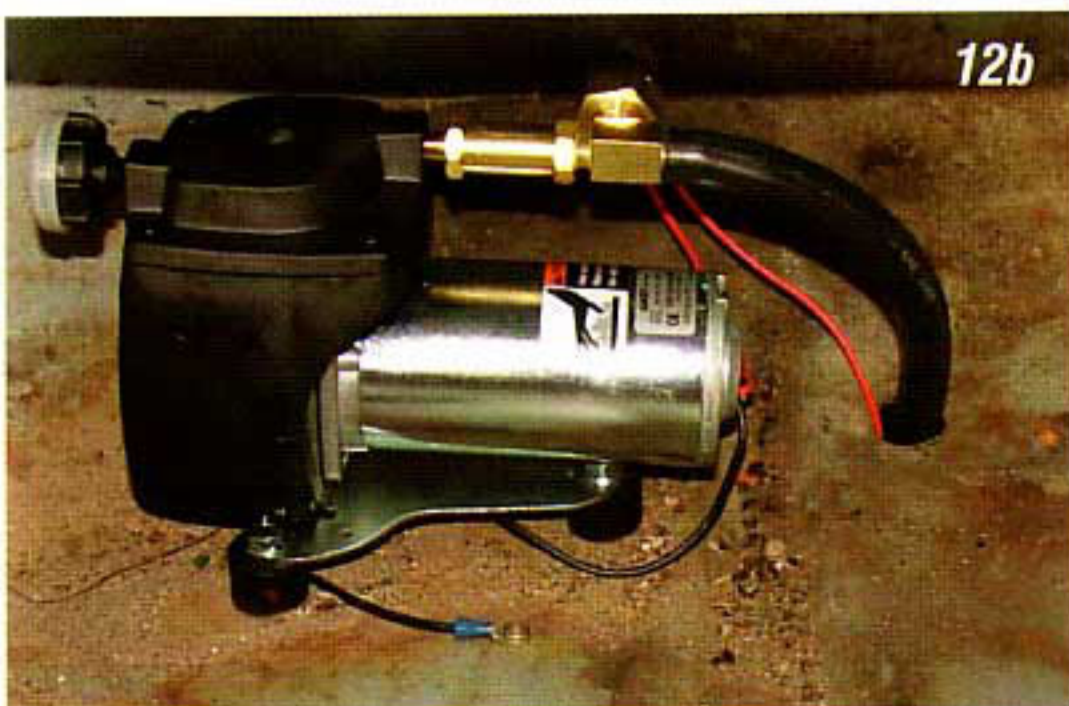
10a



**Photo #10a & 10b:** Drill three 1/4" holes and mount the vacuum pump in place. Run the black wire to ground.



**Photo #11:** We removed one of the spare tire well plugs and fed the vacuum hose running from the booster up through the spare hole and connected it to the brass fitting on the vacuum pump.



**Photo #12a & 12b:** Connect a power wire from the ignition switch to the other terminal on the pressure switch, this wire needs to be fused and only be hot when the key is on.

**Photo #13:** With the brake booster now receiving 21 inches of vacuum, the brake pressure at the front calipers is now 1400 -lbs and at the rear wheel cylinders it is 1300-lbs! This made a huge difference in the braking on our car and will on yours as well! Good Luck! ✓

