TROUBLESHOOTING COMMON PROBLEMS

MASTER CYLINDERTEST:

NOTE: This test requires a complete bleed of the brake system as the brake lines are removed, allowing air to enter.

TESTING THE MASTER CYLINDER:

1. Remove the brake lines from the master cylinder ports
2. Block off the master cylinder brake line ports using the correct size inverted flare plugs or bolts. Dual port master cylinders that have ports on both sides need to have all four ports plugged. The protruding cone of the inverted flare seat in the master cylinder port is made of a soft material that can be easily deformed if over tightened. If using bolts, be sure to just snug the bolts so as not to damage the cone seal surface. This cone mates with the inverted flare opening of the brake lines. You may also drill a point into the end of the bolt to prevent damage to the cone. Most GM master cylinders use 9/16-18 threads for the front ports and 1/2-20 threads for the rear. Most Ford master cylinders use 3/8-24 threads for the front ports and 7/16-24 for the rear. Mopars 9/16-20 and 1/2-20
3. Apply constant pressure to the pedal. The pedal should remain firm, hard, and should not drop over time.
4. If the pedal is squishy, there may be air in the master cylinder. Bench bleed the master and test again.
5. If the pedal starts firm, but begins to drop over time while under constant pressure, the master cylinder should be replaced.

PROPORTIONING VALVE TEST:

1. Use a test light by attaching a clip to a positive contact on the vehicle. Touch the point of the tester to the electrical connection of the combination valve. If the light does not come on, the valve system is operational and no further testing is required.
2. If the light comes on it is an indication that the pressure differential valve is stuck in the front or rear position.
3. Bleed the brake system to determine if the front or rear lines are blocked off. Set up one front wheel and one rear wheel for bleeding at the same time. Crack both bleeder screws and gently pump the pedal a few times. The blocked side will have very little fluid release, while an unblocked line will squirt fluid out of the bleeder.
4. Leave the bleeder for the unblocked lines open, while tightening the bleeder screws on the blocked side. This will allow pressure to build up on that side. Be sure to follow standard bleeding procedures to keep air from entering the system.
5. Slowly press the pedal with steady pressure several times until the light goes out, centering the differential valve. You may also hear a pop come from the proportioning valve. This is the metering valve returning to it's equalized position. When the light goes out, close the bleeder screw.

POWER BOOSTERTEST:

If your brake pedal feels hard while the engine is running, it is likely your booster isn't operating correctly. If the booster is defective, do not attempt to disassemble or repair the booster. Doing so is unsafe and will void your warranty.

Test 1:

1. With the engine off, pump the brake pedal to remove any residual vacuum in the booster.
2. Hold pressure on the pedal while you start the engine. When the engine starts the pedal should drop about 1/4". This drop indicates the booster is working properly.

Test 2:

1. Run the Engine a couple of minutes.
2. Turn the engine off and press the pedal several times slowly. The first pump should be fairly low. The second and third pump should become slightly firmer. This indicates an airtight booster.

Test 3:

Start the engine and press the brake pedal, then hold the pedal while turning the engine off. If the pedal does not drop after holding the pedal for 30 seconds, the booster is airtight.

Testing the Check Valve

Disconnect the vacuum hose where it connects to the intake manifold. DO NOT disconnect the line from the booster.

Verify vacuum volume.

With the engine at normal operating temperature, there should be a minimum of 18" of vacuum. If vacuum is too low make sure that the engine is properly tuned and that there are no leaks or blockages in the vacuum lines.

PROPORTIONING VALVE SPECIFICATIONS