Diagnosis of Low Pedal, Soft Pedal, or No Pedal Conditions

Follow these steps to properly diagnose a low or soft brake pedal condition.

1. Using Line-Locks (not vise-grips), constrict the brake hoses leading to the wheel. Two line locks will be required for the front axle and either one or two for the rear axle, dependent on the number of rear hoses present on the vehicle.
2. Check the brake pedal. If the problem still exists with all the lines constricted, continue to step 3, if the pedal is good after clamping the lines, skip to step 5.
3. Obtain plugs with the appropriate threads and after disconnecting the brake lines, install them in the master cylinder ports. Check the pedal. If the problem still exists, the master cylinder has failed and must be replaced. If the pedal is firm and high, then the master cylinder is good. Reconnect the brake lines to the master cylinder and proceed to step 4
4. By blocking off the wheels from the hydraulic system with no change at the brake pedal, it is determined that the problem does not lie in the wheels. By blocking off the ports of the master cylinder and achieving a good pedal, it is determined that the master cylinder is good and that the problem lies in a component located between the master cylinder and the clamped off hoses. In many cases when this problem occurs after the brake hydraulic system is serviced, there is air trapped in the ABS module or proportioning valve. ABS modules can sometimes require the use of a scan tool to electronically open internal bleeder valves in order to properly bleed all the air from the ABS system. Once you are certain that no air exists in the system, the component must be replaced.
5. By clamping off the brake hoses and achieving a good pedal, the problem has been isolated to downstream of the brake hoses. To further isolate the problem to an individual wheel (or the rear axle in the case of a vehicle with only one rear brake hose) apply normal force to the pedal while an assistant removes one clamp at a time. At one point, the pedal will fall. Note which clamp was removed in order to cause the pedal to fall and inspect that wheel very closely. If it is a disc brake axle, check for excessive caliper flex, brake pad friction compression, hose expansion, loose wheel bearings, caliper to rotor misalignment, and anything else that could possibly cause excessive hydraulic travel to properly operate the brakes on that wheel. Also, confirm that the bleeder valves on the calipers are towards the top of the caliper. Air cannot be bled from the bottom of the caliper. If the bleeders are towards the bottom, then the calipers have been installed on the wrong sides of the vehicle.