A “no brake pedal” condition can be encountered after a new master cylinder is installed leading the technician to believe that the master cylinder is defective. This usually occurs during the bleeding process when the brake system is manually bled. The brake pedal will go to the floor and subsequent efforts to get a satisfactory brake pedal will fail.

This situation commonly happens when a new cast iron master cylinder is installed. However, this situation can also occur with aluminum and plastic master cylinders. The cause is the primary piston sticking in the bore in the forward position, figure 2. When the system is manually bled the pedal is often depressed completely moving the primary and secondary pistons to their extreme forward position. The primary piston can stick even though there are springs attempting to push it back in position. The cause can be the fit of the new piston seals in the bore creating a vacuum lock. When master cylinders are assembled the seals and cylinder bore are lubricated for a positive seal. This combined with air trapped in the system can create this problem.

To determine if a sticking piston is the problem connect a pressure bleeder. If fluid can be obtained at the wheel bleeder screws, then the piston is in the correct position. If there is no fluid the piston is probably sticking. You can verify this condition by removing the master cylinder from the booster without disconnecting the brake lines. You will notice that the master cylinder piston is not resting against the snap ring, figure 3. Occasionally connecting a pressure bleeder and opening wheel bleeder screws will cause the piston to return. You can also tap lightly on the housing with a small hammer to free the piston.

After the piston has returned to its correct position and air is removed from the system the problem will not reoccur.