



Supporting Today's Vehicle Technician



Diagnosing a Vacuum Brake Booster

The vacuum brake booster is designed to multiply the force exerted to the brake pedal from the driver. The booster engages the master cylinder to stop the vehicle. The brake booster operates off engine vacuum/atmospheric pressure.

- **Vacuum Supply** - Vacuum Brake Boosters need 18-21" of vacuum to operate normally. Engine vacuum is supplied to the brake booster by a hose coming from the intake manifold. Over time, these vacuum supply hoses can become brittle which can cause cracking. They can also be soft and collapse, resulting in a reduction in vacuum supply to the booster.
- **Engine Vacuum** - Engine vacuum can be tested by installing a vacuum test gauge into the brake booster supply line. The gauge should read 18-21 inches at this location. If vacuum is less than this specified range, further engine diagnosis is required. Worn internal engine components can cause low vacuum. Performance applications with large cam shafts can also cause low vacuum.
- **Check Valve** - Vacuum brake boosters use a one-way check valve. This valve is designed to not allow air to escape the booster. A faulty check valve can lead to a hard brake pedal.
- **Testing** - To test the power brake booster, turn the engine off, pump the brake pedal 5 times, and hold with moderate pressure. While applying pressure to the brake pedal, start the engine. The pedal should fall approx. 1 inch. If there is adequate vacuum supply and the pedal remains hard. The brake booster may have an internal issue.