

**Wheels:** Ralph of Centerville writes via e-mail, “The brakes on my 1989 Chrysler New Yorker have failed three times in the past few months. My Chrysler has a 3.0-liter engine with 59,000 miles. The car runs normally until:

1. The engine runs as if the “spark is retarded.”
2. There is a slight reduction in power.
3. An increase in engine noise, or increased RPM.
4. The transmission acts differently.

The brakes were operative for several stops, and suddenly failed to have any effect when applied. The pedal travel was normal, but acted as if there were no power assist. The first and second episodes caused the “P Brake” and “ABS” warning lights to come on, but not on the most recent occurrence. Each time I really “stood” on the pedal, and pumping didn’t help either. The car just coasted to a stop.” Do you have any ideas for Ralph?

**Halderman:** Because the problem affects how the engine performs, I think there could be an exhaust restriction. If, for example, the ceramic honeycomb of the catalytic converter was broken, the pieces could, at times, block the flow of exhaust through the system. When the exhaust is partially blocked, the engine vacuum will be reduced thereby reducing engine performance and engine vacuum needed for the vacuum power brake booster. Another possibility is that the engine has a fault that prevents it from producing adequate vacuum for the power brake booster to function correctly. Have your service technician check for an exhaust restriction and for proper engine operation.

**Wheels:** How would a service technician check for an exhaust restriction?

**Halderman:** The technician could use a small rubber mallet to tap (not pound) on the catalytic converter. If it rattles, the ceramic is broken and the converter should be replaced. Other tests include a vacuum test with the engine operating at 2000 RPM. If there is an exhaust restriction, the vacuum gauge will read lower at 2000 RPM than it does at idle speed. Another test involves using a pressure gauge to measure the backpressure directly. A reading exceeding 1.25 psi at idle speed or 2.5 psi at 2000 RPM is generally considered to be excessive.

**Wheels:** What else could cause the problem?

**Halderman:** Because the ABS and the parking brake warning lights come on sometimes, there is also a possible master cylinder or ABS accumulator problem. The ABS warning lamp comes on whenever the computer senses one or more of the following problems:

- low brake fluid level
- low ABS accumulator pressure
- a fault with a wheel speed sensor

A search in the archives of the international automotive technicians network (iatn.net) has turned up similar problems that were repaired by replacing the hydraulic ABS assembly. This could be an expensive repair. Have your service technician check the accumulator pressures during normal conditions and under ABS braking conditions.

After thoroughly checking the above items, the service technician should also check for proper operation of the exhaust gas recirculation (EGR) valve. If this valve were to stick open or partially open, the engine would operate with low power and not be able to supply the necessary vacuum to properly operate the vacuum booster.

