VACUUM SOLENOID VALVE FAULTS & TESTING

The VSV (Vacuum Solenoid Valve - also known as Boost Control Solenoid, Electro-Pneumatic Valve, Pressure Transducer or Electric Switch over Valve) is fitted to many vehicles, and will often have multiple VSV’s to assist with controlling:

- Emission Systems
- Exhaust gas recirculation systems (EGR)
- Variable Geometry Turbos
- 4WD engage / disengage systems

TYPICAL COMPLAINTS:
Vacuum Control Valves are used in many systems of a vehicle, the symptoms which indicate a malfunctioning or failed valve can be highly varied:

- Insufficient power
- Turbo lag (on turbocharged vehicles)
- Black smoke
- Vehicle in Limp Home Mode
- No 4WD activation

Vacuum Solenoid Valves are constantly monitored by the on board diagnosis system for continuity, short circuit and short circuit to ground. For this reason, failures are not reliably detected, and malfunctions are frequently attributed to other components.

POSSIBLE CAUSES:
- The most frequent cause of a valve malfunctioning is water or dirt ingress. This may happen through leaky hose joints or broken hose connections.
- High ambient temperatures can cause intermittent malfunctions.
- In rare cases malfunctions are caused by confused connection hoses.
- A defective vacuum pump may deliver an insufficient low pressure for properly driving the valves.

TESTING:
The leak tightness of a vacuum solenoid valve can be checked with a manually operated low pressure vacuum pump. A simple electric test of the VSV will then be possible with a commercially available multi-meter.

ADVANTAGES:
- High actuating forces from within a small space
- The necessary low pressure auxiliary energy is available in almost all vehicles (due to the low pressure in the intake manifold or generated by a vacuum pump)
- Only a small amount of electric power is necessary for the actuating process

POSSIBLE CAUSES:
- Defective vacuum hoses
- Leaking connectors on vacuum system
- Leaking non-return valves / vacuum reservoir
- Defective / porous diaphragms or seals on vacuum solenoid(s)
- Leaks in intake manifolds

TESTING:
Smoke test the vacuum system
Use a Vac Tester and multi-meter to test the VSV's functioning to correct specs
Replace any damaged components

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- Emission Systems
- Exhaust gas recirculation systems (EGR)
- Variable Geometry Turbochargers
- 4WD engage / disengage systems

TYPICAL COMPLAINTS:
Vacuum Control Valves are used in many systems of a vehicle, the symptoms which indicate a malfunctioning or failed valve can be highly varied:

- Insufficient power
- Turbo lag (on turbocharged vehicles)
- Black smoke
- Hesitation
- Vehicle in Limp Home Mode
- No 4WD activation

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CAUSED BY VACUUM SYSTEM / SOLENOID VALVES

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PART NO. APPLICATION

| V5200 | Holden Captiva, Cruze, Epica        |
| V5201 | Hyundai i30, Accent / Kia Carens / Santa Fe |
| V5202 | Nissan Navara, Pathfinder           |
| V5204 | Audi / Skoda / Volkswagen           |
| V5207 | Volkswagen Transporter, Touareg, Kombi |
| V5310 | Merc Benz Vito                      |
| V5330 | Mercedes Benz W163, W220            |
| V5334 | Volkswagen Beetle, Polo             |
| V5335 | Volkswagen Golf                     |
| V5238 | Audi / Skoda / Volkswagen           |
| V5240 | Audi / Skoda / Volkswagen           |
| V5244 | Ford Focus, Kuga, Mondeo / Volvo    |
| V5266 | Holden Cruze                        |
| V5263 | Toyota Landcruiser                  |
| V5264 | Holden VZ, VE, Captiva, Colorado    |
| V5271 | Ford BA, BF, FG, Territory          |