

P0477: EXHAUST PRESSURE CONTROL VALVE "A" LOW

OVERVIEW

Severity	:	Medium
DIY Difficulty Level	:	Intermediate
Repair Cost	:	\$100-\$300
Can I Still Drive?	:	Yes

What Does The P0477 Code Mean?

This code can also apply to those trucks equipped with diesel engines and dealer installed exhaust brakes.

A valve is placed in the exhaust stream after the exhaust manifold to generate heat in the form of back pressure in the exhaust. This heat and/or back pressure can be used to assist in cold start warm up. It can also be used to oppose cylinder pressure coming from the engine cylinders out of the exhaust, thereby slowing the engine down and the vehicle along with it. This is especially useful during towing operations.

This code is strictly concerned about the incoming signal from the exhaust pressure sensor not matching intake manifold pressure or ambient air pressure during normal driving. This can be a mechanical or an electrical circuit fault, depending upon vehicle manufacturer.

Troubleshooting steps may vary depending upon manufacturer, type of exhaust back pressure control, and wire colors to the control solenoid.

What Are The Symptoms Of The P0477 Code?

Symptoms of a P0477 engine code may include:

- Malfunction Indicator Lamp (MIL) illuminated
- Lack of power

- Lack of engine braking
- Longer than normal cold engine warmup time

What Are The Potential Causes Of The P0477 Code?

Typically the causes for this code to set are:

- Short to Power in the power supply circuit between the exhaust pressure control solenoid and the PCM (powertrain control module)
- Open in the power supply circuit between the exhaust pressure control solenoid and the PCM
- Short to ground in the power supply circuit to the exhaust pressure control solenoid
- Exhaust Pressure Control Relay faulty
- Exhaust Pressure Control Solenoid faulty
- Possibly the PCM has failed (highly unlikely)

How Can You Fix The P0477 Code?

Check Technical Service Bulletin

A good starting point is always a technical service bulletin (TSB) search for your particular vehicle. The vehicle manufacturer may have a PCM flash/reprogram to cover this issue, and it pays to check on this before you find you've gone down a long/wrong path. PCM = powertrain control module.

Visually Inspect The Connectors And Wiring

Next, locate Exhaust Pressure Control Solenoid on your particular vehicle. Once located, visually inspect the connectors and wiring. Look for chafing, rubbing, bare wires, burn spots or melted plastic. Pull the connectors apart and carefully inspect the terminals (the metal parts) inside the connectors.

See if they look corroded, burnt or possibly green in color versus the normal metal color you are probably used to seeing. You can get some Electrical Contact cleaner at any parts store if cleaning of the terminals is needed. If this is not possible, find some 91% rubbing alcohol and a light plastic bristle brush to clean them with.

Afterwards let them air dry, get some dielectric silicone compound (same stuff they use for light bulb sockets and spark plug wires) and put some where the terminals come into contact.

If you have a scan tool, clear the diagnostic trouble codes from memory, and see if this code returns. If it does not, then the connections were most likely your problem.

Test The Sensor

If the code does return, locate the relay that operates the Exhaust Pressure Control solenoid. This

relay may also be called an Exhaust Brake or Engine Brake relay. Once located, swap it with an identical relay that is in the relay/fuse box that you know works. Clear codes and see if this code returns. If it does not, then the relay was most likely your problem.

If the code does return, we will need to test the solenoid and its associated circuits. Typically there are 2 wires at the Exhaust Pressure Control Solenoid. First, disconnect the harness going to the Exhaust Pressure Control Solenoid. With a Digital Volt Ohm Meter (DVOM), connect one lead of the meter to one terminal of the solenoid. Connect the remaining meter lead to the other solenoid terminal. It should not be open or shorted. Verify the resistance specifications for your particular vehicle. If the solenoid is either open or shorted (infinite resistance or no resistance/0 ohms), replace the solenoid.

If that's OK, with a DVOM, check to make sure you have 12V on the Exhaust Pressure Control Solenoid power supply circuit (Red lead to the solenoid power supply circuit, black lead to a good ground). Insure ignition is on. If there is no 12 volts to the solenoid, or if there is 12 volts when the ignition is turned off, repair the wiring from the PCM or relay to the solenoid, or possibly a bad PCM.

If that's OK, check to make sure you have a good ground at the Exhaust Pressure Control Solenoid. Connect a test light to 12V battery positive (red terminal) and touch the other end of the test light to the ground circuit going to the Exhaust Pressure Control Solenoid circuit ground. If the test light does not light up, this would indicate the problem circuit. If it does light up, wiggle the wiring harness going to each sensor to see if the test light flickers, indicating an intermittent connection.

If all tests have passed so far, and you continue to get a P0477 code, this would most likely indicate a failed Exhaust Pressure Control Solenoid, although a failed PCM could not be ruled out until the solenoid had been replaced.

Reference Sources

[P0477 Exhaust Pressure Control Valve "A" Low](#), OBD-Codes.