P0075: INTAKE VALVE CONTROL SOLENOID CIRCUIT (BANK 1)

OVERVIEW

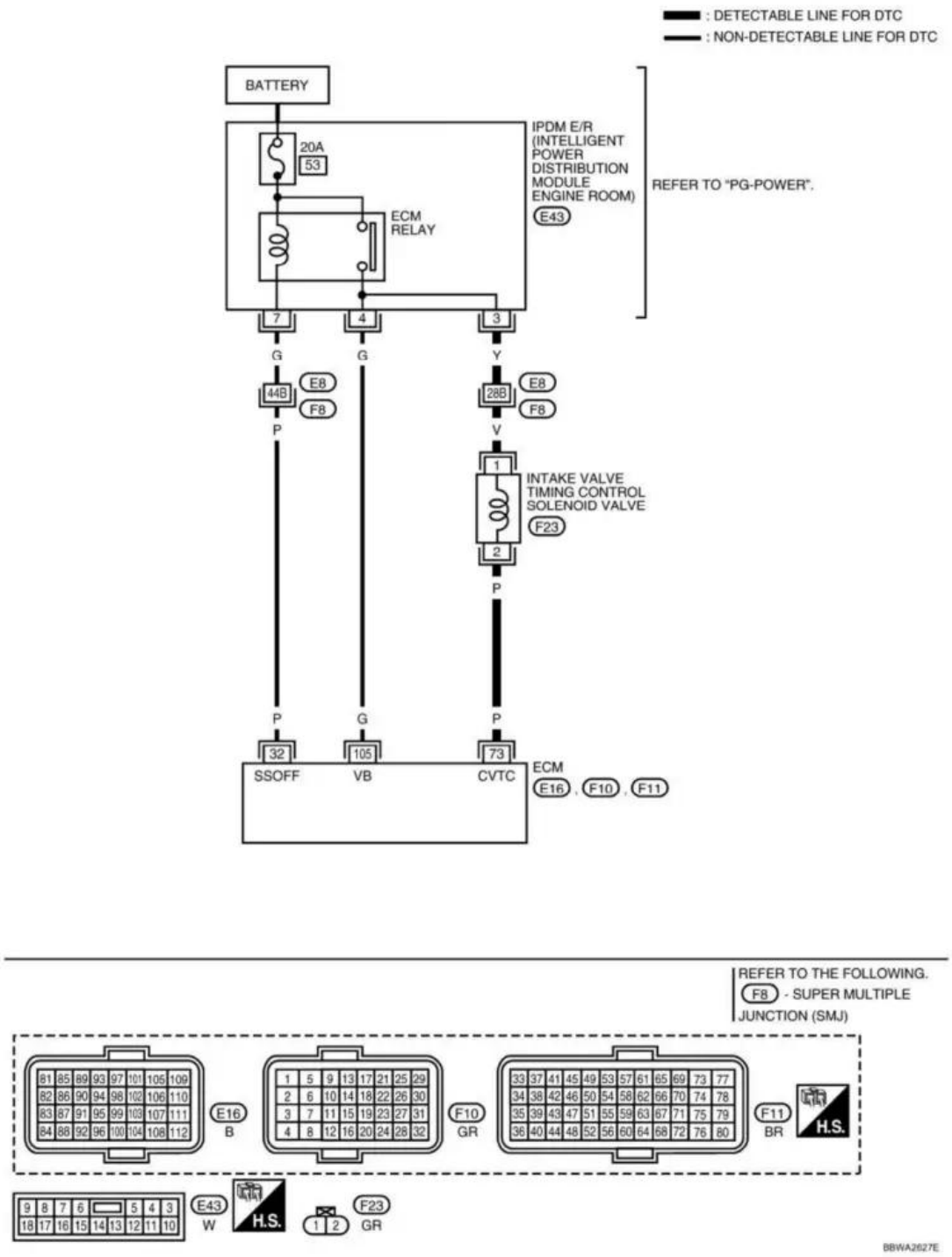
Severity	:	High
DIY Difficulty Level	:	Intermediate
Repair Cost	:	**$200-$300**
Can I Still Drive?	:	**Yes** (Short-term only)

What Does The P0075 Code Mean?

On vehicles equipped with variable valve timing (VVT), the Engine Control Module / Powertrain Control Module (ECM/PCM) controls the camshaft position by regulating the engine oil through the control solenoid to change the position of the camshaft. The control solenoid is commanded using a Pulse Width Modulated signal (PWM) from the ECM/PCM.

The ECM/PCM monitors this signal and if the voltage is out of specification or intermittent, it will set this DTC and illuminate the Check Engine Light / Malfunction Indicator Lamp (CEL/MIL).

Bank 1 refers to the side of the engine with cylinder #1 – be sure to verify according to manufacturers specifications. The intake valve control solenoid is usually located on the intake manifold side of the cylinder head.



P0075 wiring diagram

This code is similar to codes P0076 and P0077. This code may also be accompanied by P0026.

What Are The Symptoms Of The P0075 Code?

Symptoms may include:

- Check engine light illuminated (Malfunction indicator lamp)
- Vehicle may suffer from poor acceleration and decreased fuel economy.

What Are The Potential Causes Of The P0075 Code?

Potential causes of a P0075 diagnostic trouble code may include:

- Wire harness poor connection or corroded terminals
- Faulty control solenoid
- Short to power
- Short to ground
- Faulty ECM

How Can You Fix The P0075 Code?

Wire harness

Check for unplugged harness connections, look for corrosion or loose wires to connectors. Unplug harness connectors from solenoid and PCM, using a wiring diagram locate the + and – wires to the solenoid. The solenoid can be ground side or power side controlled, depending on the application. Check with factory wiring diagrams to determine the power flow in the circuit.

Using a digital volt ohm meter (DVOM) set to the ohms setting, check for resistance between each end of the wire. An over limit reading on the DVOM may be an open in the wiring, loose connection or terminal. Resistance should be around 1 ohm or less, if there is excessive resistance there may be corrosion or bad wiring between the solenoid and PCM/ECM.

Control solenoid

With the electrical harness to the solenoid unplugged, using the DVOM set to ohms, check for resistance between each of the electrical terminals on the control solenoid itself. Use the factory specifications or a known good control solenoid if available to determine if there is excessive resistance in the solenoid.

If there is an over limit or excessive resistance reading on the DVOM, the solenoid is likely faulty. Check for a short to ground through the control solenoid by putting either DVOM lead to a known good ground and the other to each terminal on the control solenoid. If there is resistance present, the solenoid may be shorted internally.

Short to power

Unplug the harness to the PCM/ECM and locate the wires to the control solenoid. With the DVOM set to the volts scale, connect the negative lead to ground and the positive lead to the wire(s) to the

control solenoid. Check for voltage, if there voltage present there may be a short to power in the wiring harness. Locate the short to power by unplugging harness connectors and testing the wiring back to the solenoid.

Short to ground

Unplug the harness to the PCM/ECM and locate the wires to the control solenoid. With the DVOM set to the volts scale, connect the positive lead to a known good voltage source such as the battery and the negative lead to the wire(s) to the control solenoid. Check for voltage, if there is voltage present there may be a short to ground in the wiring harness. Locate the short to ground by unplugging harness connectors and testing the wiring back to the solenoid.

Check for a short to ground through the control solenoid by putting either DVOM lead to a known good ground and the other to each terminal on the control solenoid. If there is a low resistance present, the solenoid may be shorted internally.

PCM / ECM

If all wiring and the control solenoid checks out okay, it will be necessary to monitor the solenoid during engine operation by back probing the wires at the PCM/ECM. Using an advanced scan tool that will read the engine functions, monitor the duty cycle commanded to the control solenoid. It will be necessary to monitor the solenoid during engine operation under various engine RPM's and load. Using an oscilloscope or graphing multimeter set to the duty cycle scale, connect the negative lead to a known good ground and the positive lead to either wire terminal at the solenoid.

The reading on the multimeter tool should match the commanded duty cycle on the scan tool. If they are opposite, the polarity may be reversed – connect the positive lead on the other wire terminal to the solenoid and re-test to verify. If there is no signal detected from the PCM, there may be a fault with the PCM itself.

Reference Sources

P0075: Intake Valve Control Solenoid Circuit B1, OBD-Codes.