

## P0148: FUEL DELIVERY ERROR

### OVERVIEW

Severity	:	<div><div></div></div> High
DIY Difficulty Level	:	<div><div>Intermediate</div></div>
Repair Cost	:	\$90-\$500
Can I Still Drive?	:	Yes (Short-term only)

### What Does The P0148 Code Mean?

Whenever I have been faced with diagnosing a stored code P0148, it has always meant that the powertrain control module had detected a problem in the high pressure fuel delivery system of a diesel engine.

Clean burning diesel engines use an extremely high degree of fuel pressure. It is strongly recommended that only qualified technicians attempt to diagnose and repair these types of systems.

Keep in mind that some states demand that only individuals who have been certified as diesel repair technicians repair high pressure diesel fuel systems. Check your state and local ordinances before proceeding. Don't say I didn't warn you.

The diesel fuel supply pump creates the high pressure required for the direct injection system. An electronically controlled (by the PCM or fuel injection controller) fuel control actuator (FCA) is responsible for regulating fuel pressure to the high pressure chambers of the engine. A fuel pressure sensor (usually located near the FCA) allows the PCM to monitor fuel pressure when the engine is running.

If the PCM detects an input signal from the fuel pressure sensor which indicates that fuel pressure is not within a specified range (too low or too high), a code P0148 will be stored and a malfunction indicator lamp may be illuminated.

## What Are The Symptoms Of The P0148 Code?

Symptoms of a P0148 code may include:

- Decreased fuel efficiency
- Diminished engine performance
- Excessive black smoke from exhaust
- The strong odor of diesel fuel
- Other fuel and engine drivability related codes may be stored

## What Are The Potential Causes Of The P0148 Code?

Potential causes for this code to set are:

- High pressure fuel system leak
- Defective fuel pressure sensor
- Faulty fuel control actuator
- Open or shorted high pressure fuel supply system wiring and/or connectors
- Bad fuel pump
- Malfunctioning fuel pump or PCM power supply relay
- PCM or PCM programming error

## How Can You Fix The P0148 Code?

### Preparation

A good starting point is always to check for technical service bulletins (TSB) for your particular vehicle. Your issue may be a known issue with a known fix put out by the manufacturer and can save you time and money during diagnosis.

A diagnostic scanner, a digital volt/ohmmeter (DVOM), a direct fuel injection diesel fuel pressure gauge, and a vehicle information source (such as All Data DIY) will be required to diagnose a stored code P0148.

### Step 1

Connect the scanner to the vehicle diagnostic connector and retrieve all stored codes and freeze frame data. It is a good idea to write this information down just in case you need it later. Now, clear the codes and proceed. If there is a strong odor of diesel fuel, suspect that a fuel leak is at the root of your problem.

If a fuel leak is detected, fuel filters and other high pressure fuel system components which have been recently replaced, should be carefully inspected before proceeding. After carefully performing

a visual inspection of all fuel delivery lines and components, repair leaks as needed and retest the system to see if the code is reset.

## Step 2

If there are no leaks present and the code is reset, carefully use the direct fuel injection diesel fuel pressure gauge to test fuel pressure. If actual fuel pressure fails to comply with manufacturer's specifications, suspect a defective fuel pump, clogged fuel filter, or bad fuel pump relay.

You can test fuel pump operation by using the DVOM to test voltage at the fuel pump connector and listening for fuel pump agitation when voltage is applied. Consult your vehicle information source for voltage stipulations and precautionary data.

If voltage is present, as specified and there is no fuel pump agitation, suspect that the fuel pump is defective. If there is no voltage at the fuel pump connector, suspect a fuel pump or PCM relay malfunction or wiring problem.

## Step 3

If fuel pressure is normal, use the DVOM to test the fuel pressure sensor and the FCA according to recommendations found in your vehicle information source.

If these diagnostic steps prove to be too challenging, you might want to go ahead and replace the FCA and the fuel pressure sensor. The regularity with which they fail and cause this code to be stored, combined with the fact that these parts are usually fairly easily accessible and inexpensive, makes this a feasible consideration. Frankly, it's what would transpire in most commercial garages.

## Step 4

If you are still having problems, use your vehicle information source to search technical service bulletins (TSB) for one that matches your specific vehicle, symptoms, and code/s. The information contained in the TSB may help you to pinpoint the malfunction and rectify the situation.

Additional diagnostic notes:

- Knowing whether actual fuel pressure is too low or too high can aid in your diagnosis
- Be very careful when removing the FCA and fuel pressure sensor (diesel fuel pressure is extremely high)

## Severity Description

A fuel delivery error may lead to reduced engine performance and possibly engine damage, so a code P0148 should be addressed with some degree of urgency (especially if a strong fuel odor accompanies it).

## Reference Sources

[Diagnostic Trouble Code \(DTC\) Charts and Descriptions for P0148](#) - Page 38.