

P0551: POWER STEERING PRESSURE SENSOR CIRCUIT RANGE/PERFORMANCE

OVERVIEW

Severity	:	High
DIY Difficulty Level	:	Advanced
Repair Cost	:	\$150-\$300
Can I Still Drive?	:	No

What Does The P0551 Code Mean?

Before hydraulically and electrically assisted steering systems were invented, manufacturers used an unassisted rack and pinion steering system. This made steering at low speed extremely difficult and inefficient.

For this reason we invented the power steering system. Generally speaking, a hydraulically assisted system will include a belt driven power steering pump, steering rack/box and various hoses/lines and sensors.

The Engine Control Module (ECM) or Powertrain Control Module (PCM) works in conjunction with the power steering pressure sensor to monitor the pressure within the system and adjust accordingly.

The ECM illuminates the check engine light with P0551 and associated codes when it recognizes one or multiples condition outside a specific desired range within the power steering pressure sensors's circuit. Most times, I would say, this code is thrown by the ECM because of an electrical issue but at times, mechanical problems could possibly be the cause.

P0551 Power Steering Pressure Sensor Circuit Range/Performance code is set when the ECM/PCM monitors a condition outside specific parameters within the sensor's circuit. It is one of five related codes, which are [P0550](#), [P0551](#), [P0552](#), [P0553](#), and [P0554](#).

What Are The Symptoms Of The P0551 Code?

Symptoms of a P0551 diagnostic code may include:

- Erratic idle
- Engine stalling symptoms
- Intermittent assist when steering (choppy turning)
- Hard to steer vehicle
- Whining noises
- Leaking fluid
- Poor handling

What Are The Potential Causes Of The P0551 Code?

Causes for this code may include:

- Broken or damaged wiring harness
- Power steering fluid leak
- Fuse/relay defective
- Power steering pressure sensor defective
- ECM issue
- Pin/connector problem. (e.g. corrosion, melting, broken lock tab, etc.)

How Can You Fix The P0551 Code?

Be sure to check for technical service bulletins (TSBs) for your vehicle. Getting access to a known fix can save you time and money during diagnosis.

Tools

Some of the things you may need when diagnosing or repairing the power steering circuits and systems:

- OBD code reader
- Power steering fluid
- Drain pan
- Multimeter
- Basic socket set
- Basic ratchet and wrench sets
- Basic screwdriver set
- Battery terminal cleaner
- Service manual

Safety Tips

- Let engine cool
- Chalk wheels
- Wear PPE (Personal protective equipment)

NOTE: ALWAYS verify and record the integrity of your battery and charging system before further troubleshooting.

Basic Step #1

Always keep it simple at first. Check your power steering fluid level and top up as necessary. Check your parking space, any signs of a leak? If so, investigate further. If the fluid is low, it's going somewhere so make sure to repair any mechanical leaks before proceeding to any electrical diagnosing.

Take a good look at the sensor itself, I've personally seen these sensors leak through the sensor itself, so make sure it's dry and there is no obvious signs of damage and/or leaks.

NOTE: These systems use high pressures that could cause harm so be careful, pinhole leaks are dangerous and are a serious hazard. If you are not familiar with the dangers of working with hydraulic systems, please bring your vehicle to a reputable repair facility.

Basic Step #2

To rule out the sensor, you will need to test it. Refer to your service manual for the specifications needed. Usually, the sensor itself is mounted to a power steering pressure line. Most times these are hard aluminum/braided rubber lines and can be accessed from under the hood.

NOTE: A common leak found is where the rubber meets the hard pressure line, sometimes it separates and causes a hard to find leak.

Basic Tip #3

Locate the electrical connector on the pressure sensor. Inspect for any oil residue/soaking. If the connector is soaked in oil, obviously the leak is a problem but the oil must be cleaned before reconnecting. A connector showing signs of melting and/or corrosion must be repaired.

NOTE: Make sure to disconnect battery before performing any electrical repairs.

Basic Step #4

Check for physical damage. In this case I'd say the sensor is exposed to some harsh conditions. If the lines aren't fastened properly, the sensor may be rubbing on something and over time could

cause an electrical problem of some sort. Fasten any loose lines, especially the one with the sensor mounted to it.

Basic Step #5

You may be able to verify the integrity of the power steering pressure sensor circuit(s). To pretty much rule out any problem with your wiring harness, you could disconnect the circuit at the sensor and the ECM. Using your multimeter, refer to your service manual and verify that all the desired values are in check. If everything seems fine up to this point i would recommend you bring the vehicle to your reputable repair facility.

Severity Description

Given the fact that most likely, your power steering system could completely fail and you could still drive your car, severity here is set to low. Obviously, that's a dumb idea, any issue left long enough will cost you more in the long run.

Reference Sources

[P0551 Power Steering Pressure Sensor Circuit Range/Performance](#), OBD-Codes.