

P0703: TORQUE CONVERTER/BRAKE SWITCH B CIRCUIT MALFUNCTION

OVERVIEW

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|----------------------|---|------------------------------------|
| Severity | : | <div><div>High</div></div> |
| DIY Difficulty Level | : | <div><div>Intermediate</div></div> |
| Repair Cost | : | \$100-\$200 |
| Can I Still Drive? | : | No |

What Does The P0703 Code Mean?

If you discover that a code P0703 has been stored in your OBD-II vehicle, it means that the powertrain control module (PCM) has detected a malfunction in a certain torque converter brake switch circuit. This code is applicable to vehicles equipped with automatic transmissions, only.

Automatic transmissions (in mass produced vehicles) have been electronically controlled since the 1980s. Most OBD-II equipped vehicles are managed by a transmission controller that is integrated into the PCM. Other vehicles utilize a stand-alone transmission control module that communicates with the PCM and other controllers via the controller area network (CAN).

The torque converter is a type of fluid coupling that links the engine to the transmission. When the vehicle is in motion, the torque converter allows torque to be transferred to the transmission input shaft. When the vehicle comes to a stop (with the engine idling) the torque converter absorbs the torque of the engine, using a complex system of wet clutches. This allows the engine to idle without stalling.

The lockup torque converter, used in OBD-II equipped vehicles, allows the engine to lock into the transmission input shaft under certain conditions. This usually occurs when the transmission has shifted into the highest gear, the vehicle has reached a certain speed, and the desired engine RPM level has been achieved.

In lockup mode, the torque converter clutch (TCC) is restricted gradually until the transmission is functioning as though it were bolted directly to the engine in a 1:1 transfer ratio. These gradual clutch restrictions are known as percentage of torque converter lockup. This system promotes fuel efficiency and optimal engine performance. Torque converter lockup is achieved using an electronic solenoid that controls a spring loaded rod or ball valve.

When the PCM recognizes that conditions are correct, the lockup solenoid is activated and the valve allows fluid to bypass the torque converter (gradually) and be applied directly to the valve body.

Torque converter lockup must be disengaged before engine RPM levels decrease to a certain level and definitely before the vehicle comes to a stop, with the engine idling.

If not, the engine will undoubtedly stall. One of the specific signals that the PCM looks for in torque converter lockup disengagement is the application of the brake pedal. When the brake pedal is applied, the brake lever arm causes contacts in the brake switch to be closed, completing one or more circuit/s.

When these circuits are completed, the stop lamps are illuminated. A second signal is sent to the PCM. This signal lets the PCM know that the brake pedal has been depressed and the torque converter lockup solenoid needs to be disengaged.

The P0703 code pertains to one of these brake switch circuits. Consult your vehicle service manual or All Data for specific information about this particular circuit as it relates to your vehicle.

What Are The Symptoms Of The P0703 Code?

Symptoms of a P0703 code may include:

- Engine stalling when the vehicle rolls to a stop
- TCC lockup may be disabled
- Diminished fuel efficiency
- Decreased engine performance (especially at highway speeds)
- Erratic transmission shift patterns
- No stop lamp illumination

What Are The Potential Causes Of The P0703 Code?

Potential causes for this code to set are:

- Defective brake switch
- Misadjusted brake switch
- Shorted or open wiring and/or connectors in the brake switch circuit designated as B
- Blown fuse or burnt fusible link

- Faulty PCM or PCM programming error

How Can You Fix The P0703 Code?

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.

Gain access to a scanner, a digital volt/ohmmeter, and a service manual (or All Data) for your vehicle. These tools will be necessary to diagnose a code P0703.

Begin with a visual inspection of brake lamp wiring and a general inspection of underhood wiring. Test stop lamp system fuses and replace blown fuses as required.

Connect the scanner to the diagnostic connector and retrieve all stored codes and freeze frame data. Make a note of this information as it may serve you in further diagnosis. Clear the codes and test drive the vehicle to see if it immediately resets.

If It Does

Check for battery voltage at the input circuit of the brake switch, using the DVOM. Some vehicles are equipped with multiple brake switches because, when the brake pedal is depressed, the stop lamps must be activated and the torque converter lockup must be deactivated. Consult your vehicle service manual to determine how your brake switch is configured. If there is battery voltage on the input circuit, depress the brake pedal and check for battery voltage on the output circuit. If there is no voltage on the output circuit, suspect a defective or misadjusted brake switch.

Additional diagnostic notes:

- Check system fuses with the brake pedal depressed. Fuses that may appear operational at first test may fail when the circuit is under load
- Often a misadjusted brake switch may be misdiagnosed as defective
- To quick test TCC operation, bring the vehicle to highway speed (at normal operating temperature), lightly tap the brake pedal and hold it while maintaining speed. If the RPM level increases when the brake is depressed, the TCC is operational and the brake switch is deactivating it properly
- Major transmission damage can occur if the TCC system remains inoperable

Severity Description

This code should be treated as urgent because severe internal transmission damage could result if the TCC lockup is inoperable over a long period of time. Most models are designed so that the PCM will disable TCC lockup, and place the transmission control system in limp-in mode, if a code of this

type is stored.

Reference Sources

[Diagnostic Trouble Code \(DTC\) Charts and Descriptions for P0703](#) - Pages 100-101.