

Document ID: 2654690

DTC P0711-P0713

Diagnostic Instructions

- Perform the [Diagnostic System Check - Vehicle](#) prior to using this diagnostic procedure.
- Review [Strategy Based Diagnosis](#) for an overview of the diagnostic approach.
- [Diagnostic Procedure Instructions](#) provides an overview of each diagnostic category.

DTC Descriptors

DTC P0711 Transmission Fluid Temperature Sensor Performance

DTC P0712 Transmission Fluid Temperature Sensor Circuit Low Voltage

DTC P0713 Transmission Fluid Temperature Sensor Circuit High Voltage

Circuit/System Description

The transmission fluid temperature sensor is located inside of the Transmission Control Module assembly w parts. The transmission fluid temperature sensor provides transmission fluid temperature information to the Module. This fault is handled inside the Transmission Control Module and no external circuits are involved.

Conditions for Running the DTC

P0711

- DTCs: P0101, P0102, P0103, P0106, P0107, P0108, P0171, P0172, P0174, P0175, P0201, P0202, P0206, P0207, P0208, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0401, P042E, P0658, P06AE, P0716, P0712, P0713, P0717, P0722, P0723, P0962, P0963, P0966, P0967, P0970, P0971, P2729, or P2730 is not set.
- Ignition voltage is between 8.6–32 V.
- The engine speed is 400–7,500 RPM or greater for 5 s.
- The vehicle speed is 8 km/h (5 mph) or greater for 5 min.
- The accelerator pedal position signal is valid.
- The engine torque signal is valid.

P0712

- DTC P0712, P0716, P0717, P0722, or P0723 is not set.
- The engine speed is greater than 400–7.500 RPM for 5 s.

© 2020 General Motors. All rights reserved.

- Ignition voltage is between 8.6–32 V.

P0713

- DTC P0713, P0716, P0717, P0722, or P0723 is not set.
- The engine speed is greater than 400–7,500 RPM for 5 s.
- Ignition voltage is between 8.6–32 V.

Conditions for Setting the DTC**P0711**

- The TCM detects a 20–50°C (36–90°F) or greater difference between the transmission fluid temperature and the TCM substrate temperature, which depends on the average of the transmission fluid temperature, the TCM substrate temperature, and the TCM power up temperature.
- The TCM detects a 20–50°C (36–90°F) or greater difference between the transmission fluid temperature and the TCM substrate temperature, which depends on the average of the transmission fluid temperature, the TCM substrate temperature, and the TCM power up temperature.
- The above conditions have to be met for 5 min within a 6 min time period.

P0712

The transmission fluid temperature is –74°C (–101°F) or less for 1 min.

P0713

The transmission fluid temperature is 174°C (345°F) or greater for 1 min.

**Action Taken When the DTC Sets**

- DTCs P0711, P0712, and P0713 are Type B DTCs.
- The TCM freezes transmission adaptive functions.
- The TCM allows the vehicle to operate in transmission protection mode.
- The TCM defaults to the TCM temperature with an offset.

Conditions for Clearing the DTC

DTCs P0711, P0712, and P0713 are Type B DTCs.

Diagnostic Aids

During a road test, the transmission fluid temperature should steadily increase to a normal operating temperature.

Reference Information

© 2020 General Motors. All rights reserved.

Schematic Reference

[Automatic Transmission Controls Schematics](#)

Connector End View Reference

- [Component Connector End Views](#)
- [Inline Harness Connector End Views](#)

Description and Operation

- [Electronic Component Description](#)
- [Transmission General Description](#)
- [Transmission Component and System Description](#)

Electrical Information Reference

- [Circuit Testing](#)
- [Connector Repairs](#)
- [Testing for Intermittent Conditions and Poor Connections](#)
- [Wiring Repairs](#)

DTC Type Reference

[Powertrain Diagnostic Trouble Code \(DTC\) Type Definitions](#)

Scan Tool Reference

[Control Module References](#) for scan tool information

Special Tools

DT-47825 Control Solenoid Test Plate

For equivalent regional tools, refer to [Special Tools](#).

Circuit/System Verification

1. Engine idling at normal operating temperature.
2. Verify the scan tool Transmission Fluid Temperature parameter is between -74 and $+174^{\circ}\text{C}$ (-101 and $+345^{\circ}\text{F}$)
⇒ **If not between -74 and $+174^{\circ}\text{C}$ (-101 and $+345^{\circ}\text{F}$)**
Replace the Q8 Control Solenoid Valve Assembly.
- ii. **If between -74 and $+174^{\circ}\text{C}$ (-101 and $+345^{\circ}\text{F}$)**

© 2020 General Motors. All rights reserved.

3. Verify the scan tool Transmission Fluid Temperature parameter increases greater than 2°C (3.5°F) after 64 km/h (40 mph) for 10 minutes.
⇒ **If the temperature does not increase greater than 2°C (3.5°F)**
Replace the Q8 Control Solenoid Valve Assembly.
⇓ **If the temperature does increase greater than 2°C (3.5°F)**
4. Verify the scan tool Transmission Fluid Temperature and the Transmission Control Module Temperature 20°C (68°F) of each other.
⇒ **If the temperatures are not within 20°C (68°F)**
Replace the Q8 Control Solenoid Valve Assembly.
⇓ **If the temperatures are within 20°C (68°F)**
5. Operate the vehicle within the Conditions for Running the DTC. You may also operate the vehicle within observe from the Freeze Frame/Failure Records data.
6. Verify the DTC does not set.
⇒ **If the DTC sets**
Replace the Q8 Control Solenoid Valve Assembly.
⇓ **If the DTC does not set**
7. All OK.

Repair Instructions

Perform the [Diagnostic Repair Verification](#) after completing the repair.

- Perform the [Reset Transmission Adapts](#) following all transmission related repairs.
- [Control Module References](#) for control solenoid valve assembly replacement, programming, and setup.

Document ID: 5429393**#99-04-20-002K: Information on Driveline Clunk Noise - (Oct 2019)****Subject: Information on Driveline Clunk Noise****Models: 2020 and Prior GM Passenger Cars and Trucks (including Medium Duty)****Attention: This bulletin also applies to any of the above models that may be Export from North America vehicles.****This bulletin has been revised to add the 2019-2020 Model Years. Please discard Corporate Bulletin N 2019-04-20-002K.**

Some customers of vehicles equipped with automatic transmissions may comment that the vehicle exhibits a clunk noise between Park and Drive, Park and Reverse, or Drive and Reverse. Similarly, customers of vehicles equipped with manual transmissions may comment that the vehicle exhibits a clunk noise while driving when the accelerator is quickly released. Tipping into the throttle after deceleration can also result in some level of clunk as the driveline is loaded. When the throttle is then with throttle reapply, the driveline gets loaded in the opposite direction (drive). On manual transmission vehicles, the clutch while in a deceleration immediately releases load on the driveline and may produce a clunk noise as the driveline is reloaded.

Note: Compare this complaint vehicle to a like vehicle. If the results are the same, this is a normal condition. For additional information, refer to the appropriate Service Information.

Whenever there are two or more gears interacting with one another, there must be a certain amount of clearance between the gears in order for the gears to operate properly. This clearance or freeplay (also known as lash) can translate into a clunk noise when the driveline is loaded and unloaded quickly, or whenever the direction of rotation is reversed. The more gears you have in a driveline, the more freeplay the total system will have.

The clunk noise that owners sometimes hear may be the result of a buildup of freeplay (lash) between the components of the driveline.

For example, the potential for a driveline clunk would be greater in a 4-wheel drive or all-wheel drive vehicle than in a 2-wheel drive vehicle. This is because in addition to the freeplay from the rear axle gears, the universal joints, and the transmission (coupled with the 4-wheel drive transfer case gears (and their associated clearances) add additional freeplay to the driveline.

In service, dealers are discouraged from attempting to repair driveline clunk conditions for the following reasons:

- Comments of driveline clunk are almost never the result of one individual component with excessive lash, but rather the added affect of freeplay (or lash) present in all of the driveline components. Because all of the components in the driveline have a certain amount of lash by design, changing driveline components will not result in a satisfactory lash reduction.
- While some owners may find the clunk noise objectionable, this will not adversely affect durability or performance.
- For additional diagnostic information, refer to the appropriate Service Information.

© 2020 General Motors. All rights reserved.

GM bulletins are intended for use by professional technicians, NOT a "do-it-yourselfer". They are written to inform these technicians of conditions that may occur on some vehicles, or to provide information that could assist in the proper service of a vehicle. Properly trained technicians have the equipment, tools, safety instructions, and know-how to do a job properly and safely. If a condition is described, DO NOT assume that the bulletin applies to your vehicle, or that your vehicle will have that condition. See your GM dealer for information on whether your vehicle may benefit from the information.



© 2020 General Motors. All rights reserved.

<https://gsi.ext.gm.com/gsi/showDoc.do?name=Information+on+Driveline+Clunk+Noise&bulletinNbr=99-04-20-002K&from=ns&releaseDate=2019-10-29&docSyskey=5>