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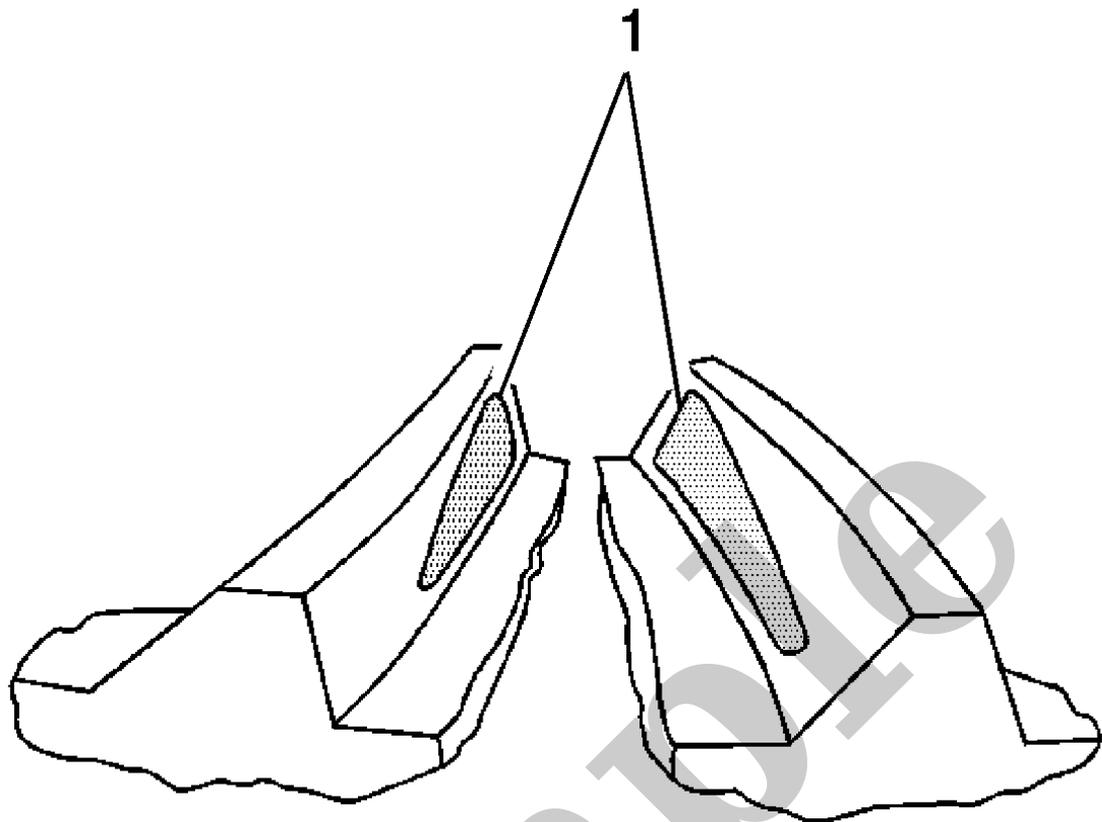
FactoryManuals.net is a great resource for anyone who wants to save money on repairs by doing their own work. The manuals provide detailed instructions and diagrams that make it easy to understand how to fix a vehicle.

2022 Chevrolet Silverado 1500 - 4WD New Service and Repair Manual

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DTC	Diagnostic Procedure
P0117	Engine Controls and Fuel - 5.3L (L83) or 6.2L (L86) - DTC P0116-P0119
P0118	Engine Controls and Fuel - 5.3L (L83) or 6.2L (L86) - DTC P0116-P0119
P0119	Engine Controls and Fuel - 5.3L (L83) or 6.2L (L86) - DTC P0116-P0119
P0121	Engine Controls and Fuel - 5.3L (L83) or 6.2L (L86) - DTC P0121-P0123, P0222, P0223, P16A0-P16A2, or P2135
P0122	Engine Controls and Fuel - 5.3L (L83) or 6.2L (L86) - DTC P0121-P0123, P0222, P0223, P16A0-P16A2, or P2135
P0123	Engine Controls and Fuel - 5.3L (L83) or 6.2L (L86) - DTC P0121-P0123, P0222, P0223, P16A0-P16A2, or P2135
P0128	Engine Controls and Fuel - 5.3L (L83) or 6.2L (L86) - DTC P0128
P0131	Engine Controls and Fuel - 5.3L (L83) or 6.2L (L86) - DTC P0131, P0132, P0137, P0138, P0151, P0152, P0157, or P0158
P0132	Engine Controls and Fuel - 5.3L (L83) or 6.2L (L86) - DTC P0131, P0132, P0137, P0138, P0151, P0152, P0157, or P0158
P0133	Engine Controls and Fuel - 5.3L (L83) or 6.2L (L86) - DTC P0133, P013A-P013F, P014A, P014B, P0153, P015A-P015D, P1133, P1153, or P2270-P2273
P0135	Engine Controls and Fuel - 5.3L (L83) or 6.2L (L86) - DTC P0030-P0032, P0036-P0038, P0050-P0054, P0056-P0060, P0135, P0141, P0155, or P0161
P0137	Engine Controls and Fuel - 5.3L (L83) or 6.2L (L86) - DTC P0131, P0132, P0137, P0138, P0151, P0152, P0157, or P0158
P0138	Engine Controls and Fuel - 5.3L (L83) or 6.2L (L86) - DTC P0131, P0132, P0137, P0138, P0151, P0152, P0157, or P0158
P013A	Engine Controls and Fuel - 5.3L (L83) or 6.2L (L86) - DTC P0133, P013A-P013F, P014A, P014B, P0153, P015A-P015D, P1133, P1153, or P2270-P2273
P013B	Engine Controls and Fuel - 5.3L (L83) or 6.2L (L86) - DTC P0133, P013A-P013F, P014A, P014B, P0153, P015A-P015D, P1133, P1153, or P2270-P2273

Parameter	System State	Expected Value	Description
Component Monitor Complete	—	Yes/No	This parameter displays Yes when the Component Monitor is Complete. The engine control module looks at many input and output components to make this determination. If a malfunction is detected the scan tool will display No.
Component Monitor Enabled	—	Yes/No	This parameter displays Yes when Component Monitor is Enabled. And No when it is not Enabled.
Compression Test	—	Not Running	This parameter displays the status of the engine compression test.
Control Module Voltage Signal	—	B+	This parameter displays the voltage of the power input to the engine control module. Since battery voltage is not directly measured by engine control module, switched battery voltage from the Run/Crank input to the engine control module is displayed.
Cooling Fan Command	—	%	This parameter displays the cooling fan duty cycle.
Cooling Fan Control Circuit 1-2 High Voltage Test Status	—	OK	This parameter displays the state of the cooling fan control circuit. The parameter displays Malfunction if the cooling fan control circuit is shorted to voltage.
Cooling Fan Control Circuit 1-2 Low Voltage Test Status	—	OK	This parameter displays the state of the cooling fan control circuit. The parameter displays Malfunction if the cooling fan control circuit is shorted to ground.
Cooling Fan Control Circuit 1-2 Open Test Status	—	OK	This parameter displays the state of the cooling fan control circuit. The parameter displays Malfunction if the cooling fan control circuit is opened.
Cooling Fan Speed	Ignition ON	Varies	This parameter displays the current state of the cooling fan speed. (For example OFF, Low, Medium, or High) rather than rotational speed.
Cooling Motor Fan Command	—	%	This parameter displays the cooling fan duty cycle.
Crank Request Signal	—	Yes	This parameter displays the state of the crank request input to the control module from the ignition switch. The scan tool will display Yes when the ignition switch is in the Crank

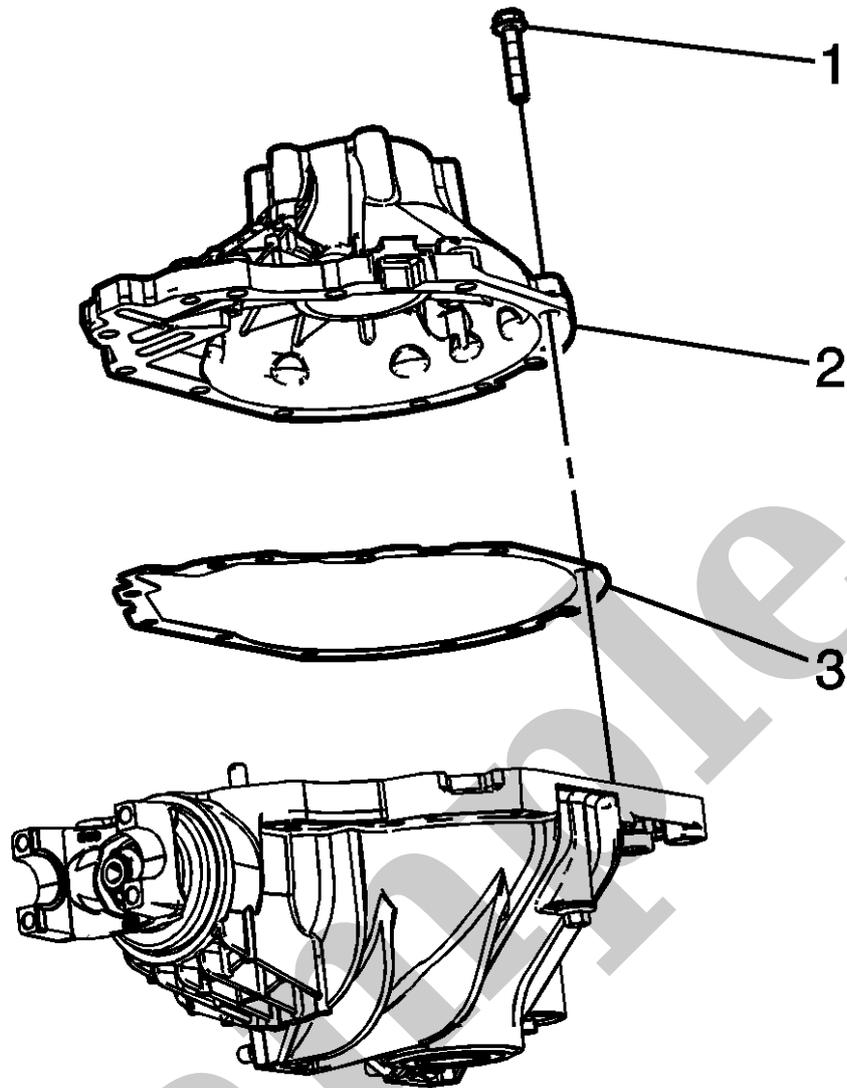


Condition

The backlash is incorrect. The ring gear is too close to the drive pinion.

Correction

Increase the backlash. Move the ring gear away from the drive pinion by adjusting the side bearing adjuster sleeves. Refer to [Backlash Inspection and Adjustment](#).



7.
Remove the differential carrier assembly bolts (1).
8. Separate the left carrier case half from the right carrier case half (2) by tapping on the on the carrier case with a hammer and a brass drift.
9. Remove the differential carrier housing (2) and the differential carrier housing gasket (3).
10. Remove the differential case assembly.
11. Remove the differential side bearing by performing the following steps:
 1. Place the differential case in a vise.

Slide the differential case assembly towards the right side axle housing until the ring gear contacts the drive pinion. This is the ZERO backlash point.

9. Install the differential assembly with the differential side bearings and differential side bearing cups into the axle housing.
10. Insert one 4.318 mm (0.170 in) thick service spacer into the left side of the axle housing.
11. Slide the differential assembly towards the service spacer in order to hold the spacer in place.
12. Install the **J-22779 gauge** between the right side differential side bearing cup and the axle housing.

13. **NOTE**

Note

Over-tightening of the **J-22779 gauge** may spread the housing and result in incorrect shim selection.

Tighten the knob on the **J-25588 installer** until there is moderate drag when the **J-22779 gauge** is moved.

14. Remove the **J-22779 gauge**.
15. Remove the service spacer.

16. **NOTE**

Note

Record the measurement.

Using a micrometer, measure the thickness of the service spacer.

17. **NOTE**

Note

Record the measurement.

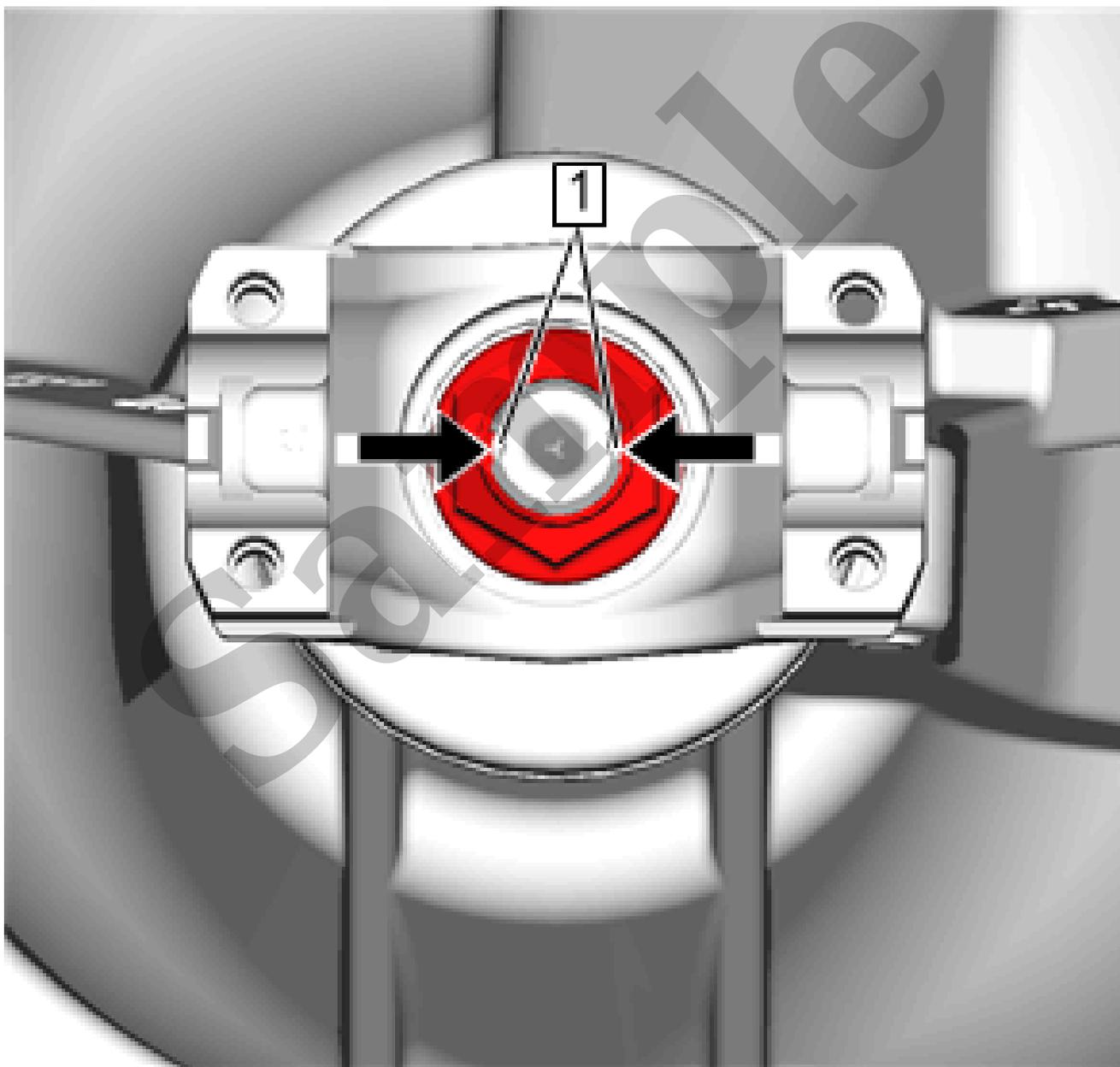
Using a micrometer, measure the thickness of the **J-22779 gauge** in 3 locations. Calculate the average of the 3 measurements.

8. **NOTE**

Note

- Recheck the rotating torque and adjust if necessary.
- Take care to not split the nut lip which could affect nut torque retention. If nut lip is split, use new nut.

Once the specified torque is obtained, rotate the pinion several times to seat the bearings.



9.

NOTE

during the call. The OnStar® indicators are controlled by the telematics communication interface control module via the keypad green indicator control circuit and the keypad red indicator control circuit.

Reference Information

Schematic Reference

[OnStar/Telematics Schematics](#)

Connector End View Reference

[Master Electrical Component List](#)

Description and Operation

[OnStar Description and Operation](#)

Electrical Information Reference

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

Scan Tool Reference

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

Circuit/System Verification

NOTE

Note

If the green LED is off with the ignition ON and the LED does not function when commanded with the scan tool, contact the OnStar Center to confirm the vehicle has a current subscription.

1. Ignition ON.
2. Verify no DTCs are set.
 - **If any DTCs are set**
Refer to [Diagnostic Trouble Code \(DTC\) List - Vehicle](#)
 - **If no DTCs are set**

Circuit	Short to Ground	Open/High Resistance	Short to Voltage	Signal Performance
<ol style="list-style-type: none"> 1. Front console and display/controls USB ports inoperative 2. Fault may affect one or more components, dependant on fault location 3. Fault affects multiple components, dependant on vehicle equipment 4. Single USB port behind display/controls inoperative 				

Circuit/System Description

The infotainment system has a USB receptacle assembly located in the front of the console. The USB ports interface with a hub device, internal to the assembly. The assembly receives fused battery voltage and ground from the harness to power the internal hub device as well as providing additional amperage to power USB devices.

The internal hub device interfaces directly with the human machine interface control module via a standard USB cable. A Mini type USB connector is used to connect the cable at the USB port and at the human machine interface control module and at the auxiliary jack, USB, and memory card receptacle. Standard USB male to female connections are typically used for connecting USB cables together where an in-line connection is required. An in-line cable connection is typically found between the console and I/P harness.

An additional USB port is located in the storage compartment behind the display/controls. This USB port is part of a USB cable that is connected to the front receptacle assembly, and interfaces through the front receptacle internal hub to connect to the system.

USB Port

The USB port allows connectivity to the infotainment system from portable media players or a USB storage device (memory stick/ flash drive). When a device is connected to the USB port, the system detects the device and switches to USB as the audio source. Once connected, the device can be controlled from the radio controls.

Not all portable media player devices or file types are compatible. Refer to the owner's manual for information on USB devices, control, and operation.

Conditions for Running the DTC

- Ignition is ON or in the ACC position
- The system voltage is 9-16 V
- The infotainment system is ON