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2023 Chevrolet Silverado 1500 - 4WD Service and Repair Manual

Go to manual page

Sample

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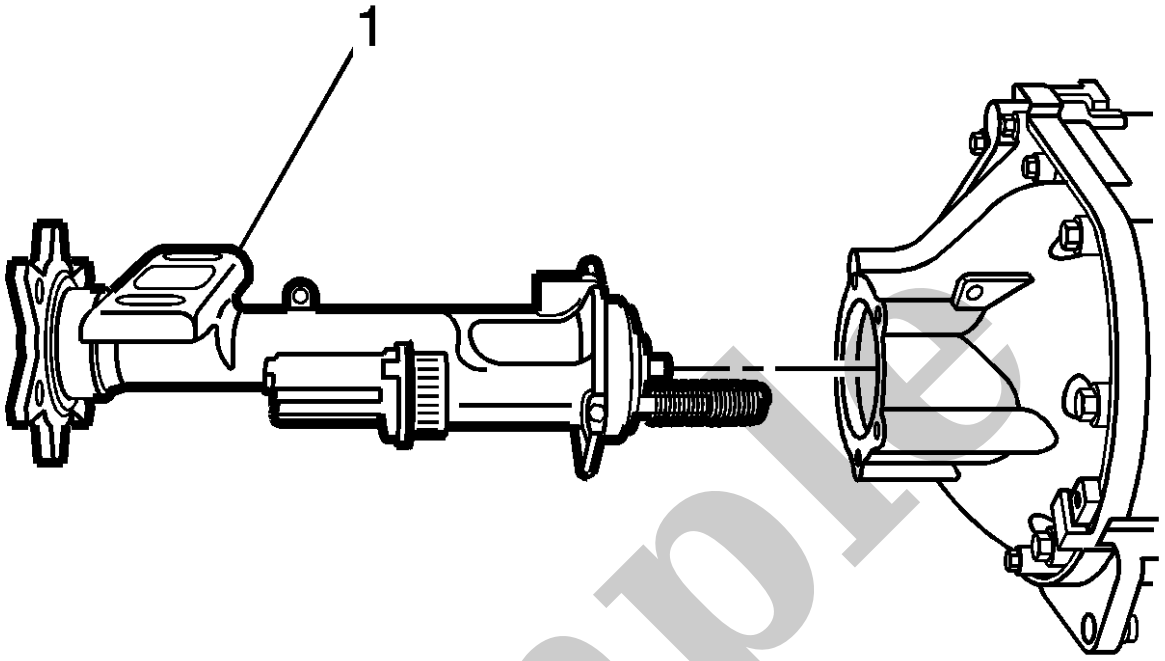
DTC	Diagnostic Procedure
P2157	Engine Controls and Fuel - 5.3L (L83) or 6.2L (L86) - DTC P2147, P2148, P2150, P2151, P2153, P2154, P2156, P2157, P216B, P216C, P216E, P216F, P217B, P217C, P217E, or P217F
P2160	Transfer Case - MP 3010 (NP0) - DTC P2160 or P2161
P2160	Transfer Case - MP 3023/3024 (NQH) - DTC P2160 or P2161
P2161	Transfer Case - MP 3010 (NP0) - DTC P2160 or P2161
P2161	Transfer Case - MP 3023/3024 (NQH) - DTC P2160 or P2161
P216B	Engine Controls and Fuel - 5.3L (L83) or 6.2L (L86) - DTC P2147, P2148, P2150, P2151, P2153, P2154, P2156, P2157, P216B, P216C, P216E, P216F, P217B, P217C, P217E, or P217F
P216C	Engine Controls and Fuel - 5.3L (L83) or 6.2L (L86) - DTC P2147, P2148, P2150, P2151, P2153, P2154, P2156, P2157, P216B, P216C, P216E, P216F, P217B, P217C, P217E, or P217F
P216E	Engine Controls and Fuel - 5.3L (L83) or 6.2L (L86) - DTC P2147, P2148, P2150, P2151, P2153, P2154, P2156, P2157, P216B, P216C, P216E, P216F, P217B, P217C, P217E, or P217F
P216F	Engine Controls and Fuel - 5.3L (L83) or 6.2L (L86) - DTC P2147, P2148, P2150, P2151, P2153, P2154, P2156, P2157, P216B, P216C, P216E, P216F, P217B, P217C, P217E, or P217F
P2176	Engine Controls and Fuel - 5.3L (L83) or 6.2L (L86) - DTC P1516, P2101, P2119, or P2176
P217B	Engine Controls and Fuel - 5.3L (L83) or 6.2L (L86) - DTC P2147, P2148, P2150, P2151, P2153, P2154, P2156, P2157, P216B, P216C, P216E, P216F, P217B, P217C, P217E, or P217F
P217C	Engine Controls and Fuel - 5.3L (L83) or 6.2L (L86) - DTC P2147, P2148, P2150, P2151, P2153, P2154, P2156, P2157, P216B, P216C, P216E, P216F, P217B, P217C, P217E, or P217F
P217E	Engine Controls and Fuel - 5.3L (L83) or 6.2L (L86) - DTC P2147, P2148, P2150, P2151, P2153, P2154, P2156, P2157, P216B, P216C, P216E, P216F, P217B, P217C, P217E, or P217F
P217F	Engine Controls and Fuel - 5.3L (L83) or 6.2L (L86) - DTC P2147, P2148, P2150, P2151, P2153, P2154, P2156, P2157, P216B, P216C, P216E, P216F, P217B, P217C, P217E, or P217F
P2199	Engine Controls and Fuel - 5.3L (L83) or 6.2L (L86) - DTC P2199
P219A	Engine Controls and Fuel - 5.3L (L83) or 6.2L (L86) - DTC P219A or P219B

Sample

Parameter	System State	Expected Value	Description
NOx Sensor 1 Heater Command	—	Off	This parameter displays the state of the control circuit for NOx Sensor 1 Heater as commanded by the engine control module.
NOx Sensor 1 Heater Mode	—	Varies	This parameter displays the status of the NOx Sensor 1 Heater.
NOx Sensor 1 Heater Operation	—	Allowed	This parameter displays the state of the NOx Sensor 1 Heater Operation. The parameter displays Allowed when commanded by the engine control module.
NOx Sensor 1 Heater Resistance	—	Ω	This parameter displays the resistance value of the NOx sensor 1 heater.
NOx Sensor 1 NOx Concentration	—	ppm	This parameter displays the concentration of NOx in the exhaust gas.
NOx Sensor 1 NOx Signal Circuit Open Test Status	—	OK	This parameter displays the state of the NOx Sensor 1 NOx Signal Circuit. The parameter displays Malfunction if the NOx Sensor 1 NOx Signal circuit is open.
NOx Sensor 1 NOx Signal Circuit Shorted Test Status	—	OK	This parameter displays the state of the NOx Sensor 1 NOx Signal Circuit. The parameter displays Malfunction if the NOx Sensor 1 NOx Signal circuit is shorted.
NOx Sensor 1 Oxygen Concentration	—	%	This parameter displays the concentration of Oxygen in the exhaust gas from NOx sensor 1.
NOx Sensor 1 Oxygen Signal Circuit 1 Open Test Status	—	OK	This parameter displays the state of the NOx Sensor 1 Oxygen Signal Circuit 1. The parameter displays Malfunction if the NOx Sensor 1 Oxygen Signal Circuit 1 is open.
NOx Sensor 1 Oxygen Signal Circuit 1 Shorted Test Status	—	OK	This parameter displays the state of the NOx Sensor 1 Oxygen Signal Circuit 1. The parameter displays Malfunction if the NOx Sensor 1 Oxygen Signal Circuit 1 is shorted.
NOx Sensor 1 Oxygen Signal Circuit 2 Open Test Status	—	OK	This parameter displays the state of the NOx Sensor 1 Oxygen Signal Circuit 2. The parameter displays Malfunction if the NOx Sensor 1 Oxygen Signal Circuit 2 is open.
NOx Sensor 1 Oxygen Signal Circuit 2 Shorted	—	OK	This parameter displays the state of the NOx Sensor 1 Oxygen Signal Circuit 2. The parameter displays Malfunction

Sample



4.

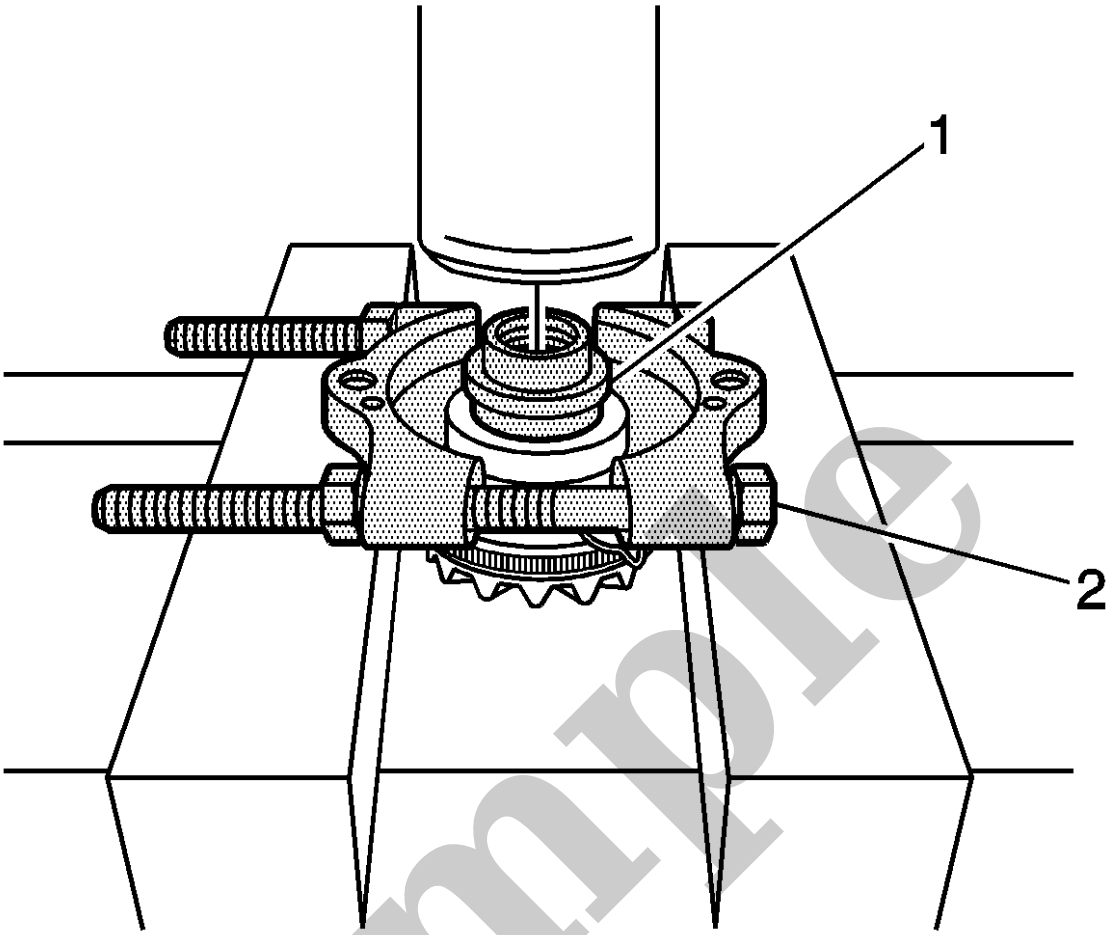
Carefully remove the inner axle shaft housing (1) with the inner axle shaft and clutch fork components from the differential carrier assembly.

Sample

7. Fill the differential carrier assembly. Use the correct fluid. Refer to Front Axle Lubricant Replacement.

8. Lower the vehicle.

Sample



3.

Using the **J-22912-01** ***puller*** (2), **J-45232** ***replacer*** (1) and a hydraulic press, remove the locking differential side gear thrust sleeve.

Sample

Rear Axle Replacement

Rear Axle Replacement

Removal Procedure

1. Raise and support the vehicle. Refer to Lifting and Jacking the Vehicle.
2. Remove the rear tires and wheels. Refer to Tire and Wheel Removal and Installation.
3. Disconnect the rear wheel speed sensors and retainers from both sides. Refer to Rear Wheel Speed Sensor Replacement.
4. Remove the rear brake calipers, and relocate to the side. Refer to Rear Brake Caliper Replacement.
5. Remove the propeller shaft. Refer to Rear Propeller Shaft Replacement.

Sample

        - Connect your phone to your vehicle with a USB cable first, before attempting to open the Android Auto app on your phone.
        - After you have connected your phone to the vehicle open Android Auto and follow the getting started flow and accept all permissions.
        - If it still does not work, uninstall Google Play Services update and re-update then follow the steps above.
    - Communication error 6: If phone battery below 20% Android Auto will not work.

      Likely cause: Radio software or Google Play version out of date.

      Suggested solutions: Update to Google Play version 12.6.85 or beyond and check for any radio updates.
    - Communication error code 7: Android Auto failed to set up a secured communication with the head unit.

      Suggested solution: Make sure Google Play services is up to date and try a different recommended USB cable.
    - Communication error 8: Authentication failed between the car and the phone.

      Likely cause: This is most likely caused by the incorrect date on the radio.

      Suggested solutions: Disconnect your phone from the vehicle. In radio settings set the correct date. Make sure it matches the settings on your phone.
    - Communication error 12: Vehicle is not responding

      Likely cause: Transient software failure. If this occurs frequently it could be caused by a faulty USB cable.

      Suggested solution: Try a new USB cable approved by the manufacture.
    - For additional information refer to “Android Auto Help” site.
- Visit for a list of Android Auto compatible apps. This does not guarantee the functionality of the app.
- Android Auto will only automatically launch the first time it is time it is connected to the system within a key cycle.
- If not equipped with wireless phone projection it is required the device be connected to the vehicles USB port. It is recommended to use the device’s factory provided USB cable. Aftermarket or third–party cables may not work.
- The device Location needs to be set to On for Wireless Phone Projection to work. Ensure the customers device Location is ON by going to Settings > Biometrics and Security > Location.

Sample

Malfunctions may include a flickering or distorted image or a blank screen.

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
- The test is continuously when the infotainment system is operating

Conditions for Setting the DTC

The human machine interface control module detects the display is not responding to the output on the LVDS circuits.

Action Taken When the DTC Sets

- The human machine interface control module sets this DTC
- No images are shown on the Info Display Module

Conditions for Clearing the DTC

- The human machine interface control module detects a properly synced digital video signal.
- A history DTC will clear once 50 consecutive malfunction-free ignition cycles have occurred.

Reference Information

Schematic Reference

Radio/Navigation System Schematics

Connector End View Reference

Master Electrical Component List

Description and Operation

Radio/Audio System Description and Operation

Electrical Information Reference

- Circuit Testing

Sample