

Your Ultimate Source for OEM Repair Manuals

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.

2020 Chevrolet Silverado 4500 HD 5500 HD 6500 HD Service and Repair Manual

[Go to manual page](#)

YOUR CURRENT VEHICLE

Diagnostic System Check - Vehicle

Diagnostic System Check - Vehicle

Diagnostic Instructions

- Review [Strategy Based Diagnosis](#) for an overview of the diagnostic approach.
- [Diagnostic System Check Instructions](#) provides an overview of each diagnostic step.
- Continue through the Diagnostic System Check until you are directed to follow a particular diagnostic or repair procedure. Once a repair has been completed, perform the [Diagnostic Repair Verification](#) and verify the customer concern has been corrected.

The diagnostic procedures within this manual are developed on the assumption that the following areas function as designed:

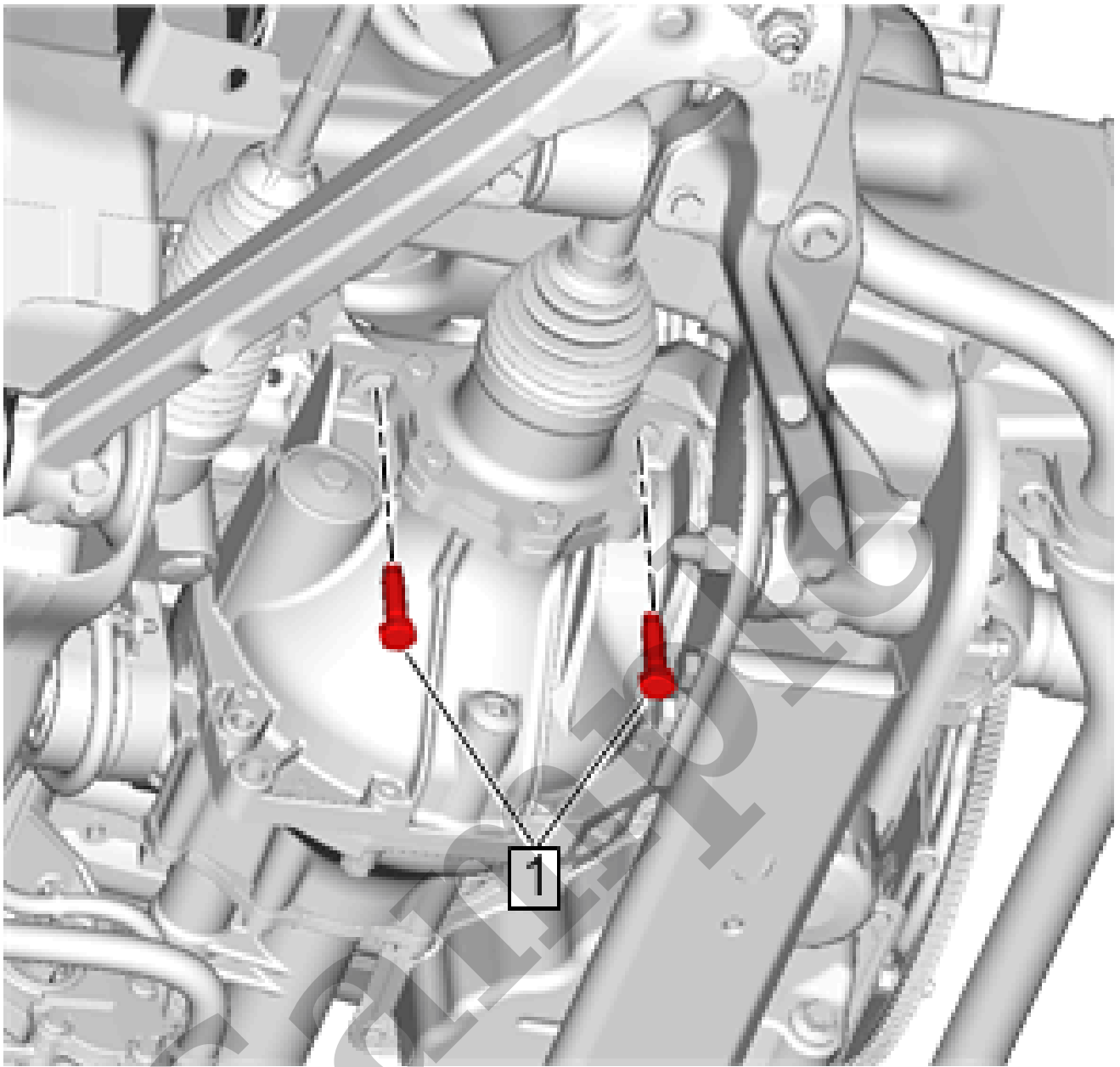
- The 12 V battery is fully charged and cables are clean and tight. Refer to [Battery Inspection/Test](#).
- Fuses are not open. Refer to [Power Distribution Schematics](#) and [Electrical Center Identification Views](#).
- Ground circuits for the area of customer concern are clean, tight, and in the correct location. Refer to [Ground Distribution Schematics](#) and [Harness Routing Views](#).
- All connectors/terminals fully seated in the area of concern. Refer to [Master Electrical Component List](#).
- There are no aftermarket devices that affect the operation of the system. Refer to [Checking Aftermarket Accessories](#).
- The scan tool powers up. Refer to [Scan Tool Does Not Power Up](#).

Diagnostic System Check

1. VERIFY CUSTOMER CONCERN — Understand and validate the customer concern. Inspect the visible system components for obvious damage or conditions that may cause the concern.

Parameter	System State	Expected Value	Description
Total Fuel Consumed	—	Liters	This parameter displays the fuel consumed in the current drive cycle in liters.
Total Misfire	—	Counts	This parameter displays the total number of cylinder firing events that the control module detected as misfires for the last 200 crankshaft revolution sample period.
Tow/Haul Mode	—	Active / Inactive / Not Available	This parameter contains signals associated with Tow Haul Mode as selected by the driver mode determination (DMD) switches
Traction Control Status	—	Inactive	This parameter displays Active if the electronic brake and traction control module (EBTCM) is commanding traction control.
Traction Control Torque Delivered Signal	—	%	This parameter displays the estimated engine torque delivered by the powertrain, as a percentage of maximum engine torque that is provided to the ABS/TCS module.
Traction Control Torque Request Signal	—	%	This parameter displays the engine torque requested by the traction control system, as a percentage of maximum engine torque.
Transmission Inhibiting Engine Cranking	—	Yes / No	This parameter contains several signals associated with the status of the power mode and starter systems
Turbocharger Control Module Supply Voltage	—	Volts	This parameter contains the undefaulted voltage applied to the turbocharger actuator power supply pins.
Turbocharger Vane Learned Closed Position	—	%	This is the learned position of the blades that control the airflow into the turbo charger. This parameter displays the learned closed position.
Turbocharger Van Learned Closed Position	—	Volts	This parameter displays the minimum position learned for Turbo Charger Vane position sensor when the Turbo Charger Vanes are closed.
Turbocharger Vane Learned Open Position	—	%	This is the learned position of blades that control the airflow into the turbo charger. This parameter displays the learned open position.

Parameter	System State	Expected Value	Definition
Sunroof Tilt Switch	—	Inactive	The scan tool displays Inactive, Open, Close, Short to Ground, Short to Battery or Stuck. This parameter displays the sunroof tilt switch status. When the switch experiences a malfunction Short to Ground, Short to Battery or Stuck will be displayed.
Sunroof/Sunshade Motor Overtemperature	—	Inactive	The scan tool displays Active or Inactive.
Sunroof/Sunshade Switch	—	Inactive	The scan tool displays Inactive, Express Open, Open, Express Close, Close, Short to Ground, Short to Battery, or Stuck. This parameter displays the sunroof or sunshade switch status.
Sunshade Enabled	—	Active	The scan tool displays Active or Inactive.
Sunshade Not Learned	—	Inactive	The scan tool displays Active or Inactive.
Sunshade Position	—	Closed	The scan tool displays Ajar, Closed, Opened, Closing, or Opening. This parameter displays the sunshade position status.
Sunshade Remote Command	—	Inactive	The scan tool displays Close or Open. This parameter displays the last sunshade remote command.
Tamper Status	—	No	The scan tool displays No or Yes.
Telematics Enhanced Service Override Active	—	No	The scan tool displays No or Yes. This parameter displays vehicle theft deterrent system status.
Total Keys Learned	—	Varies	This parameter displays the number of keys learned.
Traction Control Switch	—	Inactive	The scan tool displays Active or Inactive. This parameter displays Active when the traction control switch is active.
Transponder Authentication	—	Initializing	The scan tool displays Inactive, Initializing, ID Received, Password Received, Data Reception



5. Install the front differential carrier bolts(1) to the front differential carrier bracket and tighten to **100 N·m (74 lb ft)**
6. Install the wiring harness for the front drive axle actuator on the front differential carrier.
7. Install the electrical connector to the front drive axle actuator.
8. Install the right front differential carrier nuts. Refer to [Front Differential Carrier Bracket Replacement - Right Side](#).
9. Install the steering gear skid shield, if equipped. Refer to [Steering Gear Skid Shield Replacement](#).
10. Remove the hydraulic jack stand from the front differential carrier.
11. Remove the supports and lower the vehicle.

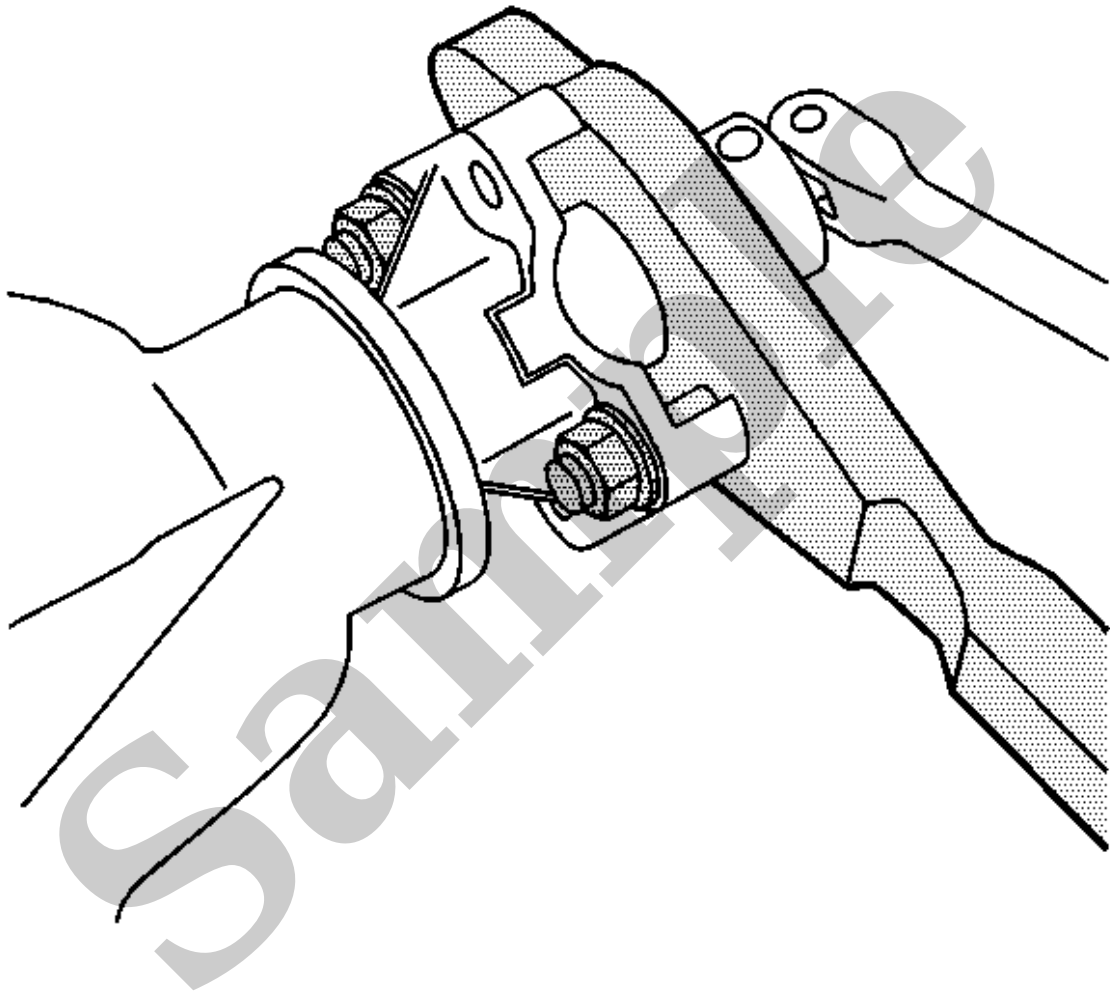
- 7** Locking Differential Clutch Disc Set
- 8** Differential Pinion Gear Thrust Washer
- 9** Differential Pinion Gear
- 10** Locking Differential Side Gear
- 11** Locking Differential Thrust Block
- 12** Differential Pinion Gear
- 13** Differential Pinion Gear Thrust Washer
- 14** Locking Differential Side Gear, Cam-Faced
- 15** Locking Differential Cam
- 16** Locking Differential Governor
- 17** Wave Washer
- 18** Locking Differential Clutch Disc Set
- 19** Locking Differential Clutch Disc Guide
- 20** Locking Differential Snap Ring Retainer
- 21** Locking Differential Clutch Disc Thrust Washer

9.5/9.76 Inch Locking Differential

Refer to [Pinion Flange/Yoke Installation Caution](#).

Using a soft faced hammer, seat the pinion yoke onto the pinion shaft until a few threads are visible.

5. Install the washer (if applicable) and a NEW pinion nut.



- 6.

NOTE

Note

If the target rotating torque is exceeded during reassembly, the pinion flange assembly will have to be removed and a new collapsible spacer installed.

Holding the **J-8614-01 holder**, tighten the pinion nut until the pinion end play is just taken up.

7. Frequently rotate the pinion while tightening the nut to seat the bearings.

- **Verify the customers device can be paired with the infotainment system.**

If the device still will not pair inform the customer the issue is with the device.

- **If the device successfully pairs with the infotainment system.**

7. Verify audio can be heard while streaming from the device.

- **If audio can not be heard while streaming.**

Ensure the volume on the device is turned up to an adequate level.

- **If audio can be heard while streaming.**

8. All OK.

Repair Instructions

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

[Control Module References](#) for human machine interface control module replacement, programming, and setup

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

[Control Module References](#) for human machine interface control module replacement, programming, and setup.

Sample