

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.

2022 Chevrolet 4500HD 4500XD Medium Duty Service and Repair Manual

[Go to manual page](#)

DTC	Diagnostic Procedure
B1133	Cellular, Entertainment, and Navigation - DTC B1025-B1135
B1134	Cellular, Entertainment, and Navigation - DTC B1025-B1135
B1135	Cellular, Entertainment, and Navigation - DTC B1025-B1135
B124B	Cellular, Entertainment, and Navigation - DTC B124B
B124C	Cellular, Entertainment, and Navigation - DTC B124C
B124F	Cellular, Entertainment, and Navigation - DTC B124F
B124F	Displays and Gauges - DTC B124F
B125A	Cellular, Entertainment, and Navigation - DTC B125A
B125C	Cellular, Entertainment, and Navigation - DTC B125C
B126A	Cellular, Entertainment, and Navigation - DTC B126A
B1271	Cellular, Entertainment, and Navigation - DTC B1271
B1277	Active Noise Cancellation - DTC B1277, B127C, or B127D
B1277	Cellular, Entertainment, and Navigation - DTC B1277
B127A	Cellular, Entertainment, and Navigation - DTC B127A
B127B	Image Display Cameras - DTC B127B
B127C	Active Noise Cancellation - DTC B1277, B127C, or B127D
B127D	Active Noise Cancellation - DTC B1277, B127C, or B127D
B127E	Cellular, Entertainment, and Navigation - DTC B127E
B1280	Cellular, Entertainment, and Navigation - DTC B1280
B1282	Cellular, Entertainment, and Navigation - DTC B1282

Parameter	System State	Expected Value	Description
			the long term correction of the fuel delivery in bank or bank 2. The scan tool will a high value for a large amount of long term fuel correction, and 0 percent for no long term fuel trim correction. The scan tool will display a negative value when fuel system is running too rich and fuel is being removed from the combustion event. The scan tool will display a positive value if the fuel system is running lean and fuel is being added to the combustion event.
Long Term Fuel Trim Average Bank 1 or Bank 2	—	1%	This parameter is calculated by the control module based on an intrusive test by the control module. The Long Term FT test average used for the long term correction of the fuel delivery in each bank. The scan tool will a high value for a large amount of long term fuel correction, and 0 percent for no long term fuel trim correction. The scan tool will display a negative value when fuel system is running too rich and fuel is being removed from the combustion event. The scan tool will display a positive value if the fuel system is running lean and fuel is being added to the combustion event.
Long Term Fuel Trim Average Bank 1 or Bank 2 without Purge	—	%	This parameter is calculated by the control module based on the Short Term FT value. The Long Term FT bank 1 is used for the long term correction of the fuel delivery in bank 1. The scan tool will display a high value for a large amount of long term fuel correction, and 0 percent for no long term fuel trim correction. The scan tool will display a negative value when fuel system is running too rich and fuel is being removed from the combustion event. The scan tool will display a positive value if the fuel system is running lean and fuel is being added to the combustion event.
Long Term Fuel Trim Test Average Bank 1	—	%	This parameter displays the filtered long term closed loop fuel correction for bank 1 (accumulated while the excess purge vapor test is inhibited), which is filtered using a first-order lag filter, also known as an exponentially weighted moving average (EWMA). This value is compared to thresholds to determine if the fuel adjustment system diagnostic is passing or failing or if an excess purge vapor test should be executed.
Long Term Fuel Trim Test Average Bank 2	—	%	This parameter displays the filtered long term closed loop fuel correction for bank 2 (accumulated while the excess purge vapor test is inhibited), which is filtered using a first-order lag filter, also known as an exponentially weighted

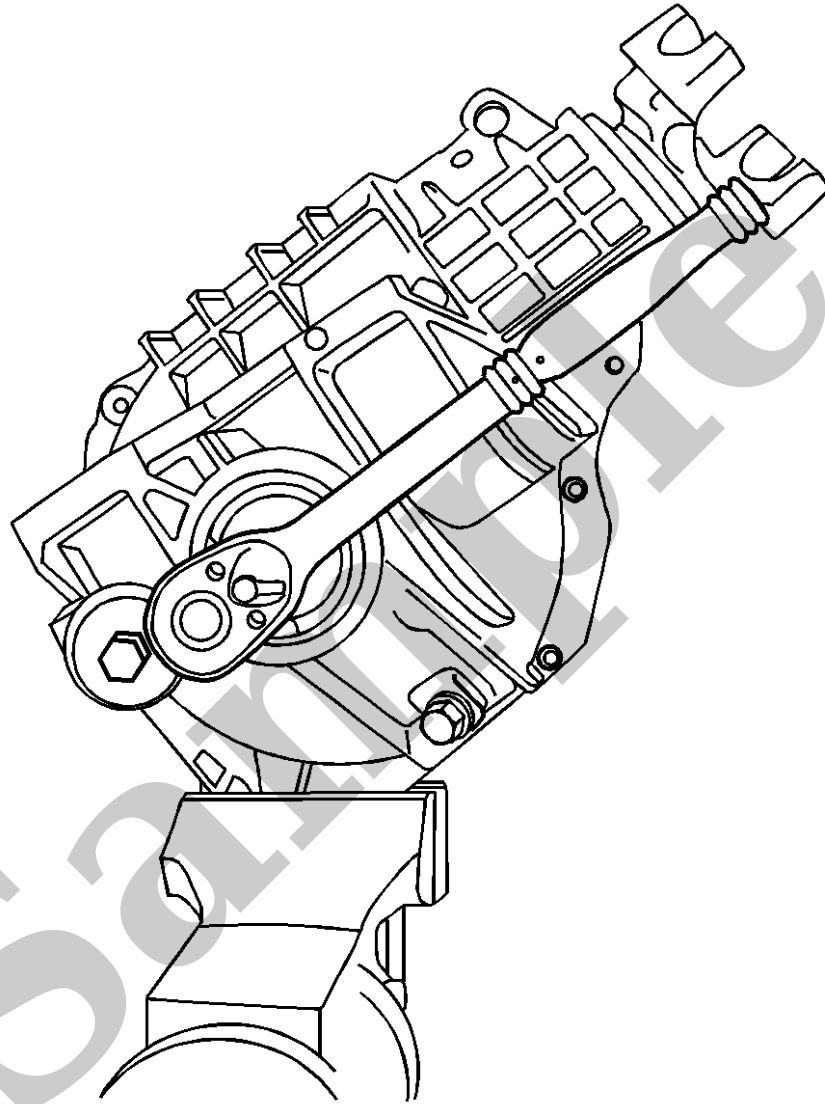
Refer to [Fastener Caution](#).

Install the fill plug and tighten to **33 N·m (24 lb ft)** .

9. Lower the vehicle.

Sample

40. While rotating the pinion yoke back and forth, turn the right side differential adjuster nut clockwise using the **J-36599-A side bearing nut wrench** until 0.0254–0.072 mm (0.001–0.003 inch) of backlash can be felt between the ring gear and the drive pinion. If the backlash specification cannot be obtained, turn the left side differential adjuster nut sleeve counter clockwise using the **J-36599-A side bearing nut wrench** in small equal increments until the backlash specification can be obtained.



41.

Using the **J-36599-A side bearing nut wrench** turn the left side differential adjuster nut clockwise in order to preload the differential side bearings against the differential side bearings cups and tighten the adjuster nut to **75 N·m (55 lb ft)**.

42. Rotate the pinion several times in order to seat the pinion and differential side bearings.

43. Using an inch-pound torque wrench, measure the rotating torque of the drive pinion and differential assembly, which should be **0.57–1.13 N·m (5–10 lb in) greater than the rotating torque of the drive pinion measured earlier**.

value is the service shim thickness for the right side of the axle without preload.

22. In order to preload of the differential side bearings and set the backlash to approximately **0.127–0.223 mm (0.005–0.009 in)**, take the value determined in step 21 and add **0.203 mm (0.008 in)** service shim thickness to this amount.
23. Assemble the left side shim pack using one **4.318 mm (0.170 in)** service spacer and the appropriate amount of service shims equaling the thickness determined in step 20. Measure the service spacer and the service shims separately. Add the measurements together in order to determine the total shim pack thickness.
24. Assemble the right side shim pack using one **4.318 mm (0.170 in)** service spacer and the appropriate amount of service shims equaling the thickness determined in step 22. Measure the service spacer and the service shims separately. Add the measurements together in order to determine the total shim pack thickness.
25. Install the differential assembly with the differential side bearings and the differential side bearing cups.
26. Install the left side service spacer and service shim into the axle housing. The service shim must be installed between the service spacer and the differential side bearing cup.
27. Install the right side service spacer between the axle housing and the differential side bearing cup.
28. Install the right side service shim into the axle housing using the **J 25588 installer**, if necessary. The service shim must be installed between the service spacer and the differential side bearing cup.

29. **CAUTION**

Caution

Refer to [Fastener Caution](#).

Install the differential bearing caps and the bolts and tighten to **85 N·m (63 lb ft)**.

30. Rotate the pinion several times to ensure the drive pinion and differential side bearings have seated.

31. **NOTE**

Note

Record the measurement.

Using an inch pound torque wrench, measure the rotating torque of the drive pinion and differential side bearings which should be **0.57–1.13 N·m (5–10 lb in)** greater than the rotating torque of the drive

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**

Note

Realign the reference marks on the rear propeller shaft and the rear axle pinion yoke.

Install the propeller shaft. Refer to: [Rear Propeller Shaft Replacement](#).

10. Install the rear disc brake rotor, if equipped. Refer to [Rear Brake Rotor Replacement](#).
11. Install the rear tire and wheel assembly. Refer to [Tire and Wheel Removal and Installation](#).
12. Inspect and add axle lubricant to the axle housing, if necessary. Refer to [Rear Axle Lubricant Level Inspection](#).
13. Remove the support and lower the vehicle.

4. Test the coax cable between the K73 Telematics Communication Interface Control Module and the T4G Cellular Phone, Navigation, and Digital Radio Antenna. Refer to component testing.

- **If the coax cable does not pass the test**

Replace the coax cable.

- **If the coax cable passes the test**

5. Test or replace the T4G Cellular Phone, Navigation, and Digital Radio Antenna.

with Navigation System

1. **NOTE**

Note

You must perform the Circuit/System Verification before proceeding with Circuit/System Testing.

NOTE

Note

The global positioning system (GPS) requires a clear line of sight to the sky to operate properly. It may take up to 5 minutes to acquire a GPS signal. In most cases the GPS will not have reception near tall buildings or inside structures.

Ignition OFF, disconnect the T4G Cellular Phone, Navigation, and Digital Radio Antenna coax cable grey connector at the T15 Navigation Antenna Signal Splitter.

2. Attach both leads of the EL-49903-1 OnStar test antenna to the EL-49903-5 combiner. Using the EL-49903-7 coax cable attach one grey connector to the combiner and the other grey connector to the T15 Navigation Antenna Signal Splitter. Place the test antenna on the roof of the vehicle, ignition ON.

3. Verify DTC B2462 is not set or that the OnStar advisor can locate the vehicle.

- **If DTC B2462 is not set or the advisor can locate the vehicle**

1. Test the coax cable between the T15 Navigation Antenna Signal Splitter and the T4G Cellular Phone, Navigation, and Digital Radio Antenna. Refer to Component Testing.

- If the coax cable does not pass the test

Replace the coax cable.

- If the coax cable passes the test

2. Replace the T4G cellular phone, navigation and digital radio antenna.

- **If clear audio is heard from all speakers**

3. All OK.

Circuit/System Testing

1. NOTE

Note

Some circuits supply audio signals to more than one speaker. It may be necessary to disconnect all speakers on the affected audio circuit when performing circuit tests.

Ignition OFF, disconnect the harness connector at the appropriate P19 Speaker. Ignition ON, infotainment system ON, mute OFF.

2. Test for 5–7 V between each audio signal circuit terminal 1 and terminal 2 and ground.

- **If less than 5 V**

1. Ignition OFF, disconnect the X1 and X2 harness connectors at the T3 Audio Amplifier.

2. Test for infinite resistance between the signal circuit and ground.

- If less than infinite resistance, repair the short to ground on the circuit.
- If infinite resistance

3. Test for less than 2 Ω in the signal circuit end to end.

- If 2 Ω or greater, repair the open/high resistance in the circuit.
- If less than 2 Ω , replace the T3 Audio Amplifier.

- **If greater than 7 V**

1. Ignition OFF, disconnect the X1 and X2 harness connectors at the T3 Audio Amplifier. Ignition ON.

2. Test for less than 1 V between the signal circuit and ground.

- If 1 V or greater, repair the short to voltage on the circuit.
- If less than 1 V, replace the T3 Audio Amplifier.

- **If 5–7 V**

3. Test or replace the P19 Speaker.