



Service Information

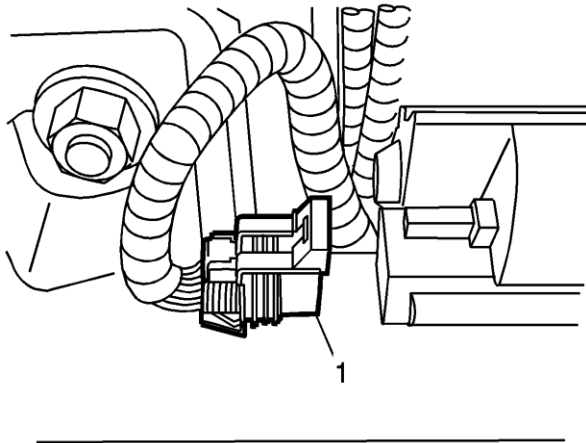


[2012 Chevrolet Silverado - 4WD](#) | [Cheyenne, Sierra, Silverado VIN C/K Service Manual](#) | [Driveline/Axle](#) | [Front Drive Axle](#)
| [Repair Instructions](#) | Document ID: 2168302

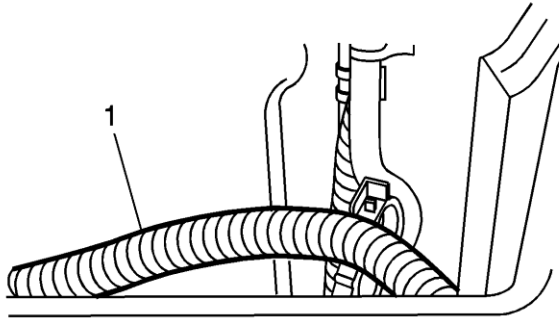
Front Drive Axle Inner Shaft and Inner Shaft Housing Replacement (8.25 S4WD and 9.25 Axles)

[Removal Procedure](#)

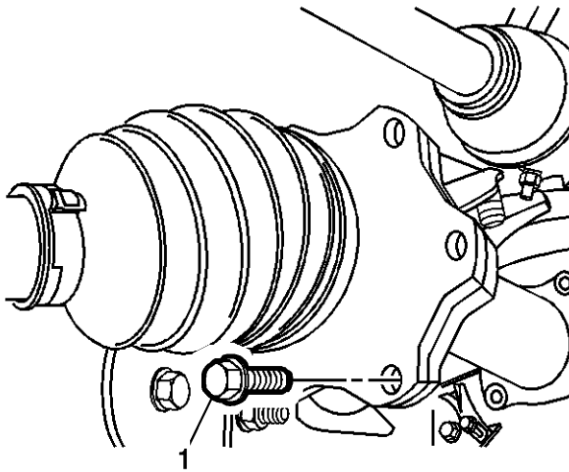
1. Raise the vehicle. Refer to [Lifting and Jacking the Vehicle](#).
2. Drain the differential carrier. Refer to [Front Axle Lubricant Replacement](#).



3. Disconnect the actuator electrical connector.
4. If only replacing the right side inner shaft and/or housing, follow the steps below. If only replacing the left side inner shaft, proceed to step 19.



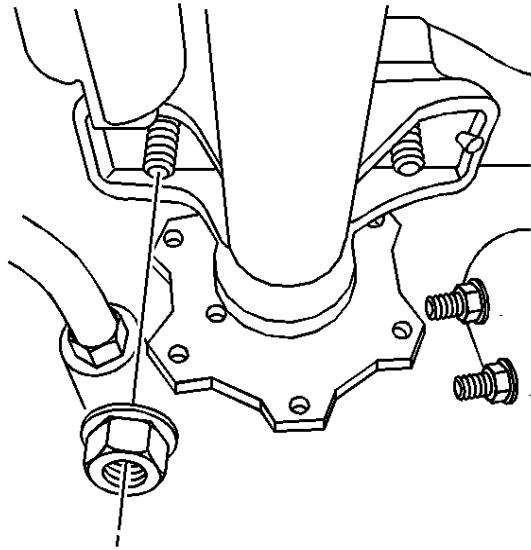
5. Disconnect the wire harness from the inner axle housing.
6. For vehicles equipped with the 8.25 inch axle, remove the front shock module. Refer to [Shock Absorber and Spring Removal and Installation](#).
7. For vehicles equipped with the 9.25 inch axle, remove the stabilizer shaft link. Refer to [Stabilizer Shaft Link Replacement](#).



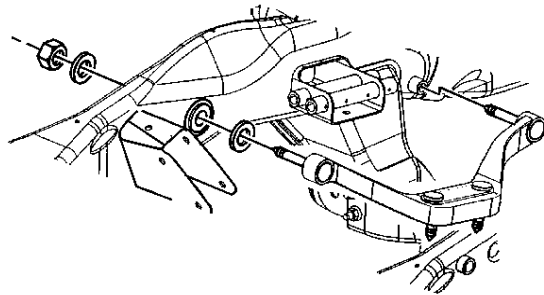
8. Remove the wheel drive shaft flange bolts.

Note: Support the wheel drive shaft in order to not over flex the constant velocity (CV) joint.

9. Disconnect the wheel drive shaft from the inner axle shaft.



10. Remove the inner axle housing mounting nuts.

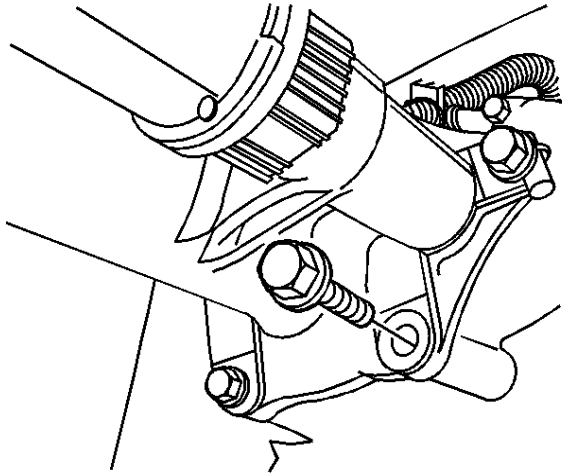


Note: For the 25/35 series vehicles, perform the following steps in order to provide additional clearance so the inner axle housing can be removed from the vehicle.

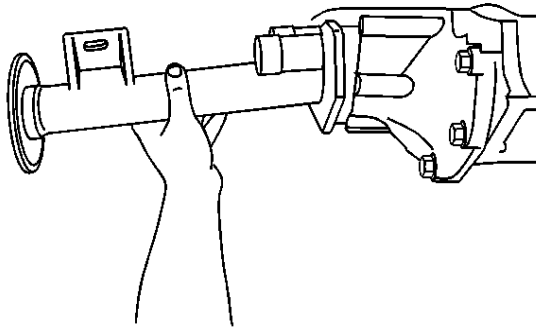
11. Remove the front axle mounting bracket to frame nuts.

Note: It may be necessary to pull down on the inner axle shaft and/or push up on the mounting bracket in order to gain clearance.

12. Slide the front axle mounting bracket towards the engine.

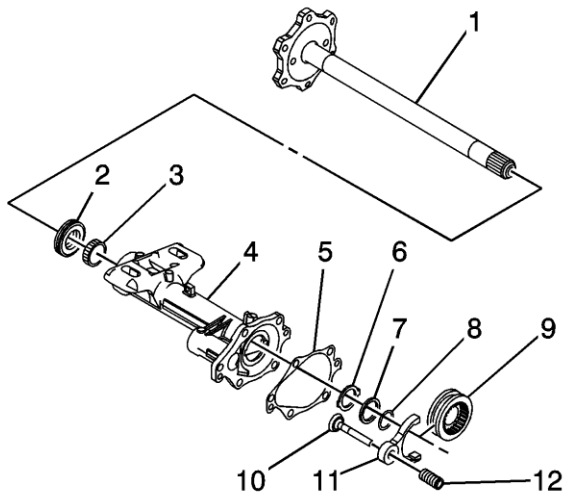


13. Remove the inner axle shaft mounting bolts.

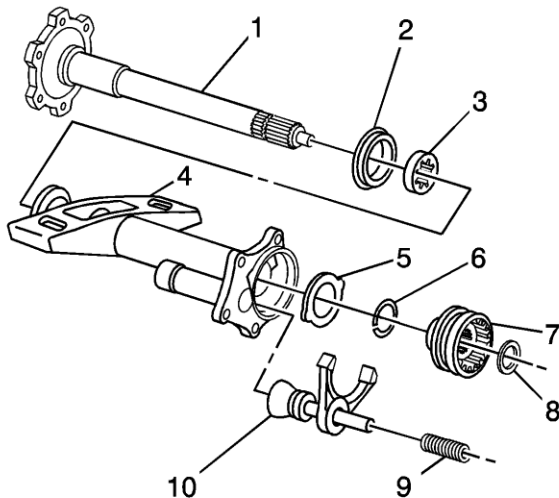


Note: Keep the open end of the inner axle housing assembly up.

14. Carefully remove the inner axle shaft housing assembly from the differential carrier assembly.

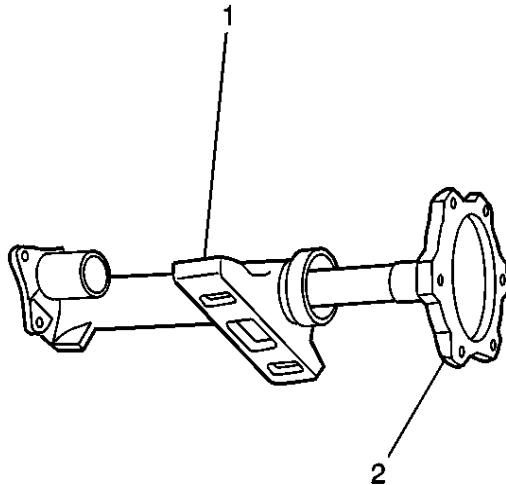


15. For the 8.25 inch axle, remove the following components from the inner axle housing:
1. Clamp the inner axle shaft housing (4) in a vise. Clamp only on the mounting flange.
 2. Shifter fork spring (12)
 3. Shifter fork (11)
 4. Shifter fork rod (10)
 5. Shifter connector gear (9)
 6. Axle shaft snap ring (8)
 7. Axle shaft thrust washer (7)
 8. Axle shaft tabbed thrust washer (6)
 9. Inner axle shaft housing gasket (5)

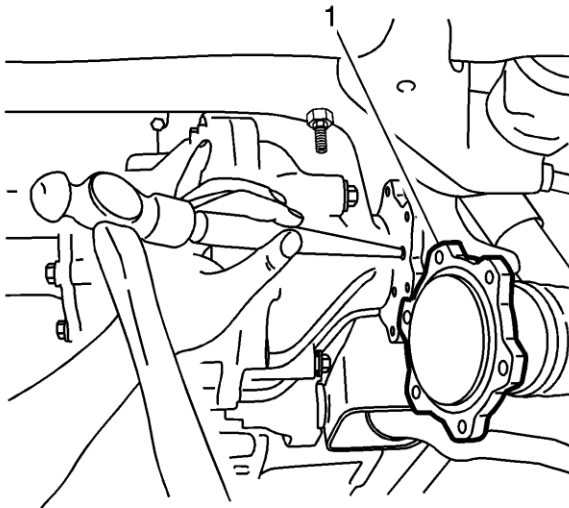


16. For the 9.25 inch axle, remove the following components from the inner axle shaft housing:
1. Clutch fork inner spring (9)

2. Clutch fork assembly (10)
3. Clutch shaft shim (8)
4. Clutch sleeve (7)
5. Retainer ring (6)
6. Thrust washers (5)



17. Using a soft-faced mallet (if necessary), remove the inner axle shaft (2).
18. Remove the inner axle seal and the bearing from the axle housing. Refer to [Front Drive Axle Inner Shaft Seal and Inner Shaft Bearing Replacement](#).



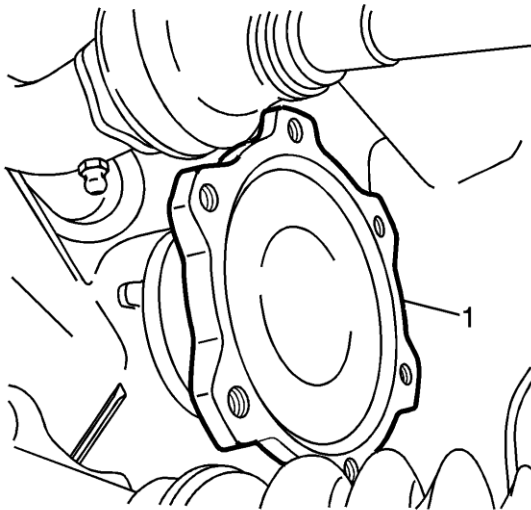
Note: If only replacing the left side inner axle shaft, perform the following steps.

19. Remove the wheel drive shaft inboard flange bolts from the inner axle shaft.
20. Disconnect the wheel drive shaft from the inner axle shaft.
21. Using a hammer and a brass drift, remove the inner axle shaft.

Note: In some rare cases, it may be difficult to remove the left front axle shaft from the front axle assembly when replacing the axle seal. To ease removal, the left front axle shaft C-clip needs to be centered in the retaining groove.

22. If the left hand inner axle shaft does not come out using moderate force follow steps below.
 1. Remove the front axle assembly from the vehicle.
 2. Position the front axle assembly straight up and down so the left hand inner axle shaft is facing upward. If required, secure in a large bench vise.
 3. Using a ball peen hammer, or preferably a brass hammer, tap the left inner axle shaft flange up and down repeatedly until the stub shaft separates from the axle assembly. This step centers the C-clip in the retaining groove of the stub shaft. Take care not to damage the machined face of the axle shaft.
 4. Inspect the C-clip and replace if necessary.

[Installation Procedure](#)



Note: If only the left side inner axle shaft was removed, install the shaft by performing the following.

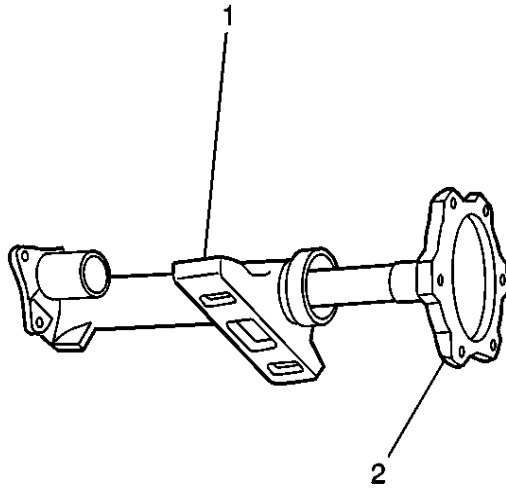
1. Using a soft-faced mallet, carefully tap the inner axle shaft until it is fully seated in the differential case side gear.
2. Pull back on the inner axle shaft to ensure that the inner axle shaft is properly retained in the differential case side gear.
3. Connect the wheel drive shaft to the inner axle shaft.

Caution: Refer to [Fastener Caution](#).

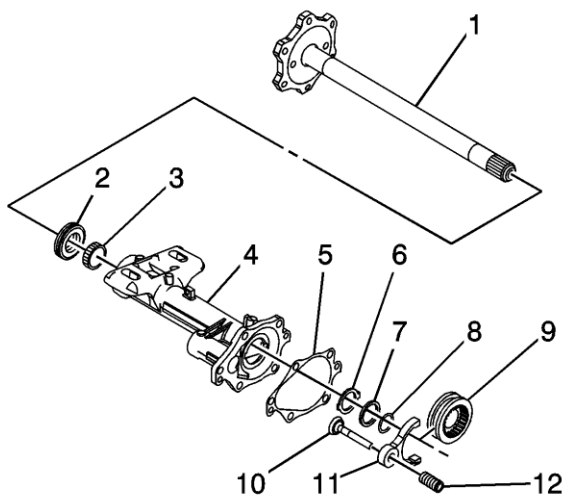
4. Install the wheel drive shaft inboard flange to inner axle shaft bolts and tighten to **79 Y (58 lb ft)**.

Note: If the right side inner axle shaft and/or housing was removed, install the shaft and/or housing following the steps.

5. Install the new inner axle shaft bearing and the seal to the axle housing. Refer to [Front Drive Axle Inner Shaft Seal and Inner Shaft Bearing Replacement](#).



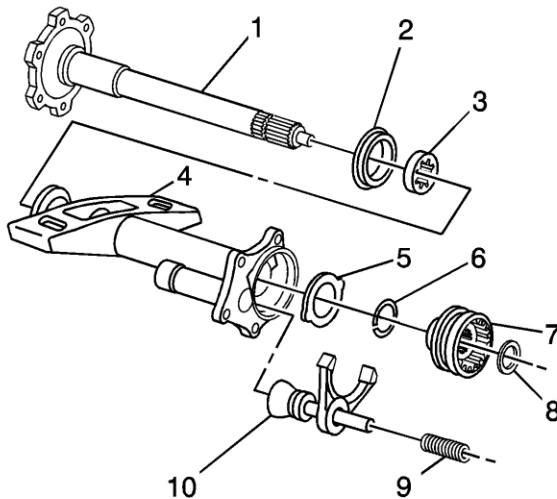
6. Using a soft faced mallet, carefully tap the inner axle shaft (2) into the inner axle shaft housing (1).
7. Place the inner axle shaft housing on end so that the splines of the inner axle shaft is facing up.



8. For the 8.25 inch axle, install the following components into the inner axle housing:
 1. Clamp the inner axle shaft housing (4) in a vise. Clamp only on the mounting flange.

Note: Use chassis grease in order to hold the thrust washer in place.

2. Axle shaft tabbed thrust washer (6)
3. Axle shaft thrust washer (7)
4. Axle shaft snap ring (8)
5. Shifter connector gear (9)
6. Shifter fork (11)
7. Shifter fork rod (10)
8. Shifter fork spring (12)
9. Inner Axle shaft housing gasket (5)



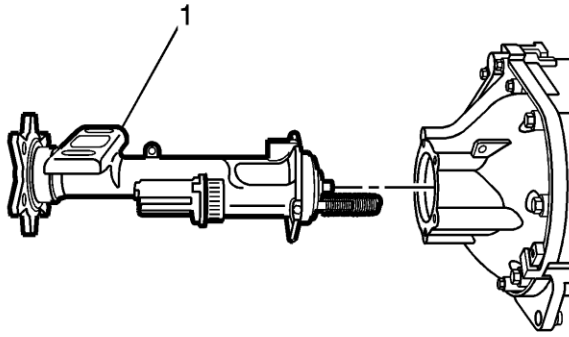
9. For the 9.25 inch axle, install the following components into the inner axle shaft housing:

Note: Use chassis grease in order to hold the thrust washer in place.

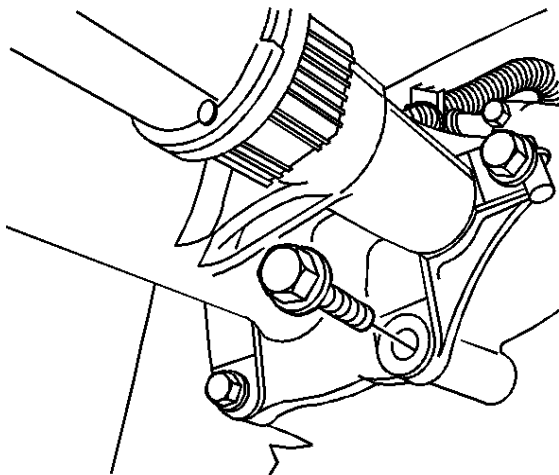
1. Thrust washer (5). Ensure the tabs on the thrust washer are aligned with the slots in the inner axle shaft housing (4).
2. Retainer ring (6) onto the inner axle shaft (1)
3. Determine the clutch gear shim thickness. Refer to [Inner Axle Shaft Shim Adjustment](#).
4. Clutch gear shim (8)
5. Clutch sleeve (7)
6. Clutch fork assembly (10)
7. Clutch fork inner spring (9)

Note: The following service procedure is for the 9.25 inch axle ONLY. If servicing the 8.25 inch axle, proceed to step 12. The 8.25 inch axle uses a gasket.

10. If servicing the 9.25 inch axle, apply sealant to the inner axle housing to differential carrier sealing surface. Use the correct sealant. Refer to [Adhesives, Fluids, Lubricants, and Sealers](#).
11. If servicing the 8.25 inch axle, install the axle housing gasket on to the differential carrier.

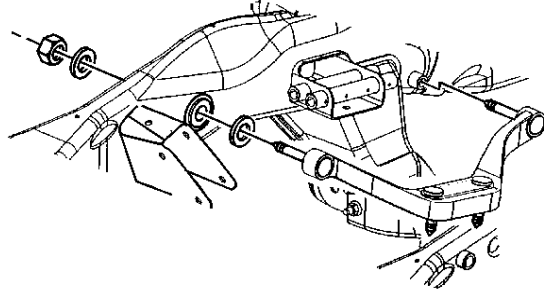


12. Install the inner axle shaft housing assembly to the differential carrier assembly.



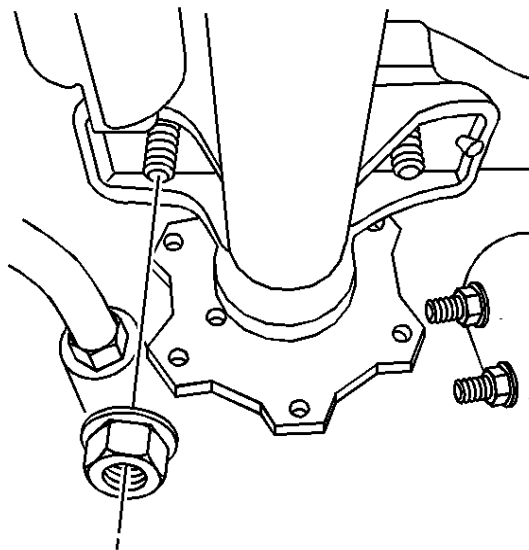
Note: If servicing the 9.25 inch axle, proceed to step 15.

13. If servicing the 8.25 inch axle, install the inner axle shaft housing bolts and tighten to **55 Y (41 lb ft)**.
14. If servicing the 9.25 inch axle, install the inner axle shaft housing bolts and tighten to **40 Y (30 lb ft)**.

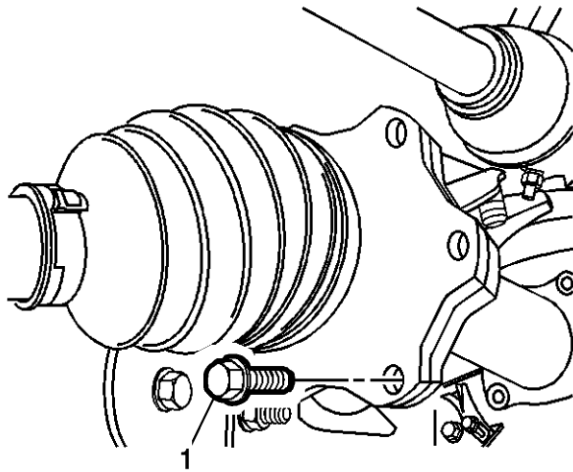


Note: For 25/35 series vehicles, perform the following steps in order to install the front axle mounting bracket to the inner axle shaft housing.

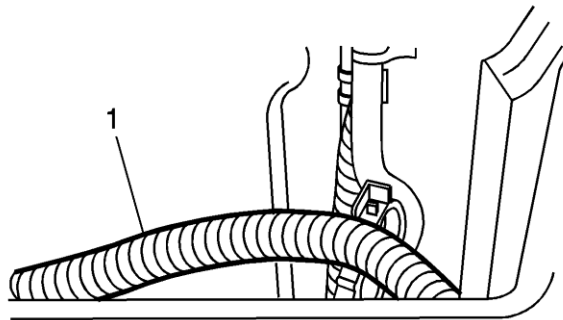
15. Slide the front axle mounting bracket towards the frame.
16. Install the front axle mounting bracket studs into the inner shaft housing mounting flange.
17. It may be necessary to push up on the front axle mounting bracket and/or pull down on the inner axle housing in order to gain enough clearance to install the mounting bracket studs into the inner shaft housing.
18. Install the front axle mounting bracket to frame nuts and tighten to **90 Y (67 lb ft)**.



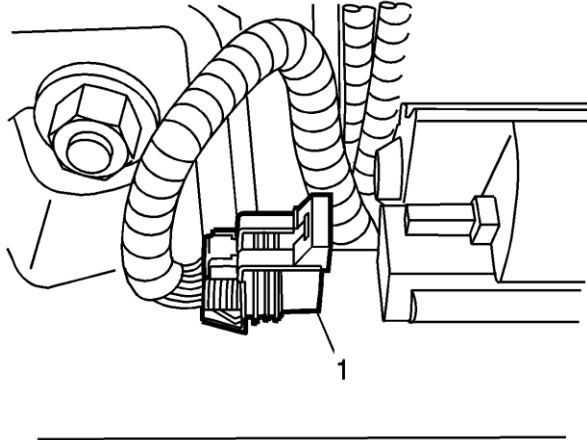
19. Install the inner axle shaft housing washers and nuts to the bracket and tighten the nuts to **100 Y (75 lb ft)**.
20. Connect the wheel drive shaft inboard flange to the inner axle shaft.



21. Install the wheel drive shaft inboard flange to the inner axle shaft bolts and tighten the bolts to **79 Y (58 lb ft)**.



22. Connect the wire harness to the inner axle shaft housing.



23. Connect the electrical connector to actuator.
24. For vehicles equipped with the 9.25 inch axle, install the stabilizer shaft link. Refer to [Stabilizer Shaft Link Replacement](#).
25. For vehicles equipped with the 8.25 inch axle, install the front shock module. Refer to [Shock Absorber and Spring Removal and Installation](#).
26. With either replacement procedure, fill the differential carrier assembly with axle lubricant. Use the correct fluid. Refer to [Front Axle Lubricant Replacement](#).
27. Lower the vehicle.

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