OPERATION (Continued)

These requirements are satisfied by using constant velocity (CV) joints at the inboard (differential) end and outboard (wheel) end of the halfshaft. A constant velocity joint is a mechanism for transmitting uniform torque and rotary motion while operating through its angle range. The inboard CV joint is a "plunge"-type joint which provides for the required axial movement to affect shaft length changes. The outboard CV joint has a higher angle capability than the inboard CV joint to accommodate wheel turning angles.

The front-wheel drive CV joints and halfshaft assemblies rotate at approximately one-third the speed of conventional rear wheel drive driveshafts and do not contribute to rotational vibration disturbances.

DIAGNOSIS

NOTE: CV joints should not be replaced unless disassembly and inspection reveals unusual wear.

Noise and Vibration in Turns

Clicking, popping or grinding noises while turning may be caused by the following:

1. Damaged CV joint boots or loose boot clamps resulting in inadequate or contaminated lube in outboard or inboard CV joints.
2. Another component contacting halfshaft assembly.
3. Worn, damaged or improperly installed wheel bearing, brake or suspension / steering components.

Vibration at Highway Speeds:

1. Out of balance front wheels or tires.
2. Out of round front tires.
3. Improperly seated outboard CV joint in front wheel hub.

Refer to Section 00-04 for high-speed shake diagnosis.

NOTE: Halfshafts are not balanced and do not contribute to rotational vibration disturbances.

Shudder or Vibration During Acceleration:

1. Excessively high CV joint operating angles caused by improper ride height. Check ride height, verify proper spring rate and check items 1, 2 and 3 under Halfshaft or CV Joint Pullout.
2. Excessively worn or damaged inboard or outboard CV joint.

Halfshaft or CV Joint Pullout

1. Inboard CV joint circlip missing or not properly seated in transaxle side gear.
2. Engine / transaxle assembly mispositioned. Check engine mounts for damage or wear.
3. Frame rail or strut tower out of position or damaged. Check underbody dimensions. Refer to Section 01-00.
4. Front suspension components worn or damaged. Check for worn bushings or bent components (stabilizer bar, control arm, etc.).

INSPECTION

1. Inspect boots for evidence of cracks, tears or splits.

   NOTE: While inspecting the boots, watch for indentations ("dimples") in the boot convolutions. If an indentation is observed, it must be removed. Refer to CV Joint Boot Indentation Removal procedure.
2. Inspect underbody for any indication of grease splatter in vicinity of CV joint boots, outboard and inboard locations, which is an indication of boot and / or clamp damage.
3. A boot vent is used on the RH inboard silicone rubber boot on AXODE applications. The tri-lobe boot uses a pinhole vent inboard of the small clamp. The non tri-lobe boot uses a keyway vent between the interconnecting shaft and the boot under the small clamp. A small amount of grease leakage at the vent is normal.
4. Inspect for transaxle differential oil seal leakage at inboard CV joint.
5. Ensure wheel hub retainer nut is the correct prevailing torque type.
6. The silicone boot will sweat during operation, causing a light film of grease to show on the outside of the boot. This condition is normal.

CV Joint Boot Indentation

Removal

Indentations or "dimples" in the inboard and / or outboard CV joint boots may occur due to improper handling during storage or service of the halfshafts. If, during inspection, a boot is observed to be "dimpled," perform the following procedure.