

Diagnosis and Testing

Inspection and Verification

NOTE: New front wheel drive halfshafts should not be installed unless disassembly and inspection reveals unusual wear.

NOTE: While inspecting the front wheel halfshaft CV joint boots, look for indentations (dimples) in the boot convolutions. If an indentation is observed, it must be removed.

- 1. Verify the customer concern.
- 2. Visually inspect for obvious signs of mechanical damage.

Visual Inspection Chart

Mechanical
• Constant velocity (CV) joints • CV joint boots • Front halfshaft(s) • Intermediate shaft • Intermediate shaft bearing • Front halfshaft(s) nut

- 3. If an obvious cause for an observed or reported concern is found, correct the cause (if possible) before proceeding to the next step.
- 4. If the concern is not visually evident, verify the symptom and refer to the Symptom Chart.

Symptom Chart

Symptom	Possible Sources	Action
Axle howling or whine	* Damaged or worn wheel hub bearings.	* CHECK for abnormal wheel hub bearing play or roughness. REFER to: Front Wheel Bearing and Wheel Hub (204-01 Front Suspension, Removal and Installation).
Clicking, Popping or Grinding Noises While Turning	* Inadequate or contaminated lubrication in the CV joints.	* CHECK the CV joint boots and joints for wear or damage. INSTALL new components as necessary. REFER to: (205-04A Front Drive Halfshafts) Front Halfshaft LH (Removal and Installation), Front Halfshaft RH (Removal and Installation). REFER to: (205-04B Front Drive Halfshafts) Front Halfshaft LH (Removal and Installation), Front Halfshaft RH - LHD FWD/RHD FWD (Removal and Installation). REFER to: (205-04C Front Drive Halfshafts) Front Halfshaft LH (Removal and Installation), Front Halfshaft RH - LHD FWD/RHD FWD (Removal and Installation). REFER to: (205-04D Front Drive Halfshafts) Front Halfshaft LH (Removal and Installation), Front Halfshaft RH (Removal and Installation). REFER to: (205-04A Front Drive Halfshafts) Front Halfshaft LH (Removal and Installation), Front Halfshaft RH (Removal and Installation).
	* Damaged or worn CV joints.	* INSPECT the CV joints for wear or damage. INSTALL a new halfshaft as necessary. REFER to: (205-04A Front Drive Halfshafts) Front Halfshaft LH (Removal and Installation), Front Halfshaft RH (Removal and Installation). REFER to: (205-04B Front Drive Halfshafts) Front Halfshaft LH (Removal and Installation), Front Halfshaft RH - LHD FWD/RHD FWD (Removal and Installation). REFER to: (205-04C Front Drive Halfshafts) Front Halfshaft LH (Removal and Installation), Front Halfshaft RH - LHD FWD/RHD FWD (Removal and Installation). REFER to: (205-04D Front Drive Halfshafts) Front Halfshaft LH (Removal and Installation), Front Halfshaft RH (Removal and Installation). REFER to: (205-04A Front Drive Halfshafts) Front Halfshaft LH (Removal and Installation), Front Halfshaft RH (Removal and Installation).
	* Another component contacting the halfshaft.	* CHECK the halfshaft and the area around the halfshaft. REPAIR as necessary.

Front Drive Halfshafts

	* Wheel bearings, brakes, suspension or steering components.	* INSPECT and REPAIR as necessary.REFER to: Front Wheel Bearing and Wheel Hub (204-01 Front Suspension, Removal and Installation), Brake System (206-00 Brake System - General Information, Diagnosis and Testing), Suspension System (204-00 Suspension System - General Information, Diagnosis and Testing), Steering System (211-00 Steering System - General Information, Diagnosis and Testing).
Driveline vibration - occurs at cruising speeds	* Out of balance front wheels or tires.	* BALANCE the wheels and tires as necessary.
	* Out-of-round wheels or tires.	* REPAIR or INSTALL new wheels or tires as necessary.
	* Incorrectly seated CV joint in the wheel hub.	* CHECK the outer CV joint for correct seating into the hub. REPAIR as necessary.REFER to: (205-04A Front Drive Halfshafts) Front Halfshaft LH (Removal and Installation), Front Halfshaft RH (Removal and Installation). REFER to: (205-04B Front Drive Halfshafts) Front Halfshaft LH (Removal and Installation), Front Halfshaft RH - LHD FWD/RHD FWD (Removal and Installation). REFER to: (205-04C Front Drive Halfshafts) Front Halfshaft LH (Removal and Installation), Front Halfshaft RH - LHD FWD/RHD FWD (Removal and Installation). REFER to: (205-04D Front Drive Halfshafts) Front Halfshaft LH (Removal and Installation), Front Halfshaft RH (Removal and Installation). REFER to: (205-04A Front Drive Halfshafts) Front Halfshaft LH (Removal and Installation), Front Halfshaft RH (Removal and Installation). REFER to: Front Wheel Bearing and Wheel Hub (204-01 Front Suspension, Removal and Installation).
Shudder Vibration During Acceleration.	* Damaged or worn CV joints.	* INSPECT the CV joints for wear or damage. INSTALL a new halfshaft as necessary. REFER to: (205-04A Front Drive Halfshafts) Front Halfshaft LH (Removal and Installation), Front Halfshaft RH (Removal and Installation). REFER to: (205-04B Front Drive Halfshafts) Front Halfshaft LH (Removal and Installation), Front Halfshaft RH - LHD FWD/RHD FWD (Removal and Installation). REFER to: (205-04C Front Drive Halfshafts) Front Halfshaft LH (Removal and Installation), Front Halfshaft RH - LHD FWD/RHD FWD (Removal and Installation). REFER to: (205-04D Front Drive Halfshafts) Front Halfshaft LH (Removal and Installation), Front Halfshaft RH (Removal and Installation). REFER to: (205-04A Front Drive Halfshafts) Front Halfshaft LH (Removal and Installation), Front Halfshaft RH (Removal and Installation).
	* Halfshaft CV joint binding.	* CHECK the outer CV joint for correct seating into the hub. REPAIR as necessary. REFER to: (205-04A Front Drive Halfshafts) Front Halfshaft LH (Removal and Installation), Front Halfshaft RH (Removal and Installation). REFER to: (205-04B Front Drive Halfshafts) Front Halfshaft LH (Removal and Installation), Front Halfshaft RH - LHD FWD/RHD FWD (Removal and Installation). REFER to: (205-04C Front Drive Halfshafts) Front Halfshaft LH (Removal and Installation), Front Halfshaft RH - LHD FWD/RHD FWD (Removal and Installation). REFER to: (205-04D Front Drive Halfshafts) Front Halfshaft LH (Removal and Installation), Front Halfshaft RH (Removal and Installation). REFER to: (205-04A Front Drive Halfshafts) Front Halfshaft LH (Removal and Installation), Front Halfshaft RH (Removal and Installation).
	* Excessively high CV joint operating angles caused by incorrect ride height.	* CHECK ride height, VERIFY correct spring rate and CHECK items under Halfshaft Joint Pullout. REPAIR or INSTALL new parts as necessary.
Driveline clunk — occurs during acceleration or as the vehicle starts to move forward following a stop	* Loose hub nut.	* CHECK the torque on the hub nut. INSTALL a new hub nut if the torque is not at specification. REFER to: (205-04A Front Drive Halfshafts) Front Halfshaft LH (Removal and Installation), Front Halfshaft RH (Removal and Installation). REFER to: (205-04B Front Drive Halfshafts) Front Halfshaft LH (Removal and Installation), Front Halfshaft RH - LHD FWD/RHD FWD (Removal and Installation). REFER to: (205-04C Front Drive Halfshafts) Front Halfshaft LH (Removal and Installation), Front Halfshaft RH - LHD FWD/RHD FWD (Removal and Installation). REFER to: (205-04D Front Drive Halfshafts) Front Halfshaft LH (Removal and Installation),

		Front Halfshaft RH (Removal and Installation). REFER to: (205-04A Front Drive Halfshafts) Front Halfshaft LH (Removal and Installation), Front Halfshaft RH (Removal and Installation).
Halfshaft Joint Pullout	* Inboard halfshaft bearing retainer circlip missing or not correctly seated in differential side gear.	* INSPECT and REPAIR or INSTALL new parts as necessary.
	* Engine/transaxle assembly mis-positioned.	* CHECK engine mounts for damage or wear. REPAIR or INSTALL new parts as necessary.
	* Frame rail or strut tower out of position or damaged.	* CHECK underbody dimensions.
	* Front suspension components worn or damaged.	* CHECK for worn bushings or bent components (front stabilizer bar, front suspension lower arm). REPAIR or INSTALL new parts as necessary.

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