

TRW Automotive
Commercial Steering Systems

Service Procedure COL-195

GEN II Steering Column Diagnostic Guide

April 2016

NOTE In most instances, the steering column should be repaired with service kits and NOT replaced. Complete column replacement, during warranty period, may result in a denied claim if a service kit or procedure is available. If you do not understand a procedure contact our Technical Service at 800.879.0899

This TRW Commercial Steering Systems' service procedure has been written to help you repair commercial vehicles more efficiently. This procedure should not replace your manuals; you should use them together. These materials are intended for use by properly trained, professional mechanics, NOT "Do-it-yourselfers". You should not try to diagnose or repair steering problems unless you have been trained, and have the right equipment, tools and know-how to perform the work correctly and safely.

Preliminary Inspection

Inspect the following items before beginning this Diagnostic Procedure

Shrouds

Ensure shrouds are secure and all fasteners are in place. Look for cracked or damaged shrouds.

Accessory Switches and Valves

Ensure all switches and valves are properly attached to the column

Wheel Nut

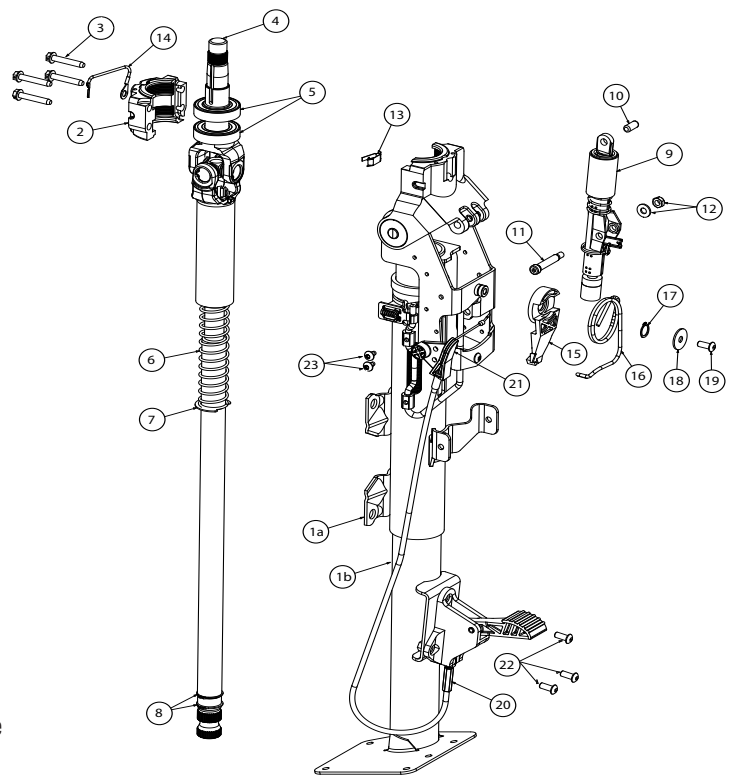
Ensure that the wheel nut is tight and that the threaded steering shaft is not damaged

Column to Cab/Dash mounting points

Visually inspect the mounting points to ensure that all bolts are secure and tightened to the OEM's specified torque

Slip Shaft Pinch Yokes

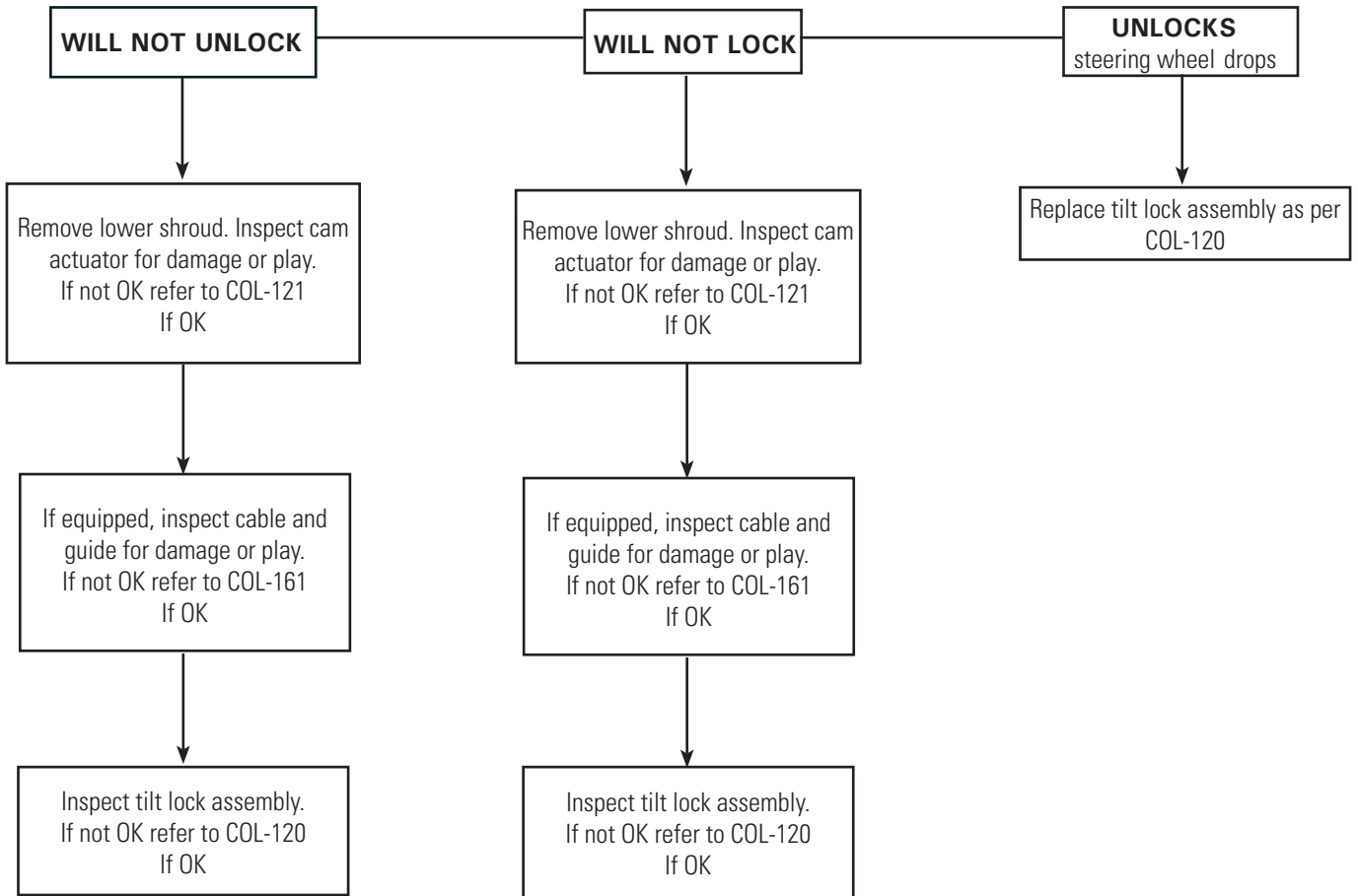
Visually inspect slip shaft pinch yokes to ensure that the bolts are secure and the splined shaft is not damaged



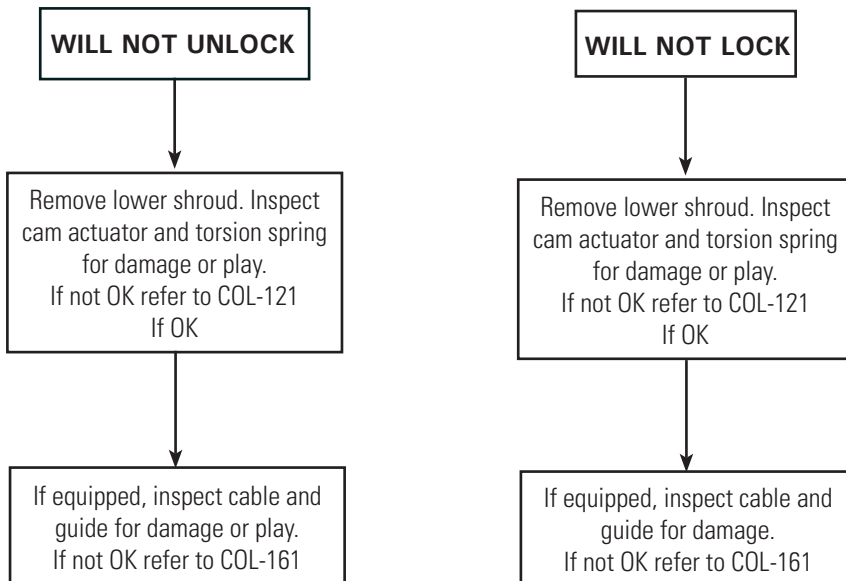
Typical Base Column Assembly

- | | |
|-------------------------------|-------------------------------|
| 1 Base Column | 12 Hex Lock Nut and washer |
| 2 Bearing Cap | 13 Ground Terminal |
| 3 Bearing Cap Bolts (4) | 14 Ground Wire Assembly |
| 4 Rotating Shaft | 15 Actuator Cam |
| 5 Bearing Gaskets | 16 Torsion Spring |
| 6 Telescope Spring | 17 Retaining Ring |
| 7 E-Clip | 18 Washer |
| 8 Retaining Ring | 19 Button Head Cap Screw |
| 9 Tilt Lock | 20 Foot Pedal Assembly |
| 10 Tilt Lock Pivot Pin | 21 Transition Block |
| 11 Socket Head Shoulder Screw | 22 Foot Pedal Assembly Screws |
| | 23 Transition Block Screws |

TILT INOPERATIVE

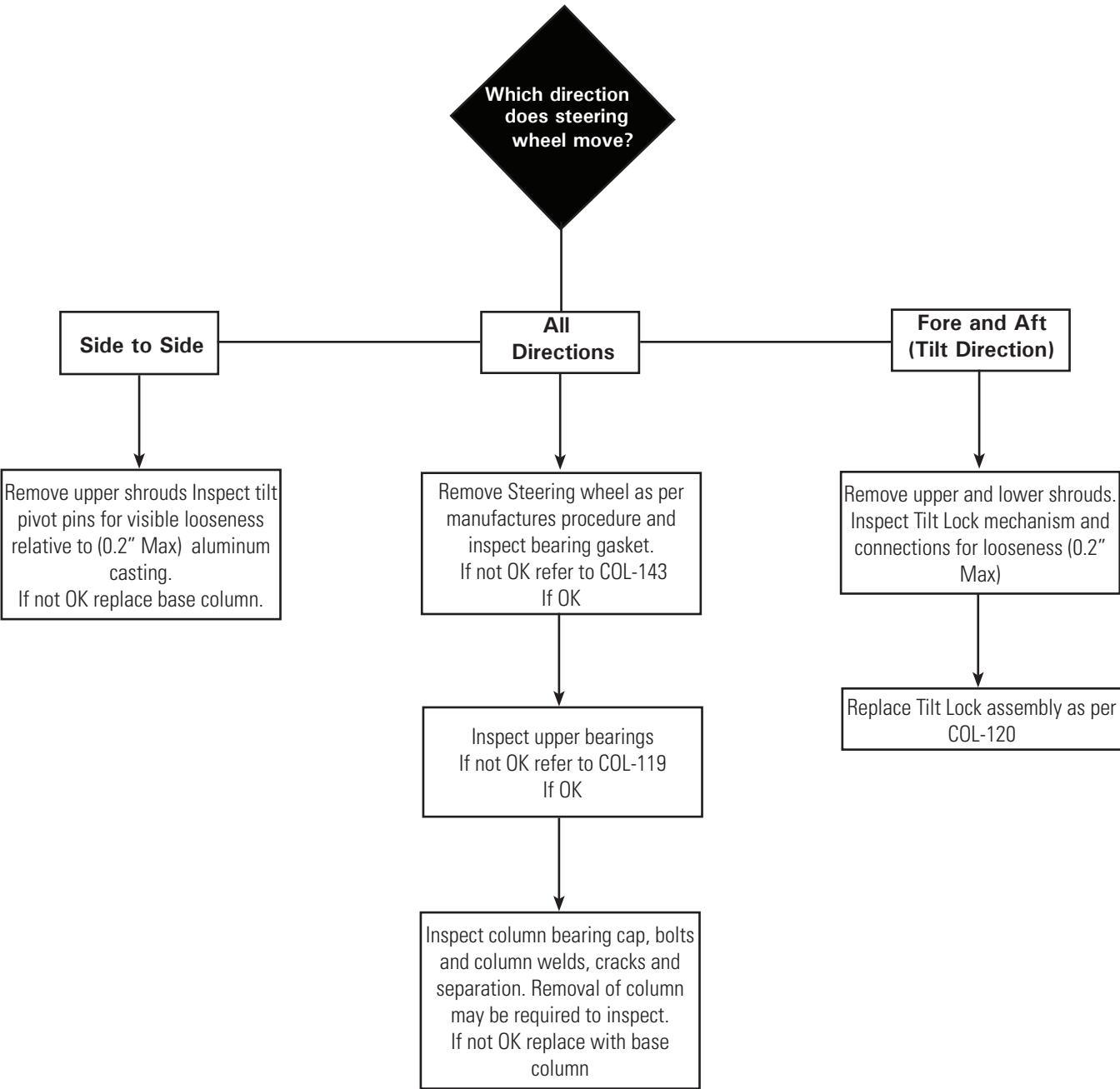


TELESCOPE INOPERATIVE



COLUMN LOOSE

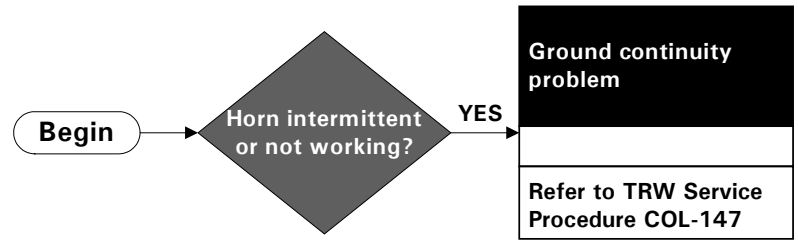
Tilt and Telescope lock and unlock function



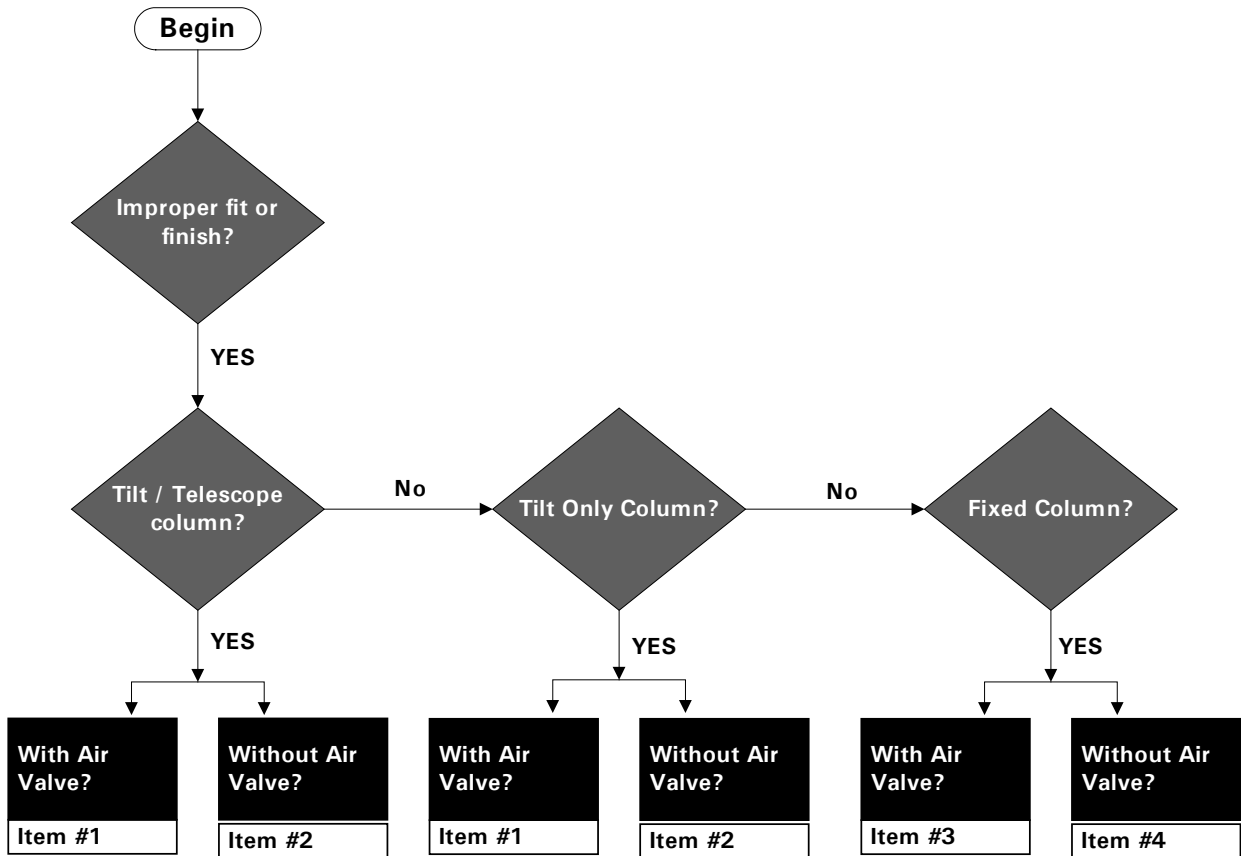
Horn Service

Refer to service parts list.
To replace contact plunger,
refer to TRW Service Procedure
COL-139.
To replace ground terminal,
refer to TRW Service Procedure
COL-114

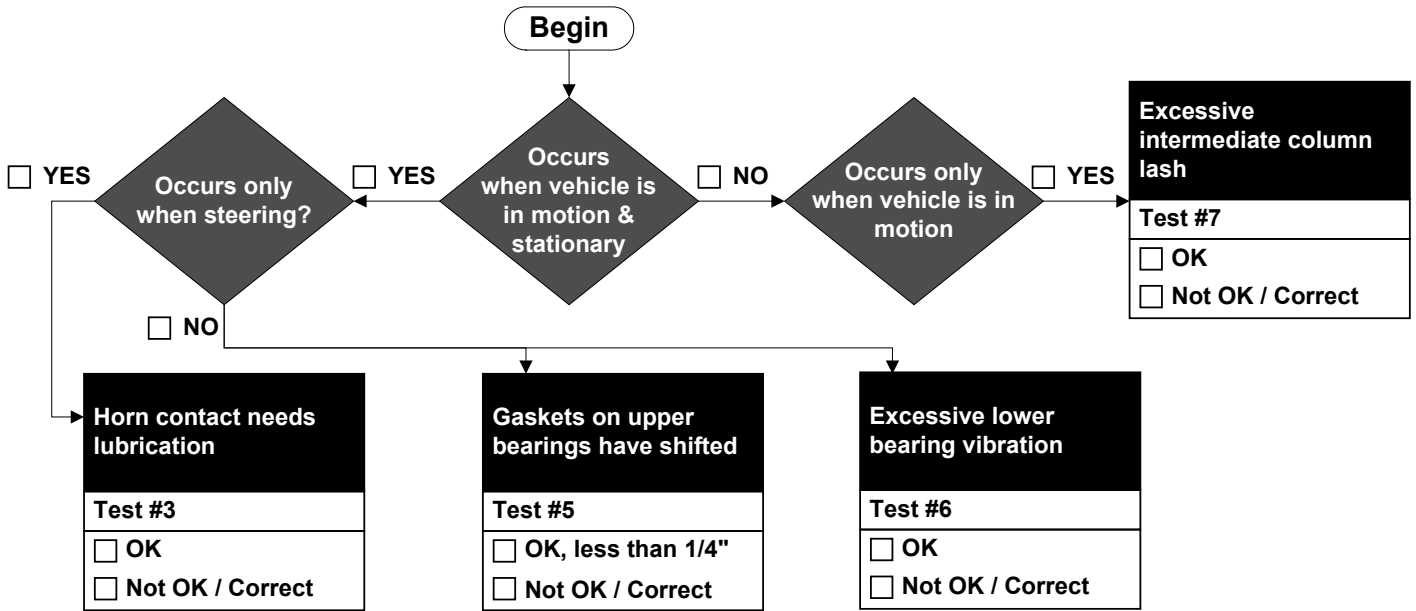
Horn Operation



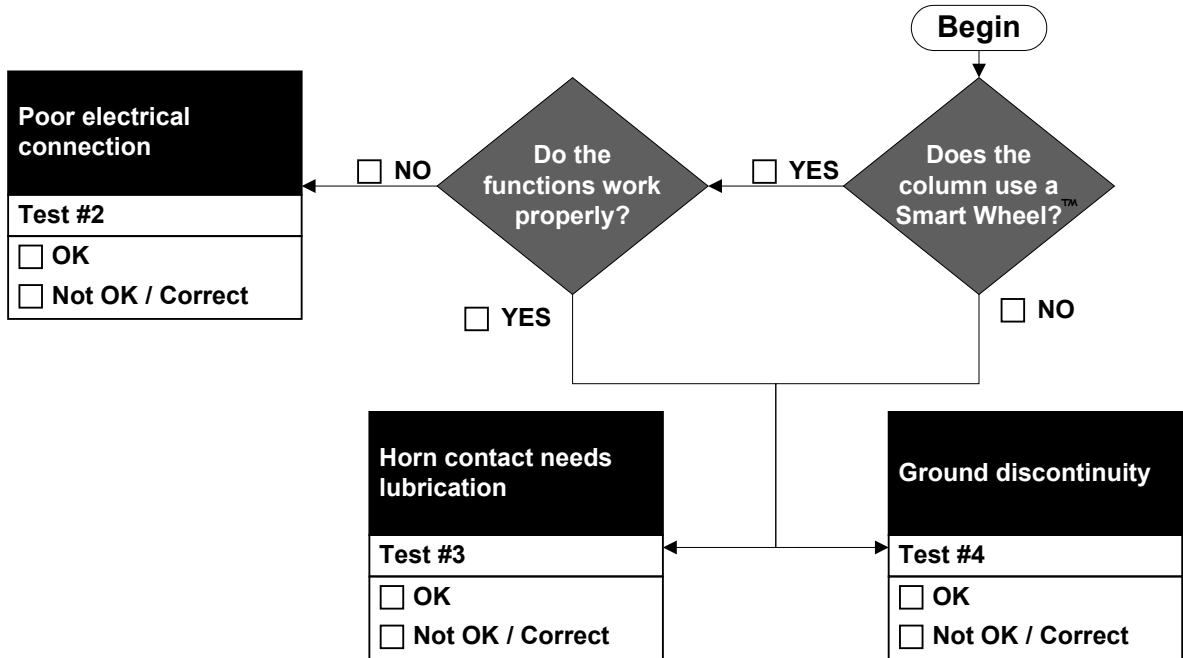
Appearance



COLUMN NOISE & VIBRATION



WHEEL FUNCTIONS



- Test #1 Repair or replace shrouding. Refer to Manufacturers Service Manual.
- Test #2 Symptoms include Smart Wheel functions not working properly or are intermittent. If column includes a clockspring, check the Smart Wheel & controller. Check clockspring. Replace parts if necessary. Refer to Manufacturers Service Manual.
- Test #3 Symptoms include rubbing or squeaking noise that occurs when the steering wheel is moved. If column does not include a clockspring, remove steering wheel and add dielectric grease to the horn contact as specified in TRW Service Bulletin COL-147. If noise continues, check steering wheel and shroud. Refer to Manufacturers Service Manual.
- Test #4 Symptoms include intermittent or non-functioning city horn in standard wheel. Check for ground continuity between shaft where steering wheel mounts and the aluminum die cast housing on the top of the column. If discontinuity is found refer to TRW Service Bulletin COL-114. Check dielectric grease on horn contact as Test #3. Refer to Manufacturers Service Manual.
- Test #5 Symptoms include excessive looseness in steering wheel. Apply light force to steering wheel, move side to side (toward driver and passenger door). Relative movement between steering wheel and shroud should be less than 1/4". Check upper bearing gaskets. Gaskets should cover bearing. If gaskets are not in correct location refer to TRW Service Bulletin COL-143. Refer to Manufacturers Service Manual.
- Test #6 Symptoms include noise or vibration that can be felt moving or when vehicle is stationary. Problem is engine speed related. Apply side load to intermediate column (I-Shaft). If problem disappears for fixed columns, refer to TRW Service Bulletin COL-145. Refer to Manufacturers Service Manual.
- Test #7 Symptoms include driver complaining of feeling "pins and needles" in hands. Problem associated with bumps or holes in the road. Check intermediate column (I-Shaft) for torsional lash in u-joints or slip section. Replace intermediate column if necessary. Refer to Manufacturers Service Manual.