



World Leadership in Directional Control Technology

Steering Column Clock Spring Service Bulletin

Smart Wheel Applications

This bulletin describes the proper procedure for the removal and installation of the Clock Spring.

The following steps outline how to remove and re-install the Clock Spring, as well as how to inspect the Clock Spring system, and the Steering Column to assure both are functioning properly.

NOTE: Follow these steps carefully to make sure there is no damage done to the Clock Spring or the Steering Column.

This procedure can be done with the Steering Column mounted in the vehicle. Before this procedure is started, make sure the Front Wheels are pointed in the straight ahead position and the Steering Wheel is centered and you have read this entire Service Bulletin.

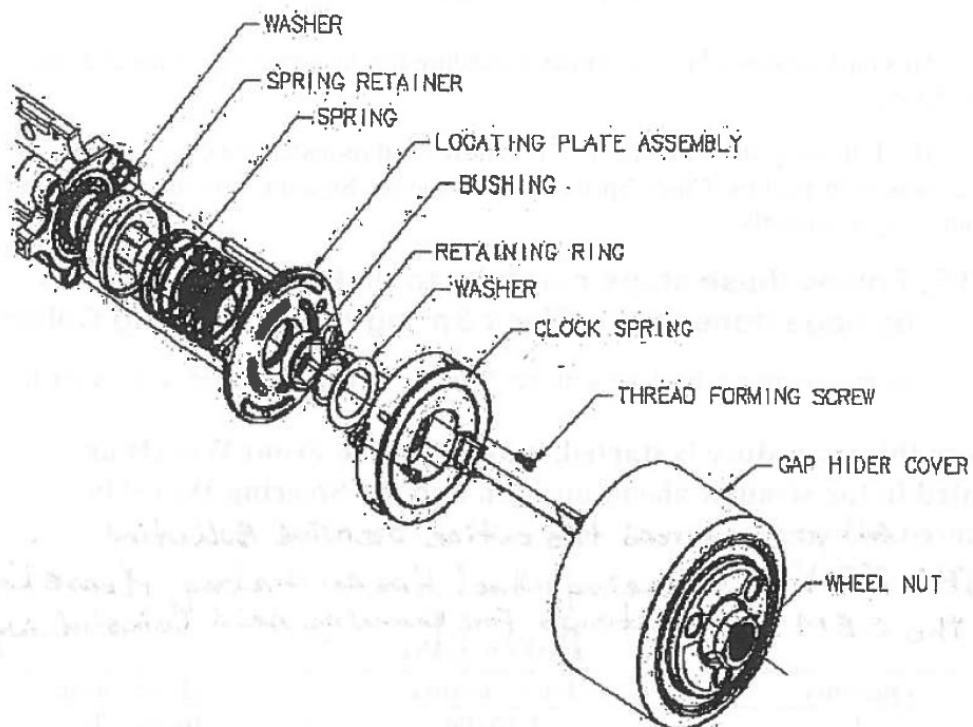
NOTE: IF YOUR STEERING WHEEL HAS AN AIRBAG, PLEASE REFER TO THE OEM INSTRUCTIONS FOR REMOVAL AND REINSTALLING

Parts List

Quantity	Part Number	Description
1	D10106	Instructions
1	1900043	Clock Spring Kit

Tool List

Quantity	Description
1	5MM Allen Wrench
1	Steering Wheel Nut Socket and Ratchet
1	Flat end Steering Wheel Puller
1	Ft. Lb. Torque Wrench
1	T20 Torx Head Driver
1	Pair Side Cutters

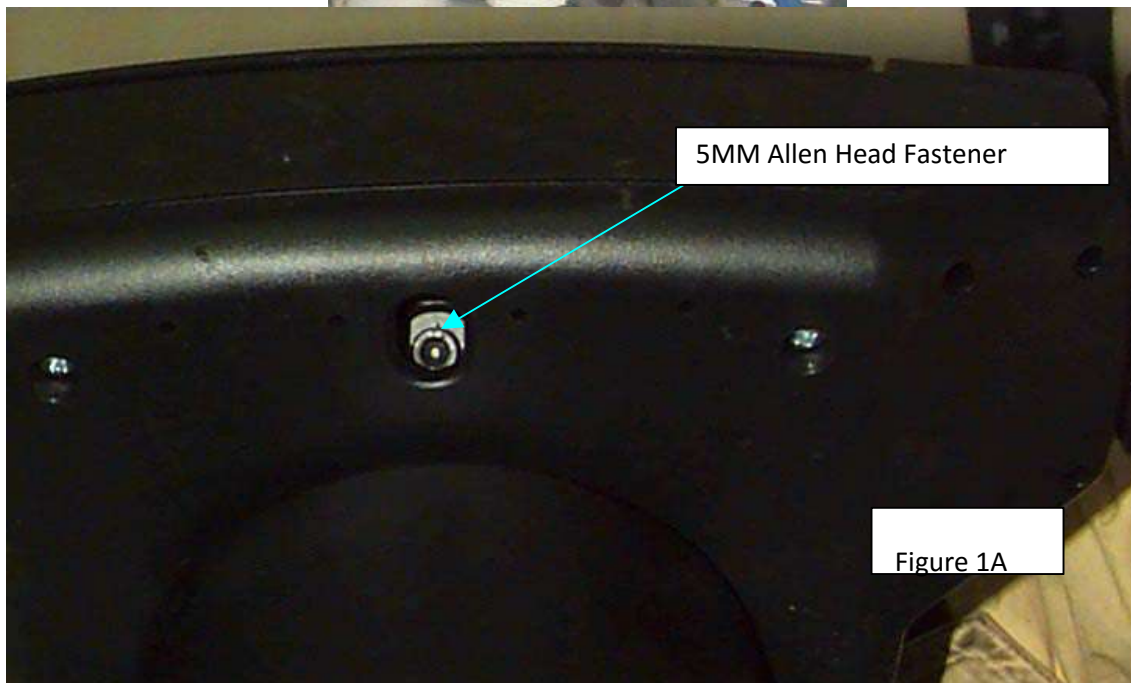


Disassembly:

- Step 1) Disconnect the black square 4 Pin Smart Wheel Connector under the dash. Then remove the 5MM Allen Head fastener located on the bottom, back side of the steering wheel that holds the Rubber Steering Wheel Cover in place. The fastener is recessed approximately 1 ½ Inches (38.1 mm).
(See figures 1 and 1A)



Figure 1

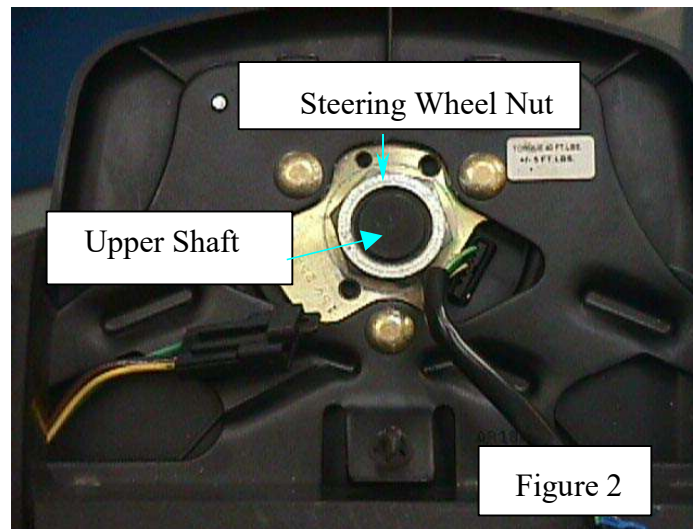


5MM Allen Head Fastener

Figure 1A

Step 2) Remove the Rubber Cover and disconnect Smart Wheel Key Pad plugs; this will expose the Steering Wheel Nut.

(See Figure 2)



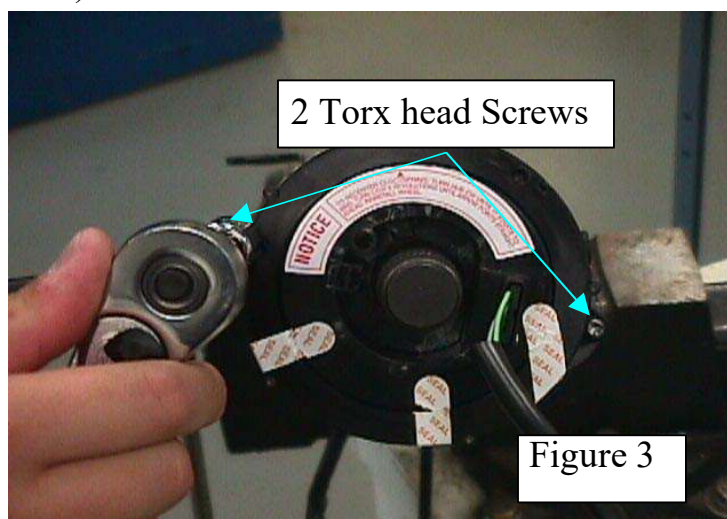
Step 3) Using the Steering Wheel Nut Socket and Ratchet remove the Steering Wheel Nut by turning it counter clockwise. Retain after removal.

Step 4) Use the Flat Ended Steering Puller to remove the Steering Wheel.

NOTE: Do not hit the Upper Shaft while removing the Steering Wheel; this will damage the Steering Column Telescope Lock function.

Step 5) Remove the Gap Hider Cover. Do not discard the Gap Hider, as it will be need for reassembly.

Step 6) Use the T20 Torx Head Driver to remove and retain the two Torx Head Screws that attach the Clock Spring to the locating plate assembly. Please note the orientation of the clock spring to the column.
(See Figure 3)

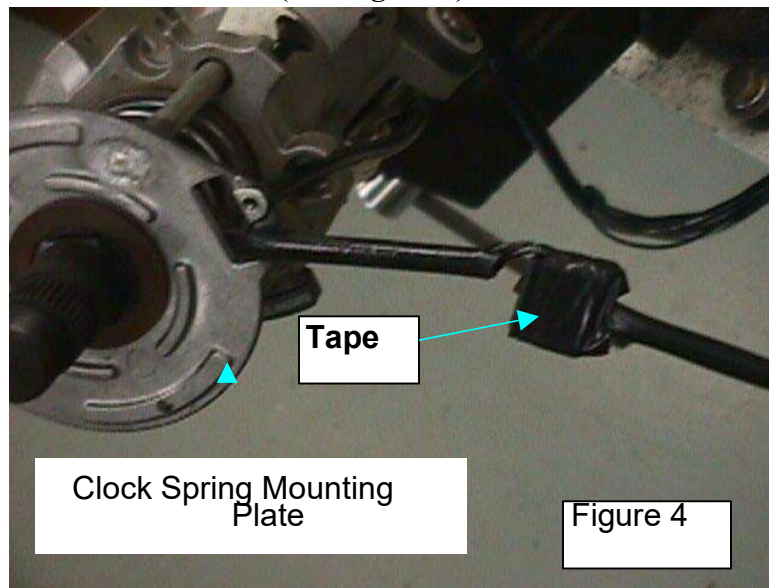


Step 7) Pull the Clock Spring away from the Locating Plate Assembly and cut the wires close to the Clock Spring. Make sure the Washer shown on Page 2 comes off with the old Clock Spring, it may be attached to the back of the Clock Spring. Retain the old Clock Spring.

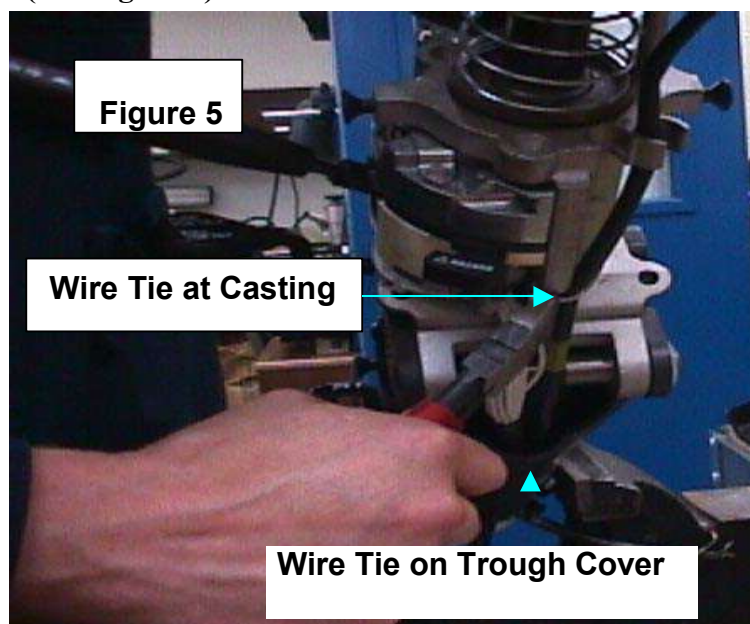
Step 8) Remove the Upper and Lower Covers that snap around the Steering Column.

Step 9) Tape the Terminal Block on the new Clock Spring to the old Clock Spring wire sticking out of the Steering Column.

(See Figure 4)



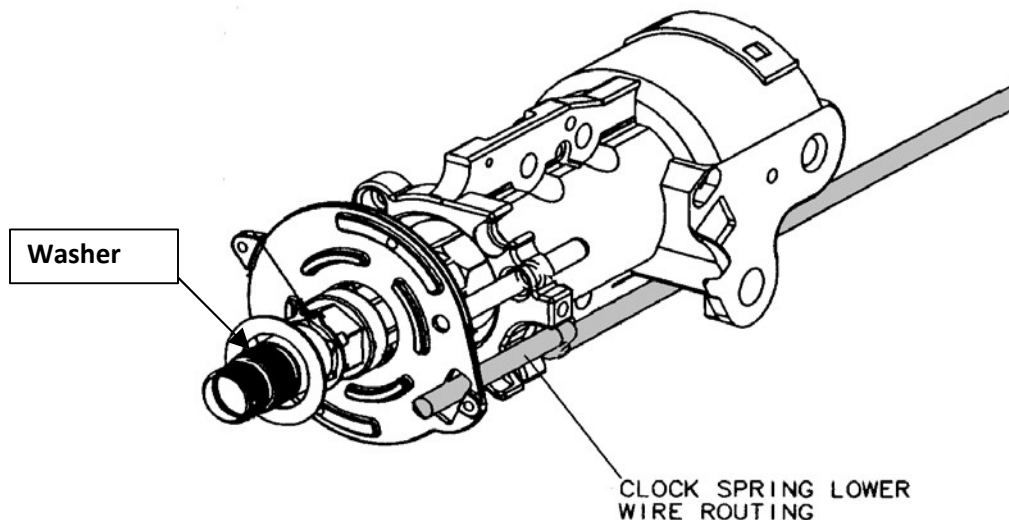
Step 10) Remove and discard the Wire Tie on the bottom of the Casting, then remove and discard the Wire Tie from the Trough Cover that holds the Harness in place. (See Figure 5)



Reassembly:

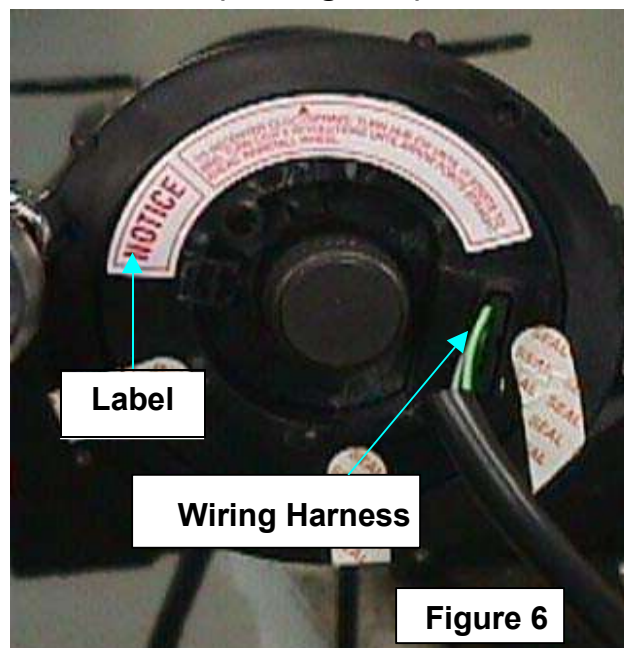
Step 11) Pull the old Clock Spring Harness out of the Steering Column from the bottom. As the old Clock Spring Harness is removed route the new Clock Spring Harness through the Steering Column as it is taped to the old Harness. Place the New Washer shown on Page 2 under the Clock Spring. Then place the Clock Spring over the Upper Shaft of the Steering Column as the Harness is routed through the Steering Column.

NOTE: Make sure clock spring wire is routed as illustrated below.



Step 12) Place the Clock Spring on the Mounting Plate like the old one was, with the Label on top and the Wiring Harness on the right side as you are sitting in the vehicle.

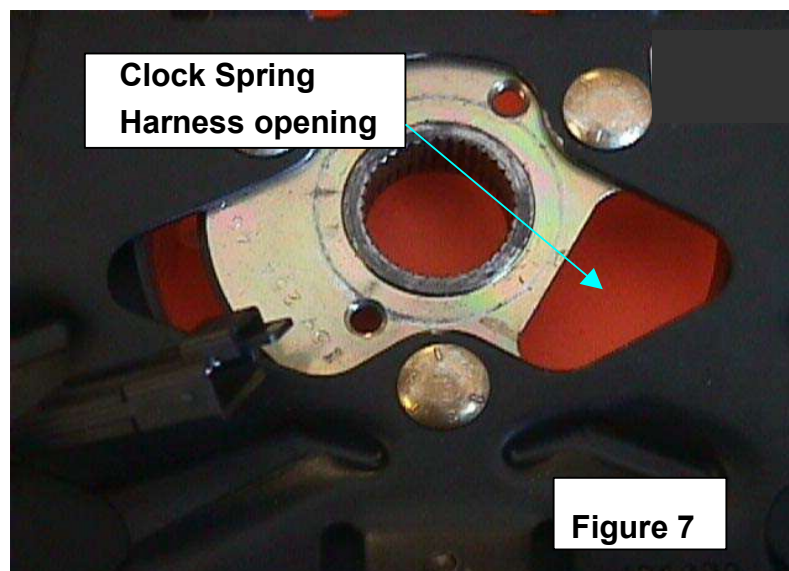
(See Figure 6)



Step 13) Install two (2) new T20 torx Head screws to secure clock spring to mounting plate.

Step 14) Place the Gap Hider Cover back on making sure to route the Clock Spring Harness through the square opening in the Gap Hider.

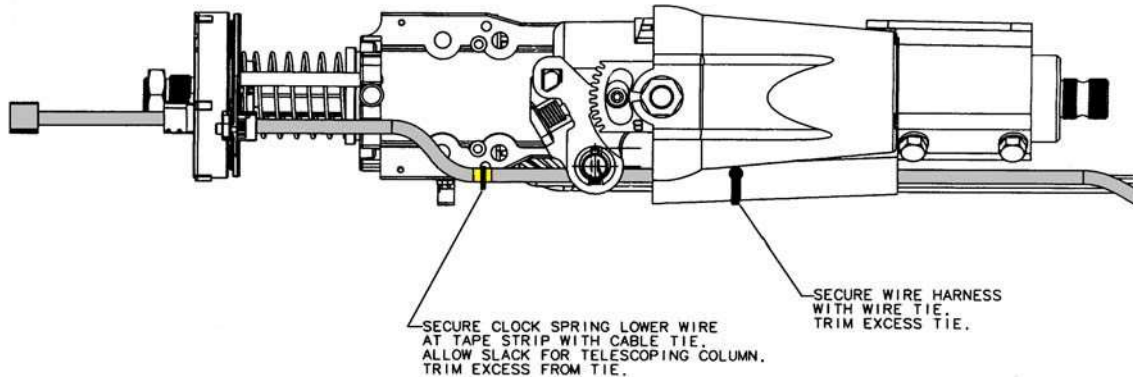
Step 15) Place the Steering Wheel on the Upper Shaft and center it on the Upper Shaft Splines then reconnect the Smart Wheel Connector Block(s). Be sure that the Clock Spring Wiring Harness is routed through the opening in the Steering Wheel Hub. **(See Figure 7)**



Step 16) Place the Steering Wheel Nut on the Upper Shaft and using the Foot Pound Torque Wrench torque the Nut to Original Equipment Manufacturer's specification.
(Minimum 55FT.Lbs.)

Step 17) Reconnect the Terminal Block at the bottom of the Steering Column for the Smart Wheel system.

Step 18) Install the new Wire Ties at the Casting and the Trough Cove



NOTE: When installing the Wire Tie for the Casting make sure the Steering Column is telescoped all of the way out and the Wire Tie is over the Yellow Strip (Tape Strip) on the Wire Bundle. This will insure that enough of the Wire Bundle is loose so that as the Steering Column is telescoped the Wire Bundle does not pull against the back of the Clock Spring. Watching the Bundle move after the Tie is in place can do this.

When installing the Wire Tie for the Trough Cover make sure that the Steering Column is tilted all of the way up. Make sure that Wire Bundle(s) lay under the Wire Tie and in the Trough provided in the Cover. Again be sure that the Wire Bundle does not pull against other components in the Steering Column as it is tilted up and down.

Step 19) Reinstall the Upper and Lower Covers on the Steering Column by snapping them back in place.

Step 20) Perform the Critical Checking Procedure as follows:

CRITICAL CHECKING PROCEDURE

- Tilt and Telescope the Column to ensure the Column still functions properly.
NOTE: Some Models Only Tilt. They won't Telescope.
- With the Steering Column in it's locked position, pull up and push down on the Steering Wheel to ensure the shaft and Retaining Rings are seated properly.
- Turn the Steering Wheel from full left to full right, lock to lock, to ensure the Column rotates freely. While rotating the Steering Wheel, feel for any catches, binding, or any other abnormalities.
- Check the Clock Spring functions per Original Equipment Manufacturer's specification to make sure they all work.

NOTE: If there are any abnormalities felt as the Steering Wheel is turned, follow the Manufacturer's removal and replacement procedures to remove the Steering Column and replace it with a new one. **DO NOT** attempt to drive the vehicle with the malfunctioning Steering Column in it!

Warranty Credit

If returning for warranty credit, all components for each corresponding component in the kit must be returned for evaluation.

A	03/23/16	DMM	PDG	Added Airbag warning, reformatted and added Warranty credit	B16-024
0	9/18/01	JK	JK	Release to Production	
Rev. Let.	Date	DRW	APR	Description	ECO #