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## **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 removed from 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.

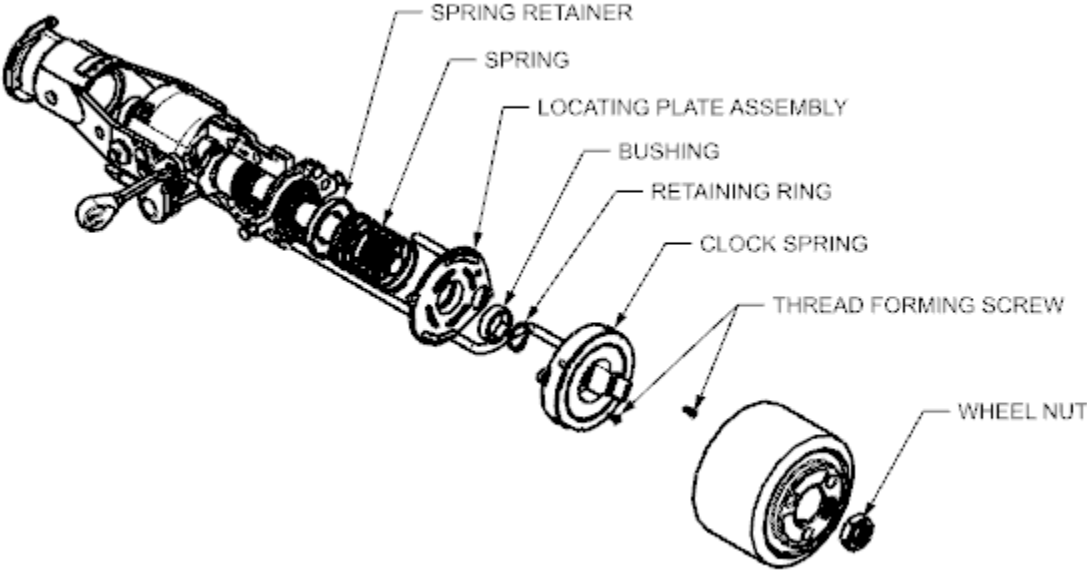
**NOTE: IF YOUR STEERING WHEEL HAS AN AIRBAG, PLEASE REFER TO THE OEM INSTRUCTIONS FOR REMOVAL AND REINSTALLATION.**

### **Parts List**

<b>Quantity</b>	<b>Part Number</b>	<b>Description</b>
1	CLSP01-920-SER	Instructions
1	CLSP01-920	Clock Spring Kit
	or	
1	1900043	Clock Spring Kit

### Tool List

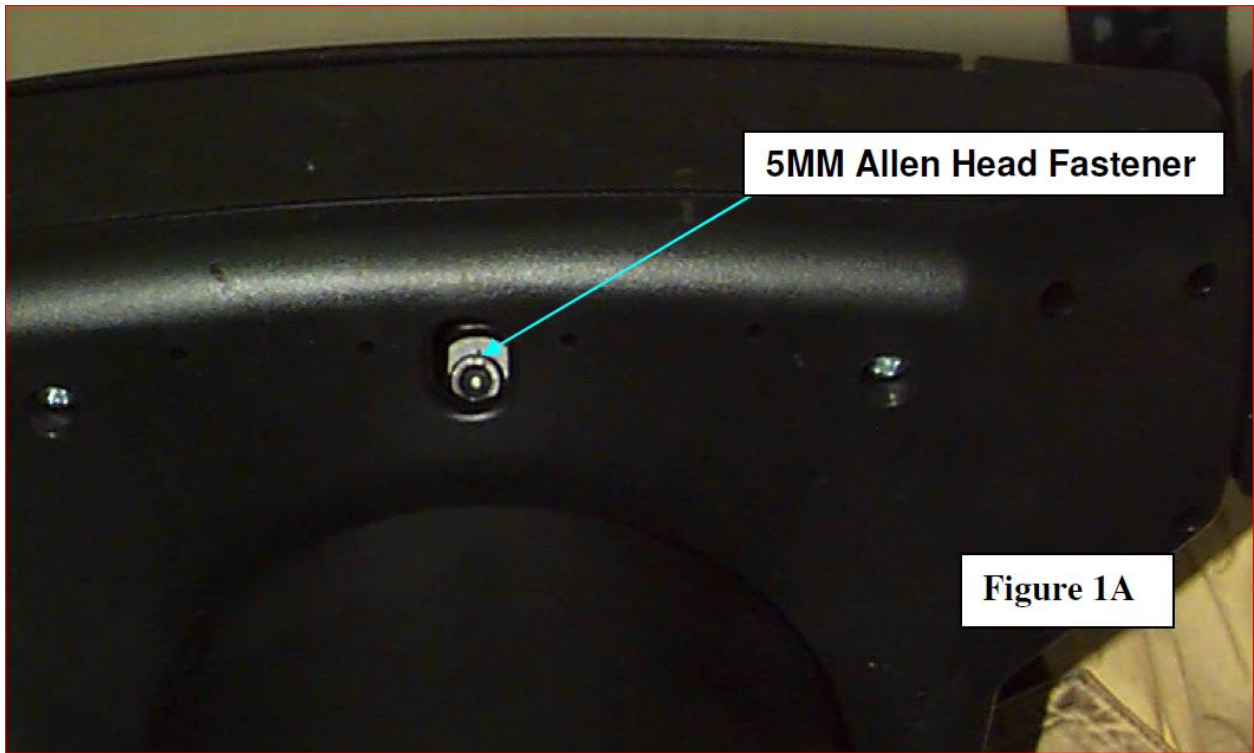
Quantity	Description
1	5MM Allen Wrench
1	Steering Wheel Nut Socket and Ratchet
1	Flat end Steering Wheel Puller
1	Ft. Lb. Torque Wrench
1	T20 Torx Head Driver
1	Pair Side Cutters



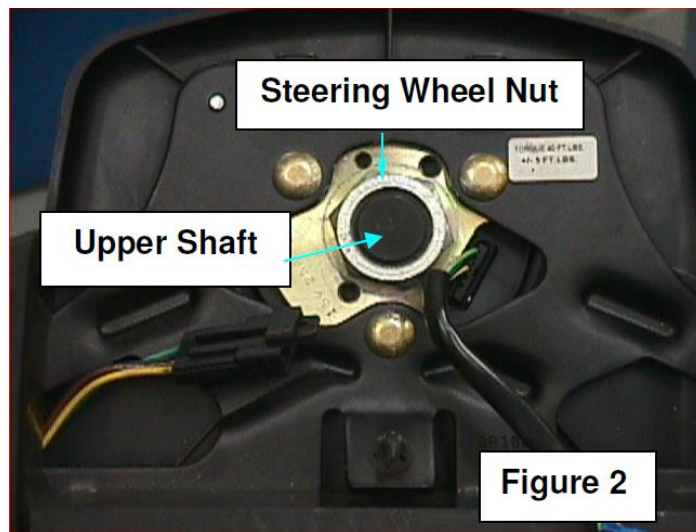
Disassembly:

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 figure 1 & 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. Discard after removal. New nut in service kit

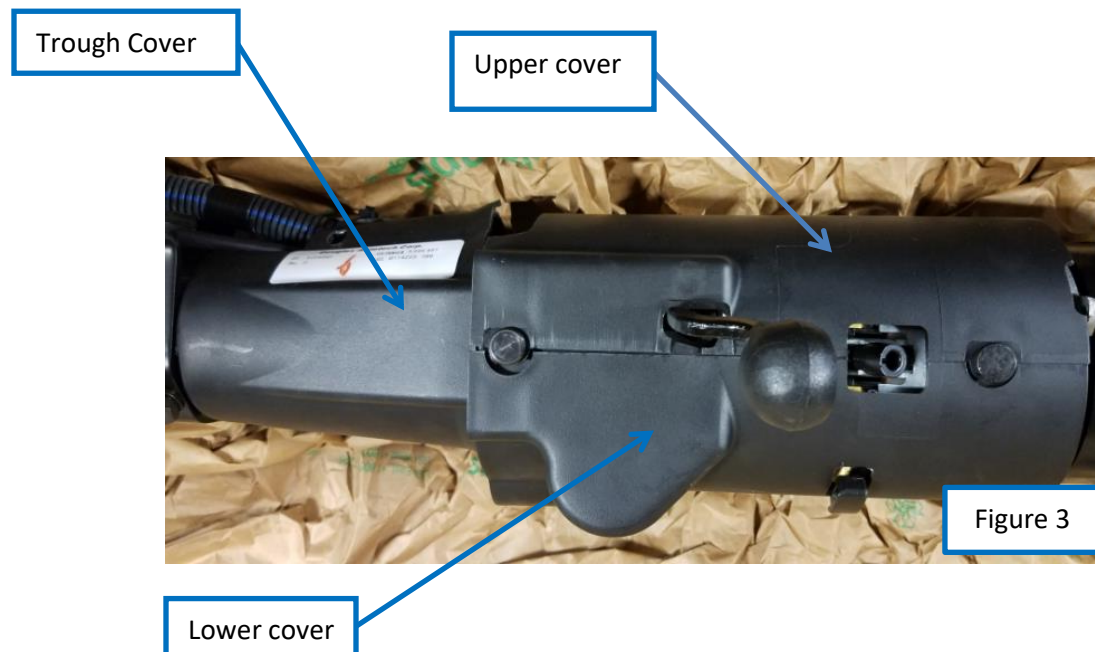
Step 4) Use the Flat Ended Steering Puller to remove the Steering Wheel.

**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.

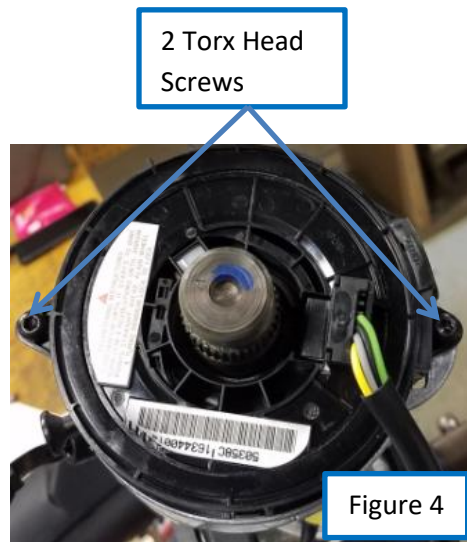
Step 6) Remove the column from vehicle. Disconnect I-shaft and all electrical connections. Unbolt column brackets from the dash (Do not remove the column from its mounting brackets)

Step 7) Remove the Upper, Lower and Trough Covers that snap around the Steering Column. See figure 3



Step 8) Use the T20 Torx Head Driver to remove and discard the two Torx Head #8-32 Screws that attach the Clock Spring to the locating plate assembly. Please note the orientation of the clock spring to the column.

(See Figure 4)



Step 9) Pull the Clock Spring away from the Locating Plate Assembly.

**NOTE: Inspect you column for harness routing. New clockspring will need to have the harness routed in the same manner.**

Step 10) Remove and discard the wire ties that hold the old harness to the column. See figure 5 for wire locations

White wire tie  
at yellow tape



Black wire tie  
at tilt shaft

Figure 5

Step 11) Remove the old clock spring and harness.

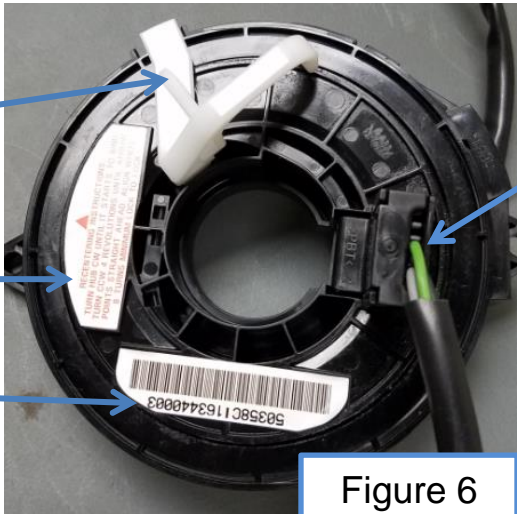
Step 12) Place the New Clock Spring on the Mounting Plate like the old one was, with the Label on the left side and the wiring harness on the right side as you are sitting in the vehicle. Route the wire harness thru the mounting plate.

(See Figure 6)

Plastic Clip

Label

Barcode



Wire Harness

Figure 6

Step 13) Install 2 new T20 Torx head #8-32 screws in Clock Spring to secure to mounting plate. Torque to 0.5 to 1.0 Nm.

Step 14) Route the new clock spring wire harness thru the column exactly like the old one and secure at the same points as shown in Figure 5.

**NOTE:** Some columns may have unique routing based on application, route and tie off same as original.

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.

Step 15) Reinstall the Upper, Lower and Trough Covers that snap around the Steering Column. See figure 3

Step 16) Install a new Wire Tie at the Trough Cover, if original was tied as shown in figure 7.



SECURE WIRE HARNESS  
WITH WIRE TIE, TIRM  
EXCESS TIE

Figure 7



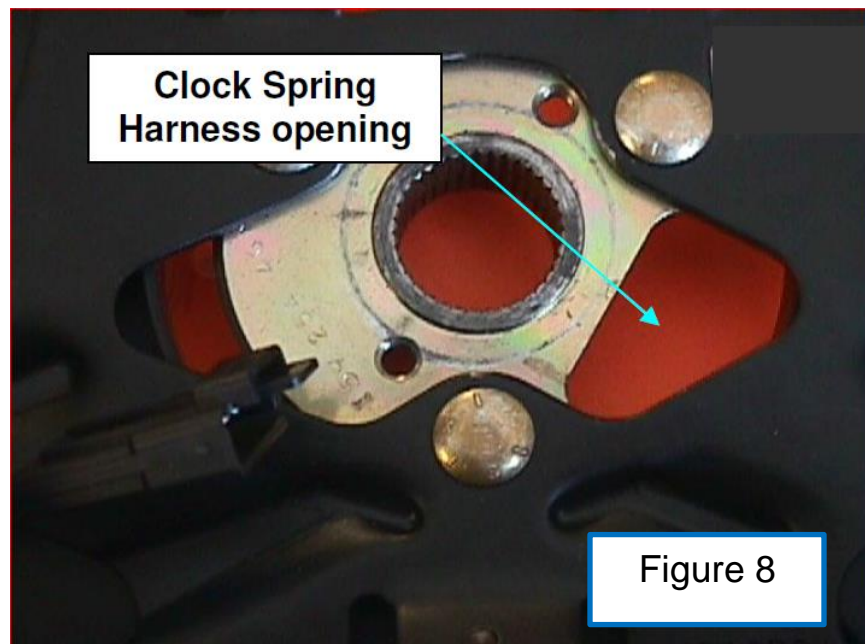
**NOTE:** When installing the Wire Tie for the Trough Cover make sure that the Steering Column is tilted all of the way up. Make sure that Wire Bundle(s) lay under the Wire tie and in the Trough provided in the Cover. Again be sure that the Wire Bundle does not pull against other components in the Steering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

Step 17) After securing the Clock Spring to the mounting plate and the harness to the column. Reinstall column in vehicle. Torque all mounting bolts to OE spec. Reinstall I-shaft and torque to 46-62 Nm. Reconnect all electrical connections under dash.

Step 18) Remove the plastic retaining clip and discard. See figure 6.

Step 19) Place the Gap Hider Cover back on making sure to route the Clock Spring Harness through the square opening in the Gap Hider.

Step 20) 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 8)



Step 21) Place the new Steering Wheel Nut on the Upper Shaft and using the Foot Pound Torque Wrench torque the Nut to Original Equipment Manufacturer's specification. (Minimum 55 FT. Lbs.)

Step 22) Reconnect the Smart Wheel Key Pad plugs and reinstall the rubber cover to the Steering Wheel. Reinstall 5mm fastener.

Step 23) 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 its 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.

Place a check mark in the box in front of each check as they are performed.

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

**WARRANTY CREDIT**

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

B	11/03/17	DMM	PDG	Updated for New Clock Spring	B18-034
A	07/15/13	DMM	PDG	Added Airbag warning, reformatted and added Warranty credit.	B16-024
N	10/24/07			Release To Production	
REV.	DATE	DRW	APR	DESCRIPTION	ECO#