

ATTENTION:
GENERAL MANAGER
PARTS MANAGER
CLAIMS PERSONNEL
SERVICE MANAGER

IMPORTANT - All Service Personnel Should Read and Initial in the boxes provided, right.

QUALITY DRIVEN® SERVICE



REPAIR INSTRUCTIONS

APPLICABILITY: 2010MY Legacy & Outback **DATE:** June 24, 2010
SUBJECT: Inspection and Repair Procedure for Steering Column Electrical Roll Connector

VIN RANGE

MODEL		FROM	TO
2010MY	Legacy	A*210001	A*244529
	Outback	A*310001	A*377827

* Various Characters may occupy this position

Note: Not all vehicles in the VIN range are affected. Always verify coverage through vehicle coverage inquiry in Subarunet.

The following inspection and repair procedure applies to vehicles affected by the WVR-28 Stop Sale & Recall Campaign.

SERVICE PROCEDURE

This service procedure will involve checking the "lot number" found on the steering roll connector. If the "lot number" is within a certain range, the connector must be replaced with a new one. If the "lot number" is not within the range, the connector was manufactured to specifications and replacement is not necessary.

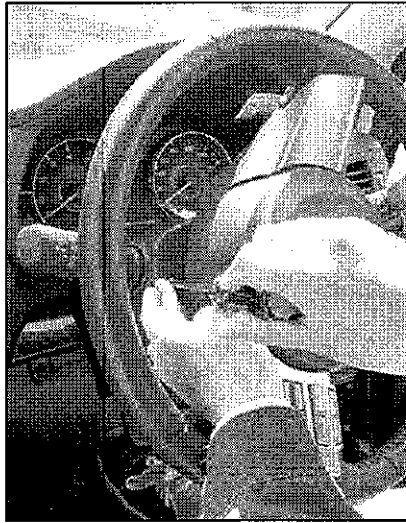
Please proceed as follows:

Steering Roll Connector Lot Number Verification

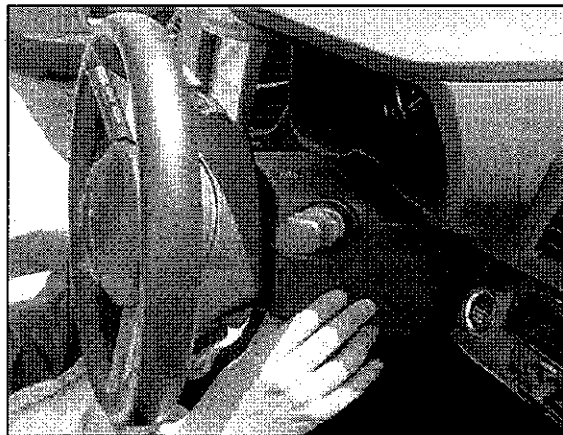
- 1) Start the engine and rotate the steering wheel 90 degrees from a straight-ahead position (either left or right rotation). Turn the ignition switch to the OFF position



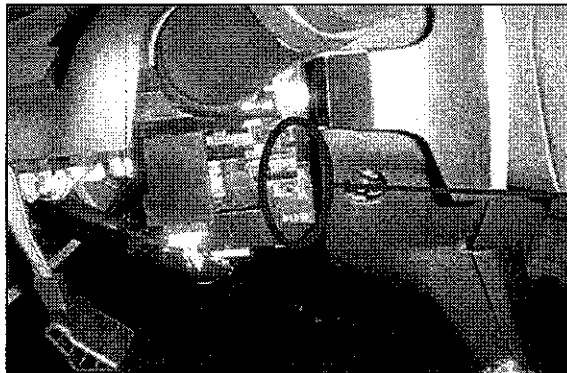
- 2) Adjust the tilt position to the lowest position and lock the tilt lever. Remove the upper steering column cover screw on one side, rotate the steering wheel 90 degrees and remove the screw on the other side.



- 3) Release the claws and detach the steering column lower cover.



- 4) Confirm the steering roll connector lot number located on the left side of the connector.



Affected Lot Numbers

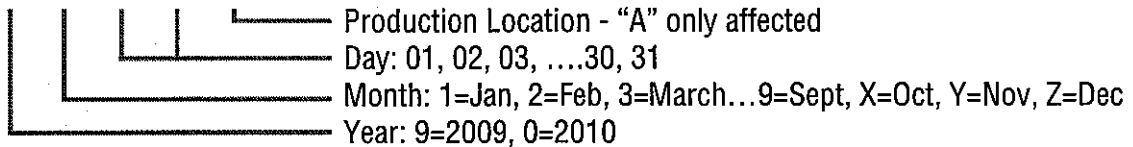
Steering Roll Connectors requiring replacement were produced on or before October 13, 2009.

Target Lot Numbers: **9X13A or before.**

How to read the Steering Roll Connector Lot Number:

Lot #: Five Characters

00000



Example: 9402A = April 2, 2009

If the lot number indicates a production date of October 14, 2009 (9X14A) or after, replacement is **not** required. Install the steering column lower cover in reverse order of removal. No further action is required.

If the lot number indicates a production date of October 13, 2009 (9X13A) or before, replacement of the steering roll connector is required. Proceed as follows.

Parts Information

Repair parts are currently being shipped to dealers with normal stock orders. Each dealer will automatically be sent replacement steering roll connectors equivalent to 20% of their dealer affected VIN list along with one 100 gram tube of steering roll connector grease. Dealers may order additional parts as needed.

Typically, replacement steering roll connectors are packaged with a small (2 gram) tube of special grease. For the purpose of this service procedure, the steering roll connectors will be packaged without grease. Instead, a 100 gram tube is available which contains enough special grease to service between 40-50 vehicles.

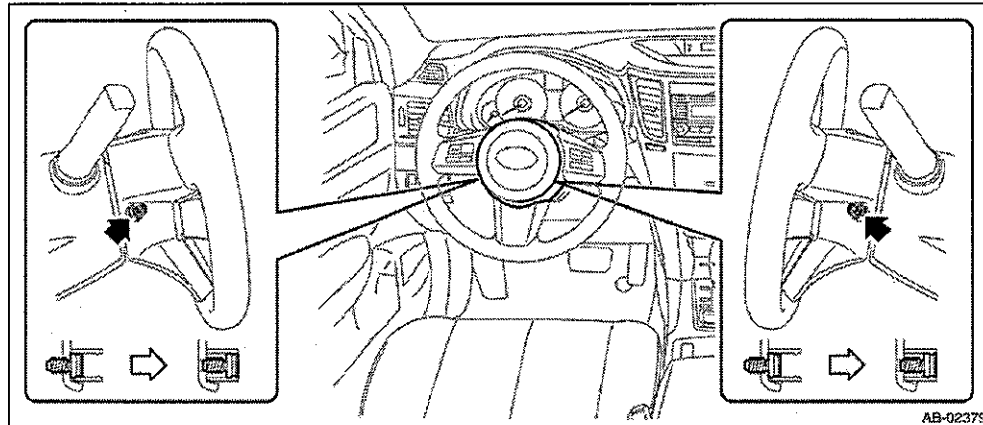
Dealers will need to order any additional supply through normal parts ordering procedures.

DESCRIPTION	PART NUMBER
Steering Roll Connector	83116AJ02B
Steering Roll Connector Grease	SOA635083 – for claim purposes only, represents 2 grams per repair. (99019AJ00A - 100 gram tube)

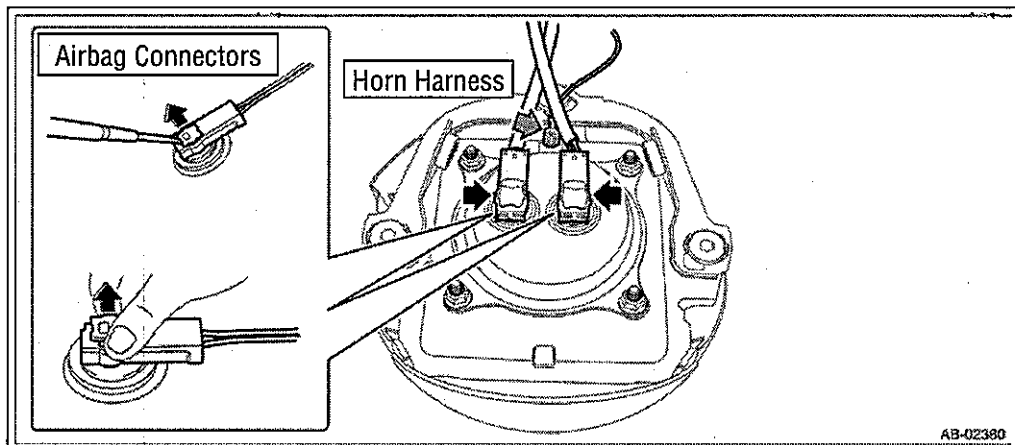
Steering Roll Connector Replacement

- 1) Position the front wheels straight ahead. (After moving vehicle 5 m (16 ft) or more with front wheels positioned straight ahead, make sure that the vehicle moves straight ahead).

- 2) Record preset radio stations
- 3) Turn the ignition switch to OFF.
- 4) Disconnect the ground cable from the battery and wait at least 60 seconds before proceeding.
- 5) Remove the driver's airbag module assembly. A TORX® T40 is required. Loosen the two TORX® bolts on the sides of the steering wheel.



- 6) Disconnect the airbag connector and remove the airbag module assembly as follows:
 - a) Using a flat tip screwdriver, pry the push lock upward to unlock. Pull the connector to disconnect it from the driver's airbag module assembly.
 - b) Disconnect the Horn Harness.

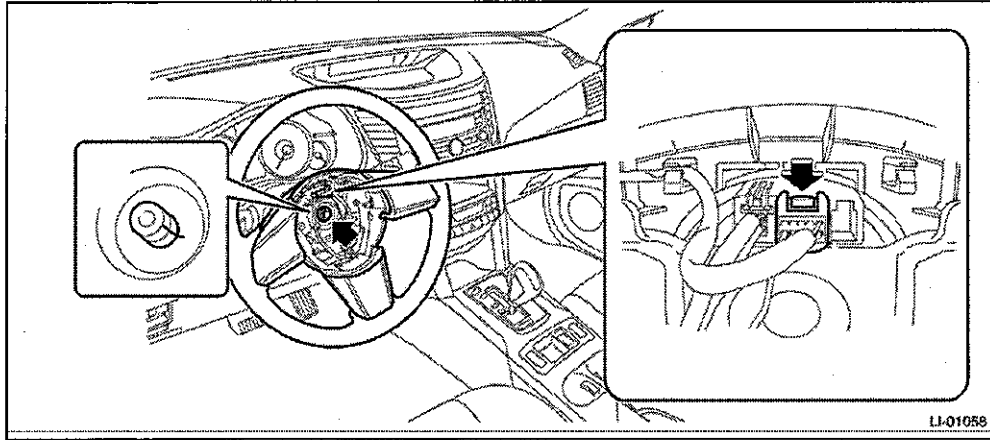


- 7) Remove the steering wheel.

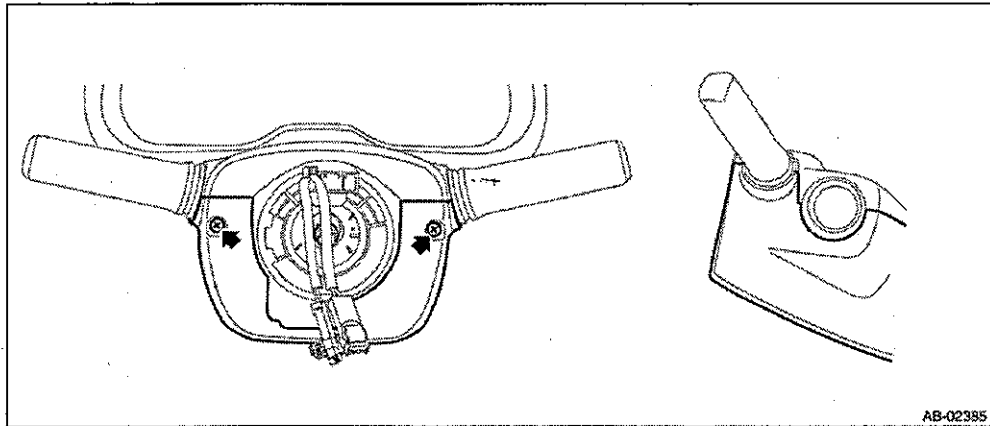
CAUTION:

- Always use the steering wheel puller for removal to avoid deforming the steering wheel.
- Once the steering wheel has been removed, make sure that the roll connector is not rotated from its original position.

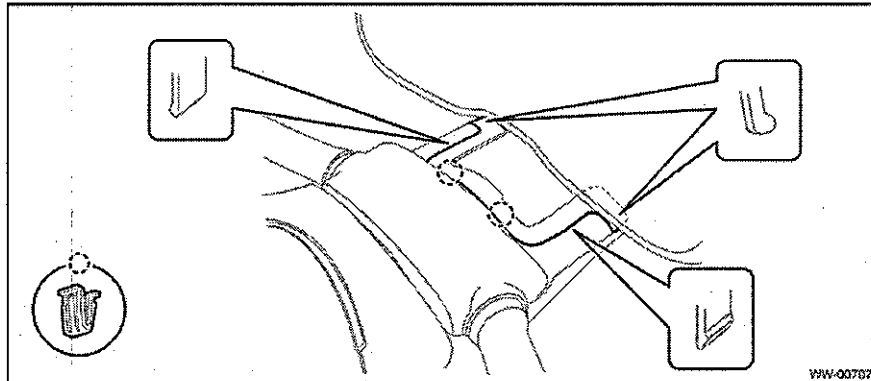
- a) Disconnect the wire harness connector and remove the steering wheel nut.
- b) Make alignment marks on steering shaft and steering wheel and remove the steering wheel.



- 8) Remove the steering column cover.
 - a) Lower the lever of the steering column. Remove the steering column upper cover retaining screws, as shown.



- b) Separate the steering column upper cover from the steering column top cover and remove.

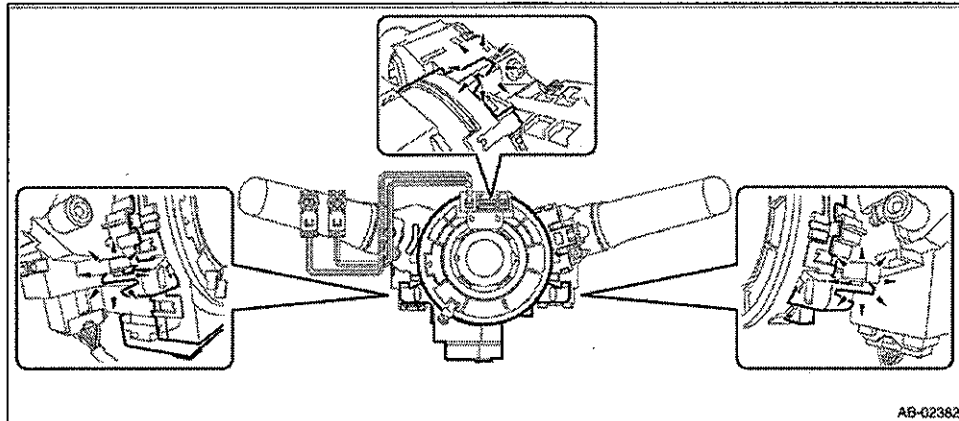


- 9) Remove the roll connector.

CAUTION: Make sure that the roll connector is not turned from the original position.

(a) Disconnect the connectors under the roll connector.

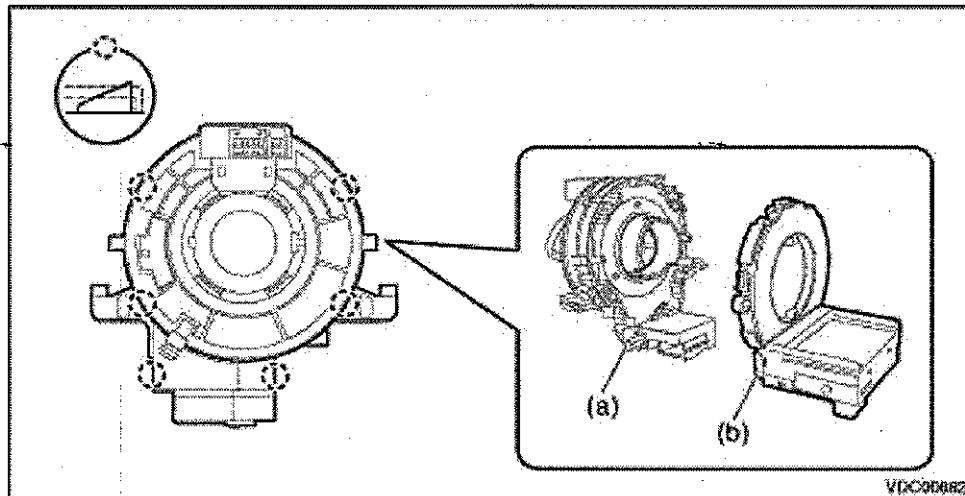
(b) Release the claws and remove the roll connector.



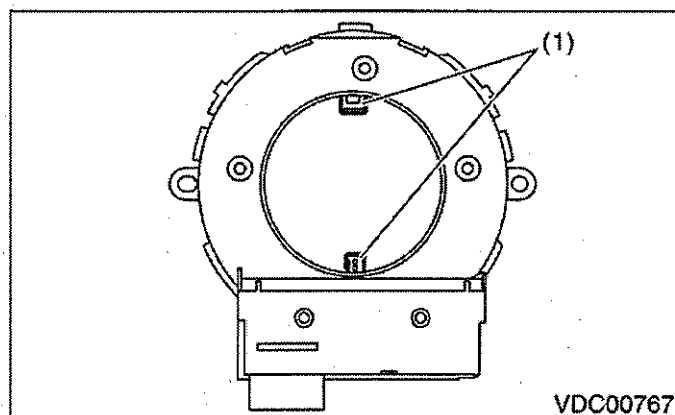
10) Remove the steering angle sensor from the roll connector as follows:

Release the claws and remove the steering angle sensor (b) from roll connector (a).

IMPORTANT: Do not rotate the inner ring after removing the steering angle sensor. If you rotate the steering angle sensor 360 degrees, the VDC system will not work properly.

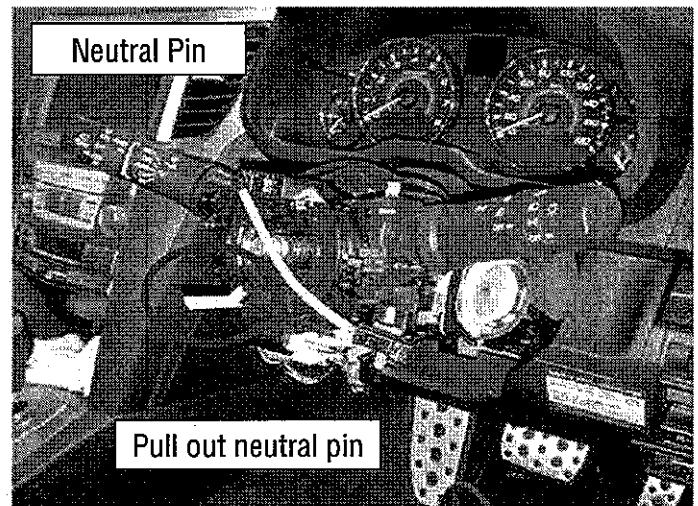
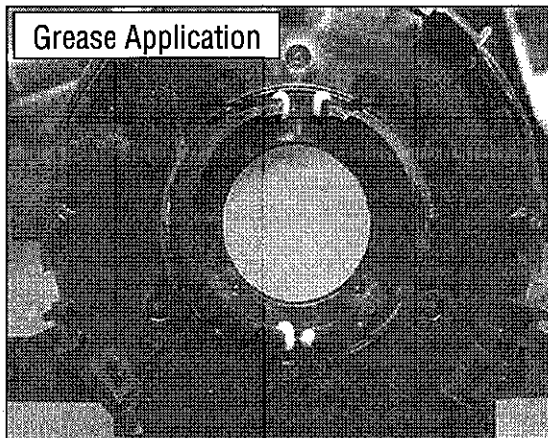


CAUTION: Do not rotate the steering angle sensor protrusions (call out "1", as shown).



- 11) Install the new steering roll connector as follows:
 - a) Wipe the old grease from the steering angle sensor.
 - b) Apply grease to 4 places on the new steering roll connector as shown in the photo below.
 - c) Align the position of the steering angle sensor protrusion and attach the steering angle sensor to the new steering roll connector. Do not rotate the steering angle sensor protrusion during assembly
- 12) Install the steering roll connector in the vehicle.
- 13) After the new steering roll connector is installed, pull out the roll connector neutral pin.

CAUTION: Do not rotate the steering angle sensor protrusion during installation.



- 14) Reassemble each part in reverse order of removal.

Tightening torque

Airbag module: 10N.m (10kg-f, 7.4ft-lb)

Steering wheel: 39N.m (40kg-f, 28.8ft-lb)

Column cover and steering wheel clearance: 2 - 4mm (0.08 - 0.06 inches)

- 15) Reconnect the Ground Cable to the battery.
- 16) Reset radio stations.

After installation, perform the neutral position setting of the steering angle sensor.

Set Up Mode For Steering Angle Sensor

- 1) Set the steering wheel to the neutral position.
- 2) Connect the Subaru Select Monitor.
- 3) On the «Main Menu» display, select {Each System Check}.
- 4) On the «System Selection Menu» display, select {Brake Control System}.
- 5) When {VDC} is displayed, select the [OK] button.
- 6) On the «Brake Control Diagnosis» display, select {Current Data Display & Save}.
- 7) Read {Steering angle sensor value}.

- 8) Check that the displayed value is between – 10 and 10 deg.
- 9) On the «Function Check Sequence» display, select {Set up mode for Neutral of “Steering Angle Sensor & Lateral G Sensor 0 point}.
- 10) Drive the vehicle for 3 minutes, and check that there is no system malfunction or warning light illumination while driving.
- 11) Make sure that there are no DTCs stored in memory.

CLAIM REIMBURSEMENT AND ENTRY PROCEDURES

Credit to perform this recall will be based on the submission of properly completed repair order information. Dealers may submit claims through Vehicle Claim Entry on Subarunet.com.

CLAIM TYPE	CAMPAIGN CODE	LABOR	LABOR OPERATION
RC	WVR-28	A182-028 0.2 hrs.	Steering Roll Connector Inspection
		A182-011 0.6 hrs.	Steering Roll Connector Inspect & Replace. Includes setting the steering angle neutral position. (Only applies when connector replacement was necessary)