

2.5 CLOCK SPRING COIL

IMPORTANT: Absolutely no wire, connector or terminal repairs are to be attempted on the clock spring coil. If the clock spring coil is damaged in any way, **REPLACE IT**.

REMOVE

1. Disable the SRS, refer [2.2. SYSTEM DISABLING AND ENABLING PROCEDURE - DISABLING THE SRS](#) in this Section.
2. Remove horn bar and air bag inflator module, refer [2.3. HORN BAR AND AIRBAG MODULE ASSEMBLY - REMOVE](#) in this Section.
3. Remove keys from ignition switch. This is to ensure that steering lock is activated and steering shaft can not rotate.
4. Remove two screws securing inner hub of clock spring coil to steering wheel.
5. Remove clock spring coil locking screw from steering wheel hub retaining location and install into clock spring coil inner hub through hole in steering wheel hub. This is necessary to prevent the relative parts of the clock spring coil from rotating during the remainder of this procedure.

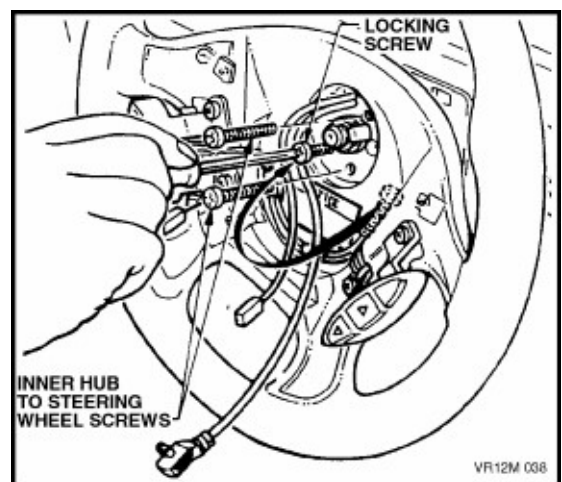


Figure 12M-54

6. Bend back tab washer tangs from steering wheel to steering shaft retaining nut. Loosen and remove retaining nut, remove tab washer.
Discard tab washer if there is any evidence of cracking at tang folds or if any tangs are broken off.
7. To aid installation of the steering wheel to its original position, scribe an aligning mark on the steering wheel hub centre section and steering shaft.

NOTE: Do not use a centre punch for this operation.

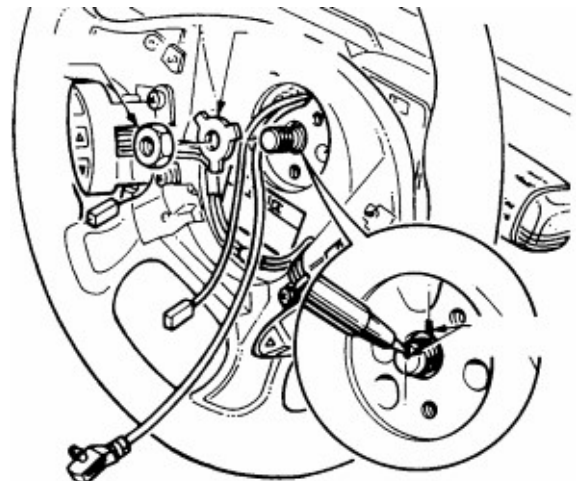


Figure 12M-55

8. Using puller, Tool No J1859-A and legs, Tool No. E1408, install to the steering wheel. After turning the lugged feet on each of the legs in an outward direction, tighten the puller forcing screw to pull the steering wheel from mating splines on the steering shaft.

Remove puller from steering wheel.

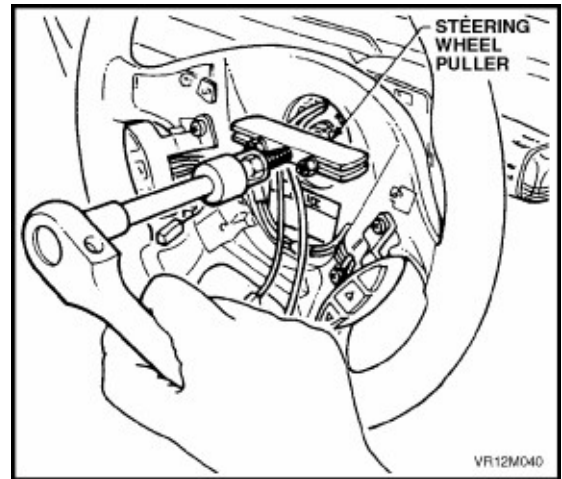


Figure 12M-56

9. Pull steering wheel from steering column, feeding out clock spring coil pigtail leads from opening in steering wheel hub.

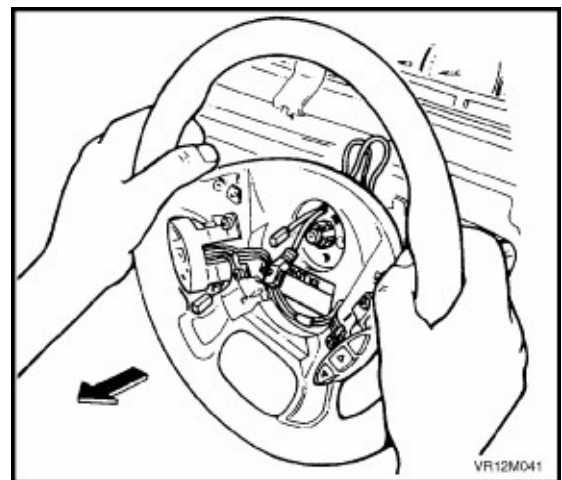


Figure 12M-57

10. Release steering column height adjusting lever and allow steering column to move upward. Leave lever in the released position.
11. Place a clean shop rag over and around steering column upper cover. This step is important so as to prevent any possibility of damage to cover should there be any contact with lower edge of instrument facia while removing the upper cover.

12. Remove steering column lower cover to column and upper cover attaching screws.

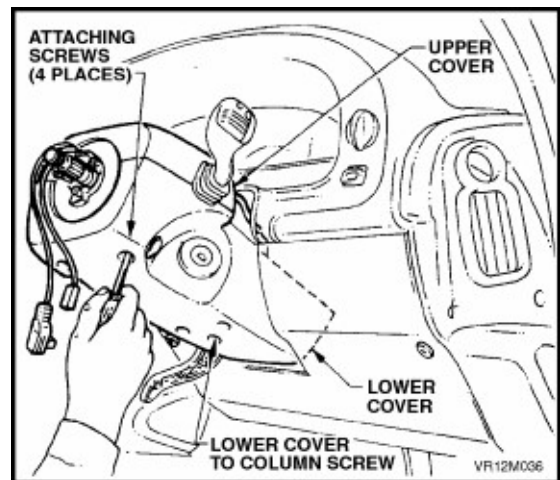


Figure 12M-58

13. Pull steering column upper cover up and away from instrument cluster, at the same time pulling lower cover down and toward instrument cluster. This will release the steering column lower cover end retainers from mating slots in upper cover.
14. Push down on steering column and feed upper cover out from between steering column and instrument panel pad, disengaging steering column to instrument facia screen from instrument panel pad edge, behind instrument facia.

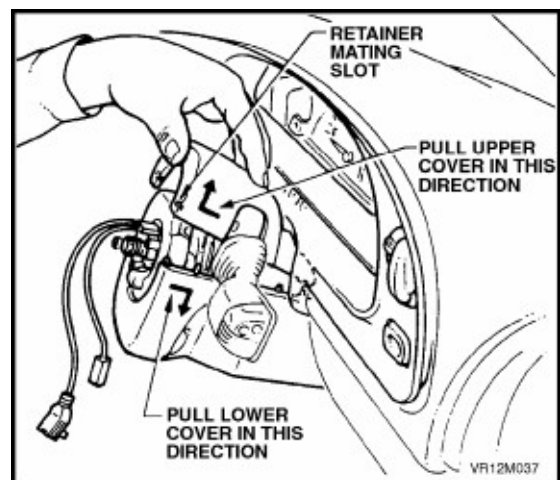


Figure 12M-59

15. Allow lower cover to drop down. Pull out right hand side of cover so as to clear ignition switch and slip ring, pull cover down over switch.
16. Pull ignition lock lamp socket from lamp housing and remove lower cover.

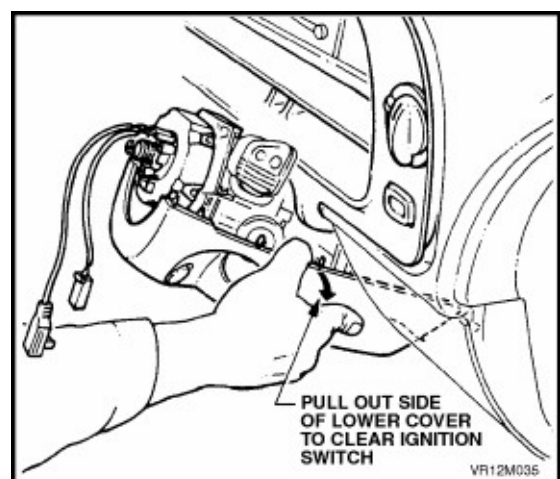


Figure 12M-60

17. At base of steering column lower cover, reach up and locate the SRS wiring harness to air bag inflator module clock spring coil connector. Squeeze together ends of SRS wiring harness connector retaining legs and pull connector from mating clock spring coil connector.

Disconnect main wiring harness to horn contact connector.

Disconnect horn contact connector and clock spring coil connector from steering column retaining bracket.

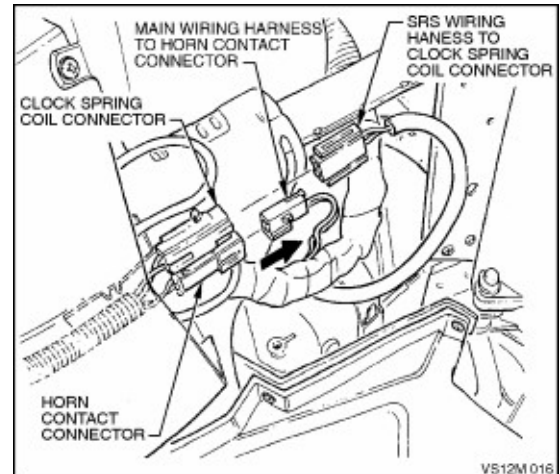


Figure 12M-61

18. Pull clock spring coil from switch housing and remove from steering column.

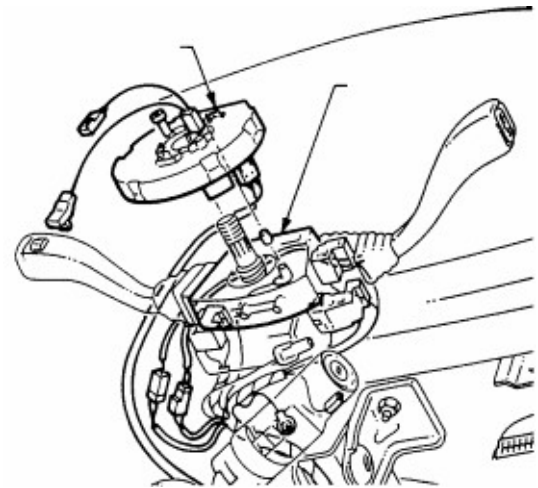


Figure 12M-62

CENTRING THE CLOCK SPRING COIL

NOTE: The following procedure must be followed when reusing a clock spring coil that has been removed from a steering column without the steering wheel being centred or the installation of the clock spring coil locking screw.

1. Ensure that steering gear is in centralised position before beginning clock spring coil ribbon wire installation, otherwise damage to the clock spring coil may result. Refer to Section 9A, STEERING in [Volume 5](#) or [Volume 12](#) of the VR Series Service Manual for details for determining steering gear centralised position.

2. While holding clock spring coil outer housing upright, grasp upper pigtail harness and rotate inner hub in an anti-clockwise direction until it becomes tight. Then rotate inner hub in opposite direction approximately 2 3/4 turns and then align arrow head stampings on inner hub and outer body.
3. While holding clock spring coil in this position, install and tighten inner hub locking screw.

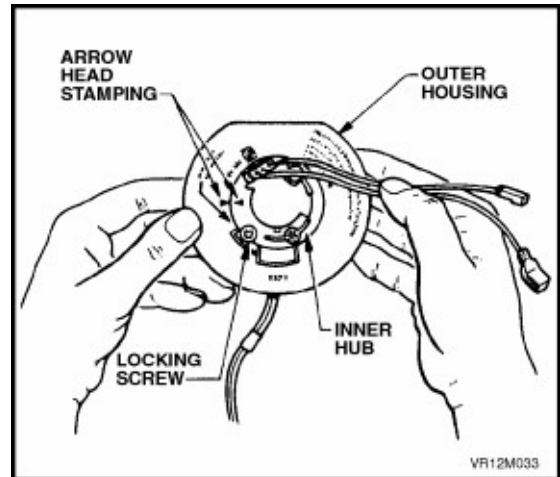


Figure 12M-63

REINSTALL

Reinstallation of the clock spring coil is the reverse of removal procedures, noting the following points:

1. Ensure that steering gear is in centralised position before beginning clock spring coil installation, otherwise damage to the clock spring coil ribbon wire may result. Refer to Section 9A, STEERING in [Volume 5](#) or [Volume 12](#) of the VR Series Service Manual for details for determining steering gear centralised position.
2. Assemble pre-centred clock spring coil over end of steering column and onto switch housing, aligning inner hub rear tang into headlamp and turn signal control switch. Also, align switch housing spring loaded horn contact between raised bosses on rear of clock spring coil main body.

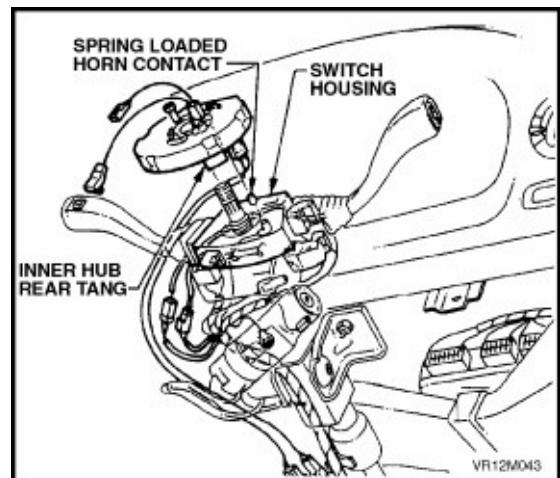


Figure 12M-64

3. Reconnect main wiring harness to clock spring coil horn lower connector.

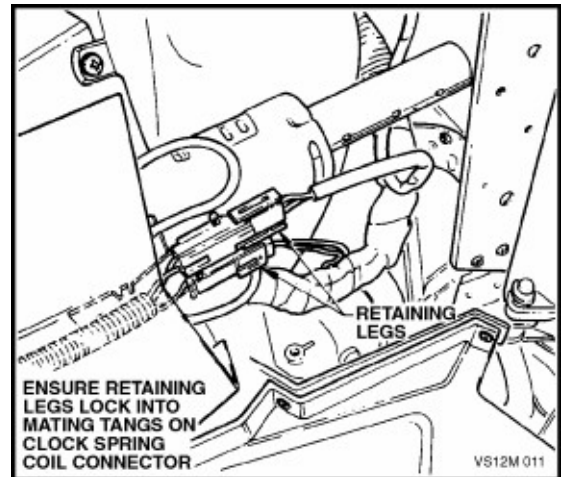


Figure 12M-65

4. Assemble steering wheel onto end of steering shaft and then feed clock spring coil leads through opening in steering wheel hub.
5. Install steering wheel onto splines of steering shaft, aligning marks made on removal.
6. Install tab washer onto steering wheel, aligning bent over tangs with mating holes in steering wheel hub. Apply Loctite 242 to the steering wheel to steering shaft retaining nut, install nut and tighten to the correct torque specification.

NOTE: Do not overtighten retaining nut. If this occurs, the alloy hub of the steering wheel will spread and be forced down the steering shaft. This will cause the steering wheel to foul the steering column covers, affect horn operation and possibly cause the self-cancelling feature of the turn indicators to be inoperative. Once distorted, the steering wheel must be replaced.

**STEERING WHEEL TO STEERING
SHAFT RETAINING NUT
TORQUE SPECIFICATION**

28 - 32 Nm

7. Bend tab washer tangs over retaining nut.
8. Install two screws securing inner hub of clock spring coil to steering wheel.
9. Through hole in hub of steering wheel, remove clock spring coil locking screw and reinstall into steering hub retaining location.
10. Tighten clock spring coil to steering wheel securing screws to the correct torque specification.

**CLOCK COIL SPRING TO STEERING
WHEEL SECURING SCREW
TORQUE SPECIFICATION**

0.3 - 0.7 Nm

11. Reinstall horn bar and air bag inflator module, refer [2.3, HORN BAR AND AIRBAG MODULE ASSEMBLY - REINSTALL](#) in this Section.
12. Enable the SRS, refer [2.2 SYSTEM DISABLING AND ENABLING PROCEDURE - ENABLING THE SRS](#) in this Section.
13. Switch ignition on, and observe SRS 'AIRBAG' warning lamp. The warning lamp should be illuminated for approximately 3.5 seconds. During this period of time the SDM performs a wiring and self check.

If no system faults are detected, the SRS 'AIRBAG' warning lamp will be switched off. If the warning lamp is again illuminated after approximately 2 seconds, a system fault is present. Refer to [3, DIAGNOSTICS](#) in this Section to rectify fault.