

STEERING COLUMN SWITCHES

Article Text

1991 Volkswagen Vanagon
For Volkswagen Technical Site
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Saturday, March 18, 2000 09:49PM

ARTICLE BEGINNING

1989-92 SAFETY EQUIPMENT
Steering Column Switches

Cabriolet, Corrado, Fox,
Golf, GTI, Jetta, Passat

WARNING: To avoid injury from accidental air bag deployment, read and carefully follow all WARNINGS and SERVICE PRECAUTIONS.

NOTE: For information on air bag DIAGNOSIS & TESTING or DISPOSAL PROCEDURES, see the AIR BAGS article.

SERVICE PRECAUTIONS

Observe these precautions when working with air bag systems:

- * DO NOT use computer memory saver tool. Using computer memory tool will keep air bag system active and may cause accidental deployment of air bag unit.
- * Disable air bag system before servicing any air bag system or steering column component. See DISABLING & ACTIVATING AIR BAG SYSTEM.
- * Because of critical operating requirements of system, DO NOT attempt to service any air bag system component.
- * Air bag parts should not be left unattended. They should be installed in vehicle immediately after obtaining them.
- * Air bag components which have been dropped more than 18 inches should not be used.
- * Chemical cleaners, oil and grease should not contact vinyl covering on air bag unit.
- * DO NOT place stickers or covers on steering wheel.
- * Always disable air bag system before performing electric welding on vehicle.
- * Air bag system can only be tested using Diagnostic Tester (VAG 1551) and Multimeter (US 1119). Never use test light on air bag system.
- * DO NOT expose air bag unit to temperatures greater than 194°F (90°C).

SYSTEM OPERATION CHECK

Two lights pertaining to air bag system are located directly above air bag symbol in instrument cluster. See Fig. 1.

Control light is used to indicate readiness of system. This light, which glows when ignition switch is turned to ON position or engine is started, will stay on approximately 5-8 seconds while diagnosis unit in air bag control unit performs an electronic test cycle of system.

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If control light does not glow when ignition is turned to ON position or does not go out after 5-8 seconds, a fault probably exists in system. If a fault occurs while ignition is on, it is stored in fault memory. Warning light will then glow and air bag system will be switched off. If warning light glows or flickers while driving, air bag system should be tested. See AIR BAG article in the ACCESSORIES/SAFETY EQUIPMENT Section.

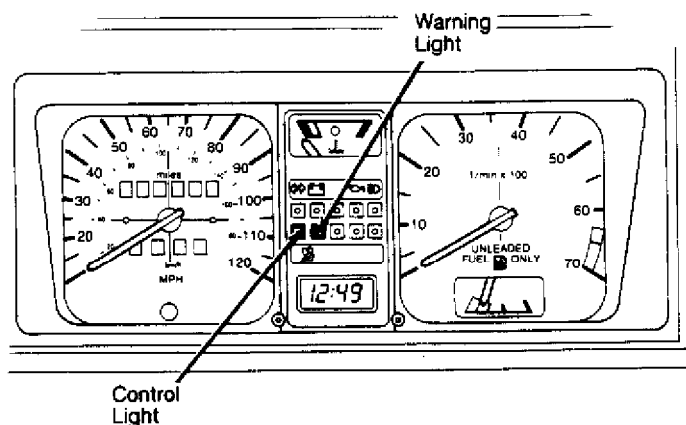


Fig. 1: Locating Air Bag Warning & Control Lights
Courtesy of Volkswagen United States, Inc.

DISABLING & ACTIVATING AIR BAG SYSTEM

WARNING: Wait about 20 minutes after deactivating air bag system before servicing. Air bag system voltage is maintained for about 20 minutes after system is deactivated. Servicing system before 20 minutes may cause accidental air bag deployment and possible personal injury.

To disable air bag system, disconnect negative battery cable and wait 20 minutes before working on vehicle. To activate system, reconnect negative battery cable. Perform a system operational check to ensure proper system operation. See SYSTEM OPERATION CHECK.

ADJUSTMENTS

AIR BAG SPIRAL SPRING

To center spiral spring assembly, turn spring assembly 4 turns from stop in either direction.

AIR BAG UNIT REMOVAL & INSTALLATION

WARNING: On Cabriolet equipped with a driver-side air bag, use extreme caution while servicing steering column. Failure to

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follow air bag service precautions may result in air bag deployment and personal injury. See SERVICE PRECAUTIONS. After component replacement, perform a system operational check to ensure proper system operation. See SYSTEM OPERATION CHECK.

Removal

1) Before proceeding, follow air bag service precautions. See SERVICE PRECAUTIONS. Disable air bag system. See DISABLING & ACTIVATING AIR BAG SYSTEM.

2) Air bag unit is located on steering wheel hub. Remove Torx head retaining screws on rear of steering wheel. See Fig. 2. Lift air bag unit from steering wheel, and tilt air bag unit downward. Disconnect wiring connector from air bag unit.

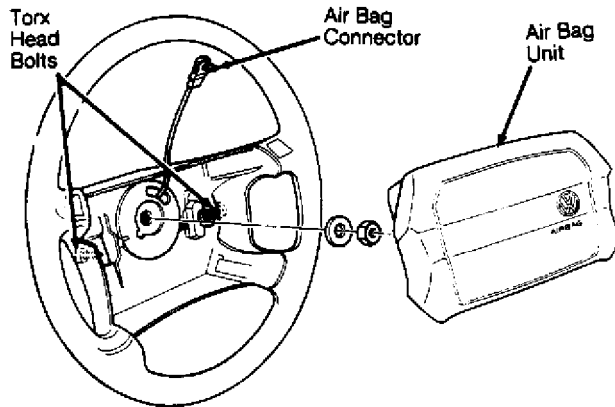


Fig. 2: Removing Air Bag Unit
Courtesy of Volkswagen United States, Inc.

Installation

To install, reverse removal procedure. Tighten air bag unit retaining screws to specification. See TORQUE SPECIFICATIONS table. Reactivate air bag system. See DISABLING & ACTIVATING AIR BAG SYSTEM. Check air bag indicator lights to ensure system is functioning properly. See SYSTEM OPERATION CHECK.

SPIRAL SPRING REMOVAL & INSTALLATION

Removal

1) Before proceeding, follow air bag service precautions. See SERVICE PRECAUTIONS. Disable air bag system. See DISABLING & ACTIVATING AIR BAG SYSTEM.

2) Remove air bag unit. See AIR BAG UNIT. Remove steering wheel. See STEERING WHEEL. Remove knee bar panel and steering column lower trim. Disconnect 2-pin wiring connector (Green/Black and Green/Red wires) at base of steering column. Remove 3 spiral spring retaining screws, and remove spiral spring. See Fig. 3.

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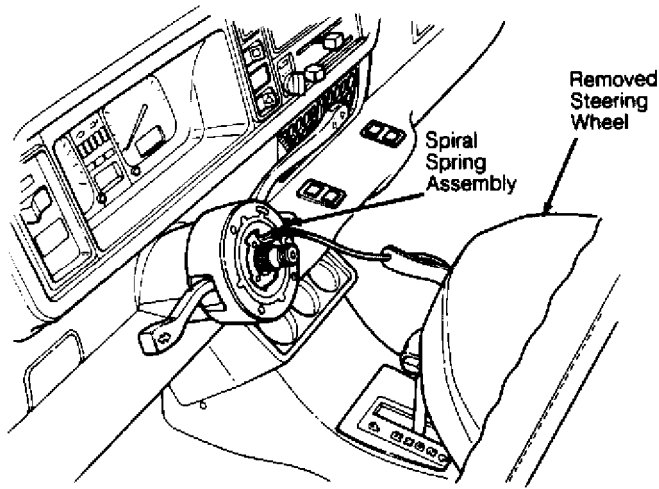


Fig. 3: Removing Spiral Spring Assembly
Courtesy of Volkswagen United States, Inc.

Installation

1) To install spiral spring assembly, reverse removal procedure. NEW spiral spring assemblies have a locking tab which locks assembly in its centered position. Locking tab must be removed before installing new spring assembly.

2) If a spiral spring assembly is reinstalled, it must be centered. To center, turn spring assembly 4 turns from stop, in either direction.

3) Reactivate air bag system. See DISABLING & ACTIVATING AIR BAG SYSTEM. Check air bag indicator lights to ensure system is functioning properly. See SYSTEM OPERATION CHECK.

STEERING WHEEL REMOVAL & INSTALLATION

Removal (Cabriolet)

1) Before proceeding, follow air bag service precautions. See SERVICE PRECAUTIONS. Disable air bag system. See DISABLING & ACTIVATING AIR BAG SYSTEM.

2) Turn front wheels to straight-ahead position. Remove air bag unit. See AIR BAG UNIT under REMOVAL & INSTALLATION. Remove steering wheel nut and spring washer. Mark steering wheel and shaft for reassembly reference. Remove steering wheel.

Installation

To install, reverse removal procedure. Tighten steering wheel nut to specification. See TORQUE SPECIFICATIONS table. Reactivate air bag system. See DISABLING & ACTIVATING AIR BAG SYSTEM. Check air bag indicator lights to ensure system is functioning properly. See SYSTEM OPERATION CHECK.

STEERING WHEEL & HORN PAD REMOVAL & INSTALLATION

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Removal (Except Cabriolet)

1) Disconnect negative battery cable. Remove screws attaching horn button assembly/center pad to steering wheel from behind steering wheel (if equipped).

2) Pull horn button assembly/center pad from steering wheel. Use a cloth covered screwdriver to pry off horn button assembly/center pad (if necessary). Disassemble horn button assembly (if necessary).

3) Place springs, contacts, horn or cruise control harness connectors and screws in order for reassembly reference. See Fig. 4. Place wheels in straight-ahead position.

4) Remove steering wheel retaining nut and washer. Mark steering wheel and shaft for reassembly reference. Using a steering wheel puller, remove steering wheel. See Fig. 5.

5) Place steering wheel, cruise control set/resume switch (if equipped), canceling cams, springs and slip rings in order for reassembly reference.

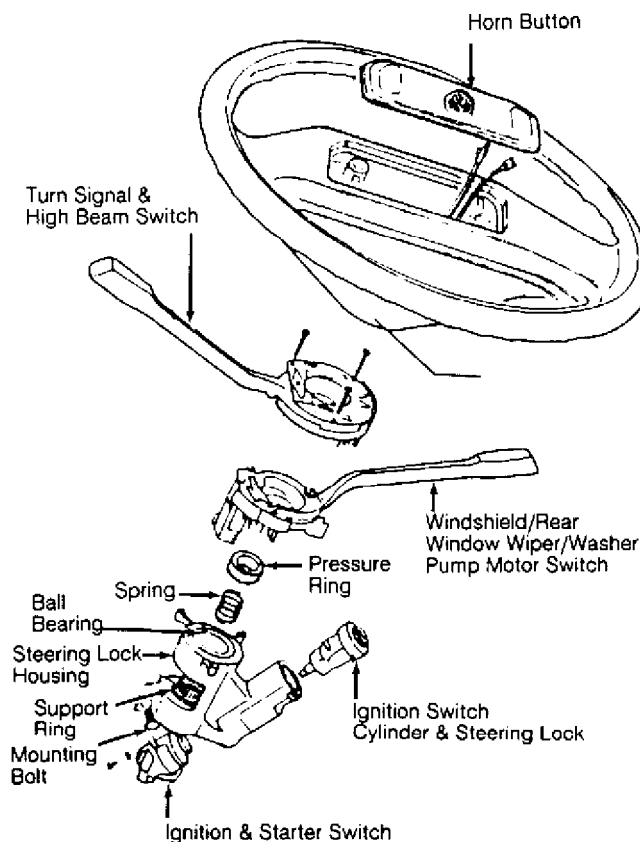


Fig. 4: Typical Steering Wheel Components (Without Air Bag - Fox Shown; Others Are Similar)

Courtesy of Volkswagen United States, Inc.

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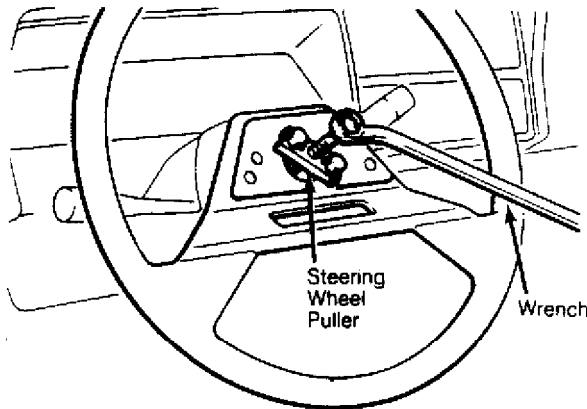


Fig. 5: Removing Steering Wheel (Typical)
Courtesy of Volkswagen United States, Inc.

Installation

1) Coat slip ring contact surfaces with a light electrical grease. Assemble horn button assembly (if disassembled). Ensure wheels are in a straight-ahead position.

2) Aligning marks made during removal, place slip ring, springs, canceling cams, steering wheel, washer and steering wheel retaining nut on shaft.

3) Tighten steering wheel nut to specification. See TORQUE SPECIFICATIONS table. To complete installation, reverse removal procedure.

COMBINATION SWITCH REMOVAL & INSTALLATION

Removal

Remove steering wheel. Remove upper and lower steering column covers. Disconnect combination switch harness connectors. Remove snap ring and washer from steering shaft (if equipped). Remove combination switch attaching screws. Remove combination switch.

Installation

To install, reverse removal procedure. Ensure all electrical connections are tight. Check canceling operation of turn signal switch.

STEERING LOCK & IGNITION SWITCH REMOVAL & INSTALLATION

Removal

1) Remove steering wheel, upper and lower steering column covers and combination switch. Disconnect ignition switch harness connectors.

2) Remove clamping washers, spring and contact ring from steering column. Remove steering lock housing mounting bolt. Remove steering lock housing from steering column.

Installation

1) To install, reverse removal procedure. Slide steering lock housing onto steering column. Install contact ring, spring and

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clamping washers onto steering column. Ensure proper operation of steering lock and ignition switch.

NOTE: On Corrado, pull steering column upward from steering column tube as far as possible to ensure proper column position.

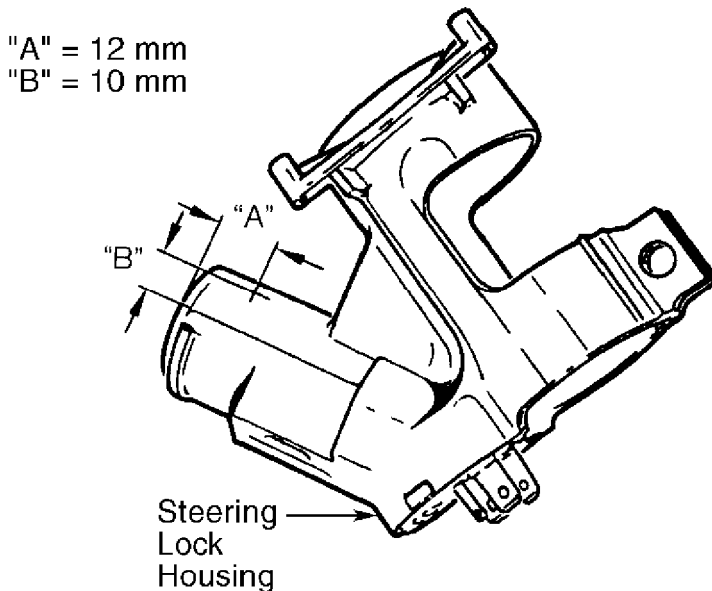
2) Install combination switch, upper and lower steering column covers and steering wheel. Tighten steering wheel nut to specification. See TORQUE SPECIFICATIONS table.

LOCK CYLINDER REMOVAL & INSTALLATION

Removal

1) Remove steering wheel. Remove combination switch and upper and lower steering wheel covers. Mark steering lock housing at intersection of "A" and "B" for hole. See Fig. 6. "A"=12 mm; "B"=10 mm.

2) Drill 3 mm hole into steering lock housing at mark until lock cylinder stop spring is visible. Hole depth will be approximately 3 mm. Compress stop spring with punch and pull lock cylinder out.



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Fig. 6: Drilling Steering Lock Housing
Courtesy of Volkswagen United States, Inc.

Installation

1) Insert lock cylinder into steering lock housing. Insert key into lock cylinder. Push lock cylinder fully into housing while gently turning key.

2) Install combination switch and upper and lower steering column covers. Install steering wheel and nut. Tighten steering wheel nut to specification. See TORQUE SPECIFICATIONS table.

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TORQUE SPECIFICATIONS

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AA

Application Ft. Lbs. (N.m)

Steering Wheel Nut 30 (40)

INCH Lbs. (N.m)

Air Bag Unit-To-Steering Wheel Screws 89 (10)

AA

END OF ARTICLE