

# **STEERING COLUMN**

## **Article Text**

1996 Volkswagen Golf

For Volkswagen Technical Site

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Thursday, August 19, 1999 11:55PM

### **ARTICLE BEGINNING**

1995-96 STEERING

Volkswagen - Steering Columns

Golf III

**WARNING:** All models are equipped with a Supplemental Restraint System (SRS) that includes an air bag located in steering wheel. Use caution when working around steering column. Ensure battery is disconnected before attempting any repair. DO NOT apply electrical power to any component on steering column without disconnecting air bag module (air bag could deploy).

**NOTE:** For information on air bag DIAGNOSIS & TESTING or DISPOSAL PROCEDURES, see appropriate AIR BAG RESTRAINT SYSTEM article in ACCESSORIES/SAFETY EQUIPMENT section:

- \* AIR BAG RESTRAINT SYSTEM - 1995
- \* AIR BAG RESTRAINT SYSTEM - 1996

### **DESCRIPTION**

Steering column shaft is held together by a nylon button. During an accident, the nylon button shears and upper part of shaft slides down over lower part of shaft. This allows SRS to maintain proper alignment during inflation while absorbing impact of collision.

### **DISABLING & ACTIVATING AIR BAG SYSTEM**

To disable air bag system, disconnect and isolate negative battery cable. No waiting time is necessary before working on vehicle. To activate system, turn ignition switch to ON position and exit vehicle. Reconnect negative battery cable. Perform a system operational check to ensure proper system operation. See SYSTEM OPERATION CHECK.

### **SERVICE PRECAUTIONS**

Observe these precautions when working with air bag systems:

- \* 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 removing them from their packaging.
- \* Air bag components which have been dropped onto a hard surface should not be used.

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- \* Chemical cleaners, oil and grease should not contact vinyl covering on air bag module.
- \* Always disable air bag system before performing electric welding on vehicle.
- \* Air bag system can only be tested using Diagnostic Tester (VAG 1551). Never use test light on air bag system.

### SYSTEM OPERATION CHECK

An air bag light is located on left side of instrument cluster. Air bag light is used to indicate readiness of system. Light glows when ignition switch is on or engine is started. Light should stay on about 3 seconds while air bag control unit performs an electronic test of system.

If air bag light does not glow when ignition is on or does not go out after 3 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 DIAGNOSIS & TESTING in appropriate AIR BAG RESTRAINT SYSTEM article in ACCESSORIES/SAFETY EQUIPMENT section.

- \* AIR BAG RESTRAINT SYSTEM - 1995
- \* AIR BAG RESTRAINT SYSTEM - 1996

### ADJUSTMENTS

#### AIR BAG SPIRAL SPRING

To center spiral spring assembly, turn spring assembly 3 turns from stop in either direction.

### REMOVAL & INSTALLATION

**WARNING:** Failure to 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.

#### AIR BAG MODULE

##### 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 module is located in steering wheel. See Fig. 1. Remove air bag module Torx head screws from rear of steering wheel. Lift off air bag module from steering wheel, and tilt air bag module downward. Disconnect air bag module connector.

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#### Installation

To install, reverse removal procedure. Tighten air bag module retaining screws to specification. See **TORQUE SPECIFICATIONS**. 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**.

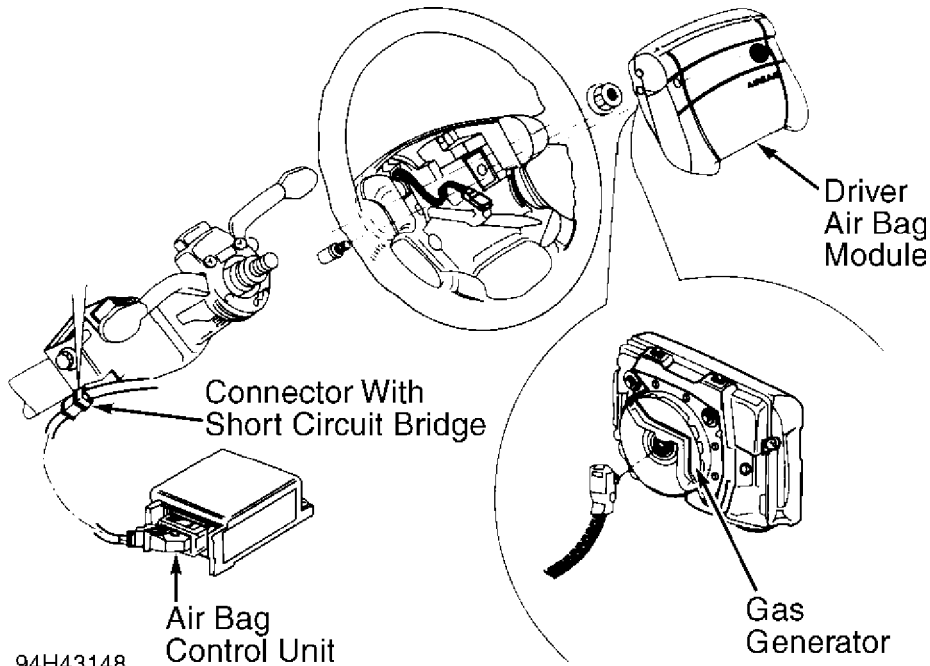


Fig. 1: Exploded View Of SRS Components  
Courtesy of Volkswagen of United States, Inc.

#### IGNITION SWITCH

##### Removal & Installation

- 1) Remove steering wheel. See **STEERING WHEEL**. Remove lower cover from steering column.
- 2) Remove turn signal and windshield wiper switches. See **TURN SIGNAL SWITCH** and **WINDSHIELD WIPER SWITCH**. Remove lock washer, spring and horn contact ring. Remove steering column tube-to-steering column housing bolt.
- 3) Disconnect ignition switch connector. Unlock steering with ignition key. Remove steering column housing, ignition lock and upper half of steering column switch cover. Remove and ignition switch screw and ignition switch. To install ignition switch, reverse removal procedure.

#### SPIRAL SPRING

##### 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 module. See **AIR BAG MODULE**. Remove steering

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wheel. See STEERING WHEEL. Remove knee bar panel and steering column lower trim. Disconnect 2-pin connector at base of steering column. Remove 3 spiral spring screws, and remove spiral spring. See Fig. 2.

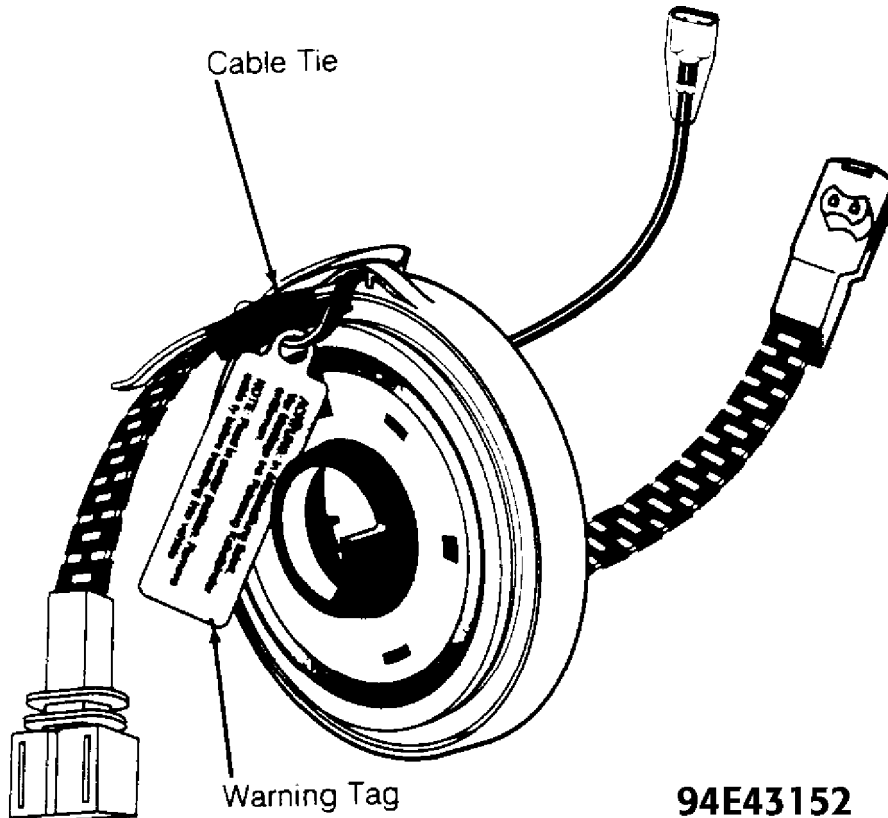


Fig. 2: Installing Spiral Spring  
Courtesy of Volkswagen of United States, Inc.

#### Installation

1) New spiral spring assemblies have a cable tie which locks assembly in its centered position. Cable tie 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) To install spiral spring assembly, reverse removal procedure. 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 COLUMN

**WARNING:** Remove air bag from vehicle before working on steering column. See AIR BAG MODULE. Failure to remove air bag may result in personal injury.

**NOTE:** Refer to appropriate illustration for exploded view of steering column. See Fig. 3 or 4.

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#### **Removal**

1) Disconnect negative battery cable. Remove steering wheel. See STEERING WHEEL. Remove bolt and screw from switch housing recess. Tilt switch unit toward instrument panel. Pry spacer sleeve from column.

2) Pull up combination switch to disconnect connector. Remove combination switch. Disconnect steering shaft from "U" joint shaft. Disconnect brake pedal push rod.

3) Disconnect clutch cable from clutch pedal (if equipped). Remove steering column bolts under instrument panel. Drill out shear bolts. Remove column assembly from vehicle.

#### **Installation**

To install, reverse removal procedure. Place wheels in straight-ahead position. Tighten pinch bolt. Install spacer. Install combination switch and steering wheel. Adjust brake pedal and clutch pedal height.

### **STEERING WHEEL**

**CAUTION:** Applying excessive pressure or causing impact to mainshaft during service may cause the column to disengage.

#### **Removal**

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 module. See AIR BAG MODULE. 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. 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.

### **TURN SIGNAL SWITCH**

#### **Removal & Installation**

Remove steering wheel. See STEERING WHEEL. Disconnect turn signal switch connector. Remove turn signal switch. To install, reverse removal procedure.

### **WINDSHIELD WIPER SWITCH**

#### **Removal & Installation**

Remove steering wheel. See STEERING WHEEL. Remove turn signal switch. See TURN SIGNAL SWITCH. Disconnect windshield wiper switch

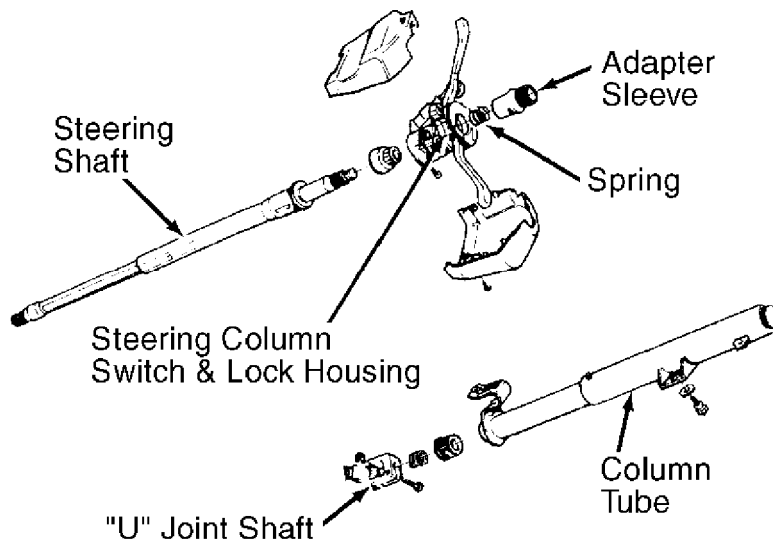
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connector. Remove windshield wiper switch. To install, reverse removal procedure.

## OVERHAUL

### STEERING COLUMN

**NOTE:** Refer to appropriate illustration for exploded view of steering column. See Fig. 3.



93G83564  
**Fig. 3: Exploded View Of Steering Column**  
Courtesy of Volkswagen United States, Inc.

#### Disassembly

Press steering shaft (column) from column tube. Remove bearings from steering shaft.

#### Inspection

Check upper bracket for damage and upper bearing for smooth rotation. Check shafts for signs of bending, damaged splines, or damaged "U" joints. Check column tube for bending or other damage. Repair or replace components as necessary.

#### Reassembly

Press in steering shaft and new bearings. DO NOT use more than 200 lbs. (90 kg) force to press shaft and bearings into column tube.

### "U" JOINT SHAFT

#### Disassembly

1) Remove lower "U" joint shaft-to-steering gear pinion shaft pinch bolt. Separate manual gearshift linkage from steering box (if equipped). Remove steering gear nuts.

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2) Pull box down to separate from lower "U" joint. Remove rubber boot from lower "U" joint. Remove upper "U" joint pinch bolt. Pull down joint and remove shaft with "U" joints.

#### Inspection

Inspect "U" joints for wear or excessive play. If abnormal wear or play exists, replace as necessary.

#### Reassembly

1) Fit "U" joint to steering shaft. Align steering shaft notch with lower "U" joint slot. Install boot and damping grommet. Fit steering box to frame while guiding pinion shaft into lower "U" joint.

2) Hand-tighten steering gear retaining nuts. Place wheels in straight-ahead position. Align steering shaft (column) and "U" joint. Tighten pinch bolt. Tighten steering gear nuts. Connect gearshift linkage. Check linkage for smooth operation.

## TORQUE SPECIFICATIONS

### TORQUE SPECIFICATIONS TABLE

AA

Application	Ft. Lbs. (N.m)
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Pinch Bolt .....	22 (30)
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Shear Bolt .....	(1)
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Steering Column-To-Instrument Panel Bolt .....	16 (22)
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Steering Gear Nut .....	22 (30)
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Steering Wheel Nut .....	37 (50)
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INCH Lbs. (N.m)

Air Bag Module-To-Steering Wheel Screws .....	57 (6.5)
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(1) - Tighten until bolt head snaps off.

AA

END OF ARTICLE