

# STEERING COLUMN

## Article Text

1991 Volkswagen Passat  
For Volkswagen Technical Site  
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Wednesday, August 25, 1999 09:03PM

### ARTICLE BEGINNING

1990-92 STEERING  
Volkswagen Steering Columns

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 appropriate AIR BAG article in the ACCESSORIES/SAFETY EQUIPMENT Section

### DESCRIPTION

Swing-away steering column is held by a clamp and leaf spring. On impact, the "U" joint shaft pushes steering column against the leaf spring. The spring allows the column to disengage and swing away.

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

### REMOVAL & INSTALLATION

#### AIR BAG

**WARNING:** On Cabriolet with Supplemental Restraint System (air bag), remove air bag from vehicle before working on steering column. Follow all WARNINGS and SERVICE PRECAUTIONS to prevent injury from accidental air bag deployment. See AIR BAG article in the ACCESSORY/SAFETY EQUIPMENT.

#### Removal & Installation (Cabriolet)

1) Disconnect negative battery cable. Wait at least 20 minutes for air bag capacitor to discharge. Remove 2 Torx screws (No. 30) from back of steering wheel.

2) Carefully tilt air bag down away from steering wheel. Disconnect electrical wire from back of air bag unit. Remove air bag unit from vehicle. DO NOT store air bag unit on its vinyl side. Store air bag unit on its metal housing.

3) To install, reverse removal procedure. Install new Torx screws to hold air bag unit in steering wheel. Tighten Torx screws to 89 INCH lbs. (10 N.m).

#### STEERING WHEEL & HORN PAD

#### Removal & Installation

1) Disconnect negative battery cable. On Corrado and Passat, lift cover from bottom, then pull cover away from steering wheel. On

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Corrado and Passat, spread horn button locating lugs, then separate contact plates. On other models, pry center cover from steering wheel.

2) Disconnect horn wiring. Ensure steering wheel is in straight-ahead position. Mark shaft and wheel for reassembly reference. Remove retaining nut and washer. Pull steering wheel from shaft. Reverse removal procedure to install.

### TURN SIGNAL SWITCH

#### Removal & Installation

Remove steering wheel. See STEERING WHEEL & HORN PAD. Remove retaining screws. Unplug harness connector. Remove turn signal switch. To install, reverse removal procedure.

### WINDSHIELD WIPER SWITCH

#### Removal & Installation

Remove steering wheel. See STEERING WHEEL & HORN PAD. Remove turn signal switch. See TURN SIGNAL SWITCH. Remove retaining screws. Unplug harness connector. Remove windshield wiper switch. To install, reverse removal procedure.

### IGNITION SWITCH (ALL BUT CORRADO)

#### Removal (All But Corrado)

1) Remove steering wheel. See STEERING WHEEL & HORN PAD. Remove lower cover from steering column. Remove turn signal and windshield wiper switches. See TURN SIGNAL SWITCH and WINDSHIELD WIPER SWITCH. Remove lock washer, spring and horn contact ring.

2) Remove bolt retaining steering column tube to steering column housing. Disconnect wiring from ignition switch. Unlock steering with ignition key. Remove steering column housing, ignition lock and upper half of steering column switch cover. Remove retaining screw and ignition switch.

#### Installation

To install ignition switch, reverse removal procedure.

#### Removal (Corrado)

1) Remove steering column and steering column switch. Insert ignition key in ignition lock. Mark dimension "a" in Fig. 1. on line with key (0.5" (12mm)).

2) Bore hole approximately 0.12" (3mm) in diameter through steering lock housing until stop spring of lock cylinder is visible; hole depth is approximately 0.12" (3mm). Compress stop spring with a punch and pull out lock cylinder with key.

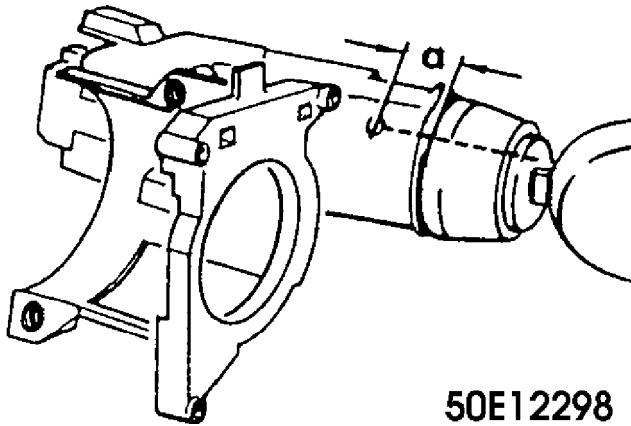


Fig. 1: Lock Cylinder

#### Installation

Press lock cylinder into steering lock housing.

**NOTE:** The lock cylinder can be pressed in to stop by gently turning the key in the lock cylinder.

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**WARNING:** On Cabriolet with Supplemental Restraint System (air bag), remove air bag from vehicle before working on steering column. See AIR BAG under REMOVAL & INSTALLATION. Failure to remove air bag may result in personal injury.

**NOTE:** Refer to illustration for exploded view of steering column components. See Fig. 2.

#### Removal (Cabriolet)

1) Disconnect battery ground cable. Remove steering wheel. Remove kneebars panel. Remove steering column lower trim panel. Unplug 2 electrical connectors.

2) Remove spiral spring assembly retaining screws. Remove lock ring, spacer ring, spring and steering lock housing. Position Tube (VW 420) on steering column. Release lock ring tension using snap ring pliers.

3) Ring will slide upward with spring pressure. Remove steering column. To remove leaf spring from steering column tube, push retaining spring downward with a screwdriver. Disengage leaf spring.

#### Installation

To install, reverse removal procedure. When installing spiral spring, install 4 turns from either stop. To install leaf spring on steering column tube, insert leaf spring in bracket slot. Press lower end of leaf spring inward until it engages retaining spring.

#### Removal (Except Cabriolet)

1) Disconnect battery ground cable. Remove steering wheel. Remove bolt and screw from switch housing recess. Tilt switch unit

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toward instrument panel. Pry spacer sleeve from column.

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

3) Disconnect clutch cable from clutch pedal. Using a screwdriver, push down leaf spring retainer clip to disengage it from mounting slot.

4) Remove bolts that retain steering column under instrument panel. Drill out shear bolts. Remove column assembly from vehicle.

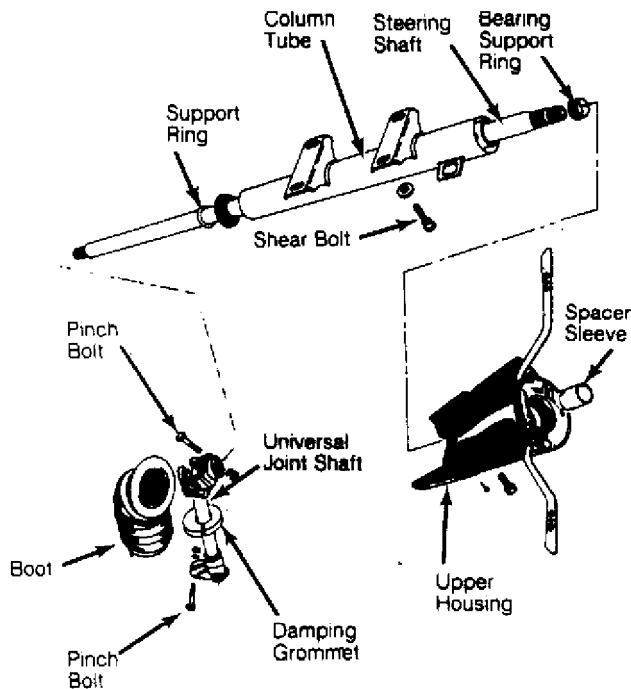


Fig. 2: Identifying Steering Column Components  
Courtesy of Volkswagen United States, Inc.

#### Installation

To install, reverse removal procedure. Place wheels in straight-ahead position. Tighten pinch bolt. Install spacer. See Fig. 2. Install combination switch and steering wheel. Adjust brake pedal and clutch pedal height.

## OVERHAUL

### STEERING COLUMN

**NOTE:** Refer to illustration for exploded view of steering column components. See Fig. 2.

#### Disassembly

Press steering shaft from column. Remove bearings from steering column.

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### 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 pinch bolt that connects lower end of "U" joint shaft to steering gear pinion shaft. See Fig. 2. Separate manual gearshift linkage from steering box. Remove steering gear retaining nuts.

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 pinion shaft and "U" joint. Tighten pinch bolt. Tighten steering gear retaining nuts. Connect gearshift linkage. Check linkage for smooth operation.

## TORQUE SPECIFICATIONS

### TORQUE SPECIFICATIONS TABLE

Application Ft. Lbs. (N.m)

Pinch Bolt	22 (30)
Steering Column-To-Instrument Panel	
Retaining Bolt	15 (20)
Shear Bolt	(1)
Steering Gear Retaining Nut	22 (30)
Steering Wheel Nut	37 (50)

(1) - Tighten until bolt head snaps off.

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**END OF ARTICLE**