

# SEAT BELTS - AUTOMATIC

## Article Text

1991 Volkswagen Passat  
For Volkswagen Technical Site  
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Wednesday, August 25, 1999 09:02PM

### ARTICLE BEGINNING

1990-92 ACCESSORIES & SAFETY EQUIPMENT  
Volkswagen - Automatic Shoulder Belts

Passat

### DESCRIPTION

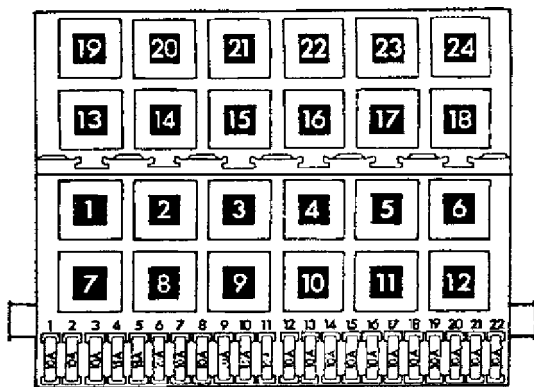
The Volkswagen automatic shoulder belt system is a passive restraint system. The driver and front seat passenger are automatically restrained by an upper torso belt as they sit down, close the door, and the ignition key is fumed in the ignition switch. The lap belt must also be latched manually.

The safety belt warning light and chime will come on briefly to check the system, and should go out a few seconds after the upper torso belt slides are in their fully latched positions. If not:

- \* A door is not fully closed
- \* The belt buckle is not properly engaged on the driver side
- \* The torso belts are buckled on the wrong sides
- \* A belt slide is not in its fully latched position

The chime will sound whenever the driver's side door is open and the key is turned in the ignition switch.

### COMPONENT LOCATIONS



50G16176

Fig. 1: Fuse & Relay Locations

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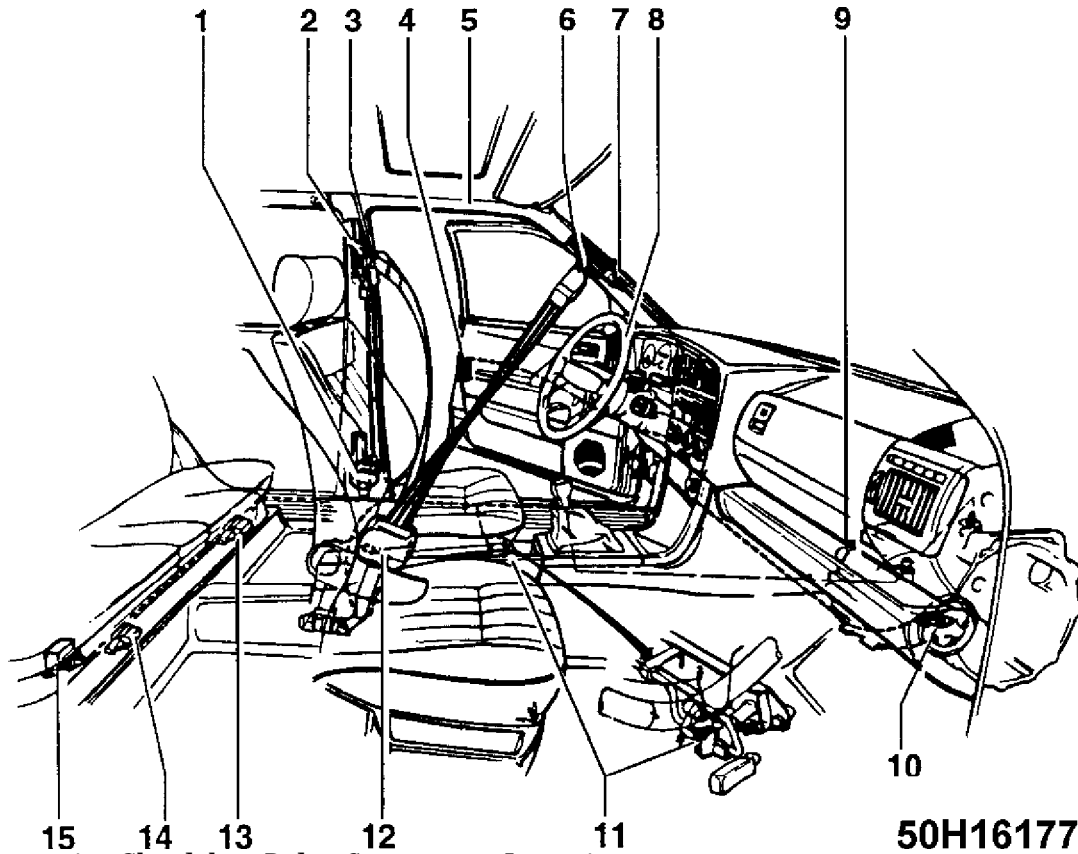


Fig. 2: Automatic Shoulder Belt Component Locations

50H16177

### COMPONENT LOCATIONS

Location		Description
1	.....	Drive unit
2	.....	Emergency belt release buckle
3	.....	Pillar switch w/lock control (driver-side only)
4	.....	Door lock microswitch
5	.....	Track
6	.....	Slide
7	.....	A-pillar switch
8	.....	Warning light
9	.....	Seat belt warning control unit
10	.....	Kneebars
11	.....	Reverse gear switch
12	.....	Shoulder belt lock release switch
13	.....	Lap belt
14	.....	Shoulder belt
15	.....	Seat belt control unit
16	.....	Motion sensor

CAUTION: Disconnect battery ground strap before removing drive unit.

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Connect and disconnect battery cables only with the ignition off to prevent sparks.

**CAUTION:** Before disconnecting the battery, make sure you know the correct activation code for the anti-theft radio.

### **TROUBLESHOOTING**

**NOTE:** Before starting any tests, ensure that fuses and battery charge are okay.

**NOTE:** Always refer to appropriate wiring diagram when troubleshooting.

#### **BOTH BELTS DO NOT MOVE TO B-PILLAR WITH DOORS SHUT & IGNITION ON**

1) Check control unit (J227/J228) ground connection.

Disconnect battery ground strap. Remove or fold over rear seat bench. Remove seat belt control unit (J227 left or J228 right). Check for continuity between Brown wire terminal on left seat belt control unit connector and ground. Check for continuity between Brown wire terminal on right seat belt control unit connector and ground. If continuity exists, go to step 2). If continuity does not exist, check fuse/relay panel for open circuit.

2) Check power (from ignition switch) to control unit (J227/J228). Connect battery ground. Turn ignition switch ON. Check for battery voltage between Brown/White wire terminal and Brown wire terminal on left seat belt control unit connector. Check for battery voltage between Brown/Red wire terminal and Brown wire terminal on right seat belt control unit connector. If battery voltage exists, proceed to step 3). If battery voltage does not exist, check connector T1 and ignition switch for open circuit. Repair wiring, or replace ignition switch.

3) If battery voltage was read in step 2), check fuse/relay panel connector Y/1 and connection terminal 30. Check for battery voltage between Red wire terminal and Brown wire terminal on right seat belt control unit connector. Check for battery voltage between Red wire terminal and Brown wire terminal on left seat belt control unit connector. If voltage does not exist, check wiring. See **WIRING DIAGRAM**

#### **DRIVER OR PASSENGER BELT DOES NOT MOVE TO B-PILLAR**

1) Check B-pillar microswitch. Disconnect battery ground strap. Remove or fold down rear seat. Remove appropriate control unit. Disconnect 4-point connector under left rear seat. Check for continuity between Blue/Yellow wire terminal and Brown wire terminal on left control unit connector. Check for continuity between Blue wire terminal and Brown wire terminal on right control unit connector. There should be no continuity in either check. If continuity exists, replace B-pillar microswitch. If continuity does not exist, proceed to

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step 2).

2) On driver's side, check ground from rear belt switch. Remove B-pillar trim. Remove connector from microswitch. Check for continuity between Brown wire terminal at microswitch connector and ground. If continuity does not exist, check for open circuit in connector and ground. If continuity does exist, proceed to step 3).

3) Check door latch switches. Close doors. Check for continuity between Brown wire terminal and Black/White wire terminal on left side control unit connector. Check for continuity between Brown wire terminal and Blue/White wire terminal on right side control unit connector. If continuity exists in either test, check and/or replace appropriate door latch switch. If continuity does not exist, proceed to step 4).

4) Check for power from ignition switch to control unit. Check for battery voltage between Brown/White wire terminal and Brown wire terminal at left control unit connector. Check for battery voltage between Brown/Red wire terminal and Brown wire terminal at right control unit connector. If battery voltage does not exist, check wiring to connector T1 for open circuit. If wiring is okay, replace ignition switch. If voltage exists, proceed.

5) Check belt adjuster motors. Disconnect battery ground. Check for continuity between White wire terminal and White/Black wire terminal at left control unit connector. Check for continuity between Yellow wire terminal and Yellow/Black wire terminal at right control unit connector. If continuity exists, replace appropriate control unit. If continuity does not exist, proceed.

6) Check wiring between appropriate control unit appropriate adjuster motor for open circuit. Repair wiring or replace belt adjuster motor.

#### DRIVER OR PASSENGER BELT DOES NOT MOVE TO A-PILLAR WHEN DOOR IS OPENED

1) Check for power from ignition switch to control unit with ignition key removed. Check fuse S51. Check for voltage between Brown/White wire terminal and Brown wire terminal at left control unit connector. Check for voltage between Brown/Red wire terminal and Brown wire terminal at right control unit connector. If voltage exists, check wiring from ignition switch. If wiring is okay, replace ignition switch. If voltage does not exist, proceed.

2) Check voltage at motion/delay sensor. Remove left rear seat. Disconnect battery ground. Disconnect connector from motion/time delay sensor. Reconnect battery ground. Check for battery voltage between terminal 3/30 (Red wire) and terminal 2/ES (Black wire) at sensor connector. If battery voltage does not exist, proceed to step 4). If battery voltage exists, proceed to step 3).

3) Check if motion/time delay sensor is defective (always activated). Disconnect battery ground. Reconnect motion/time delay sensor connector. Remove left seat belt control unit. Reconnect battery ground. Check for battery voltage between Black wire terminal and Grey wire terminal at control unit connector. If battery voltage is not present, check for open circuit from motion/time delay sensor,

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replace seat belt control unit or replace motion/time delay sensor. If voltage is present, sensor is okay.

4) Check fuse/relay panel connector Y/1 and connection at terminal 30. Check for battery voltage between Red wire terminal and Brown wire terminal at right control unit connector. Check for battery voltage between Red wire terminal and Brown wire terminal at left control unit connector. If voltage does not exist, check wiring from connector Y/1 to control unit. See WIRING DIAGRAM. If voltage does exist, check wiring between fuse S51 and terminal 3/30 on motion/time delay sensor for open circuit.

#### BELTS ONLY MOVE TO A-PILLAR WHEN DOOR OPENED & KEY REMOVED

Check door latch switches. Disconnect battery ground. Open doors. Remove control unit. Check for continuity between Brown wire terminal and Black/White wire terminal of left side control unit connector. Check for continuity between Brown wire terminal and Blue/White wire terminal of right side control unit connector. If continuity does not exist replace appropriate door switch. If continuity exists, replace appropriate seat belt control unit.

#### BELTS DO NOT MOVE TO A-PILLAR AFTER REMOVING IGNITION KEY

1) Check A-pillar microswitch. Disconnect battery ground. Remove seat belt control unit. Check for continuity between Brown wire terminal and Green/Yellow wire terminal at left control unit connector. Check for continuity between Brown wire terminal and Green wire terminal at right control unit connector. If continuity does not exist, replace appropriate A-pillar microswitch. If continuity exists on left side proceed to step 2), if continuity exists on right side replace right seat belt control unit.

2) Check backup light switch. Connect battery ground. Turn ignition switch ON. Check for voltage between Brown wire terminal and Black/Blue wire terminal at left side control unit connector. If voltage exists, replace backup light switch. If voltage does not exist, replace left seat belt control unit.

#### DRIVER BELT MOVES TO A-PILLAR WHEN VEHICLE SHIFTED TO REVERSE

NOTE: For this test, ensure that battery is charged and transmission is shifted into reverse.

Check backup light switch. Check for battery voltage between Brown wire terminal and Black/Blue wire terminal of left side control unit connector. If voltage does not exist, check wiring to backup light switch. If wiring is okay, replace backup light switch. If voltage exists, replace seat belt control unit.

#### SEAT BELT WARNING LAMP DOES NOT LIGHT WITH BELTS AT B-PILLAR & IGNITION ON

Check seat belt warning relay. Disconnect battery ground.

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Remove seat belt warning relay J34 from fuse/relay position No. 9. See Fig. 1. Reconnect battery ground. Check for battery voltage between terminal 4 and terminal 1 at relay position No. 9. If voltage exists, replace seat belt warning relay. If voltage does not exist, check wiring to fuse/relay panel and instrument panel or check seat belt warning light.

### SEAT BELT WARNING LIGHT COMES ON WITH BELTS CONNECTED & IGNITION ON

1) Check B-pillar microswitch. Disconnect battery ground. Remove B-pillar trim. Remove seat belt control units. Disconnect 4-point connector T4n located behind fuse/relay panel. Check for continuity between Blue/Yellow wire terminal and Brown wire terminal at left seat belt control unit connector. Check for continuity between Blue wire terminal and Brown wire terminal at right seat belt control unit connector. If continuity does not exist, check/replace appropriate microswitch. If continuity exists on left side, proceed to step 2). If continuity exist on right side, replace seat belt warning relay.

2) Check magnetic switch in driver's side belt buckle. check continuity between Blue/Yellow wire terminal and Grey/Red wire terminal at left side control unit connector. If continuity does not exist, replace B-pillar microswitch and belt buckle magnetic switch. If continuity does exist, replace seat belt warning relay.

### WIRING DIAGRAM

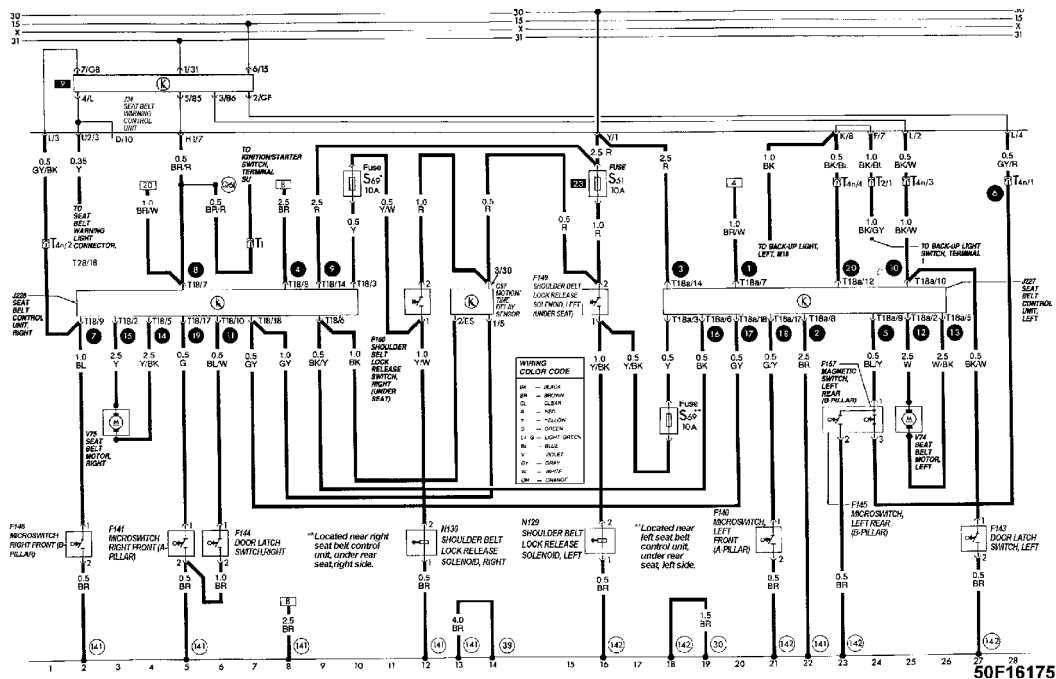


Fig. 3: Automatic Shoulder Belt Circuit Diagram

END OF ARTICLE