



# Assembly Instructions

561065760A + cable

000065713A

## Installation of original remote start feature accessory, Volkswagen Passat

### Supplied in the kit:

- ◆ 1 x Wiring harness remote start feature housing<sup>1)</sup>
- ◆ 1 x Fixing material with relay
- ◆ 1 x Installation instructions
- ◆ 4 x Plug connectors (4B0 972 623)

<sup>1)</sup> see also wiring harness remote start feature overview on page 2.

### Special tools, test and measuring equipment, and other components required:

- ◆ Torx driver bits (set)
- ◆ Flat-headed screwdriver
- ◆ Side cutters
- ◆ -VAS 1978- wiring harness repair set
- ◆ Vehicle diagnosis, measurement and information system -VAS 505X-

### Accessories:

(not included in the kit, if necessary order separately by using the vehicle's spare parts catalogue and the customer's VIN)

- ◆ Vehicle key with remote start feature with 4 buttons plus panic button

- ◆ 4H0 951 253 A Starter relay printed with "645" <sup>2)</sup>

- ◆ BCM -J519- <sup>3)</sup>

- ◆ Contact switch -F266- <sup>4)</sup>

<sup>2)</sup> only for vehicles with keyless access

<sup>3)</sup> BCM high+ is required (for example all vehicles with factory-fitted fog lights and PR no. 8WH). If necessary check with vehicle diagnostics, measurement and information system

<sup>4)</sup> only if not present in the vehicle (see also "Installing the contact switch -F266-" on page 10)

### Procedure:

#### WARNING

Improper installation procedures can cause serious personal injury.

- Installation should be performed only by a qualified technician.
- Read all instructions thoroughly before starting.
- Observe all safety precautions when working under a vehicle.
- Beware of sharp edges to help prevent cuts.
- Always wear safety glasses to help protect eyes.
- Always wear protective gear as gloves and use caution when using hand tools.

#### WARNING

Using unsuitable or damaged sockets and connecting cables and disregarding accepted safety practices may cause short circuits, accidents, and serious or fatal personal injury.

- Never use damaged sockets and connecting cables. Check connectors and cables for damage before use.
- Never allow connectors to come into contact with moisture, water and other fluids.



#### Note

- ◆ The remote start feature can only be retrofitted on vehicles **with** an automatic transmission.



- ◆ The installation of the original retrofitting remote start feature must be carried out by a competent workshop. Special tools and the accompanying literature specific to the car are required for proper installation and function. Incorrect installation may damage the vehicle.
- ◆ Secure the wires so that they cannot come into contact with any rotating or other moving parts and so that they cannot chafe against any sharp metal or plastic edges.
- ◆ All rights to make technical changes without notice are reserved.

## 1.1 Wiring harness remote start feature overview

### 1 - Additional relay housing

- ◆ Installation under the vehicle's relay housing
- ◆ With two relays plugged in
- ◆ With one empty relay socket

### 2 - Y-adapter

- ◆ With terminal pin and plug connector

### 3 - Single wire to the rotary light switch

- ◆ Black/violet, 0.5 mm<sup>2</sup> with terminal pin
- ◆ Single wire red, 0.5 mm<sup>2</sup> with plug connector

### 4 - Single wire to starter

- ◆ Single wire red, 4.0 mm<sup>2</sup> with terminal pin (→ starter)

### 5 - Multi-wire cable to the engine control unit

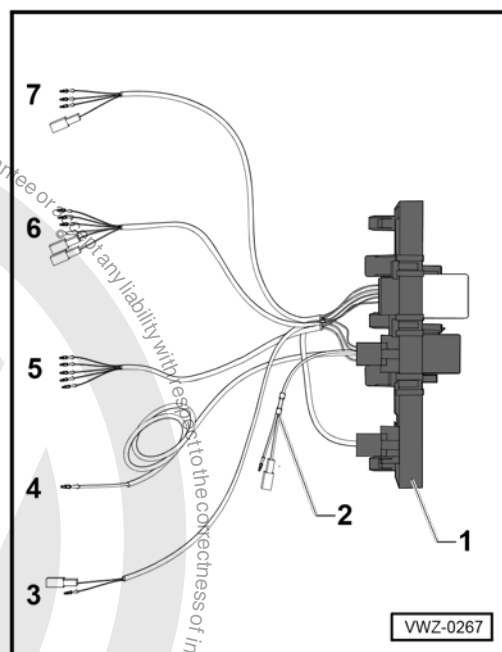
- ◆ Single wire violet/white, 0.5 mm<sup>2</sup> with terminal pin
- ◆ Single wire blue/green, 0.5 mm<sup>2</sup> with terminal pin
- ◆ Single wire blue/red, 0.5 mm<sup>2</sup> with terminal pin
- ◆ Single wire red/black, 0.35 mm<sup>2</sup> with terminal pin
- ◆ Single wire red/white, 0.5 mm<sup>2</sup> with terminal pin

### 6 - Multi-wire cable to steering column control unit -J527- or electronic steering column lock control unit -J764-

- ◆ Single wire red, 0.5 mm<sup>2</sup> with plug connector
- ◆ Single wire red/black, 0.35 mm<sup>2</sup> with terminal pin
- ◆ Single wire black, 0.35 mm<sup>2</sup> with plug connector
- ◆ Single wire black, 0.5 mm<sup>2</sup> with terminal pin
- ◆ Single wire brown, 0.5 mm<sup>2</sup> with ring eye

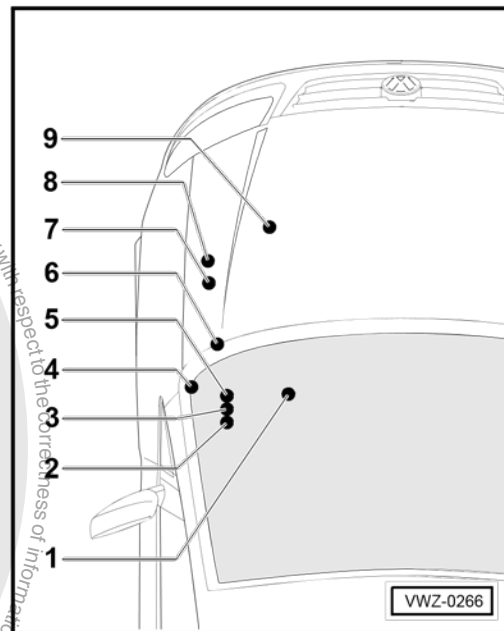
### 7 - Multi-wire cable to on-board power control unit

- ◆ Single wire violet/white, 0.5 mm<sup>2</sup> with plug connector
- ◆ Single wire black, 0.35 mm<sup>2</sup> with terminal pin
- ◆ Single wire red/blue, 0.35 mm<sup>2</sup> with terminal pin
- ◆ Single wire red/white, 0.5 mm<sup>2</sup> with terminal pin



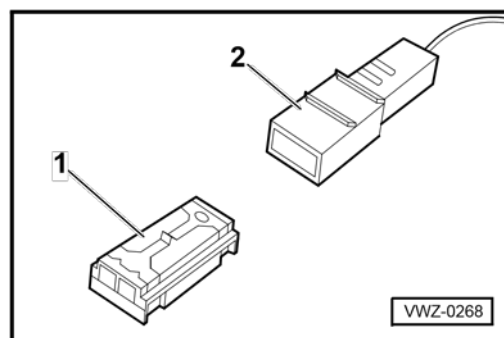
## 1.2 Installation overview

- 1 - **Steering column control unit -J527- or electronic steering column lock control unit -J764-**
  - ◆ installed underneath the steering column
- 2 - **BCM -J519-**
  - ◆ mounted on the relay and fuse box holder
- 3 - **Start relay 1**
  - ◆ mounted in the relay and fuse box holder
- 4 - **Rotary light switch**
  - ◆ on the driver's side dashboard
- 5 - **Relay and fuse box holder**
  - ◆ in the passenger-side footwell
- 6 - **Cable inlet**
  - ◆ from the interior to the engine compartment. Please use part of service/maintenance repair grommet
- 7 - **Terminal 30**
  - ◆ in the electronics box in the engine compartment
- 8 - **Engine control unit -J623-**
  - ◆ next to the relay and fuse box holder in the engine compartment
- 9 - **Starter**



## 1.3 Supplied plug connectors

- 1 - **4B0 972 623**
  - ◆ 4pc supplied in the kit
- 2 - **8E0 972 763**
  - ◆ part of the wiring harness remote start feature (see overview)





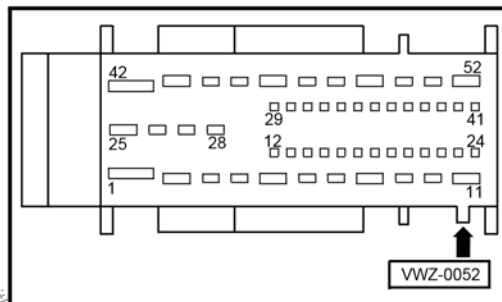
## 1.4 Overview of terminal pins on plug connectors

### 1.4.1 BCM -J519-:

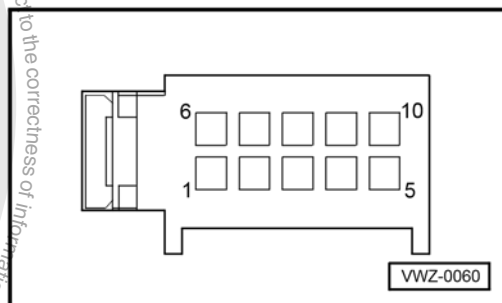


#### Note

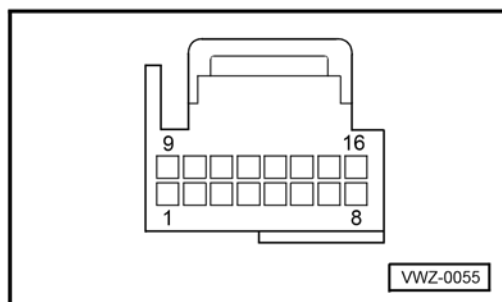
The three plug connectors on the BCM are different colours and have different mechanical encodings -arrow-. The numbering on the plug connectors is identical.



### 1.4.2 Rotary light switch:



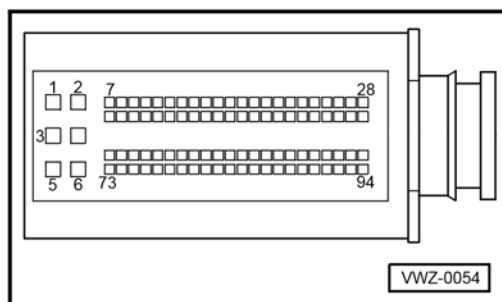
### 1.4.3 Steering column control unit -J527- or electronic steering column lock control unit -J764-:



### 1.4.4 Engine control unit -J623-:

## 1.5 Preparatory work

- ☐ Disconnect battery.
- ☐ ELSA; repair group 27
- ☐ Disconnect the left dashboard relay housing. ☐ ELSA; repair group 97 ☐ Remove the engine cover. ☐ ELSA; repair group 10
- ☐ Remove air cleaner.
- ☐ ELSA; repair group 23



## 1.6 Adapt the vehicle wiring harness

- ☐ Adapt the vehicle wiring harness as shown on the table and tick off every work step in the "Completed" column of the table.

Component	Adaptation step	Completed
BCM -J519-	<input type="checkbox"/> Press the terminal pin on the brown plug connector out of chamber C31 and insulate it.	

<input type="checkbox"/> terminal pins 1.4.1	<input type="checkbox"/> Press the terminal pin on the brown plug connector out of chamber C14 and push it into the white plug connector in chamber B13 until it locks in place.	
	<input type="checkbox"/> Press the terminal pin on the white plug connector out of chamber B29 and insulate it.	
	<input type="checkbox"/> Press the terminal pin on the white plug connector out of chamber B28 and push it into the black plug connector in chamber A3 until it locks in place.	

**Applies to: Vehicles without keyless access:**

Component	Adaptation step	Completed
Steering column control unit -J527- <input type="checkbox"/> terminal pins 1.4.3	<input type="checkbox"/> Press the terminal pin out of chamber A14 and push it into chamber A7 until it locks in place. If in chamber A7 a terminal pin is located, just isolate the terminal pin out of chamber A14.	

**Applies to: Vehicles with keyless access:**

Component	Adaptation step	Completed
Electronic steering column lock control unit -J764 <input type="checkbox"/> terminal pins 1.4.3	<input type="checkbox"/> Press the terminal pin out of chamber A8 and insulate it <input type="checkbox"/> only if located in the vehicle).	

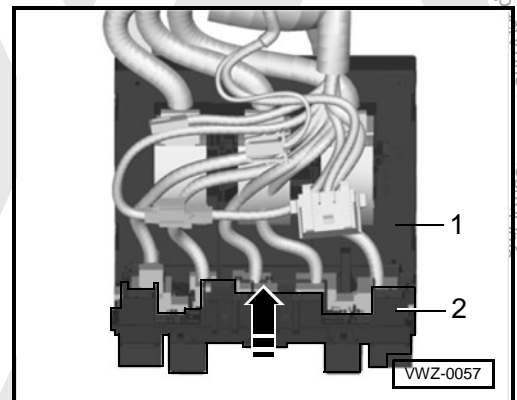
## 1.7 Additional relay housing



### Note

The illustration shows the on-board power control unit -1- in the left footwell from below.

- ☐ Attach the relay housing -2- supplied in kit to the on-board power control unit -1- and lock it in place.
- ☐ ELSA; repair group 97



**Applies to: Vehicles with keyless access:**

- ☐ Unlock starter relay -2- printed with "507" and pull it out of the relay socket.

**Applies to: Vehicles without keyless access:**

- ☐ Unlock starter relay -2- printed with "645" and pull it out of the relay socket.

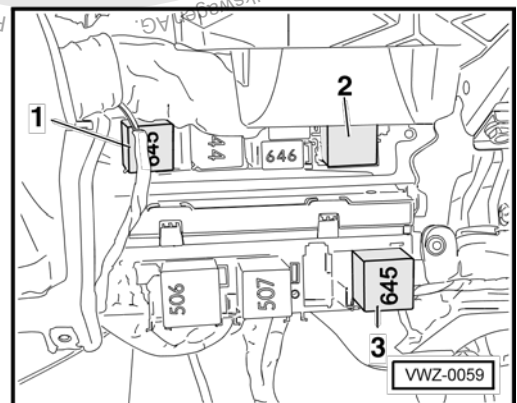
**Continue for all vehicles:**



### Note

The starter relay printed with "645" is not included in the kit and must order separately for vehicles with keyless access (see "Accessories" on page 1).

- ☐ Plug a starter relay printed with "645" -3- into the empty righthand relay socket on the additional relay housing.



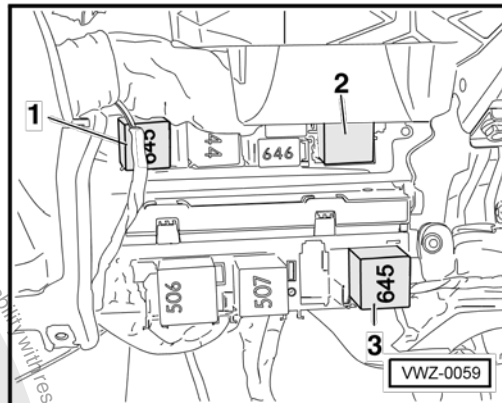


## 1.8 Connect the remote start feature wiring harness in the vehicle interior

### ! WARNING

**Never unplug the connector on the airbag control unit or connect parts of the wiring harness to wires leading to the airbag control unit.**

- ☐ Unlock the relay -1- mounted in the relay and fuse box holder at position "1" and pull it out of the relay socket.
- ☐ Press the terminal pin on the relay socket out of chamber A5.
- ☐ Connect this terminal pin with the plug connector of the Y-adapter (see page 1, 1.1, -2-) from remote start feature wiring harness.
- ☐ Push the free terminal pin from the Y-adapter in chamber A5 on the relay socket.
- ☐ Push the relay -1- back in the relay and fuse box holder.



- ☐ Connect the remote start feature wiring harness from the kit in the interior of the vehicle in accordance with the tables and tick off every work step in the "Completed" column of the table.

Wire colour	<b>Connection on the plug connectors for the BCM -J519-</b> <input type="checkbox"/> Wiring harness remote start feature overview, -6- <input type="checkbox"/> terminal pins 1.4.1	Completed
red/blue	<input type="checkbox"/> Lock the terminal pin on the red/blue wire into place in the white connector in chamber B14.	
black	<input type="checkbox"/> Lock the terminal pin on the black wire into place in the brown connector in chamber C31.	
red/white	<input type="checkbox"/> Lock the terminal pin on the red/white wire into place in the brown connector in chamber C34.	
violet/white	<input type="checkbox"/> Press the terminal pin on the brown plug connector out of chamber C30.	
	<input type="checkbox"/> Push this terminal pin into chamber 1 of a supplied plug connector <input type="checkbox"/> 1.3 - 1-.	
	<input type="checkbox"/> Connect this plug connector with the plug connector of the violet/white wire from remote start feature wiring harness.	
Wire colour	<b>Connection to the vehicle's rotary light switch</b> <input type="checkbox"/> Wiring harness remote start feature overview, -2- <input type="checkbox"/> terminal pins 1.4.2	Completed
black/violet	<input type="checkbox"/> Disconnect the plug connector on the vehicle's rotary light switch.	
	<input type="checkbox"/> Press the terminal pin on the plug connector out of chamber A4.	
	<input type="checkbox"/> Push this terminal pin into chamber 1 of a supplied plug connector <input type="checkbox"/> 1.3 - 1-.	
	<input type="checkbox"/> Connect this plug connector with the plug connector of the red wire from remote start feature wiring harness.	
	<input type="checkbox"/> Push the terminal pin from the black/violet wire in the connector in chamber A4.	

**Applies to: Vehicles without keyless access:**



Wire colour	Connection on the plug connector for the steering column control unit -J527- <input type="checkbox"/> Wiring harness remote start feature overview, -5- <input type="checkbox"/> terminal pins 1.4.3	Completed
black	<input type="checkbox"/> Lock the terminal pin on the black wire into place in the connector in chamber A14.	
red/black	<input type="checkbox"/> Press the terminal pin on the plug connector out of chamber A6.	
	<input type="checkbox"/> Push this terminal pin into chamber 1 of a supplied plug connector <input type="checkbox"/> 1.3 - 1-.	
	<input type="checkbox"/> Connect this plug connector with the plug connector of the black wire from remote start feature wiring harness.	
	<input type="checkbox"/> Push the terminal pin from the red/black wire in the connector in chamber A6.	
red/violet	<input type="checkbox"/> Press the terminal pin on the plug connector out of chamber A1.	
	<input type="checkbox"/> Push this terminal pin into chamber 1 of a supplied plug connector <input type="checkbox"/> 1.3 - 1-.	
	<input type="checkbox"/> Connect this plug connector with the plug connector of the red wire from remote start feature wiring harness.	
	<input type="checkbox"/> Push the terminal pin from the red/violet wire in the connector in chamber A1.	
brown	<input type="checkbox"/> Screw the ring eye on the brown wire onto the steering column earthing point.	

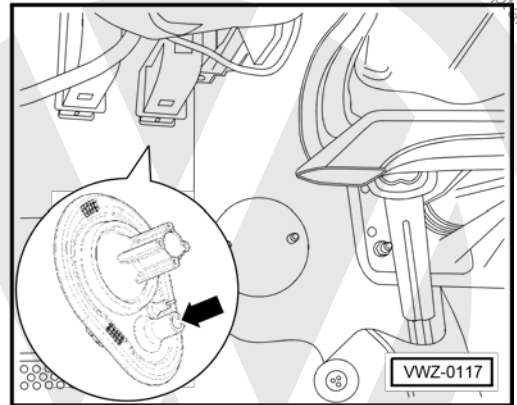
**Applies to: Vehicles with keyless access:**

Wire colour	Connection on the plug connector for the electronic steering column lock control unit -J764- <input type="checkbox"/> Wiring harness remote start feature overview, -5- <input type="checkbox"/> terminal pins 1.4.3	Completed
black	<input type="checkbox"/> Lock the terminal pin on the black wire into place in the connector in chamber A8.	
red/black	<input type="checkbox"/> Press the terminal pin on the plug connector out of chamber A12.	
	<input type="checkbox"/> Push this terminal pin into chamber 1 of a supplied plug connector <input type="checkbox"/> 1.3 - 1-.	
	<input type="checkbox"/> Connect this plug connector with the plug connector of the black wire from remote start feature wiring harness.	
	<input type="checkbox"/> Push the terminal pin from the red/black wire in the connector in chamber A12.	
red/violet	<input type="checkbox"/> Press the terminal pin on the plug connector out of chamber A2.	
	<input type="checkbox"/> Push this terminal pin into chamber 1 of a supplied plug connector <input type="checkbox"/> 1.3 - 1-.	
	<input type="checkbox"/> Connect this plug connector with the plug connector of the red wire from remote start feature wiring harness.	
	<input type="checkbox"/> Push the terminal pin from the red/violet wire in the connector in chamber A2.	
brown	<input type="checkbox"/> Screw the ring eye on the brown wire onto the steering column earthing point.	



## 1.9 Lay the remote start feature wiring harness in the vehicle's engine compartment and connect it

- ☐ Lay the not connected part of the wiring harness through the rubber grommet -arrow- in the bulkhead to the engine compartment.
- ☐ Lay the multi-wire with 5 cables to the engine control unit and attach it to the existing cables and the vehicle's holders using cable ties.



- ☐ Connect the 5 cables to the larger of the two plug connectors on the engine control unit in accordance with the corresponding table. Tick off each work step in the "Completed" column of the table. Cross out tables which are not required.

### Note

Before plugging in additional terminal pins the blind plugs must be removed from the corresponding chamber of the plug connector. Also unlock and isolate original terminal(s) if present in chamber K45, K23 or B23. **Applies to: Vehicles with 2.0l TDI engine**

Wire colour	Handling	Completed
	<input type="checkbox"/> Wiring harness remote start feature overview, -4- <input type="checkbox"/> terminal pins 1.4.4	
blue/red	<input type="checkbox"/> Lock the terminal pin on the blue/red wire into place in the connector on the engine control unit in chamber K25.	
blue/green	<input type="checkbox"/> Lock the terminal pin on the blue/green wire into place in the connector on the engine control unit in chamber K26.	
violet/white	<input type="checkbox"/> Lock the terminal pin on the violet/white wire into place in the connector on the engine control unit in chamber K44.	
red/black	<input type="checkbox"/> Lock the terminal pin on the red/black wire into place in the connector on the engine control unit in chamber K45.	
red/white	<input type="checkbox"/> Lock the terminal pin on the red/white wire into place in the connector on the engine control unit in chamber K88.	

**Applies to: Vehicles with 1.8l TSI engine**

Wire colour	Handling	Completed
	<input type="checkbox"/> Wiring harness remote start feature overview, -4- <input type="checkbox"/> terminal pins 1.4.4	
violet/white	<input type="checkbox"/> Lock the terminal pin on the violet/white wire into place in the connector on the engine control unit in chamber B62.	
red/white	<input type="checkbox"/> Lock the terminal pin on the red/white wire into place in the connector on the engine control unit in chamber B67.	
red/black	<input type="checkbox"/> Lock the terminal pin on the red/black wire into place in the connector on the engine control unit in chamber B68.	
blue/green	<input type="checkbox"/> Lock the terminal pin on the blue/green wire into place in the connector on the engine control unit in chamber B87.	
blue/red	<input type="checkbox"/> Lock the terminal pin on the blue/red wire into place in the connector on the engine control unit in chamber B88.	



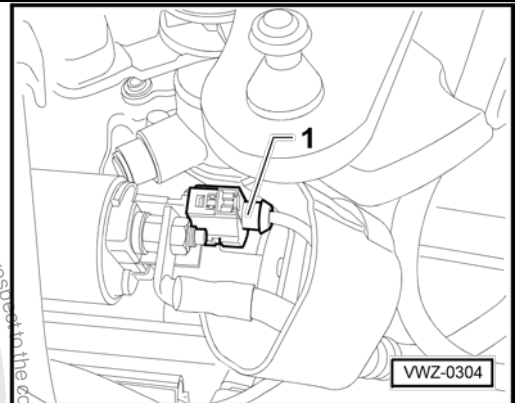
**Applies to: Vehicles with 2.5l FSI engine**

Wire colour	Handling	Completed
	<input type="checkbox"/> Wiring harness remote start feature overview, -4- <input type="checkbox"/> terminal pins 1.4.4	
violet/white	<input type="checkbox"/> Lock the terminal pin on the violet/white wire into place in the connector on the engine control unit in chamber K20.	
red/black	<input type="checkbox"/> Lock the terminal pin on the red/black wire into place in the connector on the engine control unit in chamber K23.	
red/white	<input type="checkbox"/> Lock the terminal pin on the red/white wire into place in the connector on the engine control unit in chamber K74.	
blue/green	<input type="checkbox"/> Lock the terminal pin on the blue/green wire into place in the connector on the engine control unit in chamber K75.	
blue/red	<input type="checkbox"/> Lock the terminal pin on the blue/red wire into place in the connector on the engine control unit in chamber K76.	

**Applies to: Vehicles with 3.6l FSI engine**

Wire colour	Handling	Completed
	<input type="checkbox"/> Wiring harness remote start feature overview, -4- <input type="checkbox"/> terminal pins 1.4.4	
red/black	<input type="checkbox"/> Lock the terminal pin on the red/black wire into place in the connector on the engine control unit in chamber B23.	
red/white	<input type="checkbox"/> Lock the terminal pin on the red/white wire into place in the connector on the engine control unit in chamber B24.	
violet/white	<input type="checkbox"/> Lock the terminal pin on the violet/white wire into place in the connector on the engine control unit in chamber B39.	
blue/green	<input type="checkbox"/> Lock the terminal pin on the blue/green wire into place in the connector on the engine control unit in chamber B52.	
blue/red	<input type="checkbox"/> Lock the terminal pin on the blue/red wire into place in the connector on the engine control unit in chamber B74.	

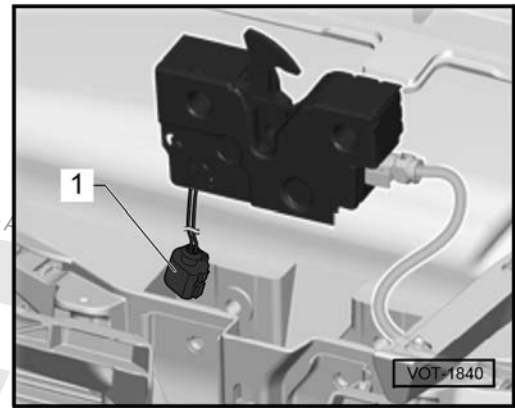
- ☐ Lay the red single wire with terminal pin to the starter of the vehicle and attach it to the existing cables and the vehicle's holders using cable ties.
- ☐ Remove the protective cap from the starter.
- ☐ Release and disconnect connector -1-.
- ☐ Remove the socket housing and insulate the terminal pin of the wire.
- ☐ Put the terminal pin of the red single wire from the remote start feature wiring harness in the socket housing and connect it to the starter.
- ☐ Install the protective cap on the starter.

**1.10 Installing the contact switch -F266-****Note**

*Retrofitting only if contact switch -F266- is not present in the vehicle.*



- ☐ Remove the vehicle's hood lock.
- ☐ ELSA; repair group 55
- ☐ Fit the contact switch in the hood lock. Pull the pin connector -1- for the contact switch through the installation bay for the hood lock.
- ☐ ELSA; repair group 55
- ☐ Lay the wires for the contact switch parallel to the control wire or the hood lock.



**Note**

- ◆ The anti-theft warning system connection to the vehicle wiring harness is located in the engine compartment on the cooler intake near the left headlight.
- ◆ The connections for the anti-theft warning system are protected against moisture by adhesive tape.
- ☐ Connect the pin connector -1- to the anti-theft warning system connection.
- ☐ Secure the wire for the contact switch to the existing holders or vehicle wiring using the cable ties supplied.

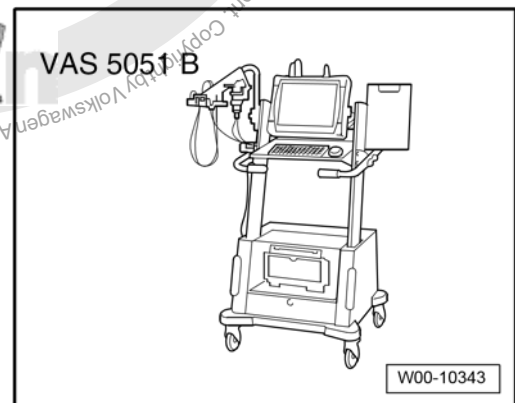
### 1.11 Coding the remote start feature

- ☐ Connect the battery
- ☐ ELSA; repair group 27

**Note**

- ◆ After connecting the battery, ensure that the vehicle accessories (radio, clock, electrical windows) are checked in accordance with the workshop manual.
- ◆ After fitting is completed, the ESP light may light up. In this case, basic setting of the steering angle sensor -G85- must be carried out.

- ☐ Connect a vehicle diagnostics, measurement and information system -VAS 505X- to the vehicle.
- ☐ Electrical system, repair group 97; wiring, vehicle diagnostics, measurement and information systems; connecting a vehicle diagnostics, measurement and information system -505X-.
- ☐ Select the operating mode "Guided Troubleshooting" and then the respective vehicle within the vehicle diagnostics, measurement and information system -VAS 505X-.
- ☐ After querying the control units, select the "Functions/ component selection" via the button "Jump" and then sequentially the following menu options:
  - ◆ Software version management
  - ◆ Adapting Software
  - ◆ Perform conversion / retrofit



- ☐ Enter the 5 character action code "3740D". The online connection is created after code entry and the software update carried out.
  - ☐ Quit the "Guided Troubleshooting" using "Go to".
- All error memory entries are deleted.

### 1.12 Concluding work and checking the remote start feature

- ☐ Teach in all of the new vehicle keys.
  - ☐ Vehicle electronics; Electrical system; repair group 96; lights, lamps, switches - internal; anti-theft protection; immobilizer; ignition key; ignition key adaptation
  - ☐ Separate the connection to the vehicle diagnostics, measurement and information system -VAS 505X-.
- The prerequisite conditions for all of the following work steps described in the "Remote start feature" chapter of the vehicle manual must be complied with!



☐ Perform a function and safety check on the "Remote start features":

- ◆ Check that the engine starts with the vehicle key in the ignition switch.
- ◆ Lock the vehicle from the outside by pressing the ☐ button on the vehicle key.
- ◆ Start the engine with the buttons on the vehicle key as follows: Press the ☐ button once and then press the ☐ button twice within 3 seconds.
- ◆ Check whether the engine can be switched off by pressing the ☐ button on the vehicle key.
- ◆ Lock the vehicle from the outside again by pressing the ☐ button on the vehicle key.
- ◆ Start the engine with the buttons on the vehicle key again: Press the ☐ button once and then press the ☐ button twice within 3 seconds.
- ◆ Check whether the engine can be switched off by pressing the ☐ button on the vehicle key.
- ◆ Briefly start the engine using the vehicle key in the ignition switch and switch it off again. Then leave the vehicle key in the ignition switch. Check whether the engine can be started as described above by pressing the ☐ and ☐ buttons on the vehicle key. This should not be possible if the vehicle key is in the ignition switch!

- ☐ Secure the remote start feature wiring harness to existing wires or brackets to help prevent rattles.
- ☐ Replace all disassembled components in reverse order.

**When handing over the vehicle, please refer the customer to the "Remote start feature" chapter in the vehicle manual and provide them with these installation instructions.**





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Original retrofitting remote start feature, 11.2014



# Cautions & Warnings

**Please read these WARNINGS and CAUTIONS before proceeding with maintenance and repair work. You must answer that you have read and you understand these WARNINGS and CAUTIONS before you will be allowed to view this information.**

- If you lack the skills, tools and equipment, or a suitable workshop for any procedure described in this manual, we suggest you leave such repairs to an authorized Volkswagen retailer or other qualified shop. We especially urge you to consult an authorized Volkswagen retailer before beginning repairs on any vehicle that may still be covered wholly or in part by any of the extensive warranties issued by Volkswagen.
- Disconnect the battery negative terminal (ground strap) whenever you work on the fuel system or the electrical system. Do not smoke or work near heaters or other fire hazards. Keep an approved fire extinguisher handy.
- Volkswagen is constantly improving its vehicles and sometimes these changes, both in parts and specifications, are made applicable to earlier models. Therefore, part numbers listed in this manual are for reference only. Always check with your authorized Volkswagen retailer parts department for the latest information.
- Any time the battery has been disconnected on an automatic transmission vehicle, it will be necessary to reestablish Transmission Control Module (TCM) basic settings using the VAG 1551 Scan Tool (ST).
- Never work under a lifted vehicle unless it is solidly supported on stands designed for the purpose. Do not support a vehicle on cinder blocks, hollow tiles or other props that may crumble under continuous load. Never work under a vehicle that is supported solely by a jack. Never work under the vehicle while the engine is running.
- For vehicles equipped with an anti-theft radio, be sure of the correct radio activation code before disconnecting the battery or removing the radio. If the wrong code is entered when the power is restored, the radio may lock up and become inoperable, even if the correct code is used in a later attempt.
- If you are going to work under a vehicle on the ground, make sure that the ground is level. Block the wheels to keep the vehicle from rolling. Disconnect the battery negative terminal (ground strap) to prevent others from starting the vehicle while you are under it.
- Do not attempt to work on your vehicle if you do not feel well. You increase the danger of injury to yourself and others if you are tired, upset or have taken medicine or any other substances that may impair you or keep you from being fully alert.
- Never run the engine unless the work area is well ventilated. Carbon monoxide (CO) kills.
- Always observe good workshop practices. Wear goggles when you operate machine tools or work with acid. Wear goggles, gloves and other protective clothing whenever the job requires working with harmful substances.
- Tie long hair behind your head. Do not wear a necktie, a scarf, loose clothing, or a necklace when you work near machine tools or running engines. If your hair, clothing, or jewelry were to get caught in the machinery, severe injury could result.
- Do not re-use any fasteners that are worn or deformed in normal use. Some fasteners are designed to be used only once and are unreliable and may fail if used a second time. This includes, but is not limited to, nuts, bolts, washers, circlips and cotter pins. Always follow the recommendations in this manual - replace these fasteners with new parts where indicated, and any other time it is deemed necessary by inspection.

# Cautions & Warnings

- Illuminate the work area adequately but safely. Use a portable safety light for working inside or under the vehicle. Make sure the bulb is enclosed by a wire cage. The hot filament of an accidentally broken bulb can ignite spilled fuel or oil.
- Friction materials such as brake pads and clutch discs may contain asbestos fibers. Do not create dust by grinding, sanding, or by cleaning with compressed air. Avoid breathing asbestos fibers and asbestos dust. Breathing asbestos can cause serious diseases such as asbestosis or cancer, and may result in death.
- Finger rings should be removed so that they cannot cause electrical shorts, get caught in running machinery, or be crushed by heavy parts.
- Before starting a job, make certain that you have all the necessary tools and parts on hand. Read all the instructions thoroughly; do not attempt shortcuts. Use tools that are appropriate to the work and use only replacement parts meeting Volkswagen specifications. Makeshift tools, parts and procedures will not make good repairs.
- Catch draining fuel, oil or brake fluid in suitable containers. Do not use empty food or beverage containers that might mislead someone into drinking from them. Store flammable fluids away from fire hazards. Wipe up spills at once, but do not store the oily rags, which can ignite and burn spontaneously.
- Use pneumatic and electric tools only to loosen threaded parts and fasteners. Never use these tools to tighten fasteners, especially on light alloy parts. Always use a torque wrench to tighten fasteners to the tightening torque listed.
- Keep sparks, lighted matches, and open flame away from the top of the battery. If escaping hydrogen gas is ignited, it will ignite gas trapped in the cells and cause the battery to explode.
- Be mindful of the environment and ecology. Before you drain the crankcase, find out the proper way to dispose of the oil. Do not pour oil onto the ground, down a drain, or into a stream, pond, or lake. Consult local ordinances that govern the disposal of wastes.
- The air-conditioning (A/C) system is filled with a chemical refrigerant that is hazardous. The A/C system should be serviced only by trained automotive service technicians using approved refrigerant recovery/recycling equipment, trained in related safety precautions, and familiar with regulations governing the discharging and disposal of automotive chemical refrigerants.
- Before doing any electrical welding on vehicles equipped with anti-lock brakes (ABS), disconnect the battery negative terminal (ground strap) and the ABS control module connector.
- Do not expose any part of the A/C system to high temperatures such as open flame. Excessive heat will increase system pressure and may cause the system to burst.
- When boost-charging the battery, first remove the fuses for the Engine Control Module (ECM), the Transmission Control Module (TCM), the ABS control module, and the trip computer. In cases where one or more of these components is not separately fused, disconnect the control module connector(s).
- Some of the vehicles covered by this manual are equipped with a supplemental restraint system (SRS), that automatically deploys an airbag in the event of a frontal impact. The airbag is operated by an explosive device. Handled improperly or without adequate safeguards, it can be accidentally activated and cause serious personal injury. To guard against personal injury or airbag system failure, only trained Volkswagen Service technicians should test, disassemble or service the airbag system.

## Cautions & Warnings

- Do not quick-charge the battery (for boost starting) for longer than one minute, and do not exceed 16.5 volts at the battery with the boosting cables attached. Wait at least one minute before boosting the battery a second time.
- Never use a test light to conduct electrical tests of the airbag system. The system must only be tested by trained Volkswagen Service technicians using the VAG 1551 Scan Tool (ST) or an approved equivalent. The airbag unit must never be electrically tested while it is not installed in the vehicle.
- Some aerosol tire inflators are highly flammable. Be extremely cautious when repairing a tire that may have been inflated using an aerosol tire inflator. Keep sparks, open flame or other sources of ignition away from the tire repair area. Inflate and deflate the tire at least four times before breaking the bead from the rim. Completely remove the tire from the rim before attempting any repair.
- When driving or riding in an airbag-equipped vehicle, never hold test equipment in your hands or lap while the vehicle is in motion. Objects between you and the airbag can increase the risk of injury in an accident.

**I have read and I understand these Cautions and Warnings.**