



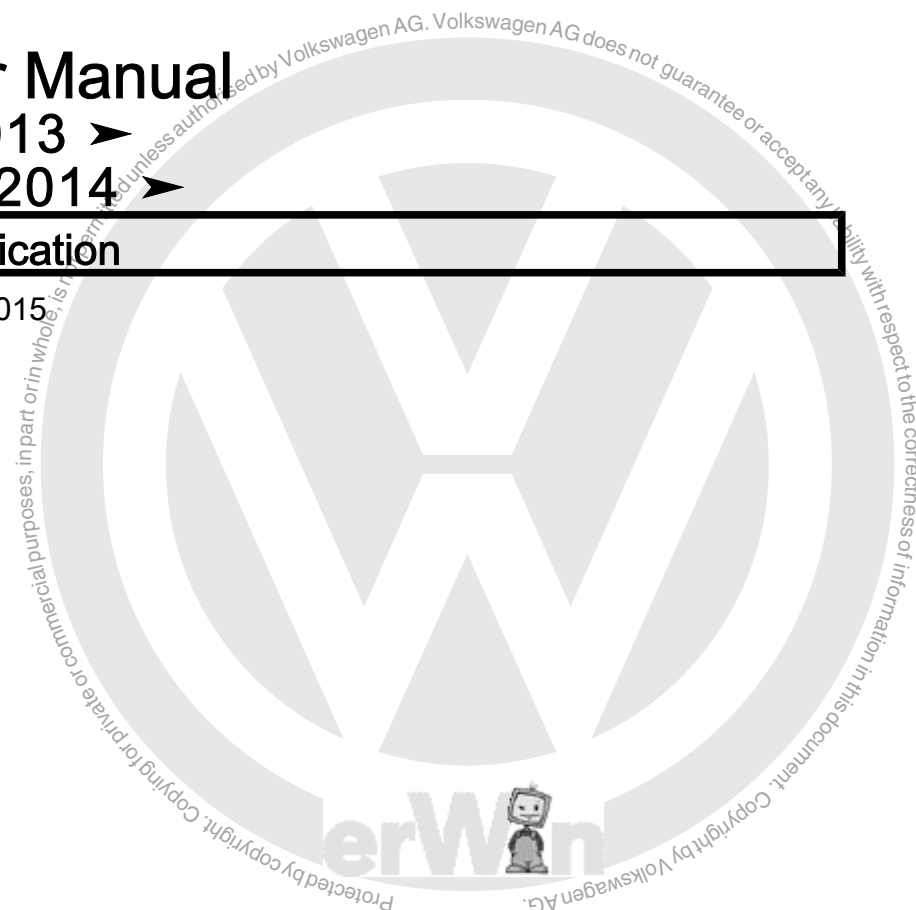
## Repair Manual

Golf 2013 ➤

e-Golf 2014 ➤

**Communication**

Edition 06.2015





## List of Workshop Manual Repair Groups

### Repair Group

00 - General, Technical Data

91 - Communication



Technical information should always be available to the foremen and mechanics, because their careful and constant adherence to the instructions is essential to ensure vehicle road-worthiness and safety. In addition, the normal basic safety precautions for working on motor vehicles must, as a matter of course, be observed.



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## 00 – General, Technical Data

### 1 Repair Information

(Edition 06.2015)

⇒ [“1.1 General Repair Information”, page 1](#)

⇒ [“1.2 CAN Bus Wires Repair Information”, page 1](#)

⇒ [“1.3 Transmitted Output, Antenna Installation Locations”, page 1](#)

#### 1.1 General Repair Information

Wiring harnesses and connectors, repairing. Refer to ⇒ Electrical Equipment General Information; Rep. Gr. 97 ; Wiring Harness and Connector Repairs .

Connector housings, releasing and disassembling. Refer to ⇒ Electrical Equipment General Information; Rep. Gr. 97 ; Wiring Harness and Connector Repairs; Contact Housings, Releasing and Disassembling

Antenna wires, repairing. Refer to ⇒ Electrical Equipment General Information; Rep. Gr. 97 ; Wiring Harness and Connector Repairs; Antenna Wires, Repairing .

Fiber-optic cables, repairing. Refer to ⇒ Electrical Equipment General Information; Rep. Gr. 97 ; Wiring Harness and Connector Repairs; Fiber-Optic Cables, Repairing .

Vehicle Diagnostic Testers. Refer to ⇒ Electrical Equipment General Information; Rep. Gr. 97 ; Vehicle Diagnosis, Testing, and Information Systems

#### 1.2 CAN Bus Wires Repair Information

CAN bus lines, repairing. Refer to ⇒ Electrical Equipment General Information; Rep. Gr. 97 ; Wiring Harness and Connector Repairs; Wiring Harnesses, Repairing .

#### 1.3 Transmitted Output, Antenna Installation Locations



**Note**

*It is legally forbidden to install antennas on bumpers. This protects pedestrians.*

Designation	Pmax/Watt	Prescribed Antenna Installation Locations
Short wave less than 54 MHz	100 (PEAK). Refer to <sup>1)</sup> .	All locations on the roof
4 m-Band	20 (eff.). Refer to <sup>2)</sup> .	All locations (on vehicle exterior)
2 m-Band	20 (eff.)	Front fender Roof center front Roof center Roof center rear
2 m-Band	50 (eff.)	Center of roof Rear center of roof



Designation	Pmax/Watt	Prescribed Antenna Installation Locations
70 cm	50 (eff.)	Front center of roof Center of roof Rear center of roof
23 cm	20 (eff.)	All locations (on vehicle exterior)
TETRA/ TETRAPOL	25 (eff.)	All locations (on vehicle exterior)
D-net GSM 900	20 (PEAK)	All locations (on vehicle exterior)
E-net GSM 1800 GSM 1900 UMTS	10 (PEAK)	All locations (on vehicle exterior)

1) PEAK = max. carrier power (Peak Envelope Power)

2) eff. = effective transmission output



#### Note

- ◆ *Deviations from these guidelines (location of antenna, frequency, output) are only permitted in special isolated cases after a single-case test carried out by the EMV center of VW AG in Wolfsburg.*
- ◆ *EMV = electromagnetic compatibility*



## 91 – Communication

### 1 Infotainment System

⇒ [“1.1 Overview - Infotainment System”, page 3](#)

⇒ [“1.2 Component Location Overview - Infotainment System”, page 11](#)

⇒ [“1.3 Infotainment System Display, Removing and Installing”, page 12](#)

⇒ [“1.4 Information Electronics Control Module 1 J794 , Removing and Installing”, page 13](#)

#### 1.1 Overview - Infotainment System

⇒ [“1.1.1 Overview - Infotainment System, Standard Display Equipment Level”, page 3](#)

⇒ [“1.1.2 Overview - Infotainment System, Composition Touch and Composition Color Equipment Levels”, page 4](#)

⇒ [“1.1.3 Overview - Infotainment System, Composition Media and Discover Media Equipment Levels”, page 6](#)

⇒ [“1.1.4 Overview - Infotainment System, Discover Pro Equipment Level”, page 9](#)

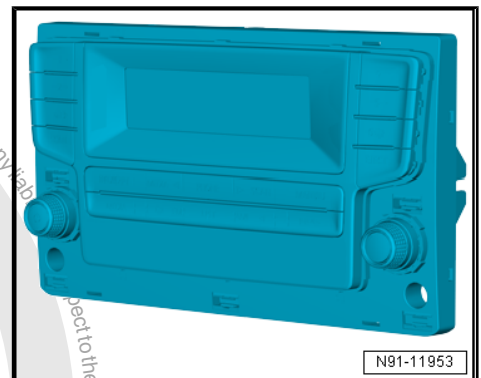
##### 1.1.1 Overview - Infotainment System, Standard Display Equipment Level

- ◆ Front Information Display Control Head - J685-
- Infotainment System Standard Display Characteristics**
- ◆ 5 inch monochrome display with touch screen
  - ◆ Support for multifunction steering wheel
  - ◆ Vehicle menu support
  - ◆ On Board Diagnostic (OBD)



#### Note

- ◆ *Familiarity with the function and operation of the Infotainment system is needed if there are customer concerns.*
- ◆ *Additional information may be found in the Owner's Manual.*
- ◆ *The connection to other vehicle systems takes place via the Infotainment CAN bus and the Data Bus On Board Diagnostic Interface - J533- .*
- ◆ *Fault finding is performed via **Guided Fault Finding** on the Vehicle Diagnostic Tester .*





## 1.1.2 Overview - Infotainment System, Composition Touch and Composition Color Equipment Levels

- ◆ Front Information Display Control Head - J685-

Optional

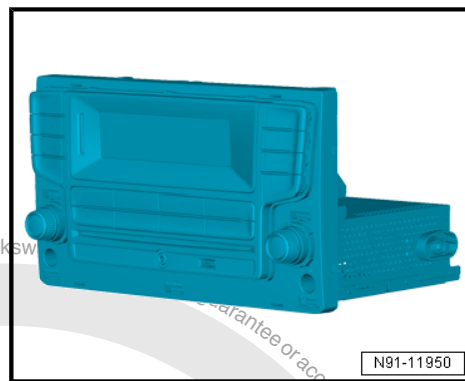
- ◆ CD player

### Composition Touch Infotainment System Characteristics

- ◆ 5 inch monochrome display with touch screen
- ◆ 2 x 20 W output
- ◆ RDS FM/AM radio
- ◆ AUX IN on the front of the unit with a jack plug
- ◆ SD Memory Card Reader
- ◆ MP3-Play back function
- ◆ WMA
- ◆ Support for multifunction steering wheel
- ◆ Vehicle menu support
- ◆ OBD including speaker diagnosis
- ◆ Speed compensated volume (SCV)

### Composition Color Infotainment System Characteristics

- ◆ 5 inch multicolor display with touch screen
- ◆ 2 or 4 x 20 W output
- ◆ RDS FM/AM radio
- ◆ Integrated diversity function
- ◆ AUX IN on the front of the unit with a jack plug
- ◆ SD Memory Card Reader
- ◆ MP3-Play back function
- ◆ WMA
- ◆ Support for multifunction steering wheel
- ◆ Vehicle menu support
- ◆ OBD including speaker diagnosis
- ◆ Integrated CD player
- ◆ Speed compensated volume (SCV)



### Note

- ◆ *Familiarity with the function and operation of the Infotainment system is needed if there are customer concerns.*
- ◆ *Additional information may be found in the Owner's Manual.*
- ◆ *The connection to other vehicle systems takes place via the Infotainment CAN bus and the Data Bus On Board Diagnostic Interface - J533- .*
- ◆ *Fault finding is performed via Guided Fault Finding on the Vehicle Diagnostic Tester .*





## Infotainment System Overview

### 1 - Front Information Display Control Head - J685-

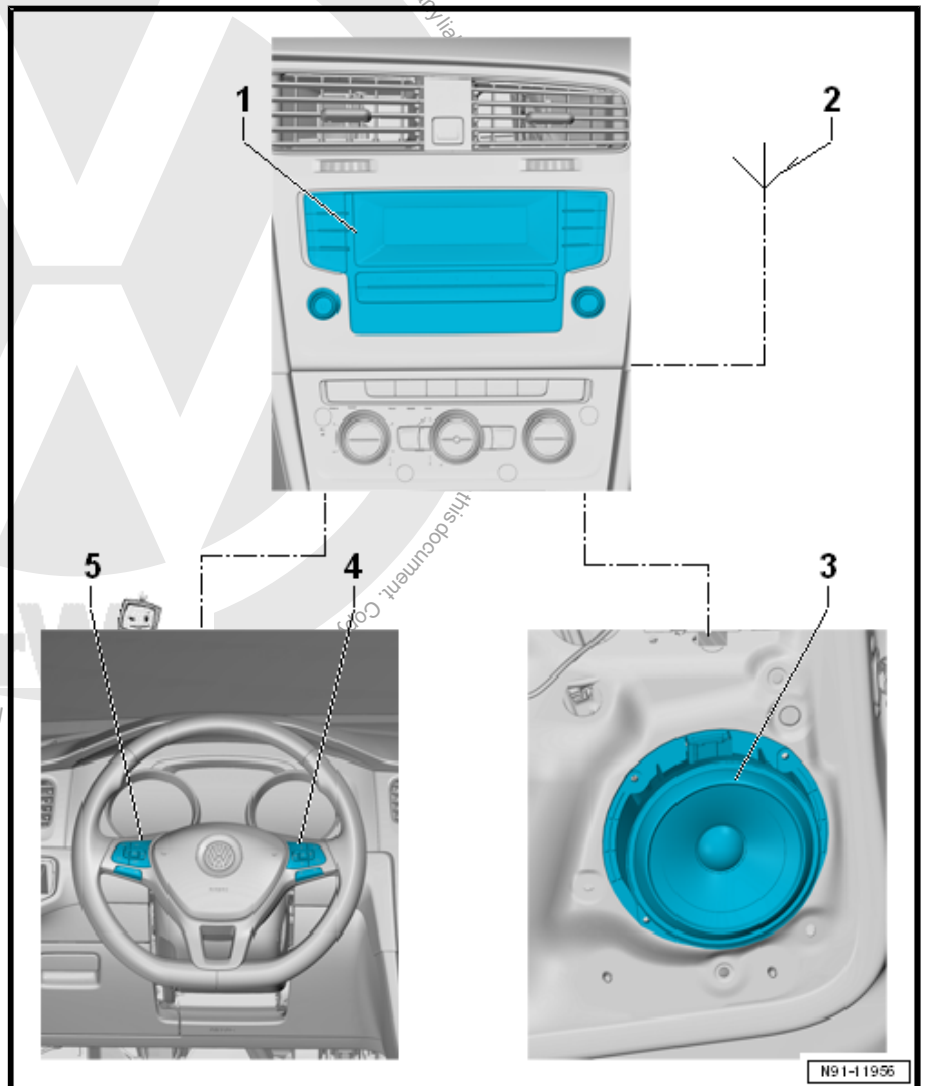
- ☑ In connection with the  
Information Electronics  
Control Module 1 -  
J794-

### 2 - Rear Window Antenna

### 3 - Sound System

### 4 - Right Multifunction Buttons On Steering Wheel - E441-

### 5 - Left Multifunction Buttons On Steering Wheel - E440-





### 1.1.3 Overview - Infotainment System, Composition Media and Discover Media Equipment Levels

- ◆ Information Electronics Control Module 1 - J794-
- ◆ Front Information Display Control Head - J685-
- ◆ CD player
- ◆ SD card reader: Discover Media with 2 SD card slots, Composition Media with 1 SD card slot

#### Optional

- ◆ Connection for External Multimedia Devices

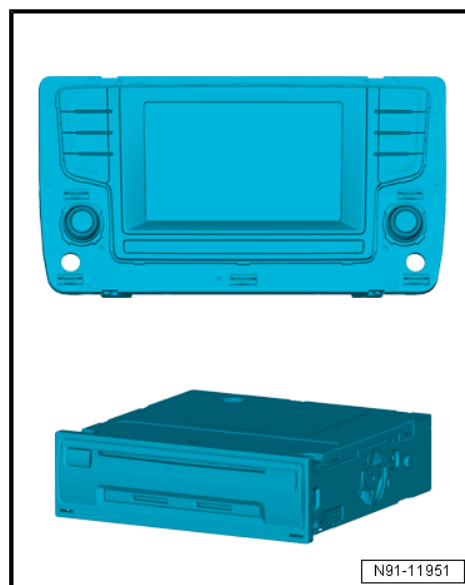
#### Composition Media Infotainment System Characteristics

- ◆ 5.8 inch multicolor display with touch screen (touch recognition)
- ◆ 4 x 20 W output
- ◆ RDS FM/AM radio
- ◆ integrated DAB tuner for digital radio reception
- ◆ SDARS for USA and Canada vehicles
- ◆ Integrated diversity function
- ◆ CD player
- ◆ SD card reader with 1 SD card slot
- ◆ AUX IN via a jack plug
- ◆ USB Connection
- ◆ iPod connection
- ◆ AAC
- ◆ MP3-Play back function
- ◆ WMA
- ◆ Support for multifunction steering wheel
- ◆ Vehicle menu support
- ◆ OBD including speaker diagnosis
- ◆ Bluetooth Hands-Free Calling
- ◆ Speed compensated volume (SCV)
- ◆ Speed dependent dynamic range compression (GADK)
- ◆ CVBS (rearview camera)
- ◆ Voice recognition system

#### Discover Media Infotainment System Characteristics

##### Additional characteristics for Infotainment System Composition Media

- ◆ Navigation system with GPS satellite receiver
- ◆ SD card reader with 2 SD card slots



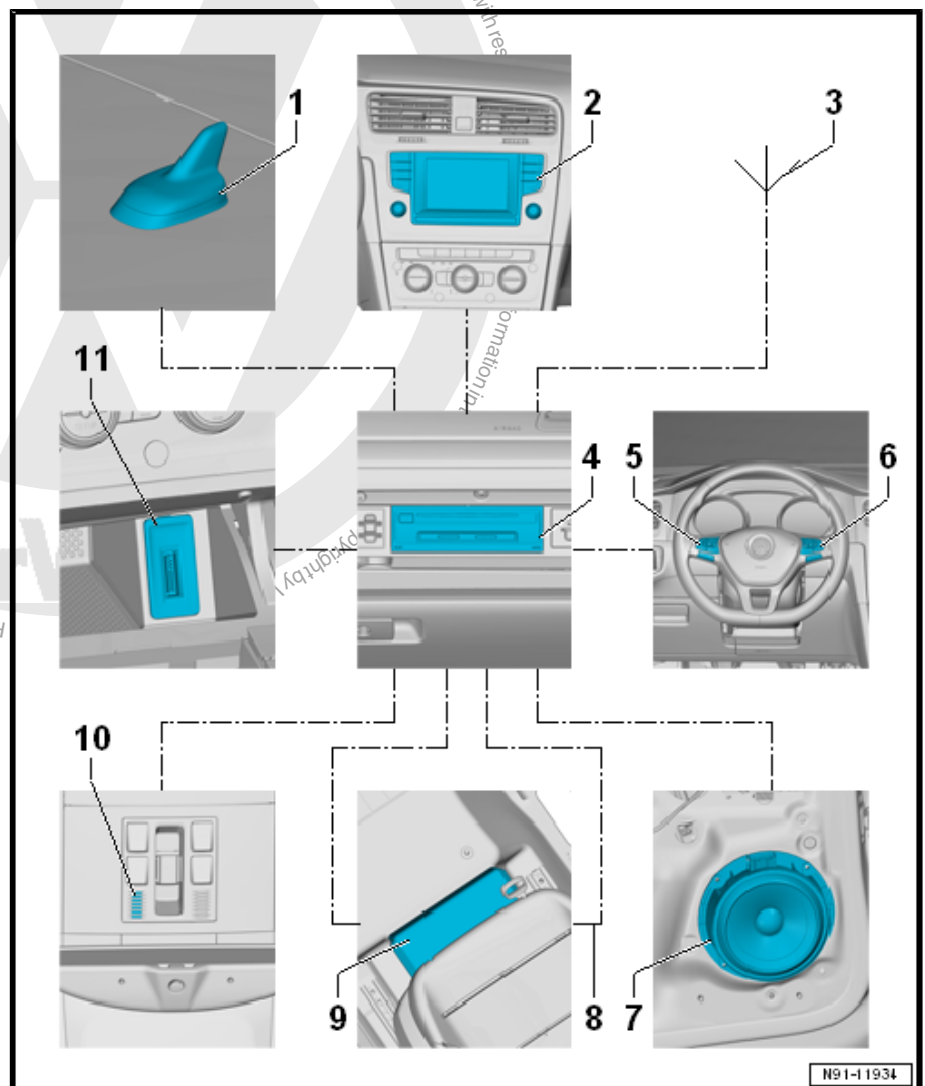


## Note

- ◆ Familiarity with the function and operation of the Infotainment system is needed if there are customer concerns.
- ◆ Additional information may be found in the Owner's Manual.
- ◆ The connection to other vehicle systems takes place via the Infotainment CAN bus and the Data Bus On Board Diagnostic Interface - J533.
- ◆ Fault finding is performed via **Guided Fault Finding** on the Vehicle Diagnostic Tester.

## Infotainment System Overview

- 1 - Roof Antenna - RX5-
- 2 - Front Information Display Control Head - J685-
- 3 - Rear Window Antenna
- 4 - Information Electronics Control Module 1 - J794-
- 5 - Left Multifunction Buttons On Steering Wheel - E440-
- 6 - Right Multifunction Buttons On Steering Wheel - E441-
- 7 - Sound System
- 8 - Most Bus
- 9 - Digital Sound System Control Module - J525-
- 10 - Microphone Unit in Front Roof Module - R164-
- Telephone Microphone - R38-
- 11 - Connection for External Multimedia Devices



## Notes on MOST bus

The optical Data bus "MOST bus" is used in addition to the CAN bus.

A fiber-optic cable is used as a "connecting cable". Fiber optic cables are routed inside corrugated tubes for protection.

Replace complete fiber optic cable if possible.

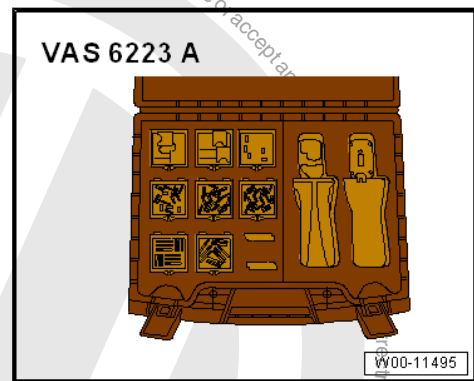


The front surface of the connectors must not be dirty.

If disconnecting the connectors: Attach Fiber-Optic Repair Set - Connector Protective Caps - VAS6223/9- .

When installing fiber optic cables, make sure not to go below the minimum bending radius of 25 mm. Do not crush or kink fiber optic cables.

Fiber-optic cables. Refer to ➤ Electrical Equipment General Information; Rep. Gr. 97 ; Wiring Harness and Connector Repairs; Fiber-Optic Cables, Repairing .





### 1.1.4 Overview - Infotainment System, Discover Pro Equipment Level

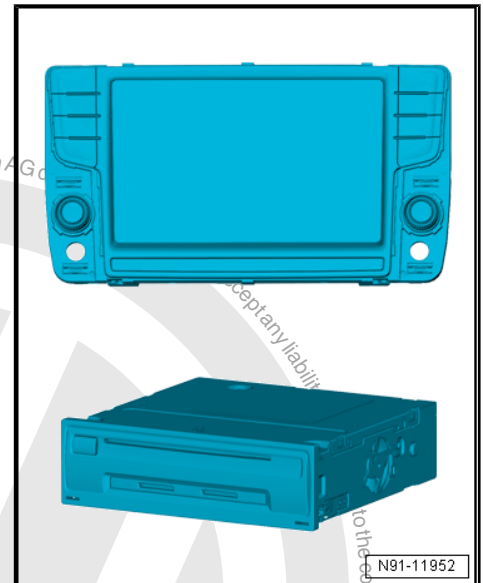
- ◆ Information Electronics Control Module 1 - J794-
- ◆ Front Information Display Control Head - J685-
- ◆ CD/DVD player
- ◆ SD card reader: 2 SD card slots
- ◆ Connection for External Multimedia Devices

#### Characteristics

- ◆ 8 inch multicolor display with touch screen (touch recognition)
- ◆ 4 x 20 W + 2 x 35 W output
- ◆ RDS FM/AM radio
- ◆ integrated Dual DAB tuner for digital radio reception
- ◆ SDARS for USA and Canada vehicles
- ◆ Integrated diversity function
- ◆ 3D navigation system with GPS satellite receiver
- ◆ CD player
- ◆ DVD drive
- ◆ SD card reader with 2 SD card slots
- ◆ AUX IN via a jack plug
- ◆ USB Connection
- ◆ iPod connection
- ◆ AAC
- ◆ AV output
- ◆ MP3-Play back function
- ◆ WMA
- ◆ JPEG viewer
- ◆ WLAN internal
- ◆ UMTS
- ◆ Support for multifunction steering wheel
- ◆ Vehicle menu support
- ◆ OBD including speaker diagnosis
- ◆ Bluetooth Hands-Free Calling
- ◆ Voice recognition system
- ◆ Speed compensated volume (SCV)
- ◆ Speed dependent dynamic range compression (GADK)
- ◆ CVBS (rearview camera)

#### Available as Option (Car Net):

- ◆ Google navigation
- ◆ Google Street View
- ◆ POI online
- ◆ Google search





## Note

- ◆ Familiarity with the function and operation of the Infotainment system is needed if there are customer concerns.
- ◆ Additional information may be found in the Owner's Manual.
- ◆ The connection to other vehicle systems takes place via the Infotainment CAN bus and the Data Bus On Board Diagnostic Interface - J533-.
- ◆ Fault finding is performed via **Guided Fault Finding** on the Vehicle Diagnostic Tester.

## Infotainment System Overview

1 - Roof Antenna - RX5-

2 - Front Information Display Control Head - J685-

3 - Rear Window Antenna

4 - Information Electronics Control Module 1 - J794-

5 - Left Multifunction Buttons On Steering Wheel - E440-

6 - Right Multifunction Buttons On Steering Wheel - E441-

7 - Sound System

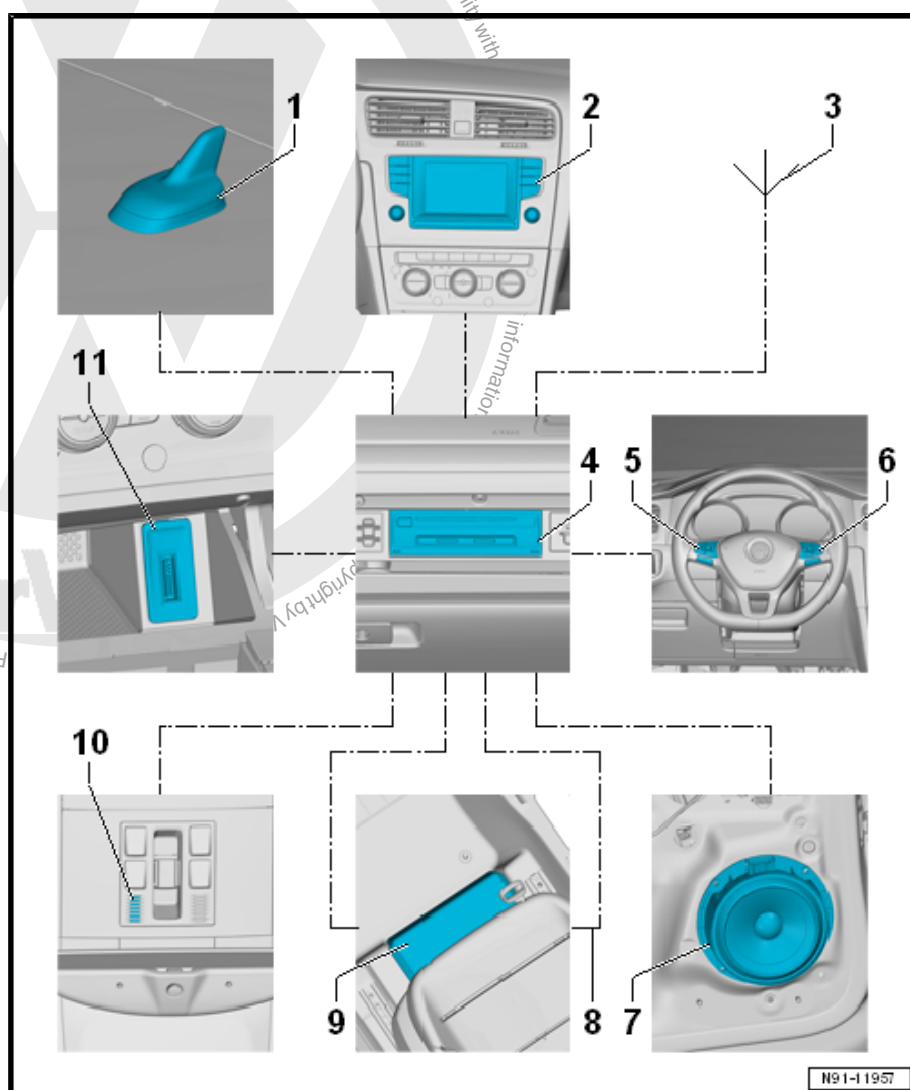
8 - MOST Bus

9 - Digital Sound System Control Module - J525-

10 - Telephone Microphone - R38-

- In the Front Interior Lamp - W1-

11 - Connection for External Multimedia Devices



## Notes on MOST Bus

The optical Data bus "MOST bus" is used in addition to the CAN bus.

A fiber-optic cable is used as a "connecting cable". Fiber optic cables are routed inside corrugated tubes for protection.

Replace complete fiber optic cable if possible.



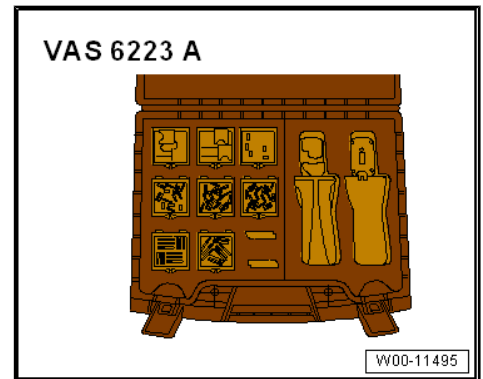


The front surface of the connectors must not be dirty.

If disconnecting the connectors: Attach Fiber-Optic Repair Set - Connector Protective Caps - VAS6223/9- .

When installing fiber optic cables, make sure not to go below the minimum bending radius of 25 mm. Do not crush or kink fiber optic cables.

Fiber-optic cables. Refer to ➔ Electrical Equipment General Information; Rep. Gr. 97 ; Wiring Harness and Connector Repairs; Fiber-Optic Cables, Repairing .



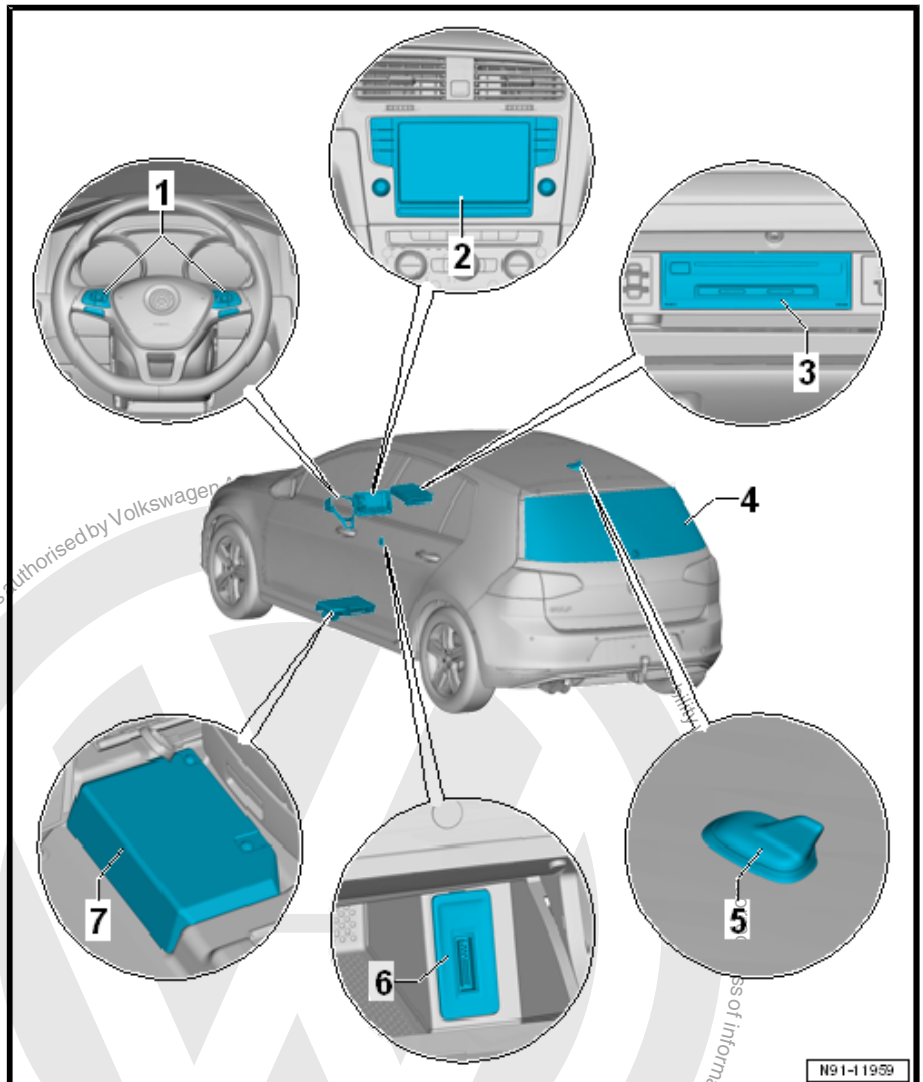
## 1.2 Component Location Overview - Infotainment System

### 1 - Multifunction Buttons on the Right Side of the Steering Wheel

- ❑ Left Multifunction Buttons On Steering Wheel - E440-
- ❑ Right Multifunction Buttons On Steering Wheel - E441-
- ❑ Removing and installing. Refer to ➔ ["9.3 Right/Left Multifunction Buttons On Steering Wheel E441 / E440 , Removing and Installing", page 55](#) .

### 2 - Front Information Display Control Head - J685-

- ❑ Inside the center of the instrument panel
- ❑ Composition Touch and Composition Color Infotainment system equipment levels: in connection with the Information Electronics Control Module 1 - J794-
- ❑ Removing and installing. Refer to ➔ ["4.2.1 Radio R , Removing and Installing, Composition Touch and Composition Color Equipment Levels", page 36](#) .
- ❑ Composition Media and Discover Media Infotainment system equipment levels or Discover Pro equipment level: individual display
- ❑ Removing and installing. Refer to ➔ ["4.2.1 Radio R , Removing and Installing, Composition Touch and Composition Color Equipment Levels", page 36](#) .





### 3 - Information Electronics Control Module 1 - J794-

- ❑ Composition Touch and Composition Color Infotainment system equipment levels: in connection with the Front Information Display Control Head - J685-
- ❑ Removing and installing. Refer to  
⇒ ["4.2.1 Radio R , Removing and Installing, Composition Touch and Composition Color Equipment Levels", page 36](#) .
- ❑ Composition Media and Discover Media Infotainment system equipment levels or Discover Pro equipment level: in the glove compartment
- ❑ Removing and installing. Refer to  
⇒ ["1.4 Information Electronics Control Module 1 J794 , Removing and Installing", page 13](#) .
- ❑ Connector assignment. Refer to ⇒ Wiring diagrams, Troubleshooting & Component locations.

### 4 - Rear Window Antenna

### 5 - Roof Antenna - RX5-

### 6 - Connection for External Multimedia Devices

- ❑ In the front center console storage compartment
- ❑ Removing and installing. Refer to ⇒ ["10 Connection for External Multimedia Devices", page 59](#) .

### 7 - Digital Sound System Control Module - J525-

- ❑ Under the left front seat

## 1.3 Infotainment System Display, Removing and Installing

### Special tools and workshop equipment required

- ◆ Trim Removal Wedge - 3409-
- ◆ Radio Removal Tool - T10057-

### Removing

- Turn off the ignition and all electrical consumers and remove the ignition key.

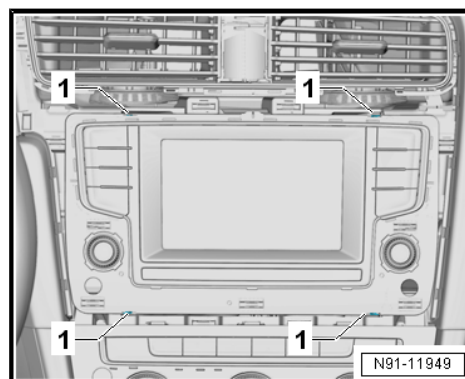


#### Caution

***Risk of damaging the component surfaces.***

- ◆ ***When positioning a prying tool, put commercially available adhesive tape over the component in the visible area.***

- Remove the instrument panel center trim. Refer to ⇒ Body Interior; Rep. Gr. 70 ; Instrument Panel; Overview - Instrument Panel .
- Insert the Radio Removal Tool - T10057- into the release slots -1- on the Front Information Display Control Head - J685- .







- Release the upper locking mechanisms -1- by pushing in direction of travel.
- Release the lower locking mechanisms -1- by pushing in direction of travel.
- Remove the Front Information Display Control Head - J685-2-.
- Release and disconnect the connectors.

#### Installing

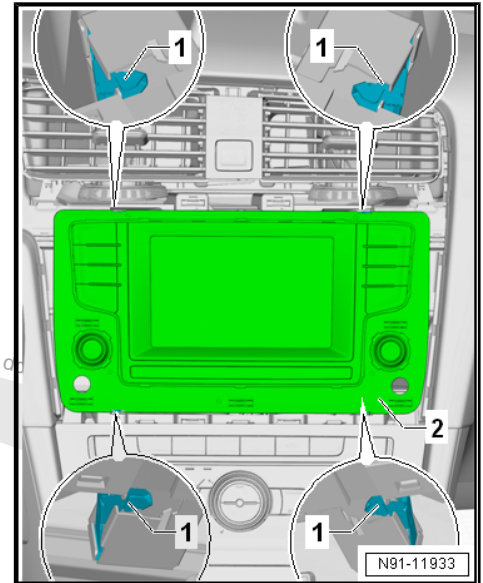
Install in reverse order of removal. Note the following:



#### Caution

**Risk of damaging the components.**

- ◆ **When inserting the Front Information Display Control Head - J685- , do not push on the display and the control equipment.**



- Install the Front Information Display Control Head - J685- until it engages.

## 1.4 Information Electronics Control Module 1 - J794- , Removing and Installing

### Special tools and workshop equipment required

- ◆ Radio Removal Tool - T10057-
- ◆ Fiber-Optic Repair Set - Connector Protective Caps - VAS6223/9-

If the control module is replaced, select the Replacement function for the appropriate control module in Guided Fault Finding. Refer to Vehicle Diagnostic Tester .

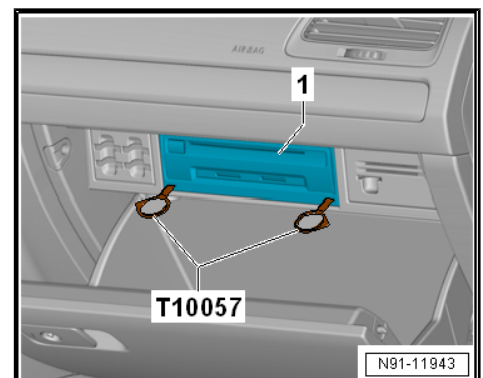
#### Removing

- Turn off the ignition and all electrical consumers and remove the ignition key.
- Open the glove compartment.
- Remove any data storage device still in the Information Electronics Control Module 1 - J794- .
- Insert the two clips from the Radio Removal Tool - T10057- into the slits in the Information Electronics Control Module 1 - J794- -1- until they lock into place.

The points on grip eyes must face outward.

- Remove the Information Electronics Control Module 1 - J794- -1- from the glove compartment at the Radio Removal Tool - T10057- grip eyes.
- Release and disconnect the connectors from the Information Electronics Control Module 1 - J794- -1-.

### Equipment Levels with the Digital Sound System Control Module - J525-





- Insert the Fiber-Optic Repair Set - Connector Protective Caps - VAS6223/9- -1- onto the MOST bus connector -2-.

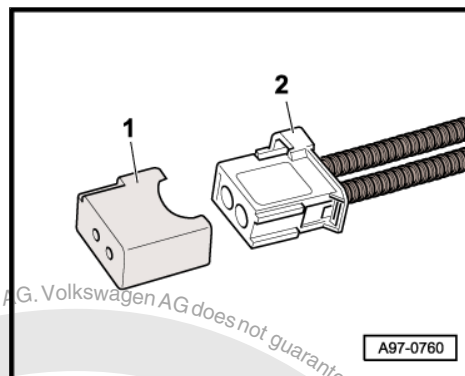
#### All Equipment Levels

- Press the locking tabs on the Information Electronics Control Module 1 - J794- and remove the Radio Removal Tool - T10057- .

#### Installing

Install in reverse order of removal. Note the following:

- Insert the Information Electronics Control Module 1 - J794- until it engages in the glove compartment.





## 2 Sound System

⇒ [“2.1 Component Location Overview - Sound Systems”, page 15](#)

⇒ [“2.2 Digital Sound System Control Module J525”, page 18](#)

⇒ [“2.3 Digital Sound System Control Module J525 Bracket, Removing and Installing”, page 22](#)

⇒ [“2.4 Left/Right Front Treble Speaker R20 / R22 , Removing and Installing”, page 23](#)

⇒ [“2.5 Left/Right Rear Treble Speaker R14 / R16 , Removing and Installing”, page 23](#)

⇒ [“2.6 Left/Right Front Bass Speaker R21 / R23 , Removing and Installing”, page 25](#)

⇒ [“2.7 Left/Right Rear Bass Speaker R15 / R17 , Removing and Installing”, page 26](#)

⇒ [“2.8 Subwoofer R211 , Removing and Installing”, page 28](#)

### 2.1 Component Location Overview - Sound Systems

⇒ [“2.1.1 Component Location Overview - Sound System, Vehicles with Volkswagen Sound System”, page 15](#)

⇒ [“2.1.2 Component Location Overview - Sound System, Vehicles with Dynaudio Sound System”, page 17](#)

#### 2.1.1 Component Location Overview - Sound System, Vehicles with Volkswagen Sound System



### 1 - Front Treble Speaker

- ☐ Left Front Treble Speaker - R20-
- ☐ Right Front Treble Speaker - R22-
- ☐ In the A-pillar trim panels
- ☐ Removing and installing. Refer to  
⇒ ["2.4 Left/Right Front Treble Speaker R20 / R22 , Removing and Installing", page 23](#) .

### 2 - Digital Sound System Control Module - J525-

- ☐ Under the left front seat
- ☐ In left of luggage compartment under cargo floor, eGolf
- ☐ Removing and installing. Refer to  
⇒ ["2.2 Digital Sound System Control Module J525", page 18](#) .

### 3 - Rear Treble Speaker

- ☐ Left Rear Treble Speaker - R14-
- ☐ Right Rear Treble Speaker - R16-
- ☐ 2-door: in the side trim panels
- ☐ 4-door: in the door trim panels
- ☐ Removing and installing. Refer to  
⇒ ["2.5 Left/Right Rear Treble Speaker R14 / R16 , Removing and Installing", page 23](#) .

### 4 - Subwoofer - R211-

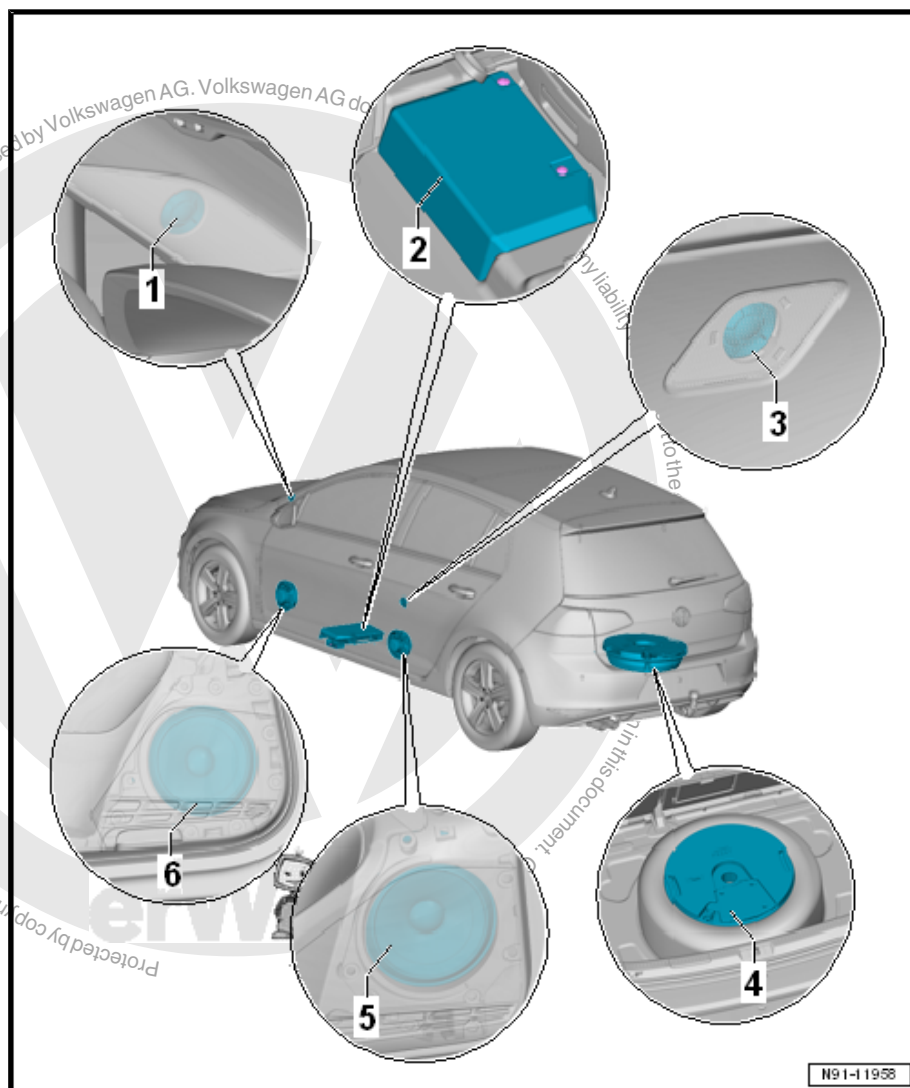
- ☐ In the spare wheel well
- ☐ Removing and installing. Refer to ⇒ ["2.8 Subwoofer R211 , Removing and Installing", page 28](#) .

### 5 - Rear Bass Speaker

- ☐ Left Rear Bass Speaker - R15-
- ☐ Right Rear Bass Speaker - R17-
- ☐ 2-door: in the sidewalls
- ☐ 4-door: in the rear doors
- ☐ Removing and installing. Refer to  
⇒ ["2.7 Left/Right Rear Bass Speaker R15 / R17 , Removing and Installing", page 26](#) .

### 6 - Front Bass Speaker

- ☐ Left Front Bass Speaker - R21-
- ☐ Right Front Bass Speaker - R23-
- ☐ In the front doors
- ☐ Removing and installing. Refer to  
⇒ ["2.6 Left/Right Front Bass Speaker R21 / R23 , Removing and Installing", page 25](#) .



## 2.1.2 Component Location Overview - Sound System, Vehicles with Dynaudio Sound System

For vehicles with the Dynaudio sound system, high quality speaker systems manufactured by Dynaudio are installed at the standard component locations in the vehicle. The Dynaudio sound system can be identified by a Dynaudio name badge on the front treble speaker trim. In the spare tire well in the luggage compartment, a subwoofer speaker is installed to play back the bass tones. A MIB Light amplifier is used as the digital sound system control module.

### 1 - Front Treble Speaker

- ☐ Left Front Treble Speaker - R20-
- ☐ Right Front Treble Speaker - R22-
- ☐ In the A-pillar trim panels
- ☐ Removing and installing. Refer to  
⇒ ["2.4 Left/Right Front Treble Speaker R20 / R22 , Removing and Installing", page 23](#) .

### 2 - Digital Sound System Control Module - J525-

- ☐ Under the left front seat
- ☐ In the luggage compartment under cargo floor on the left side, eGolf
- ☐ Removing and installing. Refer to  
⇒ ["2.2 Digital Sound System Control Module J525", page 18](#) .

### 3 - Rear Treble Speaker

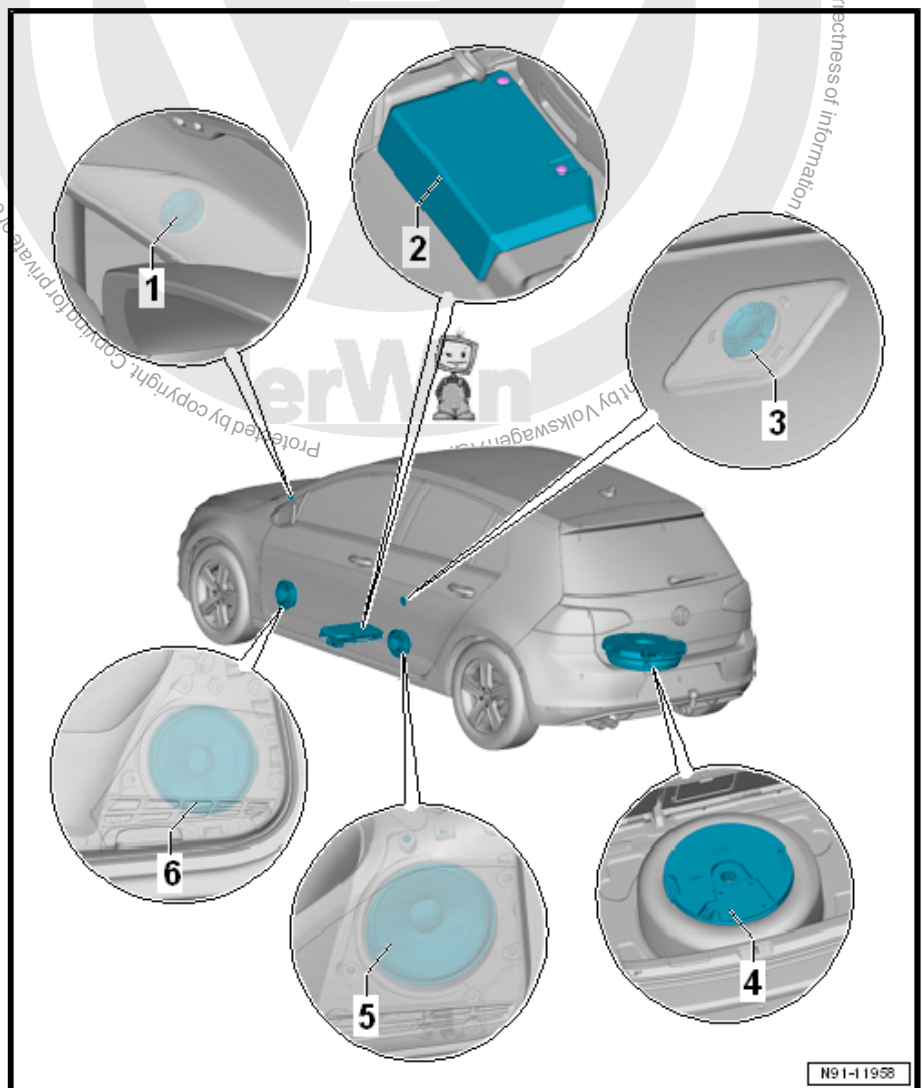
- ☐ Left Rear Treble Speaker - R14-
- ☐ Right Rear Treble Speaker - R16-
- ☐ 2-door: in the side trim panels
- ☐ 4-door: in the door trim panels
- ☐ Removing and installing. Refer to  
⇒ ["2.5 Left/Right Rear Treble Speaker R14 / R16 , Removing and Installing", page 23](#) .

### 4 - Subwoofer - R211-

- ☐ In the spare wheel well
- ☐ Removing and installing. Refer to ⇒ ["2.8 Subwoofer R211 , Removing and Installing", page 28](#) .

### 5 - Rear Bass Speaker

- ☐ Left Rear Bass Speaker - R15-
- ☐ Right Rear Bass Speaker - R17-
- ☐ 2-door: in the sidewalls
- ☐ 4-door: in the rear doors



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- ❑ Removing and installing. Refer to  
⇒ [“2.7 Left/Right Rear Bass Speaker R15 / R17 , Removing and Installing”, page 26](#) .

## 6 - Front Bass Speaker

- ❑ Left Front Bass Speaker - R21-
- ❑ Right Front Bass Speaker - R23-
- ❑ In the front doors
- ❑ Removing and installing. Refer to  
⇒ [“2.6 Left/Right Front Bass Speaker R21 / R23 , Removing and Installing”, page 25](#) .

## 2.2 Digital Sound System Control Module - J525-

⇒ [“2.2.1 Digital Sound System Control Module J525 , Vehicles with Volkswagen Sound System”, page 18](#)

⇒ [“2.2.2 Digital Sound System Control Module J525 , Vehicles with Dynaudio Sound System”, page 20](#)

⇒ [“2.2.3 Digital Sound System Control Module J525 , Removing and Installing, eGolf”, page 21](#)

### 2.2.1 Digital Sound System Control Module - J525- , Vehicles with Volkswagen Sound System

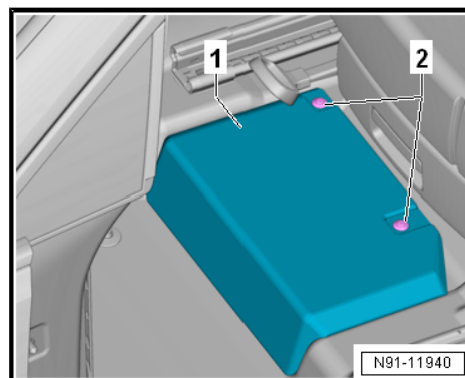
#### Special tools and workshop equipment required

- ◆ Torque Wrench 1783 - 2-10Nm - VAG1783-
- ◆ Fiber-Optic Repair Set - Connector Protective Caps - VAS6223/9-

If the control module is replaced, select the Replacement function for the appropriate control module in Guided Fault Finding. Refer to Vehicle Diagnostic Tester .

#### Removing

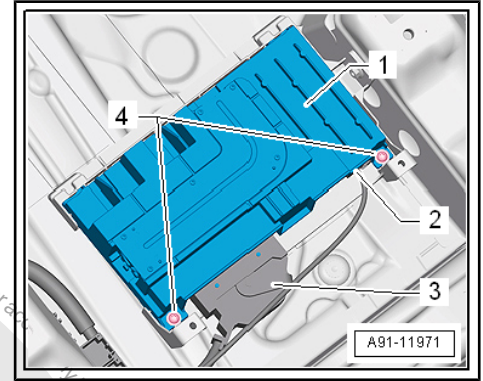
- Raise the front seat to the highest position and then to the rearmost position.
- Turn off the ignition and all electrical consumers and remove the ignition key.
- Remove the expanding rivets -2-, slide the cover -1- evenly in the direction of travel and remove it.



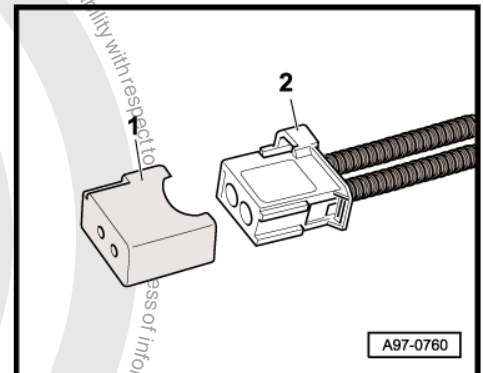




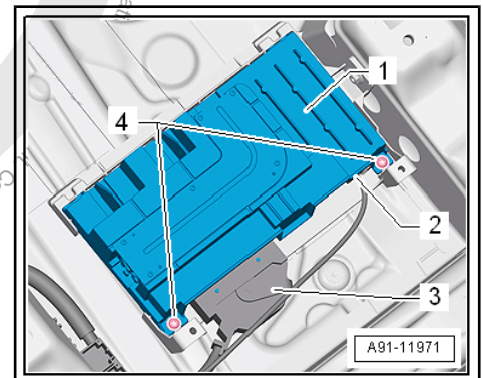
- Release and disconnect the connector -2- from the Digital Sound System Control Module - J525- -1-.



- Insert the Fiber-Optic Repair Set - Connector Protective Caps - VAS6223/9- -1- onto the MOST bus connector -2-.



- Release and disconnect the connector -3- from the Digital Sound System Control Module - J525- -1-.
- Remove the bolts -4-.
- Pivot the Digital Sound System Control Module - J525- -1- out of the bracket.



## Installing

Install in reverse order of removal. Note the following:



### Note

- ◆ *When installing, make sure that the Digital Sound System Control Module - J525- is properly inserted into the notch on the bracket.*
- ◆ *Make sure the cover is mounted correctly on the front edge of the bracket when installing it.*

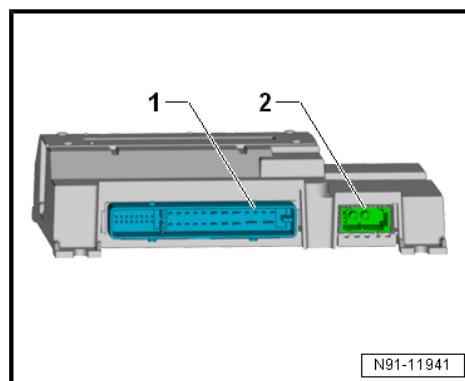
## Tightening Specifications

Component	Tightening Specification
Bolt -4- to bracket	3 Nm



## Connectors to Digital Sound System Control Module - J525-

- 1 - Multi-pin connector, 38-pin
- 2 - MOST bus, 2-pin



## 2.2.2 Digital Sound System Control Module - J525- , Vehicles with Dynaudio Sound System

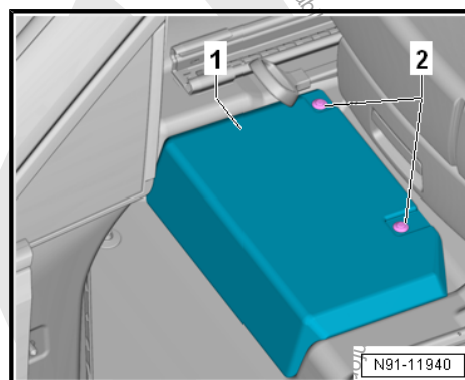
### Special tools and workshop equipment required

- ◆ Torque Wrench 1783 - 2-10Nm - VAG1783-
- ◆ Fiber-Optic Repair Set - Connector Protective Caps - VAS6223/9-

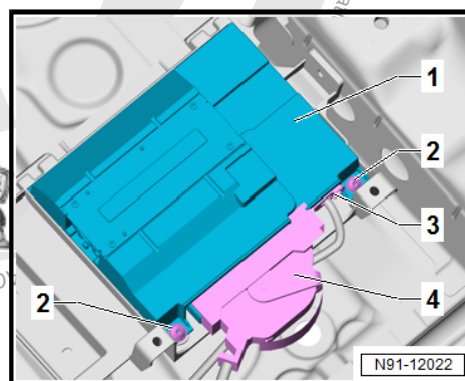
If the control module is replaced, select the Replacement function for the appropriate control module in Guided Fault Finding. Refer to Vehicle Diagnostic Tester .

### Removing

- Raise the front seat to the highest position and then to the rearmost position.
- Turn off the ignition and all electrical consumers and remove the ignition key.
- Remove the expanding rivets -2-, slide the cover -1- evenly in the direction of travel and remove it.



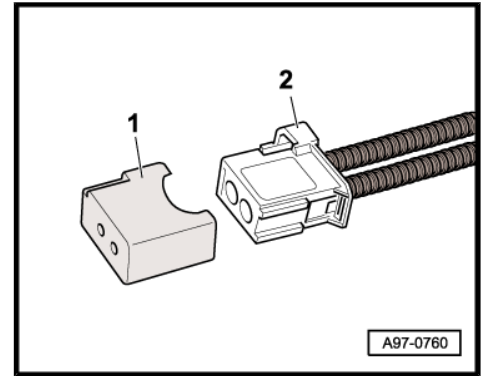
- Release and disconnect the connector -3- from the Digital Sound System Control Module - J525- -1-.







- Insert the Fiber-Optic Repair Set - Connector Protective Caps - VAS6223/9- -1- onto the MOST bus connector -2-.
- Release and disconnect the connector -4- from the Digital Sound System Control Module - J525- -1-.
- Remove the screws -2-.



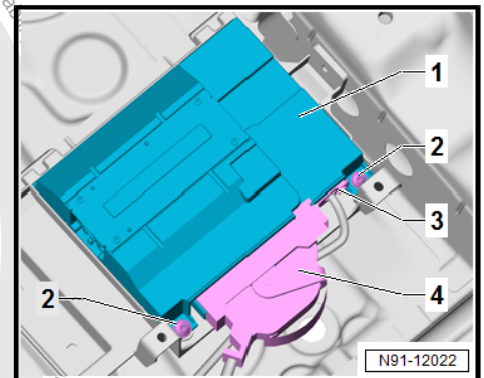
- Pivot the Digital Sound System Control Module - J525- -1- out of the bracket.

### Installing

Install in reverse order of removal. Note the following:

#### Note

- ◆ When installing, make sure that the Digital Sound System Control Module - J525- is properly inserted into the notch on the bracket.
- ◆ Make sure the cover is mounted correctly on the front edge of the bracket when installing it.

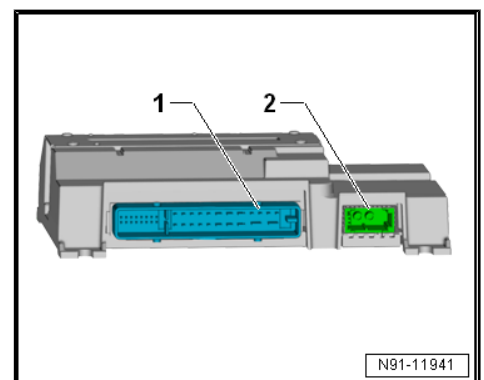


### Tightening Specifications

Component	Tightening Specification
Screws -2- to bracket	3 Nm

### Connectors to Digital Sound System Control Module - J525-

- 1 - Multi-pin connector, 38-pin
- 2 - MOST bus, 2-pin



## 2.2.3 Digital Sound System Control Module - J525- , Removing and Installing, eGolf

### Special tools and workshop equipment required

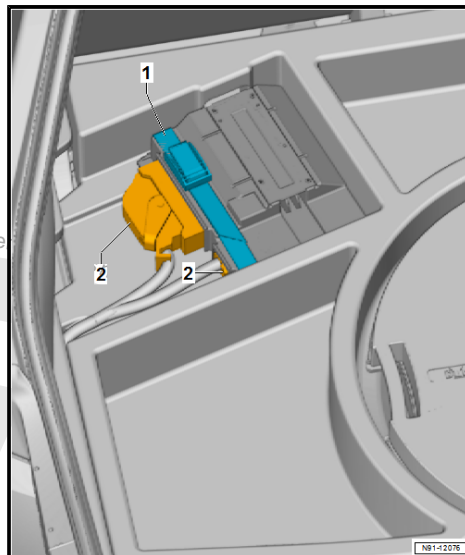
- ◆ Fiber-Optic Repair Set - Connector Protective Caps - VAS6223/9-

If the control module is replaced, select the Replacement function for the appropriate control module in Guided Fault Finding. Refer to Vehicle Diagnostic Tester .



## Removing

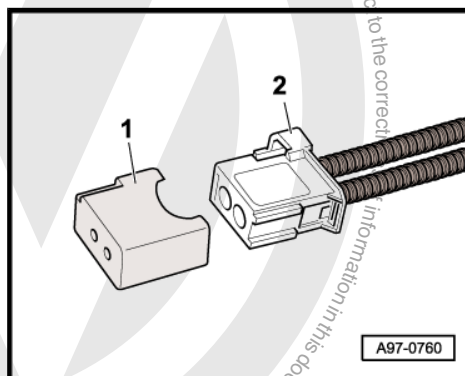
- Turn off the ignition and all electrical consumers and remove the ignition key.
- Remove the cargo floor in the luggage compartment.
- Loosen the tensioning strap -1- and release and disconnect the connectors -2- from the Digital Sound System Control Module - J525- .



- Insert the Fiber-Optic Repair Set - Connector Protective Caps - VAS6223/9- -1- onto the MOST bus connector -2-.
- Remove the Digital Sound System Control Module - J525- .

## Installing

Install in reverse order of removal. Note the following:



## 2.3 Digital Sound System Control Module - J525- Bracket, Removing and Installing

### Special tools and workshop equipment required

- ♦ Torque Wrench 1783 - 2-10Nm - VAG1783-

## Removing

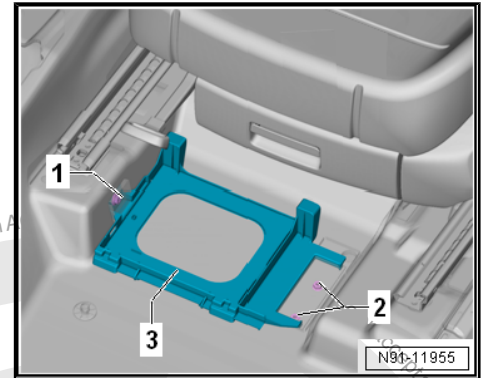
- Remove the Digital Sound System Control Module - J525- . Refer to [⇒ "2.2 Digital Sound System Control Module J525 ", page 18](#) .



- Fold back the carpet and floor insulation at the center tunnel and floor panel.
- Remove the bolt -1- on the center tunnel and the nuts -2- on the bracket.
- Remove the bracket for the Digital Sound System Control Module - J525- -3-.

### Installing

Install in reverse order of removal. Note the following:



### Tightening Specifications

Component	Tightening specification
Bolt -1-	6 Nm
Nuts -2-	6 Nm

## 2.4 Left/Right Front Treble Speaker - R20 - / - R22 - , Removing and Installing

The Left Front Treble Speaker - R20- / Right Front Treble Speaker - R22- are located in the A-pillar trim panels.



### Note

- ◆ If the Treble Speaker must be replaced, then the A-pillar trim panel must also be replaced.
- ◆ The removal and installation is described for the left side. Removing and installing on the right side is identical.

### Removing

- Turn off the ignition and all electrical consumers and remove the ignition key.
- Remove the A-pillar trim panel. Refer to ➔ Body Interior; Rep. Gr. 70 ; Passenger Compartment Trim; A-Pillar Trim Panel, Removing and Installing .

### Installing

Install in reverse order of removal.

## 2.5 Left/Right Rear Treble Speaker - R14 - / - R16 - , Removing and Installing

⇒ [“2.5.1 Left/Right Rear Treble Speaker R14 / R16 , Removing and Installing, 2-Door Vehicles”, page 23](#)

⇒ [“2.5.2 Left/Right Rear Treble Speaker R14 / R16 , Removing and Installing, 4-Door Vehicles”, page 24](#)

### 2.5.1 Left/Right Rear Treble Speaker - R14 - / - R16 - , Removing and Installing, 2-Door Vehicles

The Left Rear Treble Speaker - R14- / Right Rear Treble Speaker - R16- are located in the rear side trim panels.



#### Note

- ♦ *If the Treble Speaker must be replaced, then the speaker mesh must also be replaced.*
- ♦ *The removal and installation is described for the left side. Removing and installing on the right side is identical.*

#### Removing

- Turn off the ignition and all electrical consumers and remove the ignition key.
- Remove the side trim panel. Refer to ⇒ Body Interior; Rep. Gr. 70 ; Passenger Compartment Trim; Side Trim Panel, Removing and Installing .
- Disconnect the connector.
- Detach the Treble Speaker with the speaker mesh from the side trim panel using workshop tools.

#### Installing

- Insert the Treble Speaker with the speaker mesh into the door trim panel.
- Heat the pins using workshop tools so that the speaker mesh rests securely and flush in the side trim panel.
- Attach the connector.
- Install the side trim panel. Refer to ⇒ Body Interior; Rep. Gr. 70 ; Passenger Compartment Trim; Side Trim Panel, Removing and Installing .

### 2.5.2 Left/Right Rear Treble Speaker - R14 - / - R16 - , Removing and Installing, 4-Door Vehicles

The Left Rear Treble Speaker - R14- / Right Rear Treble Speaker - R16- are located in the rear door trim panels.



#### Note

- ♦ *If the Treble Speaker must be replaced, then the speaker mesh must also be replaced.*
- ♦ *The removal and installation is described for the left side. Removing and installing on the right side is identical.*

#### Removing

- Turn off the ignition and all electrical consumers and remove the ignition key.
- Remove the rear door trim panel. Refer to ⇒ Body Interior; Rep. Gr. 70 ; Rear Door Trim Panels; Rear Door Trim Panel, Removing and Installing .
- Detach the Treble Speaker with the speaker mesh from the door trim panel using workshop tools.

#### Installing

- Insert the Treble Speaker with the speaker mesh into the door trim panel.
- Heat the pins using workshop tools so that the speaker mesh rests securely and flush in the side trim panel.



- Attach the connector.
- Install the door trim panel. Refer to ⇒ Body Interior; Rep. Gr. 70 ; Rear Door Trim Panels; Rear Door Trim Panel, Removing and Installing .

## 2.6 Left/Right Front Bass Speaker - R21 - / - R23 - , Removing and Installing

The Left Front Bass Speaker - R21- / Right Front Bass Speaker - R23- are located at the bottom of the front doors.

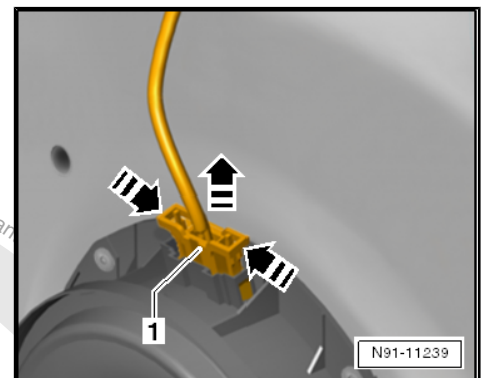


### Note

*The removal and installation is described for the left side. Removing and installing on the right side is identical.*

### Removing

- Turn off the ignition and all electrical consumers and remove the ignition key.
- Remove the front door trim panel. Refer to ⇒ Body Interior; Rep. Gr. 70 ; Front Door Trim Panels; Front Door Trim Panel, Removing and Installing .
- Release the connector locking mechanism on the Left Front Bass Speaker - R21- in the direction of the -arrow-.
- Remove the connector -1-.
- Drill out the rivets -1- using a suitable drill.



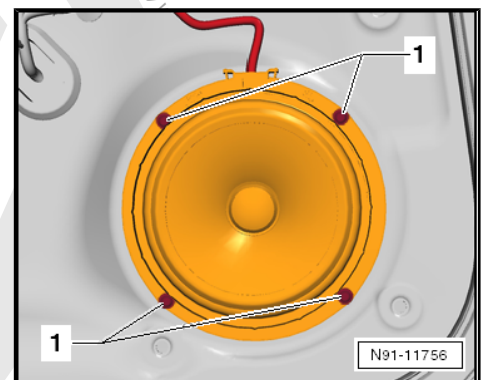
- Remove the Left Front Bass Speaker - R21- .



### Caution

**Always remove any shavings resulting from the drilling, otherwise they may cause corrosion damage later.**

**If the paint on the door frame gets damaged during drilling, touch-up immediately.**



### Installing

Install in reverse order of removal. Note the following:



### Note

*Use special blind rivets to install the speaker (note the part number!).*



## 2.7 Left/Right Rear Bass Speaker - R15 - / - R17 - , Removing and Installing

⇒ "2.7.1 Left/Right Rear Bass Speaker R15 / R17 , Removing and Installing, 2-Door Vehicles", page 26

⇒ "2.7.2 Left/Right Rear Bass Speaker R15 / R17 , Removing and Installing, 4-Door Vehicles", page 27

### 2.7.1 Left/Right Rear Bass Speaker - R15 - / - R17 - , Removing and Installing, 2-Door Vehicles

The Left Rear Bass Speaker - R15- / Right Rear Bass Speaker - R17- are located in the sidewall.

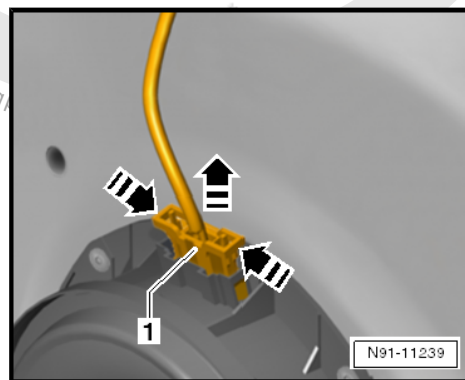


#### Note

*The removal and installation is described for the left side. Removing and installing on the right side is identical.*

#### Removing

- Turn off the ignition and all electrical consumers and remove the ignition key.
- Remove the side trim panel. Refer to ⇒ Body Interior; Rep. Gr. 70 ; Passenger Compartment Trim; Side Trim Panel, Removing and Installing .
- Release the connector locking mechanism on the Left Rear Bass Speaker - R15- in the direction of the -arrow-
- Remove the connector -1-.
- Drill out the rivets -1- using a suitable drill.





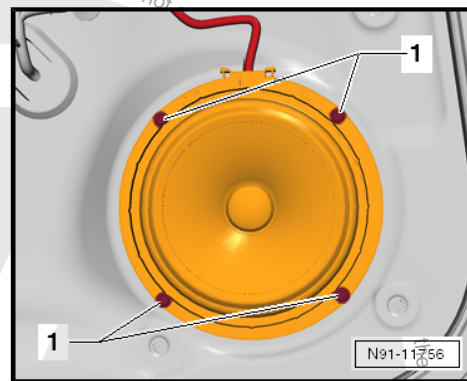
- Remove the Left Rear Bass Speaker - R15-



#### Caution

*Always remove any shavings resulting from the drilling, otherwise they may cause corrosion damage later.*

*If the paint on the door frame gets damaged during drilling, touch-up immediately.*



#### Installing

Install in reverse order of removal. Note the following:



#### Note

*Use special blind rivets to install the speaker (note the part number!).*

### 2.7.2 Left/Right Rear Bass Speaker - R15- / - R17- , Removing and Installing, 4-Door Vehicles

The Left Rear Bass Speaker - R15- / Right Rear Bass Speaker - R17- are located at the bottom of the rear doors.

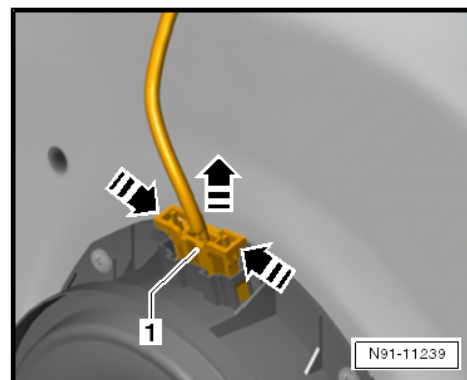


#### Note

*The removal and installation is described for the left side. Removing and installing on the right side is identical.*

#### Removing

- Turn off the ignition and all electrical consumers and remove the ignition key.
- Remove the rear door trim panel. Refer to ➤ Body Interior; Rep. Gr. 70 ; Rear Door Trim Panels; Rear Door Trim Panel, Removing and Installing .
- Release the connector locking mechanism on the Left Rear Bass Speaker - R15- in the direction of the -arrow-.
- Remove the connector -1-.
- Drill out the rivets -1- using a suitable drill.







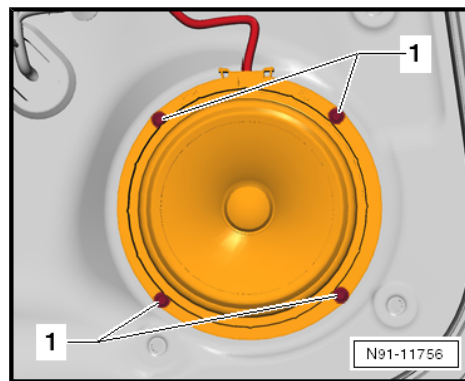
- Remove the Left Rear Bass Speaker - R15- .



#### Caution

*Always remove any shavings resulting from the drilling, otherwise they may cause corrosion damage later.*

*If the paint on the door frame gets damaged during drilling, touch-up immediately.*



#### Installing

Install in reverse order of removal. Note the following:



#### Note

*Use special blind rivets to install the speaker (note the part number!).*

## 2.8 Subwoofer - R211- , Removing and Installing

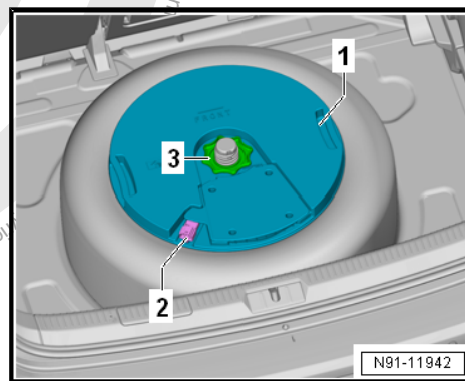
The Subwoofer - R211- is located in the spare wheel well.

#### Removing

- Turn off the ignition and all electrical consumers and remove the ignition key.
- Remove the luggage compartment floor.
- Release and disconnect the connector -2- from the Subwoofer - R211- -1-.
- Remove the screw -3- on the Subwoofer - R211- -1-.
- Remove the Subwoofer - R211- -1- upward.

#### Installing

Install in reverse order of removal. Note the following:



#### Tightening Specifications

Component	Tightening specification
Bolt -3- to Subwoofer - R211-	3 Nm



### 3 Antenna Systems

⇒ [“3.1 Component Location Overview - Antenna Systems”, page 29](#)

⇒ [“3.2 Antenna Amplifier R24 / Radio Antenna 2 R93 / TV Antenna Amplifier 3 R84 , Removing and Installing”, page 30](#)

⇒ [“3.3 AM Frequency Filter R177 , Removing and Installing”, page 31](#)

⇒ [“3.4 FM Frequency Filter In Negative Wire R178 / FM Frequency Filter In Positive Wire R179 , Removing and Installing”, page 32](#)

⇒ [“3.5 Roof Antenna RX5 , Removing and Installing”, page 33](#)

#### 3.1 Component Location Overview - Antenna Systems

##### 1 - FM Frequency Filter in Positive Wire - R179-

- ☐ On the left window frame of the rear lid
- ☐ FM plus trap circuit
- ☐ Its function is to prevent antenna signals from shorting to ground
- ☐ Removing and installing. Refer to  
⇒ [“3.4 FM Frequency Filter In Negative Wire R178 / FM Frequency Filter In Positive Wire R179 , Removing and Installing”, page 32](#) .

##### 2 - Radio Antenna 2 - R93-

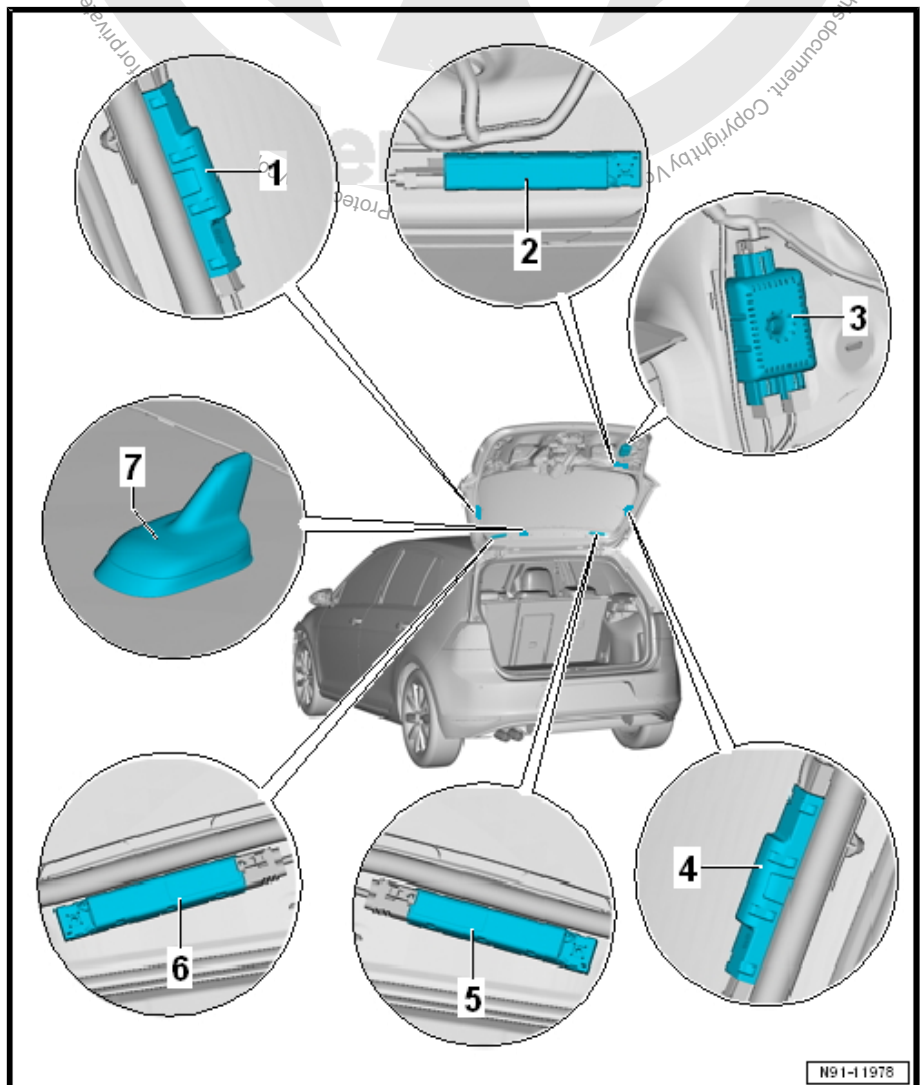
- ☐ On lower right of rear lid
- ☐ Related to the TV Antenna 2 - R56-
- ☐ TV 2 impedance converter
- ☐ Removing and installing. Refer to  
⇒ [“3.2 Antenna Amplifier R24 / Radio Antenna 2 R93 / TV Antenna Amplifier 3 R84 , Removing and Installing”, page 30](#) .

##### 3 - AM Frequency Filter - R177-

- ☐ On lower right of rear lid
- ☐ Its function is to prevent antenna signals from shorting to ground
- ☐ Removing and installing. Refer to  
⇒ [“3.3 AM Frequency Filter R177 , Removing and Installing”, page 31](#) .

##### 4 - FM Frequency Filter in Negative Wire - R178-

- ☐ On the right window frame of the rear lid
- ☐ FM minus trap circuit



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- ☐ Its function is to prevent antenna signals from shorting to ground
- ☐ Removing and installing. Refer to  
⇒ [“3.4 FM Frequency Filter In Negative Wire R178 / FM Frequency Filter In Positive Wire R179 , Removing and Installing”, page 32](#) .

#### 5 - TV Antenna Amplifier 3 - R84-

- ☐ On upper right of rear lid
- ☐ Related to the Radio Antenna - R248-
- ☐ Related to the TV Antenna 1 - R55-
- ☐ AM/FM1/TV1 impedance converter
- ☐ Removing and installing. Refer to  
⇒ [“3.2 Antenna Amplifier R24 / Radio Antenna 2 R93 / TV Antenna Amplifier 3 R84 , Removing and Installing”, page 30](#) .

#### 6 - Antenna Amplifier - R24-

- ☐ On upper left of rear lid
- ☐ Related to the Radio Antenna - R248-
- ☐ Related to the Digital Radio Antenna - R183-
- ☐ FM2/DAB impedance converter
- ☐ Removing and installing. Refer to  
⇒ [“3.2 Antenna Amplifier R24 / Radio Antenna 2 R93 / TV Antenna Amplifier 3 R84 , Removing and Installing”, page 30](#) .

#### 7 - Roof Antenna - RX5-

- ☐ Depending on the vehicle equipment level:
- ◆ GPS Antenna - R50-
- ◆ Auxiliary Heater Antenna - R182-
- ◆ GSM Antenna - R205-
- ☐ Removing and installing. Refer to ⇒ [“3.5 Roof Antenna RX5 , Removing and Installing”, page 33](#) .

### 3.2 Antenna Amplifier - R24- / Radio Antenna 2 - R93- / TV Antenna Amplifier 3 - R84- , Removing and Installing

#### Special tools and workshop equipment required

- ◆ Torque Wrench 1783 - 2-10Nm - VAG1783-



#### Note

*The removal and installation of the Antenna Amplifier - R24- is described. Removing and installing the Radio Antenna 2 - R93- and TV Antenna Amplifier 3 - R84- is identical.*

#### Removing

- Turn off the ignition and all electrical consumers and remove the ignition key.

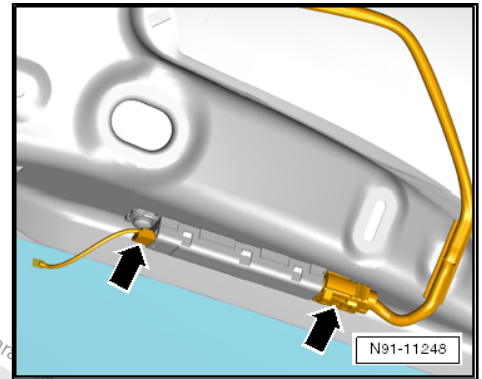
The Antenna Amplifier - R24- / TV Antenna Amplifier 3 - R84- is located at the top of the rear lid on the left side.

- Remove the upper rear lid trim panel. Refer to ⇒ Body Interior; Rep. Gr. 70 ; Luggage Compartment Trim Panels; Upper Rear Lid Trim Panel, Removing and Installing .

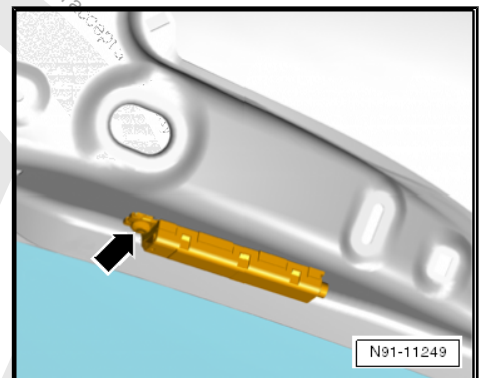
The TV Antenna Amplifier 2 - R83- is located on the bottom right of the rear lid.



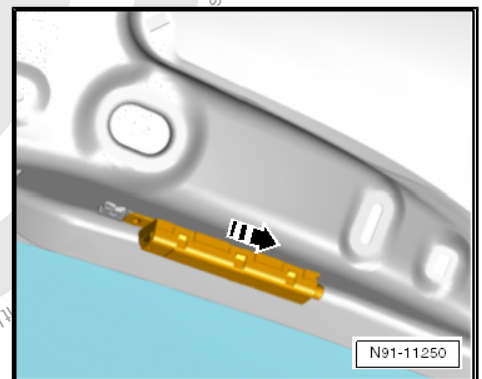
- Remove the lower rear lid trim panel. Refer to ➔ Body Interior; Rep. Gr. 70 ; Luggage Compartment Trim Panels; Lower Rear Lid Trim Panel, Removing and Installing .
- Release and disconnect the connectors -arrows- from the Antenna Amplifier - R24- .



- Loosen the bolt -arrow-.
- Remove the screw with the metal clip and Antenna Amplifier - R24- .



- Slide the Antenna Amplifier - R24- in the direction of the -arrow-.
- Remove the Antenna Amplifier - R24- .



#### Installing

Install in reverse order of removal. Note the following:

#### Tightening Specifications

Component	Tightening Specification
Bolt on the Antenna Amplifier - R24-	2 Nm

### 3.3 AM Frequency Filter - R177- , Removing and Installing

#### Special tools and workshop equipment required

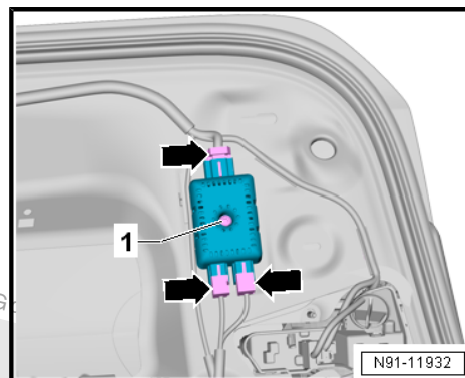
- ◆ Torque Wrench 1783 - 2-10Nm - VAG1783-

#### Removing

- Turn off the ignition and all electrical consumers and remove the ignition key.



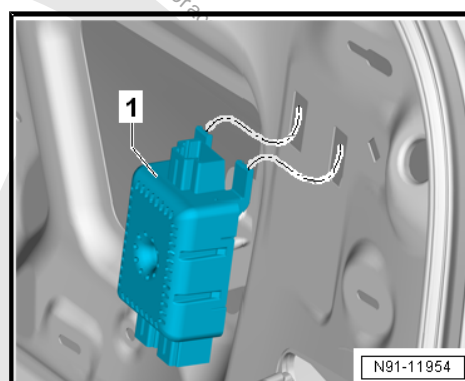
- Remove the lower rear lid trim panel. Refer to ➤ Body Interior; Rep. Gr. 70 ; Luggage Compartment Trim Panels; Lower Rear Lid Trim Panel, Removing and Installing .
- Release and disconnect the connectors -arrows- from the AM Frequency Filter - R177- .
- Remove the bolt -1-.



- Remove the AM Frequency Filter - R177- -1- from the rear lid, while paying attention to the mounting hooks.

### Installing

Install in reverse order of removal. Note the following:



### Tightening Specifications

Component	Tightening Specification
Bolt to AM Frequency Filter - R177-	6 Nm

## 3.4 FM Frequency Filter In Negative Wire - R178- / FM Frequency Filter In Positive Wire - R179- , Removing and Installing



### Note

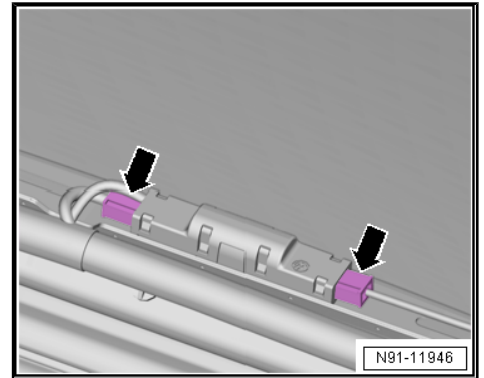
*The removal and installation of the FM Frequency Filter in Negative Wire - R178- on the right side is described. The removal and installation of the FM Frequency Filter in Positive Wire - R179- on the left side is identical.*

### Removing

- Turn off the ignition and all electrical consumers and remove the ignition key.
- Remove the upper rear lid trim panel. Refer to ➤ Body Interior; Rep. Gr. 70 ; Luggage Compartment Trim Panels; Upper Rear Lid Trim Panel, Removing and Installing .



- Disconnect the connectors -arrows- from the FM Frequency Filter .

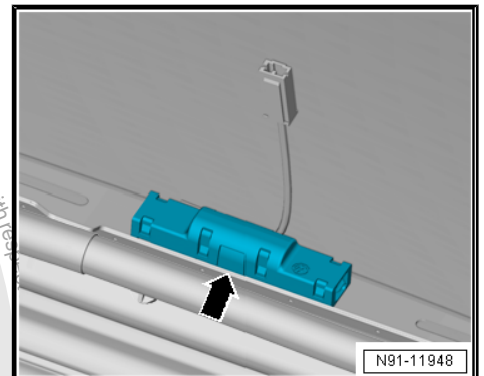


- Carefully pry out the FM Frequency Filter near the -arrow- using a suitable tool.

#### Installing

Install in reverse order of removal. Note the following:

Push the FM Frequency Filter into the installation opening until it engages.



### 3.5 Roof Antenna - RX5- , Removing and Installing

#### Special tools and workshop equipment required

- ◆ Torque Wrench 1783 - 2-10Nm - VAG1783-



#### Note

*The antenna wires are connected directly to the base of the Roof Antenna - RX5- .*

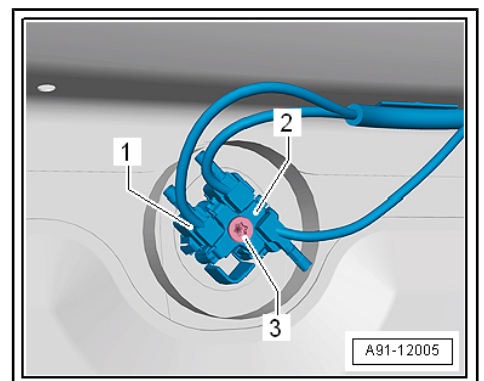
#### Removing

- Turn off the ignition and all electrical consumers and remove the ignition key.
- Remove the headliner and place it on the headrests. Refer to ➔ Body Interior; Rep. Gr. 70 ; Roof Trim Panels; Headliner, Removing and Installing .
- Release and disconnect the connectors -1- from the antenna wires.
- Remove the bolt -3- with the clip.
- Remove the Roof Antenna - RX5- -2-.

#### Installing

Install in reverse order of removal. Note the following:

- Position the Roof Antenna - RX5- and press it down until it latches.





### Tightening Specifications

Component	Tightening Specification
Bolt -3- to Roof Antenna - RX5-	6 Nm







## 4 Radio

⇒ [“4.1 Overview - Radio”, page 35](#)

⇒ [“4.2 Radio, Removing and Installing”, page 36](#)

### 4.1 Overview - Radio

⇒ [“4.1.1 Overview - Radio, Composition Touch and Composition Color Radio Equipment Levels”, page 35](#)

⇒ [“4.1.2 Overview - Radio, Composition Media Radio Equipment Level”, page 35](#)

⇒ [“4.1.3 Overview - Radio, Discover Pro Radio Equipment Level”, page 35](#)

#### 4.1.1 Overview - Radio, Composition Touch and Composition Color Radio Equipment Levels

The Radio - R- is installed in the center of the instrument panel.

Fault finding is performed via [Guided Fault Finding](#) on the Vehicle Diagnostic Tester .

For additional information. Refer to  
⇒ [“1.1.2 Overview - Infotainment System, Composition Touch and Composition Color Equipment Levels”, page 4](#) .

#### 4.1.2 Overview - Radio, Composition Media Radio Equipment Level

The radio function is integrated in the Information Electronics Control Module 1 - J794- .

Fault finding is performed via [Guided Fault Finding](#) on the Vehicle Diagnostic Tester .

For additional information. Refer to  
⇒ [“1.1.3 Overview - Infotainment System, Composition Media and Discover Media Equipment Levels”, page 6](#) .

#### 4.1.3 Overview - Radio, Discover Pro Radio Equipment Level

The radio function is integrated in the Information Electronics Control Module 1 - J794- .

Fault finding is performed via [Guided Fault Finding](#) on the Vehicle Diagnostic Tester .

For additional information. Refer to  
⇒ [“1.1.4 Overview - Infotainment System, Discover Pro Equipment Level”, page 9](#) .



## 4.2 Radio, Removing and Installing

⇒ "4.2.1 Radio R , Removing and Installing, Composition Touch and Composition Color Equipment Levels", page 36

⇒ "4.2.2 Radio R , Removing and Installing, Composition Media and Discover Media or Discover Pro Equipment Levels", page 37

### 4.2.1 Radio - R- , Removing and Installing, Composition Touch and Composition Color Equipment Levels

Special tools and workshop equipment required

- ◆ Trim Removal Wedge - 3409-
- ◆ Radio Removal Tool - T10057-

#### Removing

- Turn off the ignition and all electrical consumers and remove the ignition key.

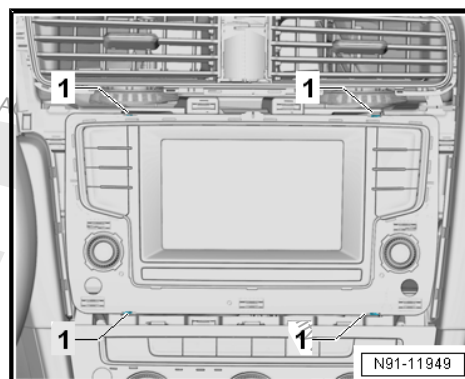


#### Caution

*Risk of damaging the component surfaces.*

- ◆ *When positioning a prying tool, put commercially available adhesive tape over the component in the visible area.*

- Remove the instrument panel center trim. Refer to ⇒ Body Interior; Rep. Gr. 70 ; Instrument Panel; Overview - Instrument Panel .
- Insert the Radio Removal Tool - T10057- into the release slots -1- on the Front Information Display Control Head - J685- .
- Release the upper locking mechanisms -1- by pushing in direction of travel.
- Release the lower locking mechanisms -1- by pushing in direction of travel.
- Remove the Radio - R- -2-.







- Release and disconnect the connectors.

### Installing

Install in reverse order of removal. Note the following:

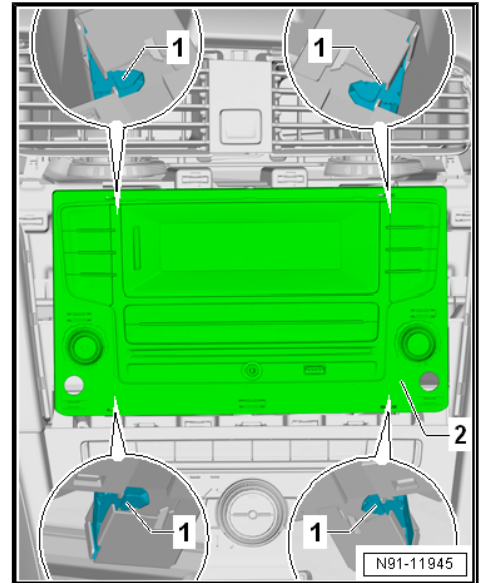


#### Caution

**Risk of damaging the components.**

- ◆ **When inserting the Front Information Display Control Head - J685- together with the Information Electronics Control Module 1 - J794-, do not push on the display and control equipment.**

- Slide in the Radio - R- until it engages.



### 4.2.2 Radio - R - , Removing and Installing, Composition Media and Discover Media or Discover Pro Equipment Levels

The radio is a component of the Information Electronics Control Module 1 - J794- and is located in the glove compartment.

- Remove the Information Electronics Control Module 1 - J794- . Refer to [⇒ "1.4 Information Electronics Control Module 1 J794 , Removing and Installing", page 13](#) .



## 5 Telephone System

⇒ [“5.1 Cell Phone Preparation”, page 38](#)

⇒ [“5.2 Component Location Overview - Telephone System”, page 39](#)

⇒ [“5.3 Telephone Microphone R38 , Removing and Installing”, page 40](#)

⇒ [“5.4 Cellular Telephone Amplifier R86 , Removing and Installing”, page 41](#)

⇒ [“5.5 Cellular Telephone Amplifier R86 Bracket, Removing and Installing”, page 41](#)

### 5.1 Cell Phone Preparation

⇒ [“5.1.1 Cell Phone Preparation, Bluetooth Hands-Free Calling”, page 38](#)

⇒ [“5.1.2 Cell Phone Preparation, Online Bluetooth Car Phone”, page 38](#)

#### 5.1.1 Cell Phone Preparation, Bluetooth Hands-Free Calling

The Bluetooth hands-free calling function is integrated in the Information Electronics Control Module 1 - J794- .

Bluetooth is connected via the Cellular Telephone - R54- .

The Bluetooth Antenna - R152- is integrated in the Information Electronics Control Module 1 - J794- .

The hands-free calling consists of the following components:

- ◆ Front Information Display Control Head J685-
- ◆ Information Electronics Control Module 1 - J794- with Bluetooth Antenna - R152-
- ◆ Telephone Microphone - R38-
- ◆ Cellular Telephone Amplifier - R86-

Fault finding is performed via Guided Fault Finding on the Vehicle Diagnostic Tester .

Antenna wires, repairing. Refer to ⇒ Electrical Equipment General Information; Rep. Gr. 97 ; Wiring Harness and Connector Repairs; Antenna Wires, Repairing .

#### Notes on Bluetooth Technology

A standardized radio connection is used to transfer data between the Information Electronics Control Module 1 - J794- and Cellular Telephone - R54- - Bluetooth Technology.

An additional transmitter/receiver unit is installed in the Information Electronics Control Module 1 - J794- . A Bluetooth Antenna - R152- connects the Information Electronics Control Module 1 - J794- and the Cellular Telephone - R54- so that the Cellular Telephone - R54- can be operated without a wire connection.

The range is approximately 10 meters.

#### 5.1.2 Cell Phone Preparation, Online Bluetooth Car Phone

The online Bluetooth car phone is integrated in the Information Electronics Control Module 1 - J794- .



Bluetooth is connected via the Cellular Telephone - R54- .

The Bluetooth Antenna - R152- is integrated in the Information Electronics Control Module 1 - J794- .

An integrated Wi-Fi hotspot connects to wireless devices. Its use requires an appropriate cell phone plan.

The hands-free calling consists of the following components:

- ◆ Front Information Display Control Head - J685-
- ◆ Information Electronics Control Module 1 - J794- with Bluetooth Antenna - R152-
- ◆ Telephone Microphone - R38-
- ◆ Cellular Telephone Amplifier - R86-

Fault finding is performed via **Guided Fault Finding** on the Vehicle Diagnostic Tester .

Antenna wires, repairing. Refer to ⇒ Electrical Equipment General Information; Rep. Gr. 97 Wiring Harness and Connector Repairs; Antenna Wires, Repairing .

#### Notes On Bluetooth Technology

A standardized radio connection is used to transfer data between the Information Electronics Control Module 1 - J794- and Cellular Telephone - R54- - Bluetooth Technology.

An additional transmitter/receiver unit is installed in the Information Electronics Control Module 1 - J794- . A Bluetooth Antenna - R152- connects the Information Electronics Control Module 1 - J794- and the Cellular Telephone - R54- so that the Cellular Telephone - R54- can be operated without a wire connection.

The range is approximately 10 meters.

## 5.2 Component Location Overview - Telephone System



### 1 - Telephone Microphone - R38-

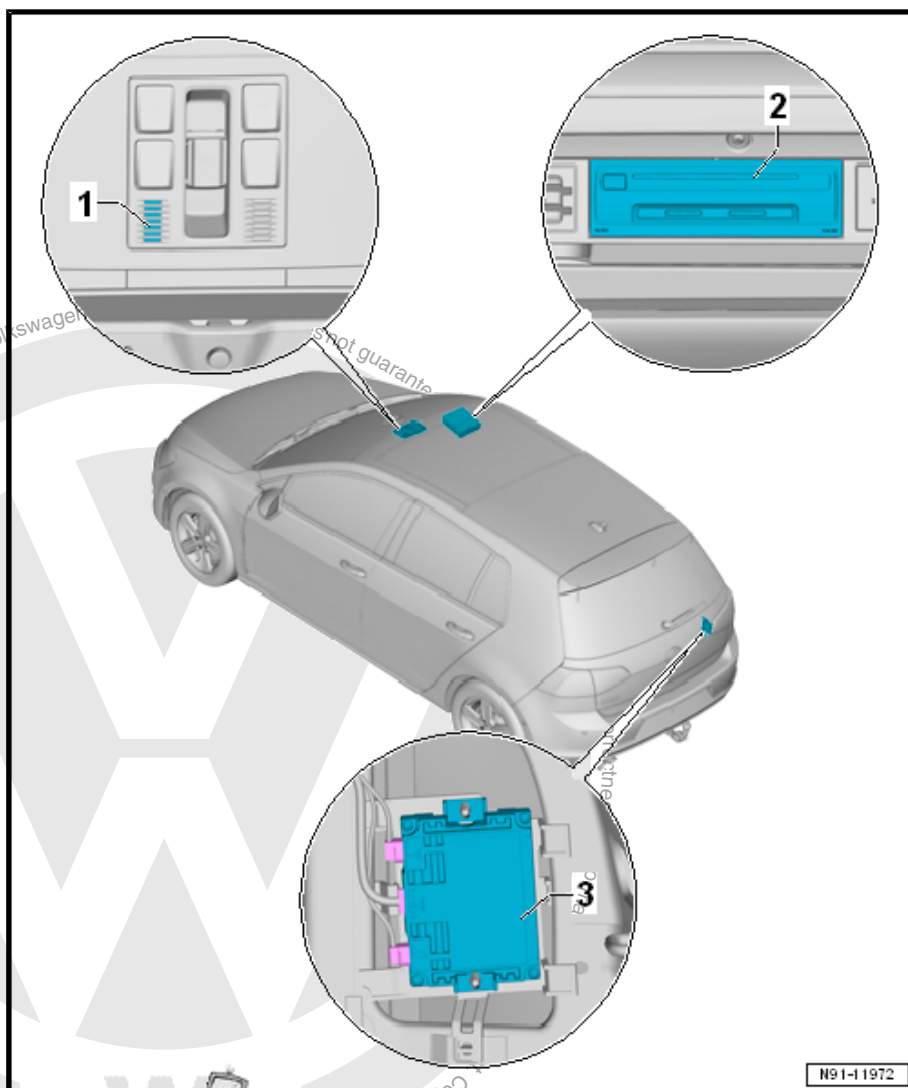
- ❑ In the Front Interior Lamp - W1-
- ❑ Removing and installing. Refer to ➔ ["5.3 Telephone Microphone R38, Removing and Installing", page 40](#).

### 2 - Information Electronics Control Module 1 - J794-

- ❑ In the glove compartment
- ❑ Removing and installing. Refer to ➔ ["1.4 Information Electronics Control Module 1 J794, Removing and Installing", page 13](#).

### 3 - Cellular Telephone Amplifier - R86-

- ❑ Behind the luggage compartment trim panel on the right side
- ❑ Removing and installing. Refer to ➔ ["5.4 Cellular Telephone Amplifier R86, Removing and Installing", page 41](#).



## 5.3 Telephone Microphone - R38- Removing and Installing

### Removing

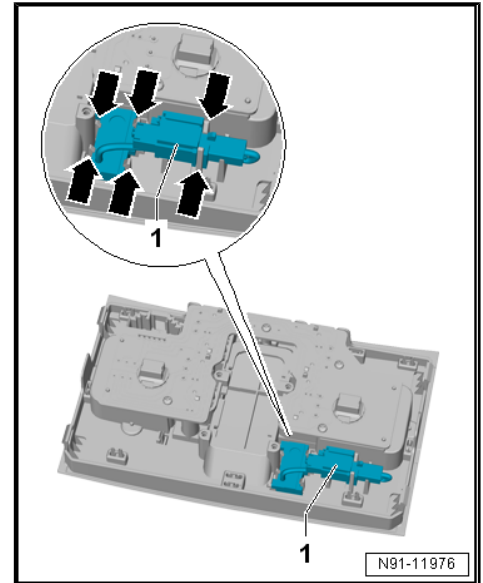
- Turn off the ignition and all electrical consumers and remove the ignition key.
- Remove the Front Interior Lamp - W1-. Refer to ➔ Electrical Equipment; Rep. Gr. 96 ; Lamps; Overview - Roof Trim Panel Lamps .



- Release the hooks -arrows-.
- Remove the Telephone Microphone - R38- -1- from the Front Interior Lamp - W1- .

#### Installing

Install in reverse order of removal.



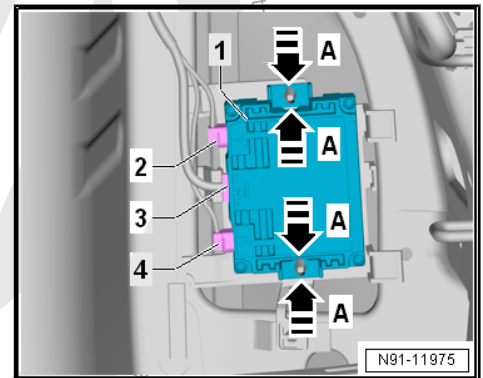
### 5.4 Cellular Telephone Amplifier - R86- , Removing and Installing

#### Removing

- Turn off the ignition and all electrical consumers and remove the ignition key.
- Remove the right luggage compartment side trim panel until the Cellular Telephone Amplifier - R86- is accessible.
- Push the tabs in the direction of - arrow A-.
- Remove the Cellular Telephone Amplifier - R86- -1- from the bracket.
- Release and disconnect the connectors -2 through 4- from the Cellular Telephone Amplifier - R86- -1-.

#### Installing

Install in reverse order of removal.



### 5.5 Cellular Telephone Amplifier - R86- Bracket, Removing and Installing

#### Removing

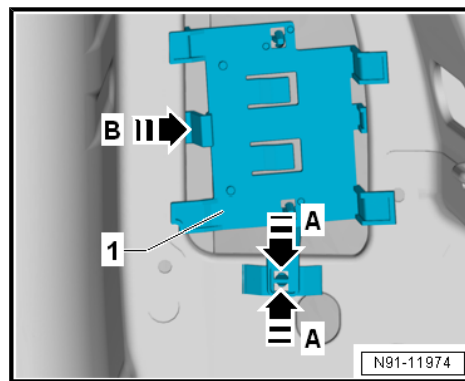
- Remove the Cellular Telephone Amplifier - R86- . Refer to ["5.4 Cellular Telephone Amplifier R86 , Removing and Installing", page 41](#) .
- Push the tabs in the direction of the -arrow A-.
- Loosen the bracket for the Cellular Telephone Amplifier - R86- -1- from the lower mount.
- Push the metal tab in the direction of the -arrow B-.



- Remove the bracket for the Cellular Telephone Amplifier - R86- -1- from the sidewall.

### Installing

Install in reverse order of removal.



## 6 Navigation System

⇒ [“6.1 Overview - Navigation System”, page 43](#)

⇒ [“6.2 Component Location Overview - Navigation System”, page 43](#)

⇒ [“6.3 Navigation System Control Module, Removing and Installing”, page 44](#)

### 6.1 Overview - Navigation System

The navigation system is available on vehicles with Discover Media and Discover Pro with navigation.

The navigation function is integrated in the Information Electronics Control Module 1 - J794- .

The navigation data on the Discover Media equipment level is saved on a SD card.

The navigation data on the Discover Pro equipment level is saved on an internal hard drive.

Fault finding is performed via [Guided Fault Finding](#) on the Vehicle Diagnostic Tester .

### 6.2 Component Location Overview - Navigation System

#### 1 - Front Information Display Control Head - J685-

- ❑ Inside the center of the instrument panel
- ❑ Removing and installing. Refer to  
⇒ [“1.3 Infotainment System Display, Removing and Installing”, page 12](#) .

#### 2 - Information Electronics Control Module 1 - J794-

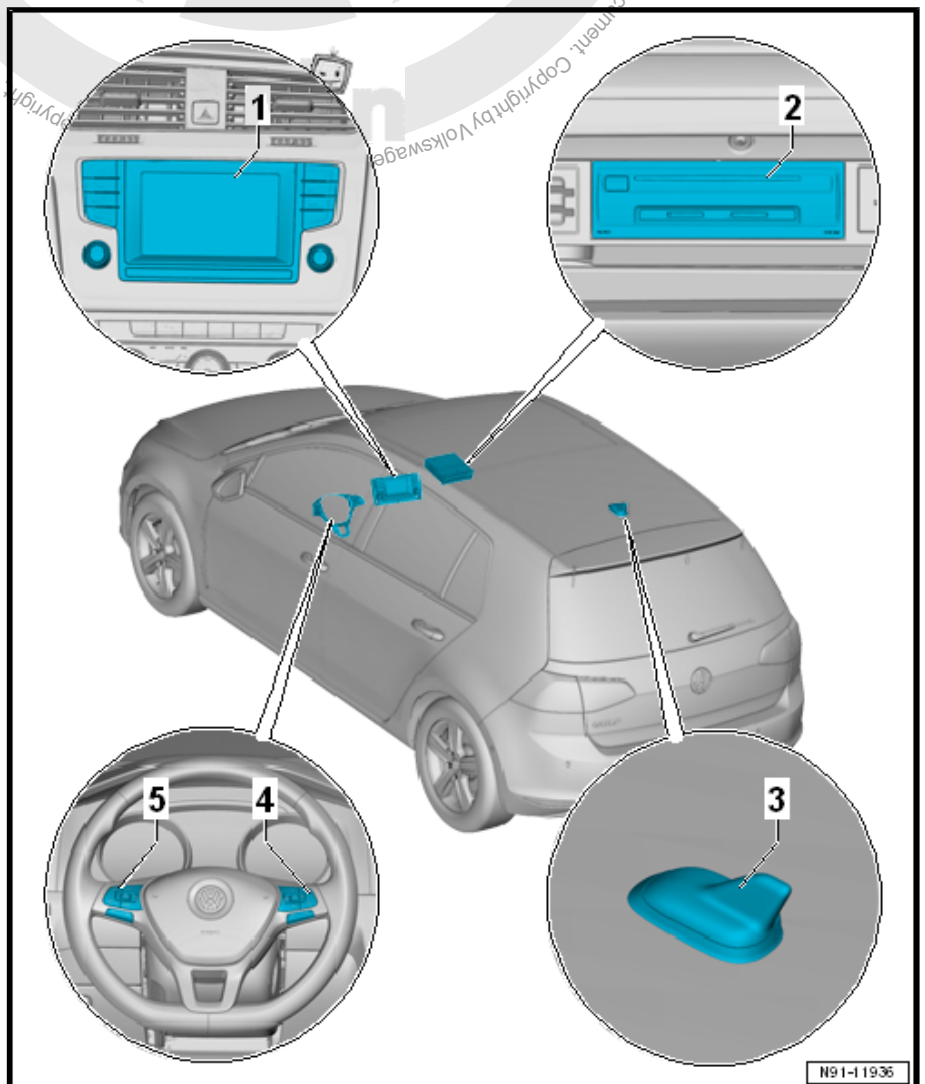
- ❑ In the glove compartment
- ❑ Removing and installing. Refer to  
⇒ [“1.4 Information Electronics Control Module 1 J794, Removing and Installing”, page 13](#) .

#### 3 - Roof Antenna - RX5-

Removing and installing. Refer to  
⇒ [“3.5 Roof Antenna RX5, Removing and Installing”, page 33](#) .

#### 4 - Right Multifunction Buttons On Steering Wheel - E441-

- ❑ Removing and installing. Refer to  
⇒ [“9.3 Right/Left Multifunction Buttons On Steering Wheel E441 / E440, Removing and Installing”, page 55](#) .







## 5 - Left Multifunction Buttons On Steering Wheel - E440-

- Removing and installing. Refer to  
⇒ [“9.3 Right/Left Multifunction Buttons On Steering Wheel E441 / E440 , Removing and Installing”, page 55](#) .

## 6.3 Navigation System Control Module, Removing and Installing

The navigation function is integrated in the Information Electronics Control Module 1 - J794- .

- Remove the Information Electronics Control Module 1 - J794- .  
Refer to  
⇒ [“1.4 Information Electronics Control Module 1 J794 , Removing and Installing”, page 13](#) .



## 7 TV System

⇒ [“7.1 Component Location Overview - TV System”, page 45](#)

⇒ [“7.2 TV Tuner, Removing and Installing”, page 45](#)

### 7.1 Component Location Overview - TV System

#### Component Location Overview - TV System

##### 1 - Front Information Display Control Head - J685-

- ☐ Removing and installing. Refer to  
⇒ [“4.2.1 Radio R, Removing and Installing, Composition Touch and Composition Color Equipment Levels”, page 36](#) .
- ☐ Removing and installing. Refer to  
⇒ [“1.3 Infotainment System Display, Removing and Installing”, page 12](#) .

##### 2 - Rear Window Antenna

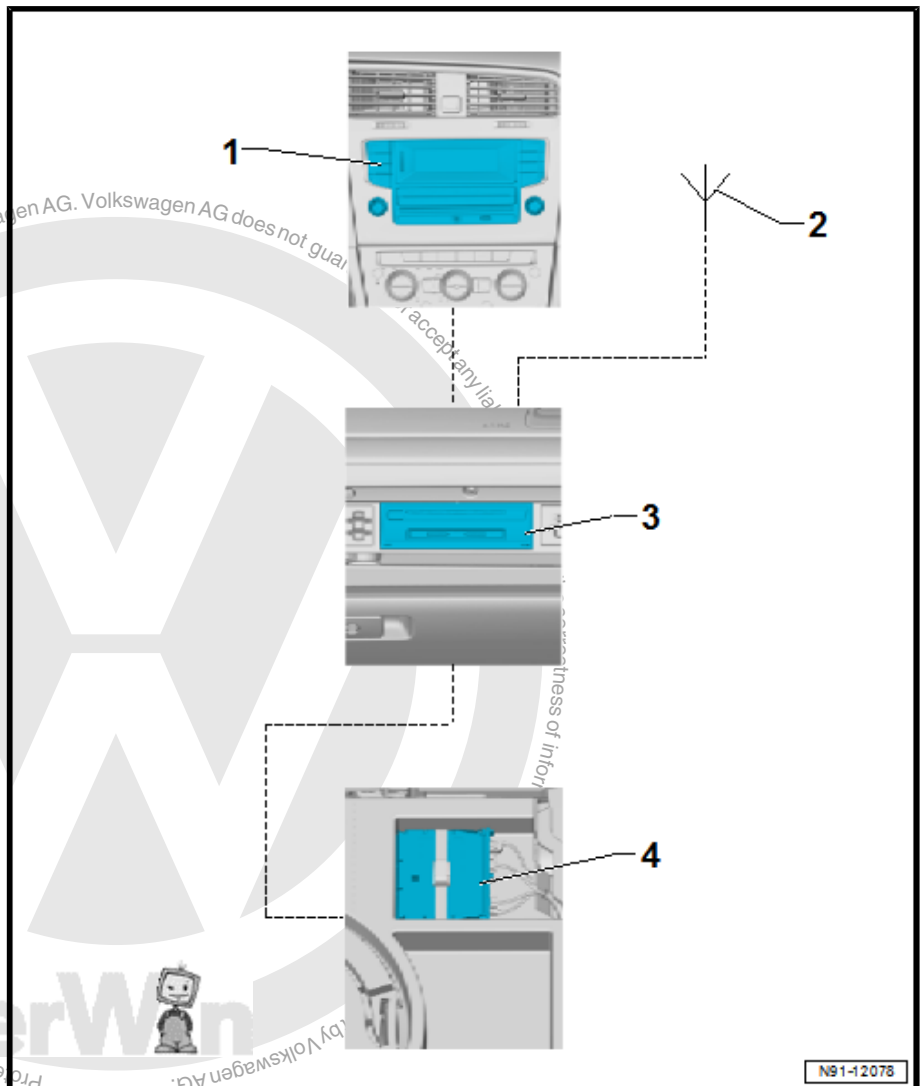
Installed in the rear lid. Refer to  
⇒ [“3 Antenna Systems”, page 29](#) .

##### 3 - Information Electronics Control Module 1 - J794-

- ☐ Installed in the glove compartment.
- ☐ Removing and installing. Refer to  
⇒ [“1.4 Information Electronics Control Module 1 J794, Removing and Installing”, page 13](#) .

##### 4 - Digital TV Tuner - R171-

- ☐ In the luggage compartment under the cargo floor on the right side, eGolf
- ☐ Installed under the right front seat, Golf
- ☐ Removing and installing. Refer to ⇒ [“7.2 TV Tuner, Removing and Installing”, page 45](#) .



### 7.2 TV Tuner, Removing and Installing

⇒ [“7.2.1 TV Tuner, Removing and Installing, Golf”, page 45](#)

⇒ [“7.2.2 TV Tuner, Removing and Installing, eGolf”, page 47](#)

#### 7.2.1 TV Tuner, Removing and Installing, Golf

##### Special tools and workshop equipment required

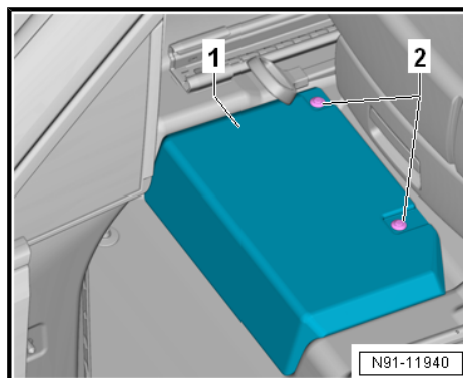
- ◆ Fiber-Optic Repair Set - Connector Protective Caps - VAS6223/9-



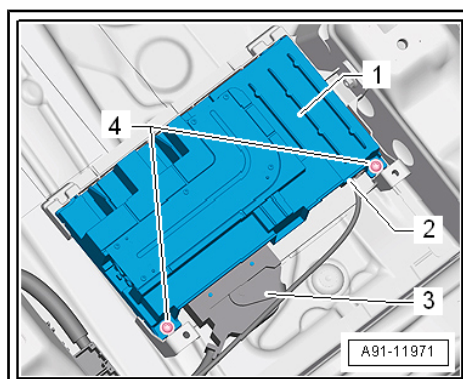
If the control module is replaced, select the Replacement function for the appropriate control module in Guided Fault Finding. Refer to Vehicle Diagnostic Tester .

### Removing

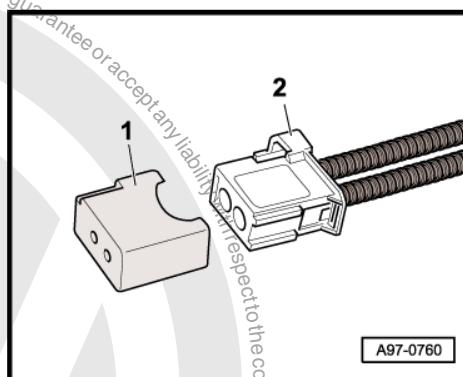
- Raise the front seat to the highest position and then to the rearmost position.
- Turn off the ignition and all electrical consumers and remove the ignition key.
- Remove the expanding rivets -2-, slide the cover -1- evenly in the direction of travel and remove it.



- Release and disconnect the connector -2- from the Digital TV Tuner - R171- -1-.



- Insert the Fiber-Optic Repair Set - Connector Protective Caps - VAS6223/9- -1- onto the MOST bus connector -2-.
- Release and disconnect the connector -3- from the Digital TV Tuner - R171- -1-.
- Remove the bolts -4-.





- Remove the Digital TV Tuner - R171- -1- from the bracket.

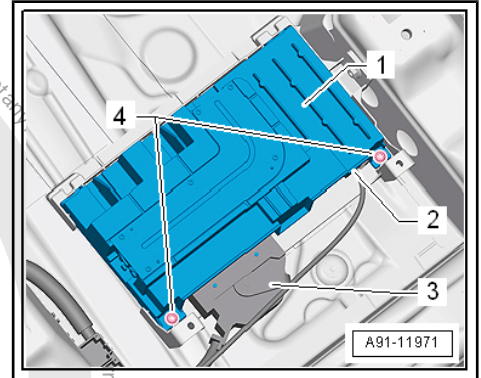
### Installing

Install in reverse order of removal. Note the following:



#### Note

- ◆ When installing, make sure that the Digital TV Tuner - R171- is properly inserted into the notch on the bracket.
- ◆ Make sure the cover is mounted correctly on the front edge of the bracket when installing it.



## 7.2.2 TV Tuner, Removing and Installing, eGolf

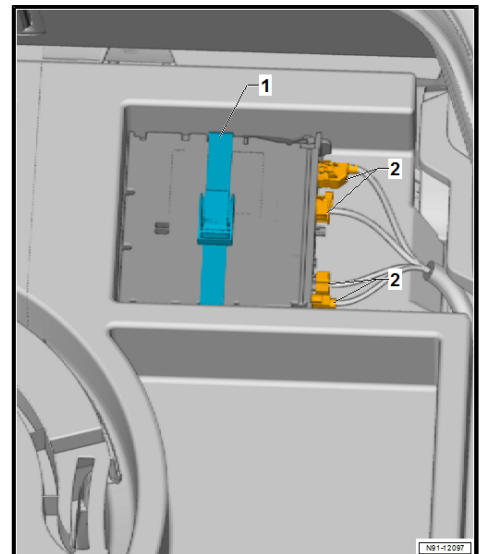
### Special tools and workshop equipment required

- ◆ Fiber-Optic Repair Set - Connector Protective Caps - VAS6223/9-

If the control module is replaced, select the Replacement function for the appropriate control module in Guided Fault Finding. Refer to Vehicle Diagnostic Tester .

### Removing

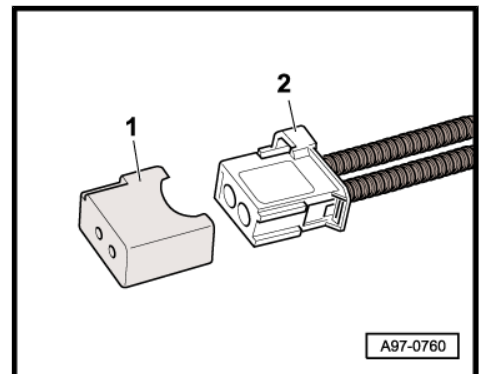
- Remove the cargo floor in the luggage compartment.
- Loosen the securing strap -1- and disconnect the connectors -2-.
- Insert the Fiber-Optic Repair Set - Connector Protective Caps - VAS6223/9- -1- onto the MOST bus connector -2-.



- Remove the Digital TV Tuner - R171- .

### Installing

Install in reverse order of removal. Note the following:





## 8 Rearview Camera System

⇒ ["8.1 Overview - Rearview Camera System", page 48](#)

⇒ ["8.2 Component Location Overview - Rearview Camera System", page 48](#)

⇒ ["8.3 Overview - Rearview Camera System", page 50](#)

⇒ ["8.4 Rearview Camera R189 , Removing and Installing", page 50](#)

### 8.1 Overview - Rearview Camera System

The rear view camera system assists the driver during back-up driving by providing the driver with an image of the traffic situation behind the vehicle via the Front Information Display Control Head - J685- .

The rear view camera system is switched on when engaging the reverse gear.

The rear view camera system consists of the following components:

- ◆ The pivoting emblem with the Rearview Camera - R189- and pivoting motor
- ◆ Information Electronics Control Module 1 - J794-
- ◆ Front Information Display Control Head - J685-

### 8.2 Component Location Overview - Rearview Camera System





### 1 - Front Information Display Control Head - J685-

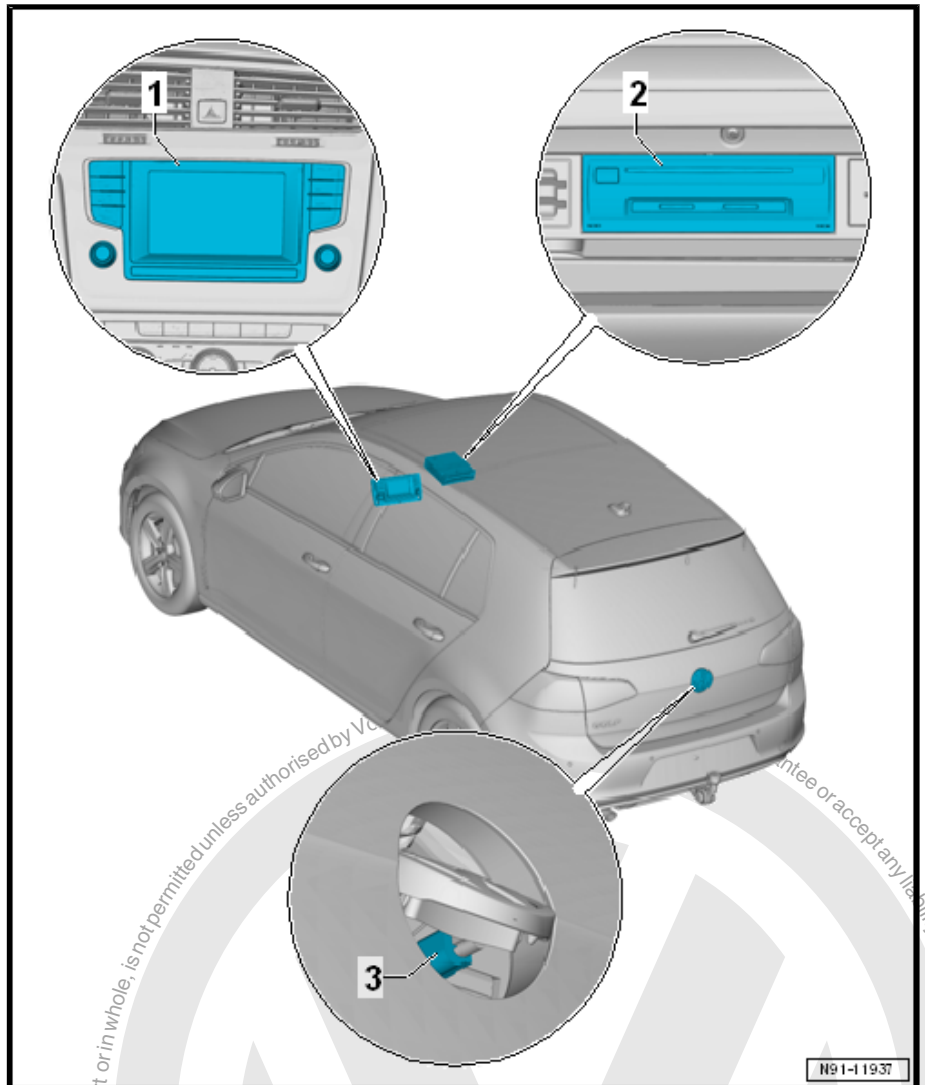
- ❑ In center console, front
- ❑ Removing and installing. Refer to ➔ ["1.3 Infotainment System Display, Removing and Installing"](#), page 12 .

### 2 - Information Electronics Control Module 1 - J794-

- ❑ In the glove compartment
- ❑ Removing and installing. Refer to ➔ ["1.4 Information Electronics Control Module 1 J794, Removing and Installing"](#), page 13 .

### 3 - Rearview Camera - R189-

- ❑ Pivoting emblem with Rearview Camera - R189- and pivoting motor in the rear lid
- ❑ Removing and installing. Refer to ➔ ["8.4 Rearview Camera R189, Removing and Installing"](#), page 50 .



N91-11937





## 8.3 Overview - Rearview Camera System

### 1 - Bolt

- ❑ 2.5 Nm
- ❑ Quantity: 4

### 2 - Pivoting Motor

- ❑ Removing and installing. Refer to [page 53](#).

### 3 - Connector

### 4 - Connector

### 5 - Bolt

- ❑ 4 Nm
- ❑ Quantity: 3

### 6 - Pivoting Emblem with Rearview Camera - R189-

- ❑ Removing and installing. Refer to [page 51](#)

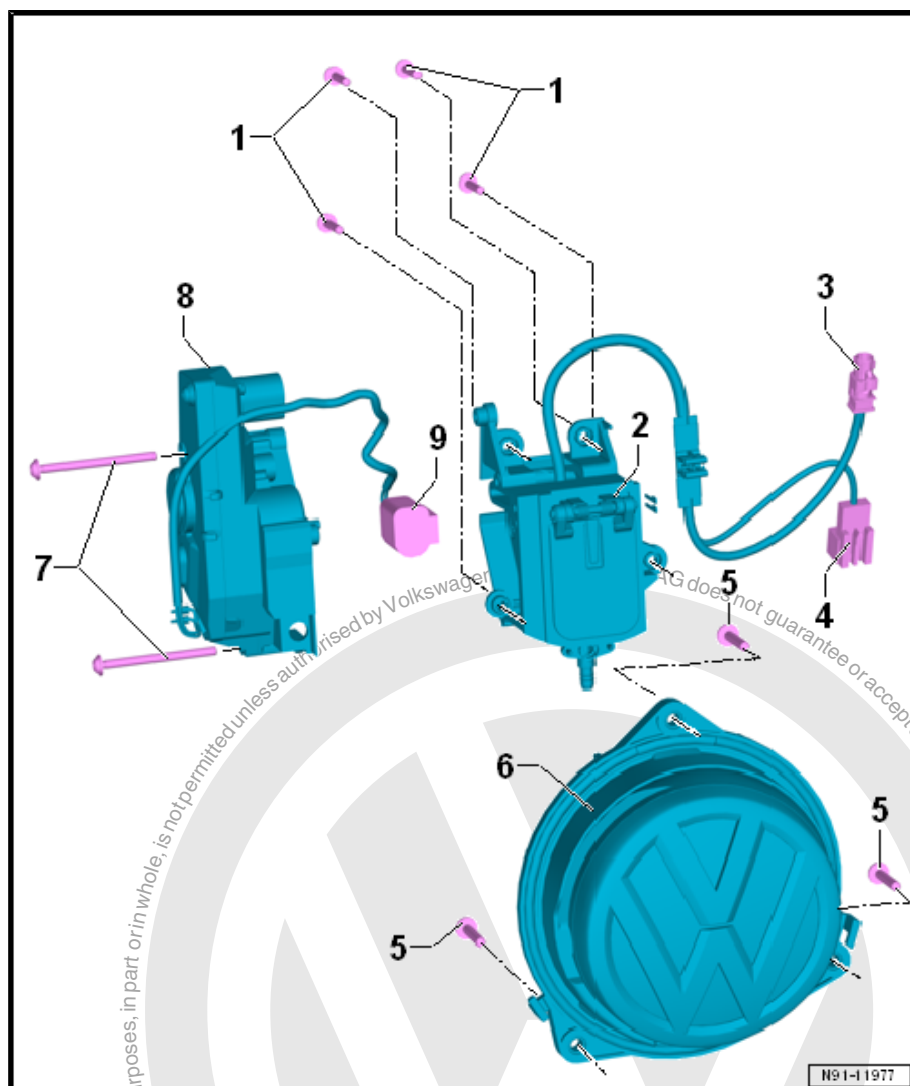
### 7 - Bolt

- ❑ 1.6 Nm
- ❑ Quantity: 2

### 8 - Rearview Camera Housing

- ❑ Removing and installing. Refer to [page 53](#)

### 9 - Connector



## 8.4 Rearview Camera - R189- , Removing and Installing

The rear view camera and pivoting motor are installed in individual housings in the rear lid pivoting emblem. To remove the camera housing, both components and the pivoting emblem must be removed from the rear lid first. Then the camera housing, the pivoting motor and pivoting emblem can be removed and the camera housing can be separated from the pivoting motor. The camera is not designed to be removed from the camera housing.

- ◆ Pivoting emblem with rearview camera housing and pivoting motor, removing from the rear lid and installing. Refer to [page 51](#).
- ◆ Rearview camera housing with pivoting motor, removing from pivoting emblem and installing. Refer to [page 52](#).
- ◆ Rearview camera housing, disconnecting from pivoting motor. Refer to [page 53](#).





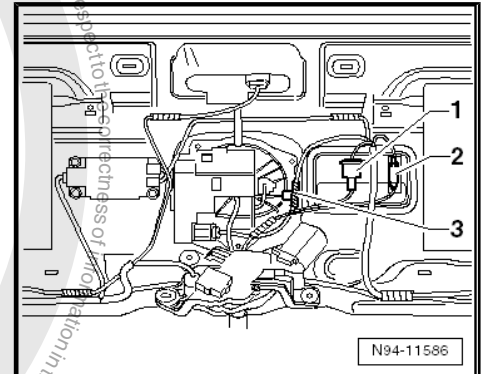
## Pivoting Emblem with Rearview Camera Housing and Pivoting Motor in Rear Lid, Removing and Installing

### Special tools and workshop equipment required

- ◆ Torque Wrench 1783 - 2-10Nm - VAG1783-

### Removing

- Switch off the ignition and all electrical consumers and remove the ignition key.
- Remove the rear lid trim panel. Refer to ➔ Body Interior; Rep. Gr. 70 ; Luggage Compartment Trim Panels; Lower Rear Lid Trim Panel, Removing and Installing .
- Detach the connectors -1 and 2- from the mounts.
- Disconnect the connectors -1 and 2-.
- Loosen the wire from the bracket -3-.
- Release and disconnect the connector -2-.
- Remove the bolts -arrows- from the pivoting emblem.
- Turn the pivoting emblem with the rearview camera housing and the pivoting motor -1- to the right as far as the stop and press it inward out of the mount in the rear lid.
- Remove the water drain hose from the hose grommet on the bottom of the pivoting emblem.
- Remove the pivoting emblem with the rearview camera housing and pivoting motor.



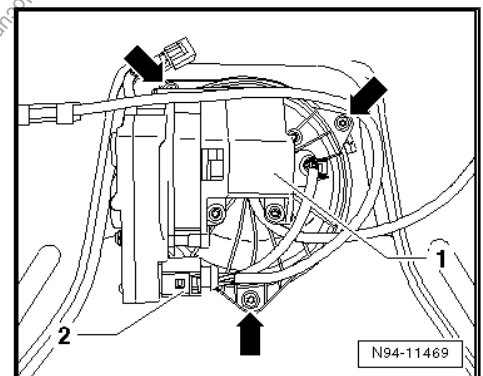
### Installing

Install in reverse order of removal. Note the following:

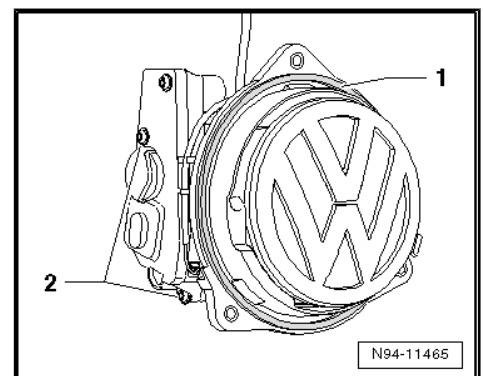


#### Caution

- ◆ **Risk of leaks**
- ◆ **Water could enter the luggage compartment if the seals are twisted or are not positioned correctly.**
- ◆ **Make sure the installed seal is in good condition and installed correctly.**



- Check the rubber seal -1- surrounding the pivoting emblem and ensure that it is completely in the groove.
- Connect the water drain hose to the hose grommet on the bottom of the pivoting emblem.
- Rotated to the right, insert the pivoting emblem into the rear lid.
- Engage the pivoting emblem in the rear lid by turning it to the left.
- Install the pivoting emblem bolts -arrows- without tightening them.
- Center the pivoting emblem with the body opening in the rear lid and tighten the three bolts -arrows-.
- Secure the wires and connectors with the retainers again to prevent rattling noises.



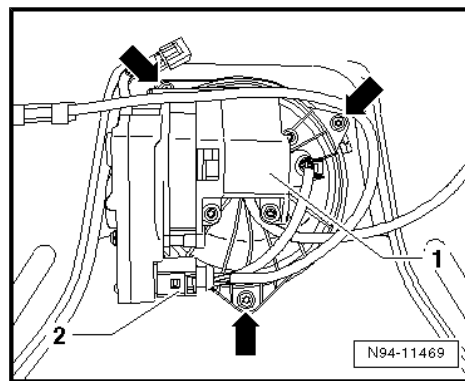


- After installing, clean the rearview camera lens with lint-free cloth.

### Tightening Specifications

- ◆ Refer to  
⇒ ["8.3 Overview - Rearview Camera System", page 50](#)

### Rearview Camera Housing with Pivoting Motor, Removing from Pivoting Emblem and Installing



### Special tools and workshop equipment required

- ◆ Torque Wrench 1783 - 2-10Nm - VAG1783-

### Removing

- Remove the pivoting emblem with rearview camera housing and pivoting motor from the rear lid. Refer to ⇒ [page 51](#).
- Release and disconnect the connector -5-.
- Remove bolts -arrows-.
- Remove the rearview camera housing -2- together with the pivoting motor -3- from the pivoting emblem -4-.

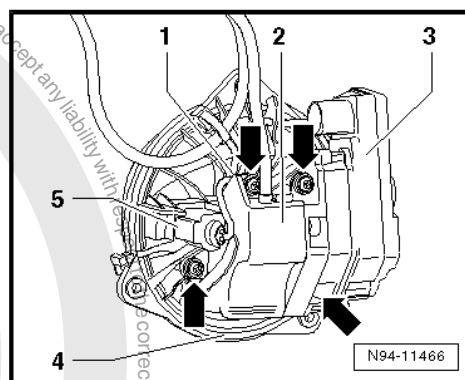
### Installing

Install in reverse order of removal. Note the following:



#### Caution

- ◆ **Risk of leaks**
- ◆ **Water could enter the luggage compartment if the seals are twisted or are not positioned correctly.**
- ◆ **Make sure the installed seal is in good condition and installed correctly.**



- Check the seal between the camera and pivoting emblem and make sure it is not loose or turned.

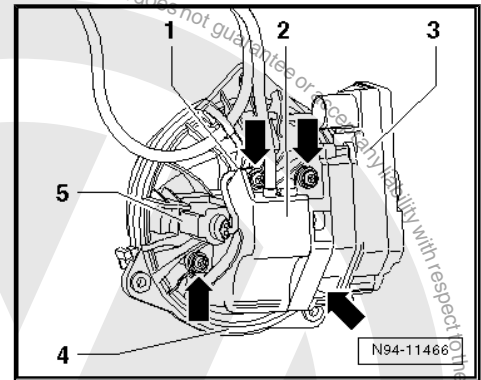


- Insert the pivoting motor wire into the wiring guide -1- for the rearview camera housing -2-.
- Insert the rearview camera housing -2- together with the pivoting motor -3- into the pivoting emblem -4-.



#### Caution

- ◆ *The pivoting mechanism may be difficult to move.*
- ◆ *The bolt in the pivoting motor that is difficult to access -lower right arrow- may fall out when inserting it in the rear view camera housing.*
- ◆ *The pivoting emblem must be held so that the pivoting motor -3- is at the bottom when positioning the bolts.*



- Install the bolts -arrows-.
- Install the pivoting emblem with the rear view camera housing and pivoting motor in the rear lid. Refer to ➤ [page 51](#) .

#### Tightening Specifications

- ◆ Refer to  
➤ ["8.3 Overview - Rearview Camera System", page 50](#)

#### Rearview Camera Housing, Disconnecting from Pivoting Motor

#### Special tools and workshop equipment required

- ◆ Torque Wrench 1783 - 2-10Nm - VAG1783-

#### Removing

- Rearview camera housing with pivoting motor, removing from pivoting emblem. Refer to ➤ [page 52](#) .
- Remove the bolts -2-.
- Carefully separate the rearview camera housing from the pivoting motor.

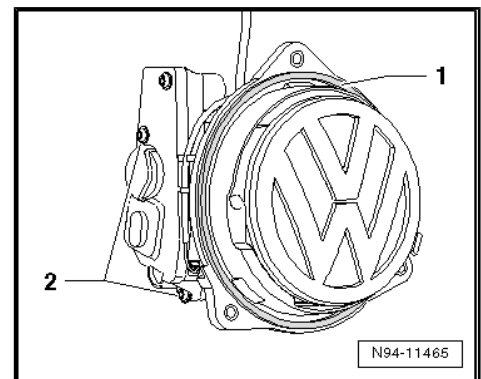
#### Installing

Install in reverse order of removal. Note the following:

- Check if the release lever and the sliding surface on the pivoting motor are sufficiently lubricated with grease.
- Connect the rearview camera housing and the pivoting motor.
- Install the bolts.
- Install the rear view camera housing with the pivoting motor in the pivoting emblem. Refer to ➤ [page 52](#) .

#### Tightening Specifications

- ◆ Refer to  
➤ ["8.3 Overview - Rearview Camera System", page 50](#)





## 9 Multifunction Steering Wheel

⇒ ["9.1 Overview - Multifunction Steering Wheel", page 54](#)

⇒ ["9.2 Overview - Multifunction Steering Wheel", page 54](#)

⇒ ["9.3 Right/Left Multifunction Buttons On Steering Wheel E441 / E440 , Removing and Installing", page 55](#)

⇒ ["9.4 Tiptronic Downshift Button on Steering Wheel E439 / Tiptronic Upshift Button on Steering Wheel E438 , Removing and Installing", page 57](#)

### 9.1 Overview - Multifunction Steering Wheel

Buttons are integrated in the steering wheel for easier operation of the Infotainment system, telephone, navigation, cruise control system and vehicle menus. On vehicles with Tiptronic, rocker switches are also installed on the left and right.

The Multifunction Steering Wheel Control Module - J453- ( Left Multifunction Buttons on Steering Wheel - E440-) reads out the button information and transfers it over the LIN bus to the Steering Column Electronics Control Module - J527- . From the Steering Column Electronics Control Module - J527- , the information is transferred to the individual components via the CAN bus (comfort) and the Data Bus On Board Diagnostic Interface - J533- .

Fault finding is performed via [Guided Fault Finding](#) on the Vehicle Diagnostic Tester .

### 9.2 Overview - Multifunction Steering Wheel



#### 1 - Tiptronic Downshift Button on Steering Wheel - E439-

- ❑ Removing and installing. Refer to  
⇒ [“9.4 Tiptronic Downshift Button on Steering Wheel E439 / Tiptronic Upshift Button on Steering Wheel E438 , Removing and Installing”](#), page 57 .

#### 2 - 3-Spoke-Steering Wheel

#### 3 - Tiptronic Upshift Button on Steering Wheel - E438-

- ❑ Removing and installing. Refer to  
⇒ [“9.4 Tiptronic Downshift Button on Steering Wheel E439 / Tiptronic Upshift Button on Steering Wheel E438 , Removing and Installing”](#), page 57 .

#### 4 - Bolt

- ❑ 1.2 Nm

#### 5 - Trim

#### 6 - Right Multifunction Buttons On Steering Wheel - E441-

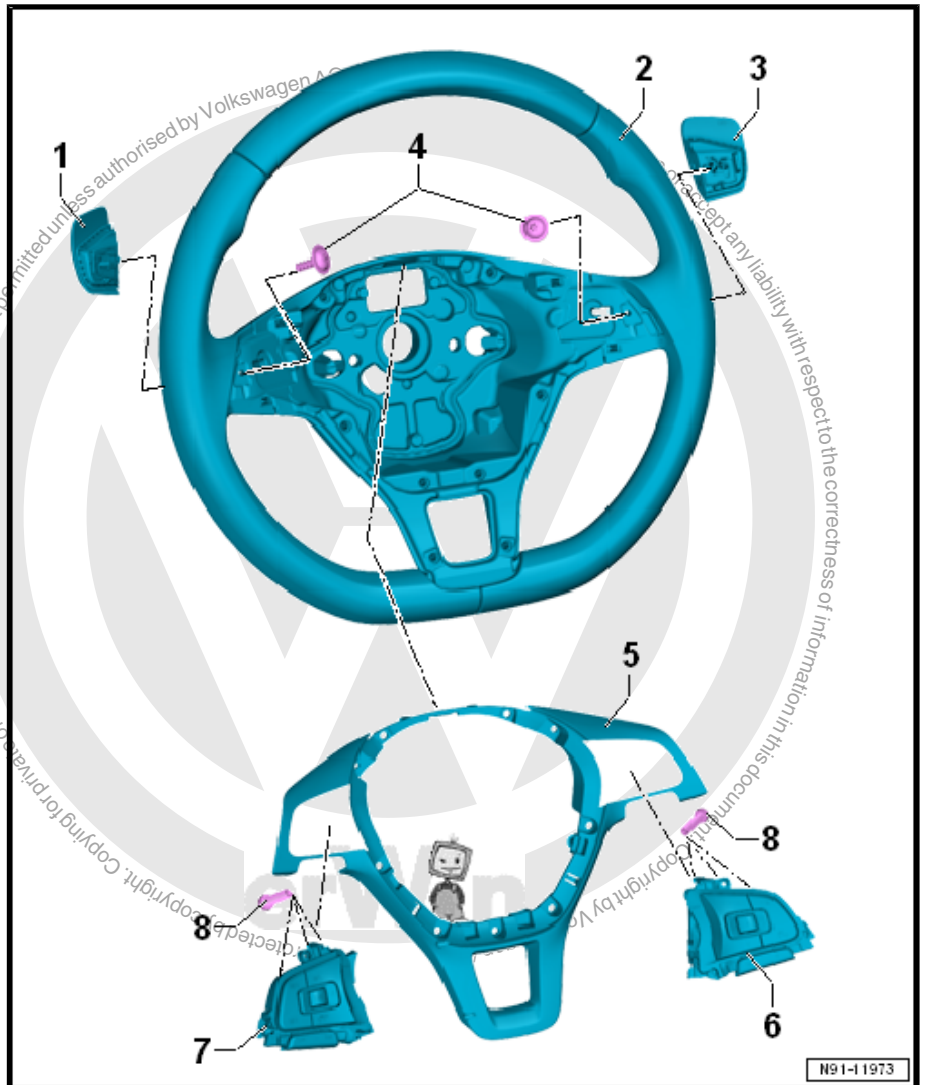
- ❑ Removing and installing. Refer to  
⇒ [“9.3 Right/Left Multifunction Buttons On Steering Wheel E441 / E440 , Removing and Installing”](#), page 55 .

#### 7 - Left Multifunction Buttons On Steering Wheel - E440-

- ❑ Removing and installing. Refer to  
⇒ [“9.3 Right/Left Multifunction Buttons On Steering Wheel E441 / E440 , Removing and Installing”](#), page 55 .

#### 8 - Bolt

- ❑ Quantity: 6



### 9.3 Right/Left Multifunction Buttons On Steering Wheel -E441 - / -E440 - , Removing and Installing

#### Special tools and workshop equipment required

- ◆ Trim Removal Wedge - 3409- , quantity: 2
- ◆ Lever - Fuel Line - T10468-
- ◆ Door Trim Pliers - 3392-



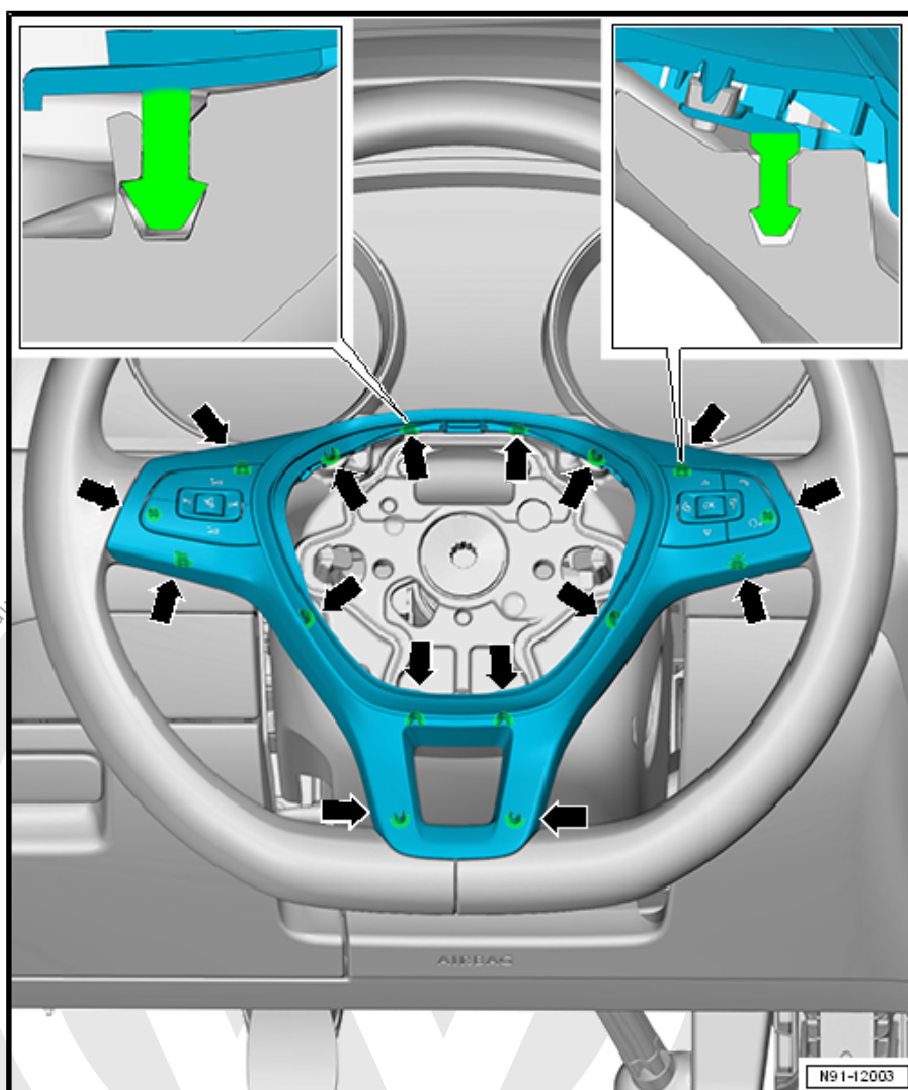
## Removing



### Note

*The multifunction buttons are attached with the trim molding. The trim molding and the multifunction buttons are attached to the steering wheel. The trim can be easily removed with the help of a second Trim Removal Wedge - 3409- .*

- Turn off the ignition and all electrical consumers and remove the ignition key.
- Remove the driver side airbag. Refer to ➔ Body Interior; Rep. Gr. 69 ; Driver Side Airbag; Overview - Driver Side Airbag .



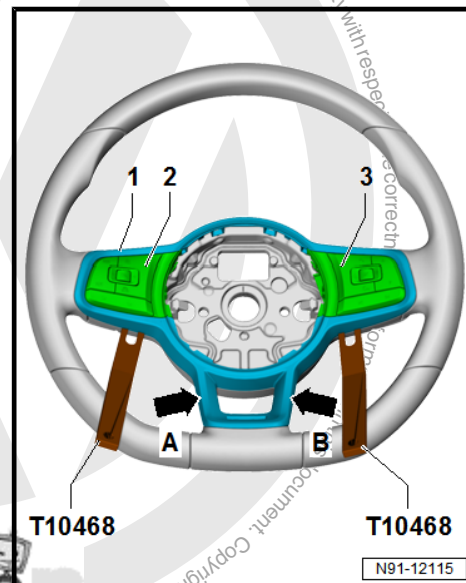
The trim molding is locked in place in the areas near the -arrows- in the multifunction steering wheel.

- Loosen the trim molding -1- near the arrows -A and B- from the steering wheel using the Trim Removal Wedge - 3409- .
- Loosen the trim molding -1- near the Left Multifunction Buttons on Steering Wheel - E440- -2- and Right Multifunction Buttons on Steering Wheel - E441- -3- using the Lever - Fuel Line - T10468- .





- Remove the trim molding -1- near the Left Multifunction Buttons on Steering Wheel - E440- -2- and Right Multifunction Buttons on Steering Wheel - E441- -3- using the Door Trim Pliers - 3392- .
- Remove the trim molding -1- near the arrows -A and B- from the steering wheel.
- Release and disconnect the connectors.



- Remove the trim molding -1- with the Left Multifunction Buttons on Steering Wheel - E440- -2- and Right Multifunction Buttons on Steering Wheel - E441- -3-.

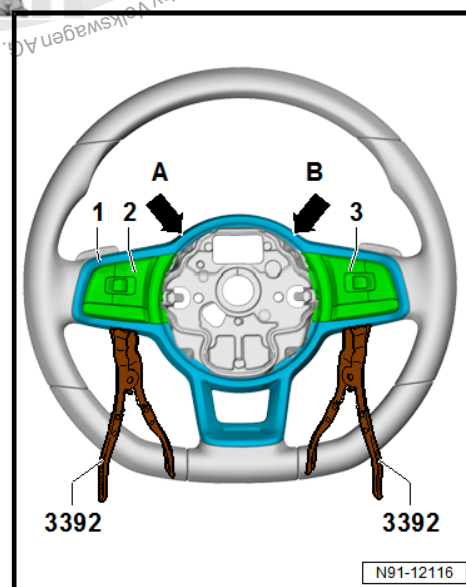
#### Installing

Install in reverse order of removal. Note the following:



**Note**

*For a better installation, clip in the trim starting from the bottom.*



## 9.4 Tiptronic Downshift Button on Steering Wheel - E439- / Tiptronic Upshift Button on Steering Wheel - E438- , Removing and Installing

Special tools and workshop equipment required

- ◆ Torque Wrench 1783 - 2-10Nm - VAG1783-





## Removing



### Note

*The removal and installation is described for the left side. Removing and installing on the right side is identical.*

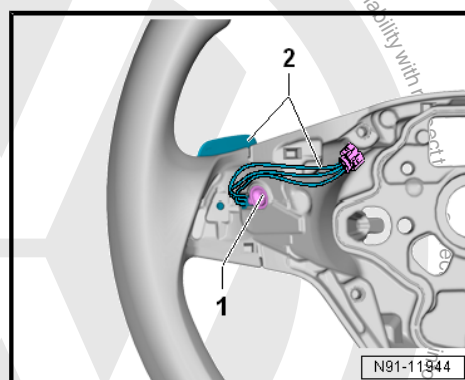
- Turn off the ignition and all electrical consumers and remove the ignition key.
- Remove the Right Multifunction Buttons on Steering Wheel - E441- / Left Multifunction Buttons on Steering Wheel -E440- . Refer to  
⇒ ["9.3 Right/Left Multifunction Buttons On Steering Wheel E441 / E440 , Removing and Installing", page 55](#) .
- Remove the bolt -1- on the steering wheel.
- Remove the Tiptronic switch -2- with the connecting cable toward the rear.

## Installing

Install in reverse order of removal. Note the following:

### Tightening Specifications

- ◆ Refer to  
⇒ ["9.2 Overview - Multifunction Steering Wheel", page 54](#)





## 10 Connection for External Multimedia Devices

⇒ ["10.1 Connection for External Multimedia Devices, Removing and Installing", page 59](#)

⇒ ["10.2 USB Distributor R293 , Removing and Installing", page 61](#)

### 10.1 Connection for External Multimedia Devices, Removing and Installing

⇒ ["10.1.1 Connection for External Multimedia Devices, Removing and Installing, in Front Center Console Storage Compartment", page 59](#)

⇒ ["10.1.2 Connection for External Multimedia Devices, Removing and Installing, in Front Armrest Storage Compartment", page 60](#)

#### 10.1.1 Connection for External Multimedia Devices, Removing and Installing, in Front Center Console Storage Compartment



##### Note

- ◆ The connection for external multimedia devices is connected to the Information Electronics Control Module 1 - J794-
- ◆ The connection for external multimedia devices -1- is located in the front center console storage compartment -2-.
- ◆ Suitable adapter cables are needed. Refer to the Owner's Manual.
- ◆ Fault finding is performed via [Guided Fault Finding](#) on the Vehicle Diagnostic Tester.

There are several versions of the connection for external multimedia devices:

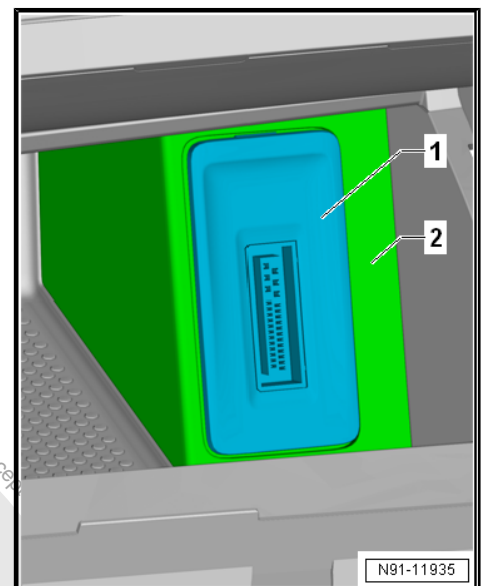
- ◆ AUX IN
- ◆ AUX IN - USB
- ◆ MEDIA-IN

Different external audio sources can be connected to the connection for external multimedia devices:

- ◆ iPod
- ◆ MP3 player
- ◆ USB Stick

##### Removing

- Turn off the ignition and all electrical equipment.
- Then remove the ignition key, if equipped.
- Remove the front center console storage compartment. Refer to ⇒ Body Interior; Rep. Gr. 68 ; Center Console; Front Center Console Storage Compartment, Removing and Installing .
- On the connection for external multimedia devices -1-, press the tabs in the direction of the -arrow A-.



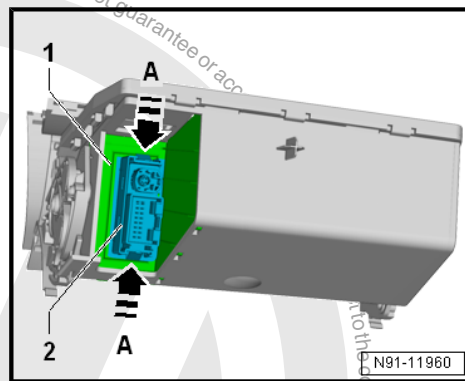
N91-11935



- Press the connection for external multimedia devices -2- out of the storage compartment -1-.

#### Installing

Install in reverse order of removal.



### 10.1.2 Connection for External Multimedia Devices, Removing and Installing, in Front Armrest Storage Compartment

#### Special tools and workshop equipment required

- ◆ Trim Removal Wedge - 3409-

#### Removing

- Turn off the ignition and all electrical equipment.
- Then remove the ignition key, if equipped.

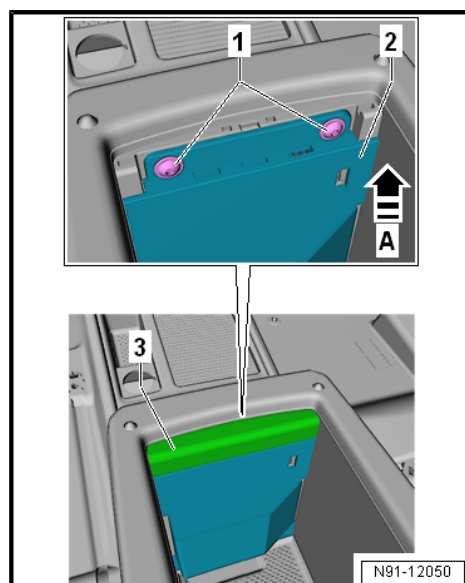


#### Caution

***Risk of damaging the component surfaces.***

- ◆ ***When positioning a prying tool, put commercially available adhesive tape over the component in the visible area.***

- Fold the center console armrest up.
- Pry off the cover -3- using the Trim Removal Wedge - 3409- .
- Remove the screws -1-.
- Remove the mounting plate -2- from the storage compartment in the direction of the -arrow A-
- Release and disconnect the connectors.
- Push the retainers -2- in the direction of the arrow -B- from the USB connection.

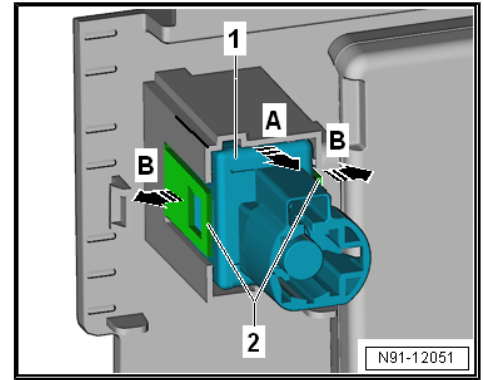




- Remove the USB connection -1- in the direction of the -arrow A-.

### Installing

Install in reverse order of removal.



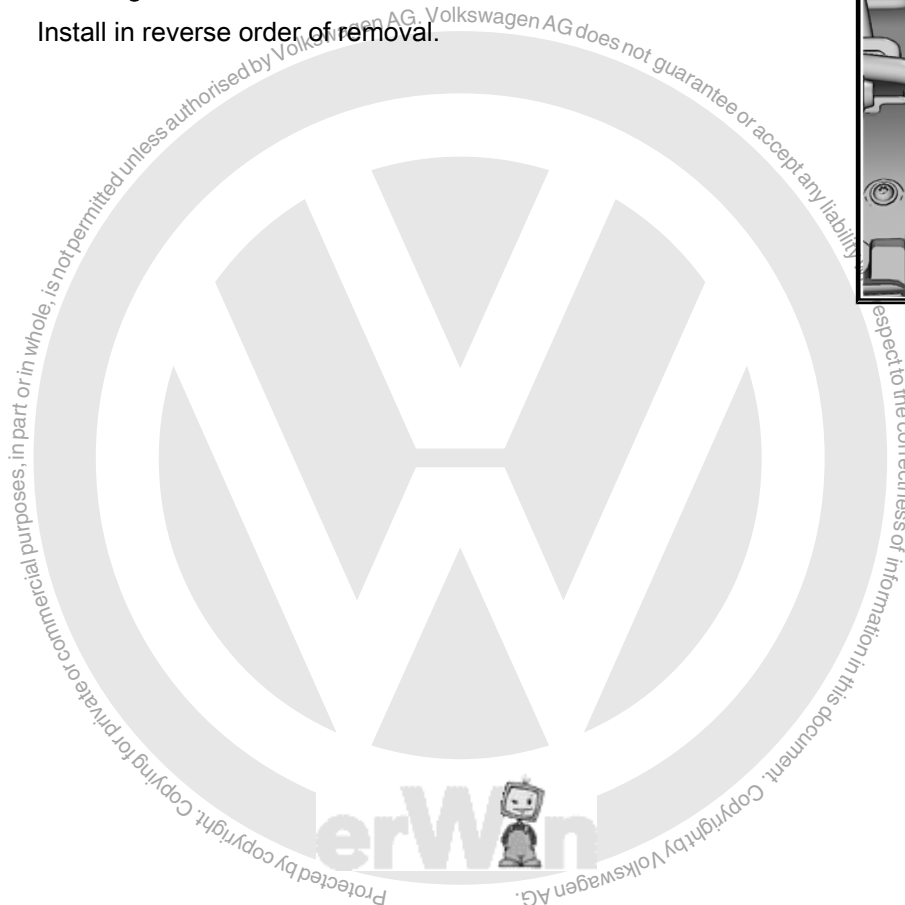
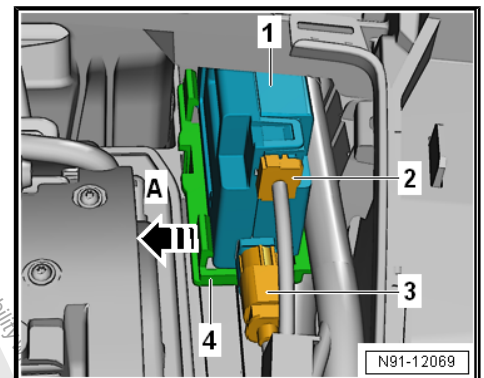
## 10.2 USB Distributor - R293- , Removing and Installing

### Removing

- Turn off the ignition and all electrical equipment.
- Then remove the ignition key, if equipped.
- Remove the center console insert. Refer to ➔ Body Interior; Rep. Gr. 68 ; Center Console; Center Console Insert, Removing and Installing .
- Press the catch on the bracket for the USB Distributor - R293- -4- in the direction of the arrow -A-.
- Lift the USB Distributor - R293- -1- and remove it toward the rear.
- Release and disconnect the connectors -2 and 3-.

### Installing

Install in reverse order of removal.





## 11 Mobile Online Services

⇒ [“11.1 General Information”, page 62](#)

⇒ [“11.2 Component Location Overview - Mobile Online Services”, page 62](#)

⇒ [“11.3 Control Module for Emergency Call Module and Communication Unit J949 , Removing and Installing”, page 64](#)

⇒ [“11.4 Control Module for Emergency Call Module and Communication Unit J949 , Replacing”, page 65](#)

### 11.1 General Information

Mobile Online Services are only available with a Radio/RNS - RX1- .

For vehicles with a telephone, the telephone function is integrated in the Control Module for Emergency Call Module and Communication Unit J949- .

#### Troubleshooting

The mobile online services system is capable of self-diagnosis.

For troubleshooting, use the Vehicle Diagnostic Tester in the “Guided Fault Finding” function.



#### Note

- ◆ *When there are concerns about the function, it necessary to be familiar with the Mobile Online Services functions.*
- ◆ *For additional information. Refer to the Owner's Manual and ⇒ Wiring diagrams, Troubleshooting & Component locations.*
- ◆ *Check all vehicle equipment (clock, convenience systems, etc.) after connecting the battery. Refer to ⇒ Electrical Equipment; Rep. Gr. 27 ; Battery; Battery, Disconnecting and Connecting and/or the Owner's Manual.*

### 11.2 Component Location Overview - Mobile Online Services

⇒ [“11.2.1 Component Location Overview - Mobile Online Services”, page 62](#)

⇒ [“11.2.2 Component Location Overview - Mobile Online Services, eGolf and GTE”, page 64](#)

#### 11.2.1 Component Location Overview - Mobile Online Services



#### Note

*The mobile online services are in the Information Electronics Control Module 1 - J794-*



### 1 - Radio/RNS - RX1-

### 2 - Telephone Microphone - R38-

- ☐ Installed inside the front roof console
- ☐ Removing and installing. Refer to  
⇒ ["5.3 Telephone Microphone R38, Removing and Installing", page 40](#).

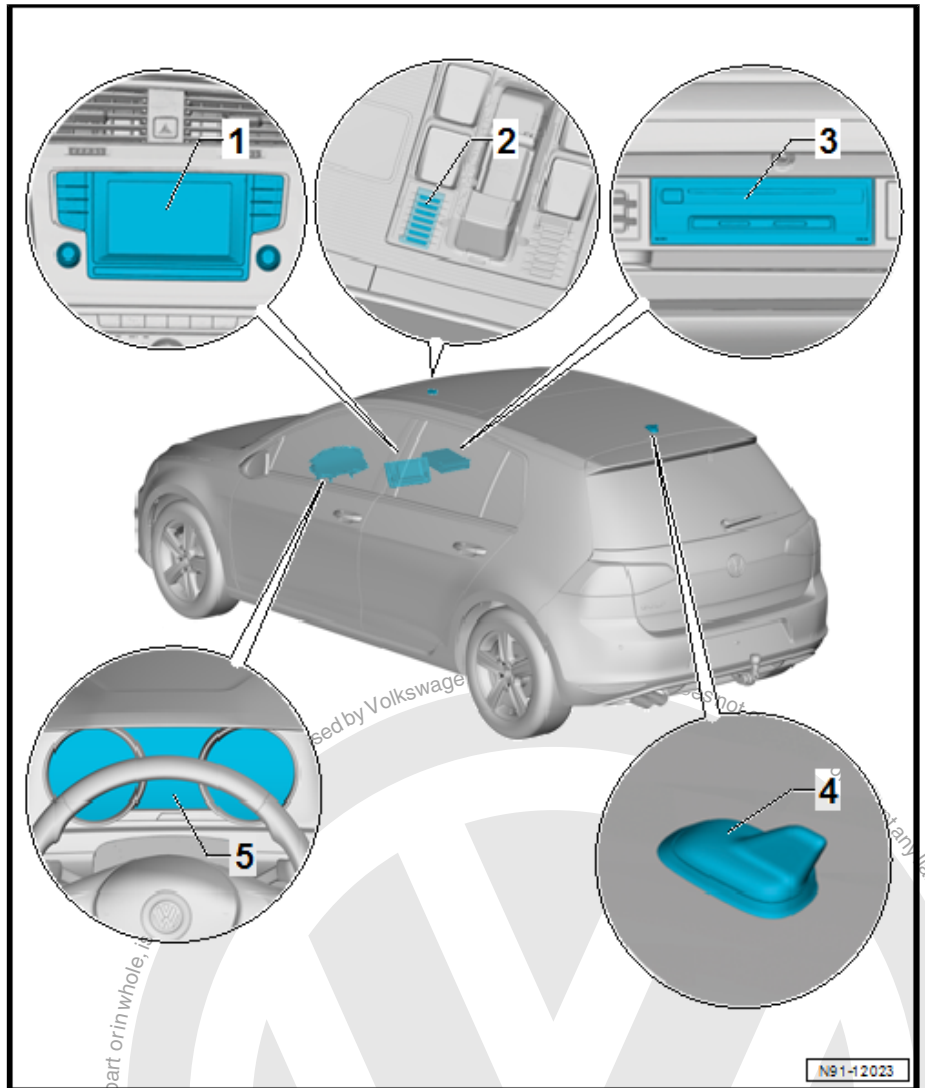
### 3 - Information Electronics Control Module 1 - J794-

- ☐ Installed in the glove compartment
- ☐ Control Module for Emergency Call Module and Communication Unit - J949- is integrated in the Information Electronics Control Module 1 - J794-
- ☐ Removing and installing. Refer to  
⇒ ["1.4 Information Electronics Control Module 1 J794, Removing and Installing", page 13](#).

### 4 - Roof Antenna - RX5-

- ☐ Removing and installing. Refer to  
⇒ ["3.5 Roof Antenna RX5, Removing and Installing", page 33](#).
- ☐ Installed under the rear bumper cover on the right side. Removing and installing, eGolf

### 5 - Instrument Cluster Control Module - J285-







## 11.2.2 Component Location Overview - Mobile Online Services, eGolf and GTE

### 1 - Instrument Cluster Control Module - J285-

### 2 - Telephone Microphone - R38-

- ☐ Installed inside the front roof console
- ☐ Removing and installing. Refer to  
⇒ ["5.3 Telephone Microphone R38, Removing and Installing", page 40](#).

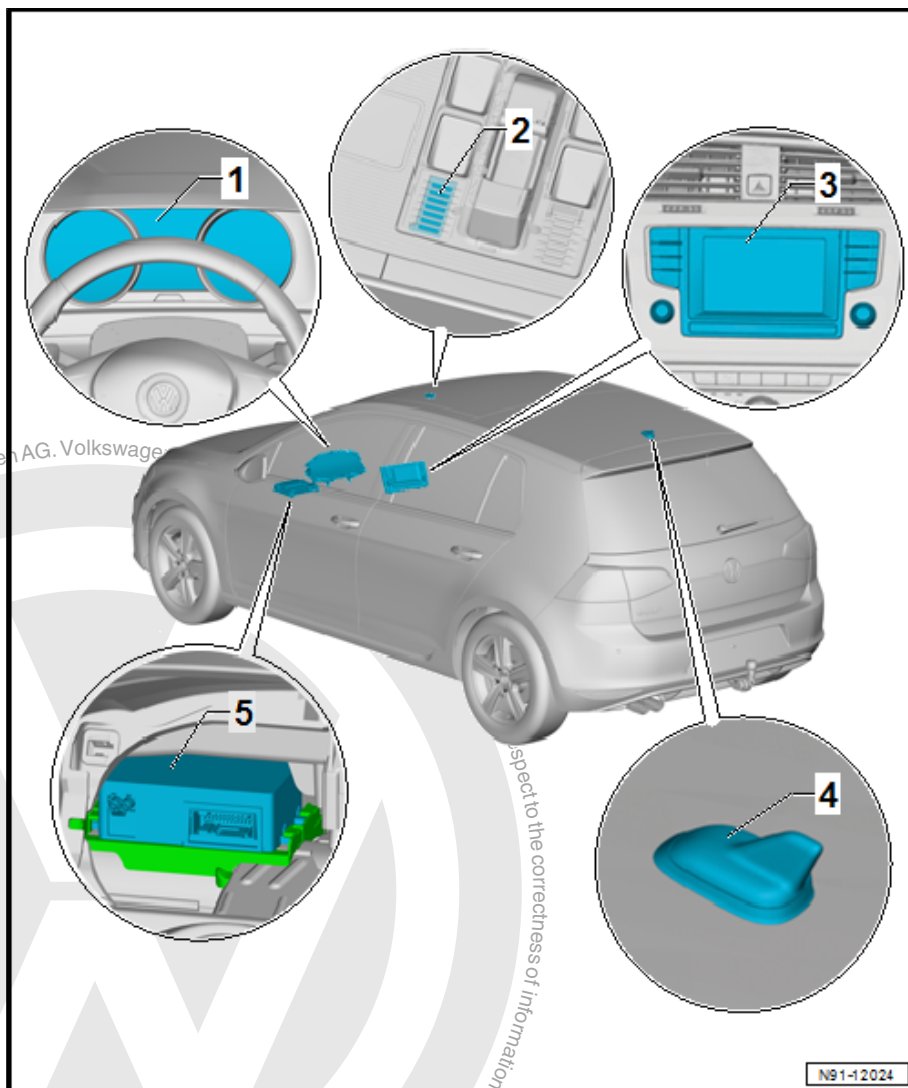
### 3 - Radio/RNS - RX1-

### 4 - Roof Antenna - RX5-

- ☐ Removing and installing. Refer to  
⇒ ["3.5 Roof Antenna RX5, Removing and Installing", page 33](#).

### 5 - Control Module for Emergency Call Module and Communication Unit - J949-

- ☐ Installed behind the instrument cluster
- ☐ Removing and installing. Refer to  
⇒ ["11.3.1 Control Module for Emergency Call Module and Communication Unit J949, Removing and Installing, eGolf and GTE", page 64](#).



## 11.3 Control Module for Emergency Call Module and Communication Unit - J949-, Removing and Installing

⇒ ["11.3.1 Control Module for Emergency Call Module and Communication Unit J949, Removing and Installing, eGolf and GTE", page 64](#)

### 11.3.1 Control Module for Emergency Call Module and Communication Unit - J949-, Removing and Installing, eGolf and GTE

The Control Module for Emergency Call Module and Communication Unit - J949- -1- is installed behind the instrument cluster.

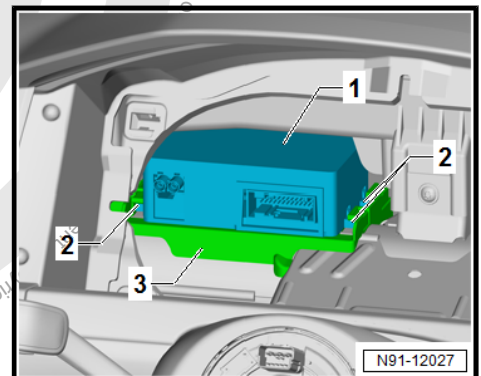
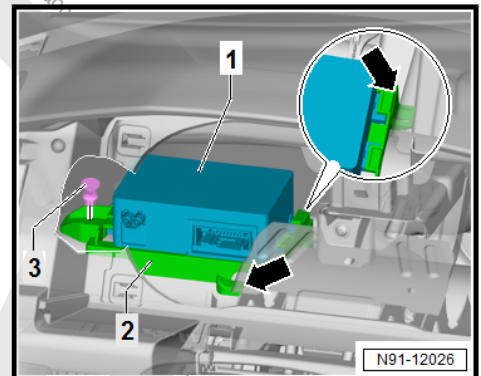
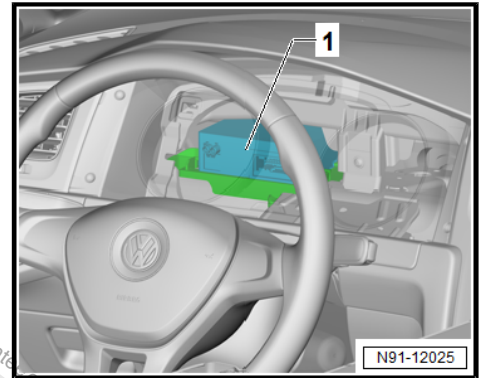




Set the Control Module for Emergency Call Module and Communication Unit - J949- in service mode. Refer to Vehicle Diagnostic Tester .

### Removing

- Bring the Control Module for Emergency Call Module and Communication Unit - J949- into the service mode. Vehicle Diagnostic Tester
- Remove the instrument cluster. Refer to ⇒ Electrical Equipment; Rep. Gr. 90 ; Instrument Cluster; Instrument Cluster - KX2- , Removing and Installing .
- Loosen the fastener -3- and remove the bracket together with the control module -2-.
- Release and disconnect the connectors from the Control Module for Emergency Call Module and Communication Unit - J949- .
- Press the locking hooks -2- and remove the Control Module for Emergency Call Module and Communication Unit - J949- from the bracket -3-.



### Installing

Installation is performed in the reverse order of removal.

## 11.4 Control Module for Emergency Call Module and Communication Unit - J949- , Replacing

### Control Module for Emergency Call Module and Communication Unit - J949- , Replacing and Adapting

- Current data for the "Guided Fault Finding"
- Select the Replace function. Refer to Vehicle Diagnostic Tester in the Guided Fault Finding or Guided Functions mode for the Control Module for Emergency Call Module and Communication Unit - J949- .
- Remove the Control Module for Emergency Call Module and Communication Unit - J949- . Refer to ⇒ "11.3 Control Module for Emergency Call Module and Communication Unit J949 , Removing and Installing", page 64 .
- Install the new Control Module for Emergency Call Module and Communication Unit - J949- . Refer to ⇒ "11.3 Control Module for Emergency Call Module and Communication Unit J949 , Removing and Installing", page 64 .



- Select the **Coding** function. Refer to Vehicle Diagnostic Tester in the **Guided Fault Finding** or **Guided Functions** mode for the Control Module for Emergency Call Module and Communication Unit - J949- .
- Select the **Adapting to Immobilizer** function. Refer to Vehicle Diagnostic Tester in the **Guided Fault Finding** or **Guided Functions** mode for the Control Module for Emergency Call Module and Communication Unit - J949- .
- Select the **Activating** function. Refer to Vehicle Diagnostic Tester in the **Guided Fault Finding** or **Guided Functions** mode for the Control Module for Emergency Call Module and Communication Unit - J949- .
- Exit **Guided Fault Finding** or **Guided Functions**.
- Turn off the ignition.

#### **Control Module for Emergency Call Module and Communication Unit - J949- , Connecting to Rear End Module and Sending Mileage to Rear End Module**

- Move the vehicle out of the service facility so that the vehicle has GPS and phone reception.
- Switch on the ignition and leave it switched on for approximately 10 minutes. Do not connect the Vehicle Diagnostic Tester .

After the waiting period is over, check the function of the Control Module for Emergency Call Module and Communication Unit - J949- as follows:

- Select the **Read measured values** function. Refer to Vehicle Diagnostic Tester in the **OBD** mode.
- Select the measured values of the group **Online services activation status**.
- The measured value shown for the "Vehicle Health display" must be "activated".

If the measured value shown for the "Vehicle Health display" stays at "not activated", then:

- Exit **OBD** mode and disconnect the Vehicle Diagnostic Tester from the vehicle.
- Turn off the ignition.
- Disconnect the connector from the Control Module for Emergency Call Module and Communication Unit - J949- to reset terminal 30.
- After waiting a short amount of time, reconnect the connector to the Control Module for Emergency Call Module and Communication Unit - J949- .
- Restart the procedure for connecting the Control Module for Emergency Call Module and Communication Unit - J949- to the rear end module and sending the mileage to the rear end module. Refer to ➔ [page 66](#) .

If the measured value shown for the "Vehicle Health display" is at "activated", then:

- Note the mileage in the instrument cluster.
- Exit **OBD** mode and disconnect the Vehicle Diagnostic Tester from the vehicle.
- Switch off the ignition and leave it switched off for at least five minutes.



The Control Module for Emergency Call Module and Communication Unit - J949- establishes a connection to the rear end module and sends the current mileage to the rear end module.

#### Enrollment Process in Customer Web Portal, Checking

- Log in to the Car-Net customer portal, creating a test account if necessary.
- Add the vehicle, along with:
  - ◆ Entering the VIN
  - ◆ Entering the mileage
  - ◆ Entering a vehicle name



#### Note

- ◆ *After successfully entering the information, an e-mail is sent for confirmation. It is not necessary to wait for this e-mail.*
- ◆ *After approximately two minutes the vehicle is displayed under "My Vehicles".*
- Load the vehicle into the "Dashboard". The following values are shown:
  - ◆ Mileage
  - ◆ Charge level
  - ◆ Various functions, such as starting, charging, climate control and parking position.



#### Note

*The vehicle data is only displayed after a trip.*

- Delete the vehicle in your own account.
- When the customer picks up their vehicle, then add the vehicle with the customer and the mileage checked earlier to the customer account.

#### Enrollment in Customer Web Portal, Checking

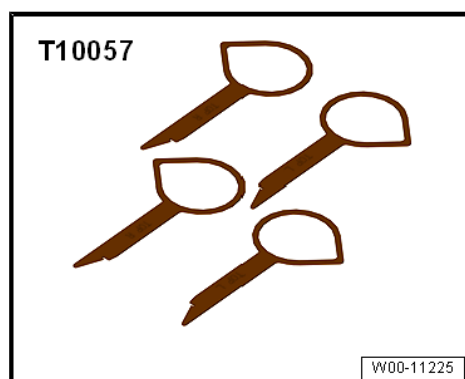
- Check for a successful enrollment as follows:
- Turn on the ignition.
- Select the Read measured values function. Refer to Vehicle Diagnostic Tester in the OBD mode.
- Select the measured values of the group Online services activation status.
- The measured values shown for the subscribed Car-Net services change to "activated".



## 12 Special Tools

### Special tools and workshop equipment required

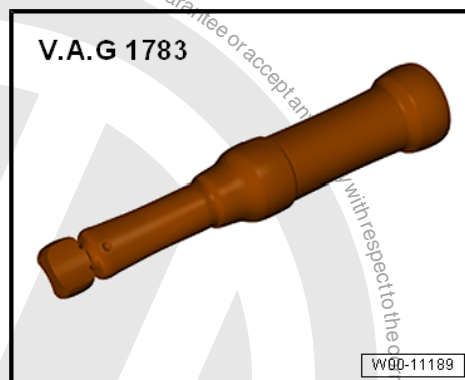
- ◆ Radio Removal Tool - T10057-



- ◆ Lever - Fuel Line - T10468-



- ◆ Torque Wrench 1783 - 2-10Nm - VAG1783-

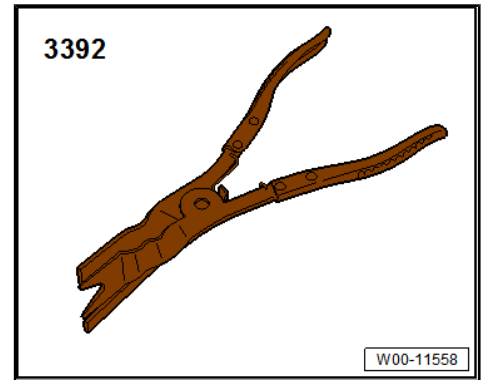


- ◆ Fiber-Optic Repair Set - Connector Protective Caps - VAS6223/9-

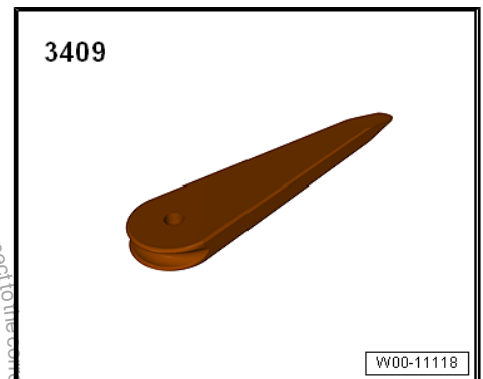




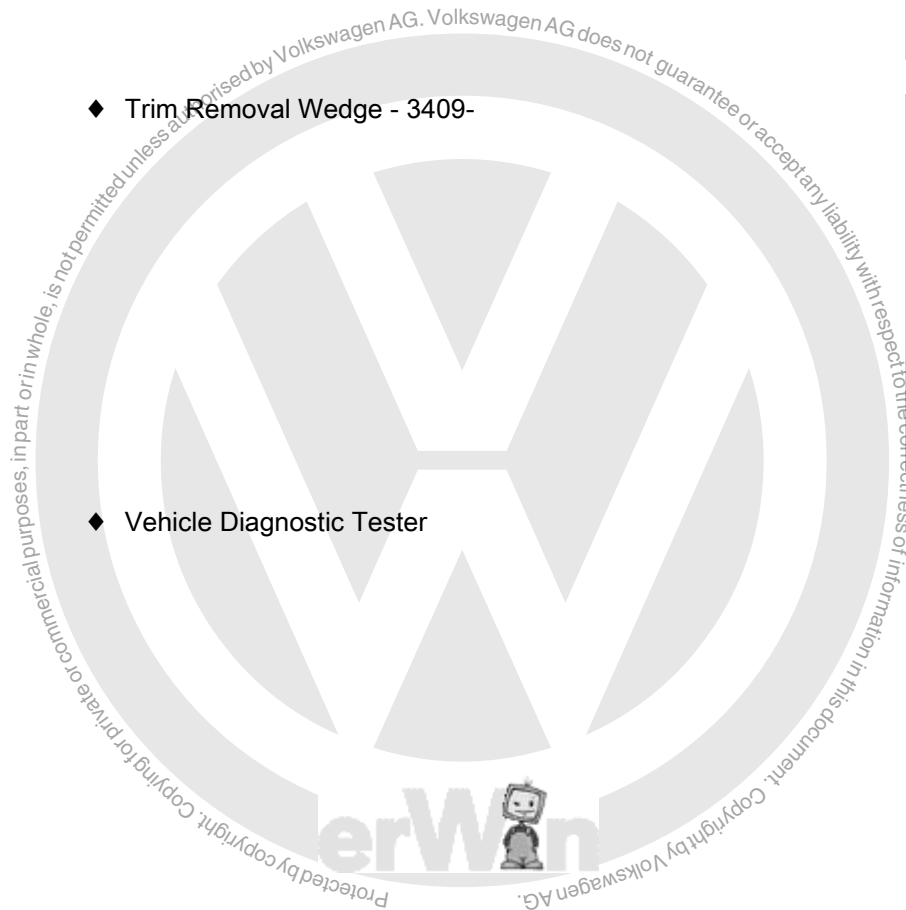
◆ Door Trim Pliers - 3392-



◆ Trim Removal Wedge - 3409-



◆ Vehicle Diagnostic Tester





## 13 Revision History

DRUCK NUMBER: K0059211021

Fac- tory Edi- tion	Edit Edi- tion	Job Type	Fee dba ck	Notes	Quality Checke d By
06.2 015	07/1 6/20 15	Fac- tory Up- date	N/A		Eric P.
10.2 014	11/1 9/20 14	Link Chec king	N/A		Tom P.
10.2 014	10/1 4/20 14	Fac- tory Up- date	N/A		Jim H.
04.2 014	7/23/ 2014	Fac- tory New	N/A		Joe Y.



# 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.



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- 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.**

