

Multi-function steering wheel

In the interior of the multi-function steering wheel, in addition to the horn, there are two button panels for activating frequently used functions.

The left button panel serves the functions of the automatic proximity control (APC) with cruise control system (CCS). Infotainment system functions are operated using the right button panel.

Left button cluster

- + CCS: Current speed increased in steps of 10 km/h
- SET: Stores current speed as a desired speed in steps of 1 km/h and activates the APC or CCS
- RESUME: Activates the APC or CCS at the most recently selected required speed
- - CCS: Reduces the desired speed in steps of 10 km/h
- CANCEL: Switches the APC or CCS to standby mode and stores the desired speed
- Rotary wheel: Adjusts the APC distance
- ON/OFF: Activates the APC or CCS after starting the engine



On the side at the rear of the button module there is an additional button for switching off the button illumination.



For further information on the functions of the left button panel and on the subject of automatic proximity control (APC) with cruise control system (CCS) please refer to Self-Study Programme 276 "The Phaeton - Automatic Proximity Control".

The steering wheel buttons are connected to the control unit for steering column electronics which transmits data via the convenience CAN databus to the dash panel insert or the control unit, and the front display and control unit (CDC). The gateway in the dash panel insert manages the data interchange between the convenience CAN databus and the drive train CAN databus.



The multi-function steering wheel is capable of self-diagnosis through the VAS 5051 Diagnostic Testing and Information System using address word 16.

Right button panel

- + Vol: Increases the volume of all audio functions
- Car phone receiver, Initiates or terminates telephone connections
- Announces the most recent navigation information
- - Vol: Reduces the volume of all audio functions
- Menu selection: Swaps between onboard computer, car phone and Infotainment
- Press/rotate thumbwheel: Menu selection (by turning the thumbwheel) and selection confirmation (by pressing the thumbwheel)
- ESC: Fades-in the previous display on the display in the dash panel insert or stops a procedure that is running



S273_068



For further information on the functions of the right button panel and on the subject of "Infotainment" please refer to Self-Study Programme 274 "The Phaeton - Infotainment System".

On the side at the rear of the button module there is an additional button for switching off the steering wheel heating.

Sound system

For the Phaeton there is a choice between the 8-channel standard sound system or the 12-channel Premium sound system (optional).

The 8-channel sound system comprises

- 10 loudspeakers (190 W) and an analogue amplifier

The 12-channel sound system comprises:

- 12 loudspeakers (270 watts) and
- a digital amplifier

Components and fitting locations*

Tweeter,
in the mirror triangle

Woofer/mid-range,
device carrier panel,
front door

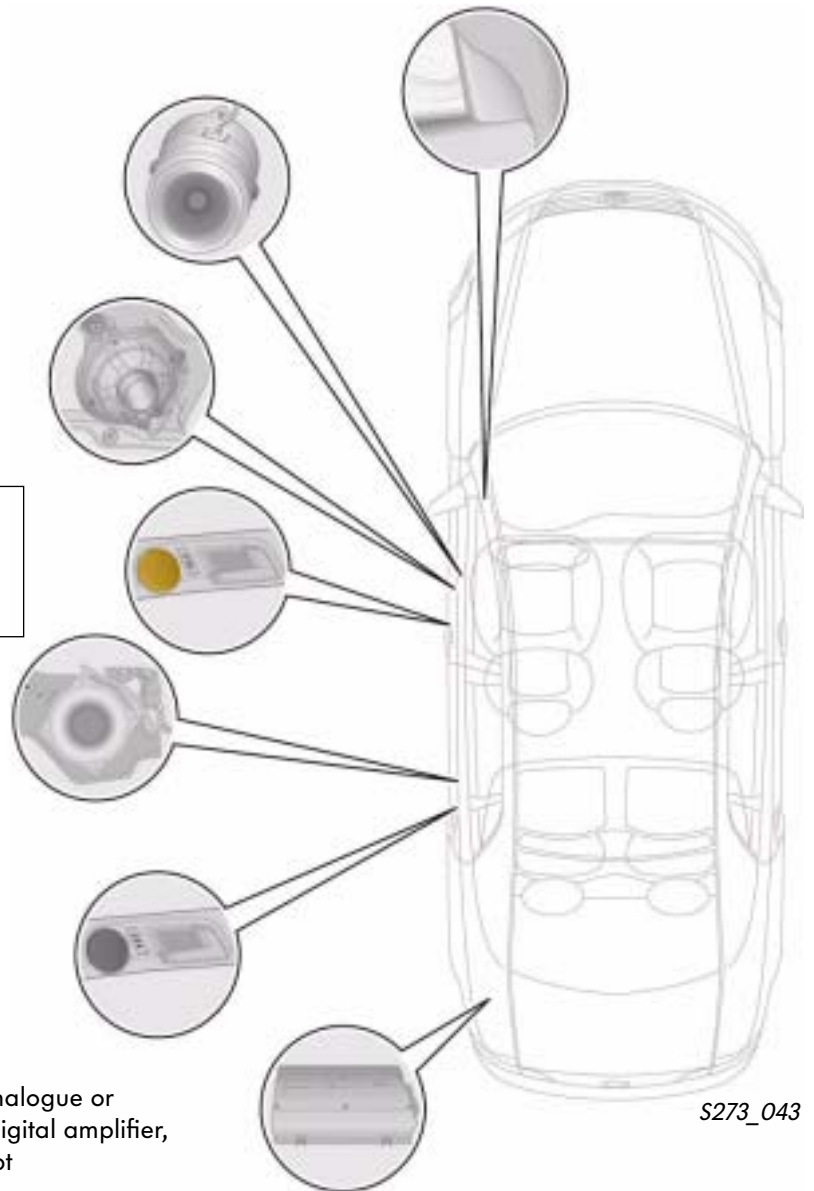
Woofer,
device carrier panel,
front door

Mid-range/tweeter,
inner door actuation,
front door (12-channel sound system only)

Woofer,
device carrier panel,
rear door

Mid-range/tweeter,
inner door actuation,
rear door

8-channel analogue or
12-channel digital amplifier,
on left in boot



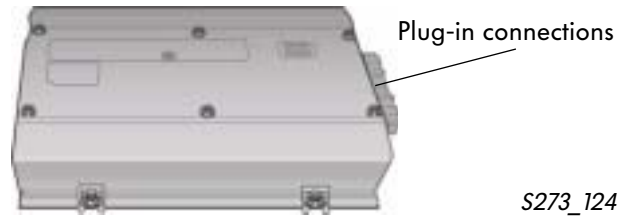
S273_043

*The loudspeaker fitting locations apply to both the left and right side of the vehicle.

Amplifier

The 12-channel digital amplifier offers the following extended range of functions compared with the analogue amplifier:

- generate various room modes (pop, classical, jazz) and other effects (space, echo)
- optimised effect for each individual seat
- vehicle-specific settings (fabric/leather seats; right/left-hand drive models)



J525
Digital sound package control unit

S273_124

Both types of amplifier also generate the alert tones for the parking aid acoustic warning (also refer to the chapter entitled "Parking aid").



It is possible to identify whether an 8-channel analogue amplifier or a 12-channel digital amplifier is fitted in the vehicle by the colours of the plug-in connections for the amplifier: if they are grey and green, then it is an analogue amplifier; digital amplifiers have black plug-in connections. Please refer to the current Workshop Manual for further information about the sound system.



The sound system is capable of self-diagnosis through the VAS 5051 Diagnostic Testing and Information System using address word 47.

Sound system

Car phone

The fixed-network car phone is fitted in the front passenger's armrest. The car phone is operated by means of

- the receiver,
- the front control unit and central display and control unit (CDC) or
- Multi-function steering wheel

The hands-free microphone fitted on the driver's side in the roof module is used for transmission.

The car phone aerial (GSM) is integrated invisibly in the upper area of the rear window (also refer to the chapter entitled "Aerials". This means that aerials on the roof or bootlid are no longer necessary.



The car phone control unit is fitted on the rear shelf in the boot.

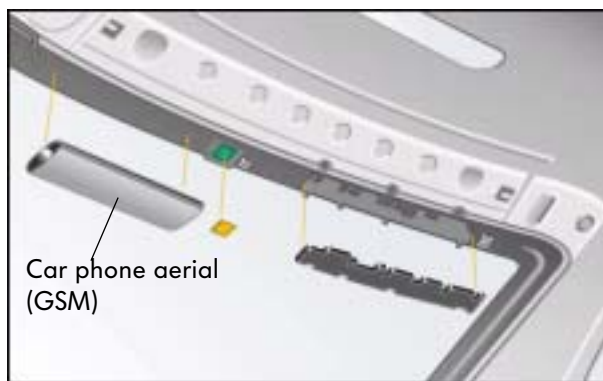


For further information on how to operate the car phone, please refer to Self-Study Programme 274 "The Phaeton - Infotainment System".



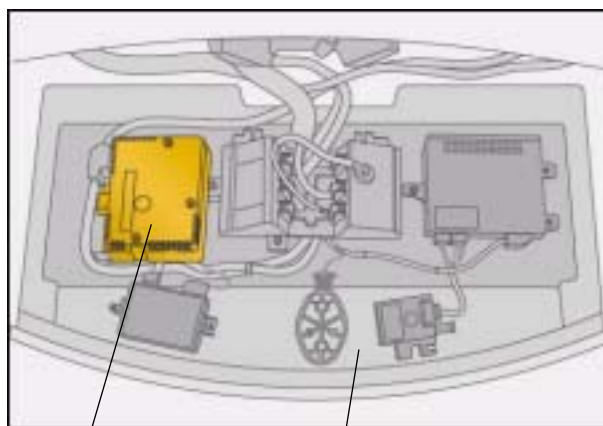
Car phone in front passenger armrest

S273_119



Car phone aerial (GSM)

S273_034

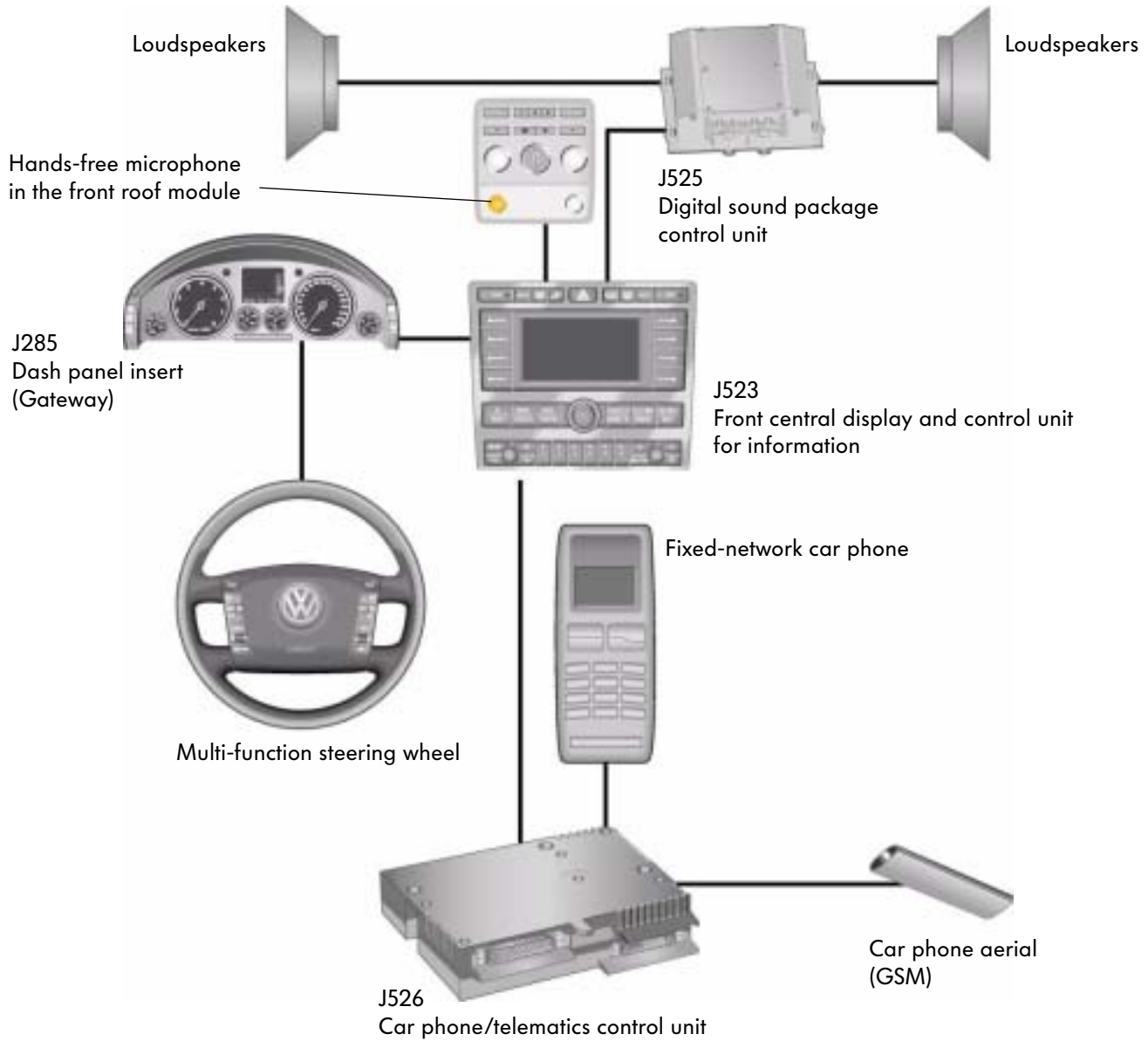


Car phone/
telematics control unit

Rear shelf

S273_032

Overview of car phone system



S273_033



The car phone system is capable of self-diagnosis through the VAS 5051 Diagnostic Testing and Information System using address word 77.

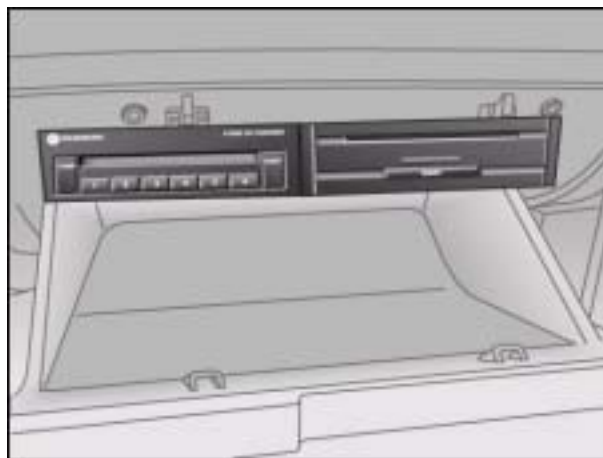
Sound system

Navigation system

The CD player for the navigation system is fitted in the glove box. To use the system, the navigation CD must be inserted in the player.

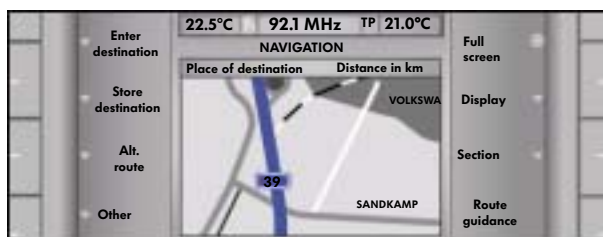
The navigation CD player can also receive the Infotainment system CD. Or it can be used to display information, for example, in other languages.

The navigation system is operated via the front central display and control unit (CDC), and also via the rear CDC if the car is equipped accordingly.



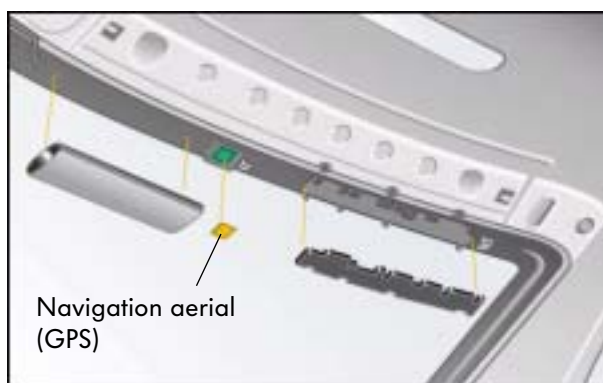
R41 CD changer and J401 navigation system with CD drive control unit in the glove box *S273_036*

A particularly large map section can be displayed in full screen mode on the 7" screen.



Map section in the CDC display *S273_039*

The navigation aerial (GPS) is invisibly integrated under glass in the upper part of the rear window.



S273_034



The navigation system is capable of self-diagnosis through the VAS 5051 Diagnostic Testing and Information System using address word 37.

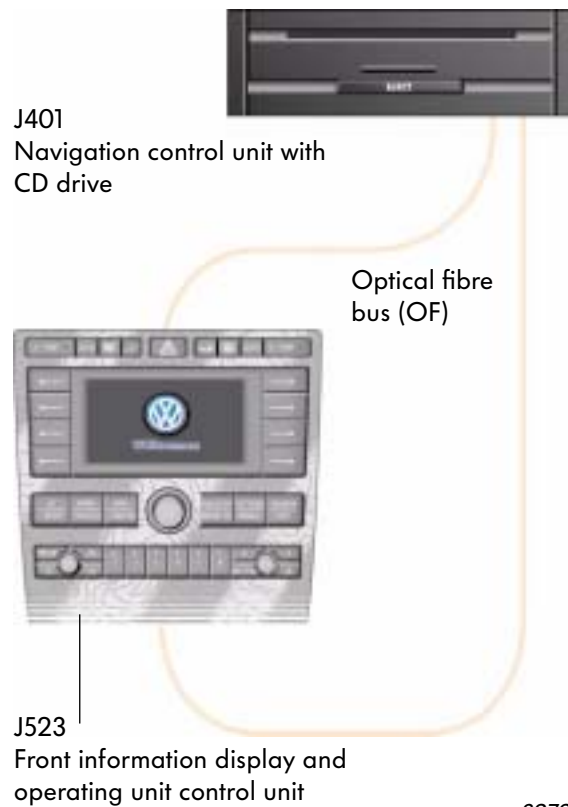
Optical bus

The front and rear information display and operating unit control units and the navigation control unit intercommunicate via an optical databus to display a digital map.

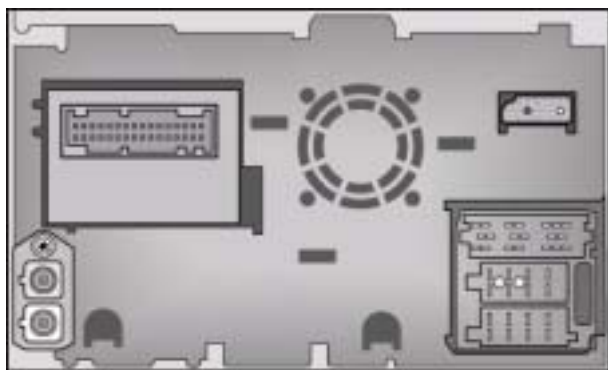
Optical fibre bus

The control units are connected in a ring by means of an optical fibre bus (OF). The optical fibre bus must be handled with extreme care:

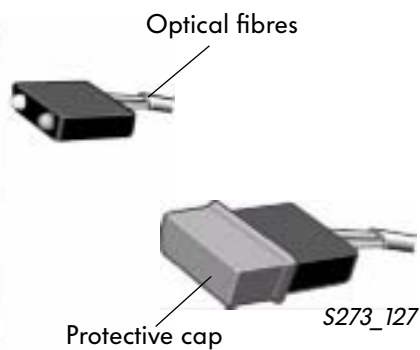
- do not kink or crush the optical fibre cable,
- do not bend the FO cable at bending radii of less than 25 mm,
- do not remove the protective cap until just before installation,
- if the protective cap is missing, you may have to renew the optical fibre cable.



S272_091



J 401
Navigation system control unit with connector for optical bus



Sound system

CD changer

The 6-disc CD changer is located next to the navigation computer in the glove box.

At least one CD must be loaded in the CD changer to play an audio CD. When a CD slot is occupied, it is indicated by an illuminated LED above the relevant station button.



S273_037

The CD changer is operated via the audio unit in the front central display and control unit (CDC).



S273_038

TV tuner

The TV tuner is fitted on the right on the rear shelf in the boot.

The TV aerials are invisibly integrated in the upper part of the rear window.

For safety reasons, while the vehicle is travelling occupants only have access to sound and not to an image on the CDC screen.

The TV function is operated via the audio unit in the front central display and control unit (CDC).



S273_128

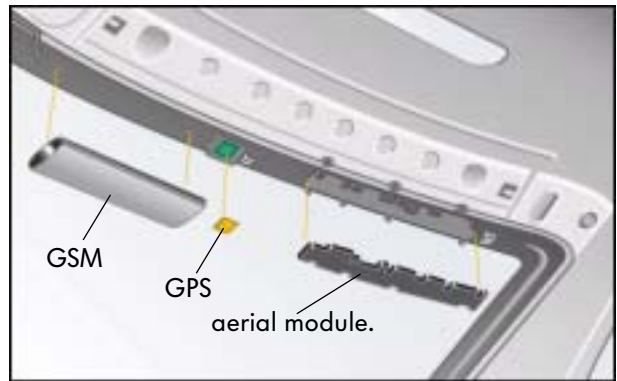


Aerials

The following aerials are fitted invisibly in the upper border of the rear window:

- car phone aerial (GSM*)
- navigation aerial (GPS*)
(combined in one housing),
- aerial module.

*GSM = Global System for Mobile communication
GPS = Global Positioning System



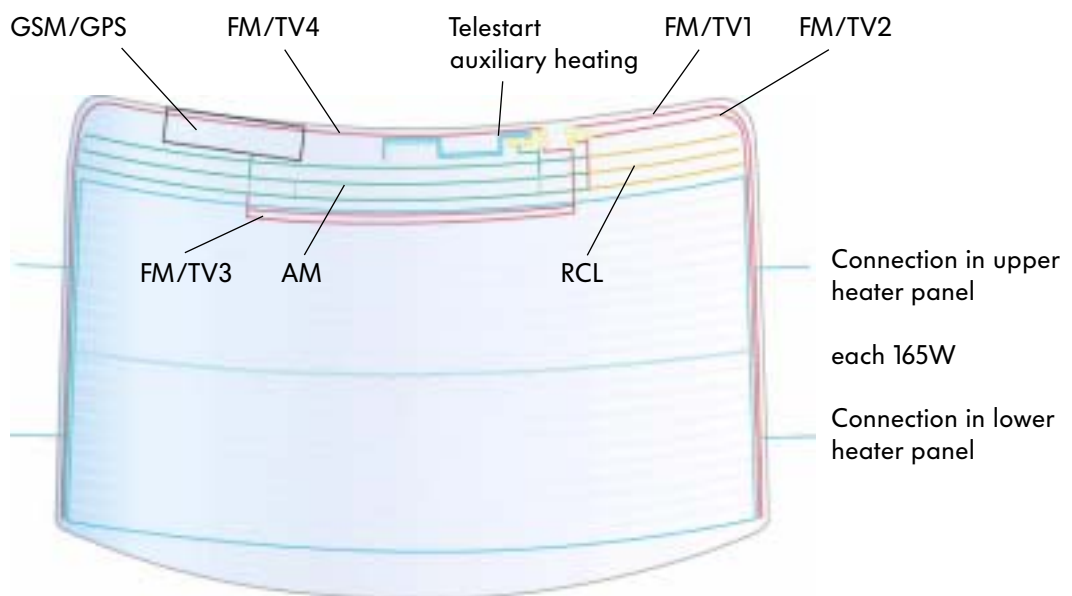
S273_034

The following are integrated into the aerial module:

- diversity aerial,
- aerial booster for the four radio aerials (FM 1-4, AM),
- four aerial boosters for the active TV aerials (1-4),
- Teletstart aerial for the auxiliary heating (passive),
- passive aerial for remote central locking (RCL).

All aerial conductors are invisibly concealed in the upper area of the rear window. All aerial conductors are invisibly concealed in the upper area of the rear window.

The car phone aerial (GSM) and the navigation aerial (GPS) are also fitted in a module in the upper border of the rear window. However, it is not linked to the conductors in the rear window.



S273_081

Seats

The following front seat options are available:

- 12-way seat
- 18-way seat (optional).

Depending on the type of equipment, both seat variants contain a wide range of functions such as

- seat adjustment
- memory functions
- seat ventilation and heating
- massage
- easy-entry function

12-way seat

The 12-way seat offers the following options for electrical adjustment:

- 1 Longitudinal adjustment
- 2 Belt height adjustment
- 3 Backrest adjustment
- 4 Inclination adjustment
- 5 4-way lumbar support (up/down; front/back)

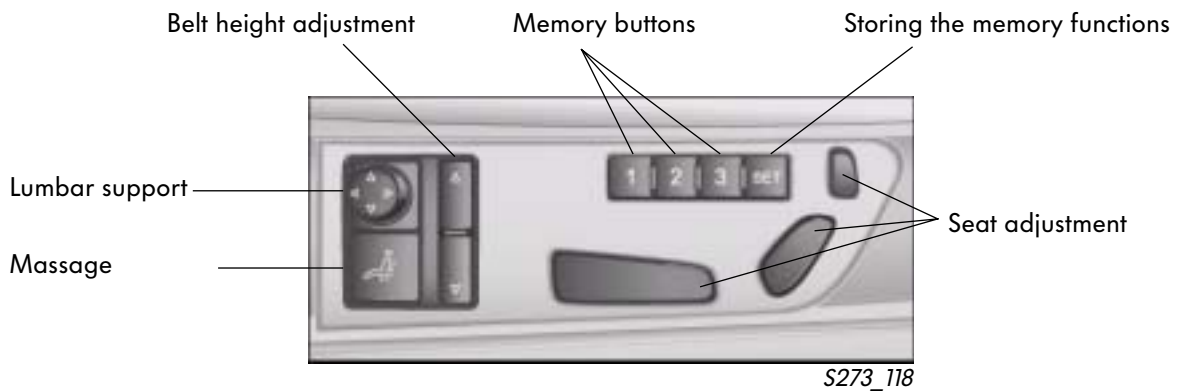


S273_078



12-way seat controls

The seats are operated by means of buttons located on the side of the front seat.



12-way seat motors

The adjacent figures provides an overview of the seat adjustment motors fitted in the 12-way seat:

- 1 Motor for longitudinal adjustment
- 2 Motor for height adjustment
- 3 Motor for backrest adjustment
- 4 Motor for inclination adjustment
- 5 Motor for horizontal lumbar support
- 6 Motor for vertical lumbar support
- 7 Seat control unit for memory



Seats

18-way seat (optional)

In addition to the functions on the 12-way seat, the 18-way front seats has the following functions:

- 1 electric recline adjustment
- 2 extendible seat cushion
- 3 head restraint adjustment

All memory functions, the seat heater, ventilation and massage functions are contained in the 18-way seat.

Non-perforated leather is available as an option for the seats; in this case, the seat ventilation function is not fitted.

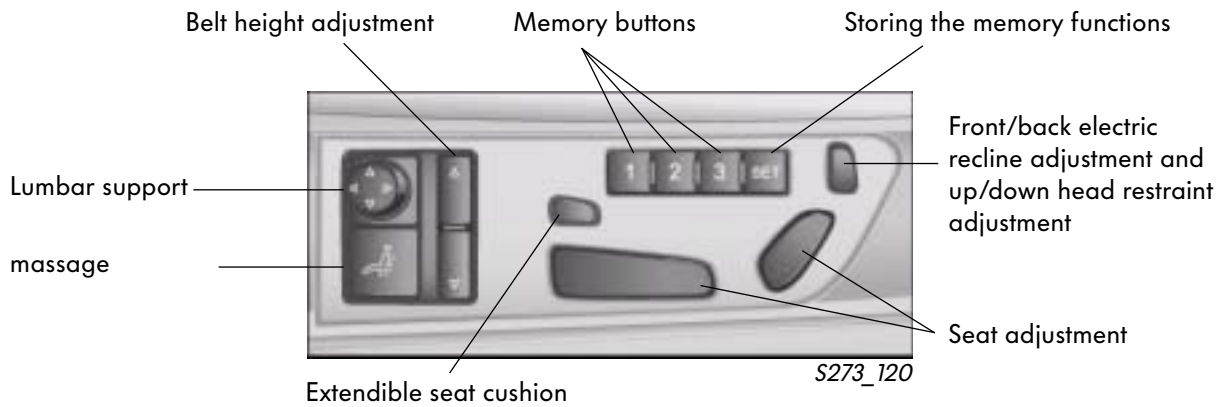


S273_079



18-way seat controls

In addition to the seat adjustment functions available in a 12-way seat, the 18-way seat has an extendible seat cushion.



18-way seat motors

The adjacent figure provides an overview of the additional motors fitted for seat adjustment in the 18-way seat:

- 1 Electric recline adjustment
- 2 Extendible seat cushion
- 3 Head restraint adjustment
- 4 Seat control unit for memory



Seats

Rear seats

The rear seats may be supplied optionally as a single rear bench seat designed for three people or as individual seats for two people.

Rear bench seat

The rear bench seat is available in two equipment variants:

- Rear bench seat: with side airbags and manually adjustable head restraints (seat heater optional)
- Rear bench seat "plus": with electric 6-way lumbar support adjustment in the outer seats, ventilation, massage, seat heater, manually adjustable head restraints and seat occupancy detection (the head restraints rise automatically when the seat is occupied and the seat heater is enabled).

The controls for the rear bench seat function are located on the side of the seats.

Individual seats

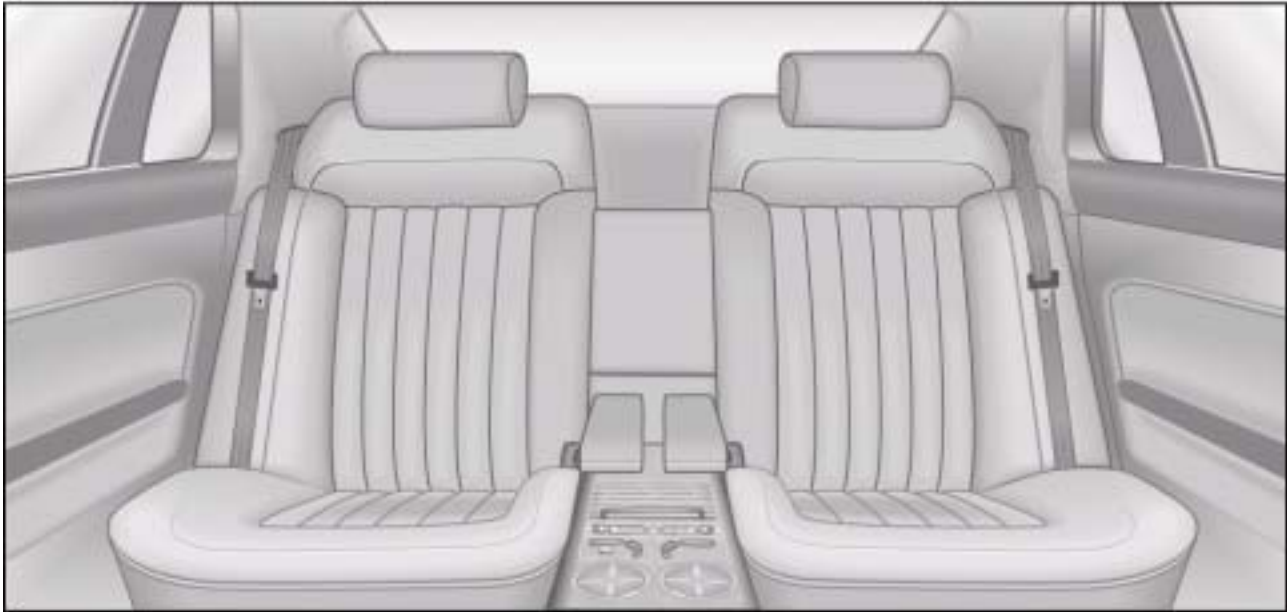


In addition to the rear bench seat functions, the two individual seats offer the following electrical 10-way auxiliary functions:

- extendible seat cushion, seat tilt, the height of the head restraints and adjustment of the 4-way lumbar support (up/down; front/back),
- memory function,
- Easy-Entry function (the seats move back 10 cm automatically when the door is opened) and
- seat occupancy detection (see above).

The individual seats are only fitted in combination with 18-way front seats.

Individual seats



S273_130

Controls for adjusting the front passenger's seat

The controls for the individual rear seats are located in the rear central console.

In the version that has individual rear seats, it is possible to adjust the front passenger's seat from the rear compartment. This enables rear seat passengers to obtain more leg-room and makes it easier to exit the vehicle.



S273_026



Seats

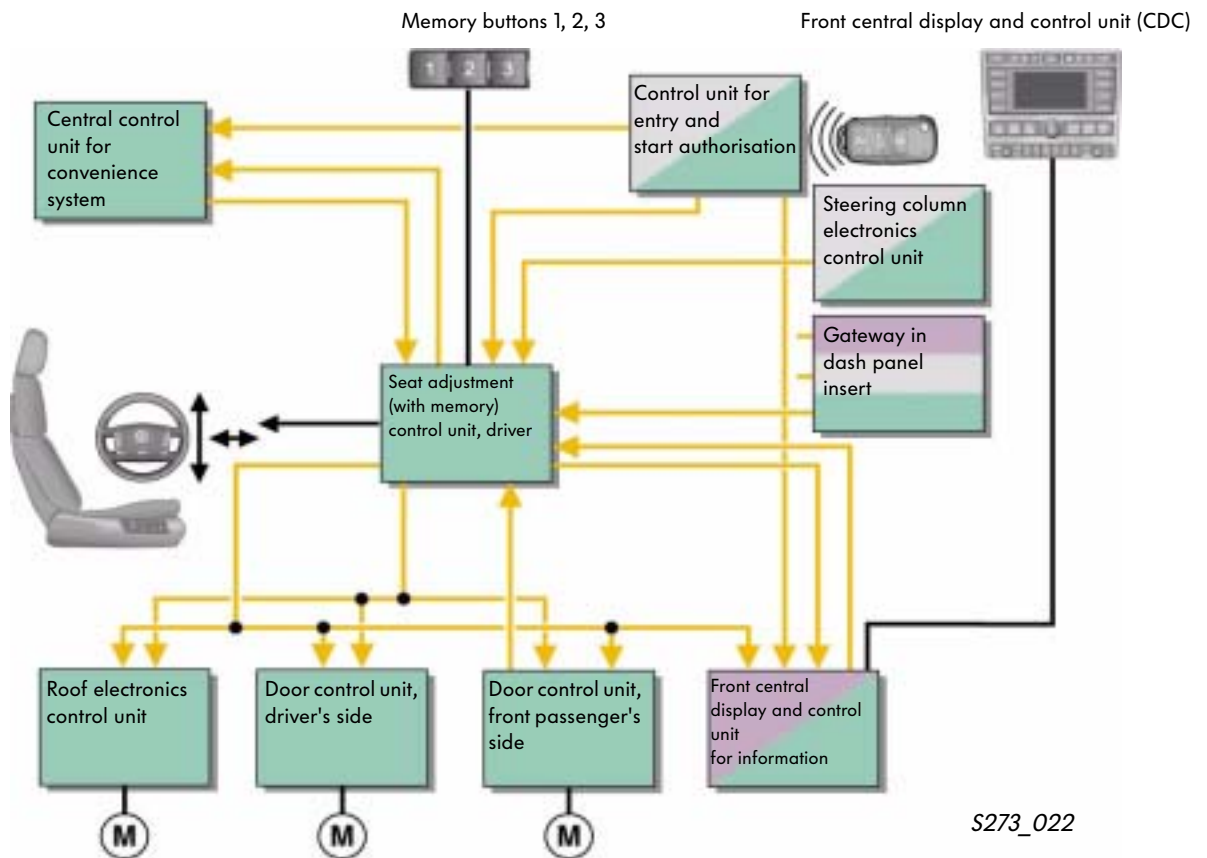
Memory functions

The following functions can be stored electrically using the memory functions (optional in 12-way seat, standard in 18-way seat):

- individual seat adjustments
- the position of the steering column with easy-entry function for the steering column
- the position of the seat belts (height adjustment)
- the settings for the interior and exterior mirrors

In addition to the 12-way seat memory functions, the 18-way seat has electric adjustments for the head restraints, extendible seat cushion and the recline.

System overview of memory functions



S273_022

Seat heater and ventilation

The seat heater integrated in the seat works together with a fan to feed air at the right temperature evenly through the perforated leather via air ducts.

The seat heater and storage of the memory position are regulated by the seat control unit. The required heater and ventilation positions are set by means of the seat heater potentiometer. If the driver's side seat heater is active, the steering wheel is heated simultaneously.

If the onboard power supply is overloaded, the steering column heater and the seat heater and ventilation are switched off by the onboard power supply control unit.



S273_116

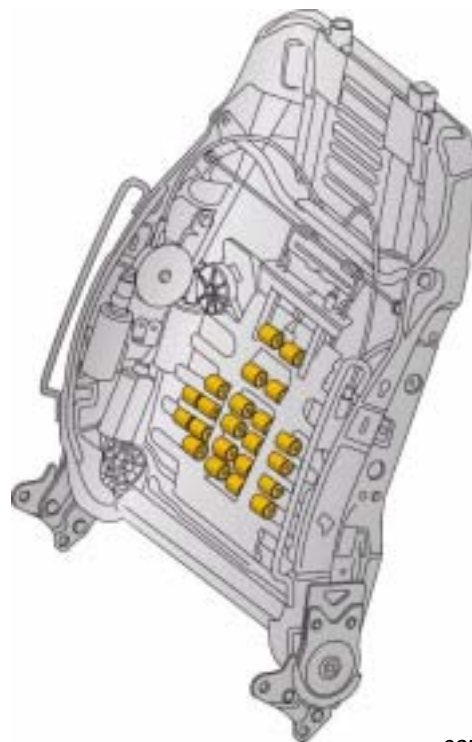
Massage function (optional)

The massage to relieve back muscles works mechanically through the 4-way lumbar support. Once it has been activated using the button on the seat, the lumbar support vibrates in all directions for 10 minutes.

In addition, the horizontal lumbar support moves fully forwards.

To adjust the intensity of the massage, the horizontal lumbar support can be moved back manually.

The seat control unit assumes all the electric seat convenience functions, including entering information for all buttons and switches located on the seat.



S273_027



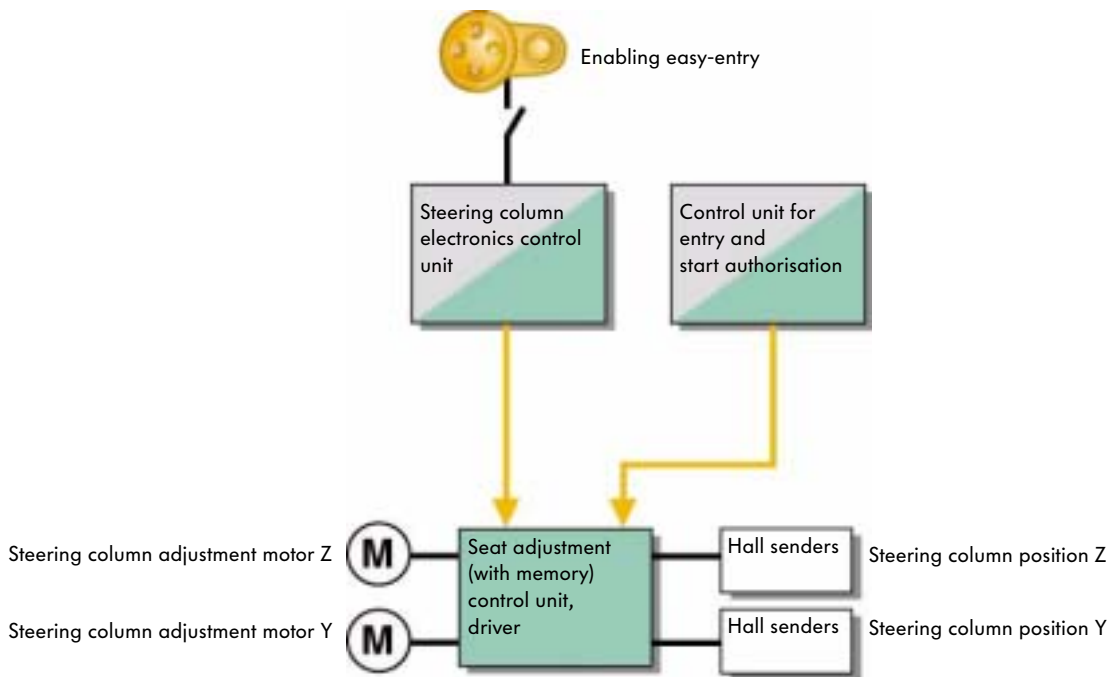
Seats

Easy-Entry function

This function is activated by means of the switch on the steering column module, regardless of the user profile. This moves the steering column electrically into the maximum upper and front position (park position) to allow the driver to enter and exit comfortably.

When the ignition key is turned (Terminal 15 on), the steering column is returned to the stored position. While the engine is being started, the steering column movements are interrupted.

Information relating to the switch is transmitted over the convenience CAN databus. When the ignition key is withdrawn, the current steering column position is stored and it returns to the park position. When the ignition key is switched on (Terminal 15 on), the steering column is returned to the last stored position.



S273_024



For further information about the seats and their functions, please refer to Self-Study Programme 270 "The Phaeton".

Adjusting the steering column

The request to adjust the steering column is made via the convenience CAN databus and is processed by the driver's side seat memory. When a command is given to make an adjustment, the steering column is moved in the required direction until the request is reset or the soft stop is reached.

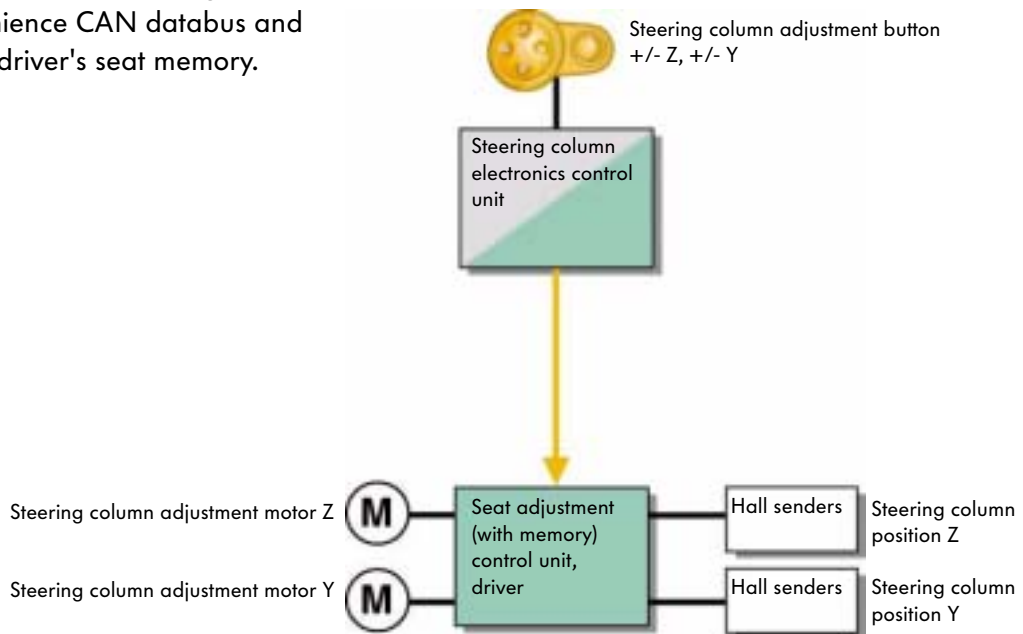


S273_025

Detecting the position of the steering column and belt height

The same function request is used to adjust the height of the belt as to adjust the seats.

The command to adjust the steering column is sent to the convenience CAN databus and processed by the driver's seat memory.



S273_023



The seats have self-diagnostic capability using the VAS 5051 Diagnostic Testing and Information System with the address words 06 (front passenger), 36 (driver) and 66 (rear).



Parking aid

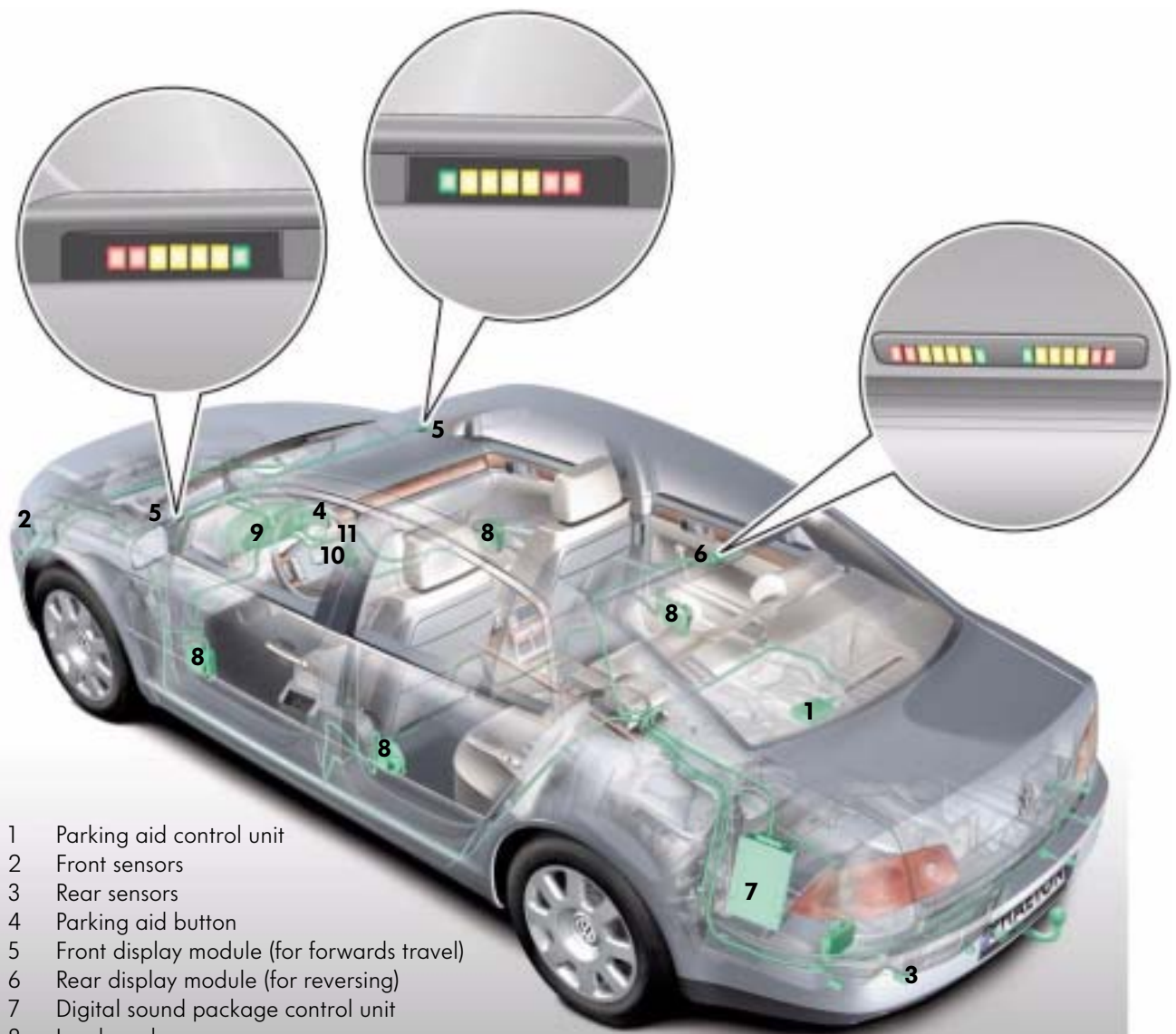
The parking aid is intended to assist the driver when manoeuvring. It is based on well-known ultrasound technology. The sensors are hardly visible and are fitted in the bumper.

The system has the following new features:

- six sensors at front and six at rear,
- obstacle detection on the left and right,
- display modules at the front and rear and
- visual and acoustic warnings.

The acoustic signal is sent on the convenience CAN databus and received by the digital sound package control unit (DSP), processed and then played back over the loudspeaker.

System overview

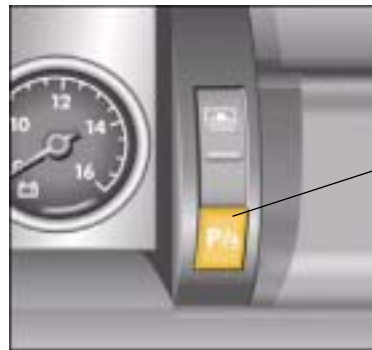


- 1 Parking aid control unit
- 2 Front sensors
- 3 Rear sensors
- 4 Parking aid button
- 5 Front display module (for forwards travel)
- 6 Rear display module (for reversing)
- 7 Digital sound package control unit
- 8 Loudspeaker
- 9 Dash panel insert
- 10 Entry and start authorisation switch
- 11 Onboard power supply control unit

S273_014

Parking aid function

The parking aid is activated automatically when the ignition is turned on. It can be deactivated manually using the button on the dash panel insert. The green segment in the display modules indicates that the system is ready.



Parking aid button on the dash panel insert

S273_117

Warnings in the module are indicated:

- visually between 130 cm and 50 cm by means of LEDs **2** to **4**,
- visually and acoustically (slow intermittent tone) between 50 cm and 40 cm by means of LED **5**,
- visually and acoustically (rapid intermittent tone) between 40 cm and 25 cm by means of LED **6**,
- visually and acoustically (continuous tone) between 25 cm and 0 cm by means of LED **7**.

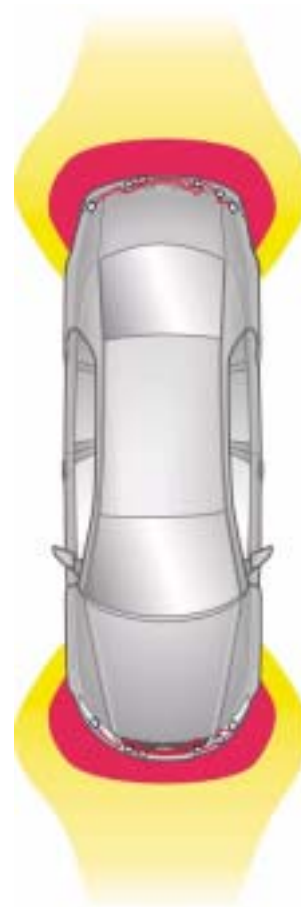
LEDs in the display module



S273_012

Tone frequencies are different at the front and at the rear.

Detection ranges



S273_011

The system is active, when

- the ignition is on (Terminal 15 on),
- the speed is < 15 km/h,
- reverse or neutral gear was selected (system active at front and rear),
- the gate selector lever is in position "D" or "S" (system active at front only) and
- a trailer is detected (system is deactivated at rear).

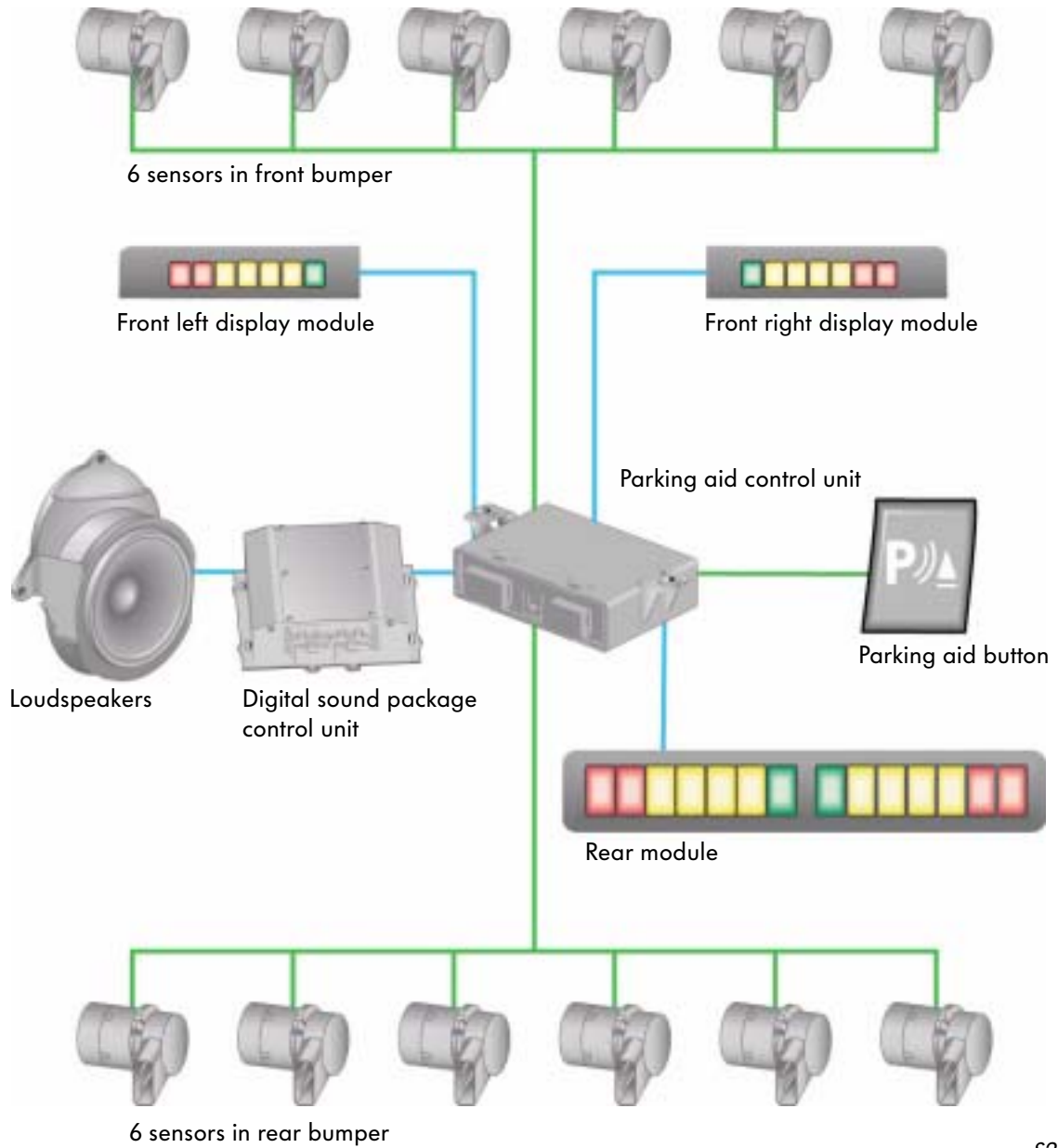
The system is not active, when

- the speed is > 15 km/h,
- the handbrake is on (system is deactivated after 2 seconds),
- the gate selector lever is in position "P".



Parking aid

Overview of the parking aid



S273_010



The parking aid is capable of self-diagnosis through the VAS 5051 Diagnostic Testing and Information System using address word 76.



Test your knowledge

1. In the convenience and safety electronics there are several control units networking with several CAN databus systems. Decide which control units communicate simultaneously with the convenience CAN databus and with the Infotainment CAN databus.

- a) Steering column electronics control unit
- b) Parking distance control unit
- c) Front information display and operating unit control unit
- d) Rear information display and operating unit control unit
- e) Entry and start authorisation relay

2. Which positions are there on the entry and start authorisation switch?

- a) Off
- b) On
- c) Zero
- d) Start
- e) Assistance driving light

3. How many exterior aerials are there in the convenience equipment of the systems for entry and start authorisation?

- a) 4
- b) 6
- c) 8



4. In which ways can the bootlid be closed hydraulically?

- a) The bootlid can be closed with the radio-wave remote control.
- b) The bootlid can be closed with the button in the bootlid.
- c) The bootlid can be closed with the switch on the inside of the driver's door.
- d) The bootlid can be closed with the exterior button in the VW emblem.

5. If there is a power failure, the bootlid can be opened...

- a) ...using the interior button in the bootlid...
- b) ...using the radio-wave remote control...
- c) ...using the emergency lock cylinder in the VW emblem in the bootlid...
- d) ...using the switch on the inner side of the driver's door.

6. Which statement about the windscreen wiper module is correct?

- a) The module comprises a single motor wiper system with wiper linkage.
- b) The module comprises a dual motor wiper system without wiper linkage.



Test your knowledge

7. Where is the GPS aerial fitted invisibly?

- a) The GPS aerial is fitted in the upper part of the rear window.
- b) The GPS aerial is fitted in the bootlid.
- c) The GPS aerial is fitted on the roof.

8. According to which principle do the parking aid sensors function?

- a) They are optical sensors.
- b) They use ultrasound.
- c) The sensors work with radar.

9. The parking aid warnings are indicated...

- a) ...visually
- b) ...by sense of touch
- c) ...acoustically.






Answers:
1. c, d 2. a, b, c, d 3. b 4. a, b, c, d 5. c 6. b 7. a
8. b 9. a, c



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