

Self Study Program 890283

# The Arteon

Design and Function - Tablet Format



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# Introduction

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## The Arteon – A Five-Seater Grand Tourer

The Arteon was developed on the modular transverse matrix (MQB) platform. The transverse mounted engine at the front creates space between the axles, allowing a long wheelbase with short overhangs. The result is more legroom in the passenger compartment and a luggage compartment.

Thanks to an aerodynamic silhouette, frameless door windows and a striking rear end design, the Arteon combines the design elements of a traditional sports car with the elegant flowing rear section of a coupé.



s557\_001

# Introduction

## Product Features

- LED Headlights and LED Daytime Running Lights
- 8-speed Automatic Transmission
- Progressive Steering
- Virtual Cockpit
- Frameless Door Windows
- 9.2-inch Infotainment System



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- 19.8 to 55 cubic feet of Luggage Compartment Volume



- LED Tail Lights
- Easy Open & Delayed Closing
- Re-active Hood
- Adaptive Chassis Control DCC

# Introduction

## Distinctive Features

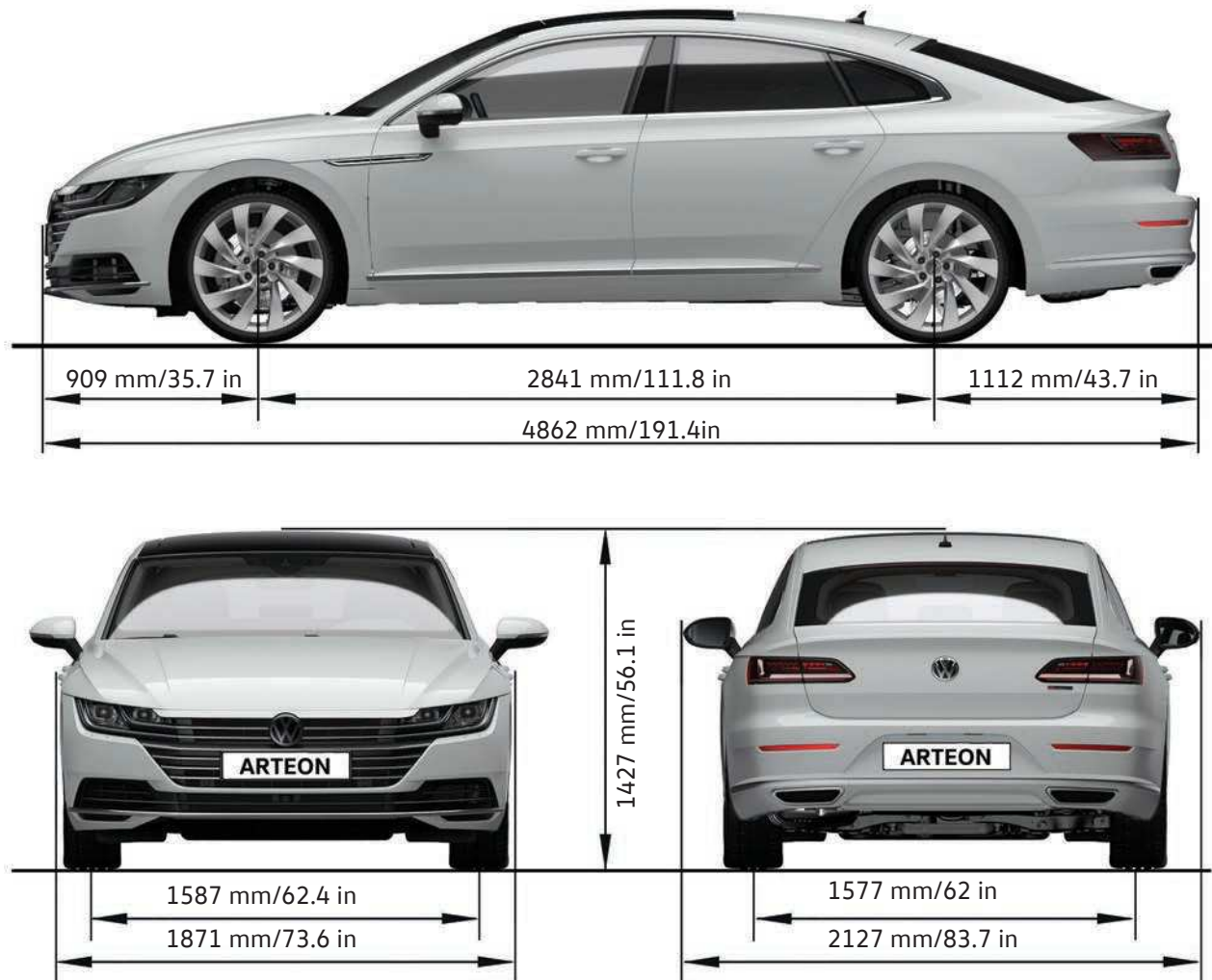




# Introduction

## Technical Data

Turning Diameter	11.9 m	39 ft
Maximum Vehicle Weight	2030 kg	4475 lb
Curb Weight	1429 kg	3150 lb
Maximum Roof Load	50 kg	110.2 lb
Drag Coefficient	0.279 <sub>cd</sub>	



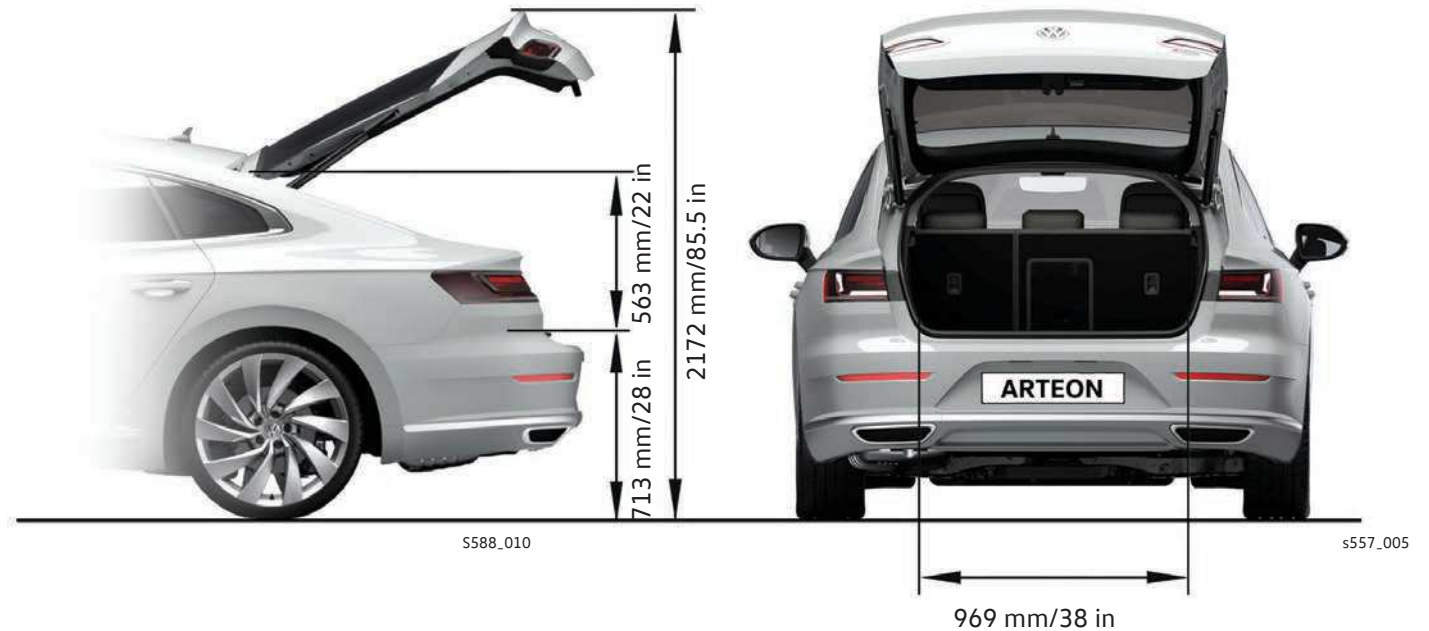
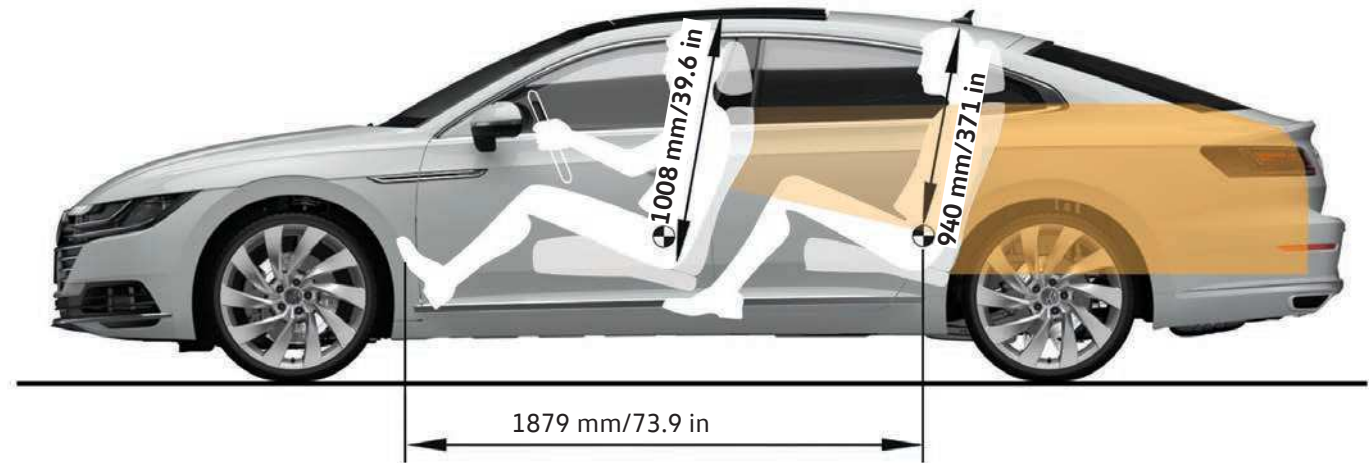
s557\_003

# Introduction

## Interior Dimensions and Volumes

Interior Dimensions and Volumes

Through-load Width Between Wheel Housings	1005 mm	3.29 ft
Trunk Volume	563 Liters	149 Gallons
Trunk Volume with Rear Seat Backrest Folded Forward	1557 Liters	411 Gallons
Fuel Tank Capacity	66 Liters	17 Gallons
Back Seat Knee Space	167mm	6.5 in

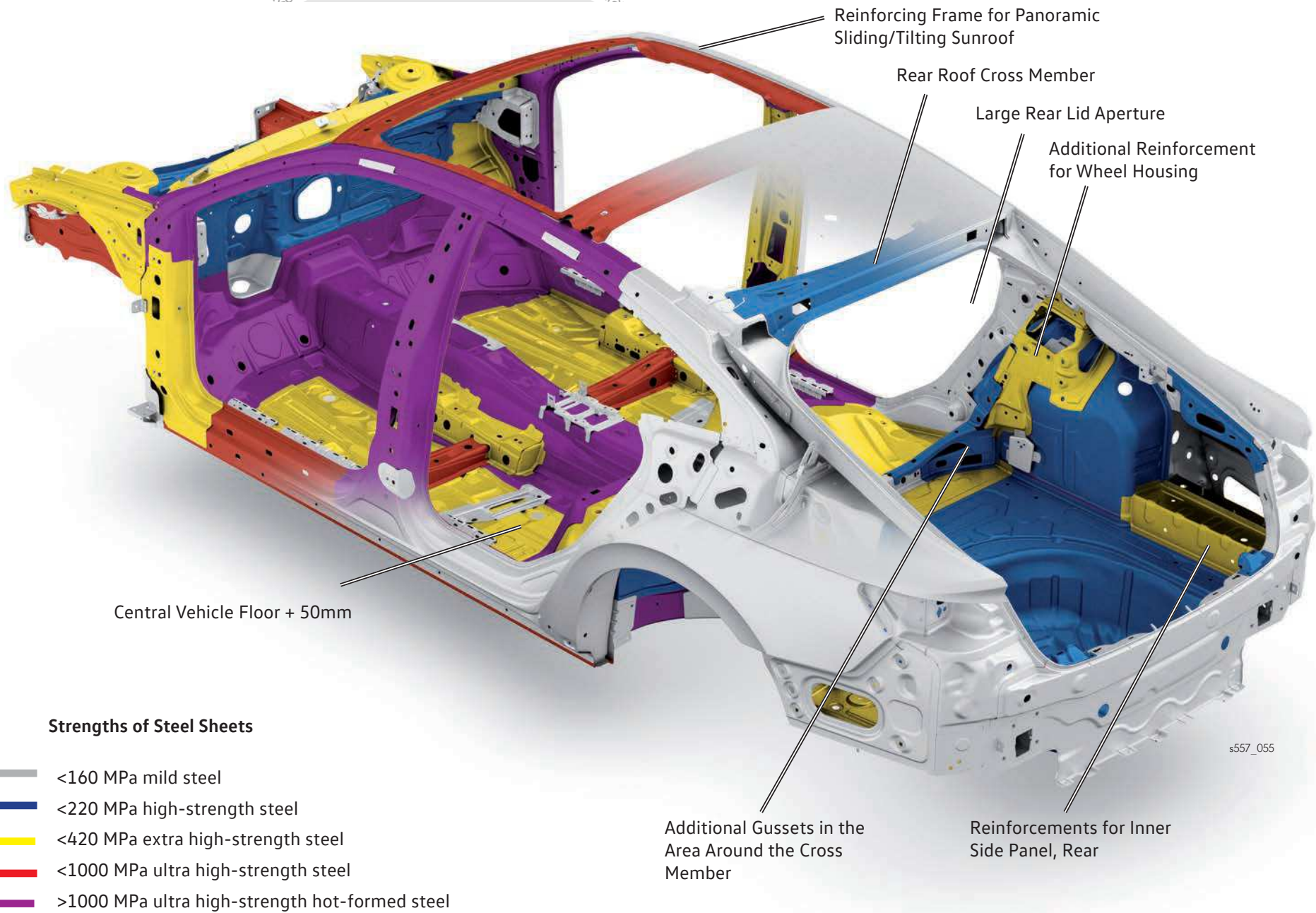


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# Body



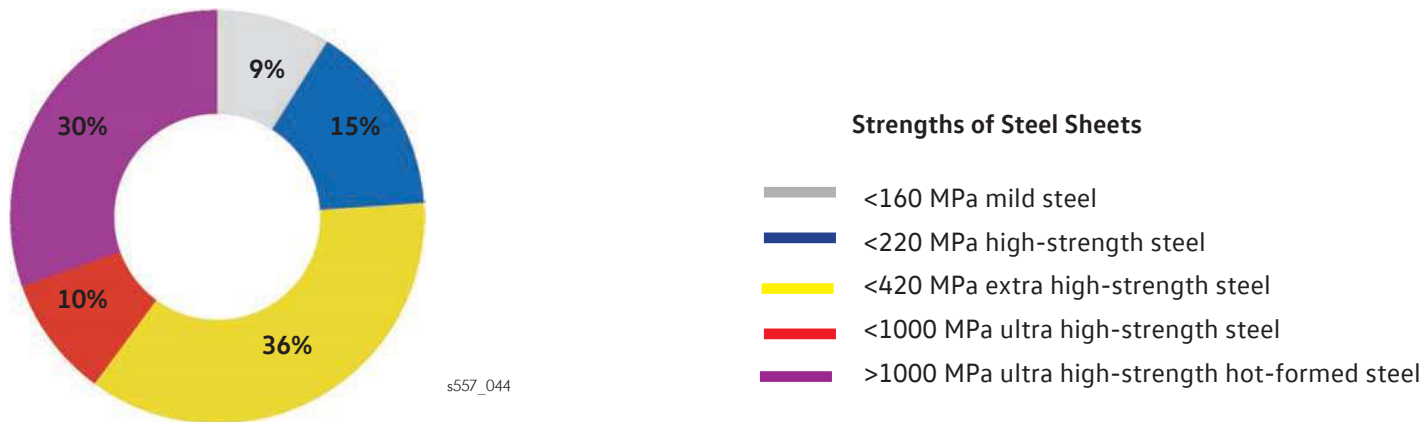
# Body

## Body Structure

The Arteon has an all-new body design. The modular transverse matrix (MQB-B) is used for the floorpan design. The long wheelbase creates a large feeling of interior space due to the long interior and C-pillar. The development work for the new body structure focused on a high level of crash safety and increasing the torsional stiffness while achieving low weight and creating large body openings.

The rear roof cross member forms a torsional ring for a high level of body stiffness together with the wheel housing reinforcements, the inner rear side panels and the cross member area, which is reinforced with additional gussets.

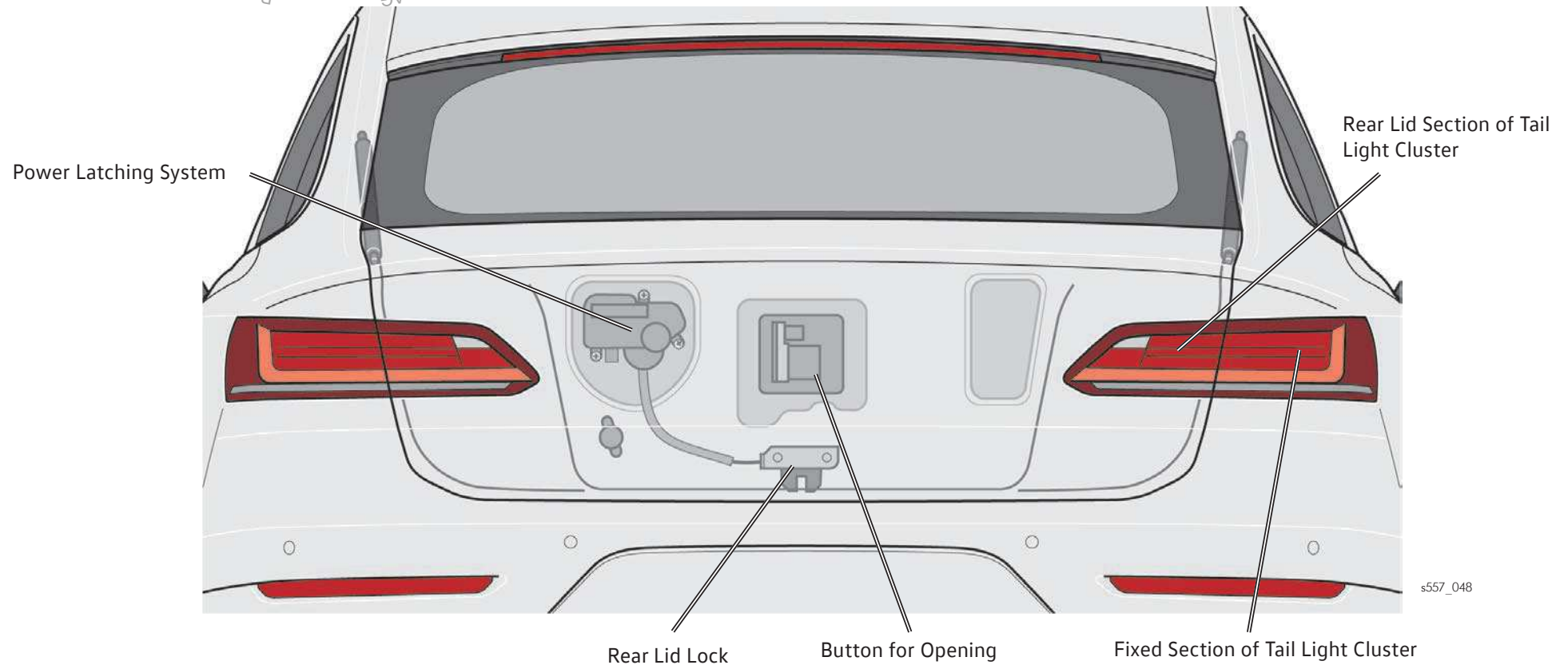
Proportion of Steel Sheets According to Strength



# Body

## Rear Lid

The rear lid is attached to the body with two single-pivot hinges. It is opened by pressing the release button in the rear lid handle, the remote or the button in the driver's door. The rear lid lock is equipped with an electric power latching system.



# Body

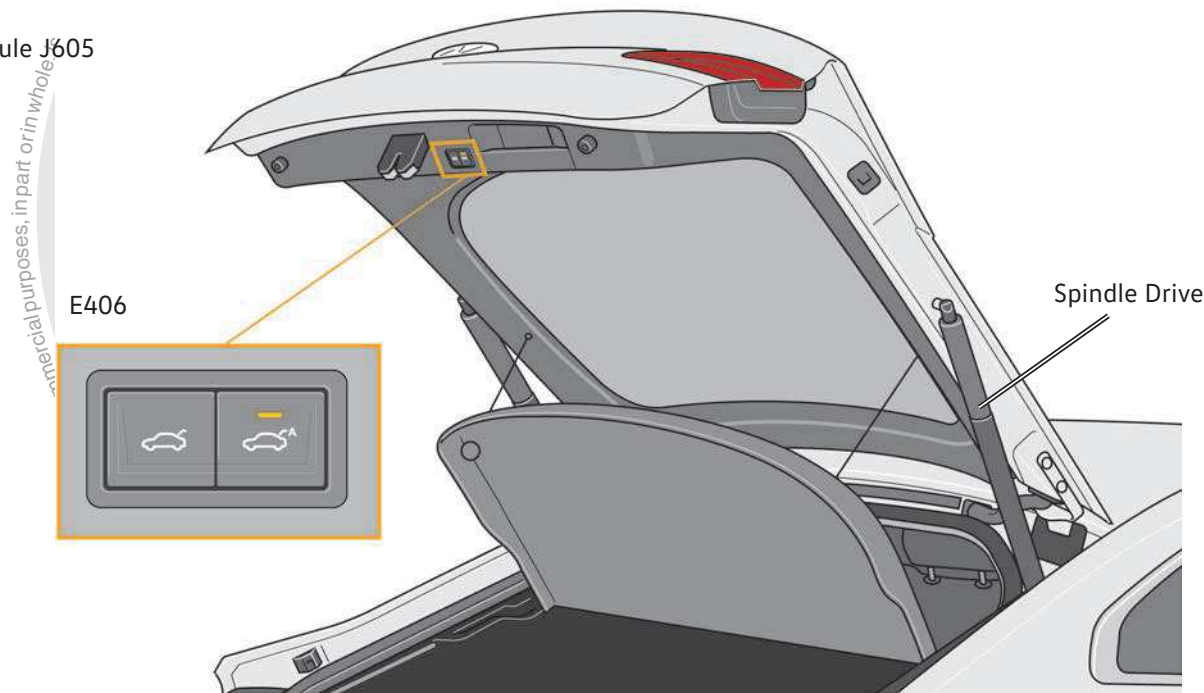
## Electrically Operated Trunk Lid

The Arteon is available with an electrically operated rear trunk lid. The system is made up of the following components:

- The remote control
- The Rear Lid Remote Release Button E233 in the driver door trim
- The Release Button in Rear Lid Handle E234
- One spindle drive on each side
- Power latching system on rear lid lock
- The Rear Lid Lock Button in Luggage Compartment E406 (located in the rear lid trim)
- The Rear Lid Control Module J605

The spindle drive ensures very quiet running and smooth movements. Combined with the power latching system, these features make the rear lid functions easy to use.

It can be opened with the E234, the E233 in the driver door trim or the remote control key. The rear lid can be closed with the E406, the E233 in the driver door trim or the remote control key. The opening height of the rear lid is programmable.



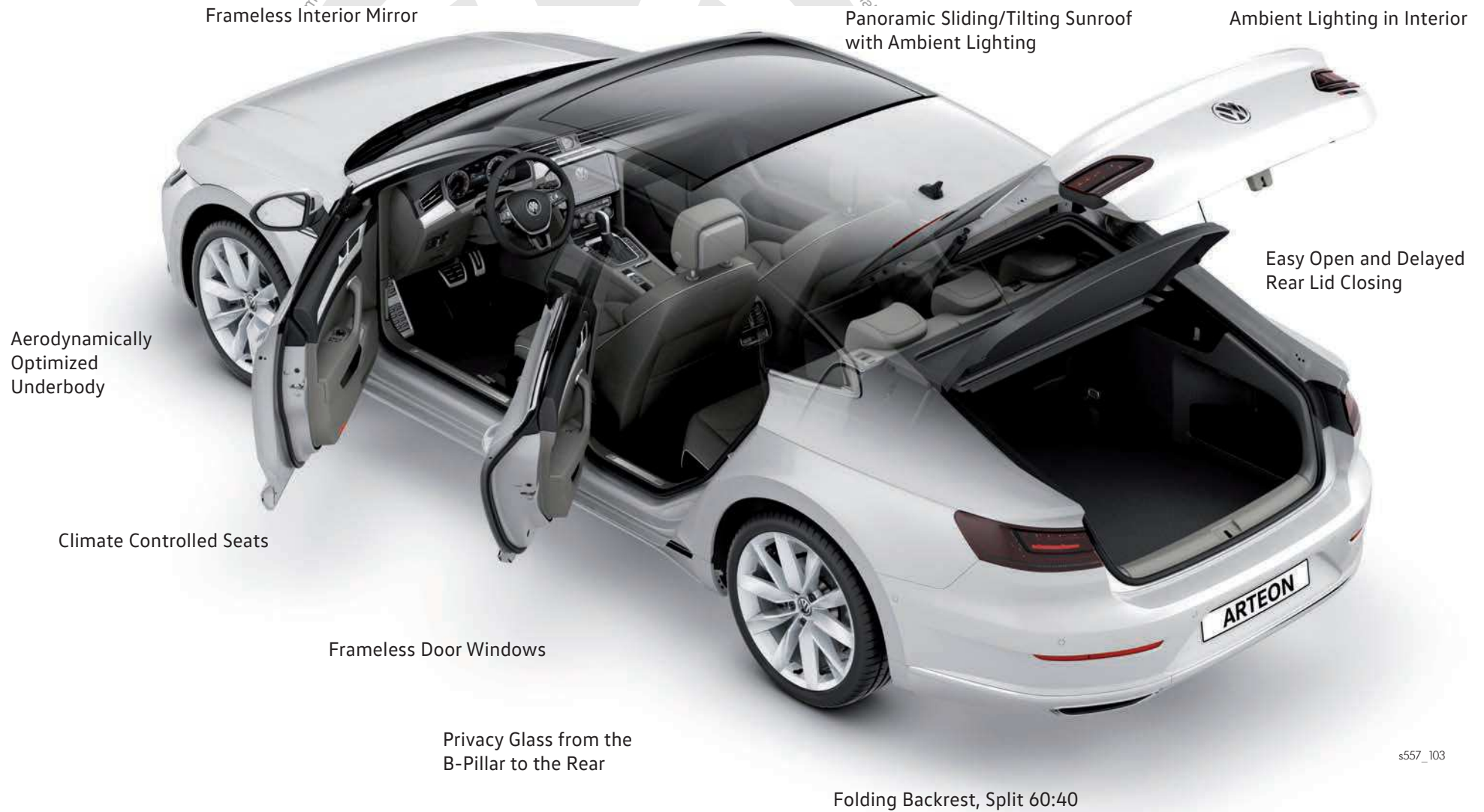
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# Body

## Equipment

The illustration shows the equipment features of the Arteon. These systems may vary according to country and equipment level.



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# Occupant Protection

## Passenger Protection

The following occupant protection systems can be installed:

- Driver airbag
- Front passenger airbag with occupant detection
- Front side airbags
- Left and right curtain airbags
- Knee airbag on driver and passenger front
- Three-point seat belt with front belt tensioner
- Three-point seat belts on all seats
- Belt force limiters on front and outer rear seats
- Top tether system



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# Occupant Protection

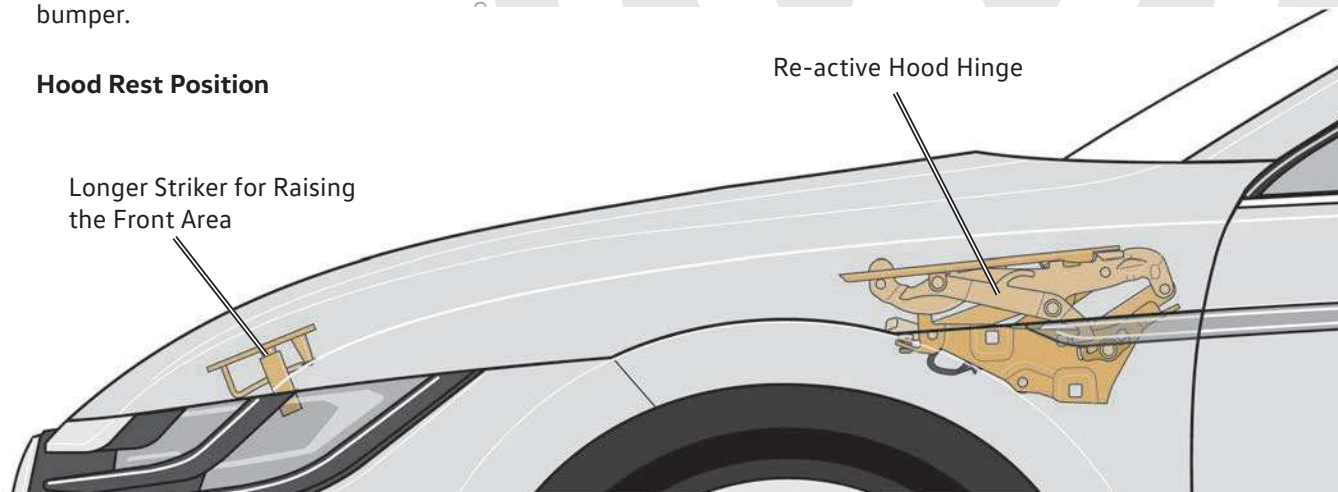
## Pedestrian Protection

The Arteon features a re-active hood for pedestrian protection.

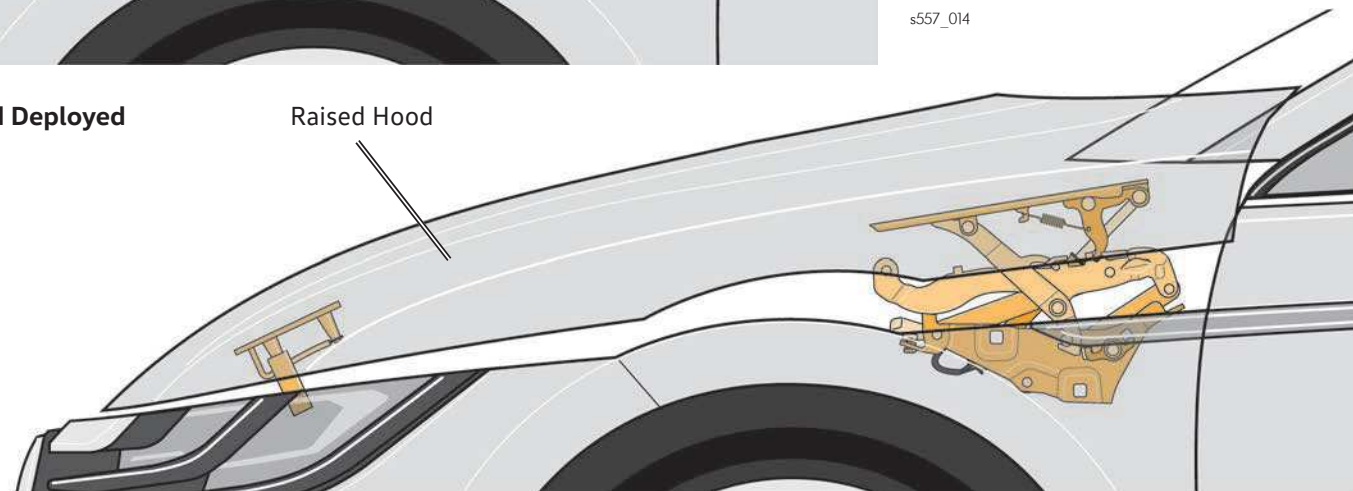
### Re-active Hood

The rear end of the re-active hood is raised during a collision with a pedestrian. This increases the distance between the flexible hood and the rigid engine block. It is deployed by the trigger for pedestrian protection using pyrotechnics. The sensors for collision detection are located in the area of the front bumper.

### Hood Rest Position

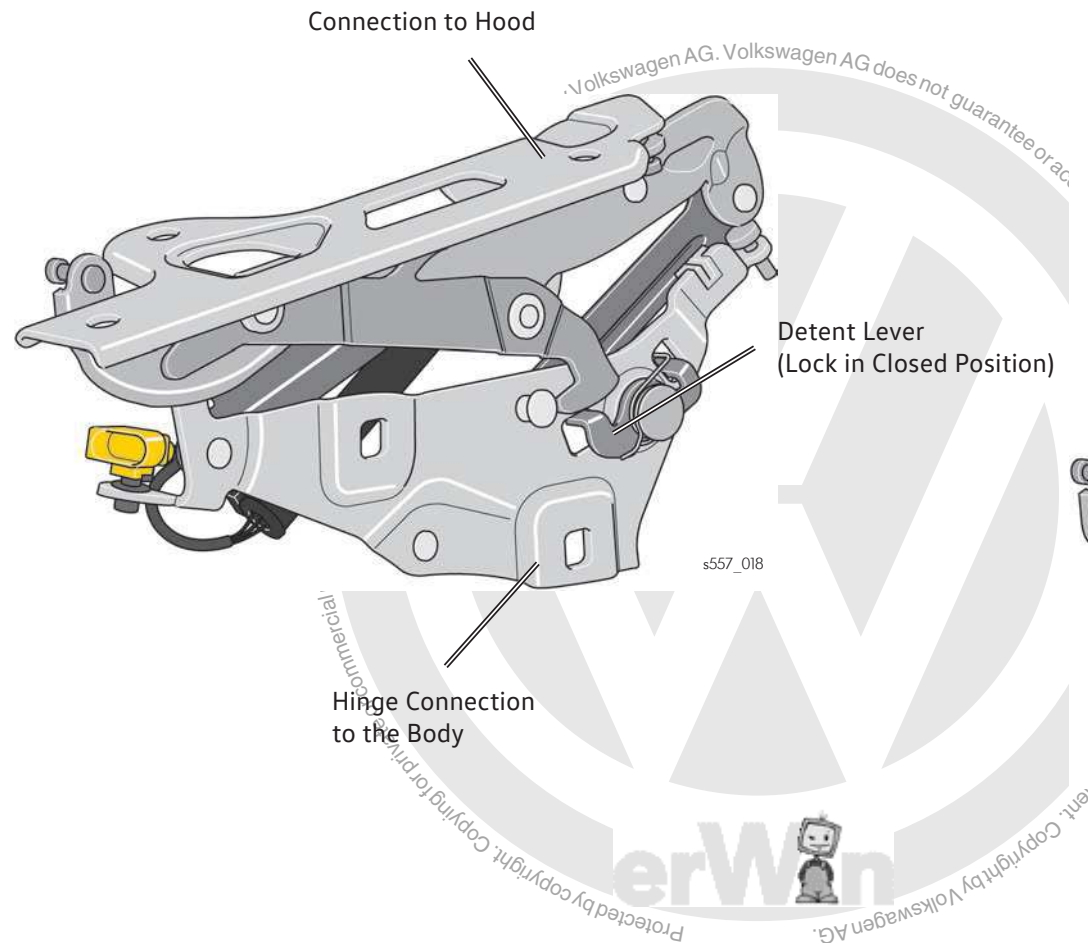


### Hood Deployed

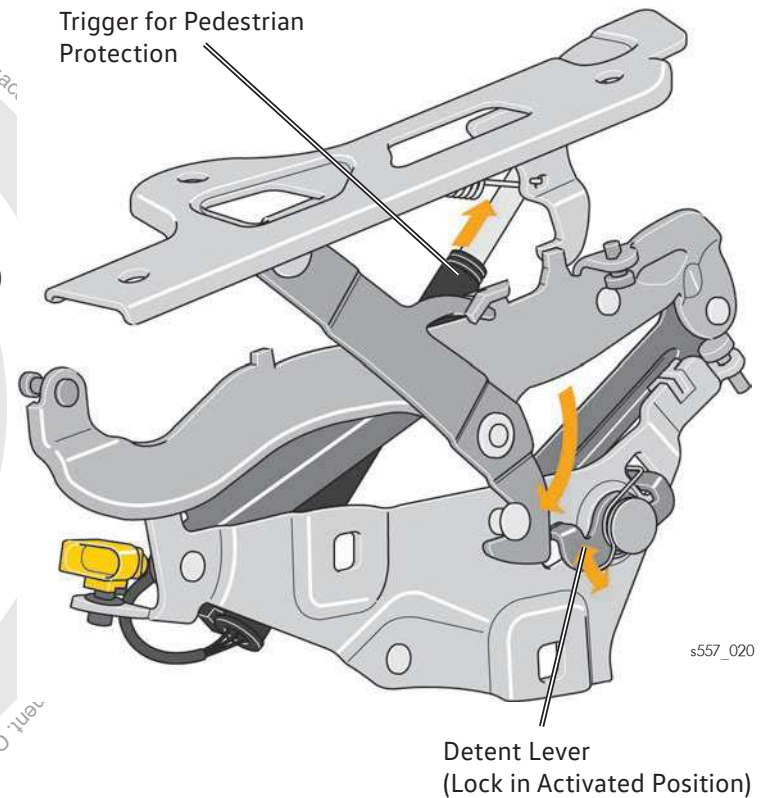


# Occupant Protection

## Normal Position of Re-active Hood Hinge



## Triggered Re-active Hood Hinge



# Powertrain

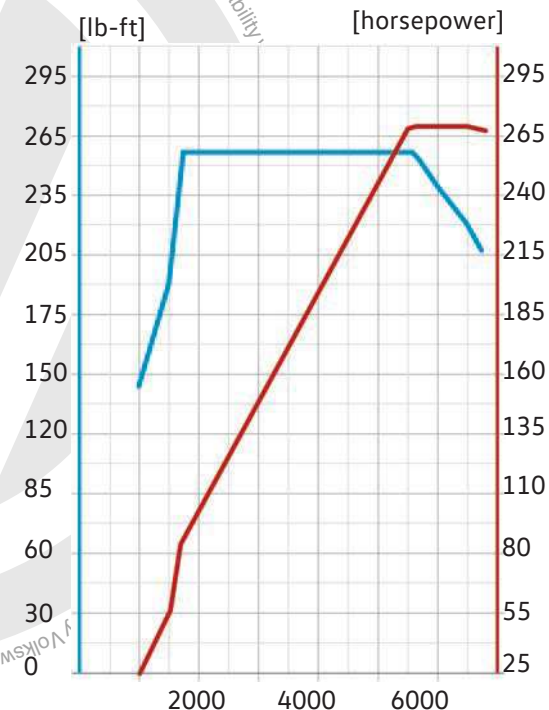
## The 2.0-I 268 hp TSI Engine

The 2.0-I TSI engine has:

- Valvelift on the exhaust camshaft
- Exhaust Door Control Module on the left and right mufflers (J883 and J945). During overrun and in a rpm range of 1,000 to 2,700 rpm, one or also both exhaust flaps are closed to minimize droning sounds in the vehicle interior



Engine Code	DLRB
Type	4-cylinder in-line engine
Displacement	1,984cm <sup>3</sup>
Bore	82.5mm
Stroke	92.8mm
Valves per Cylinder	4
Compression Ratio	9.3:1
Maximum Output	268 hp from 5,600 to 6,500 rpm
Maximum Torque	258 lb-ft from 1,700 to 5,600 rpm
Engine Management	SIMOS 18.1
Fuel	92 AKI Premium
Exhaust Gas Treatment	Three-way catalytic converter, one broadband lambda probe upstream of the turbocharger and one step-type lambda probe downstream of the catalytic converter



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# Heating and Air Conditioning

## Air Conditioning

The Arteon uses air conditioning components from the MQB vehicles. The functions are identical to those in the 2019 Tiguan. A manually/electrically controlled air conditioning system is offered as basic equipment. A Climatronic system is available as an option.

### Climatronic

The 3-zone Climatronic system allows the driver and front passenger as well as the rear passengers to independently set their own preferred temperature. Regulation is fully automatic. The three climate zones are supplied by a heater and air conditioning unit located up front.

### Front Operating and Display Unit

All Climatronic functions can be set using the front operating and display unit.



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### Rear Operating and Display Unit

The rear operating and display unit is located in the center console. It allows adjustment of the temperature for the third climate zone for the rear seats.



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# Running Gear

## Running Gear and Driver Assist Systems at a Glance

### Driver Assist Systems:

- Area monitoring system – Front Assist
  - City Emergency Braking System
- Adaptive cruise control (ACC)
- Lane departure warning – Lane Assist
- Lane change assist – Side Assist
  - Rear Traffic Alert
- Parking aid
- Parking steering assistance – Park Assist (PLA 3.0)
  - Maneuver braking, front and rear
- Overhead view camera – Area View
- Tire Pressure Monitoring System (TPMS)
- Multicollision brake



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### Running Gear:

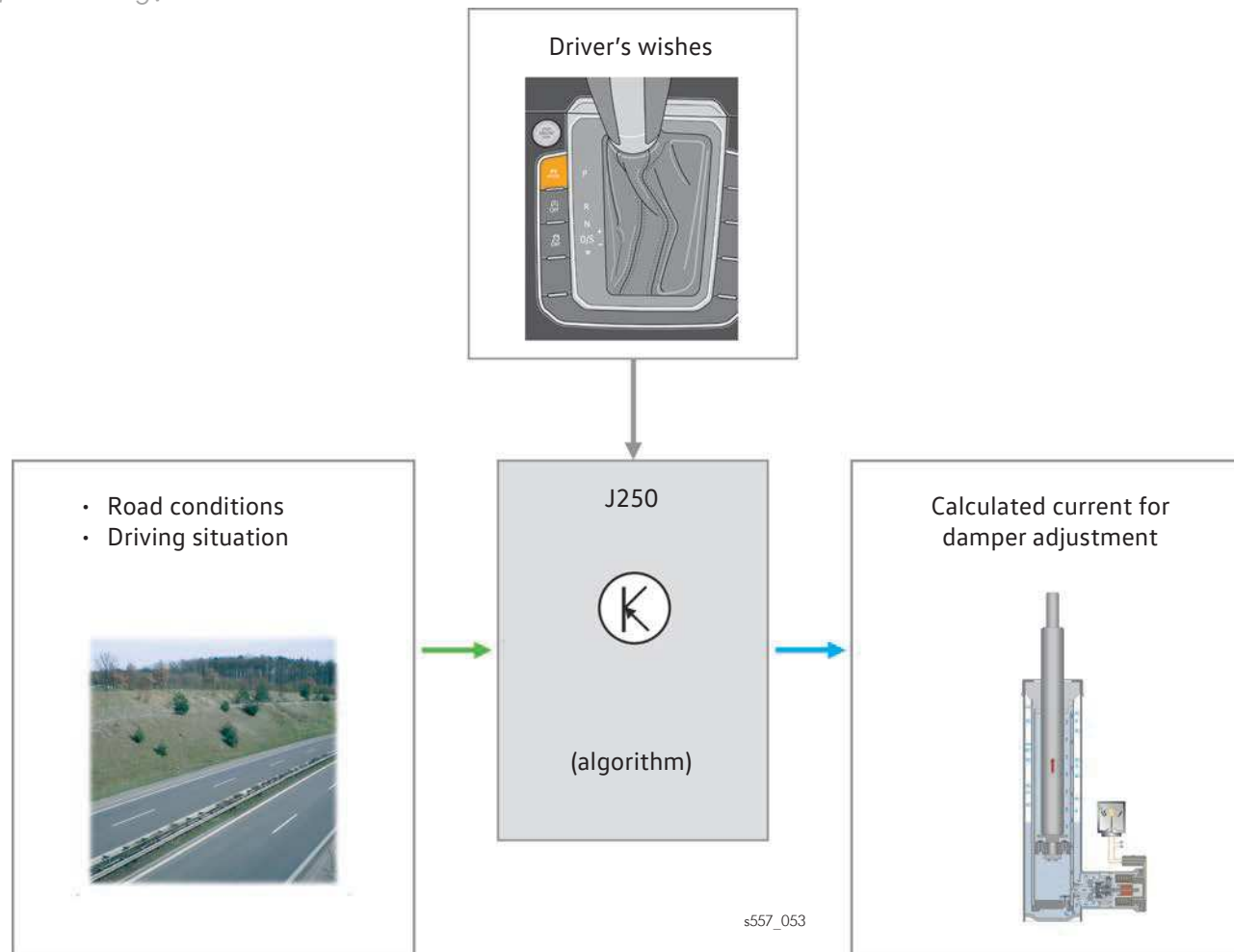
- McPherson strut front suspension
- Four-link rear axle
- Electromechanical parking brake
- Electromechanical power steering
  - Parallel-axis drive
- ABS/ESC – MK100 from Continental

# Running Gear

## Adaptive Chassis Control DCC

Adaptive chassis control DCC allows you to configure the running gear for normal, sporty or comfort-oriented driving. The electrically adjustable damping is adapted automatically, as is the electromechanical power steering. The adaptive chassis control DCC reacts continuously to different driving situations and takes account of braking, steering and acceleration.

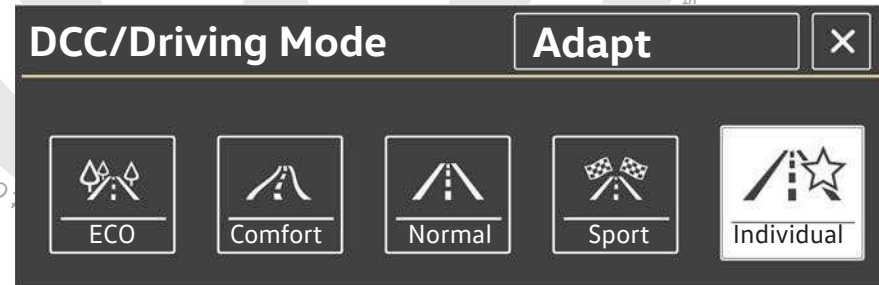
The driving profile selection allows modification of the characteristic curves for damping control, the electromechanical power steering, the transmission and the engine.



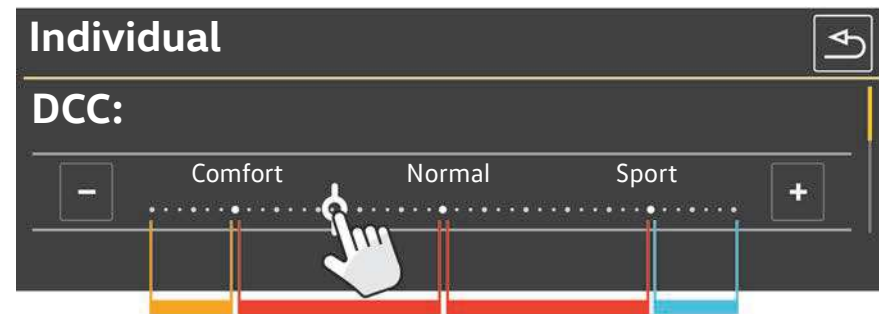


# Running Gear

After you press the "MODE" button, the "Driving Mode Selection" menu opens where you can choose between the ECO, Comfort, Normal, Sport and Individual characteristic curves (modes).



The "Individual" menu option allows the driver to customise the characteristic curves with infinitely variable adjustments.



A slider (virtual slide control) for DCC is used for the first time in the Arteon. This makes the following possible:

- New intermediate levels between comfort/normal and normal/sport give customers further individualization options.
- Below Comfort there is a further adjustment range that provides a softer running gear configuration with additional comfort characteristics.
- Above Sport is an extended adjustment range with maximum damping. This results in a harder chassis configuration and direct vehicle responses.

For the driver, this means a greater adjustment range and even more individual running gear adjustment possibilities.


# Running Gear

## Front Radar Sensor

The front radar sensor (Distance Regulation Control Module J428) for Front Assist and ACC is installed behind the radar-compatible VW badge on the Arteon.

### Technical data of the sensor:

- Mid-range radar sensor MRR 1.5 EVO
- Manufacturer: Bosch
- Frequency: 77GHz
- Range: 160m



Distance Regulation Control  
Module J428  
Behind the Radar-Compatible  
Volkswagen Badge

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# Running Gear

## Static Calibration

The front radar sensor is calibrated statically on the wheel alignment platform. This is done by aligning the ACC reflector mirror VAS 6430/10 with the vehicle according to the manufacturer's instructions.

During calibration, the front radar sensor self-adapts based on the adjustment fixture's orientation to the vehicle's axle. The calibration procedure is activated in the Scan Tool test program, and is performed automatically. A mechanical adjustment with adjustment screws is no longer possible, nor necessary.

### ACC reflective mirror VAS 6430/10

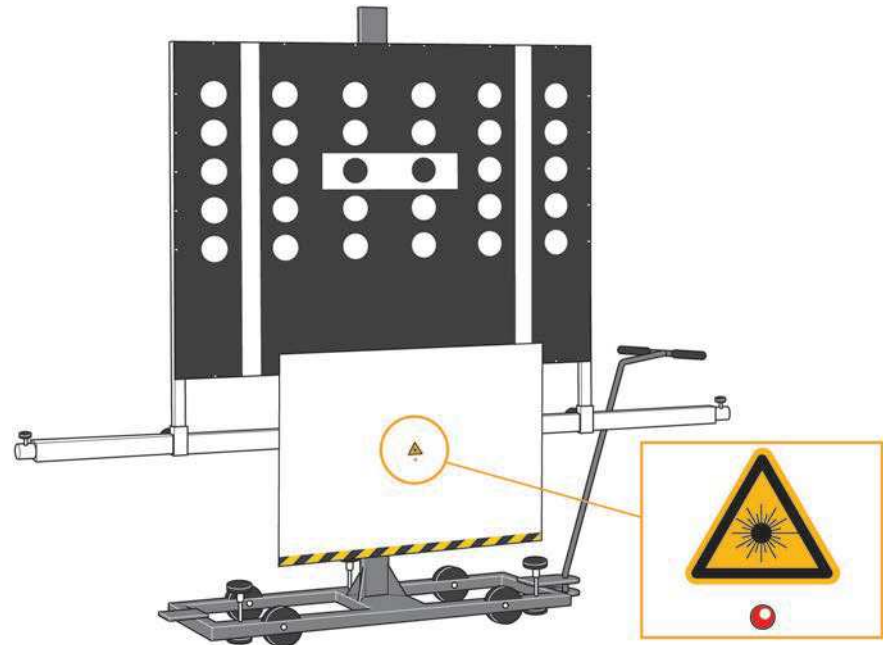
The ACC reflective mirror VAS 6430/10 is fixed so that it cannot tilt. This makes reliable calibration possible.

### The Distance Regulation Control Module J428 needs to be calibrated if:

- The J428 control module has been replaced.
- The locking plate has been moved into service position or replaced.
- The rear toe has been adjusted.
- There is a customer claim.
- There is a record in the event memory.



Always follow the ElsaPro and ODIS Service instructions when performing vehicle procedures.



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# Running Gear

## Adaptive Cruise Control (ACC)

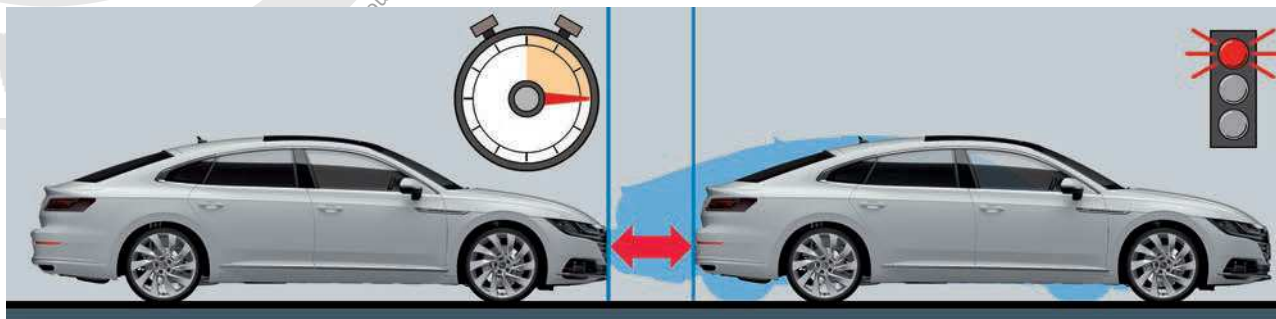
The adaptive cruise control system (ACC) regulates the vehicle's speed and its distance from the traffic in front to a value previously set by the driver. The driver remains in charge of the vehicle in all driving situations. The driver can override the system at any time by switching off the system or by depressing the brake pedal or accelerator. Depending on the profile, ACC will accelerate up to the (set) desired speed if the road is clear. If there is a slower vehicle ahead in the same lane, the system brakes and follows that vehicle at a safe distance.



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### Stop&Go function

The vehicle is braked until it comes to a stop when following a vehicle. If the preceding vehicle moves off again within the first three seconds, the Arteon will follow it automatically.



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# Electrical System

## Overview of Electrical and Infotainment Systems

These systems may vary according to country and equipment level.

- 
- LED Headlights
  - MIB Generation 2
  - Remote Start
  - Keyless Entry and Access, Optional
  - Generation 5 Immobilizer and component protection
  - Start/Stop System 2.0
  - Keyless Entry and Access, Optional
  - Tail Lights using LED Technology, Standard
  - Easy Open & Easy Close
  - Virtual Cluster
  - "Dynaudio" Sound System



# Electrical System

## Fitting Locations in Electrical System

Alternator



Depending on vehicle features included, various alternators and batteries may be used. All Arteon models will have an Enhanced Flooded Battery (EFB+) located in the engine compartment. This battery requires either the VAS 6161 or the GRX 3000 for testing and/or charging, with the EFB battery type selected.

Three fuse holders distribute the electricity in the vehicle:

- A multifuse Fuse Panel A SA in the engine compartment electronics box
- A relay and Fuse Panel B SB in the electronics box
- A relay and Fuse Panel C SC on left under dash panel, behind the storage compartment

12-V Battery in Engine Compartment



Main Fuse Box

Relay and Fuse Holder SC



Relay and Fuse Holder SB

Multifuse Pre-Fuse Holder SA



Negative Battery Terminal

Positive Battery Terminal



Jump Start Terminals

The N253 is located in the main fuse box. The electrical supply to the engine compartment, with the exception of the ABS Control Module J104 and Power Steering Control Module J500, is cut off by the N253 and when an airbag is deployed. This allows continued steering and braking.



# Electrical System

## Headlights

Two types of headlight are available for the Arteon:

- "Eco" LED headlights
- "High" LED headlights with dynamic cornering lights and light assist.

### "Eco" LED headlights

The "Eco" LED headlights have the light functions: low beam, high beam, side light, turn signal and daytime running light. Except for the turn signal, all light functions use LED technology. The "Eco" headlight features dynamic headlight range control. The daytime running lights and side lights are formed by four LEDs in the daytime running light/side light LED module. The L shape on the bottom edge of the headlight is created by a light conductor. The LED light is dimmed by 10% for the side light function.

Turn Signal  
(conventional technology  
PWY24W (24W))

LED Unit for Low Beam/HighBeam  
(2 × 2-chip LED, 16W/6 × 2-chip LED, 16W)



s557\_069



Always consult I-Wire for the most  
current and accurate wiring information.

L Signature for Side and Daytime Running Light  
(4 × LED, 0.8 W side light and  
8 W daytime running light)

# Electrical System

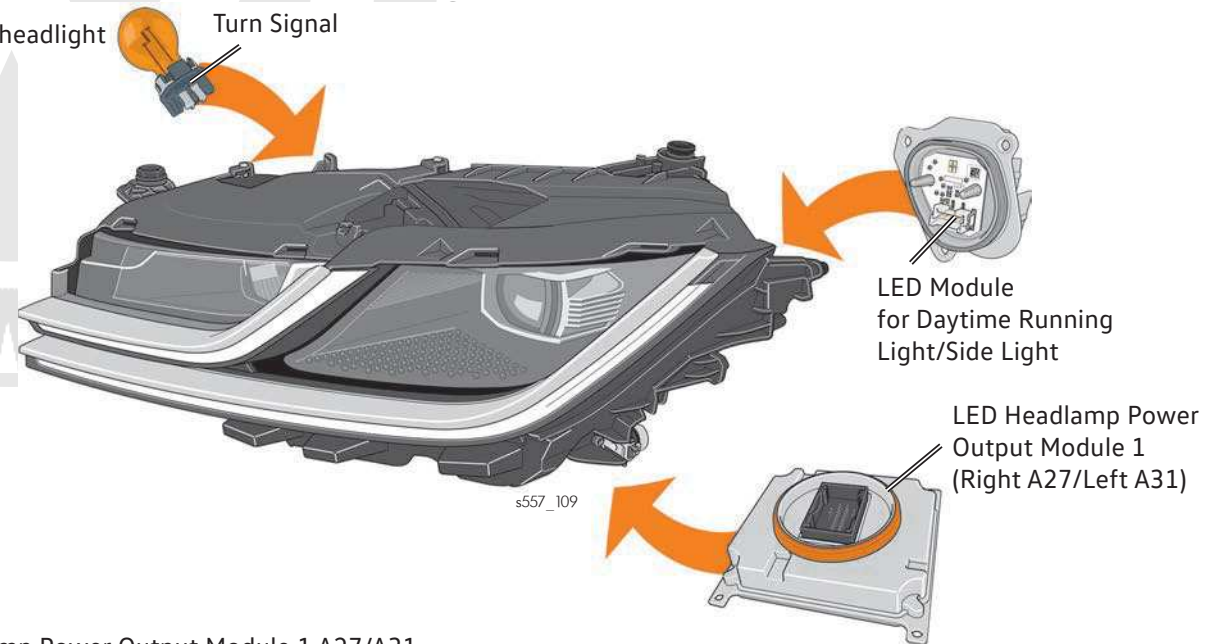
## Design

The following LED modules and modules are installed in the headlight housing:

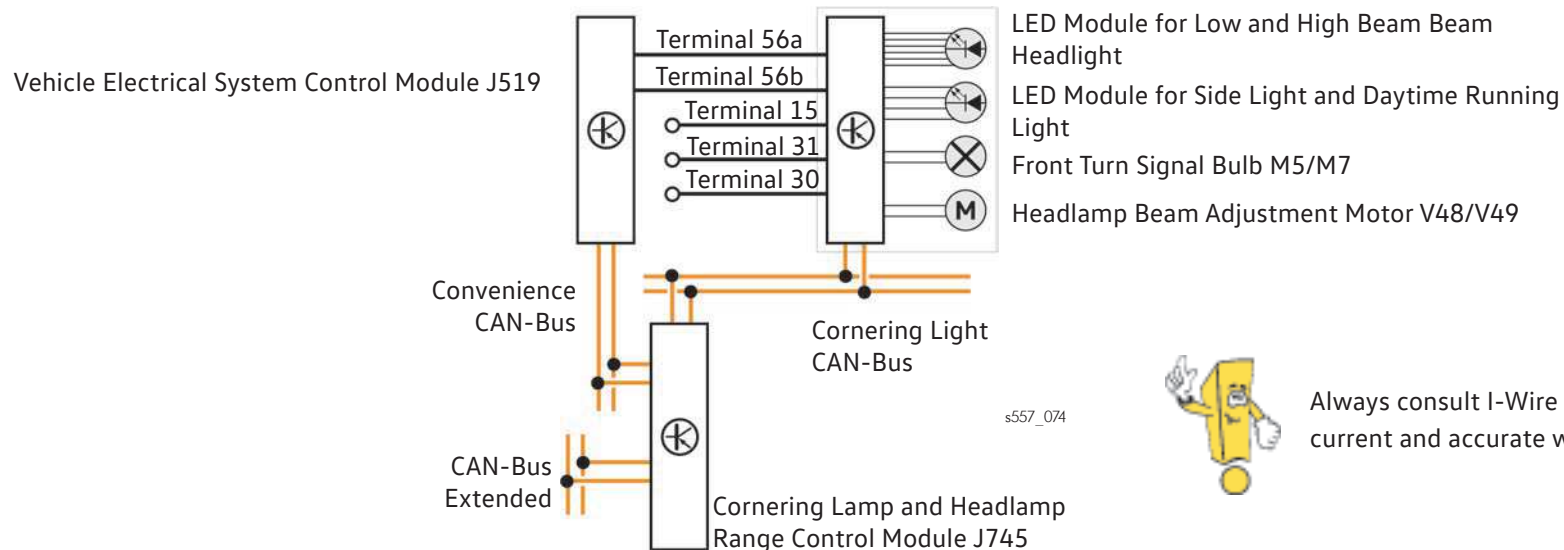
## Circuit

The Cornering Lamp and Headlamp Range Control Module J745 is responsible for headlight range control and operates the control motors for headlight range control.

One new feature is that it is also connected to the convenience CAN-Bus. This makes a fast data transfer with the relevant control units and the control unit possible.



LED Headlamp Power Output Module 1 A27/A31



Always consult I-Wire for the most current and accurate wiring information.

# Electrical System

## "High" LED Headlights

The "High" LED headlight is another headlight from the MQB. In addition to the conventional light functions, it also has the following:

- Dynamic cornering lights
- Light Assist
- All-weather lights

LED Unit for Static  
Cornering Light  
(2 × 2-chip LED, 7.8W)

LED Unit for  
Low Beam Surround Lighting  
(2 × 3-chip LED, 15W)

LED Unit for Low Beam/High Beam  
(2 × 2-chip LED, 10.4W/  
6 × LED 2-chip, 15.8W)

Turn Signal  
(4 × LED, 8.6W)

L Signature for Side and Daytime  
Running Light  
(4 × LED, 0.4W side light and  
4W daytime running light)

U Signature for Side and  
Daytime Running Light  
(2 × LED, 0.4 W side light and  
4 W daytime running light)

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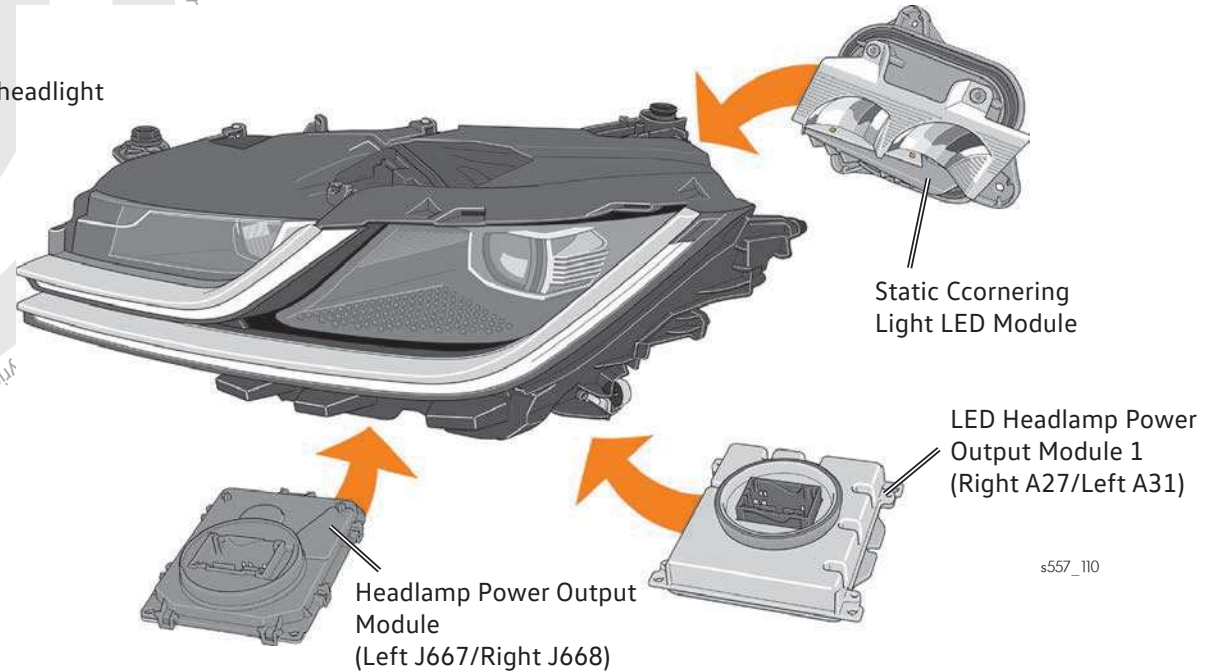
# Electrical System

## Design

The following LED modules and modules are installed in the headlight housing:

## Circuit

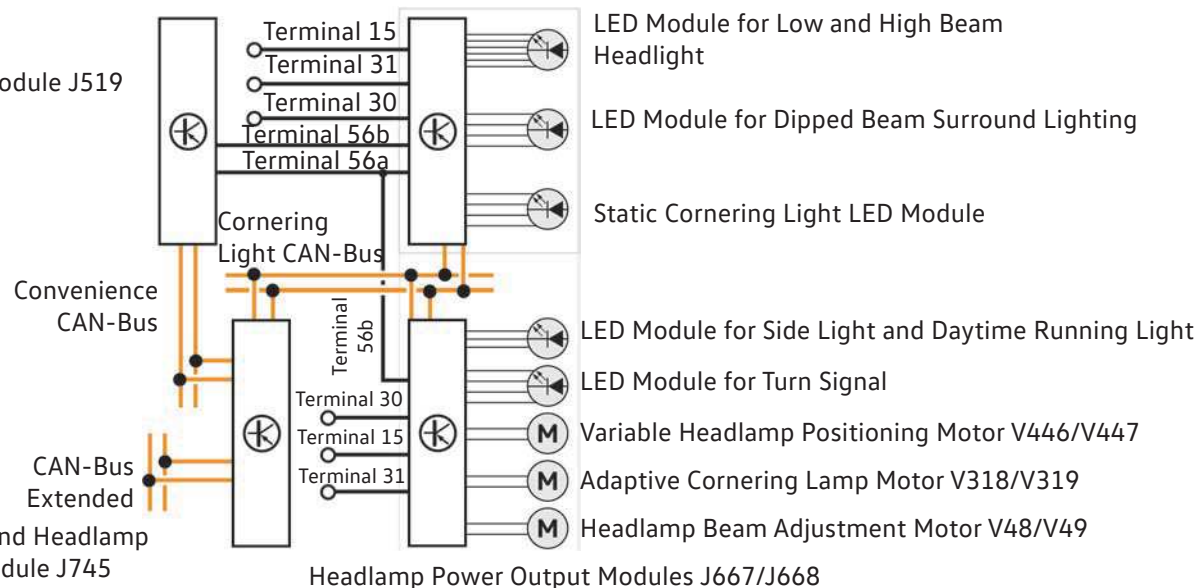
The Cornering Lamp and Headlamp Range Control Module J745 is responsible for headlight range control and the dynamic cornering light. It also controls the control motors for headlight range control and the dynamic cornering light control motors. One new feature is that it is also connected to the convenience CAN-Bus. This makes a fast data transfer with the relevant control units and the control unit possible.



s557\_110

LED Headlamp Power Output Module 1 A27/A31

Vehicle Electrical System Control Module J519



Always consult I-Wire for the most current and accurate wiring information.



# Electrical System

## All-weather Lights

The "all-weather light" function is only available if the vehicle is equipped with the "High" headlights. The all-weather light function distributes the light in a special way to illuminate the road better in generally poor weather conditions like rain, fog and snowfall.

The all-weather light is activated when you press the Fog Lamp Button E315. The static cornering light is switched on simultaneously in both headlights. This function is only possible when the dipped beam is activated at the same time. A function LED in the button indicates the activation status.

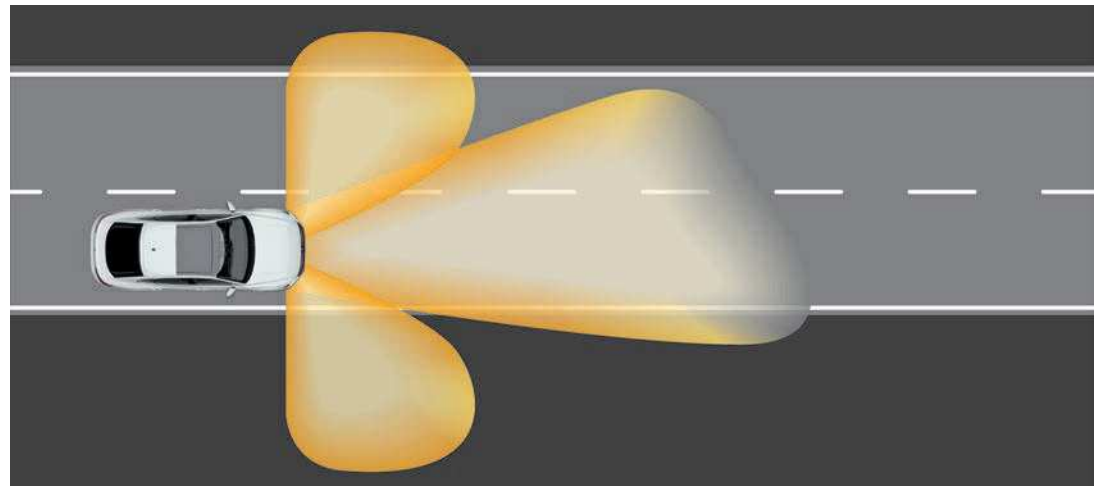
Picture may not match what is available in your market.



Fog Lamp Button  
E315

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Light Distribution when Dipped Beam and All-Weather Light are Activated



s557\_038



# Electrical System



Fixed Section of  
Tail Light Cluster

Rear Lid Section  
of Tail Light Cluster

s557\_117

## Tail Light Clusters

The tail light clusters on the Arteon are equipped exclusively with LED technology. "High" and "High+" versions are available. Both types of tail light cluster are split into a fixed section and a section on the rear lid.

Except for the turn signal function, both types have identical designs and light functions. The turn signal features a dynamic lighting effect on the "High+" version.



# Electrical System

## "High" and "High+" Tail Light Clusters



Total output per light function:

- Tail light 12.1W
- Brake light 5.3W
- Reversing light 4.7W
- Brake light 5.3W
- Turn signal High 4W
- Turn signal High+ 7.2W

### Light Functions

Light Pattern: Tail Light



Light Pattern: Tail Light with Brake Light



Light Pattern: Tail Light with Reverse Light



# Electrical System

## Turn Signal

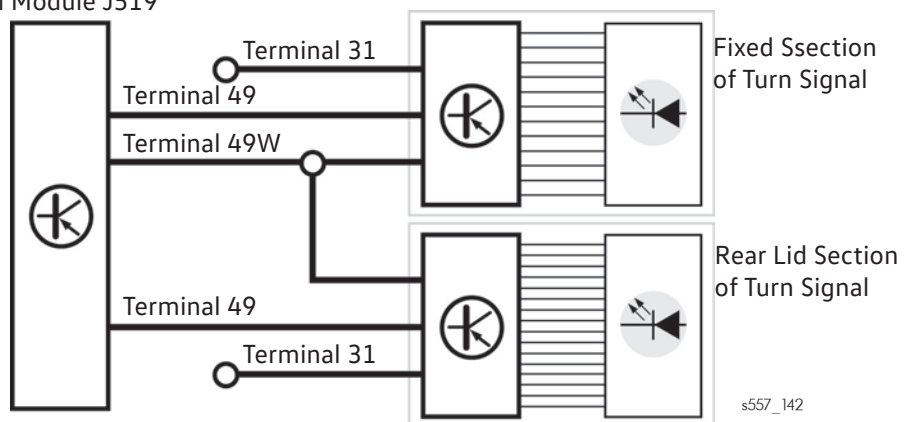
Light Pattern: Turn Signal "High"



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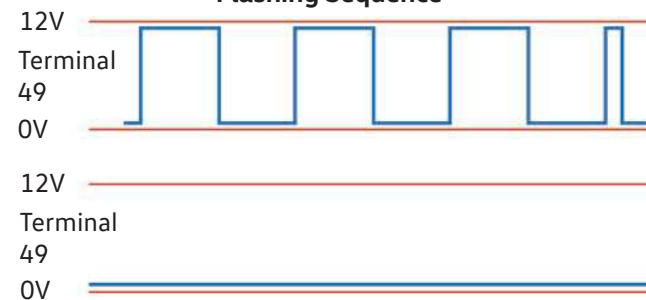
Turn Signal

Vehicle Electrical System  
Control Module J519



s557\_142

Flashing Sequence



s557\_144

# Electrical System

## Dash Panel Insert



s557\_035

### Functions and characteristics

- Analog gauges for tachometer, speed, coolant temperature and fuel
- Multifunction display showing the following information:
  - Time, total mileage, trip mileage
  - Vehicle warning messages in form of symbols and text in multiple languages
  - Selected range, gear change display
  - Onboard computer with efficiency display
  - Outside temperature, ice warning
  - Cruise control system display
  - Speed warning
  - Date
  - Service interval
  - Additional driver assist systems
  - Navigation guidance
  - Telephone lists
  - Radio station list
  - Oil temperature display

## Color Dash Panel Insert



s557\_073

### Functions and characteristics

- The same functions as the Medium plus:
  - Color TFT center display with a resolution of 240 x 320 pixels
  - Screen transitions with animations



# Electrical System

## Digital Cockpit

In the Digital Cockpit the analog gauges are presented virtually. The following warning lights, relevant to driver safety, are still set indicators and are available separately on the screen:

- Turn signal
- ABS warning light
- Central warning light (depending on the message displayed)
- Electromechanical power steering warning light
- Brake system warning light
- Electromechanical parking brake warning light
- Airbag warning light

A custom driver profile can show additional information about the

driving, navigation and assistance functions in the center zone in the speedometer and RPM gauge.

### Functions and Characteristics

- 12.3" TFT display with a resolution of 1,440 × 540 pixels
- Has all of the basic functions
- Several display options are available
- Automatically switch between displays depending on the active function

Graphic display in 2D and 3D

- Navigation and media indication display



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# Electrical System

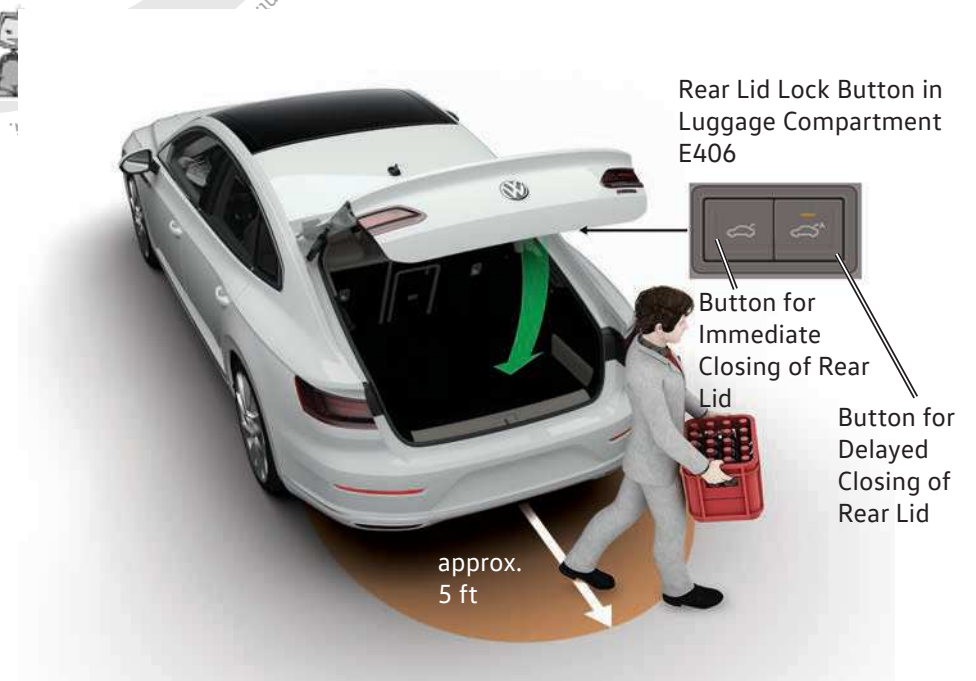
## Delayed Closing

Delayed closing is an extension of the "Easy Open" function. An additional button in the rear lid allows the user to activate the function. If the user leaves the rear area of the vehicle along with the vehicle key, the rear lid will close automatically.

The LED in the button will start to flash slowly when the button is pressed for delayed closing. The Access/Start System Interface J965 uses the aerial in the rear bumper to search for an authorized key near the rear of the vehicle. If an authorized key is detected, the user has 20 seconds to leave the area, which extends to approx. 1.5m in range. Once the area has been exited, the rear lid is closed automatically.

The delayed closing is cancelled if:

- No authorized key is detected in the rear area for up to 3 seconds after activating the button
- The key remains in the 1.5m wide rear area for more than 20 seconds after activation
- The key that was just removed is detected again in the sensor range during the closing process



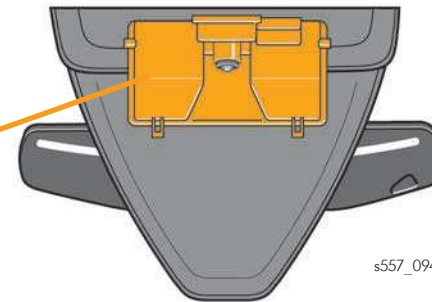
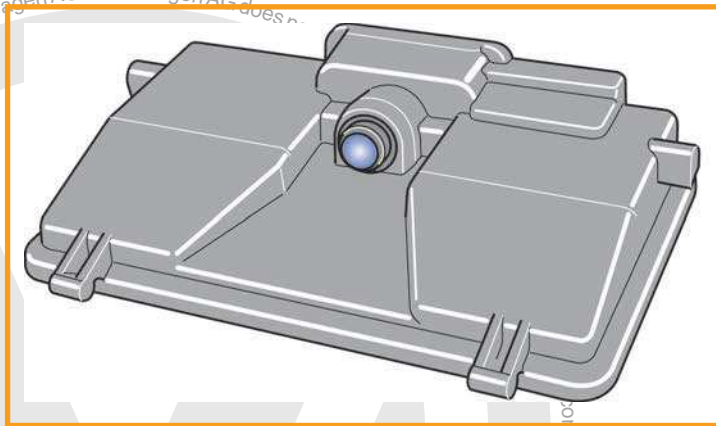
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# Electrical System

## Driver Assistance Systems Front Camera R242

The R242 supplies visual information to several driver assist systems. Detailed pictures of the area in front of the vehicle are generated by the front camera. This visual data is transferred on the sensor fusion and extended CAN-Buses and evaluated by various systems.

The R242 is also a control module. The control module does not only supply signals for the other control units, but controls signals and information for the low beam assist and Light Assist functions as well as for the in some equipment levels. The front camera is installed on the inside of the windscreen above the interior mirror. It has its own heating unit. The Window Defogger for Front Sensor System Z113 prevents the part of the windscreen directly in front of the camera from misting up or icing over.



### Technical data:

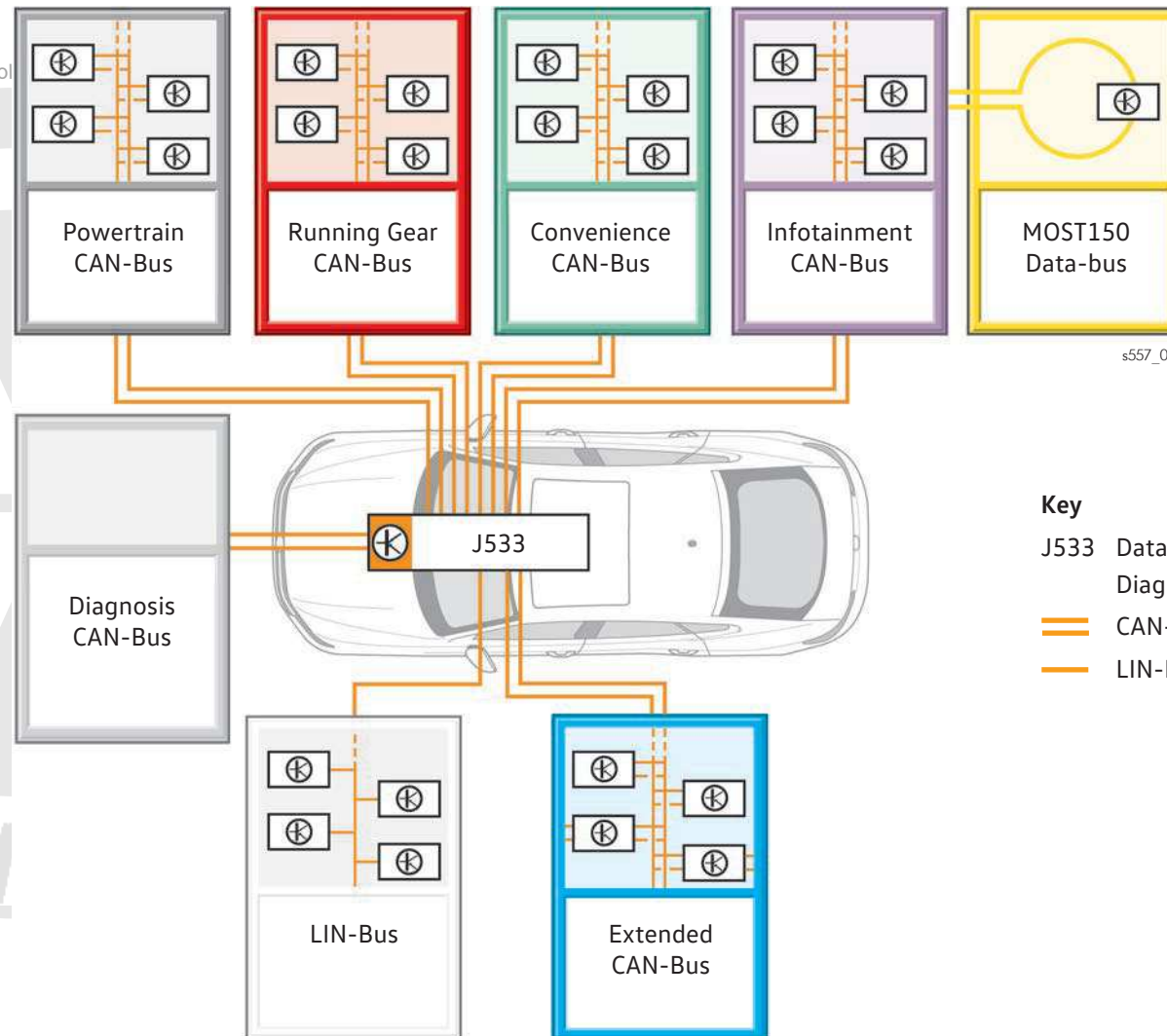
- Resolution: 1280 × 960 pixels
- Pixel size: 3.75µm.
- Opening angle: ±21.9° horizontal, 12.2° vertical
- Frame frequency: 30Hz (bimodal: 15Hz)
- Color recognition: grey, red and blue
- Current consumption: approx. 600mA

# Electrical System

## Networking

### Overview of the data bus systems used

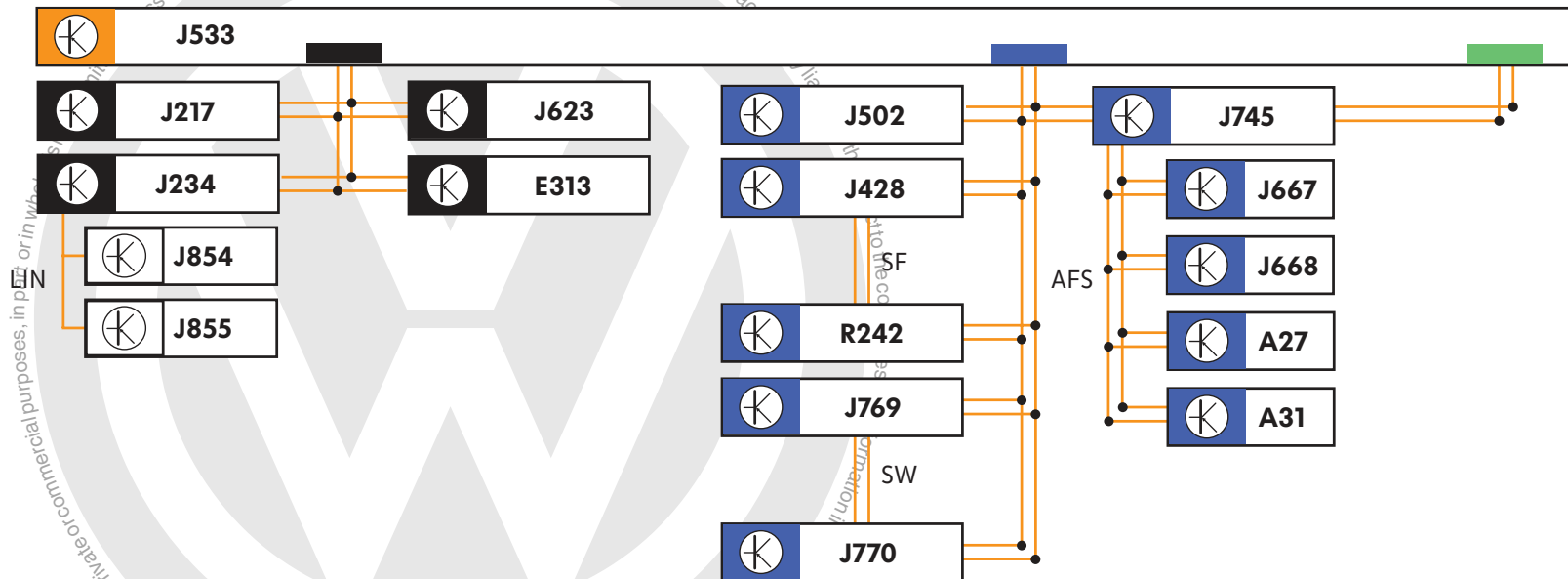
All of the Arteon's CAN-Bus systems have a transmission speed of 500 kBit/s. The LIN-Busses transmit at a speed of 19.2 kBit/s, while the MOST150 Data-Bus with fiber optic technology transmit at a rate of 150 MBit/s. The Data-Bus Onboard Diagnostic Interface J533 controls some LIN-Busses and acts as a Gateway between the CAN-Bus systems. Other LIN-Busses are connected to different control modules.



# Electrical System

## Powertrain and Extended CAN-Buses

Only the powertrain and extended CAN-Buses are depicted in this graphic.



### Key

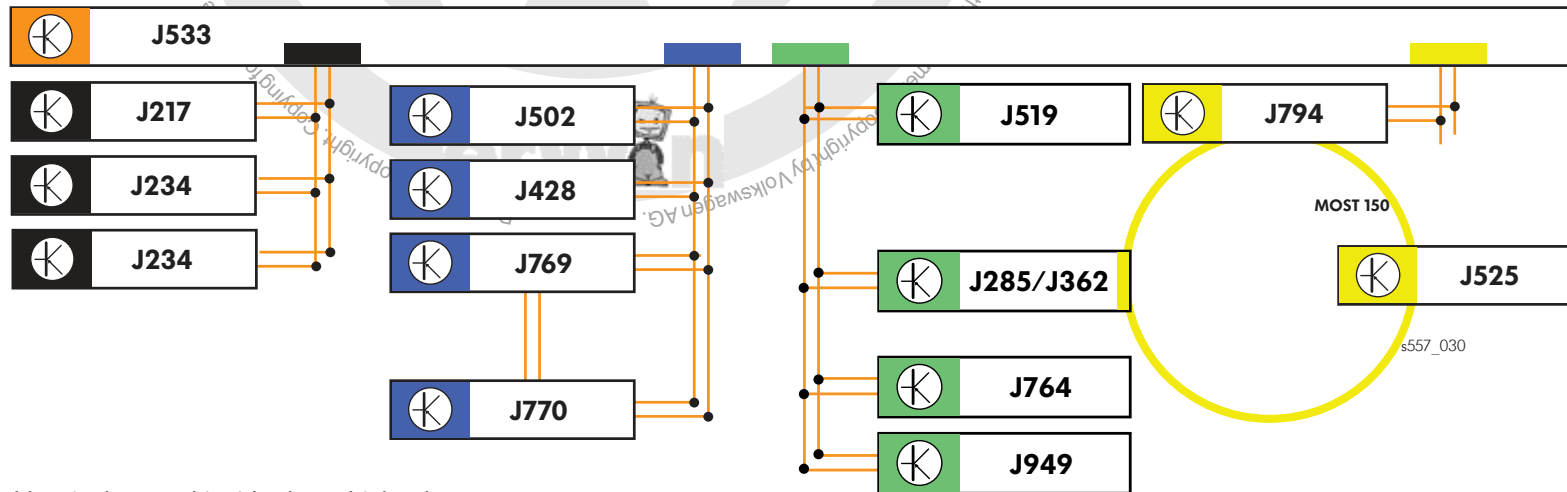
A27 Right LED Headlamp Power Output Module 1  
 A31 Left LED Headlamp Power Output Module 1  
 E313 Selector Lever  
 J234 Airbag Control Module  
 J428 Distance Regulation Control Module  
 J502 Tire Pressure Monitoring Control Module  
 J533 Data bus On Board Diagnostic Interface  
 J623 Engine Control Module  
 J667 Left Headlamp Power Output Module  
 J668 Right Headlamp Power Output Module  
 J745 Cornering Lamp and Headlamp Range Control Module

J769 Lane Change Assistance Control Module  
 J770 Lane Change Assistance Control Module 2  
 J854 Left Front Seat Belt Tensioner Control Module  
 J855 Right Front Seat Belt Tensioner Control Module  
 R242 Driver Assistance Systems Front Camera  
 AFS Cornering Light CAN-Bus  
 SF Sensor Fusion CAN-Bus  
 SW Lane Change CAN-Bus

Powertrain CAN-Bus  
 CAN-Bus Extended  
 Convenience CAN-Bus  
 CAN-Bus Wire  
 LIN-Bus Wire

# Electrical System

## Immobilizer and Component Protection



If an authorized key is detected inside the vehicle, the corresponding component protection control modules are checked for component protection. If the result is positive, the vehicle will operate normally.

If the result is negative, the respective control module either partially or totally blocks its operation (i.e., the radio may be turned on but no sound comes from the speakers). At that point the scan tool should be used to go online to enable the component protection function. This online connection may be established with the FAZIT database responsible for enabling component protection and for all immobilizer component adaptations.

### Key

J217	Transmission Control Module
J234	Airbag Control Module
J285	Instrument Cluster Control Module
J362	Anti-theft Immobilizer Control Module
J428	Distance Regulation Control Module
J519	Vehicle Electrical System Control Module
J525	Digital Sound System Control Module
J533	Data bus On Board Diagnostic Interface
J623	Engine Control Module
J764	Electronic Steering Column Lock Control Module
J769	Lane Change Assistance Control Module
J770	Lane Change Assistance Control Module 2
J794	Information Electronics Control Module 1
J949	Control Module for Emergency Call Module and Communication Unit

	Immobilizer Subscriber
	Component Protection Subscriber
	Powertrain CAN-Bus
	Extended CAN-Bus
	Convenience CAN-Bus
	Infotainment CAN-Bus
	MOST bus
	CAN-Bus Wire
	MOST Fiber Optic Cable



# Infotainment

## Modular infotainment matrix (MIB)

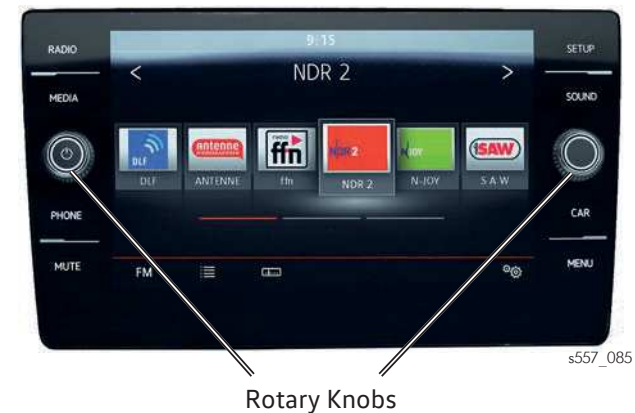
The Arteon has the second-generation modular infotainment system (MIB II). It can have the following radio and navigation systems: Composition Color, Composition Media, Discover Media

### Composition Media

#### Technical features

- Touch-sensitive 8" TFT color display with a resolution of 800 × 480 pixels
- CD drive
- Phase diversity antennas
- Proximity sensors
- SD card reader and AUX-IN multimedia port
- USB multimedia interface
- Support of MP3, WMA, AAC and FLAC audio formats
- JPEG viewer (image viewer)
- "Basic" mobile telephone interface with Bluetooth profiles: HFP, PBAP, A2DP, AVRCP, MAP, two mobile telephones can be paired at the same time via HFP
- App-Connect
- Voice control

#### Front View of Composition Media



The illustration shows the standard version. If certain equipment is ordered, the label or the functions of the buttons may differ.

# Infotainment

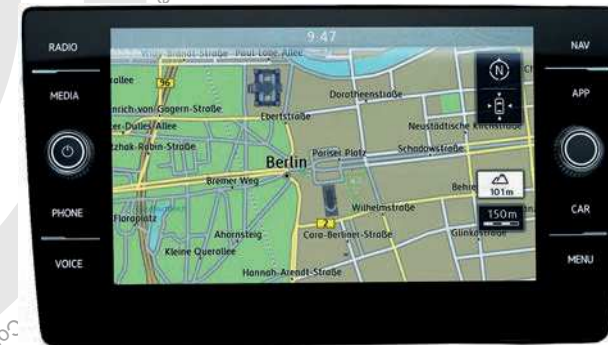
## Discover Media

### Technical features

The Discover Media has the following features which are different from or are in addition to the Composition Media:

- 2 × SD card readers
- Navigation function
  - Personal points of interest (POI)
  - 2D/3D map display
  - Sirius Travel Link
  - Sirius Traffic
  - Preset POIs
- App-Connect

Front View of Discover Media






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# Infotainment

## Mobile Telephone/Media Interfaces

The Arteon can be equipped with various mobile telephone/media interfaces:

Composition Media	Discover Media
The following are located in the respective unit panels:	
	
1 × SD card reader	1 × SD card reader
1 × CD drive	1 × CD drive
Bluetooth telephone interface	Bluetooth telephone interface
	
The following are located in the jumbo box under the center armrest:	
Apple-compatible USB socket	Apple-compatible USB socket
AUX-IN socket	AUX-IN socket
Optional (depending on the market)	
1 × USB charging socket in rear	1 × USB charging socket in rear

Key

	Standard
	Optional

# Infotainment

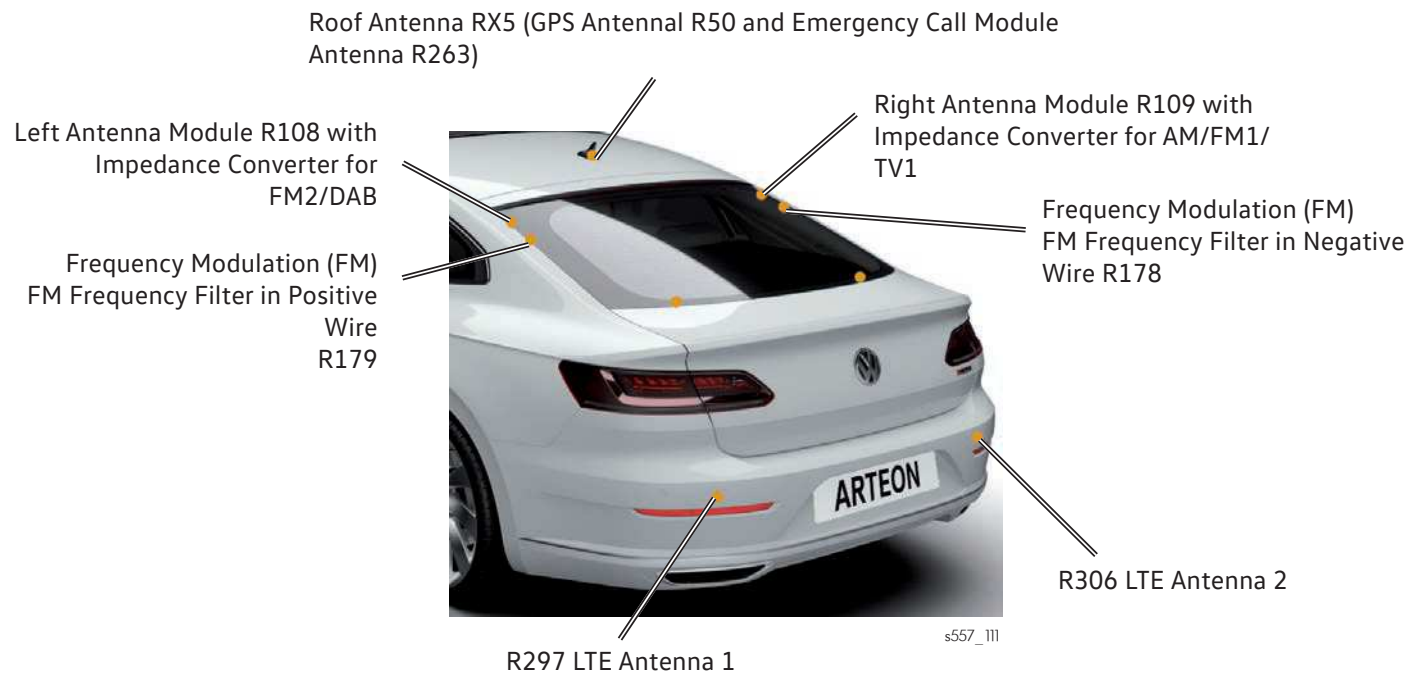
## Aerial systems

In addition to the roof aerial, the Arteon also features several aerials in the rear window and behind the rear bumper cover. The aerials for AM, FM and are located in the rear window. The GPS aerial is integrated into the roof aerial.

All telephone aerials that can be installed in the Arteon are LTE-capable. The mobile telecommunication standards GSM, UMTS and LTE are covered. The assignment and/or the installation of the different telephone aerials and the emergency call module aerial depends on the equipment.

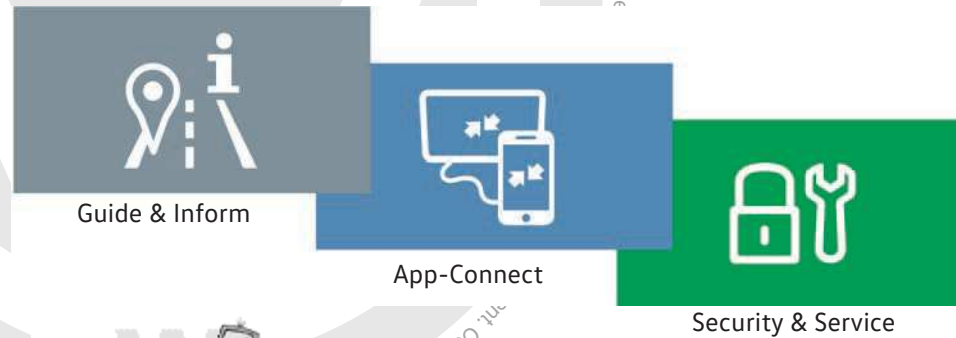
A frequency filter for amplitude modulation (AM) is not necessary in the vehicle as the AM aerial (top three ladders) in the upper area of the rear window is not heated. These three ladders are used exclusively for AM reception.

The following figure shows the aerial components of a fully-equipped Arteon.



# Car-Net

The Arteon has the following Car-Net services available:



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The online applications and functions depend on the country and features included. All services are not available at vehicle launch. You may consult the Car-Net functions available in your market on the following information page: [www.volkswagen-carnet.com](http://www.volkswagen-carnet.com).

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

The Control Module for Emergency Call Module and Communication Unit J949 is a data interface with subscriber identification. It transfers and receives data and commands for Car-Net Security & Service.

The J949 can establish an Internet connection through the mobile phone network. This allows receiving, processing and executing commands with the ignition switched on or off. Data exchange is direct and coded. There is no direct data transmission between the customer terminal, the CP (Customer portal) or smartphone (application) and vehicle. The control module is located behind the infotainment screen.



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# Glossary

## **AAC - (Advanced Audio Coding)**

AAC is an audio data compression method developed by the Moving Picture Experts Group that is used in the MP2 standard (MPEG layer 2).

## **ABS - (Anti-lock braking system)**

Traction control system which prevents the wheels from locking when braking.

## **ACC - (Adaptive Cruise Control)**

Abbreviation for the automatic adaptive cruise control system.

## **AFS - (Advanced Frontlighting System)**

Abbreviation for the cornering light CAN-Bus. This function improves illumination of the road considerably when the vehicle is cornering as the headlight light beam pattern is directed according to the position of the steering wheel.

## **AM**

Amplitude modulation, electromagnetic wave used to transmit messages. In amplitude modulation, the amplitude of the high frequency is varied.

## **AUX-IN**

Signal input for external audio devices.

## **A2DP - (Advanced Audio Distribution Profile)**

A technology used by many manufacturers which allows wireless transmission of stereo audio signals to a corresponding receiver via Bluetooth.

## **Bluetooth**

Bluetooth is an industry standard developed by the Bluetooth Special Interest Group (SIG) for wireless communications between devices over short distances.

## **CAN - (Controller Area Network)**

Standardized digital twin-wire data network used in vehicle electronics.

## **DAB - (Digital Audio Broadcasting)**

Radio channel broadcast digitally by radio stations. DAB+ is a further development of digital radio, which was introduced in 2011 in Germany.

## **Driver Alert System**

Electronic driver assist system which alerts the driver to decreasing attentiveness.

## **DVD - Digital Versatile/Video Disc**

A further development of optical storage media with a memory capacity of 4.7 GB, on one-sided, singlelayer DVDs (single-layer DVD, DVD±R, DVD±RW), and 8.5 GB, on one-sided, double-layer DVDs (dual-/double-layer, DVD±R-DL, DVD-RW±DL).

## **EFB - (Enhanced Flooded Battery)**

Abbreviation for the improved form of a wet battery.

# Glossary

## **ESC - (Electronic Stability Control)**

Electronic stabilization program, previously abbreviated to ESP.

## **FLAC - (Free Lossless Audio Codec)**

Audiocodex for loss-free audio data compression.

## **FM**

Frequency modulation, electromagnetic wave used to transmit messages. In frequency modulation, the frequency of the carrier wave varies in step with the information signal. The amplitude remains constant.

## **Front Assist**

Electronic area monitoring system that monitors the distance from the vehicle in front, issues a warning if there is a risk of a collision and automatically brakes the vehicle.

## **GPS - (Global Positioning System)**

Officially NAVSTAR GPS, this is a global satellite navigation system for position location and time measurement.

## **GSM - (Global System for Mobile communications)**

Standard for digital mobile telecommunications networks that is also used for data transfer and text messages (SMS).

## **HFP - (Hands-free profile)**

Bluetooth standard for hands-free system.

## **JPEG - (Joint Photographic Experts Group)**

Designation that describes various methods of image compression. It was developed by the Joint Photographic Experts Group. The designation also applies to an image format file.

## **Lane Assist - (Lane departure warning)**

Electronic driver assist system that draws the driver's attention to any departure from a lane and compensates minor deviations within the scope of the system limits.

## **LED - (Light Emitting Diode)**

Energy-saving lamp system in which one or more light-emitting diodes are connected to form a source of light.

## **LIN - (Local Interconnect Network)**

Serial single-wire data network, which is used to connect electronic components to higher-level control units.

## **LTE - (Long Term Evolution)**

Designation of fourth generation mobile telecommunications standard. The transfer rate is considerably higher than with previous standards (e.g. GSM, UMTS).

# Glossary

## **MAP - (Message Access Profile)**

Allows you to read and write SMSs.

## **MIB - (Modular infotainment matrix)**

Designation for a modular system used by many brands and models for the vehicle's infotainment components.

## **MOST - (Media Oriented Systems Transport)**

This is a serial bus system for transmitting audio, video, speech and data signals. Volkswagen currently uses fibre optic cable for this bus system.

## **MP3**

Abbreviation for MPEG Layer3 (Motion Picture Experts Group Layer 3); compression standard for audio data formats.

## **MQB - (Modular transverse matrix)**

Designation for a modular system used by many brands and models in vehicle development and production.

## **Park Assist - (Park assist steering)**

Driver assist system which actively supports the driver when parking or leaving a parking space, depending on the system version.

## **PBAP - (Phonebook Access Profile)**

Bluetooth profile for transfer of address data and telephone numbers to the Infotainment system.

## **Personal POI**

A personal POI is an additional point of interest added to the infotainment system by the driver. Several personal POIs can be combined in one POI package, which can in turn contain the position data of numerous special destinations. POIs can be assigned to different categories within the package. An icon can be allocated to each of the categories, which is then shown in the map view of the navigation system.

## **POI online search - (POI = Point of Interest)**

Information relating to an interesting navigational item within the navigation system and route planning.

## **rSAP - (remote SIM Access Profile)**

Profile that enables the SIM card to be read and its access data to be used by the universal mobile telephone preparation (UHV).

## **SD card - (Secure Digital card)**

Small and robust memory cards, e.g. for digital cameras.

# Glossary

## **SENT - (Single Edge Nibble Transmission)**

The SENT protocol is a digital protocol that meets the requirements resulting from the increased use of sensors in automotive technology and transfers the data from the sensors to the control units. It uses an unshielded three-wire connection via which the sensors are also supplied with power. The transfer via SENT protocol non-critical towards interfering signals.

## **Side Assist - (Lange change assist)**

Driver assistance system that supports the driver during overtaking and lane changing manoeuvres.

## **SIM card - (Subscriber Identity Module card)**

A SIM card is a chip card with a built-in processor that can be inserted into a mobile telephone. It can be used by a mobile telephone user to log into a telecommunication network.

## **TFT - (Thin Film Transistor)**

Abbreviation for a flat screen with a transistor display matrix.

## **Top tether system**

The top tether system is used for additional child seat anchoring on the rear seat bench.

## **TPLI - (Tire Pressure Loss Indicator)**

Driver assist system that alerts the driver to deviations in the tire pressures from the preset figure on all four wheels.

## **TPMS - (Tire Pressure Monitoring System)**

Driver assist system that informs the driver about the current tire pressures. It is a directly measuring system. If the tire inflation pressure is too low or there is a rapid pressure loss, the driver is warned by optical and/or acoustic signals.

## **Traffic Alert**

When reversing out of a perpendicular parking space, this system warns the driver about moving objects in the area behind the vehicle.

## **UMTS - (Universal Mobile Telecommunications Systems)**

Mobile telephone/data standard of the third generation with which data transfer rates of up to 42 Mbits per second are possible.

# Glossary

## **UPnP - (UniversalPlugAndPlay)**

Standard that serves to actuate devices from any manufacturer (audio devices, routers, printers, house controls) via an IP-based network.

## **USB - (Universal Serial Bus)**

A standardised interface between various electronic devices such as computers, printers, scanners and televisions etc.

## **WLAN**

Wireless local area network used to create a connection to the internet.

## **WMA - (Windows Media Audio)**

Specific Microsoft Windows audio format.



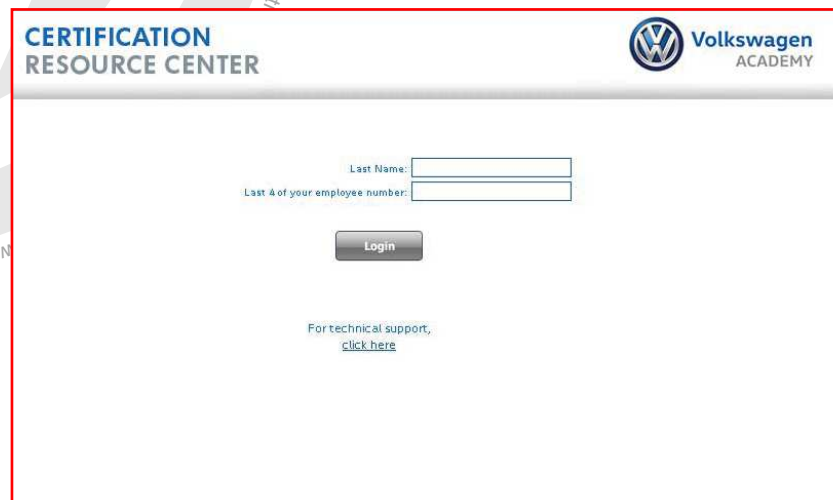
# Knowledge Assessment

An on-line Knowledge Assessment (exam) is available for this Self-Study Program. The Knowledge Assessment may or may not be required for Certification.


You can find this Knowledge Assessment at: [www.vwwebservice.com](http://www.vwwebservice.com)

For Assistance, please call: **Volkswagen Academy, Certification Program Headquarters 1-877-791-4838 (8:00 a.m. to 8:00 p.m. EST)**

Or, E-mail: [concierge@volkswagenacademy.com](mailto:concierge@volkswagenacademy.com)



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Herndon, VA 20171  
2018



# 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 Volkswagen Factory Approved Scan Tool (ST).
- Never work under a lifted vehicle unless it is solidly supported on stands designed for the purpose. Do not support a vehicle on cinder blocks, hollow tiles or other props that may crumble under continuous load. Never work under a vehicle that is supported solely by a jack. Never work under the vehicle while the engine is running.
- For vehicles equipped with an anti-theft radio, be sure of the correct radio activation code before disconnecting the battery or removing the radio. If the wrong code is entered when the power is restored, the radio may lock up and become inoperable, even if the correct code is used in a later attempt.
- If you are going to work under a vehicle on the ground, make sure that the ground is level. Block the wheels to keep the vehicle from rolling. Disconnect the battery negative terminal (ground strap) to prevent others from starting the vehicle while you are under it
- Do not attempt to work on your vehicle if you do not feel well. You increase the danger of injury to yourself and others if you are tired, upset or have taken medicine or any other substances that may impair you or keep you from being fully alert.
- Never run the engine unless the work area is well ventilated. Carbon monoxide (CO) kills.
- Always observe good workshop practices. Wear goggles when you operate machine tools or work with acid. Wear goggles, gloves and other protective clothing whenever the job requires working with harmful substances.
- Tie long hair behind your head. Do not wear a necktie, a scarf, loose clothing, or a necklace when you work near machine tools or running engines. If your hair, clothing, or jewelry were to get caught in the machinery, severe injury could result.
- Do not re-use any fasteners that are worn or deformed in normal use. Some fasteners are designed to be used only once and are unreliable and may fail if used a second time. This includes, but is not limited to, nuts, bolts, washers, circlips and cotter pins. Always follow the recommendations in this manual - replace these fasteners with new parts where indicated, and any other time it is deemed necessary by inspection.

## Cautions & Warnings

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

## Cautions & Warnings

- Do not quick-charge the battery (for boost starting) for longer than one minute, and do not exceed 16.5 volts at the battery with the boosting cables attached. Wait at least one minute before boosting the battery a second time.
- Never use a test light to conduct electrical tests of the airbag system. The system must only be tested by trained Volkswagen Service technicians using the Volkswagen Factory Approved 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.**

