Service Training

Self-Study Program 714

Taos NAR



El nuevo Taos

The new Taos is manufactured at the plant in the city of Puebla, Mexico. Every production process is carried out locally, from the stamping of body parts to the manufacture of axles and catalytic converters.

The new Taos is a mid-sized SUV. It has 5 seats and has a youthful but familiar design. Its technology and safety are its highlights. This model reinforces Volkswagen's participation in the A-SUV segment. It is based on the MQB modular transversal platform.

Taos is a proper name of Tiwa origin that means "Our People". This people is originally from New Mexico, USA.

Two TSI four-cylinder gasoline engines are available in the introductory model: A 118-kW 1.5l engine for Canada and the United States of America, and a 110 kW 1.4l engine for Mexico.

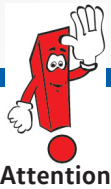
Depending on the market, it has the new generation of driver assistance systems such as the Lane Assist system (for lane departure warning), Jam Assist (anti-jam), Emergency Assist, Side Assist (lane change), Adaptive Cruise Control ACC, Front Assist (emergency brake assistance), Light Assist (highway beam change assistance) and Park Assist (rear parking sensors), among others.



The Self-Study Program reports on the design and operation of new developments.

The contents are not updated.

For the actual checking, adjustment and repair instructions, please refer to the After-Sales Service documentation prepared for these purposes.



Attention Note

Introduction 4

Body 10

Bodywork Dash Assembly 12

Safety Equipment 18

Power Units 20

Gearbox 24

Heating and Air conditioning 28

Running Gear 32

Electrical System 46

Infotainment 70

Car-Net 76

List of terms 80















Introduction

According to the SUV length, they are classified into three categories A0, A and B



A0	4,200 - 4,450 mm



A	4,500 - 4,700 mm



B	4,800 - 5,040 mm

3 equipment levels are offered: Basic, Comfort and Highline.

In addition, the equipment is expanded with additional packages. The main ones are:

- Adaptive speed control ACC
- Blind spot detector BSD
- Heated front seats
- Electrically adjustable front seats
- Auto-dimming rear view mirror
- Heated steering wheel
- LED reading lights
- Remote engine start
- Panoramic sliding sunroof
- 7J x 18" wheels



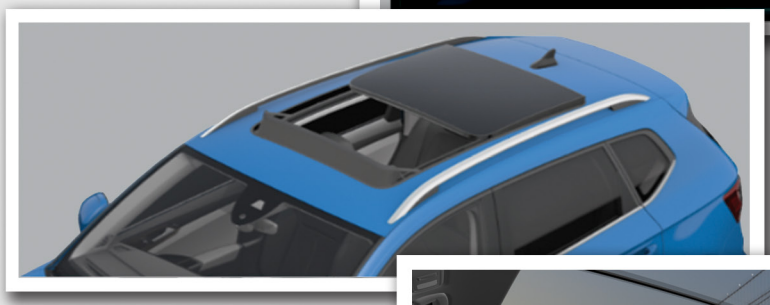
For more information, see what each market has to offer.

Highlights

LED headlights

With LED light conductors in the radiator grill





Black or silver roof rails

Panoramic sliding sunroof

Door and side panel with foam film, synthetic leather trims with stitching

Heated front seats





Digital instrument cluster

Radio MIB Generation 3

Wireless App Connect

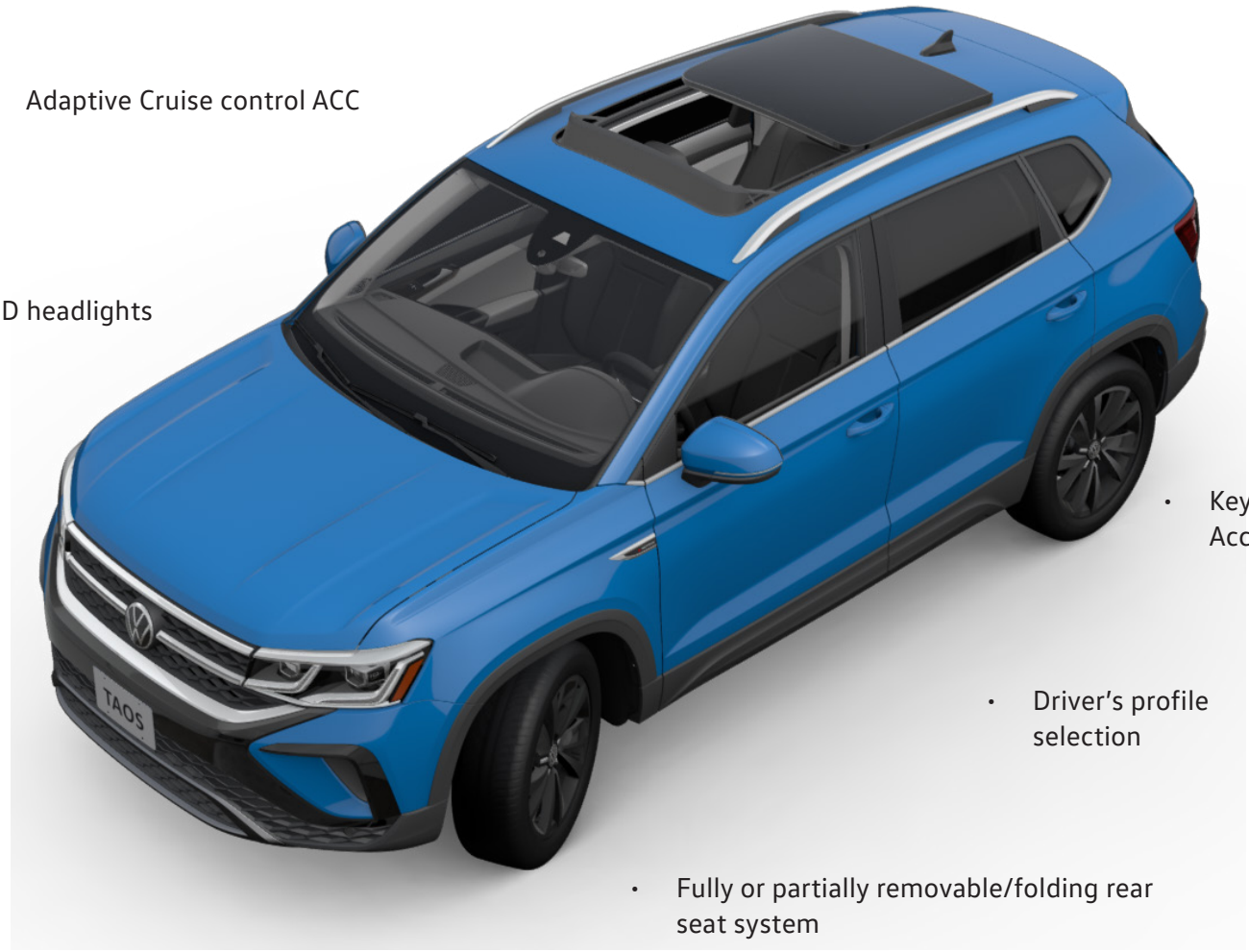


Rear LED lights
License-plate holder with LED lighting

Product Features

This overview chart shows the innovative and attractive product features in the versions with more equipment at the Series start production ramp-up.

- New-generation driver assists
- Emergency Assist
- Adaptive Cruise control ACC
- LED headlights



- Keyless Access
- Driver's profile selection
- Fully or partially removable/folding rear seat system
- Digital instrument cluster

- Wireless App Connect
- 3 USB Type-C connections
- Panoramic sliding sunroof
- Inductive charge for mobile phone



- Rear LED light sets
- Rear parking sensors
- 4Motion Drive
- Rear View Camera

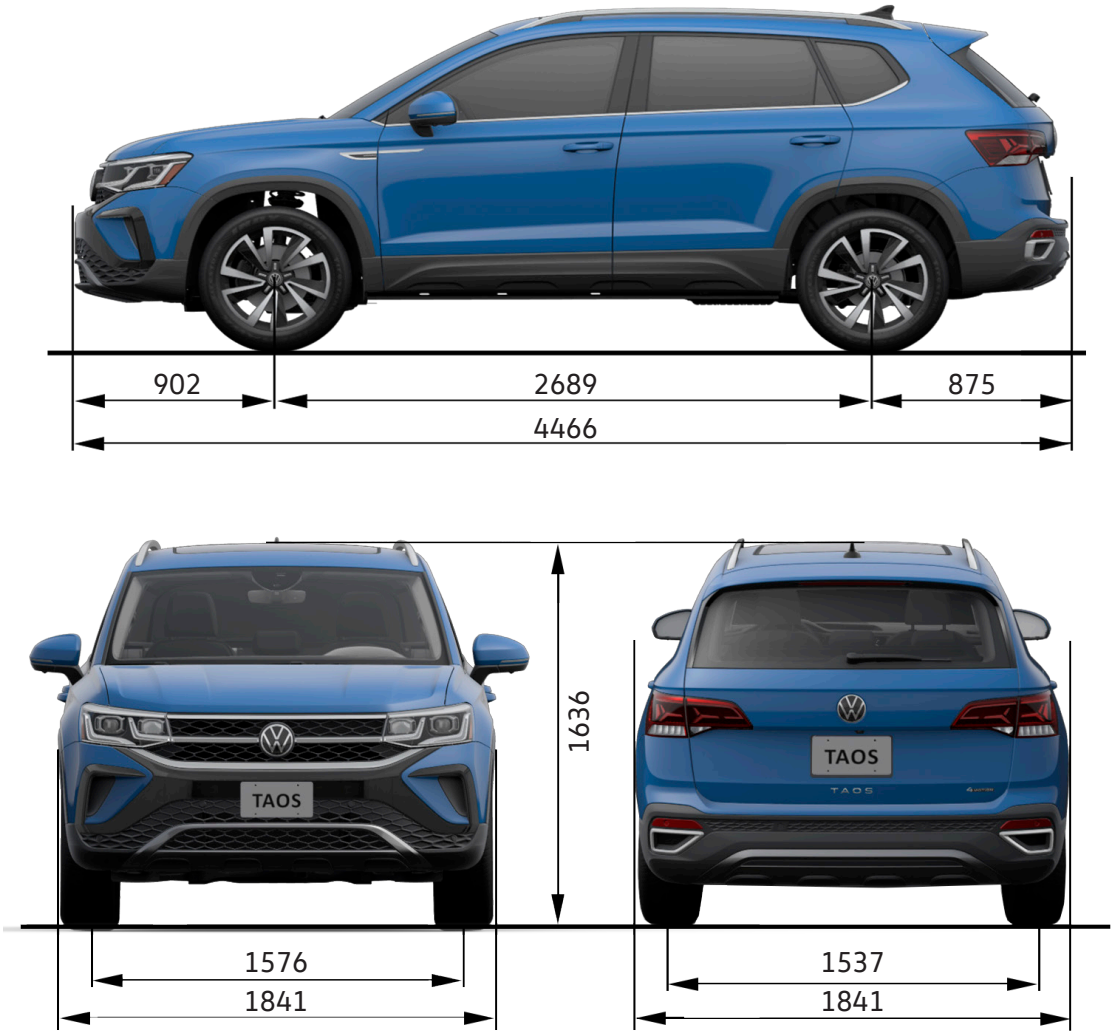


Equipment depends on the market.

Technical Data

Taos data refer to the basic equipment with the entry-level 1.4 l TSI engine, a 6-gear MQ200 automatic transmission and 205/60 R16 weightless tires and without driver.

External dimensions and weights



Units, mm

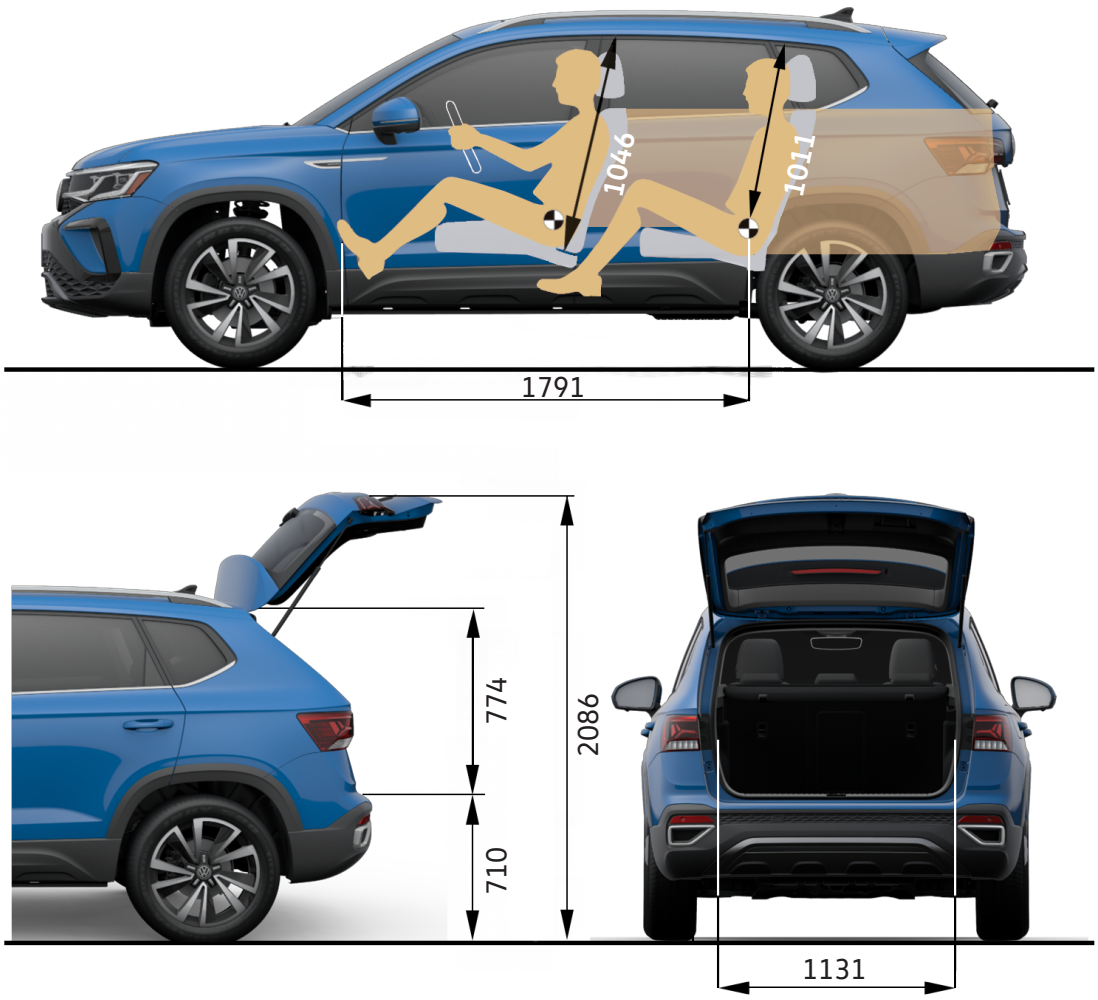
Weights and other data

Turning circle	11.468 m
Maximum authorized mass (Gross vehicle weight rating)	1940 kg
Mass in running order according to DIN* Kerb weight according to DIN*	1486 kg
Max. load on the roof	75 kg
Drag coefficient **	0,326 cx

- DIN **D**eutsches **I**nstitut für **N**ormung (German Institute for Standardization)

**This value depends on the equipment

Passenger-compartment dimensions and volumes Interior dimensions and capacities



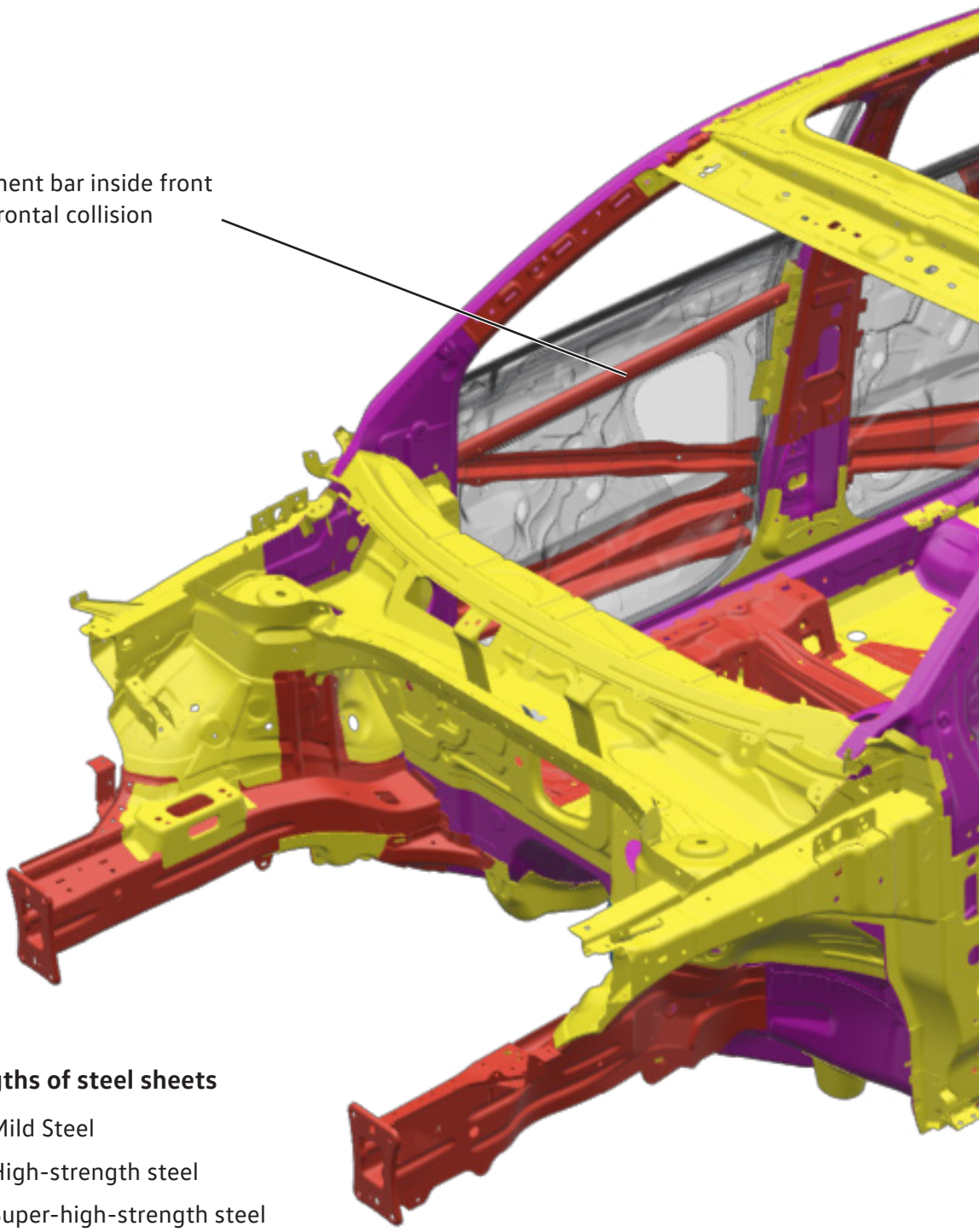
Passenger-compartment dimensions and volumes Interior dimensions and capacities

Luggage compartment volume*	500 l
Luggage compartment volume with folded backrests	1591 l
Tank capacity	50 l

- Longitudinally movable rear bench.

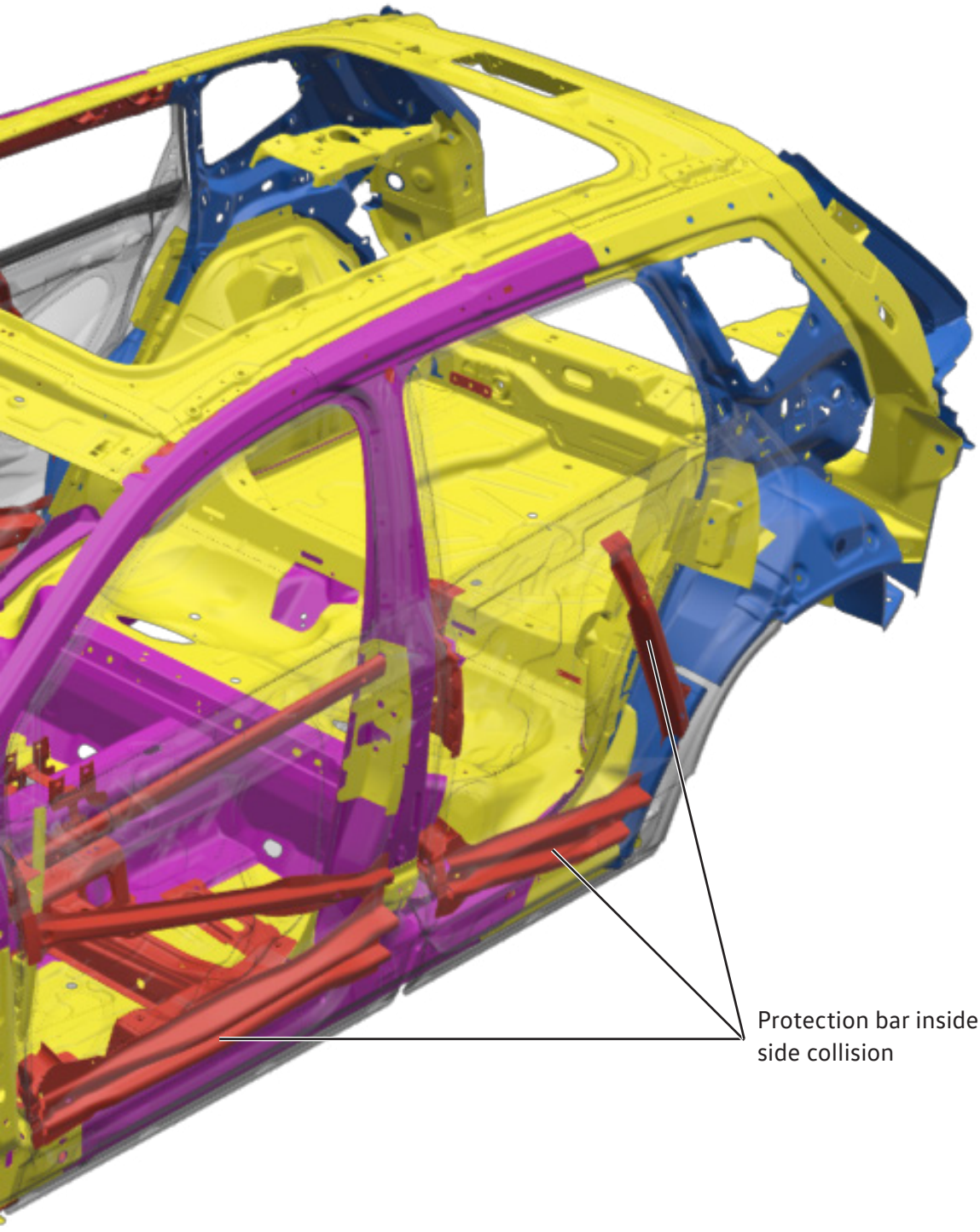
Body Framework

The Taos underbody is the well-known MQB platform. Thanks to this platform, greater interior space is achieved, body weight reduction, greater rigidity, and compliance with the most demanding standards as to occupant protection in case of a collision.



Strengths of steel sheets

- < 160 MPa Mild Steel
- < 220 MPa High-strength steel
- < 420 MPa Super-high-strength steel
- < 1000 MPa Ultra-high-strength steel
- > 1000 MPa ultra-high-strength hot-formed steel



The joining methods used in bodywork manufacture range from structural body adhesives, laser welding without base material fusion, resistance spot welding to clinching and riveting.

Bodywork Dash Assembly

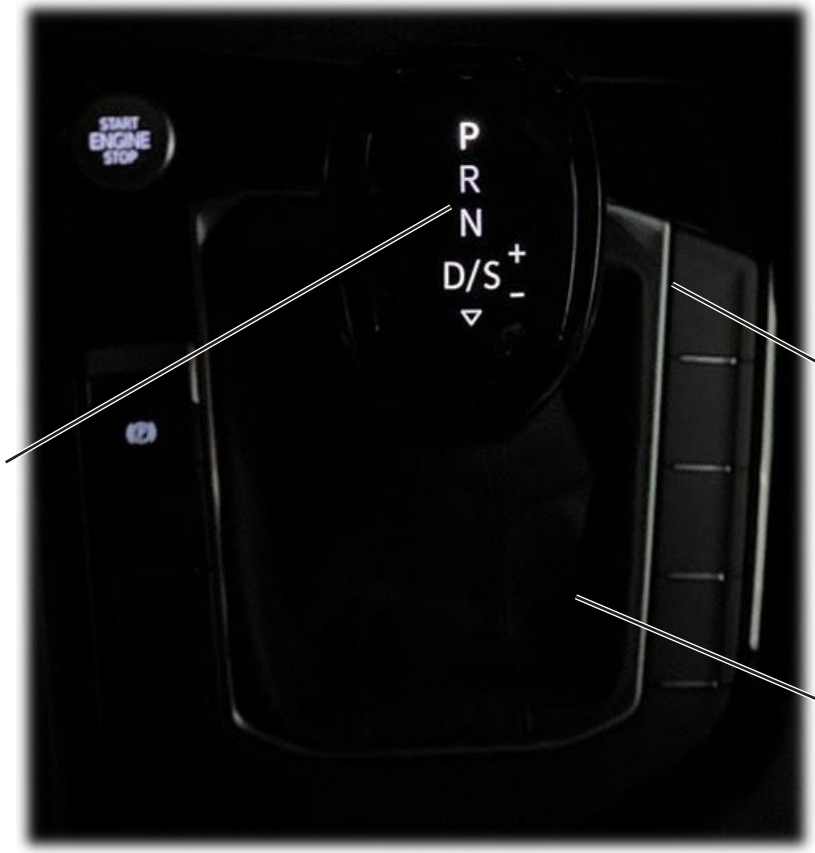
Instrument Dash Panel and Center Console

The Taos dash panel is a fully innovative design. It features a broad driving vision, elegance and high quality. The infotainment system is located in a much higher position. In addition, the dash panel has a new centrally located object holder and a new gear selector lever with position display, a well-known feature from other models.



Y26 Shift Lever Position Display

This technological innovation has been previously mounted on other models, and is characterized by incorporating a tiny electronic device with 7 LEDs on the shift lever knob where its actual position P, R, N, D, S, + or - turns on when moving the lever. The trim and cover are part of the lever knob.



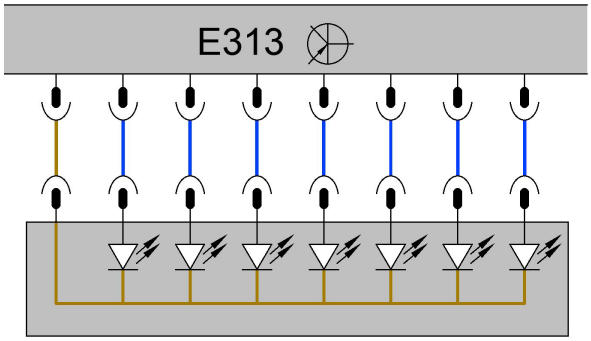
Y26 Shift lever position display

Lever trim

Lever cover

Power connections

E313 Palanca selectora



Y26 Shift lever position display

The E313 shift lever control unit supplies power to the 7 internally-connected LEDs.
When moving the shift lever to each gear, the corresponding LED turns on.

Front Driver Seat

Taos features the following standard equipment:

- Manual regulation
- Power regulation

Additionally, active air-conditioning (A/C) is featured for powered versions.

Driver seat with active A/C

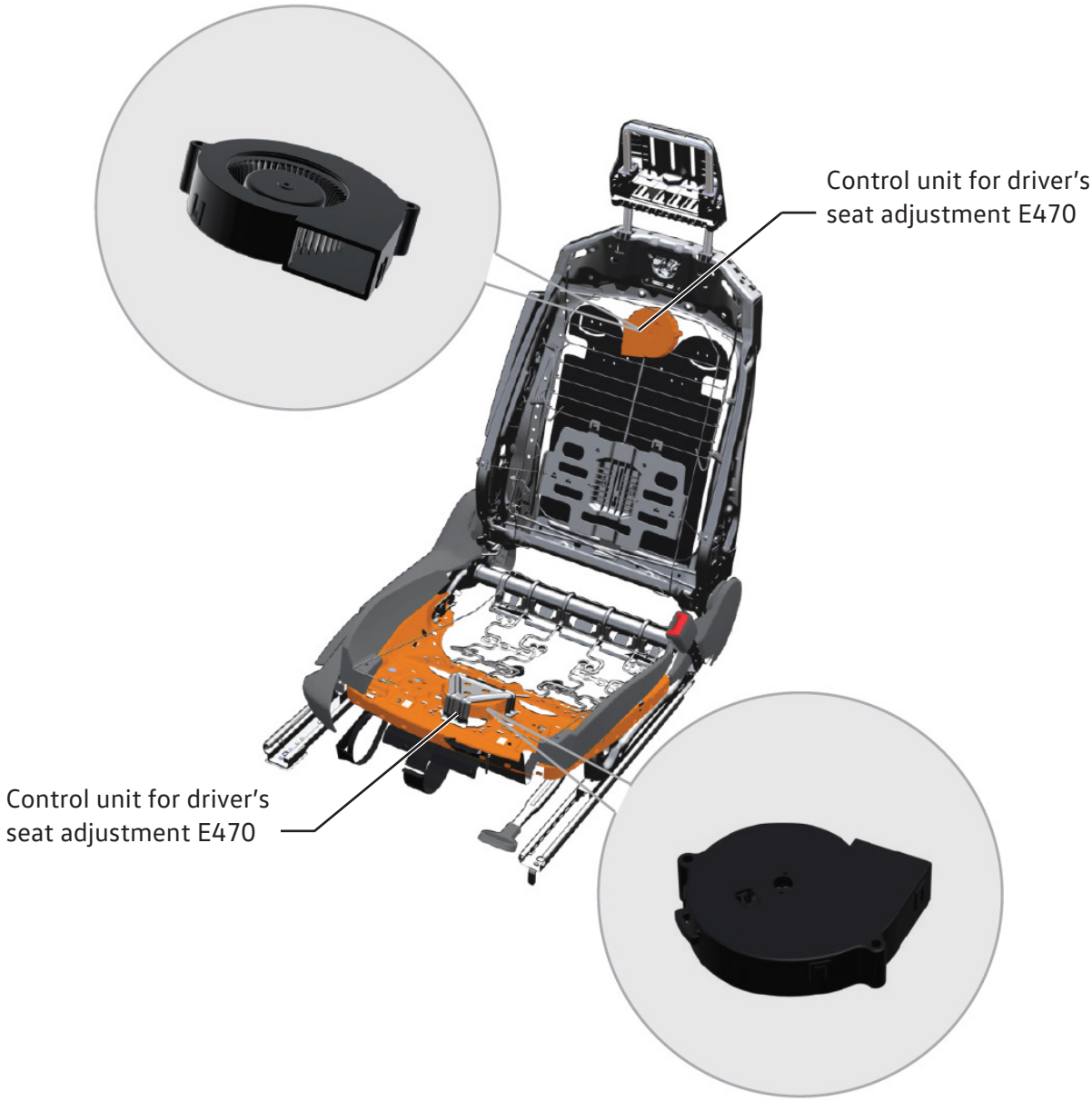


Front Seat, Passenger Side

There are 2 versions:

- With heating element
- With heating element and seat occupant detection

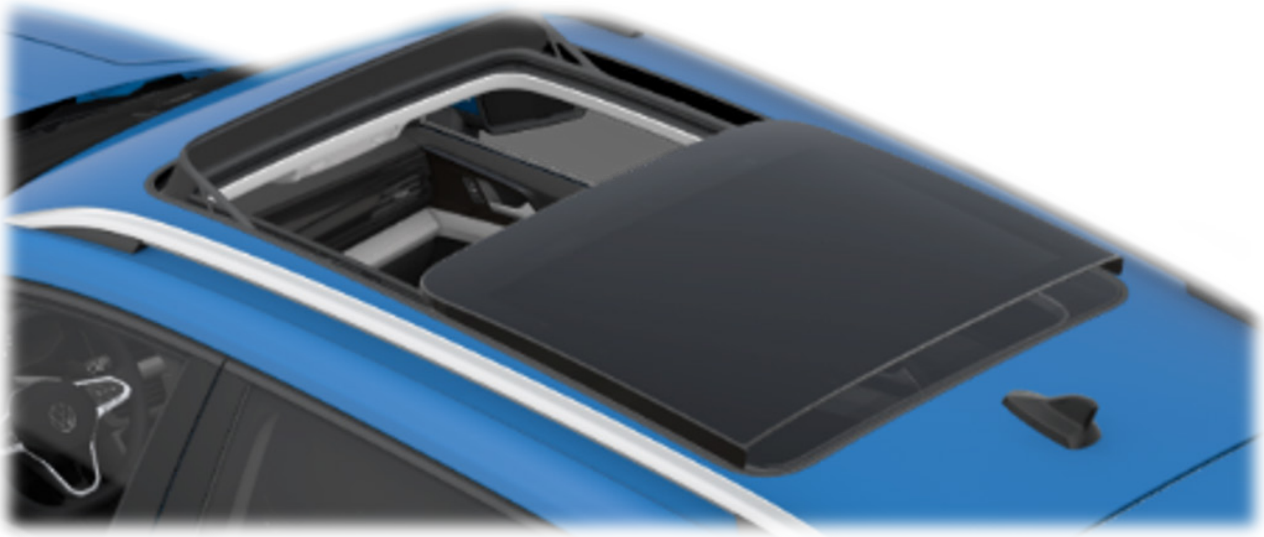
Front passenger seat with active A/C and with heating element and seat occupant detection



Information on the front seat with active A/C may be found in the Self-Study Program No. 544 "Passat 2015 Body and Occupant Protection".

Techo corredizo panorámico

The panoramic sliding roof is bolted to the roof frame from the bottom. This setup is known as Bottom-Load. The front glass panel of the sliding roof has a lift-and-slide function, while the rear glass panel is fixed. This type of roof offers occupants a feeling of great spaciousness in the passenger compartment, and complies with the legal requirements on anti-entrapment protection.



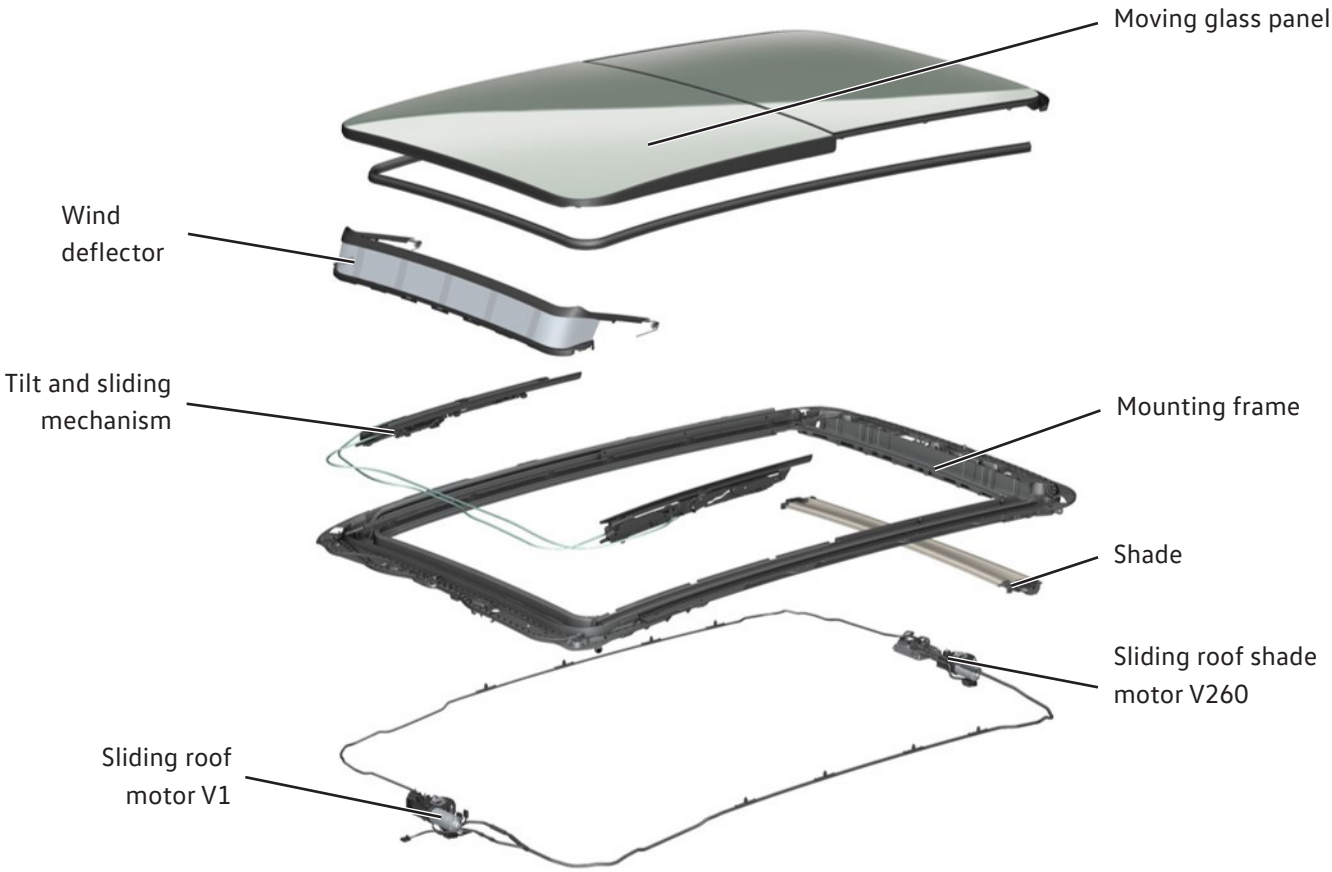
The glass panel is mounted with the R2R (Rail2Rail) system. Side moldings on the roof are eliminated with this design.

Panoramic Sliding Sunroof

There are two identical motors mounted underneath the sliding roof frame, one for moving the front glass panel and the other for sliding roof shade. The shade is made of fabric and is electrically powered.

This shade is mounted from the top and opens automatically when the sliding roof glass pane is opened.

The panoramic sliding sunroof is made up of:



The panoramic sliding sunroof has four drains: Two forward on the A-pillars and two rearward along D-pillars.

Occupant Protection

There are 2 versions of airbag system available for the NAR region. The PR 4UM is for the US and Canadian market, and the PR 4UF is for the Mexican market. Both versions offer maximum safety to occupants.

The two versions consist of:

- Front airbag modules for driver and front passenger.
- Side airbag modules for driver and front passenger.
- Head airbag module.
- Acoustic and optical warning for driver to use safety belt.
- Belt force limiter in the front seat.
- Side collision sensors located inside the front doors.
- Side collision sensors located inside the rear wheel arch bodywork.

Additionally , the PR 4UM has:

- Passenger seat occupant detection, in order to switch the passenger airbag into active mode.
- Lap-and-shoulder belt with force limiter and three pyrotechnic charges in front seats.
- Left and right front collision sensors located behind the front bumper.
- Driver and front passenger seat position sensors.

The version with PR 4UF consists of:

- Acoustic and optical warning for front passenger to use safety belt.
- Manual deactivation of the front passenger airbag.
- Pre-tensioners on the front belts with pyrotechnic charge.
- Three-point safety belts with pyrotechnic pre-tensioner in front seats.
- Front collision sensor located behind the front bumper.

Front passenger airbag module two-phased PR 4UM, one-phased PR 4UF



Key switch for front passenger airbag disconnection, only for PR 4UF



Front passenger airbag deactivation indicator lamp K145





Collision sensor for front airbag G190
Only for PR 4UF.
For PR 4UM, driver side G283 and passenger side G284



Instrument cluster control unit J285



For more information on occupant protection, see Self-Study Program No. 559 "Tiguan 2018 LWB".

Front driver airbag module



Head airbag module



Front passenger seat detection sensor G128, only PR 4UF



Control unit of the seat occupant detection system J640 only PR 4UM

Collision sensor for rear side airbag, driver side G256 and passenger side G257





Side airbag module



Lap-and-shoulder belt pre-tensioner with force limiter on the driver seat N153, N297 and G551, and on both the driver and front passenger seats N154, N298 and G552 only for PR 4UM



Seatbelt pre-tensioner igniter on both driver and passenger sides N153, N154



Collision sensor for side airbag, driver side G179 and front passenger side G180



Airbag control unit J234



Seat position detection sensor on driver side G553 and on front passenger side G554, only for PR 4UM





Additionally, it has:

- Top Tether System
- Isofix System
- Multi-collision brake

Engine-Gearbox combinations

Gearbox \ Gasoline Engines	1,4 l TSI de 110 kW Engine DSJA	1,5 l TSI de 118 kW Engine DNKA
		
6-speed automatic gearbox AQ250 09G Gen 3	 6F	
8-speed automatic gearbox AQ300 09S		 8F
7-speed dual clutch gearbox DQ381 0GC		 7A

6F = 6-gear front wheel drive
8F = 8-gear front wheel drive
7A = 7-gear All-Wheel Drive (4WD / 4Motion)

1.4 l 110 kW TSI Engine

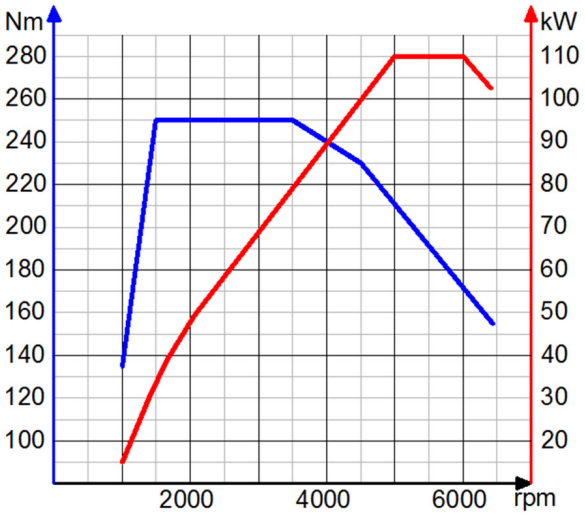
The basic engine was designed in the EA211 engine generation. In order to comply with the various environmental regulation requirements, different versions have been implemented.



Technical data

Engine code	DSJA
Type	4-cylinder in-line engine
Displacement	1,395 cm³
Bore	74,51 mm
Stroke	80 mm
Valves per cylinder	4
Compression ratio	10,0:1
Maximum output	110 kW at 5000 - 6000 rpm
Maximum torque	250 Nm at 1400 - 3500 rpm
Engine management system	Bosch MED
Fuel	Super unleaded RON 95
Exhaust gas treatment	Three-way catalytic converter, two binary lambda probes: one before and another after the catalytic converter
Emission standard	EU5 Plus

Torque and power diagram





Information on engine mechanics may be found in the Self-Study Program Nr. 511 “The New EA211 Petrol Engine Family”.

1.5 l 118 kW TSI Engine

The new 1.5 l TSI 4-cylinder engine is introduced in the Taos for the first time. This engine belongs to the new EA211 EVO2 (Evolution Generation 2) engine range. Generation 2 is characterized by having strong environmental measures for CO_2 concern. Additionally, it has the Miller combustion process, which is very efficient in the partial load range. This is a follow-up to the strategy of reducing fuel consumption and caring for the environment.



Information on engine mechanics may be found in the Self-Study Program Nr. 511 "The New EA211 Petrol Engine Family".

1.5 l 118 kW TSI Engine

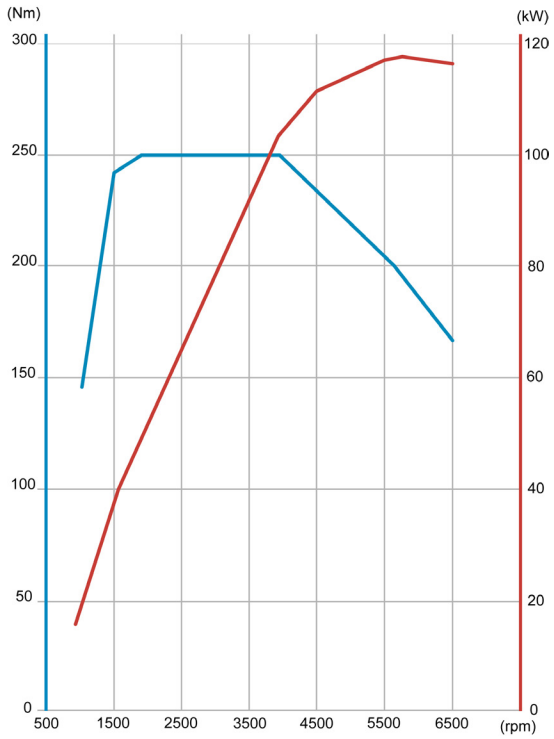
Technical Characteristics features

- Direct fuel injection
- Optimized Miller combustion process
- VTG (Variable Turbine Geometry) turbocharger with a 950°C temperature range and wastegate
- Thermal management
- Cylinder head with integrated exhaust manifold
- Camshaft is driven by a toothed belt
- Intake camshaft timing (70° crankshaft, basic setting in “lag” position)
- Exhaust camshaft timing (40° crankshaft, basic setting in “forward” position)
- Engine block with plasma-coated cylinder liners
- Regulated mechanical oil pump with vacuum generation
- Bosch MG1 engine management
- Fine-oil separator with breather hose (OBD requirement)
- DMTL pump for fuel tank gas leak diagnosis
- Optimized intercooler
- Secondary air system

Technical data

Engine code	DSJA
Type	4-cylinder in-line engine
Displacement	1,498 cm^3
Bore	74,5 mm
Stroke	85,9 mm
Valves per cylinder	4
Compression ratio	11,5:1
Maximum output	118 kW a 5500 - 6000 rpm
Maximum torque	250 Nm a 1750 - 4000 rpm
Engine management system	Bosch MG1
Fuel	Super unleaded RON 95
Tratamiento de los gases de escape	Main 3-way catalytic converter. Lambda control with a broadband lambda probe upstream and a binary lambda probe downstream to the main catalytic converter with secondary air system
Emission standard	LEV 3/Tier 3 30

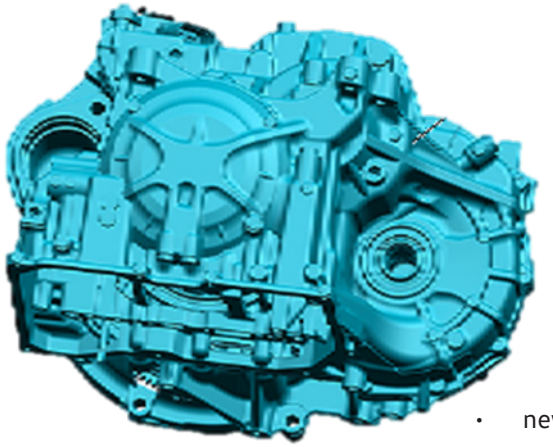
Torque and power diagram



AQ250 09G Gen 3 6-Gear Automatic Transmission

The 09G Generation 3 was first introduced at the 2019 Jetta launch. The mechanical structure and working principle remains the same as previous generations. It was developed by the Japanese transmission manufacturer AISIN AW CO LTD. Changes in Gen 3 are:

- new gearbox housing
- new control valve assembly slider box
- new sensor and actuator wiring harnesses
- new oil filter



- new gearbox housing



- new sensor and actuator wiring harnesses



- new oil filter



- new control valve assembly

Generation 3: Additional features

- Control unit with aluminum housing and 81 pins
- Electromagnetic pump EMOP V475 for the Start-Stop function
- ATF oil with higher friction grade
- Modified clutches and brakes with friction discs

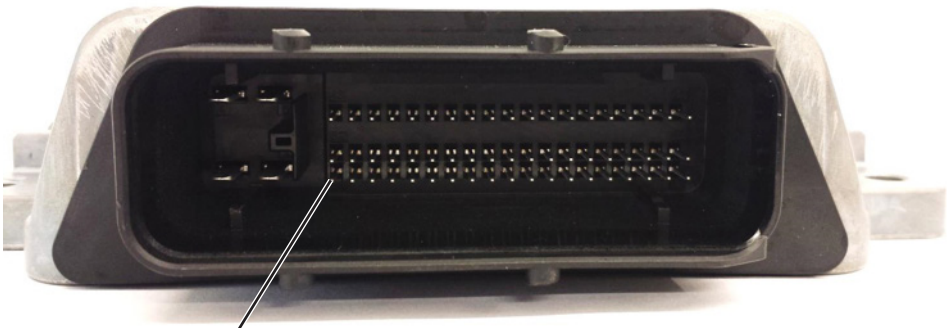


Information on the automatic transmission mechanics may be found in the Self-Study Program SSP No. 309 "6-Gear Automatic Transmission 09G/09K/09M".

6-Gear Automatic Transmission AQ250 09G Gen 3

New Control Unit J217

The new Generation 3 J217 control unit features 81 pins and an aluminum housing that dissipates heat faster. This architecture is also used in other AISIN automatic gearboxes, such as: AQ160_6F (09G), AQ300_8F (09S), AQ450_8F/A (09P/09Q). Additionally, this new control unit contains a programming logic with two comfort algorithms: The heavy traffic algorithm and the non-stepped downshift algorithm.



81 Pins



Heavy traffic algorithm.

The electronics evaluates whether the automatic transmission is in a heavy traffic situation with very slow advance, that is to say, gear shifts from 1-2 and 2-1. So when the unit determines it, the car starts in D2.

Non-stepped downshift algorithm.

The electronics evaluates the downshifts coming from the self-learning of driving habits and thus decides to make non-stepped downshifting for either one gear or two gears.



Information may be found in the Self-Study Program SSP No. 712 “09S 8-Gear and 09G Generation 3 Automatic Transmission”.

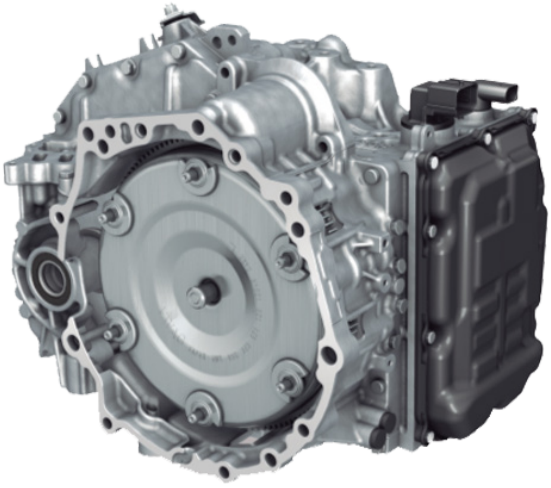
Gearbox

8-gear Automatic Transmission 09S

The Japanese transmission manufacturer AISIN AW CO LTD. developed this automatic transmission. The eight gears forward are performed by means of a system of modified planetary assemblies (modified Lepelletier system). Additionally, the 09S is designed for the Start-Stop function. By means of a new electromagnetic pump called EMOP, the first gear clutch remains actuated during the function, thus ensuring a smooth engine transition from switch-off to start-up.

Technical data

Manufacturer	AISIN AW CO., LTD. Japan
Production Designation	AQ300_8F
Service Designation	09S
ATF Specification	G053001
Filling Capacity	6.3 l first fill in factory
Service period	Not yet planned





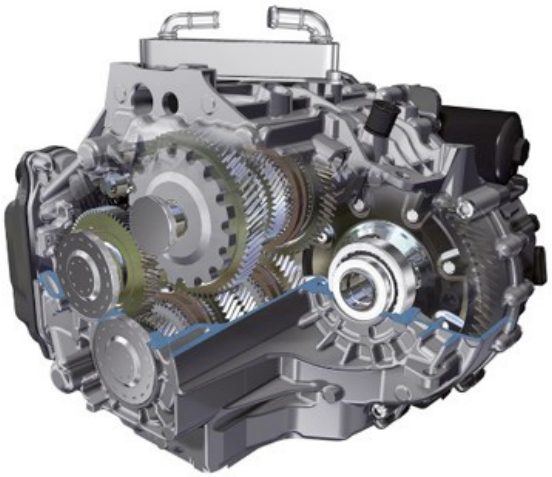
Information may be found in the Self-Study Program SSP No. 712 "8-Gear 09S and 09G Generation 3 Automatic Transmission".

7-gear 0GC double-clutch transmission

This double clutch gearbox was developed after the CO2 emission reduction strategy. In combination with the Start-Stop system, emissions are further reduced by 1g/km. Moreover, thanks to the 7th gear in 0GC, there is an additional reduction of 3g/km. Another feature of the 0GC is sportiness. This is why 4-wheel drive has been considered.

Technical data

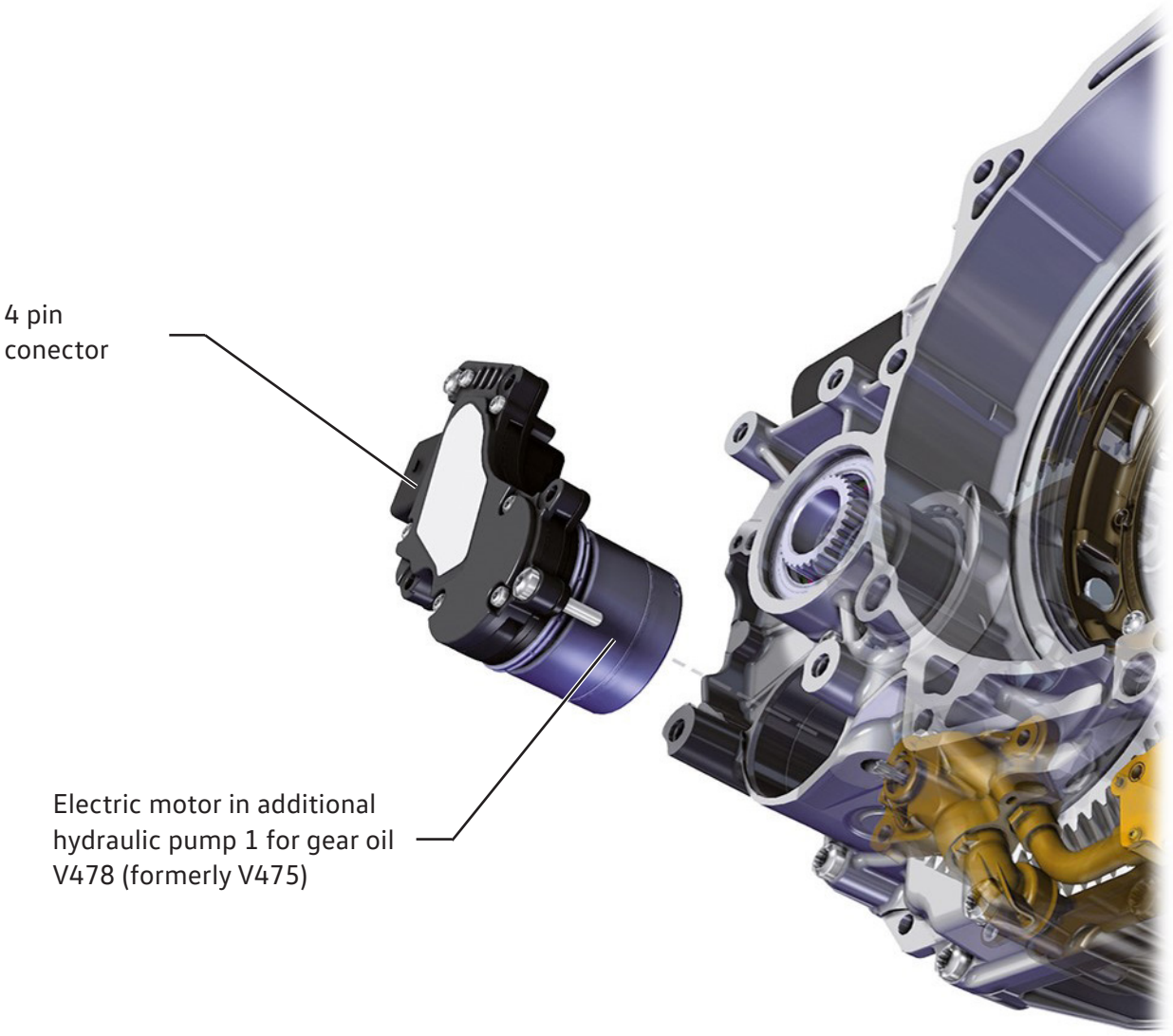
Production Designation	DQ381_7A
Service Designation	0GC
Number of clutches	2 wet clutches
Maximum torque	420 Nm
Weight	85Kg + 2Kg additional hydraulic
Oil capacity	7 liters of synthetic oil



7-Gear 0GC Double-Clutch Transmission

New assignment: Electric motor in additional hydraulic pump 1 for gear oil V478 (formerly V475)

It is a brushless DC motor with control electronics and a rotor position sensor. The connector has 4 pins and they are used for: voltage supply and the CAN drive bus. This electric motor has been changed from V475 to V478 as of the Taos launch.



Further information may be found in the Self-Study Program No. 556 "7-Gear 0GC Double-Clutch Transmission".

Heating and Air conditioning

A/C System

The Taos A/C system has two management types:

- Electric manual climate control.
- 2-zone Climatronic.

In order to improve the quality of air entering the passenger compartment, both systems have a dust-and-pollen filter with activated carbon.

The following A/C controls are available depending on the equipment level:

- Front seat heating with three independent intensity levels. The selected level is displayed by 3 LEDs.
- And in the case of Climatronic, it can additionally have front seat ventilation with 3 independent intensity levels. The selected level is displayed by 3 LEDs as well.

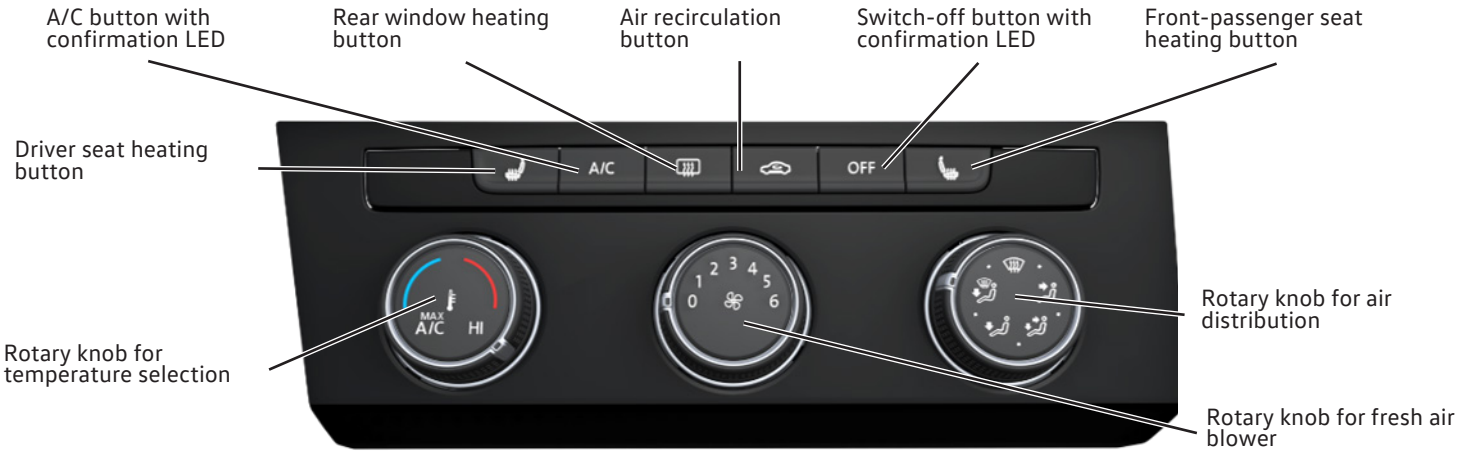
The Comfort CAN-Bus manages the A/C control units Connection with the refrigerant circuit pressure sensor G805 and the external fresh air blower control unit J126 (which includes the external air turbine V2) occurs via LIN Bus.



Electric manual climate control unit

The highlights of this management unit are:

- All flaps are driven by electric motors when excited by the control unit.
- "MAX A/C" function, request for maximum cooling power.
- There are two versions for the electric manual climate control depending on whether it is equipped with controls for seat heating.

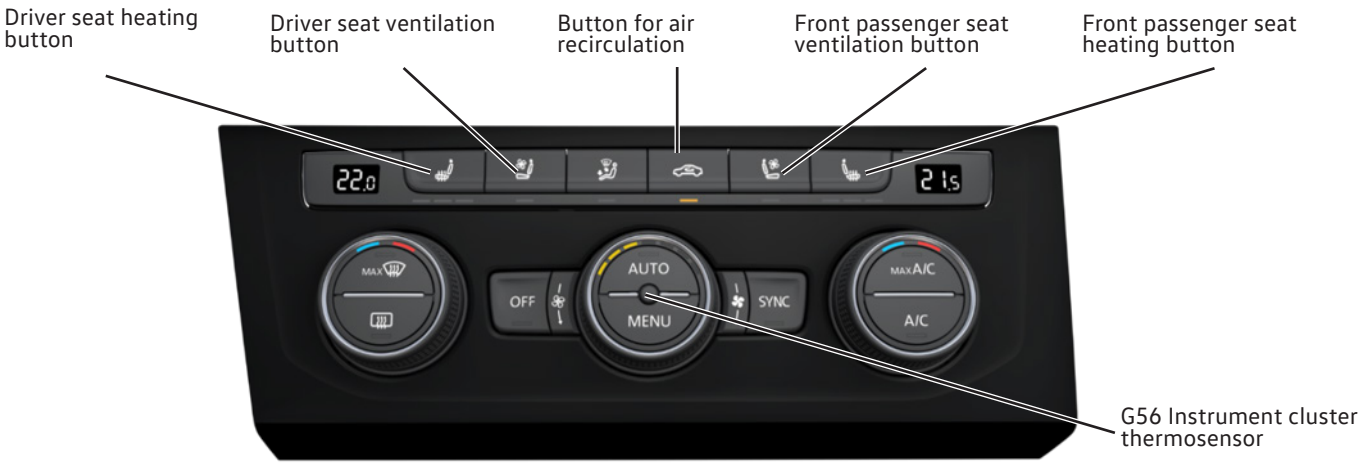


2-zone Climatronic control unit

This climate control is automatic and with two zones. This unit takes control of the temperature regulation, air distribution, air flow according to solar radiation and both interior and exterior temperature.

The highlights of the Climatronic variant are:

- Two indicator lights to show the selected temperature in each zone.
- "MAX A/C" function, request for maximum cooling power.
- With the "SYNC" button, temperatures in the 2 zones are synchronized.



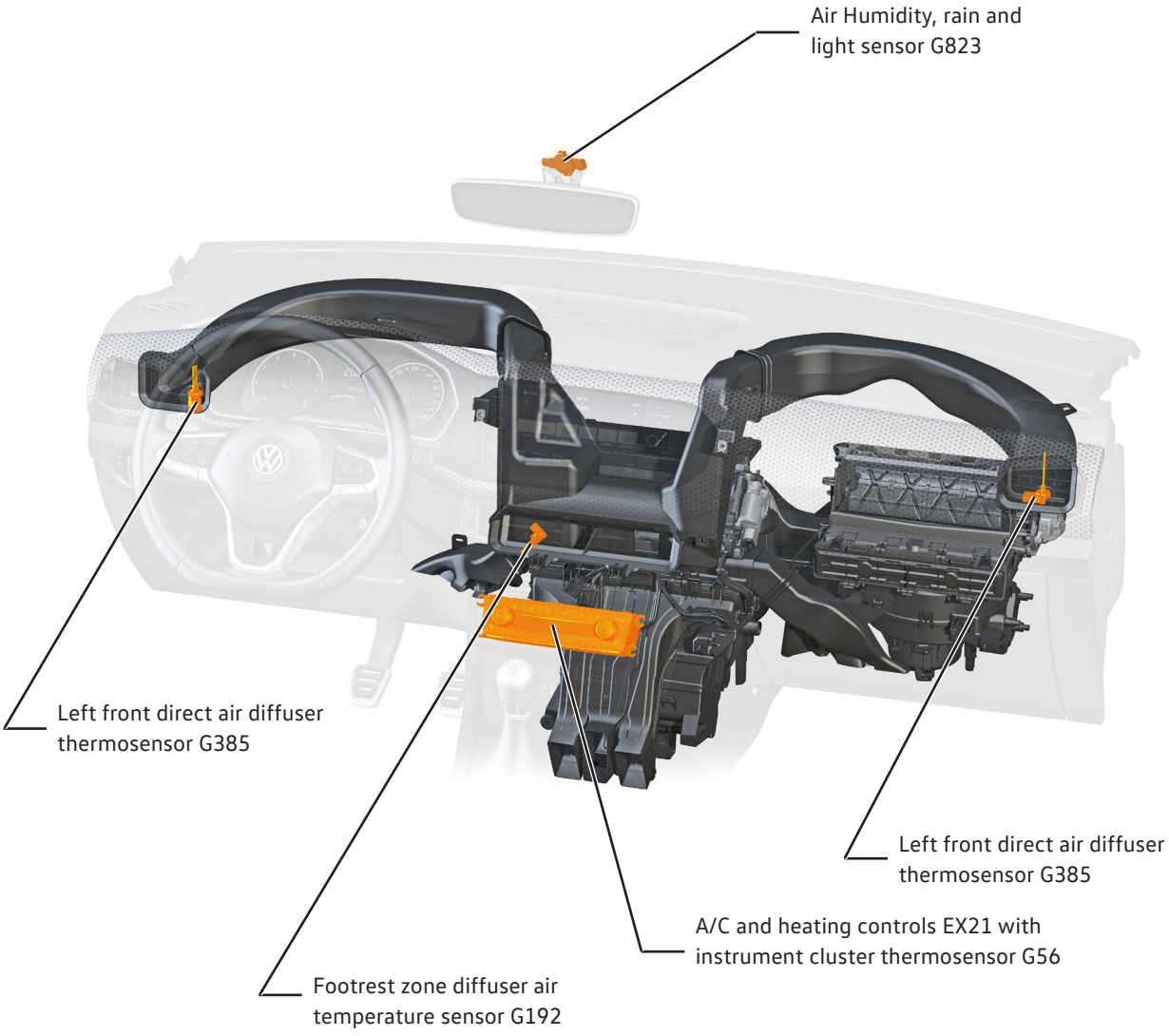


Depending on the equipment level, there are variants with seat heating and ventilation

Temperature Sensors for the Climatronic System

Climatronic allows setting temperatures from 16° C to 29.5° C in the driver's zone and front passenger's zone independently.

This is monitored and regulated by two air temperature sensors, one in the right-side vent (G151) and another in the left-side vent (G150). With the other interior temperature sensors G65, the exterior temperature sensor G17, the solar radiation photosensors G134 and G135, and the climate control air humidity sensor, the "well-being environment" for the passenger compartment is defined in automatic mode.
To guarantee good operation, the system also has the evaporator thermosensor G308.

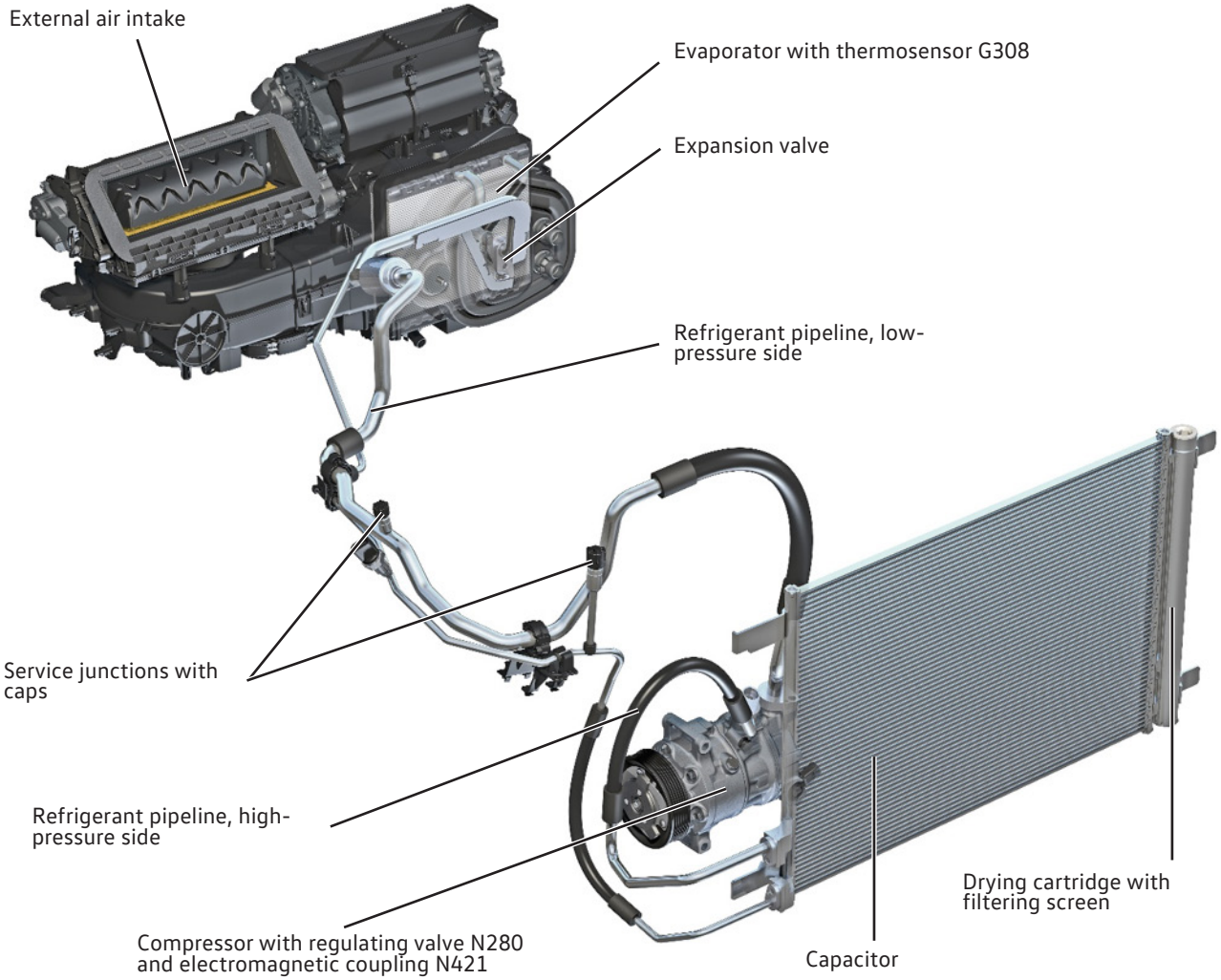


Refrigerant Circuit

Depending on each country's legislation, either refrigerant R134a or refrigerant R1234yf is used for the circuit.
This can be made clear by the climate control indicator label in the engine compartment and by the color of the service junction caps:

- Gray cap - R1234yf (PR KK3)
- Black cap - R134a (PR KK1)

In order to reduce the engine load when the A/C is not connected and thereby reduce fuel consumption and polluting gas emissions, the climate control compressor has the electromagnetic coupling N421 and the regulating valve N208. This only applies to USA and Canada. In the case of Mexico, it is available with the N280 regulating valve only.





More information on refrigerant R1234yf may be found in Self-Study Program No. 552 "Tiguan LWB 2017".

Running Gear

Running Gear Overview

Taos has two types of running train:

- 4WD running train
- Standard running train

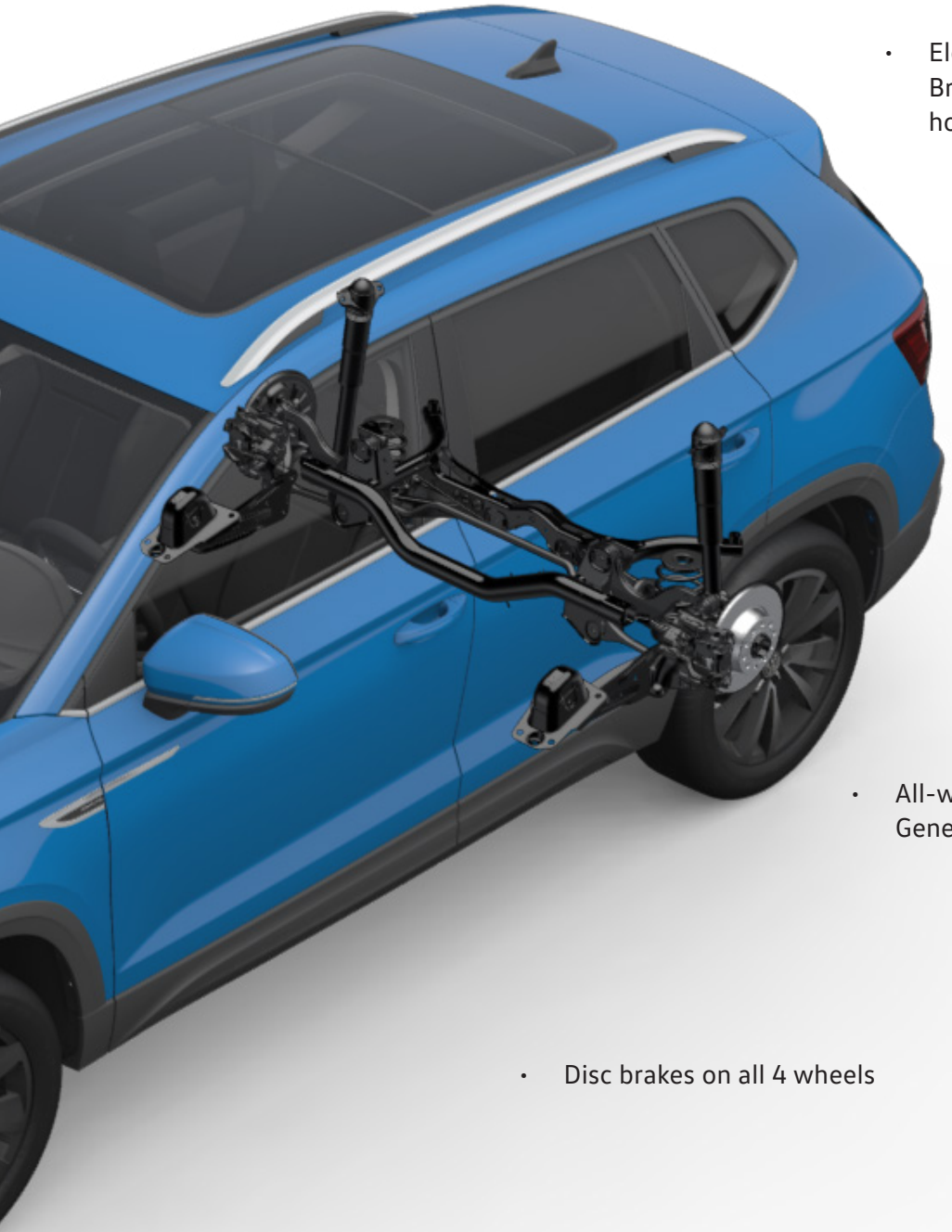
4WD Running Gear

- Front axle with McPherson-type telescopic arms



- Continental MK 100 ABS/ESC anti-lock system

- Electromechanical steering with double-pinion drive and the following characteristics::
  - no steering column lock
  - bionic-type steering rack housing
  - synchronous motor instead of asynchronous motor
  - 2-point connection to the front axle
  - reduced overall weight



- Electromechanical Parking Brake (EPB) without Auto-hold
- Four-link rear axle
- All-wheel drive clutch Generation 6
- Disc brakes on all 4 wheels
- Driver profiles

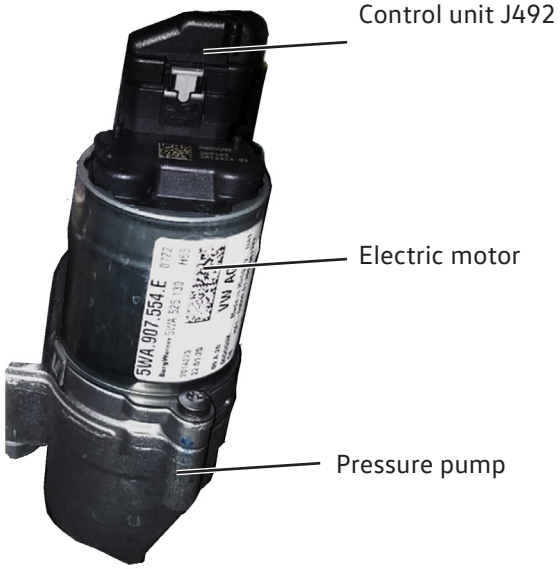
Information on steering may be found in Self-Study Program No. 317 “Double-Pinion Electromechanical Power Steering”.

All-Wheel Drive Clutch Generation 6

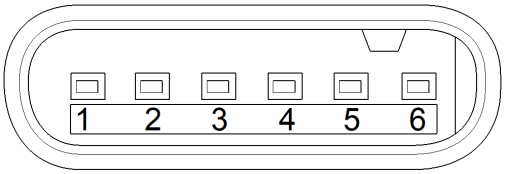
The all-wheel drive clutch Generation 6 is characterized by having fewer elements, less weight and a more dynamic behavior.

Improvements in this generation are:

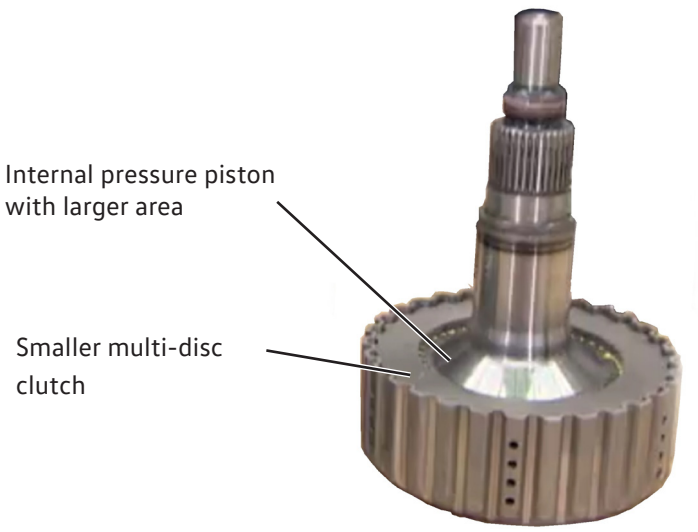
- Electrically driven pressure pump with brushless DC motor
- Control unit J492 is integrated into the pressure pump
- Smaller multi-disc clutch, reduction of 3 discs
- Internal multi-disc clutch pressure piston with larger area



Electrical connection J492



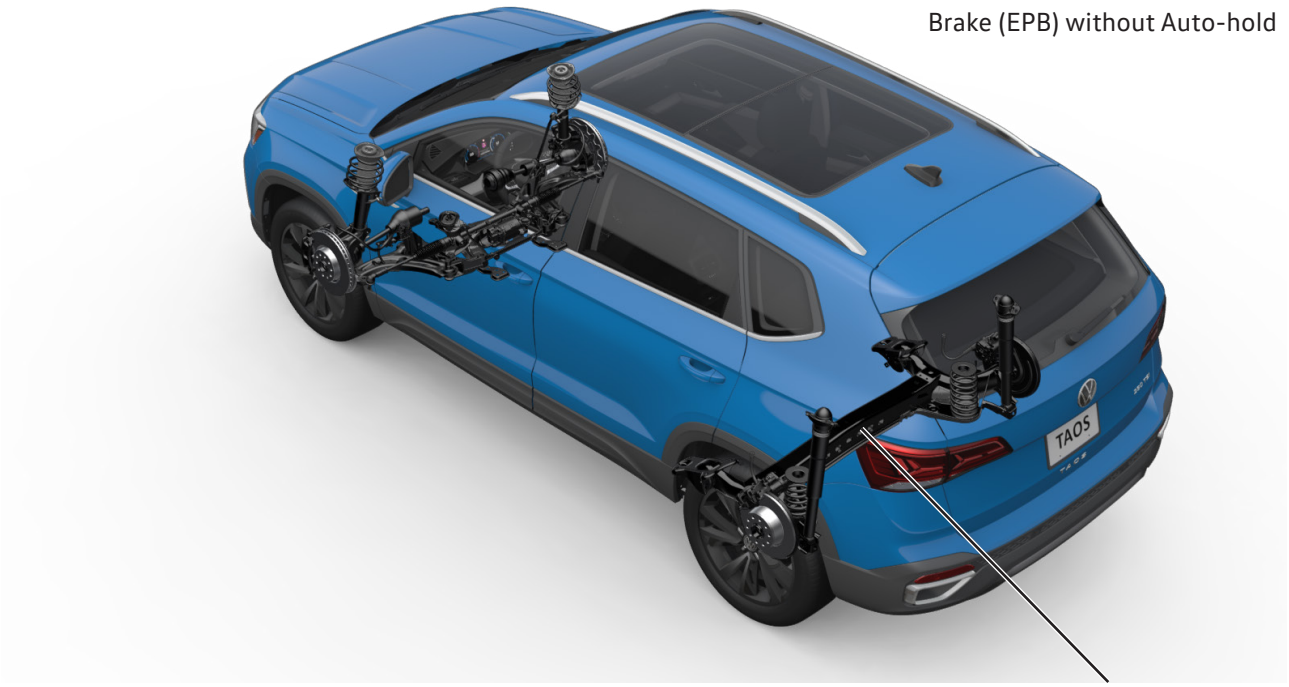
Pin 1	Mass
Pin 2	Free
Pin 3	CAN Low
Pin 4	CAN High
Pin 5	Current 15
Pin 6	Current 30



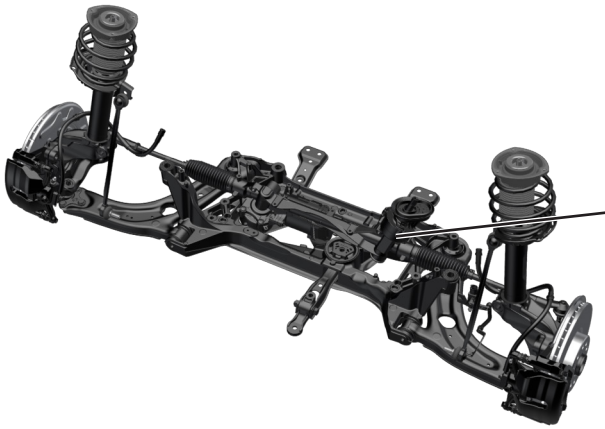
Standard Running Gear

ABS/ESC anti-lock system
Continental MK 100

Electromechanical Parking Brake (EPB) without Auto-hold



Semirigid-type rear axle with interconnected arms



Front axle with McPherson-type telescopic arms

Electromechanical steering with double-pinion drive without steering column lock



Driver Assist Systems Overview

Dependiendo del equipamiento, el nuevo Taos puede montar diferentes sistemas de asistencia:

- Adaptive Cruise Control (ACC) with Stop-and-Go function
- Front Assist emergency braking system
- Blind Spot Monitor with rear traffic warning
- Parking distance control with rear emergency braking
- RDK- or RKA-type tire pressure monitoring
- Automatic multi-collision brake
- High beam assistant
- Passive or active reverse camera




Lane change assist
Reverse camera
Rear parking distance control (PDC)
Tire pressure monitoring (RKA o RDK)
MODE
Driver profile selection
Emergency assist

Volkswagen I.Q. Drive Technology

It represents Volkswagen's state-of-the-art solutions in driving "partial automation" or semi-autonomous driving.

Adaptive Cruise Control (ACC) with Front Assist

Continental J428 control unit performs different driver assistance functions such as Adaptive Cruise Control, Stop-and-Go and Front Assist without a front camera.
Adaptive Cruise Control maintains a speed preset by the driver, just like conventional cruise control. If a vehicle with ACC approaches a slower vehicle, ACC will automatically match the speed of the vehicle ahead and follow it at a preset distance. When the vehicle ahead changes lanes, ACC will speed up to maintain the preset speed. A radar sensor located at the front of the vehicle continuously scans for objects or vehicles ahead. ACC controls on the multi-function steering wheel may activate and deactivate it, and set a preferred distance. Taos ACC system is designed to bring the vehicle to a complete stop if necessary. If this happens, all the driver needs to do to keep the ACC operation up is pressing the gas pedal.



Función Stop & Go

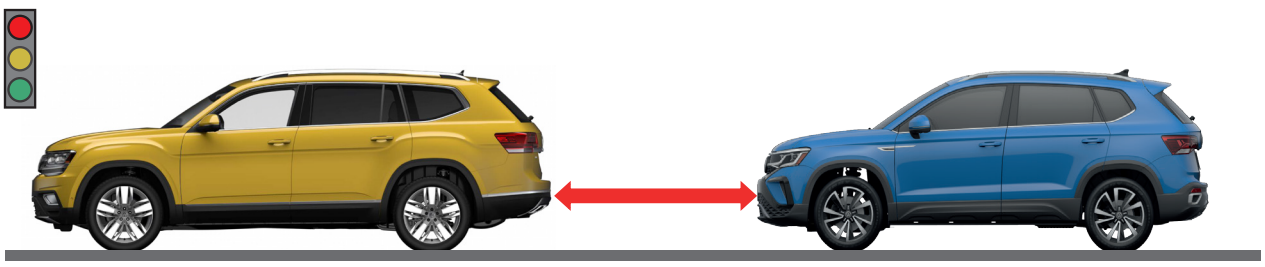
The vehicle brakes to a stop when following a vehicle. If the vehicle ahead pulls away again within the first three seconds, the Taos will automatically follow.

Forward Collision Warning (FCW)

Specially developed for city driving, this system can help reduce or prevent a frontal collision when traveling at speeds up to 30 kph (19 mph).

Automatic Braking

Front Assist can fully brake the vehicle. The vehicle will not stay braked after that. The brake pedal must be stepped on. The brake pedal feels firmer during an automatic braking maneuver.



Front Radar Sensor

The front radar sensor (ACC control unit J428) for ACC and Front Assist in Taos is mounted behind the radar-capable Volkswagen emblem.

Taos features a new generation of radar sensors. Until now, the Front Assist function was performed by the combination of radar sensor and front camera. Now, next-generation radar sensors can detect distance and speed of the vehicles ahead with greater precision. The sensor calculation capacity is much higher. Thus a better detection, evaluation and differentiation of the different objectives is achieved.

Dynamic Calibration

To calibrate this new generation of ACC sensors, there is a function that is enabled through the ODIS diagnostic equipment. When enabling the procedure, the car needs to run for the sensor to perform the self-adaption process. The diagnostic equipment displays the progress and completion of this process. However, if performing a dynamic calibration is not possible, a static calibration must be performed with the special tool VAS 6430/10.

Technical Data of Sensor:

- Mid-range radar sensor
- Manufacturer: Continental
- Frequency: 77GHz
- Range: 160m



ACC control unit J428 behind the radar-capable Volkswagen emblem



Rear Radars

Blind Spot Detection

Radar sensors mounted on the rear bumper can detect vehicles within the blind spot zone up to 25 meters away and warn the driver through signals on the external rearview mirrors. This system prevents accidents, especially while changing lanes.

Radar sensors monitor the area behind the vehicle. The rear radar measures distance and speed difference with other vehicles and informs the driver through visual signals in the external rearview mirrors.

System Limits

The blind spot monitor system should be used on paved roads. Among other possibilities, the blind spot monitor may not interpret the traffic situation correctly in the following situations:

- On tight curves
- While driving in the middle of two lanes
- When lanes have different widths
- On slopes and ditches
- In adverse weather conditions
- When equipment is installed on the side of the road, such as high or off-center guardrails



Exit Assist

When leaving a parking space in reverse, the system can recognize a car approaching behind and warn the driver about the risk. If the driver does not react, the vehicle automatically performs an emergency braking.



More information on driver assistance systems can be found in the Self-Study Program Nr. 706 “Golf 2020”.

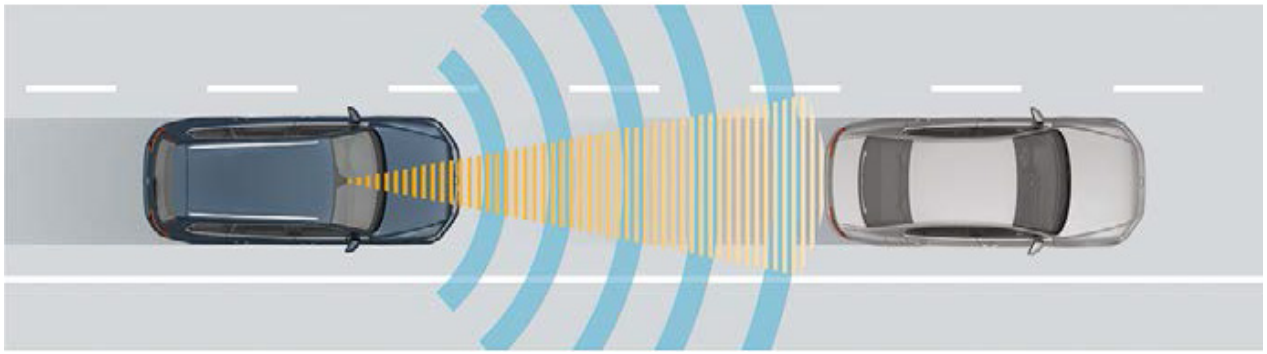
New Braking Assistant. Front Assist

Within the system limits, Front Assist can warn the driver of impending collisions, prepare the vehicle for an automatic braking maneuver, and initiate the braking maneuver automatically.

Warning times vary depending on the traffic situation and driving behavior. The front assist system cannot substitute the driver's attention.

Driving with Front Assist

Front Assist interventions can be canceled by moving the steering wheel or pressing the accelerator pedal.



Forward Collision Warning (FCW) PR 6K4

Specially developed for city driving, this system can help reduce or prevent a frontal collision when traveling at speeds up to 30 kph (19 mph).

Automatic Braking

Front Assist can fully brake the vehicle. However, the vehicle will not stay braked after that. The brake pedal must be pressed. The brake pedal feels firmer during an automatic braking maneuver.

Pedestrian Detection PR VL5

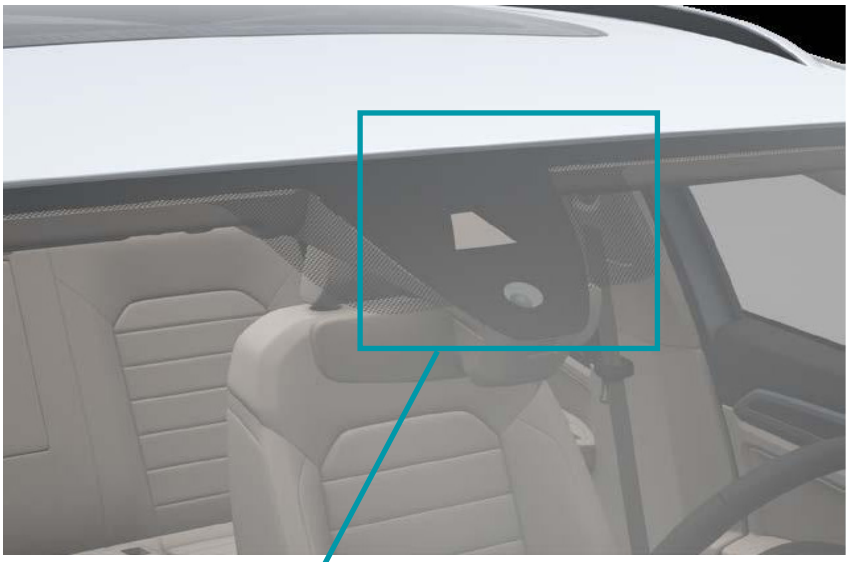
Pedestrian detection consists of a warning intervention and an automatic braking intervention when a possible collision with a human being is detected. Within the system limits, speed can be reduced and an accident can be prevented in the best case.

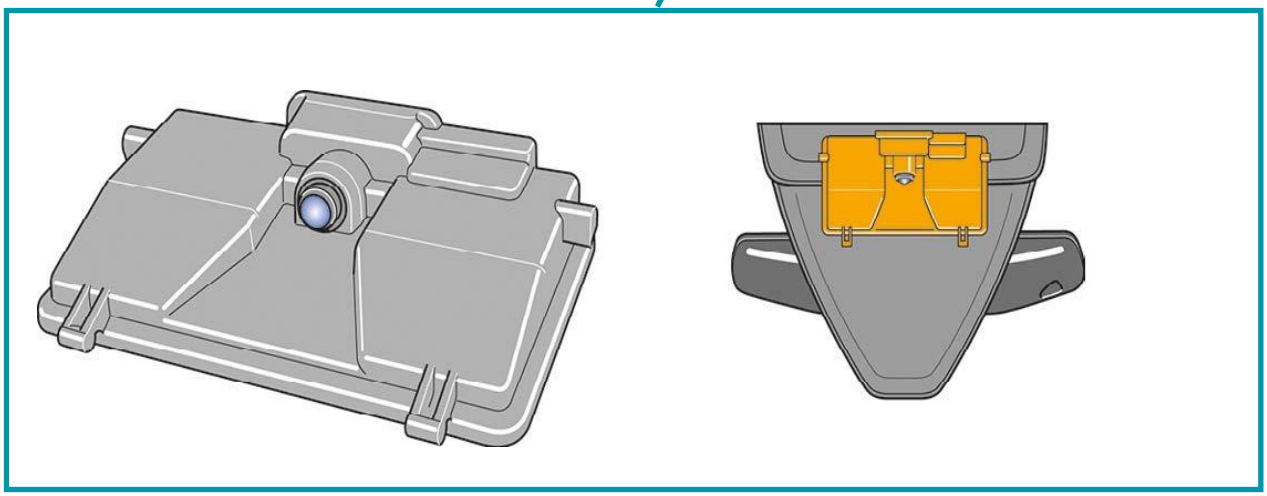
Front Camera for Assistance Systems R242 PR QK1

The front camera is mounted on the windshield inside the car, in front of the rearview mirror. This has its own heating unit Z113. This unit prevents the windshield area where the camera is mounted from fogging up or accumulating ice or snow.

Camera R242 provides visual information for some of the driver assistance systems. Detailed images of the front vehicle area are captured by this camera. This visual data is transferred to various systems via CAN-Bus data buses, and is evaluated by the systems.

Camera R242 is also a control unit since it does not only supply signals for other systems, but also controls signals and data for Light Assist and other functions.





Multi-Function Camera (MFC) for the following systems:

The “High-Beam Control” light assistant PR 8G1

It recognizes both approaching traffic and vehicles standing in front of the camera. The system automatically switches between low beam and high beam at speeds over 60km/h (37 mph).

Taos has a light assistant function. This function is designed to switch between low beam and high beam for better visibility depending on the lighting situation and conditions.

The front camera for assistance systems R242 is used to detect lights from other cars approaching frontally. When detecting a light, the car automatically switches to low beam, and when the camera detects that the car has passed by, it switches back to high beam.

This system connects the low beam when external light conditions are present. For example: in the city.

In some other versions where the camera for assistance systems is not available, this function is achieved with an additional camera J844 mounted on the base of the rearview mirror.

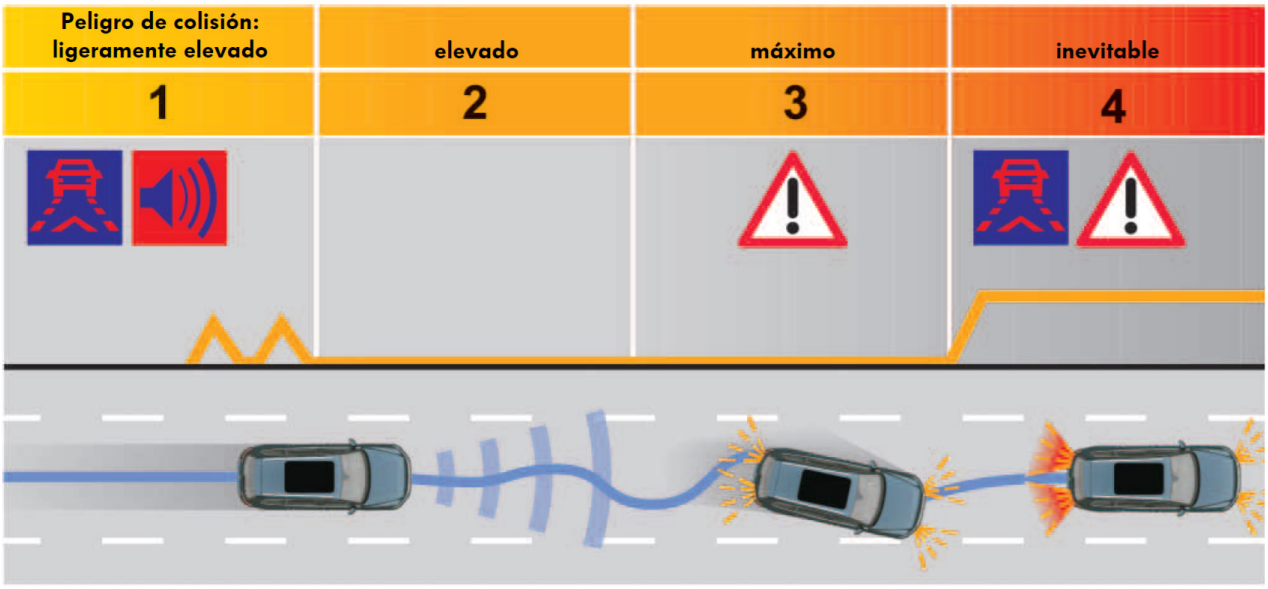


Emergency Assistant

The emergency assistant has been developed for any occasion when drivers find themselves in a medical emergency situation, and cannot therefore continue driving the Taos any longer. In this situation, the emergency assistant takes over the function of longitudinal and transverse guidance of the vehicle, followed by controlled braking until the vehicle stops on its own lane. If Taos itself approaches another vehicle ahead with excessive speed, then the Taos brakes with greater braking power. This aims at preventing an imminent rear-end collision or at least reducing its severity.

The emergency assistant takes on an urgent emergency mode if the system is no longer able to detect the touch of hands on the steering wheel for a defined period of time. A special software algorithm has been developed for this detection. It is called Hands-Off detection. For Hands-Off detection, the signal from the steering torque sensor is continuously analyzed. The software is able to interpret this signal characteristics to thereby deduce whether the hands are on the wheel. As another criterion on the driver's inactivity, gestures on the accelerator and brake pedal are also resorted to.

When the emergency assistant is active, a series of measures are put into effect on the vehicle. They have been implemented in order to protect the driver and keep the risk of a collision as low as possible.



1. Driver Warning
- Acoustic and optical warning
- Brief braking jerks

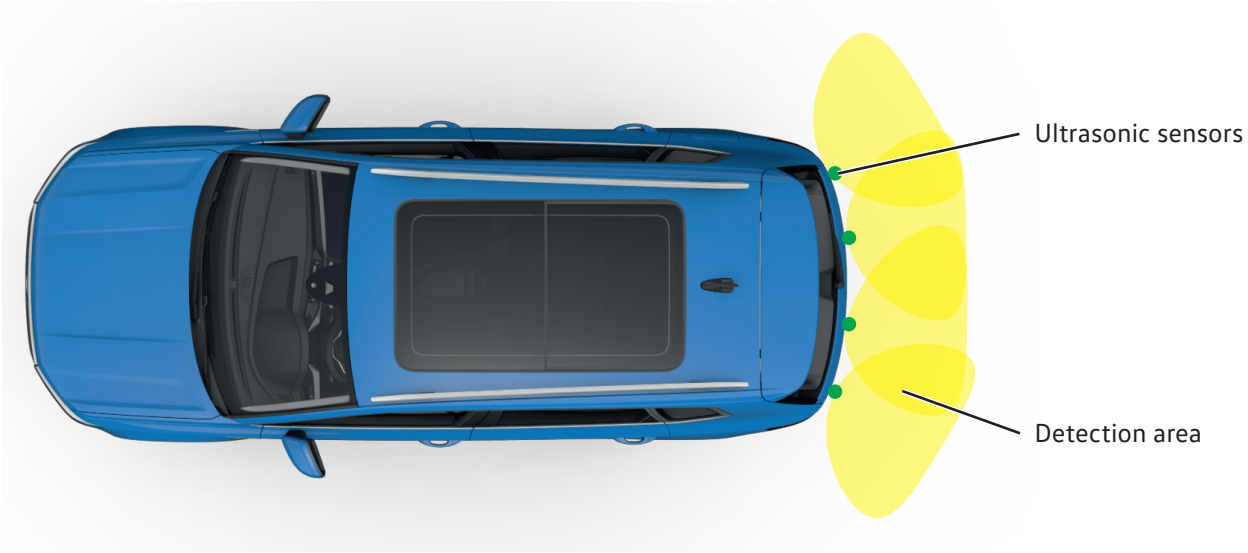
2. Security
- Keeping on lane with the Lane Assist enabled
- Keeping the vehicle distance from traffic ahead is achieved with the Adaptive Cruise Control (ACC) enabled

3. Driver Warning
- Emergency flashers at approx. 80 km/h (50 mph)
- Zigzagging movements on the lane

4. Target Braking
- The vehicle comes to a complete stop within its own lane

Parking Distance Control

The rear Parking Distance Control (PDC) system uses 4 ultrasonic sensors to alert the driver of objects behind the vehicle during parking or reverse maneuvers.



Rear Braking Assist

The Rear Brake Assist helps the driver to brake when the car approaches an object that is not being perceived by the driver and thus performs hydraulic braking within the system limits. After the vehicle brakes, the driver must press the brake pedal to hold the vehicle stationary.

The main condition for this system to be efficient is that the car travels at a speed lower than 15 km/h (9 mph). And that the brake pedal is not touched by the driver while the car is moving.

Electrical System

Overview of Electrical System and Infotainment Systems

There may be some differences depending on country and equipment.

- Start-Stop 2.0 system
- 5th-Generation immobilizer with component protection
- New-generation Information Display System MIB 3
- LED headlights with dynamic cornering light
- Keyless Entry and Keyless Access, optional



- Ambient light with dynamic light switching depending on the driver profile



- Rear light clusters with LED technology as standard equipment

- Digital Cockpit or Active Info Display instrument cluster

- "BeatsAudio" sound system

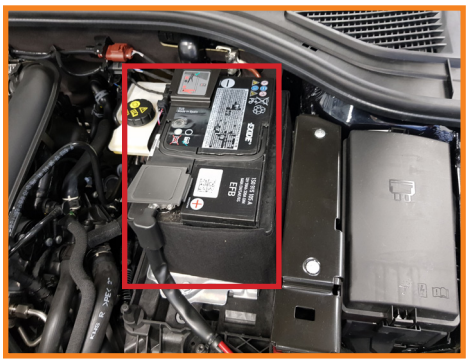
- Driver profile selection

On-Board Network Locations

Depending on the equipment, an alternator with a load current intensity from 110 to 140 Amperes is used. Also depending on the equipment, the following battery types are mounted with a capacity between 280A/59Ah to 320A/59 Ah.

The alternator charge is controlled by the diagnostic interface Gateway J533 by using a LIN-Bus network.

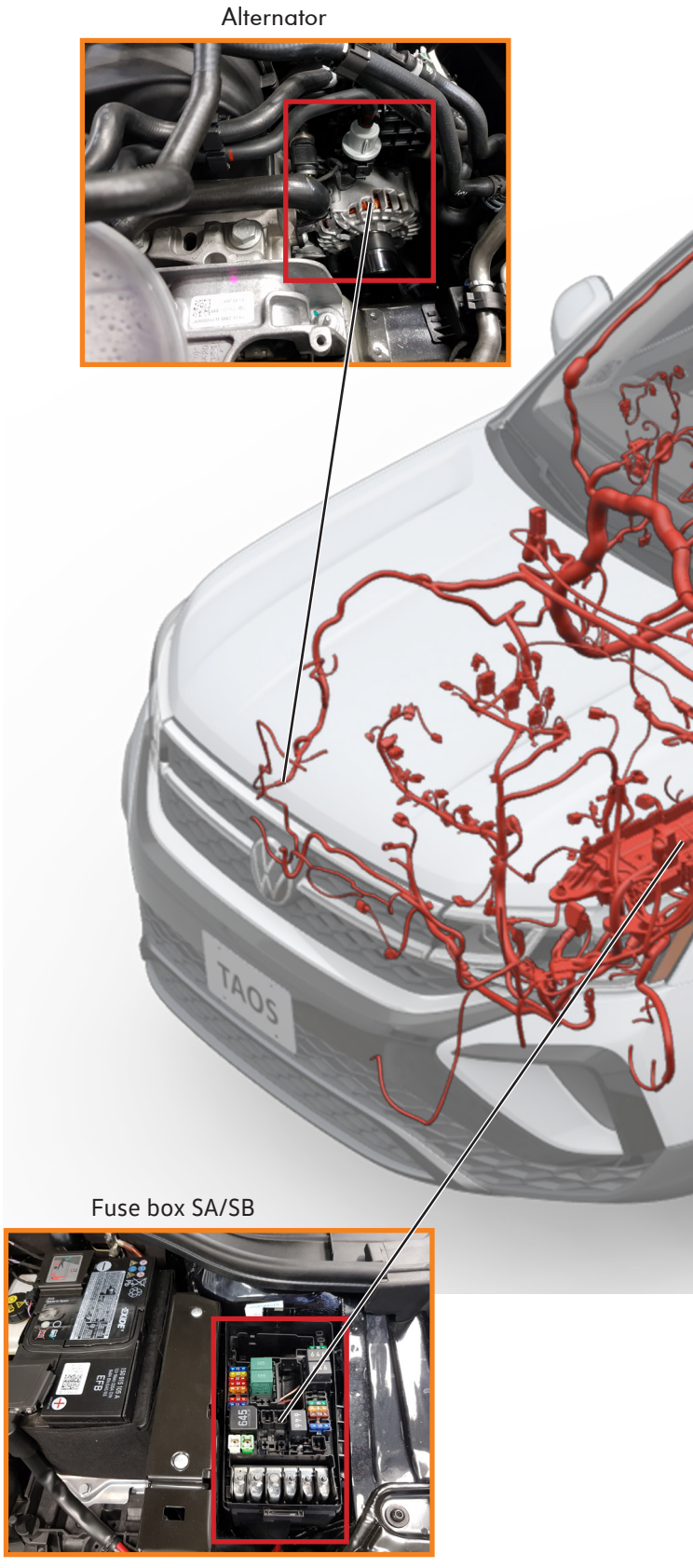
The battery is located in the engine compartment for all models.



Engine Compartment 12V Battery

Three fuse holders distribute the electric current in the vehicle:

- A Multifuse SA pre-fuse holder in the electronic box of the engine compartment.
- A relay holder and fuse holder SB in the electronic box.
- A relay holder and fuse holder SC underneath the left side of the instrument panel, behind the storage compartment



Relay holder and fuse holder SC



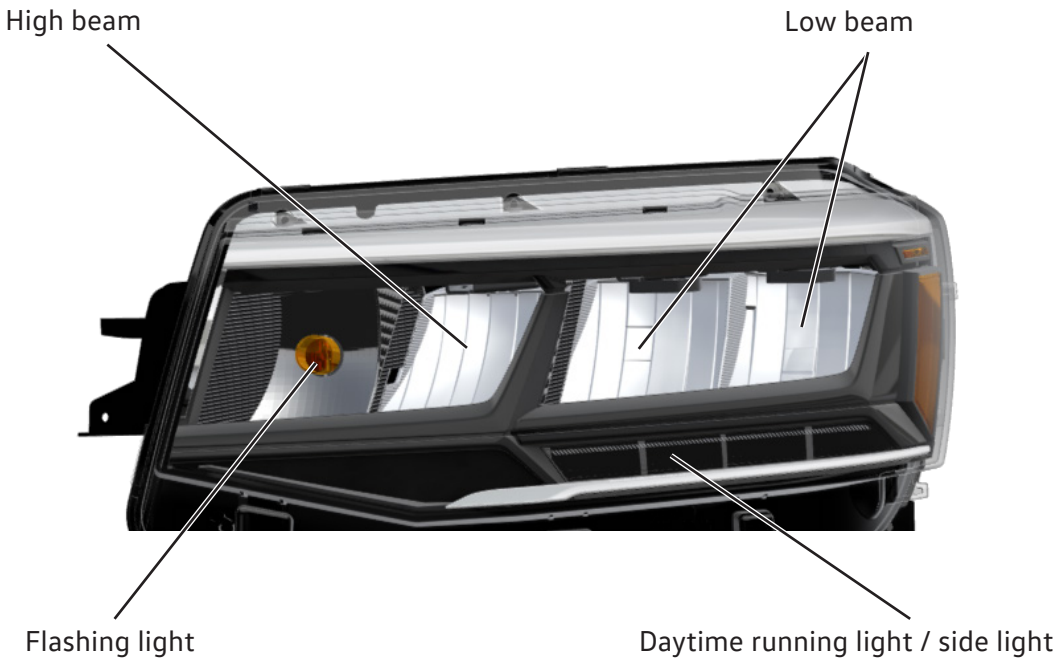
Headlights

There are two types of headlights available for the New Taos:

- LED headlights with LED daytime running lights.
- LED “High” headlights, depending on the equipment, with IQ technology Light (DLA) which has dynamic and static curve light function.

High-Performance LED Headlight

The LED “Basis” headlight has the following light functions: Low beam, high beam, side light, flashing light and daytime running light. Except for the flashing light, every other light function is performed with LED technology.
The daytime running light and the side light are generated by an LED module and an optical conductor, where the LED light is dimmed down to 10%.

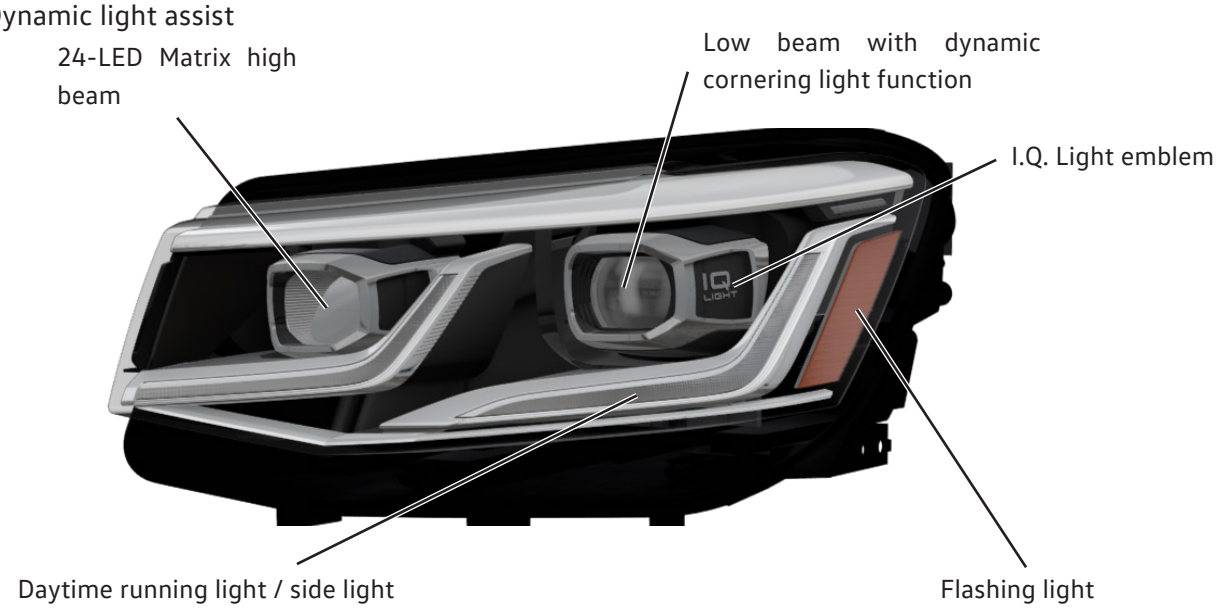


“High” LED Headlight

The “High” LED headlight is also available in the new Taos.

The “High” LED headlight with IQ Light technology available in Taos consists of the following technical characteristics:

- Lens technology
- Exclusively in LED technology
- Dynamic flashing light
- Integrated static cornering light with “Bad-Weather Light” function
- Up to three light functions for the low beam:
  - City light
  - Back road light
  - Highway light
- Dynamic light assist



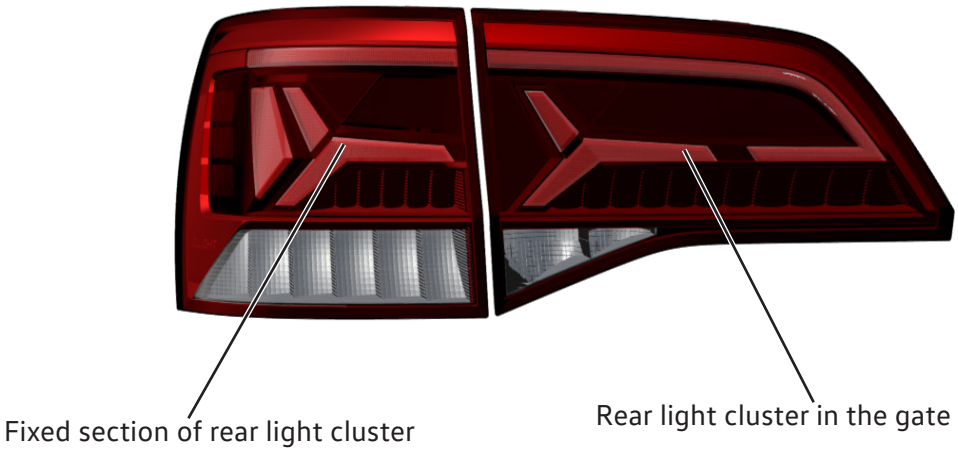
Front Daylight

Taos has a light conductor with LED source which runs along the front grill and connects the light spectrum between both headlights.

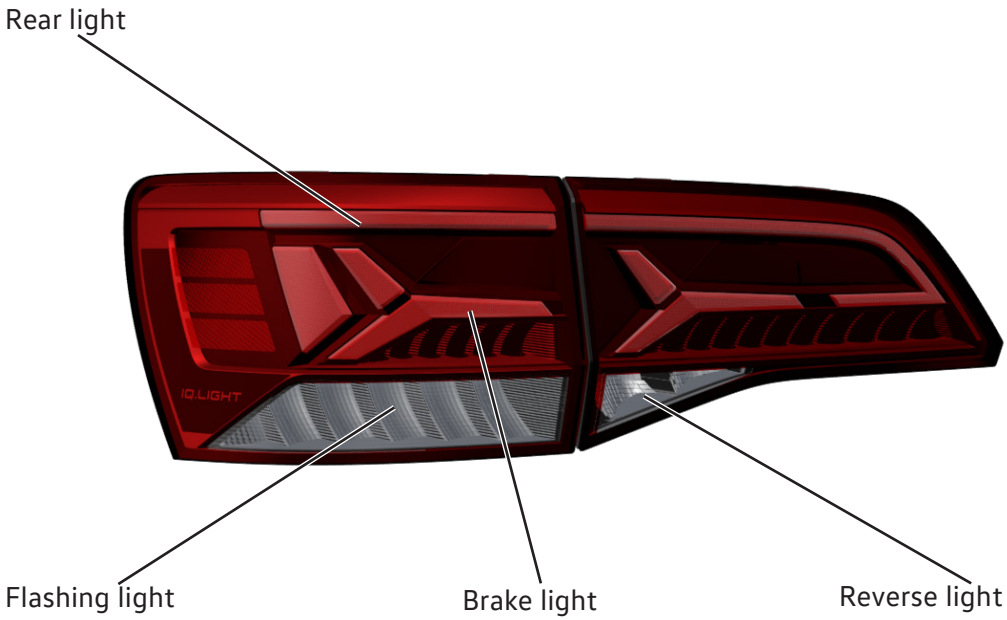


Rear Light Clusters

In Taos, the rear light clusters are equipped exclusively with LED technology.



Rear Light Cluster



Remote Start

Remote start is optional for the new Taos.

To enable it, press the following buttons within 3 seconds:

- The lock button, one time 
- The remote start button, two times  



The turn signals will flash once for confirmation and the parking lights will remain illuminated when the vehicle is in motion. If the remote start function is not interrupted, the engine will run for approximately 10 minutes. Two remote starts in a row are possible before a starting cycle is required from inside the vehicle.

Instrument Cluster

Digital Cockpit



Entry Taos versions are equipped with a digital instrument cluster. The driver may use the VIEW button on the steering wheel to switch between the following four views:

- Classic
- Reduced
- Navigation
- Assistance systems

The operating principle has been thoroughly revised: The selected view determines the central display.

The contents to the left and right may only be changed via the multi-function steering wheel.
As the vehicle runs, the following information is displayed continuously: Current speed, selected gear change, fuel level, autonomy, driver profile and ambient temperature.

Functions and Characteristics

- 10.25"color TFT screen with 1280 x 480 resolution
- Can Comfort Bus connections
- Round instrument display
- Media graphics display
- Animated representations

The speed shown in the instrument cluster is equivalent to the current speed.
Certain other displays, such as tire tread wear and tire pressure are calculated by means of complex algorithms.

Instrument Cluster Active Info Display (AID)



In the Active Info Display (AID), the analog dial gauges are presented virtually.

The safety-related lamps are still set displays and are laid out separately above the display.

For setting up customized information for the driver to be displayed at any given time, additional data of the driving, navigation and assistance functions can be displayed in central areas of the speedometer and the tachometer.

This instrument cluster displays the following basic information:

- Vehicle status
- Driving data
- Assistance systems
- Navigation
- Audio
- Additional view
- These screens are accessed by using the steering wheel controls.

Funciones y características:

- Pantalla TFT de 10" con una resolución de 1440 x 540 píxeles
- Cuenta con todas las funciones básicas
- Se pueden seleccionar diferentes pantallas
- Cambio automático de pantallas según la función activa
- Visualización de gráficos 2D y 3D
- Navegación y visualización de medios

The following safety-related warning indicators remain as they are:

- Turn signals
- Coolant temperature
- Fuel level
- Engine failure



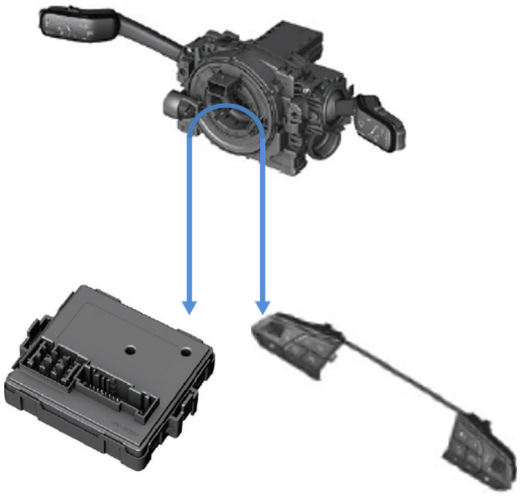


Multi-Function Steering Wheel

The steering wheel has the multi-function steering wheel control unit J453 and the master unit is the J533 Data Bus on-board diagnostic interface. The multi-function steering wheel control unit J453 is located in the left module.

The steering column electronics control unit does not process any information related to the multi-function steering wheel, it is only an interconnection bridge.

The multi-function steering wheel control unit makes the driver-aid assistants and Infotainment options easy to use.



Buttons for driver aid assistants



Buttons for Infotainment





Multi-Function Steering Wheel Buttons

Depending on the equipment level, the driver-aid assistance buttons may not be enabled.





RES — Resuming the pre-set driving speed may not be enabled

SET — Set speed

Activar CCS

Activate CCS

ACC distance setting

Lower speed

Increase speed

Increase volume

Decrease volume

One-step back (previous radio station, music track)

One-step forward (next radio station, music track)

Take phone call / Open phone menu

Go to previous entry

Go to next entry

Display previous menu

Display the following menu

OK — OK button (confirm selection)

Keyless Access System

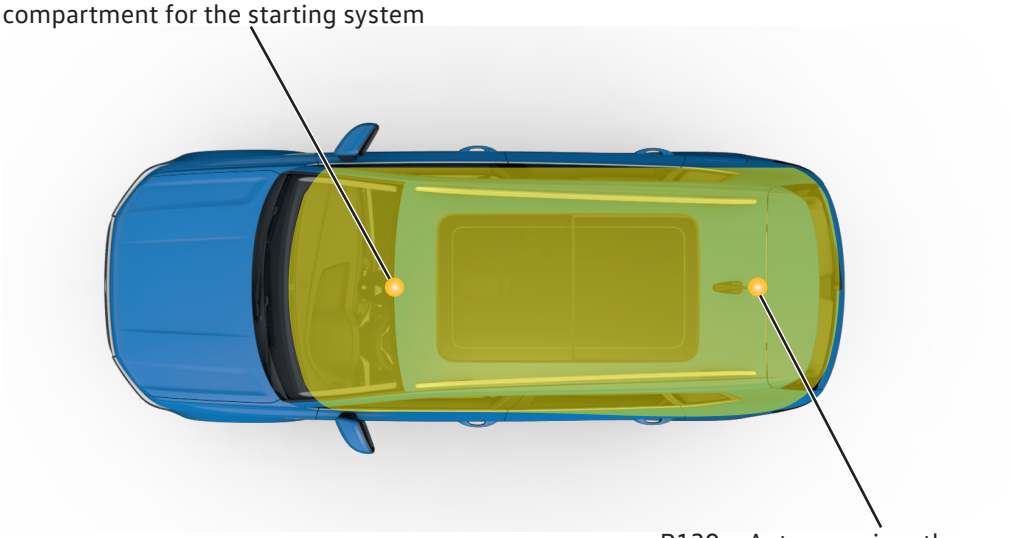
Taos can be equipped with one of the two “Keyless Access” lock and start systems available: “Go” and “Entry”.

The “Keyless Access Go” system is equipped as standard.
Therefore, the conventional ignition lock is eliminated.

“Keyless Access Go” System

The “Keyless Access Go” system has two antennas for the starter system. One in the center console and the other in the trunk. These antennas check whether there is an authorized key inside the vehicle. The E378 Starter pushbutton enables the ignition to be switched on and the engine started. Unlocking and locking occur after active actuation of the remote control.

R138 Antenna 1 in the passenger compartment for the starting system



R139 Antenna in the passenger compartment for the access and start system

Key

Antenna for starter

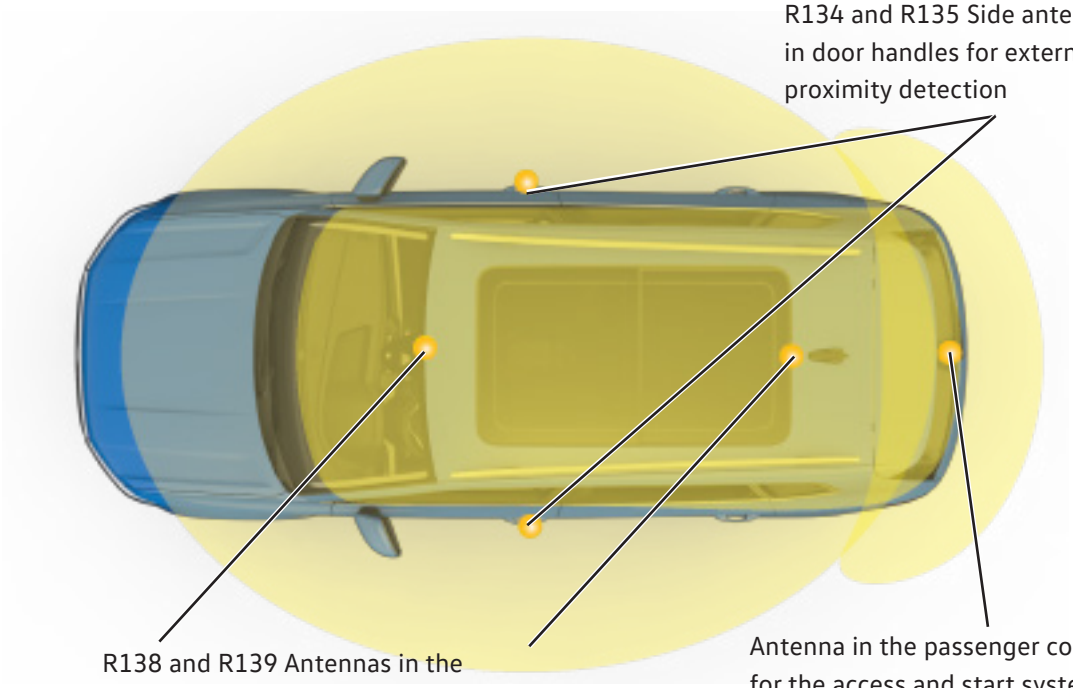


The J764 Steering wheel lock control unit has been removed from both Keyless Access versions.

“Keyless Entry” System

The “Keyless Access Advanced” system includes all the features of the “Keyless Access Go” system. In addition, it allows the following:

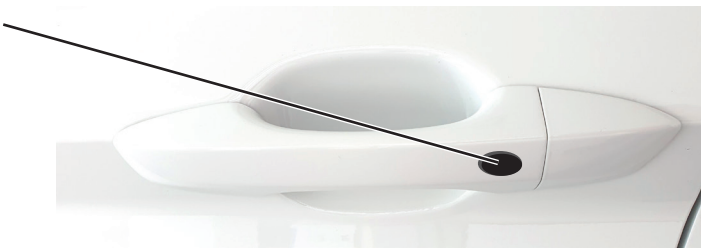
- Keyless unlocking and locking of the vehicle. To this end, Taos 2021 has two other antennas for the access system that are mounted on every front door opening handle. These have a broader detection range than antennas in other models with the “Keyless Access” system.
- Unlocking automatically when the authorized key is detected within the detection range of the two side antennas for the access and start system.
- Comfort vehicle locking function by means of a physical switch located in the door handle.



Key

Antenna for the access and start system

Physical switch on front door handles.
For comfort locking function.



Wireless Charging

Some Taos versions have a wireless phone charging system. The wireless charging plate is located on the central object holder right in front of the shift lever.



Alternating voltage is applied to a coil in the charging unit (on the docking antenna) for wireless charging. An ever-changing magnetic field is produced.
Mobile phones include as well a coil where the changing magnetic field induces a voltage.
The receiver electronics includes a rectifier that turns AC voltage into DC voltage, and this is transmitted to the phone battery.

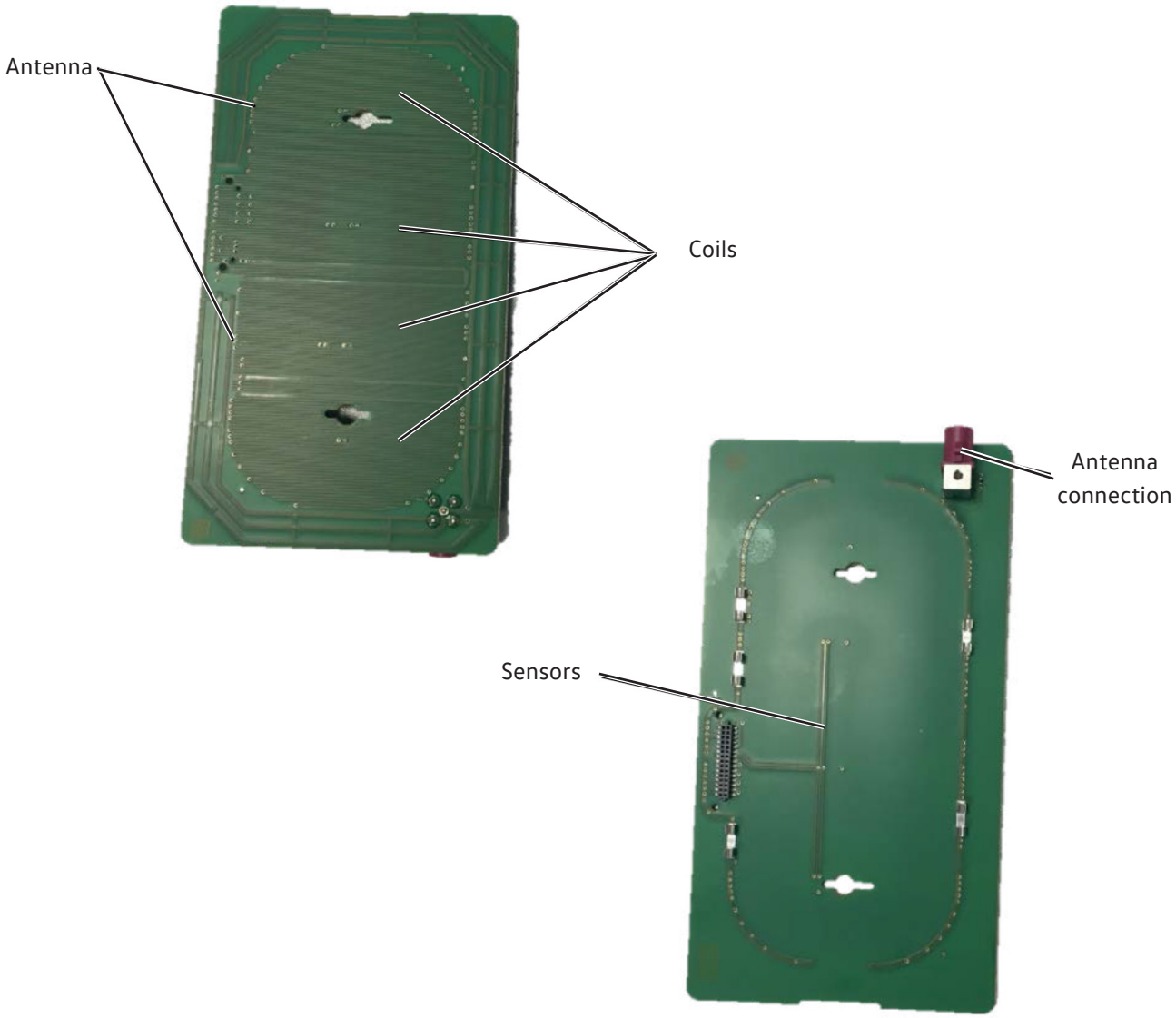


Retainer frame | Charge electronics | Plate Insulator | Printed circuit with antenna and coils | Housing

Volkswagen uses the Qi Standard, which was developed by the Wireless Power Consortium.
The Qi Standard defines the communication that is required between the charging unit and the mobile phone during the charging phase.
The maximum power that can be transmitted is 5 watts. Since smartphones generally run on 5 volts, this means there is a maximum charging current of 1 amp.

Wireless Charging Operation

The Printed Circuit Board (PCB) for the antenna has 4 separate coils for the charging function. The antenna for mobile phone reception is located around the outside of the coils.
If the radio navigation system (MIB) is ON, the charge electronics is active for a phone connected via Bluetooth. Sensors on the PCB (both inductive and capacitive) are used by the charge electronics to check for an object on the board. If a mobile phone that supports wireless charging is detected, a higher current flow starts and the charging process begins. If a charging process is not required, energy consumption is reduced to a minimum.
Only one coil at a time is used for a charging process. The charge electronics determines the best coil to be used. The coil that can carry the highest charge current is the best one. To use the best coil, the mobile phone transmits information via Bluetooth to the charge electronics via MIB. Then the charge electronics either increases the specific coil power or switches to a different coil in case of changes (position, mobile phone).



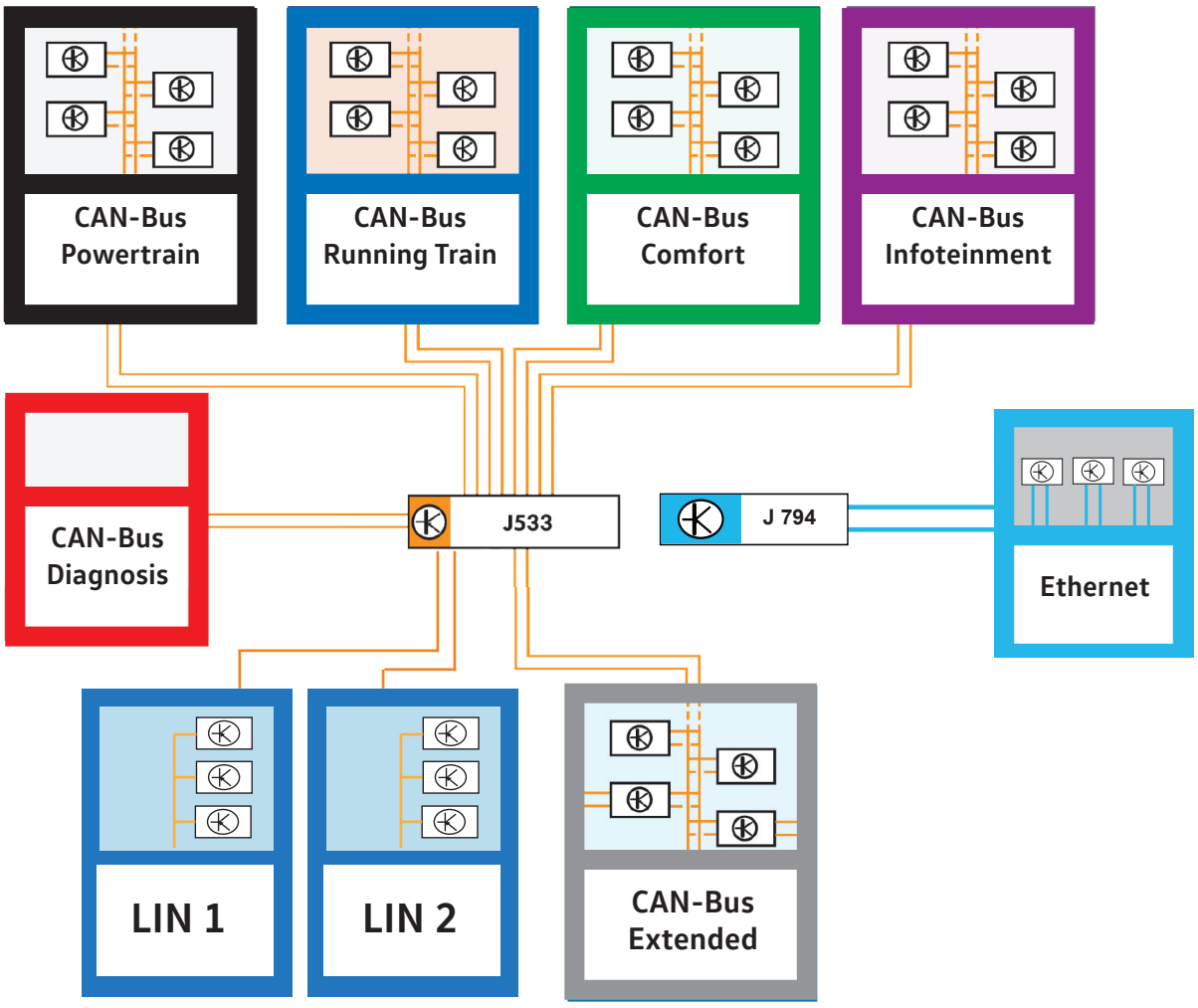
Networking

Overview of Data Bus Systems

The architecture used by Taos is the J533 High Data Bus interface, which is foreign to the On-board Network. It has 6 CAN-Buses, and all of them at a transmission speed of 500 kBit/sec. It controls as well 2 LIN buses and, as usual, it links the CAN data bus systems.

Other LIN buses are connected to various control units. LIN data buses are transmitted at a rate of 19.2 kBit/sec.

With the incorporation of the third-generation modular information platform MIB3, Ethernet is used as the bus for transmission of large data streams, especially audio and video, thus replacing the MOST data bus. The master unit is the J794 Electronic information system control unit 1.
The transmission speed is 100 Mbits/sec.

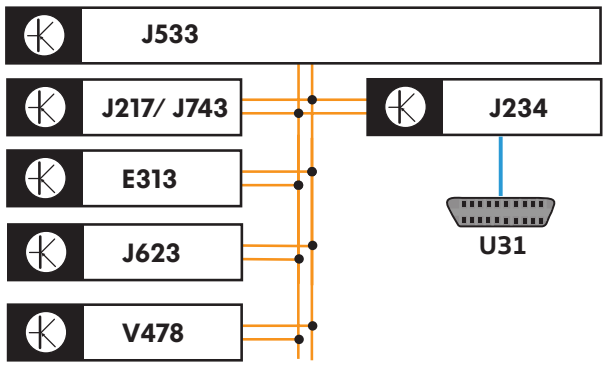


Leyenda
J533 Data bus on board diagnostic interface
CAN data bus cable
LIN data bus cable
Ethernet

CAN Data Buses

Drive CAN-Bus

The Drive CAN-Bus has changed slightly in comparison to other Volkswagen vehicles. The J500 Power steering control module has been moved from the powertrain CAN-Bus to the running train CAN-Bus.

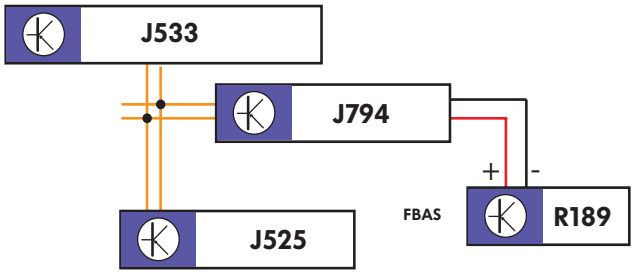


Key

E313 Selector lever
J217 Transmission control module
J234 Airbag control module
J533 Data bus on board diagnostic interface
J623 Engine control module
J743 Dual-clutch transmission Mechatronic (DSG)
V478 Transmission fluid cooling pump
U31 Diagnostic connection

Infoteinment CAN-Bus

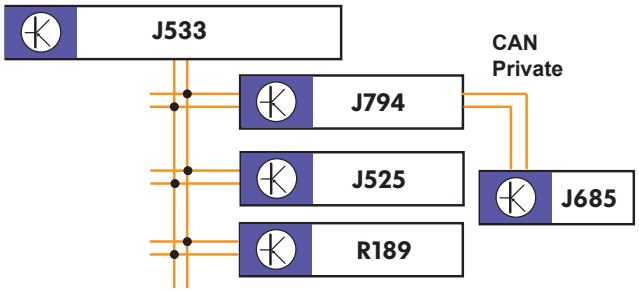
There are two Infotainment CAN-Bus versions depending on the equipment.



For PR 8UK

Key

J525 Digital sound system control module
J533 Data bus on board diagnostic interface
J794 Information electronics control module 1
R189 Rearview camera



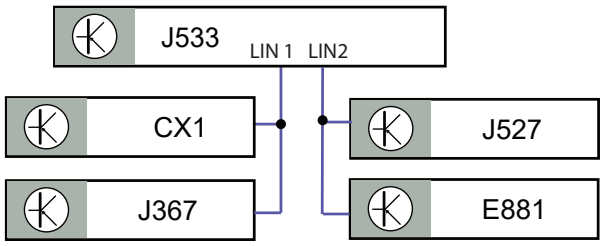
For PR 8AR

Key

J525 Digital sound system control module
J533 Data bus on board diagnostic interface
J685 Front information display control head
J794 Information electronics control module 1
R189 Rearview camera

LIN-Bus

The J533 Data Bus On-board Diagnostic Interface Unit may have 2 Lin Buses depending on the equipment level.

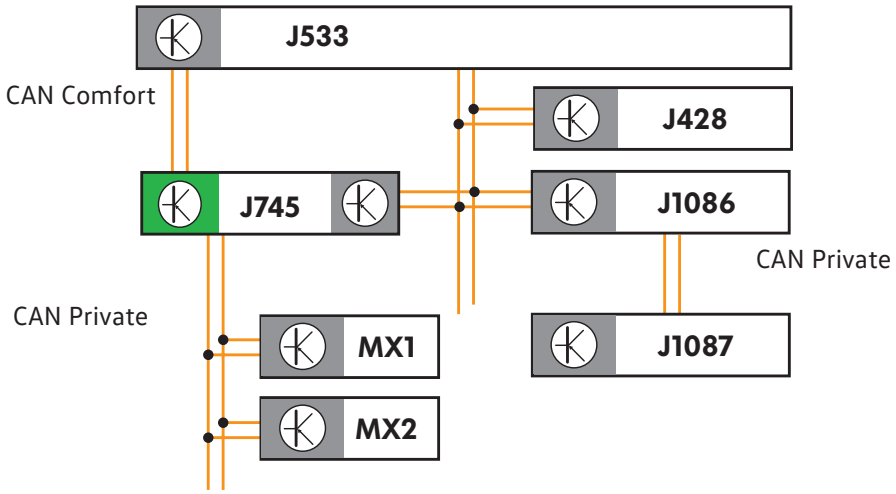


Key

CX1 Generator
E881 Driving profile selection control head
J367 Battery monitoring control module
J527 Steering column electronics control module
J533 Data bus on board diagnostic interface

CAN-Bus Extended

CAN-Bus extended contains the lighting and driver assistance systems. The J745 Control unit for cornering lights and headlight range regulation is also connected to the Comfort CAN-Bus. In addition, there is a CAN-Bus for private communication.

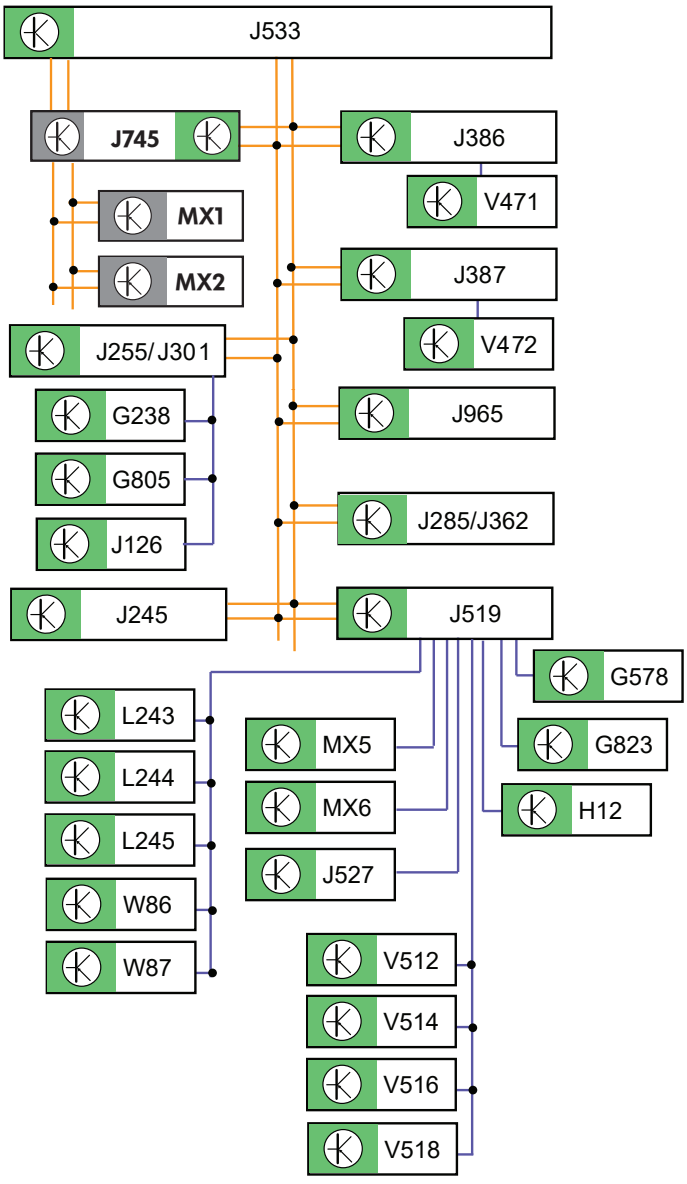


Key

J428 Distance regulation control module
J533 Data bus on board diagnostic interface
J745 Cornering lamp and headlamp range control module
J1086 Blind spot detection control module
J1087 Blind spot detection control module 2
MX1 Left front headlamp
MX2 Right front headlamp

CAN-Bus Comfort

The Comfort CAN-Bus is the most extended CAN-Bus. In addition to CAN buses that connect the electrical system control units and accessories, there is a more extended LIN data network, where the J519 On-Board Network control unit acts as the master and the sensors and actuators are slaves.

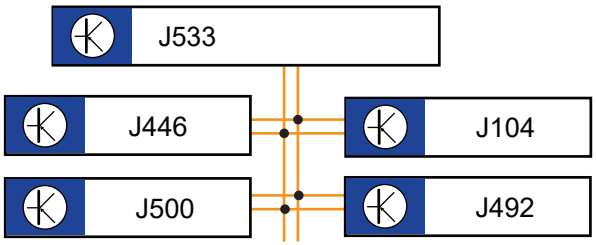


Key

G238 Air quality sensor
G578 Anti-theft alarm system sensor
G805 Refrigerant circuit pressure sensor
G823 Humidity, rain and light recognition sensor
H12 Alarm horn (with battery)
J126 Fresh air blower control module
J245 Power sunroof control module
J255 Climatronic control module
J285 Instrument cluster control module
J301 A/C control module
J345 Towing recognition control module
J362 Anti-theft immobilizer control module
J386 Driver door control module
J387 Front passenger door control module
J519 Vehicle electrical system control module
J527 Steering column electronics control module
J533 Data bus on board diagnostic interface
J745 Cornering lamp and headlamp range control module
J810 Driver seat adjustment control module
J965 Access/start system interface
L243, L244, L245 Instrument panel contour illumination lamps
MX1 Left front headlamp
MX2 Right front headlamp
MX5 Left tail lamp 2
MX6 Right tail lamp 2
V471 Driver side rear window regulator motor
V472 Passenger side rear window regulator motor
V512 Left front seat backrest fan 1
V514 Left front seat cushion fan 1
V516 Right front seat backrest fan 1
V518 Right front seat cushion fan 1
W86 Driver side door ambient lighting lamp
W87 Passenger side door ambient lighting lamp

CAN Bus Running Train

In the CAN-Bus Running train some of the units related to driver assistance systems are connected.



Key

J104 ABS control module
J446 Parking aid control module
J492 All wheel drive control module
J500 Power steering control module
J533 Data bus on board diagnostic interface

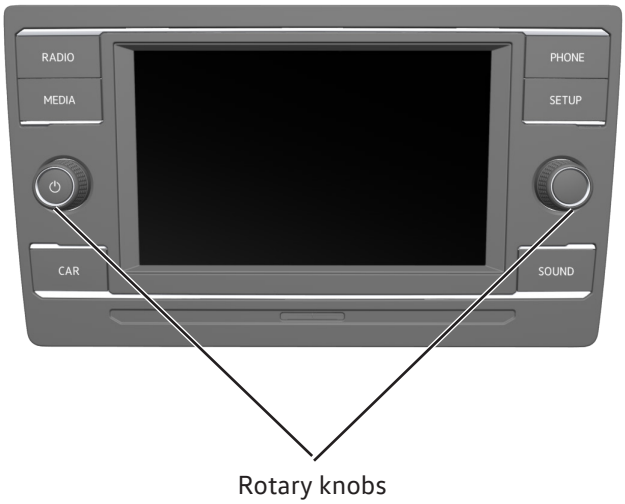
Modular Infotainment System (MIB)

Radio Composition

Technical characteristics

- 6.5″ Touch screen
- Two rotary push knobs
- Display resolution 142 dpi (1088x480) pixels
- 4-channel amplifier
- FM radio with radio station logos
- Bluetooth hands-free device
- Two USB-C connections suitable for data transmission
- Pre-installation for reverse assist
- Wired AppConnect (optional)
- Data bus link: CAN Infotainment

Front view of Radio Composition



Rotary knobs

Discover Pro

Technical characteristics

- 10" Touch screen
- Screen resolution 1560 x 700 pixels (172dpi)
- Central computer behind the glove compartment
- Starting screen
- Map navigation in central screen and instrument cluster.
- Navigation maps stored on the hard drive
- Proximity sensors (driver/front passenger detection, slide touch functions)
- Touch controls (Touch bar)
- Joint FM/DAB/on-line station list
- Wi-Fi access points
- Wireless Carplay
- Data bus link: Ethernet and CAN Infotainment
- No physical buttons

Front view of Discover Media



Summary of top news:

- Operation via MIB3 menus
- List of FM/DAB+ radio stations
- List of multimedia favorites
- Video play
- Touchless gesture recognition system
- Natural voice control
- Wireless use of CarPlay
- Additional USB ports. These ports are only for DC charging.
- 2 USB C-type DC charging and data inputs in the center console
- 1 USB C-Type input on rear center console for DC charging only
- No SD and CD input in Infotainment unit





The photo displays the standard version. Depending on the equipment level, either button names or functions may vary.

USB C-type Port Interconnection

Taos has 2 media inputs and a charging socket in the rear center console, depending on the equipment level: Two ports in the central object holder provide connectivity for data and charging. All USB inputs are connected to a USB hub located below the center console. This UBS hub communicates with the electronic information unit J794.

The J794 is responsible for:

- Receiving information from the USB ports and AUX-IN inputs.
- Sending data, image and video information to the Infotainment screen and digital instrument cluster via Ethernet cable at 100 MBits/s.



LVDS cable for image transmission

Private CAN-Bus for data transmission



J794



Ethernet cables for data and video transmission at 100 Mbits/s.

+ 5 V
58D Terminal
TX Signal
RX Signal
0 V

+ 5 V

0 V

R293 USB hub



USB ports
On the instrument panel object holder

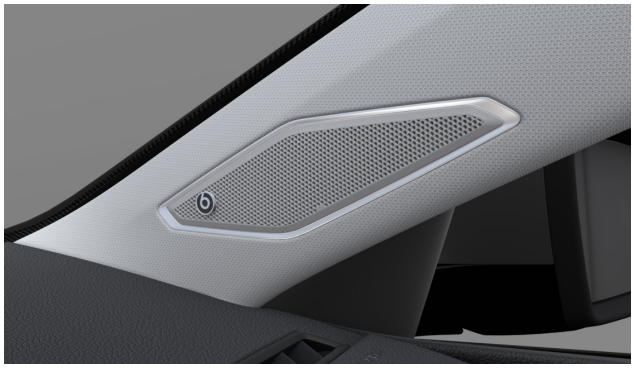


USB port in rear center console

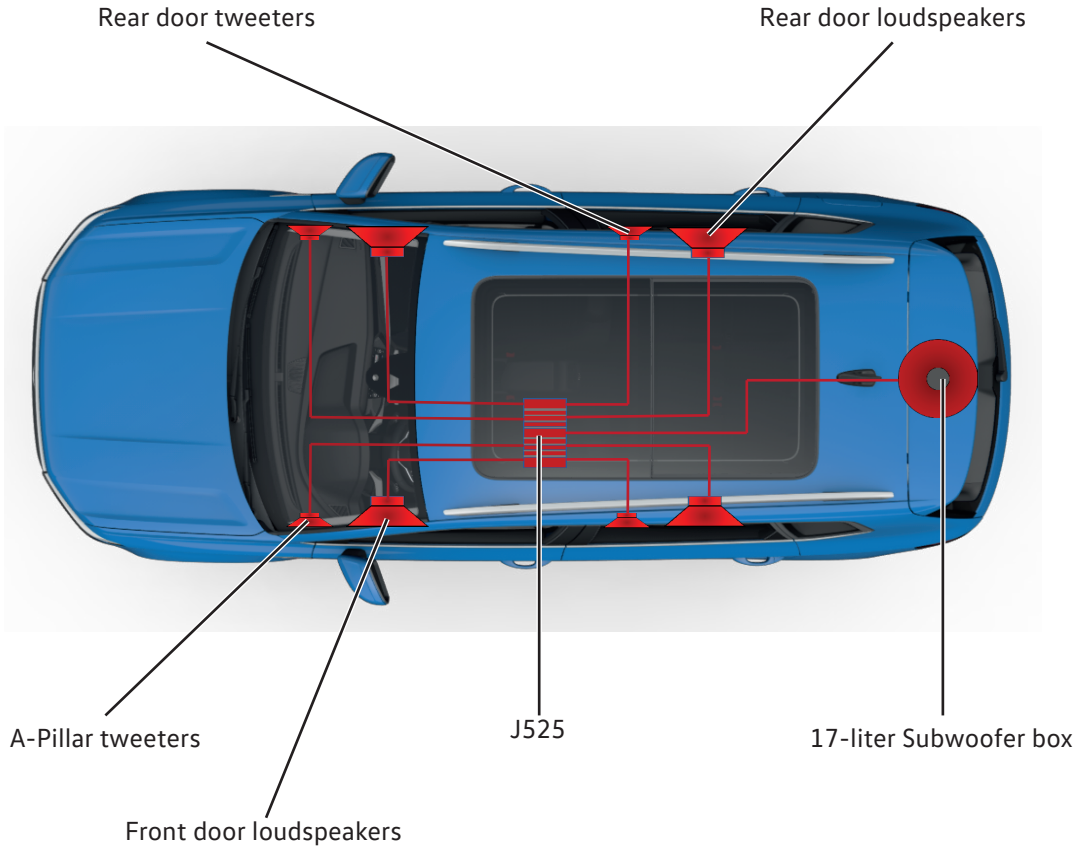
BeatsAudio Sound System

Technical characteristics

- 300 watt power
- Amplifier
- 6 Loudspeakers
- 1 Subwoofer



BeatsAudio Diagram



MIB Modular Infotainment System REGIO PR 8UK

Overview

MIB REGIO is an Infotainment system with a 10.1" screen that combines the latest state-of-the-art, modern design, impeccable finishes and multiple functions.
The entire product is designed to run the Android Auto operating system, which provides more user connectivity and interactivity.
This Infotainment system has no physical buttons. It operates entirely through a capacitive touch screen that allows extremely precise touch commands.

MIB-Regio, in addition to being connected to the Data CAN-bus, uses Ethernet technology as the communication data bus.

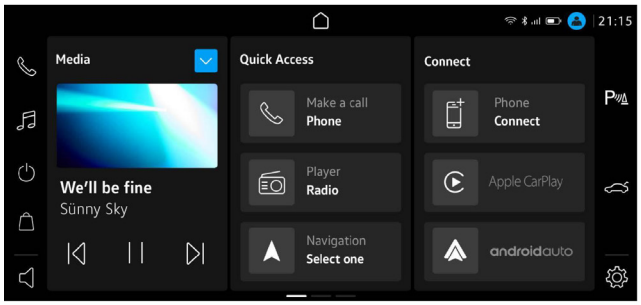
Initially, for the new modular Infotainment MIB-Regio system, there is only one level of implementation in its full version, commercially called VW Play.

Radio MIB REGIO

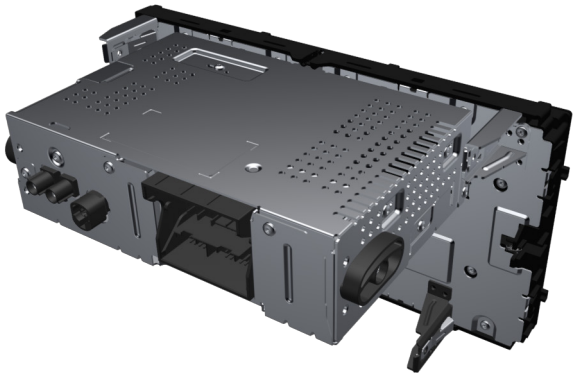
Technical characteristics

- 10.1" Touch screen
- Two rotary push knobs
- 1540 x 720-pixel screen resolution
- FM tuner with 6 memories
- Audio formats (MP3/WMA/ACC/FLAC)
- Video formats (MP4/TS/MKV/AVI/MPV)
- USB 3.0 C-Type connection ports
- Wi-Fi hotspot function from the mobile phone
- Wireless charging interface
- 10 GB storage memory
- Exclusive VW Play App Store
- Intuitive control interface with widgets
- App-Connect
  - Apple CarPlay with wireless connection and USB cable
  - Android Auto with wireless connection and USB cable
- Bluetooth 4.2 with A2DP and HFP
- Wi-Fi 2.4 GHz and 5 GHz for internet access
- Media Player to play music and video
- Virtual button to protect your applications
- Virtual button for vehicle functions
- 4-channel amplifier
- ETHERNET technology as communication data bus
- Valet mode to block the use of Infotainment by means of a 4-digit code. This mode enables as well to view the kilometers the car has traveled and the maximum speed the car reached during the time the mode was active.

MIB REGIO Front view



MIB REGIO Rear view





The illustration shows the standard version. Depending on the equipment installed, either button names or functions may vary.

VW Play Apps

VW Play Apps. These are Volkswagen applications that can be setup in the vehicle. It is an exclusive virtual environment for brand clients that perform different functions.

Associated applications

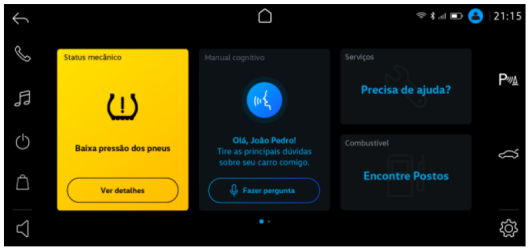
The applications available in VW Play Apps are designed for the best experience in the vehicle. They offer only functions that are safe while driving, and it is not possible to access games or videos while the vehicle is in motion. Even for applications with functions available while driving, everything has been planned to ensure that nothing distracts the driver's attention.

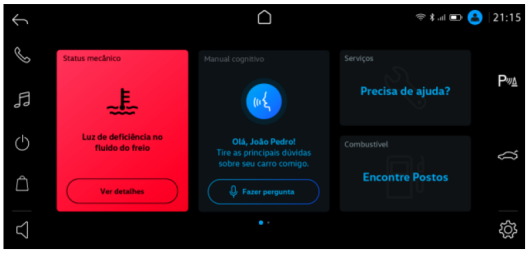
10GB are available for data and application storage, making it possible to install various functions that previously depended on the mobile phone along with the wired connection. This frees up mobile phone memory space and extends the battery charge. In addition, the applications run faster in the radio, which offers greater comfort and safety.



My VW App

The My Volkswagen applications will be preset in some radio versions. This allows to recognize and program service needs, in addition to showing the vehicle status. For example, when a pilot lamp turns on in the instrument cluster, the application recognizes the meaning of the pilot lamp and by touching the icon in 'View details', suggestions for actions to be taken according to the type of failure are displayed.







Available applications depend on market.

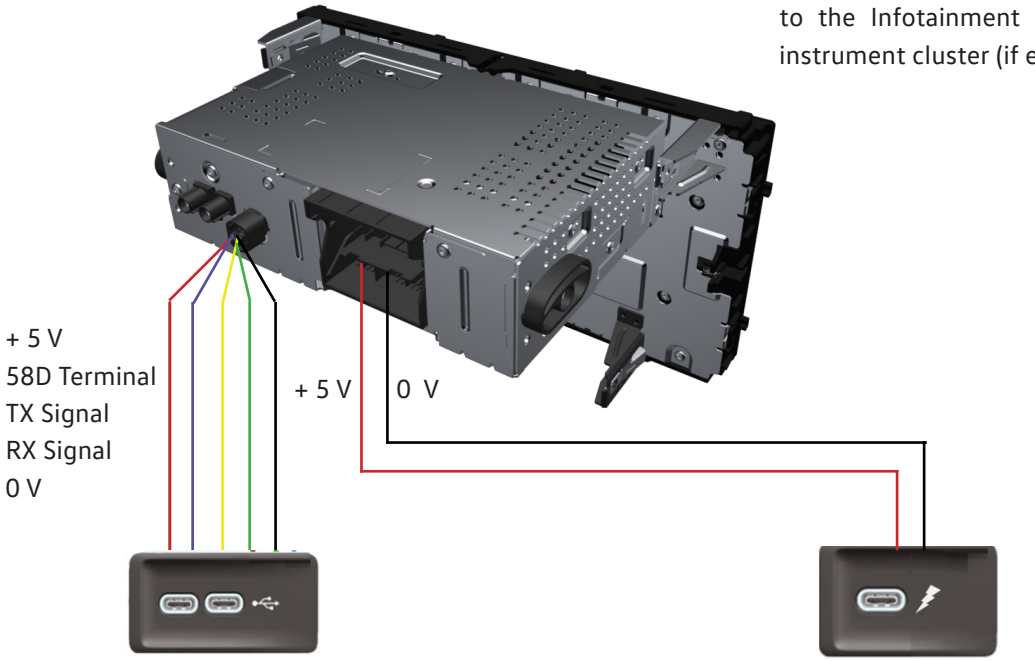
Infotainment

USB C-type Port Interconnection

Taos has one or two inputs for media, depending on its equipment level: The two ports on the center object holder in front of the shifter lever provide connectivity for data and charging. The remaining ports support only charging. One is located in the object-holder compartment and the other is on the rear center console base.

The J794 is responsible for:

- Receiving information from the USB ports and AUX-IN inputs.
- Sending image and audio information to the Infotainment screen and digital instrument cluster (if equipped).



USB ports with data transfer on the instrument panel object holder

USB charging port on the rear of the center console

Taos replaces the traditional USB connections (A-type) with the newer USB C-type connections. This connection type has the advantage of being totally reversible. In this way, both the connector and the cable itself do not have a specific mounting position. 3 USB C-type connections are mounted on Taos: 1 in the front object holder right in front of the shifter lever, 1 inside the center console compartment, and 1 in the rear of the center console.

Ethernet

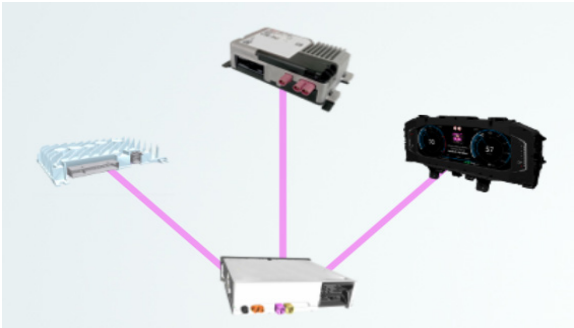
With the addition of the new generation of MIB3 control units of the electronic information system, Ethernet technology is used as the communication data bus.

Automotive Ethernet Network

Ethernet has a data transmission bi-directional rate of 100 Mbit/s per branch, which is well suited for audio and video transmission.

Topology

Only two control units are connected to one cable (point-to-point connection). This results in a star-type network topology.



Data Flow

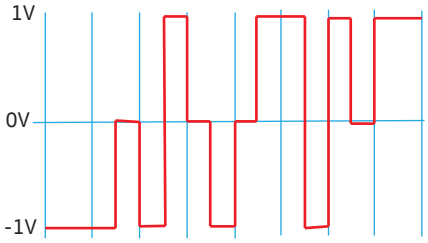
wo interconnected control units can send or receive 100 Mbit/s at the same time. Therefore, the maximum data flow is 200 Mbit/s, i.e. if there are three control units connected, the maximum data flow is 600 Mbit/s.



Signal

3 voltage levels are used for data transmission:

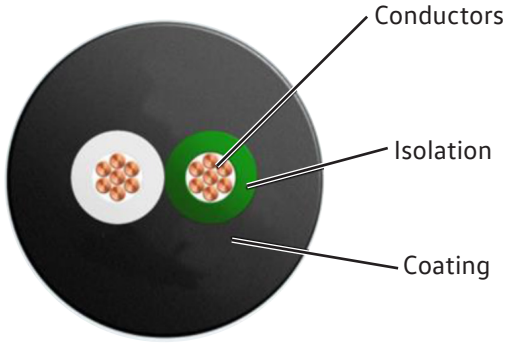
-1 V
0 V
+1V



Automotive Ethernet Cables Cable

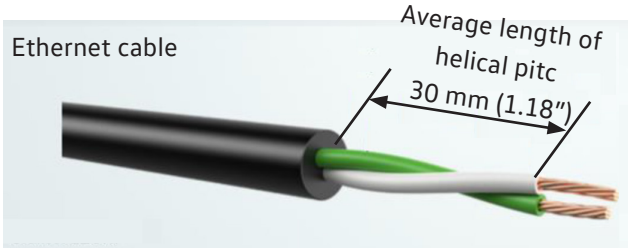
Configuration

The cable has two wires wound with 0.13 sq. mm copper and magnesium conductors. The pair of conductors has white and green insulations. These are wrapped in a polypropylene coating to protect the outside.



Conectors

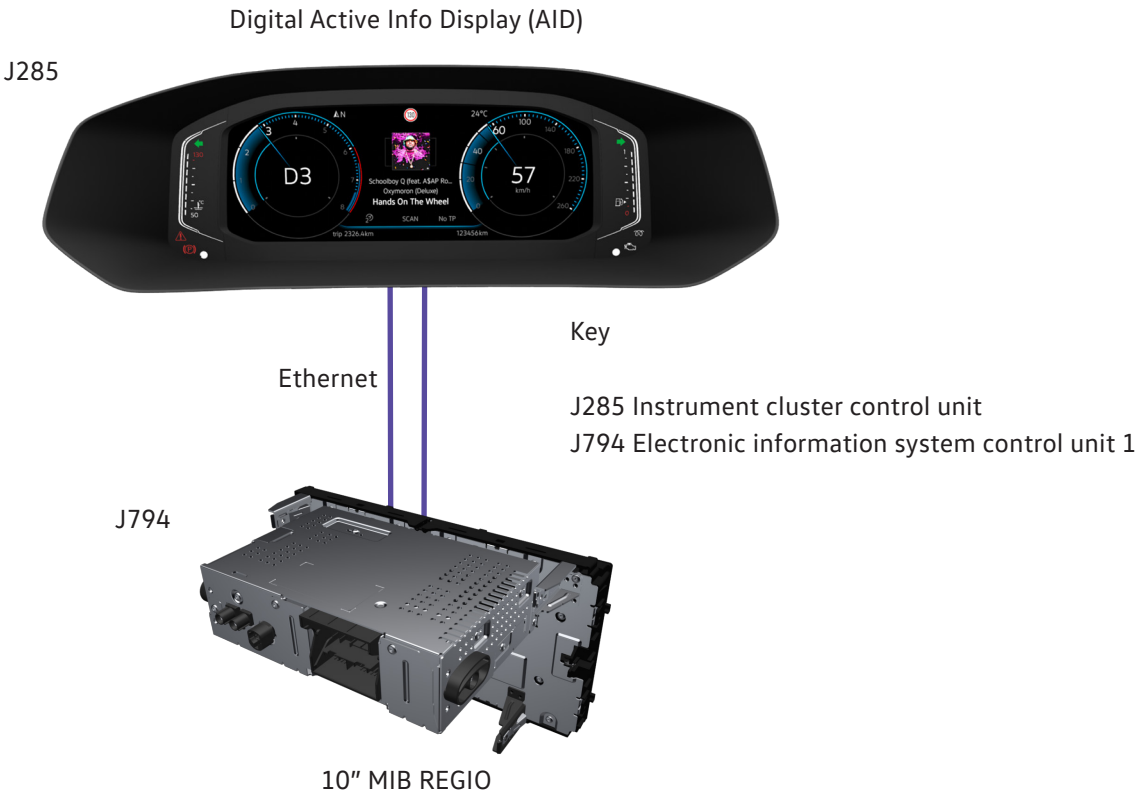
onventional contact and connector housings are used for the connection.



Repair

Cables must not be repaired. They must be replaced. For this, the part number in the ETKA Electronic Parts Catalog must be searched for.

In Taos, the Ethernet master unit is the Electronic Information System 1 control unit J794 and the slave unit is the Digital Active Info Display (AID) J285 instrument cluster.

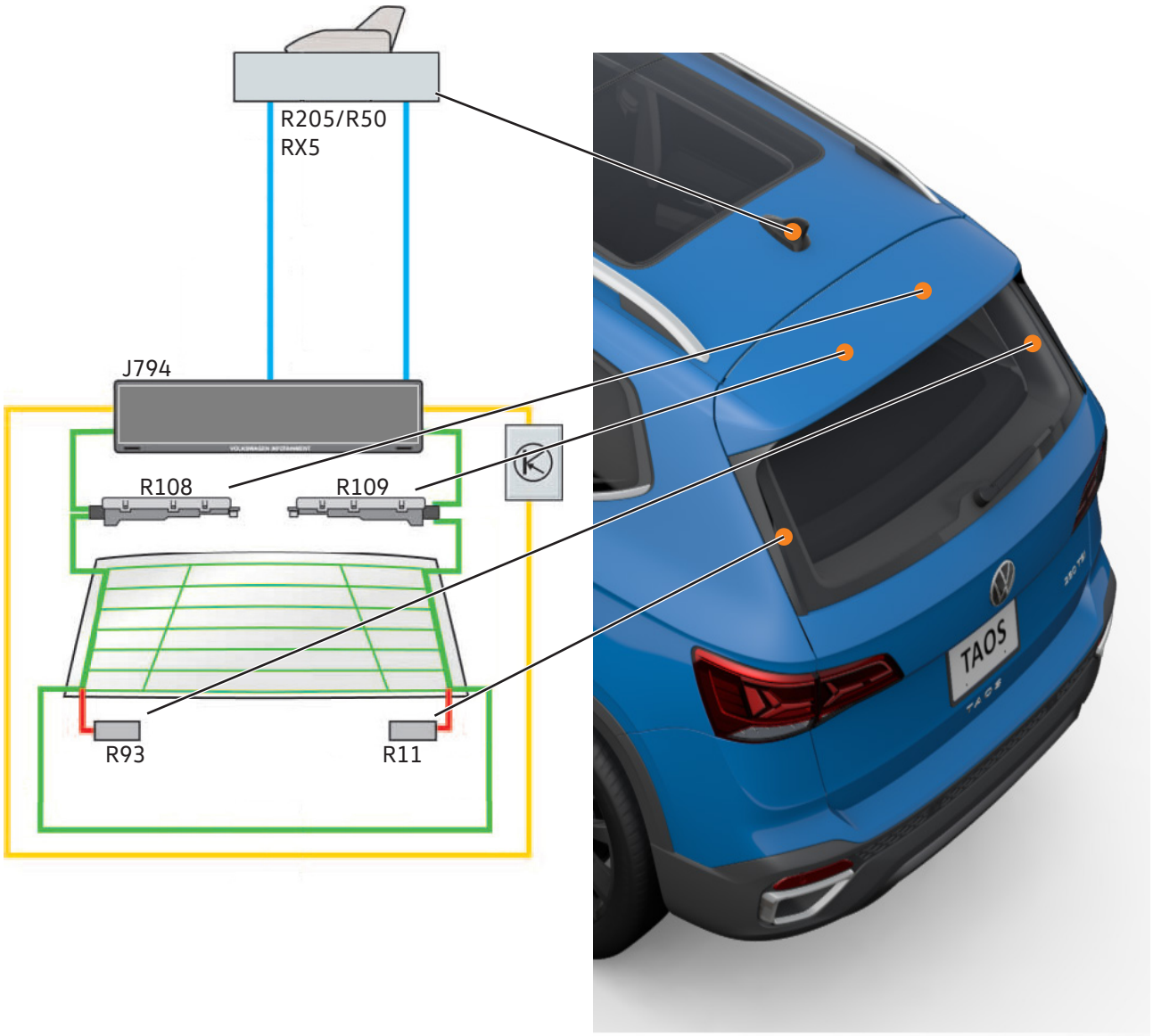


The master unit initiates communication and determines the interval. The slave unit needs an adaptation phase to the set interval.

Antenna System

FM and DAB radio reception antennas are located in the rear window. The GPS antenna has been integrated into a roof antenna.

If the car has no GPS system, the roof element only fulfills an aesthetic function and the telephone receiving antenna is the one in the mobile device.



Leyenda

J794 Electronic information system control module 1
R50 GPS antenna
R11 Antenna
R93 Antenna 2 for radio
R108 Left antenna module
R109 Right antenna module
R205 GSM antenna
RX5 Roof antenna

Emergency call module and communication unit J949

Taos incorporates the third generation of emergency call module and communication unit. The difference between the first and third generations are the electrical connections, the type of internal battery and the VW Car-Net Safe & security functions. In the NAR region, the system is only implemented for the United States and Canada markets.

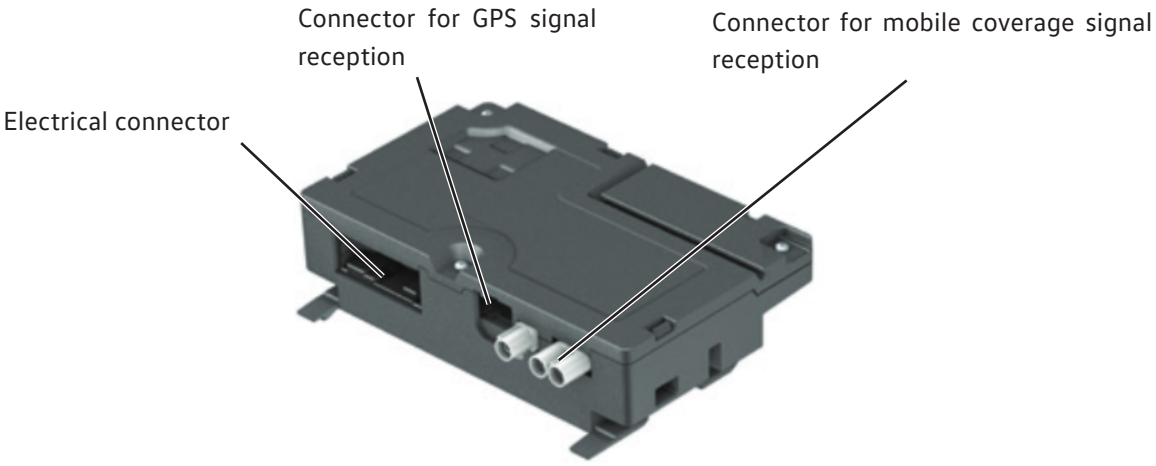
The control unit of the Emergency call module and communication unit J949 is located under the steering column.

The unit has 4 connectors: The electrical connector and 3 antenna connectors according to the FAKRA standard.

The electrical connector has terminals for the CAN-Bus, Ethernet bus (only in the PR NZ4 High version), control unit power supply, pilot lamp power supply, signal for the loudspeaker and pushbutton signals.

GPS signals and mobile coverage are received through the antenna connectors.

For disassembling the control unit of the Emergency call module and communication unit J949, the Infotainment unit screen must be disassembled previously.



Control unit for the Emergency call module and communication unit J949

It has an internal battery to guarantee emergency calls in case of an on-board voltage failure. This battery is different from the first generation battery.



First-generation battery

Third-generation battery

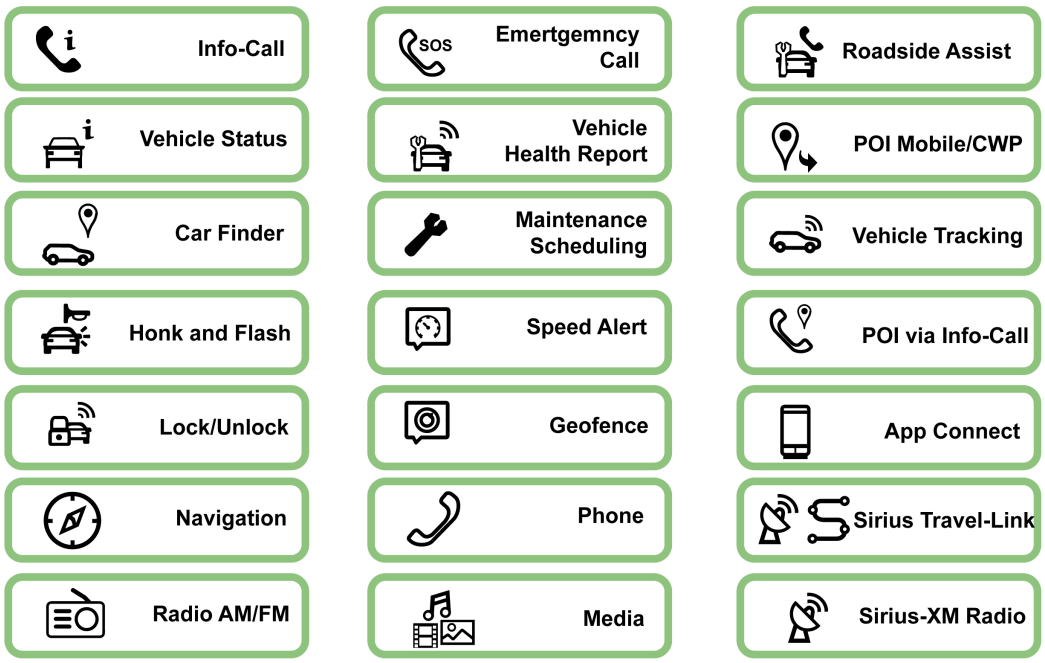
Emergency Call Module and Communication Unit J949 Versions

There are two versions: Low and High. The differences are the control unit, the electrical connection and the Car-Net Safe & security functions.

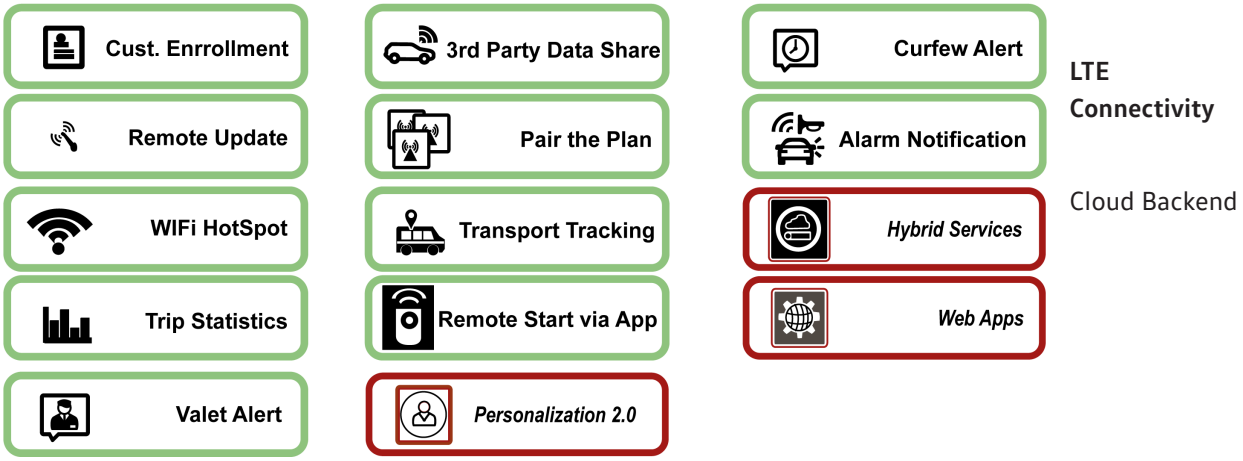
The VW Car-Net Safe & security functions depend on the services available in each market. The subscription may include emergency assistance, automatic accident notification, anti-theft alerts, and an assistant to locate the stolen vehicle, among others.

The differences between the services offered in the Low and High versions are listed below.

Services available in the Low version

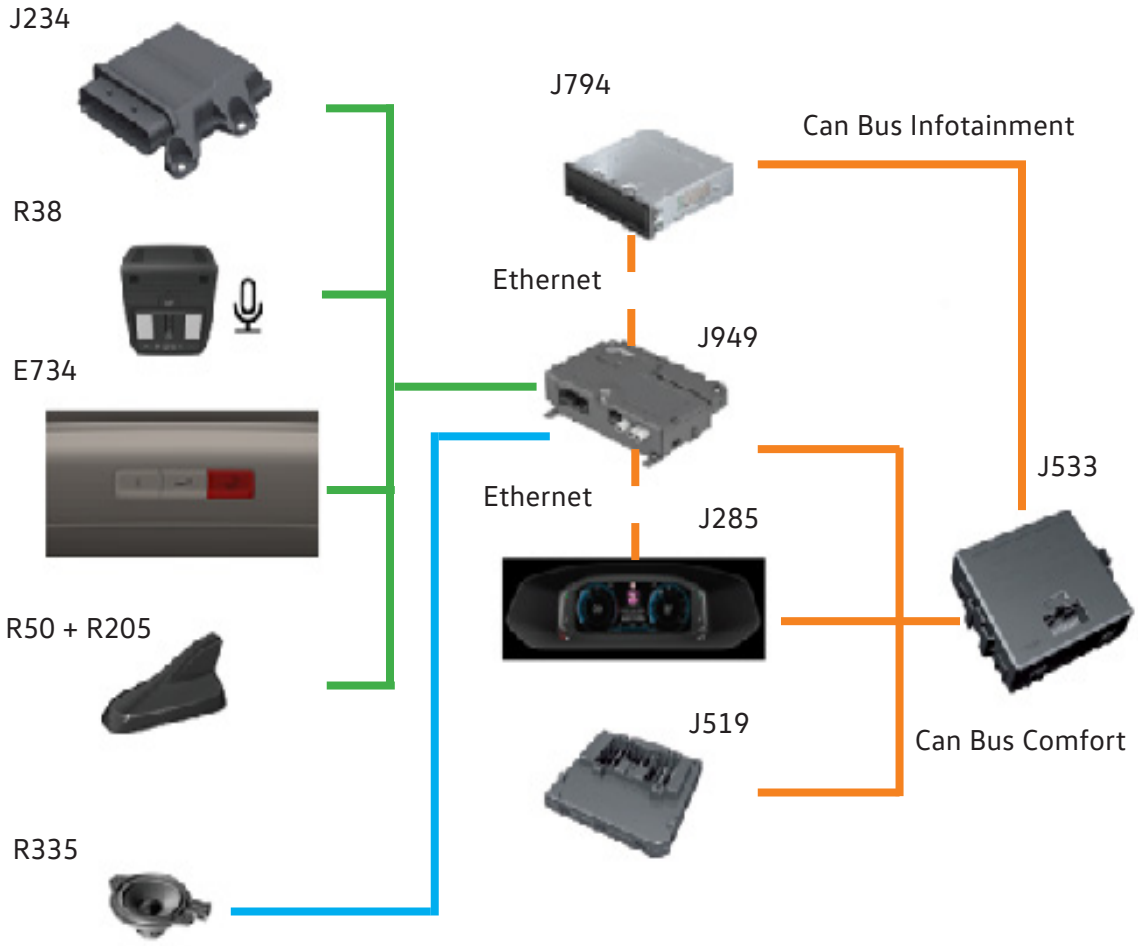


Services available in the High version



Car-Net

Emergency call module High version (PR NZ4) components



Leyenda

E734 Telematics button module
J234 Airbag control module
J285 Instrument cluster control module
J519 Unidad de control de la red de a bordo
J533 Data bus on board diagnostic interface
J794 Information electronics control module 1
J949 Control module for emergency call module and communication unit
R335 Emergency call module speaker
R38 Telephone microphone
R50 GPS antenna
R205 GSM antenna



The PR NZ3 Low version has no Ethernet connection



List of terms

AAC
(Advanced Audio Coding) AAC is an audio data compression method developed by Moving Pictures Expert Group, which is used in the MP2 (MPEG Layer 2) standard.

AVI
(Audio Video Interleave) is an audio and video container format released by Microsoft in 1992.

A2PP
(Advanced Audio Distribution Profile) enables the transmission of stereo audio signals via Bluetooth.

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

Bottom-Load
Mounting setup of the panoramic sliding sunroof with a baffle, which is bolted to the roof frame from underneath.

CAN
(Controller Area Network) Standardised digital twin-wire data network used in vehicle electronics.

CCS
(Cruise Control System) Cruise control, also known as speed regulator or autocruise.

EFB/EFB+
(Enhanced Flooded Battery) EFB + is an evolution of the EFB battery with even greater resistance.

ECO
ECO mode is a function that optimizes fuel consumption. It acts upon some energy consuming systems in the vehicle (heating, air conditioning, power steering, etc.) and on certain driving actions (acceleration, gear shifting, speed regulator, deceleration, etc.).

E100
The fuel can be up to 100% bioethanol. Any mixing ratio below 100% is authorized.

FAKRA
FAKRA connectors (Fachkreis Automobil; a German standard) are SMB-based automotive grade connectors that can operate up to 6 GHz. These connectors are embedded inside a plastic housing with a locking feature that has an audible clicking noise notifying that a connection has been made.

FLAC
(Free Lossless Audio Codec) is an audio code that allows digital audio compression with no loss.

FM
Frequency Modulation. Electromagnetic wave used to transmit information. In the case of Frequency Modulation, the carrier oscillation is varied according to the voltage of the information applied to it. Amplitude does not vary.

I.Q. Drive
They are state-of-the-art driver assistance systems that aim at semi-autonomous driving.

I.Q. Light®
It is a self-assembling lighting system made up of interlocking quadrilaterals.

GPS
(Global Positioning System) Its official name is NAVSTAR GPS. It is a satellite navigation system to determine a position and measure time.

HFP
Hands-Free Profile.

LED
(Light Emitting Diode) System of low-energy-consumption lighting elements where one or more light diodes are excited jointly to form a light source.

LIN
(Local Interconnect Network) Single-wire serial data network by which electronic components are connected to a higher control unit.

LVDS
(Low Voltage Differential Signaling): It is an interface standard for high-speed data transfer.

MIB
(Modular Infotainment System) Modular system used in all makes and models for the Infotainment system components in vehicles.

MQB
It is the Transversal Modular Platform

MP3 MP4
Abbreviation for MPEG Layer 3 or 4 (Motion Picture Experts Group Layer 3 or 4). Compression standard for audio data formats.

PL6 BR
Brazil's Vehicle Emission Control Program, Level 6.

Qi
A general standard that describes the functions for wireless charging of mobile terminals for all manufacturers.

TFT
(Thin Film Transistor) Abbreviated name for a flat screen with transistor matrix.

Señales Rx y Tx
It is a data communication protocol which is implemented in universal asynchronous receivers/transmitters. R for reception and T for transmission.

USB
(Universal Serial Bus) It is a standardized interface between different electronic devices, such as computers, printers, scanners, and televisions.

Wi-Fi
It is a technology that allows wireless interconnection of electronic devices.

Widgets
They are micro-applications displayed on a computer screen, web page or on mobile device.

WMA
(Windows Media Audio) Audio compression format developed by Microsoft. Mobile terminals without Windows Media Player, such as an iPod, are not compatible with this format.



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