



Self-study Programme 404

The Tiguan 2008



The Tiguan covers the market segment for compact SUVs (Sport Utility Vehicles) with its many special features. It is often described as the little brother of the Touareg, but it is a true individual as it sets standards in terms of suspension, engines and comfort. Details like, for example, off-road suspension functions, off-road navigation, exclusive turbocharged engines and off-road front bumper with 28° approach angle will make the Tiguan a success among customers.

The name has already caused quite a sensation. 350,000 readers of Germany's AutoBild magazine chose the name Tiguan, a combination of tiger and iguana. You will find out why it is true to its name in this self-study programme.

We hope you enjoy reading.



S404_002

NEW



**Warning
Note**



**The self-study programme shows the design and function of new developments.
The contents will not be updated.**

For current testing, adjustment and repair instructions, refer to the relevant service literature.



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Where is the Tiguan manufactured?

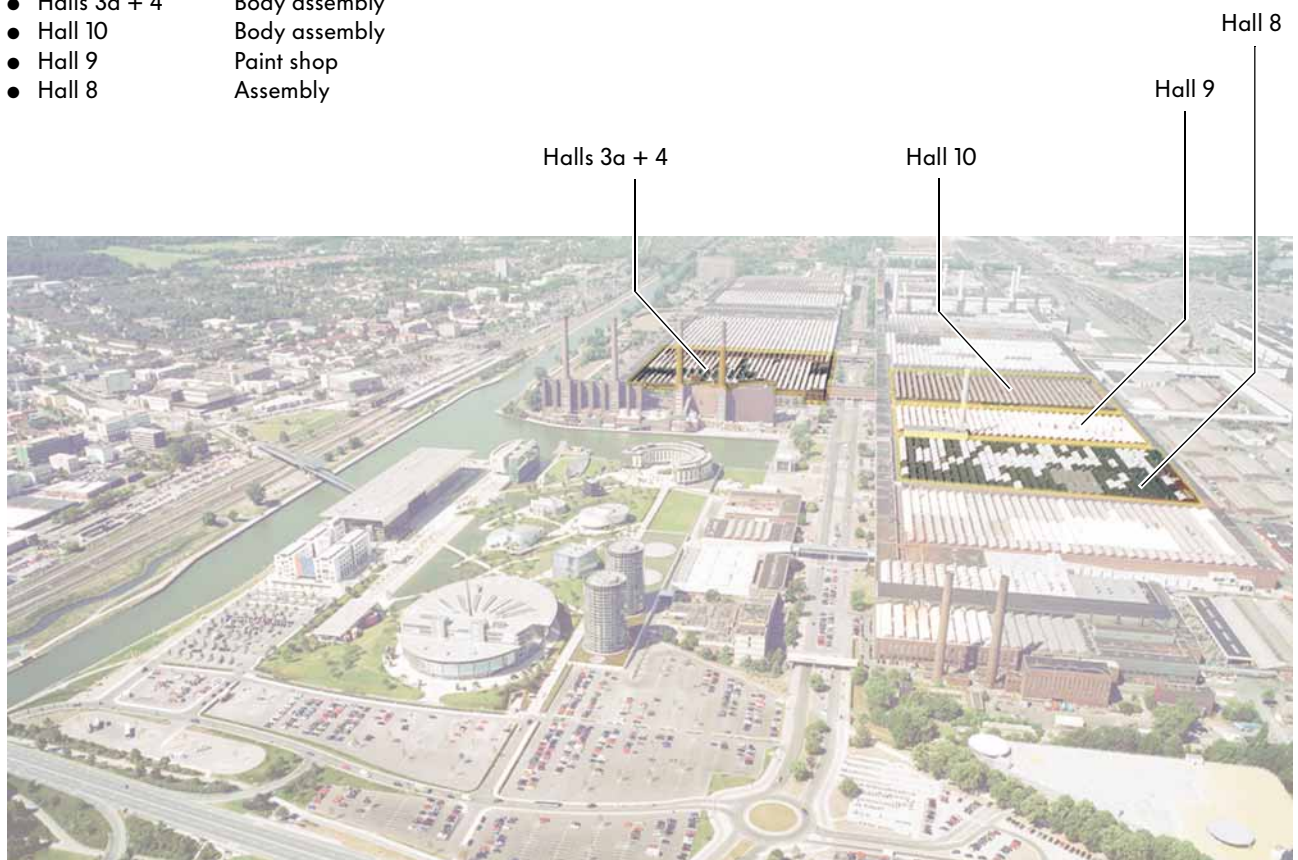
The Volkswagen Tiguan 2008 is produced at Auto 5000 GmbH in Wolfsburg.

In addition to the successful Touran compact MPV, a second model from Volkswagen is being built by Auto 5000 GmbH – the Tiguan compact SUV.

The production at Auto 5000 GmbH ranges from body assembly through the paint shop to assembly.

The latest in manufacturing and logistics processes have proven themselves since the start of production at Auto 5000 GmbH in November 2002 and are constantly being improved through the implementation of innovative concept ideas. One result is the flexible assembly line that is now being used for both Touran and Tiguan production.

- Halls 3a + 4 Body assembly
- Hall 10 Body assembly
- Hall 9 Paint shop
- Hall 8 Assembly



Auto 5000 GmbH in the Volkswagen plant, Wolfsburg

S404_061



S404_060

Auto 5000 GmbH is a subsidiary of Volkswagen AG. Its production site is at Volkswagen Group headquarters in Wolfsburg.

The rapid success story of Auto 5000 GmbH began in Autumn 1999 with the project "5000 x 5000" (5000 jobs at 5000DM).

Auto 5000 GmbH started out with the aim of proving that it is possible in Germany to create new secure jobs and, at the same time, build an internationally competitive car. The subsequent success has proven that the idea and Auto 5000 GmbH were right. More than 750,000 Tourans have already left the factory.

A decisive factor for the success is the close networking of work and learning.

Consistent qualification and training of staff has even been laid down in a separate qualification wage agreement.

Inside the factory, there is a "learning factory" for each area that serves as a learning and communication centre and also gives staff the opportunity to exchange experiences.



The Tiguan 2008 from Volkswagen

- RCD 510 radio
- RNS 510 radio/navigation system
- Tyre pressure monitor
- B-pillar with 2 rigidity zones
- Park Assist
- Brakes with off-road functions
- Bumper versions with different approach angles:
On-road version at 18°
Off-road version at 28°
- Electromechanical steering with parallel axis drive





- Panoramic sunroof



S404_003

- Four-wheel drive coupling generation IV

- Reverse lights in rear bumper

- Mechanical swivelling tow coupling

- Electromechanical parking brake with planetary gear



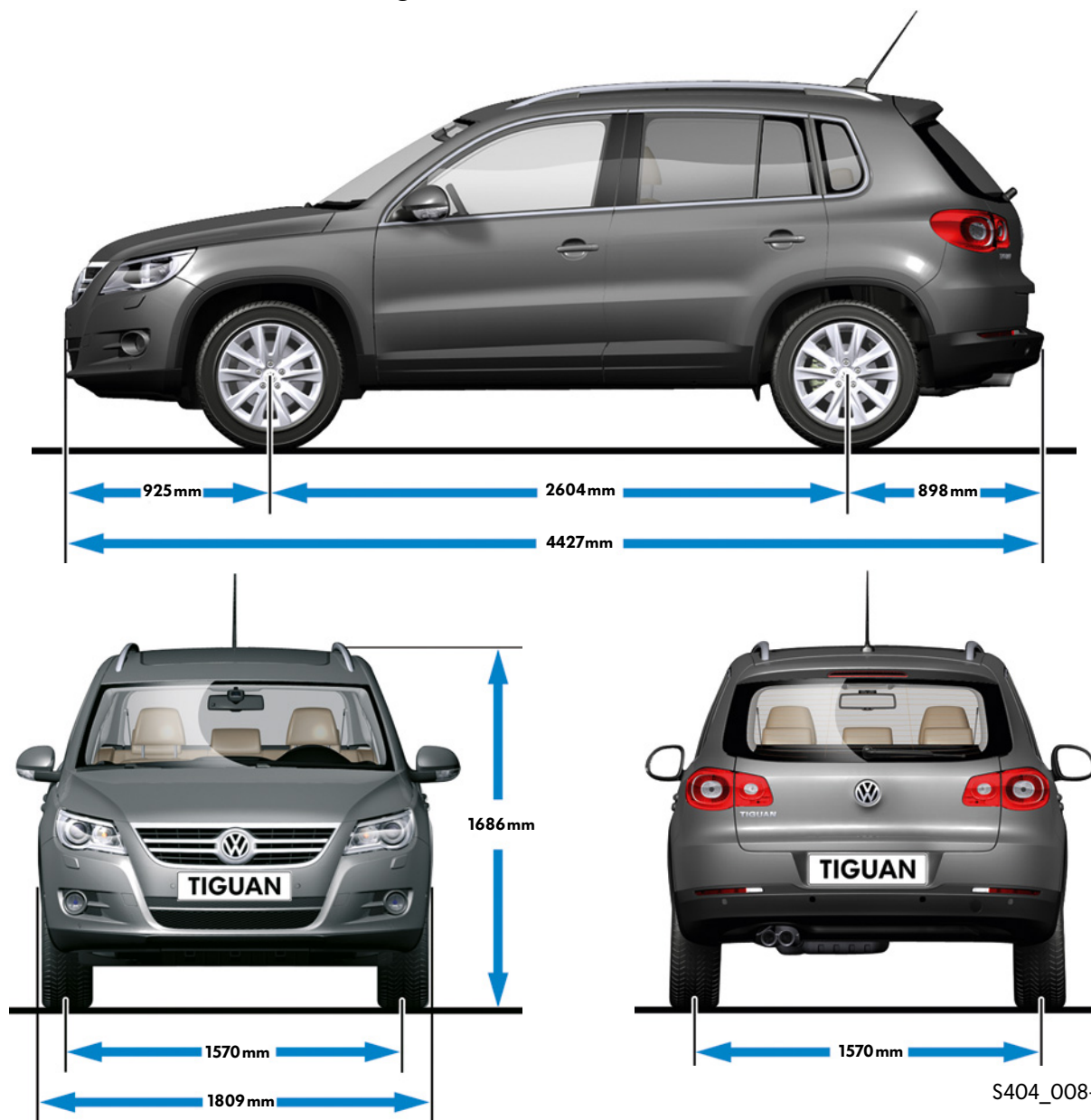
You will find information on the panoramic sunroof in self-study programme 400 "The Golf 2007 – Chassis".

In Brief



Technical data

Exterior dimensions and weights



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Exterior dimensions

Length	4427 mm *
Width	1809 mm
Height	1686 mm
Wheelbase	2604 mm
Track width at front	1570 mm
Track width at rear	1570 mm

* with on-road bumper

** Standard equipment with 1.4l 110kW TSI engine/
6-speed manual gearbox 0A6 (4Motion)

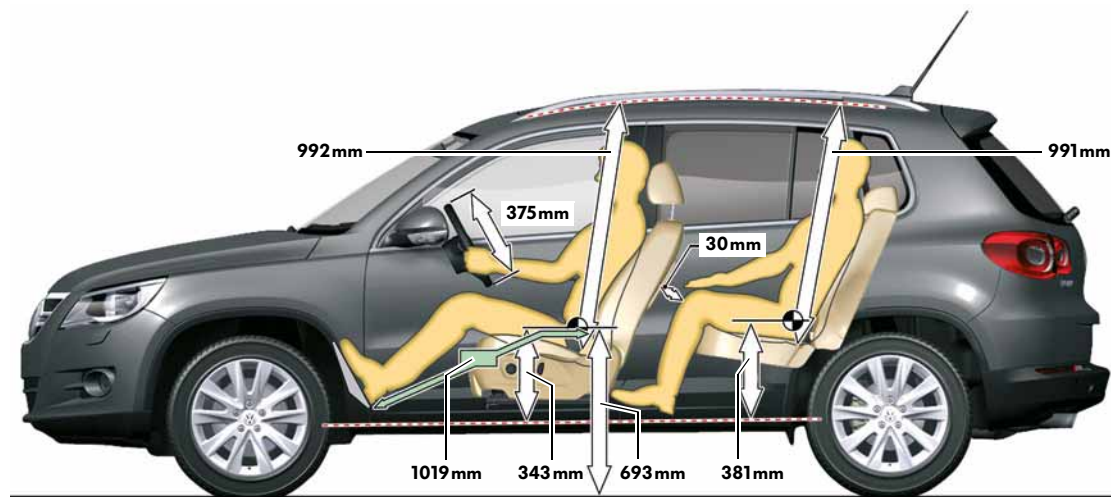
Weights/further data

Maximum weight	2170 kg **
Curb weight without driver	1546 kg **
Max. roof load	100 kg ****
Towing capacity (braked)	2500 kg up to 12% gradient ***
Tank capacity	64 l
Drag coefficient	0.37

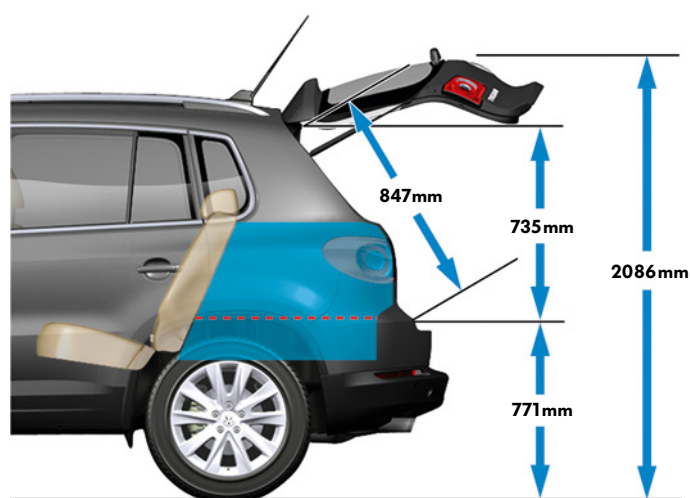
*** 2.0l/103kW CR TDI engine/"Track & Field" equipment

**** with roof rail

Interior dimensions



S404_011



S404_012



S404_013

Interior dimensions and volumes

Interior length	max. 1758mm
Boot volume	360-600l *
Luggage compartment volume with rear seat backrest folded down	max. 1510l **

Front headroom	992mm
Rear headroom	991mm
Front elbow room	1428mm
Rear elbow room	1398mm

* depending on equipment and position of rear seat bench

** depending on equipment

Body

Body structure

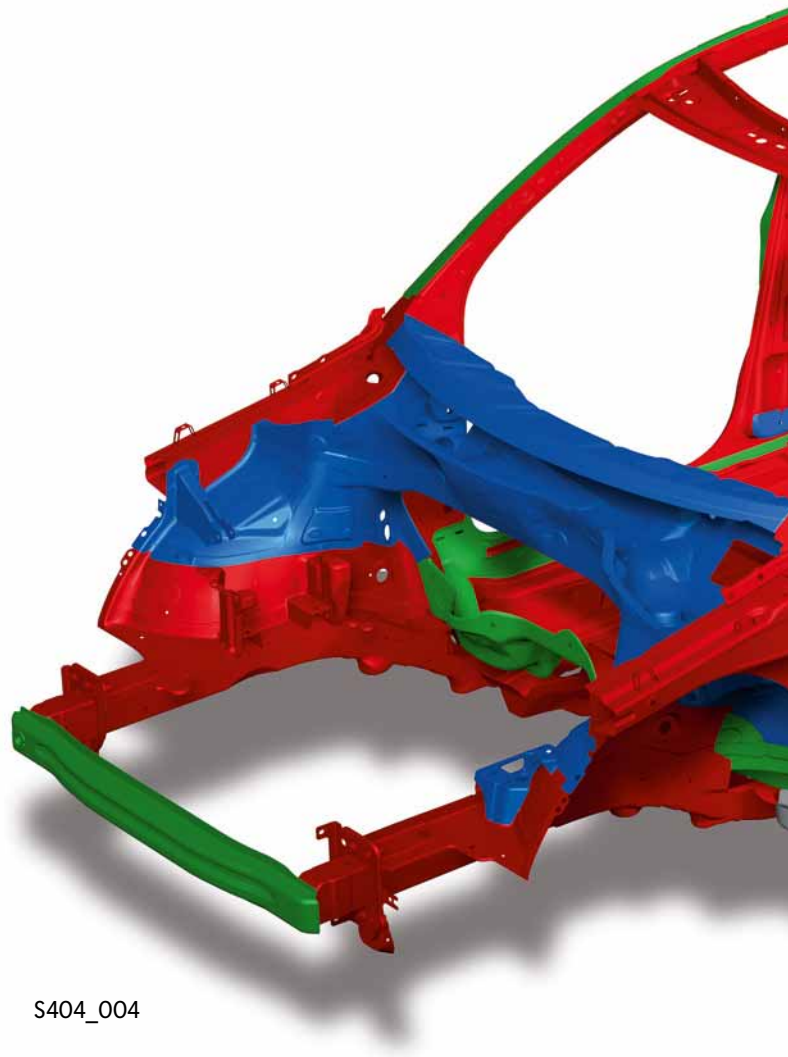
The Tiguan body is based on the Passat body concept at the front end and in the middle underbody areas. The Golf concept has been used at the rear. The structure is a completely new development.

The main focus in the design was placed on comfort and crash performance without neglecting lightweight construction. Reaching the objectives for on-road and off-road use was a challenge.

The high standards reached are reflected in the excellent static and dynamic stiffness and thus in the lightweight construction quality.





Lightweight construction quality $L = 2.4$
(e.g. Golf 2004, $L = 2.5$)

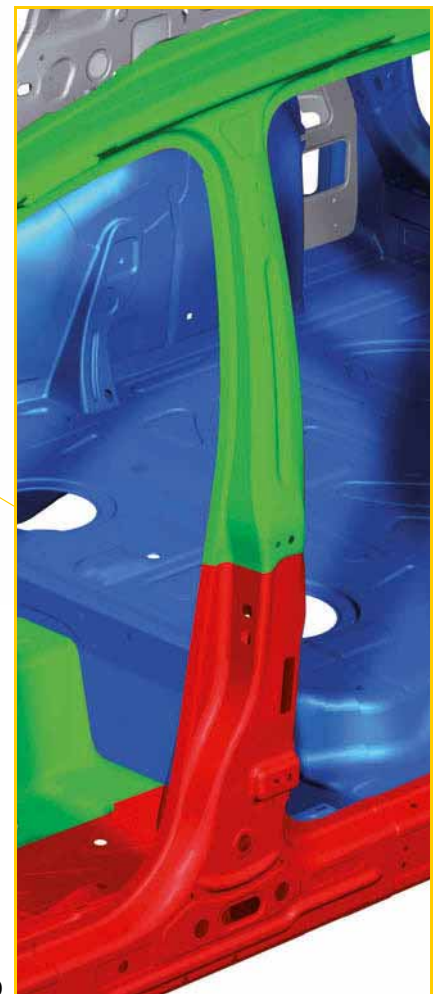
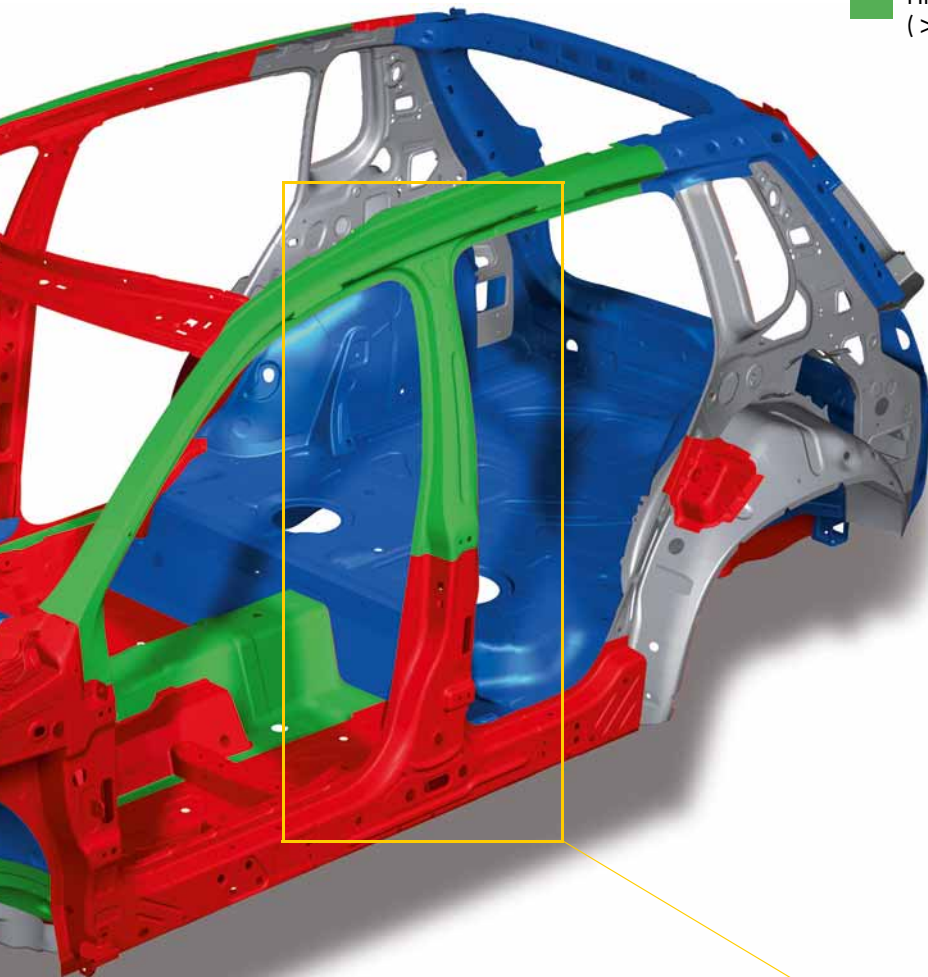
The lightweight construction quality puts the vehicle mass in proportion with the vehicle size and stiffness.



Body-chassis connection

The body has been raised so that the Tiguan has SUV ground clearance. Also the connection points of the front axle (31mm) and rear axle (41mm) are lower which moves the body construction up. In addition, the larger wheels also provide more ground clearance.

-  Steel panels (< 140 MPa)
-  High-strength plates (180-220 MPa)
-  High-strength plates (240-420 MPa)
-  Highest-strength sheets, die-quenched (> 1000 MPa)



B-pillar

The special feature of the B-pillar is that it is made from one part, but has two rigidity zones. The upper part has a very high strength for extreme loads due to partial die-quenching. The lower part has a lower strength with higher deforming capability for controlled deformation in crashes.

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New body features

Front bumper versions

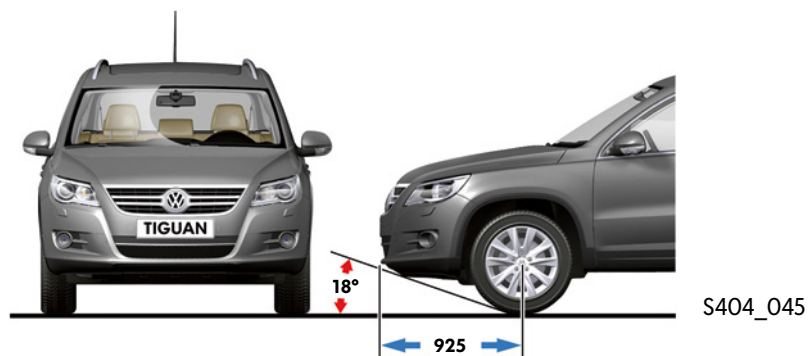


Two different bumpers can be fitted on the Tiguan. Depending on the equipment version, there is an on-road bumper optimised for road use and an off-road bumper optimised for driving on uneven terrain. The off-road bumper has a greater approach angle allowing large obstacles and steep banks to be tackled on uneven terrain without damaging the front end. The wheel housing liners and front modules are adapted to the respective bumper versions.

On-road bumper

The on-road version is fitted in the “Trend & Fun” and “Sport & Style” equipment versions.

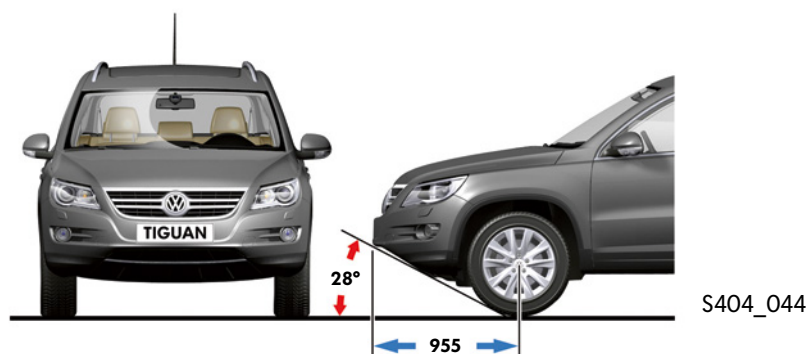
- Approach angle: 18°
- Front axle overhang: 925mm



Off-road bumper

The off-road bumper version is fitted on the “Track & Field” version.

- Approach angle: 28°
- Front axle overhang: 955mm

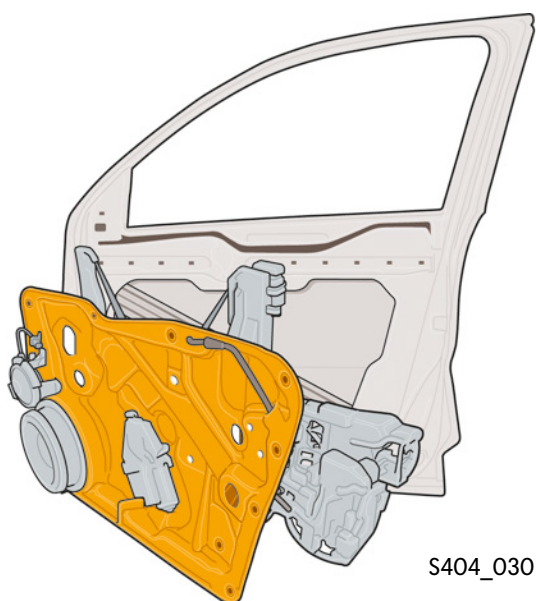


Door concept

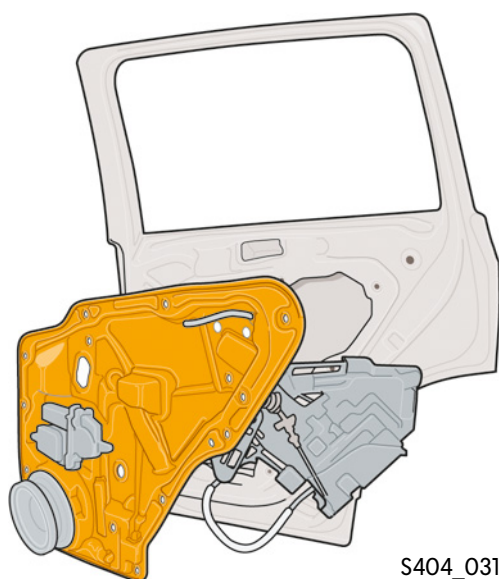
The front and rear doors have a conventional door design and are made up of a basic door unit and a bolted assembly carrier. The door locks, window regulators and loudspeakers are pre-assembled on the assembly carrier.



Front door with assembly carrier

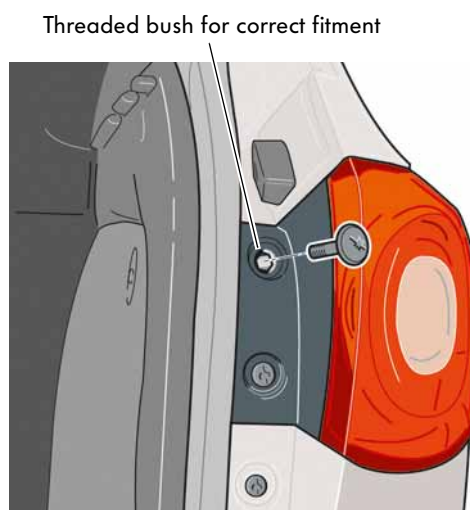
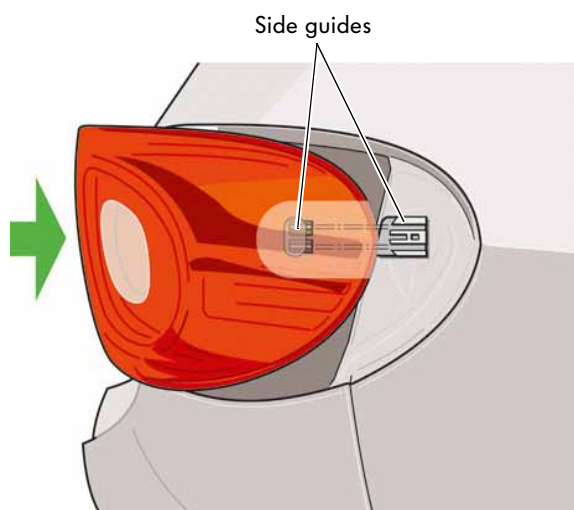


Rear door with assembly carrier



Tail lights

The tail lights are mounted with two securing bolts and a side guide, into which the tail lights are inserted and lock in. There are two threaded bushes with hexagon sockets under the securing bolts that are used for correct fitment.



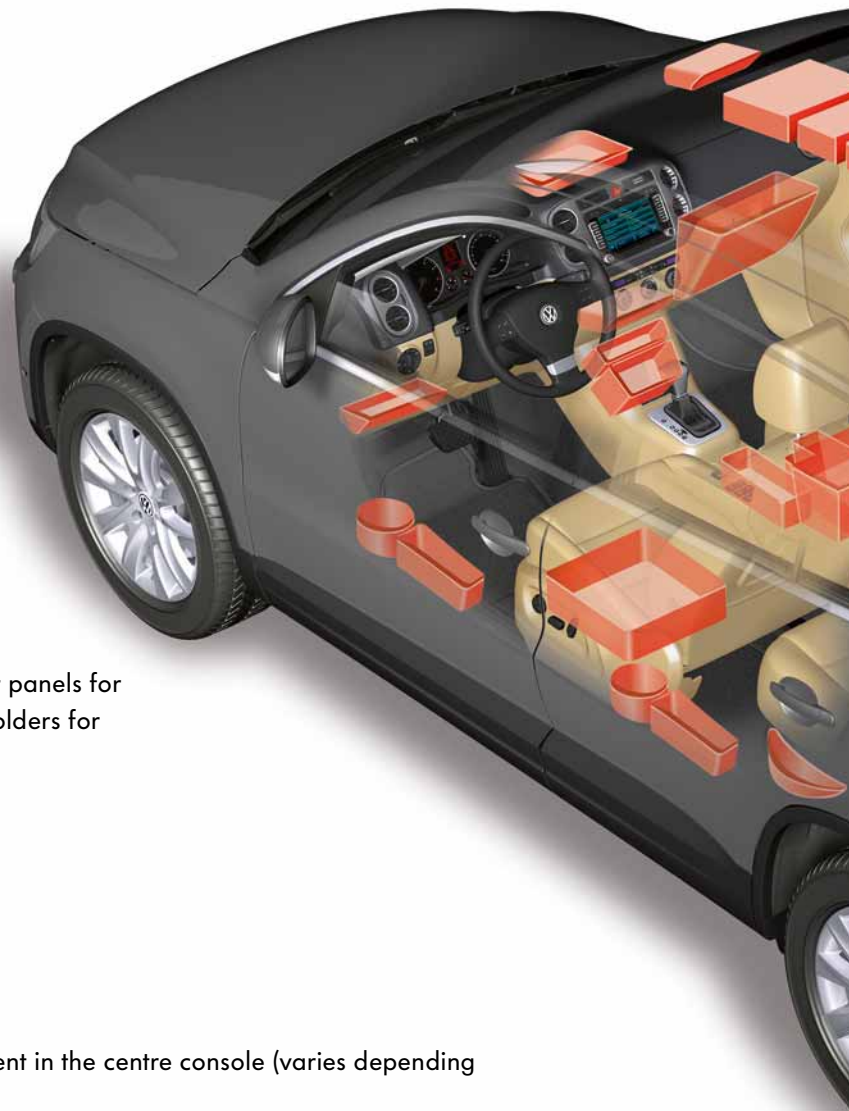
Body

Storage concept

The storage concept in the Tiguan provides all occupants with sufficient storage space for large and small items all around the interior.



- Cooled glove compartment with integrated pen and notepad holder
- Storage compartments in dash panel insert as well as under front seats
- Storage compartments in the front door panels for large-format road atlases and drinks holders for up to 1.5l bottles
- Storage compartment in the centre console (varies depending on equipment):
 - up to four cup holders (2 front, 2 rear);
 - ashtray;
 - sockets;
 - armrest with extra large storage compartment;
 - armrest with small storage compartment and CD charger





- Roof console with glasses compartment and three other compartments lined with rubber mats with normal full roof



- Bins in the rear door panels and drinks holders for up to 1.5l bottles

- Cup holders in through-load facility

S404_014

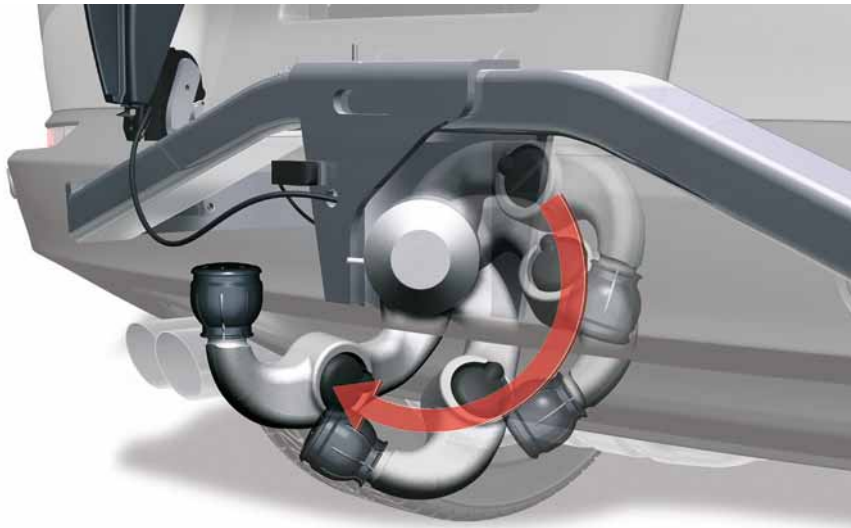
- Boot with different load platform heights and flexible cargo space as well as a cargo management system for storing a wide range of items

Body

Mechanical swivelling tow coupling

For the first time, a mechanical swivelling tow coupling is being used by Volkswagen. Previously fixed, removable or electrically adjusted versions were used.

The mechanical swivelling tow coupling is mounted behind the rear bumper and is also simple to use when the vehicle is fully loaded. Depending on the engine, the Tiguan has a towing capacity of up to 2500 kg (up to 12% gradient).



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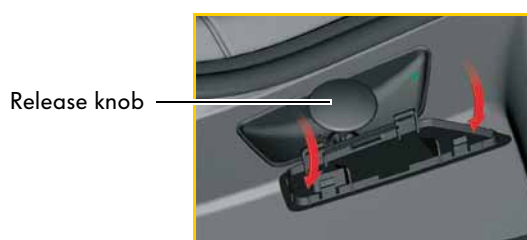
Operation

Release button in bumper

There is a release knob in the rear bumper under a dust cap to extend and retract the tow coupling.



S404_016



S404_017



S404_018

Releasing and locking

To change the position of the tow coupling, pull the release knob to unlock it. The release knob is connected to the tow coupling via a cable. After unlocking, the tow coupling automatically swivels downwards to the unlocked position. Then it needs to be either manually locked in the rest or working position. The tow coupling locks into one of the end positions with a clearly audible locking noise.



Unlocked tow coupling



S404_019

Rest and working position



S404_020



LED warning lamp

S404_021

LED display for end positions

In addition to the locking noise, an LED illuminates green when one of the two end positions is reached. The LED extinguishes when the lock is released.

The LED is next to the release knob in the rear bumper and is only activated when the tailgate is open.



Electrical socket

S404_022

Integrated socket

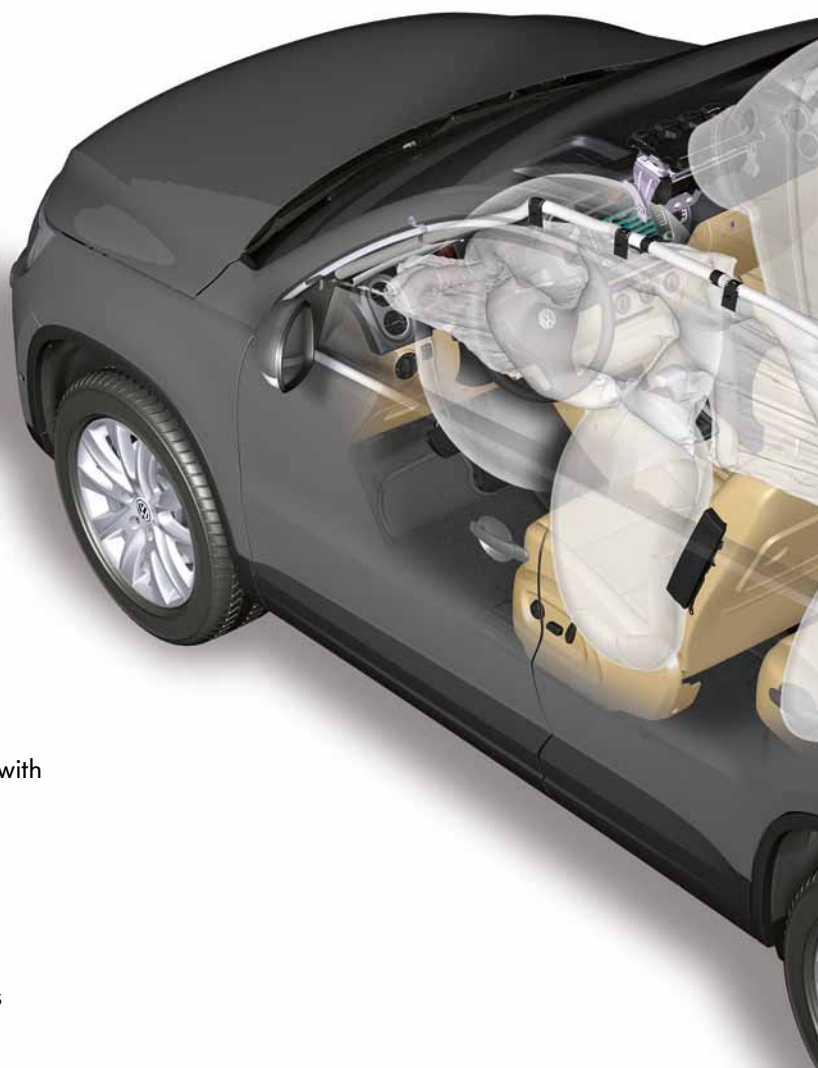
The connecting socket for the trailer is integrated in the tow coupling in an easy to reach position.

Occupant Protection

Safety equipment



- The passenger airbag can be deactivated using a key switch in the storage compartment on the passenger's side.
- Driver and front passenger airbag
- Driver and front passenger seat belt warning light
- Belt tensioners and belt force limiters for the front seats
- Belt force limiters for the outer rear seats
- Optional rear side airbags in conjunction with belt tensioners for the outer rear seats
- 3-point seat belts on all seats
- Isofix anchoring points on outer rear seats
- Pressure sensors in the front doors



- Curtain airbags for front and rear occupants

- The airbag trigger system consists of an airbag control unit in the front area of the frame tunnel with three internal acceleration sensors (two sensors in vehicle longitudinal direction and one in transverse direction) as well as four external sensors for recognising side collisions. Two are configured as pressure sensors and are in the two front doors. Two transverse acceleration sensors are in the C-pillar area.





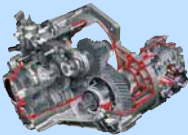
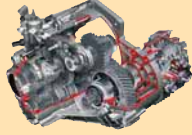

S404_023

- Side airbags in the front seats

- Acceleration sensors in C-pillar area

Engines

Engine/gearbox combinations

Petrol engine	1.4l/110kW TSI engine with 4-valve technology	2.0l/103kW CR TDI engine with 4-valve technology
Diesel engine		
6-speed manual gearbox 0A6 (4Motion)		
6-speed automatic gearbox 09M (4Motion) *		

* The 6-speed automatic gearbox 09M has been adapted to the requirements of the Tiguan.

1.4I/110kW TSI engine with dual-charging

This engine is already familiar from various Volkswagen models and has been tuned to an output of 110kW for the Tiguan.

Technical features

- Homogeneous mode (Lambda 1)
- Double injection (catalytic converter heating)
- Turbocharger with waste gate
- Additional mechanical supercharger
- Intercooler
- Engine cover with vacuum tank for the intake manifold flap control
- Grey cast iron cylinder block
- Dual-circuit cooling system
- Fuel system regulated according to requirements
- High-pressure fuel pump with a delivery pressure of up to 130bar



S404_046

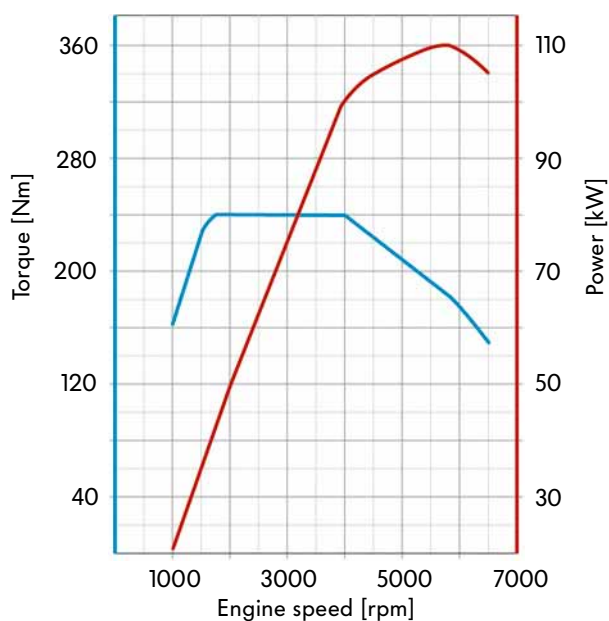


You will find further information on this engine in self-study programme no. 359 "The 1.4I TSI Engine".

Technical data

Engine code	BWK
Type	4-cylinder in-line engine
Displacement	1390 cm ³
Bore	76.5mm
Stroke	75.6mm
Valves per cylinder	4
Compression ratio	10:1
Maximum output	110kW at 5800 rpm
Maximum torque	240Nm at 1750rpm to 4000rpm
Engine management	Bosch Motronic MED 17.5.1
Fuel	Super unleaded RON 95
Exhaust gas treatment	Main catalytic converter, Lambda control
Emissions standard	EU4

Torque and power diagram



S404_047

Engines

2.0l/103kW CR TDI engine with 4-valve technology

The new 2.0l/103kW TDI engine with common rail injection system is being used for the first time in the Tiguan. It is based on the 2.0l TDI engine with 4-valve technology and unit injector system.

Technical features

- Common rail injection system with piezo injectors
- Diesel particulate filter with upstream oxidation catalytic converter
- Intake manifold with swirl flap adjustment
- Electric exhaust gas recirculation valve
- Adjustable turbocharger with travel feedback
- Low-temperature exhaust gas recirculation cooling



S404_048

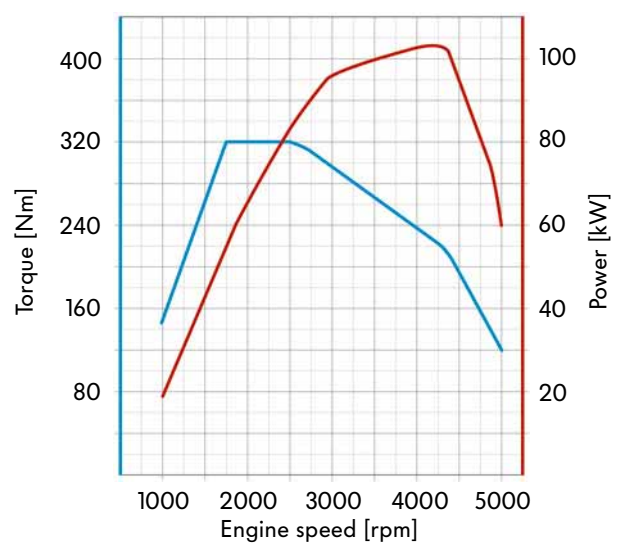


You will find further information on this engine in self-study programme no. 403 "The 2.0ltr. TDI Engine with Common Rail Injection System".

Technical data

Engine code	CBAB
Type	4-cylinder in-line engine
Displacement	1968 cm ³
Bore	81mm
Stroke	95.5mm
Valves per cylinder	4
Compression ratio	16.5:1
Maximum output	103kW at 4200 rpm
Maximum torque	320Nm at 1750 rpm up to 2500 rpm
Engine Management	Bosch EDC 17 (common rail fuel injection system)
Fuel	Diesel, in accordance with DIN EN 590
Exhaust gas treatment	Exhaust gas recirculation, oxidation catalytic converter and diesel particulate filter
Emissions standard	EU4

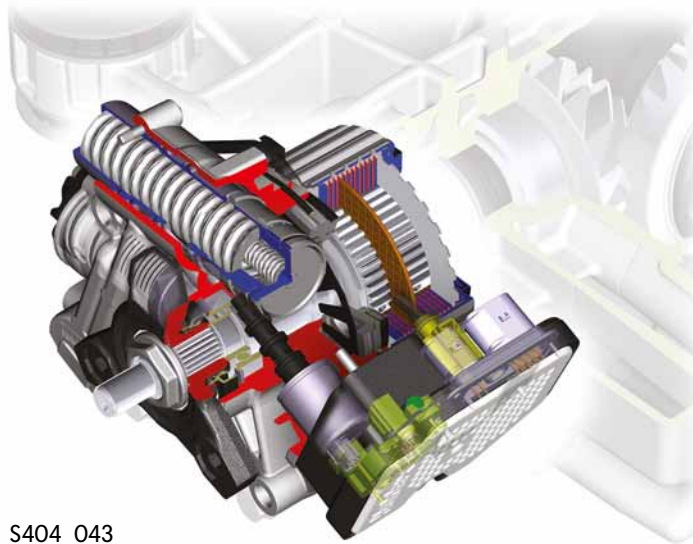
Torque and power diagram



S404_049

Four-wheel drive coupling generation IV

In principle, power is transmitted via the clutch plate set on the fourth generation of the four-wheel drive coupling in the same way as the previous Haldex models. The pressure being built up with an electric pump is a new feature. The four-wheel drive control unit J492 determines the torque to be transferred by controlling the coupling opening control valve N373. Speed differences between the front and rear axle are no longer required to activate the four-wheel drive coupling.



S404_043

Technical features

- Electrohydraulically controlled plate clutch
- Integrated in the rear axle drive
- Simplified hydraulic system
- Optimised, demand-regulated pump control

Advantages

- Coupling control not dependent on driving situation
- Fast moment build-up by means of pre-control
- Permanent rear-axle drive capacity
- Fully compatible with the traction control systems (e.g. ESP, ABS)



You will find information on this topic in self-study programme 414 "4Motion with Four-wheel Drive Coupling Generation IV".

Chassis

Overview of chassis

The Tiguan chassis combines typical car driving properties on the road with very good off-road capabilities. This very high requirement for a chassis was fulfilled by further developing and utilising the existing chassis components from the Golf and Passat.

- Rebound bump-stop dampers at front
- Ground clearance: 195 mm
- Brake system: ABS/ESP TRW 450 EBC
 - Off-road button
 - Hill descent assist
 - Roll-over prevention (ROP)
- Tyre pressure monitor, standard equipment with "Sport & Style", "Track & Field"
- Revised steering column lock
- Electromechanical steering with parallel axis drive and torque steer compensation
- The ESP sensor unit is integrated in the electromechanical parking brake control unit.





- Electromechanical parking brake with planetary gear and new switch in centre console
- Weight-optimised rear subframe made from high-strength steels

S404_005



Chassis variants

The Tiguan comes with two different chassis versions depending on the equipment version. The comfort-oriented normal chassis features in the “Trend & Fun” and “Track & Field” equipment versions. The sportier dynamic chassis is fitted in the “Sport & Style” version.

This sportiness has not been achieved by lowering the suspension, but exclusively by adapting the springs, dampers and anti-roll bars. This guarantees sufficient ground clearance in all versions.

Chassis

Front axle

The front axle uses a McPherson concept with lower wishbones and spring struts. The subframe and the wishbones are made from aluminium. There are six connection points between the subframe and body. This makes the body extremely stiff.



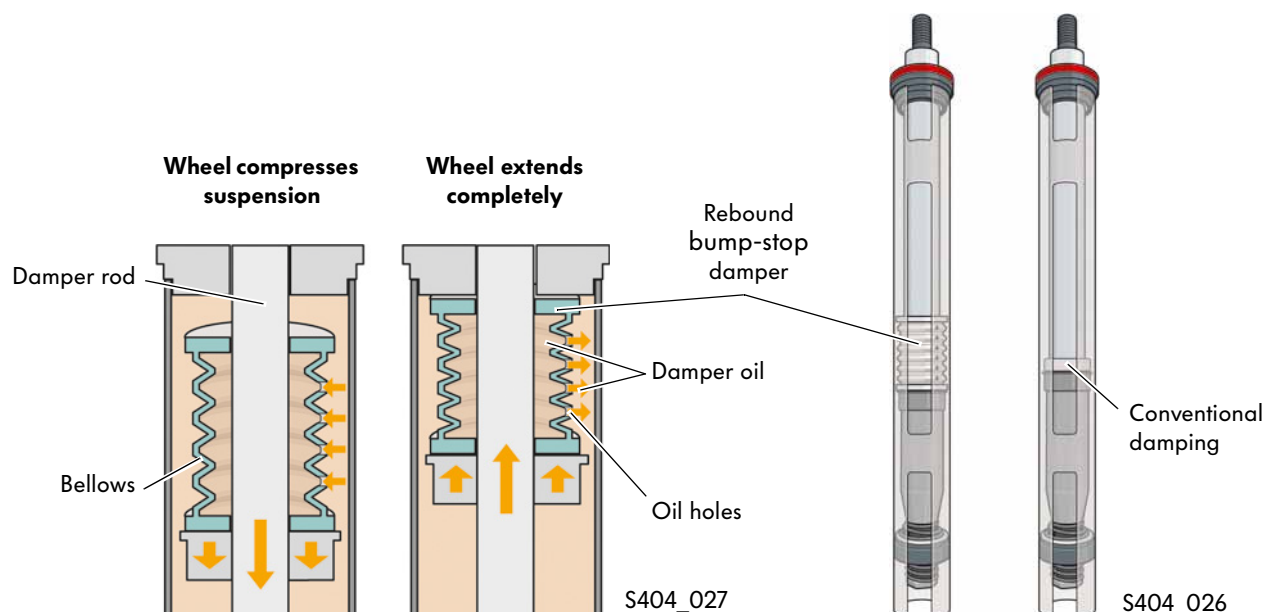
S404_025



Rebound bump-stop dampers

The all-new struts on the front axle have plastic bellows that act as rebound bump-stop during the suspension extension cycle. This has further improved the off-road suspension comfort.

The damping is achieved by the bellows being pushed together. In addition, the rebound bump-stop dampers have oil holes that allow the damper oil to escape and create a hydraulic damping effect.



Rear axle

The rear axle of the Tiguan is based on the four-link 4Motion rear axle from the Passat. The aluminium subframe has been replaced with a weight-optimised new development made from high-strength steels. Furthermore new wheel dampers are used. They have a greater oil volume. This prevents the damper oil becoming too hot during off-road usage.



S404_024



4Motion rear axle

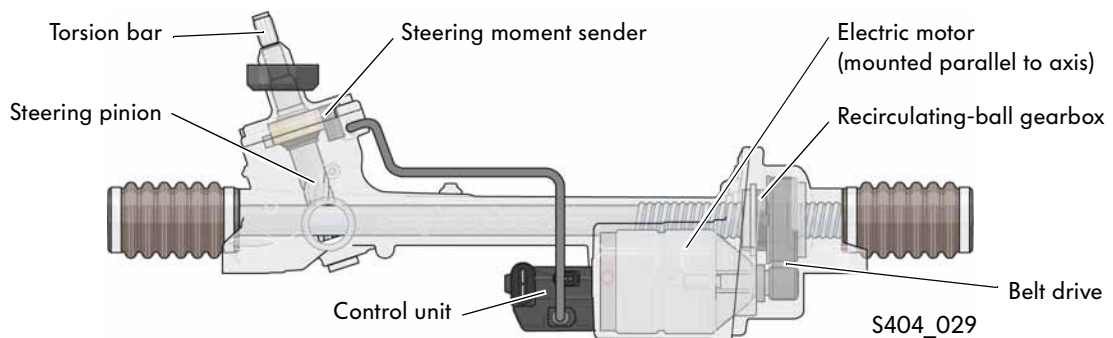
The 4Motion version uses the Passat 2006 rear axle. The damper characteristics, the springs and the anti-roll bars have been adapted according to the axle loads.

Rear axle for front-wheel drive version

The 4Motion rear axle is also used on the front-wheel drive version. The propshaft, rear-axle differential and the drive shafts are simply omitted and the wheel bearings for the front-wheel drive version are fitted.

Electromechanical steering with axis-parallel drive

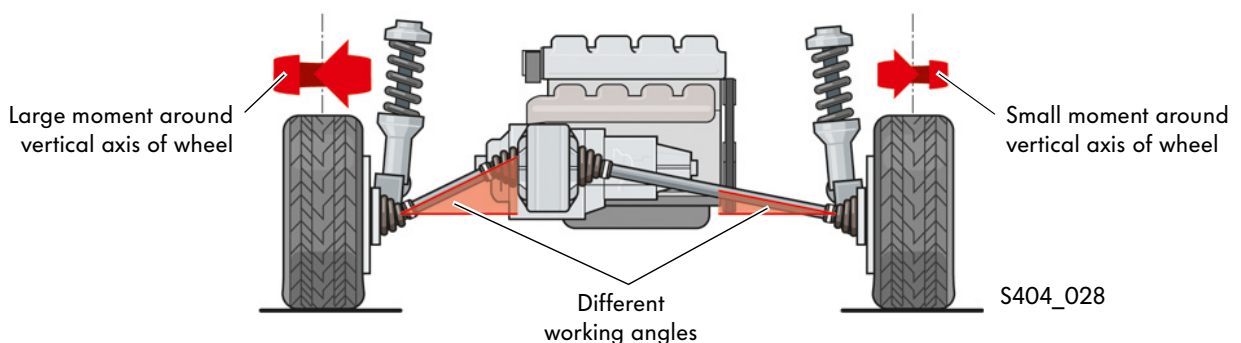
An electromechanical steering system with a belt-driven recirculating-ball gearbox and electric motor mounted parallel to the axis is being used for the time on the Tiguan (left-hand drive only). This new development allows jolt-free and very sensitive, precise and powerful steering. Familiar functions like straight-running correction and counter-steer support have been integrated.



You will find further information on this topic in self-study programme 399 “Electromechanical Power Steering with Parallel Axis Drive”.

Torque steer compensation

Torque steer compensation is a new electromechanical power steering function for front-wheel drive vehicles. It prevents uneven tracking when vehicles with powerful engines and different drive shaft lengths accelerate. The different length drive shafts that are normally used with transverse engines and front-wheel drive have different working angles which cause different moments around the vertical axis of the wheels during acceleration. These moments can cause uneven tracking that is automatically compensated by the electromechanical power steering.



Steering column

The Tiguan steering column is based on the Golf Plus steering column. It has an adjustment range of 50mm for the height and 50mm for reach.

The steering column is locked mechanically.



Steering column lock

The steering column locking lever is made from plastic and has been placed on the left-hand side for ergonomic reasons. This has allowed the crash safety in the knee area to be improved considerably without using a complex knee airbag.

Also the locking mechanism and thus the closing force for the steering column lock has been revised for easier use.

Brakes

Brake systems

All engine models come with the same brake system.

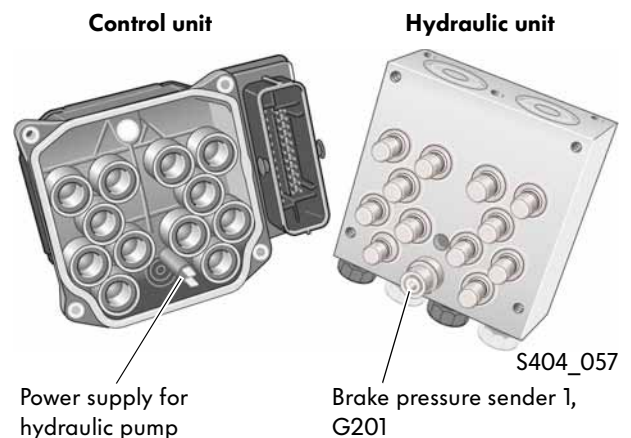
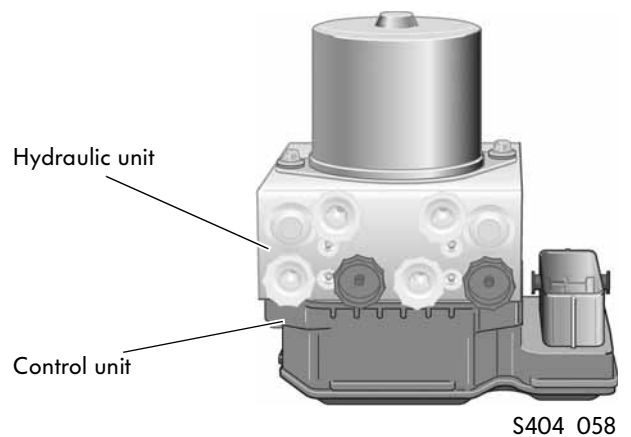
- Front brakes: Ø312 x 25mm, with bolted swing mounting
- Rear brakes: Ø286 x 12mm, with electromechanical parking brake

Electronic stabilisation programme ABS/ESP TRW EBC 450

The ESP system from TRW as used in the 2006 Passat has been further developed for the Tiguan and its off-road performance. In addition to the familiar ABS/ESP functions from other Volkswagen models, the Tiguan has the following additional functions:

- Roll-over prevention (ROP)
- Off-road functions (only for 4Motion) that are activated with the off-road button.
 - Hill descent assist
 - Adjustment of accelerator pedal characteristics
 - EDL adaptation
 - ABS adaptation
 - Auto hold function (manual gearbox)
 - Gear level preselect (automatic gearbox)

ESP and hydraulic brake assist (BA) are standard on the Tiguan.



Off-road button in centre console



Hill descent assist

The hill descent assist is one of the off-road functions that makes it easier for drivers to tackle routes with steep gradients. The hill descent assist maintains a constant speed after the vehicle starts down a slope without driver intervention. The vehicle speed that is maintained by the hill descent assist depends on the entry speed to the slope and the selected gear. This function is achieved with active, controlled braking at all four wheels.



Indication in dash panel insert and off-road button

S404_033

The hill descent assist is activated via the OFF ROAD button together with the other off-road functions. Readiness is indicated in the dash panel insert when the speed falls below 20km/h. The lamp will flash when the hill descent assist brakes the wheels. The following activation conditions need to be met:

- Speed below 20km/h
- Gradients greater than 20%
- Engine running
- Accelerator pedal and brake pedal not pressed

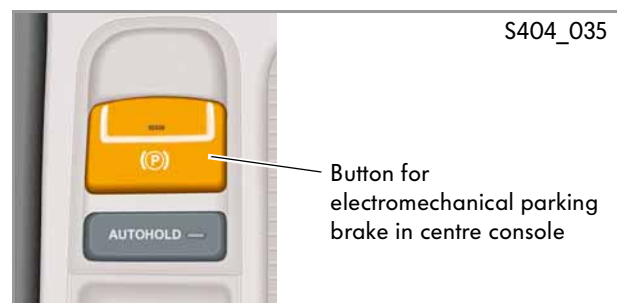
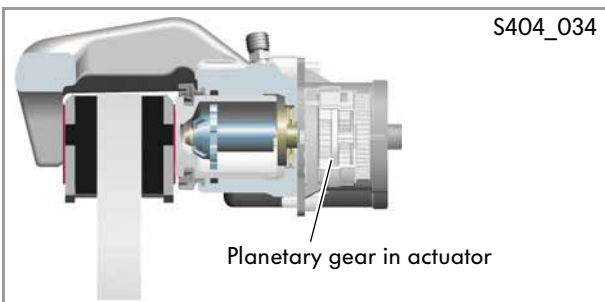
Intervention by the hill descent assist system is cancelled or interrupted as soon as one of the following conditions is met:

- Off-road button pressed or new ignition cycle
- Gradient less than 12%
- Accelerator or brake pedal pressed



Electromechanical parking brake with planetary gear

The Tiguan comes with the electromechanical parking brake with new planetary gear as standard. The button for the electromechanical parking brake is in the centre console together with the Auto Hold button.

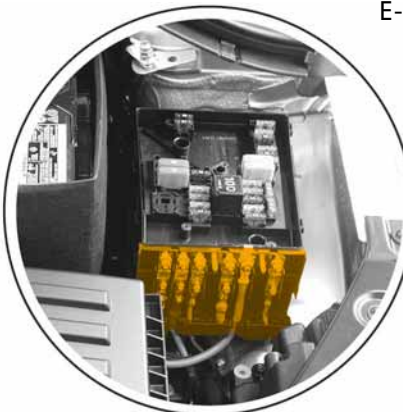


Electrical System

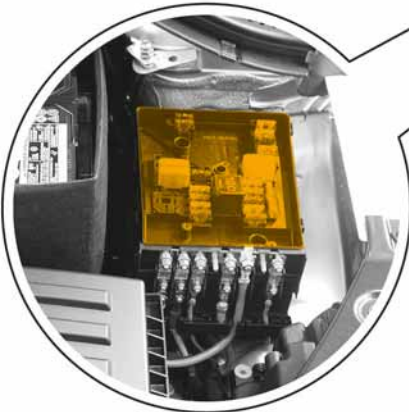
Fuse boxes and relay locations in the onboard supply

Locations

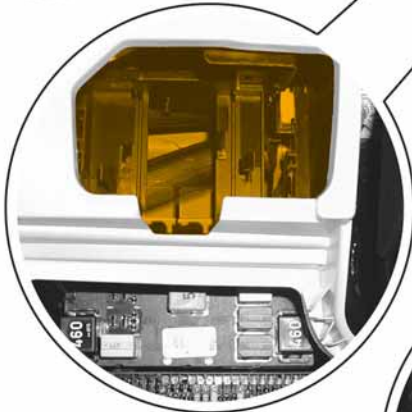
E-box on left of engine compartment



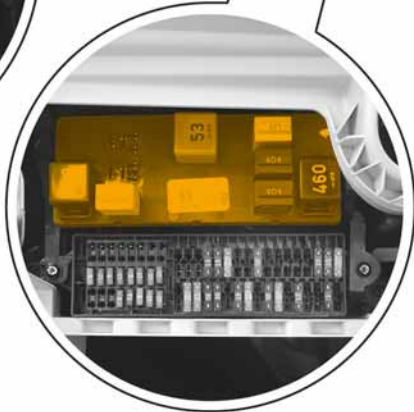
Pre-fuse box on left in the engine compartment

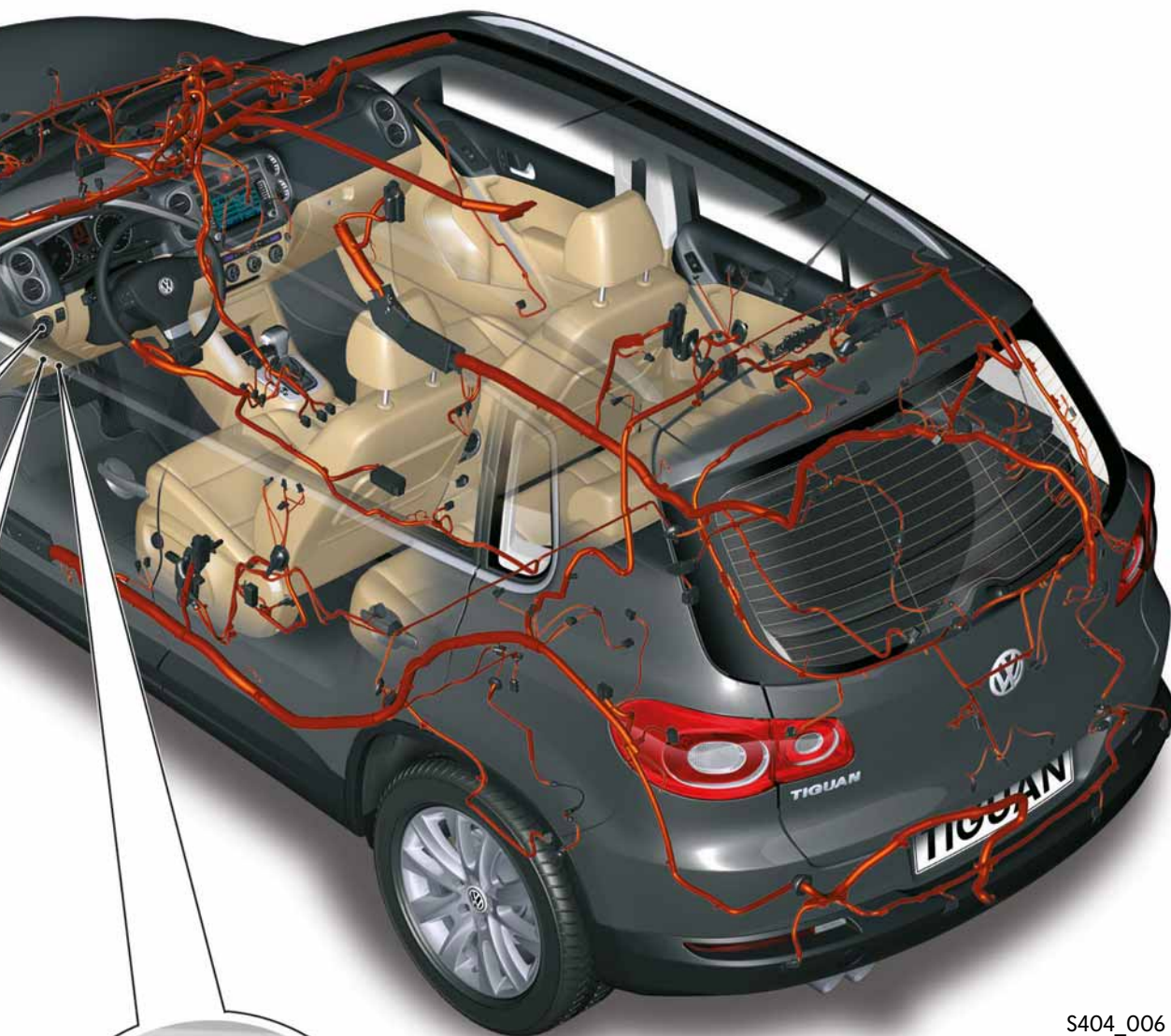


Relay carrier under dash panel on left, above the onboard supply control unit



Relay carrier on onboard supply control unit, under dash panel on left





S404_006

Fuse box on onboard supply control unit,
under dash panel on left

Electrical System

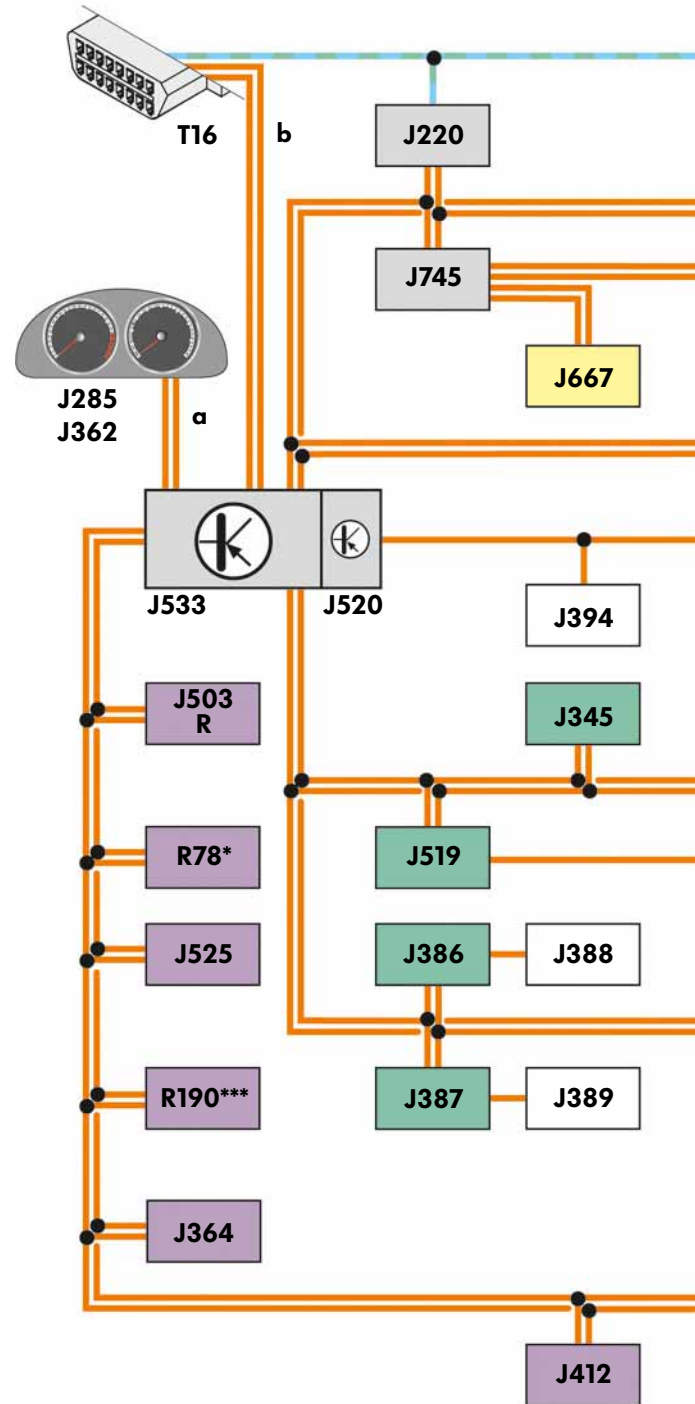
Networking concept

The data bus diagnostic interface J533 forms the interface for communication between the following data bus systems:

- Powertrain CAN data bus
- Convenience CAN data bus
- Infotainment CAN data bus
- Combi CAN data bus
- Diagnostics CAN data bus

The following data bus systems are connected downstream of a CAN data bus system as sub-bus systems:

- LIN data buses
- Sensor CAN data bus
- Cornering light CAN data bus

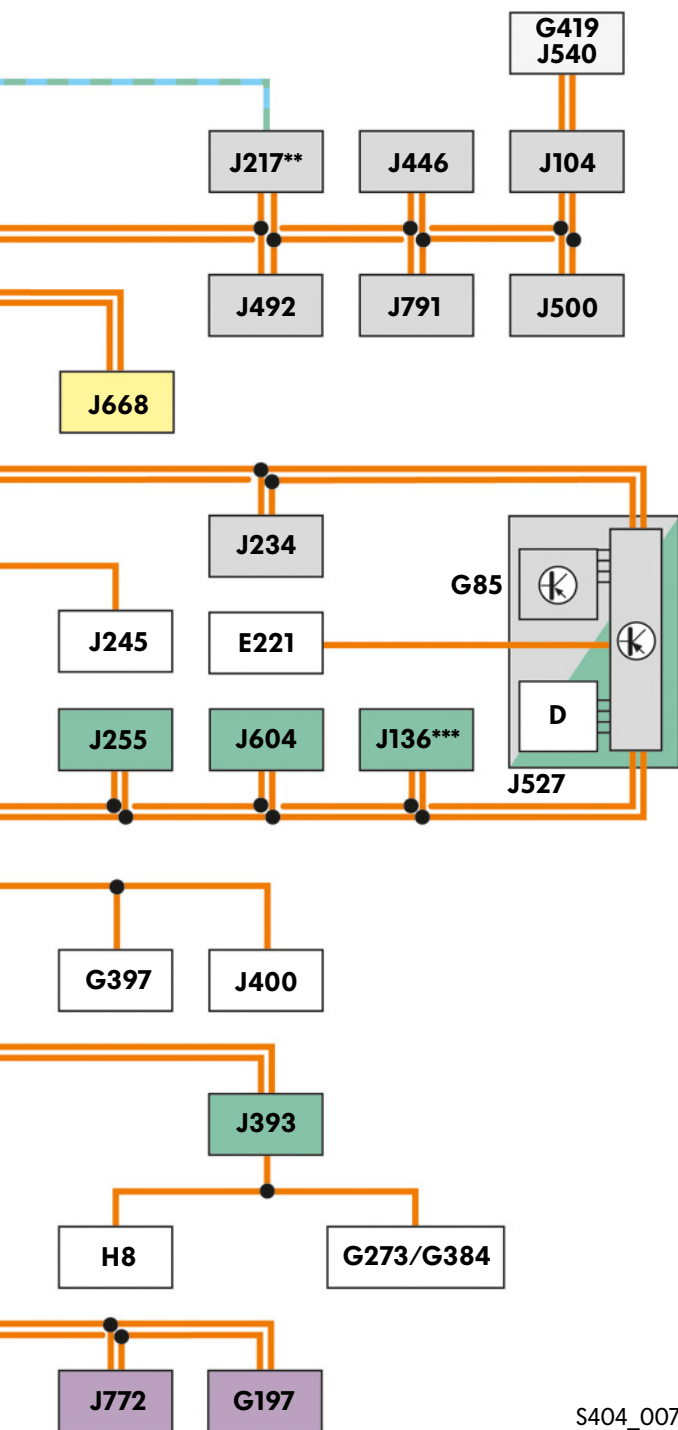


Transfer speeds

Powertrain CAN data bus:	500kBit/s
Convenience CAN data bus:	100kBit/s
Infotainment CAN data bus:	100kBit/s
Sensor CAN data bus:	500kBit/s
Combi CAN data bus:	500kBit/s
Diagnosis CAN data bus:	500kBit/s
Cornering light CAN data bus:	500kBit/s
LIN data buses:	19.2kBit/s

Legend

	Powertrain CAN data bus
	Convenience CAN data bus
	Infotainment CAN data bus
	Sensor CAN data bus
a	Combi CAN data bus
b	Diagnostics CAN data bus



S404_007

Legend

D	Ignition switch
E221	Operating unit in steering wheel (multifunction steering wheel)
G85	Steering angle sender
G197	Magnetic field sender for compass
G273	Interior monitoring sensor
G384	Vehicle inclination sender
G397	Rain and light sensor
G419	ESP sensor unit
H8	Anti-theft alarm system horn
J104	ABS control unit
J136***	Seat and steering column adjustment control unit with memory
J217**	Automatic gearbox control unit
J220	Motronic control unit
J234	Airbag control unit
J245	Sliding sunroof adjustment control unit
J255	Climatronic (and Climatic) control unit
J285	Control unit with display in dash panel insert
J345	Trailer detector control unit
J362	Immobilizer control unit
J364	Auxiliary heater control unit
J386	Driver door control unit
J387	Front passenger door control unit
J388	Rear left door control unit
J389	Rear right door control unit
J393	Convenience system central control unit
J394	Sunroof roller blind control unit
J400	Wiper motor control unit
J412	Mobile telephone operating electronics control unit
J446	Parking aid control unit
J492	Four-wheel drive control unit
J500	Power steering control unit
J503	Control unit with display for radio and navigation
J519	Onboard supply control unit
J520	Onboard supply control unit 2
J525	Digital sound package control unit
J527	Steering column electronics control unit
J533	Data bus diagnostic interface
J540	Electromechanical parking brake control unit
J604	Auxiliary air heater control unit
J667	Power output module for left headlight
J668	Power output module for right headlight
J745	Cornering light and headlight range control unit
J772	Reversing camera system control unit
J791	Control unit for parallel parking assist
R	Radio
R78*	TV tuner
R190	Digital radio satellite receiver***
T16	Diagnosis connector

* Only Japan

** With automatic gearbox only

*** Only North American region (NAR)



Radio, Navigation and Telephone

Radio systems in the Tiguan

The RCD 210, RCD 300 and RCD 510 radio systems are available for the Tiguan. The RCD 210 and RCD 510 radio systems are new. They will be described here.

RCD 210 radio

The new RCD 210 radio system is cheapest in the new generation of Volkswagen radio systems. You will see an additional storage facility on the front that can be used, for example, to safely keep music CDs.



S404_907

Technical features

- Monochrome display with a resolution of 122 x 36 pixels
- FM, TP and RDS reception via a single tuner
- TP button; stations that do not broadcast TP information will be displayed with "No TP".
- AM reception
- 24 memory slots for AM and FM stations each on two memory levels with 6 slots available according to the available buttons.
- The autostore function fills the currently selected memory level with the stations with the strongest reception.
- "Initial Autostore" is a service function for the hand-over inspection. It quickly fills all memory levels with receivable stations from the FM and AM wavebands.
- Two or four loudspeakers with up to 20 Watt output can be connected
- Treble, bass and balance sound adjustments; a fader adjustment is also available when there are four loudspeakers
- Integrated CD drive
- Brightness of display backlight can be controlled independently of the dim signal for the vehicle interior lighting
- Audio input interface (Aux-In)
- Service test mode

Combination and expansion possibilities

- VW telephone hands-free system UMPP (mono playback only)
- Compatible telephone hands-free systems from third-party manufacturers
- Volume reduction when vehicle is equipped with new Park Distance Control (diagnosis address 10)
- Can be operated via multifunction steering wheel and displayed in dash panel insert
- VW CD changer or VW Individual iPod adapter or USB adapter





Europe version with TIM

S404_908

RCD 510 radio

The RCD 510 is currently the top radio system in the RCD series. The main difference to the other RCD system is the touch sensitive colour screen with which you can operate various functions.

In addition to the 6-CD changer, the RCD 510 has a slot so you can use SD memory cards as a music source.

Technical features

- Touch-sensitive 6.5" TFT colour display with a resolution of 400 x 240 pixels
- Twin-tuner for FM, TP and RDS reception
- Integrated aerial diversity for two aerials
- AM reception
- Two or four loudspeakers with up to 20 Watt output can be connected
- Integrated 6-CD changer
- Integrated memory for TIM information (depending on equipment)
- Integrated DAB tuner (depending on equipment)
- SDARS tuner (depending on equipment)
- Integrated SD memory card reader
- Media support for MP3 and WMA audio data
- Audio input interface (Aux-In)
- Interface for connecting a reversing camera on RCD 510 RVC (Rear View Camera) version
- Self-diagnosis and loudspeaker diagnosis

Combination and expansion possibilities

- External sound amplifier
- Support of external second display via the BAP operating and display protocol as well as the DDP display data protocol
- Telephone hands-free system UMPP Low, UMPP Premium and UMPP Premium light
- Compatible, external telematics units
- Control via multifunction steering wheel
- External CD changer (without MP3 support)



The cover frame has to be removed to remove or install a radio, in order to access the threaded connection located behind it.



Radio, Navigation and Telephone

RNS 300 radio/navigation system

- 5" monochrome display
- Two or four loudspeakers (20 Watt) can be connected
- Single tuner principle for FM incl. TMC (Traffic Message Channel)
- Integrated single CD drive
- MP3 playback
- Dynamic guidance with TMC
- Navigation without inserted navigation CD (corridor function)
- Route guidance using symbols and speech
- Optionally compatible with mobile phone preparation and hands-free system
- Optionally compatible with multifunction steering wheel

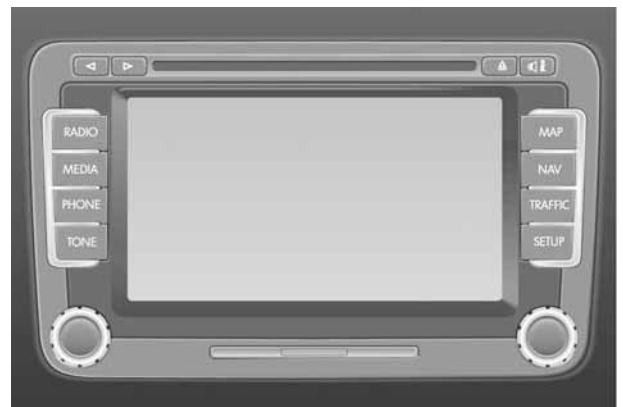


S404_901

- Optionally compatible with external CD changer (CDC)

RNS 510 radio/navigation system

- Touch-sensitive 6.5" multi-colour display (MFD) with a resolution of 800 x 480 pixels
- Output stage with 4 x 20 Watt output, two or four loudspeakers can be connected
- RDS, FM and AM Europe radio
- FM twin tuner with internal diversity
- SDARS tuner (depending on equipment)
- Integrated DVD drive for navigation, audio and video
- Integrated drive hard for storing navigation and audio data
- Integrated SD memory card reader
- Media support for MP3 and WMA audio data
- Map display also in 3D bird's eye view
- TMC function (the current traffic messages are stored)
- Controllable via multifunction steering wheel
- Optionally compatible with Volkswagen sound and Dynaudio as well as Volkswagen TV tuner

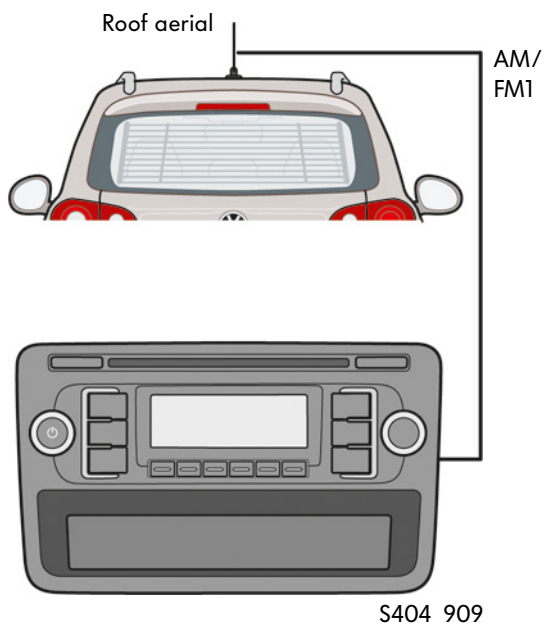


S404_903



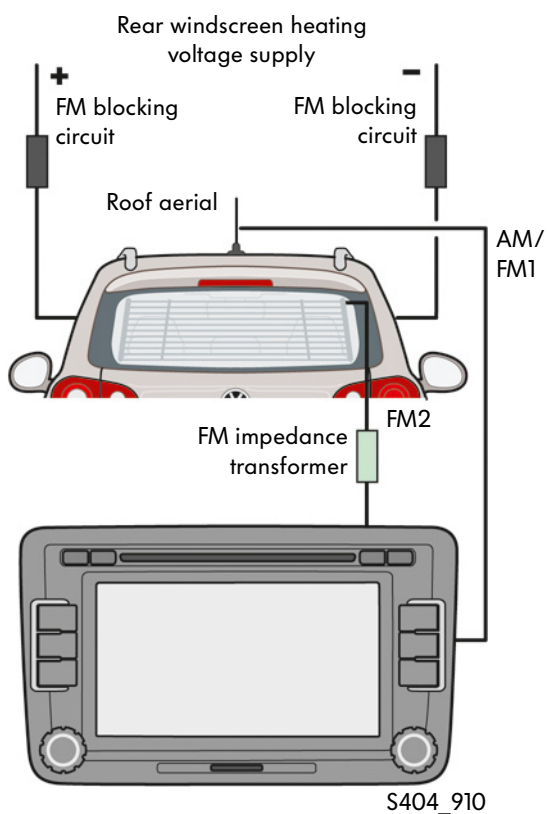
You will find further information on these systems in self-study programme no. 397 "2007 Radio/Navigation Systems" or in the corresponding operating manuals.

Aerial concept in Tiguan



Aerial set-up for RCD 210

The AM/FM connection for the RCD 210 is made via the Tiguan roof aerial. External blocking circuits or impedance transformers used in the aerial system in the rear window are not required.



Aerial set-up for RCD 510

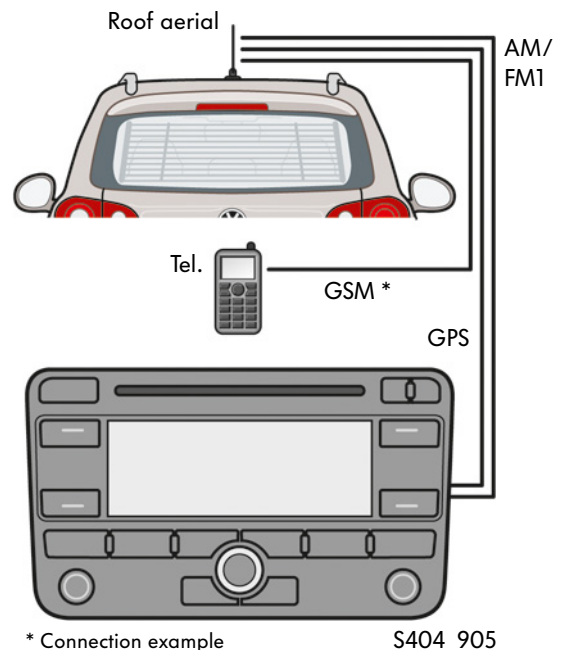
Since the RCD 510 uses the twin tuner principle, i.e. it has two FM tuners, it is necessary to use an aerial structure in the rear window in addition to the roof aerial. An FM impedance transformer is required for this FM2 connection. Two FM blocking circuits are integrated in the heating wire circuit.



Radio, Navigation and Telephone

Aerial set-up for RCD 300

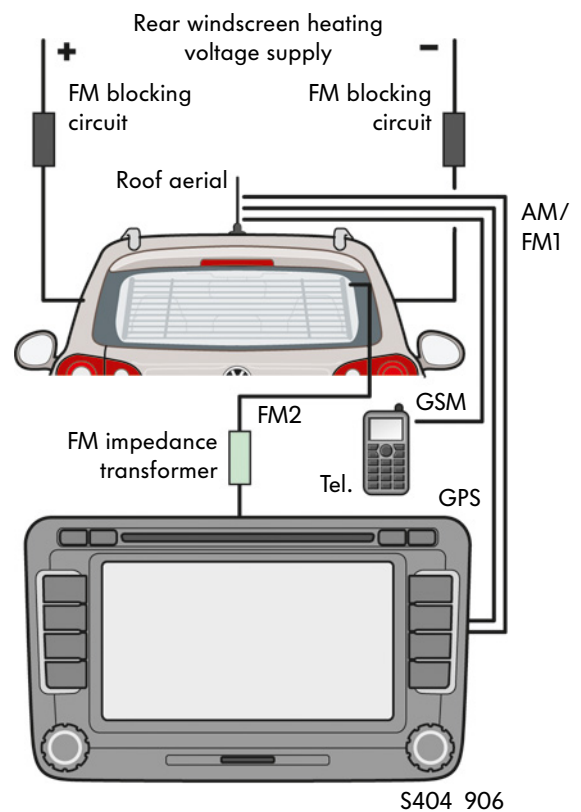
If the Tiguan is equipped with the RNS 300, it will have a roof aerial that is connected to the GPS and the AM/FM tuner module in the radio/navigation system and the GSM module in the mobile phone. The aerial structure in the rear windscreen is not required.

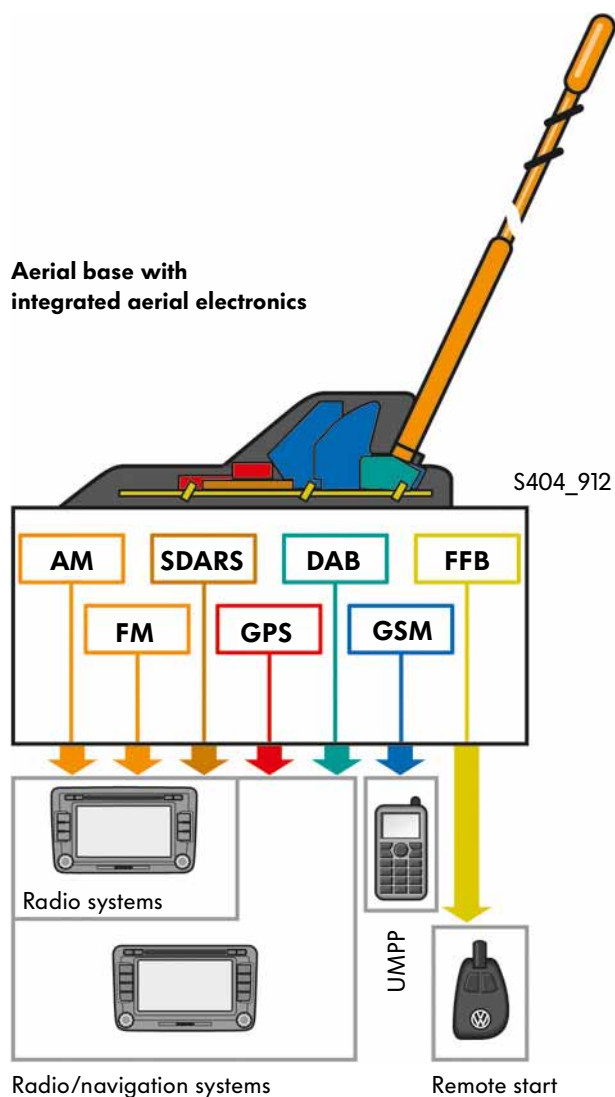


Aerial set-up for RCD 510

If the Tiguan is equipped with the RNS 510, an aerial structure in the rear windscreen for twin-tuner operation in the FM range will be used in addition to the roof aerial.

AM and FM reception as well as the signals for the navigation system (GPS) and the telephone (GSM) are received via the roof aerial. An FM impedance converter is required to connect the second FM tuner via the rear windscreen aerial. Furthermore the rear windscreen heating circuit needs to be decoupled from the onboard supply signals with two FM blocking circuits.





Roof aerial

In addition to the aerial structures in the rear or side windows and the proven shark fin roof aerial, there is now also a new roof aerial available to allow the different signals for radio (AM/FM/SDARS), navigation (GPS), telephone (GSM), digital radio (DAB) and the remote control for the auxiliary heating (FFB), for example, to be received via an aerial for the corresponding vehicle systems.

When the roof aerial was developed, we considered it particularly important to integrate the complex aerial electronics in the aerial base to minimise assembly work for the electrical components.

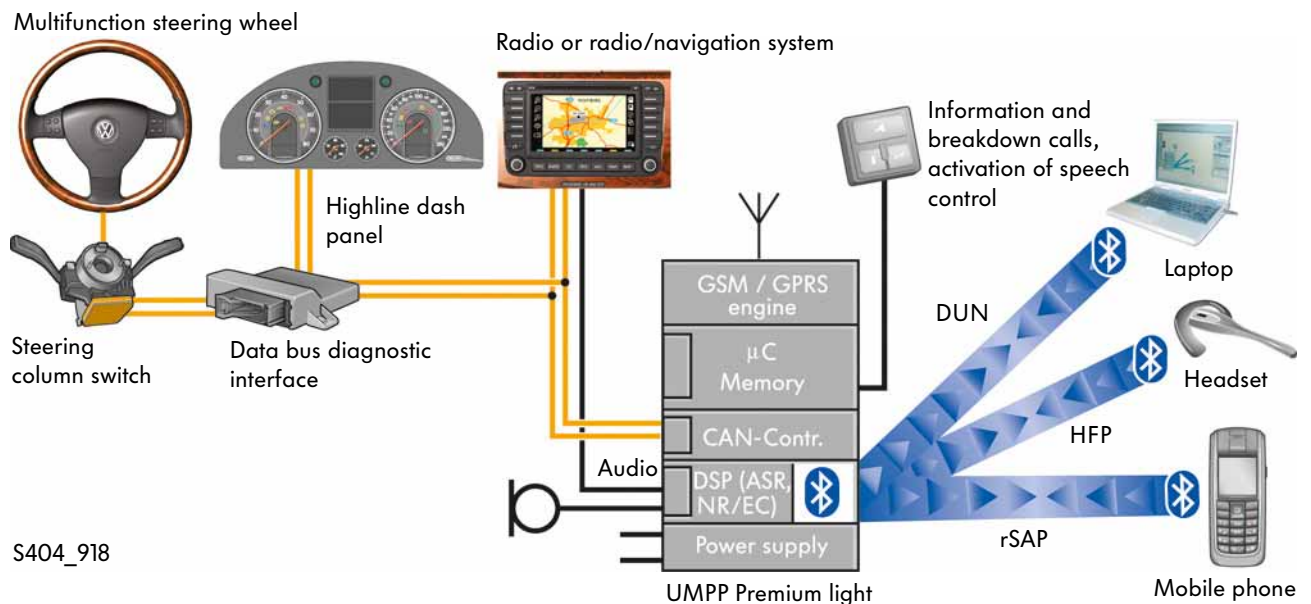


Radio, Navigation and Telephone

UMPP Premium Light telephone preparation

The UMPP Premium Light is a fixed telephone system with wireless access to the telephone data on a mobile phone logged into the vehicle system via Bluetooth. It is being used in the Tiguan for the first time.

The UMPP Premium Light requires that the mobile phone to be connected has both a **Bluetooth interface** and also supports the **Remote SIM Access Profile (rSAP)**. rSAP allows, for example, telephone book entries on the mobile phone SIM card to be accessed.

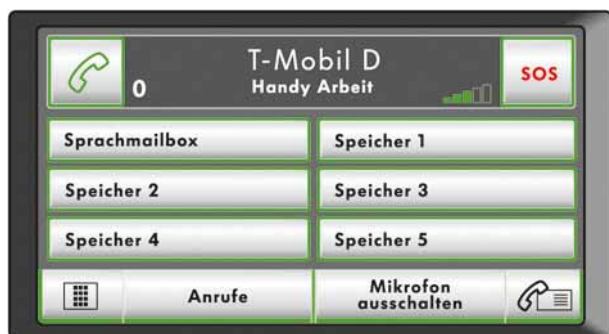


The following functions are available with the RCD 510 or RNS 510:

- Control via the multifunction steering wheel
- Multi-language display possibilities via the Highline dash panel insert
- No phone cradle required; you can leave the authorised mobile phone in your jacket pocket, for example.
- Hands-free function in good audio quality configured for the vehicle
- Telephone book downloaded from mobile phone
- Support for call lists, speed dial and SMS functions
- Option of using a Bluetooth headset with the Hands Free Profile (HFP)
- Information and breakdown call
- Option to connect a laptop via the Dial-Up Network profile (DUN)
- Management of up to three personalised users
- Speech control function, also in English, Italian, Portuguese, Spanish, French and Czech



You will find further information on the HFP, DUN and rSAP profile in self-study programme 345 "Universal Mobile Telephone Preparation".



S404_915



S404_916



S404_914

Control fields for UMPP Premium light on touch-sensitive screen for RCD 510 and RNS 510

With the introduction of the new UMPP Premium Light mobile phone preparation, the separate 10-button keypad for manual dialling in the dashboard from the Premium mobile phone preparation was discontinued. If the vehicle is equipped with the RCD 510 or RNS 510, it is possible to use a keypad that is displayed on the touch screen.

In conjunction with the RCD 210 and RCD 300 radio systems, it is only possible to operate the UMPP Premium Light manually via the multifunction steering wheel.



The screenshots shown are from the radio or radio/navigation system with German system setting and only serve as an example. Please refer to the corresponding operating manuals for the labels of the virtual buttons in other languages.



It is no longer possible to charge the mobile phone battery using this equipment due to the omission of the mobile phone cradle. Solutions from car accessory retailers are required for this.

The UMPP Premium Light is always combined with the multifunction steering wheel in the Tiguan. The UMPP can always also be controlled with the steering column switch instead of the multifunction steering wheel depending on the vehicle model and equipment. Only one option can be installed within a vehicle.

Heating and Air Conditioning

Air conditioning



S404_039

Two different types of air-conditioning system are fitted in the Tiguan that have also already been used in the Golf and Touran:

- The semi-automatic heater and air conditioner “Climatic”
- The fully automatic “2C-Climatronic” heating and air-conditioning system

Operation

Depending on the vehicle equipment, there are two different versions of the control units:

- With or without instant heat button for the auxiliary coolant heating
- With or without potentiometer for the seat heating

“Climatic” control unit



S404_038

“Climatronic” control unit



S404_036/037

Button assignment for version with auxiliary coolant heating





S404_040



S404_041/042



Condenser and dryer

Several improvements have been made to the condenser with integrated dryer for the Tiguan. The condenser dryer cylinder has been shortened for better crash performance. This provides better protection when the bumper cross member deforms.

When fitted with off-road bumpers (28° approach angle), the Tiguan has a stone-guard grille for the condenser.

Servicing has been made easier by moving the connection for the coolant hoses to the upper part of the engine compartment. This makes them easier to access when work needs to be carried out on the condenser. Furthermore the dryer cylinder can be replaced without the condenser being removed.



You will find further information on heating and air-conditioning systems in self-study programme 318 "The Golf 2004".



Thermo Top V auxiliary coolant heating

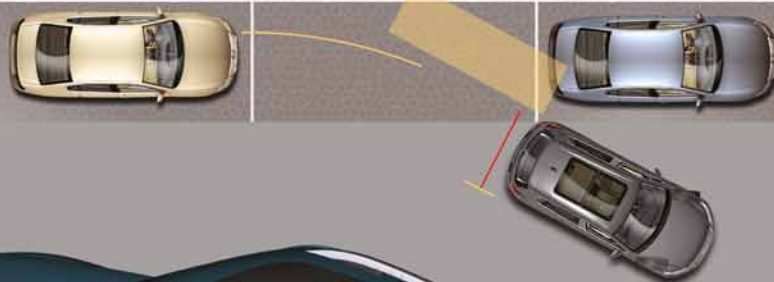
The Tiguan can be optionally equipped with the Thermo Top V auxiliary coolant heating system. The following changes have been made to the design for use in the Tiguan:

- Modified air-intake damper
- Water hoses with quick-release connections
- Adapted exhaust gas pipe

Notes



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000.2812.04.20 Technical status 10.2007

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