

Service Training



Self-study Programme 318

The Golf 2004



The Golf 2004 continues the success story of the Golf, which so far has been almost 30 years in the making. It stands out by virtue of its aesthetics and comfort, and through the use of modern technologies. The loving attention to detail, the spacious interior, the powerful and safety-conscious "inner values" under the bonnet and within the member structure set the Golf 2004 apart as a trendsetter.

The product characteristics of the Golf 2004:

- Dynamic, elegant design
- Excellent quality
- Superior handling dynamics
- Comprehensive safety
- Innovative drivetrain technology
- Efficient economy
- Spacious interior
- Target-group-oriented product range



S318_032



There are special Self-study Programmes on the following topics:

- SSP 308: The Direct Shift Gearbox 02E
- SSP 317: The Electromechanical Power-Assisted Steering with Double Pinion
- SSP 319: The Golf 2004 - Electrical System
- SSP 321: The 2004 Golf Running Gear

NEW



Important Note



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

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

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Brief overview



The Golf 2004

The Golf 2004 sets new standards for the A-class in many areas, e.g.:

- design,
- handling dynamics,
- drivetrain technology,
- spaciousness,
- safety,
- quality.

- High-end radio and sound system

- Various stowage options,
e.g. in the overhead console

- Electromechanical power assisted steering

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

- Clear glass headlights





The Golf 2004 stands for the group values...

...innovation,

value retention

and a partnership
approach.



- 2C-Climatronic (2-zone air conditioning)

- Rear lights with LED technology



Further highlights:

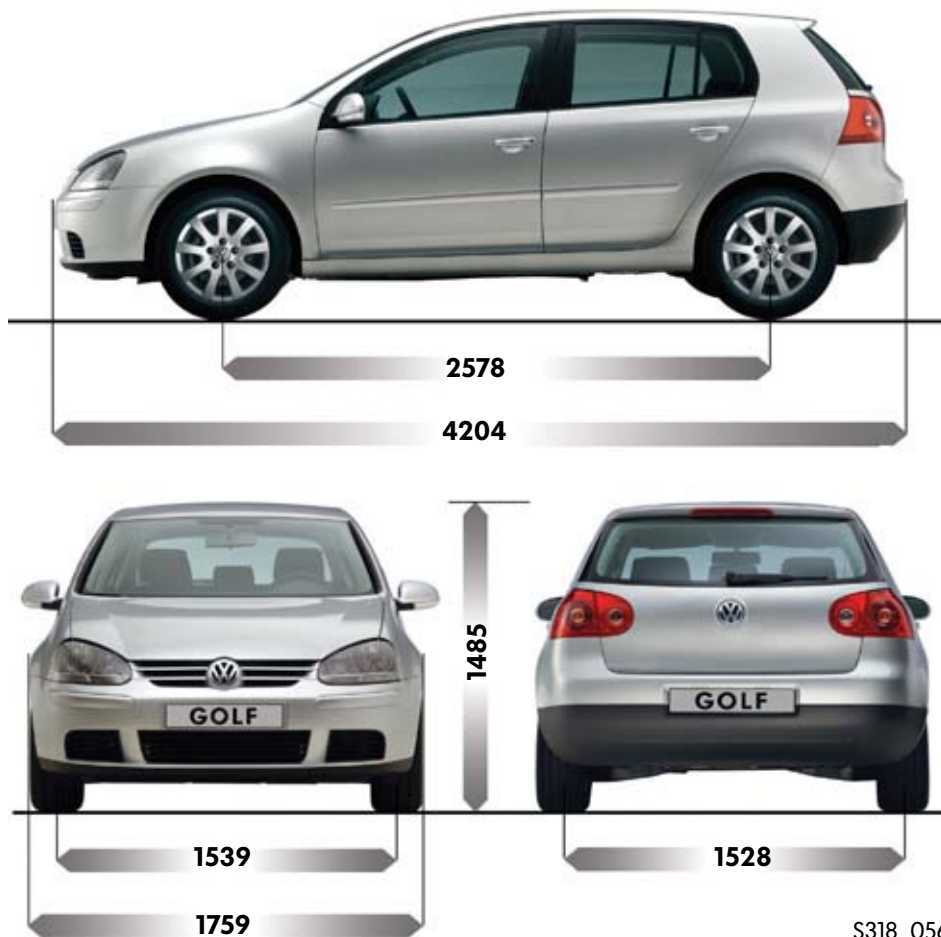
- Intelligent wiper system with "droplet wipe function": a repeat wipe cycle is executed five seconds after the last wipe-wash cycle
- Optional Coming Home and Leaving Home function
- Optional ParkPilot (rear distance warning)

S318_070

Brief overview

Technical data

The figure shows the dimensions of the Golf 2004 as a 4-door saloon with front-wheel drive.



S318_056

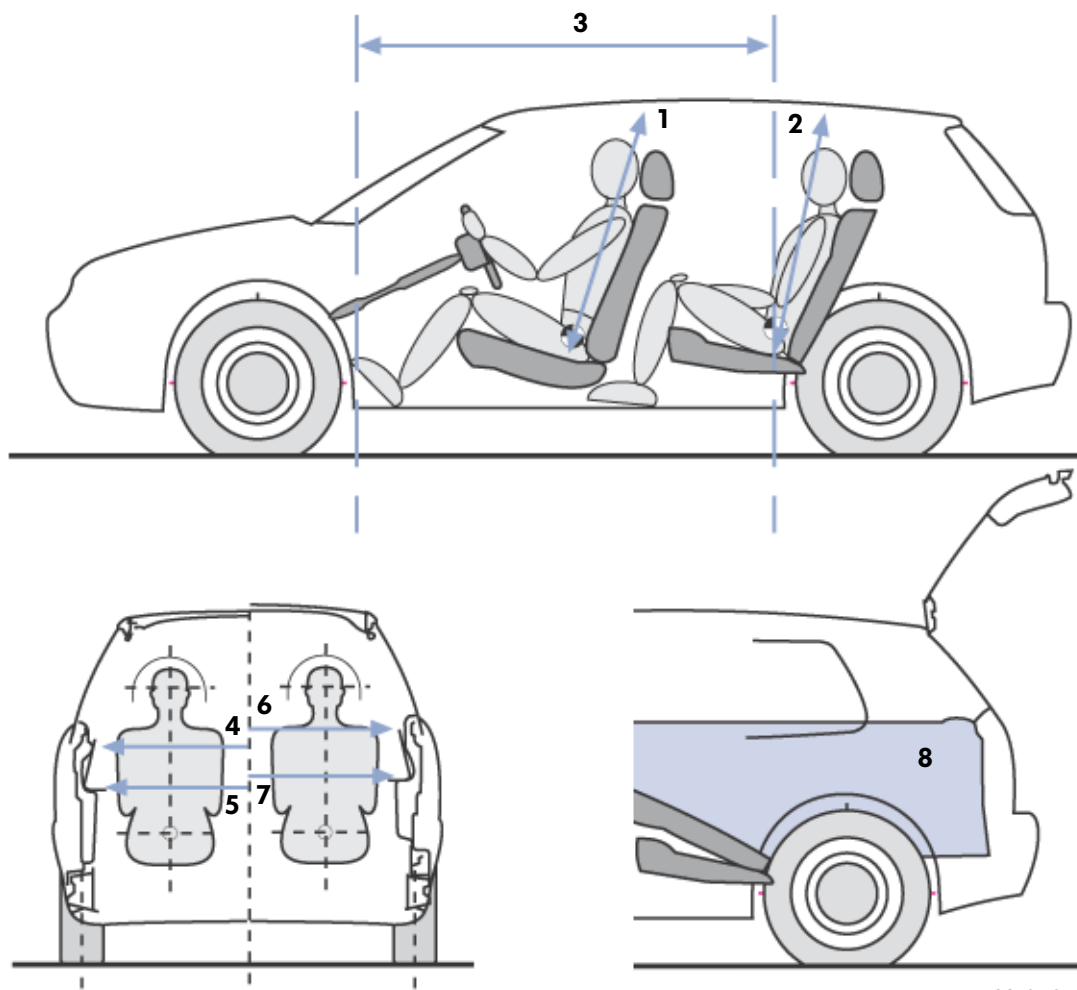
Dimensions and weights

Length	4204 mm
Width	1759 mm
Height	1485 mm
Wheelbase	2578 mm
Roof load	75 kg
Trailer load, braked	from 1200 to 1700 kg
Tank capacity	55 l

Front track width	1539 mm
Rear track width	1528 mm
Max. permissible weight	from 1740 to 2010 kg*
Unladen weight	from 1154 to 1431 kg*
Luggage capacity	350 l
Coefficient drag value	0.32 c _d

*varies depending on model

Interior dimensions



S318_059

Dimensions

1	Front headroom	from 965 to 987 mm*
2	Headroom 2nd seat row	from 978 to 979 mm*
3	Cabin length	1736 mm
4	Shoulder room front	from 1390 to 1391 mm*
5	Elbow room front	from 1446 to 1448 mm*

6	Shoulder room rear	from 1348 to 1386 mm*
7	Elbow room rear	from 1437 to 1479 mm*
8	Luggage capacity with rear seat back folded forward	1305 l

*varies depending on model

Body

The body structure

Static and dynamic rigidity

The Golf 2004 sets new standards for static and dynamic rigidity. However, this rigidity has not been achieved to the detriment of body weight, but by systematic application of lightweight design principles. This fact is reflected clearly in the vehicle's 'lightweight factor'.



The lightweight factor L

Formula:

$$L = \frac{M_{RK}}{C_T \cdot A}$$

M_{RK} = bodyshell mass

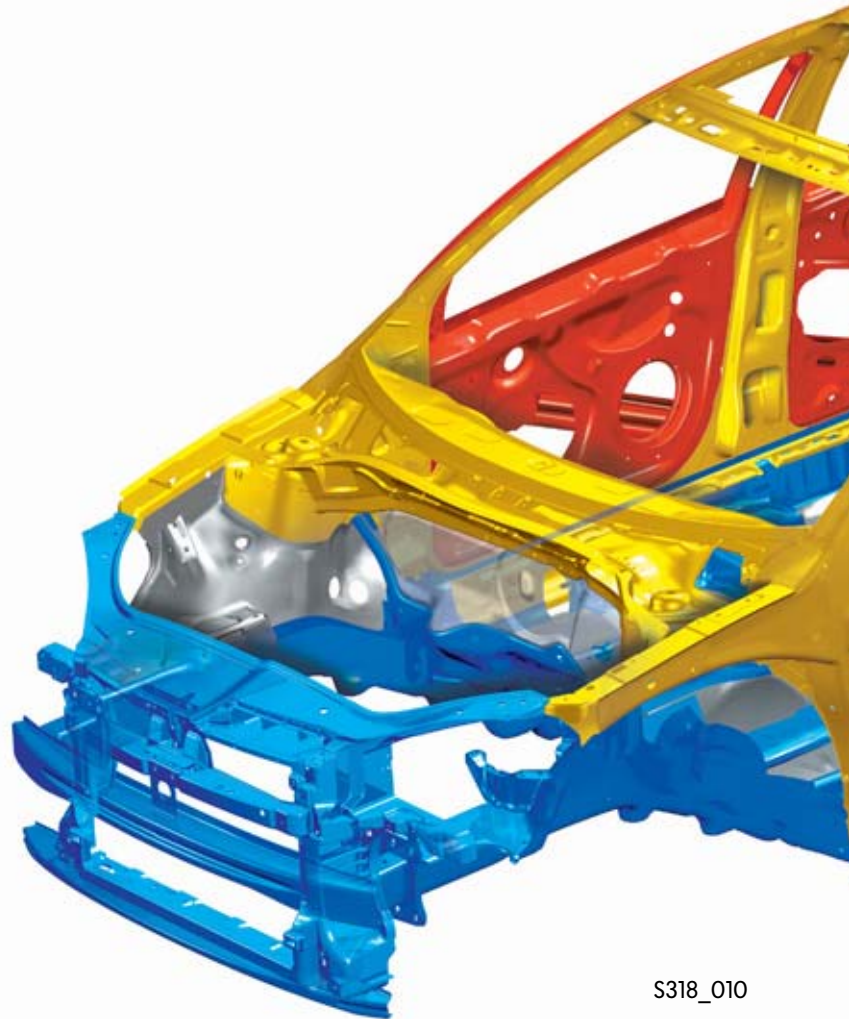
C_T = torsional rigidity

A = wheel contact surface

As the formula shows, the lightweight factor is the ratio of vehicle mass to the product of vehicle size and rigidity. The lesser the vehicle's mass and the greater its size and rigidity in relation to this, the better.

Therefore, the lower the value, the higher the lightweight factor L. The lightweight factor of the Golf has been improved continuously over generations.

The 1974 Golf had a lightweight factor of $L=6.2$; in the 1998 Golf, it was $L=4.0$, and in the 2004 Golf it is now only $L=2.5$.



S318_010

Key:

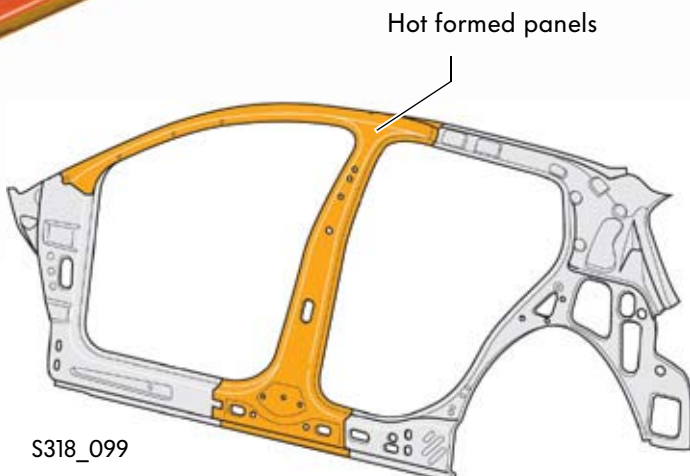
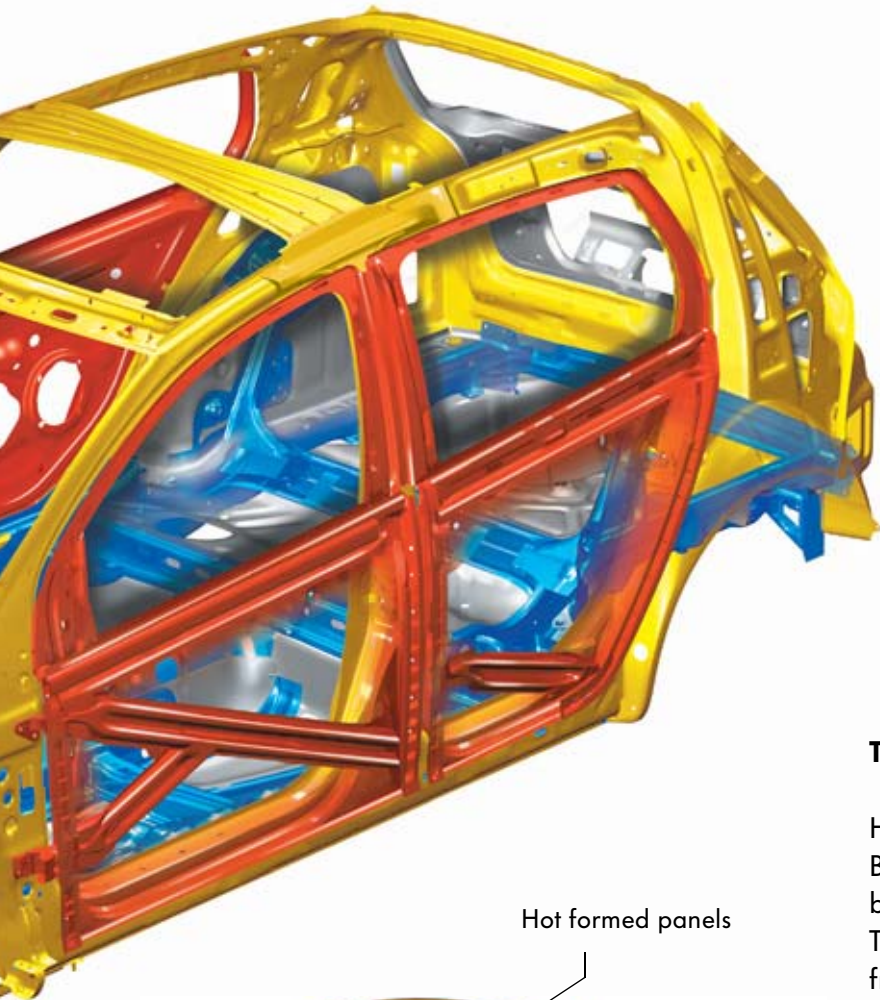
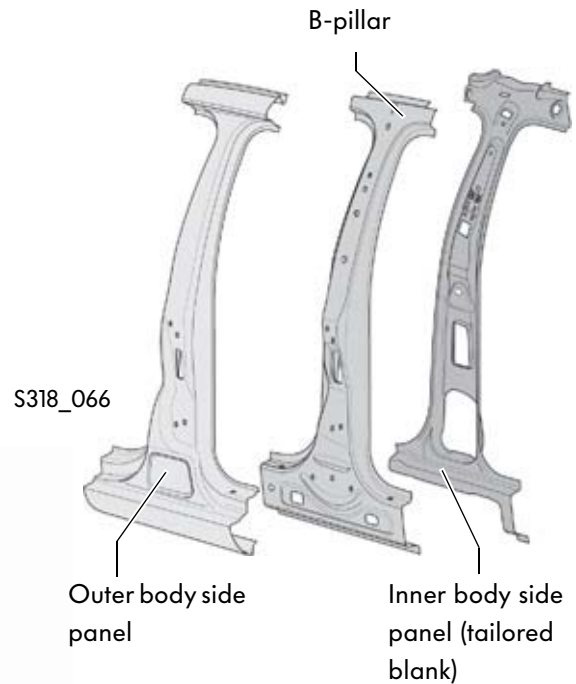
red =side impact zone

yellow =occupant cell

blue =frame structure

The B-pillar

The B-pillar has a 3-layered structure. By using hot formed panels, it provides a high degree of safety for the vehicle's occupants in the event of a side-impact collision.



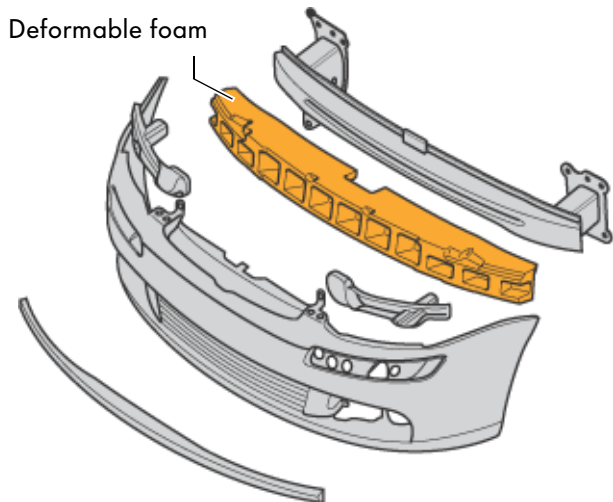
The hot formed panels

Hot formed panels are used for the B-pillar and in the adjacent portion of the body in the direction of the A-pillar. These components derive their strength from specific heat treatment before and during the in-tool shaping process. Hot formed panels have a higher strength and lower weight than regular panels.



Body

The add-on parts



S318_289

The front bumper

The risk of injury for pedestrians was reduced by integrating an elastic impact-absorbing element into the front bumper behind the front spoiler. This deformable foam element allows a defined compression of the front end in the event of a collision.



S318_068

The headlights

The headlights on the Golf 2004 feature clear glass technology. The lamps are connected to the reflector by a "one-touch" fastener system. The turn signals are located below the dipped and main beam headlights in order to improve visibility for other road users.

In the Medium and High versions, a combination of the BiXenon module and a main beam reflector with H7 lamps is possible as an optional extra.





S318_151

The exterior mirror

LED turn signals are integrated in the exterior mirrors.



S318_259

The rear lights

The 2004 Golf has two-part rear lights.



S318_062

The doors concept

A completely new doors concept based on a door outer panel with mounting rails and a door inner section will be introduced to the Golf.

Body

The glazing

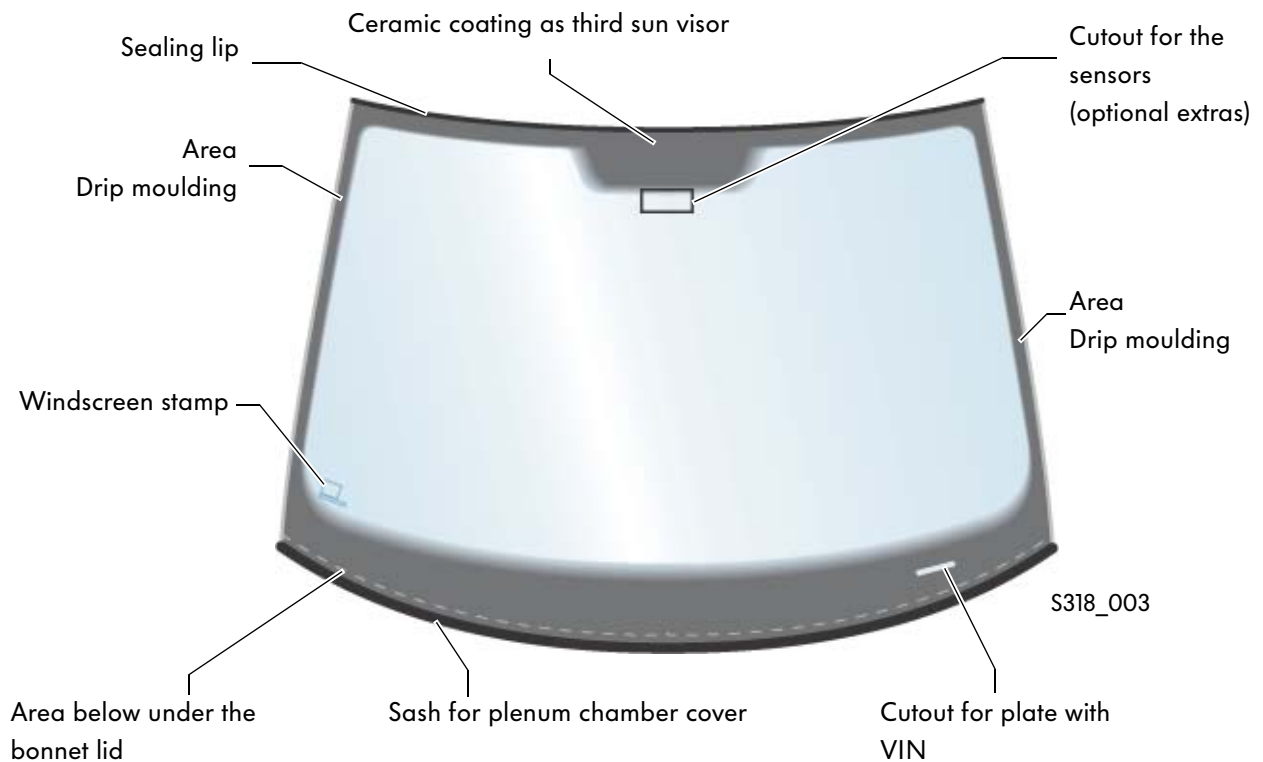
The windows on the Golf are in green-tinted glass, and will also be available in blue-tinted glass at a later date. Deep tinted glass on the windows behind the B-pillar is optional. The thickness of the window glass corresponds to its function: the windscreen is 4.4 mm thick, the front side windows are 3.5 mm thick and the other windows are 3.15 mm thick.

All fixed windows are bonded directly.



The windscreen

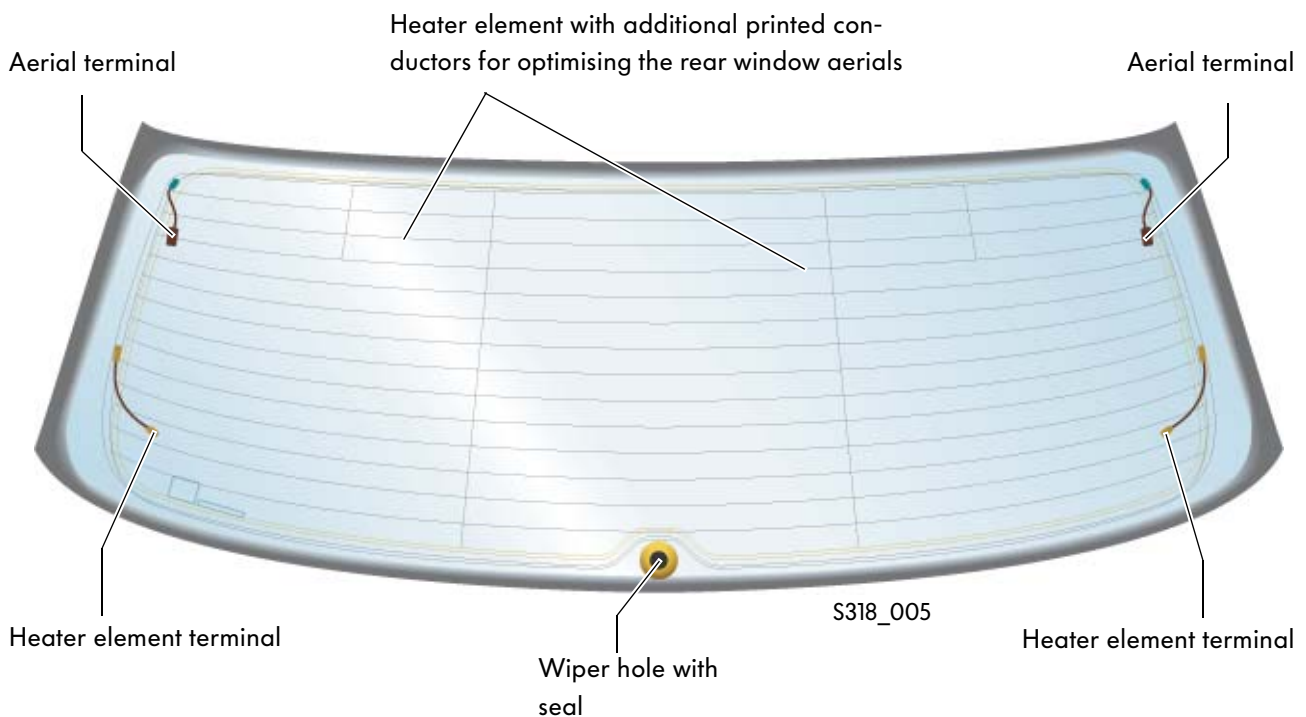
The windscreen is also available with an infrared-reflective metal vapour deposition coating. This metal vapour deposition coating reflects to a large extent the infrared portion (heat radiation component) of the sunlight, whereas conventional heat reflective glass shields only a far smaller proportion of the solar radiation by absorption.



The windscreen may only be set down on its side. Otherwise, the sash at the bottom and/or the sealing lip at the top can become damaged.

The rear window

In the production process, windows are fitted with different types of aerial depending on model. As a replacement part, the rear window is basically fitted with Diversity aerials. If no Diversity system is being used in the vehicle, the unnecessary aerial terminal must be removed, otherwise rattling noises can occur. In the case of the Diversity aerial, there are two aerial terminals on the window. The signals are simultaneously relayed from these terminals to the radio and respectively to the Diversity switching box (with the radio navigation system MFD 2). Use of both aerial signals significantly reduces interference with reception.

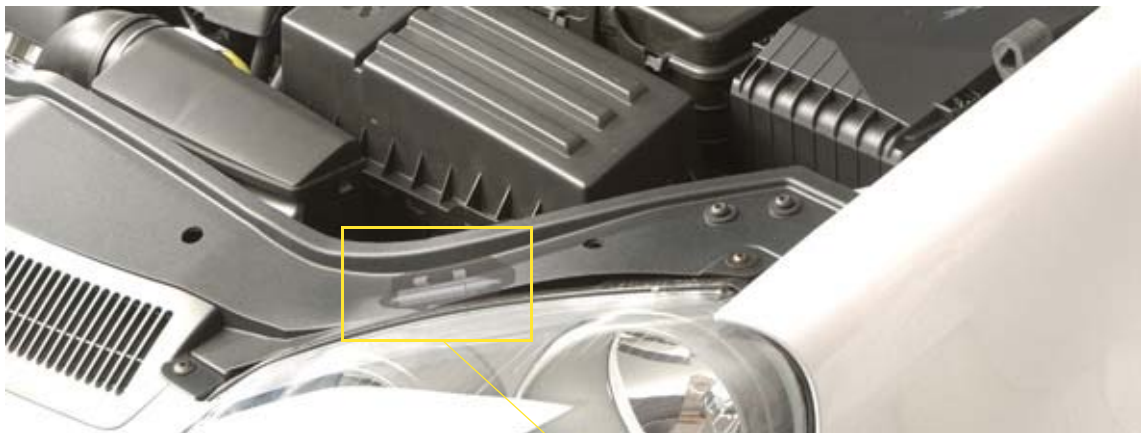


The rear window may only be fitted if the rear lid has been installed and set. For detailed instructions for fitting the rear window, please refer to the current workshop manuals.

Body

The bonnet lid

The bowden cable for opening the bonnet lid is located in an access-protected position in the engine compartment. There is a disconnection point behind the left headlight. This means that the bowden cable need no longer be removed from the vehicle interior, but can easily be disconnected to carry out work on the front end.



S318_046

Disconnection point closed



S318_251

Disconnection point open



S318_253

Bowden cable disconnected



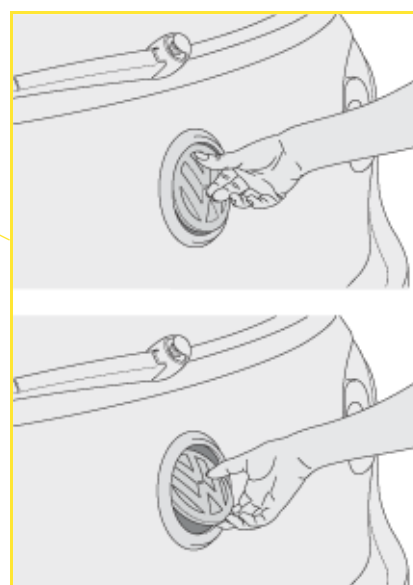
S318_255

The rear lid

The rear lid has a new locking mechanism. The VW badge swivels upward under gentle pressure - which is applied to the top third of the badge with the thumb - to become a neat handle for opening the rear lid. After that, the badge glides gently back into its original position by means of a silicone brake.



S318_048



S318_283

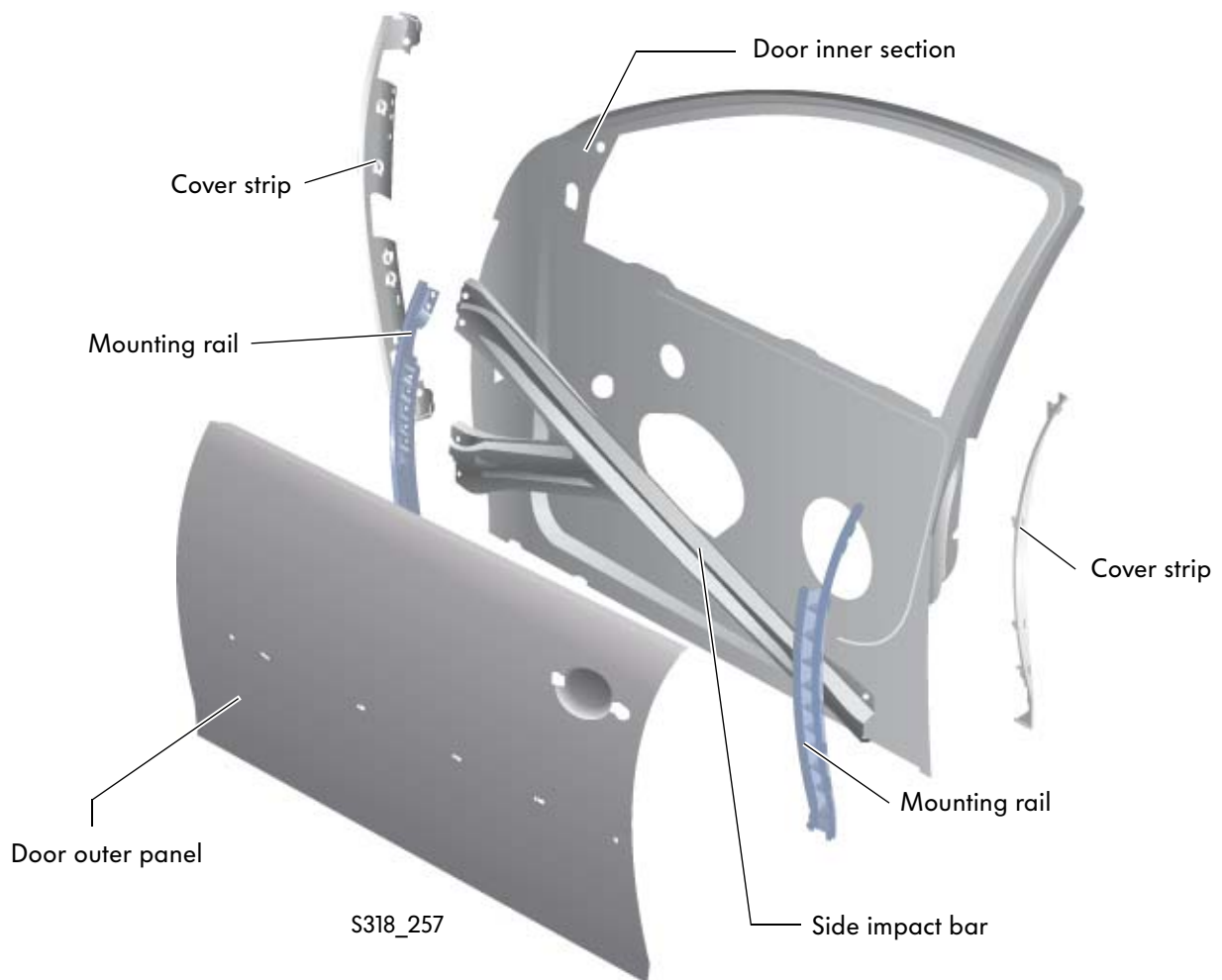
After the body has been painted, the lock unit can be installed. It is functional straight away - without the need for adjustment work. To make this possible, a diecast zinc ring was beaded into the body.

The emergency release mechanism

There is a removable cover in the rear lid trim. After this cover has been removed, the locking linkage can be accessed to allow emergency release of the rear lid.

The new doors concept

The doors in the Golf 2004 consist of a door outer panel with two mounting rails and a door inner section for mounting the fittings. The door outer panel is bonded onto the mounting rails. The mounting rails are in turn bolted onto the door inner section.

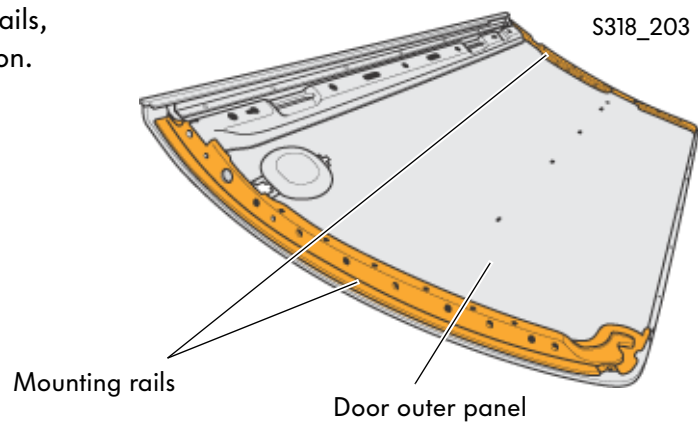


This provides the following advantages:

- The technology in the doors is easily accessed and checked after the door outer panel has been removed.
- In the event of damage, the door outer panel can be separately detached for removing dents or for replacement purposes.

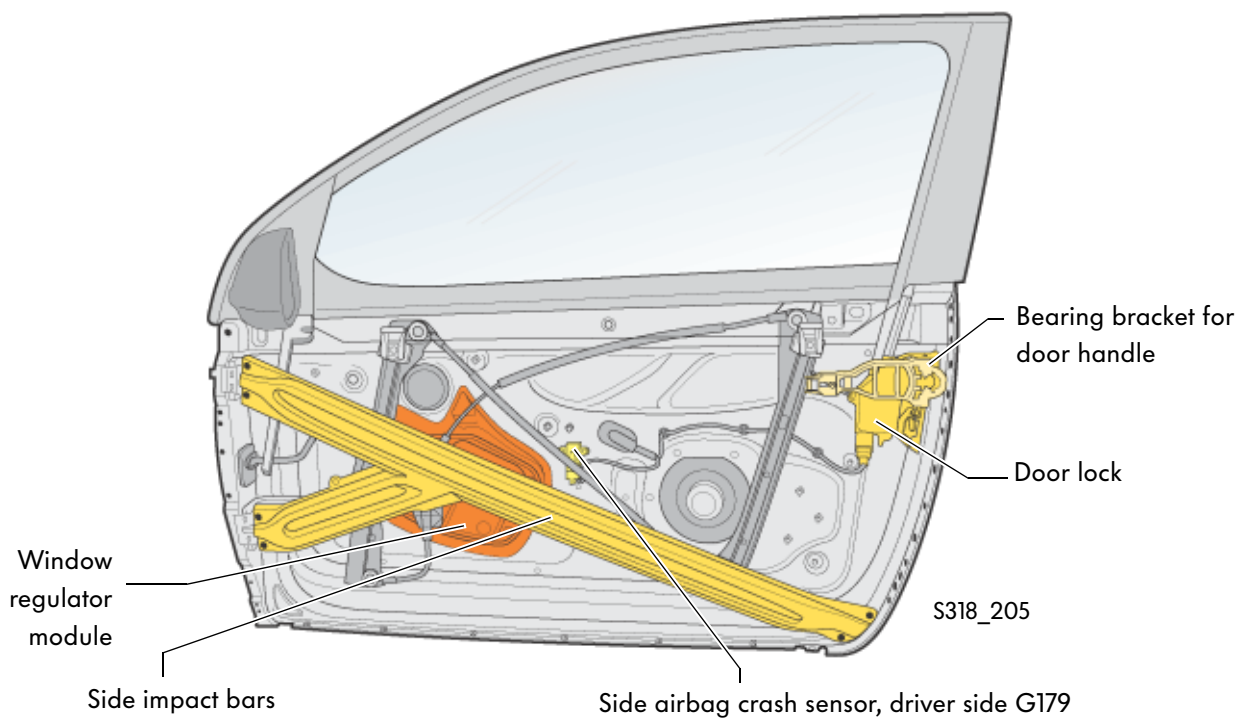
The mounting rails

The door outer panel is made for accurate fit and is bonded once only onto mounting rails, which are bolted into the door inner section.



The door fittings

Detaching the door outer panel provides easy access to the side impact bars, the door handle bearing bracket, the door lock and the side airbag crash sensor, as well as the window regulator module on the door inner section.



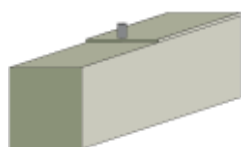
Body

The door assembly

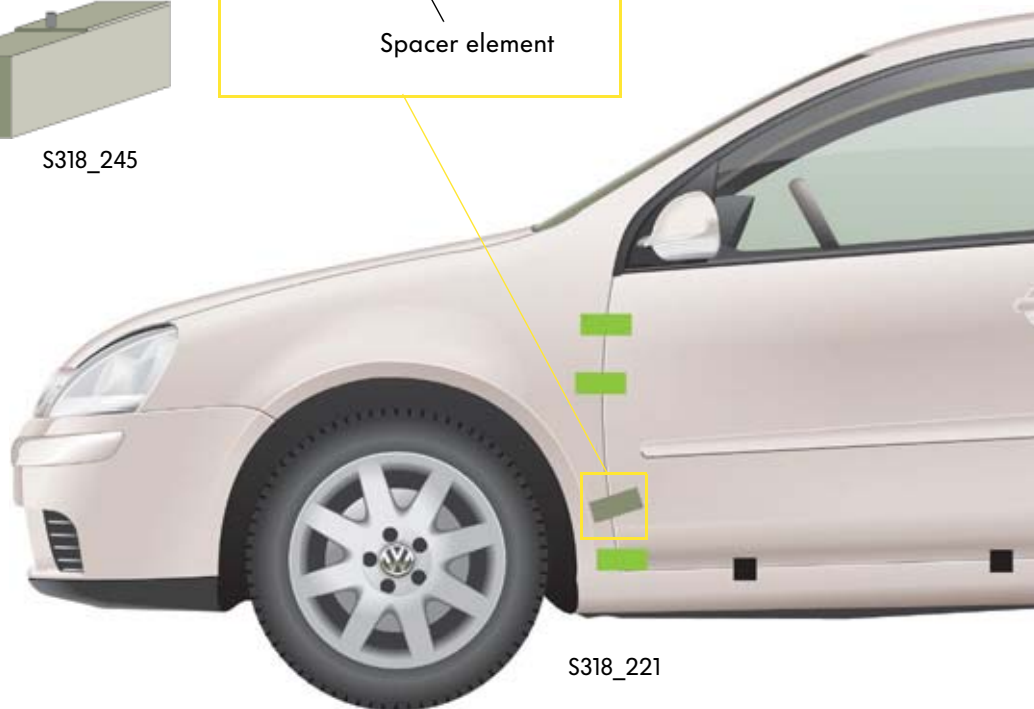
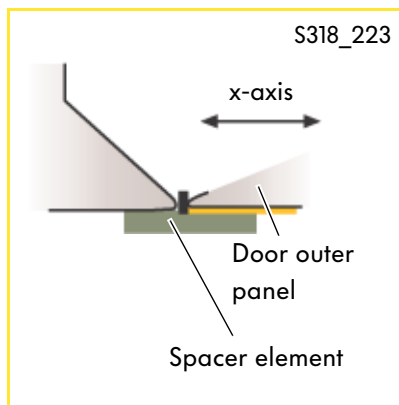
The door inner section serves as the supporting structure. The mounting rails are bolted onto the door inner section along the two vertical edges beneath the top shoulder. The door outer panel is bonded onto the mounting rails. For this purpose, the door outer panel must firstly be adapted "dry" to the mounting rails installed in the door inner section using spacer elements and wedges. The door outer panel is aligned along the x-axis using the spacer elements and along the z-axis using the spacer wedges. Fixing stops are used to fit the panels along the y-axis. The shut line is set using pins attached to the spacer elements.



The door outer panel is aligned along the x-axis using the spacer element.



S318_245



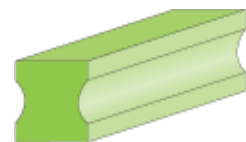
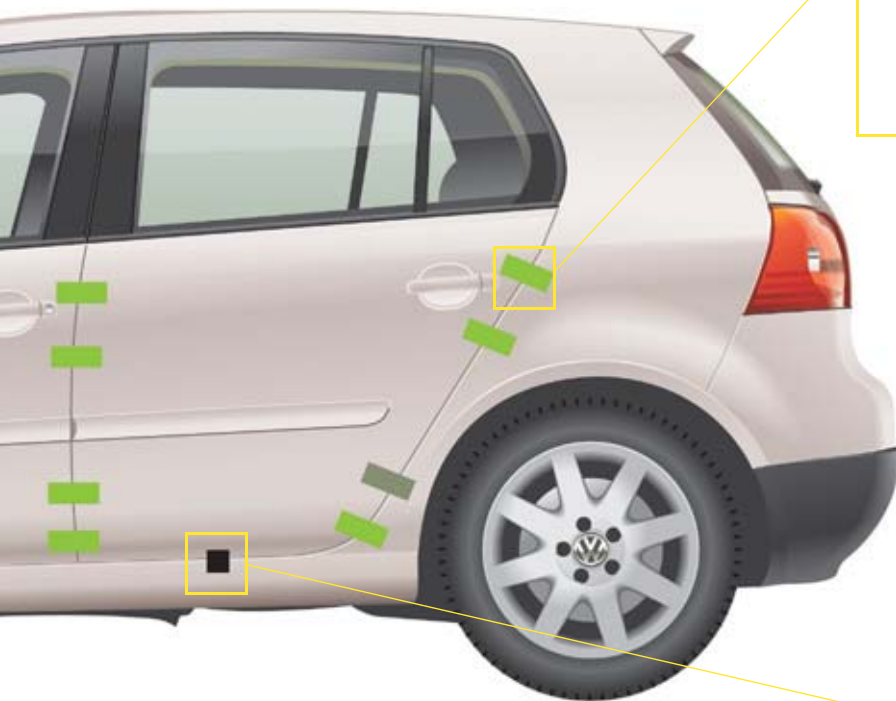
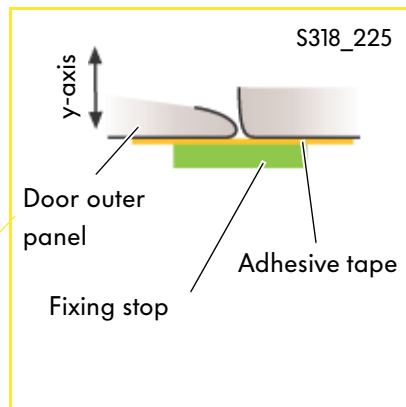
For detailed instructions for assembling the door, please refer to the current workshop manuals. The spacer elements, fixing stops and spacer wedges are supplied with tool no. T10237.

The adapted door outer panel is fixed in place using double-sided adhesive tape and the fixing stops. It can now be detached complete with the supports and stops. Adhesive can now be applied to the mounting rails, and the outer body panel can be securely bonded in place. In addition, the door outer panel and door inner section are bolted directly in the sill and top shoulder areas.



If so required, the door outer panel can now be detached by unscrewing the mounting rails and undoing the direct bolted connection.

The door outer panel is aligned along the y-axis by means of fixing stops.

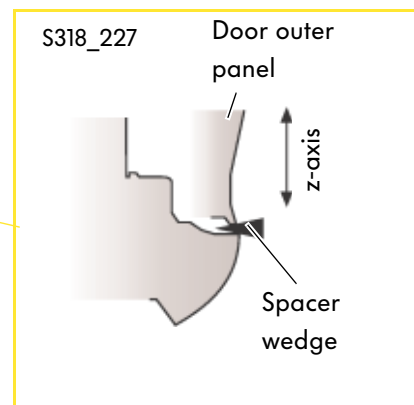


S318_247



S318_249

The door outer panel is aligned along the z-axis using spacer wedges.



Body

The seat concept

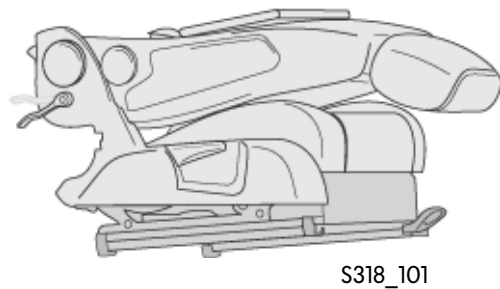
The front seats

The front seats have as standard equipment an active head restraint system.

A mechanical 2-way lumbar support or an electrical 4-way lumbar support and an under-seat drawer are available as optional equipment. The figure shows a seat with electrical 4-way lumbar support.



The front passenger seat has an optional through-loading facility. This allows long items of cargo to be transported easily using the full length of the vehicle interior. An Isofix anchoring is optionally available for the front passenger seat.



The front seats in the 2-door version are equipped with the "Easy-Entry" system with manual memory function.

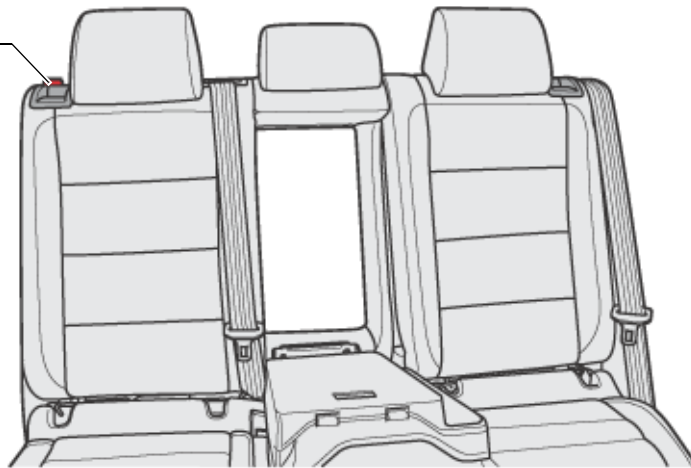


The rear bench seat

The seat cushion is continuous across the width of the car. The backrest is split 60/40 and can be folded down. The backrests can be locked using a rotary latch lock. There is attached to the backrest a red indicator which signals the status of the backrests so it can be determined at first glance whether the backrests are locked or not.

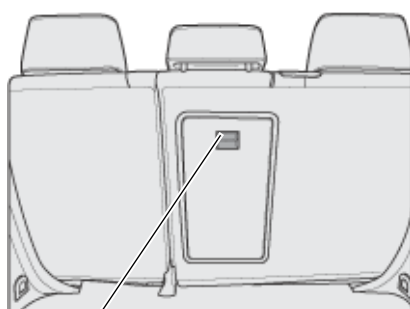


Red indicator:
this seat is not locked.



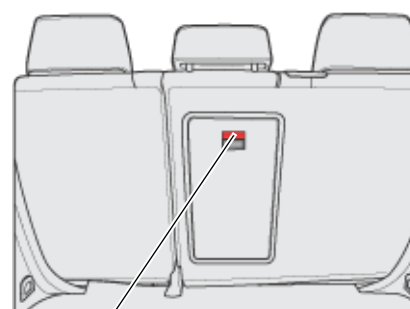
S318_207

A through-loading facility is optionally available for the rear bench seat. The armrest and a flap located behind it can be folded forward to allow long items (e.g. skis, golf bag) to protrude from the luggage compartment.



S318_209

The load-through flap is locked.



S318_211

Red indicator:
the load-through flap is not locked.

Body

The stowage space concept

There is a multiplicity of storage compartments and spaces in the interior of the Golf 2004.



The front storage compartments/spaces

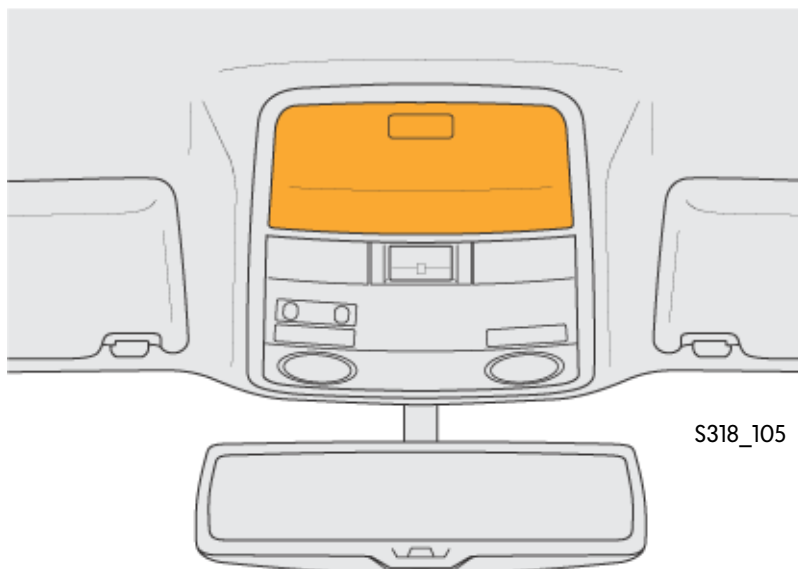
Three compartments are provided as standard in the dash panel. If the vehicle is equipped with an air conditioning system, the storage compartment on the front passenger side is cooled.



S318_103

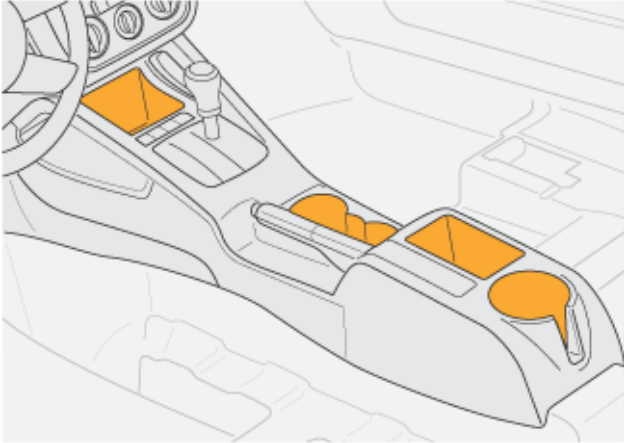
The storage compartments/spaces in the overhead console

There is an open compartment in the overhead console of the Golf 2004. A spectacles compartment, as shown in the figure, is optionally available.



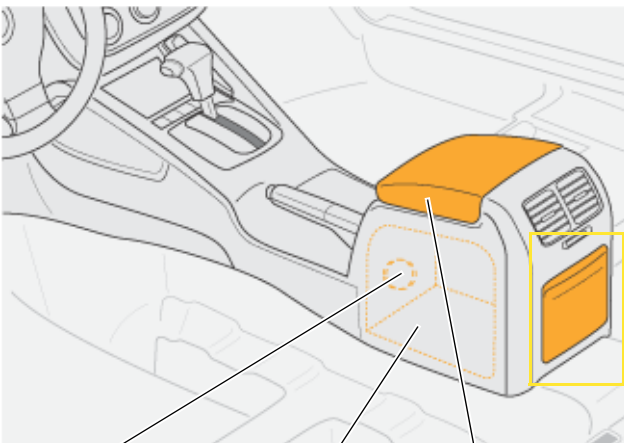
S318_105

The storage compartments/spaces in the centre console



S318_089

In the basic trim, there are two open compartments as well as a cup holder for the driver, front passenger and one rear passenger in the centre console.



S318_081

Manually adjustable outlet

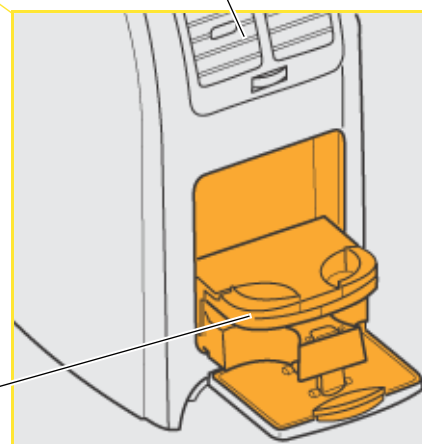
Fold-up cover

Temperature-controllable compartment in the centre armrest

Folded-out cup holder

The Golf is optionally available with an air-conditioned combi-box in the centre armrest, as well as foldaway cup holders for the rear seats.

Rear centre vent

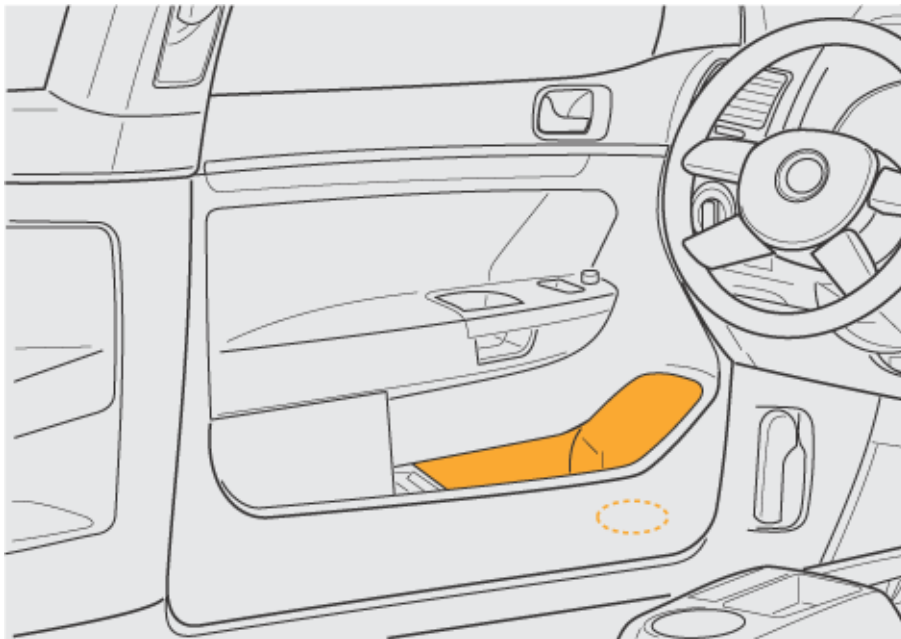


S318_155

Body

The storage compartments/spaces in the doors

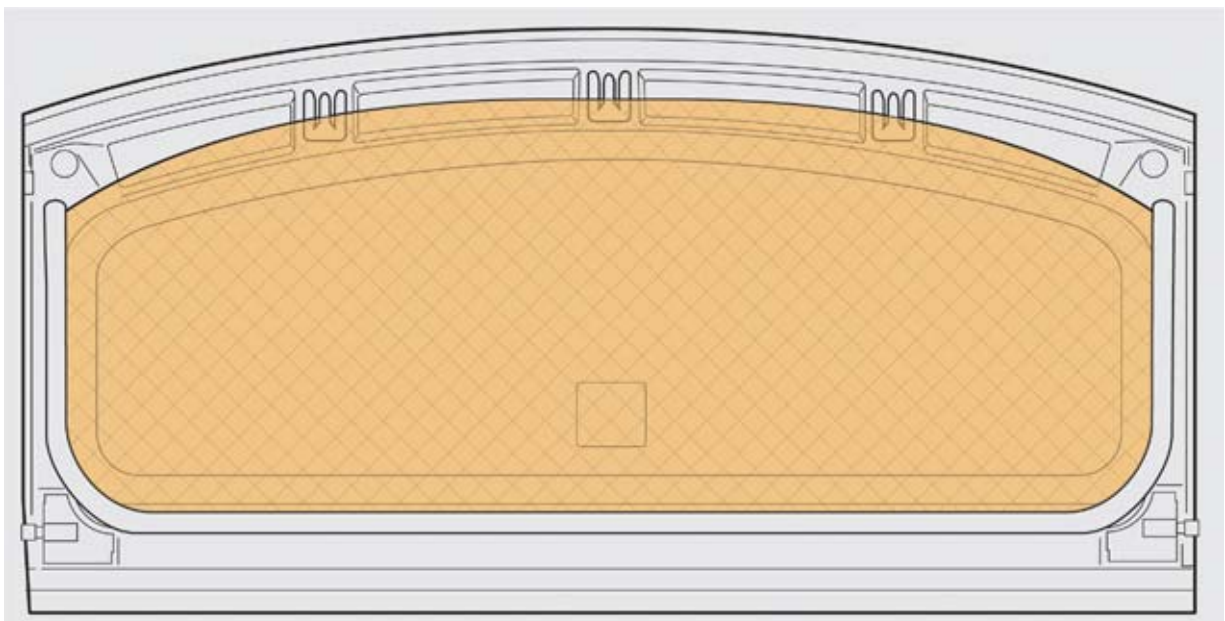
Located in the door panel trims are storage compartments, as well as a cup holder for 1.5 litre bottles.



S318_135

The storage net on the rear shelf

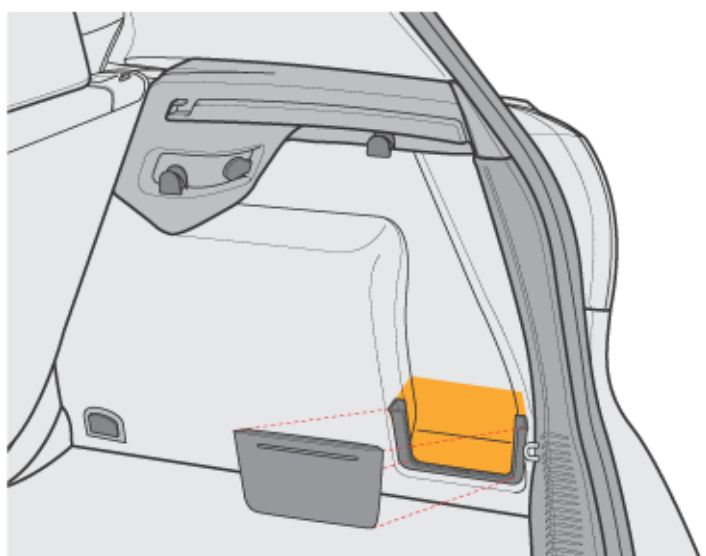
An optional extra is a storage net which attaches to the underside of the rear shelf and in which small objects can be safely stowed away.



S318_133

The storage compartments/spaces in the luggage compartment

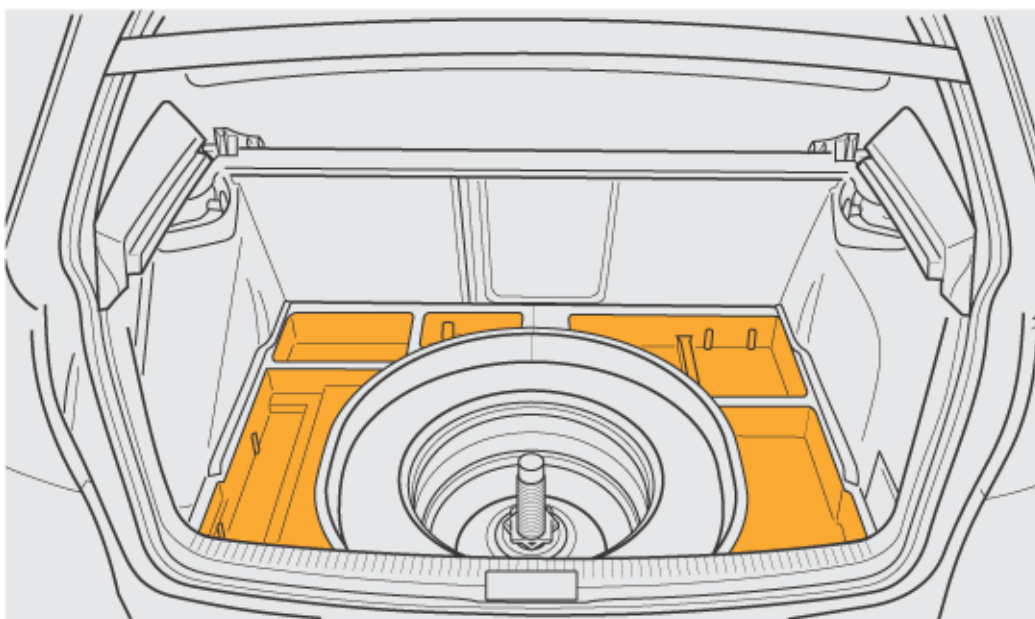
A sliding cover integrated in the side luggage compartment trim accommodates small objects. When the sliding cover is removed, items such as a golf bag can be easily stowed parallel to the rear bench seat.



S318_239

The storage compartments/spaces in the spare wheel well

The Golf 2004 is optionally available with an emergency wheel or a full-size spare wheel. In those vehicles which are equipped with a full-size spare wheel, the cavities below the hub cap serve as additional stowage spaces.



S318_107

Occupant safety

Introduction

For protection of the occupants in the Golf 2004, the following components have been fitted.

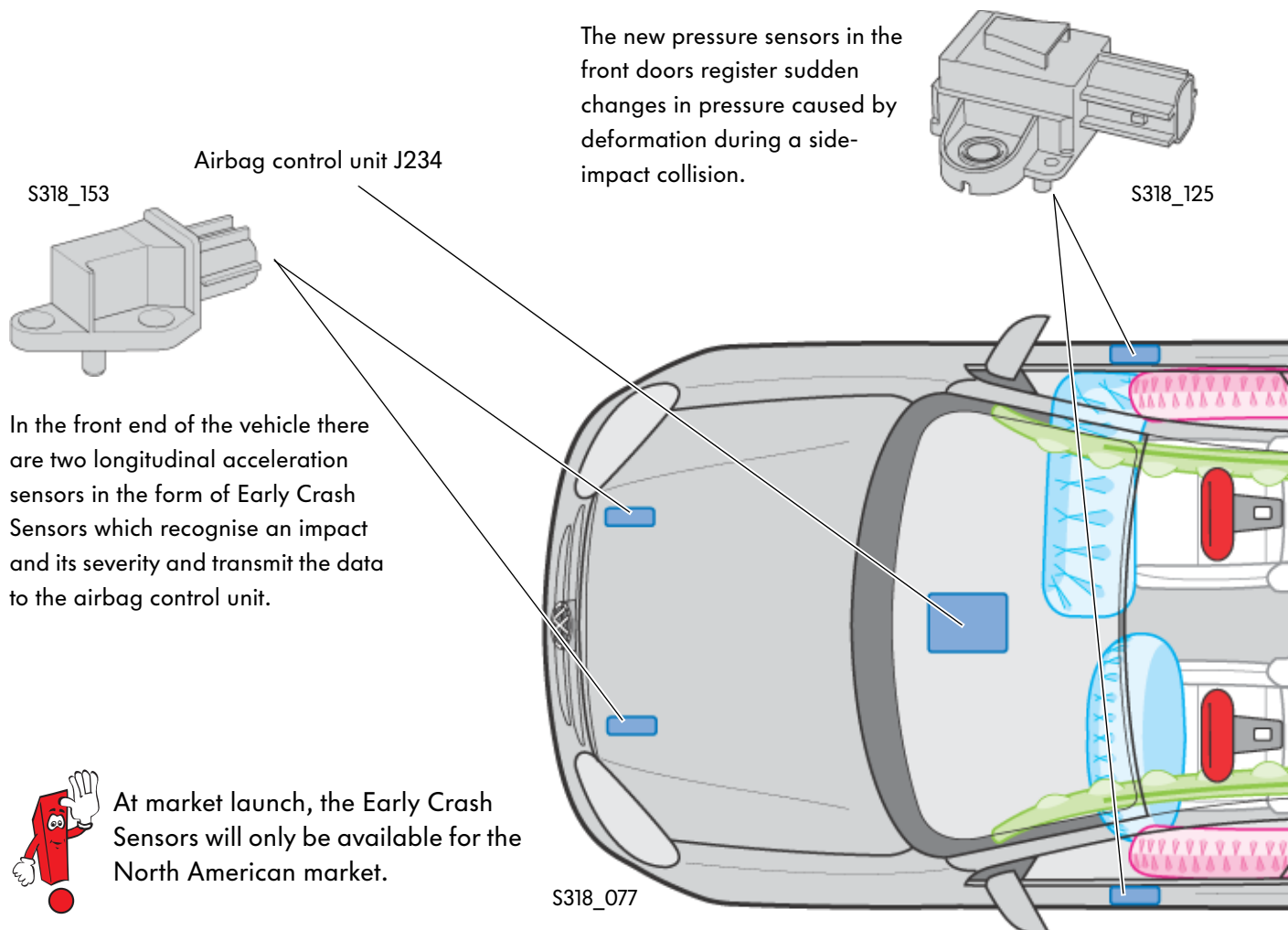
Standard equipment:

- driver and front passenger airbags,
- side airbags in the front seats,
- head airbags for cockpit and rear occupants,
- 3-point seat belts on all seats,
- belt tensioners and belt force limiters for the front seats,
- active head restraint system on the front seats.

Optional equipment:

- side airbags for rear passengers in combination with belt tensioners and belt force limiters on the outer and rear seats (in the 4-door version).

The figure shows a Golf 2004 with airbag and belt systems in full specification.



The front airbags are designed for single-stage deployment.

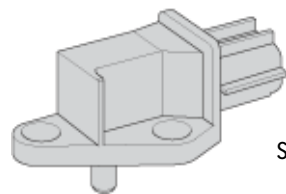
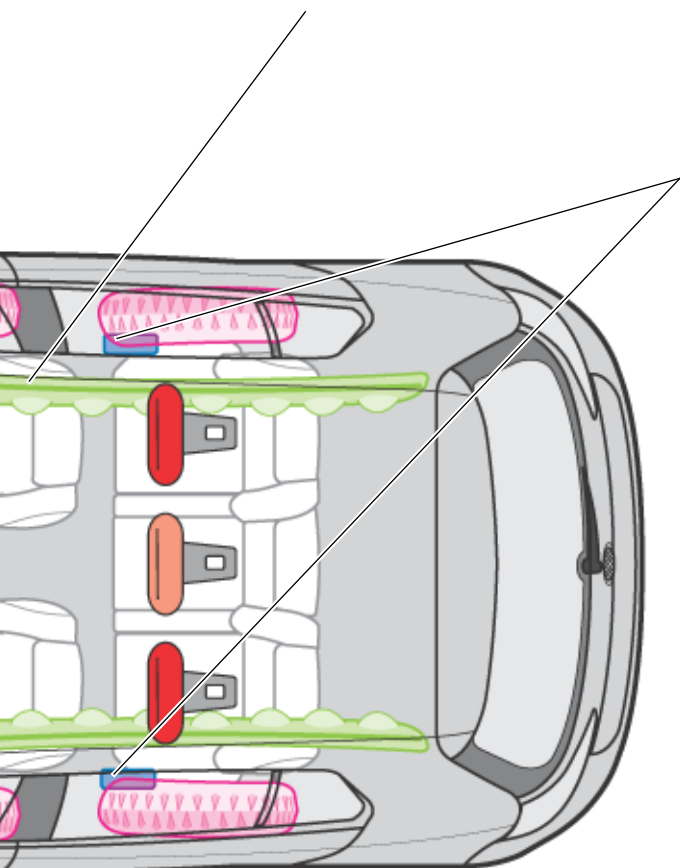
The front passenger airbag can be deactivated by means of a key switch in the storage compartment on the front passenger side.

In the curtain airbags, which cover a window area extending from the A-pillar to the C-pillar, a gas distributor tube ensures uniform inflation of the airbags in the event of a crash.

Isofix anchorages are located on the rear outer seats. An Isofix anchorage can be ordered for the front passenger seat as an optional extra.



Head airbag with gas distributor tube



S318_153

In the rear wheel housing trims there are lateral acceleration sensors which recognise a side-impact collision.



Three-point seat belt with belt tensioner and belt force limiter



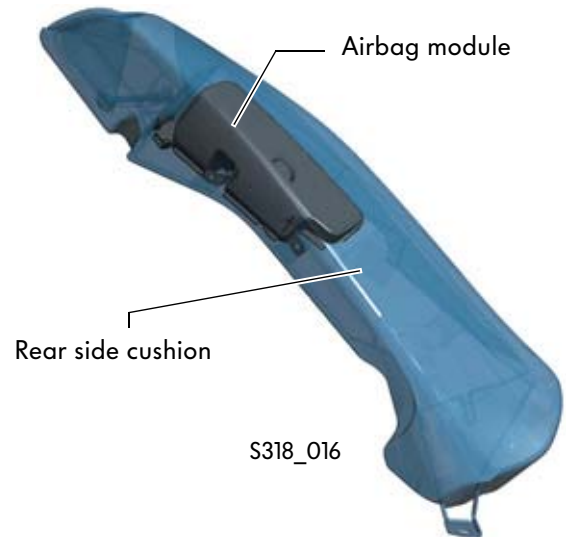
Three-point seat belt with retractor in the backrest

Occupant safety

The rear side airbags

In the 4-door version, side airbags are optionally available for the outer rear seats. They are installed in the side bolsters.

Rear side airbags will be introduced to this class for the first time in the 2004 Golf.



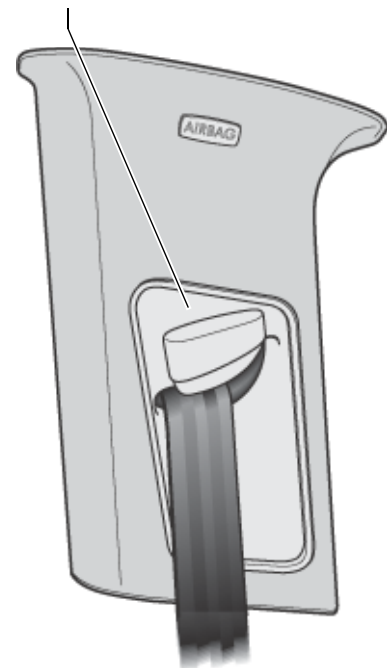
The belts

The driver and front passenger belts are equipped with electrically igniting pyrotechnical ball-type tensioners and belt force limiters. The belts for the front seats have belt guides for added comfort.

In vehicles equipped with rear side airbags, the rear outer seats also have belt tensioners and belt force limiters. The retractors are attached to the bodyshell for enhanced comfort in the shoulder area.

The rear centre seat has a three-point seat belt whose retractor is integrated in the bench seat backrest.

Driver seat belt in the B-pillar with belt guide



S318_213

The side airbag crash sensor, driver side G179, The side airbag crash sensor, front passenger side G180

For side impact detection, new pressure sensors are fitted in the place of the conventional acceleration sensors.

These new sensors allow more rapid detection of side impacts in the door area.

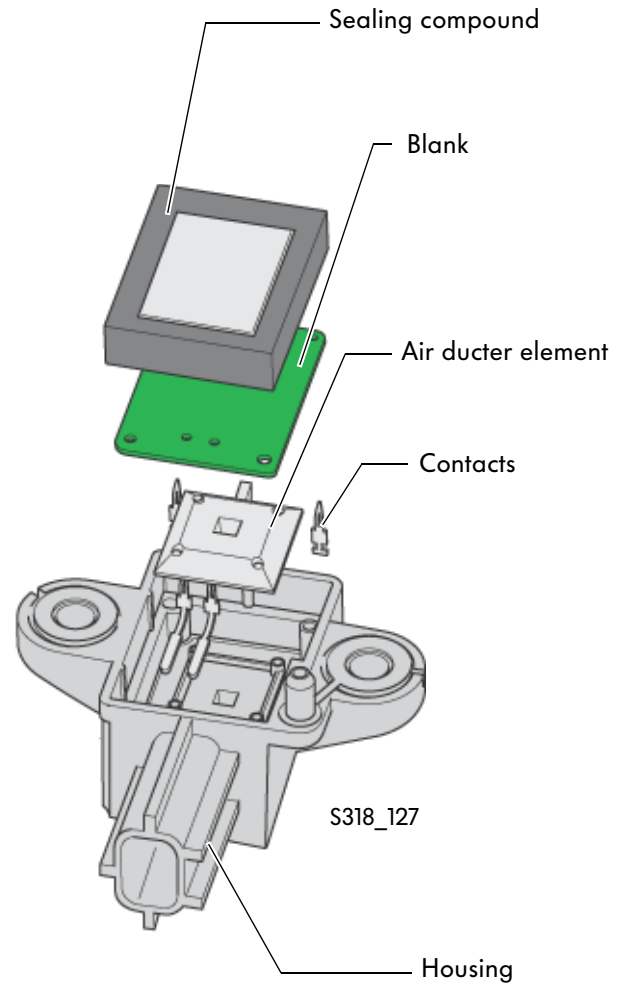
Function

The side airbag crash sensors for the driver and front passenger sides are located in the front doors between the inner and outer body panels. They react to changes in pressure in the door cavity. The air is directed via an inflow duct to a plate. The components on the plate react to rapid changes in pressure of the kind which arise during a crash.

Signal application

The sensor continuously measures the air pressure.

If the sensor detects a rise in air pressure above a predetermined threshold value, it sends a signal to the airbag control unit.




Effects of failure








If the sensor fails, the airbag warning lamp in the dash panel insert will come on.

Engine-gearbox combinations

The petrol engines

Engine	0AF  5-speed manual gearbox	0AG  6-speed manual gearbox	0A4  5-speed manual gearbox
1.4 l/55 kW engine 			
1.4 l/66 kW FSI engine 			
1.6 l/75 kW engine 			
1.6 l/85 kW FSI engine 			
2.0 l/110 kW FSI engine 			









<p>02S</p>  <p>6-speed manual gearbox</p>	<p>02Q</p>  <p>6-speed manual gearbox</p>	<p>09G</p>  <p>6-speed automatic gearbox</p>	<p>DSG 02E</p>  <p>6-speed direct shift gearbox</p>
			
			
			












Engine-gearbox combinations

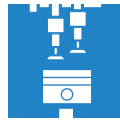
The diesel engines

Engine	0AF  5-speed manual gearbox	0AG  6-speed manual gearbox	0A4  5-speed manual gearbox
1.9 l/77 kW TDI engine 			
2.0 l/103 kW TDI engine 			



The 0AF, 0AG, 0A4, 02S and 02Q manual gearboxes are identical to the gearboxes from the Touran. They have been improved for the 2004 Golf in respect of their shift quality and adapted to the installation requirements.

<p>02S</p>  <p>6-speed manual gearbox</p>	<p>02Q</p>  <p>6-speed manual gearbox</p>	<p>09G</p>  <p>6-speed automatic gearbox</p>	<p>DSG 02E</p>  <p>6-speed direct shift gearbox</p>
			
			



Power units

The 1.4 l/55 kW engine with 4-valve technology

The 1.4 l/55 kW engine is the entry-level engine for the 2004 Golf. It has been adopted from the predecessor model and adapted to the space needs of the 2004 Golf.

Special features

- Air filter integrated in the engine cover
- Returnless fuel system
- Crankshaft sealing flange with new engine speed sender wheel
- Electrical exhaust gas recirculation valve
- Electronic throttle with contactless accelerator pedal position sender
- Contactless clutch position sender

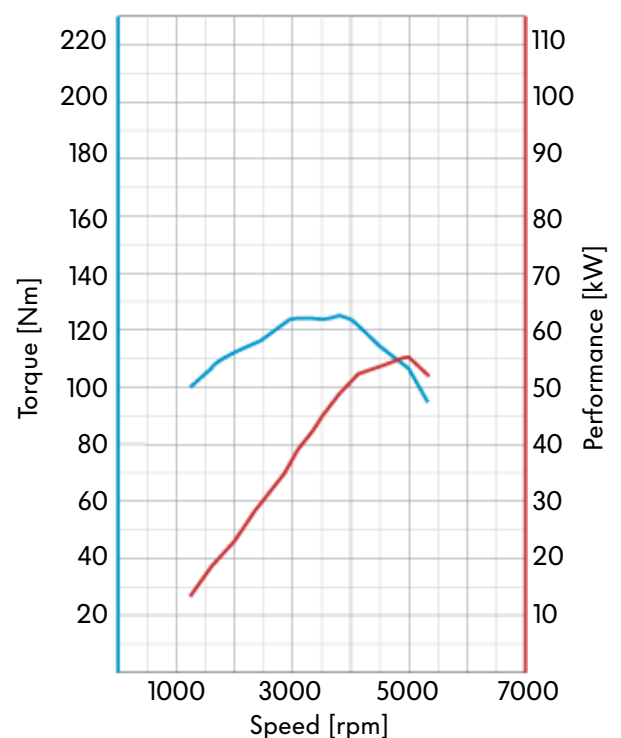


S318_159

Technical data

Engine code	BCA
Type	4-cylinder in-line engine
Displacement [cm ³]	1390
Bore [mm]	76.5
Stroke [mm]	75.6
Valves per cylinder	4
Compression ratio	10.5:1
Max. output	55 kW at 5000 rpm
Max. torque	126 Nm at 3800 rpm
Engine management	Bosch Motronic ME 7.5.10
Fuel	95 RON unleaded fuel (91 RON unleaded fuel can be used alternatively with a slight reduction in performance)
Exhaust gas treatment	Pre-catalytic converter, main catalytic converter, lambda control
Emissions standard	EU 4

Torque and power development diagram



S318_201

The 1.4 I/66 kW FSI engine with 4-valve technology

This 1.4 I/66 kW FSI engine is based on the 1.4 I/63 kW FSI engine in the Polo. It is a petrol direct injection engine with timing chain. Its power output has been increased from 63 kW to 66 kW.

Special features

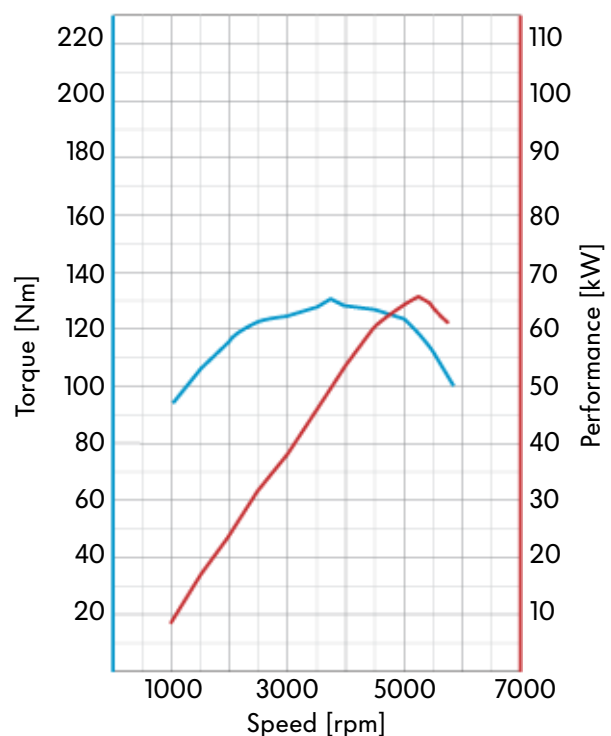
- Timing chain driven camshaft
- Dual circuit cooling system
- Self-regulating oil pump
- Crankshaft sealing flange with integrated engine speed sender wheel
- Petrol direct injection engine MED 9.5.10 with twin injection
- Supply on demand fuel system
- Accelerator pedal module with contactless accelerator pedal position senders
- Contactless clutch position sender



Technical data

Engine code	BKG
Type	4-cylinder in-line engine
Displacement [cm ³]	1390
Bore [mm]	76.5
Stroke [mm]	75.6
Valves per cylinder	4
Compression ratio	12:1
Max. output	66 kW at 5250 rpm
Max. torque	130 Nm at 3750 rpm
Engine management	Bosch Motronic MED 9.5.10
Fuel	95 RON unleaded fuel (91 RON unleaded fuel can be used alternatively with a slight reduction in performance)
Exhaust gas treatment	Pre-catalytic converter, NO _x storage-type catalytic converter, lambda control
Emissions standard	EU 4

Torque and power development diagram



S318_229

Power units

The 1.6 l/75 kW engine with 2-valve technology

The 1.6 l/75 kW engine is based on the conventional 1.6 l/75 kW engine from the predecessor Golf with engine code BFQ. In the predecessor Golf, however, the engine was available only in combination with automatic transmission.



S318_040

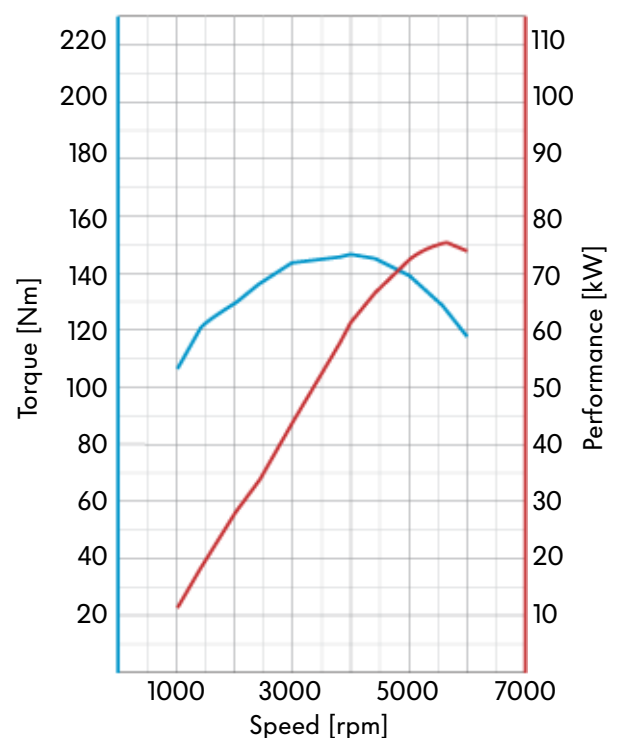
Special features

- 2-valve roller rocker finger
- Aluminium engine block
- Secondary air system
- Plastic active intake manifold
- Pressure sensor guided system (previously HFM, hot-film air mass meter)

Technical data

Engine code	BGU
Type	4-cylinder in-line engine
Displacement	1595 cm ³
Bore	81 mm
Stroke	77.4 mm
Valves per cylinder	2
Compression ratio	10.5:1
Max. output	75 kW at 5600 rpm
Max. torque	148 Nm at 3800 rpm
Engine management	Simos 7.1
Fuel	95 RON unleaded fuel (91 RON unleaded fuel can be used alternatively with a slight reduction in performance)
Exhaust gas treatment	Pre-catalytic converter probe: linear lambda probe, probe after catalytic converter: nonlinear probe
Emissions standard	EU 4

Torque and power development diagram



S318_235

The 2.0 I/110 kW FSI engine with 4-valve technology

The 2.0 I/110 kW FSI engine was introduced to the Audi A3 in February 2003. Volkswagen will deploy the engine in the Touran for the first time in October, and thereafter in the Golf in early 2004.

Special features

- Single-piston high-pressure pump
- Plastic active intake manifold with change-over barrel for homogeneous and heterogeneous charge operation
- Water-cooled exhaust gas recirculation valve
- Roller rocker finger with hydraulic support element
- Two overhead camshafts with continuous inlet camshaft timing adjustment
- Balancer shaft gear assembly in the oil sump
- Air-guided combustion process



S318_028



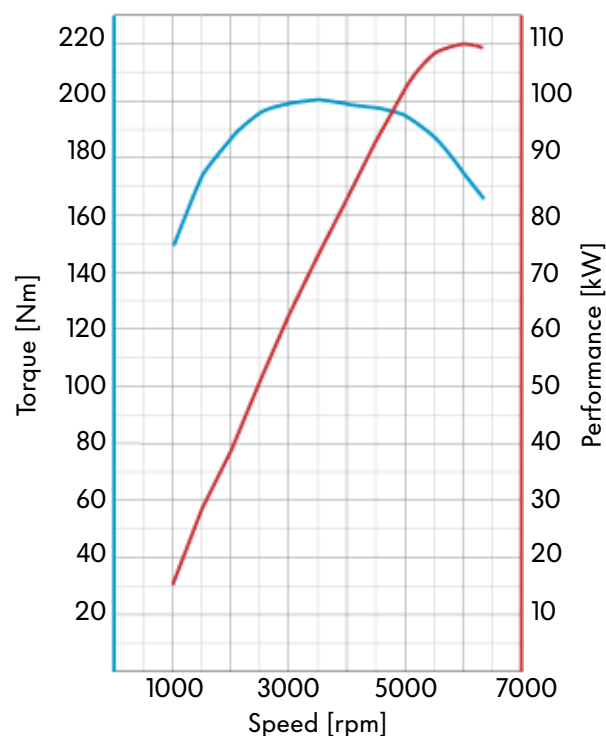
For further information on the engine, please refer to SSP 322 "The 2.0 I/110 kW Petrol Direct Injection Engine".



Technical data

Engine code	AXW
Type	4-cylinder in-line engine
Displacement [mm ³]	1984
Bore [mm]	82.5
Stroke [mm]	92.8
Valves per cylinder	4
Compression ratio	11.5:1
Max. output	110 kW at 6000 rpm
Max. torque	200 Nm at 3500 rpm
Engine management	Bosch Motronic MED 9.5.10
Fuel	98 RON unleaded fuel (95 RON unleaded fuel can be used alternatively with a slight reduction in performance)
Exhaust gas treatment	NO _x storage-type catalytic converter and two pre-catalytic converters
Emissions standard	EU 4

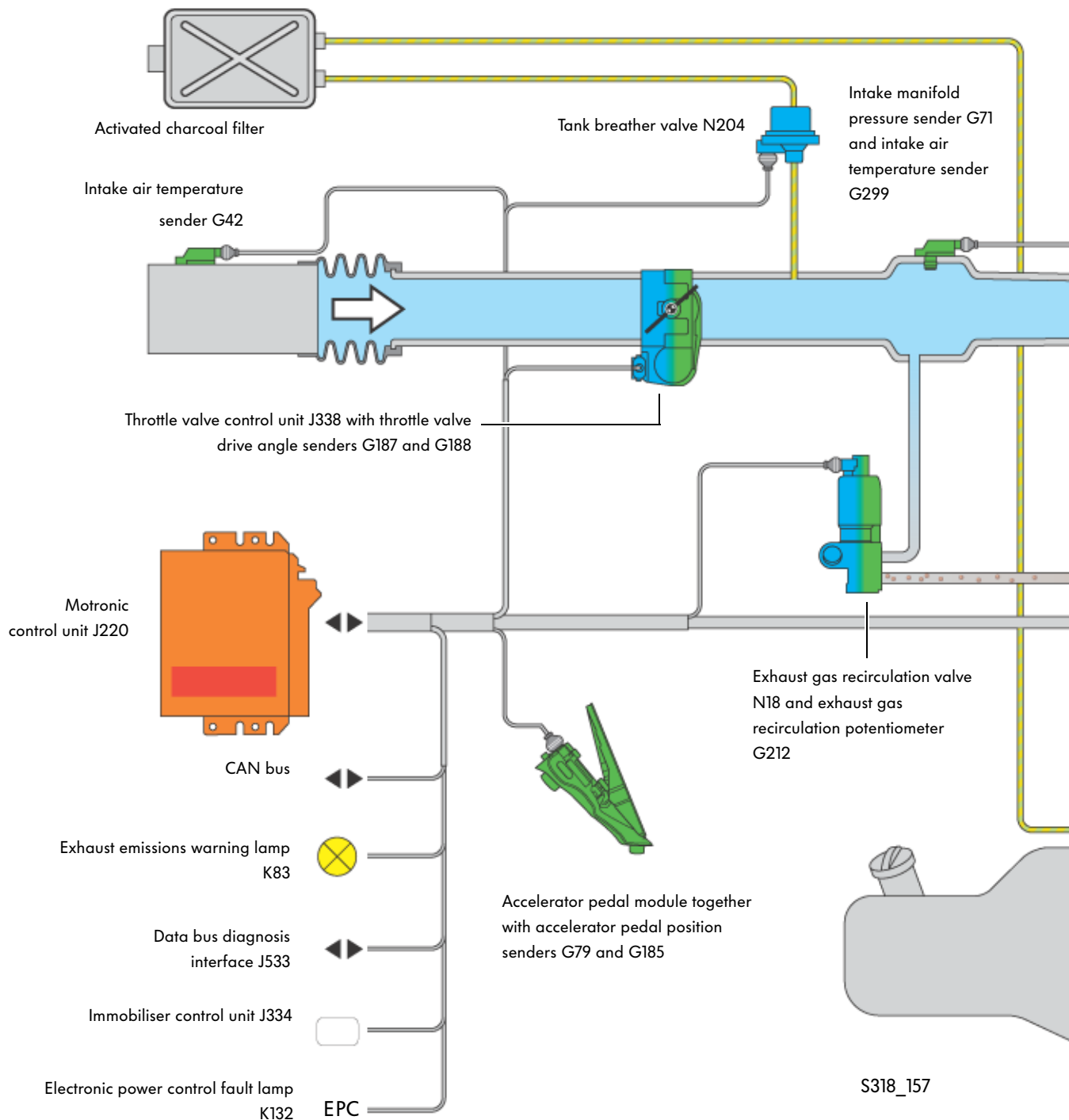
Torque and power development diagram



S318_233

Power units

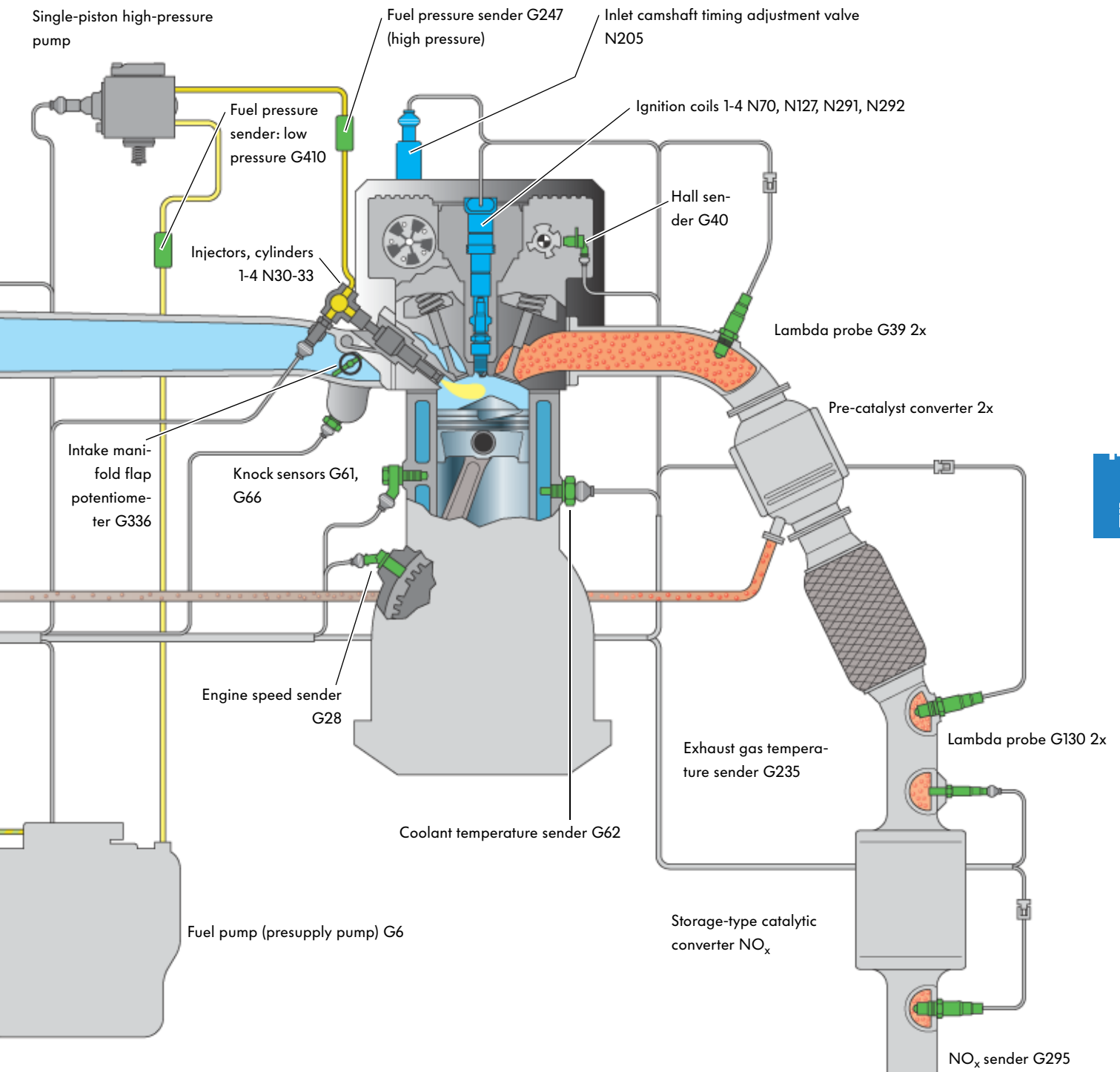
The FSI functional diagram of the 2.0 l/110 kW engine



S318_157

The load sensing device utilises the following sensor signals:

- ambient pressure (determined by an altitude sender installed in the engine control unit),
- intake air temperature (determined by the intake air temperature sender G42 installed upstream of the throttle valve),
- throttle valve position,



- pressure and temperature in the intake manifold (determined by the Duo sensor together with intake manifold pressure sender G71 and intake manifold temperature sensor G299),
- flap position of exhaust gas recirculation valve N18,
- position of the tumble flaps,
- inlet camshaft position.

Power units

The 1.6 l/85 kW FSI engine with 4-valve technology

This 1.6 l/85 kW FSI engine has already been introduced to the Touran. It is a petrol direct injection engine with camshaft timing chain.

Special features

- Timing chain driven camshaft
- Continuous variable valve timing
- Dual circuit cooling system
- Self-regulating oil pump
- Crankshaft sealing flange with new engine speed sender wheel
- Petrol direct injection MED 9.5.10 with twin injection
- Supply on demand fuel system
- Accelerator pedal module with contactless accelerator pedal position senders
- Contactless clutch position sender

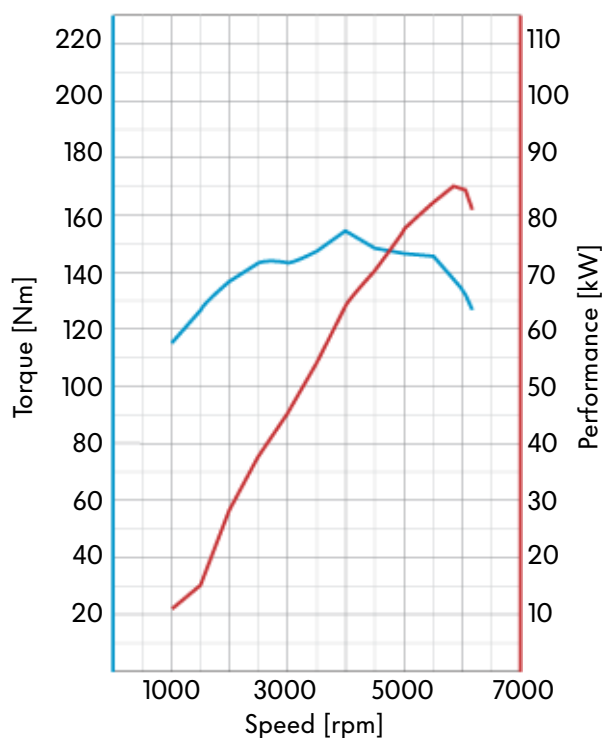


S318_023

Technical data

Engine code	BAG
Type	4-cylinder in-line engine
Displacement [cm ³]	1598
Bore [mm]	76.5
Stroke [mm]	86.9
Valves per cylinder	4
Compression ratio	12:1
Max. output	85 kW at 5800 rpm
Max. torque	155 Nm at 4000 rpm
Engine management	Bosch Motronic MED 9.5.10
Fuel	98 RON unleaded fuel (95 RON unleaded fuel can be used alternatively with a slight reduction in performance)
Exhaust gas treatment	Pre-catalytic converter, NO _x storage-type catalytic converter, lambda control
Emissions standard	EU 4

Torque and power development diagram



S318_231

The 1.9 l/77 kW TDI engine with 2-valve technology

This TDI engine is a further development of the 1.9 l/74 kW TDI engine from the Polo.

Special features:

- Switchable EGR cooler
- Crankshaft sealing flange with integrated engine speed sender wheel
- Accelerator pedal module with contactless accelerator pedal position senders
- Contactless clutch pedal switch.



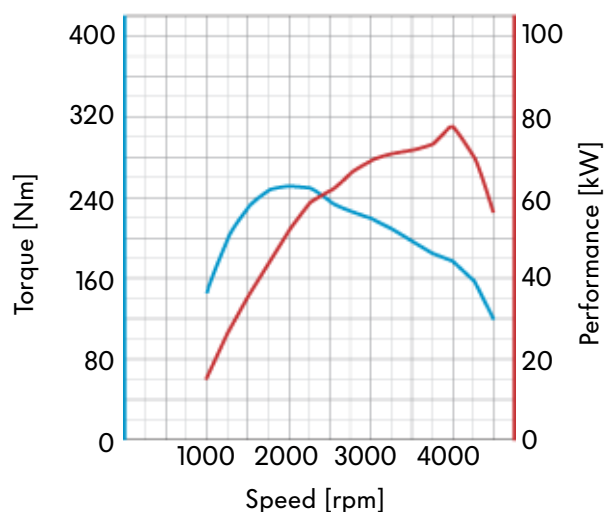
S318_033



Technical data

Engine code	BEZ
Type	4-cylinder in-line engine
Displacement	1896 cm ³
Bore	79.5 mm
Stroke	95.5 mm
Valves per cylinder	2
Compression ratio	19:1
Max. output	77 kW at 4000 rpm
Max. torque	250 Nm at 1900 rpm
Engine management	Bosch EDC 16
Fuel	Diesel, min. 49 CN or biodiesel
Exhaust gas treatment	Exhaust gas recirculation and oxidising catalytic converter
Emissions standard	EU4

Torque and power development diagram



S318_197

Power units

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

This TDI engine is a further development of the 1.9 l/96 kW TDI engine.

Special features:

- 4-valve technology
- Two camshafts, driven by toothed timing belts
- Increased engine displacement by means of greater cylinder bore
- New unit injectors adapted to the 4-valve technology
- Switchable EGR cooler
- Crankshaft sealing flange with integrated engine speed sender wheel
- Accelerator pedal module with contactless accelerator pedal position senders
- Contactless clutch pedal switch.



S318_035

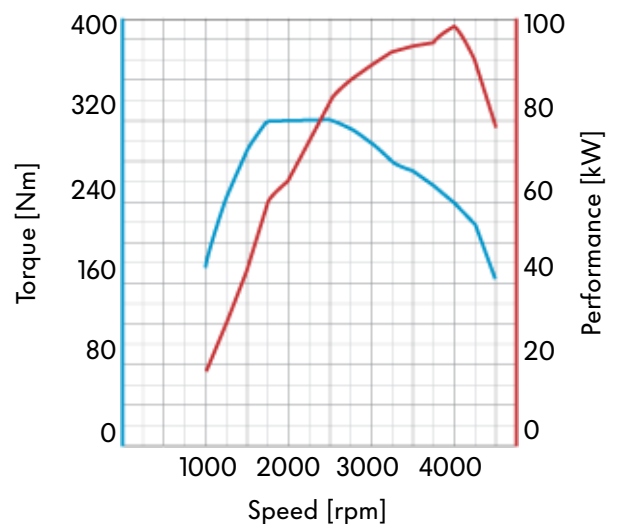


For detailed information on 2.0 l/ 103 kW TDI engine please refer to SSP 316, "The 2.0 l TDI Engine".

Technical data

Engine code	BKD
Type	4-cylinder in-line engine
Displacement	1968 cm ³
Bore	81 mm
Stroke	95.5 mm
Valves per cylinder	4
Compression ratio	18:1
Max. output	103 kW at 4000 rpm
Max. torque	320 Nm at 1750 rpm to 2500 rpm
Engine management	EDC 16 with pump injection system
Fuel	Diesel, at least 49 CN
Exhaust gas treatment	Exhaust gas recirculation and oxidising catalytic converter
Emissions standard	EU4

Torque and power development diagram



S318_199