Self-study Programme 891143C

The Golf 2014
The material in this Self Study Program (SSP) may contain technical information or reference vehicle systems and configurations which are not available in the Canadian market.

Please ensure you reference ElsaPro for the most current technical information and repair procedures.
The new Golf

The Golf 2013 is the first vehicle to be launched by the Volkswagen brand which is based on a new concept used for all platforms, the “Modular Transverse Matrix” (MQB). Many of the mechanical units, subassemblies and systems have been completely re-developed within the scope of the MQB.

This makes the seventh generation of the Golf a completely new release, and one which is accompanied by many innovations. The Golf 2013 sets new standards in its vehicle class when it comes to convenience, quality and safety features, as well as the assistance systems available for the vehicle.

This Self-study Programme will provide an overview of the design and function of the new Golf and help explain many of the technical innovations it boasts.

The individual chapters contain references to further Self-study Programmes which provide more detailed information on the way the individual vehicle components are designed and constructed.
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The Modular Transverse Matrix (MQB)

The modular transverse matrix, or MQB for short, is the new modular strategy introduced by the Volkswagen Group. Under the direction of the Volkswagen brand, this modular transverse matrix will be launched for the Volkswagen, Audi, SKODA and SEAT brands. The models Polo, Beetle, Scirocco, Jetta, Tiguan, Touran, Sharan, Passat, Volkswagen CC and, as the first vehicle model of them all, the Golf 2013 are being assembled using the MQB as a basis.

Vehicle architecture

The integral feature of the modular transverse matrix is a flexible vehicle architecture. This has been divided into five principle vehicle sections. The central dimension is the area between the pedal cluster and wheel centre.

Module families

The modular strategy characterising the MQB is based on the following standardised module families:
- Electrics/electronics
- Drive
- Running gear
- Vehicle design (vehicle body, air conditioning system, seat system, airbags)
From the platform to the modular matrix

<table>
<thead>
<tr>
<th>Platform strategy</th>
<th>Module strategy</th>
<th>Modular matrix strategy</th>
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<tbody>
<tr>
<td><img src="s513_070" alt="Body-in-white Platform" /></td>
<td><img src="s513_072" alt="Module" /></td>
<td><img src="s513_074" alt="Module" /></td>
</tr>
</tbody>
</table>

*Synergies within just one vehicle class*  
*Synergies partly shared among vehicle classes*  
*Synergies shared among all vehicle classes*

Since the early 1990s, a number of different models have been produced on a shared platform. This strategy involves dividing the vehicle into the body-in-white and the platform. The technical features of the platform components are virtually identical.

In the year 2000, this strategy was supplemented with the launch of the module strategy. Modules with basic technical functions and designs which are identical were introduced to a variety of vehicles. Since 2007, the use of modules has been extended to the entire vehicle, and has been introduced across all vehicle classes as well. From 2012 on, the same modules will be used across the entire Group within the modular strategy.

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**Standardisation across all brands**

Some of the advantages provided by standardisation across all brands include:

- VW production will become faster, simpler, more cost-effective and more flexible through standardisation across the brands. It will simplify development, creating synergies right across all brands and vehicle series.
- The modular matrix strategy will allow the number of versions, and their complexity, to be reduced significantly.
- Standardised production processes are made possible by employing uniform joining sequences in body construction, a uniform assembly sequence and uniform installation concepts.
- It is now possible to produce models based on the MQB architecture, even when they are made by different brands, together on one and the same production line.
Introduction

The production sites

The Golf 2013 will be produced in the Volkswagen factory in Wolfsburg, as well as in the Volkswagen factory in Zwickau.

The Wolfsburg production site

The production plant in Wolfsburg, which was built in 1938/1939, is now headquarters of the Volkswagen Group and the largest continuous automobile factory in the world.

The factory grounds, which are located next to the Mittelland Canal, encompass an area covering more than six square kilometres.

Over 51,000 staff are currently employed there. They are not only involved in the production of the Golf, but also the Volkswagen models Golf Plus, Touran and Tiguan. In 2011, a total of 805,000 vehicles left this factory’s production halls. Altogether, around 40 million vehicles have been produced at the Wolfsburg plant to date.

The Zwickau production site

The Volkswagen plant in Zwickau is an automobile factory located in Saxony, founded in 1990 in what is now the Mosel district of Zwickau, and which forms Volkswagen-Sachsen GmbH, with headquarters in Zwickau, together with the engine factory in Chemnitz. The factory grounds cover an area approximately 1.8 square kilometres in size. The Golf and Passat models as well as bodies for Bentley and Phaeton are produced at the production plant.

A combined number of around 8,100 employees work in Zwickau and Chemnitz.
The Golf innovations

The main contribution made by all vehicle subassemblies is the weight saved, this being up to 100 kg compared to the previous models. This also saves a significant amount of fuel for all engine and gearbox combinations, at the same time as reducing the CO₂ emissions by the same proportion. This focus on innovations allowed numerous new technologies to be implemented in this vehicle class, such as:

- A new series of engines
- Modular Infotainment System (MIB)
- Active Cylinder Management (ACT)
- ergoActive seat design
- Multicollision brake
- Electromechanical parking brake with AutoHold
- Panorama sliding/tilting sunroof
- Xenon headlight versions
- Proactive occupant protection
- Driving mode selection

For the first time, many new systems and numerous driver assist systems are being utilised in the Golf 2013, all of which were otherwise only available for higher-level vehicle classes, such as:

- Traffic sign recognition (TSR)
- Driver Alert System
- Dynamic Light Assist (DLA)
- Main beam assist (FLA)
- Lane departure warning system “Lane Assist”
- Speed limiter
- Adaptive Cruise Control (ACC)
- FrontAssist with City Emergency Brake and distance warning
- Optical parking system (OPS)
- Park Assist Steering 2.0 (PLA)
Technical data
Exterior dimensions and weights

Exterior dimensions

<table>
<thead>
<tr>
<th></th>
<th>Golf 2009</th>
<th>Golf 2013</th>
</tr>
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<tbody>
<tr>
<td>Length</td>
<td>4199 mm</td>
<td>4255 mm</td>
</tr>
<tr>
<td>Width</td>
<td>1786 mm</td>
<td>1799 mm</td>
</tr>
<tr>
<td>Height</td>
<td>1480 mm</td>
<td>1452 mm</td>
</tr>
<tr>
<td>Wheelbase</td>
<td>2578 mm</td>
<td>2637 mm</td>
</tr>
<tr>
<td>Track width at front</td>
<td>1541 mm</td>
<td>1549 mm</td>
</tr>
<tr>
<td>Track width at rear</td>
<td>1514 mm</td>
<td>1520 mm</td>
</tr>
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</table>

Weights/further data

<table>
<thead>
<tr>
<th></th>
<th>Golf 2009</th>
<th>Golf 2013</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gross vehicle weight rating</td>
<td>1780kg*</td>
<td>1720kg*</td>
</tr>
<tr>
<td>Kerb weight</td>
<td>1154kg*</td>
<td>1130kg*</td>
</tr>
<tr>
<td>Max. roof load</td>
<td>75 kg</td>
<td>75 kg</td>
</tr>
<tr>
<td>Turning circle</td>
<td>10.9 m</td>
<td>10.9 m</td>
</tr>
<tr>
<td>Tank capacity</td>
<td>55 litres</td>
<td>50 litres</td>
</tr>
<tr>
<td>Drag coefficient</td>
<td>0.312 c_w</td>
<td>0.287 c_w*</td>
</tr>
</tbody>
</table>

* This data refers to the two vehicles, without driver, when equipped with a 1.2 l 63 kW TSI engine, 5-speed manual gearbox MQ200 and 195/65 R15 tyres, as well as BMT (BlueMotion technology) for the Golf 2013 and without BMT for the Golf 2009.
Interior dimensions and volumes

<table>
<thead>
<tr>
<th></th>
<th>Golf 2009</th>
<th>Golf 2013</th>
</tr>
</thead>
<tbody>
<tr>
<td>Length of vehicle interior</td>
<td>1736 mm</td>
<td>1750 mm</td>
</tr>
<tr>
<td>Luggage compartment volume</td>
<td>350 litres</td>
<td>380 litres</td>
</tr>
<tr>
<td>Luggage compartment volume with rear seat backrest folded down</td>
<td>1305 litres</td>
<td>1270 litres</td>
</tr>
<tr>
<td>Height of luggage compartment aperture</td>
<td>659 mm</td>
<td>643 mm</td>
</tr>
<tr>
<td>Width of luggage compartment aperture</td>
<td>976 mm</td>
<td>1023 mm</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Golf 2009</th>
<th>Golf 2013</th>
</tr>
</thead>
<tbody>
<tr>
<td>Through-load width between wheel housings</td>
<td>1006 mm</td>
<td>1003 mm</td>
</tr>
<tr>
<td>Max. front headroom</td>
<td>1033 mm</td>
<td>1018 mm</td>
</tr>
<tr>
<td>Rear headroom</td>
<td>979 mm</td>
<td>967 mm</td>
</tr>
<tr>
<td>Knee room – 2nd seat row</td>
<td>29 mm</td>
<td>44 mm</td>
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</table>
Body structure

The key focus during development of the body structure was combining high crash safety with a low body weight. This is why a high proportion of ultra-high tensile (thermoformed) sheet metal parts have been used for the Golf 2013. Furthermore, innovative production technologies, such as the “tailored rolled blank technique”, and new joining technologies, such as the “wobble seams” in the side area, have been used. This has allowed the stability of the passenger compartment to be increased.

Wobble seams

For the first time, wobble seams (the name refers to their shape) have been used in the Golf 2013. This joining technology produces a longer laser weld join over the same area. It can be subjected to a load 3 to 4 times greater than individual spot welds.
Tailor rolled blank technology

The B-pillar has been, produced by employing “tailor rolled blank technology”. This involves only shaping those areas of a component where the loads exerted require a larger wall thickness. A so-called tailor rolled blank plate is produced. Tailored blank (meaning custom-made blank).

Manufacturing process

You can find further information on the body in the Self-study Programme no. 520 “The Golf 2013 – Body and Occupant Protection”.
Occupant safety

Safety equipment

The Golf 2013 features the following safety equipment:

• Single-stage driver airbag
• Single-stage, disengagable front passenger’s airbag
• Side airbags at front
• Side airbags at rear as an option
• Head-protection airbags
• Knee airbag on driver’s side
• Three-point automatic seat belt with tensioner at front
• Three-point automatic seat belt at rear
• Reversible belt tensioner at front as an option
• Belt force limiter at front
• Top tether

Seat belt reminder

As an option, the 4-door Golf can be equipped with side airbags at the rear in combination with a seat belt reminder. The seat belt reminder informs the driver of whether the passengers in the rear compartment have fastened their seatbelts, indicating this in the multifunction display in the dash panel insert.

Crash sensors

The following crash sensors are installed:

• Crash sensor for front airbag
• Crash sensors in the doors for side crash detection (pressure sensors)
• Crash sensors in the C-pillars for side crash detection (acceleration sensors)
Proactive occupant protection system

For the very first time in this vehicle class, the Golf features the option of being equipped with the proactive occupant protection system.

This system takes action if one of the following criteria is met:

- Emergency braking (very fast brake pedal actuation)
- Hazard braking (fast increase in the brake pedal pressure when braking)
- Unstable vehicle conditions, such as e.g. excessive vehicle under or oversteering

If a potential accident situation is identified, then the occupants and vehicle are prepared for a possible accident. Tensioning of the seat belts by means of electric motors keeps the driver and front passenger securely in their seats, allowing the airbag and the seat belt system to provide the highest possible level of protection.

In the event of excessive vehicle under or oversteering, the panoramic sliding roof and the side windows are also closed until only a residual gap remains.

Once the driver has regained control of the vehicle and it has been returned to a stable dynamic handling condition, the seat belts are relaxed again.

You can find further information on the body in Self-study Programme no. 520 “The Golf 2013 – Body and Occupant Protection”.

**Power units**

## Engine and gearbox combinations

### Petrol engines

<table>
<thead>
<tr>
<th>Engine Details</th>
<th>Engine Details</th>
<th>Engine Details</th>
<th>Engine Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.2 l 63 kW TSI engine CJZB</td>
<td>1.2 l 77 kW TSI engine CJZA</td>
<td>1.4 l 90 kW TSI engine CMBA</td>
<td>1.4 l 103 kW TSI engine CHPA/CPTA**</td>
</tr>
<tr>
<td><img src="image1.png" alt="Image of engine" /></td>
<td><img src="image2.png" alt="Image of engine" /></td>
<td><img src="image3.png" alt="Image of engine" /></td>
<td><img src="image4.png" alt="Image of engine" /></td>
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</table>

<table>
<thead>
<tr>
<th>Gearbox Details</th>
<th>Gearbox Details</th>
<th>Gearbox Details</th>
<th>Gearbox Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>5-speed Manual gearbox MQ200-5F* 0AH</td>
<td>6-speed Manual gearbox MQ200-6F* 0AJ</td>
<td>6-speed Manual gearbox MQ250-6F* 02S</td>
<td>7-speed Dual-clutch gearbox DQ200-7F* 0CW</td>
</tr>
<tr>
<td><img src="image5.png" alt="Image of gearbox" /></td>
<td><img src="image6.png" alt="Image of gearbox" /></td>
<td><img src="image7.png" alt="Image of gearbox" /></td>
<td><img src="image8.png" alt="Image of gearbox" /></td>
</tr>
</tbody>
</table>

* 5F = 5-speed front-wheel drive, 6F = 6-speed front-wheel drive, 7F = 7-speed front-wheel drive  
** engine with active cylinder management (ACT)
## Diesel engines

<table>
<thead>
<tr>
<th>Engine Type</th>
<th>Description</th>
<th>Image</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.6l 77 kW TDI engine CLHA</td>
<td><img src="image1.png" alt="Image" /></td>
<td><img src="image2.png" alt="Image" /></td>
</tr>
<tr>
<td>2.0l 110 kW TDI engine CRBC</td>
<td><img src="image3.png" alt="Image" /></td>
<td><img src="image4.png" alt="Image" /></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Gearbox Type</th>
<th>Description</th>
<th>Image</th>
</tr>
</thead>
<tbody>
<tr>
<td>5-speed Manual gearbox MQ250-5F* 0A4</td>
<td><img src="image5.png" alt="Image" /></td>
<td></td>
</tr>
<tr>
<td>6-speed Manual gearbox MQ350-6F/6A* 02Q</td>
<td><img src="image6.png" alt="Image" /></td>
<td><img src="image7.png" alt="Image" /></td>
</tr>
<tr>
<td>6-speed Dual-clutch gearbox DQ250-6F* 0D9</td>
<td><img src="image8.png" alt="Image" /></td>
<td></td>
</tr>
<tr>
<td>7-speed Dual-clutch gearbox DQ200-7F* 0CW</td>
<td><img src="image9.png" alt="Image" /></td>
<td></td>
</tr>
</tbody>
</table>

* 5F = 5-speed front-wheel drive, 6F = 6-speed front-wheel drive, 6A = 6-speed four-wheel drive, 7F = 7-speed front-wheel drive

With the launch of the modular transverse matrix, the installation position of the dual clutch gearbox has been changed, along with the communication between the mechatronic unit and the data bus system. This has lead to a change in the designations used for the dual clutch gearboxes. The dual clutch gearbox 0AM has become the 0CW, and the 02E has become the 0D9.
1.2 l 63/77 kW TSI engine with turbocharger

The 1.2 l TSI engine in the new EA211 series of petrol engines is available in two different power versions. The two different power versions are realised by the software.

Technical features

- Cylinder head with integrated exhaust manifold
- Toothed belt drive
- Coolant distributor housing forms a unit with the coolant pump
- Coolant pump driven by a toothed belt from the exhaust camshaft
- Exhaust gas turbocharger with electric charge pressure controller
- Inlet camshaft adjustment
- Crankshaft oil pump

Technical data

<table>
<thead>
<tr>
<th>Engine code</th>
<th>CJZB/CJZA</th>
</tr>
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<tbody>
<tr>
<td>Design</td>
<td>4-cylinder inline engine</td>
</tr>
<tr>
<td>Displacement</td>
<td>1197 cm³</td>
</tr>
<tr>
<td>Bore</td>
<td>71 mm</td>
</tr>
<tr>
<td>Stroke</td>
<td>75.6 mm</td>
</tr>
<tr>
<td>Valves per cylinder</td>
<td>4</td>
</tr>
<tr>
<td>Compression ratio</td>
<td>10.5:1</td>
</tr>
<tr>
<td>Max. output</td>
<td>63 kW at 4300 - 5300 rpm</td>
</tr>
<tr>
<td></td>
<td>77 kW at 4500 - 5500 rpm</td>
</tr>
<tr>
<td>Max. torque</td>
<td>160 Nm at 1400 - 3500 rpm</td>
</tr>
<tr>
<td></td>
<td>175 Nm at 1400 - 4000 rpm</td>
</tr>
<tr>
<td>Engine management</td>
<td>Bosch Motronic MED 17.5.21</td>
</tr>
<tr>
<td>Fuel</td>
<td>Super unleaded RON 95</td>
</tr>
<tr>
<td>Exhaust gas aftertreatment</td>
<td>Three-way catalytic converter with one upstream broadband Lambda probe and one step-type Lambda probe downstream of the catalytic converter</td>
</tr>
<tr>
<td>Emissions standard</td>
<td>EU5</td>
</tr>
</tbody>
</table>

Torque and performance diagram

CJZB, 63 kW
CJZA, 77 kW
1.4 l 90 kW TSI engine with turbocharger

The 1.4 l 90 kW TSI engine is another engine from the new EA211 series of petrol engines.

Technical features

- Cylinder head with integrated exhaust manifold
- Toothed belt drive
- Coolant distributor housing forms a unit with the coolant pump
- Coolant pump driven by a toothed belt from the exhaust camshaft
- Exhaust gas turbocharger with electric charge pressure controller
- Inlet camshaft adjustment
- External gear wheel oil pump with two-stage oil pressure regulation

Technical data

<table>
<thead>
<tr>
<th>Engine code</th>
<th>CMBA</th>
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<tbody>
<tr>
<td>Design</td>
<td>4-cylinder inline engine</td>
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<tr>
<td>Displacement</td>
<td>1395 cm³</td>
</tr>
<tr>
<td>Bore</td>
<td>74.5 mm</td>
</tr>
<tr>
<td>Stroke</td>
<td>80 mm</td>
</tr>
<tr>
<td>Valves per cylinder</td>
<td>4</td>
</tr>
<tr>
<td>Compression ratio</td>
<td>10.0:1</td>
</tr>
<tr>
<td>Max. output</td>
<td>90 kW at 5000 - 6000 rpm</td>
</tr>
<tr>
<td>Max. torque</td>
<td>200 Nm at 1400 - 4000 rpm</td>
</tr>
<tr>
<td>Engine management</td>
<td>Bosch Motronic MED 17.5.20</td>
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<tr>
<td>Fuel</td>
<td>Super unleaded RON 95</td>
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<tr>
<td>Exhaust gas aftertreatment</td>
<td>Three-way catalytic converter with one upstream broadband Lambda probe and one step-type Lambda probe downstream of the catalytic converter</td>
</tr>
<tr>
<td>Emissions standard</td>
<td>EU5</td>
</tr>
</tbody>
</table>

Torque and performance diagram

[Nm] 240 220 200 180 160 140 120 100 80 60 40 20 0
[kW] 90 80 70 60 50 40 30 20 10
rpm 2000 4000 6000
1.4 l 103 kW TSI engine with turbocharger

The 1.4 l 103 kW TSI engine is the basic engine in the new EA211 series of petrol engines.

Technical features

- Cylinder head with integrated exhaust manifold
- Toothed belt drive
- Coolant distributor housing forms a unit with the coolant pump
- Coolant pump driven by a toothed belt from the exhaust camshaft
- Exhaust gas turbocharger with electric charge pressure controller
- Inlet and exhaust camshaft adjustment
- External gear wheel oil pump with two-stage oil pressure regulation

Technical data

<table>
<thead>
<tr>
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<th>Specification</th>
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<tr>
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<td>Design type</td>
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<tr>
<td>Displacement</td>
<td>1395 cm³</td>
</tr>
<tr>
<td>Bore</td>
<td>74.5 mm</td>
</tr>
<tr>
<td>Stroke</td>
<td>80 mm</td>
</tr>
<tr>
<td>Valves per cylinder</td>
<td>4</td>
</tr>
<tr>
<td>Compression ratio</td>
<td>10.0:1</td>
</tr>
<tr>
<td>Max. output</td>
<td>103 kW at 4500 - 6000 rpm</td>
</tr>
<tr>
<td>Max. torque</td>
<td>250 Nm at 1500 - 3500 rpm</td>
</tr>
<tr>
<td>Engine management</td>
<td>Bosch Motronic MED 17/05/2021</td>
</tr>
<tr>
<td>Fuel</td>
<td>Super unleaded RON 95</td>
</tr>
<tr>
<td>Exhaust gas aftertreatment</td>
<td>Three-way catalytic converter with one upstream broadband Lambda probe and one step-type Lambda probe downstream of the catalytic converter</td>
</tr>
<tr>
<td>Emissions standard</td>
<td>EU5</td>
</tr>
</tbody>
</table>

Torque and performance diagram
1.4 l 103 kW TSI engine with Active Cylinder Management (ACT)

The main difference between this engine and the 1.4 l 103 kW TSI engine is the Active Cylinder Management (ACT).

Technical features

- Active Cylinder Management (ACT)
- For further technical features, read about the 1.4 l 103 kW TSI engine with turbocharger.

More information on active cylinder management can be found in Self-study Programme no. 510 “Active Cylinder Management (ACT) in the 1.4 l 103 kW TSI engine”.

Technical data

<table>
<thead>
<tr>
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<tbody>
<tr>
<td>Engine code</td>
<td>CPTA</td>
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<td>Design</td>
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<tr>
<td>Displacement</td>
<td>1395 cm³</td>
</tr>
<tr>
<td>Bore</td>
<td>74.5 mm</td>
</tr>
<tr>
<td>Stroke</td>
<td>80 mm</td>
</tr>
<tr>
<td>Valves per cylinder</td>
<td>4</td>
</tr>
<tr>
<td>Compression ratio</td>
<td>10.0:1</td>
</tr>
<tr>
<td>Max. output</td>
<td>103 kW at 4500 - 6000 rpm</td>
</tr>
<tr>
<td>Max. torque</td>
<td>250 Nm at 1500 - 3500 rpm</td>
</tr>
<tr>
<td>Engine management</td>
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<tr>
<td>Fuel</td>
<td>Super unleaded RON 95</td>
</tr>
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<td>Exhaust gas aftertreatment</td>
<td>Three-way catalytic converter with one upstream broadband Lambda probe and one step-type Lambda probe downstream of the catalytic converter</td>
</tr>
<tr>
<td>Emissions standard</td>
<td>EU6</td>
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</table>

You can find further information on the petrol engines in Self-study Programme no. 511 “The New EA211 Petrol Engine Series”.

![Torque and performance diagram](s513_054)
The 1.6 l 77 kW TDI engine

The 1.6 l 77 kW TDI engine is the basic engine in the new EA288 series of diesel engines.

Technical features

- Camshaft bearings in camshaft housing (modular design)
- Oil pump and vacuum pump in one housing with a shared drive shaft
- Thermomangement with switchable coolant pump
- Intake manifold with water-cooled charge air cooler
- Exhaust purification module with integrated oxidizing catalytic converter and diesel particulate filter
- Low pressure exhaust gas recirculation

Technical data

<table>
<thead>
<tr>
<th>Engine code</th>
<th>CLHA</th>
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</thead>
<tbody>
<tr>
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</tr>
<tr>
<td>Displacement</td>
<td>1598 cm³</td>
</tr>
<tr>
<td>Bore</td>
<td>79.5 mm</td>
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<tr>
<td>Stroke</td>
<td>80.5 mm</td>
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<tr>
<td>Valves per cylinder</td>
<td>4</td>
</tr>
<tr>
<td>Compression ratio</td>
<td>16.2:1</td>
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<tr>
<td>Max. output</td>
<td>77 kW at 3000 - 4000 rpm</td>
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<tr>
<td>Max. torque</td>
<td>250 Nm at 1500 - 2750 rpm</td>
</tr>
<tr>
<td>Engine management</td>
<td>Bosch EDC 17</td>
</tr>
<tr>
<td>Fuel</td>
<td>Diesel as per EN 590</td>
</tr>
<tr>
<td>Exhaust gas aftertreatment</td>
<td>Exhaust gas recirculation, oxidising catalytic converter, diesel particulate filter</td>
</tr>
<tr>
<td>Emissions standard</td>
<td>EU5</td>
</tr>
</tbody>
</table>

Torque and performance diagram
The 2.0l 110 kW TDI engine

The 2.0l 110 kW TDI engine is the more powerful version in the new EA288 series of diesel engines.

Technical features

- Camshaft bearings in camshaft housing (modular design)
- Oil pump and vacuum pump in one housing with a shared drive shaft
- Thermomanagement with switchable coolant pump
- Intake manifold with water-cooled charge air cooler
- Exhaust purification module with integrated oxidizing catalytic converter and diesel particulate filter
- Low pressure exhaust gas recirculation
- Balancer shaft integrated in the cylinder block

Technical data

<table>
<thead>
<tr>
<th>Engine code</th>
<th>CRBC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Design</td>
<td>4-cylinder inline engine</td>
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<td>Displacement</td>
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<tr>
<td>Bore</td>
<td>81.0 mm</td>
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<tr>
<td>Stroke</td>
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<tr>
<td>Valves per cylinder</td>
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<tr>
<td>Compression ratio</td>
<td>16.2:1</td>
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<tr>
<td>Max. output</td>
<td>110 kW at 3500 - 4000 rpm</td>
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<tr>
<td>Max. torque</td>
<td>320 Nm at 1750 - 3000 rpm</td>
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<tr>
<td>Engine management</td>
<td>Bosch EDC 17</td>
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<tr>
<td>Fuel</td>
<td>Diesel as per EN 590</td>
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<tr>
<td>Exhaust gas aftertreatment</td>
<td>Exhaust gas recirculation, oxidising catalytic converter, diesel particulate filter</td>
</tr>
<tr>
<td>Emissions standard</td>
<td>EU5</td>
</tr>
</tbody>
</table>

Torque and performance diagram

You can find further information on the TDI engines in Self-study Programme no. 514 “The New EA288 Diesel Engine Series”.
The misfuelling prevention device for vehicles with a diesel engine

On vehicles with a diesel engine, there is an insert with a mechanically locking flap on the filler neck for the fuel tank. The flap prevents the incorrect fuel nozzle from being inserted, allowing the diesel vehicle to be protected from being filled with the wrong type of fuel.

Design

View from front

- Flap with spring
- Tabs
- Plastic ring with annular spring

View from rear

- Tabs
- Plastic ring with annular spring
- Flap with spring
- Locking lugs
**Function**

If a diesel fuel nozzle is inserted into the filler neck of the fuel tank, the fuel nozzle pushes all the tabs in the misfuelling prevention device to the side. The plastic ring is splayed and the locking lugs are forced apart. The force of the fuel nozzle during insertion opens the flap. The diesel fuel nozzle can now be fully inserted into the filler neck and the vehicle can be refilled with diesel fuel.

When the diesel fuel nozzle is pulled out of the misfuelling prevention device, the flap is closed by the force of the springs, with the force of the annular springs contracting the plastic ring and the flap being locked by the locking lugs.

The diameter of a petrol fuel nozzle is too small to force all the tabs in the plastic ring apart. The plastic ring is not splayed and the locking lugs cannot release the flap. This prevents the insertion of the incorrect fuel nozzle.

**Filling with reserve canister**

If the fuel tank needs to be filled using a reserve canister and filler neck, the flap does not open. In this case, it is only possible to fill the tank using the gap left between the tabs and flap. The diesel fuel should then be filled in very small amounts and very slowly.
The engine-gearbox connection

With the introduction of the modular transverse matrix, the connection between the engine and the gearbox has been changed, and a new engine bolt point has been added.

The selector lever

The selector lever features a new option for changing from selector position “D” to “S” and vice-versa. The change is made by tapping it backwards once. The selector lever then springs back into the D/S position.
Four-wheel drive clutch

With the Golf 2013, the 5th generation of four-wheel drive clutch is being launched. The control logic for the various driving situations has been adopted from the 4th generation four-wheel drive clutch. The pressure control in the 5th generation is now generated by a piston pump with an integrated centrifugal governor (Haldex coupling pump for 4WD V181).

The regulated pressure acts on the working piston and compresses the clutch pack within the clutch cage, allowing the required torque to be transferred to the rear axle.

You will find more information on the 5th Generation four-wheel drive clutch in Self-study Programme no. 515 “The Golf 2013 – Running Gear and Four-wheel Drive Concept”.

![Four-wheel drive clutch diagram](s513_068)
Overview of the running gear and the driver assist systems

This overview presents the most important series-standard and optional running gear equipment and driver assist systems available for the Golf 2013. The Golf can be equipped with a standard running gear, a sports running gear, a heavy-duty running gear or an adaptive chassis control (DCC).

Running gear:

- McPherson strut front suspension
- Four-link rear axle or a torsion-beam rear axle (depending on the engine).
- Electromechanical parking brake (EPB) with AutoHold
- Electromechanical power steering
- ABS/ESP Continental MK 100
- 4MOTION drive
Driver assist systems:

- Automatic distance control system (ACC) with city emergency braking function (CNB)
- Area monitoring system (Front Assist)
- Distance warning
- Multicollision brake
- Front camera
- Lane departure warning (Lane Assist)
- Park Assist Steering 2.0 (PLA)
- Tyre pressure monitoring (TMD)
- Driver Alert System (MKE)
- Cruise control system (CCS)
- Speed limiter
- Park distance control (PDC)

You will find further information on the running gear and the driver assist systems in Self-study Programme no. 515 “The 2013 Golf Running Gear and Four-wheel Drive Concept” and no. 516 “The Golf 2013 Driver Assist Systems”.

s513_031
The different climate control versions

There are three different versions of the climate control system available for the Golf 2013:

- The heating and ventilation system
- The manual electric air conditioning system
- 2-zone Climatronic

Each version has a self-contained operating unit.

As an option, all three versions can be equipped with a button for controlling the seat heating. Furthermore, the two air conditioning systems may also feature an optional button for controlling the auxiliary heating.

The heating and ventilation system

The seat heating features three levels. The heating level chosen is indicated by an LED in the respective button. The auxiliary heater can be switched on and off using the immediate heat button in the respective operating unit.

All three versions of the climate control are diagnostically-compatible and can be accessed using the address word 08.

The operating and control unit for the heating and ventilation system is a completely new development. It is a manual electric system, meaning the temperature flap and the air flaps can be adjusted with the aid of control motors.

The fresh air blower now features 6 different speeds. The various fresh air blower speeds are now controlled by the fresh air blower control unit J126.
Heating and ventilation network plan

Legend

- EX21  Heater/air conditioner operating unit
- G92   Potentiometer for temperature flap control motor
- G645  Potentiometer for air distribution
- J65   Heater control unit
- J126  Fresh air blower control unit
- J519  On-board power supply control unit
- J533  Data bus diagnostic interface
- V2    Fresh air blower
- V68   Control motor for temperature flap
- V113  Control motor for air recirculation flap
- V428  Control motor for front air distribution flap

- Powertrain CAN bus
- Running gear CAN bus
- Convenience CAN bus
- CAN data bus line
- LIN data bus line
- Sensor line
- Actuator line
The operating and control unit for the manual electric air conditioning system is also a completely new development. The system operates on an electrical/manual basis. In this case, the temperature flap and the air flaps are also adjusted using control motors. There is no automatic regulation. All settings must be activated and adjusted manually, when required.

Just like the heating and ventilation system, the fresh air blower is now a 6-speed one. The various fresh air blower speeds are also controlled by the fresh air blower control unit J126.
The manual electric air conditioning system network plan

Legend

- **EX21**  Heater/air conditioner operating unit
- **G92**  Potentiometer for temperature flap control motor
- **G308**  Evaporator temperature sender
- **G645**  Potentiometer for air distribution
- **G805**  Pressure sender for refrigerant circuit
- **J126**  Fresh air blower control unit
- **J301**  Air conditioning system control unit
- **J519**  On-board power supply control unit
- **J533**  Data bus diagnostic interface
- **N280**  Air conditioner compressor regulating valve
- **V2**  Fresh air blower
- **V68**  Control motor for temperature flap
- **V113**  Control motor for air recirculation flap
- **V428**  Control motor for front air distribution flap
Heating and air conditioning

The 2-zone Climatronic

The operating and control unit for the 2-zone Climatronic is also a completely new development. Temperature settings ranging from 16°C to 29.5°C can be set individually for the driver’s side and the passenger side.

The illustration shows the control and operating unit for Climatronic J255 for the highest equipment level.

It is operated using the following buttons:

- **SETUP**: Opens the climate menu in the operating and display unit for the Infotainment system, allowing the climate profile, AUTO air recirculation and auxiliary heating programming to be set.
- **AUTO**: Automatic regulation of blowers, temperature and air distribution in accordance with the intensity of the sun, outside and inside temperature and humidity.
- **MAX Defrost**: Maximum blower power, air distribution is guided towards the windows.
- **SYNC**: Synchronises the climate zones with the driver’s value.
- **MAX A/C**: Temperature setting to “LO”, maximum blower power, air distribution to the occupant vents.
2-zone Climatronic network plan

Legend

EX21 Heater/air conditioner operating unit
G17 Exterior temperature sensor
G107 Sunlight penetration photosensor
G135 Potentiometer control motor for defroster flap
G150 Left vent temperature sender
G151 Right vent temperature sender
G192 Footwell vent temperature sender
G220 Potentiometer for left temperature flap control motor
G221 Potentiometer for right temperature flap control motor
G238 Air quality sensor
G260 Humidity sender for air conditioning system
G308 Evaporator temperature sensor
G642 Potentiometer for air distribution
G644 Potentiometer for fresh air/air recirculation air flow flap
G805 Pressure sender for refrigerant circuit
J126 Fresh air blower control unit
J255 Climatronic control unit
J519 On-board power supply control unit

J533 Data bus diagnostic interface
J623 Engine control unit
N280 Air conditioner compressor regulating valve
V2 Fresh air blower
V107 Defroster flap control motor
V158 Control motor for left temperature flap
V159 Control motor for right temperature flap
V425 Control motor for fresh air and air recirculation flap and air flow flap
V426 Control motor for air distribution

Powertrain CAN bus
Running gear CAN bus
Convenience CAN data bus
CAN data bus line
LIN data bus line
Sensor line
Actuator line
Heating and air conditioning

Climate profiles

The climate profile is set using the operating and display unit for the Infotainment system. The following three climate profiles are available for selection:
- Gentle
- Average
- Intensive

A characteristic map has been stored for each individual climate profile in the Climatronic control unit. Depending on the climate profile selected, the airflow is regulated using the fresh air blower speed.

The time needed to respond to disturbances varies between the climate profiles. For example, the climate profile intensive gives the information an even stronger weighting when processing it. Furthermore, this profile also factors in the signals from the sunlight sensor.

Air conditioning system sensors

Ambient temperature sensor G17

Installation location

The ambient temperature sensor G17 is installed behind the front bumper.

Function

The temperature is measured by NTC thermistors.

Effects of failure

The air conditioning system control unit J255 will assume a defined temperature value of 0°C in this case. The air conditioning system will continue to operate using this value.

Signal analysis

The signal is transmitted to the onboard supply control unit J519. This transmits it to the air conditioning system control unit J255 via the convenience CAN bus.

Using the „Guided Functions“ in the vehicle diagnostic tester, the current outside temperature can be stored in the air conditioning system control unit. This function is useful when working on the air conditioning system in the workshop when the vehicle was exposed to temperatures of less than 0°C beforehand and the air conditioning system control unit needs to be renewed.
Pressure sender for refrigerant circuit G805

Installation location

The pressure sender for the refrigerant circuit G805 replaces the high-pressure sender G65. It is screwed into place in the high-pressure line between the condenser and the expansion valve. The pressure sender for the refrigerant circuit G805 is connected directly to the air conditioning system control unit via the LIN bus.

Signal utilisation

The actual refrigerant pressure in the refrigerant circuit, and therefore the required engine load, is calculated using the signals.

Signal curve

The display of the signal curve during diagnosis differs considerably from the signal curve of the PWM signal issued by the sender previously used, G65.

Effects of failure

If the pressure signal fails, the cooling function is deactivated.
Humidity sender for air conditioning system G260

Installation location

The humidity sender for the air conditioning system G260 is only installed with the Climatronic unit. It is installed in the base of the interior mirror together with the rain/light sensor.

Design and functional principle

The humidity and the temperature at the windscreen are measured using a capacitive thin-layer sensor. The sender functions in a similar manner to a plate capacitor; measurement of the capacity reveals the degree of humidity.

Signal utilisation

The sender determines:
- The inside windscreen temperature
- The inside relative humidity
The signals are transmitted to the onboard supply control unit and are forwarded to the Climatronic control unit via the convenience CAN bus. This uses the signals to calculate the inside dew point and the inside dew point distance.

To reduce the fogging of the windscreen, the Climatronic ensures that conditions in the passenger compartment are optimal and initiates the following measures:
- Compressor on/off
- Defroster flaps open/closed
- Air quantity regulation by changing the fresh air blower speed
- Evaporator temperature change
- Air recirculation flap in the recirculation/fresh air position

Effects of failure

Without the sensor’s signal, the control unit is no longer able to calculate the point in time from which moisture settles on the windows. The automatic defrost function fails.
Climate control components

Heater and air conditioning units

Three different versions have been used in the Golf 2013:

- The 1-zone heater and air conditioning unit for the heating and ventilation system
- The 1-zone heater and air conditioning unit for the manual electric air conditioning system
- The 2-zone heater and air conditioning unit for the 2-zone Climatronic

The horizontal installation position of the dust and pollen filter in the heater and air conditioning units is a new feature.

The dust and pollen filter is replaced through the glove compartment, which involves placing the glove compartment cover in a "service position".

Manufacturer versions

Heater and air conditioning units made by the Denso company and by the Valeo company are installed in the Golf. When installed, the heater and air conditioning unit which a vehicle has can only be identified by the heater pipe connections on the heat exchanger for heater. Because the control motors for actuating the individual air flaps are different for Denso and Valeo, these must be ordered according to manufacturer.
Internal heat exchanger

A new feature in the Golf is the so-called “Internal heat exchanger” (IWT), which was used for the first time in the Volkswagen Touareg. This is a refrigerant line that forms a “pipe-in-pipe system”. This refrigerant line features a low-pressure line which is guided through a separate space in the high-pressure line. The refrigerant flows through the outer line to the expansion valve (high pressure), and flows back from the expansion valve through the inner line towards the air conditioner compressor (low pressure). This design increases the efficiency of the system and contributes to reducing the fuel consumption.

The airflow limiter

On vehicles with a heater and air conditioning system, the same fresh air blower V2 and control unit J126 is installed as in vehicles with an air conditioning system. However, in this case there is no evaporator to reduce the air flow.

An air flow limiter has therefore been installed in the heater unit in these vehicles. This guarantees that the heater and blower power operates optimally.
“Thermo Top Evo” auxiliary coolant heating

The auxiliary coolant heating “Thermo Top Evo” is available as an optional extra for the new Golf. It is installed at the front right, behind the bumper, as in the Golf 2009. The “Thermo Top Evo” is offered both as a petrol and diesel version. The auxiliary heater is used as a fuel-operated auxiliary heater for petrol and diesel engines. It is activated via the air conditioning system control unit.

Design

The heater unit is largely identical to the “Thermo Top Fleece”, which has been installed in the passenger vehicle models with diesel engines since October 2010.

Legend

1. Combustion air blower (fan wheel)
2. Coolant inlet
3. Coolant outlet
4. Temperature sensor G18
5. Overheating sensor G189
6. Cooling jacket
7. Heat exchanger with fins
8. Burner with combustion chamber and combustion tube
9. Exhaust outlet
10. Fuel line
11. Combustion air inlet
12. Control unit J364
13. Metal fleece
14. Glow plug with flame monitor Q8
Heating and air conditioning

Auxiliary coolant heating network plan

Legend

G6 Fuel system pressurisation pump
G17 Exterior temperature sensor
J104 ABS control unit
J285 Control unit in dash panel insert
J364 Supplementary heating system control unit
J519 On-board power supply control unit
J533 Data bus diagnostic interface
J623 Engine control unit
J685 Display unit for front information display and operating unit control unit
J794 Control unit 1 for information electronics
R149 Remote control receiver for auxiliary coolant heater
V54 Metering pump
V55 Recirculating pump

Powertrain CAN bus
Running gear CAN bus
Convenience CAN data bus
Infotainment CAN bus
CAN bus line
LIN data bus line
Sensor line
Actuator line
Function

The only differences to the “Thermo Top Fleece” are found in the activation and the functions which have been integrated into the auxiliary heater control unit J364. This means the programming for the timer is now stored in the vehicle, for example, with the heating now switching “On” or “Off”. The auxiliary heater and auxiliary ventilation functions, as well as supplementary heater operation, are still available. The T91R is used as a remote control.

The auxiliary heating can still be started in one of three different ways, by:

- the immediate heat button in the heating/air conditioner operating unit
- the remote control
- programming the “auxiliary heating” menu in the operating and display unit of the Infotainment system.

A new feature is that the “Auxiliary heating” menu in the operating and display unit of the Infotainment system can be used to set the departure time in vehicles in which an air conditioning system is installed. This means that the vehicle should already be warmed up at this preset time. The control unit for the air conditioning system determines the starting time for the auxiliary heater automatically. The current battery charge capacity is factored into the calculation of the auxiliary heating run time.

The auxiliary heating function can be activated or deactivated in the “Air conditioning system settings” menu.
Overview of the electrical system and driver assist systems

This overview presents the most important series-standard and optional features of the electrical system available for the Golf 2013.

Electrical systems:

- Transmission speed of the CAN bus systems is 500 kBit/s
- The multifunction steering wheel is available in three different versions:
  - Normal multifunction steering wheel
  - Multifunction steering wheel with cruise control system (GRA)
  - Multifunction steering wheel with adaptive cruise control (ACC)
- The dash panel insert is available in three different versions:
  - Dash panel insert with multi-function display (MFD)
  - Dash panel insert with MFD Plus
  - Dash panel insert with MFD Premium
- Immobilizer V (fifth generation)
- Component protection
- Front camera for driver assist systems
- Reversing camera
- Modular Infotainment System (MIB)
Driver assist systems:

• Traffic sign recognition (TSR)
• Dynamic Light Assist (DLA)
• Main beam assist (FLA)
• Optical parking system (OPS)
• Driving mode selection (FPA)

You can find further information on the electrical system and on the driver assist systems listed above in Self-study Programme no. 517 “The Golf 2013 Electrical System”.
**Network design**

The following diagram shows the new features of the control unit network in the Golf 2013. All CAN bus systems in the Golf 2013 have a transmission speed of 500 kBit/s. For the first time, the Golf 2013 also features a running gear CAN bus and an extended CAN bus, along with the familiar CAN data buses.

---

**Legend**

- J104 ABS control unit
- J250 Electronically controlled damping control unit
- J285 Control unit in dash panel insert
- J362 Immobilizer control unit
- J412 Mobile telephone operating electronics control unit
- J428 Adaptive cruise control unit
- J446 Parking aid control unit (connected to J791)
- J453 Multifunction steering wheel control unit
- J492 Four-wheel drive control unit
- J500 Power steering control unit
- J533 Data bus diagnosis interface (Gateway)
- J540 Control unit for electromechanical parking brake
- J500
- J492
- J104 (J981, J540)
- J250
- J791
- J446
- J533
- J428
- R242
- J844
- J745
- J667
- J668
- J667
- J668
- J285 (J362)
- R
- J453
- CSCC
- R189
- J794 (J412)
- LVDS
- J685
- J685*
- MIB-CAN

---

- J667 Output module for left headlight
- J668 Output module for right headlight
- J685 Display unit for front information display and operating unit control unit, front information display (connected to R and J685 on MIB CAN)
- J685* Display unit for front information display and operating unit control unit, front information display (on MIB CAN)
- J745 Cornering light and headlight range control unit
- J844 Main beam assist control unit
- J981 Electronic stabilisation control unit (ESP)
- J791 Park Assist control unit (connected to J446)
The diagnostic interface for data bus J533 connects the individual CAN data bus systems. It is also the master in the energy management LIN network and for the multifunction steering wheel control unit (J453).

For the very first time, the control unit for the dash panel insert J285 is connected to the convenience CAN bus in the Golf.

The control units for the driver assist systems are connected to the extended CAN bus. These, in turn, feature two sub-CAN data bus systems:

- Sensor Fusion (SF) CAN bus between the adaptive cruise control unit J428 and the front camera for driver assist systems R424.
- Cornering light CAN bus (Advanced Frontlighting System, AFS) between the cornering light and headlight range control unit J745 and the output modules for the headlights J667 and J668.

In the infotainment CAN bus, the display unit for front information display and operating control unit J685 is connected to the control unit for information electronics J794 by a new, subordinate data bus system, the MIB CAN bus and a low voltage differential signalling (LVDS) line (depending on equipment version).

<table>
<thead>
<tr>
<th>J794</th>
<th>Control unit for information electronics (connected to R and series display J685 on the infotainment CAN bus)</th>
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<tbody>
<tr>
<td>R</td>
<td>Radio (connected to J794 and series display J685 on the infotainment CAN bus)</td>
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<tr>
<td>R189</td>
<td>Reversing camera</td>
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<td>R242</td>
<td>Front camera for driver assist systems (connected to J844)</td>
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<tr>
<td>T16</td>
<td>16-pin connector</td>
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<tr>
<td>CSCC</td>
<td>Colour video blanking sync signal; “Colour TV line”</td>
</tr>
<tr>
<td>LVDS</td>
<td>Low voltage differential signalling; standard interface for high speed data transmission</td>
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<tr>
<td>AFS</td>
<td>Cornering light CAN data bus</td>
</tr>
<tr>
<td>SF</td>
<td>Sensor fusion CAN bus</td>
</tr>
</tbody>
</table>

- Powertrain CAN bus
- Running gear CAN bus
- Extended CAN bus
- Convenience CAN data bus
- Infotainment CAN bus
- LIN data bus
- CAN bus line
- LIN data bus line
Electrical system

Fuse boxes and relay locations in the electrical system

- The battery is located on the left in the engine compartment.

The following batteries are available with equipment versions without StartStop:
- Lead-acid battery 44Ah/220A (H4 format)
- Lead-acid battery 51Ah/280A (H4 format)
- Lead-acid battery 60Ah/280A (H5 format)
- Lead-acid battery 61Ah/330A (H5 format)
- Lead-acid battery 72Ah/380A (H6 format)

The following batteries are available with equipment versions with StartStop:
- EFB 59Ah/320A (H5 format)
- EFB 69Ah/360A (H6 format)
- AGM battery 68Ah/380A (H6 format)

The AGM battery 68Ah/380A (H6 format) is always installed in vehicles which feature auxiliary heating.

All lead-acid batteries and EFB feature an acid level indicator.

You can find further information on the different types of batteries in the Self-study Programme no. 517 "The Golf 2013 Electrical System".

- The alternator is at the right hand side of the engine compartment. Depending on the equipment installed, alternators with an output of 110A, 140A and 180A are fitted.

Legend

EFB  Enhanced Flooded Battery
AGM  Absorbent Glass Mat Battery
Fuse box in the passenger compartment.

On-board supply control unit

- Fuse box is on the left hand side of the passenger compartment. The onboard supply control unit J519 is located at the side of the fuse carrier.

- Fuse box in the engine compartment in front of the battery, with Multifuse

Fuse box in the engine compartment
Modular Infotainment System (MIB)

The new Infotainment concept, the Modular Infotainment System (MIB), is being installed in the Golf 2013 for the very first time. The Modular Infotainment System is a component of the modular transverse matrix (MQB).

The central element of the MIB in its Standard and High versions is a central computer, with the same one being used Group-wide (control unit 1 for information electronics, J794), with a performance and capacity which is scalable with a constant installation space.

The MIB is always connected to the infotainment CAN bus.

The MIB features three configuration levels with the following operating and display units:

- **MIB Entry**
  - Composition Touch
  - Composition Colour

- **MIB Standard**
  - Composition Media
  - Composition Media (DAB+)
  - Discover Media (Standard navigation)

- **MIB High**
  - Discover Pro (High navigation)

You can find further information on the Modular Infotainment System (MIB) in Self-study Programme no. 518 “The Golf 2013 – Infotainment, Part 1.”
Driving mode selection

The optional driving modes allow a variety of wide-ranging settings to be made in the vehicle according to the driver’s preferences. The driving mode selection provides the driver with the option of choosing between the following driving profiles:
- Convenience (in combination with DCC)
- Normal (standard setting)
- Eco
- Sport
- Individual

The driving mode selection is activated using the MODE button in the centre console, and the driving profile is selected using the touchscreen in the operating and display units. It communicates with the driver using the display in the respective operating and display unit.

Depending on the driving profile selected and the vehicle equipment, different systems will be affected.

You can find further information on the driving mode selection in Self-study Programme no. 518 “The Golf 2013 – Infotainment, Part 1”.

Systems affected

- Air conditioning system
- Reversible belt tensioners
- Dynamic cornering light
- Main beam assist
- Gearbox
- MODE button
- Display in the dash panel insert
- Operating and display unit
- StartStop
- Engine
- Damper control
- DCC
- Adaptive cruise control
- ACC
- Steering
The service concept from model year 2013 on

The cross-brand service concept is being launched with the Golf 2013. The following information describes the most important changes.

Core terms

The cross-brand service concept involves standardising the terms used to describe the individual service intervals at the Group brands. Consequently, the following core terms are being introduced at all brands:

- Oil change service
- Inspection

In service, these terms will be used for communication throughout the Group, for example:
- using the service interval display in the dash panel insert
- in the service lists
- in APOS
- in the service schedule
- as well as in the invoice.

The term “interval service” is no longer being used with the Golf 2013.
**QI PR numbers**

Every vehicle that leaves the production site is marked with a fixed PR number referring to the oil change service. The world map shows which oil change intervals are necessary in various regions. The following, cross-brand QI PR numbers determine the engine oil change intervals all over the world.

### Legend

<table>
<thead>
<tr>
<th>QI</th>
<th>Service interval display</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>QI 1</td>
<td>Service interval display 5,000 km or 1 year</td>
<td>(fixed)</td>
</tr>
<tr>
<td>QI 2</td>
<td>Service interval display 7,500 km or 1 year</td>
<td>(fixed)</td>
</tr>
<tr>
<td>QI 3</td>
<td>Service interval display 10,000 km or 1 year</td>
<td>(fixed)</td>
</tr>
<tr>
<td>QI 4</td>
<td>Service interval display 15,000 km or 1 year</td>
<td>(fixed)</td>
</tr>
<tr>
<td>QI 5</td>
<td>For Volkswagen Commercial Vehicles only</td>
<td>(fixed)</td>
</tr>
<tr>
<td>QI 6</td>
<td>Service interval display 30,000 km or 2 years</td>
<td>(flexible)</td>
</tr>
<tr>
<td>QI 7</td>
<td>Service interval display 10,000 miles or 1 year</td>
<td>(fixed)</td>
</tr>
<tr>
<td>QI 8</td>
<td>For Volkswagen Commercial Vehicles only</td>
<td>(flexible)</td>
</tr>
</tbody>
</table>

**Two service channels**

In the past, it was only possible to inform customers of any service events due at the same time as the oil change using the service interval display. All other service events were listed on the service sticker. The Golf 2013 has been given a second service channel to ensure that service events which are not linked to an oil change can be displayed.

This guarantees a clearly displayed service due date. This reduces the risk of exceeding any service events which are due, as the customer’s attention is drawn to them directly by the display in the dash panel insert.

Filling in the service sticker is no longer necessary.
Service intervals for the Golf 2013

The following overview shows the service intervals for the Golf with fixed intervals (QI 4) and flexible intervals (QI 6).

Mileage 15,000 km/year; fixed interval: maximum 15,000 km/year

QI 4 fixed

15,000 km 12 months

QI 6 flexible

15,000 km 12 months

30,000 km 24 months

45,000 km 36 months

60,000 km 48 months

75,000 km 60 months

Mileage 15,000 km/year; ESI*: maximum 30,000 km/2 years

* ESI = Extended Servicing Interval

Legend

<table>
<thead>
<tr>
<th>EI</th>
<th>Extended Inspection scope: first inspection after 60,000 km/3 years, followed by every 60,000 km/2 years</th>
</tr>
</thead>
<tbody>
<tr>
<td>AT</td>
<td>Additional tasks, e.g. brake fluid/air and fuel filter/dust and pollen filter/spark plugs*</td>
</tr>
<tr>
<td>OC</td>
<td>Oil change service</td>
</tr>
<tr>
<td>I</td>
<td>First inspection after 30,000 km/2 years, followed by every 30,000 km/1 year</td>
</tr>
</tbody>
</table>

* The additional tasks are listed according to mileage or running time. The corresponding intervals for the additional tasks are described in the service literature.
Service schedule

The following is new in the service schedule from model year 2013:

- **Explanation of the QI PR numbers for identifying the respective type of service**
  The explanation of the QI PR number and the information about the servicing the vehicle requires indicates the respective type of service (fixed/flexible) and is described in the service schedule.

- **Documentation of the body inspection**
  The verification field is used for documenting any vehicle damage needing examination within the scope of the inspection.

- **Discontinuation of the detailed list of all service scopes**
  There may be technical changes during the period over which the printed service plan applies. This prevents any information in the service schedule from contradicting the content found in ELSA.
  This allows a service schedule to be used worldwide.

Service list

The order of the service items is no longer structured according to subassemblies, but rather based on events.