High-mounted stop light

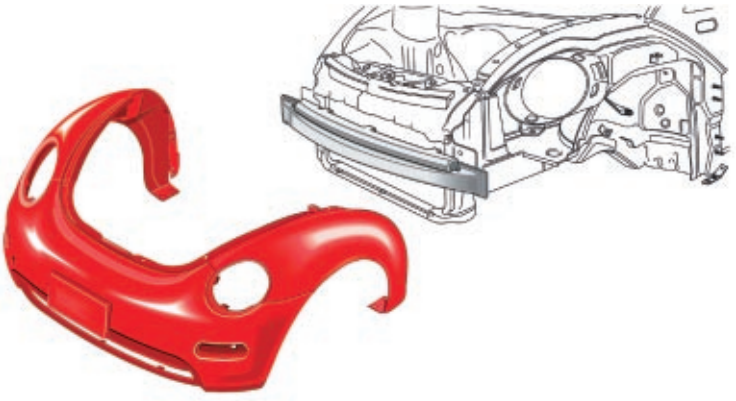
The high-level stop light is integrated in the boot. If an LED fails, the complete unit must be replaced.

211/047

When installing the stop light, take care to ensure that the rubber seal is properly seated, otherwise water may enter the luggage compartment.

Removing and installing of the front bumper

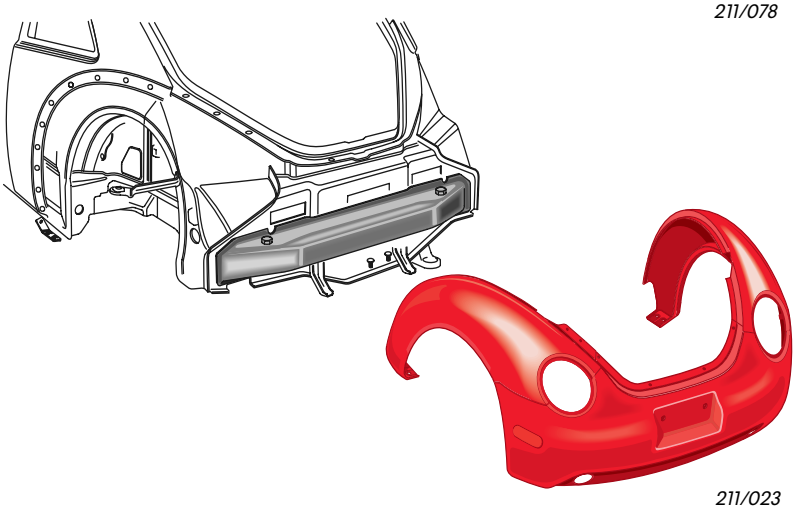
The front bumper can only be removed as a unit complete with the two wings. These components can then be fitted individually.



211/078

Removing and installing the rear bumper

The rear bumper also has to be removed together with the wings. The wings and bumper can be separated after this.



211/023

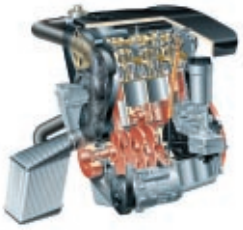
Engines

General information

The New Beetle, like the Golf ´98, Audi A3 and Skoda Oktavia, is based on the A-platform. The engines of these vehicles are almost identical from a technical viewpoint too.
The New Beetle is available with a 1.9-ltr. TDI engine and a 2.0-ltr. petrol engine with crossflow cylinder head.

Design features of the 1.9-ltr. and 2.0-ltr. A4 platform engines:

- No intermediate shaft
- Chain-driven oil pump
- New thermostat housing
- Small engine block
- Aluminium oil sump
- Lightweight valve train
- New coolant pump housing
- Pendulum-type engine support



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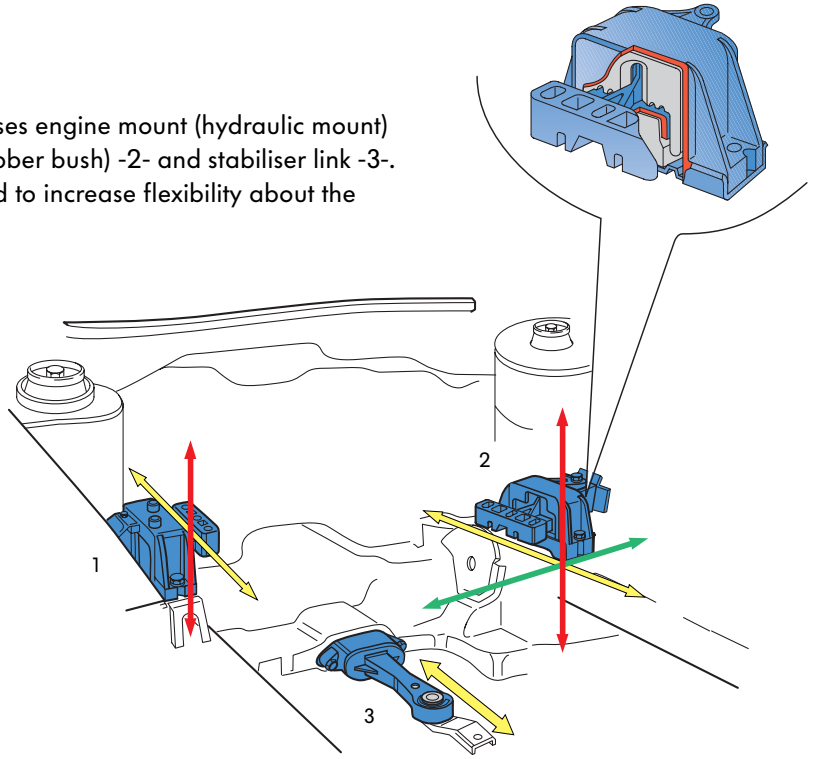
Assembly mounting

The assembly mounting comprises engine mount (hydraulic mount) -1-, gearbox mount (bonded rubber bush) -2- and stabiliser link -3-. The assembly layout is designed to increase flexibility about the axis of rotation of the engine.

The stabiliser link absorbs the engine movement which is induced by engine torque. Engine and transmission vibrations are absorbed by large-sized rubber mountings which prevent these vibrations being transmitted to the bodyshell.
The hydraulic mount dampens sympathetic vibration of the engine.



211/049

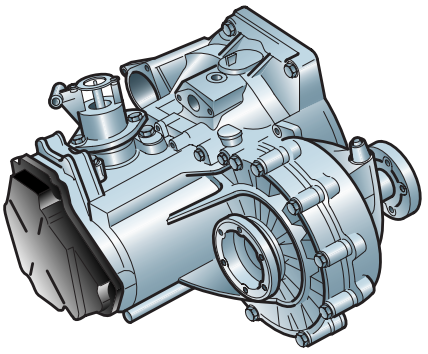
Gearbox versions

A manual gearbox and an automatic gearbox are used:

- 5-speed manual gearbox 02J
- 4-speed automatic gearbox 01M

The engine oil sump is attached to the gearbox by bolts.
This engine-gearbox link-up increases the rigidity of the complete engine-gearbox unit. This serves to improve the transfer of forces to the stabiliser link of the assembly mounting.

5-speed manual gearbox 02J



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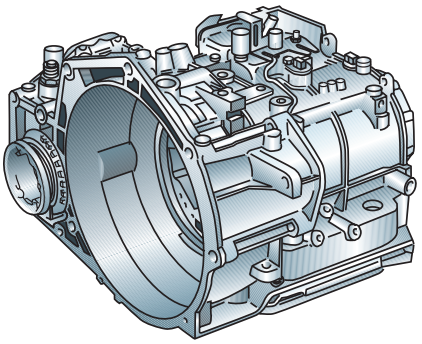
4-speed automatic gearbox 01M



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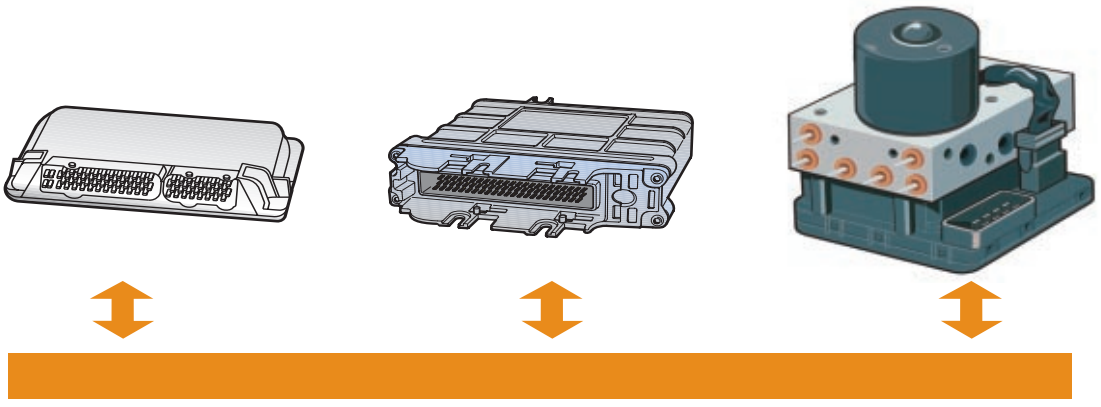
CAN databus

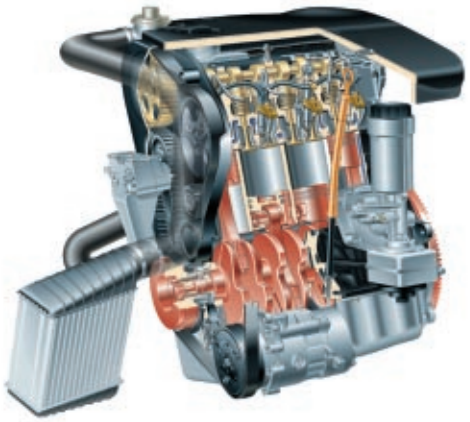
The engine control units, the control unit for the automatic gearbox and the ABS control unit are interconnected via two CAN databus lines.
The control unit interchange information such as Throttle valve position, vehicle road speed or gearbox shift point (also refer to SSP 186) via CAN databus.



211/050

Engines

1.9-ltr. TDI engine (66 kW) - ALH



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The special features of the A4 platform 1.9-ltr. TDI engine are:

- Magnesium cylinder head cover with new seal
- Special fastening elements for the cylinder head cover
- Wet-filter oil separator integrated in the cylinder head cover
- Camshaft-driven vacuum pump
- Stationary oil filter with filter cartridge

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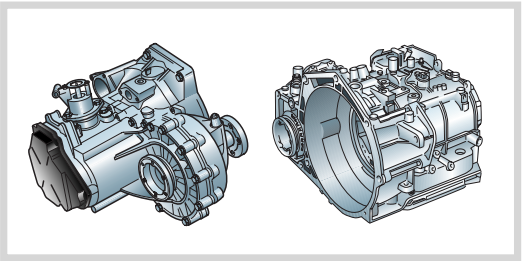
Specifications:

Code:	ALH
Bore:	79.9mm
Stroke:	95.5mm
Displacement:	1896cm^3
Compression ratio:	19.5 : 1
Power output:	66kW (90 bhp) at 3750 rpm
Torque:	210Nm at 1900 rpm
Exhaust emission standard:	D-3 standard
Engine management:	Bosch Electronic Diesel Control (EDC)

Gearbox versions

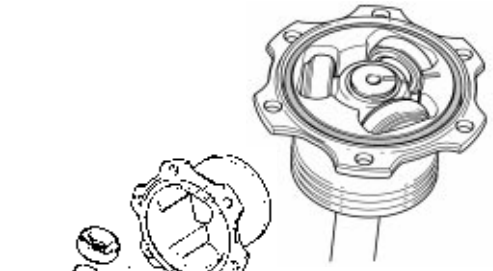
The 1.9-ltr. TDI engine is available in connection with

- 5-speed manual gearbox 02J and
- 4-speed automatic gearbox 01M.

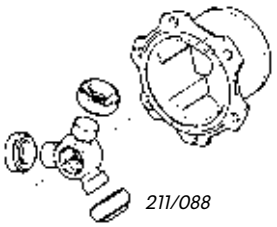


The 1.9-ltr. TDI engine with manual or automatic transmission delivers power by way of triple roller joint drive shafts.

Triple roller joint drive shafts dampen the vibrations which occur in the drive train.



211/048



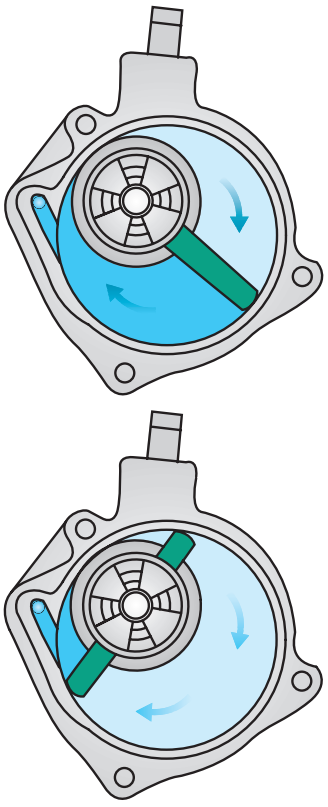
211/088

Vacuum pump

The vacuum pump is located on the cylinder head and is driven directly by the camshaft.

The vacuum pump produces additional vacuum to safely operate the following vacuum-controlled components reliably under all operating conditions:

- Vacuum brake servo
- Intake manifold flap changeover valve
- Exhaust gas recirculation valve, and
- Charge-pressure limiting valve



211/051

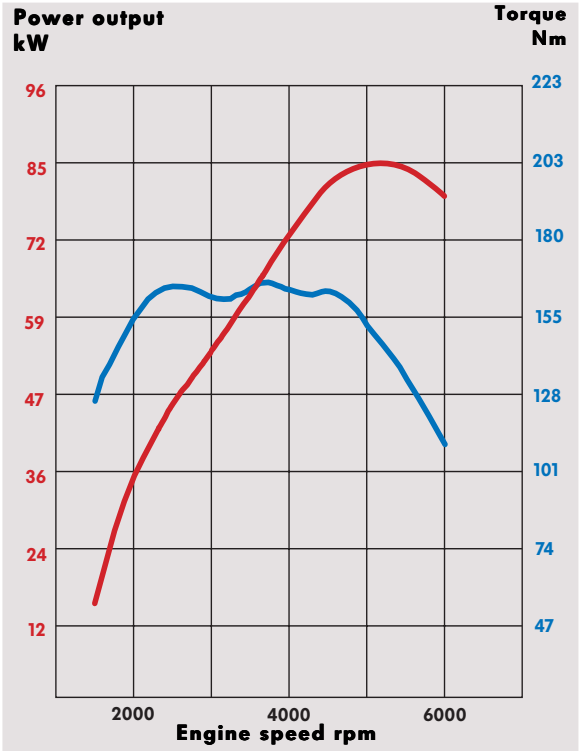
Engines

2.0-ltr. engine (85 kW) - AQY

211/016

The engine driving the New Beetle is being used here for the first time on the A4 platform vehicle. The special features of the 2.0-ltr. engine are as follows:

- Crossflow cylinder head
- Two-piece intake manifold
- Exhaust manifold of stainless steel
- Air-swept injectors
- 2nd lambda probe downstream of catalytic converter
- Secondary air pump



211/055

Specifications

Code:	AQY
Bore:	82.5mm
Stroke:	92.8mm
Displacement:	1984cm^3
Compression ratio:	10.5 : 1
Power output:	85kW (115 bhp) at 5200 rpm
Torque:	170Nm at 2400rpm
Exhaust emission standard:	D-4 standard
Engine management:	Motronic 5.9.2

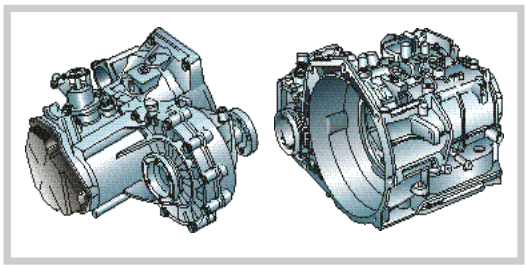
Deviations from US version:

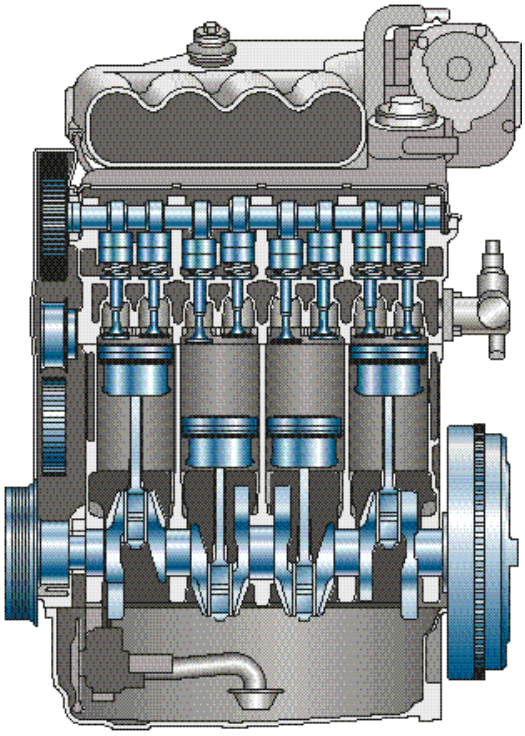
- Code AEG
- Compression ratio 10.0 : 1
- Max. output is at 5400rpm and max. torque is 165Nm at 2600rpm

Gearbox versions

The 2.0-ltr. crossflow engine is available with:

- 5-speed manual gearbox 02J and
- 4-speed automatic gearbox 01M.





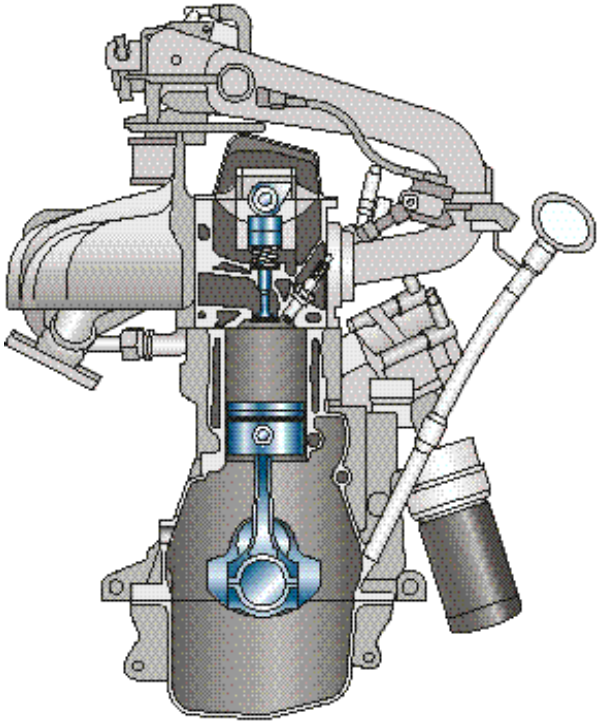
211/031

The crossflow cylinder head used previously in the US version of the Golf 3 is a tried and tested design.

Advantages:

- The intake manifold at the front end of the engine enhances crash performance, as there is more space between the intake tube and engine bulkhead.
- The optimised gas flow characteristics improve handling performance and exhaust emission.

The engine block of the 2.0-ltr. engine is identical to the A4 platform 1.8-ltr. engine block.



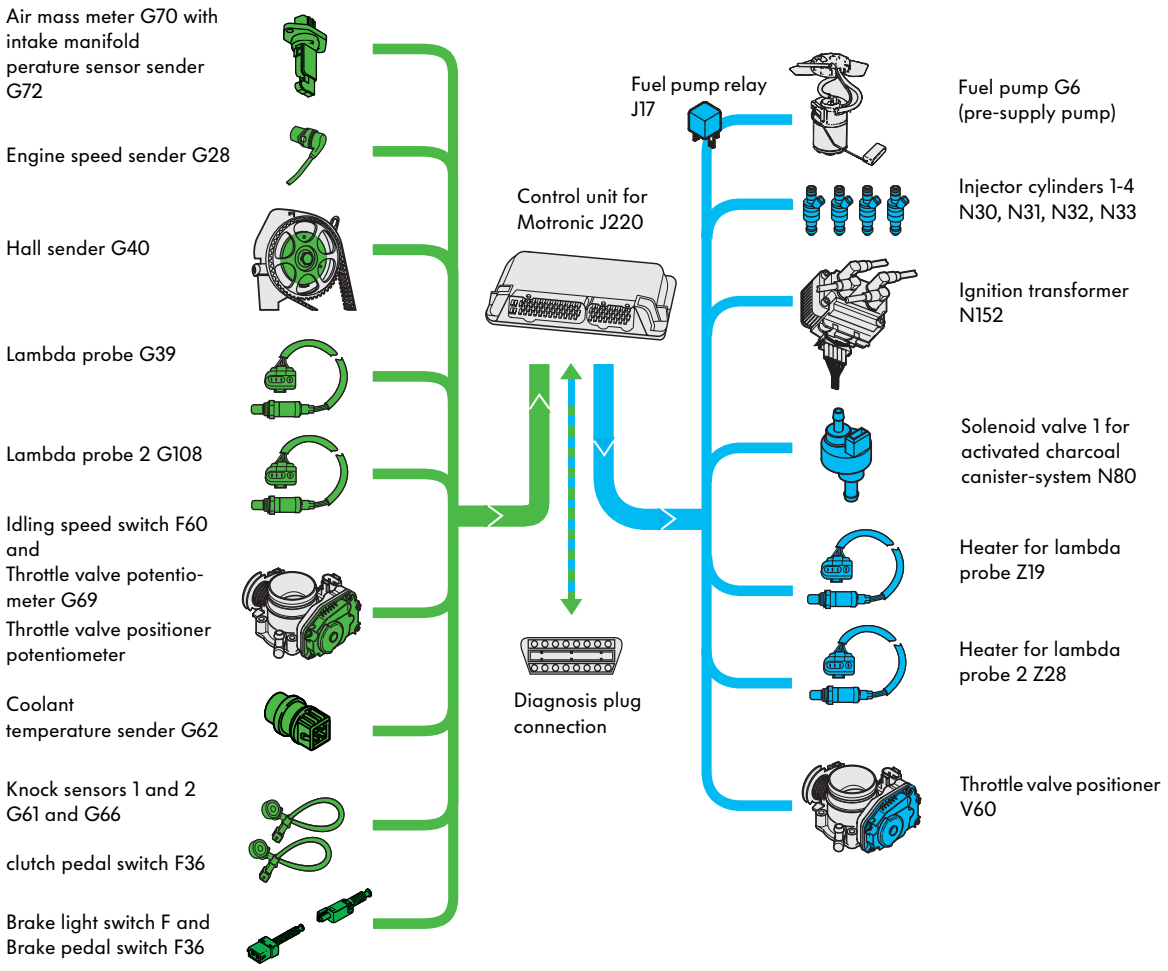
211/030

Engines

Motronic 5.9.2

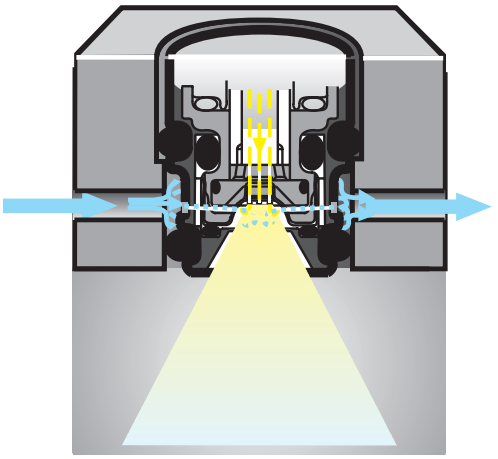
The Motronic 5.9.2 has a string of features which facilitate engine starting, improve fuel economy and reduce exhaust emission.
These include:

- Hall sender configured as a quick-start sender
- Distributorless electronic ignition
- Air mass meter with reverse flow recognition and integrated intake air temperature sensor
- yActivation of cruise control system via the throttle valve control unit.



Air-swept injectors

The vacuum in the intake manifold draws in air from the intake air duct and conveys the air to the individual injectors along a line.
The fuel is atomised completely by this.
Combustion is improved and exhaust emissions are reduced.



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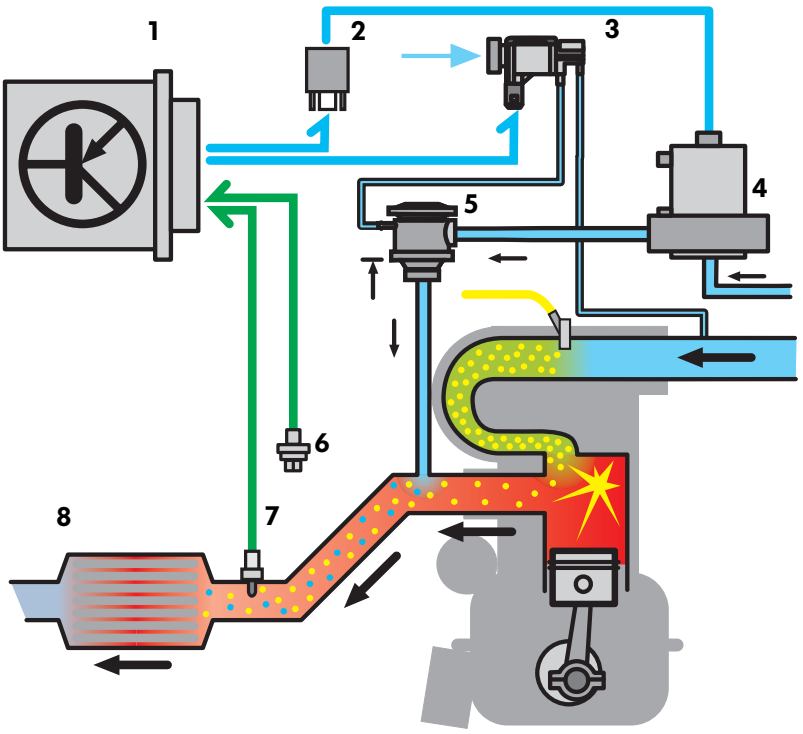
Secondary air system

A condition for low contaminant emissions during the warm-up phase is that the catalytic converter reaches a high operating temperature quickly.
Secondary air injection accelerates the rate of catalytic converter temperature rise considerably.

The secondary air pump blows air behind the exhaust valve. The air surplus oxidises (burns) the hydrocarbons and the carbon monoxide, and the catalytic converter reaches its operating temperature.



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Legend:

1 Control unit
2 Relay for secondary air pump
3 Secondary air injection valve
4 Secondary air pump
5 Combi valve
6 Coolant temperature sender
7 Lambda probe
8 Catalytic converter

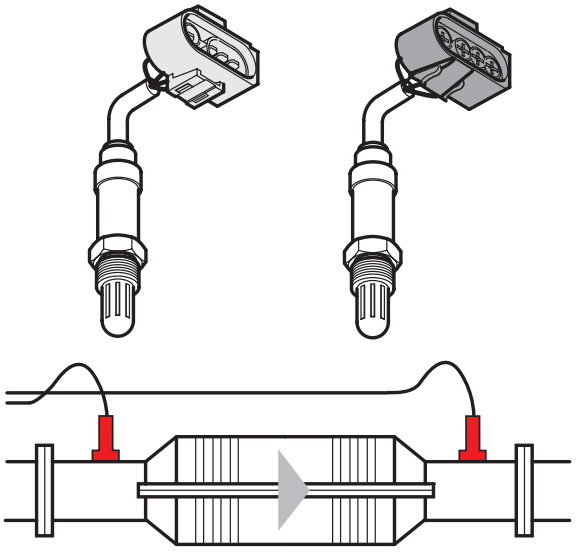
Engines

2nd lambda probe

A 2nd lambda probe is integrated in the exhaust system downstream of the catalytic converter. It checks the degree of conversion (a measure of the cleaning efficiency of the catalytic converter).

The engine control unit compares the probe voltage of the probes located upstream and downstream of the catalytic converter. If the ratio parameter deviates from the setpoint, the engine management system assumes that a malfunction has occurred in the catalytic converter.

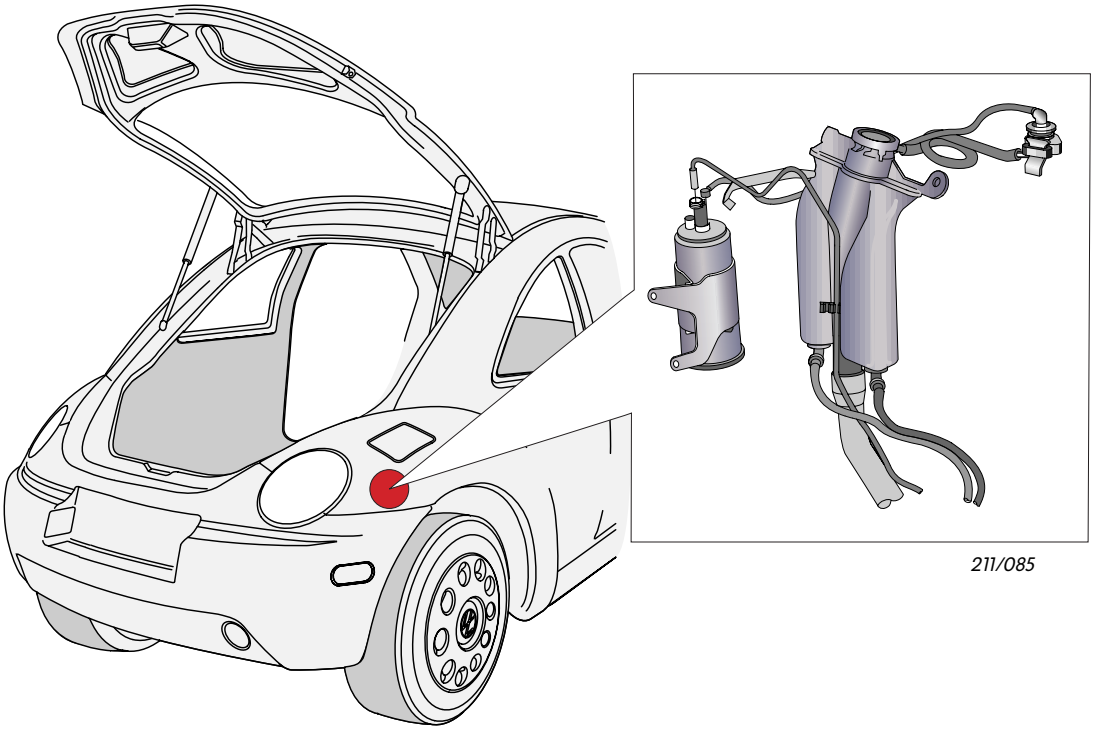
The engine control unit then saves a fault message to the fault memory.



211/071

Fuel tank purging system

The activated charcoal canister is not located in the Front right wheel housing, as in other VW models, but behind the wheel housing liner under the rear right wing. The activated charcoal system is technically the same as the system fitted to the Golf 4.

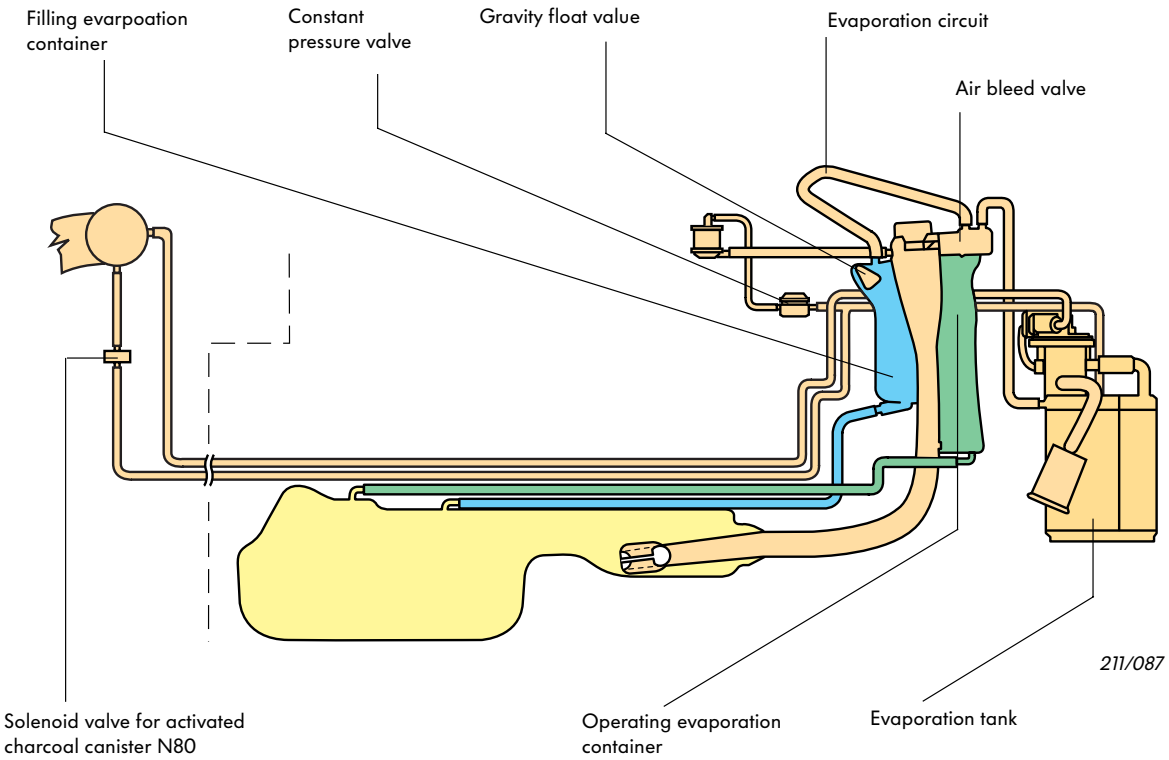


211/085

Fuel evaporation system for USA

The US version of the New Beetle has a fuel evaporation system which complies with the stringent US laws.
The evaporation system can be checked for leaks and throughflow characteristics with the aid of the leak detector pump.
Since the fuel evaporation control system is mechanical, no additional on-board diagnostic capabilities are required to check the system and clear problems.

The operation evaporation container holds the fuel vapours which are given off during normal vehicle operation. The filling evaporation container retains these fuel vapours as well as the large volumes of air displaced from the fuel tank (during refuelling operation).

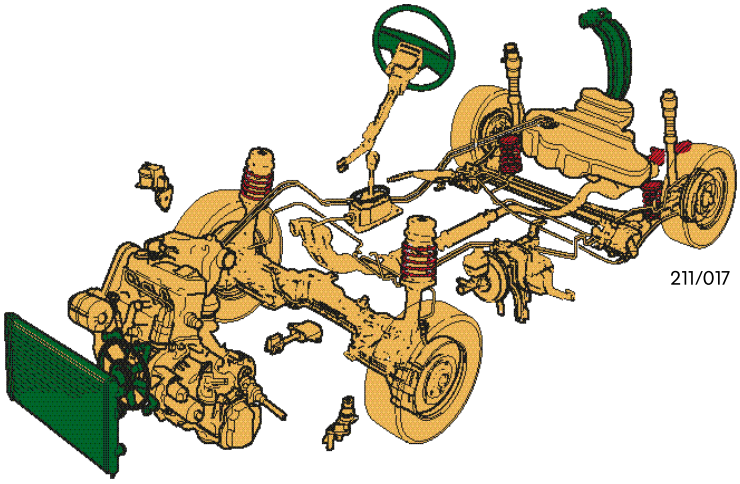


Running gear

General information

Thanks to the large wheels and long wheelbase, the New Beetle offers an excellent ride.

The tried and tested axle construction also provides effective anti-interference. As a result, the vehicle has large safety reserves and holds the road safely.



211/017

Basis (platform)

New part

Adaptable part

The front axle ...

is based on a proven principle: McPherson strut axle with wishbones.

211/058

Details:

- The anti-roll bar is connected to the track control arms by means of coupling rods.
- The suspension strut is inserted in the wheel bearing housing and clamped by a bolt.
- Wheel bearing housing is made of cast iron with a high graphite content. As a result, no lubricant is required to install a wheel bearing.