ŠKODA OCTAVIA

Information on the Engineering

Self Study Programme

SP15-1

A name with tradition -
modern automotive engineering.

The **OCTAVIA** moves SKODA car manufacture, so rich in tradition, into the mid-class vehicle range.
The automotive engineering makes use of proven Group components.

Contents

You can find information regarding inspection and maintenance, setting and repair instructions in the Workshop Manuals.

An initial overview

Versions available								
	LX		GLX			SLX		
Engine dis-placement kW	1.6 l 55	1.9 l 50	1.6 l 55	1.6 l 74	1.9 l 50	1.6 l 74	1.8 l 92	1.9 l 66

Note:
Optional equipment can only be factory-fitted!
Individual retrofitting of options is technically complicated.

The Engineering of the OCTAVIA

- All-galvanized safety body with side impact protection
- Windscreen and rear window flush-bonded to body
- Recirculating air mode with automatic cutout, pollen filter
- 5-speed manual gearbox
- Optional 4-speed automatic gearbox with the more powerful engines
- Front independent suspension (McPherson strut with wishbone arm)
- Rear trailing arm torsion beam axle
- Front disc brakes, rear drum brakes (rear disc brakes with certain engines)
- 14" or 15" wheels (depending on engine)
- Passenger and driver airbag
- Power-assisted steering
- Driver's seat adjustable for height
- Safety steering column, adjustable fore and aft and for height
- Steering wheel lock with slip coupling
- Central locking, Bosch CAN bus system and radio remote control
- Electronic immobiliser
- H4 headlights with integrated fog lights
- Centre high-mounted brake light

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Optional equipment

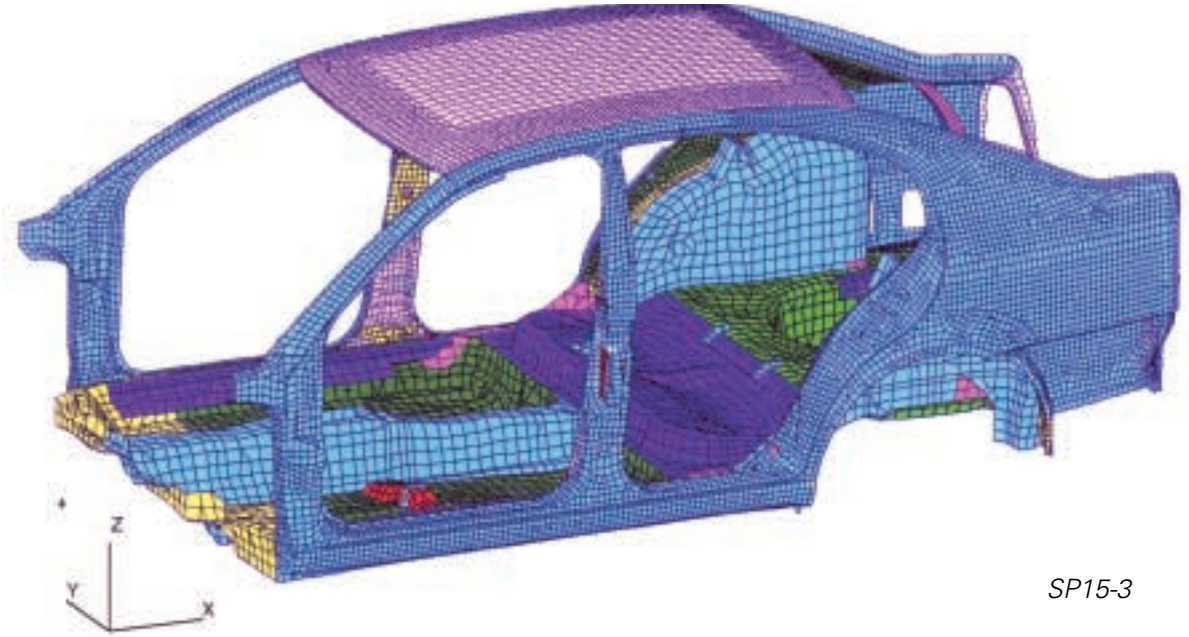
– Seat belt tensioners
– ABS or ABS with EDL
– Radio preinstallation
– Radio/cassette
  incl. 4 or 8 speakers
– Rear window wiper
– Front/rear power windows
– Passenger's seat adjustable for height
– Heated front seats
– Anti-theft alarm
– Power operated door mirrors
– Power operated glass sliding roof

Technical data of vehicle

Length	4511	mm
Width	1731	mm
Height	1429	mm
Wheelbase	2512	mm
Front track	1516	mm
Rear track	1492	mm
No. of seats	5	
Unladen weight	1160 - 1345 depending on equipment	kg

The body structure

The aim of the design work on the OCTAVIA was to produce a protective body structure.



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The FEM = Finite Element Method (computer model in which the body is broken down into minute geometry elements such as rectangles or triangles) was used to process and calculate the body structure for crash analysis.

This made it possible to take full account of the following important aspects as early as the development phase

- compliance with all existing safety regulations applicable.
- ompliance with likely safety regulations, for example crash against a moving barrier as is proposed from the year 2000 on.

A further development goal was to ensure that no major parts such as the bonnet, side members, rear doors suffer damage during low-speed crashes - up to 15 km with overlap.

Satisfying these requirements is relevant for the car´s classification in the insurance class.
The OCTAVIA has successfully achieved a very good classification.

One of the design features which contributes to this is a specified front crumple zone at the side members.
The occupants are protected, the deformation is absorbed by the front members and the remaining side members do not suffer any damage.

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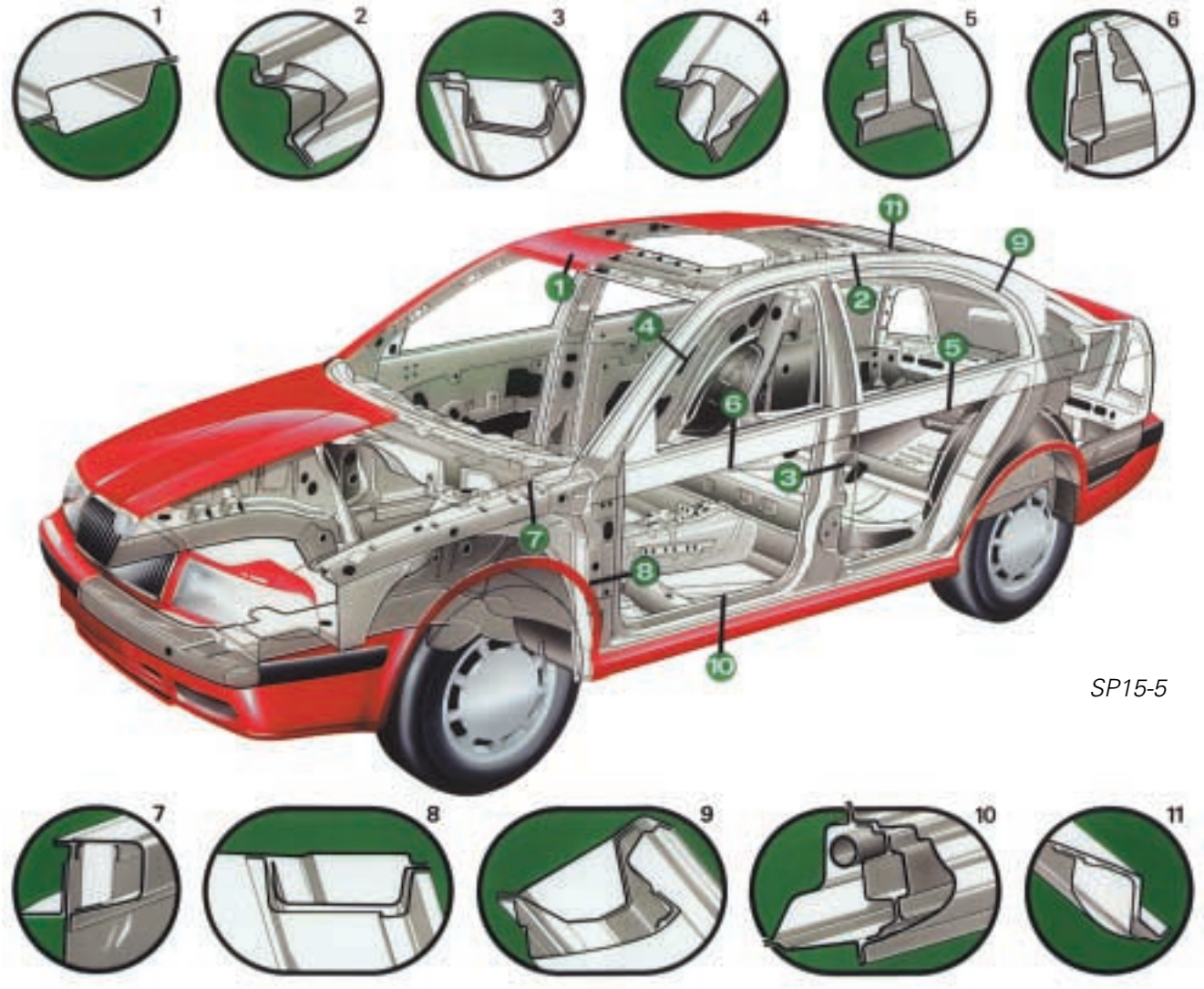
Specified deformation of the side member



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The computer model made it possible to acquire valuable knowledge regarding the body cross sections as early as the development phase.
These have been optimised in respect of their safety features and the materials used and form the torsionally-stiff passenger cell.

Highlights of the body structure

- front side member structure extending as far as the middle of the body
- front side members designed on the "crumple principle" (specified buckling point)
- cross member in the footwell for conducting the forces incurred in a side impact
- side and cross members in the rear area
- wide B pillars at the point where they connect with the sills
- tubular stiffeners in the side sills (as a protection in a side impact)
- recessed rain runnels
- large, well-rounded exterior body parts
- mooth body line from bonnet over windscreen to roof

Vehicle Safety

OCTAVIA Safety Body

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Safety legislation

The OCTAVIA not only surpasses all present safety standards but already satisfies intended legislation which exists only as a recommendation or draft.

Safety cell

A rigid passenger (safety) cell ensures that the car occupants are provided with a survival space which does not deform.
Pillars integrated into the roof frame and lower sill, special impact members (side protection) in the doors and additional stiffening at the window waist rails of the doors ensure safety even in the event of side collisions.

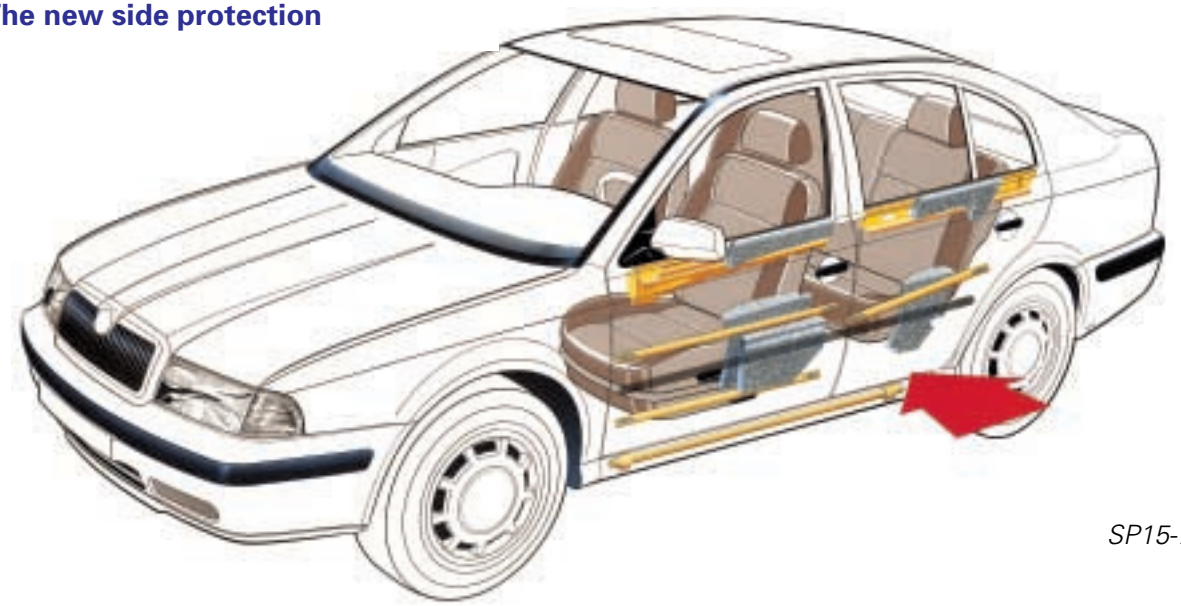
Deformation zones

Defined crumple zones at the front and rear which deform gently ensure the lowest possible deceleration without any extreme peak values in the level of stresses to which occupants are subjected when wearing their seat belts. The side members crumple with defined buckling during an impact.

Flush-bonded windows

Windscreen and rear window are flush-bonded to the body which increases the dynamic stability of the body - an important factor in the event of a rollover.

The new side protection



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The measures listed below have been incorporated to offer the occupant side protection in the event of a side impact:

- wide sheet sections below the window line stiffen the doors
- reinforcing tubes in the middle area of the door are capable of absorbing particularly high forces by virtue of their cross section
- tubular reinforcement in the side sills
- foam-filled side impact absorbing elements in the doors for the pelvis and rib area which move the occupants away from the hard outer parts.

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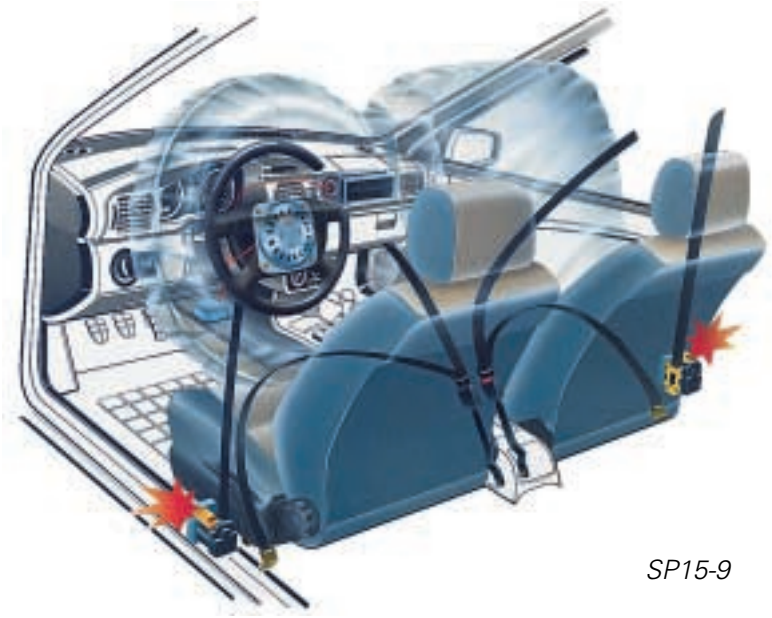
The SKODA OCTAVIA after a "frontal crash" test

Crash tests are the practical confirmation of the computer-aided body design.
They are the starting point for type approval of the vehicle in conformity with internationally valid safety standards.

Vehicle Safety

Passive safety features



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In addition to the design measures relating to the strength and information characteristics of the body, further influencing factors in respect of passive safety ("All measures which are capable of preventing or minimizing the consequences of accidents") have been implemented in the OCTAVIA.

Safety steering column	–	telescopes in the event of a crash, providing additional large unrestricted area from the cross panel to the universal joint shaft of the steering.
Steering wheel	–	adjustable fore and aft and for height No relevant intrusion into the interior in the event of a crash; if the airbag is triggered, the protection which it offers is not impaired.
Airbag	–	Driver airbag with volume of 65 litres Passenger airbag with volume of 90 litres Control unit on centre tunnel, as on the FELICIA. Activated in the event of a collision at a speed of more than 20.5 km/h.
Three-point seat belt	–	with height adjustment and seat belt tensioner on front seats (with optional airbag)
Head restraints	–	front restraints adjustable for height and angle rear restraints adjustable for height
Seats	–	with high level of lateral stiffness with impact-absorbing plate in the backrest of the front seats to protect the driver's and front passenger's backs from possible injury from the rear passenger's knees in the event of an accident.
Luggage compartment	–	with bulkhead as a protection for the occupants
Subframe	–	with specified buckling point

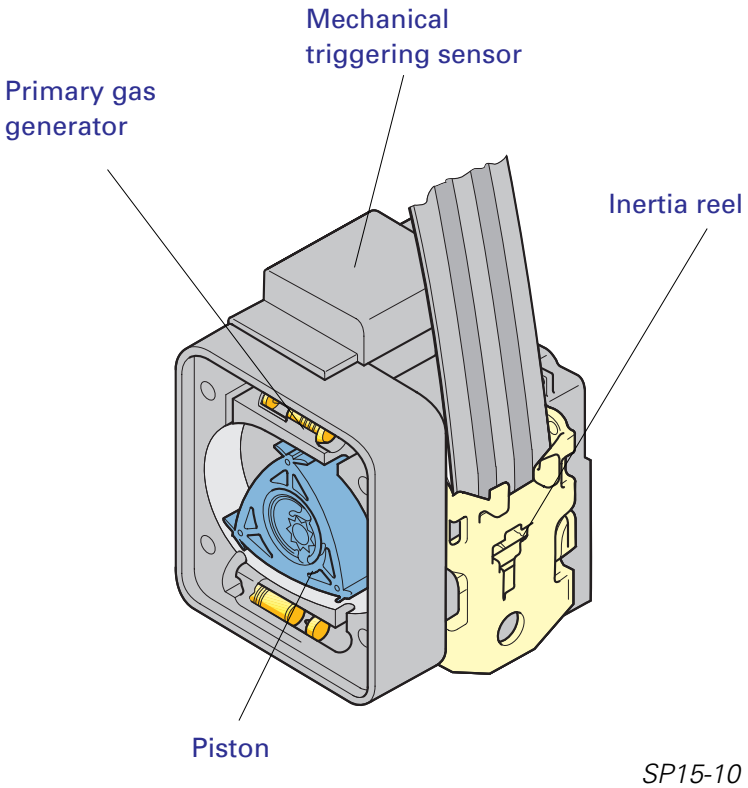
The OCTAVIA fully complies with all safety standards relating to such components.

Front seat belt tensioners (rotary piston tensioner)

New !

Design

The seat belt tensioner operates on the rotary piston principle with 3 working chambers.
Seat belt tensioner and the inertia reel form a compact component.
The installation point is the familiar location for the inertia reel seat belt at the bottom of the B pillar.
The seat belt tensioner system is activated by a mechanical sensor, which is integrated in the seat belt tensioner, as a function of the deceleration in the event of a collision.



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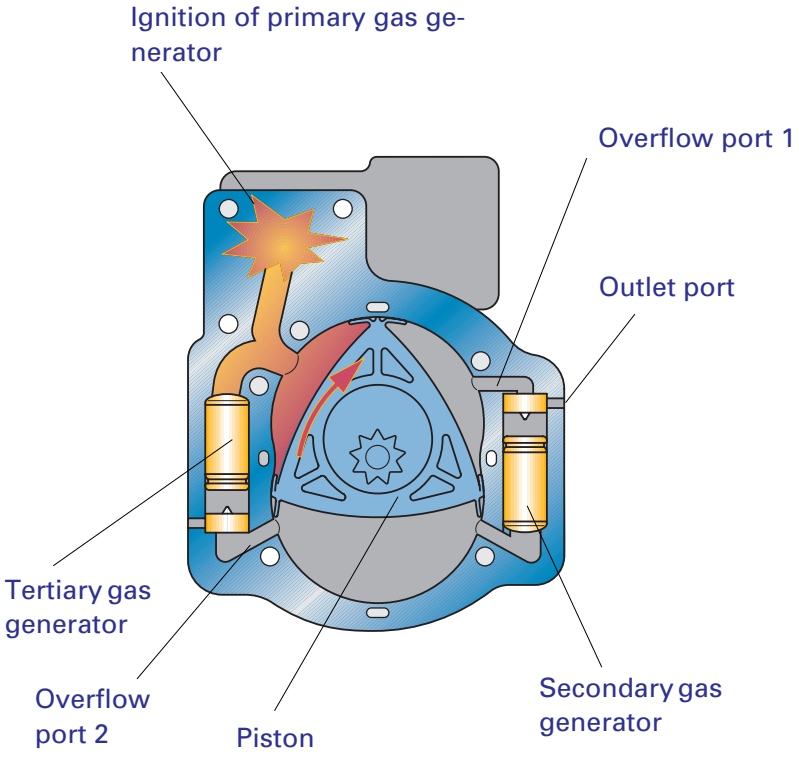
Operating principle

- The mechanical sensor mecha nism ignites the primary gas generator with an impact bolt and impact igniter.
- The expanding gas in the first working chamber causes the piston to rotate.
- Once the overflow/outlet port 1 has been reached, the working pressure which exists from the first chamber ignites the secondary gas generator by means of an impact pin.
  The piston is rotated further as a result of the new propellant charge.
- Further pressure ignition occur when the other overflow/outlet ports are reached (tertiary gas generator).
- The seat belt is tensioned by up to 120 mm within 13 ms.



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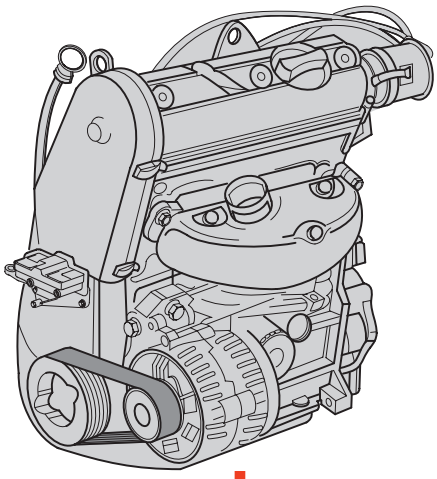
Note:
Do not open seat belt tensioner after it has been activated!

Engine/Gearbox Combinations

Engine range	EA 111	EA 188
Engine code letter	AEE	AGP
Displacement	1598 cm^3	1896 cm^3
Output	55 kW/75 PS	50 kW/68 PS
Engine management	Magneti Marelli 1 AV	Direct injection, SDI, electronically controlled distributor injection pump



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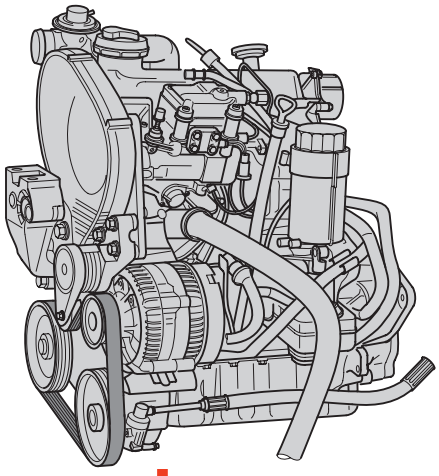

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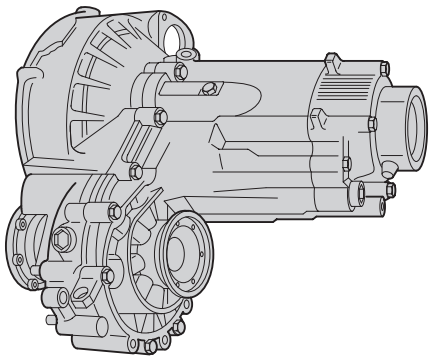

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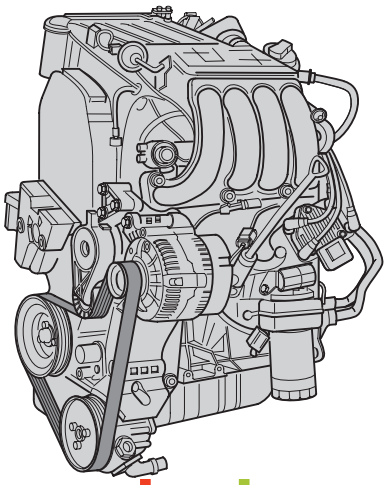
5-speed manual gearbox
02K

EA 113	EA 113	EA 188
AEH	AGN	AGR
1595 cm^3	1781 cm^3	1896 cm^3
74 kW/100 PS	92 kW/125 PS	66 kW/90 PS
Simos 2	Bosch-Motronic M 3.8.2	Direct injection, TDI, electronically controlled distributor injection pump



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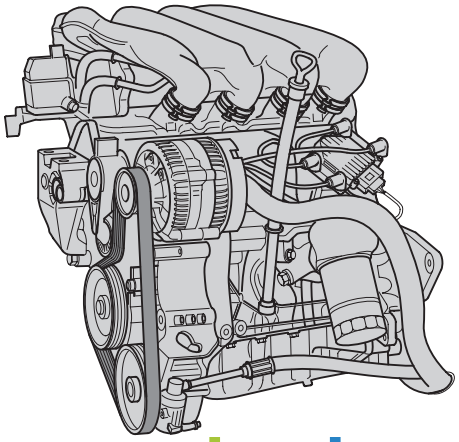

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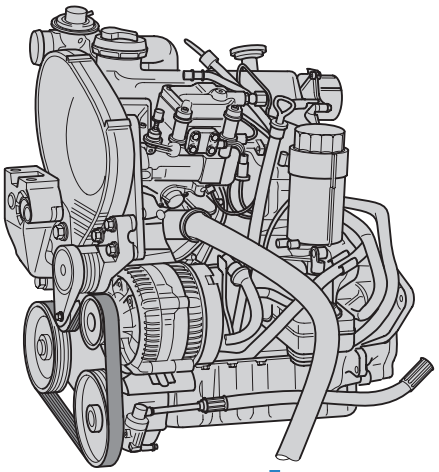

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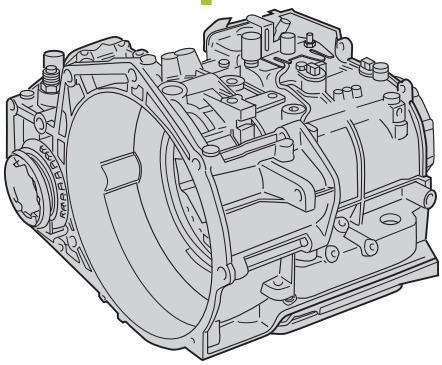

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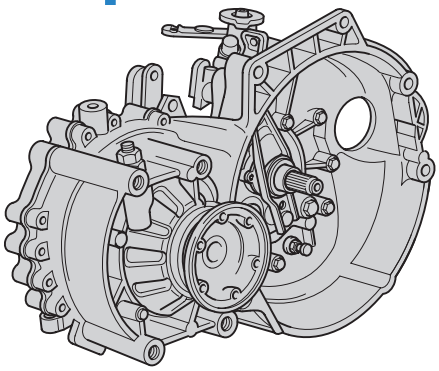
4-speed automatic gearbox
01M



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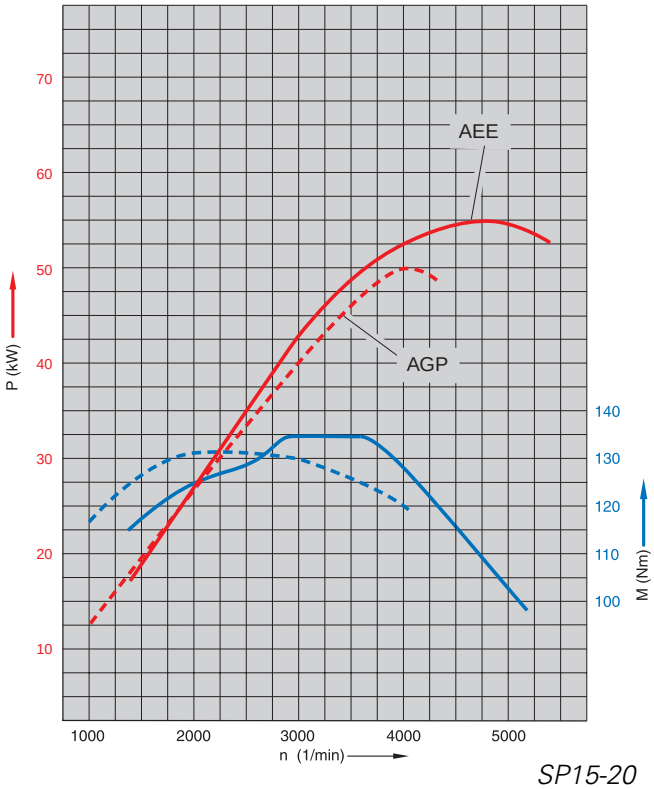
5-speed manual gearbox
02J

Engine characteristic curves



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1.6-ltr. AEE

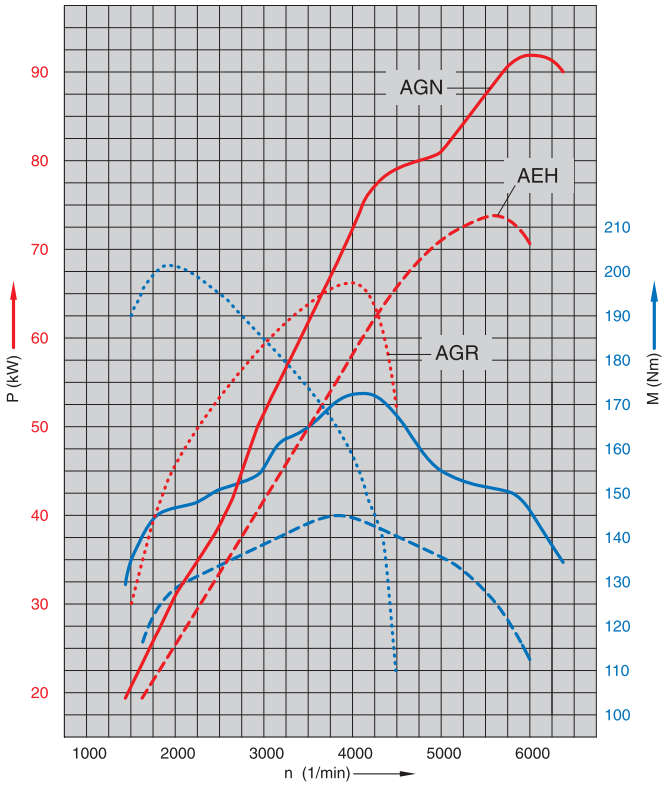
The 1.6-ltr. petrol engine produces its maximum output of 55 kW/75 HP at a speed of 4800 rpm. It reaches its maximum torque of 135 Nm at 3200 rpm.

A torque of at least 120 Nm is available in the range from 2000 up to 4300 rpm.

1.9-ltr. AGP

The 1.9-ltr. SDI engine has a maximum output of 50 kW/68 HP at a speed of 4000 rpm.

It produces its maximum torque of 130 Nm at 1800 rpm.



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P = Output
M = Torque
n = Engine speed

1.6-ltr. AEH

The 1.6-ltr. petrol engine achieves an output of 74 kW/100 HP at a speed of 5800 rpm.
It produces its maximum torque of 145 Nm at 3800 rpm.

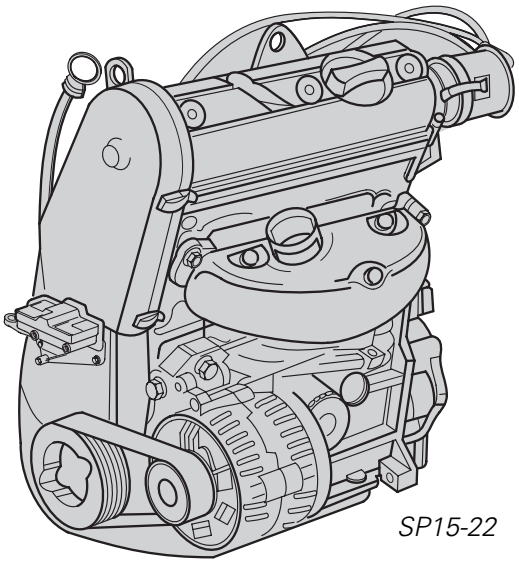
1.8-ltr. AGN

The 1.8-ltr. petrol engine produces its maximum output of 92 kW/125 HP at a speed of 5900 rpm.
It achieves its maximum torque of 173 Nm at 3900 rpm.

1.9-ltr. AGR

The 1.9-ltr. TDI engine achieves its maximum output of 66 kW/90 HP at a speed of 4000 rpm.
It produces its maximum torque of 202 Nm at a speed of 1900 rpm.

1.6-ltr. petrol engine AEE



SP15-22

This engine will already be familiar to you from the FELICIA.

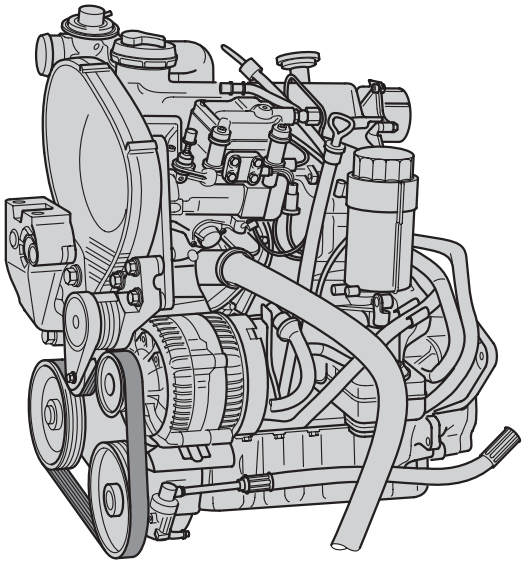
The intermediate plate between engine and gearbox is not required in the OCTAVIA, the hole pattern in the engine flange and gearbox flange being identical.

The engine mounting bracket is matched to the new pendulum mounting.

The oil pan is now manufactured from die cast aluminium.

The engine has a new type of clutch.

1.9-ltr. naturally aspirated diesel engine AGP



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The 4-cylinder SDI naturally aspirated diesel engine (engine code AGP) is a new development for transverse mounting.
The air is inducted conventionally, without any turbo boost. Consequently, the designation naturally aspirated diesel.

The direct fuel injection principle is employed, which offers high output levels.

With a piston stroke of 95.5 mm, the engine is a long-stroke design, which coupled with a cylinder bore of 75.5 mm, produces a displacement of 1.9 litres.
The distributor injection pump with electronic control ensures good fuel economy.

The naturally aspirated diesel is identical with the TDI in certain components.

In combination with the emission control system, it surpasses the exhaust limits for direct-injection diesel engines.

The new petrol engines

1.6-ltr. 2-valve AEH

1.8-ltr. 5-valve AGN

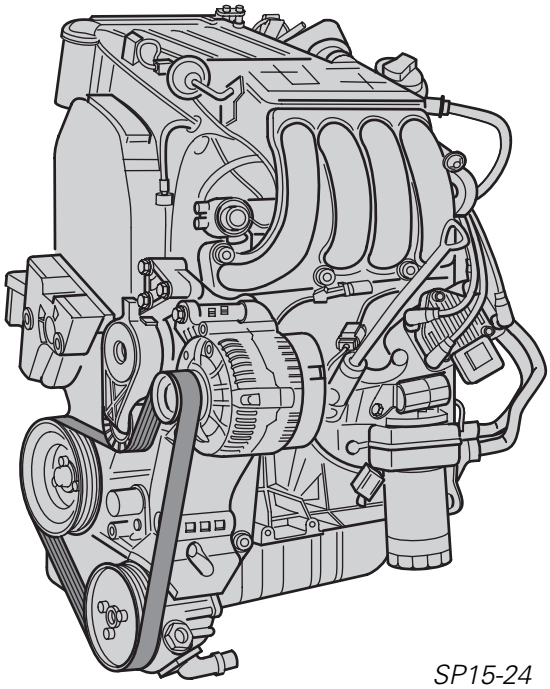
Development goal:
New, powerful engines for transverse mounting, good fuel economy and low emission levels, maximum possible parts commonality.

The two petrol engines have their origin in components of the Group engine range. This engine range EA 113 has been developed from these for the OCTAVIA.

Common features of the range:

- Geometrically identical crankcase, light alloy on 1.6-ltr. engine cast iron on 1.8-ltr. engine.
- Cross-flow cylinder head.
- Oil pump with chain drive, no separate drive shafts required.
- Coolant pump integrated in crankcase, driven by toothed belt.
- Optimised valve gear (valve stem diameter 7 mm, single valve spring) which reduces moved masses.
- Rotorless high-voltage distribution, no drive required for distributor. Crankshaft position detected by sensor at the crankshaft (reference marks), camshaft position detected by phase sensor at camshaft (see section Electrical System).
- Electronic engine management. All engine control units have identical housings with two-part connector.
- Identical ancillary mounts - compact arrangement of ancillaries.

1.6-ltr. petrol engine AEH



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The 1.6-ltr. petrol engine AEH is a new powerful engine with light weight and good fuel economy.
Advanced design details have made it possible to achieve a compact design as is required for transverse mounting in the car.

A further development goal was to surpass legal emission requirements.

The engine features an intake manifold with switchover facility.
The intake manifold is a plastic component.
The intake manifold switchover influences the torque in the lower rpm range, and in the upper rpm range improves output and engine running.

Special features of the 1.6-ltr. AEH

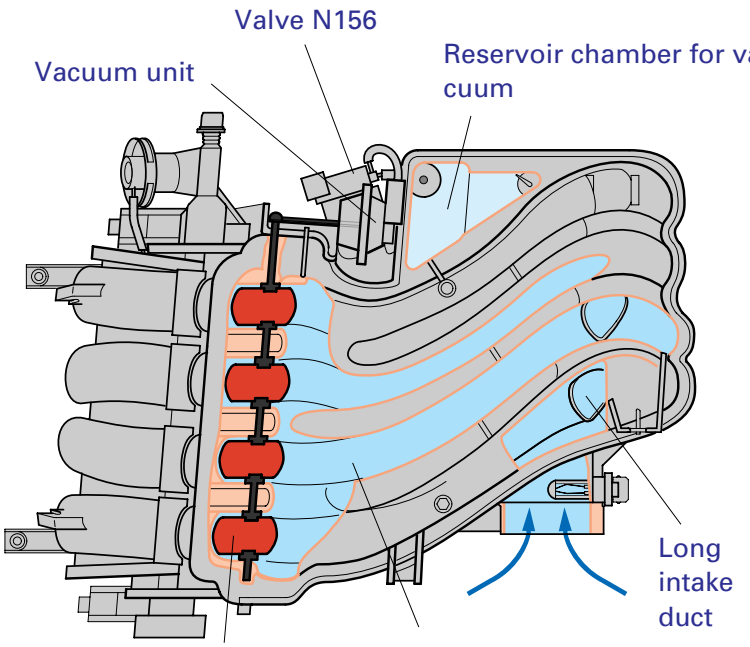
- Light alloy cross-flow cylinder head
- 2 valves for each cylinder
- Light alloy cylinder block with internal breather
- Integrated cast iron contact surfaces in the cylinders, not replaceable
- Simos 2 engine management system with hot film air mass meter
- Coolant pump integrated in housing; no separate housing
- Rotorless high-voltage distribution
- Coated cylinder head gasket made of metal (see also 5-valve engine)

The variable intake manifold of the 1.6-ltr. AEH

Variable intake tracts in the intake manifold make it possible to achieve ideal induction conditions and to have a favourable impact on torque and power output, both for low as well as high engine speed ranges.

Four flaps operating synchronously are controlled in line with the engine map, in other words in accordance with the prevailing engine load and speed conditions, to form long or short intake tracts.
The short intake tract affects engine output while the long tract influences engine torque.

The flaps are vacuum-operated.



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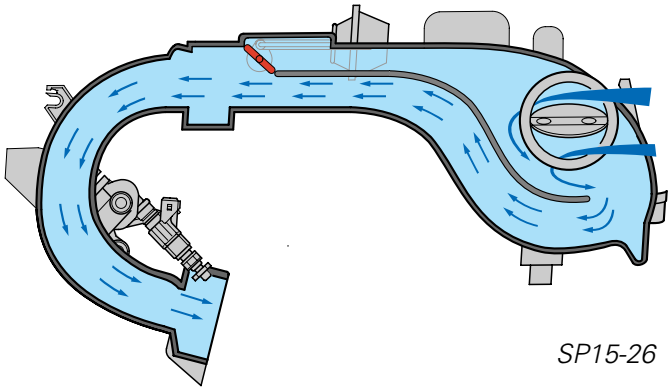
The vacuum is stored in a reservoir chamber. The vacuum reservoir makes it possible to achieve up to 15 switching operations.
This is important, for example for uncontrolled operations of the accelerator pedal, in particular if the car is fitted with an automatic gearbox. The intake manifold changeover valve N156 directs the vacuum to the vacuum unit in line with the actuation of the flaps by the engine control unit. The flaps are operated mechanically.

The flaps which are open when the engine is idling, close when the throttle is operated. The long intake tract – torque tract – is formed.
This produces optimal engine torque.



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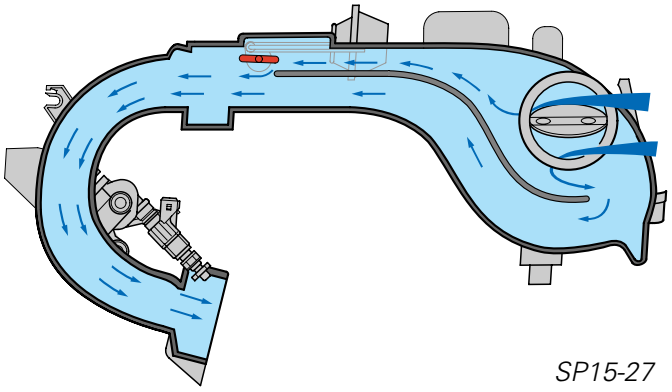
Flaps closed
long intake tract = torque duct

The flaps open again at engine speed of more than 42000 rpm.
The short intake tract – power tract – is now active and the engine is able to provide full power at high revs.

Soft governing of engine speed is activated at 6200 rpm.
The flaps are closed agian for this purpose.



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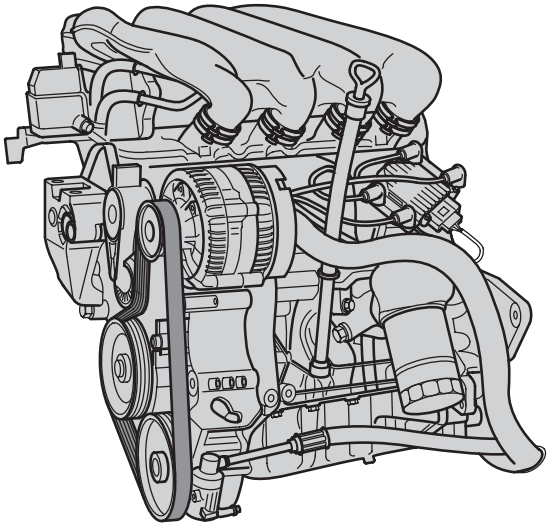
Flaps open
short intake tract = power duct

1.8-ltr. 5-valve petrol engine AGN



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The 1.8-ltr. petrol engine AGN is a powerful engine with light weight and good fuel economy. Advanced design details have made it possible to achieve a compact design as is required for transverse mounting in the car.

A further development goal was to surpass legal emission requirements.

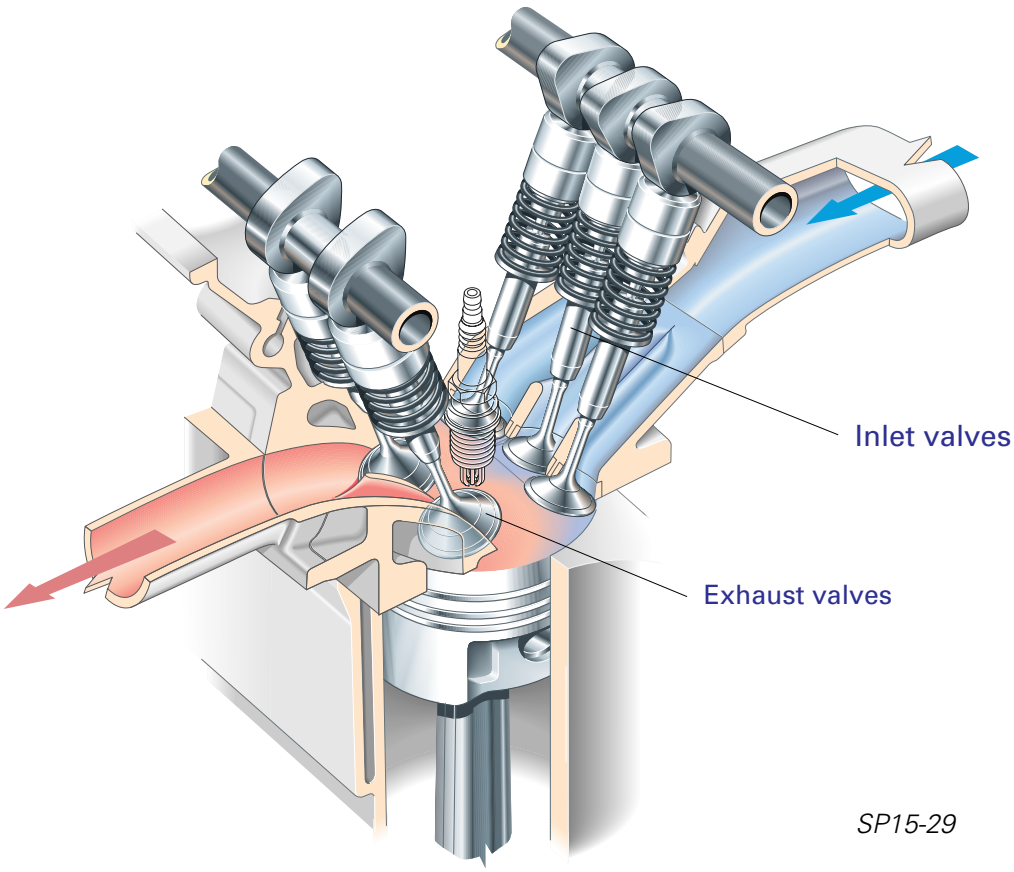
The engine features 2 camshafts with a hydraulic, map-controlled camshaft adjusting device for the inlet camshaft.
The camshaft adjuster influences the overlap of the inlet/exhaust valves and achieves improved cylinder charge.

Special features of the 1.8-ltr. AGN

- Multipoint injection (MPI) mixture formation
- Light alloy cross-flow cylinder head
- 5 valves for each cylinder
- Cast iron cylinder block with combined block head-crankcase breather
- Bosch Motronic M 3.8.2 engine management system with hot film mass air meter
- Coolant pump integrated in housing; no separate housing
- Rotorless high-voltage distribution
- Coated cylinder head gasket made of metal
- Light alloy oil sump
- Resonator between air mass meter and throttle valve for the purpose of eliminating acoustically unpleasant vibrations in certain engine speed ranges

5-valve design

The output of an engine is dependent not only on the displacement and engine speed, but also in particular on how rapidly the charge cycle can be completed.
The power which an engine produces is all the more intensive the more fresh gas is able to flow into the combustion chamber within the identical unit of time.
The 5-valve design makes it possible to achieve a high power output with a small displacement engine while adjusting the camshaft of the inlet valves optimises the volumetric efficiency and the torque curve of the engine.
The engine has three inlet and two exhaust valves which offer a large flow cross section. The inlet and exhaust valves are each controlled by a camshaft.



The advantages of the 5-valve design

– High power output with small displacement.

– Good fuel economy as a result of high engine efficiency.

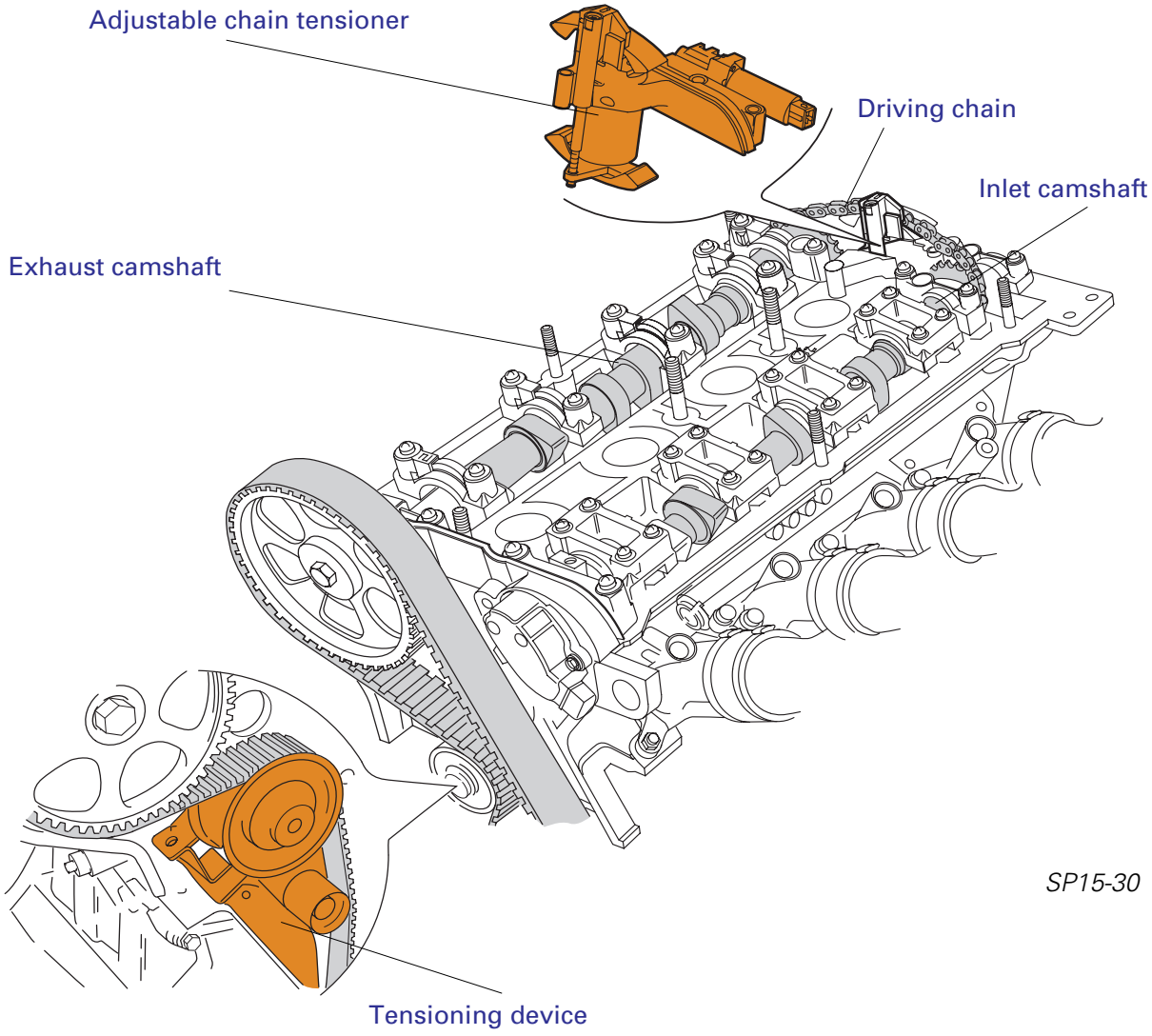
– Good torque characteristics and high pulling power.

– Compact design and low engine weight.

– Pleasant engine acoustics and smooth running as a result of low combustion noise level.

Valve gear of the 5-valve engine

The five valves are operated by the two camshafts directly by means of hydraulic bucket tappets. The inlet camshaft controls three valves at each cylinder. The exhaust camshaft controls two valves.
The exhaust camshaft is crankshaft-driven by means of a toothed belt.
It in turn drives the inlet camshaft by means of a chain.
This driving chain is maintained at the correct tension by the adjustable chain tensioner (camshaft adjusting device).



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The toothed belt for the camshaft drive is tensioned automatically by a tensioning device.

Camshaft adjustment of 5-valve engine

The camshaft adjuster makes it possible to achieve improved volumetric efficiency in the engine and to optimise the power output curve (high torque and good elasticity at low rpm). The timing and minimal overlap of the opening of the inlet and exhaust valves are critical elements for influencing the gas cycle operations.

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The adjustable chain tensioner operates hydraulically, pressure being supplied by the engine oil pump. The hydraulic cylinder moves the driving chain in its path on the basis of signals supplied by the engine management system to the camshaft adjuster solenoid valve.

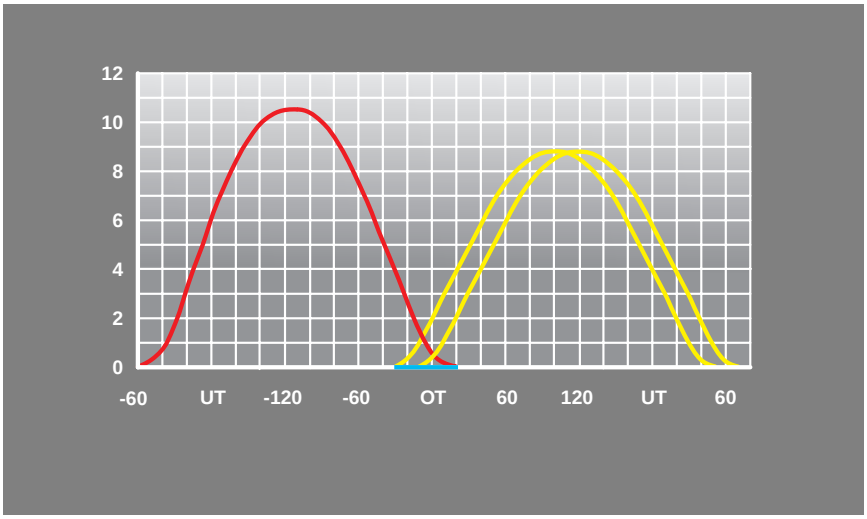
The length of the chain at the one side is enlarged between the two driving gears of the camshafts and simultaneously shortened at the other side.

The result of this is that the inlet camshaft is rotated vis-à-vis the crankshaft-driven exhaust camshaft and the overlap of exhaust valve and inlet valve is thus reduced.

Timing is altered in line with engine speed and load. The appropriate parameters are programmed in the map of the engine control unit.

The effect of the full load-dependent camshaft adjustment is

retarded from 0 up
to 1300 rpm
advanced up to 3600 rpm
retarded from 3600 rpm.

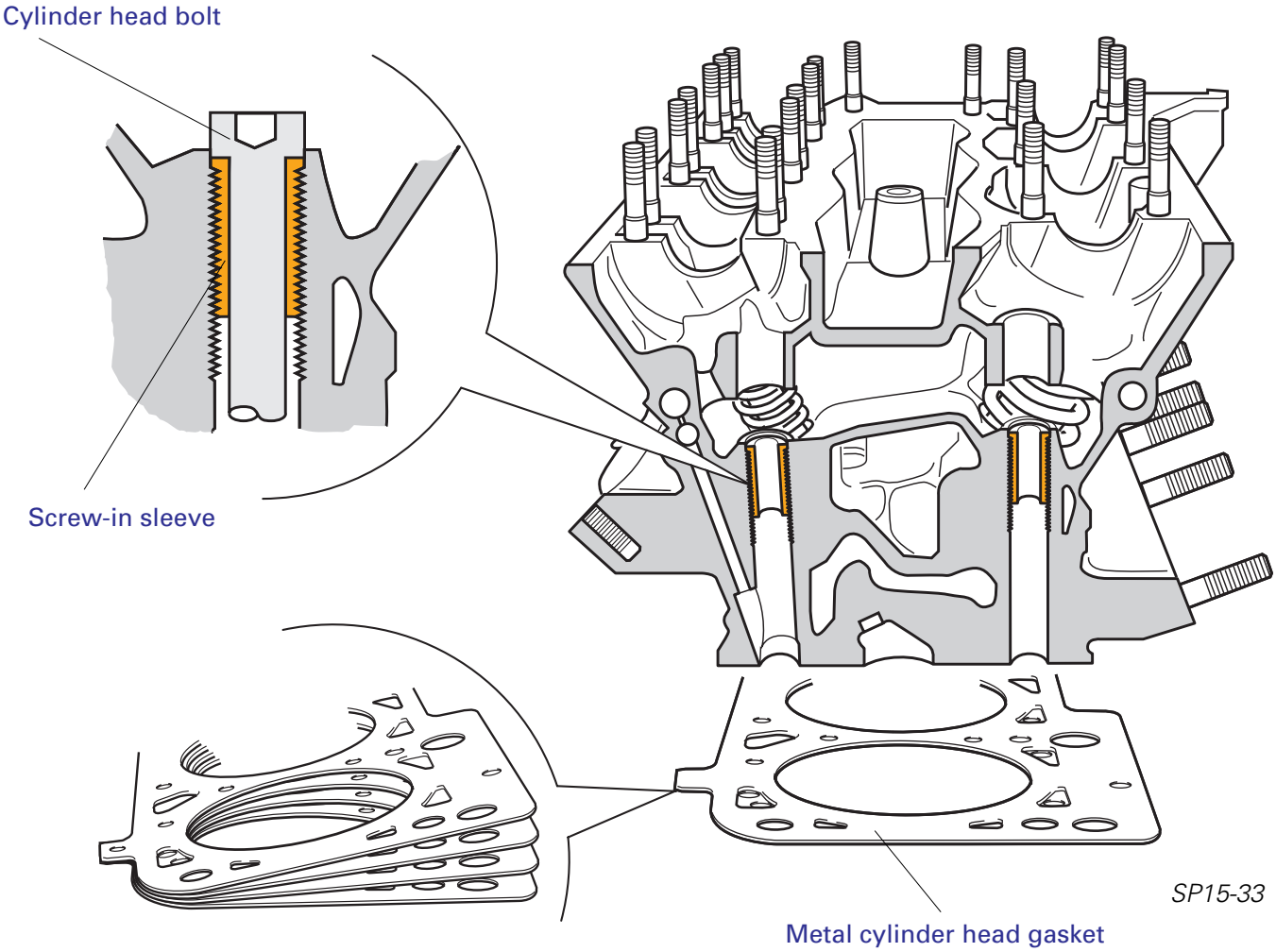


SP15-32

UT= bottom dead centre
OT= top dead centre
= range of overlap

Cylinder head of 5-valve engine

Despite the compact design of this engine, it is possible to remove and insert the cylinder head bolts with the camshafts in place.
To permit this, it was necessary to use cylinder head bolts without large washers.
The pre-stress force is now introduced into the cylinder head by using hardened and tempered screw-in sleeves.
This has a beneficial effect on the settling properties.



The cylinder head gasket is composed of 4 individual metallic layers.
This prevents compression of the gasket.
The sealing surfaces are treated with a special coating in order to ensure good sealing properties.

Note:
Pay attention to the installation position when installing the cylinder head gasket.
The cylinder head bolts do not require to be re-tightened.

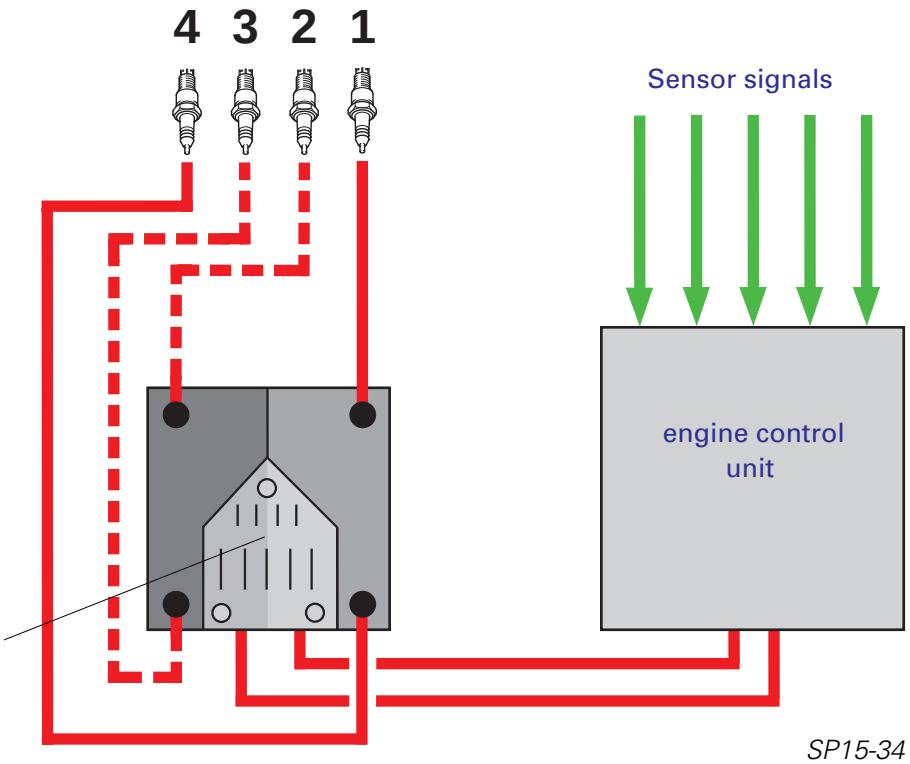
Fully electronic ignition

The 1.6-ltr. AEH and 1.8-ltr. AGN engines are equipped with a fully electronic ignition.
They no longer have any rotating parts for the high-voltage distribution and no distributor is fitted.
Double ignition coils (twin-spark ignition coils) are now used in place of the distributor.

Advantages:

- no rotating parts, no mechanical wear and tear
- reduction in noise level
- reduced number of high-voltage connections and susceptibility to faults
- no mechanical ignition setting

This type of fully electronic ignition is known as a rotorless high-voltage distribution.

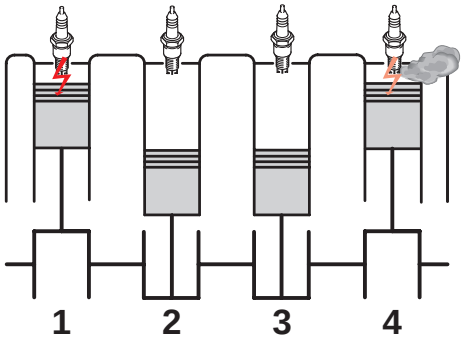


The distributorless ignition system is composed of two double ignition coils in an ignition module.
These are operated alternately each by an ignition output stage.

The double ignition coil produces two ignition sparks simultaneously at the ignition timing point.
Each of the double ignition coils is assigned to the pair of cylinders whose pistons are positioned simultaneously at top dead centre (1 and 4 and 2 and 3, respectively).

Example of the operating principle:

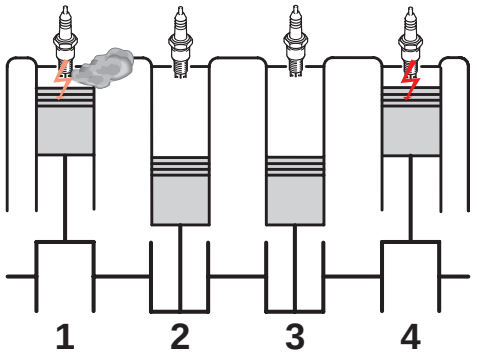
One double ignition coil is assigned to the cylinder pair 1/4, the other to the cylinder pair 2/3.
The entire ignition cycle takes place over 2 revolutions of the crankshaft, in other words over 720°.
In the first part of the cycle, the one ignition spark ignites in the compression stroke of cylinder 1 whereas the other ignites simultaneously as "empty ignition" at the end of the exhaust stroke of cylinder 4.



SP15-35

One revolution of the crankshaft later, cylinder 4 is now in the compression stroke and ignites whereas cylinder 1 ignites empty in the exhaust stroke.

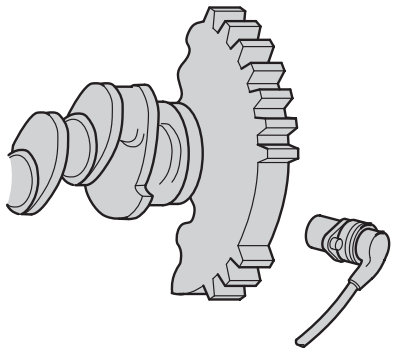
This ignition cycle applies in the same manner to cylinders 2/3, although this occurs at a crankshaft angle offset by 180° compared to cylinder 1.



SP15-36

Top dead centre sensor

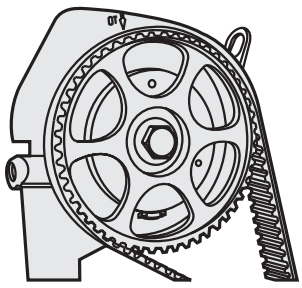
The rotorless high-voltage distribution system requires an electric signal for detecting the top dead centre of cylinder 1+4. A toothed signal ring is attached to the crankshaft.The position of the crankshaft – and also the rotational speed – is detected by an induction sensor at the crankshaft.



SP15-37

Camshaft position sensor

A signal is required from the camshaft in order to detect the camshaft position.
On the 1.6-ltr. engine AEH a Hall sender is attached to the camshaft sprocket for this purpose.
On the 1.8-ltr. engine AGH a Hall sender in a special housing at the cylinder head is attached to the inlet camshaft for this purpose.



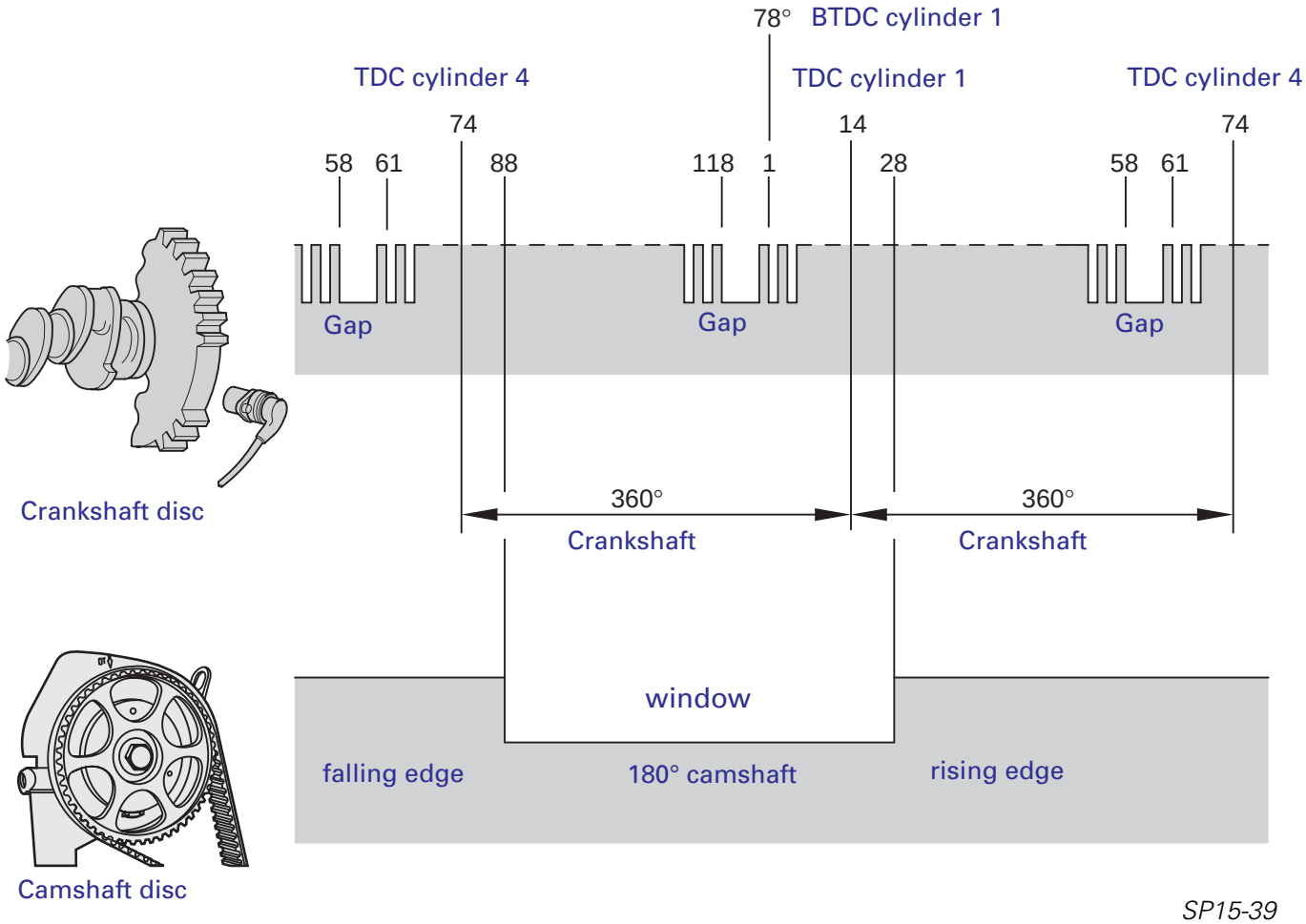
SP15-38

Ignition - Simos 2 engine management (1.6-ltr. AEH)

System functions

The system conducts an angle allocation between crankshaft and camshaft.
The crankshaft signal rotor has 120 teeth with two gaps of 2 teeth for synchronization.
The camshaft plate has a window 180° large.
The element which is analysed is always the falling edge of the tooth after the gap.
Self-diagnosis detects varlations from the specified values.
Start of injection and ignition are computed in line with the sensor signals.

Diagram for detecting crankshaft/camshaft position



SP15-39

Crankshaft disc
The 1st falling tooth edge after the synchronizing gap is positioned at 78° CA before ignition TDC of cylinder 1 and cylinder 4, respectively

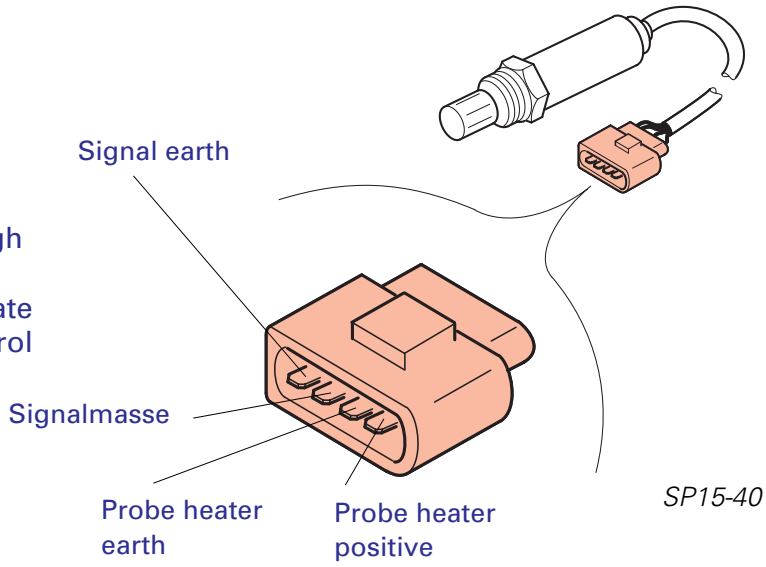
Camshaft disc
The rising edge of the camshaft signal is positioned at the 28th tooth after the window = 14 teeth after ignition TDC of cylinder 1.
The falling edge is located at the 88th tooth after ignition TDC of cylinder 1.

Voltageless lambda probe with defined earth offset

All the petrol engines in the OCTAVIA feature a voltageless lambda probe.

Voltageless means:

The lambda probe is no longer supplied with its earth for the signal voltage through the female thread and thus through the exhaust system but now features a separate earth cable which runs to the engine control unit.



SP15-40

Note:
The voltageless lambda probe is recognizable from the 4-pin connector.

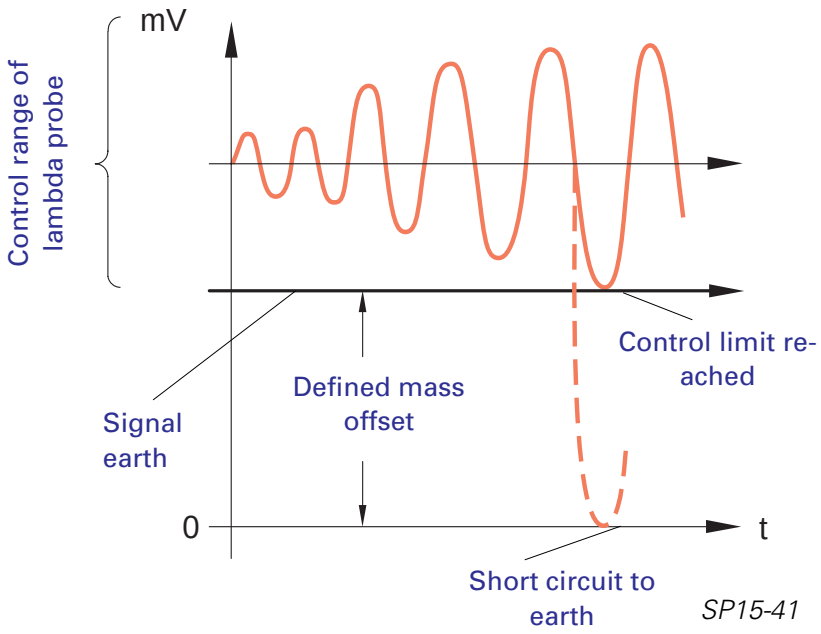
The voltageless lambda probe features a defined mass offset.

Defined mass offset means:

The control range is raised, which corresponds to the defined mass offset.

Advantage:

The self-diagnosis is now capable of distinguishing whether the lambda probe is at the control limit (fault in injection system) or whether a short circuit to earth exists.

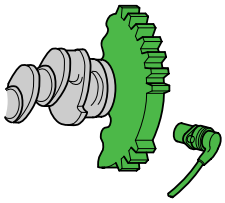


SP15-41

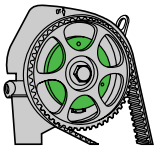
Note:
The earth offset to vehicle earth can only be measured at the 4-pin connector.
The voltage readings of the control range, related to signal earth, are displayed in the measured value block of the self-diagnosis.
The absolute values of the mass offset in mV differ depending on the engine management system, Refer to Workshop Manual.

System overview of 1.6-ltr./1.8-ltr. petrol engines

Engine speed sensor G28 and inductive sensor

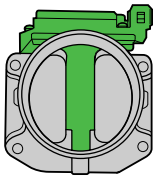


Hall sensor G40
Cylinder 1 *

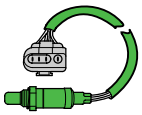


Hall sensor G40
Cylinder 1 **

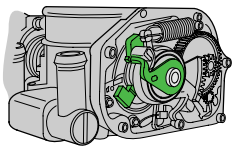
Hot film mass air meter G70



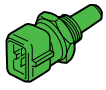
Lambda probe G39



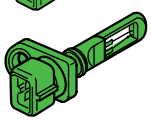
Idling switch F60
Throttle valve positioner potentiometer G88
Throttle valve potentiometer G69



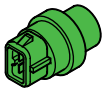
Intake air temperature sensor G42 **



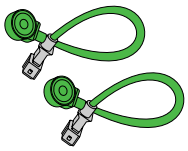
Intake air temperature sensor G42 *



Coolant temperature sensor G62



Knock sensor I G61
Knock sensor II G66 **

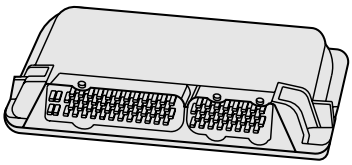


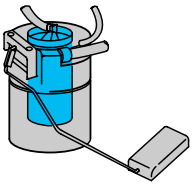
Additional signals

- A/C compressor
- Fan control
- Automatic gearbox

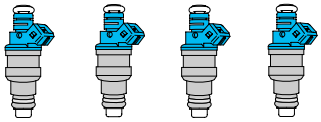
Simos
control unit J361 *

Motronic
control unit J220 **

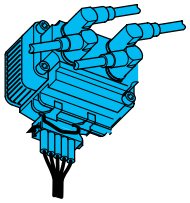




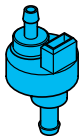
Fuel pump relay J17
Fuel pump G6



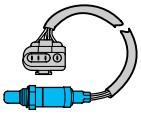
Injectors
N30-N33



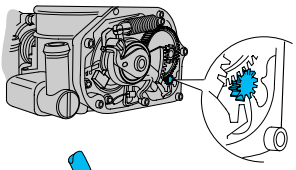
Power output stage N122
with ignition coil 1 N
and ignition coil 2 N128



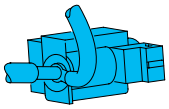
Solenoid valve for
activated charcoal filter N80



Lambda probe heater Z19

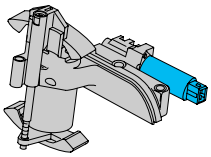


Throttle valve positioner V60



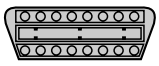
*

Intake manifold changeover
valve N156



**

Camshaft adjustment valve N205



Diagnostic connection T16

- Vehicle speed signal
- Fuel consumption signal
- Throttle valve signal to
  automaticg earbox

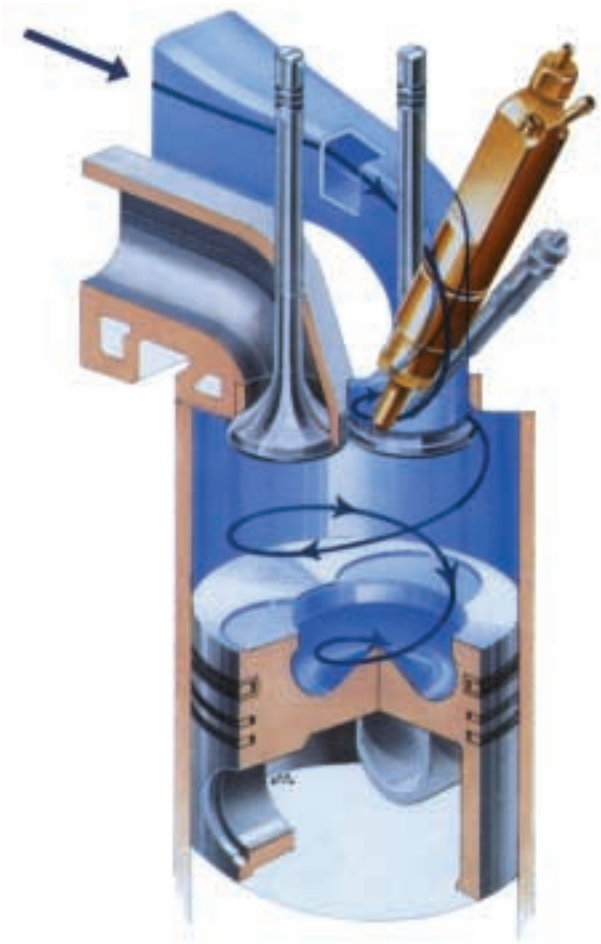
SP15-42

* only for 1.6-ltr.
** only for 1.8-ltr.

1.9-ltr. turbodiesel AGR

The TDI principle

The engine features direct injection, exhaust gas turbocharger with intercooler and electronic diesel control.
The fuel is injected at a high pressure through five nozzles directly into the respective combustion chamber.
The combustion air which has been compressed by the turbocharger and intermediately cooled in the intercooler reaches the combustion chamber through a specially shaped inlet swirl port.
This swirl port, together with the combustion chamber the bowl of which is positioned in the piston crown, has a major influence on the entire combustion cycle of the engine.



SP15-43

5-hole injector

The fuel is injected into the piston bowl in two stages.
It ignites on contact with the hot air.
The two-stage injection principle avoids a sudden pressure rise.

SP15-44

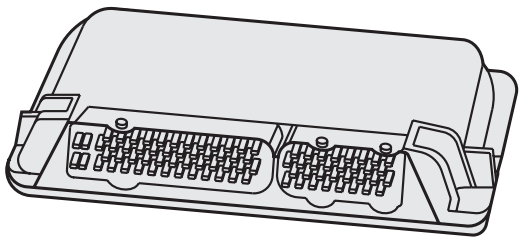
Special features of the 1.9-ltr. TDI

- Bosch VP 37 EDC distributor injection pump with pump pressure of 800 bar
- Electronic diesel control (EDC)
- Exhaust gas recirculation
  Oxidation catalytic converter
  Boost pressure control
- Coolant preheating with electric auxiliary heater
- Alternator freewheeling
- EGR valve in intake manifold
- Valve cover gasket vulcanized in place
- Oil sump with silicone sealant
- Replaceable oil filter in the form of paper cartridge
- Vacuum pump camshaft-driven

Electronic control

To satisfy the high demands in terms of fuel economy and emissions, the quantity of fuel injected and the injection timing are controlled with the aid of the electronic system.

This task is performed by the Electronic Diesel Control (EDC). It determines the quantity of fuel and start of injection of the distributor injection pump, controls the boost pressure, exhaust gas recirculation and the glow period.
On the TDI engine this is the task of the diesel direct injection system control unit J248.



SP15-45

Diesel direct injection system control unit J248

System overview of the electronic control of the TDI

The diesel direct injection system control unit J248 accesses maps and characteristic curves in order to ensure the best possible engine characteristics in respect of available torque, fuel economy and emission levels for every operating situation.

Sensors

Needle lift sensor G80

Engine speed sensor G28

Air mass meter G70

Coolant temperature sensor G62

Intake manifold temperature sensor G72
+ Intake manifold pressure sender G71

Brake light/brake pedal switch F/F47

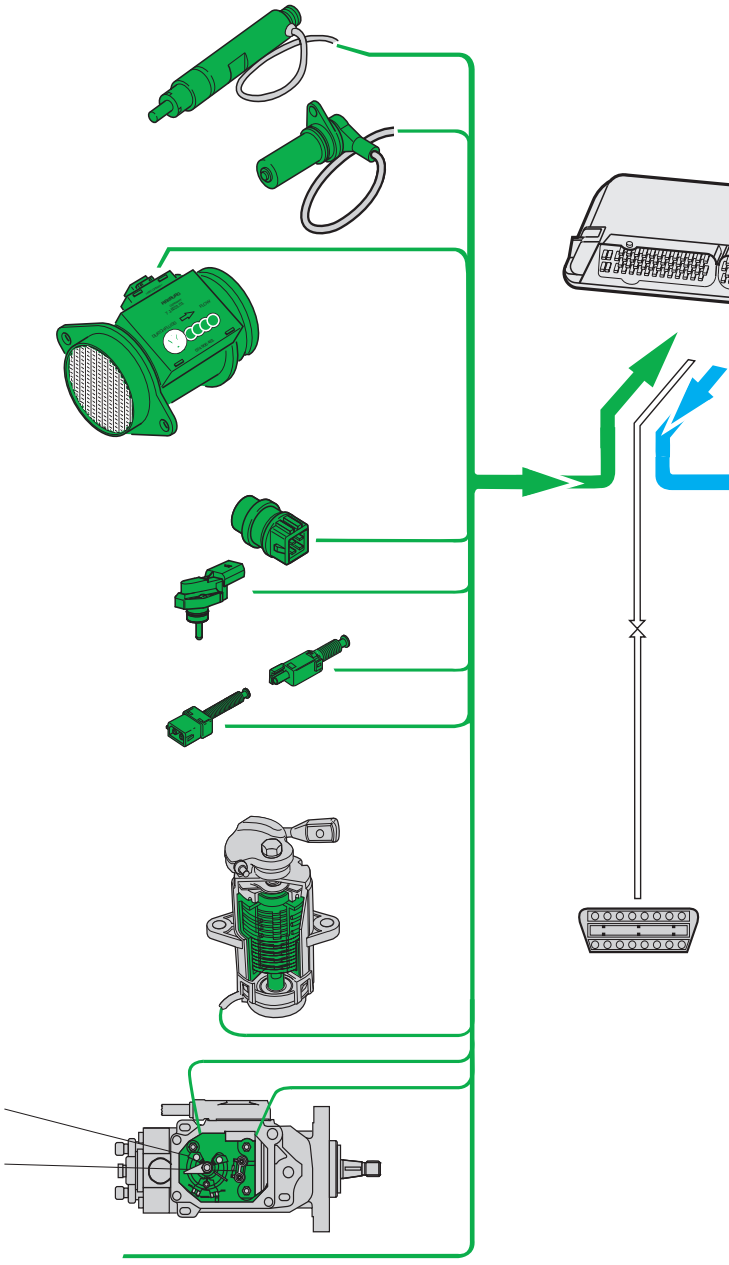
Clutch pedal switch F36

Accelerator pedal position sensor G79
+ Idling switch F60
+ Kick-down switch F8

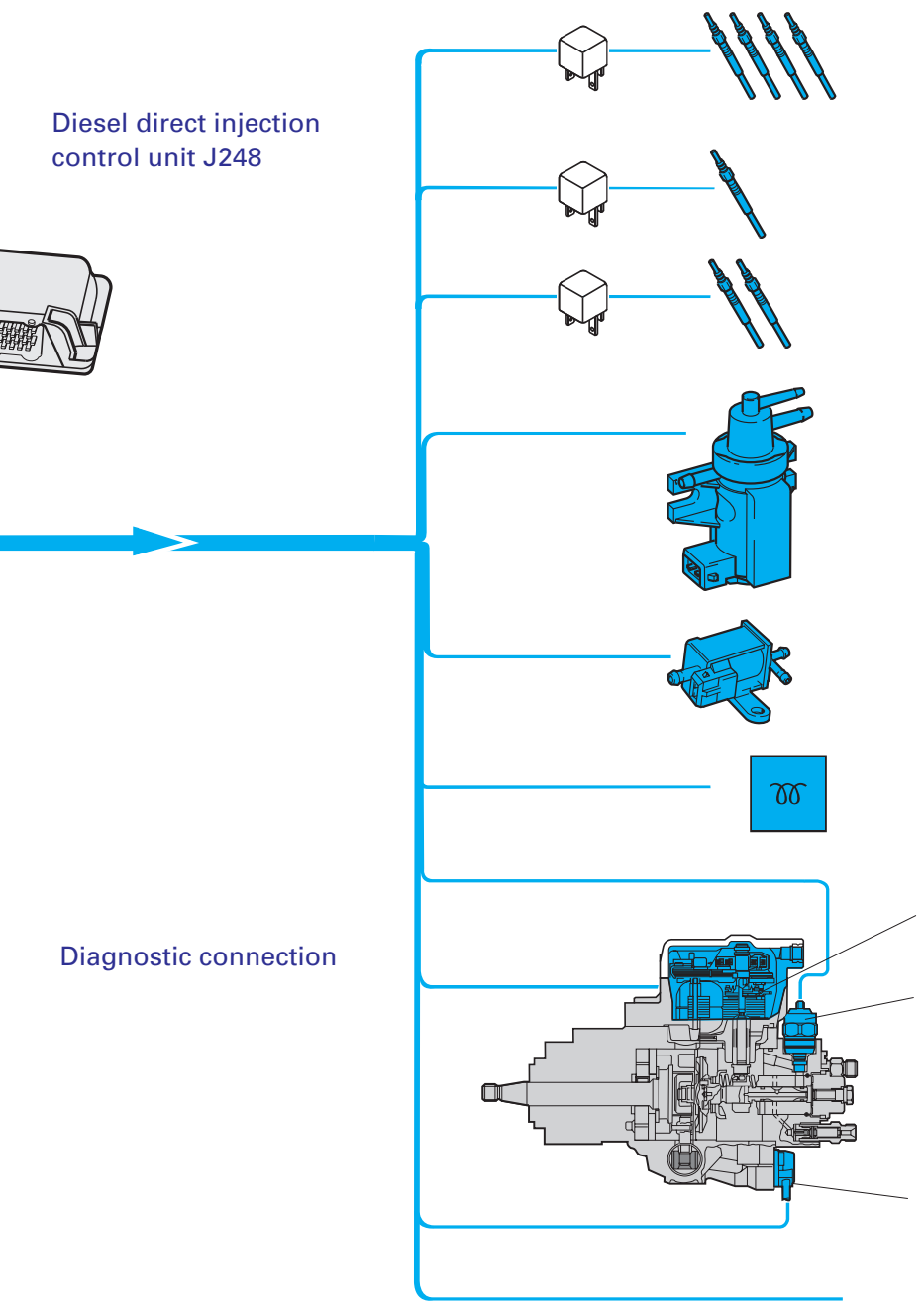
Modulating piston movement sensor G149

Fuel temperature sensor G81

Additional signals
- Air conditioning
- Terminal DF



Actuators



Glow plugs (engine) Q6
Glow plug relay J52

Heating element (coolant) Q7
Low heating output relay J359

Heating elements (coolant) Q7
High heating output relay J360

EGR valve N18

Boost pressure control solenoid - valve N75

Glow period warning lamp K29

Quantity adjuster N146

Fuel shut-off valve N109

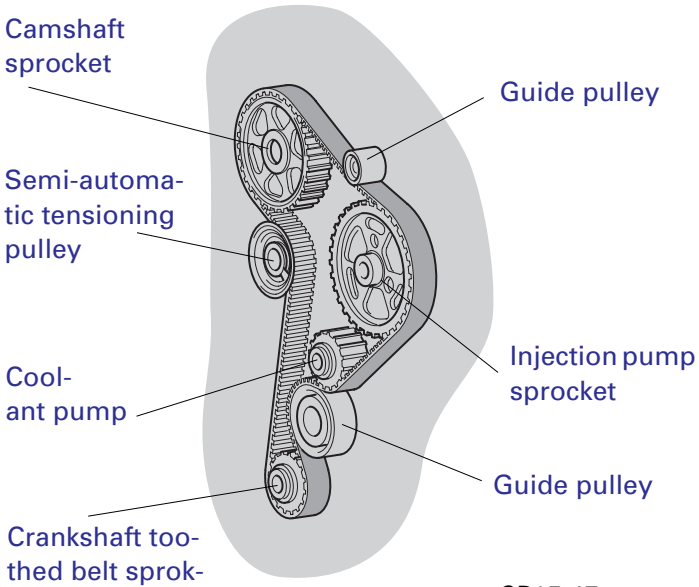
Start of injection valve N108

Additional signals

- Engine speed signal
- Fuel consumption signal
- Air conditioning

Brief description of mechanical components of the TDI

Setting distributor injection pump and toothed belt



SP15-47

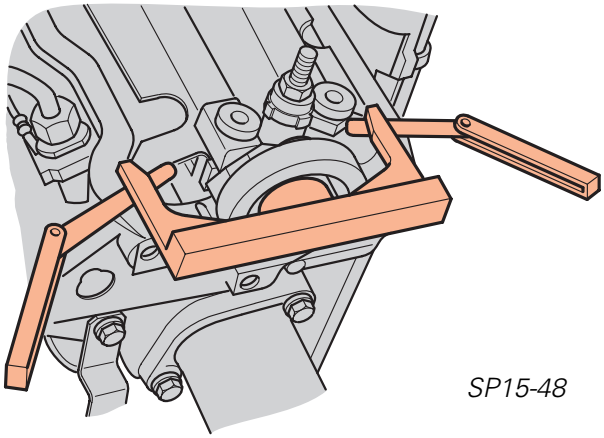
The toothed belt drives the following components:
- camshaft
- distributor injection pump
- coolant pump

The belt wrap required is achieved by using two guide pulleys while correct tension is maintained by the semi-automatic toothed belt tensioning pulley.

Adjusting toodhed belt

Appropriate markings are provided for setting the timing (crankshaft, camshaft, injection pump settings).

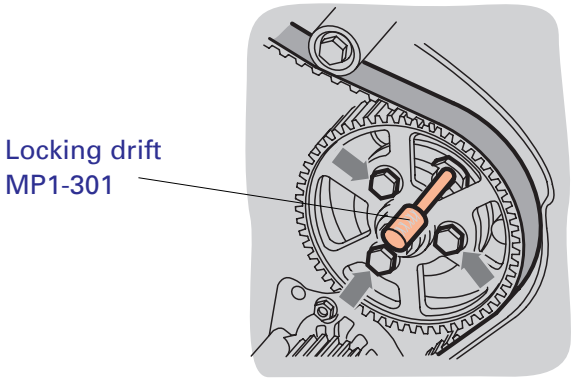
- Crankshaft setting
  Crankshaft/top dead centre for cylinder 1 is visible on the flywheel through the inspection hole of the gearbox.
  A setting device is required if the engine has been removed.



SP15-48

- Camshaft setting
  The correct setting is locked with new adjusting straightedge. The precise centre position should be determined with feeler gauges. Exact positioning of the camshaft is of majer importance when fitting on the toothed belt, for precise valve timing.

- Injection pump gear
  The setting of the injection pump is fixed with the locking drift. The injection pump gear is a two-section design. A precision adjustment can be made by slackening the 3 bolts -arrows-.



SP15-49

Note:
On no account slacken the nut for the hub of the injection pump.
If this is done, the basic setting of the injection pump will be altered and can no longer be set with workshop tools.

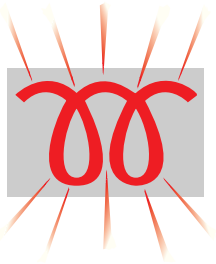
The exact procedure is described in the Workshop Manual for the 1.9-ltr. turbodiesel engine.

Self-diagnosis and safety concept of the TDI with electronic diesel control EDC

DIAGNOSIS

When the engine is running, the control unit performs the following functions:

- Comparison of the measurements supplied by the sensors for plausibility.
- Monitoring system reactions to electrical mechanical operation of the actuators.
- Monitoring the condition of the electric plug and cable connections for cable break and short circuits.



If faults occur in the system, the EDC reacts in stages **in line with the significance of the fault.**

REACTION

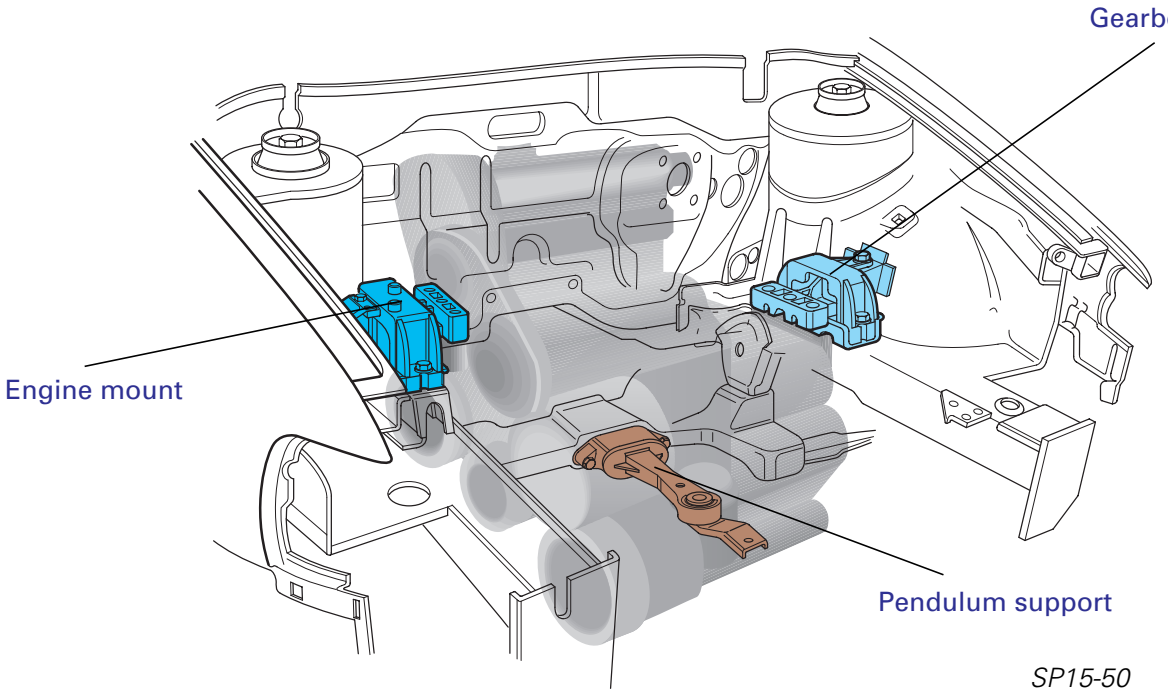
Stage 1: In the event of failure of sensors with correction functions, specified substitute values or analysable information of other sensors are adopted. The driver usually is not aware of this.

Stage 2: Major faults which result in the failure of subfunctions, produce a reduction in engine output. The driver is advised of this by the glow warning lamp flashing.

Stage 3: If the driver is no longer able to influence the power output of the engine by means of the accelerator pedal, the EDC controls the engine in the fast idling mode. This ensures that sensor functions of the vehicle are maintained. The car can continue to be driven with certain restrictions.

Stage 4: If reliable operation of the engine is no longer assured, the engine is shut off by the fuel metering control. Should this not be possible because of the fault, the engine is switched off through the fuel shut off valve (redundant system).

Engine/Gearbox Mounting



SP15-50

The engine/gearbox mounting consists of engine mount, gearbox mount and the pendulum support. The engine mount is a hydraulic mount (hydraulically damped rubber bush), while the gearbox mount and pendulum support are designed as bonded rubber bushes.

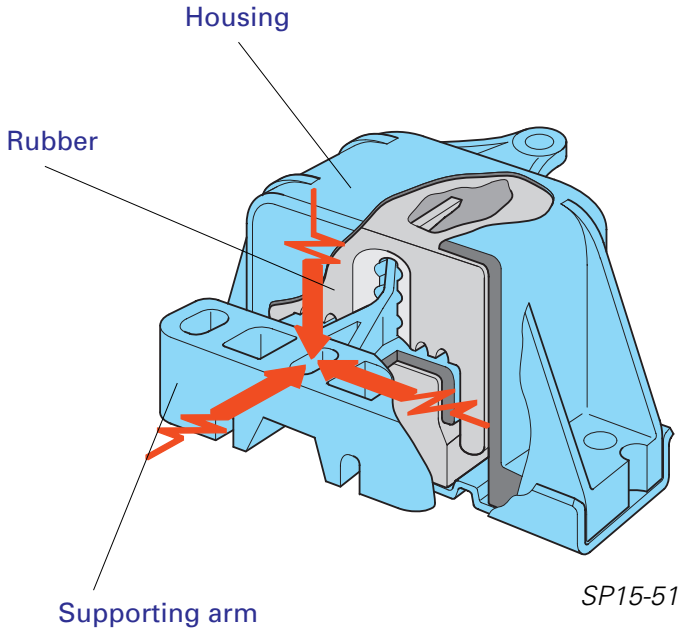
Engine and gearbox mounts are positioned in the rotational axis of the power train about which the engine/gearbox assembly moves when a torque is produced.

The pendulum support is located between subframe and gearbox. It absorbs only tensile and compressive forces. It is rigidly attached to the gearbox and flexibly connected to the subframe.

Benefit of this type of mounting:
Forces act in 3 directions on the engine and gearbox mounts. These forces are absorbed in the direction in which they are effective.

The vibrations of the engine/gearbox are well absorbed in the large rubber bushes and prevented from reaching the body.

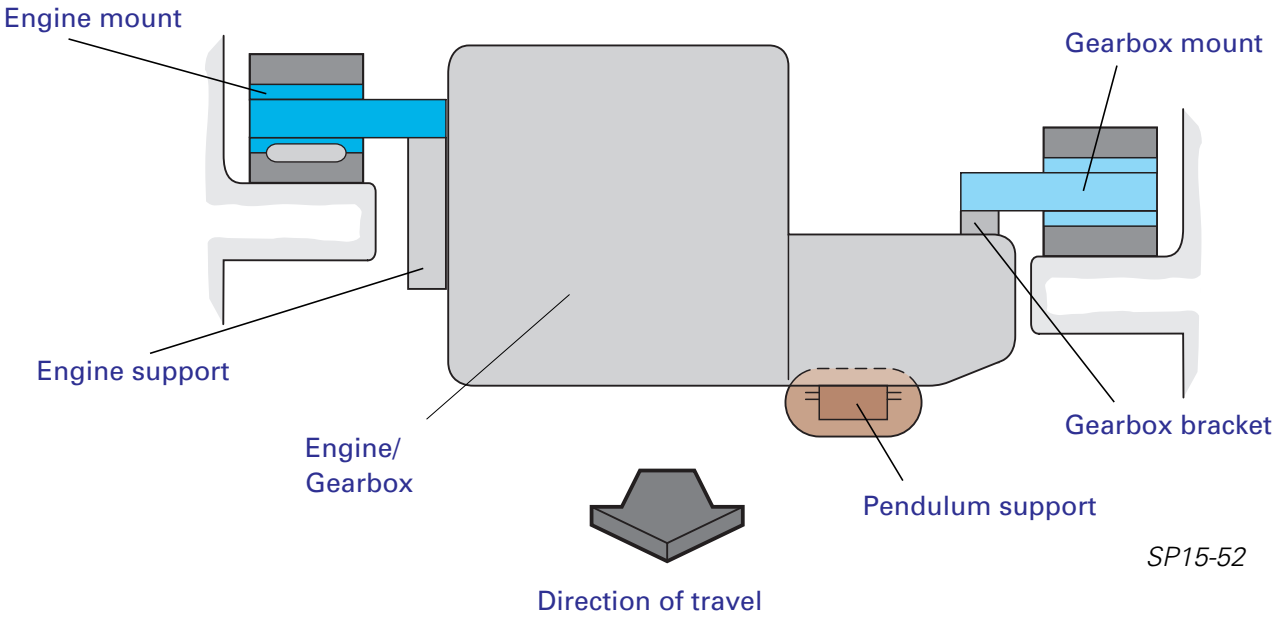
The hydraulic mount minimizes resonance vibrations which could result in the engine/gearbox "bouncing".



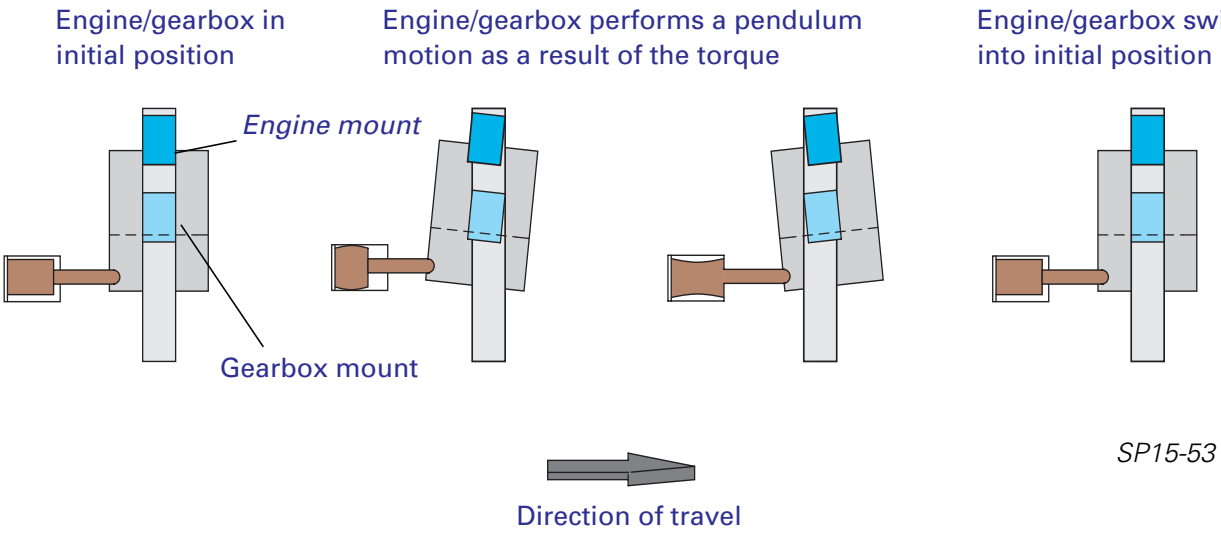
SP15-51

The principle of the engine/gearbox mounting

The mounting of the engine and gearbox is based on the principle of a pendulum.
As a result of the torque produced by the engine the engine/gearbox perform a pendulum motion. This pendulum motion is limited and damped by the pendulum support which is located between the subframe and gearbox.



SP15-52



SP15-53

Note:
Important note for the Service Sector
- **when bolting the engine/gearbox mount supporting arms to the brackets, the engine and gearbox mounts must not be twisted;**

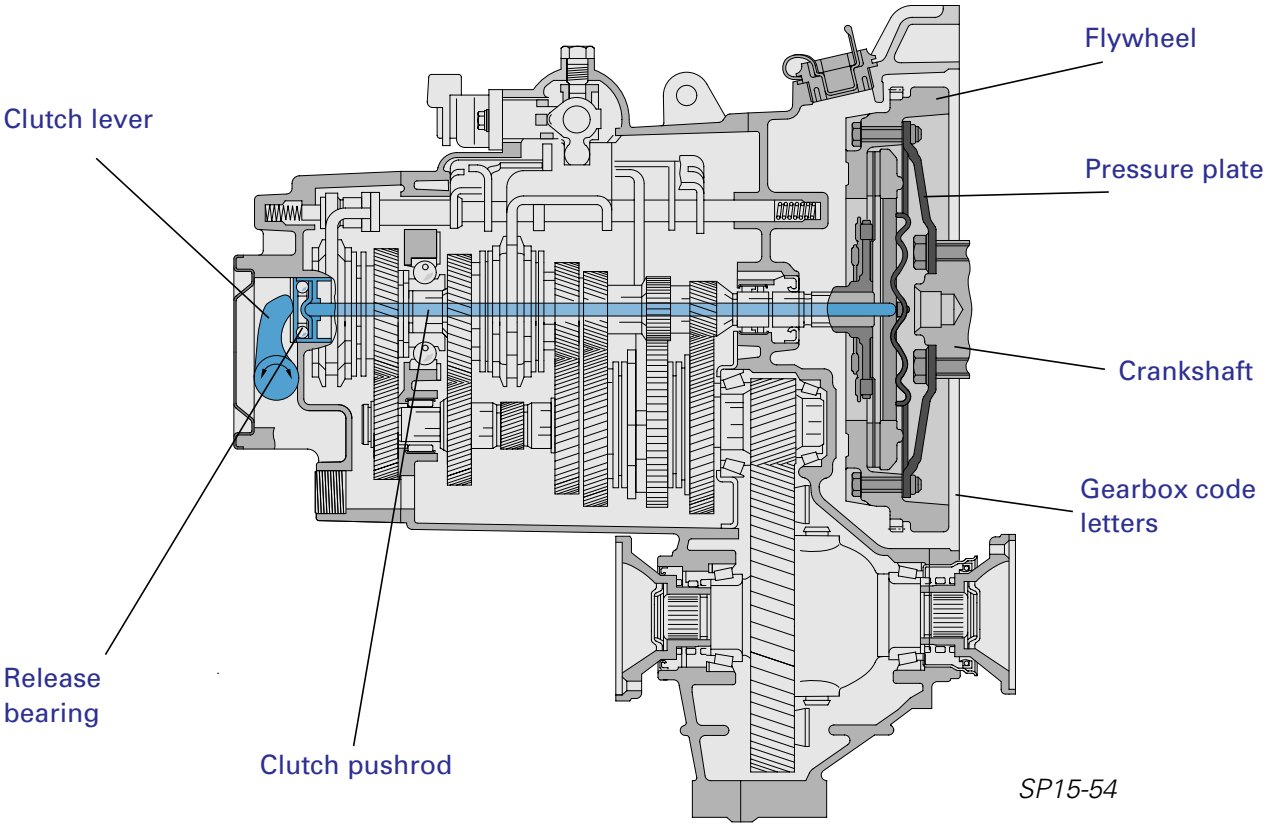
- **the engine/gearbox should be aligned at the side so as to achieve a clearance of 10 mm between engine mount and engine bracket. The supporting arms have slots for this purpose.**

5-speed manual gearbox 02 K

Manual gearbox and final drive form a single component.

Gearbox assignment in accordance with engine torque and speed is based on code letters which are affixed together with the date of manufacture of the gearbox to the gearbox housing.

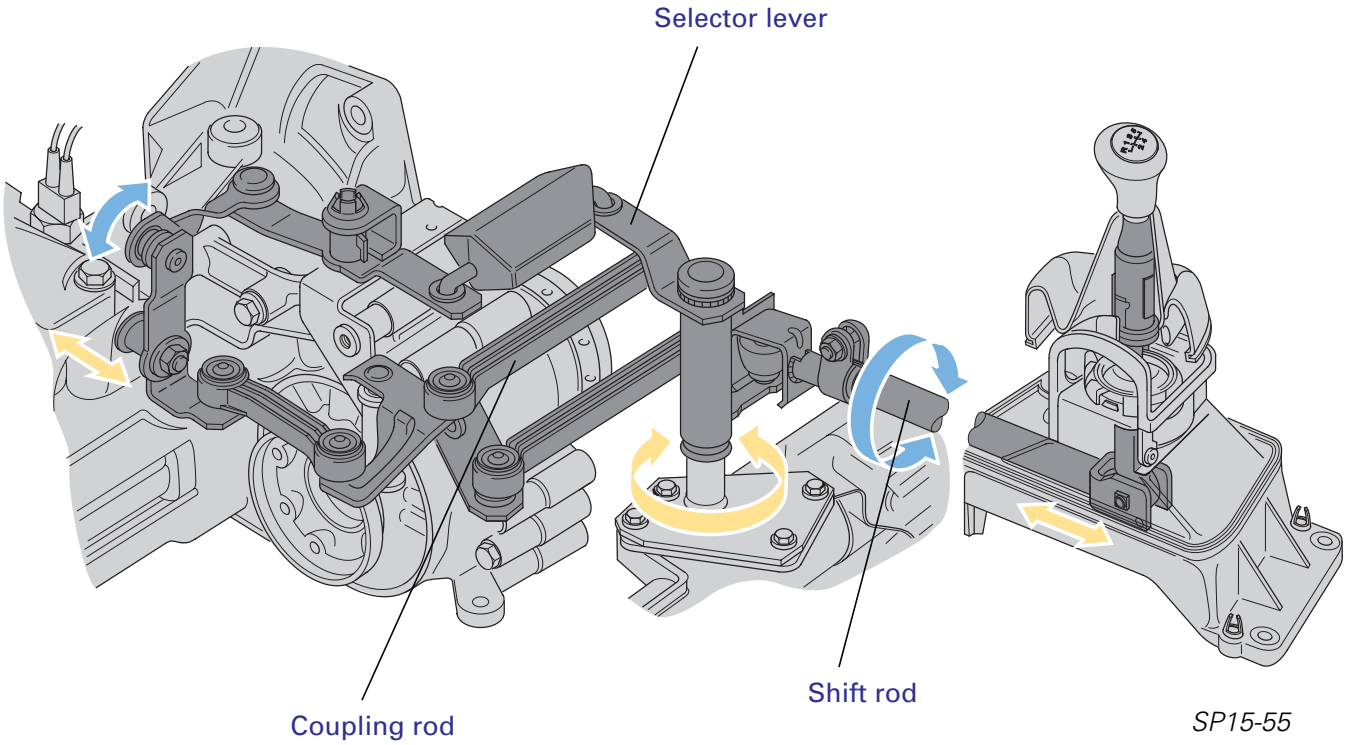
Engine	1.6-ltr. 55 kW	1.6-ltr. 74 kW	1.9-ltr. 50 kW
Engine code letters	AEE	AEH	AGP
Gearbox code letters	CZE	CZD	CZB



The clutch is operated hydraulically. The slave cylinder presses on the clutch lever which is attached at the gearbox end. The clutch pushrod moves longitudinally through the input shaft. The release movement is transmitted to the clutch through the clutch lever, the release bearing and the clutch pushrod.

Note:
The clutch is assembled in the reverse order.
The pressure plate is bolted to the crankshaft.
The flywheel faces toward the gearbox.

The gearshift movements (selecting and shifting) are transmitted through a shift rod. The coupling rods are provided to minimize vibrations at the gearshift lever.



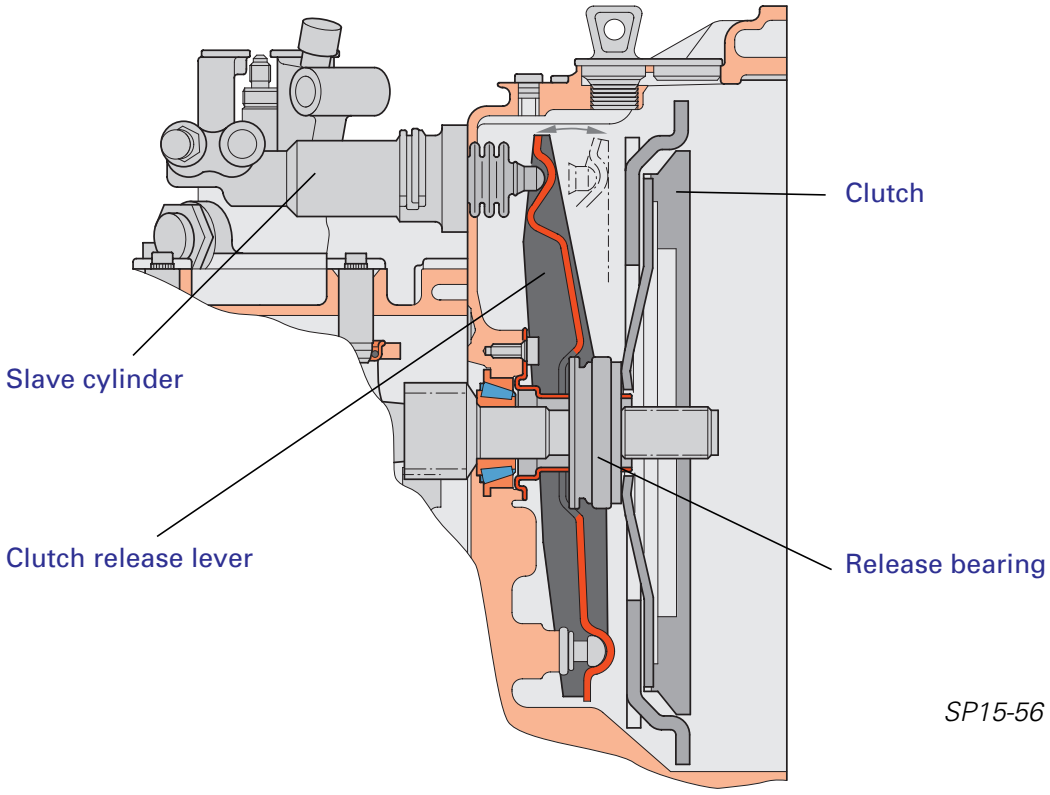
SP15-55

5-speed manual gearbox 02J

This manual gearbox is fitted with the following engines:

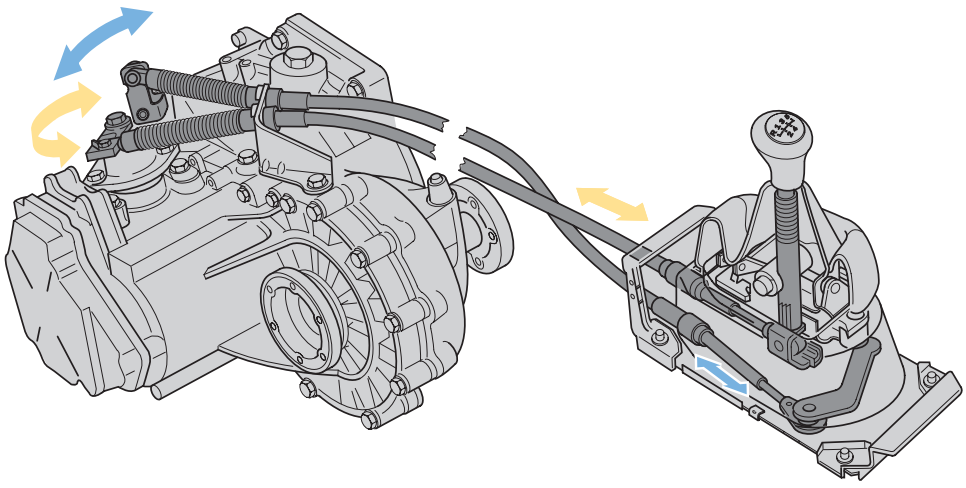
Engine	1.8-ltr. 92 kW	1.9-ltr. 66 kW
Engine code letters	AGN	AGR
Gearbox code letters	CZM	CZL

Features of the clutch mechanism:
The clutch is operated hydraulically. The slave cylinder is located at the gearbox housing and presses on the clutch release lever. The clutch is operated through the release bearing.



SP15-56

The shift movement (selecting and shifting) is transmitted by two cables.

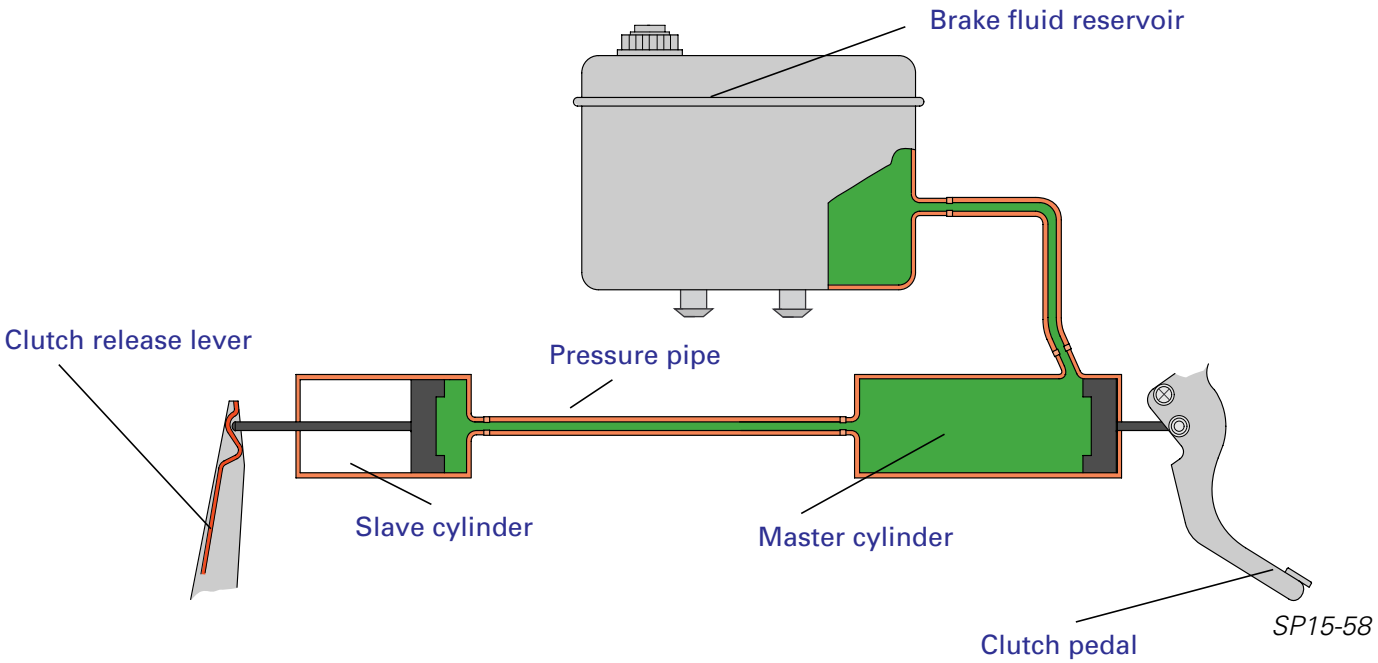


SP15-57

The hydraulic clutch mechanism

Advantages of a hydraulic clutch mechanism compared to the conventional cable-operated clutch:

- Reduced pedal forces and shorter pedal travel which remain the same over the entire life of the clutch.
- Improved efficiency as a result of reducing the friction losses.
- Softer operation of pedal when releasing clutch.
- Reduced transmission of noise and vibration from the engine.
- Self-adjusting clutch pedal play.



The hydraulic clutch mechanism consists of the master cylinder (positioned at the pedal assembly), slave cylinder (at gearbox) and brake fluid reservoir. Master and slave cylinders are connected by a pressure pipe.

The hydraulic clutch mechanism operates with brake fluid.
When the clutch pedal is depressed, the hydraulic pressure is transmitted by the master cylinder along the pressure pipe to the slave cylinder.

Bleeding is performed in the same way as for the brake system.

Automatic gearbox 01M

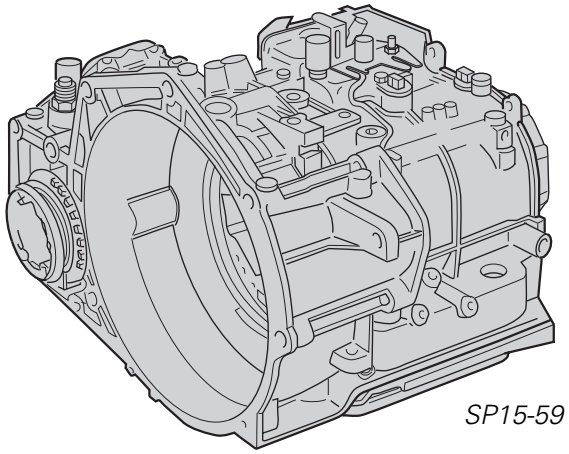
The following engines can be fitted optionally with an automatic gearbox.

Engine	1.6-ltr. 74 kW	1.8-ltr. 92 kW
Engine code letters	AEH	AGN
Gearbox code letters	DLU	DLR

The automatic gearbox is a **4-speed gearbox** with electronic control.

It automatically performs the task of moving-off, selecting gears (ratios) and shifting gears.

A hydrodynamic converter (torque converter) is used as the starting-off element.

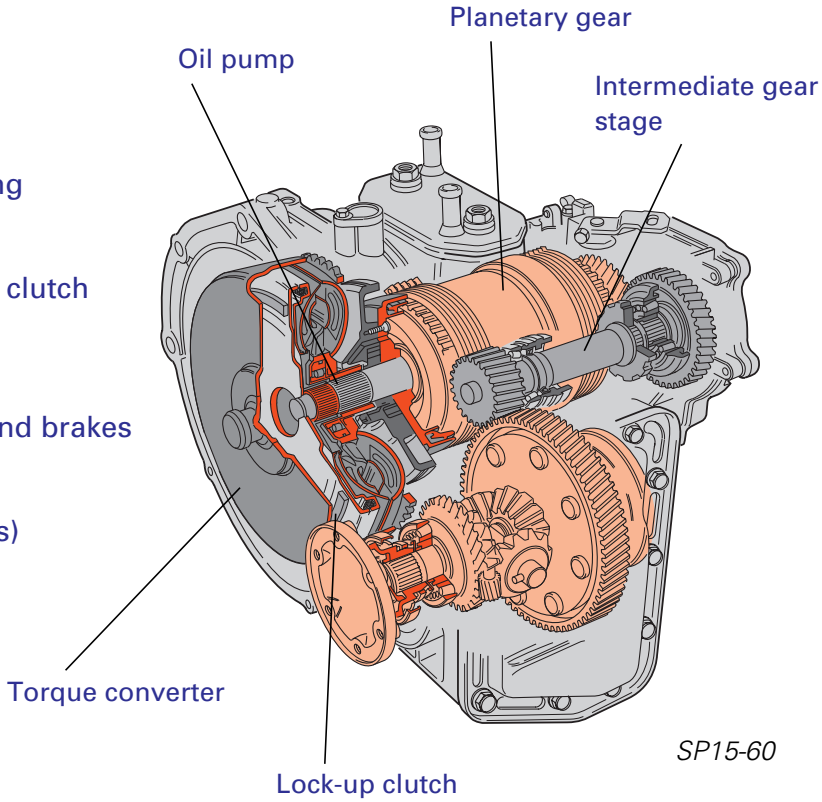


SP15-59

Gearbox design

The automatic gearbox has the following main assemblies:

- Torque converter with lock-up clutch
- Oil pump
- Planetary gear with clutches and brakes
- Intermediate gear stage (the park lock is located on this)
- Final drive with bevel gear differential



SP15-60

A mechanical connection between engine and gearbox is produced by the lock-up clutch by means of a clutch lining. This eliminates any torque converter slip (torque converter slip = difference in rotational speed between input engine speed and output speed of torque converter). The power of the engine is transmitted mechanically practically 100%.

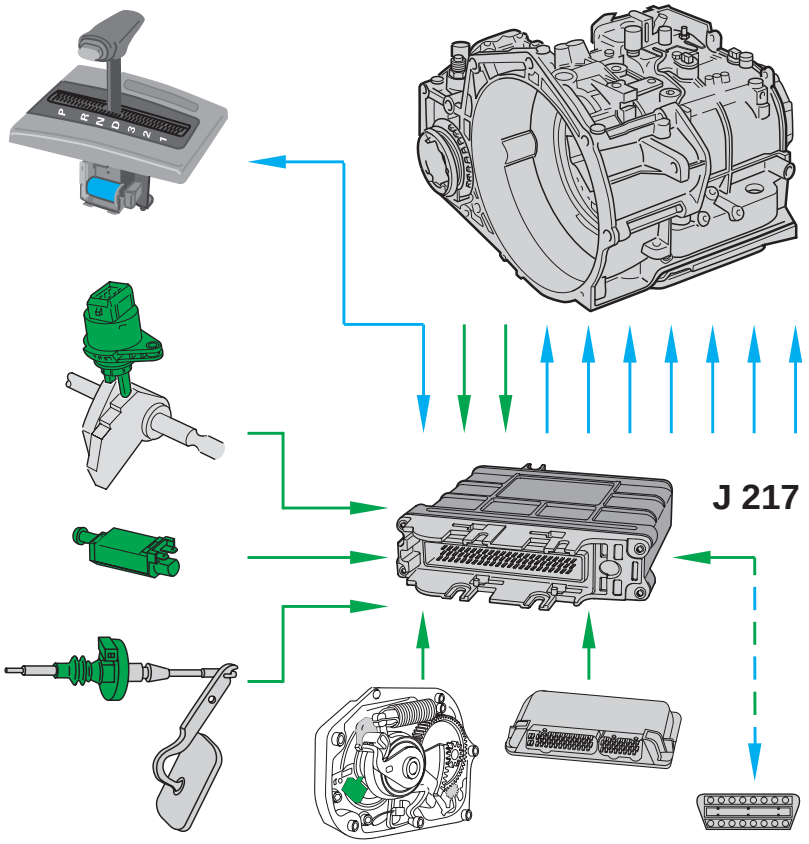
The electronic control is performed by the

Automatic gearbox control unit J217.

The control unit processes information in accordance with a set programme of drive situation circuits (fuzzy logic)

The shift point is then computed automatically and varies according to the driving situation and resistances.

- Individual adaptation of shift points in all driving situations.
- Changes in shift points in the case of uphill or downhill sections are selected as a function of accelerator pedal position and vehicle speed.



SP15-61

The control unit features a fault memory.
This enables faults to be precisely located using the self-diagnosis.
In the case of critical faults which occur when driving, the gearbox is operated in the "emergency running mode".
In the case of control unit failure, 1st, 3rd and reverse gears can continue to be engaged manually and the car can start off in position "D".

Protection agains car moving off unintentionally

A mechanical lock in the gearbox is activated in selector lever position "P" as a safeguard when the car is parked. The driving gears are blocked when the selector lever is in this position.
The ignition key can be withdrawn **only** in this position.
After this, it is no longer possible to shift the selector lever out of position "P".

Selector lever lock

A solenoid at the selector lever releases the selector lever only after the brake pedal is depressed when the ignition is switched on. It is now possible to engage a drive position.
If the brake pedal is not depressed, it is not possible to shift the selector lever out of positions "P" or "N".

Running Gear

Overview

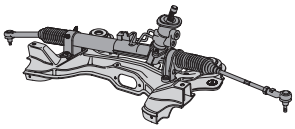
The SKODA OCTAVIA has independent suspension and also coil springs at the front and rear.

Front suspension with McPherson strut, rear suspension with springs and dampers located in line.

An anti-roll bar at front and rear reduces the tendency of the body to roll.

Disc brakes are fitted as standard at the front with drum brakes at the rear (disc brakes also at the rear with the 92 kW engine version).

The suspension, the anti-roll bars (18x3 mm or 21.7x3 mm) and the brake design are matched to the particular engine.



All models feature power-assisted steering.

The steering column is adjustable forward/back and for height.

SP15-62

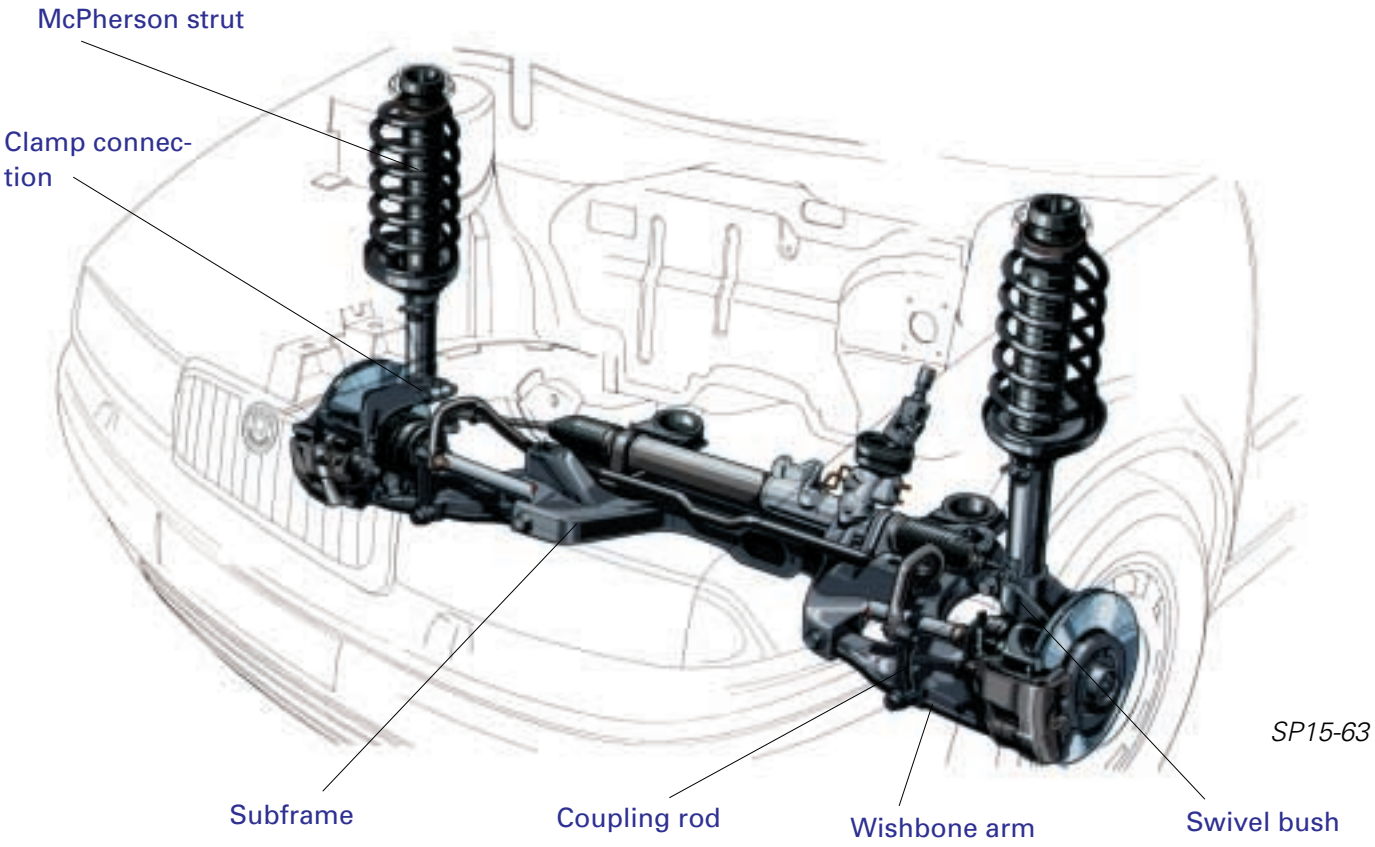
The OCTAVIA can be fitted with 14" and 15" wheels.
The wheels are attached with 5 wheel bolts M14x1.5 with spherical collar (hole circle diameter 100 mm).

The spare wheel is the same as the standard wheels and is stowed in the boot.

Engine output kW	Tyre size	Disc wheel	Offset depth
50, 55, 74	175/80 R14	6J x 14 H2 steel	38 mm
50, 55, 66, 74, 92	195/65 R15	6J x 15 H2 steel 6J x 15 H2 light alloy	38 mm
66, 74, 92	205/60 R15	61/2J x 15 H2 light alloy	43 mm

Front suspension

Wheel location features a McPherson strut with wishbone arm and subframe.
Cast swivel bushes are used.
The wishbone arms are mounted in a subframe which is bolted to the body assembly.



A bolt connects the shock absorber tubes by means of a clamp connection - as is familiar from the Felicia - to the swivel bush.

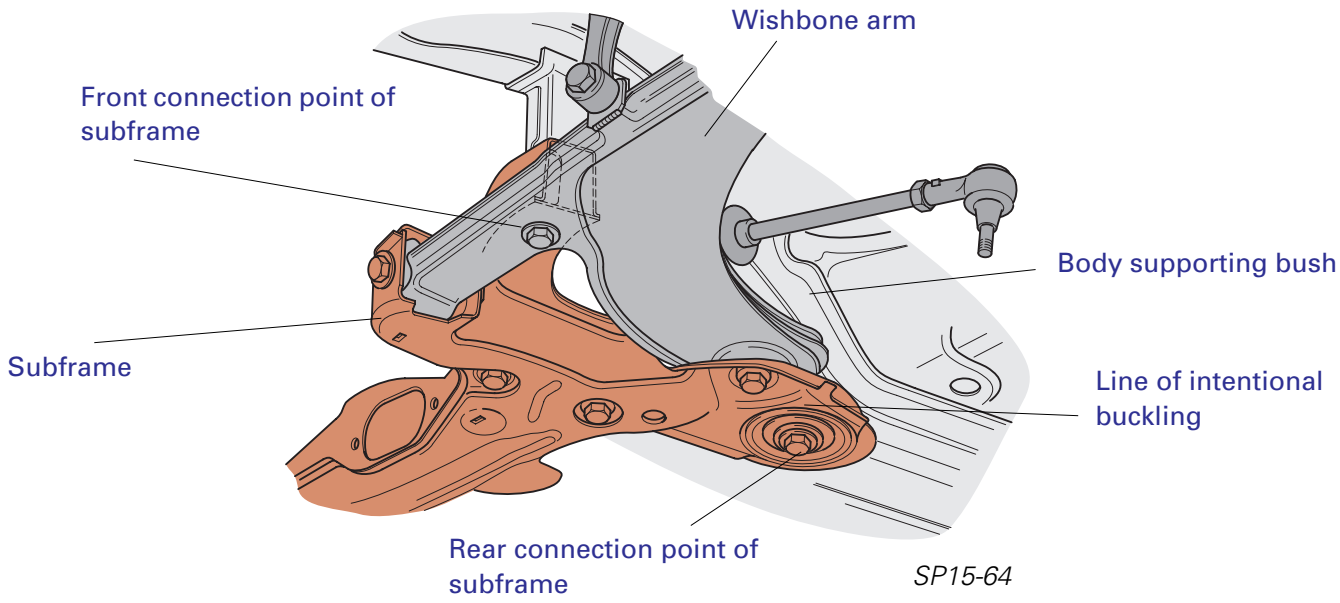
The suspension is supported at the top at the body by means of a rubber bush.

A new principle has been selected for the pivoting of the anti-roll bar:
Positioned in front of the steering gear and located by means of the joint shaft.
The anti-roll bar is linked to the wishbone arm by coupling rods.

The advantage of this arrangement is a short leg length at the anti-roll bar with higher efficiency combined with a smaller anti-roll bar diameter (smaller distance from pivot point of shoulder bearing to the coupling rod offers greater torsion at the anti-roll bar with the same spring compression).

Subframe

The subframe is attached to the body by four bolts.
The rear connection points are embedded in a rubber bush.
This design absorbs the structure-borne sound which would be transmitted to the body supporting bracket.



Extremely comprehensive test results have been incorporated in the design of the subframe.
The subframe is "crash-optimised".
The subframe buckles along an intentional line - behind the connection point of the wishbone arm - downward if subjected to a certain force.
This is followed by a specific absorption of the energy in a crash by intentional permanent deformation of the subframe to protect the passenger cell and the side members.

Caster

A caster of 40 mm has been adopted to reduce the traction influences on the steering and to achieve excellent straight-running characteristics.
The steering efforts required for this caster setting (the larger the caster, the greater the effort required for steering) is compensated for by the power-assisted steering.

Steering roll radius

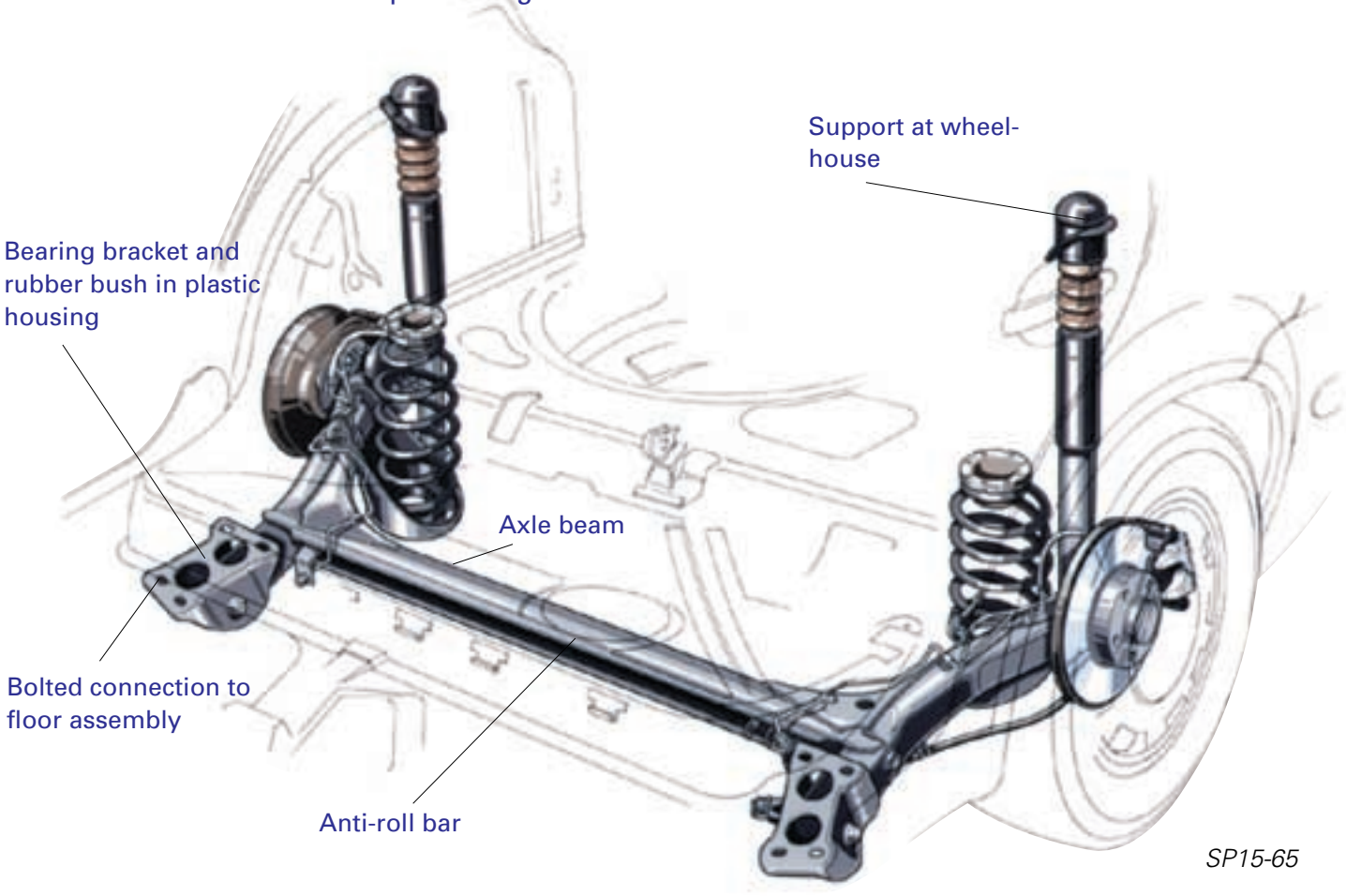
A negative roll radius of 19 mm (with a wheel offset depth of 38 mm) has a positive effect on directional stability when braking.

Service work on front suspension

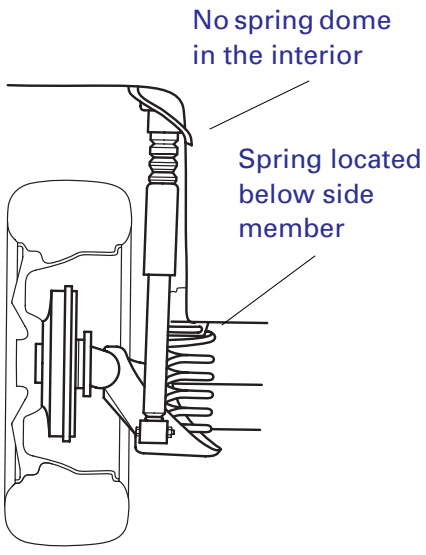
- **No adjustment operations are required in the Inspection Service. When carrying out repairs after an accident, inspect the entire suspension geometry.**
- **Wheel toe can be corrected by up to 2 mm at the wishbone**
  The steering joint is mounted in slots for this purpose.
- **The position of the subframe can be altered by up to 4 mm.**
  This modifies the camber on the right and left side.
- **No adjustments are possible at the top body support.**

Rear suspension

The rear suspension is a trailing arm torsion beam design with anti-roll bar.
Arranging the springs and shock absorbers in line one behind the other increases the through-loading width of the luggage compartment compared to a conventional suspension strut.
The axle beam is bolted at two points to the floor assembly and is supported by the coil spring at two points to the body.
The shock absorbers operate as gas-filled shock absorbers.



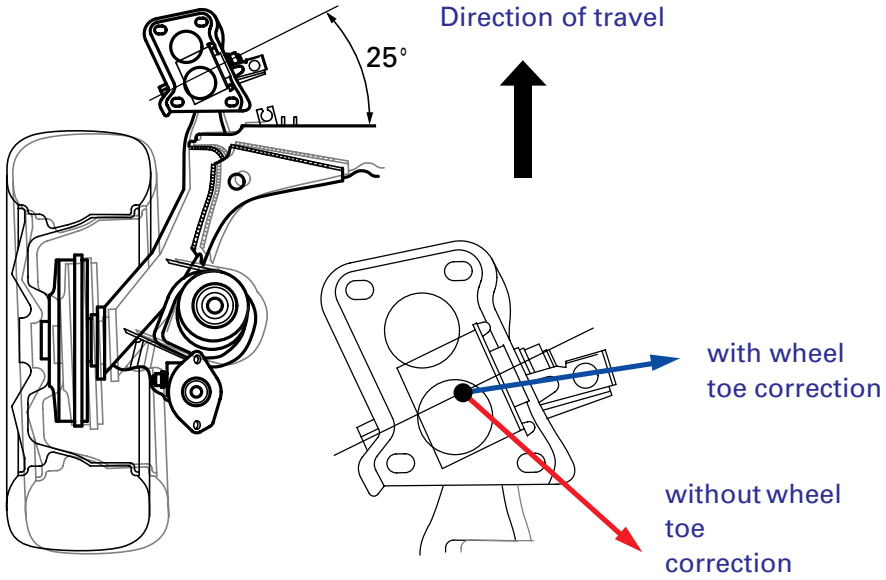
SP15-65



Constructive features of the axle mounting for improving comfort:
There is no connection to the interior through the spring and shock absorber. The spring is located below the side member in the vehicle. This arrangement has a positive effect on noise transmissions, fewer noises are transmitted to the interior of the car.
The top pivot point of the shock absorber - at the wheelhouse but outside of the boot - also reduces the level of noises transmitted. The connection at the front to the floor assembly is by means of a rubber bush angled by 25° in a plastic housing at the bearing bracket to achieve a wheel toe correction.
As a result of these measures the attachment of the axle beam to the body is acoustically decoupled.
Rolling noises from the wheels are suppressed.

SP15-66

Rear suspension when subjected to cornering force

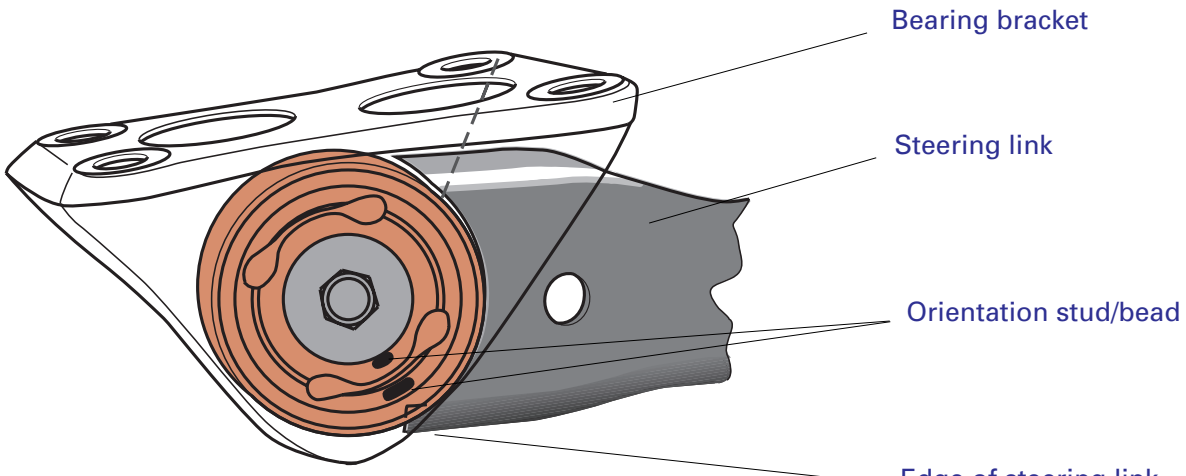


SP15-67

What does cornering force mean?

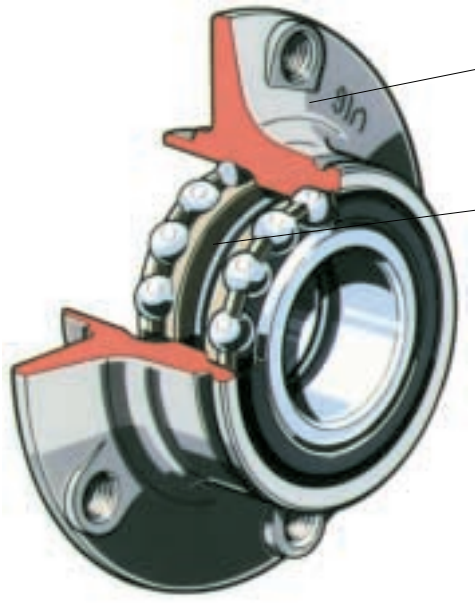
When the car is cornered, there is generally a change in wheel toe as a result of the effect of the cornering force and a certain steering effect of the rear suspension.
This effect is compensated for by angling the position of the bearing point in connection with the special design of the rubber bush.
If the suspension is tending to shift as a result of the cornering force, it is supported by a rubber shoulder at the angled bearing bracket. Cornering is thus optimised.
These design details are rendered ineffective if the components are incorrectly installed.

Note:
The rubber bushes have a wheel toe-correcting effect and therefore have to be installed the correct way round. The bush has an orientation stud and bead for this purpose. These should be aligned to the edge of the steering link. A special tool is provided.



SP15-68

Note:
It is not necessary to set the rear suspension. The slots provided in the bearing bracket are intended only as an installation aid.



Radnabe
identical bearing outer race

Two-row grooved ball bearing
with bearing inner race

SP15-69

New !

Wheel mounting - one wheel bearing unit

The wheel bearing unit is a two-row grooved ball bearing.
It consists of the bearing inner races, the balls and the wheel hub which at the same time is the outer running surface for the balls.
The wheel bearing unit is press-fitted onto the axle stub and bolted with a twelve-point collar nut.
It is not necessary to set the bearing play, this exists itself radially and axially in the bearing.
The brake drum is fitted on separately.

Note:
The brake drum can be removed separately when carrying out work on the brakes; the wheel hub remains on the axle stub. No further influencing of the operation of the wheel bearing, no further setting of play when carrying out work on the brakes.

When the wheel hub is pulled off, the wheel bearing unit is destroyed and must not be re-installed. Use a new wheel bearing unit.

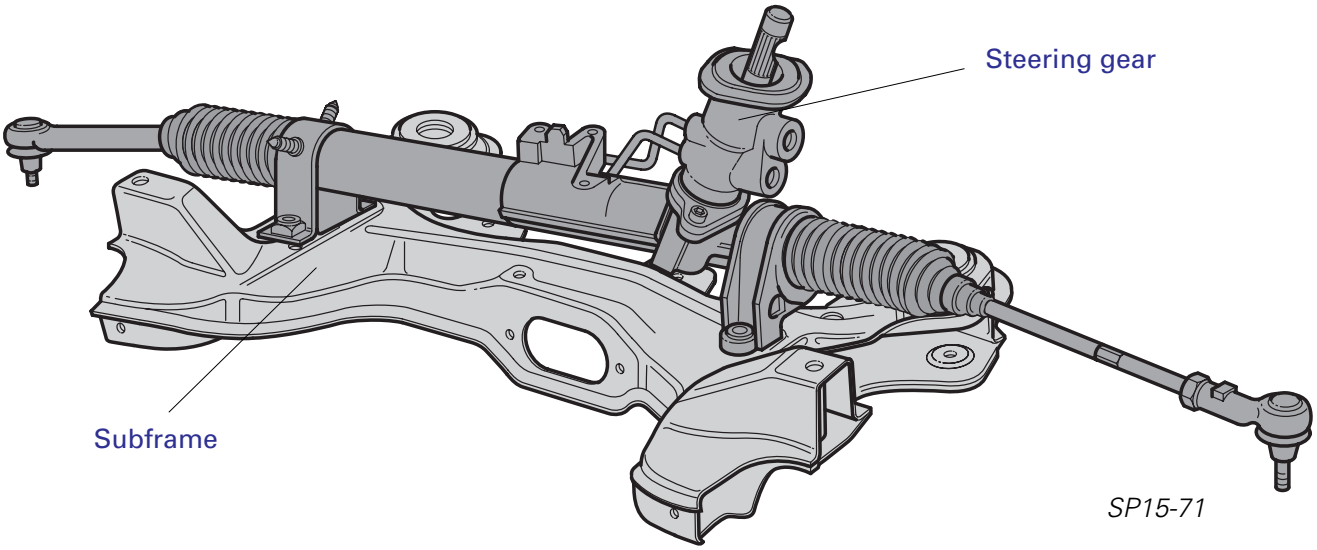
The wheel bearing unit is screwed onto the axle stub with the new assembly tool MP.
It is essential to tighten the twelve-point collar nut to the correct torque .

Steering

The SKODA OCTAVIA is equipped as standard with a power-assisted steering.
The steering servo assistance is a hydraulic system.

The steering system includes the following components

- power-assisted steering gear with track rods bolted to the subframe
- mechanical vane pump
- supply pipes for feed and return flow
- expansion tank (reservoir).



SP15-71

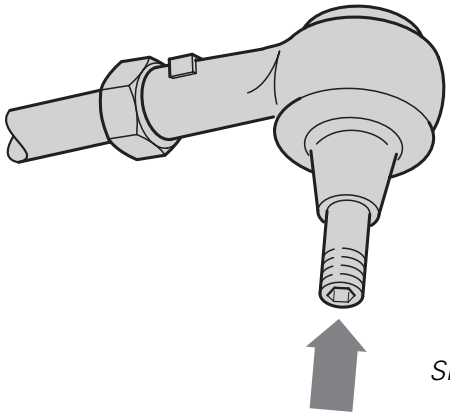
The operating principle of the power-assisted steering is the same as that known from the FELICIA system.
The pressure in the power cylinder of the steering is as high as 100 bar.

New !

Note:
The track rod end has a pitch ratio of 1 : 5 at the taper.
When carrying out repairs, it is essential to use only the relevant genuine replacement parts.

The track rod ends do not have a self-locking effect.
When carrying out repairs, counter-hold with a hexagon socket wrench (arrow).

The power-assisted steering gear cannot be repaired.
It should be replaced complete.



SP15-72

Steering column

The steering column is attached to the central tube which is bolted to the two A pillars.
It operates through 2 universal joints with a joint shaft to the steering gear.
The universal joint shaft is mounted on the steering pinion. The universal joint shaft is a telescope design for this purpose. A cross bolt is used as a locking element.
The universal joint shaft features a safety device to prevent it being pulled apart.

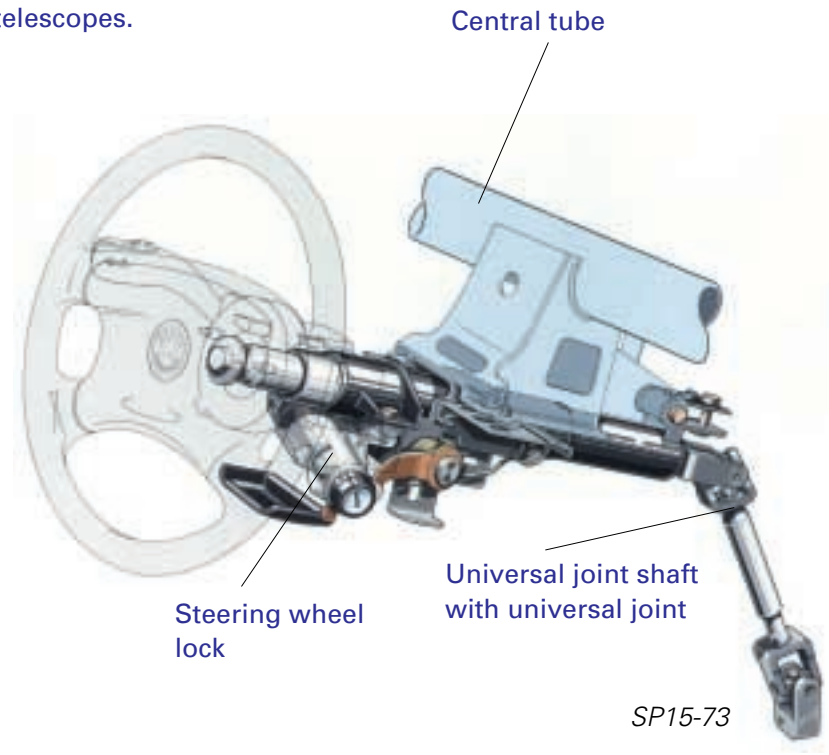
Safety concept of the steering column

In the event of a crash the steering column telescopes.

In addition, the steering concept has been designed so as to produce an unrestricted space to the steering in the event of a crash, relatively independently of the deformations of the cross panel. This unrestricted space is sufficiently large so that any deformations have scarcely any or only relatively slight effects on the steering column.

Steering wheel lock

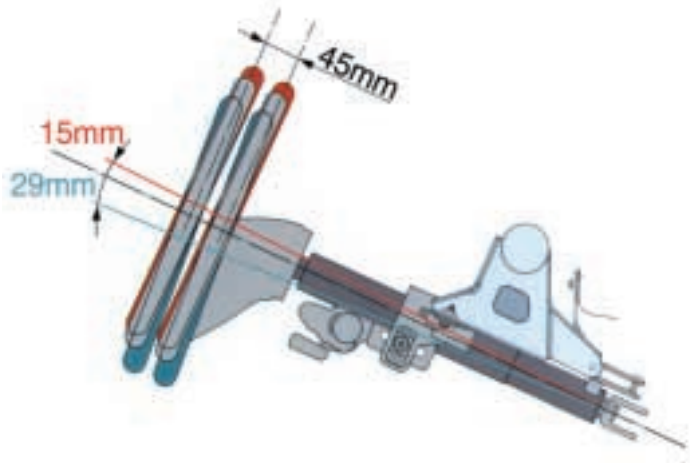
The steering wheel lock is provided with a rotary locking device.
This acts as a slip coupling.
It is not possible to remove the locking bolt.
Advantage: Steering wheel and steering column are not damaged in the event of attempted theft.



SP15-73

Steering column adjustment

The steering column can be adjusted manually forward and back by 45 mm and in height by 44 mm.



SP15-74

Note:
No provision is made for repairing the steering (safety component).
It is only replaced complete.

Car brakes - General view

- Dual-circuit brake system, split diagonally
- 10" brake servo unit
- Front floating caliper disc brakes, two sizes of brake discs depending on engine version
- Rear drum brakes with automatic slack adjuster or disc brakes with more powerful engine versions
- Load-responsive brake pressure regulator at rear brakes (no by cars with ABS)
- Anti-lock brake system (ABS) or ABS with EDL as optional equipment

Vehicle with engine	Front brakes	Rear brakes
1,9 ltr. / 50 kW 1,6 ltr. / 55 kW 1,6 ltr. / 74 kW	 14" brake, internally ventilated brake disc Ø 256 x 22 mm	 Brake drum Ø 230 mm hubless as a result of new wheel bearing unit
1,8 ltr. / 92 kW	 15" brake, internally ventilated brake disc Ø 280 x 22 mm	 Brake disc Ø 232 mm hubless as a result of new wheel bearing unit, light alloy floating caliper
1,9 ltr. / 66 kW	 15" brake, internally ventilated brake disc Ø 280 x 22 mm	 Brake drum Ø 230 mm hubless as a result of new wheel bearing unit

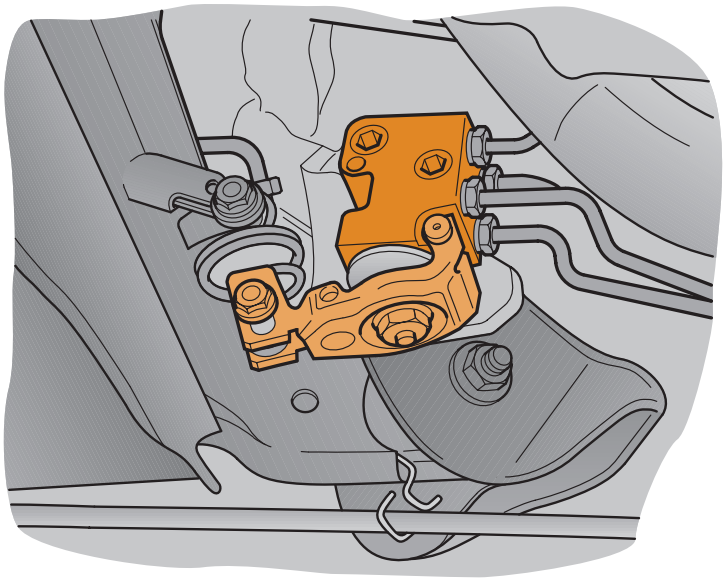
SP15-75

Load-responsive brake pressure regulator

The load-responsive brake pressure regulator operates on the same principle as on the FAVORIT of FELICIA.

The brake pressure regulator is attached to a bracket which is located at the bearing bracket of the rear suspension.

The vehicle springs compress on the load, the spring tensioner of the tensile spring increases.
Depending on the tension of this spring, the lever arm of the brake pressure control valve is operated all the more.
The brake pressure at the rear wheels is increased.



SP15-76

Anti-lock-brake system

The operating principle of the optional anti-lock brake system **ABS MK20 I** is familiar from the FELICIA.

It operates with the functions of ABS and EBD (**E**lectronic **B**rake pressure **D**istribution).
The mechanical load-responsive brake pressure control is not fitted together with the ABS system.

A further optional equipment is ABS with EDL.
EDL = **E**lectronic **D**ifferential **L**ock.
This system brakes any wheels which are tending to slip when starting off and the driving torque is directed to the wheels with the better grip.

Brake servo

RHD models require a 7" / 8" tandem brake servo unit for space reasons (identical brake servo assistance).

Brake System

Parking brake (handbrake)

New !

The lever travel of the handbrake is set or corrected with an adjusting nut at the compensating plate of the handbrake.
The adjusting nut is accessible after removing the centre console in the passenger compartment.
Two separate handbrake cables run from this point to the rear wheels.

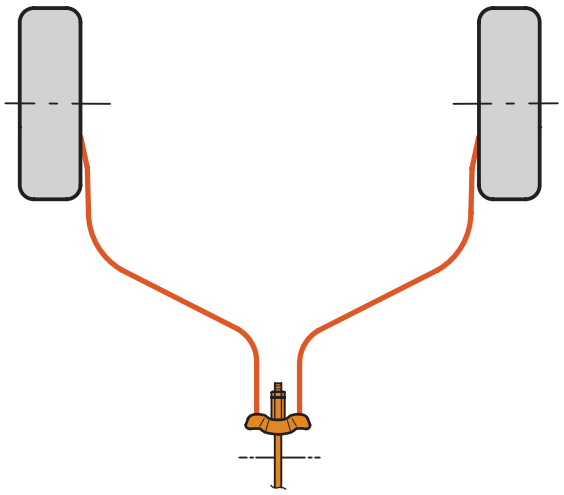
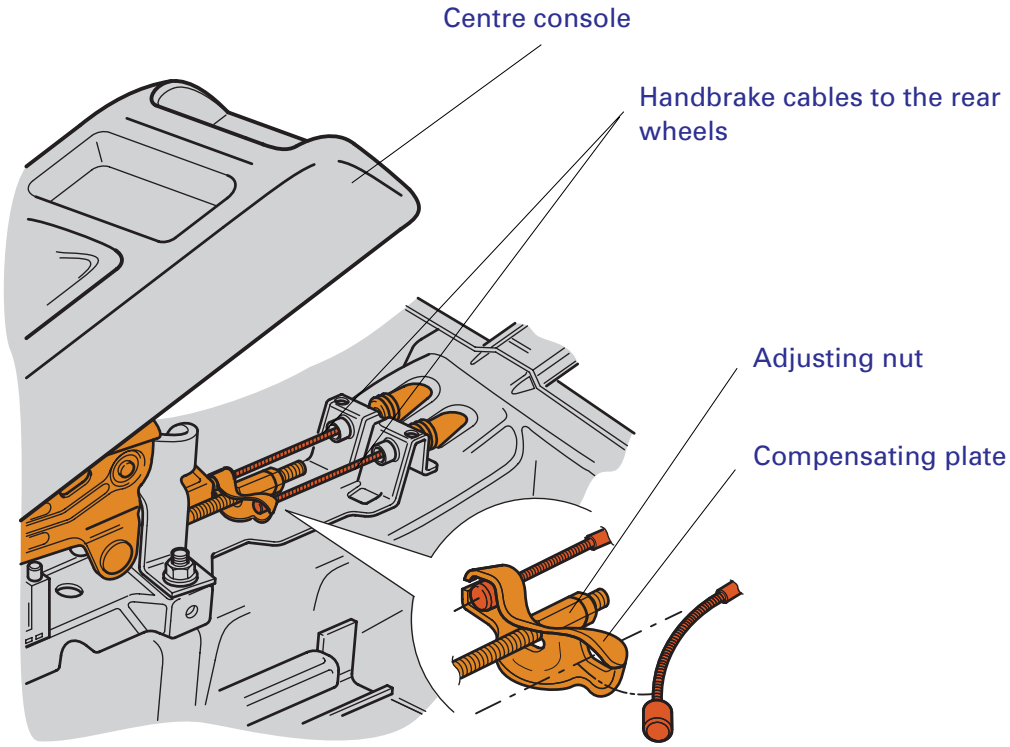


Diagram of parking brake

SP15-77



SP15-78

Note:
The two handbrake cables are suspended with nipples in the compensating plate.
The compensating plate makes it possible to evenly alter the travel of both brake cables at one adjustment point.

There are a number of new design details in the body sector.
These are described briefly in the sections which follow.

Interior trim

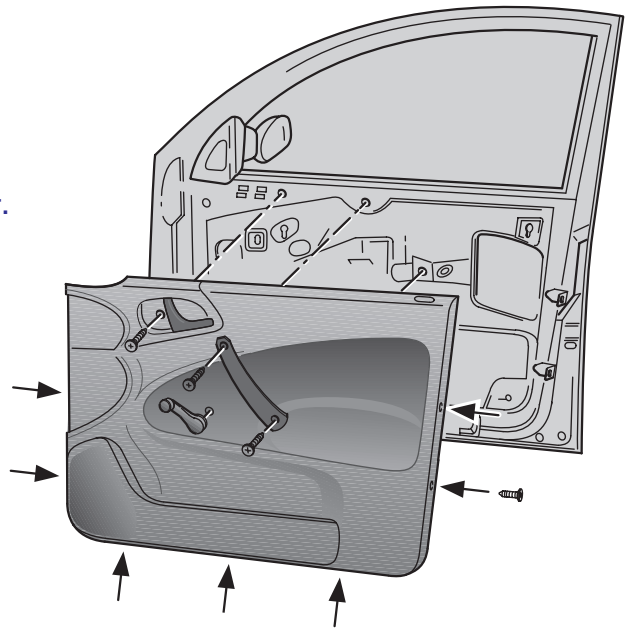
Door trim panel

New !

The trim panel of the door is screwed to the door on 3 sides.
The trim panel is attached into the inner door slot seal at the top

The trim panel is not screwed directly to the door but into clips which are located in the door. The clips have a support area for the trim panel which produces a defined gap to the door in order to avoid rattling noises.
The pull handle is screwed directly to the door and offers an additional means of fixing the trim panel.

The trim panels of the rear doors are attached in the same way.



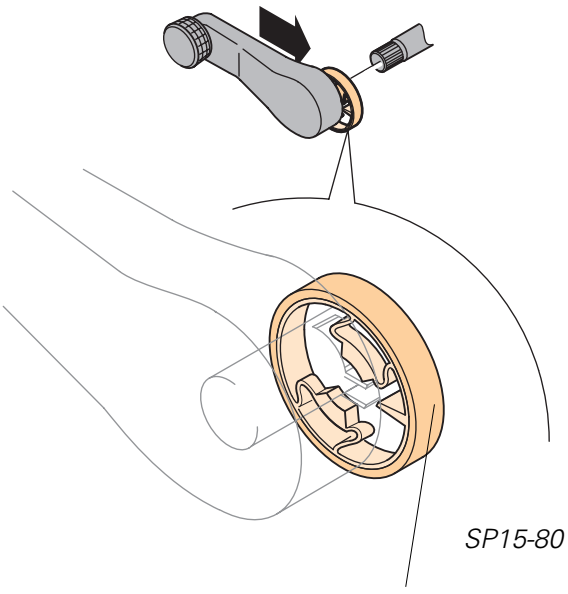
SP15-79

Window crank

New !

The window crank is not screwed directly to the crank shaft.
It is pushed onto the crank shaft in the familiar way.
It is prevented from being pulled off by a locking clip which is located concealed in the mount.

The mount is pushed in the direction of the arrow in order to take off the window crank.
This releases the locking clip and the window crank can be pulled off in the usual way.
When the window crank is fitted on, the locking clip automatically engages in the slot of the crank shaft.



SP15-80

Mount with locking clip

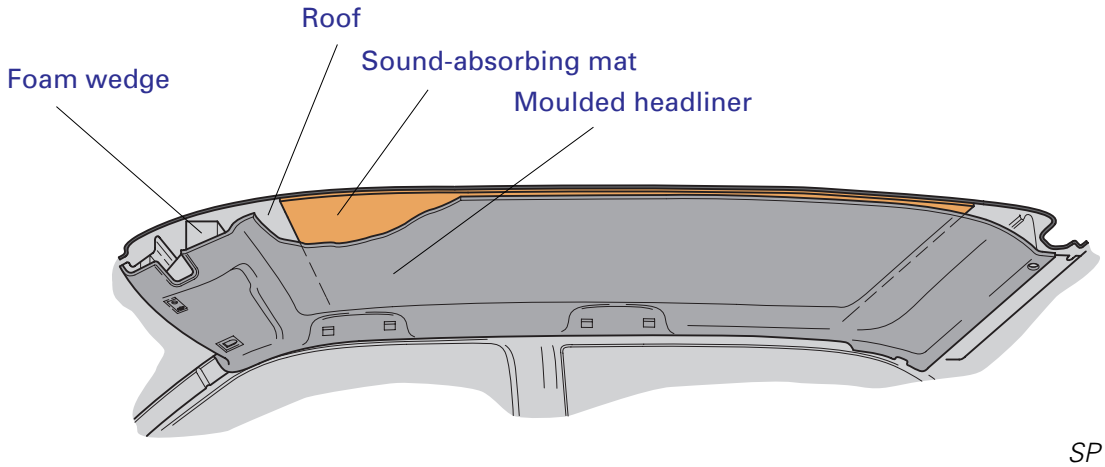
The insulation/sound absorption concept

Numerous individual design details related to insulating and absorbing structure-borne sounds have resulted in a very low interior noise level. Not all the components are immediately noticeable, as for example the connection of the rear suspension to the body (refer to section on rear suspension), which together represents the entire concept.

The following important sound-absorbing concepts produce a reduction in interior noise:

– Connection of front and rear suspension to the body
– Engine with sound-absorbing encapsulation
– Bonnet with sound-absorbing layer
– Sound-absorbing mats at the cross member and bulkhead
– Sound-absorbing mats for the floor and floor covering
– Sound-absorbing mats for the roof and moulded headliner
– Sound-absorbing material used for the interior and pillar trim and luggage compartmentrim

Sound-absorbing in the roof



SP15-81

Sound-absorbing mat
bonded to the roof using butyl adhesive with 12 adhesive beads.

Moulded headliner
attached with clips in the rear area, otherwise screwed on in the same way as on the FELICIA simultaneously with roof grab handles and sun visors.

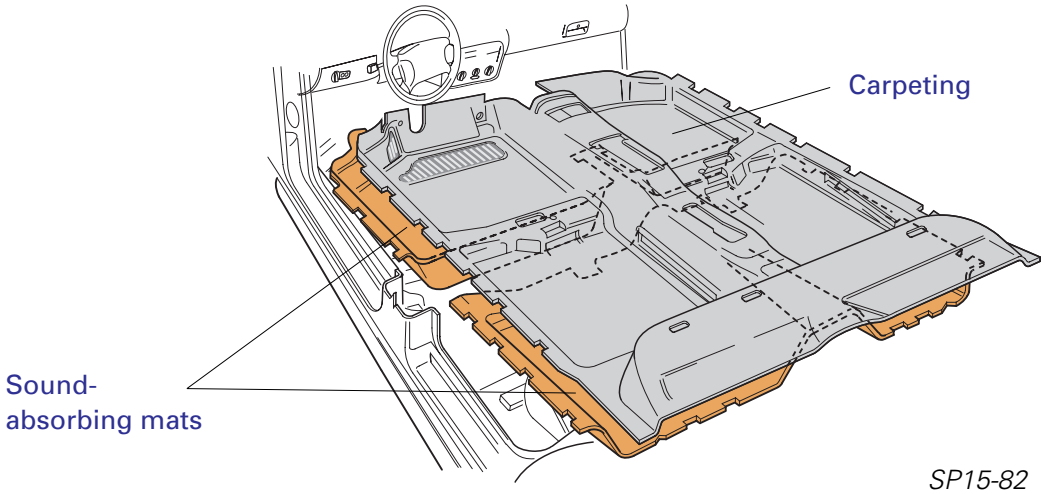
Foam wedge
acts as a spacer so that the moulded headliner remains visually stable.

Note:
The sound-absorbing mat on the roof not only has an acoustic function.
It also stabilises the roof in particular from dents.
When carrying out repairs, the sound-absorbing mat should always be bonded into place again.

Sound-absorbing in the floor

In contrast to FELICIA, where the carpeting and sound insulation form a unit, carpets and mats in the OCTAVIA are separate:

- two sound-absorbing mats (separate for front and rear footwell) on the floor.
- on top of this is placed a single-piece, full-length carpeting.

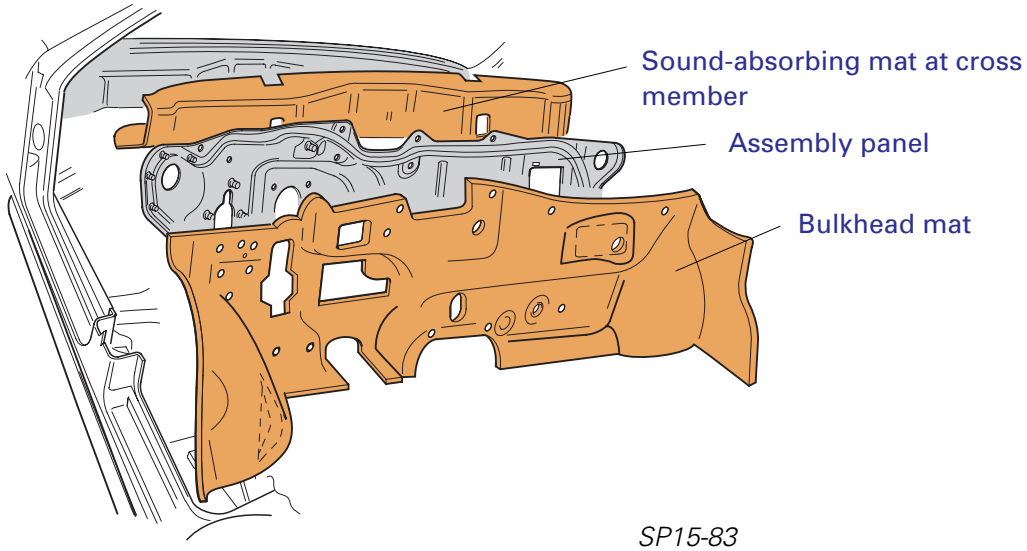


SP15-82

Sound-absorbing in the bulkhead

Here, too, a different design principle has been employed in contrast to the FELICIA.
The sound-absorbing of the bulkhead is made up of two sound insulation mats.

- The top one attached to the sound insulation on the cross member of the body.
- The bottom one attached to the bulkhead (assembly panel).



SP15-83

Corrosion protection

SP15-84

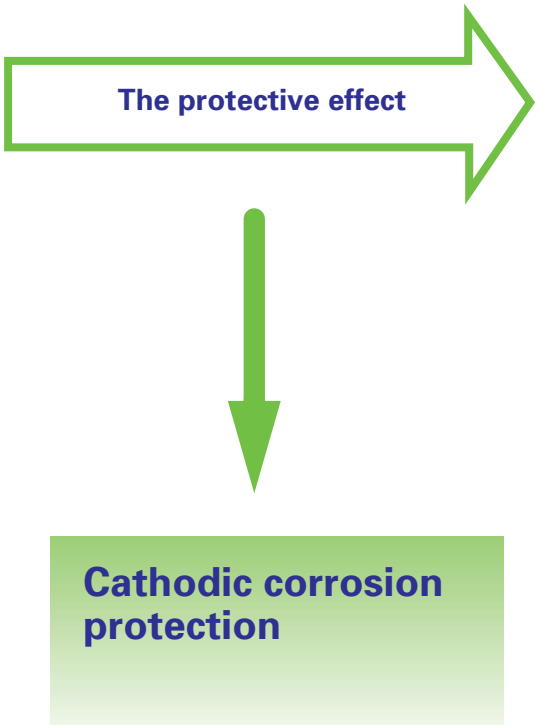
Sun, rain, snow, industrial and vehicle pollutants, surface water and stone chips - these are numerous influences which the corrosion protection of the vehicle has to resist.

In order to maintain the gloss, brilliance and durability of the paintwork and to protect the body frame from destructive rust, SKODA has implemented two additional precautionary measures on the OCTAVIA:

– fully zinc-coated body

– paintwork using water-based paint

Fully zinc-coated body



Zinc is an additional protection.
Full zinc-coating together with the other corrosion protection measures, protects the body over a lengthy period from destructive rust.

The protective effect of zinc-coated steel panels is based on electrochemical reactions.

This effect shows itself if the other components of the protective layer - paint, filler, primer - are damaged.

Zinc, which is a less noble metal than iron, first of all transforms into the non-metallic state.

If a zinc-coated panel suffers mechanical damage, the oxidation process begins with the zin

The iron remains unaffected at first.

This process is known as "cathodic corrosion protection".
Several years can pass until the zinc is completely oxidised.
The problem of rust damaging the paintwork from below which is familiar from non-zinc-coated painted body panels scarcely occurs.
The considerably smaller zinc corrosion products leave the paintwork largely unaffected.

SP15-85

The body panels are zinc-coated on both sides before leaving the steel mill.
The pre-treated panels are then shaped in the pressing shop to form the body parts.
The zinc layer survives the severe shaping processes in the pressing plant without any damage.
When body panels are cut, zinc spreads over the bright metal surface of the cut and thus also forms an additional corrosion-resistant protective skin.

Two types of body panels are used:

- Electrolytically galvanized panels; these have a particularly fine zinc layer and are used for all body outer parts.
- Hot-dipped galvanized panels; they have the characteristic zinc flowers and are used for non-visible body parts.

Repair work on fully zinc-coated bodies

Provided certain repair instructions are properly observed, welding work does not result in any quality reduction of the body. Straightening work using a naked flame destroys the protective zinc layer (generally prohibited for supporting parts).

Welding methods

- Use resistance spot-welding methods if possible.
  Should this not be possible at certain points, then use shielded arc-welding methods (CO_2 or Argon CO_2 mixed gas) for achieving narrow heated zones.

- The welding fumes produced when welding zinc-coated sheet contain toxic zinc oxides.
  The welding fumes should therefore be drawn off by suitable extraction facilities as a protection for all employees.

Preparatory work

- Before commencing welding work, thoroughly clean the connection points. The zinc layer should not be damaged.
- The contact surfaces of the weld areas should be treated with a thin coat of cold zinc paint LKL 015001 (not in the case of shielded arc welding or brazing).

Repair instructions

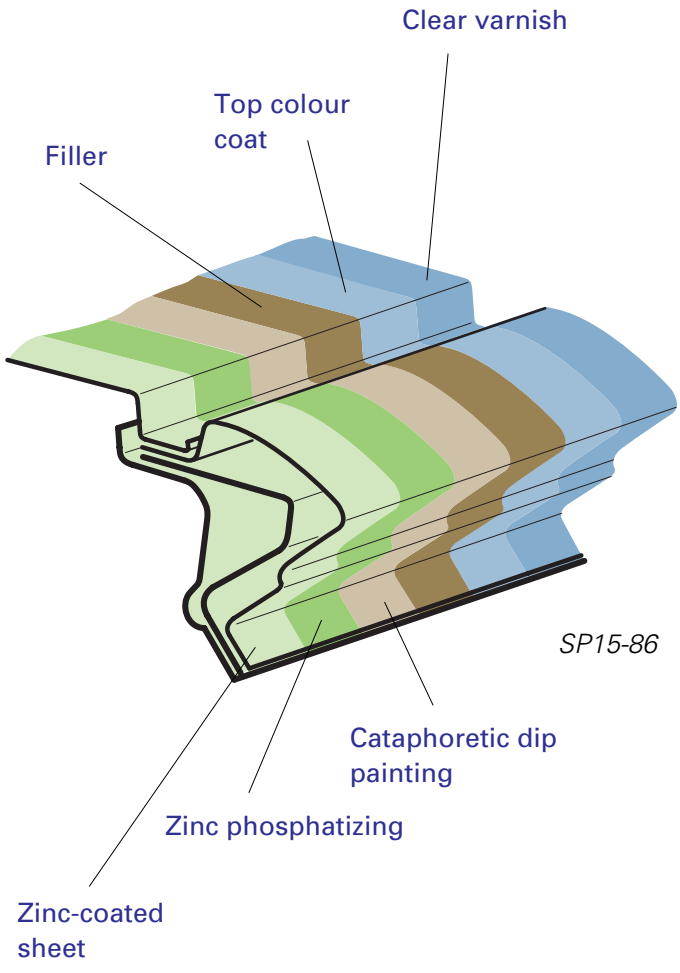
- You will find detailed repair instructions and details of the procedures regarding welding methods in the Workshop Manual.

Paintwork with water-based paint

The advantages

- Can be diluted with water before use; after the drying process hard, flexible under impact, resistant and completely insensitive to moisture.
- Low level of solvents ensures that the valid air limit values for the paintwork are maintained.

Structure of the water-based paintwork



The top coat in the case of the water-based paintwork consists of the colour coat and a two-component clear varnish finish.

This structure applies to standard colours and metallic finishes.

The sequence of layers of the corrosion protection on the zinc-coated sheets consist of

- zinc phosphatizing
- cataphoretic dip painting
- application of filler
- top colour coat
- clear varnish

and the familiar intermediate stages of degreasing, rinsing, drying, sealing.

The design of the paint system is matched to the water-based paint.
All the paint spray facilities have to be manufactured of stainless steel because of the risk of corrosion arising from the water.
Water evaporates more slowly than solvent which requires special intermediate driers.

The elements of the water-based paintwork

The principal aim in developing the water-based paint was to reduce the portion of solvents as a contribution to environmental protection.
The filler was also incorporated in the development work.

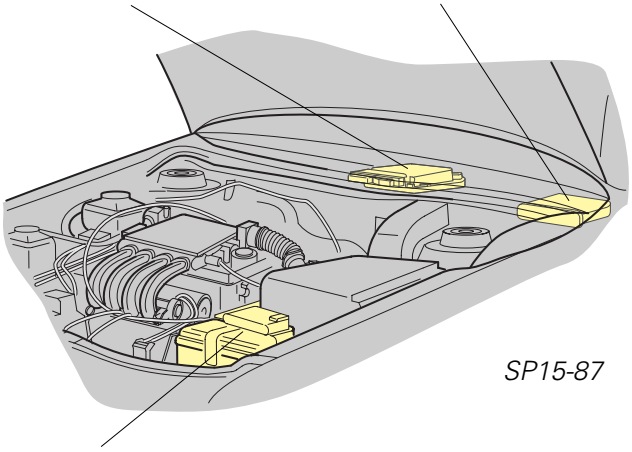
	Elements %	Solvent-based paint	Solvent-based paint
Filler	Solvent	45	10
	Water	–	35
	Solid bodies	55	55
Standard top coat	Solvent	55	15
	Water	–	50
	Solid bodies	45	35
Metallic top coat	Solvent	87	15
	Water	–	67
	Solid bodies	13	18
Clear varnish	Solvent	57	42
	Solid bodies	43	58

The film thickness of the final paintwork after dip priming and the 3 water-based paint components of filler, top coat and clear varnish is 90 to 95 µm.
Improved binder components in the filler and top coat produce an elastic paint structure.
The new water-based paints are considerably more resistant to chip damage.

The corrosion protection measures make it possible to provide a 10-year warranty against perforation and a 3-year warranty for the quality of the paintwork.

Electrical System

The electrical system differs from that in the FELICIA in the design of the wiring and the fitting locations of the main components. The wiring looms are separated for engine, instrument panel, door and rear components. They are merged in three connector stations (in left of plenum chamber, in bottom of the left and right A pillars). The principal features are explained in the sections which follow.



SP15-87

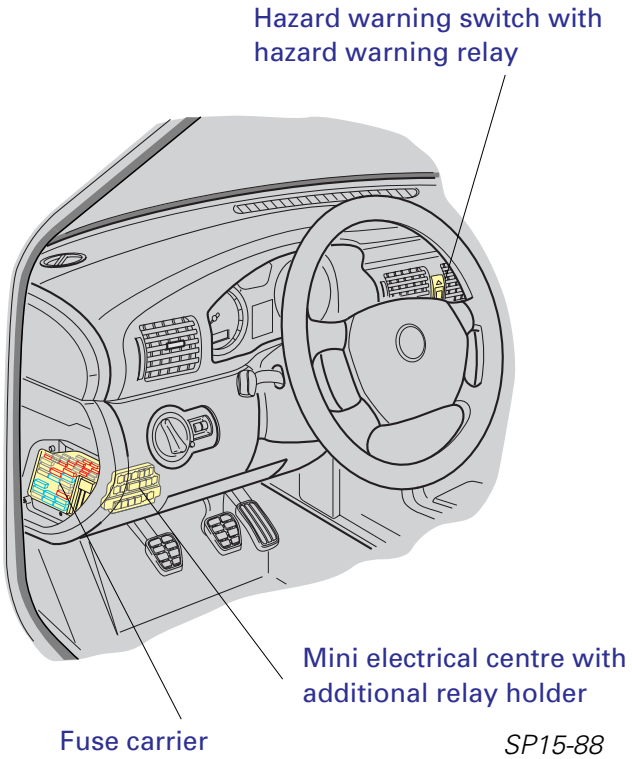
Engine control unit

The engine control unit for all the engine types and model versions is housed in the plenum chamber.
It is connected by a split 80-pin connector to the circuits of the vehicle.
Small connector - all the cables coming from the engine, large connector - all the cables coming from the vehicle components.

Battery

The battery is installed in the engine compartment.
It houses the main fuse carrier.
This is provided with a flap which also covers over the positive terminal of the battery. The battery is surrounded by a protective cover.

Note:
The battery terminals must no longer be greased.



SP15-88

Protection of the electric circuits

The electric circuits have been enlarged. They are protected by means of fuses at three installation points:

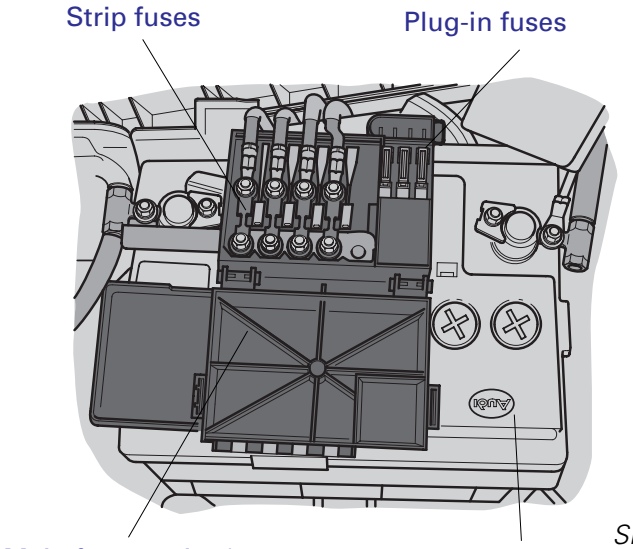
-main fuse carrier

-fuse carrier

-mini electrical centre

The fuse carrier is located behind a cover in the side of the instrument panel. It houses the main fuses of the base equipment. The fuse assignment is indicated on a sticker affixed to the cover.

New !



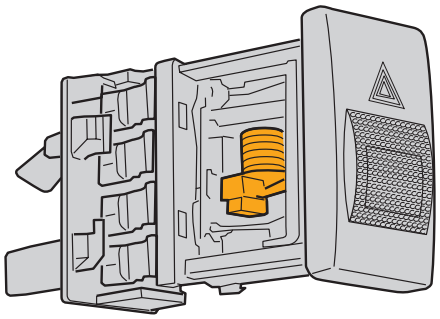
SP15-89

The main fuse carrier

The main use carrier is located on the battery. It contains four strip fuses and three plug-in fuses.
An integrated metal bar is used for the connections to the battery (positive).
The fuses protect individual electric circuits of the main components from overload at a point just downstream of the battery.

This permits specific pinpointing of the circuits which are the cause of the problem in the service sector.

New !



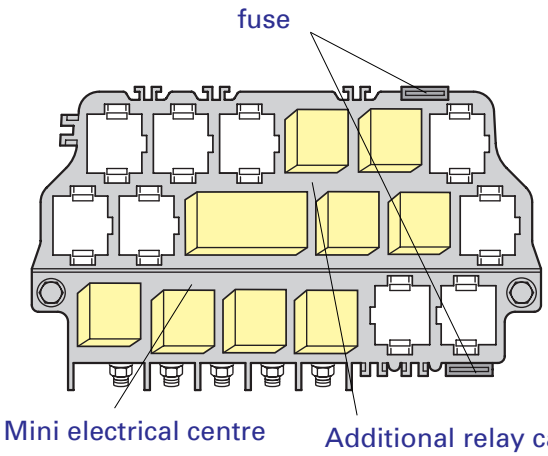
SP15-90

The hazard warning relay

The hazard warning relay is integrated in hazard warning switch.

The mini electrical centre

The mini electrical centre houses the main relays of the base equipment.
On models with more comprehensive optional equipment, an additional relay carrier is installed above the mini electrical centre.
The mini electrical centre contains the fuses required in the case of optional equipment (e.g. power windows).



SP15-91

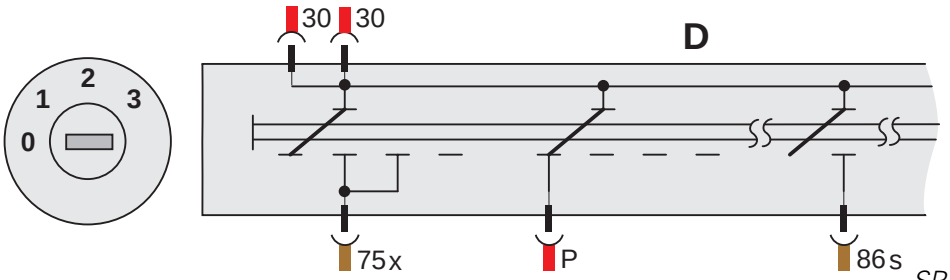
Note:
Reference should be made to the particular valid current flow diagram for the contact assignments.
See in this connection Current Flow Diagrams, Electrical Fault Finding and Fitting Locations binder.

X contact circuit

New !

The ignition/starter switch on the OCTAVIA has a contact -75x- for operating the relief relay for X contact J59. Depending on the position of the ignition key 0-1-2-3, different circuits are set in the ignition/starter switch which automatically switch off electrical components during starting, the light warning signal or radio.

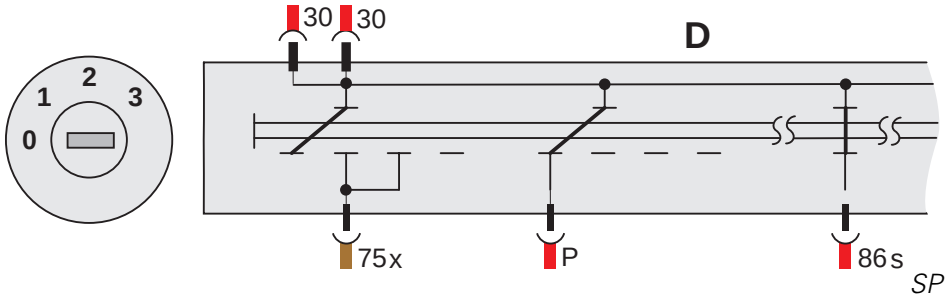
Ignition Off
Ignition key withdrawn!



SP15-92

Battery positive (30) is supplied to the parking light switch (E19) through contact "P".
A radio which is switched on does not operate.

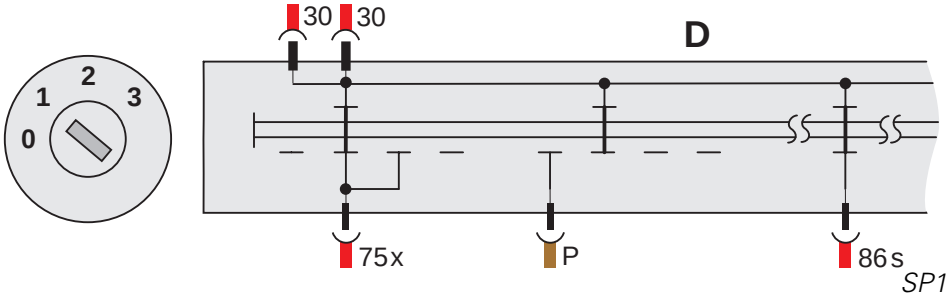
Ignition Off!
Ignition key inserted!



SP15-93

Battery positive (30) is supplied to the warning device (buzzer) and the radio through contact "86s".
If the radio was not switched off, it is now operational.
If the side lights were switched on, the warning buzzer now sounds.

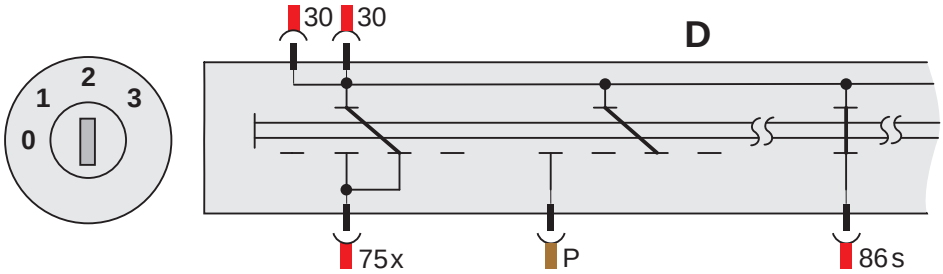
Ignition Off!
Ignition key in position "1"!



SP15-94

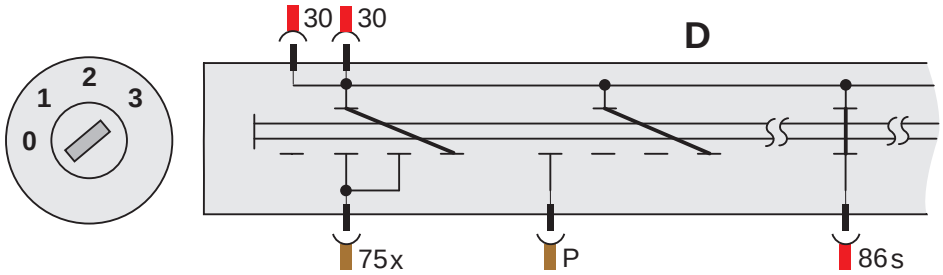
Contact "P" is set to "Off".
Parking light switch not operating.
Contact "75x" and thus also relief relay for X contact are connected to battery positive. The relief relay for X contact (J59) operates.
The electrical components (lights, turn signals, wipers, heater with blower, horn, rear window wiper) can now be operated.

Ignition on!
Engine still off!
Ignition key in position "2"!



All electrical components and control units operating. *SP15-95*

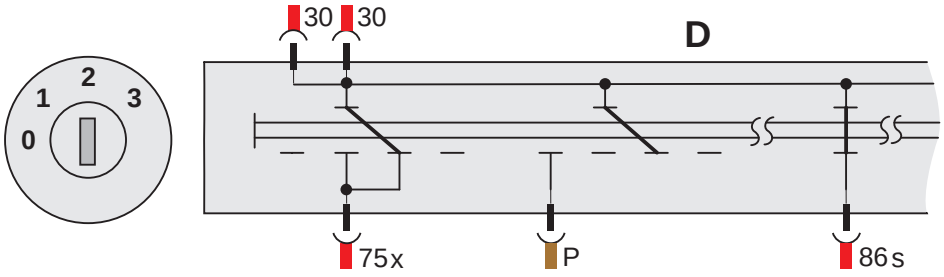
Ignition on!
Engine start!
Ignition key in position "3"!



SP15-96

For the start operation contact "75x" is no longer connected to battery positive (30). The relief relay for X contact (J59) opens and any components switched on (e.g. lights) are switched off.

Ignition on!
Engine running!
Ignition key in position"2"!



SP15-97

Once starting is completed, the ignition lock jumps back into position "2" and all electrical components can be operated.

Legend:
D = Ignition/starter switch
75x = Connection for relief relay for X contact (J59)
P = Connection for parking light switch
86s = Connection for warning buzzer and radio

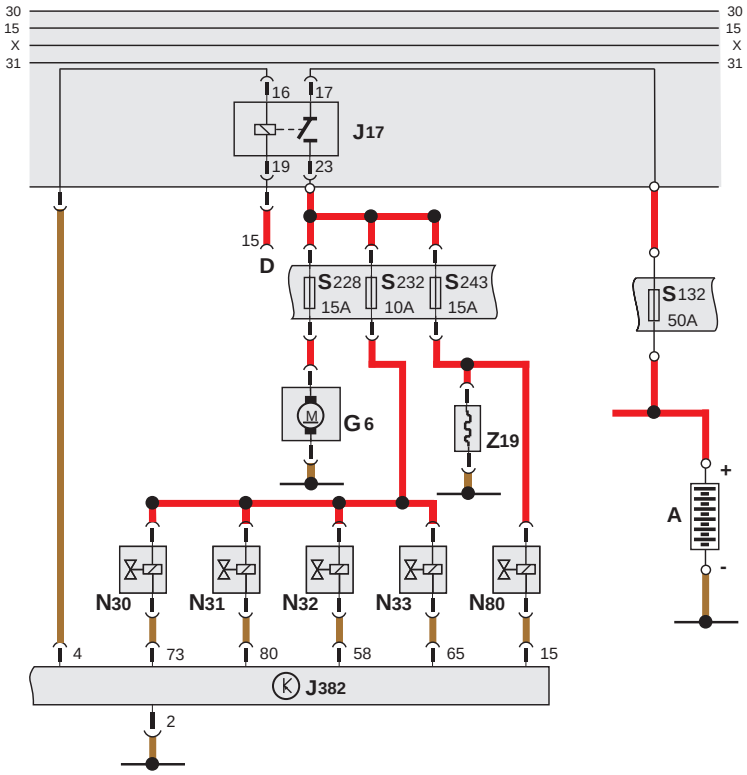
Power supply taking the example of fuel system

New !

The fuel pump relay is located in the mini electrical centre, relay position 4.
It is supplied with positive from terminal 15 of the ignition/starter switch (D) and earth (31) through the engine control unit.
Voltage is supplied through the fuel pump relay (J17) to the following components:

- fuel pump (G6)
- injectors (N30...N33)
- das Magnetventil
  solenoid valve for activated charcoal filter (N80) an the lambda probe heater (Z19).

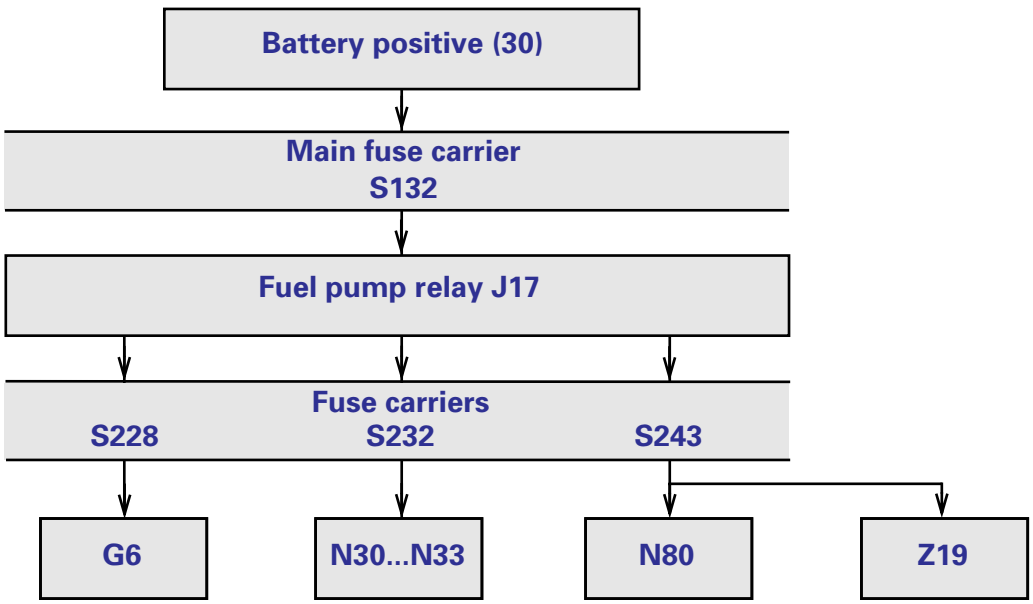
Note:
Note should be made of 2 fuses in the voltage supply for these components.



Function diagram of voltage supply

SP15-98

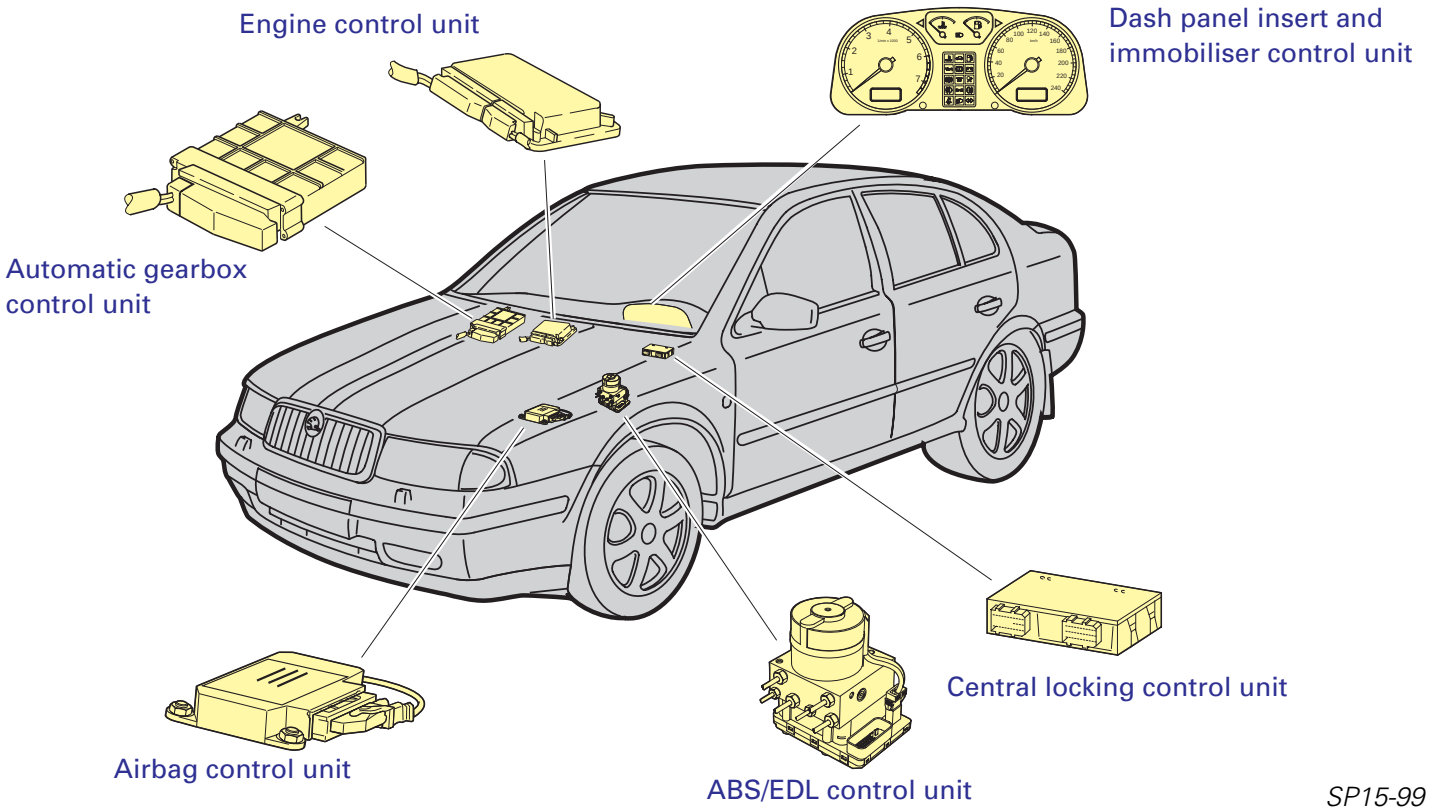
Diagram of voltage supply



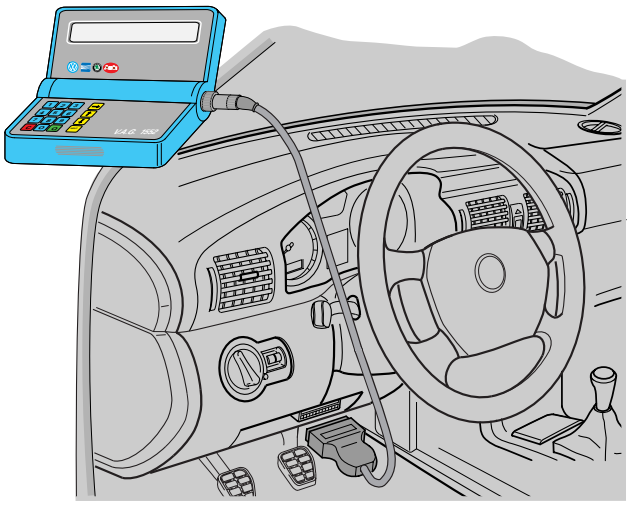
One contact of the fuel pump (G6) and the lambda probe heater (Z19) is connected to vehicle earth (31). The injectors (N30...N33) and the solenoid valve (N80) are switched to earth by the engine control unit.

Self-diagnosis

The vehicle features comprehensive self-diagnosis with fault memory.
Vehicle systems with self-diagnosis capability:



SP15-99



SP15-100

The connection for self-diagnosis is located in the shelf on the driver's side.

Vehicle system tester V.A.G 1551/1552 is used for self-diagnossis.
Important!
Program card 6 is required for V.A.G 1551, and program card 3 for V.A.G 1552.

Note:
Reading the fault memory of the self-diagnosis is part of the Annual Inspection.

The automatic test sequence is carried out by selecting address word "00"; in other words the fault memories of all vehicle systems with self-diagnosis capability and with rapid data transfer are interrogated.

Detailed description of self-diagnosis is given in the OCTAVIA Workshop Manuals.

Electrical System

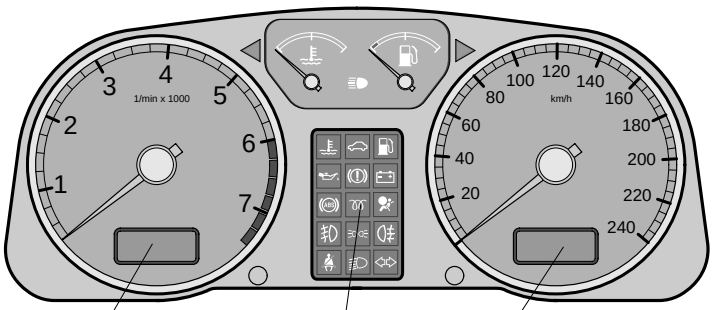
Dash panel insert

New !

The dash panel insert is offered in 2 versions:

- Base version (with digital clock in rev counter)
- Midline (with multifunction display - in rev counter)

The speedometer contains the indications for distance, trip counter and service interval display.
The service interval display appears when the engine is started.
The dash panel insert is controlled by a microprocessor and features comprehensive self-diagnosis.



The immobiliser control unit is integrated in the dash panel insert.
The dash panel insert and the immobiliser can be interrogated with the fault reader V.A.G 1551/1552 by selecting address word "17".

Dash panel insert

Multifunction display
- Digital clock
- Driving time anddistance
- Average speed
- Average fuel consumption
- Momentary consumption
- Outside temperature

Immobiliser
- Emergency start function
- Key adaptation
- Control unit adaptation

Service interval display
- Oil Service
- Service Inspection based on distance and time
- Resetting after service or replacing control unit

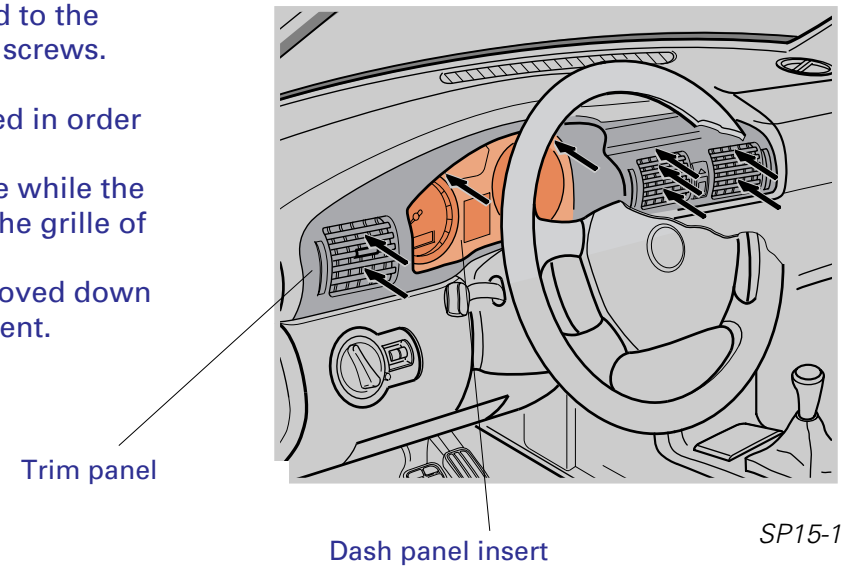
Self-diagnosis with
- Interrogation of fault memories
- Final control diagnosis
- Coding control unit

Adaptation possible for
- Correction of fuel consumption display
- Service interval
- Distance counter
- Tank sensor characteristic

Indicator/warning lights
- Top 3 rows, LEDs, cannot be replaced
- Bottom 2 rows, bulbs of lights can be replaced

The dash panel insert is attached to the dash panel with two cross-head screws.

The trim panel has to be removed in order to gain access to the screws.
Two screws are easily accessible while the others can be reached through the grille of the vents.
The steering wheel should be moved down with the steering wheel adjustment.



SP15-102

Note:
The dash panel insert must not be disassembled.
Interrogate the fault memory and note all the readouts relating to distance and service interval display before removing dash panel insert.
After installing, the dash panel insert should be coated, the immobiliser control unit adapted and the service interval display correctly set.

Light switch

New !

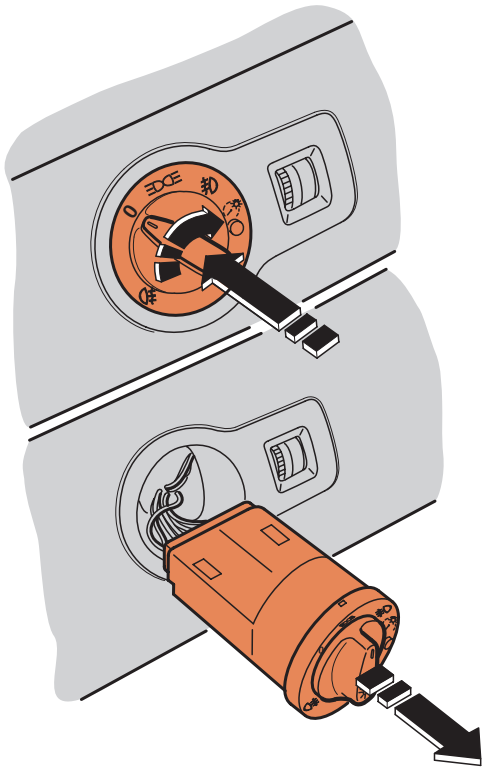
The light switch is a combination switch.
Rotary switch for
- side lights
- driving lights.

Pull switch for
- fog lights
- rear fog light,

with a rotary handle for regulating the intensity of the instrument lighting.

The light switch is held in the instrument panel by locking catches (not visible).

Note:
To remove the light switch, push light switch forward into position "0" and then turn to the right.
The locking catches move down when this is done.
Leave light switch in this position and pull it out of the instrument panel.

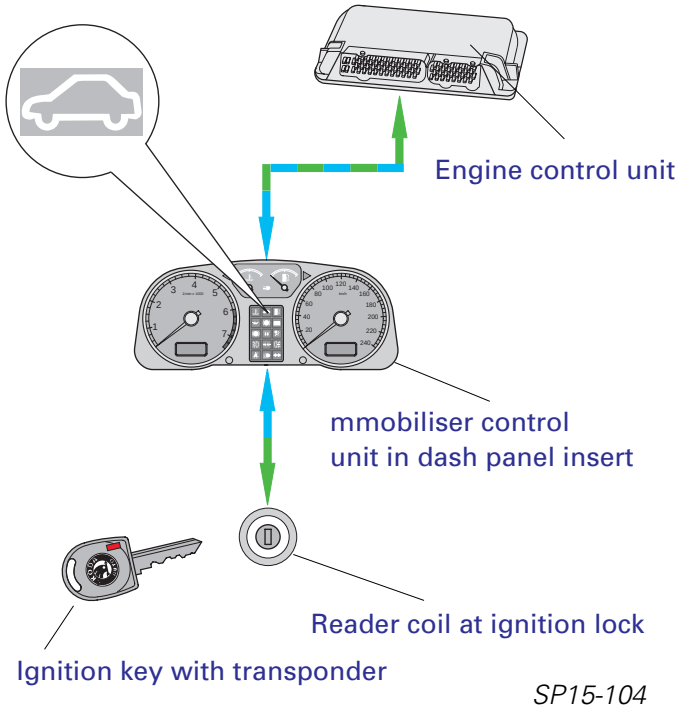


SP15-103

Immobiliser

The immobiliser operates in the same way as the system familiar from the FELICIA. It intervenes through an adapted engine control unit in the engine management system.

It comprises the components of
- adapted ignition key with transponder
- reader coil at ignition lock
- warning light in dash panel insert
- immobiliser control unit in dash panel insert
- adapted engine control unit.



SP15-104

The immobiliser features comprehensive self-diagnosis.
If faults occur, fault codes are stored in the fault memory of the control unit.

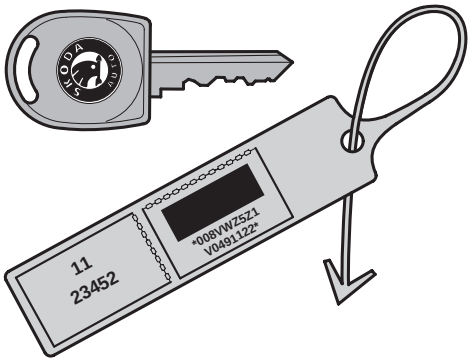
The faults can be determined by using the vehicle system tester V.A.G 1551/1552.

Emergency start function
If the car is not operational because the immobiliser is faulty, the immobiliser can be deactivated by using an emergency start function. The car can then be driven under its own power to the nearest SKODA workshop.

Two methods can be used for the emergency start:

- with V.A.G 1551/1552
- with instruments of the dash panel insert

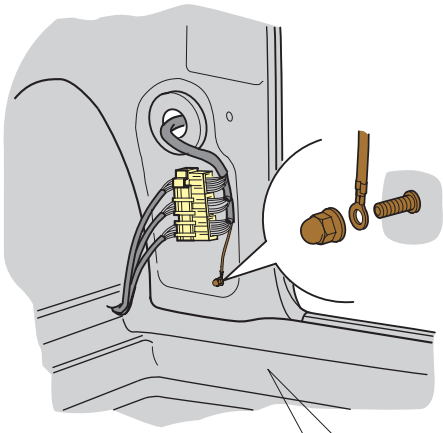
No matter which method is used, it is necessary to have the secret number (key fob with concealed secret number or determine the number from the 14-digit ident number of the control unit).
Once the emergency start has been completed, it is always possible to again start the engine within 45 minutes with the ignition key inserted.
If the ignition key is withdrawn, it is then only possible to start the engine within 10 minutes.



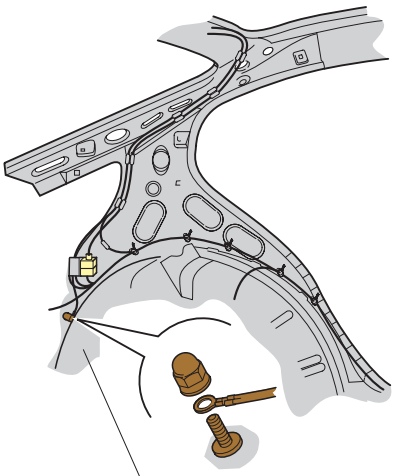
SP15-105

Note:
Before initiating the emergency start functions, the customer should prove that he is the authorized user by presenting the vehicle registration documents and an ID.
The procedure for the emergency start function is described in the Workshop Manual OCTAVIA, Electrical System.

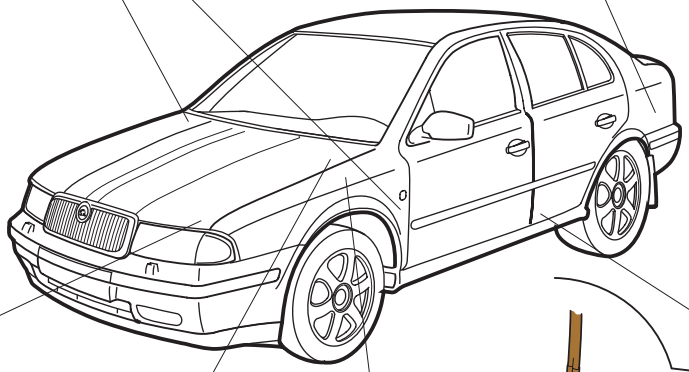
Coupling and connector stations
and principal earth points in the vehicle

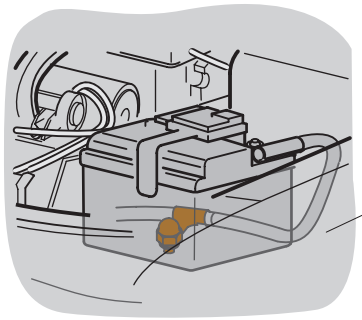


Connector station in bottom of left and right A pillars and earth point

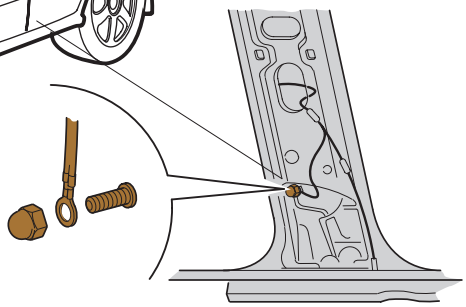


Connector station at bottom of left C pillar and earth point

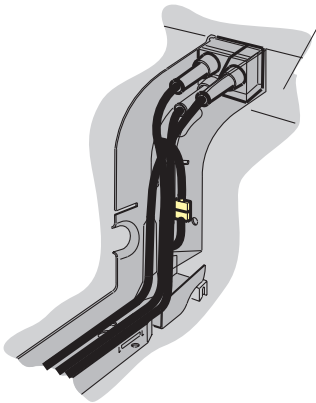




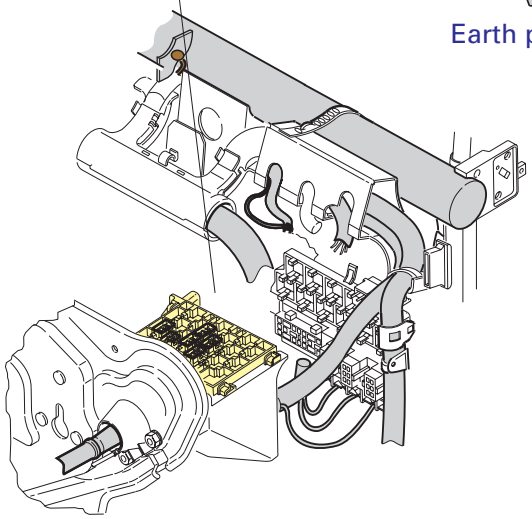
Left earth point, below battery



Earth point in B pillars



Connector station cable duct (links engine cabling and engine wiring harness)



Coupling station in plenum chamber and earth point at central tube

SP15-106

Central locking/electric convenience system

New!

The OCTAVIA features a convenient system for central locking with which additional electrical components are closely linked.
The information is no longer transmitted by using individual cabling but along signal wires (CAN network) and processed in control units (CAN = Controller Area Network - a means of transmitting signals which were previously sent along the wiring loom).
Functions are not carried out through the CAN.

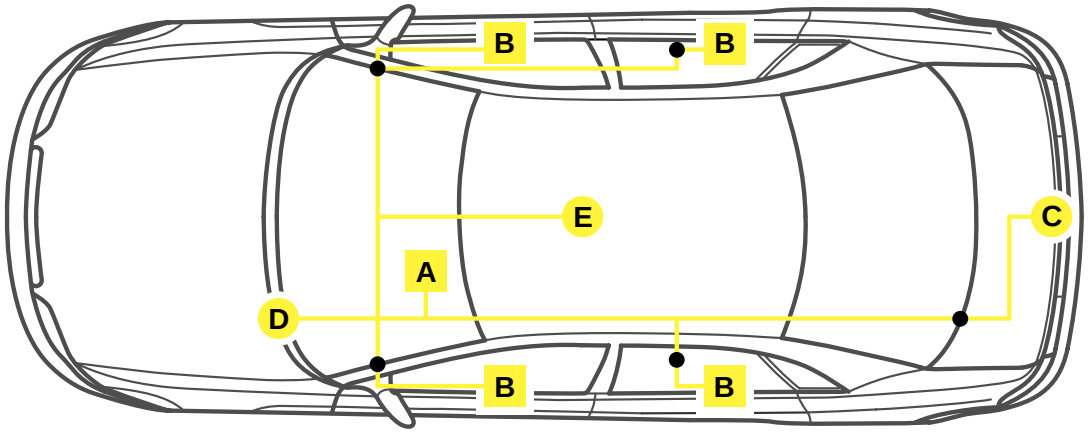


Diagram of convenience system equipment A

SP15-107

A = Central control unit for convenience electrics J393 (central module)
B = Door control units J386 ... J389 with locking units F 220...F223
C = Tailgate
D = Diagnostic connection
E = Sliding roof, interior lights
● = Separation points (door, tailgate)

Functions of the convenience system

Equipment A

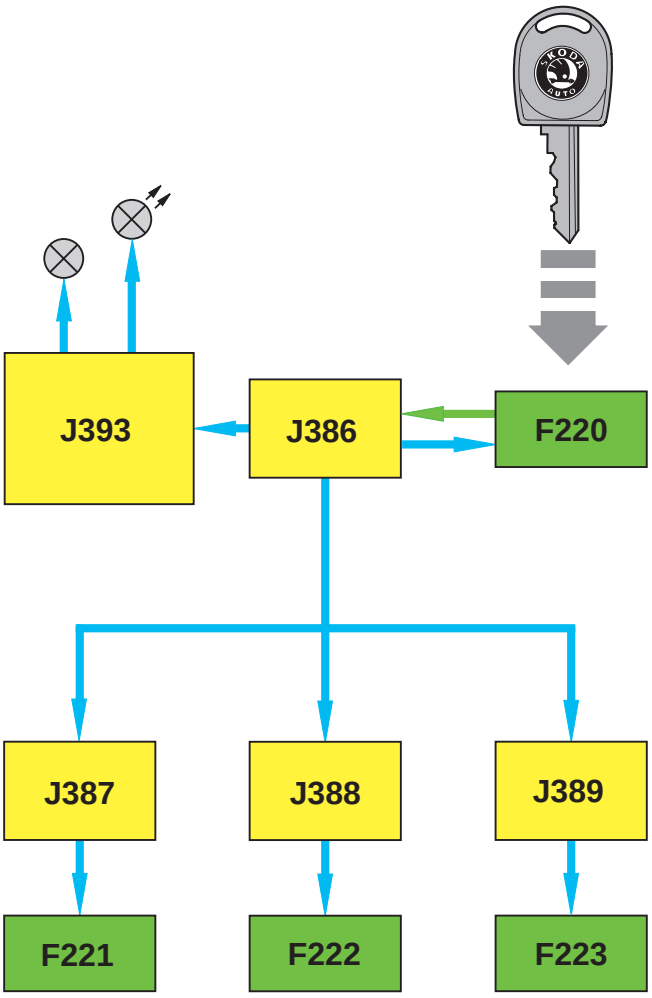
– Central locking (each door has its own door control unit, integrated at the power window motor)
– Power windows control
– Mirror adjustment control
– Mirror heater control
– Folding mirror control
– Tailgate central locking
– Radio remote control
– Anti-theft alarm
– Diagnosis

Equipment B

– Central locking (without door control unit, control from central control unit)
– Tailgate central locking
– Radio remote control
– Anti-theft alarm
– Diagnosis

The control units of the 4 doors and the central module are interlinked by a 2-wire dataline (CAN network).
All the information (switch signals, locking states) are advised to the other system components by means of this connection.
Information from the vehicle (e.g. ignition terminal 15, vehicle speed) is output by the central module for data transfer.

Function diagram of central locking taking the example of the driver's door



SP15-108

The locking operation consists of:

- actuating the components involved in the lock system,
- the locking function in the door locks/locking unit,
- the information to initiate other convenience functions.

Example of a locking operation procedure (schematic diagram)

- The driver side door control unit J386 is activated by the locking unit F220 as a result of the locking operation with the key
- A check is carried out in data transfer in J386 as to whether locking is authorized, e.g. "Is driver door closed?"
- Information to own locking unit F220 "Lock driver door"
- Signal along dataline to central control unit J393 and to all door control units for the locking operation
- All the door control units automatically initiate the "locking" function.

  At the same time the windows are closed and the locking knobs of the doors automatically blocked.
- The interior light is switched off and the anti-theft alarm activated by the central control unit.

Depending on the vehicle equipment, the procedure can also be initiated using the radio remote control.

Further information regarding the functions of the convenience system are given in the Self Study Programme No. 17 - SKODA OCTAVIA, Convenience Electrics.

Notes

re special features

Each door control unit carries out its functions for itself.
The central control unit does not have any master function.

The door lock is an element of the central locking system.

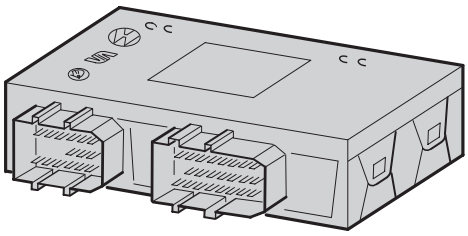
The operating points are the lock cylinders of the driver's door, front passenger's door and tailgate.

No door contact switches are provided in the system.
The contact is made by the rotary tumbler switch in the door lock.

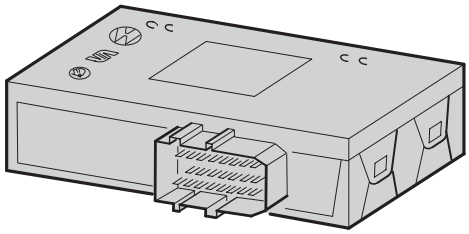
On models with manually operated windows, the central locking is not controlled through the door control units but by the central control unit.

Operational checks at the door are possible within a period of 10 minutes even from outside the car, without data transfer.

The control units of the central locking



SP15-109



SP15-110

The central control units of the central lokking/convenience electrics differ in their internal configuration depending on the optional equipment fitted to the vehicle.
The fitting location and casings are identical.

Maximum configuration

Central locking
Anti-theft alarm
Central locking using remote control

In this case the control unit has an external aerial.
This can be recognized from the two plug connections on the outside.

Minimum configuration

Central locking

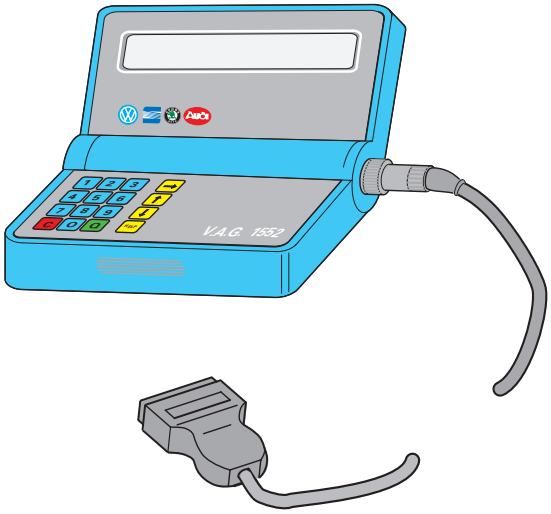
The control unit has only one plug connection on the outside.

Self-diagnosis of the convenience system

The electronic convenience system/central locking is equipped with comprehensive self-diagnosis. The address word for the convenience system is "46".

The following functions can be carried out:

Function 02 Interrogating fault memory
Function 03 Final control diagnosis
Function 05 Erasing fault memory
Function 06 Ending output
Function 07 Coding control unit
Function 08 Reading measured value block



SP15-111

03 Final control diagnosis

– Alarm horn
– Actuating turn signal lights
– Interior lights
– Closing sliding roof signal
– Safe LED
– Lighting of switches and instruments

07 Coding control unit

The equipment version (with power windows or with simple central locking) and the national version are advised to the convenience system by means of a numerical code.

08 Reading measured value block

A wide range of measured values can be read using this function. A selection of the components:

– Central control unit
– Window lifter switch
– Key switch
– Window lifter Hall signal
– Rotary tumbler switch
– Mirror adjustment switch
– Instrument lighting
– S contact
– Bonnet and radio contact switches

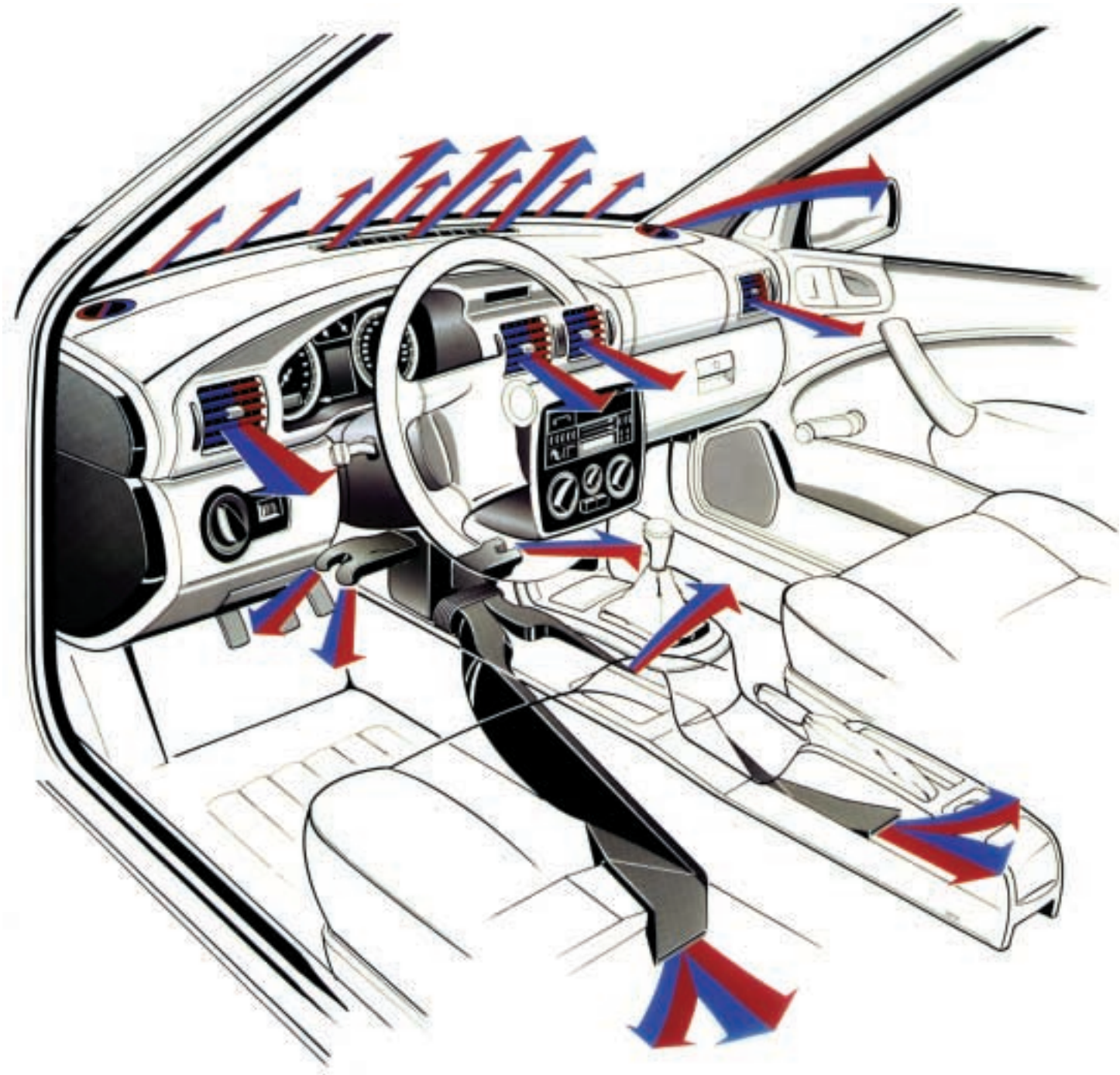
Note:

When carrying out fault finding of the electric convenience system/ central locking, the first action is to initiate diagnosis before carrying out any mechanical work.

After the system link has been established by selecting address word "46" with ignition switched on, diagnosis can also be carried out with the ignition switched off.

The vehicle system tester can thus be placed in the vehicle and the lokking operations can be initiated and observed from outside of the car.

Heating/Ventilation



SP15-112

The heating, as on the FELICIA, is controlled at the air side (temperature flaps).

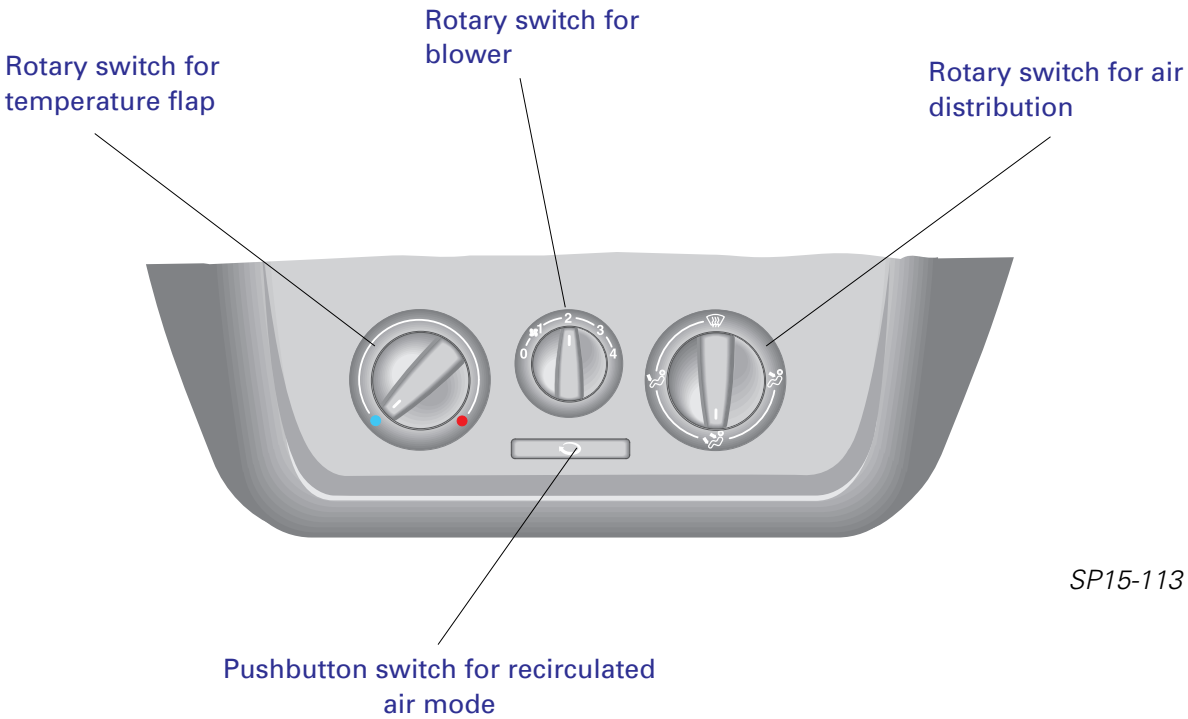
It is equipped with a pollen filter, a 4-speed blower and recirculated air system.

It differs from the FELICIA in the installation position and in the installation point:

– installed not in the engine compartment but in the interior of the car.

The rear compartment heating duct is divided and merges in the footwell behind the front seats.

The rotary switches for the temperature flap, for the blower, for the air distribution and the pushbutton switch for the recirculated air mode are conveniently located in the centre console.



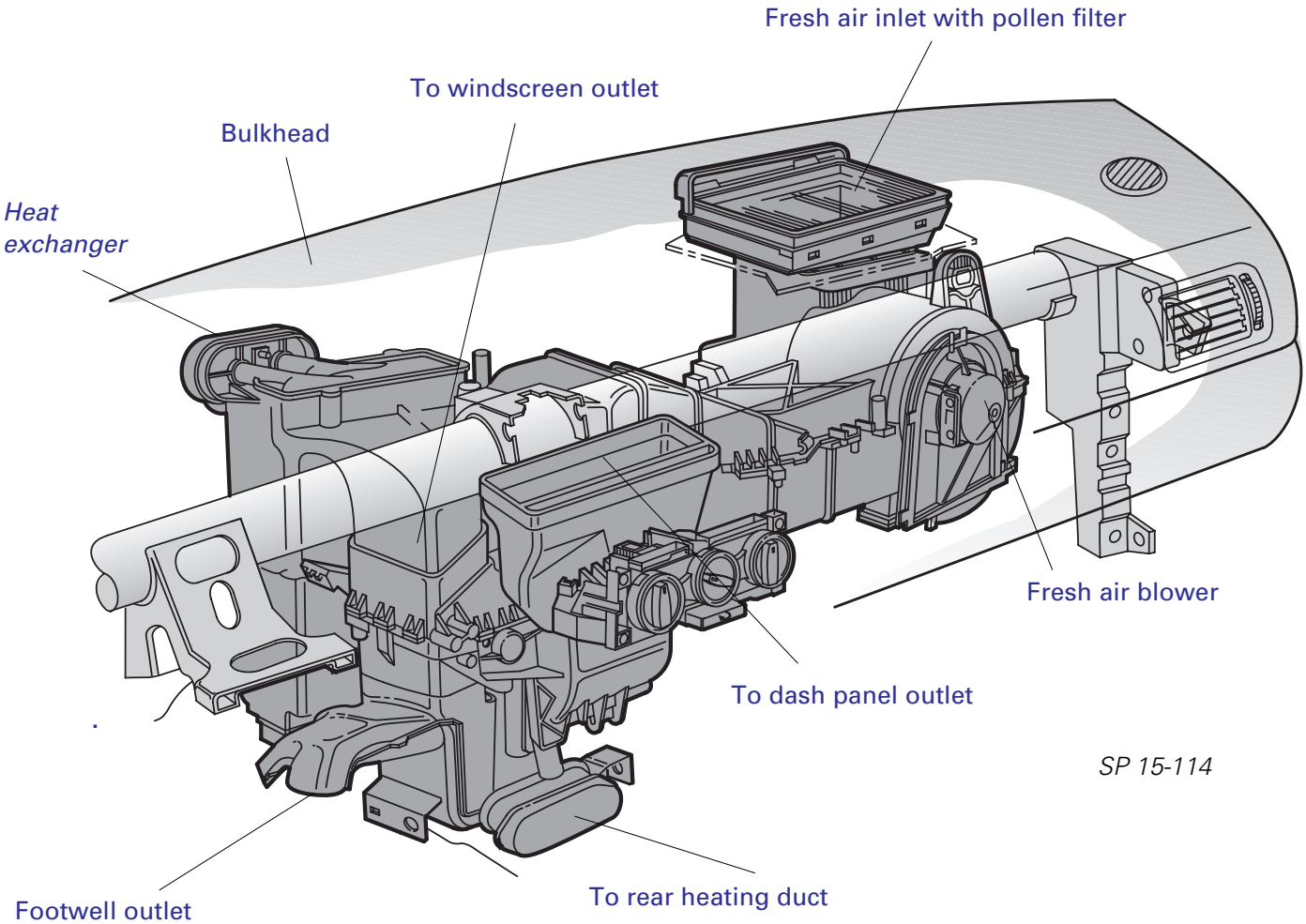
SP15-113

The operation of the heating system is described on the pages which follow.
For the special features regarding recirculated air mode refer to the section Air Conditioning

Installation point

The heater unit is installed in the interior of the car, below the instrument panel.

The air ducts between heater unit and outlets are an integral part of the instrument panel. This has made it possible to eliminate separate connections.

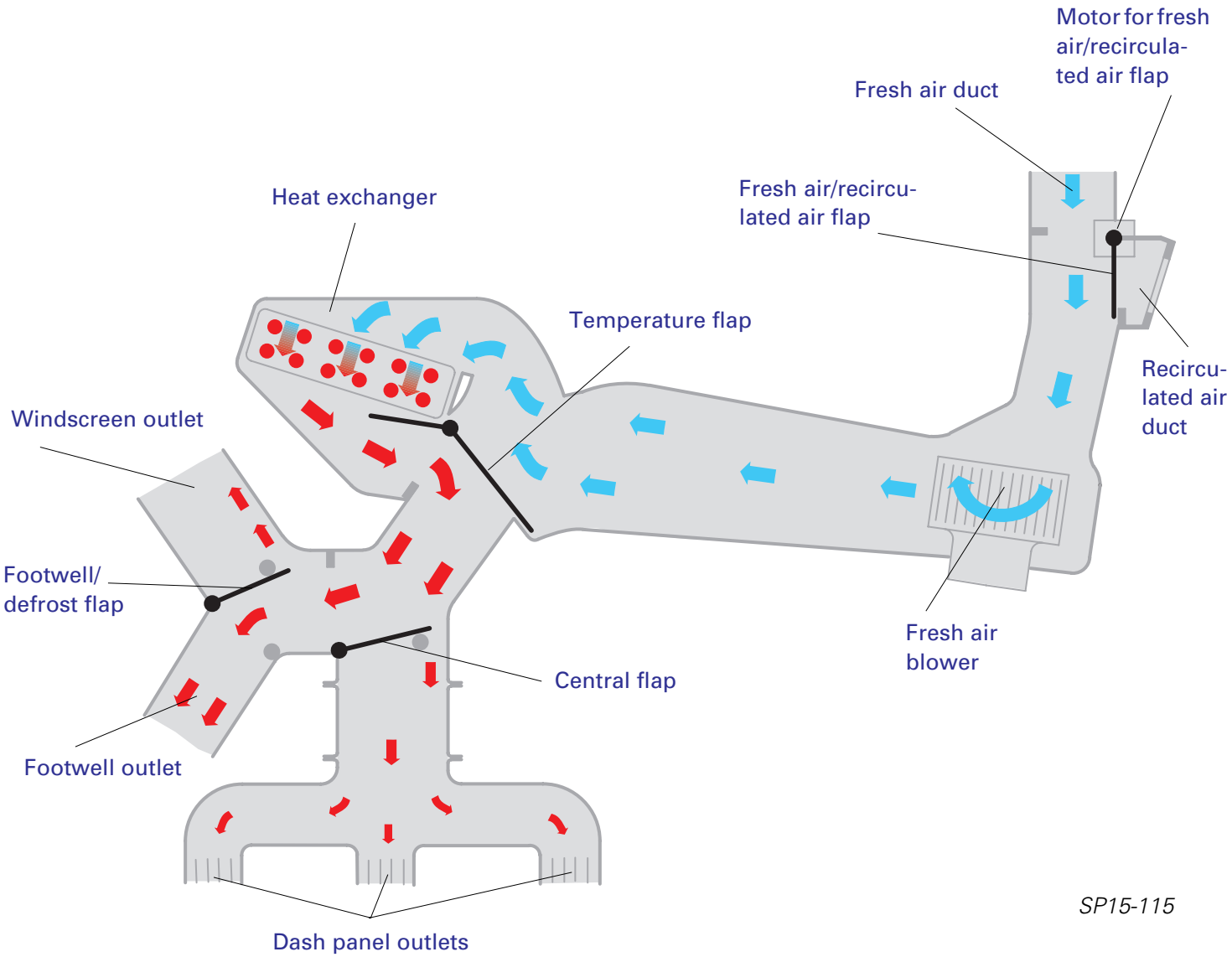


SP 15-114

Diagram of air circulation - simplified representation

The air from the outside flows into the heating system ahead of the windscreen.
It passes first of all through the pollen filter.
A well designed system of flaps makes it possible to easily set the air flow for heating and ventilation without any losses.
Depending on the position of the temperature flap, the air flows through the heat exchanger and is heated or used directly for the fresh air supply.

It is possible to switch over to recirculated air mode if required.
In this case, only the air in the interior of the car then circulates.
The fresh air/recirculated air flap is switched over electrically by a servo motor

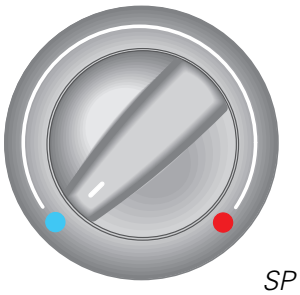


Temperature control

The heated air is controlled steplessly by the temperature flap.
Coolant continuously flows through the heat exchanger.

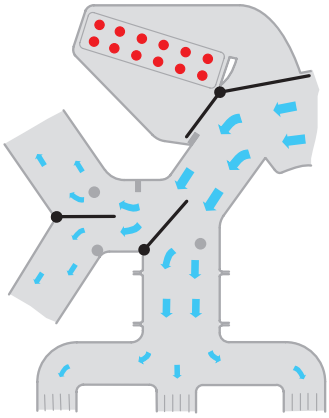
Advantages:

- short response time when altering temperature from warm to cold or vice versa
- continuous full circulation of the coolant

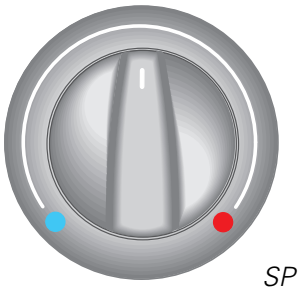


SP15-116

Temperature flap closed

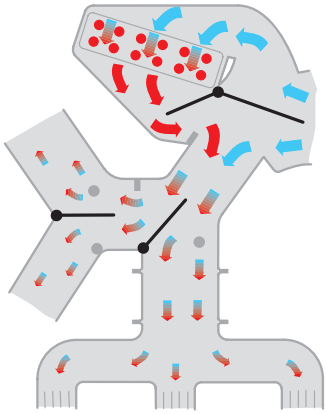


SP15-119

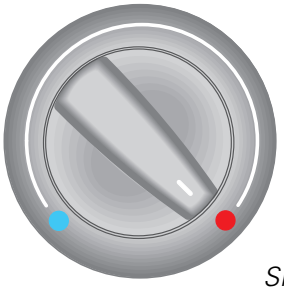


SP15-117

Temperature flap half opened

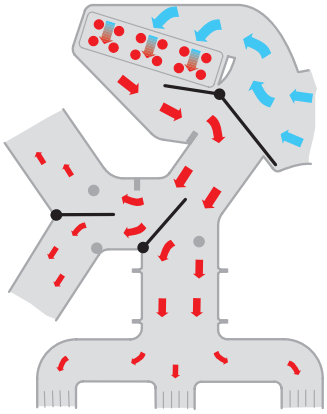


SP15-120



SP15-118

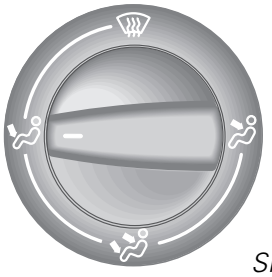
Temperature flap fully opened



SP15-121

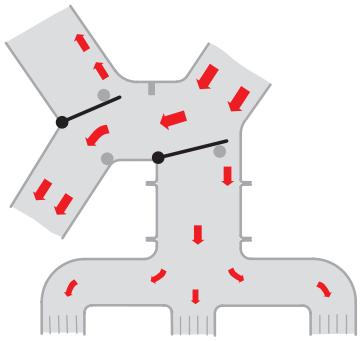
Air distribution

The air distribution is regulated by means of a rotary switch.
The central flap and the footwell/defrost flap are actuated by cams and the recirculated air switch is locked in a switch position.

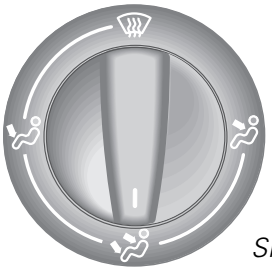


SP15-122

Most of the air is directed into the footwell.
Small volume of air flows through the flap gap to the windscreen and to the dash panel outlets.

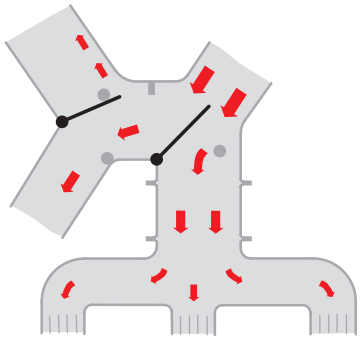


SP15-126

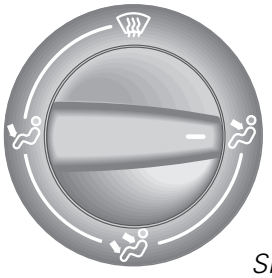


SP15-123

Air is directed into the footwell, to the windscreen and to the dash panel outlets.
Small volume of air to the wind-screen through the gap of the flap.

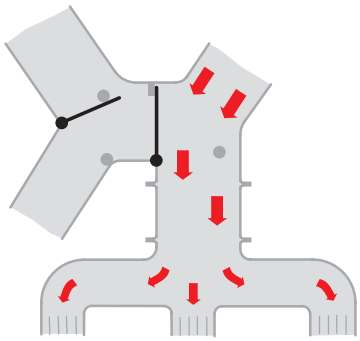


SP15-127

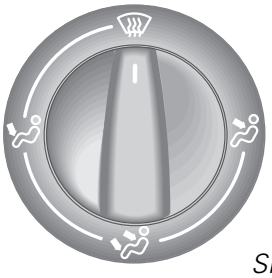


SP15-124

Air directed to the dash panel outlets
Entire air flow is directed to the dash panel outlets. The dash. panel outlets can be regulated individually or closed.

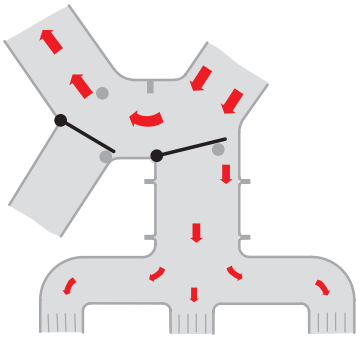


SP15-128



SP15-125

Most of the air is directed to the windscreen and a small volume through the gap of the flap to the dash panel outlets.
The recirculated air switch is blocked.



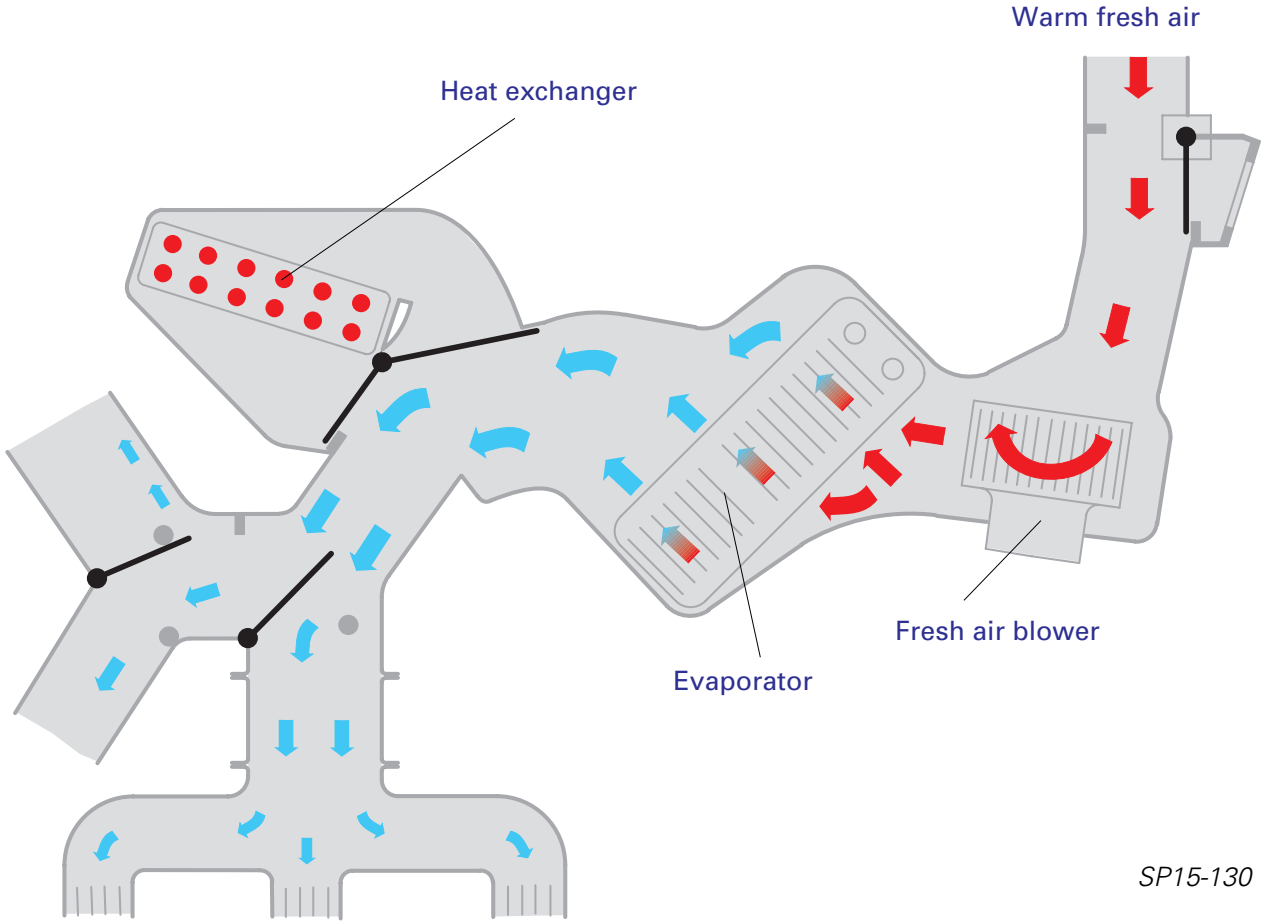
SP15-129

Air Conditioning

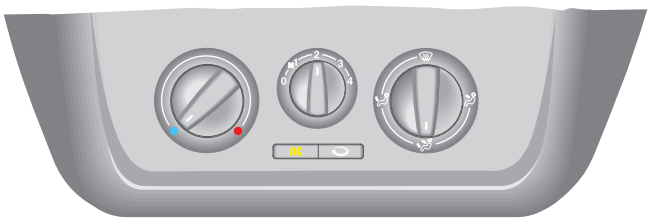
A manually regulated air conditioning system is available as optional equipment in the SKODA OCTAVIA.
The air conditioning system differs from the heating and ventilation system in the following respects:

- additional pushbutton switch with ON/OFF function for the A/C compressor
- additional evaporator upstream of the heat exchanger for cooling and drying the air
- the other familiar components of the refrigerant circuit which are filled with CFC-free refrigerant R134a

The air distribution as well as the operation of the blower and recirculated air mode are identical with the heating and ventilation system. The blower should be set at least to stage 1 when the air conditioning is operating.
The air conditioning does not operate when the blower is set to stage 0 (risk of icing).
The LED in the pushbutton switch comes on when the air conditioning is operating.



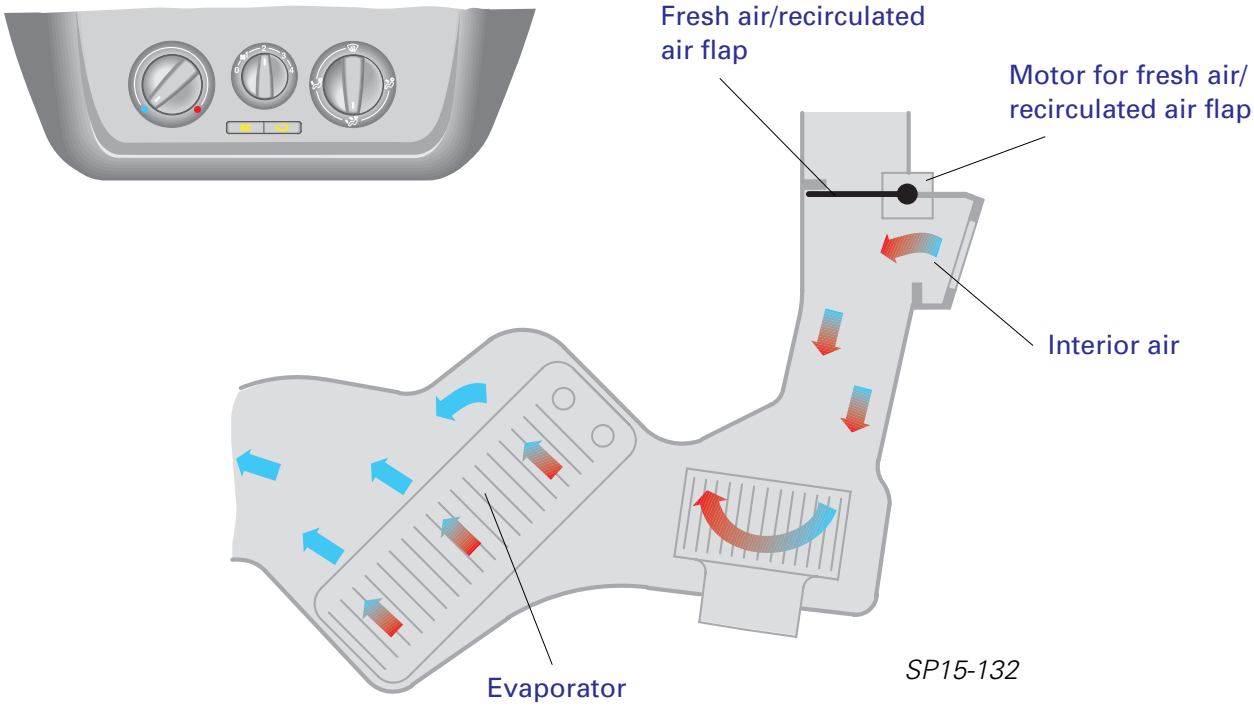
SP15-130



SP15-131

Recirculated air mode

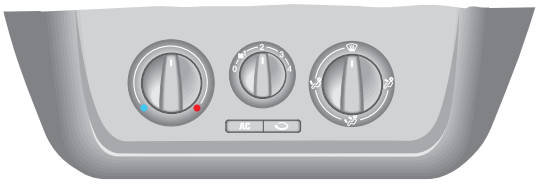
The system is switched over from the fresh air to the recirculated air mode with the recirculated air switch.
This is identical for the air conditioning system and the standard heating system.



SP15-132

The fresh air/recirculated air flap is switched over electrically by means of a servo motor. This motor is attached to the heater housing. The shaft of the flap is operated by a positioning lever.

Note:
It is not possible to select the recirculated air mode in every position of the rotary switch for air distribution.

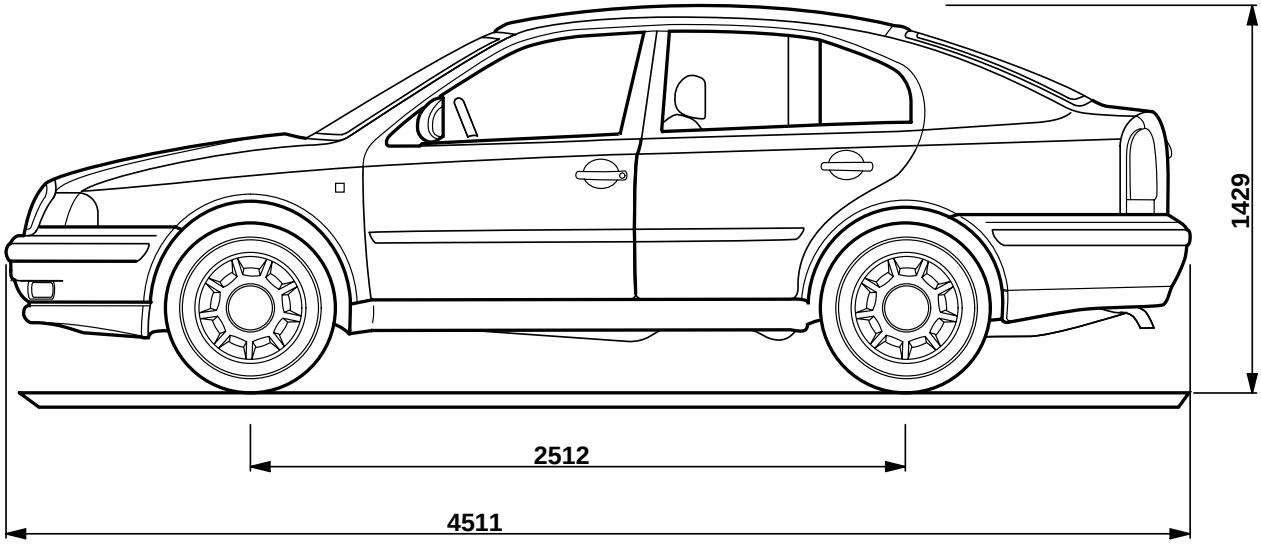


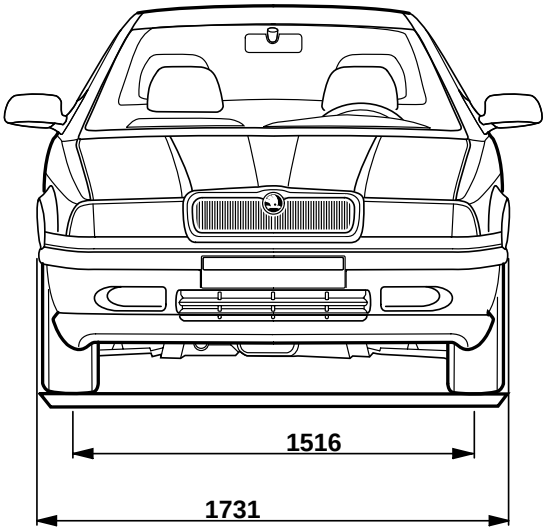
SP15-133

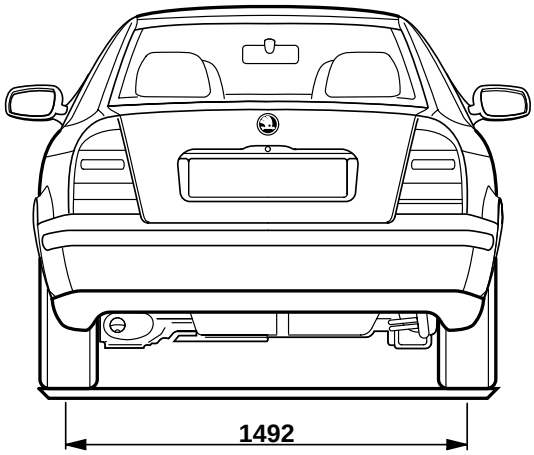
The recirculated air switch is automatically blocked when the rotary switch is in the "windscreen" position.
The switch then cannot be operated.
This applies both to the standard heating system and to the air conditioning system.
The purpose of this is to avoid the windscreen misting up because of moist interior air.

The recirculated air flap is automatically closed when the recirculated air mode is switched on and switch position "windscreen" is selected.

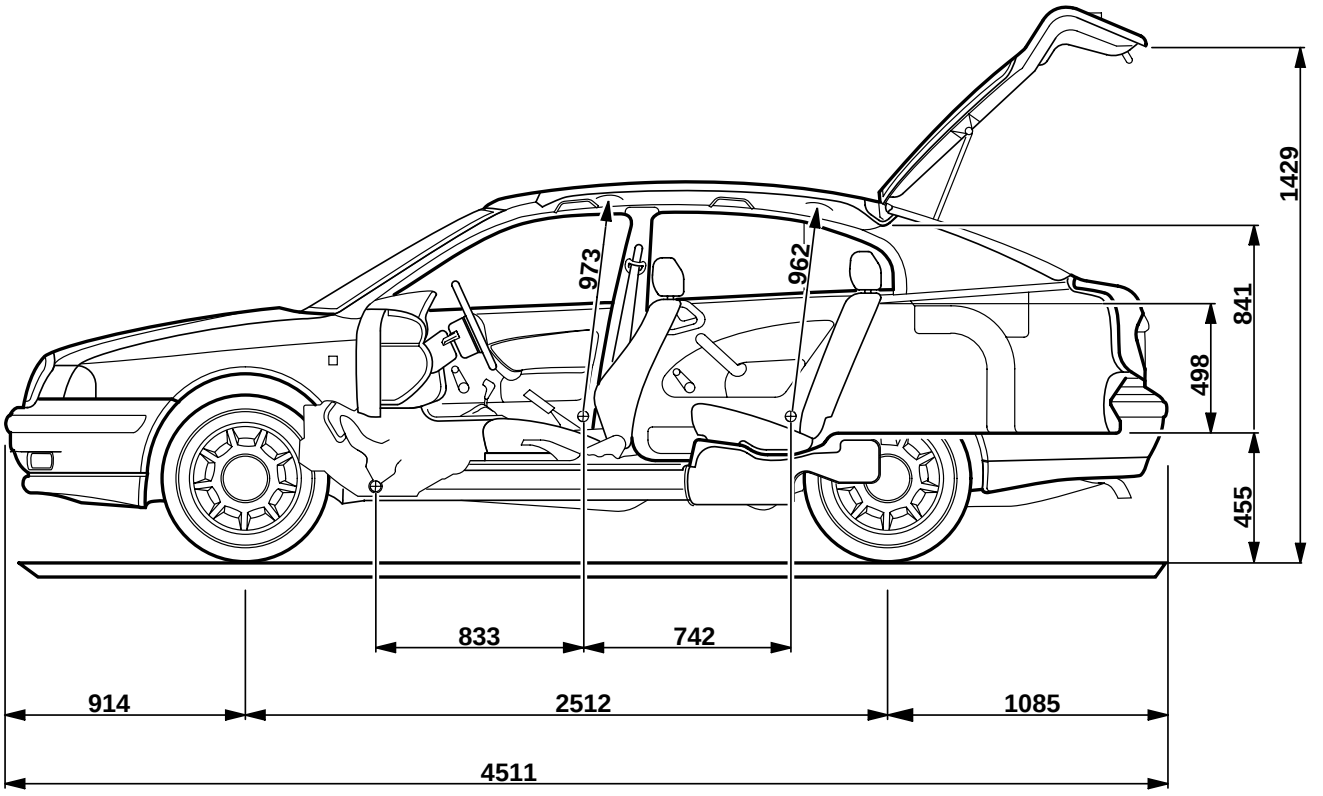
Dimensions







SP15-134



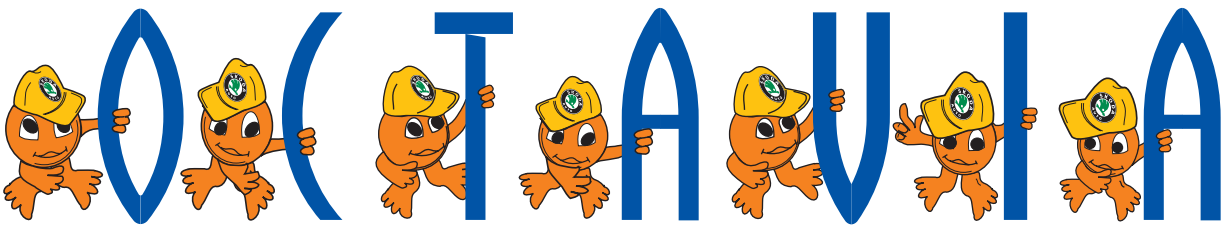
SP15-135

The enhanced comfort demands are also reflected in the dimensions of the OCTAVIA:

Compact exterior dimensions –
an interior offering plenty of space for occupants and their luggage,

Luggage compartment volume 534 ltr. / 1245 ltr.,
with split rear seat from equipment version GLX,

wide-opening tailgate.


OCTAVIA

List of Self Study Programmes published so far

No.	Title	Technical Status	Article No.
01	Mono-Motronic	01/93	S00.2003.60.00
02	Central locking	02/93	S00.2003.61.00
03	Anti-theft alarm	03/94	S00.2003.62.00
04	Working with current flow diagrams	09/94	S00.2003.63.00
05	SKODA FELICIA	10/94	S00.2003.64.00
06	SKODA vehicle safety	02/95	S00.2003.65.00
07	ABS ground basic idea	envisaged	S00.2003.66.00
08	FELICIA ABS	05/95	S00.2003.67.00
09	Immobiliser with transponder	01/95	S00.2003.68.00
10	Air conditioning in the vehicle	07/95	S00.2003.69.00
11	FELICIA air conditioning	08/95	S00.2003.70.00
12	1.6-ltr. engine with MPI	07/95	S00.2003.71.00
13	1.9-ltr. naturally aspirated diesel engine	11/95	S00.2003.72.00
14	Power-assisted steering	01/96	S00.2003.73.00

List of Service Training Booklets published so far

Title	Article No.
Mono-Motronic	S00.2005.00.00
Airbag	S00.2005.01.00
Anti-lock brake system	S00.2005.02.00
Refrigerant in vehicle air conditioning systems	S00.2005.03.00
Electronic immobiliser	S00.2005.04.00
Seat belt with seat belt tensioner	S00.2005.05.00

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S00.2003.74.20 Technical Status 09/96