Workshop Manual
FABIA 2000 ➤

Inspection and Maintenance
Edition 08.99

Printed in Czech Republic
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List of Supplements to Workshop Manual

FABIA 2000 ➤

Inspection and Maintenance

Edition 08.99

Supple-ment	Edition	Subject	Article Number
	08.99	Basic Edition	S00.5301.00.20
1	12.99	Supplement to Basic Edition	S00.5301.01.20
2	02.00	Vehicle identification number	S00.5301.02.20
3	03.00	Inspection Service every 90.000 km; exhaust-emission analysis	S00.5301.03.20
4	11.00	FABIA COMBI, new engines and gearboxes, exhaust-emission analysis	S00.5301.04.20
5	12.00	Vehicle identification number, exhaust-emission analysis, text modifications	S00.5301.05.20
6	06.01	FABIA SEDAN, text modifications	S00.5301.06.20
7	11.01	Additional text	S00.5301.07.20
8	02.02	Engines AWY and BBY	S00.5301.08.20
9	06.02	Engine BBZ, coolant G12 Plus	S00.5301.09.20
10	10.02	Additions and alterations to the text, exhaust-emission analysis	S00.5301.10.20
11	04.03	AZQ Engine, additions and alterations to the text	S00.5301.11.20
12	07.03	Exhaust-emission analysis according to EOBD, engine oil capacity at oil change, engines AMF and ASZ	S00.5301.12.20
13	02.04	Exhaust gas, addition to text	S00.5301.13.20
14	09.04	BMD, BKY engine, addition to text	S00.5301.14.20

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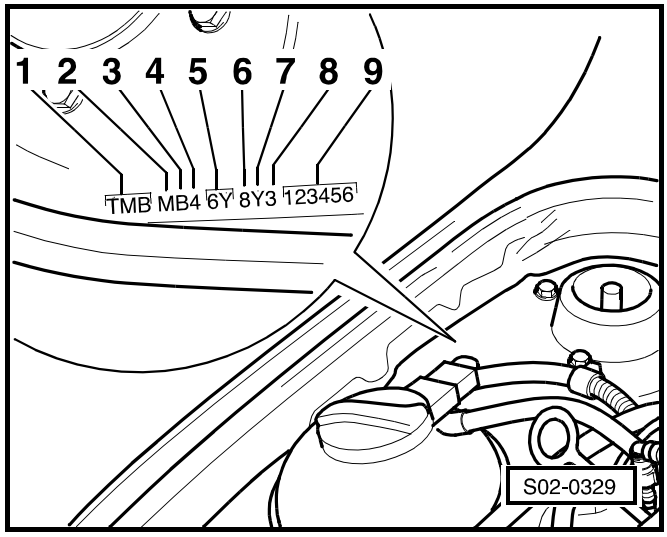
02 – Inspection and Maintenance

02-1 General points

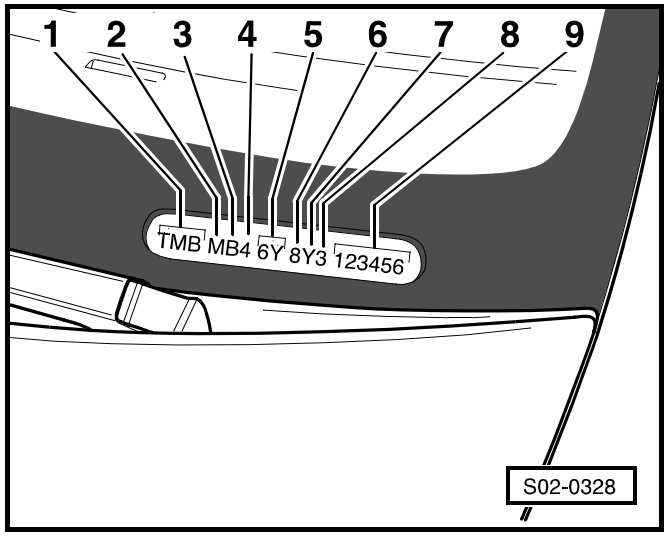
Vehicle identification data

Vehicle identification number

The vehicle identification number (chassis number) is attached to the right suspension dome.



The vehicle identification number (chassis number) can also be found bottom left of the front window corner.



1 - Manufacturer's world code

2 - Model and version:

B - FABIA SEDAN Elegance

C - FABIA SEDAN Comfort/Ambiente

D - FABIA SEDAN Classic

G - FABIA COMBI Elegance

H - FABIA COMBI Comfort/Ambiente

J - FABIA COMBI Classic

M - FABIA Elegance

N - FABIA Comfort/Ambiente

P - FABIA Classic/Junior

T - FABIA PRAKTIK

W - FABIA RS

3 - Engine type:

A - 1.0 ltr./37 kW/petrol engine

B - 1.4 ltr./50 kW/petrol engine

C - 1.4 ltr./55 kW/petrol engine

D - 1.4 ltr./74 kW/petrol engine

E - 2.0 ltr./85 kW/petrol engine

F - 1.9 ltr. SDI/47kW/diesel engine

H - 1.4 ltr./44 kW/petrol engine

S - 1.9 ltr. TDI PD/74 kW/diesel engine

U - 1.9 ltr. TDI PD/96 kW/diesel engine

W - 1.2 ltr./40 kW/petrol engine

Y - 1.2 ltr./47 kW/petrol engine

Z - 1.4 ltr. TDI PD/55 kW/diesel engine

4 - Airbag System:

0 - no airbag

1 - 1 Front airbag

2 - 2 Front + 2 side airbags

4 - 2 Front airbags

8 - light weight utility vehicle

5 - Model:

6Y - FABIA, FABIA COMBI, FABIA SEDAN, FABIA PRAKTIK, FABIA RS

6 - Internal code

7 - Model year:

Y - 2000

1 - 2001

2 - 2002

3 - 2003

4 - 2004

5 - 2005

8 - Manufacturing plant:

3 and 4 - Mladá Boleslav

6 - Kvasiny

7 - Vrchlabí

B - Solomonovo

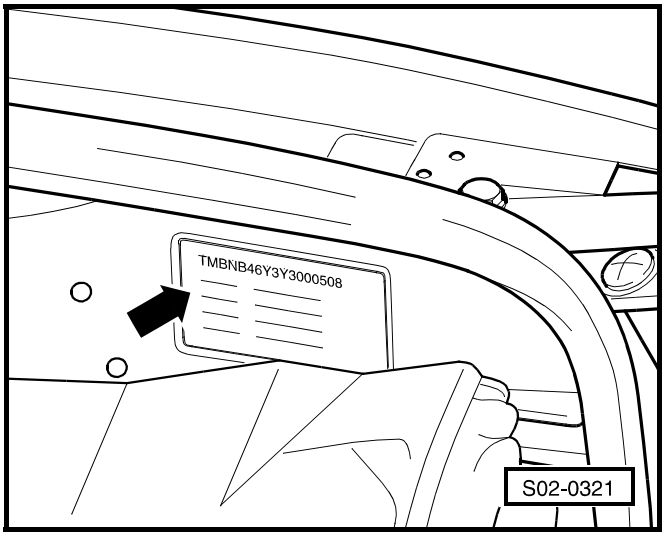
N - Mladá Boleslav

X - Poznan

9 - Vehicle body number

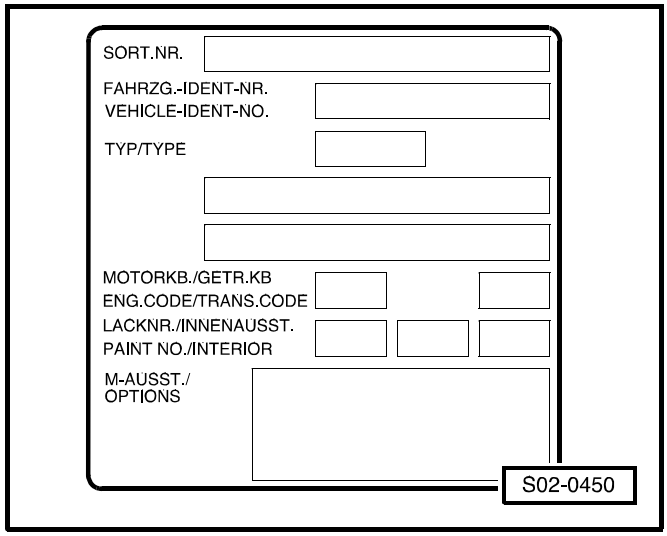
Type plate

The type plate -arrow- is attached to the front of the left wheel house.



Vehicle data sticker

The vehicle data sticker is located at the rear left on the floor of the boot. ►



Storage of ŠKODA new vehicles

Notes on storage of new vehicles ⇒ Technical Service Handbook.

Vehicle handover from stock

- Before starting a stock vehicle, carry out a Pre-sales Inspection.
- If the vehicle has been in stock for more than 6 months, replace the brake fluid.
- Inspect the electrolyte level of the battery and top up, if necessary.
- Before the vehicle is sold, the recharging table must be removed from the battery.
- If the battery is more than 52 weeks old or has been recharged more than twice, it must be replaced with a new battery.

Additional customer information regarding inspection and maintenance

Information regarding the use of vehicles under „severe conditions“:

- The service advisor should always point out to the customer that the inspection intervals are based on normal operating conditions.
- Under „severe conditions“ the inspection intervals must be shortened.

„Severe conditions“ exist, for instance, if the vehicle is operated continuously in one or several of the conditions stated below:

- ♦ Towing a trailer or when fitted with a roof rack.
- ♦ Operated on dusty, poor, muddy roads or roads treated with road salt.
- ♦ Driven for short distances and at ambient temperatures below freezing point.

- If one or several of these „severe conditions“ exists, please advise your customer whether it is necessary to have work carried out between the normal service intervals, such as:

- ♦ Changing the engine oil before the normal specified interval.
- ♦ Cleaning or replacing the air filter element in the air filter housing.

General information:

– Inform your customer about this so that he has each inspection carried out at the right time and none are forgetten.

– Draw the attention of your customer to the sticker affixed to the side of the dash panel (driver's side) indicating when the next service event is due.

– In addition, enter in the boxes provided in the pages of the Service Schedule when the next service or other additional operations should be carried out.

– An oil change service should be undertaken at the prescribed interval ⇒ Chapter 02-2.

– Advise your customer that to maintain the vehicle in a safe and roadworthy condition and also to ensure that the warranty terms are complied with, it is essential to have the additional following operations carried out in addition to the annual inspections:

♦ Every 2 years change the brake fluid (have this done if possible during an inspection service).

02-2 Inspection

Pre-Delivery Inspection -PDI- (Export)

The operations marked with * apply to all countries; other operations are applicable to certain countries only!

Compare as-delivered condition of vehicle with order form	Chapter
♦ Engine fitted	
♦ Type plate in the engine compartment ♦ Vehicle data sticker (compare with stamped identification number)	
♦ Colour of paintwork, badges, inscriptions	
♦ Seats (cover, colour) interior trim (colour)	
♦ Radio, speakers, aerial	
♦ Central locking system, anti-theft alarm system	
♦ Wheels, tyres	
♦ Sun roof	
♦ Vehicle log book - for completion: Operating manual and service plan (in the correct language and with the correct edition data), short introduction, technical data, support in the case of a breakdown, other manuals (radio,...)) - all in the vehicle log book pouch	
♦ Other equipment (all equipment fitted in proper condition)	
* Check transport damage (bodywork, paintwork, upholstery, interior trim, carpeting, footmats, tyres, wheels)	02-5, 02-7
Vehicle (exterior)	
– Check that all car keys and key number fobs have been provided; check that the sticker for the key number for the electronic immobiliser is complete and legible	
– Proper operation of door handles outside, door locks, child safety locks, door contact switches and proper operation of all locks and keys (including spare keys), doors, boot lid/ tailgate, fuel filler cap, bonnet lock	02-7
– Proper operation of anti-theft alarm system	
Engine compartment (from above)	
– Check battery no-load voltage, recharge battery if necessary	02-6
– Check tight connection of electric cables and plug connections (in particular battery cables)	
– Inspect engine, gearbox, cooling system, brake system and fuel system for leaks	02-3, 02-5
– Engine oil level (in-between markings on dipstick)	02-3
– Brake fluid level (at „MAX“ marking)	02-5
– Coolant level (in-between marking), special equipment antifreeze down to -35°C	02-3
– Fill up fluid in washer reservoir, in the winter add antifreeze	
Vehicle interior	
– Proper operation of seat belts, seat belt height adjuster, power windows and sun roof	
– Check car tool kit, spare wheel and accessories for completeness and proper attachment	
Underside of vehicle (on lift platform)	
– Inspect underbody (underbody protection for damage)	02-7
– Inspect for leaks and damage: Engine, gearbox, final drive, steering, brake system, axles, joint boots. Check proper routing of the brake hoses and brake lines, fuel lines including ventilation of the fuel system	02-3, 02-5

Pre-sales Inspection - (the Czech Republic)

Compare as-delivered condition of vehicle with order form	Chapter
♦ Engine fitted	
♦ Type plate in the engine compartment ♦ Vehicle data sticker (compare with stamped identification number)	
♦ Colour of paintwork, badges, inscriptions	
♦ Seats (cover, colour) interior trim (colour)	
♦ Radio, speakers, aerial	
♦ Central locking system, anti-theft alarm system	
♦ Wheels, tyres	
♦ Sun roof	
♦ Vehicle log book - for completion: Operating manual and service plan (in the correct language and with the correct edition data), a list of dealers, short introduction, technical data, other manuals (radio.....)) - all in the vehicle log book pouch	
♦ Other equipment (all equipment fitted in proper condition)	
♦ Vehicles in stock for more than 6 months: Change brake fluid	
Inspections and operations to be completed	
Vehicle (exterior)	
– Plastic and rubber parts - cleanliness and damage	
– Inspect bodywork and paintwork for damage	02-7
– Check that all car keys and key number fobs have been provided; check that the sticker for the key number for the electronic immobiliser is complete and legible	
– Proper operation of door handles outside, door locks, child safety locks, door contact switches and proper operation of all locks and keys (including spare keys), doors, boot lid/ tailgate, fuel filler cap, bonnet lock	02-7
– Proper operation of anti-theft alarm system	
– Tighten the wheel bolts to specified torque (steel and light alloy wheels 120 Nm), fit wheel caps	02-5
– Check the tyre inflation pressure (including spare wheel), if necessary correct the tyre inflation pressure, fit valve caps	02-5
– Fit roof aerial	
Engine compartment (from above)	
– Check battery no-load voltage, recharge battery if necessary	02-6
– Check tight connection of electric cables and plug connections (in particular battery cables)	
– Inspect engine, gearbox, cooling system, brake system and fuel system for leaks	02-3, 02-5
– Engine oil level (in-between markings on dipstick)	02-3
– Brake fluid level (at „MAX“ marking)	02-5
– Coolant level (in-between marking)	02-3
– Fill up fluid in washer reservoir, in the winter add antifreeze	
– Windscreen wiper/washer system and headlamp cleaning system: Check for proper operation	02-7
Vehicle interior	

– Proper operation of seat belts, seat belt height adjuster, power windows and sun roof	
– Inspect upholstery, interior trim, carpeting and footmats for cleanliness and damage	
– Inspect all switches, all electrical components, gauges/indicators and controls	02-6
– Radio: Inspect for proper operation, store stations, set clock, encode	02-6
– Reset service interval display	02-6
– Power windows: Inspecting positioning	02-6
– Key switch for airbag deactivation, front passenger side: Check function „ON/OFF“ and switch-over to the position „ON“	02-7
– Fit net in luggage compartment (if available)	
– Check the car tool kit, spare wheel and accessories, that they have all been supplied and are properly secured	
– Install the carpets supplied in the vehicle	
– Perform a test drive	
Underside of vehicle (on lift platform)	
– Inspect underbody (underbody protection for damage)	02-7
– Inspect for leaks and damage: Engine, gearbox, final drive, steering, brake system, axles, joint boots. Check proper routing of the brake hoses and brake lines, fuel lines including ventilation of the fuel system	02-3, 02-5
– Inspect tyres and wheels for damage	02-5
Concluding operations	
– Interrogate fault memory of all systems, if necessary erase	02-6
– Remove protective seat covers	
– Remove recharging table (if affixed)	
– Complete the service schedule, affix the vehicle data sticker in the Service Schedule to the floor of the luggage compartment next to the spare wheel„Next Service Date“ sticker and affix to the side of the dash panel on the driver's side, hand the card „Škoda Assistance“ to the customer	02-7
– Final inspection to ensure proper condition for handover to the customer	

Delivery Inspection (Export)

Inspections and operations to be completed	Chapter
Vehicle (exterior)	
– Plastic and rubber parts: Inspect for cleanliness and damage	
– Inspect bodywork and paintwork for damage	02-7
– Check operation of the tailgate lock and the fuel filler cap, door contact switch, operation of the door handles, door locks and safety buttons, central locking from outside as well as inside, child safety locks, ability to close all locks on the vehicle using all keys (including the spare key)	02-7
– Check operation of the anti-theft alarm system	
– Tighten the wheel bolts to specified torque (steel and light alloy wheels 120 Nm), fit wheel caps	02-5
– Check the tyre inflation pressure (including spare wheel), if necessary correct the tyre inflation pressure, fit valve caps	02-5
– Vehicles in stock for more than 6 months: Change brake fluid	02-5

– Fit roof aerial	
Engine compartment (from above)	
– Check battery no-load voltage; recharge if necessary	02-6
– Check tight connection of electric cables and plug connections (in particular battery cables)	
– Brake fluid level (at „MAX“ marking)	02-5
– Check the engine oil level (to be in-between the marking on the dipstick)	02-3
– Check the coolant level (in-between marking), for special equipment antifreeze down to -35 °C	02-3
– Fill up fluid in washer reservoir, in the winter add antifreeze	
– Check windscreen wiper and washer system, the spray nozzle adjustment and the resting position of the windscreen wipers	02-7
Vehicle interior	
– Inspect upholstery, interior trim, carpeting and footmats for cleanliness and damage	
– Inspect all switches, all electrical components, gauges/indicators and controls	02-6
– Radio: Inspect for proper operation, store stations, encode, set clock	02-6
– Fit net in luggage compartment (if available)	
– Vehicle log book - for completion: Operating manual and service plan (in the correct language and with the correct edition data), short introduction, technical data, support in the case of a breakdown, other manuals (radio,...)) - all in the vehicle log book pouch	
– Reset service interval display	02-6
– Power windows: Inspecting positioning	02-6
– Key switch for airbag deactivation, front passenger side: Check function „ON/OFF“ and switch-over to the position „ON“	02-7
Underside of vehicle (on lift platform)	
– Inspect underbody (underbody protection for damage)	02-7
– Inspect for leaks and damage: Engine, gearbox, final drive, steering, brake system, axles, joint boots. Check proper routing of the brake hoses and brake lines, fuel lines including ventilation of the fuel system	02-3, 02-5
– Inspect tyres and wheels for damage	02-5
Concluding operations	
– Perform a test drive	02-9
– Interrogate fault memory of all systems, if necessary erase	02-6
– Complete the service schedule, affix the vehicle data sticker in the Service Schedule to the floor of the luggage compartment next to the spare wheel, complete the „Next Service Date“ sticker and affix to the side of the dash panel on the driver's side	02-7
– Remove recharging table (if affixed)	
– Remove protective seat covers	
– Install the carpets supplied in the vehicle	
– Final inspection to ensure proper condition for handover to customer	

Oil Change Service every 15.000 km[1)] (QG0)

An Oil Change Service need only be carried out if the vehicle has covered 15 000 km before one year has elapsed[1)]. If the Oil Change Service is due only a few months prior to the Annual Inspection, it is recommended to carry out the Annual Inspection at the same time.

Work involved	Chapter
– Change engine oil – Replace engine oil filter	02-3
– Disc brake pads: Inspect thickness	02-5
– Reset service interval display	02-6
– Drain away water from the fuel filter (diesel engine with fuel operation, which does not comply with DIN EN 590-standard)	
After each oil change	
– Complete „Next service date“ sticker (max. 1 year or 15 000 km) and affix sticker to the side of the dash panel (on the driver's side)	
– Complete and attach service mirror tag to the interior rear-view mirror	
– Hand customer the completed and signed form	

Annual Inspection (every 12 months) (QG0)

	Chapter
♦ For vehicles with a high mileage carry out an Oil Change Service no later than after 15 000 km[1)]. Carry out Annual Inspection after 30 000 km prior to the scheduled date	02-3
♦ Every 2 years - in addition change brake fluid	02-5
♦ Every 4 years - in addition, change air filter element and clean air filter housing - vehicles driven less than 60 000 km within 4 years - replace contents set for tyre repair	02-3
♦ Every 5 years - replace the emergency battery for the alarm	02-6
♦ Exhaust-emission analysis (EEA): Expiry date - see EEA tag on the vehicle identification plate (only valid for some countries)	
♦ Recommendation: Replace windscreen wiper blades every 2 years	
♦ At each inspection - check the 'use by date' of the first aid kit	
Work involved	
– Interrogate fault memory of all systems, if necessary erase	02-6
– Inspect engine and components in the engine compartment for leaks and damage	02-3
– Change engine oil – Replace engine oil filter	02-3
– Airbag units: Perform visual inspection for external damage	02-7
– Reset service interval display	02-6
– Inspecting brake system for leaks and damage	02-5
– Check the thickness of the brake pads on all wheels	02-5
– Check gearbox, final drive, drive shafts and joint boots for leaks and damage	
– Axle joints: Inspect boots for leaks and damage	

[1)] The 7500 km interval applies for diesel operation with high sulphur content - it does not apply for the Czech Republic (for further information refer to Technical Service Handbook)

– Track rod ends: Inspect play and correct attachment of boots	
– Check the tyre inflation pressure (including spare wheel), correct if necessary	02-5
– Inspect tyre wear (including spare wheel)	02-5
– Inspect tyre tread depth (including spare wheel) and record (FL..., FR..., RR..., RL..., SP...)	02-5
– Inspect exhaust system for leaks, damage and attachment	
– Brake fluid volume: Check level, if necessary top up	02-5
– Battery: test	02-6
– Check the anti-freeze in the cooling system and record ..... °C, check for leaks, top up coolant if necessary	02-3
– Flap lock for the engine bonnet: grease	
– Inspect operation of all switches, all electrical components, gauges/indicators and controls for proper operation	02-6
– Windscreen wiper and washer system: Inspect condition of wiper blades, wiper operation, washer system: if necessary top up fluid	02-7
– Inspect plenum chamber for dirt, clean if necessary	02-7
– Fuel filter: Drain away water (vehicles with diesel engine with fuel operation, which does not comply with DIN EN 590-standard)	02-3
– Inspect trailer coupling (with removable arm - manufacturer Profsvar)	02-7
After each inspection	
– Complete the „Next Service“ sticker and affix sticker to the side of the dash panel (on the driver's side)	
– Perform road test including inspection of proper operation of footbrakes and handbrake, gearshift and steering, final inspection	02-9
– „Mirror tag“ - complete and attach to interior mirror	
– Hand customer the completed and signed form	

Every 30 000 km (QG0)

Includes: Annual inspection and additional operations stated in the table below

Work involved	Chapter
– Headlights: Inspect, if necessary adjust	02-6
– Gear oil: Inspect level and top up if necessary (manual gearbox)	02-4
– Fuel filter: Drain away water (vehicles with diesel engine with fuel operation, which does not comply with DIN EN 590-standard)	02-3
– Check underbody protection and body paintwork for damage	02-7
– Dust and odour filter element for the passenger compartment: replace	02-7
– Inspect operation of tilting roof and grease the runners	02-7
– Inspect timing belt (petrol engines) - every 90 000 km, then every 30 000 km	02-3

Every 60 000 km (QG0)

Includes: Inspection every 30 000 km and additional operations stated in the table below

Work involved	Chapter
– Air filter: Clean housing, replace filter element	02-3
– Fuel filter: replace (vehicles with diesel engine)	02-3
– Ribbed V-belt: Inspect condition and for vehicles without tensioning pulley also the tension	02-3
– Spark plugs: replace	02-3
– Automatic gearbox: Inspect ATF[1)] level, if necessary top up	02-4

1) Automatic transmission fluid for the automatic gearbox

Every 90 000 km (QG0)

Includes: Inspection every 30 000 km and additional operations stated in the table below

Work involved	**Chapter**
– Timing belt for camshaft drive: replace (ASY diesel engines up to 04.2001)	02-3
– Timing belt and tensioning pulley for camshaft drive: replace (PD diesel engine up to 07.03)	02-3
– Timing belt for camshaft drive: inspect (petrol engines) - every 90 000 km, then every 30 000 km	02-3

Every 120 000 km (QG0)

Includes: Inspection every 60 000 km and additional operations stated in the table below

Work involved	**Chapter**
– Timing belt and tensioning pulley (038 109 244 H)[1)] for camshaft drive: replace (diesel engines other than the PD engine) - vehicles as of 05.2001 to 04.2002	02-3
– Timing belt for camshaft drive: replace (PD diesel engine as of 08.03)	02-3

1) When the tensioning pulley Spare Part No. 038 109 244 M is mounted after 120 000 km. on vehicles with a diesel engine during replacement of the timing belt and the tensioning pulley the change interval of the timing belt should be altered from 120 000 km to 150 000 km. The customer should be informed about the new service interval when the tensioning pulley is first replaced by a new tensioning pulley Spare Part No. 038 109 244 M by making an entry in the service plan, in the section „Workshop entries“. Only the timing belt will be replaced at each next service interval at 150 000 km.

Every 150.000 km (QG0)

Includes: Inspection every 60 000 km and additional operations stated in the table below

Work involved	**Chapter**
– Timing belt: replace (diesel engines other than the PD engine) - vehicles as of 05.2002	02-3

Every 240 000 km (QG0)

Includes: Inspection every 120 000 km and additional operations stated in the table below

Work involved	Chapter
– Replace tensioning pulley (PD diesel engine as of 08.03)	02-3

Inspection Service (QG1, QG2)

♦ Every 2 years - in addition change brake fluid
♦ Every 4 years - replace contents set for tyre repair
♦ Every 90 000 km - replace the guide pulley and the tensioning pulley (PD diesel engine up to 07.03)
♦ Every 120 000 km - replace the timing belt and the guide pulley (038 109 244 H) (diesel engines as of 05.01 to 04.02 except the PD engine)
♦ Every 120 000 km - Replace the timing belt (PD Diesel engine as of 08.03)
♦ Every 150 000 km - replace the timing belt (diesel engines as of 05.02 and with the guide pulleyr 038 109 244 M) - except on the TDI PD engine
♦ Every 240 000 km - Replace the tensioning pulley (PD Diesel engine as of 08.03)
♦ Exhaust-emission analysis (EEA). Expiry date - see EEA tag on the vehicle identification plate (only valid for some countries)
♦ At each inspection - check the 'use by date' of the first aid kit
♦ Recommendation: Replace windscreen wiper blades every 2 years

Note

- *Vehicles with WIV (QG1) must be filled with oils which conform to the VW standard 503 00 (petrol engines) VW 506 00 (SDI, TDI diesel engines) or VW 506 01 (TDI PD diesel engines), possibility of damage when using other oils.*
- *Vehicles with WIV which have been filled with oils which do not conform to the VW standard 503 00 or VW 506 00 or VW 506 01, must be coded in the WIV with a fixed oil change limitation (QG2) ⇒ Chapter 02-6.*

Work involved	Chapter
– Interrogate fault memory of all systems, if necessary erase	02-6
– Visual inspection: Engine and components in the engine compartment for leaks and damage	02-3
– Change the engine oil, replace the oil filter	02-3
– Conduct a visual inspection of the airbag units for external damage	02-7
– Reset service interval display	02-6
– Inspecting brake system for leaks and damage	02-5
– Check the thickness of the brake pads on all wheels	02-5
– Check gearbox, final drive, drive shafts and joint boots for leaks and damage	
– Axle joints: Inspect boots for leaks and damage	
– Track rod ends: Inspect play and correct attachment of boots	

Work involved	Chapter
– Check the tyre inflation pressure (including spare wheel), correct if necessary	02-5
– Inspect tyre wear (including spare wheel)	02-5
– Inspect tyre tread depth (including spare wheel) and record (FL..., FR..., RR..., RL..., SP...)	02-5
– Inspect exhaust system for leaks, damage and attachment	
– Brake fluid volume: Check level, if necessary top up	02-5
– Battery: test	02-6
– Check the anti-freeze in the cooling system and record ..... °C, check for leaks, top up coolant if necessary	02-3
– Flap lock for the engine bonnet: grease	
– Inspect operation of all switches, all electrical components, gauges/indicators and controls for proper operation	02-6
– Windscreen wiper and washer system: Inspect condition of wiper blades, wiper operation, washer system: if necessary top up fluid	02-7
– Inspect plenum chamber for dirt, clean if necessary	02-7
– Inspect operation of tilting roof and grease the runners	02-7
– Headlights: Inspect, if necessary adjust	02-6
– Gear oil: Inspect level and top up if necessary (manual gearbox)	02-4
– Draining the fuel filter (diesel engine)	
– Inspect trailer coupling (with removable arm - manufacturer Profsvar)	02-7
– Check underbody protection and body paintwork for damage	02-7
– Dust and odour filter element for the passenger compartment: replace	02-7
– Air filter: Clean the housing, replace the insert every 4 years or 60.000 km.	02-3
– Replace the fuel filter (diesel engine with fuel operation, which does not comply with DIN EN 590-standard)	
– Ribbed V-belt: Inspect condition and for vehicles without tensioning pulley also the tension - every 60.000 km	02-3
– Replace the fuel filter (diesel engine) - every 60.000 km	
– Spark plugs: replace - every 60.000 km.	02-3
– Automatic gearbox: Check the ATF level, and top up if necessary, every 60.000 km	
– Check the timing belt for the camshaft on a 4-cylinder petrol engine at 90.000 km and then every 30.000 km after that	
– Replace the emergency battery for the alarm system - every five years	02-6
After each inspection	
– Complete the „Next Service“ sticker and affix sticker to the side of the dash panel (on the driver's side)	
– Perform road test including inspection of proper operation of footbrakes and handbrake, gearshift and steering, final inspection	02-9
– „Mirror tag“ - complete and attach to interior mirror	
– Hand customer the completed and signed form	

Oil change (QG1, QG2)

Work involved	Chapter
– Change engine oil – Replace engine oil filter	02-3
– Disc brake pads: Inspect thickness	02-5
– Reset service interval display	02-6
– Drain away water from the fuel filter (diesel engine with fuel operation, which does not comply with DIN EN 590-standard)	
After each oil change	
– Enter the next service date on the „Next Service“ sticker and affix sticker to the side of the dash panel on the driver's side, that is according to the indicator or the kilometer schedule (also the date for changing the brake fluid)	
– Complete and attach service mirror tag to the interior rear-view mirror	
– Hand customer the completed and signed form	

02-3 Engines

Engine overview

Engine identification characters	ARV	AQV	AWY	AZQ	AZE	AZF
Emission standard	EU2	EU3	EU4, EU2 DDK, EU3 DDK	EU4, EU2 DDK, EU3 DDK	EU2	EU4
Manufacturing (from...through)	01.01 ... 07.02		02.02 ... 05.04	01.03	04.00 ... 03.03	
Displacement in litres	1,0		1,2	1,2	1,4	
Output (kW at rpm)	37 / 5000		40 / 4750	47 / 5400	44 / 5000	
Max. torque (Nm at rpm)	84 / 2750		106 / 3000	112 / 3000	118 / 2600	
Bore (∅ mm)	72		76,5	76,5	75,5	
Stroke (mm)	61,2		86,9	86,9	78	
Compression	10		10,3	10,5	10	
Hydraulic valve clearance compensation	X		X	X	X	
Mixture formation	Simos 3PB	Simos 3PA	Simos 3PD	Simos 3PE	Simos 3PB	Simos 3PA
Fuel RON (minimum)	unleaded 95[1)]		unleaded 95[1)]	unleaded 95[1)]	unleaded 95[1)]	
Fuel CN (minimum)	-		-	-	-	
Firing order	1-3-4-2		1-2-3	1-2-3	1-3-4-2	
Exhaust gas recirculation	-		-	X	-	
Ignition system/fuel injection	Simos 3PB	Simos 3PA	Simos 3PD	Simos 3PE	Simos 3PB	Simos 3PA
Self-diagnosis	X		X	X	X	
Catalytic converter	X		X	X	X	
Turbocharging	-		-	-	-	
Charge air cooler	-		-	-	-	
Lambda probe	X		X	X	X	
Camshaft adjustment	-		-	-	-	

1) Regular grade unleaded petrol (min. 91 ROZ) can be used although engine power output is slightly reduced.

Engine identification characters	**AME**	**ATZ**	**AQW**	**AUA**	**BBY**
Emission standard	EU2	D4	EU4, EU3 DDK	EU3, EU4, EU2 DDK, EU3 DDK	EU4, EU2 DDK, EU3 DDK
Manufacturing (from...through)	08.99 ... 04.03	11.99 ... 07.00	08.00 ... 03.03	05.00 ... 03.02	03.02 ... 05.04
Displacement in litres	1,4			1,4	
Output (kW at rpm)	50 / 5000			55 / 5000	
Max. torque (Nm at rpm)	120 / 2500			126 / 3800	
Bore (∅ mm)	75,5			76,5	
Stroke (mm)	78			75,6	
Compression	10			10,5	
Hydraulic valve clearance compensation	X			X	
Mixture formation	Simos 3PB	Simos 3PA		Magneti Marelli 4LV	
Fuel RON (minimum)	unleaded 95[1)]			unleaded 95[1)]	
Fuel CN (minimum)	-			-	
Firing order	1-3-4-2			1-3-4-2	
Exhaust gas recirculation	-			X	
Ignition system/ fuel injection	Simos 3PB	Simos 3PA		Magneti Marelli 4AV	
Self-diagnosis	X			X	
Catalytic converter	X			X	
Turbocharging	-			-	
Charge air cooler	-			-	
Lambda probe	X			X	
Camshaft adjustment	-			-	

1) Regular grade unleaded petrol (min. 91 ROZ) can be used although engine power output is slightly reduced.

Engine identification characters	AMF	AUB	BBZ	ASY
Emission standard	EU3	EU4 EU2 DDK, EU3 DDK	EU4, EU2 DDK, EU3 DDK	EU3
Manufacturing (from...through)	05.03	08.99 ... 05.02	05.02	08.99
Displacement in litres	1,4	1,4		1,9
Output (kW at rpm)	55 / 4000	74 / 6000		47 / 4000
Max. torque (Nm at rpm)	195 / 2200	126 / 4400		125 / 1600 - 2800
Bore (∅ mm)	79,5	76,5		79,5
Stroke (mm)	95,5	75,6		95,5
Compression	19,5	10,5		19,5
Hydraulic valve clearance compensation	X	X		X
Mixture formation	Bosch PDE - injectors	Magneti Marelli 4LV		Bosch VP
Fuel RON (minimum)	-	unleaded 98[1)]		-
Fuel CN (minimum)	49	-		49
Firing order	1-2-3	1-3-4-2		1-3-4-2
Exhaust gas recirculation	X	X		X
Ignition system/fuel injection	Bosch PDE - injectors	Magneti Marelli 4AV		Bosch VP
Self-diagnosis	X	X		X
Catalytic converter	X	X		X
Turbocharging	X	-		-
Charge air cooler	X	-		-
Lambda probe	-	X		-
Camshaft adjustment	-	-		-

[1)] Regular grade unleaded petrol (min. 95 ROZ) can be used although engine power output is slightly reduced.

Engine identification characters	ATD	ASZ	AZL	BMD	BKY
Emission standard	EU3	EU3	EU4, EU2 DDK, EU3 DDK	EU4, EU2 DDK	EU4, EU2 DDK
Manufacturing (from...through)	02.00	06.03	08.00	05.04	05.04
Displacement in litres	1,9	1,9	2,0	1,2	1,4
Output (kW at rpm)	74 / 4000	96 / 4000	85 / 5400	40 / 4750	55 / 5000
Max. torque (Nm at rpm)	240 / 1800 - 2800	310 / 1900	170 / 2400	108 / 3000	126 / 3800
Bore (∅ mm)	79,5	79,5	82,5	76,5	76,5
Stroke (mm)	95,5	95,5	92,8	86,9	75,6

Engine identification characters	ATD	ASZ	AZL	BMD	BKY
Compression	19	19	10,5	10,3	10,5
Hydraulic valve clearance compensation	X	X	X	X	X
Mixture formation	Bosch PDE - injectors	Bosch PDE - injectors	Bosch ME 7.5	Simos 3PG	Magneti Marelli 4TV
Fuel RON (minimum)	-	-	unleaded 95[1)]	unleaded 95[1)]	unleaded 95[1)]
Fuel CN (minimum)	49	49	-	-	-
Firing order	1-3-4-2	1-3-4-2	1-3-4-2	1-2-3	1-3-4-2
Exhaust gas recirculation	X	X	-	-	X
Ignition system/fuel injection	Bosch PDE - injectors	Bosch PDE - injectors	Bosch ME 7.5	Simos 3PG	Magneti Marelli 4TV
Self-diagnosis	X	X	X	X	X
Catalytic converter	X	X	X	X	X
Turbocharging	X	X	-	-	-
Charge air cooler	X	X	-	-	-
Lambda probe	-	-	X	X	X
Camshaft adjustment	-	-	-	-	-

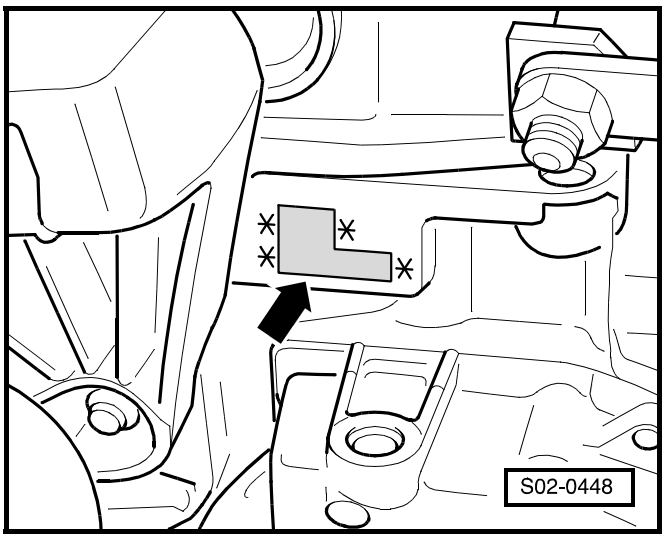
1) Regular grade unleaded petrol (min. 91 ROZ) can be used although engine power output is slightly reduced.

Engine fitted

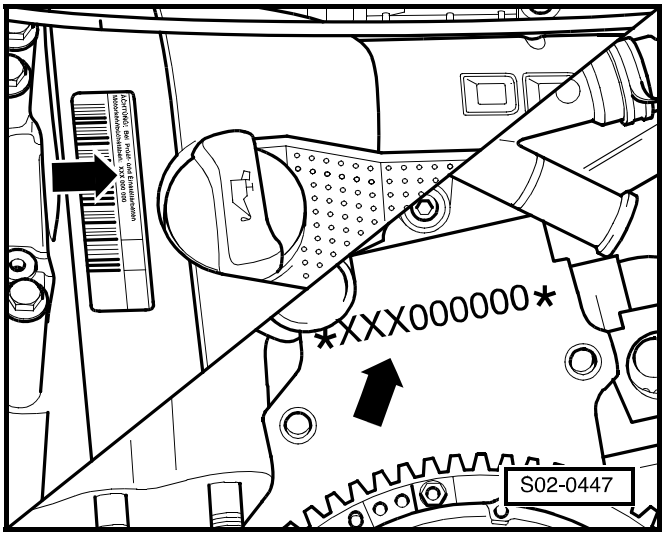
The engine identification characters and serial number are located in the front at the engine/gearbox joint.

In addition, a sticker with the engine identification characters and serial number is affixed to the timing belt guard.

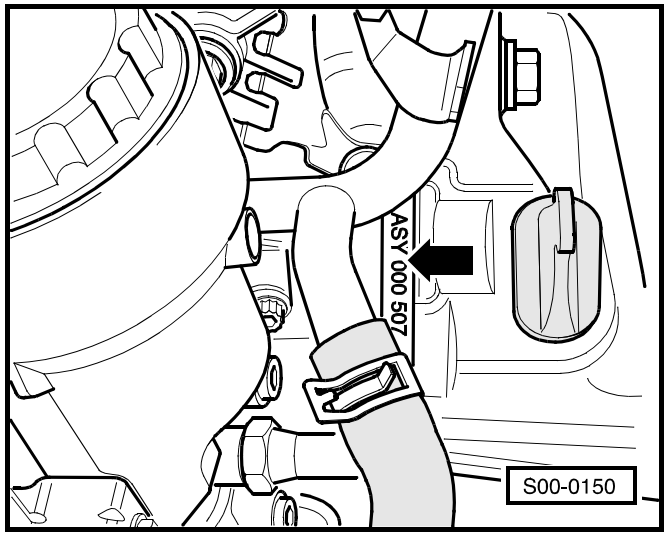
Engine with identification characters ARV, AQV, AZE, AZF, AME, ATZ and AQW.



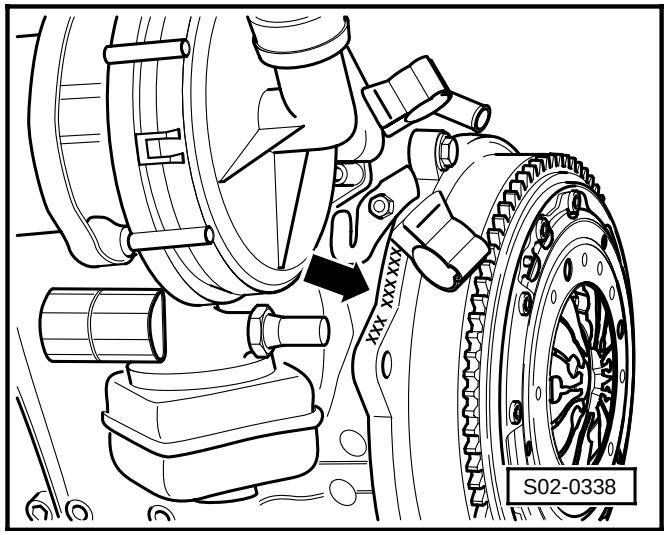
Engine with identification characters AUA, AUB, BBY, BBZ, BKY.



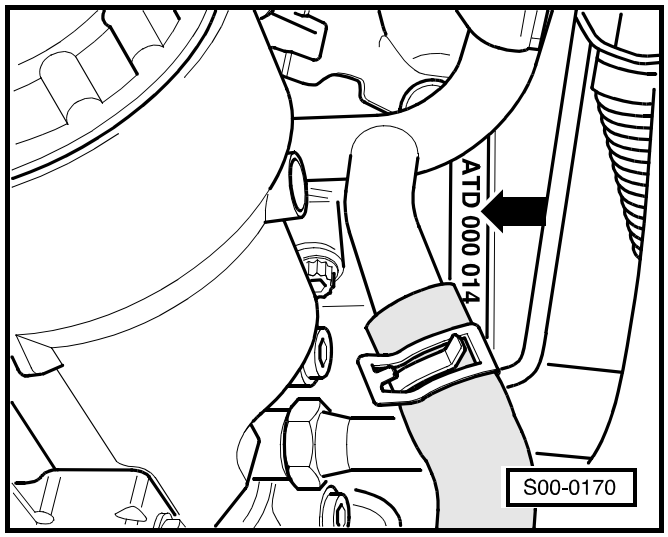
Engine with identification characters ASY.



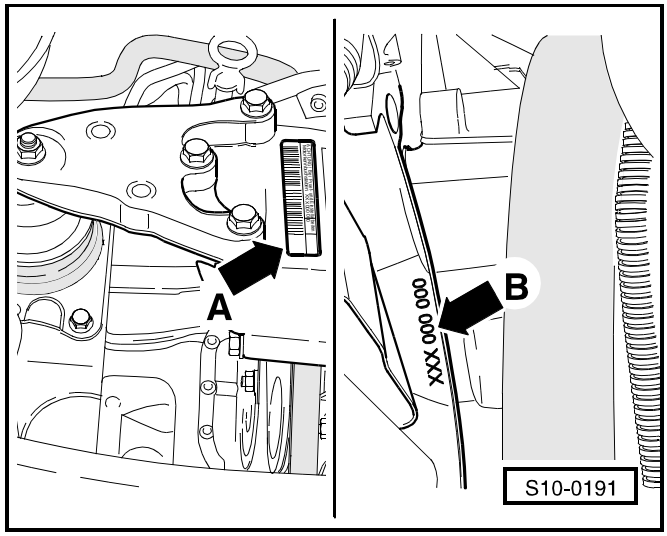
Engine with identification characters AZL.



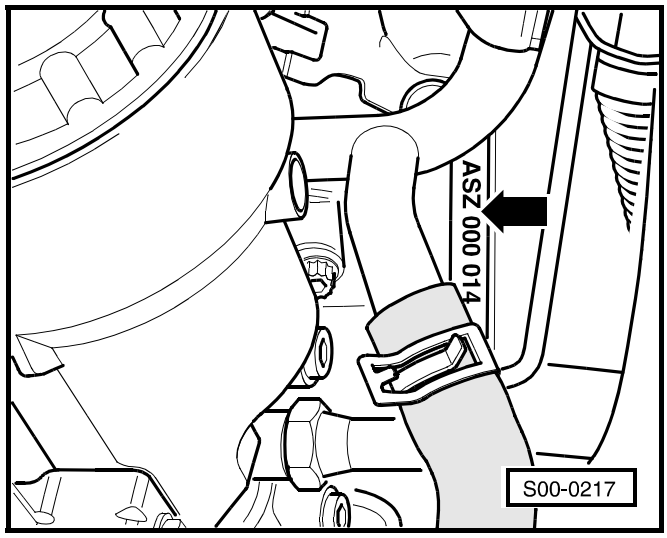
Engine with identification characters ATD.



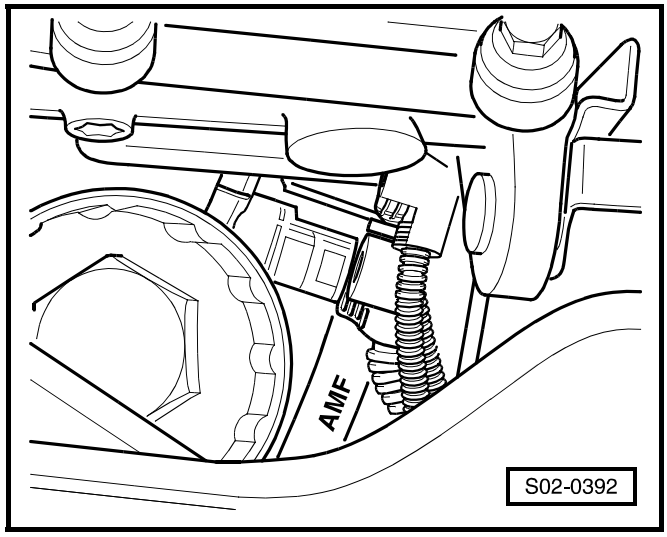
Engine with identification characters AWY, AZQ, BMD. ►



Engine with identification characters ASZ. ►



Engine with identification characters AMF. ►



Visual inspection: Engine for leaks and damage

- Inspect engine for leaks and damage.
- Inspect all lines, hoses and connections of the fuel system and of the cooling and heating system for leaks, chafing points, porous and brittle joints.
- Inspect gearbox or final drive for leaks (e.g. drain plug, drive shafts, shift linkage etc.).
- Inspect steering, sealing boots of track rod ends as well as steering boots for damage and correct installation.
- Inspect boots of steering joints for damage, leaks and correct installation.

Replace engine oil filter

Vehicles with petrol engine

Special tools, test and measuring equipment and auxiliary items required

- Oil filter wrench

– Release oil filter (e.g. Würth, Hazet) and remove.

– Clean sealing surface at engine.

– Oil rubber seal slightly.

– Screw in new filter and tighten by hand.

– After filling with oil, run engine until it is at operating temperature and inspect for leaks.

Vehicles with diesel engine

Special tools, test and measuring equipment and auxiliary items required

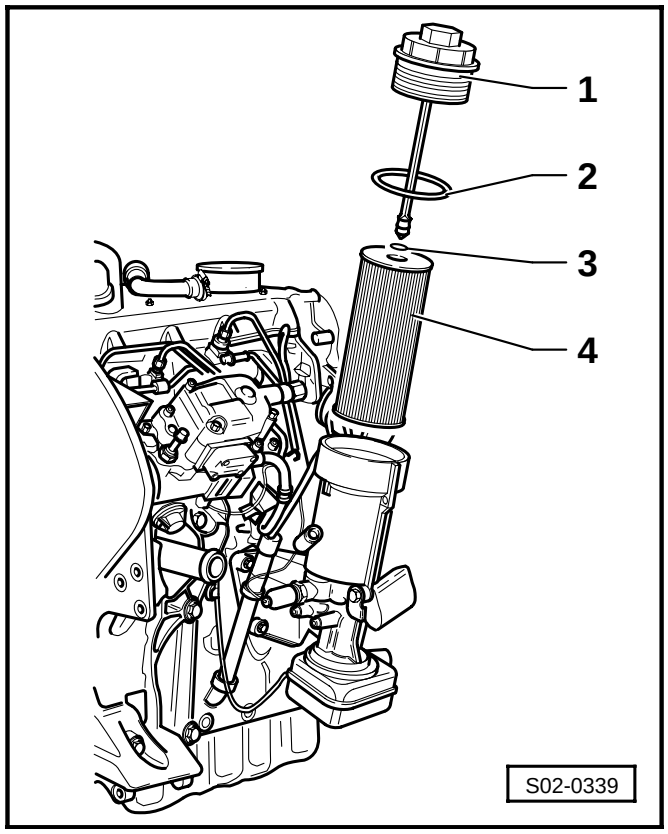
- Oil filter wrench -3417- or wrench 36

– Release cap -1-.

– Replace O-rings -2- and -3- as well as oil filter element -4-.

– Tighten cap -1-.

Tightening torque of the cap: 25 Nm



Replacing timing belt and tensioning pulley for camshaft drive (1.9 TDI engines)

– Removing and installing the timing belt
⇒ Rep. Gr. 13; 1.9/74 TDI Engine, Mechanics, or
⇒ Rep. Gr. 13; 1.9/96 TDI Engine, Mechanics.

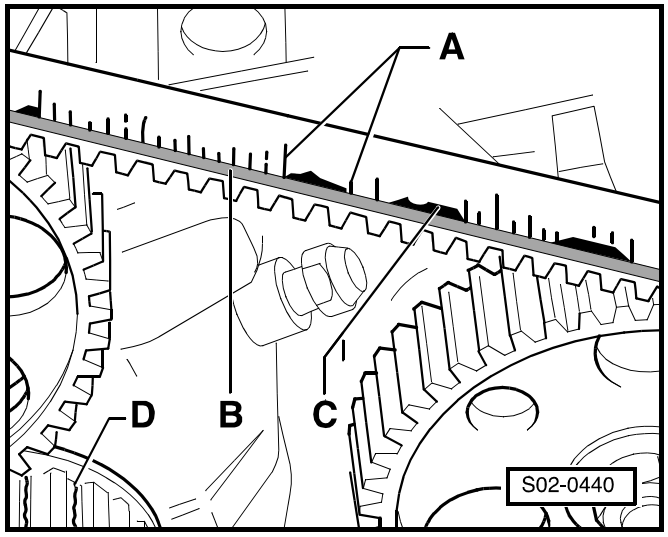
Replacing timing belt and tensioning pulley for camshaft drive (1.4 TDI engines)

– Removing and installing the toothed belt
⇒ Rep. Gr. 13; 1.4/55 TDI Engine, Mechanics.

Inspecting timing belt for camshaft drive for wear and running (petrol engine)

Check timing belt for:

- Tears or splits -A-, cross-sectional fractures
- Lateral catches -B-
- Fraying or chunking -C-
- Crack in the base tooth -D-
- Separation of layers (timing belt housing, cords)
- Traces of oil and grease



Note

The timing belt must most definitely be replaced if any shortcomings are found. This will help prevent any failures or operational problems. Replacing the timing belt is a repair measure.

Replacing toothed belt and guide pulley for camshaft drive (1.9 SDI engines)

– Removing and installing the toothed belt
⇒ Rep. Gr. 13; 1.9/47 SDI engine, Mechanics.

Inspecting engine oil level

When inspecting, pay attention to the following points:

Before inspecting, warm up the engine to normal temperature.

Wait at least 3 minutes after switching off the engine to allow the oil to flow back into the oil pan.

– Withdraw dipstick, wipe off with a clean cloth and reinsert dipstick fully.
– Withdraw dipstick once again and read off oil level.

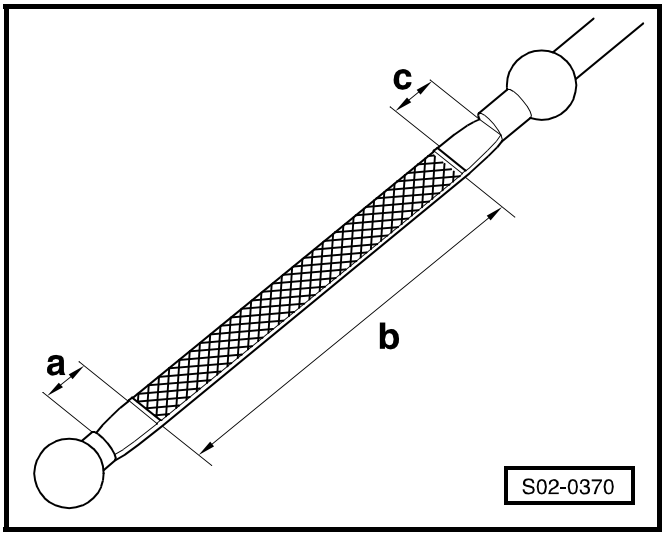


Fig. 1: Oil dipstick version I ►

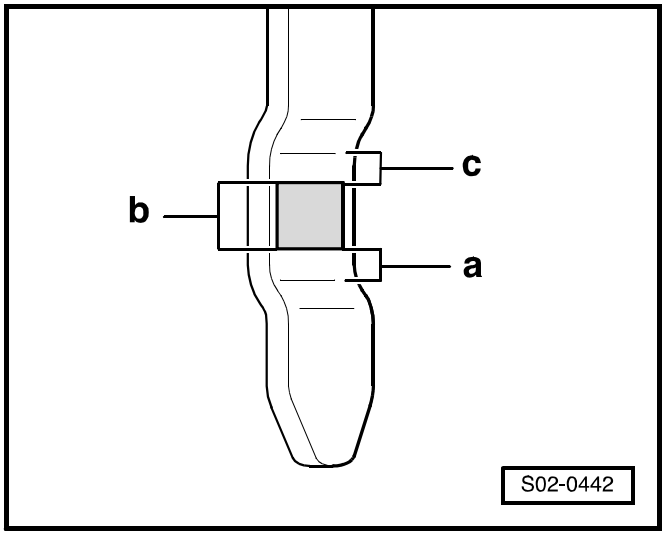


Fig. 2: Oil dipstick version II ►

The oil level in area -a-

– The oil must be topped up. It is sufficient when the oil level rises to the area -b-.

The oil level in area -b-

– The oil can be topped up. It is possible that the oil level will rise to the area -c-.

The oil level in area -c-

– The oil must not be topped up.

Note

- *The oil level must not, under any circumstances, be above area -a- - danger of damage to the catalytic converter.*
- *The vehicle must be standing on level ground when measuring the oil level. Wait a few minutes after switching off the engine to allow the oil to flow back into the oil pan.*

Change engine oil

Note

- *The engine oil should always be changed, if possible, when the engine is at normal operating temperature.*
- *If the engine oil is drained, replace the seal of the oil drain plug.*

- *It is absolutely necessary to observe the oil disposal instructions!*
- *It is not permitted to clean and re-use the oil filter!*

– Remove oil filler cap.

– Remove the noise insulation.

– Screw out the oil drain plug and collect the oil in a suitable vessel.

– Clean the drain plug, screw in with a new seal and tighten to the specified tightening torque:

Engine-oil pan: 30 Nm

– Pour in oil as stated in the specifications.

Engine oil capacities:

- with oil filter change approx.:

2.4 litres (1.2 litre/40 kW - engine)

2.8 litres (1.2 litre/47 kW - engine)

3.2 litre (1.4 litre/55 kW (petrol) and 1.4 litre/74kW - engine)

4.0 litre (1.0 litre/37 kW, 1.4 litre/44 kW, 1.4 litre/50 kW and 2.0 litre/85 kW engine)

4.2 litre (1.4 litre/55 kW TDI PD - engine)

4.3 litre (1.9 litre/47 kW SDI, 1.9 litre/74 kW TDI PD and 1.9 litre/96 kW TDI PD - engine)

The engine is factory-filled with quality multigrade oil, which can also be used as an all-season oil, except in extremely cold climatic zones.

Specification for petrol engines:

The given specifications must be indicated on the can individually or together with other specifications.

Only use engine oils:

QGO, QG2

Standard: VW 500 00, VW 501 01 or VW 502 00

Oils may be intermixed when topping up.

In exceptional cases:

Multigrade oils according to ACEA A2 or A3. Such oils must only be used once for topping up within the specified oil change interval if, in exceptional cases, no approved engine oil is available.

QG1

Specification VW 503 00

Specification for diesel engines:

The given specifications must be indicated on the can individually or together with other specifications.

Only use engine oils:

QGO, QG2

Specification VW 505 01 or VW 505 00 (oil according to VW 505 00 cannot be used for TDI PD - engines)

Oils may be intermixed when topping up.

In exceptional cases:

Multigrade oils according to ACEA B3 or B4. Such oils must only be used once for topping up within the specified oil change interval if, in exceptional cases, no approved engine oil is available.

QG1

Specification VW 506 01 or VW 506 00 (oil according to VW 506 00 cannot be used for TDI PD - engines)

– Close the oil filler opening again.
– Start engine and check for leaks.
– Check the engine oil level again and top up with oil if necessary.
– Wait at least 3 minutes after topping up the oil again before inspecting the oil level again.
– Install the noise insulation.

Note

The oil level must not be above the -max- marking to avoid damage to the catalytic converter. See Inspecting engine oil level ⇒ 02-3 page 8.

Inspecting antifreeze protection, replenishing coolant additive if necessary

WARNING!

Coolant additives are toxic!

Do not inhale coolant vapours, do not swallow coolant, avoid contact with skin and eyes; hazardous if consumed!

Note

- *Collect drained coolant for proper disposal.*
- *Observe the disposal instructions for the drained coolant.*

Special tools, test and measuring equipment and auxiliary items required

- Refractomer -T10007-

Inspecting antifreeze protection of the coolant

- The refractometer -T10007- may, for example, be used for inspecting the antifreeze protection of the coolant.

– Extract a small quantity of coolant with the pipette and place on the measuring glass. Hold unit against a light source and read off the temperature down to which antifreeze protection exists on the scale for ethylene glycol.

Note

- *Antifreeze protection must be ensured down to about -25 C.*
- *Down to about -35 C in countries with an arctic climate.*
- *If a greater antifreeze concentration is required for climatic reasons, the concentration may be increased up to 60 % (i.e. antifreeze protection down to about -40 C). Any further increase in concentration increase would reduce the antifreeze protection and impair cooling efficiency.*

Replenishing coolant additive

Note

- *Coolant additive G12 - red in colour, complying with standard TL VW 774 D, must not be mixed with other coolant additives which comply with standard TL VW 774 C(B) -bluish-green in colour-. If these two coolant additives are mixed the coolant will turn brown. Brown coolant must be drained immediately, the cooling system flushed out with drinking water and filled with fresh coolant. If this is not done the engine and cooling system may suffer damage.*
- *Coolant additives complying with standard TL VW 774 C (G11) -bluish-green in colour-, must only be used for topping up on vehicles fitted with a cooling system which is already filled with this coolant.*
- *Vehicles produced as of MJ 03 are filled with coolant additive G12 PLUS which has a lilac colour and conforms with the standard TL VW 774 F.*
- *Coolant additive G12 PLUS must only be mixed with coolant additives G12 and G11.*
- *Coolant additive G12 PLUS is recommended for use on all vehicles when changing the coolant.*

If the vehicle is filled with the recommended coolant and the antifreeze protection is not adequate, drain part of the coolant from the cooling system.

– After this, fill the cooling system with concentrated coolant additive.

The coolant capacity is:

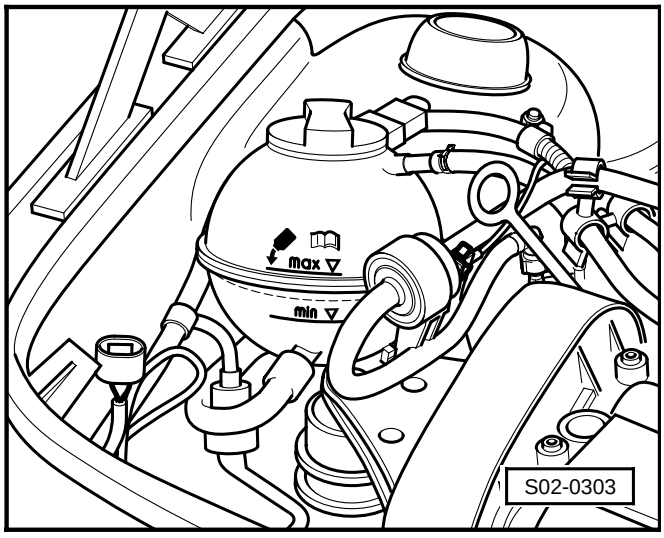
Engine	Coolant capacity
1.2 ltr./40 kW and 1.2 ltr./47 kW	approx. 5.1 ltr.
1.4 ltr./55 kW and 1.4 ltr./74 kW	approx. 5.5 ltr.
1.0 ltr./37 kW; 1.4 ltr/ 44 kW and 1.4 ltr./50 kW	approx. 6.0 ltr.
1.4 ltr./55 TDI PD	approx. 6.2 ltr.
1.9 ltr./47 kW SDI	approx. 6.6 ltr.
1.9 ltr./74 kW TDI PD and 1.9 ltr./96 kW TDI PD	approx. 6.8 ltr.
2.0 ltr./85 kW	approx. 6.9 ltr.

– Perform a test drive and again check the coolant anti-freeze protection.

Inspecting coolant level (volume)

– The coolant expansion reservoir is located on the right ► of the engine compartment.

– Inspect coolant level only when the engine is not running.



Specified coolant level for the Inspection Service:

- Engine cold: between„MAX“ and „MIN“ marking.
- Engine warm: slightly above the „MAX“ marking.

WARNING!

Coolant additives are toxic!

Do not inhale coolant vapours, do not swallow coolant, avoid contact with skin and eyes; hazardous if consumed!

Note

- *The cooling system is filled all year round with a mixture of water and antifreeze/anti-corrosion agent. Coolant additives prevent damage from frost and corrosion and the accumulation of lime scale while also raising the boiling point of the coolant. For these reasons the cooling system must always be filled all year round with radiator antifreeze and anti-corrosion agent offering these properties.*
- *Coolant additive G12 - red in colour, complying with standard TL VW 774 D, must not be mixed with other coolant additives which comply with standard TL VW 774 C(B) -bluish-green in colour-. If these two coolant additives are mixed the coolant will turn brown. Brown coolant must be drained immediately, the cooling system flushed out with drinking water and filled with fresh coolant. If this is not done the engine and cooling system may suffer damage.*

- *Coolant additives complying with standard TL VW 774C (G11) -bluish-green in colour-, must only be used for topping up on vehicles fitted with a cooling system which is already filled with this coolant.*
- *Vehicles produced as of MJ 03 are filled with coolant additive G12 PLUS which has a lilac colour and conforms with the standard TL VW 774 F.*
- *Coolant additive G12 PLUS must only be mixed with coolant additives G12 and G11.*
- *Coolant additive G12 PLUS is recommended for use on all vehicles when changing the coolant.*

Do not use coolant additives that have not been recommended by ŠKODA AUTO a.s.

Other coolant additives may specifically impair the provided corrosion protection.

The resulting corrosion damage may lead to a loss of coolant and subsequently cause major engine damage.

Coolant additives conforming to the standard TL VW 774 D (G12) or TL VW 774F (G12 PLUS) prevent frost and corrosion damage, as well as the formation of scale, and also increase the boiling point of the coolant.

For these reasons you must use coolant additives 12 months a year.

The engine's reliability is also increased when the engine is stressed, especially in countries with a tropical climate.

Coolant additives G12 - an overview

Coolant additives from the ŠKODA Genuine Parts List which comply with Standard TL VW 774 D:

Coolant additive	Manufacturer
Glysantin G 30-72	BASF AG
XT 4030	ELF OIL AG
Coolant ETX 6280	TEXACO
FROSTOX SF-D 12	HENKEL HÄRTOL GmbH

Note

The indicated G12 coolant additives may be intermixed.

Coolant additives G12 PLUS - an overview

Coolant additives from the ŠKODA Genuine Parts List which comply with the standard TL VW 774 F:

Coolant additive	Manufacturer
Havoline XLC+B (VL 02)	ARTECO
Glysantin G 30-81	BASF AG
Frostox SF D12 PLUS	HENKEL HÄRTOL GmbH

Note

The listed G12 PLUS coolant additives may be intermixed.

Ribbed V-belt: Inspect condition

Special tools, test and measuring equipment and auxiliary items required

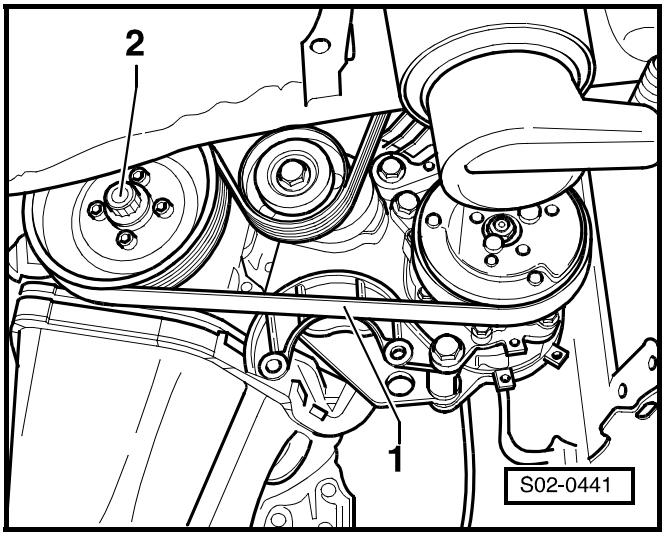
- Wrench socket

Perform the following procedure:

– Raise vehicle.

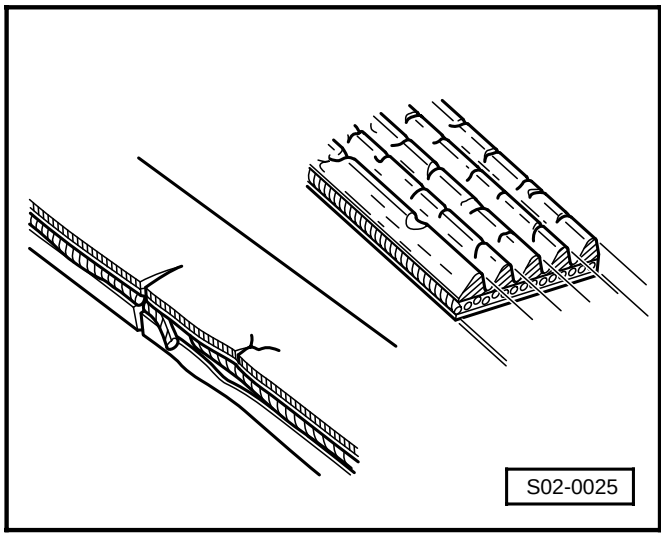
– Remove bottom engine compartment cover at right.

– Use a socket wrench to crank the engine at the belt pulley -2-.



– Check ribbed V-belt for:

- Splits in the carcass (initial splits, splits in core, splits across carcass).
- Separation of layers (top layer, cords).
- Sections of carcass broken out.
- Fraying of cords.
- Wear to sides (abrasion of material, frayed sides, hardening of sides, glazed and hardened surfaces).
- Traces of oil and grease.
- Correct tension (vehicles without tensioning pulley).

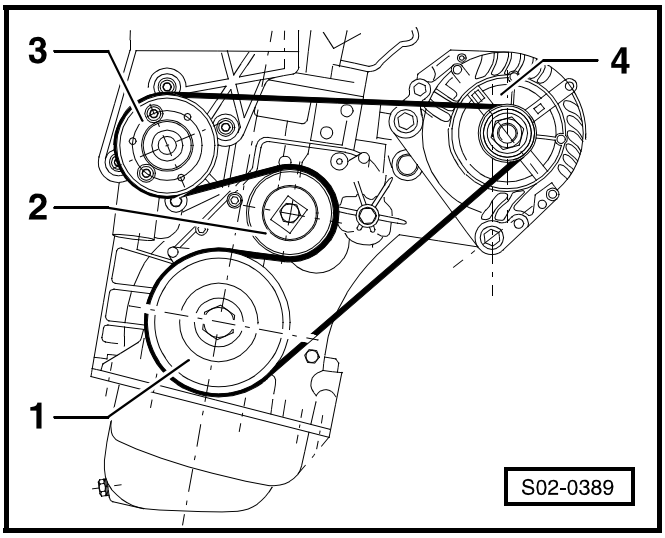


Note

- *It is essential to replace the V-ribbed belt if defects are found. This will help prevent any operational problems. Replacing the ribbed V-belt is a repair measure.*
- *Engines fitted with an AC compressor are equipped with a double ribbed V-belt.*

Routing of V-ribbed belt

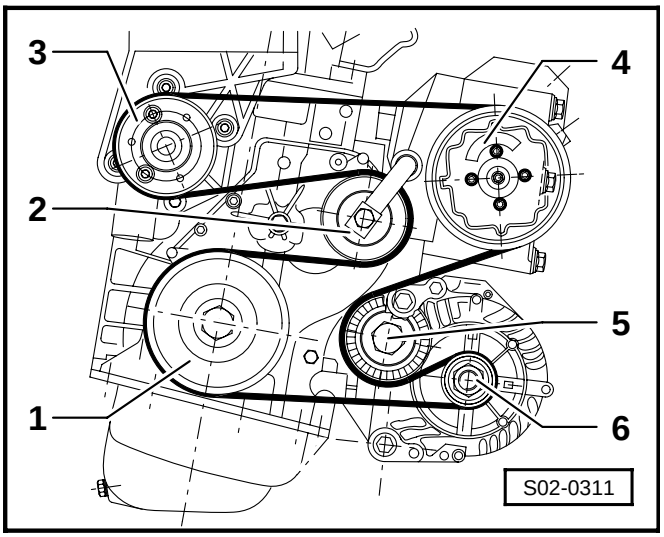
1.0 litre/37 kW (ARV and AQV), 1.4 litre/44 kW (AZE and AZF), 1.4 litre/50 kW (AME, ATZ and AQW) without air-conditioning



1 - Crankshaft
2 - Tensioning pulley
3 - Coolant pump
4 - AC generator

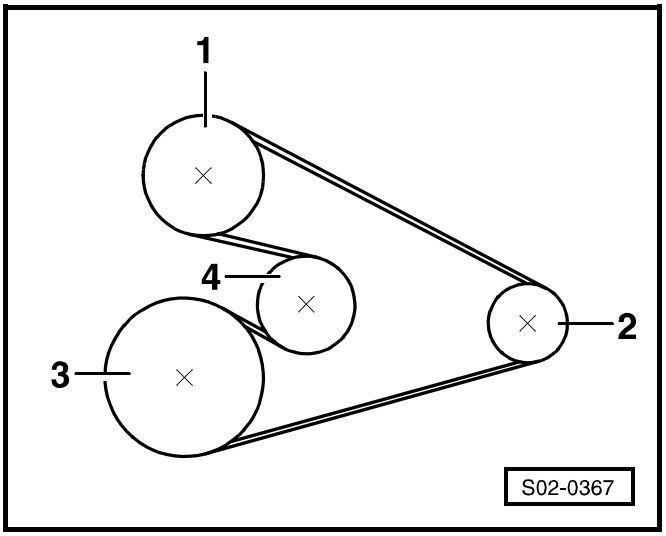
1.0 litre/37 kW (ARV and AQV), 1.4 litre/44 kW (AZE and AZF), 1.4 litre/50 kW (AME, ATZ and AQW) with air-conditioning

1 - Crankshaft
2 - Tensioning pulley
3 - Coolant pump
4 - AC compressor
5 - Guide pulley
6 - AC generator



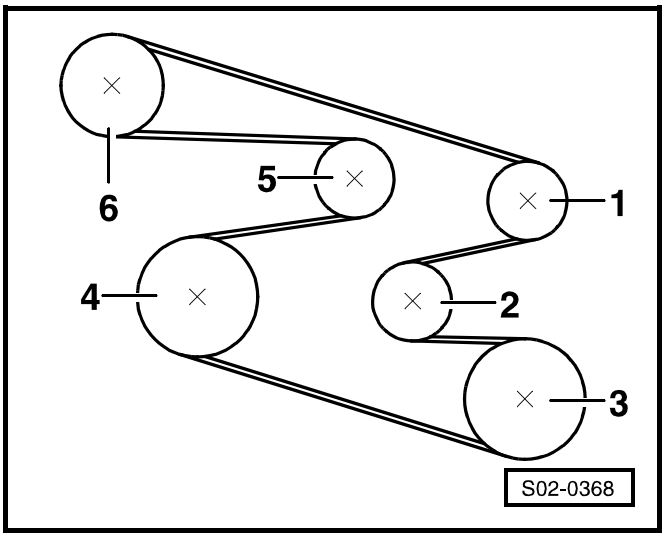
1.2 litre/40 kW (AWY, BMD), 1.2 litre/47 kW (AZQ) without air-conditioning

1 - Coolant pump
2 - AC generator
3 - Crankshaft
4 - Tensioning pulley



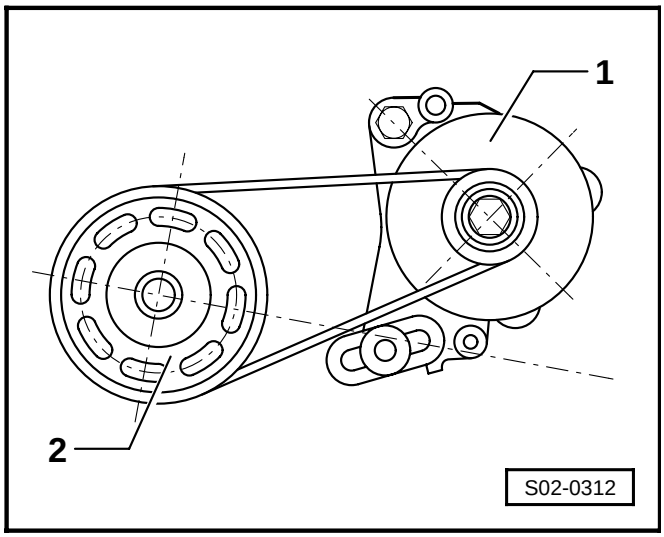
1.2 litre/40 kW (AWY, BMD), 1.2 litre/47 kW (AZQ) with air-conditioning

1 - AC generator
2 - Guide pulley
3 - AC compressor
4 - Crankshaft
5 - Tensioning pulley
6 - Coolant pump



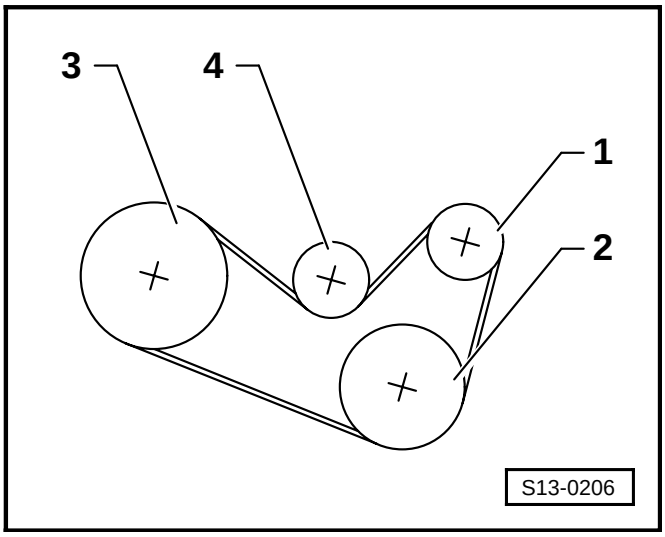
1.4 litre/55 kW (AUA, BKY) and 1.4 litre/74 kW (AUB, BBZ) without air-conditioning ►

1 - AC generator
2 - Crankshaft



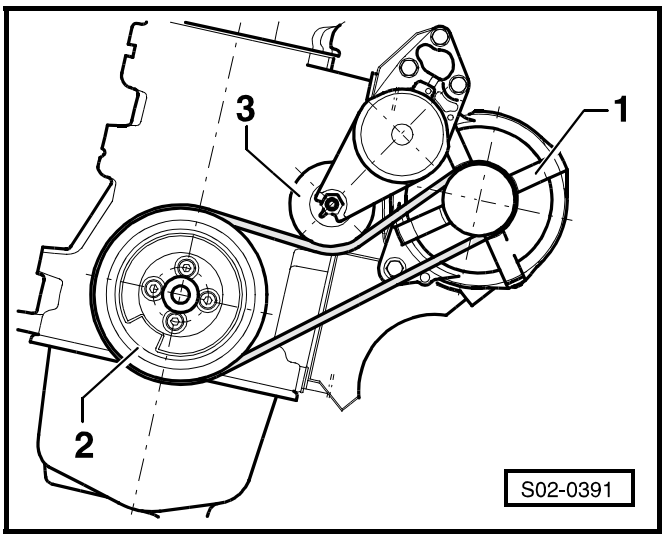
1.4 litre/55 kW (AUA, BKY) and 1.4 litre/74 kW (AUB, BBZ) with air-conditioning ►

1 - AC generator
2 - AC compressor
3 - Crankshaft
4 - Tensioning pulley



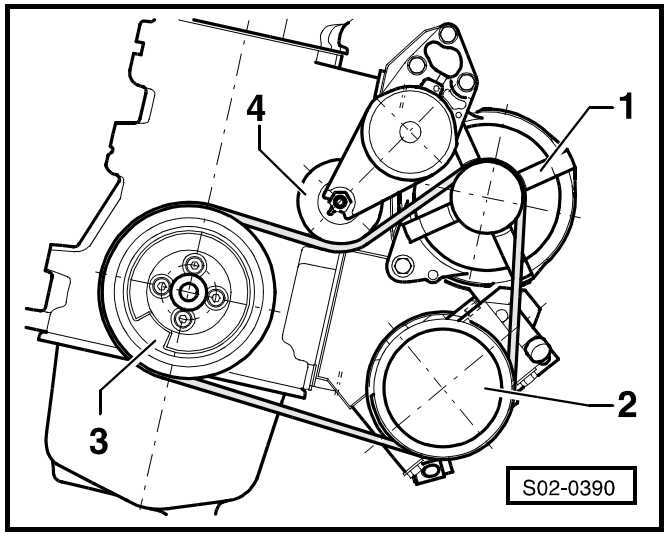
1.4 litre/55 kW (AMF) without air-conditioning ►

1 - AC generator
2 - Crankshaft
3 - Tensioning pulley



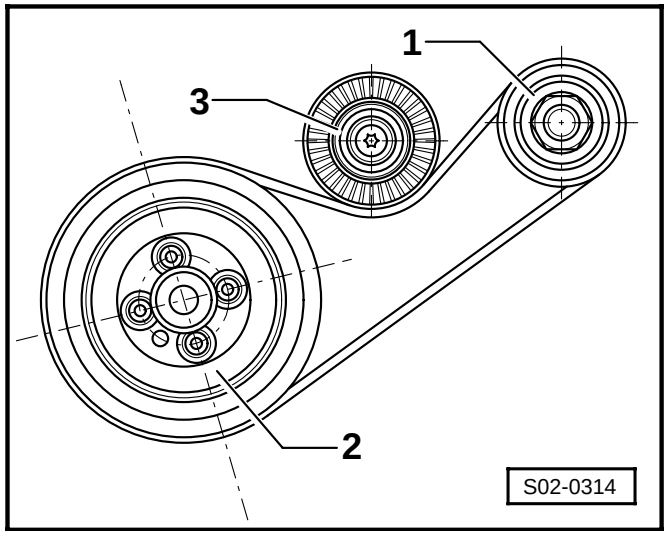
1.4 litre/55 kW (AMF) with air-conditioning

1 - AC generator
2 - AC compressor
3 - Crankshaft
4 - Tensioning pulley



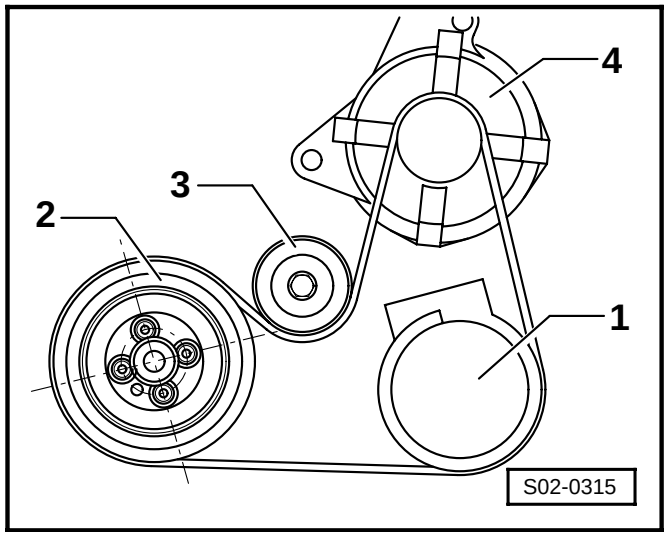
1.9 litre/47 kW (ASY), 1.9 litre/74 kW (ATD), 1.9 litre/96 kW (ASZ), 2.0 litre/85 kW (AZL) without air-conditioning

1 - AC generator
2 - Crankshaft
3 - Tensioning pulley



1.9 litre/47 kW (ASY), 1.9 litre/74 kW (ATD), 1.9 litre/96 kW (ASZ), 2.0 litre/85 kW (AZL) with air-conditioning

1 - AC compressor
2 - Crankshaft
3 - Tensioning pulley
4 - AC generator



Replace spark plugs

Note

- *To replace the spark plugs use the special spark plug wrench.*
- *Observe all disposal instructions for the spark plugs.*
- *Change interval: every 60 000 km.*
- *Tightening torque: 30 Nm.*
- *Use assembly tool -T10029- for unplugging the spark plug connector (not applicable to cable with fixture).*

Engine fitted		Spark plug manufacturer's designation	Parts No.	Electrode spacing
1.0 litre/37 kW		NGK BKR 6ETA-10	101 000 065 AA	1.0 mm[1)]
1.2 ltr./40 kW	AWY	NGK PZFR5J-11	101 905 600	1.0 mm[1)]
		NGK ZFR 5P-G	101 905 617	0.9 mm[1)]
		BOSCH F7 HER2	101 905 601 B	0.9 mm[1)]
	BMD	NGK ZFR 5P-G	101 905 617	0.9 mm[1)]
		BOSCH F7 HER2	101 905 601 B	0.9 mm[1)]
		Brisk DOX 15 LE	101 905 618	0.9 mm[1)]
1.2 ltr./47 kW		BOSCH F7 HER2	101 905 601 B	0.9 mm[1)]
		NGK ZFR5P-G	101 905 617	0,8 mm[1)]
1.4 ltr./44 kW		Brisk DR 15 TC	101 000 060 AA	0,8 mm[1)]
1.4 ltr./50 kW		Champion RC-89 PYC	101 000 049 AC	0.8 mm[1)]
1.4 ltr./55 kW	AUA, BBY	NGK BKUR 6ET-10	101 000 033 AA	1.0 mm[1)]
	BKY	BERU 14F-7 HUR 2	101 905 603 B	0.9 mm[1)]
1.4 ltr./74 kW		NGK BKUR 6ET-10	101 000 033 AA	1.0 mm[1)]
2.0 ltr./85 kW		NGK BKUR 6ET-10	101 000 033 AA	1.0 mm[1)]

[1)] Distance between earth electrode and spark plug insulator.

Replace air filter element

– Open the filter housing.
– Replace the filter element and clean the filter housing.
– Close filter housing and check correct fitting.

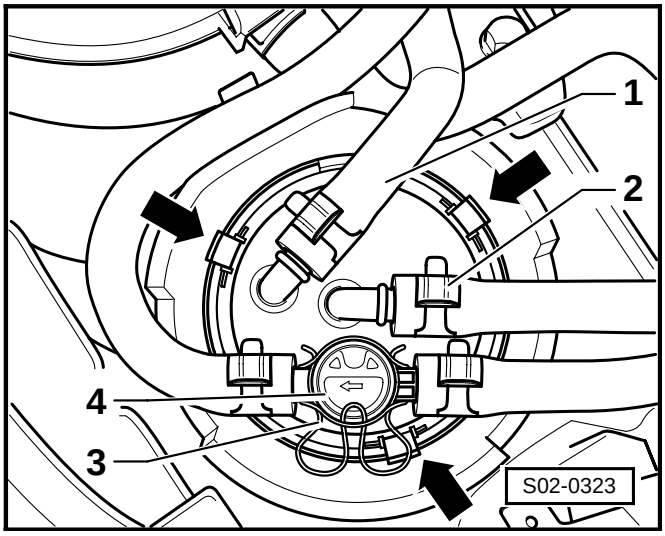
Replacing the fuel filter (diesel engine)

Note

- *Make sure no diesel fuel comes into contact with the coolant hoses. If necessary clean the hoses immediately!*
- *It is absolutely necessary to observe the oil disposal instructions!*
- *Observe the disposal instructions!*

Removing

– Remove retaining clips -3-.
– Remove regulating valve -4- with the connected fuel hoses.
– Remove fuel hoses -1- and -2- on the filter.



– Unlock hooks -arrows-.
– Loosen the fuel filter and remove.

Installing

– Install new fuel filter.
– Lock hooks -arrows-.
– Fit the new O-ring for the regulating valve.
– Install regulating valve -4- with the connected fuel hoses.
– Attach retaining clips -3-.
– Install the fuel hoses -1- and -2- and secure with hose clamps.

Note

The direction of flow is indicated with arrows (do not switch connections).

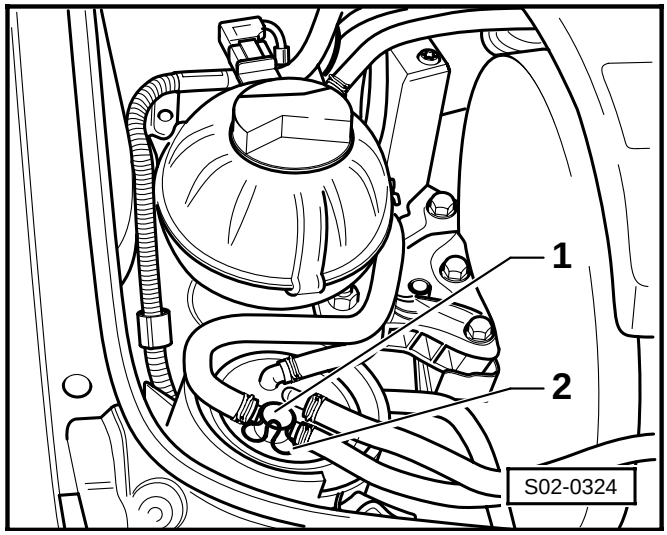
– Inspect the fuel system for tightness (visual inspection).

Draining the fuel filter (diesel engine)

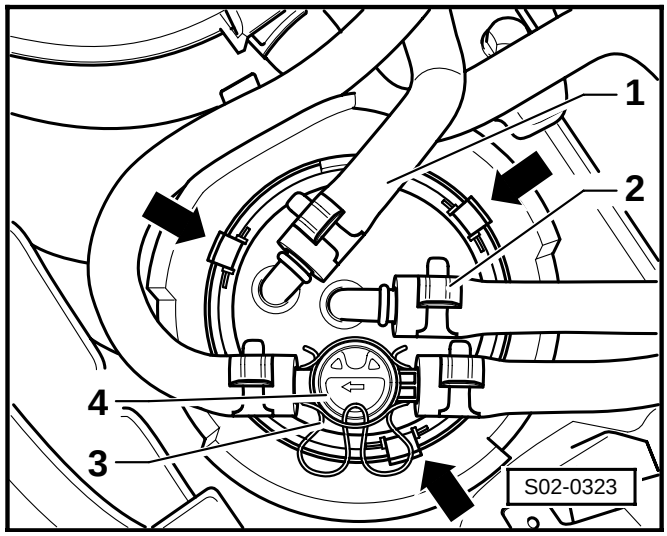
Note

- *Make sure no diesel fuel comes into contact with the coolant hoses. If necessary clean the hoses immediately!*
- *Collect fuel in a suitable vessel!*
- *It is absolutely necessary to observe the oil disposal instructions!*

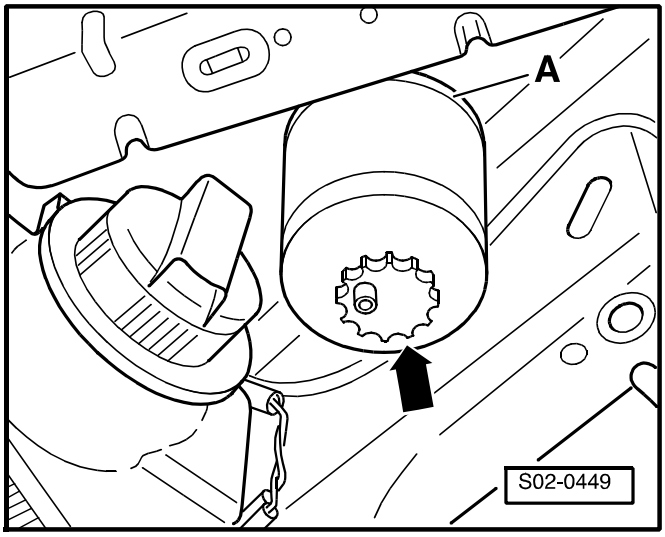
– Remove retaining clip -2- and remove regulating valve -1- with the connected fuel hoses.



– Unlock hooks -arrows-.
– Loosen the fuel filter and remove.



– Loosen the drain plug -arrow- and drain off approximately 0.1 litres of fluid.
– Tighten the drain plug.
– Carry out the installation again in the reverse order.
– Inspect the fuel system for tightness (visual inspection).



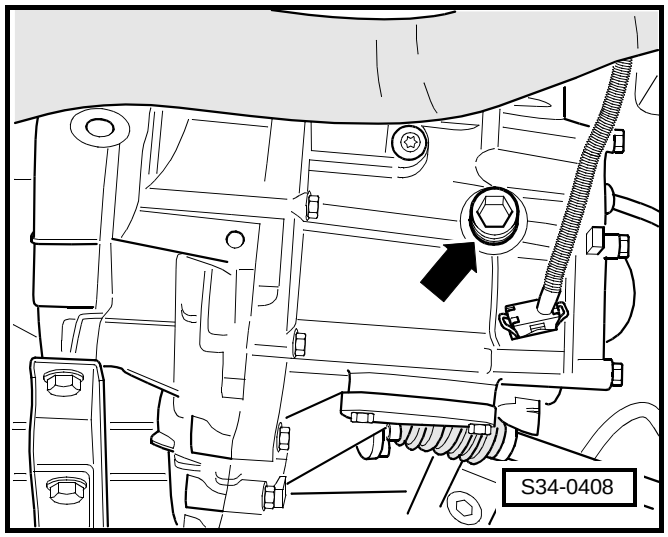
02-4 Gearbox

Gearbox/Final drive: Check the oil level and top it if necessary

5 speed gearbox 002

Gearbox oil specification: G50 SAE 75W90 (synthetic oil)

– Unscrew plug for inspecting gear oil -arrow-.



The oil is at the correct level if the gear is filled up to the lower edge of the oil filler hole.

– Tighten plug -arrow-, 25 Nm.

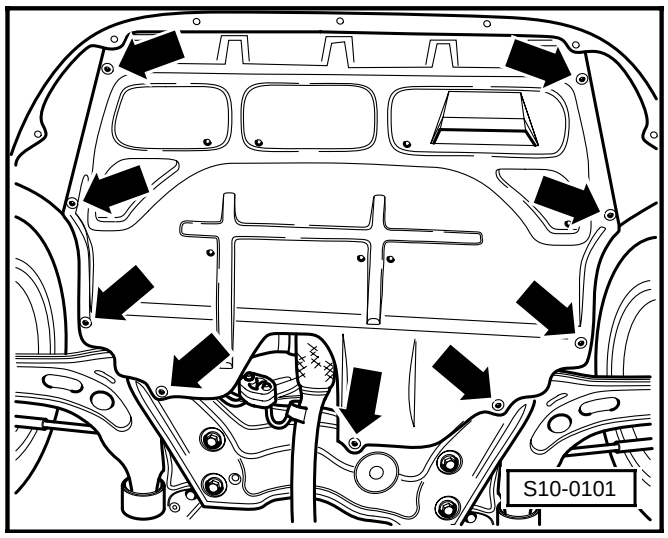
When topping up, pay attention to the following points:

– Unscrew plug for inspecting gear oil -arrow-.
– Pour in gear oil up to lower edge of the filler hole.
– Screw in plug -arrow-.
– Start engine, engage a gear and allow gearbox to rotate for about 2 minutes.
– Switch off engine, unscrew plug -arrow- and top up gear oil to lower edge of the filler hole.
– Tighten plug -arrow-, 25 Nm.

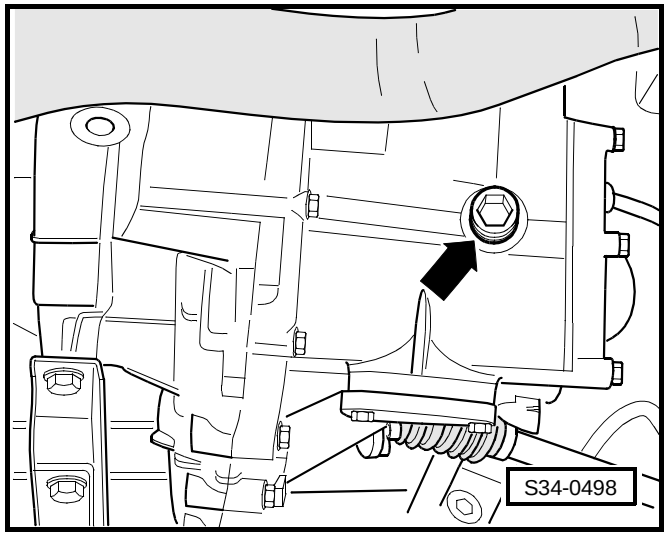
5 speed gearbox 02R

Gearbox oil specification: G50 SAE 75W90 (synthetic oil)

– Remove noise insulation panel -arrows-.



– Unscrew plug for inspecting gear oil -arrow-.



The oil is at the correct level if the gear is filled up to the lower edge of the oil filler hole.

– Tighten plug -arrow-, 30 Nm.

When topping up, pay attention to the following points:

– Unscrew plug for inspecting gear oil -arrow-.
– Pour in gear oil up to lower edge of the filler hole.
– Screw in plug -arrow-.
– Start engine, engage a gear and allow gearbox to rotate for about 2 minutes.
– Switch off engine, unscrew plug -arrow- and top up gear oil to lower edge of the filler hole.
– Tighten plug -arrow-, 30 Nm.

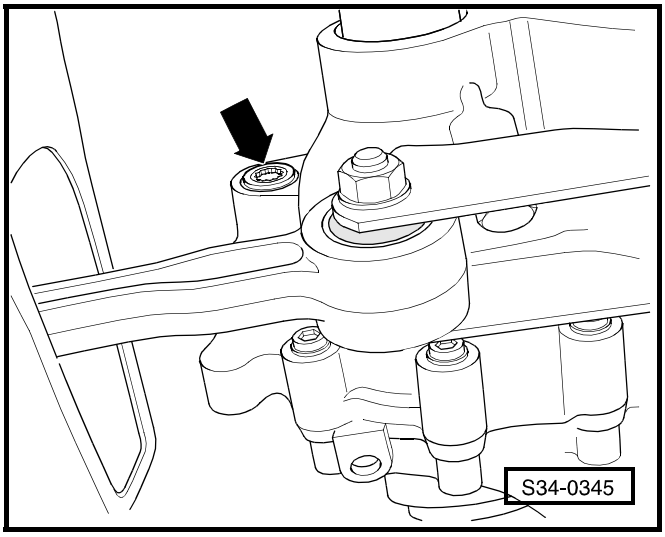
5 speed gearbox 02T

Special tools, test and measuring equipment and auxiliary items required

♦ Socket wrench insert -T30023 (3357)-

Gearbox oil specification: G50 SAE 75W90 (synthetic oil).

– Unscrew plug for inspecting gear oil -arrow-.



The oil is at the correct level if the gear is filled up to the lower edge of the oil filler hole.

– Tighten plug -arrow-, 25 Nm.

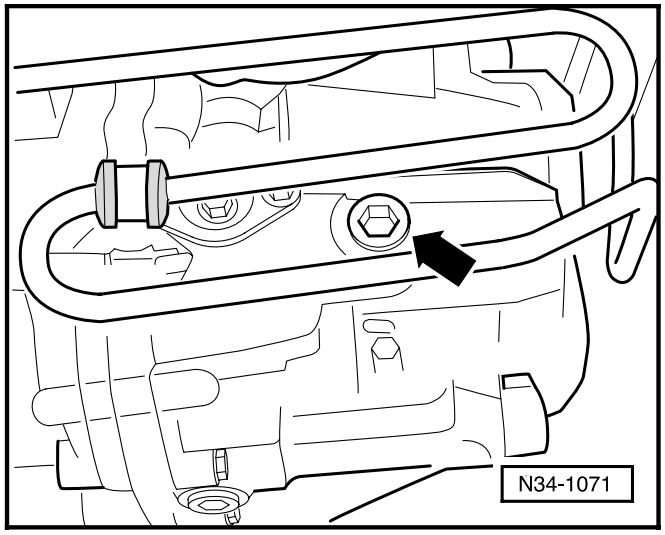
When topping up, pay attention to the following points:

– Unscrew plug for inspecting gear oil -arrow-.
– Pour in gear oil up to lower edge of the filler hole.
– Screw in plug -arrow-.
– Start engine, engage a gear and allow gearbox to rotate for about 2 minutes.
– Switch off engine, unscrew plug -arrow- and top up gear oil to lower edge of the filler hole.
– Tighten plug -arrow-, 25 Nm.

6 speed gearbox 0A8

Gearbox oil specification: G51 SAE 75W90 (synthetic oil).

– Unscrew plug for inspecting gear oil -arrow-.



The oil is at the correct level if the gear is filled up to the lower edge of the oil filler hole.

– Tighten plug -arrow-, 30 Nm.

When topping up, pay attention to the following points:

– Unscrew plug for inspecting gear oil -arrow-.
– Pour in gear oil up to lower edge of the filler hole.
– Screw in plug -arrow-.
– Start engine, engage a gear and allow gearbox to rotate for about 2 minutes.
– Switch off engine and unscrew plug -arrow-.
– Pour in gear oil again up to lower edge of the filler hole.
– Tighten plug -arrow-, 30 Nm.

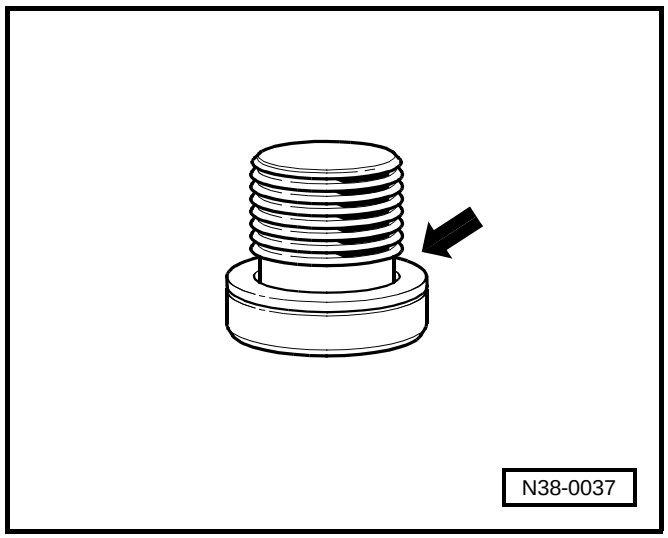
Inspecting ATF level, if necessary topping up

Special tools, test and measuring equipment and auxiliary items required

- Torque wrench (5 to 50 Nm), e.g. -V.A.G 1331-
- Diagnostic cable -V.A.G 1551/3-
- Vehicle system tester -V.A.G 1552-
- ATF filling system e.g. -V.A.G 1924-

If ATF is added, use ATF with spare part number -G 052 990 A2-.

– The gasket ring -arrow- for the ATF screw plug must always be replaced.



Inspecting ATF level

Test conditions

- Gearbox not in emergency running mode, ATF temperature not above 30°C.
- Vehicle on level ground
- Selector lever in „P“

– Attach the reservoir of the ATF filling system, e.g. -V.A.G 1924- to the vehicle.

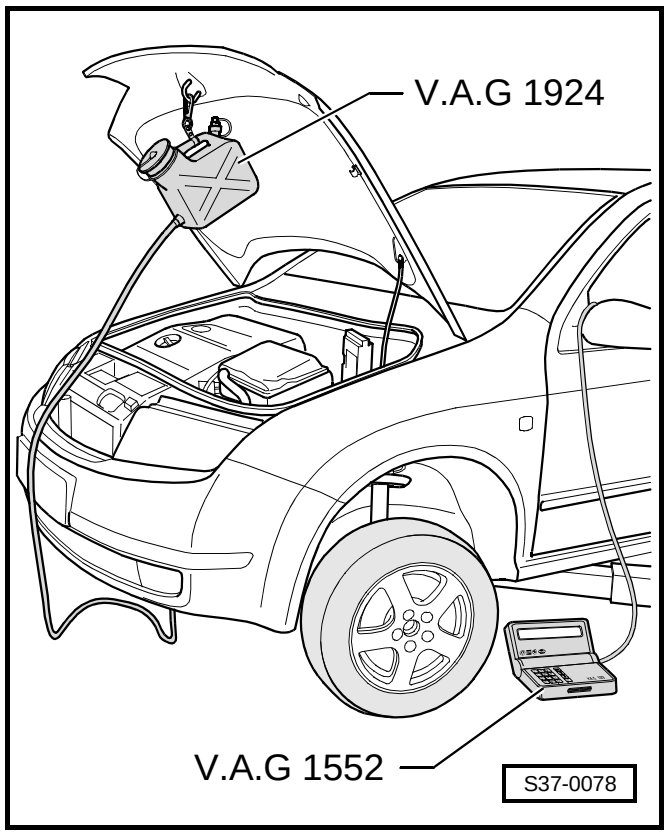
– Connect vehicle system tester -V.A.G 1552- with diagnostic cable -V.A.G 1551/3- ⇒ Chap. 02-6.

– Select address word 02 „gearbox electronics“ and move forward until „select function XX“ appears in the display.

– Start engine.

– Raise vehicle.

– Position the catch pan under the gearbox.



Readout on display:

```
Vehicle system test                    HELP
Select function XX
```

– Enter function 0 8 for „Read measured value block“ and confirm the entry with the key Q.

```
Reading measured value block
Enter display group number XXX
```

– 0 0 2 Enter function for „display group number 002“ and confirm the entry with the key Q.

Readout on display:

```
Reading measured value block  2   ->
0%        4%         30 C         12.9 V
```

The third display field indicates the ATF temperature.

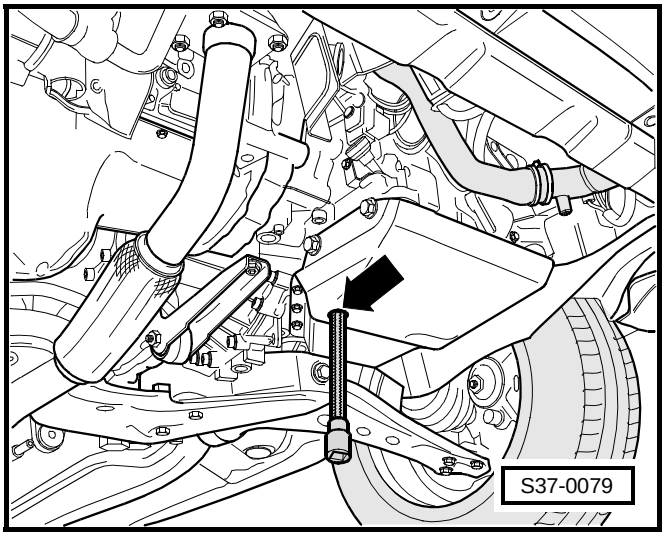
Note

The ATF temperature must not exceed 30 C at the start of the test.

– Bring ATF to test temperature.

Test temperature: 35 C to 45 C

– Remove screw plug for ATF inspection in the oil pan -arrow-.



The ATF present in the overflow tube flows out.

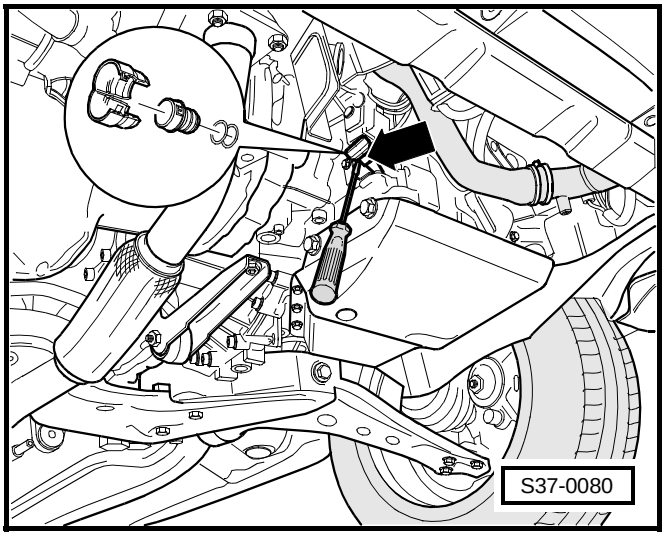
If ATF drips out of the hole:

It is not necessary to top up with ATF.

– Fit new gasket ring on screw plug and tighten to 15 Nm.

Topping up ATF

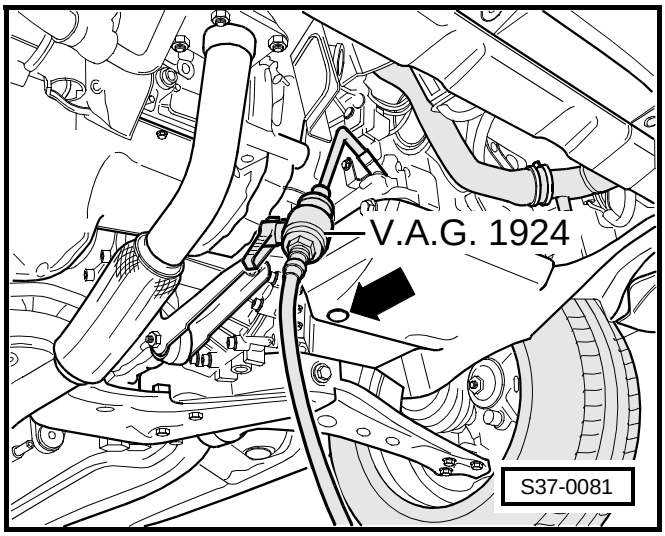
– Lever off cap -arrow- for securing the screw plug with a screwdriver.



The cap with the clip lock is destroyed in the process, therefore always replace the cap.

– Pull off screw plug from the filler tube.

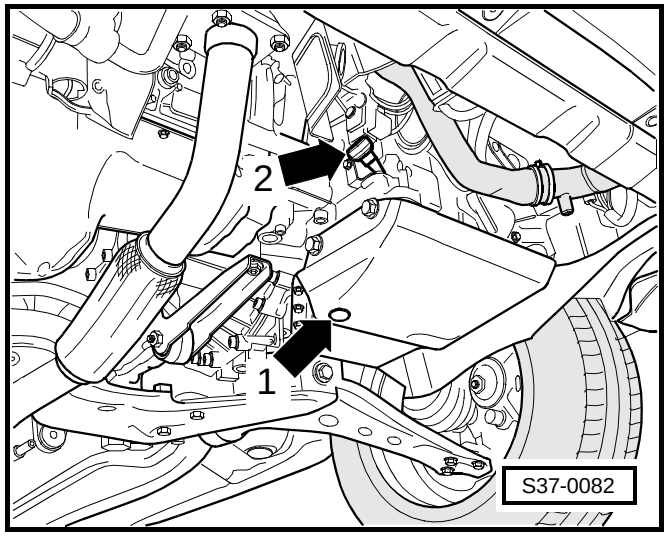
– Top up ATF with the ATF filling system -V.A.G 1924 - until ATF flows out of the inspection hole -arrow-.



Note

Too much or too little ATF filling impairs the gearbox function.

– Fit new gasket ring on screw plug -arrow 1- and tighten to 15 Nm. ►
– Insert screw plug of the filler tube and secure with new cap -arrow 2-.



02-5 Chassis

Inspecting thickness of front and rear brake pads/linings

Front disc brake pads:

Note

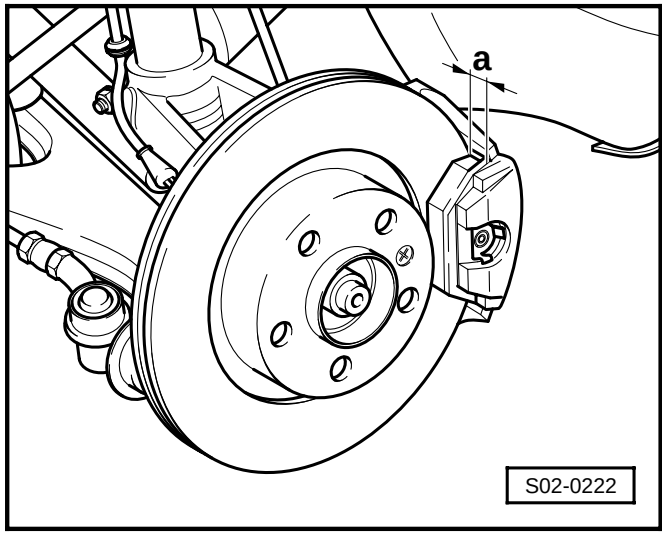
For a better assessment of the residual pad thickness remove wheels. Do not mix up wheels (mark).

– Release the wheel bolts and remove wheel.

-a- - the wear limit is reached at a pad thickness of 7 mm, including the base plate.

If the thickness of the pad is less than 7 mm including base plate, always replace the brake pads on both sides (repair measure)

– Fit on wheels in the marked position and tighten the wheel bolts to 120 Nm.



Note

After replacing the brake pads depress brake pedal firmly several times when the vehicle is stationary to ensure the brake pads are properly seated in their normal operating position.

Rear disc brake pads

Note

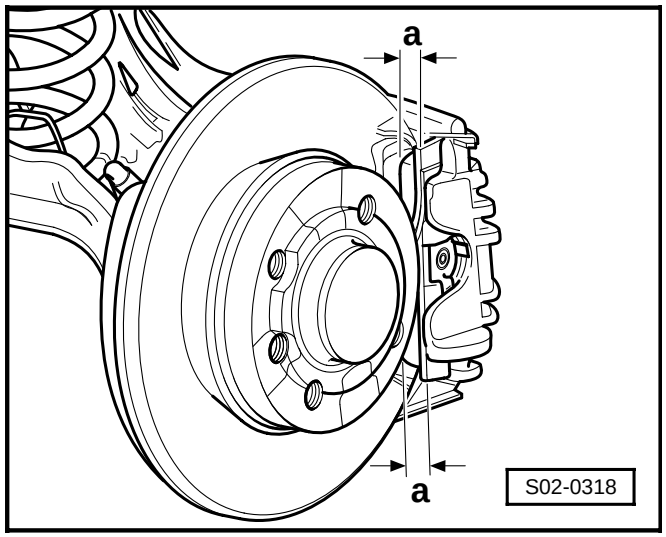
For a better assessment of the residual pad thickness remove wheels. Do not mix up wheels (mark).

– Release the wheel bolts and remove wheel.

-a- - the wear limit is reached at a pad thickness of 7.6 mm, including the base plate.

If the thickness of the pad is less than 7.6 mm, always replace the brake pads on both sides (repair measure)

– Fit on wheels in the marked position and tighten the wheel bolts to 120 Nm.



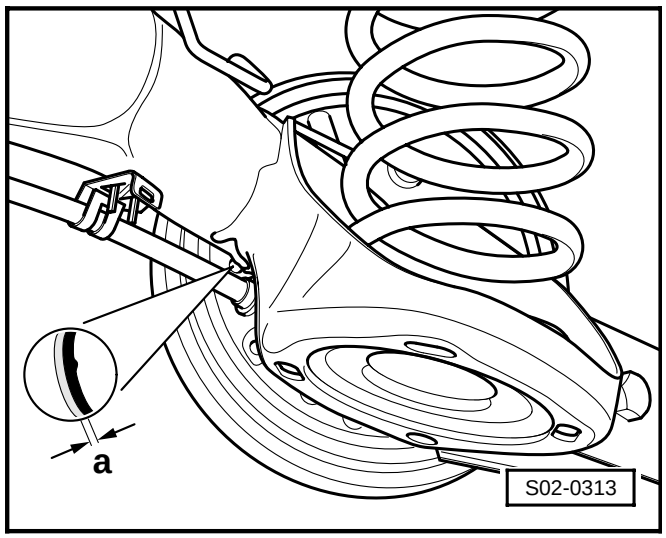
Note

After replacing the brake pads depress brake pedal firmly several times when the vehicle is stationary to ensure the brake pads are properly seated in their normal operating position.

Rear drum brake linings

– Inspect the thickness of the brake linings through the inspection holes in the brake carrier plates.

– The wear limit is reached at a lining thickness -a- of 5 mm, without supporting shoe. If a wear case exists, al-



ways replace the brake linings on both sides (repair measure).

Note

Avoid soiling from brake fluid or grease flowing out.

Inspecting brake system for leaks and damage

– Inspect master brake cylinder, brake servo unit (for ABS: hydraulic unit), brake pressure regulator, brake calipers for leaks and damage.
– Inspect brake hoses for twisting.
– Ensure that the brake hoses do not touch any parts of the vehicle when the steering is turned to full left or full right lock.
– Inspect the brake hoses for porous and brittle points. Inspect the brake hoses and brake lines for chafing points.
– Inspect the brake connections and attachments to ensure they are correctly fitted, free of leaks and corrosion.

WARNING!

Any defects found must be rectified (repair measure).

Changing brake fluid (every 2 years)

Special tools, test and measuring equipment and auxiliary items required

- Extraction device
- Brake pedal support, e.g. - V.A.G 1869/2-

Use only fresh genuine brake fluid FMVSS 571.116 DOT 4.

WARNING!

Brake fluid must never come into contact with fluids containing crude oils (oil, petrol, cleaning agent). Crude oils damage the gaskets and boots of the brake system.

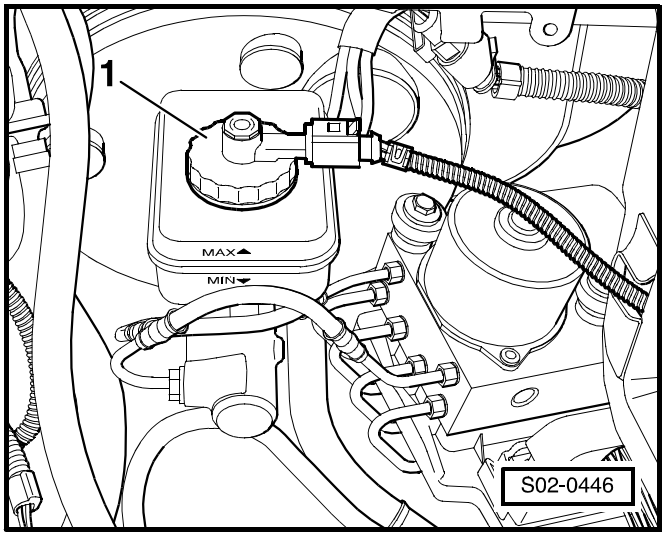
Brake fluid is toxic. Because of its caustic effect brake fluid must not come into contact with paint.

Brake fluid is hygroscopic, i.e. it absorbs moisture from the surrounding air . Therefore it should always be stored in airtight containers.

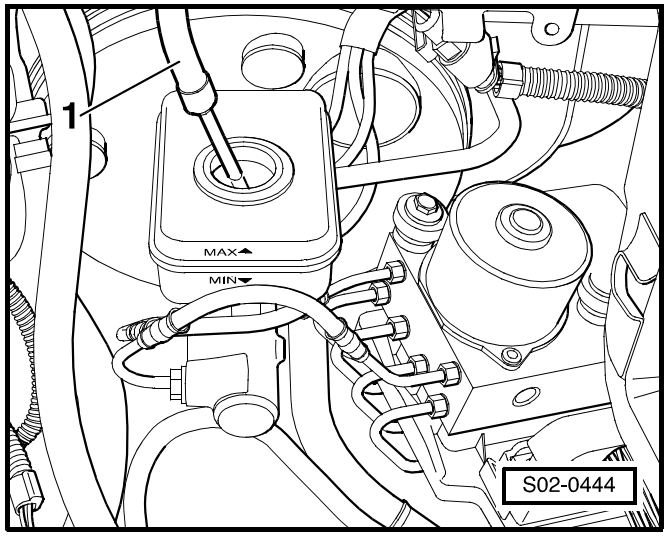
Wash any parts stained with brake fluid with large volumes of water.

Observe the disposal instructions!

– Unscrew cap -1- from the brake fluid reservoir ►



– Remove strainer and clean.
– Use extraction device -1- to extract as much brake fluid as possible from the brake fluid reservoir.



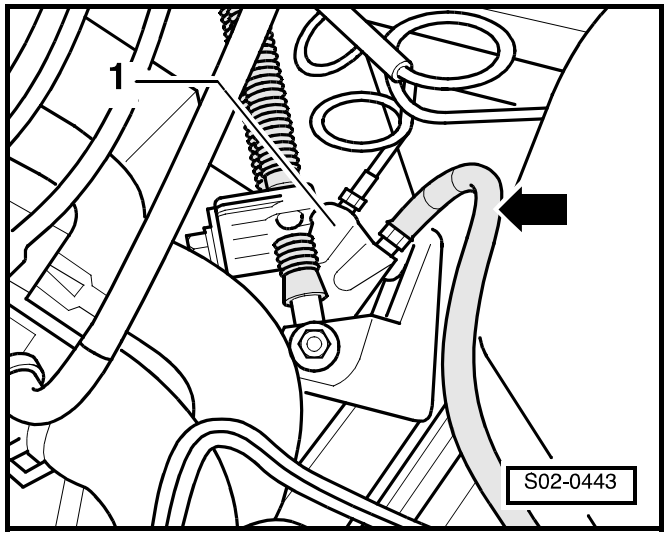
WARNING!

Drained (used) brake fluid must never be used again.

– Fill the brake fluid reservoir with new brake fluid.

Vehicles fitted with a manual gearbox

– Fit hose of extraction device -Arrow- onto the bleeder screw of the master cylinder -1-.
– Open the bleeder screw and by depressing the clutch pedal allow approx. 0.1 litre of brake fluid to flow out.
– Secure the clutch with the brake pedal depressor, e.g. -V.A.G 1869/2- in bottom position.
– Tightne bleeder screw and remove the hose.
– Put the clutch pedal in home position.



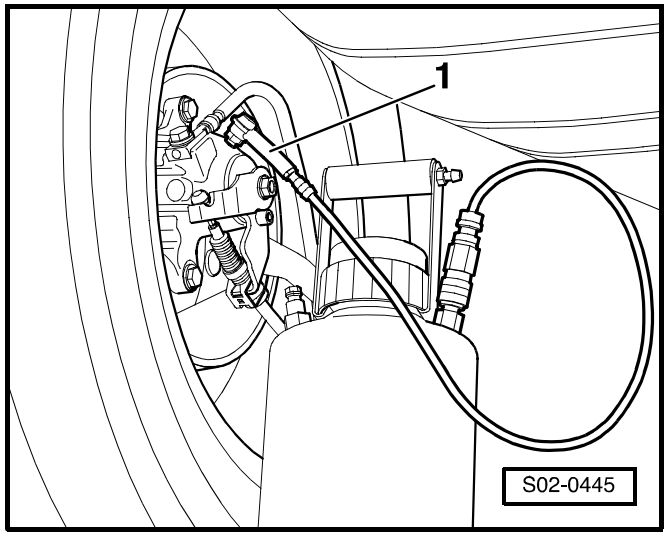
All vehicles

Sequence: Wheel brake cylinder, brale caliper, clutch slave cylinder	Quantity of brake fluid that must flow out of the wheel brake cylinders or brake calipers and clutch slave cylinder:
Rear right	0.2 litres
Rear left	0.2 litres
Front right	0.2 litres
Front left	0.2 litres
Clutch hydraulics	0.1 litres

Note

When changing the brake fluid it is necessary to replenish the brake fluid reservoir with brake fluid.

– Fit hose of extraction device -1- onto the bleeder screw of the rear right wheel.[1)]
– Open the bleeder screw and by depressing the brake pedal allow approx. 0.2 litres of brake fluid to flow out.
– Secure the clutch with the brake pedal depressor, e.g. -V.A.G 1869/2- in bottom position.
– Tighten bleeder screw and remove the hose.
– Put the brake pedal in home position.



[1)] On vehicles with right-hand steering: fit hose of extraction device onto the bleeder screw of the rear left wheel.

– Repeat the procedure for all wheels in the following sequence: rear left, front right and front left.[1)]
– Insert strainer in the brake fluid reservoir and fill with brake fluid up to the specified level.
– Inspect pedal position and idle travel at brake pedal. Idle travel: max. 1/3 of pedal travel.

Vehicles with ABS or ABS/EDL:

A road test on such models must be carried out after bleeding the brake system. While doing so perform at least one ABS adjustment!

Inspecting the brake fluid level

Use only fresh genuine brake fluid FMVSS 571.116 DOT 4.

WARNING!

Brake fluid is toxic. Because of its caustic effect brake fluid must not come into contact with paint.

Brake fluid is hygroscopic, i.e. it absorbs moisture from the surrounding air . Therefore it should always be stored in airtight containers.

Note

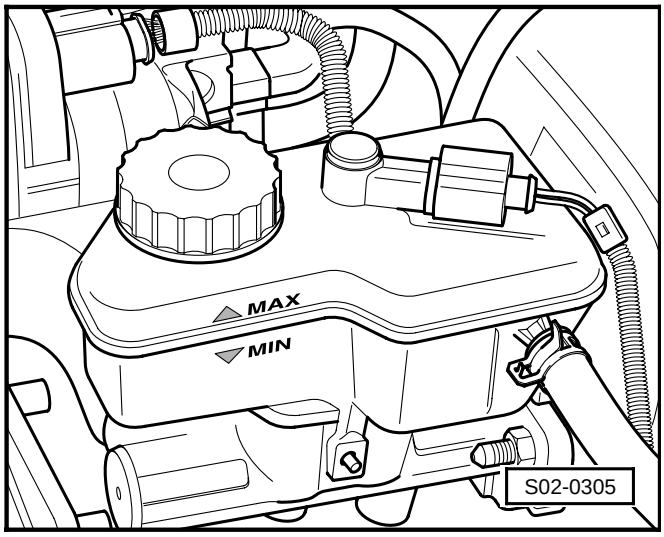
The brake fluid must not be above the „MAX“ marking to prevent fluid flowing out of the reservoir.

Delivery Inspection

The brake fluid level during the delivery inspection should be at the „MAX“ marking.

Inspection Service:

– The brake fluid level (volume) must always be assessed on the basis of the brake pad wear. When driving a slight drop in the brake fluid level occurs as a result of wear-and-tear and the automatic slack adjustment of the brake pads.
– If the fluid brake level is on the „MIN“ marking or slightly above, it is not necessary to top up the brake fluid if the brake pads have practically reached their wear limit.
– If the brake pads are new or far off the brake wear limit, the brake fluid level must be between the „MIN“ and „MAX“ markings.
– If the brake fluid level has dropped below the „MIN“ marking, it is necessary to inspect the brake system before topping up the brake fluid ⇒ 02-5 page 2; carry out repair measure if necessary.



[1)] for right-hand drive vehicles the following sequence applies: rear right, front left and front right

Track rod ends: Inspect play, correct attachment and joint boots

– Raise vehicle (wheel clear of the ground) and inspect play by moving the track rods and wheels. Clearance: There must not be any play present.

– Inspect attachment.

– Inspect seals for damage and correct installation.

Inspecting tyres (including spare wheel)

Note

Only tyres of the same type may be fitted to the vehicle. Tyres of the same brand and tread pattern must always be fitted to wheels on the same axle!

WARNING!

Tyres that are more than 6 years old must only be used in case of emergency and while driving very carefully.

Delivery Inspection:

– Inspect the tyre tread and side wall for damage, if necessary remove any foreign bodies from the tyres, such as nails or glass splinters.

Inspection Service:

– Inspect the tyre tread and side wall for damage, if necessary remove any foreign bodies from the tyres, such as nails or glass splinters.

– Inspect tyres for scrubbing, tread worn down on one side, porous side walls, cuts and punctures. Any defects found must be advised to the customer and the customer's attention must be drawn to any necessary repair measures!

Inspecting tyre wear

– The wear pattern on the front tyres makes it possible to assess whether it is necessary to inspect the wheel toe and camber:

- The formation of ridges on the tyre tread is an indication of wheel toe errors.
- Tread worn on one side is usually attributable to camber errors.

– If such signs of wear are found, determine the cause by checking the chassis alignment (repair measure).

Inspecting the tyre tread depth (including spare wheel) and entering

This value may differ in individual countries as a result of differing statutory requirements.

If the tyre tread depth is close to the legal minimum, in other words if no further tread exists at the points around the circumference of the tyre at which the 1.6 mm high wear indicators are positioned, the customer should be informed of the necessary repair measures.

Tightening wheel bolts to specific torque

Special tools, test and measuring equipment and auxiliary items required

- Torque wrench

Tightening torque for steel and light alloy wheels 120 Nm.

Inspecting the tyre inflation pressure (including spare wheel) and correcting the tyre inflation pressure if necessary

Special tools, test and measuring equipment and auxiliary items required

- Tyre inflation pressure tester

Note

- *The tyre inflation pressures are indicated on a sticker,which is affixed to the inside of the fuel filler flap.*
- *The tyre inflation pressures indicated on the sticker apply only to the tyres when cold. Do not reduce the higher inflation pressure of warm tyres.*
- *If winter tyres are fitted, the relevant tyre inflation pressure should be increased by 0.2 bar/20 kPa.*

Tyre inflation pressure table

Note

The instructions in the Workshop Repairs Manual always have priority over those for the vehicle.

FABIA

Engine	Tyres	Tyre inflation pressure (kPa/bar)			
		Partial load		Full load	
		Front axle	Rear axle	Front axle	Rear axle
1.0 ltr./37 kW 1.2 ltr./40 kW 1.2 ltr./47 kW 1.4 ltr./44 kW 1.4 ltr./50 kW 1.4 ltr./55 kW 1.4 ltr./74 kW 2.0 ltr./85 kW	155/80 R13	230/2,3	220/2,2	230/2,3	250/2,5
	165/70 R14	210/2,1	200/2,0	210/2,1	260/2,6
	185/60 R14	220/2,2	200/2,0	230/2,3	270/2,7
	185/55 R15	210/2,1	200/2,0	220/2,2	270/2,7
	195/50 R15	210/2,1	210/2,1	230/2,4	270/2,8
	205/45 R16	220/2,2	200/2,0	240/2,4	280/2,8

Engine	Tyres	Tyre inflation pressure (kPa/bar)			
		Partial load		Full load	
		Front axle	Rear axle	Front axle	Rear axle
1.9 ltr./47 kW SDI 1.4 ltr./55 kW TDI PD	165/70 R14	220/2,2	200/2,0	240/2,4	280/2,8
	185/60 R14	210/2,1	190/1,9	230/2,3	270/2,7
	185/55 R15	210/2,1	200/2,0	220/2,2	270/2,7
	195/50 R15	210/2,1	200/2,0	220/2,2	270/2,7
	205/45 R16	220/2,2	200/2,0	240/2,4	280/2,8
1.9 ltr./74 kW TDI	185/60 R14	230/2,3	210/2,1	250/2,5	280/2,8
	185/55 R15	210/2,1	200/2,0	220/2,2	270/2,7
	195/50 R15	230/2,3	210/2,1	250/2,5	280/2,8
	205/45 R16	220/2,2	200/2,0	240/2,4	280/2,8
1.9 ltr./96 kW TDI PD	205/45 R16	230/2,3	220/2,2	250/2,5	280/2,8
	185/55 R15	230/2,3	210/2,1	250/2,5	280/2,8

FABIA COMBI

Engine	Tyres	Tyre inflation pressure (kPa/bar)			
		Partial load		Full load	
		Front axle	Rear axle	Front axle	Rear axle
1.2 ltr./40 kW 1.2 ltr./47 kW 1.4 ltr./44 kW 1.4 ltr./50 kW 1.4 ltr./55 kW 1.4 ltr./74 kW 2.0 ltr./85 kW	165/70 R14	220/2,2	210/2,1	220/2,2	280/2,8
	185/60 R14	220/2,2	210/2,1	230/2,3	280/2,8
	185/55 R15	220/2,2	210/2,1	230/2,3	280/2,8
	195/50 R15	210/2,1	220/2,2	230/2,3	280/2,8
	205/45 R16	220/2,2	210/2,1	240/2,4	280/2,8
1.9 ltr./47 kW SDI 1.4 ltr./55 kW TDI PD	165/70 R14	230/2,3	210/2,1	230/2,3	300/3,0
	185/60 R14	220/2,2	210/2,1	220/2,2	290/2,9
	185/55 R15	220/2,2	210/2,1	230/2,3	280/2,8
	195/50 R15	210/2,1	230/2,3	230/2,3	280/2,8
	205/45 R16	220/2,2	220/2,2	250/2,5	280/2,8

Engine	Tyres	Tyre inflation pressure (kPa/bar)			
		Partial load		Full load	
		Front axle	Rear axle	Front axle	Rear axle
1.9 ltr./74 kW TDI	185/60 R14	220/2,2	220/2,2	230/2,3	290/2,9
	185/55 R15	220/2,2	210/2,1	230/2,3	280/2,8
	195/50 R15	220/2,2	230/2,3	230/2,3	280/2,8
	205/45 R16	220/2,2	220/2,2	250/2,5	280/2,8

FABIA SEDAN

Engine	Tyres	Tyre inflation pressure (kPa/bar)			
		Partial load		Full load	
		Front axle	Rear axle	Front axle	Rear axle
1.2 ltr./40 kW 1.2 ltr./47 kW 1.4 ltr./44 kW 1.4 ltr./50 kW 1.4 ltr./55 kW 1.4 ltr./74 kW 2.0 ltr./85 kW	165/70 R14	220/2,2	210/2,1	220/2,2	280/2,8
	185/60 R14	220/2,2	210/2,1	230/2,3	280/2,8
	185/55 R15	220/2,2	210/2,1	230/2,3	280/2,8
	195/50 R15	210/2,1	220/2,2	230/2,3	280/2,8
	205/45 R16	220/2,2	210/2,1	240/2,4	280/2,8
1.9 ltr./47 kW SDI 1.4 ltr./55 kW TDI PD	165/70 R14	230/2,3	210/2,1	230/2,3	300/3,0
	185/60 R14	220/2,2	210/2,1	220/2,2	290/2,9
	185/55 R15	220/2,2	210/2,1	230/2,3	280/2,8
	195/50 R15	210/2,1	230/2,3	230/2,3	280/2,8
	205/45 R16	220/2,2	220/2,2	250/2,5	280/2,8
1.9 ltr./74 kW TDI	185/60 R14	220/2,2	220/2,2	230/2,3	290/2,9
	185/55 R15	220/2,2	210/2,1	230/2,3	280/2,8
	195/50 R15	220/2,2	230/2,3	230/2,3	280/2,8
	205/45 R16	220/2,2	220/2,2	250/2,5	280/2,8

02-6 Electrical System

Power windows: Inspecting positioning

If the battery is diconnected the power windows forget their current position.

Test conditions:

- All car doors closed

The inspection procedure is carried out from the outside

Close window with the car key using the convenience closing system.

– Turn car key into close position and hold until all the windows are closed.
– After closing the windows hold the key in the close position for approximately another 3 seconds.

Electrical components: Check for proper operation

– Inspect lighting, main headlights, headlight beam control, fog lights, turn signal lights, hazard warning light system, tail lights, rear fog lights, reversing lights, brake lights, parking light control for brightness and proper operation.
– Inspect interior lights, illuminated storage compartment, illuminated ashtray for proper operation.
– Airbag warning lamps: Check operation ⇒ Chapter 02-7.
– Inspect warning buzzer, onboard computer, all switches in centre console as well as on the dash panel and horn for proper operation.
– Inspect power windows, exterior mirrors (heated and electrically adjustable), central locking system, infrared remote control and convenience closing system for proper operation
– Inspect heating of front seats for proper operation.
– Inspect radio for proper reception and absence of interference, also inspect speakers ⇒ 02-6 page 2.

Battery: Testing no-load voltage

Special tools, test and measuring equipment and auxiliary items required

♦ Multimeter (e.g. -V.A.G 1526 A-)

Prior to the measurement the vehicle must have been in the no-load state for at least two hours (no engine starts, no charging or discharging of battery).

The following procedure applies to measuring the battery voltage in the no-load state (after at least two hours):

– With the battery installed measure the voltage between the terminals (ignition switched off).

If the tester indicates a voltage of 12.5 Volts or more, the battery is O.K.

If the voltage is less than 12.5 Volts determine the cause (repair measure).

Battery: Inspecting electrolyte level, topping up with distilled water if necessary

Note

This procedure is not valid for batteries with the sign „Magic eye". Test procedure for these batteries ⇒ Electrical System; Rep. Gr. 27.

– Inspect electrolyte level:

WARNING!

When working on the battery wear proper protection and observe safety precautions.

– The electrolyte level must be between the „MIN" and „MAX" markings.
– Top up the battery with distilled water up to the „MAX" marking if necessary.

Note

Before disconnecting the battery determine the code of radio sets fitted with anti-theft coding.

Radio: Check for proper operation

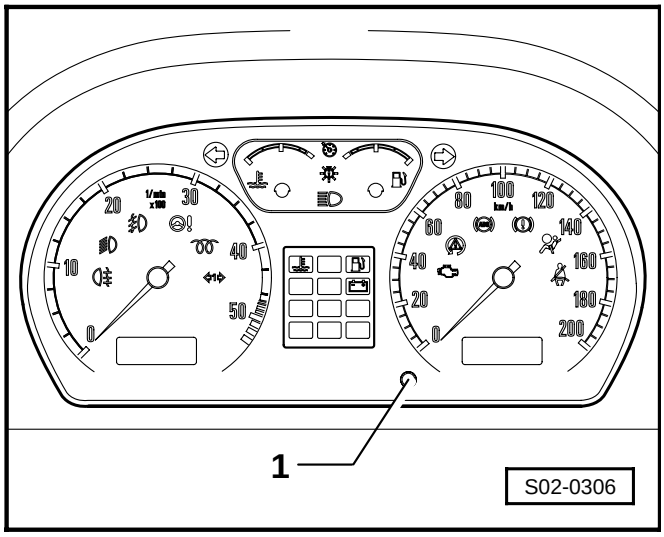
Precise information on how to operate the radio should be obtained from the operating instructions before inspecting proper operation of the radio set.

– Switch radio set on and off.
– Operate the volume control.
– Carry out station programming[1)].
– Inspect station search[1)].
– Inspect cassette player (insert cassette and play) [1)].
– Inspect activation of the anti-theft code of the radio [1)].

Setting clock

A rotary knob is provided next to the rev counter for setting the time. The hours (h) are set by turning the knob -1- to the left, and the minutes (min) are set by turning the knob to the right:

– By briefly turning the knob the time is advanced by one hour or one minute. It is possible to move the hours or minutes back or forward continuously by



[1)] These functions are model specific and are not present on all types of radio sets. For operation refer to Radio Operating Instructions.

holding the knob in the left or right position respectively.

Connect vehicle system tester and interrogate fault memory

The stored faults can be read out with vehicle system tester -V.A.G 1552-, -V.A.G 1551-, or -V.A.S. 5051-.

Note

- *The following description relates to vehicle system tester -V.A.G 1552- using program card 6.0.*
- *The use of vehicle diagnosis, measurement and information system -V.A.S 5051- or fault read-out scan tool -V.A.G 1551- with the program card version 9 is similar. (A minor deviation on the display read-out is possible).*

Special tools, test and measuring equipment and auxiliary items required

- Vehicle system tester -V.A.G 1552 -
- Diagnostic cable -V.A.G 1551/3, 3A, 3B oder 3C-

Test conditions

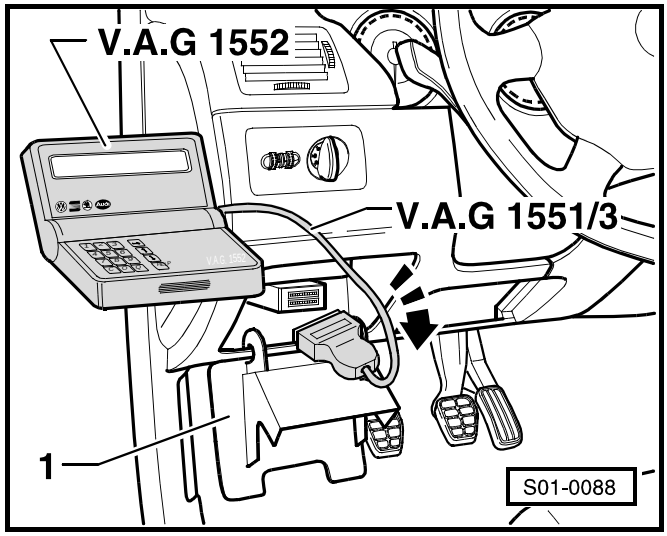
- Battery voltage at least 9 V.
- All fuses OK.
- Earth connections between the engine (on gearbox housing) and body (below the battery) must be O.K.

– Apply handbrake.

– Gearbox: Put the lever into Neutral.

– Automatic gearbox: Move selector lever into position „P“ or „N“.

– Fold cover open -1- in the direction of the arrow. ►



Connect vehicle system tester - V.A.G 1552- with appropriate cable.

– Start engine and run in idle.

If the read-outs as shown in the work sequence are not displayed, refer to the following notes:

Note

- *If „Error in data transmission“ is displayed because of an incorrect entry, unplug cable from vehicle system tester, plug in again and repeat all the steps.*
- *If one of the following messages appears in the display, carry out fault finding as specified in the fault finding program at the diagnostic cable ⇒ Current Flow Diagrams, Electrical Fault Finding and Fitting Locations, or ⇒ Operating Instructions of vehicle system tester*

►
```
Vehicle system test                    HELP
The control unit does not respond
```

►
```
Vehicle system test                    HELP
Fault in communication set-up
```

```
Vehicle system test                    HELP
K cable does not connect to earth
```

```
Vehicle system test                    HELP
K cable does not connect to pos. term.
```

```
Vehicle system test                    HELP
Enter address word XX
```

Operate the vehicle system tester by referring to the read-out on the display:

Read out on display:

– Enter 00 for address word „Automatic test sequence“ and confirm with Q.

The automatic test sequence is carried out with address word 00, i.e. the fault memory of all self-diagnosable systems in the vehicle is interrogated.

If a control unit responds with its identification, the display will show the number of faults stored in the memory or „No fault detected!“ Eventuell gespeicherte Fehler eines Systems werden nacheinander angezeigt.

Any faults stored for one of the systems are displayed in sequence.

If faults are stored, it is necessary to carry out a repair measure. Displayed faults are to be entered.

– Switch off ignition.

The vehicle system tester -V.A.G 1552 - may have to remain connected for the exhaust emission test and for resetting the service interval display.

Resetting service interval display (SID) QG0

If the due date of a service is reached, the service event appears in the short journey counter below the speedometer as a flashing display, after the ignition is switched on. The service event also continues flashing for about 60 seconds after the engine is started.

The following displays are possible:

OIL - Oil change service

INSP - Inspection Service

Note

The service event is shown on the indicator when the service interval has been reached.

The service interval display should be adapted when carrying out the Delivery Inspection or during every Inspection Service.

The following intervals are set when adapting the service interval display (SID):

Service event	Nominal value (distance)	Nominal value (time)
OIL	15 000 km	-
INSP	30 000 km	365 days

Resetting service interval display (SID) with -V.A.G 1552- (QG0)

– Connect -V.A.G 1552-.

– Switch on ignition.

– Enter address word 17 „Dash Panel Insert“ and confirm with Q.

```
6Y1919870B COMBIINSTRUMENT VDO X09   ->
Coding    20141        WSC 12345
```

– Press ▢ key.

Readout on display (e.g.):

```
TMBMC46Y0Y7000001   SKZ7Z0W0204038   ->
```

– Press ▢ key.

Readout on display:

```
Vehicle system test                HELP
Select function XX
```

– Enter function 10 „Adaptation“ and confirm with the Q key.

Readout on display:

```
Adjustment
Enter channel number XX
```

– Select adaptation channel of the service event to be reset: for display „service OIL“ channel 10; for display „service INSP“ channel 10, 11 and 12.

Service event	adjustment channel	Counter contents	Adaptation value
OIL	10	Distance in 100 km	00150
INSP	11	Distance in 100 km	00300
INSP	12	Time in days	00370

Note

- *Entry of the relevant adaptation value for the short journey counter can only be made in steps of 100 km; consequently the read-out in the display is also in units of 100 km.*
- *Adaptation values must be entered as a 5-digit number (e.g. 00150 for adaptation value 150, equals a distance of 15 000 km to the next service event).*
- *The value entered is counted back to 0 km.*
- *The time counter for the „INSP service“ can be adapted with a maximum of 370 days.*
- *Only a direct data entry is possible using the keypad of the vehicle system tester!*
- *If an incorrect figure is entered the „Adaptation“ function is terminated and must be adapted again.*

Example:

Resetting SID for „OIL service“:

Readout on display:

```
Channel 10  Adjustment     1          ->
actual value OIL in 100 km -    -
```

Note

„in 100 km“ = adaptation value x100

The current read-out of the short journey counter for the OIL service is displayed (is still 100 km in our example until the next OIL service).

– Press ▢ key.

Readout on display:

```
Channel 10    Adaptation     1
Enter adjustment value  XXXXX
```

The short journey counter must be reset to 150 (equals 15 000 km) for setting the SID for the OIL service.

– Enter adaptation value 00150.

Readout on display:

```
Channel 10      adjustment    1        Q
Enter adaptation value          00150
```

– Confirm the entry with key Q.

Read-out on display after entering adaptation value 00150:

```
Channel 10      adjustment    150      Q
actual value OIL in 100 km -      -
```

– Confirm the entry with key Q.

Readout on display:

```
Channel 10      adjustment      15     Q
Store changed value?
```

– Confirm the entry with key Q.

Readout on display:

```
Channel 10  Adjustment     150         ->
Changed value stored
```

– Press ▢ key.

Readout on display:

```
Vehicle system test                   HELP
Select function XX
```

– Enter 06 for „End output“.

Readout on display:

```
Vehicle system test                   HELP
06 End output
```

– Confirm the entry with key Q.

– Observe short journey counter.

– Switch off ignition.

After switching off the ignition the short journey counter display should show the entered service interval for a short time.

– Switch on ignition.

After switching on the ignition the short journey counter display does not show a service interval.

The service interval display is now reset.

– Switch off ignition.

– Switch off -V.A.G 1552-.

Resetting service interval display (SID) without -V.A.G 1552- (QG0)

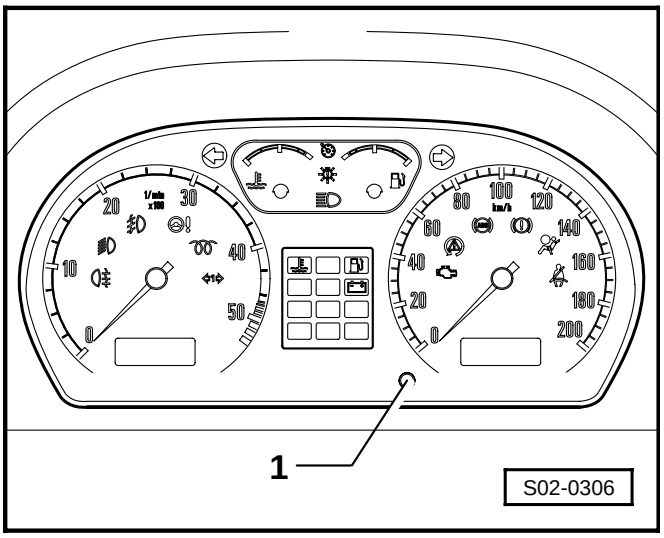
After completing the service work, the appropriate service message „OIL“ or „INSP“ must be reset.

Note

- *For vehicles with the dash panel insert 6Y0 920 xxx x, the SID with the set button -1- cannot be reset before a service is required.*
- *Always only reset the desired service interval („OIL service“ or „INSP service“), otherwise an incorrect date for another service interval will be set.*

– Switch off ignition.

– Press set button -1- and hold and simultaneously switch on ignition.



– As soon as the display „OIL service“ appears, release the set button.

– Turn set button -1- to the right.

„- - -“ appears in the display.

– Move forward to the next service message by once again pressing the set button -1-.

– As soon as the display „INSP service“ appears, release set button -1-.

– Turn set button -1- to the right.

„- - -“ appears in the display.

– Switch off ignition.

Resetting service interval display (SID) QG1 and QG2

The pre-information about an up-coming service will be displayed 30 days before the service interval. The read-out appears on the display for the kilometre counter after switching on the ignition whereby the number of remaining kilometres required to reach the distance interval will be displayed for the first 10 seconds while the number of days remaining to reach the time interval will be shown in the next 10 seconds. This interval will reduce later in steps while driving down to 1 day or 100 kilometres. This display stops blinking after 20 minutes, after starting the engine or after pressing the reset button of the short journey counter.

If the due date of a service is reached, the key symbol appears in the short journey counter below the speedometer as a flashing display, after the ignition is switched on, whereby there are no numbers displayed. The display is accompanied by an audible tone signal. This display stops blinking after 20 seconds, after starting the engine or after pressing the reset button of the short journey counter.

If no inspection service is made the display will appear in a similar way to that for reaching the service interval but minus values will be both displayed and accumulated.

Note

The pre-information display shows 30 days before the due date of an inspection.

Resetting service interval display (SID) with -V.A.G 1552- (QG1, QG2)

– Connect -V.A.G 1552-.

– Switch on ignition.

– Enter address word 17 „Dash Panel Insert“ and confirm with Q.

Readout on display (e.g.):

```
6Y1919870B COMBIINSTRUMENT VDO X09     ->
Coding    03111        WSC 12345
```

– Note the dash panel insert coding.

– Press ▢ key.

Readout on display (e.g.):

```
TMBMC46Y0Y7000001   SKZ7Z0W0204038     ->
```

– Press ▢ key.

Readout on display:

```
Vehicle system test                HELP
Select function XX
```

– Enter address word 10 „Adaptation“ and confirm with the Q key.

Readout on display:

```
Adjustment
Enter channel number XX
```

– Enter adjustment channel 02.

Readout on display:

```
Channel 2       Adaptation 1
                     -   -
```

– Press ▢.

Readout on display:

```
Channel 2       Adaptation 1
Enter adjustment value  XXXXX
```

– Enter adaptation value 00000.

Readout on display:

```
Channel 2      adjustment      1       Q
Enter adaptation value 00000
```

– Confirm the entry with key Q.

Read-out on display after entering adaptation value 00000:

```
Channel 2      adjustment      0       Q
                     -   -
```

– Confirm the entry with key Q.

Readout on display:

```
Channel 2      adjustment      0       Q
Store changed value?
```

– Confirm the entry with key Q.

Readout on display:

```
Channel 2       Adaptation 0
Changed value stored
```

– Press ▢ key.

Readout on display:

```
Vehicle system test                HELP
Select function XX
```

– Enter 06 for „End output“.

Readout on display:

```
Vehicle system test                HELP
06 - End output
```

– Confirm the entry with key Q.

– Switch off ignition.

Resetting service interval display (SID) without -V.A.G 1552- (QG1, QG2)

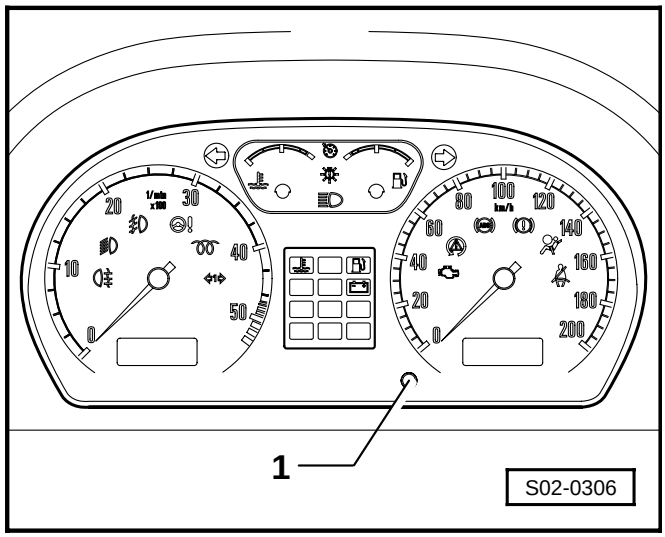
– Switch off ignition.

– Press set button -1- and hold and simultaneously switch on ignition.

– Release set button -1- and turn to the right.

All counters are reset.

– Switch off ignition.



Note

- *For vehicles with the dash panel insert 6Y0 920 xxx x, the SID with the set button -1- cannot be reset before a service is required.*
- *The fact that the correct oil quality cannot be entered in this way means that this value will be set to 1 when resetting the set button (low quality) and the service interval with a fixed oil change limitation will be activated.*

Changing the code of the service intervals

Service intervals are sub-divided into two types after coding of the dash panel insert:

WIV with variable service intervals for changing the oil (QG1)

Service intervals with flexibly set message lengths. Here the character of the vehicle operation, the condition of the brake linings and the oil level are monitored. The oil must conform to the standards VW 503 00, VW 506 000 or VW 506 01.

WIV with fixed service intervals for changing the oil (QG2)

Service intervals with fixed set message lengths for 1 year or 15 000 km. The oil level is, however, measured with the oil sensor and the condition of the brake linings is monitored. This version is usually set when no oil is used which is not of the required quality.

Change service interval type

Note

- *Every change of the coding of the dash panel insert which is associated with the service intervals must be entered into the service schedule for the vehicle.*
- *The changes to service intervals with fixed limit for oil change (QG2) on WIVs with variable service intervals (QG1) can only be undertaken on the basis that the vehicle was originally fitted with WIV at the works and one exclusively only uses engine oil in a quality which is in accordance with the standard for WIV.*
- *The changes made from QG1 to QG2 can be undertaken independently of the setting up done at the worts.*

An example of changing from QG1 to QG2:

– Connect -V.A.G 1552-.
– Switch on ignition.
– Enter address word 17 „Dash Panel Insert“ and confirm with Q.

Readout on display (e.g.):

```
6Y1919870B COMBIINSTRUMENT VDO X09   ->
Coding    03111        WSC 12345
```

– Note the dash panel insert coding.
– Press ▢ key.

Readout on display (e.g.):

```
TMBMC46Y0Y7000001   SKZ7Z0W0204038    ->
```

– Press ▢ key.

Readout on display:

```
Vehicle system test                HELP
Select function XX
```

– Enter function 07 „Code control unit“ and confirm with Q key.

Readout on display:

```
Coding control unit
Enter code number XXXXX (0-32767)
```

– Enter dash panel insert coding which is identical to the original coding. The value on the fourth position must, however, be altered from 1 to 2.

XXX1X - QG1

XXX2X - QG2

Readout on display (e.g.):

```
Coding control unit
Enter code number 03121     (0-32767)
```

– Confirm the entry with key Q.

Readout on display (e.g.):

```
6Y1919870B COMBIINSTRUMENT VDO X09   ->
Coding    03121        WSC 12345
```

– Press ▢ key.

Readout on display (e.g.):

```
TMBMC46Y0Y7000001   SKZ7Z0W0204038    ->
```

– Press ▢ key.

Readout on display:

```
Vehicle system test                HELP
Select function XX
```

– Enter 06 for „End output“.

Readout on display:

```
Vehicle system test                HELP
06 End output
```

– Confirm the entry with key Q.
– Switch off ignition.
– Switch off -V.A.G 1552-.

Inspecting headlight beam setting and adjusting if necessary

Special tools, test and measuring equipment and auxiliary items required

♦ Headlight beam setting device

In principle the following inspection and setting description applies for all countries. However, comply with national guidelines and legislation of the relevant country.
⇒ Operating instructions for the headlight beam setting device

Test and setting conditions

- Tyre inflation pressure O.K.
- Lenses must neither be damaged nor soiled.
- Reflectors and bulbs O.K.
- Vehicle load must be achieved.

Load: With an individual or 75 kg on the driver's seat in an otherwise unladen vehicle (dead weight).

The unladen weight is the weight of the vehicle with full fuel tank (at least 90 %) including the weight of all the operational equipment elements (e.g. spare wheel, tool kit, jack etc.).

The vehicle must have rolled a few metres or have been depressed a few times at the front and rear to allow the springs to settle.

- Both the vehicel and headlight beam setting device must be on a level flat surface.
- Align the vehicle and headlight beam setting device in accordance with the device manufaturer's indications.
- Check the control system of vehicles equipped with headlight beam control by repeatedly turning the thumbwheel in the dash panel. Then turn the thumbwheel to basic position.
- Set the inclination value.

Inclination value:

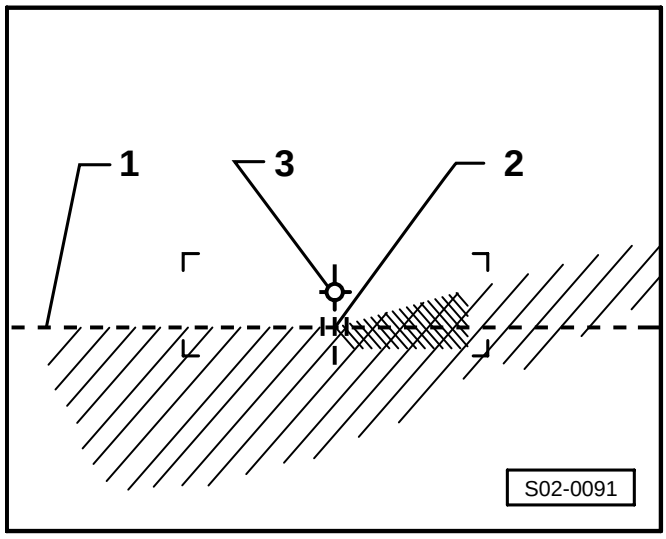
The inclination value is marked in „%“ at the top of the headlight housing. The main headlights must be set to this value. The percentage value applies up to 10 metres projection distance. This will be 12 cm for an inclination value of e.g. 1.2 %.

Inspecting headlight beam setting and adjusting if necessary

Main headlights:

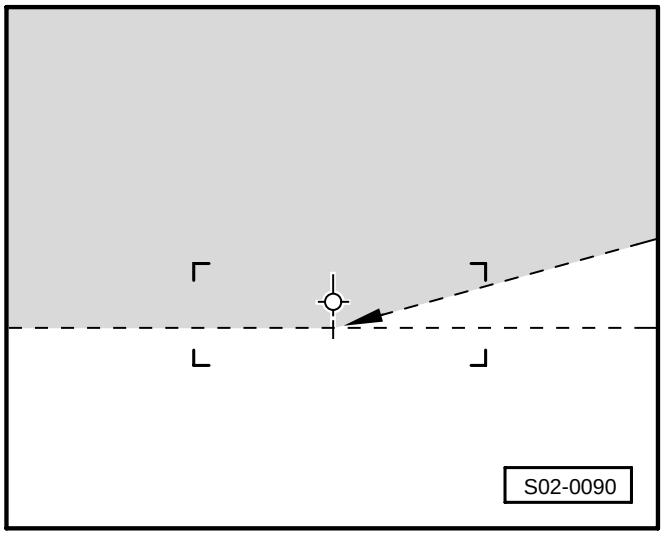
– Check whether the horizontal light/dark limit touches the separation mark -1- on the test surface when the low beam light is on .

– Check whether the kink -2- between the left horizontal part and the ascending right part of the light/dark limit intersects with the central mark -3- on the vertical line. The light core of the light beam must be located to the right of the vertical line.



Note

- *To easily determine the kink -2-, alternately cover and uncover the left half of the headlight (in the driving direction) a few times. After this, check the low beam once again.*
- *Once the low beam light has been correctly set the centre of the light beam of the main beam must be positioned on the central mark -3-.*
- *The adjustment foreseen for the new control screen also applies for the previous one, which has a 15 adjusting line. To avoid incorrect settings disregard the 15 adjusting line.*



Other additional headlights:

Additionally fitted headlights must be inspected or set in compliance with the relevant applicable directives.

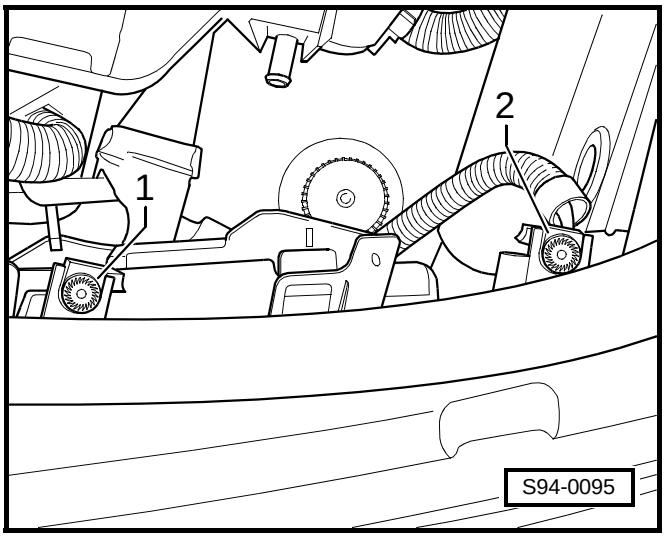
Setting the headlight beam

Setting the main beam

Note

The headlight adjusting device is used to set up the headlight. Nominal values ⇒ 02-6 page 10.

Left headlight (right headlight in mirror image)



1 - Vertical adjustment
2 - Lateral adjustment

– Adjust with corresponding thumbwheel.

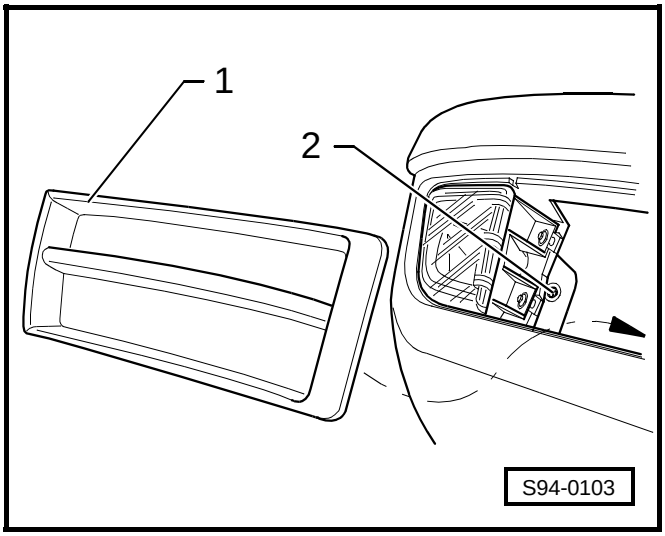
Adjust the fog light beam

Inclination value:

The angle is 2.2%.

Vehicles up to MY 2004

Right fog light (left fog light in mirror image)

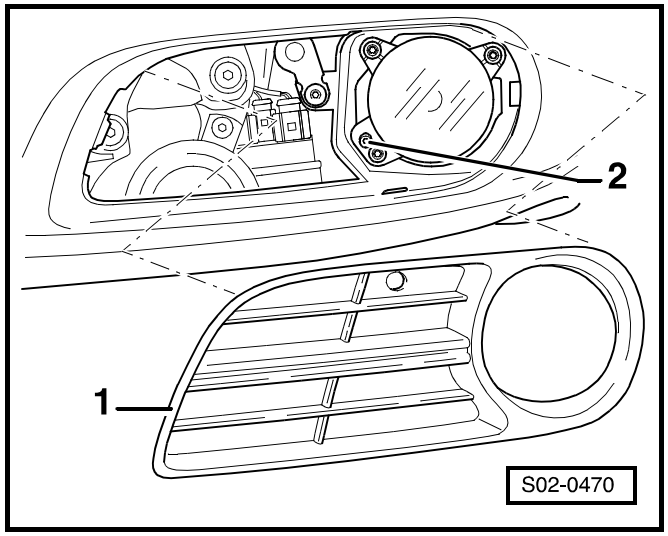


Vehicles as MY 2005

Left fog light (right fog light in mirror image)

– Unclip the cap -1- on the bumper.

– Use a screwdriver to turn screw -2- and to align the fog light beam.

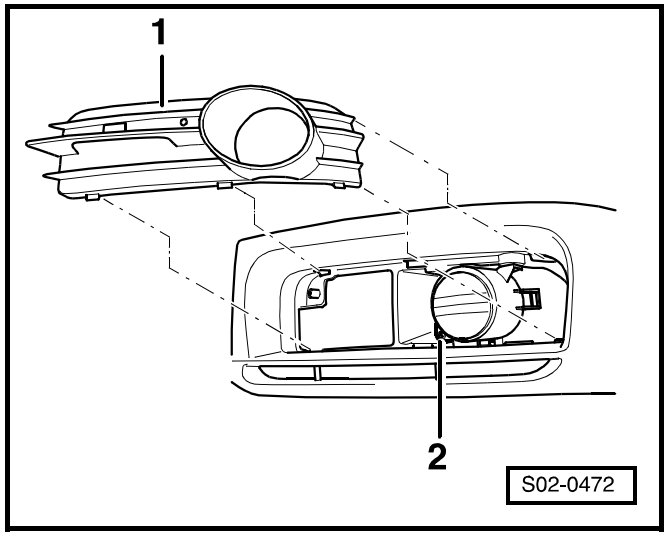


Vehicles RS

Left fog light (right fog light in mirror image)

– Unclip the cap -1- on the bumper.

– Use a screwdriver to turn screw -2- and to align the fog light beam.



Replace emergency battery for alarm system

– Replacing the alarm of the alarm system ⇒ Electrical System; Rep. Gr. 94.

02-7 Body

Airbag units: Visual inspection

Inspecting operation of airbag unit

When the ignition is switched on the airbag warning lamp K75 lights up for approximately 4 seconds. Should the warning lamp flash again for a further 12 seconds this is an indication that the front passenger airbag or the side airbag unit on the front passenger is electronically locked (valid for vehicles which do not have an airbag switch-off function).

The warning lamp will go out after 4 seconds for vehicles which are fitted with an airbag switch-off function and switching off of the front passenger airbag will be signalled by the warning lamp „AIRBAG OFF“ in the middle of the dash panel.

- If warning lamp K75 does not go out after 4 seconds and lights up continously there is a fault.
- If the warning lamp goes out and then lights up again the control unit is not coded, the wrong control unit has been fitted or there is a fault.
- If the airbag warning light K75 flashes constantly, it is then necessary to replace the airbag control unit J234.

If the warning light indicates a fault, the fault must be rectified (repair measure) Body Work; Rep. Gr. 01.

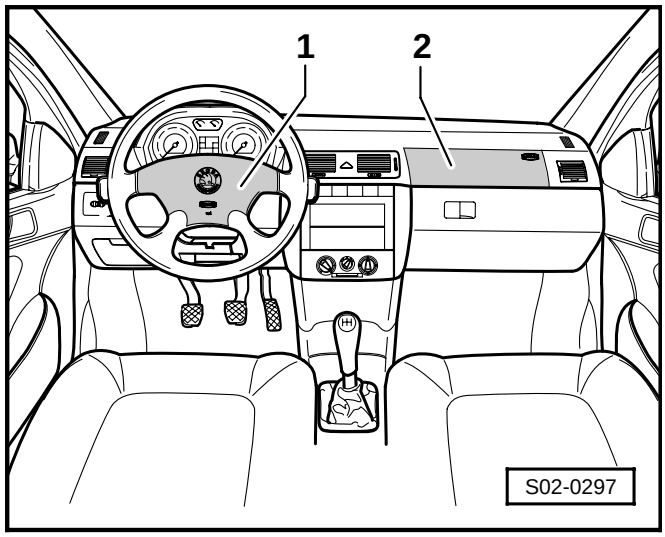
Inspecting airbag for external damage

Driver and front passenger airbag units

The logo „AIRBAG“ on the padded boss of the steering wheel (driver's side) and on the right side of the dash panel (passenger side) indicates that an airbag is fitted.

– Carry out a visual inspection of the padded boss of the steering wheel -1- and surface of the dash panel -2- on the front passenger side for external damage. ►

– Undertake a visual inspection of the front seats to determine any damage (valid for vehicles with side airbags).

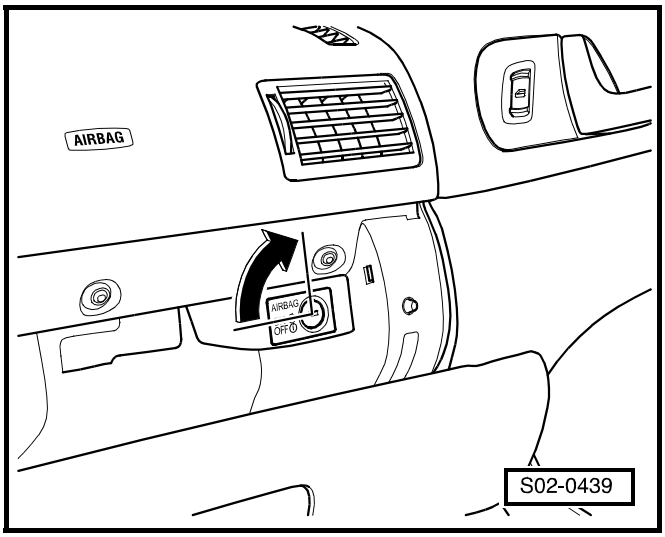


- Only use original seat upholstery approved for side airbags.
- The use of commercially available protective seat covers is prohibited as this impairs the operation of the side airbags.
- Replace all harpoon clips with new original parts.
- In the event of damage to the upholstery - tears, burn holes etc. - in the area of the side airbag always replace the upholstery with a new original part for safety reasons.

Note

Do not affix any stickers or cover over the padded boss of the steering wheel -1- and the foam-lined surface of the airbag unit on the front passenger side -2- or do not carry out any modifications to these parts. These parts must only be cleaned with a dry and slightly moistened cloth.

Inspect key switch for deactivation of front passenger airbag ►



– Switch off ignition.
– Turn the key switch for deactivation of front passenger airbag to the position „OFF“.

When the ignition is switched on the airbag warning lamp must light up in the front interior light.

– Switch off ignition.
– Turn the key switch for deactivation of front passenger airbag to the position „ON“.

After the ignition and the front passenger airbag is switched on, the airbag warning light in the front interior light must no longer light up after approx. 3 seconds.

Note

Key switch for deactivation of front passenger airbag must only be turned when ignition is switched off. If the position of the switch is changed, the airbag control unit can evaluate a fault; the individual contacts in the switch make contact during different time intervals and subsequently the warning lamp lights up in the dash panel insert (there is no risk of airbag activation).

Check underbody protection and body paintwork for damage

The inspection of the underbody sealant and paintwork should cover the following points:

1) undamaged layer of PVC Plastisol

– Vehicle floor
– Wings and wheel housings
– Sills

2) undamaged paintwork

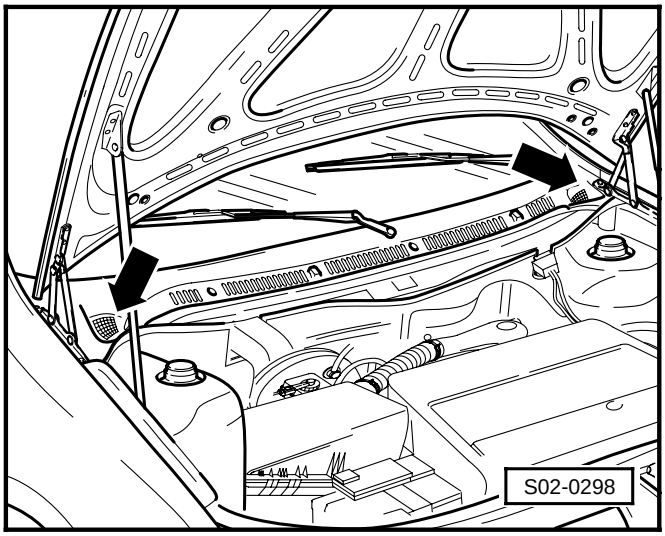
– all body joints
– surround of windscreen
– surround of rear window
– flange of inner surfaces of engine hood
– horizontal and vertical painted surfaces
– Connection of the roof in the area of the luggage compartment lid

It is essential to rectify any defects found!

The materials and the corresponding work instructions are listed in the ⇒ Technical Service Handbook, Part 6 - Technology of paint repairs, chemical materials.

Inspecting plenum chamber and water drain openings for dirt, cleaning if necessary

Carry out a visual inspection for soiling through the cover of the plenum chamber -arrows-. Remove the cover if it is necessary to clean the plenum chamber (repair measure).



Note

The water drain openings must not be blocked with wax or underbody sealant.

Windscreen wiper/washer system: Check for proper operation

Fluid in windscreen washer fluid reservoir

The fluid reservoir for the windscreen washer system must be filled up to the brim.

Note

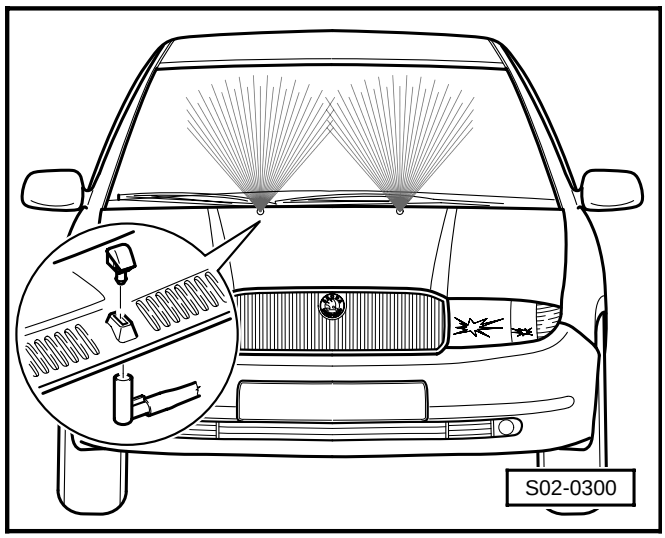
- *If it is necessary to add fluid, always mix windscreen cleaner to the water (in summer) or antifreeze agent (in the winter).*
- *If the vehicle is fitted with a headlight washing system and the headlights have plastic - (polycarbonate) - lenses, one must only use fluids for topping up the headlight washing system which do not damage the polycarbonate.*

Inspecting setting of nozzles of windscreen washer system, adjusting nozzles if necessary:

Nozzles of windscreen washer system

The nozzles on the windscreen washer system are set by the manufacturer and cannot be subsequently altered.

– The water spray should strike the windscreen in a cone-shaped pattern.



Note

If the spray flows out unevenly, replace the spray nozzle (repair measure).

Windscreen wiper arms: Inspecting park position, adjusting if necessary

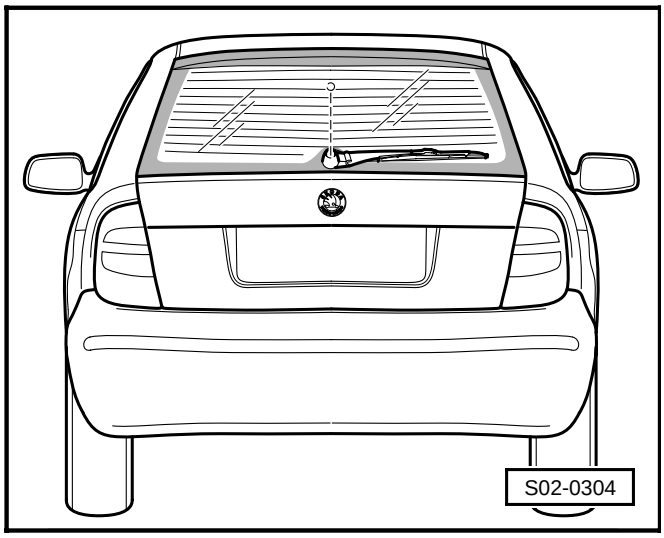
– Wiper arms are positioned relative to the round markings in the windscreen.

The specified tightening torque for the windscreen wiper arms is 20 Nm.

Wiper arms of rear window: Inspecting park position, adjusting if necessary, spray nozzle of rear window: Inspect setting and adjust if necessary

The spray should strike the rear window as shown in the illustration when the vehicle is stationary.

– Set the position of the windscreen wiper arm in such a way that it is parallel to the edge of the ceramic sprayed film (on vehicles with spray nozzles in the windscreen wiper arm).

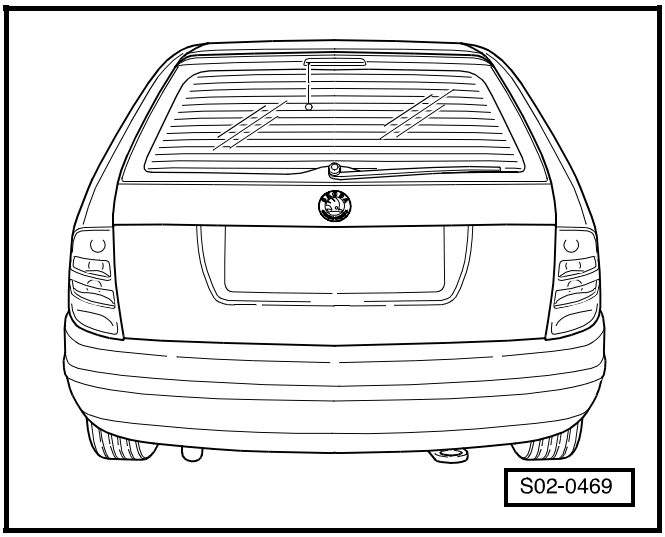


The spray should strike the rear window as shown in the illustration when the vehicle is stationary.

– Set the position of the windscreen wiper arm in such a way that it is parallel to the edge of the ceramic sprayed film (on vehicles with spray nozzles in the additional brake light).

The specified tightening torque for the windscreen wiper arms is 12 Nm.

– Inspect setting of nozzle, if necessary adjust with a tool, e.g. with a needle.

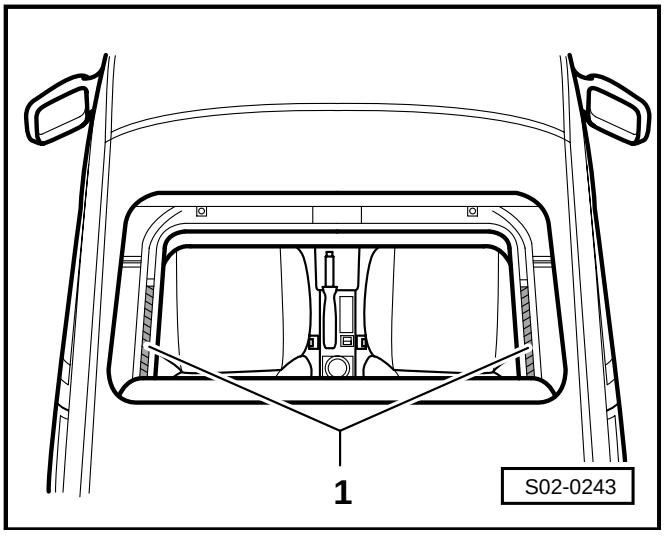


Note

If the spray flows out unevenly, or if it cannot be adjusted, replace the spray nozzle (repair measure).

Sun roof: Cleaning and greasing runners

– Carry out a visual inspection of the sun roof for leaks and corrosion damage
– Clean the runners -1- and grease with lubricant -G 052 778-.
– Inspect proper operation of the sun roof, pay attention to possible abrasive residue.



Door locks, locking buttons, child safety locks: Check for proper operation

Door locks and locking buttons:

– Unlock and lock the driver and front passenger doors. Check whether the locking buttons move up and down when this is done.
– Press down the locking button on the front passenger door and on the rear doors and close the doors. The doors must be locked.

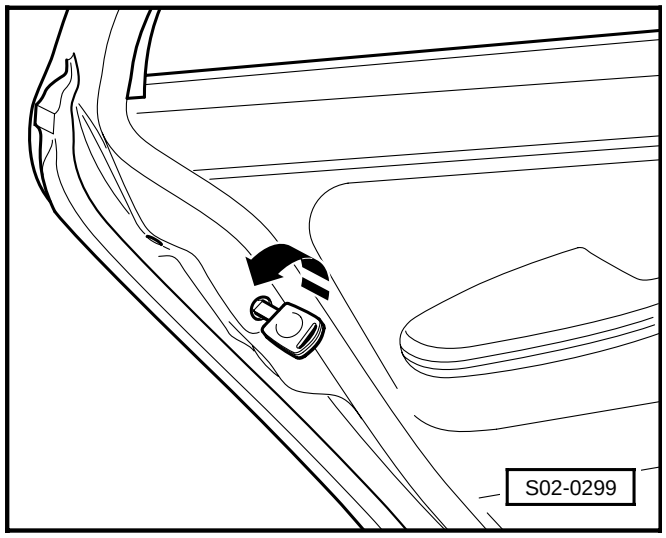
The safety knob on the driver's door must not be pressed in as long as the door is open.

Child safety locks (rear doors):

The rear doors are additionally equipped with a child safety lock.

– Insert car key in the lock.

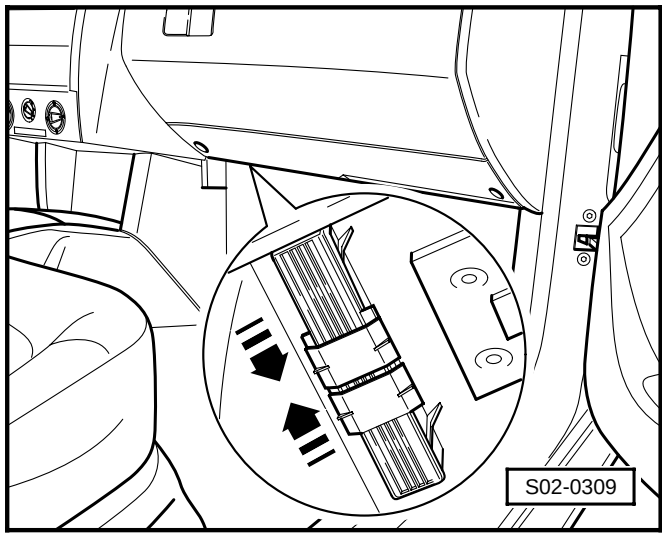
– The child safety lock is activated when the key is turned to the left in the direction of the arrow. The inner door opening lever is blocked. The door can only be opened from the outside.



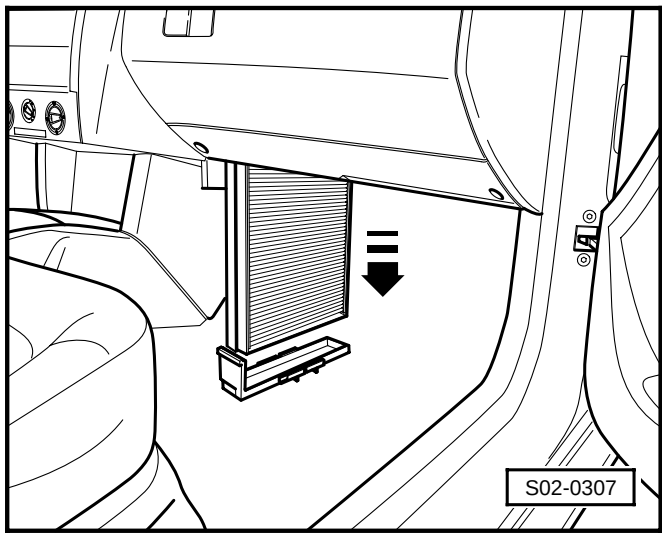
Replacing the dust and odour filter element

Removing:

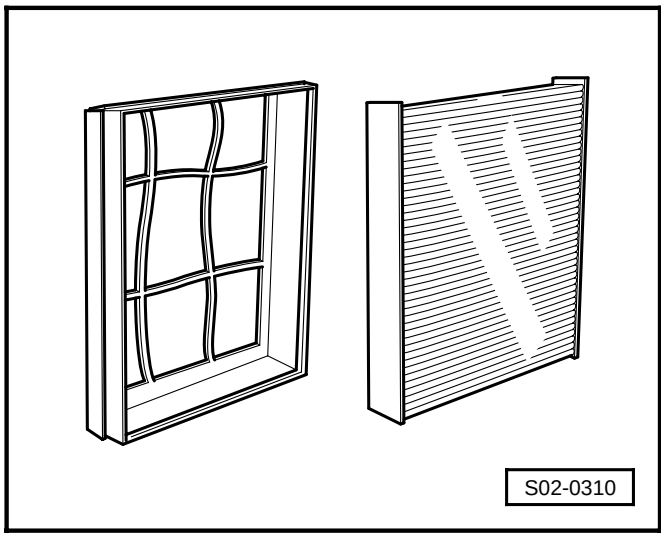
– Press back the catches of the filter element -arrows-.



– Take filter element out of the heater body -arrow-.



– Separate filter element from the frame.

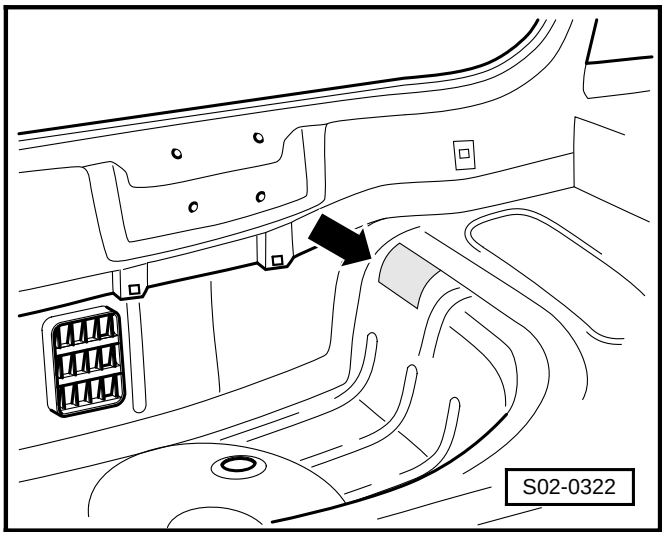


Installing:

Installation is carried out in the reverse order.

Sticking the vehicle data sticker

– Stick the vehicle data sticker to the floor of the luggage compartment inside the vehicle next to the spare wheel -arrow-.



Inspect trailer coupling

Inspect condition of trailer coupling support

– Inspect condition of cavity of tensioning sleeve.

– Clean cavity of tensioning sleeve and treat with G 052 778 A2.

– Check cap of tensioning sleeve.

If the cap of the tensioning sleeve is missing or damaged, replace with a new one.

Inspect condition of trailer arm

– Check whether the control lever turns.

If the control lever turns with difficulty or does not turn, the seized eccentric in the trailer arm housing must be cleaned and treated with G 052 778 A2. If it is does not improve, then the trailer arm must be sent back to the manufacturer for repair or replaced with a new one (repair measure).

– Check the turning of the key in the lock.

If the securing bolt moves with difficulty or does not move at all; the reasons for this may be:

- Lock is defective ⇒ replace bolt with lock (repair measure)
- Bent control lever ⇒ must be repaired by the manufacturer or replace trailer arm (repair measure)
- Clean seized bolt ⇒, treat with G 052 778 A2 and bring into motion. If it is does not improve, then the trailer arm must be sent back to the manufacturer for repair or replaced with a new one (repair measure).

Note

When applying G 052 778 A2 make sure that the product does not penetrate into the gap between the lock bolt, control lever, eccentric and trailer arm housing.

Trailer coupling: Check for proper operation

– Tighten trailer arm in the tensioning sleeve.

– Close lock and remove key.

– Check for correct closing by turning the control lever downwards.

WARNING!

If one of the measures cannot be carried out or if the closed lever can be turned to an angle greater than 5 , the trailer coupling is damaged and must not be operated. The fault must be identified and the damaged components must be replaced (repair measure).

02-8 Exhaust-emission Analysis

Note

The exhaust-emission analysis must be carried out according to the relevant national legislation of the particular country.

Exhaust-Emission Analysis on Models with Fuel Engines

Note

Perform the following visual inspections and comply with the setting conditions below before performing the exhaust-emission analysis:

Visual inspection

- Lambda probes are connected
- All vacuum hoses are connected
- All wires of the activated charcoal filter system are connected
- All the electrical wires of the ignition and injection system are connected
- Hose for crankcase ventilation is connected
- The exhaust system must be undamaged and tight
- Catalyst must be undamaged

Test and setting conditions

- Perfect operation of the engine
- Perfect operation of the ignition system
- Intake system tight
- All electrical components are switched off (radiator fan must not run during the test)

Note

- *If any errors are noticed they must be repaired.*
- *The idling speed, ignition point and CO content are only measured as they cannot be adjusted.*
- *The CO content is set to nominal value by the lambda control. Faults in the lambda control are detected by the self-diagnosis and stored in the fault memory.*
- *When interrogating the fault memory (engine electronics) all detected faults must be repaired and the fault memory must be erased.*
- *To prevent injury to persons and/or damage to the ignition and injection system make sure the ignition is switched off when disconnecting and connecting the wires of the ignition system.*

Connect the test equipment to the vehicle

To prevent industrial accidents or avoid causing damage to the ignition system, pay attention to the following:

- ♦ Disconnect and connect wires of the ignition system (including high-voltage wires) when the ignition is switched off.

– Connect the tester in compliance with the operating instructions.

Note

The exhaust gas probe must be fully inserted into the exhaust tailpipe (do not insert into the suction tube)!

– Start engine and run in idle.

– Measure idle speed and CO content.

Test Values for Exhaust-Emission Analysis on Models with Fuel Engines

Engine identification characters	**ARV and AQV**	**ARV and AQV**	**ARV and AQV**	**AWY**
Model year	**MY00**	**MY01**	**MY02**	**MY02 ➤**
Oil temperature	min. 80 °C	min. 80 °C	min. 80 °C	min. 80 °C
Catalyst warming-up time	2 min. at 2500 rpm	2 min. at 2500 rpm	2 min. at 2500 rpm	2 min. at 2500 rpm
Idling speed (rpm)	590 ... 790	590 ... 690	590 ... 790	600 ... 800
CO content at idle speed (measured after catalyst)	0,0 ... 0,5%	0,0 ... 0,5%	0,0 ... 0,5%	0,0 ... 0,5%
Increased idling speed (rpm)	2400 - 2600	2400 - 2600	2400 - 2600	2400 - 2600
Lambda value at 2850 - 2900 rpm	0,97 ... 1,03	0,97 ... 1,03	0,97 ... 1,03	0,97 ... 1,03
CO content at 2850 - 2900 rpm	max. 0.3%	max. 0.3%	max. 0.3%	max. 0.3%
Speed for control loop test (rpm)	490 ... 890	490 ... 790	490 ... 890	500 ... 900
Lambda probe version	-	-	-	Jump probe
Voltage jump (V)	-	-	-	0,3
DELTA-lambda	0,03	0,03	0,03	0,03
Test speed	-	-	-	Idling speed

Engine identification characters	AZQ	AZE, AZF and AME	ATZ	AQW
Model year	**MY03 ➤**	**MY00 ➤ MY03**	**MY00**	**MY01 ➤ MY03**
Oil temperature	min. 80 °C	min. 80 °C	min. 80 °C	min. 80 °C
Catalyst warming-up time	2 min. at 2500 rpm	2 min. at 2500 rpm	2 min. at 2500 rpm	2 min. at 2500 rpm
Idling speed (rpm)	650 ... 850	700 ... 900	700 ... 900	700 ... 900
CO content at idle speed (measured after catalyst)	0,0 ... 0,5%	0,0 ... 0,5%	0,0 ... 0,5%	0,0 ... 0,5%
Increased idling speed (rpm)	2400 - 2600	2400 - 2600	2400 - 2600	2400 - 2600
Lambda value at 2850 - 2900 rpm	0,97 ... 1,03	0,97 ... 1,03	0,97 ... 1,03	0,97 ... 1,03
CO content at 2850 - 2900 rpm	max. 0.3%	max. 0.3%	max. 0.3%	max. 0.3%
Speed for control loop test (rpm)	550 ... 950	600 ... 1000	600 ... 1000	600 ... 1000
Lambda probe version	-	-	-	-
Voltage jump (V)	-	-	-	-
DELTA-lambda	0,03	0,03	0,03	0,03
Test speed	-	-	-	-

Engine identification characters	AUA	AUA with manual gear-box	AUA with automatic gearbox	BBY with manual gearbox
Model year	**MY00 and MY01**	**MY02**	**MY02**	**MY02 ➤**
Oil temperature	min. 80 °C	min. 80 °C	min. 80 °C	min. 80 °C
Catalyst warming-up time	2 min. at 2500 rpm	2 min. at 2500 rpm	2 min. at 2500 rpm	2 min. at 2500 rpm
Idling speed (rpm)	650 ... 850	650 ... 850	580 ... 780	660 ... 860
CO content at idle speed (measured after catalyst)	0,0 ... 0,5%	0,0 ... 0,5%	0,0 ... 0,5%	0,0 ... 0,5%
Increased idling speed (rpm)	2400 - 2600	2400 - 2600	2400 - 2600	2400 - 2600
Lambda value at 2850 - 2900 rpm	0,97 ... 1,03	0,97 ... 1,03	0,97 ... 1,03	0,97 ... 1,03
CO content at 2850 - 2900 rpm	max. 0.3%	max. 0.3%	max. 0.3%	max. 0.3%
Speed for control loop test (rpm)	550 ... 950	550 ... 950	480 ... 880	560 ... 960
Lambda probe version	Wide band probe (lambda)	Wide band probe (lambda)	Wide band probe (lambda)	Wide band probe (lambda)
Voltage jump (V)	-	-	-	-
DELTA-lambda	0,03	0,03	0,03	0,03
Test speed	Idling speed	Idling speed	Idling speed	Idling speed

Engine identification characters	BBY with automatic gearbox	AUB	BBZ	AZL
Model year	**MY02 ➤**	**MY00 ➤ MY02**	**MY02 ➤**	**MY01 ➤**
Oil temperature	min. 80 °C	min. 80 °C	min. 80 °C	min. 80 °C
Catalyst warming-up time	2 min. at 2500 rpm	2 min. at 2500 rpm	2 min. at 2500 rpm	2 min. at 2500 rpm
Idling speed (rpm)	580 ... 780	740 ... 940	580 ... 780	680 ... 880
CO content at idle speed (measured after catalyst)	0,0 ... 0,5%	0,0 ... 0,5%	0,0 ... 0,5%	0,0 ... 0,5%
Increased idling speed (rpm)	2400 - 2600	2400 - 2600	2400 - 2600	2400 - 2600
Lambda value at 2850 - 2900 rpm	0,97 ... 1,03	0,97 ... 1,03	0,97 ... 1,03	0,97 ... 1,03
CO content at 2850 - 2900 rpm	max. 0.3%	max. 0.3%	max. 0.3%	max. 0.3%
Speed for control loop test (rpm)	480 ... 880	640 ... 1040	480 ... 880	580 ... 980
Lambda probe version	Wide band probe (lambda)	Wide band probe (lambda)	Wide band probe (lambda)	-
Voltage jump (V)	-	-	-	-
DELTA-lambda	0,03	0,03	0,03	0,03
Test speed	Idling speed	Idling speed	Idling speed	-

Engine identification characters	BMD	BKY		
Model year	**MY04 ➤**	**MY04 ➤**		
Oil temperature	min. 80 °C	min. 80 °C		
Catalyst warming-up time	2 min. at 2500 rpm	2 min. at 2500 rpm		
Idling speed (rpm)	620 ... 820	660 ... 860		
CO content at idle speed (measured after catalyst)	0,0 ... 0,5%	0,0 ... 0,5%		
Increased idling speed (rpm)	2400 - 2600	2400 - 2600		
Lambda value at 2850 - 2900 rpm	0,97 ... 1,03	0,97 ... 1,03		
CO content at 2850 - 2900 rpm	max. 0.3%	max. 0.3%		
Speed for control loop test (rpm)	520 ... 920	560 ... 960		
Lambda probe version	Jump probe	Wide band probe (lambda)		
Voltage jump (V)	-	-		
DELTA-lambda	0,03	0,03		
Test speed	-	-		

Note

All tubes and plug connections, which had been removed or disconnected for the test and adjustment, must be re-inserted or connected.

Technical data of the spark plugs Chapter 02-3.

Exhaust-Emission Analysis on Models with Diesel Engines

Note

- *When possible the test should be carried out immediately after the road test and also outdoors. If specific reasons prevent this (weather conditions, excessive noise in residential areas) the test may also be performed in the workshop.*
- *Secure the engine bonnet in the first stop while measuring to reduce the noise.*

Visual inspection

- Hose for crankcase ventilation is connected
- Fuel system and injection pump must be tight
- The exhaust system must be undamaged and tight
- All vacuum hoses are connected

Test and setting conditions

- Engine oil temperature at least 80 °C
- All electrical components disconnected
- No fault stored in the fault memory ⇒ Chapter 02-6, connect vehicle system tester and interrogate fault memory

Note

Correct detected faults before measuring (repair measure).

Connect the test equipment

– Connect the tester in compliance with the operating instructions.

– Start engine, warm up to normal temperature and run in idle.

– Perform the exhaust-emission analysis.

Note

- *Activate and inspect auxiliary equipment such as e.g. power steering, automatic gearbox or air conditioning system. Check whether the engine continues to run perfectly under this load.*
- *All tubes and plug connections, which had been removed or disconnected for the test and adjustment, must be re-inserted or connected.*

Test Values for Exhaust-Emission Analysis on Diesel Engines

Engine identification characters	AMF	ASY	ASY	ASZ
Model year	**MY03 ➤**	**MY00 ➤ MY02**	**MY03 ➤**	**MY03 ➤**
Oil temperature [1]	min. 80 °C	min. 80 °C	min. 80 °C	min. 80 °C
Idling speed (rpm)	850 ... 1050	825 ... 950	825 ... 950	800 ... 1000
Cutoff speed (rpm)	4700 ... 4900	4750 ... 4950	4650 ... 5050	4900… 5300
Soot emission max. opacity value [2]	0.9 m^{-1}	0.8 m^{-1}	0.8 m^{-1}	0.98 m^{-1}
Probe no.	1	1	1	1
Measurement mode	B	B	B	B
Measurement time slice	0.5 s	0.5 s	0.5 s	0.5 s

[1] From an engine oil temperature of min. 60°C warm up the engine to min. 80°C with 10 free accelerations up to cutoff speed.
[2] After the process - free acceleration.

Engine identification characters	ATD	ATD		
Model year	**MY00 ➤ MY02**	**MY03 ➤**		
Oil temperature [1]	min. 80 °C	min. 80 °C		
Idling speed (rpm)	800 … 1000	800 … 1000		
Cutoff speed (rpm)	4600 ... 5000	4600 ... 5000		
Soot emission max. opacity value [2]	1.5 m^{-1}	0.6 m^{-1}		
Probe no.	1	1		
Measurement mode	B	B		
Measurement time slice	0.5 s	0.5 s		

[1] From an engine oil temperature of min. 60°C warm up the engine to min. 80°C with 10 free accelerations up to cutoff speed.
[2] After the process - free acceleration.

If the actual values differ from the nominal values: Repair and again perform an exhaust-emission analysis.

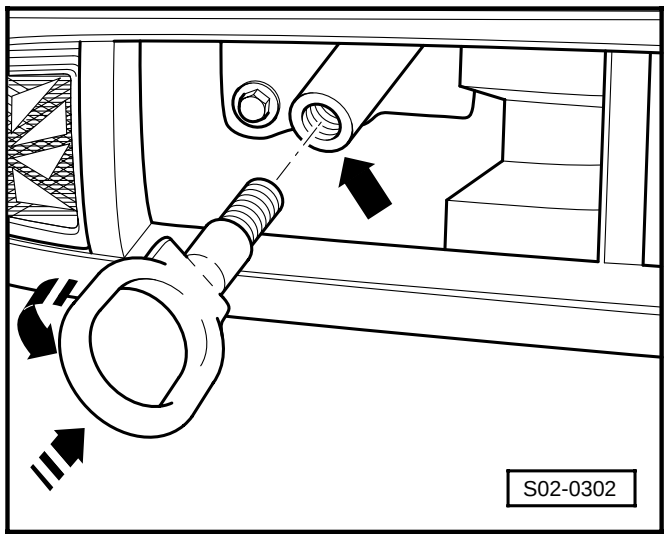
02-9 Miscellaneous

Tow starting/Towing

Note

- *A towing rope or towing bar must only be fitted to the above towing lugs.*
- *The towing rope must be elastic to protect the vehicle. Therefore only use synthetic ropes or ropes manufactured in an equally elastic material. However, it is safer to use a towing bar!*
- *Make sure no unauthorised traction forces and no jolting loads are exerted. During towing manoeuvres away from hardened road surfaces there is a risk of overloading and damaging the fixation parts.*
- *Before starting the engine by towing, first use the battery of another vehicle as a start aid.*

Front: The threaded hole of the front towing lug is located ► in the front right part of the bumper behind the cover grill.



Note

Screw in the towing lug by hand by turning it to the left (in the direction of the arrow) up to the stop.

Rear: The towing lug is located below the rear right part of the bumper.

Note

- *Comply with the legal regulations on towing.*
- *Both drivers must be familiar with the specificities of the towing process.*
- *When using a towing rope the driver of the towing vehicle must press the clutch very smoothly when driving off and changing gear.*
- *The driver of the towed vehicle must make sure the rope is kept taut.*
- *The ignition must be switched on to ensure the steering wheel does not lock and the turn signals, horn, windscreen wipers and windscreen washer system can be activated.*
- *As the brake servo unit only operates with the engine running, the brake pedal must be pressed much harder when the engine is switched off.*
- *On vehicles with power steering the steering is much harder when the engine is switched off.*
- *If there is no lubricant in the gearbox or automatic gearbox the vehicle must only be towed with the drive wheels raised.*

When towing vehicles with a manual gearbox pay attention to the following:

– Before towing engage 2nd or 3rd gear.

– Switch on ignition.

– As soon as the engine starts, press clutch and remove gear to avoid driving into the towing vehicle.

Note

Do not start the engine of vehicles fitted with an exhaust catalyst by towing over a long distance as unburnt fuel may get into the catalyst and burn there. This may result in overheating and hence in the destruction of the catalyst.

Perform a test drive

The following must be assessed within the scope of a test drive according to the vehicle equipment and the available possibilities (city/country, weather)

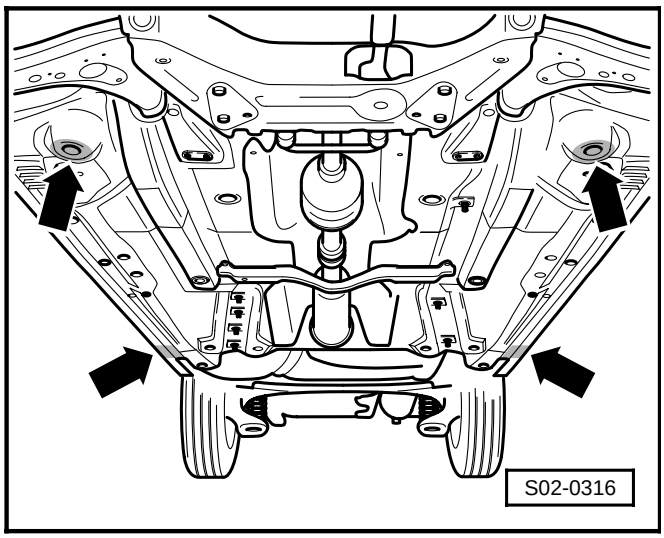
– Inspect engine for performance, misfiring, idling behaviour and acceleration.
– Foot and handbrake: Functional test (jerking, squeaking, pulling to one side) ABS operation. Brake pedal-idle travel: max. $^1/_3$ of the idle travel.
– Inspect the lever position and smooth operation of the gearshifts.
– Inspect the driving behaviour of the clutch as well as the pedal force and smell.
– Inspect automatic gearbox: Selector lever position, selector lever lock, shifting behaviour, display indication in dash panel insert.
– Inspect steering clearance of the vehicle standing on its wheels, with engine running by turning the steering wheel one way and then the other (wheels straight ahead). There must be no play on the steering.
– Inspecting the sun roof operation.
– Pay attention to pulling and to the straigt ahead position of the steering wheel during driving.
– Inspect the imbalance of the wheels, drive shafts and propshafts.
– Inspecting functions: Heating, air conditioning, ventilation, instruments and warning lights, mirror adjustment.
– Inspect engine, gearbox, axles, steering, brakes, clutch, bodywork for abnormal noises

Raising the vehicle

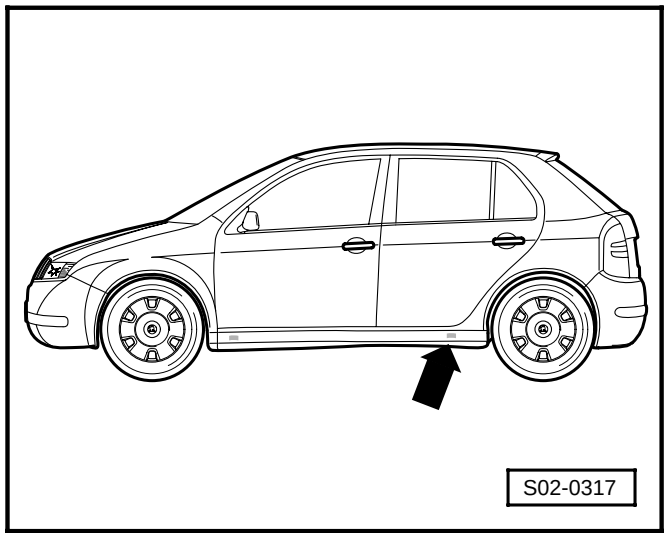
Using a lift platform and a workshop jack

The vehicle must only be raised with a workshop jack in the indicated jacking points -arrows-.

To avoid damage use a suitable rubber or wood insert.



The rear support points are located in the make axle embossed in the sill -arrow-. ►



WARNING!

Under no circumstances may the arms of the lift platform or jack be positioned under the engine, the gearbox, the front or rear axles.

Never start the engine or engage a gear when the vehicle is raised, while a driving wheel is in contact with the ground.

Secure the vehicle on the lift platform before its centre of gravity shifts considerably because of successive disassembly operations.

The vehicle must not be supported at the front under the sill.