





Maintenance

Heading

- 1. Engine list
- 2. General rules of cleanliness
- 3. Service work
- 4. General
- 5. Descriptions of work
- 6. Exhaust emissions test
- 7. Glossary



careful and constant adherence to the instructions is essential to ensure vehicle road-worthiness and safety. In addition, the normal basic safety precautions for working on motor vehicles must, as a matter of course, be observed.

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Engine list 1

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Diesel engines	<u>⇒ page 1</u>
Petrol engines	<u>⇒ page 1</u>

Diesel engines



To ease the search for an engine, the engine codes are listed in alphabetical order.

Engines:	⇒	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel
Capacity	I	2.0	2.0	2.0	2.0	2.0	2.0
Introduction		Week 05/2010 ►	Week 05/2010 ►	Week 05/2012 ►	Week 22/2012 ►	Week 30/2012 ►	Week 05/2012 ►
Engine c	ode	CDBA	CDCA	CNEA	CNFA	CNFB	CSHA
No. of cy valves pe der	linders/ er cylin-	4/4	4/4	4/4	4/4	4/4	4/4
Output	kW at rpm	90/3750	120/4000	132/4000	90/3750	103/3500	132/4000
Torque	Nm at rpm	340/1750-2500	400/1500-2000	400/1500 - 2250	340/1600 - 2000	340/1600-2250	420/1750
Bore	arnothing mm	81.0	81.0	81.0	81.0	81.0	81.0
Stroke	mm	95.5	95.5	95.5	95.5	95.5	95.5
Compression ratio		16.5	16.5	16.0 en AG. Volkswag	16.0 ^{Jen} AGdo	16.0	16.0
Injection/igni- tion		TDI common rail	TDI common rail	TDI com- mon rail	TDI com	TDI common rail	TDI com- mon rail
Diesel particu- late filter		yes/no ¹⁾	55 auth yes/no1)	yes/no ¹⁾	yes/no ¹⁾	yes/no ¹⁾	yes/no ¹⁾
Camshaft drive		Toothed belt	Toothed belt	Toothed belt	Toothed belt	Toothed belt	Toothed belt
Petrol engines							

Petrol engines

				0
Engines:	\Rightarrow		Petrol	ct to
Capacity tre	1		2.0	the
Introduction		Week 42/	2010 ►	porre
Engine code		CFPA		ctne
No. of cylinders/valves per cylinder		4/4		lo SS
Output Pool	kW at 1 rpm		118/3800-55	00 ^f
Torque	Nm at rpm		300/1600-37	50 ¹⁷⁷
Bore	Ø mm		82.5	ion _{ii}
Stroke	mm		92.8	0 ×1
Compression ratio		9.6	0000	
Injection/ignition	(i)	Motronic N er	MED 17.5 TS	turbocharg-
145undos a	Ă	A Kar	lein	
ng palag	Prog	BEWEXNOL		1. Engine list



Engines: ⇒	Petrol
Capacity	2.0
Introduction	Week 42/2010 ►
Engine code	CFPA
Camshaft drive	Chain



2 General rules of cleanliness

Note

Only some examples are given in this document. Not all concrete situations are covered.

- Before disconnecting, thoroughly clean connections and surrounding areas.
- Place removed parts onto a clean surface and cover. Use only lint-free cloths.
- If the repair is not performed immediately, carefully cover or olkswagen AG. Volkswagen AG do seal opened components.
- Fit only clean parts. Remove spare parts from their packaging only immediately before their use. Do not use parts that have been kept unpackaged (for example in toolboxes or similar).
- If a system is open, avoid working with compressed air if possible. If possible, do not move the vehicle.

"2.1 Rules of cleanliness during work with information material Maintenance Manual ", page 3

⇒ "2.2 Rules of cleanliness during work with information material Maintenance Manual ", page 10

 \Rightarrow "2.3 Rules of cleanliness during work with information material Maintenance Manual ", page 16

⇒ "2.4 Rules of cleanliness during work with information material Maintenance Manual ", page 17

⇒ "2.5 Rules of cleanliness during work with information material Maintenance manual for heating, ventilation and air conditioning system "page 18

⇒ "2.6 Rules of cleanliness during work with information material Maintenance Manual - Body ", page 28

⇒ "2.7 Rules of cleanliness during work with information material Maintenance Manual - Body ", page 35

ial irial ierial ierial ierial interial interial in material in ma 2.1 Rules of cleanliness during work with information material "Maintenance Manual"

Special tools and workshop equipment required

- Universal cloth -VAS 6385-
- Non-fibrous lint-free cloths
- Soft commercially available sponge
- Commercially available wire brush (brass or plastic)
- Commercially available vacuum cleaner



2.1.2 Cleaning filling device -VAS 6542-

Open both cut-off taps -3- and -6- and clean or rinse all parts of filling device for AdBlue -VAS 6542- under running water.



2.1.3 Clean sealing surfaces on oil filter housing and oil filter cover

Clean sealing surfaces on threaded cap and on oil filter housing with a non-fibrous, lint-free cloth (for example universal cloth -VAS 6385-).



- Ensure that no engine oil comes into contact with coolant hoses or other engine parts or painted parts. If necessary, clean hoses immediately.
- Observe disposal regulations!

Cleaning sliding window seals 2.1.4

Remove all dirt and dust from the seals of the sliding window and from the contact surfaces of the sliding window seals, using a soft sponge or a non-fibrous and lint-free cloth (for example universal cloth -VAS 6385-) and normal rinsing water. Prof DAM



After cleaning, treat the sliding window seals using a commercially available anti-soiling rubber care product.

2.1.5 Cleaning electro-hydraulic 3-way tipper

- Before undoing connections, thoroughly clean them and their surroundings with a non-fibrous, lint-free cloth (for example universal cloth -VAS 6385-).
- Place removed parts on a clean surface and cover them with a non-fibrous, lint-free cloth (for example universal cloth -VAS 6385-).
- Carefully cover opened components with a non-fibrous, lintfree cloth (for example universal cloth -VAS 6385-).



i I Note

- Only install clean parts.
- Do not take replacement parts out of their packaging until im-٠ mediately before they are installed.
- Do not use parts that have been kept unpackaged (for exam-٠ ple in toolboxes etc.).

2.1.6 Cleaning bonnet lock

Clean bonnet catch -arrow- with cleaning solution -D 009 401 04- and, for example, a universal cloth -VAS 6385- . Also use _ "compressed air" to clean if necessary.

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2.1.7 Cleaning guide rails of sliding sunroof

Clean guide rails of sliding sunroof -arrows- with a non-fibrous, _ lint-free cloth (for example universal cloth -VAS 6385-) or a GIGINICOS INGUACOS, soft sponge.

Note

After cleaning the guide rails, lubricate them again with grease -G 000 450 02- .



2.1.8 Cleaning threads of threaded connections

Clean threads of threaded connections -1- (shown here for Crafter) with a commercially available wire brush (brass or plastic) and, if necessary, remove dirt such as "rust" or "underbody sealing compound".



2.1.9 Cleaning holes for filling and draining in transfer box

- Clean surroundings of oil filler plug -1- and oil drainage plug -2- using a commercially available wire brush, if necessary using compressed air as well.
- Cover magnet of oil drainage plug with a non-fibrous, lint-free cloth (for example universal cloth -VAS 6385-).

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i	Note
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Observe disposal regulations!

Cleaning fuel filter housing and fuel filter 2.1.10 connections

- Remove dirt from fuel filter housing and fuel filter connections with a non-fibrous, lint-free cloth (for example universal cloth -VAS 6385-), if necessary using a wire brush as well (brass or plastic).
- Cover surroundings of fuel filter connections with a non-fi-versal cloth -VAS 6385-).



- Ensure that no diesel fuel contacts coolant hoses. If necessary, clean hoses immediately.
- Observe disposal regulations!

2.1.11 Cleaning fuel filter housing

- Remove air filter element.
- Then, clean filter housing with a non-fibrous, lint-free cloth or the universal cloth -VAS 6385-, a vacuum cleaner or with compressed air.







Note

- Before blowing out the air filter housing with compressed air, cover components that conduct air such as the air mass meter, air inlet pipes etc. with a clean cloth or with blue blotting paper in order to prevent malfunctions.
- When replacing air filter, make sure that no dirt gets into intake hose, air mass meter -G70- and air filter cover.

2.1.12 **Cleaning dipstick**

- Pull out dipstick and wipe with a clean, non-fibrous lint-free cloth or the universal cloth -VAS 6385-, then push dipstick back in as far as it will go.
- 2.1.13 Cleaning padded surface and the foamed surface of the airbag unit

WARNING

It is not permissible to cover or attach stickers to the padded surface of the steering wheel and the foamed surface of the airbag or to modify them in some other way.

Remove dirt from padded surface of steering wheel and the foamed surface of the airbag with a dry cloth or a cloth moistened with water.

Lever the frequencies of the second s Cleaning filler neck of reducing-agent tank

Clean filler neck of reducing-agent tank with a lint-free cotton cloth moistened with water or with a non-fibrous, lint-free cloth (for example universal cloth -VAS 6385-).

Cleaning rear door hinges

And the state of t Remove dirt from door hinges -arrows- with a non-fibrous, lintfree cloth (for example universal cloth -VAS 6385-). Profected by copyright, Copyrighter



hability with respect to the correctness of information

2.1.16 Cleaning holes for filling and draining in transfer box

- Clean surroundings of oil filler plug -1- and oil drainage plug -2- using a commercially available wire brush, if necessary using compressed air as well.
- Cover magnet of oil drainage plug with a non-fibrous, lint-free cloth (for example universal cloth -VAS 6385-).



Observe disposal regulations!

2.1.17 Cleaning spray jets for headlight cleaning system

Flush removed spray jets in direction opposite to spraying direction and, if necessary, use compressed air to clean them in spraying direction and opposite direction.

Caution

- Never use items to clean the spray jets!
- Never use a needle or a similar object to adjust the spray jets, otherwise the water passages in the spray jet will be damaged!

2.1.18

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2.1.19 Cleaning holes for filling and draining in transfer box

Remove dirt from the surroundings of the filler plug -1- and drainage plug -2- with a commercially available brush or with a non-fibrous, lint-free cloth (for example universal cloth -VAS 6385-). Cogninate or commercial purposes, in pa-







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2.1.20 Cleaning holes for filling and draining in

- front-axle differential
- Remove dirt from the surroundings of the filler plug -1- and drainage plug -2- with a commercially available brush or with a non-fibrous, lint-free cloth (for example universal cloth -VAS 6385-).



2.1.21 Cleaning water drain hole in floor area of sliding door

- Remove dirt from water drain holes -2- with a commercially available brush or a non-fibrous, lint-free cloth (for example universal cloth -VAS 6385-).
- Poke through water drain holes -2- e.g. with an appropriate cable tie -1- and, if necessary, remove dirt with a vacuum cleaner.



2.2 Rules of cleanliness during work with information material "Maintenance Manual"

Special tools and workshop equipment required

- Ultrasonic cleaning device -VAS 6418-
- Cleaning fluid -VAS 6418/2-
- Mounting plate for injection modules -VAS 6418/1-
- Universal cloth -VAS 6385-
- Nylon brush -T10133/4-
- Commercially available paintbrush

Cleaning sealing flange on pulley side <u>⇒ page 11</u>

Cleaning work on fuel tank \Rightarrow page 11

Cleaning work on fuel pressure sender -G247- → page 11

Cleaning work on air mass meter -G70- \Rightarrow page 12

Cleaning work on fuel pressure regulating valve -N276-⇒ page 1

Cleaning work on intake manifold flap housing \Rightarrow page 12

Cleaning work on holes of injectors \Rightarrow page 13

Cleaning work on injectors <u>⇒ page 13</u>

Cleaning work on high-pressure lines <u>⇒ page 14</u>

Cleaning work on the Teflon seal of the injectors \Rightarrow page 14

Cleaning work on throttle valve module -J338- ⇒ page 14

Cleaning work on a used injector (piezo injector) \Rightarrow page 15

Cleaning work when glow plugs are removed or installed \Rightarrow page 15

2.2.1 Cleaning sealing flange on pulley side

- Remove sealant residue from sealing flange with a rotating plastic brush (wear protective goggles).
- Cover sealing surfaces with a commercially available brake cleaner and a non-fibrous, lint-free cloth (for example universal cloth -VAS 6385-).



oil ano y. swagen AG does not guarantee or, Je free Jauthorised by Volkswagen AG. Sealing surfaces must be free of oil and grease.



2.2.2

Cleaning work on fuel tank

- ability with respect to the correctness of information Whenever work is done on the fuel system, ensure cleanliness and do the work carefully.
- The fuel system reacts sensitively to the ingress of dirt.
- Clean inside of fuel tank with a lint-free cloth.

Cleaning work on fuel pressure sender -

 i.
 i Before removing the fuel pressure sender -G247-, clean the threaded area around it (e.g. with a commercially available



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Note

- Do not allow dirt to get into the high-pressure accumulator hole.
- Do not allow any cleaning agent to get into the connector, ٠ clean it carefully.
- Dry the fuel pressure sender -G247-. _
- Unscrew and remove fuel pressure sender -G247- -1-.



Seal the high-pressure accumulator hole immediately with a suitable bung in order to prevent the ingress of dirt.

part



Cleaning work on an Check intake port for dirt as far as the air filter element.

If there is any salt residue, dirt or leaves in the air filter housing, wash the housing out with a non-fibrous, lint-free cloth (for example universal cloth -VAS 6385-) or vacuum cleaner.

2.2.5 Cleaning work on fuel pressure regulating valve -N276-

Before removing the regulating valve, clean it with a commercially available degreaser, for example, or compressed air.

Note

- Do not allow dirt to get into the hole of the high-pressure accumulator (fuel rail) in any circumstances.
- Do not allow any cleaning agent to get into the connector at the fuel pressure regulating valve -N276- .

2.2.6 Cleaning work on intake manifold flap housing



Coking can occur in the housing of the throttle valve due to the interplay of unfavourable factors. If coking is discovered, e.g. during removal of the exhaust gas recirculation valve -N18- or the motor for the intake manifold flap -V157,-, the housing has to be cleaned.



Acetone is highly inflammable. Please comply with the accident prevention regulations and the safety instructions when handling highly inflammable fluids. Wear protective goggles and protective clothing to avoid injury and contact with the skin.

- Remove intake manifold flap housing.
- Remove exhaust gas recirculation valve -N18- as well as the motor for intake manifold flap -V157-.
- Thoroughly clean intake manifold flap housing, especially in the area of the exhaust gas recirculation valve, using acetone to DIN 53247 and a paintbrush.
- Wipe inside of intake manifold flap housing with a lint-free cloth.
- Allow acetone to dry off completely.
- Complete the cleaned intake manifold flap housing.
- Replace seal and fit again.

2.2.7 Cleaning work on holes of injectors

 Thoroughly clean the holes of injector for cylinder 1 -N30- to injector for cylinder 4 -N33- in the cylinder head with the nylon brush -T10133/4- .



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2.2.8 Cleaning work on injectors



Note

Comply with safety regulations and operating instructions for the ultrasonic device.

 Ultrasonic device must have been filled with cleaning fluid -VAS 6418/2- 6



Note

Ultrasonic device must have been filled with cleaning agent up to the upper edge of the holes (see magnifying glass).

Insert injectors -1- into mounting plate for injection modules.
 VAS 6418/1- as far as they will go -2-.





- Dip injectors together with mounting plate for injection modules -VAS 6418/1- into the cleaning agent.
- Set a temperature of 50 degrees with the rotating knob -4-.
- Set a cleaning time of 30 minutes with the rotating knob -5-.
- Switch on the ultrasonic device with button -3-.

Note

The set time starts as soon as the cleaning temperature reaches 50 degrees.

2.2.9 Cleaning work on high-pressure lines

 Before removing high-pressure lines, clean their surroundings thoroughly and all over with brake cleaner and a lint-free cloth.

2.2.10 Cleaning work on the Teflon seal of the

- 2.10 Cleaning injectors Before installing the injectors, clean holes of injectors in cylkswagen AG does not guarantee or a inder head thoroughly with the Nylon brush provided -
- Remove any deposits (coking) with a brass wire brush.

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Cleaning work on throttle valve module 2.2.11 -J338-

Note

Make sure that the throttle valve housing is not scratched during cleaning. Profected by copyright

Remove throttle valve module -J338- .

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Open throttle valve by hand and block it in the open position with a suitable object (e.g. plastic or wooden wedge) -arrow-



WARNING

Acetone is highly inflammable. Comply with the accident prevention regulations and the safety instructions when handling highly inflammable fluids. Do not use compressed air to clean the throttle valve. Wear protective goggles and protective clothing to avoid injury and contact with the skin.

- Thoroughly clean intake manifold flap housing, especially in the area -arrows- of the closed throttle valve, using acetone to DIN 53247 and a paintbrush.
- Wipe the inside of the throttle valve housing with a lint-free does not guaran Volkswag cloth.
- Allow acetone to dry off completely and then installed the cleaned throttle valve module.





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2.2.12 Cleaning work on a used injector (piezo injector)

Clean the sealing surface of the injectors (piezo injectors) in the cylinder head and the injector shaft.

Use a clean cloth soaked in diesel fuel or rust remover to remove soot particles on the sealing surface.

Do not use engine oil for cleaning.

Avoid causing damage to the sealing surface.

2.2.13

- Leg surface. Le
- Then, clean glow plug channel with a a non-fibrous, lint-free cloth moistened with oil (for example universal cloth -VAS 6385-).



2.3 Rules of cleanliness during work with information material "Maintenance Manual"

Special tools and workshop equipment required

- ۲ Drip tray for V.A.G 1202 -V.A.G 1306/-
- Universal cloth -VAS 6385-٠
- Non-fibrous lint-free cloths
- Commercially available screw tap

Removing type sealant from wheel rim \Rightarrow page 16

Care and treatment of alloy wheels \Rightarrow page 16

Cleaning type pressure sensor/wheel rim \Rightarrow page 17

Cleaning work on brake system \Rightarrow page 17

2.3.1 Removing tyre sealant from wheel rim

WARNING

Jen A.G. Volkswagen A.G. does not guarantee or accept and the or a Do not allow tyre sealant to come into contact with eyes or skin! It is damaging to health and can cause eye irritation and allergies.

During assembly work, wear protective gloves and goggles.

- Using a suitable drill or cutter, carefully make a hole in the shoulder area of the tyre.
- Hold wheel over drip tray and allow sealant to flow out.
- Remove tyre from wheel ram.
- Clean wheel rim with a damp cloth, for example.



Care and treatment of alloy wheels 2.3.2 Protected by copyright.

Note

After cleaning or removing adhesive residue from the wheels, the wheels must be rinsed with water again.

VIL ^{10t} guaraniee or accept Protection of the second s 2.3.3 Cleaning tyre pressure sensor/wheel

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Note







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- Non-fibrous lint-free cloths
- Commercially available wire brush

Cleaning adhesive pad of rain sensor \Rightarrow page 17

Cleaning cables <u>⇒ page 18</u>

Cleaning the battery terminal clamp and the battery terminal <u>⇒ page 18</u>

2.4.1Cleaning adhesive pad of rain sensor



The contact surface of the rain sensor within the locking ring on the windscreen must be free of dirt, dust and grease.



Thoroughly clean contact surface with isopropanol (technical alcohol).

2.4.2 Cleaning cables

 Clean sockets, connectors and cables with a non-fibrous, lintfree cloth (for example universal cloth -VAS 6385-) and contact spray G 000 700 04.

2.4.3 Cleaning the battery terminal clamp and the battery terminal



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Do not use rust remover, contact spray or grease etc. as the specified torque will be exceeded during tightening due to a lack of static friction in the thread and will cause the threaded connection to break

- Disconnect battery.
- Check battery terminal clamp and battery terminal for corrosion or dirt.
- Clean the battery terminal clamp with the wire brush of the battery terminal cleaner, using circular movements.



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- Clean the battery terminal with the bottom of the battery terminal cleaner, using circular movements.
- Reconnect battery and secure the battery terminals by tight, Mooren ening them to the specified torque.

Note

Optimum contact is ensured if the components to be screwed on are tightened to the specified torque after cleaning.

2.5 Rules of cleanliness during work with information material "Maintenance manual for heating, ventilation and air conditioning system"

Special tools and workshop equipment required

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Cleaning housing covers of the Hydronic "DW5S" \Rightarrow page 20

Rinsing (cleaning) refrigerant circuit with R134a refrigerant does ⇒ page 20

Cleaning plug mantle on supplementary heater ⇒ page 27

Cleaning the evaporator with the suction feed spray gun -V.A.G 1538- and spraying lance \Rightarrow page 27

Cleaning work on heat exchanger \Rightarrow page 27

2.5.1 Cleaning housing covers of the Hydronic "DW5S"

Note 5

- The seal (sealing film) is self-adhesive. It protects the heater and its electronic components against the unallowed ingress of water.
- Before attaching the seal (sealing film), remove dirt, grease and adhesive residue from bonding surfaces with silicone remover -LLS MAX 007-.
- Pull the seal (sealing film) -1- off the heater.
- Clean bonding surfaces with silicone remover -LLS MAX 007-.



2.5.2 Rinsing (cleaning) refrigerant circuit with R134a refrigerant



WARNING

If you suspect that chemical substances have been put in the vehicle's refrigerant circuit in order to seal leaks, do not connect the A/C service station and do not vacuum-extract the refrigerant.

Chemical substances for sealing off leaks cause deposits to be formed in the refrigerant circuit; these deposits impair proper functioning of the air-conditioning system and lead to failure of the air-conditioning system (and your A/C service station).

Draw the customer's attention to the fact that his air-conditioning system contains substances that have not been approved by VW. You cannot empty or repair this air-conditioning system.

Note

- VW rejects the use of chemical substances for sealing leaks in the refrigerant circuit.
- Chemical substances used to seal leaks in the refrigerant circuit usually react with the ambient air and the humidity this air contains. They lead to deposits in the refrigerant circuit (and your A/C service station), causing functional impairments at the valves and other components with which they come into contact. These deposits cannot be completely removed from the components (not even by rinsing).
- From the outside, you cannot usually detect chemical substances used to seal leaks in the refrigerant circuit. The necessary sticker which has to be glued on for marking purposes has usually been removed. You should therefore be careful when working on a vehicle whose past history you do not know.
- In order to remove dirt (e.g. abraded matter from a defective air-conditioning compressor) as well as old refrigerant oil as cleanly as possible and with as little work as possible, rinse the refrigerant circuit with R134a refrigerant.

Note

How to rinse a refrigerant circuit is explained in the ⇒ Volkswagen ServiceNet; Volkswagen TV; API Online; OR Volkswagen TV Net; API / PKW under Modules, Body, and then the information broadcast on 8.06.2005 "Rinsing the refrigerant circuit of a Golf Plus as an example".

Note

- If you do not have any of the two A/C service stations indicated above, you can also rinse the refrigerant circuit with the A/C service station you do have if the station is of the right type (min. 7 kg of R134a refrigerant in the refrigerant bottle) by making use of the rinsing device for refrigerant circuits -VAS 6336/1- or rinsing device for refrigerant circuits -VAS 6337/1-However, the rinsing cycle must then be carried out manually.
- <text> In the case of vehicles with threaded connections to the refrigerant circuit, adapter V.A.G 1785/1- to adapter -V.A.G 1785/8- from the adapter case, car kit, VW/Audi -VAS 6338/1or adapter case, commercial vehicle kit -VAS 6338/50- , can be used. In the case of vehicles with threaded connections to the air-conditioning compressor and collecting receptacle, two adapters -V.A.G 1785/8- are necessary.
- The adapter cases also contain a filling hose -VAS 6338/31with 5/8 -18 UNF connections and a larger interior diameter in order to bridge components (it is commercially available).

Preparatory work

- Drain refrigerant circuit.
- Remove air-conditioning compressor ⇒ Heating, air-conditioning system.

In the case of a vehicle with throttle and collecting receptacle.

Remove throttle (vehicle-specific) and connect refrigerant pipes to each other again \Rightarrow Heating, air-conditioning system.







 Maintenance - Edition 10.2012_{CC} Volkswagen Acode
 Remove collecting receptacle (vehicle-specific) ⇒ Heating, air-conditioning system and connect refrigerant pipes to each other (using the adapters and the filling hose -VAS 6338/31-) from the adapter case, car kit, VW/Audi -VAS 6338/1-.
 Note
 The collecting receptacle could be rinsed but, because of its large interior volume, it takes up too much liquid refrigerant. If this refrigerant is vacuum-extracted, the connecting receptacle freezes up severely and the vacuum-extraction process takes much longer.
 In the case of a vehicle with expansion valve and fluid container.
 Remove fluid container ⇒ Heating, air-conditioning system (vehicle-specific, not necessary for all vehicles) and connect the refrigerant pipes to each other (using the adapters and the filling hose -VAS 6338/31-).
 Remove expansion valve ⇒ Heating, air-conditioning system (vehicle-specific) and replace it with an adapter.
 Note valve can also be drilled open (the old expansion valve is to be replaced with a new one).



Caution

- When boring it open, make sure that the sealing surfaces on the expansion valve are not damaged.
- Otherwise, refrigerant will escape.

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Note

- Before the expansion valve is drilled open open, some parts have to be removed from it.
- There are different types of expansion valve. In the case of type -A-, you have to remove parts -B-, -C- and -D-. Then, detach the regulating element -E- from part -D-. Following this, you drill open the expansion valve in area -F-, using a suitable drill (diameter 6 mm).
- In the case of type -G-, you must remove parts -H-, -I- and -K- and then drill open area -L-, using a suitable drill (diameter 6 mm).
- Remove drilling residue (filings) from the drilled-open expansion valve.
- Re-install parts -B-, -C- and -D- in the case of type -A- or part -H- in the case of type -G-.



In the case of vehicles with 2 evaporators, the circuit for the second evaporator is to be detached from the circuit of the first evaporator and then rinsed in a separate step ⇒ Heating, airconditioning system .

Rinsing

Check the amount of refrigerant in the refrigerant bottle; it must contain at least 7 kg of R134a refrigerant.



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If necessary, switch on the heater fitted to your refrigerant bottle for 30 minutes before you start rinsing. This causes the pressure in the refrigerant bottle to increase and speeds up filling of the rinsing circuit.

Drain old-oil container of the A/C service station.

AC Jerant circuits ing com-ciameter). - C se circ. - Connto the pressor Connect supply hose (high-pressure side) of the A/C service station with the help of an adapter and connect the low-pressure line to the air-conditioning compressor (line with larger

- Connect return hose (low-pressure or intake side) of the A/C service station to the output of the rinsing device for refrigerant
- Connect the input of the rinsing device for refrigerant circuits to the high-pressure line leading to the air-conditioning compressor with the help of an adapter (line with smaller diameter).





- <page-header><text><text><text><text><text><text>

- If the circuit is very dirty, it may be necessary to carry out two

Sequence of steps in a rinsing run (these steps are carried out automatically in accordance with the program of the A/C service station)

- Afgerant circuit is to be carried out in accordance range instructions for the X/C service station. If depending on the type of X/C service station. If the necessary to drain the larger amount of refrigerant to be insed with a larger amount of refrigerant to a ransing cycle. The refrigerant of this these here insing device for the first entropic of the skip of gerand insing device for the first entropic of the skip of gerand insing device for the first entropic of the skip of gerand insing device for the first entropic of the skip of gerand insing device for the first entropic of the skip of gerand insing device for the first entropic of the skip of gerand insing device for the first entropic of the skip of gerand insing device for the first entropic of the skip of gerand insing device for the first entropic of the skip of gerand insing device for the first entropic of the skip of gerand insing device for the first entropic of the skip of gerand insing device for the first entropic of the skip of gerand insing device due to the first entropic of the skip of gerand insing device for a term of the A/C service station of the skip of gerand in the skip of gerand first entropic of the skip of gerand in the skip of gerand first entropic of the skip of gerand in the skip of gerand first entropic of the skip of gerand in the skip of gerand first entropic of the skip of gerand in the skip of gerand first entropic of the skip of gerand in the skip of gerand first entropic of the skip of gerand in the skip of gerand first entropic of the skip of gerand in the skip of gerand first entropic of the skip of gerand in the skip of gerand first entropic of the skip of gerand in the skip of gerand first entropic of the skip of gerand the skip of gerand first entropic of the skip of gerand the skip of gerand first entropic of the skip of gerand the skip of gerand first entropic of the skip of gerand the skip of gerand first entropic of gerand the skip of gerand the skip of gerand first entropic of gerand the skip of gerand the ski
- for refrigerant circuits).
- Once the refrigerant has been extracted, the heater (if there is one) of the rinsing device for refrigerant circuits is switched off (it is possible that the refrigerant circuit will then be briefly evacuated again, depending on the type of equipment). After evacuation, the refrigerant oil extracted from the refrigerant circuit is separated by the A/C service station.
- The sequential procedure of filling, extracting (and evacuating) refrigerant is repeated twice (i.e. three times altogether).
- After the third extraction, the rinsing circuit is evacuated, depending on the type of A/C service station.



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2.5.3Cleaning plug mantle on supplementary heater

- 1 Plug mantle for B1LC; B3LP and B3LC heaters
- (fibre metal)
- 2 Plug mantle for D1LC; D3LP and D3LC heaters
- (screen)
- Pull plug mantle out of plug socket by the lug -arrow A- with the help of pliers.
- Clean coked plug mantle with brass wire brush (commercially available) and, if necessary, replace.
- Blow out hole for plug ventilation -arrow B- with compressed air.



2.5.4 Cleaning the evaporator with the suction feed spray gun -V.A.G 1538- and spraying lance

The evaporator is directly sprayed with "Contra Sept" with the help of a spraying lance (approx. 10 bar).

Note

"Contra Sept" neutralises dirt in the form of microbes and bacteria directly on the evaporator.

In order to enable access to the evaporator, preparatory work and different spraying lances are necessary, e.g. V.A.G 1538/5; V.A.G 1538/6 or V.A.G 1538/7.

The cleaning solution for D 600 100 A2 evaporators comes with a set of vehicle-specific user instructions.

Current devices and spraying lances can be found in \Rightarrow Service-Net Function "Search".

2.5.5Cleaning work on heat exchanger

WARNING

Danger of freezing injuries.

If refrigerant circuit has not been evacuated, refrigerant can escape.

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Extract refrigerant before opening refrigerant circuit.



Before installing the heat exchanger, check the foam base -1- and the all-round seal of the roof air-conditioning system -2- for damage and looseness. If necessary, replace them.



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Before installing the heat exchanger, clean the seal's contact surface -3- on the roof of the vehicle.



Isted undes Ruthonised by Volkswagen AG. Volkswagen AG does not guarantee of a construction of guarantee of a construction of the second secon Rules of cleanliness during work with in-2.6 formation material "Maintenance Manual - Body"

Special tools and workshop equipment required

- Universal cloth -VAS 6385-
- Hot-air blower -V.A.G 1416-٠
- Removal wedge -3409-٠
- Non-fibrous lint-free cloths

Cleaning and removing excess adhesive on the retaining plate for the interior mirror with rain sensor \Rightarrow page 28

Cleaning in the event of dirt caused by adhesive sealing material ⇒ page 29

Cleaning work on windscreen ⇒ page 29

Cleaning work on the retaining plate for the interior mirror with rain sensor ⇒ page 29

Cleaning work on door outer seal \Rightarrow page 30 Cleaning work of door outer seal \Rightarrow page 30

Cleaning work if a mirror base has fallen off or if new mirror base is to be fitted \Rightarrow page 30

Cleaning work when a hard top is to be fitted \Rightarrow page 30

Cleaning work before renewal of emblems etc. ⇒ page 31

Cleaning work before replacement of protective film (transparent) ⇒ page 31

Cleaning water drainage hoses (Polo Classic) ⇒ page 32

Cleaning water drainage hoses (Polo Variant) ⇒ page 33

Cleaning water drainage hoses (Transporter) \Rightarrow page 33

- 2.6.1 Cleaning and removing excess adhesive on the retaining plate for the interior mirror with rain sensor
- 0,5 ... 1 hour after attaching mirror base, carefully remove adhesive tap.



- Scrape off the still-soft adhesive residue, using a suitable spatula.
- Completely remove any remaining adhesive residue with a primer applicator or cloth soaked in cleaning solution.

2.6.2 Cleaning in the event of dirt caused by adhesive sealing material

 Use of the adhesive remover -D 002 000 10- as a cleaning agent is recommended. When this work is being done, the safety relations must be observed.

WARNING

When the vehicle interior is being cleaned, make sure not to press the window that has just been fitted towards the outside.

- First, clean the painted surface roughly with a dry cloth. Remove residual dirt, using the adhesive remover -D 002 000 10-.
- Allow adhesive sealing material of plastic trim to harden (approx. 1 hour) and then pull it off.
- Clean surface of outer panel with adhesive remover -D 002 000 10- immediately before fitting attachments and then carefully remover dirt, grease, wax and other impurities with plastic cleaner -D 195 850 At - .
- Clean the painted sufface roughly with a dry cloth.
- Remove residual dirt, using adhesive remover -D 002 000 10-.

2.6.3 Cleaning work on windscreen

- Clean the viewing window -arrow- of the windscreen -1- from the inside, using the cleaning solution -009 401 04-.
- Clean a 20 mm wide strip all round the edge of the window with the cleaning solution D 009 401 04-.
- Then, dry the window edge with a lint-free cloth.

WARNING

The ceramic coating on the glass is not a primer. The glass must be primed before the adhesive sealing material is applied. Only use glass/paint primer D 009 200 02!

2.6.4 Cleaning work on the retaining plate for the interior mirror with rain sensor

- All adhesive and primer residue must be removed down as far as the initial ceramic coating.
- Cleaning bonding surface with cleaning solution D 009 401 04.



Allow for a drying time of at least 10 minutes.





2.6.5 Cleaning work on the side window

- Clean a 20 mm wide strip all round the edge of the side window in the sliding door -1- with the cleaning solution -D 009 401 04-.
- Then, dry the window edge with a lint-free cloth.



Clean the bonding surface all round with the adhesive remover
 -D 002 000 10- and then dry the bonding surface with a cloth.



The entire bonding surface must be free of dust and grease.

2.6.7 Cleaning work if a mirror base has fallen off or if new mirror base is to be fitted

- Remove adhesive residue mechanically (this only applies if mirror base has fallen off).
- Wet-grind the bonding surface with very fine emery paper (800 to 1200 grain) until the bonding surface is covered with a fine layer of water.
- Then, clean bonding surface with cleaning solution D 009 401
 ^{Y/DelDelOI} 04.

2.6.8 Cleaning work when a hard top is to be fitted

- Remove residual adhesive sealing material at points where hard top and body are connected to each other.
- Clean the points where the hard top and body are connected to each other, using silicone remover -LSE 020 000 A3-.



30 2. General rules of cleanliness

Apply PUR adhesive sealing material -AKD 476 KD5- in white to all the points of connection -arrow-.



2.6.9Cleaning work before renewal of emblems etc.

- Before removing an emblem etc., heat it with the hot-air blower -V.A.G 1416- .
- Lever off an emblem etc. from the rear lid with the removal wedge -3409- , for example.
- Remove any remaining adhesive residue, using the adhesive strip remover -VAS 6349- .
- Thoroughly clean the bonding surface directly before bonding, using adhesive remover -D 002 000 10- .



- used by Volkswagen AG. Volkswagen AG does not guarantee of dust. arease, dirt and other ter. tely id pull th sili-Bonding surfaces must be free of dust, grease, dirt and other media and must be dry.
- First, pull protective film off the preliminary seal directly before fitting.
- Cleaning work before replacement of 2.6.10 protective film (transparent)

Note

- The transparent protective film must be stuck on with water and soap.
- The exact mixing ratio is 1 ml of liquid soap to 1 litre of water. The mixture must be well stirred.
- Do not pull backing off the bonding surface until immediately before fitting. Working temperature approx. 20 °C.
- Heat protective film with a hot-air blower -V.A.G 1416- and pull protective film off surface of outer panel.
- Clean outer panel with petroleum ether, then treat it with silicone remover and dry with a cloth.
- Bonding surfaces must be free of dust and grease.



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- Spray a thin film of soapy water onto the surface of the outer panel, using a spray bottle.
- Pull backing of the bonding surface off the protective film.
- Apply and align protective film.
- Push out the water under the film, using a plastic wiping blade with a paper tissue wrapped around it.



The paper tissue is needed to ensure that the hard edge of the plastic wiping blade does not scratch the film.

2.6.11 Cleaning water drainage hoses (Polo Classic)


i Note

An auxiliary tool - a probe which is approx. 2,300 mm long and made of speedometer drive shaft cores - is recommended for cleaning.

2.6.12 Cleaning water drainage hoses

The water drainage hoses at the front are routed through or along the A-pillars and end in the plenum chamber. Cleaning is carried out from the sliding/tilting roof aperture.

The water drainage hoses at the rear are routed through the Dpillars and end in the water drainage valves behind the bumper cover. Cleaning is carried out from the lower end of the hoses. The bumper or the luggage compartment trim must be removed for this.



An auxiliary tool - a probe which is approx. 2,300 mm long and made of speedometer drive shaft cores - is recommended for cleaning.

2.6.13 Cleaning water drainage hoses (Transporter)

The water drainage hoses at the front are routed on the A-pillars and end at the partition wall in the engine compartment. Cleaning is carried out from the sliding/tilting roof aperture.







The water drainage hoses at the rear are routed through the Dpillars and end in the rear wheel housings. Cleaning is carried out from the wheel housing and, to do this, the wheel housing liner must be removed.





A probe which is approx. 2,300 mm long and made of speedom-eter drive shaft cores is recommended for cleaning. formation material "Maintenance Man-. DA nep ual - Body"

Special tools and workshop equipment required

- Universal cloth -VAS 6385-
- ۲ Non-fibrous lint-free cloths
- Commercially available screw tap ٠
- Commercially available protective goggles



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Cleaning ATF lines and ATF cooler ⇒ page 36

Removing locking agent from threaded holes ⇒ page 36

Cleaning work on the clutch \Rightarrow page 37

Cleaning work on bolts and nuts ⇒ page 37

2.7.1 Cleaning ATF lines and ATF cooler

scoot any liability with respect to the correctness of information, If the ATF is contaminated, blow out the engine oil cooler and ATF lines with compressed air (max. 10 bar) before installing the gearbox or installing a replacement gearbox.



Wear protective goggles.

Unscrew and remove the nuts of the ATF lines and pull ATF . DA nagewento V volten og 1 18 1000 118 1000 lines off the gearbox. Kolected by copyright, Copyrights



- Remove the ATF lines -1- off the ATF cooler. When doing this, counterhold on the connecting piece -2-.
- Attach a hose to the ATF line and secure with a hose clip. Place the other end of the hose in a suitable container.
- Blow out ATF line with compressed air.
- Attach hose to other ATF line and repeat the procedure.

Note

- Always replace the O-rings of the ATF lines.
- Wet the O-rings with ATF.

2.7.2 Removing locking agent from threaded holes

Remove locking agent from all threaded holes.



Cleaning can be carried out with a screw tap.



2.7.3 Cleaning work on the clutch

i Note

Clean splines of drive shaft and, if the clutch plate has been used, clean the splines of the hub. Remove corrosion and apply a very thin layer of lubricating grease for male splines of clutch plates -G 000 100- to the splines. Then, move the clutch plate back and forth on the drive shaft until the hub moves easily on the shaft. Remove excess grease.

 In order to reduce the smell of a burned clutch, the clutch housing as well as the stopping face of the flywheel must be thoroughly cleaned with a cloth.

2.7.4 Cleaning work on bolts and nuts



Residual locking agent must be removed from all threaded holes into which self-locking bolts are screwed; this is done with a screw tap. Otherwise, there is a danger that the bolts will shear off when refitted.





3 Service work

- Information reference flexible or fixed service \Rightarrow page 38 ٠
- Service tables \Rightarrow page 40 ٠
- Scopes of service <u>⇒ page 50</u>
- Information reference flexible or fixed 3.1 service

3.1.1 Service identification

Amarok 2011 ≻ Maintenance - Edi	tion 10.2012	
3 Service w	ork	
	ZIN	
This chapter provides inform	nation on the following subjects:	
 Information reference field 	INDIE OF TIXED SERVICE \Rightarrow page 38	wewagen AG. Volkswagen AG door
 Service tables <u>⇒ page 4</u> 	<u>J</u>	olisti guaro
 Scopes of service ⇒ pag 	<u>le 50</u>	antegor
3.1 Information service	reference flexible or fixed	accepterty
Service identification <u>> pag</u>	<u>e 38</u>	
Flexible service <u>⇒ page 38</u>	is not	N N N N N N N N N N N N N N N N N N N
Fixed service <u>⇒ page 39</u>	hole	resp
Service interval display <u>⇒ p</u>	<u>age 39</u> 년	ect to
3.1.1 Service ide	ntification	theo
 Referring to vehicle data is equipped with following 	sticker <u>⇒ page 59</u> , check if vehicle g PR numbers:	e
The PR number is decisive <mark>⇒ page 40</mark> .	for the service intervals	of infor
Model year	PR number	Service
▶ 2012	QG1 S	Flexible service
► 2012	QG0, QG2	Fixed service
2013 ►	QI6 52	Flexible service
2013 ►	QI8 ^{1/1} 00	Flexible service
2013 ►	QI1, QI2, QI3, QI4, QI5, C	217 Fixed service
	V.00.	DA nseswerlov.

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3.1.2 **Flexible service**

The flexible service enables long service intervals, depending on individual driving style and the conditions under which the vehicle is used.



For the flexible service, special LongLife engine oil is required *⇒ page 42*.

Vehicles with PR number "QG1" or "QI6/QI8" are set up for flexible service before they leave the factory. This means that these vehicles have a flexible service interval display \Rightarrow page 39 and are fitted with the following components:

- Flexible service interval display in dash panel insert
- Engine oil level sensor ٠
- Brake pad wear indicator (if fitted)

For vehicles with flexible service the service interval is determined by the control unit and is indicated on service interval display (SID) <u>⇒ page 39</u>.

Therefore the service intervals are flexible.



3.1.3 **Fixed service**

For vehicles with a fixed service, fixed services are calculated. This means that the indicated mileage or time intervals have already been determined and specified by Volkswagen Commercial Vehicles. For normal operating conditions achieving these service intervals is technically assured.

Therefore the service intervals are fixed.

For vehicles

- Which have not been delivered with extended servicing intervals (ESI) (PR numbers "QG0", "QG2", "QI1", "QI2", "QI3", "QÍ5", "QI7". "QI4",
- When the extended servicing interval (ESI) was stopped.
- When no LongLife engine oil was used.

The fixed service applies.

These non-flexible service intervals apply to all types of service including an engine oil change.

Vehicles with PR number "QG0".

The vehicles are "not" factory-fitted with components for flexible service. Fixed service intervals apply for maintenance.

Vehicles with PR number "QG2"

The PR number is valid only to ►2012.

For these vehicles the flexible service is not factory-activated. Therefore, these vehicles have a fixed service interval display page 39 and for maintenance the fixed service intervals (rigid service intervals) apply. These vehicles are fitted with the following components:

- Fixed service interval display in dash panel insert

3.1.4

Introduction of extended servicing intervals (ESI) > page 39

rvice Interval j components: Fixed service interval display in dasn per. Engine oil level sensor Brake pad wear indicator (if fitted) Service interval display '-ing intervals (ESI) ⇒ page 39 '-ing intervals (ESI) ⇒ page 39 Flexible service interval display (only vehicles with a flexible service) <u>⇒ page 39</u>

Fixed service interval display (only vehicles with a fixed service) \Rightarrow page 40

Service interval display: Resetting ⇒ page 141

Service interval display: Adapting ⇒ page 143

Introduction of extended servicing intervals (ESI)

Ask your importer if the extended servicing interval (ESI) is available for your country.

Flexible service interval display (only vehicles with a flexible service)

Calculation of service intervals:

Hild mith respect to the correctness of information in The service intervals on vehicles with a flexible service is calculated. Input values such as, distance travelled, fuel consumption, oil temperature and loading on diesel particulate filter are evaluated by the control unit. Protected by copyrigh



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- The result of the evaluation is a measure of the deterioration of the oil due to thermal load.
- Oil deterioration is the decisive factor in determining the distance that can still be driven before the next service.



For vehicles with a flexible service but which are serviced according to fixed service intervals, the service interval display must be recoded to "non-flexible" \Rightarrow page 143.

Fixed service interval display (only vehicles with a fixed service)

Calculation of service intervals:

- The service interval for vehicles with a fixed service is calculated in fixed service intervals. This means that the mileage or time values have been previously determined and specified by Volkswagen Commercial Vehicles.
- For normal operating conditions achieving these service in-٠ tervals is technically assured.

3.2 Service tables

<page-header><text> The following chapter contains the well-known service tables with the service specifications of the Volkswagen Commercial Vehicles brand. Since, in the past, individual service specifications were set up in various markets, mostly through severe operating conditions, these are listed in service tables with specific deviations.

Service tables <u>⇒ page 40</u>

Service tables with market-specific deviations = page 43



- For combined kilometre and time display applies: whichever occurs first.
- Depending on conditions under which the vehicle is used and vehicle equipment, extra service work must be performed in addition to the interval service, inspection service or interval service inspection.
- It is also possible, to perform additional work outside the service intervals with regard to the entries in the service schedule (or sticker: your next service).

3.2.1 Service tables

- Service interval \Rightarrow page 41
- VW engine oil standards <u>⇒ page 42</u> S LOGECEED BY COPYLIGHT COPYLIGION AND COPYLIGION AND COPYLIGION AND COPYLIGION COPYLICON COPYLICON COPYLICION COPYLICON COPYLICION COPYLICION COPYLICION



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Only applies to diesel engines:

Caution

- Some countries have an elevated sulphur content in diesel fuel. 5
- The high sulphur content leads to excessive wear of cyl-inders and it considerably reduces the cleanliness of pis-٠ tons.
- Therefore, in those countries with an elevated sulphur content in diesel fuel, change the engine oil every 5,000 • km.

i Note

Only applie	s to diesel engines:	1 Inde	
Some c	ountries have an elevated su	Iphur content in diesel	
♦ The hig inders a tons.	h sulphur content leads to e and it considerably reduces t	kcessive wear of cyl- he cleanliness of pis-	
 Therefore content km. 	ore, in those countries with al in diesel fuel, change the er	n elevated sulphur ngine oil every 5,000	
Note		ss of informatio	
However, oth will inform yo	her intervals apply for other c ou about this.	countries. Your importer	
Of BUILT		Amarok 2010 - Jan	
140	5.	ervice interval 2010 + 2012	
From to	Engine/ Engine code/ PR No./Remarks	Service: Intervals Nov Varup: Antervals Nov Varup:	Indication on SID (with oil change)
2010 ► 2012	Diesel engines with high sulphur content in diesel fuel	Oil change service (fixed): every 10,000 km or 1 year	YES
	QG0/QG2 or QG1 vehicles coded to fixed intervals	Oil change service (fixed): every 15,000 km or 1 year (petrol en- gine)	YES
		Oil change service (fixed): every 20,000 km or 1 year (diesel en- gine)	YES
		Interval service (fixed): max. 30,000 km or 2 years (petrol en- gine)	YES
		Interval service (fixed): max. 40,000 km or 2 years (diesel en- gine)	YES
	QG1 vehicles	Interval service (flexible): max. 30,000 km or 2 years (petrol en- gine)	YES
		Interval service (flexible): max. 40,000 km or 2 years (diesel en- gine)	YES
	All vehicles	First inspection service after 3 years, then every 2 years	NO



Amarok 2013►						
Service intervals 2013►						
From - to	PR No.	Service: Intervals	Indication on SID (with oil change)			
2013►	QI1	Oil change service (fixed): every 5,000 km or 1 year	YES			
	Q12	Oil change service (fixed): every 7,500 km or 1 year	YES			
	QI3	Oil change service (fixed): every 10,000 km or 1 year	YES			
	Q14	Oil change service (fixed): every 15,000 km or 1 year	YES			
	Q15	Oil change service (fixed): every 20,000 km or 1 year	YES			
	QI7	Oil change service (fixed): every 10,000 mi or 1 year	YES			
	QI1, QI2, QI3, QI4, QI5, QI7	Interval service (fixed): every 30,000 km or 2 years (petrol engine)	YES			
	QI1, QI2, QI3, QI4, QI5, QI7	Interval service (fixed): every 40,000 km or 2 years (diesel engine)	YES			
	QI6	Interval service (flexible): every 30,000 km or 2 years (petrol engine)	YES			
	QI8	Interval service (flexible): every 40,000 km or 2 years (diesel engine)	YES			
	QI1, QI2, QI3, QI4, QI5, QI6, QI7, QI8	First inspection service after 3 years, then every 2 years	NO			
Tor combined kitometre and time display applies: whichever oc-						
Caution Caution						
Only engin formation = maintenan	e oils approved by VW may ⇒ ServiceNet, Technical infol ice, Approved oils , or ask yc	be used, up-to-date in- rmation, Inspection and our importer.	Tormation			
	³ ¹ 0					

i Note

VW ENGINE OIL STANDARDS

Caution

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enito	Am	arok	00 00 00
404 GU	VW ENGINE O	IL STANDARDS	
With flexi	ble service	With fixe	d service
PETROL ENGINE	40juldo	A A A A A A A A A A A A A A A A A A A	
4-cylinder	504-00 alternative 503 00	· ƏH UƏG 44 Cylinder	504 00 ¹⁾ 502 00 ²⁾
DIESEL ENGINES			

	Amarok				
	VW ENGINE OIL	STANDARDS			
4-cylinder (with Bosch EDC 17 TDI common rail with die- sel particulate filter)	507 00 ¹⁾ 505 01 ²⁾	4-cylinder (with Bosch EDC 17 TDI common rail with die- sel particulate filter)	507 00 ¹⁾ 505 01 ²⁾		
4-cylinder (with Bosch EDC 17 TDI common rail without diesel particulate filter)	507 00 ¹⁾ 505 01 ²⁾	4-cylinder (with Bosch EDC 17 TDI common rail without diesel particulate filter)	507 00 ¹⁾ 505 01 ²⁾		

¹⁾ Only for markets where diesel complies with EN 590.

²⁾ Only for markets with elevated sulphur content in diesel fuel.

Nolkswagen AG. Volkswagen AG does not

3.2.2

<text><text><text><text><text><text><text><text> The following chapter contains the service tables for Volkswagen commercial vehicles for markets with individual maintenance requirements that differ from the German market due to the more difficult vehicle operating conditions in those markets.



Amarok 2010 ►				
	S	Service interval 2010 ►2012		
From to	Engine/ Engine code/ PR No./Remarks	Indication on SID (with oil change)		
2010 ► 2012	Diesel engines with high sulphur content in diesel fuel	Oil change service depending on sul- phur content in fuel <u>⇒ page 45</u>	YES	
	QG0/QG2 or QG1 vehicles coded to fixed intervals, export	Oil change service (fixed): every 15,000 km or 1 year (petrol en- gine)	YES	
		Interval service (fixed): max. 30,000 km or 2 years (petrol en- gine)	YES	
		Interval service (fixed): max. 40,000 km or 2 years (diesel en- gine)	YES	
	QG1 vehicles, export	Interval service (flexible): max. 30,000 km or 2 years (petrol en- gine)	YES	
		Interval service (flexible): max. 40,000 km or 2 years (diesel en- gine)	YES	
	All vehicles	First inspection service after 3 years, then every 2 years	NO	



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		Von	-01/01
		Amarok 2013►	guarante
		Service intervals 2013►	CO OF 20
From - to	PR No.	PR No. Service: Intervals	
2013►	QI1 QI1	Oil change service (fixed): every 5,000 km or 1 year	YES IV
	QI2	Oil change service (fixed): every 7,500 km or 1 year	YES
	QI3 Dart or li	Oil change service (fixed): every 10,000 km or 1 year	YES to the c
	QI4	Oil change service (fixed): every 15,000 km or 1 year	YES
	QI5 odjind [Oil change service (fixed): every 20,000 km or 1 year	YES YES
	QI7 QI7	Oil change service (fixed): every 10,000 mi or 1 year	YES
	QI1, QI2, QI3, QI4, Q5, QI7	Interval service (fixed): every 30,000 km or 2 years (petrol engine)	YES YES
	QI1, QI2, QI3, QI4, QI5, QI7	Interval service (fixed): every 40,000 km or 2 years (diesel engine)	YES NOT
	Q16	Interval service (flexible): every 30,000 km or 2 years (petrol engine)	MSHON NALUDIA YES
	Q18	Interval service (flexible): every 40,000 km or 2 years (diesel engine)	YES
	QI1, QI2, QI3, QI4, QI5, QI6, QI7, QI8	First inspection service after 3 years, then every 2 years	NO

i Note

For combined kilometre and time display applies: whichever occurs first.

Oil change intervals depending on sulphur content in fuel

Amarok ► 2012							
Oil change intervals depending on sulphur content in fuel							
Fuel quality	Fuel quality (EN590) ◄ 500 ppm 500-2,000 ppm 2,000-4,000 ppm ► 4,000 pp						
Change interval	ESI	20 tkm/1 year	10 tkm/1 year	7.5 tkm/1 year	5 tkm/1 year		
Abu Dhabi		Х					
Afghanistan				Х			
Egypt					Х		
Albania		Х					
Algeria			Х				
Angola			Х				
Equatorial Guinea					Х		
Armenia			Х				
Azerbaijan		Х					
Ethiopia					X		



		Amarok	× ► 2012				
Oil change intervals depending on sulphur content in fuel							
Fuel quality	(EN590)	 ✓ 500 ppm 	500-2,000 ppm	2,000-4,000 ppm	► 4,000 ppm		
Change interval	ESI	20 tkm/1 year	10 tkm/1 year	7.5 tkm/1 year	5 tkm/1 year		
Australia	Х						
Bahamas					Х		
Bahrain		Х					
Bangladesh				Х			
Belgium	Х						
Belize					Х		
Benin	VIOIKSWAS	en AG. Volkswagen,	AG does not		Х		
Bermuda	JOY		St guarant		Х		
Bhutan cauthor		Х	"@@OJ				
Bolivia				CCBO,	Х		
Bosnia-Herzegovina	Х			PTU .			
Botswana 🔊				abilit	Х		
British Overseas Territo- ries				y with re	Х		
Brunei 🖇			Х	spe			
Bulgaria	Х			ctto			
Burkinā Faso				heo	Х		
Burunđi				prre	Х		
Chile 8	Х			ctne			
China			X	SS O			
Costa Rica		X		^f infc			
Denmark	Х		Ĭ	rma,			
Dem. Rep. Congo				Onii	Х		
Djibouti 🎉				This	Х		
Dominican Republic				10 ⁰	Х		
Dubai		Х		. Walt			
Ecuador 3		Q	culdo	X			
El Salvador	000		o Majubr	Х			
Ivory Coast	19 pajoaj	old	иэбеменна Х				
Eritrea		~ 0.			Х		
Estonia	Х						
Finland	Х						
France	Х						
French Overseas Territo- ries (not EU)					Х		
French Guyana	Х						
Gabon					Х		
Gambia					Х		
Georgia		Х					
Ghana				Х			
Gibraltar					Х		
Greece	Х						
Great Britain and North- ern Ireland	Х						

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		Amarok	< ► 2012		
Oi	l change i	ntervals depend	ing on sulphur cor	ntent in fuel	
Fuel quality	(EN590)	◀ 500 ppm	500-2,000 ppm	2,000-4,000 ppm	► 4,000 ppm
Change interval	ESI	20 tkm/1 year	10 tkm/1 year	7.5 tkm/1 year	5 tkm/1 year
Guadeloupe	Х				
Guatemala				Х	
Guinea					Х
Guinea-Bissau					Х
Guyana					Х
Haiti					Х
Honduras				Х	
Hong Kong	Х				
India		Х			
Indonesia				Х	
Iraq					Х
Iran					Х
Ireland	Х				
Iceland	X	/olkswagen 4 o			
Israel	SWAGEN AND	senAG does	not a		
Italy dised by	Х		Suarante		
Jamaica			COT 20	Х	
Japan June	Х		C.C.D.F.		
Yemen			12		Х
Jordan					Х
Cambodia			Х	with	
Cameroon			X	resp	
Canada			X	ectt	
Čap Verde				othe	Х
Caribbean driving on the left				correc	Х
Caribbean driving on the right				iness of	Х
Kazakhstan			X	info	
Qatar	×		Х	Ima	
Kenya				10 ⁰ X	
Kyrgyz Republic			X	1 this	
Columbia			X	۲ <u>ــــــــــــــــــــــــــــــــــــ</u>	
Comoros 2			. TUBUT		Х
Croatia	Х	Q	Culldon		
Cuba TOLIAdos A			NOV VOIND:		Х
Kuwait	Protecte	. DA Nagense	X		
Laos	-)	Х		
Lesotho					Х
Latvia	Х				
Lebanon			X		
Liberia					Х
Libya			X		
Lithuania	Х				



10₀



	ed un	Amarok	× ► 2012	Di al			
Oi	Oil change intervals depending on sulphur content in fuel						
Fuel quality	^(EN590)	 500 ppm 	500-2,000 ppm	2,000-4,000 ppm	► 4,000 ppm		
Change interval	ESI	20 tkm/1 year	10 tkm/1 year	7.5 tkm/1 year	5 tkm/1 year		
Luxembourg	Х				spec		
Madagascar			Х		tot		
Malawi		Х			ne cc		
Malaysia 🚊		Х			prrec		
Mali				X	tnes		
Malta	Х				Sof		
Morocco	X				infor		
Martinique	X				mati		
Mauritania S					X rin ^{nc}		
Mauritius	are			X	This of		
Mayotte				JUR	X		
Macedonia	Xun			·······································			
Mexico		246 X	<u> i</u>	1611Ado S			
Moldova		···/AdosX		WION NOTA			
Mongolia		rotected ,	X . ĐA nag	BWay			
Montenegro	Х						
Mozambique		Х					
Mozambique		Х					
Myanmar (Burma)					X		
Namibia					Х		
Nepal		Х					
New Caledonia	Х						
New Zealand	Х						
Nicaragua					Х		
Netherlands	Х						
Dutch Overseas Territo- ries					Х		
Niger					Х		
Nigeria				Х			
North Korea					Х		
Norway	Х						
Oman		X					
Austria	Х						
Pakistan					Х		
Palestinian Territories	Х						
Panama		Х					
Papua New Guinea		Х					
Paraguay			X				
Pacific driving on the left					X		
Pacific driving on the right					X		
Peru							
Philippines		Х		Х			
Poland	Х						
Portugal	Х						

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	Amarok ► 2012					
Oi	l change i	ntervals dependi	ng on sulphur cor	ntent in fuel		
Fuel quality	(EN590)	 ✓ 500 ppm 	500-2,000 ppm	2,000-4,000 ppm	► 4,000 ppm	
Change interval	ESI	20 tkm/1 year	10 tkm/1 year	7.5 tkm/1 year	5 tkm/1 year	
Puerto Rico		wewagen AG	Volkswagen AG does		Х	
Republic of Congo		odby Volker		^{lot} gu _{an} X		
Reunion	X,thoms			antee o		
Rwanda	10552			ACCC.	Х	
Romania	S X			PI an		
Russian Federation				X B		
Saint-Barthélemy				le l	X X	
Zambia					The X	
Sao Tome and Principe					spec X	
Saudi Arabia					to X	
Sweden gat	Х				hec	
Switzerland	X				orrec	
Senegal				Х	ctne;	
Serbia	X				of SS of	
Seychelles					info X	
Sierra Leone					m _{at} X	
Zimbabwe				X	Con :	
Singapore	X			th is		
Slovakia	X			1000		
Slovenia	OU X			.74804		
Somalia	903 . 11 10		Q	GUNDOS	Х	
Spain	X	Mdos Ac		"OV Varian		
Sri Lanka and the Mal- dives		Protectedan	X ^{A n9} DBW2	D// .		
South Africa	X					
Sudan					x	
South Korea	X					
Surinam				Х		
Swaziland					X	
Syria					X	
Tajikistan			Х			
Taiwan	X					
Tanzania					X	
Thailand		X				
Тодо					X	
Trinidad and Tobago			Х			
Chad					X	
Czech Republic	X					
Tunisia			Х			
Turkey	X					
Turkmenistan		X				
Uganda					X	
Ukraine		X				
Hungary	X					



n par

Amarok ► 2012						
Oi	Oil change intervals depending on sulphur content in fuel					
Fuel quality	(EN590)	 ✓ 500 ppm 	500-2,000 ppm	2,000-4,000 ppm	► 4,000 ppm	
Change interval	ESI	20 tkm/1 year	10 tkm/1 year	7.5 tkm/1 year	5 tkm/1 year	
Uruguay				Х		
USA-1 federal states without CARB require- ment			Х			
USA-2 federal states with CARB requirement	Volkswagen	AG. Volkswagen AG	loes not guare			
Uzbekistan uthonse			· antee	Х		
Venezuela			ACCC R		Х	
United Arab Emirates			×		Х	
Vietnam			Х	liabil		
Belarus	Х			ity wi		
West Sahara				thre	Х	
Central African Republic				spec	X	
Cyprus	Х			Ato tr		

3.3% Scopes of service

s, ithe seen test order + The following chapter contains the well-known service tables of the Volkswagen Commercial Vehicles brand. Since, in the past, individual service specifications were set up in various markets, mostly through severe operating conditions, these are listed in the scopes of service tables with market specific deviations.

- Scopes of service <u>⇒ page 53</u> ۲
- ٠ Scopes of service market specific deviations ⇒ page 55
- Delivery inspection ⇒ page 50 ٠
- Time and distance dependent additional work ۲

3.3.1 **Delivery inspection**

. DA nagewsylon The sequence of the individual service tasks has been tested ۲ and optimised. The sequence must be followed in order to avoid unnecessary interruptions in work.

W	Page				
Ele	ectrics				
۲	Relay for battery disconnection (if fitted): remove	<u>⇒ page 84</u>			
•	Vehicles with transport equipment				
•	Battery: Check battery terminal clamps by hand for tightness	<u>⇒ page 81</u>			
•	Battery: Perform visual check and check magic eye (if fitted)	<u>⇒ page 84</u>			
•	Four-wheel drive fuse: Insert (PR number "1x1")	<u>⇒ page 107</u>			
•	Vehicle system test: Perform	<u>⇒ page 104</u>			
•	Radio code: Request (customer should be informed of radio code IF DESIRED)	<u>⇒ page 131</u>			
Ve	Vehicle interior				



W	ork to be completed	Page
•	All switches, electrical consumers, sockets, gauges and other control elements: Check function	
•	Door handles, door locks, central locking and windows: Check function and ease of movement	
٠	Front passenger airbags: Check key switch and ON/OFF function", set switch to "ON"	nt _{es} <mark>⇒ page 88</mark>
٠	Electric window regulators: Check positioning (open and close functions)	<u>⇒ page 102</u>
٠	Clock: Set to correct time	<u>⇒ page_146</u>
٠	Climatronic: Set temperature to 22 °C	<u>⇒ page 101</u>
٠	Transportation mode: Switch off	hresp
٠	Radio/radio navigation system: Activate anti-theft coding, store local radio stations to station buttons	<u>⇒ page 133</u>
٠	Radio navigation system: Insert navigation CD/DVD and perform update	<u>⇒ page 134</u>
٠	Seat protective covers and protective foils: Remove	
•	Vehicle interior: Check for cleanliness (front and rear seats, interior trim, carpets/mats, windows)	(Informa
Ve	ehicle exterior	ion _{ii}
•	All equipment that has been packed inside the vehicle (mats, wipers, spoilers, roof aerial, full sized wheel trims/wheel trims, wheel bolt covers, tyre valve extensions): Install (if featured)	USUNOO DE
٠	Edge protection on doors (plastic foil): Remove	Columb
•	Vehicle exterior: Check for cleanliness (paintwork, decorative parts, windows, wiper blades, surfaces)	
٠	Protective foil: Remove (if fitted)	<u>⇒ page 146</u>
٠	Towing eyes: remove	
•	Place towing eye in vehicle tool kit and fit cover to bumper	
Ту	res	
٠	Spare wheel tyre: Check condition and inflation pressure (if fitted)	<u>⇒ page 89</u>
٠	Front left tyre: Check condition and inflation pressure	<u>⇒ page 89</u>
٠	Rear left tyre: Check condition and inflation pressure	<u>⇒ page 89</u>
٠	Rear right tyre: Check condition and inflation pressure	<u>⇒ page 89</u>
•	Front right tyre: Check condition and inflation pressure	<u>⇒ page 89</u>
٠	Wheel securing bolts: Tighten to specified torque	<u>⇒ page 130</u>
Ve	ehicle, bottom	
•	Vehicle from below (without removing underbody protection): Perform visual check for leaks and damage	<u>⇒ page 146</u> ⇒ page 110
•	Engine, CV joint boots/bellows, brake system, steering, axles, gearbox/final drive, ho- ses, fluid reservoirs/containers	



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Vehicle underside (floor pan): Perform visual check for damage	<u>⇒ page 146</u>
Brake system: Perform visual check for leaks and damage	<u>⇒ page 92</u>
ingine compartment	
 Engine and components in engine compartment (from above): Perform visual check for leaks and damage 	<u>⇒ page 126</u>
 Window wash/wipe system and headlight washer system: Check function and settings; replenish to maximum level 	<u>⇒ page 134</u>
Engine oil level: Check (observe VW engine oil standards if replenishing)	<u>⇒ page 122</u>
Coolant level: Check level is at maximum	<u>⇒ page 115</u>
Brake fluid: Change	<u>⇒ page 100</u>
For stock vehicles and vehicles in storage whose standing period of 6 months or more, the brake fluid must be renewed.	
Brake fluid level: Check level is at maximum	<u>⇒ page 100</u>
Power assisted steering: Check fluid level	<u>⇒ page 144</u>
ocumentation/final checks	
 Number and function of keys: Check, wipe off grease if necessary 	
Vehicle data sticker: Stick into service schedule and in vehicle	<u>⇒ page 59</u>
Service schedule: Enter delivery inspection, enter a cross for the 1st service and com- plete vehicle data in service schedule, see "Vehicle delivery documentation"	
Interval service for vehicles with LongLife service (PR No. QG1) ¹⁾	
Oil change service for vehicles with time or distance dependent service (PR No. QG0/ QG2) ¹⁾	
Vehicle literature: Check literature is complete and prepare for handover to customer	Red OF
Reset service interval display	<u>⇒ page 141</u>
Road test: Perform	<u>⇒ page 129</u>
Service identification	with respect to the correctness of information in the opposite the second secon

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3.3.2 Scopes of service

Note

- The various types of service can be combined under certain circumstances (oil change or interval service in conjunction with an inspection service). Whereupon doubly listed activities are only charged once.
- Depending on the vehicle equipment and the conditions under which the vehicle is used, additional maintenance measures may need to be performed when services are due.
- It is possible to have additional work done outside the service intervals, with account being taken of the entries in the service schedule (or service sticker: "Your next service dates").
- If faults are found within the scope of servicing which make repair measures necessary, the customer must be informed and the additional work invoiced separately where necessary.
- ♦ Abbreviations for scope of service:
- Abbreviations for scope of scrue ¹⁾ Oil: Qil change service, ²⁾ Int.: Interval service and a scrue of a s

O A	₩)	int. 2)	Insp. 3)	Measure
Electrics				
X Front lights - Check function: Side lights, dipped beam, main beam, fog lights, tu hazard warning lights				 Front lights - Check function: Side lights, dipped beam, main beam, fog lights, turn signals, hazard warning lights
	_		X	$\Rightarrow page 138$
			X	 Rear lights - Check function: brake lights (including 3rd brake light), tail lights, reversing lights, rear fog light, number plate light, turn signals, hazard warning lights
			Х	 Interior, luggage and glove compartment lights, cigarette lighter, sockets, horn and warn- ing lamps: Check function
		X		 Battery: Perform visual check and check magic eye
				⇒ page 84
S V	'ehi	cle	exterio	r j
Nate N			Х	Doors: Grease door arrester
	10,10			<u>⇒ page 145</u>
	X Windscreen wash and wipe system: Check function, spray jet settings ar adjust if necessary		 Windscreen wash and wipe system: Check function, spray jet settings and for damage, adjust if necessary page 134 	
X		Х	 Wiper blades: Check for damage and park position, adjust as necessary 	
				<u>⇒ page 137</u>
	X Paint: Perform visual check for damage and corrosion, interior and exterior v and bonnet/rear lid/flaps are open		 Paint: Perform visual check for damage and corrosion, interior and exterior when doors and bonnet/rear lid/flaps are open 	
				<u>⇒ page 145</u>
		Х		 Bonnet catch: Clean, ensure attachment is secure and lubricate ⇒ page 6
	+	x	X	Windscreen: Perform visual check for damage
T	yre	s		



Oil 1)	Int. 2)	Insp. 3)	Measure		
	Х		 Tread depth, condition, wear pattern, age, inflation pressure (including spare tyre): Check, rectify as necessary 		
			<u>⇒ page 89</u>		
Veh	icle	from b	rom below		
		X	 Engine and components in engine compartment (from below), gearbox, final drive, rear axle and protective bellows: Perform visual check for leaks and damage 		
			 If fluid loss is greater than can be expected through normal use, determine cause and rectify using a special order 		
			⇒ page 126		
		X	 Underbody: Visual check for damage to underbody protection and underbody trim/panels page 146 		
		Х	 Exhaust system: Visual check for leaks, security and damage 		
		X	Check track rod ends:		
		hotbe	♦ play, attachment and damage to boots/bellows		
		le, is	<u>⇒ page 144</u>		
		or in Who	 CV joints, axial bearings, coupling rod bearings and anti-roll bar rubber bushes: Visual check for damage 		
		part	<u>⇒ page 79</u>		
	X	ses, in	 Brake system: Perform visual check for leaks and damage 		
-	Y	urbo	Days 32 Thickness of brake pads and condition of front brake discs and rear drum brake linings:		
		lercial p	check		
Enc		<u> </u>	<u>⇒ page 93</u>		
			Engine oil level: Check, observe oil specification when topping up!		
			⇒ page 122		
		Х	 Engine and components in engine compartment (from above): Perform visual check for leaks and damage 		
×	x		page 120 % Application of the second seco		
			and replenish if necessary		
			Note VW engine oil standards		
			<u>⇒ page 122</u>		
		X	 Brake fluid: Change (after 3 years from initial registration and then every 2 years) 		
			⇒ page 95		
	X		 Brake fluid level (depending on lining wear): Check (observe specification) 		
			<u>⇒ page 100</u>		
		X	 Brake system and shock absorbers: Perform visual check for leaks and damage 		
	×		 page 95 Power assisted steering: Check fluid level 		
	Y		<u>Air filter with saturation indicator in dash panel insert: Check</u>		
			 In countries with high levels of dust, a new dust and pollen filter must be fitted as a sep- arate ich order. 		
			<u>→ paye i i u</u>		

Oil 1)	Int. 2)	Insp. ³⁾	Measure	
		Х	 Cooling system: Check frost protection and coolant level, replenish if necessary 	
			 Specified antifreeze value: "-25 °C" In countries with an arctic climate "-35 °C" 	
			<u>⇒ page 115</u>	
Fina	al ch	ecks		
		Х	 Headlight adjustment: Check, if necessary adjust 	
		Х	 Vehicle system test: Perform 	
Х	X		 Reset service interval display 	
X	X	Х	 "Your next service" sticker: Enter next due date ¹⁾ and attach service sticker to driver side door pillar (B-pillar) 	
		Х	 Breakdown set (if fitted): Check (renew tyre inflation bottle with sealant if use-by date has expired) 	
Х		X	Road test: Perform	

Scopes of service, market specific devi-3.3.3 ations

This chapter only contains market-specific differences. This means that all the service activities or time and distance dependant additional work not listed here are listed in the normal scope Argentinian market from model year 2011 → Page 55
Brazilan market from model year 2011 → Page 55
Brazilan market from model year 2011 → page 56

Additional work		Description of work
Brake fluid: Change (comply with specification)	Every 2 years	<u>⇒ page 95</u>
Check whether brake fluid service is due.	respec	
• Dust and pollen filter (cabin filter): Clean housing and renew filter element	Every 30,000 km	<u>⇒ page 110</u>
♦ ⁵ / ₆ Air filter: Clean housing and renew filter element	Every 30,000 km	<u>⇒ page 118</u>
 Reset programmed values in engine control unit -J623- 	ness	
Spark plugs: Renew	Every 90,000 km or 6 years	<u>⇒ page 149</u>
 Fuel filter: Renew – if vehicle runs on diesel fuel 	every 10,000 km or 6 months	<u>⇒ page 113</u>
Camshaft drive toothed belt: Check	every 10,000 km or 6 months	<u>⇒ page 148</u>
Brazil market from model year 2011	Bully	





A	dditional work	Interval	Description of work
•	Brake fluid: Change (comply with specification)	Every 2 years	<u>⇒ page 95</u>
•	Check whether brake fluid service is due.		
•	Air filter: Clean housing and renew filter element	Every 90,000 km	<u>⇒ page 118</u>
-	Reset programmed values in engine control unit -J623-	or 6 years	
•	Spark plugs: Renew	Every 90,000 km ^{Wagen} A Or _{oes} 6 years ⁷ ot or	<u>⇒ page 149</u>
•	Fuel filter: Renew – if vehicle runs on diesel füß	Every 60,000 km	^{fan} t <mark>⇒ page 113</mark>
•	Camshaft drive toothed belt: Check	every 10,000 km or 6 months	<u>⇒ page 148</u>

China market from model year 2011

Additional work	part on	Interval	Description of work
 Spark plugs: Renew 	ises, in	Every 20,000 km	<u>⇒ page 149</u>
	purpo		

, with respe

Time and distance dependent additional 3.3.4 work

3.3.4 Time and distance dependent ac work	Iditional
 Depending on conditions under which the vehicle is vehicle equipment, extra service work must be perfi- addition to the inspection service or oil change servic service. These additional maintenance measures are separately and are marked as extra work. 	used and ormed in ce/interval e invoiced
Measure:	
Thickness of brake pads and condition of front brake discs and rear drum brake linings: check	Recommendation: 1)
◆ Fuel filter: Renew – if vehicle runs on diesel fuel	Every 10,000 km
• That does not conform with standard "DIN EN 590"	
• and has an elevated sulphur content (>2000 ppm)	
<u>⇒ page 113</u>	
• Fuel filter: Drain water - if vehicle runs on diesel fuel	Every 20,000 km
• That does not conform with standard "DIN EN 590"	
<u>⇒ page 114</u>	
 Camshaft drive toothed belt: Check 	Every 40,000 km
Valid in "dusty" regions, diesel engines	
<u>⇒ page 148</u>	
◆ Fuel filter: Renew – if vehicle runs on diesel fuel	
• That does not conform with standard "DIN EN 590"	
<u>⇒ page 113</u>	

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Measure:	Interval
 Dust and pollen filter (cabin filter): Clean housing and renew filter element 	Every 60,000 km
<u>⇒ page 110</u>	
 Spark plugs: Renew 	uskswagen AG. Volkswagen AG does b
<u>⇒ page 149</u>	by Voli
 Air filter: Clean housing and renew filter element (reset learnt values of engine control unit -J623-) 	"TITEGOT GCCG
♦ Valid in "dusty" regions	Otany.
 In countries with high levels of dust, a new dust and pollen filter must be fitted as a separate job order 	
<u>⇒ page 118</u>	Intre
• Fuel filter: Renew – if vehicle runs on diesel fuel	Every 80,000 km
♦ Conforming to "DIN EN 590"	
◆ ◆	
⇒ page 113	
 Air filter: Clean housing and renew filter element (reset learnt values of engine control unit -J623-) 	Every 120,000 km
<u>⇒ page 118</u>	Pfor
 Camshaft drive toothed belt and toothed belt ten- sioning roller: Renew 	nation in
Valid in "dusty" regions, diesel engines	13 is
<u>⇒ page 148</u>	JIRO
Poly V-belt: Check condition	
<u>⇒ page 111</u>	and a start and a start
Poly V-belt: Renew	Every 180,000 km
Applies for petrol engines	
<u>⇒ page 112</u>	
 Toothed belt for water pump: renew 	
Applies to petrol engines	
⇒ page 148	
Toothed belt for balancer shaft: renew	
Applies to petrol engines	
<u>⇒ page 148</u>	
 Diesel particulate filter (if fitted): Interrogate ash mass (saturation level) 	At 200,000 km then every 40,000 km
<u>⇒ page 80</u>	
 Camshaft drive toothed belt and toothed belt ten- sioning roller: Renew 	Every 210,000 km
Valid for diesel engines	
<u>⇒ page 148</u>	
◆ Timing chain: Renew	Every 300,000 km
Applies for petrol engines	
<u>⇒ page 134</u>	



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Measure):	Interval
♦ Cams	shaft drive toothed belt: Check	Every 2 years
Valid	in "dusty" regions, diesel engines	
<u>⇒ page 1</u>	<u>148</u>	
 Dust and residue 	and pollen filter (cabin filter): Clean housing enew filter element	
<u>⇒ page 1</u>	<u>110</u>	
♦ Air filt (reset)	ter: Clean housing and renew filter element t learnt values of engine control unit -J623-)	Every 3 years
♦ Valid	in "dusty" regions	
In coupoller	untries with high levels of dust, a new dust and n filter must be fitted as a separate job order	
 Emiss many taxis) 	sions test: Perform (every 12 months in Ger- ofor commercial passenger transport, e.g.	3 years after initial registration and then every 2 years
<u>⇒ page 1</u>	152 AG does a	
♦ Fuel f	filter: Renew – if vehicle runs on diesel fuel	Every 4 years
That of the second	does not conform with standard "DIN EN 590"	100 Orac
<u>⇒ page (</u>	<u>ří3</u>	CCROF.
 Spark 	<pre>< plugs: Renew</pre>	
<u>⇒ page 1</u>	<u>149</u>	
الله کې	ter: Clean housing and renew filter element t learnt values of engine control unit -J623-)	Every 6 years
<u>∃⇒ page 1</u>	<u>118</u>	ectto
ੇ ♦ Fuel f	filter: Renew – if vehicle runs on diesel fuel	other
Če Confo	orming to "DIN EN 590"	COTTE
og <mark>⇒ page 1</mark>	<u>113</u>	C the
¹⁾ Check thickness of front and rear brake pads/lining. If the brakes are subjected to regular or severe stress (e.g. vehicle op- erated in mountainous regions, frequent driving with a full load, vehicle used for courier service), we recommend as a precau- tionary measure that the thickness of the brake pads be checked by a qualified workshop 15,000 km after the last service at the latest.		

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4 General

- ♦ Sticker ⇒ page 62
- ◆ Entries in service schedule <u>⇒ page 63</u>
- Severe conditions <u>⇒ page 60</u>
- Vehicle identification number (chassis number) <u>⇒ page 59</u>
- ◆ Vehicle data sticker <u>⇒ page 59</u>
- ◆ Engine code and engine number <u>⇒ page 60</u>
- ◆ Countries with high levels of dust <u>⇒ page 60</u>

4.1 Vehicle identification number (chassis number)

A vehicle identification number is located behind the windscreen on the driver side.

Second vehicle identification number is located on right side of longitudinal member and can be seen in right wheel housing -arrow-.



Significance of vehicle identification/numbervagenAG does

WV1	ZZZYVOING	2H	Z Shot gua	В	D	000 234
Manufacturer code	Filler charac-	Туре	Filler charac- ters	Model year 2011	Production lo- cation	Serial number

4.2 S Vehicle data sticker

The vehicle data sticker -arrow- is attached to the left A-pillar lower trim panel in the footwell.

This vehicle data sticker is also found in the service schedule for the customer.

On the left side of left-hand drives, on the right side of right-hand drives.

Attagh second "vehicle data sticker" in customer service schedule ⇒ page 62 ¹⁰⁰





The sticker shows the following vehicle data.

- 1 Vehicle identification number (chassis number)
- 2 Vehicle type, engine output, gearbox

3 - Engine and gearbox code letters, paint number, interior equipment

4 - Optional equipment, PR numbers



Nolkswagen AG. Volkswagen AG o 4.3 Severe operating conditions

If the vehicle is used under severe operating conditions some jobs will have to be performed before the next service due or at shorter service intervals.

Severe operating conditions

- Regular short trips of stop and go operation in urban traffic
- High percentage of cold starts
- Vehicle is used in areas with extremely low temperatures over a long period
- Frequent long periods with the engine idling (e.g. taxi)
- Vehicle is often driven at full throttle with high payload or whilst towing a trailer
- Using diesel with elevated sulphur content
- Regular operation in areas with high levels of dust ٠

4.4 Engine code and engine number

Engine code and engine number are located:

- On a sticker on toothed belt guard \Rightarrow Rep. gr. 00, ٠
- . DA N905WEMOVYdM0M00, Manuodine On vehicle data sticker on left A-pillar lower trim panel in the footwell \Rightarrow page 59.
- On vehicle data sticker in service schedule for the customer. ٠

4.5 Countries with high levels of dust

The countries with high levels of dust are indicated in this chapter.

Country	Dusty country
Abu Dhabi	X
Afghanistan	X
Egypt	X
Algeria	X
Angola	X
Equatorial Guinea	X
Argentina	X
Armenia	X
Azerbaijan	X
Ethiopia	X
Australia	X
Bangladesh	X

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Country 2 ^{uthorise}		200,-		
		ACC ROL		
Benize	A Y	Prent .		
Denin E	A Y			
Bolinio	×	i V Wit		
Botowana	×	hree		
Brozil	×	spect		
Chie	×	toth		
	* *	ne co		
Guinea-Bissau	A	orrec		
Guyana	X	tnes		
	<u> </u>	Sof		
Verser	X	infor		
Yemen	X	mati		
Jordang	X	Onin		
Cambodia	X	this s		
Cameroon	X	UNOOK		
	X			
		K40.2		
Qatar Ving	A CONTRACTOR OF A CONTRACTOR O			
Kenya	Anagen AG			
Kuwait	<u> </u>			
Laos	<u> </u>			
Lesotho	X			
Lebanon	X			
Liberia	A			
Libya	A			
Madagascar	X			
Malawi	A			
Singerere	A			
Singapore	<u> </u>			
Somalia	<u> </u>			
South Africa, Sudan	X			
Surinam	X			
Swaziland	X			
Tanzania	X			
Thailand	X			
Тодо	Х			
Chad	Х			
Tunisia	Х			
Turkey	Х			
Turkmenistan	Х			
USA-2	X			
Uzbekistan	Х			
Venezuela	Х			
United Arab Emirates	Х			
Vietnam	X			
Belarus	X			



Country	Dusty country	
West Sahara	Х	

4.6 Sticker

- Attaching service sticker "Your next service dates" <u>⇒ page 62</u> .
- Attaching "vehicle data sticker" into customer service schedule ٠ and in vehicle \Rightarrow page 62

Attaching service sticker "Your next 4.6.1 service dates"

Service sticker "Your next service dates"

Enter next service due: Enter a cross according to "service interval display" and enter date and odometer reading.



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Installation position of vehicle data sticker
page 59

- 1 Week of production
- 2 PR number



- ٠
- ٠
- <text><text><text><text><text><text><text><text>



4.7



5 Descriptions of work

- Swivel joints: Visual check \Rightarrow page 79 ٠
- Four-wheel drive: Insert fuse \Rightarrow page 107 ٠
- Lifting the vehicle \Rightarrow page 65 ٠
- Reading ash mass (saturation level) of diesel particulate filter <u>⇒ page 80</u>

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Address of information in respect to the correctness of information in the correctness of in the correctness

- Battery: Check battery terminal clamps for secure seating <u>⇒ page 81</u>.
- Battery: Check magic eye ⇒ page 84
- Battery: Perform visual check ⇒ page 84 ٠
- Removing relay for battery disconnection (if fitted) ⇒ page 84
- Front passenger front airbag: Check key switch and "On/Off function" \Rightarrow page 88.
- Checking tyres: Condition, wear pattern, tyre pressure, tread depth <u>⇒ page 89</u>
- Brake system: Perform visual check for leaks and damage ٠ Protected by copy \Rightarrow page 92
- Brake fluid level: Check \Rightarrow page 100
- Brake fluid: Change <u>⇒ page 95</u> ٠
- Climatronic: Set temperature to 22 °C \Rightarrow page 101 ٠
- Thickness of brake pads and condition of front brake discs and rear drum brake linings: check \Rightarrow page 93
- Window regulators: Check positioning (open and close functions) <u>⇒ page 102</u>
- Performing vehicle system test ⇒ page 104
- Connecting vehicle diagnosis tester <u>⇒ page 102</u> ٠
- Bonnet catch: Clean, ensure attachment is secure and lubricate \Rightarrow page 127
- Protective bellows: Visual check \Rightarrow page 110
- Poly V-belt: Check condition <u>⇒ page 111</u>
- Fuel system: Bleed (diesel engine) ⇒ page 114
- Fuel filter: Drain water (diesel engine) <u>⇒ page 114</u> ٠
- Fuel filter: Renew (diesel engine) ⇒ page 113
- Cooling system: Check frost protection and coolant level ⇒ page 115
- Paint: Perform visual check for damage and corrosion, interior and exterior when doors and bonnet/rear lid/flaps are open ⇒ page 145
- Steering: Check bellows/boots for leaks and damage ⇒ page 151
- Air filter: Clean housing and renew filter element ⇒ page 118
- Air filter with saturation indicator: Check saturation indicator \Rightarrow page 121

- <u>source</u> Engine and components in engine compartment (from above and below): Perform visual check for leaks and damage <u>⇒ page 126</u>
- Engine oil: Drain or extract; renew oil filter and replenish engine oil <u>⇒ page 122</u>
- ♦ Oil level: Check <u>⇒ page 122</u>
- Check breakdown set ⇒ page 128.
- ♦ Performing road test <u>⇒ page 129</u>
- Wheel securing bolts: Tighten to specified torque ⇒ page 130
- Reading radio code (only valid for vehicles without sticker with serial number and radio code on vehicle data sticker) ⇒ page 131
- Radio / radio navigation system: Enter anti-theft coding PIN ⇒ page 133 .
- Radio navigation system: Insert navigation CD/DVD and perform update <u>⇒ page 134</u>
- Windscreen wash/wipe system and headlight washer system: Check function and settings ⇒page 134
- Headlight adjustment: Check, if necessary adjust ٠ \Rightarrow page 138
- Service interval display: Reset <u>apage 141</u>
- Service interval display: Adapt (export) \Rightarrow page 143
- Power assisted steering: Check fluid level = page 144
- Track rod ends: Check clearance, security and boots <u>⇒ page 144</u>
- Dust and pollen filter: Clean housing and renew filter element Protected by copyright ⇒ page 110
- Clock: Set to correct time \Rightarrow page 146
- Underbody protection: Perform visual check for damage ⇒ page 146
- ♦ Removing and installing skid plate ⇒ page 150
- ♦ Camshaft drive toothed belt: Check condition ⇒ page 148
- Camshaft drive toothed belt: Renew ⇒ page 148
- ♦ Spark plugs: Renew ⇒ page 149

5.1 Lifting the vehicle

- Safety notes ⇒ page 66
- Lifting the vehicle ⇒ page 66
- Alternative ways of lifting the vehicle
 <u>page 73</u>
- ♦ Additional support of vehicle ⇒ page 77



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5.1.1 Safety notes

WARNING

- Before driving onto a lifting platform, ensure that there is sufficient clearance between low-lying vehicle components and lifting platform.
- Before driving a vehicle onto a lifting platform it must be ensured that the vehicle weight does not exceed the permissible lifting capacity of the platform.
- Vehicle may be lifted only at points indicated in figure to avoid damaging vehicle underbody or tipping vehicle.
- Never start engine when vehicle is raised and do not engage a gear in gearbox even if only one driven wheel is touching floor. Disregarding these warnings risks the danger of an accident!
- Depending on the vehicle load, the mechanic must always decide whether to strap the vehicle down on the lifting platform or not.
- If the vehicle is not strapped down, there is a great danger that the vehicle will slip off the lifting platform.
- Laden vehicles are only allowed to be raised using wheel lifts as main support. If wheels need to be removed, it is also permissible to lift laden vehicles by means of prismatic supports under the rear axle tube. If this is not possible because work is to be performed on rear axle, the load must be removed from the vehicle.
- If vehicle is jacked up with a workshop jack in order to work underneath it, it must be securely supported using suitable stands.

5.1.2 Lifting the vehicle

This chapter indicates different ways of lifting the vehicle. Please comply with the safety notes in chapter \Rightarrow page 66 and the instructions for lifting the vehicle.



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- Inclusion of the stability should mainly be done for all such as the where the second seco

Raising vehicle with wheel lifts as main method of support

Perform the following jobs:





68 5. Descriptions of work




Position rear support arms of lifting platform with prismatic supports -1- as shown in illustration, exactly under rear axle tube.

۲

another.

Position front support arms of lifting platform with rubber plate _ supports under front frame screw connection -2- and -3-.



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If necessary, secure vehicle additionally with tensioning straps -T10038- -4- directly on frame of front and rear support arms of lifting platform.



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Raising vehicle before rear axle tube

- Front support arms of lifting platform with rubber plate supports are positioned in area of front bolted gearbox cross _ member.
- Rear support arms of lifting platform with rubber plate supports -1- are positioned in front of front leaf spring supports -2- under vehicle frame.
- If necessary, vehicle can be additionally secured with tension-ing straps -T10038- -4- directly on frame of front and rear support arms of lifting platform. _





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5.1.3 Alternative ways of lifting the vehicle

This chapter indicates different ways of lifting the vehicle. Please comply with the safety notes in chapter \Rightarrow page 66 and the instructions for alternative ways of lifting the vehicle.

Note

- If work is to be done on the running gear, e.g. removal of front axle and rear axle, another way of raising the vehicle is to use jacks in front of the rear axle tube.
- The vehicle may only be lifted at points indicated in order to avoid damaging vehicle and to prevent vehicle from tipping.
- Laden vehicles must be unloaded before being raised.
- Vehicle must under no circumstances be raised on sills or front leaf spring supports, otherwise it will slip off and its body could be seriously damaged.
- To avoid damage, make sure that no electrical cables, brake lines or fuel lines become trapped.



Alternative lift for front of vehicle

- Front support arms -1- of lifting platform with rubber plate supports are positioned in area of front bolted gearbox cross member.
- If necessary, vehicle can be additionally secured with tension-ing straps -T10038- -2- directly on frame of front and rear support arms of lifting platform. _



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Alternative lift for rear of vehicle

- Front support arms of lifting platform with rubber plate sup-_ ports are positioned in area of front bolted gearbox cross member.
- The rear support arms of the lifting platform with anti-slip discs -V.A.G 1994- -1- are positioned in front of the front leaf spring support -2- under the vehicle frame.
- If necessary, vehicle can be additionally secured with tension-ing straps -T10038- -3- directly on frame of front and rear support arms of lifting platform.











- Depending on assembly condition of vehicle, it can be secured using height-adjustable stands -2- in addition to lashing it to support arms of lifting platform with tensioning straps -ΤΊΌ038-.
- To avoid damage, make sure that no electrical cables, brake ٠ Protect lines or fuel lines become trapped.

Perform the following jobs:

5.1.4

i

Note

Place height-adjustable stands -1- for supporting vehicle under rear longitudinal member -arrows-.



 Alternatively, height-adjustable stands -2- can be positioned under rear leaf spring bracket -1- on rear axle tube.







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Check boots -arrow- of lower swivel joints for leaks and damage.



- Check boots -arrow- of upper swivel joints for leaks and damage.



5.3 Reading ash mass (saturation level) of diesel particulate filter

i Note

- The ash mass test provides information on the saturation level of the particulate filter volume.
- After a certain running time diesel particulate filters must be exchanged, because of ash deposits.

- Pull on handbrake.
- Manual gearbox: Gear lever in neutral
- Connecting vehicle diagnosis tester ⇒ page 102
- Switch on ignition.
- Select the »Guided functions« field on the screen.
- Select "Engine" as the vehicle system and -J623- as the engine control unit; press Read.
- Read measured value block -J623-.
- Select measured value block 68, second measured value »Ash mass« and confirm with the <u>Done</u> button.
- Follow instructions on display.
- End the test.
- Switch off ignition and detach vehicle diagnosis tester from the vehicle.

Axle mass DPF

Please observe the limits for maximum carbon black loading (values are indicated in the following table):

Engine	Emis- sions stand- ard	Limit for changing DPF (ash volume in ml or ash mass in g)	First test for DPF exchange (km or mi)
2.0I, 4-cylinder TDI Common Rail	EU5	175ml	200,000 km

5.4 Battery: Check battery terminal clamps for secure seating

- ◆ Specified torques: Battery <u>⇒ page 83</u>
- ♦ Battery: Check battery terminal clamps for secure seating ⇒ page 81
 .
- Battery terminal connections <u>> page 83</u>

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Note

- The battery terminal clamps must only be connected by hand without using force, to ensure the battery housing is not damaged.
- Battery terminals must not be greased.
- Always adhere to the sequence of work steps.
- Disconnecting the battery earth cable ensures safe working on the electrical system.

Special tools and workshop equipment required

Torque wrench -V.A.G 1331/- (5-50 Nm)



5.4.1 Battery: Check battery terminal clamps for secure seating

i Note

- In all vehicles a battery with "magic eye" and covered-over cell sealing plugs or without cell sealing plugs is installed.
- A securely seated battery clamp ensures trouble free function and long service life of the battery.
- The battery is located in engine compartment.



Battery installation position ⇒ Electrical system; Rep. gr. 27

Perform the following jobs:

Switch off ignition, all electrical consumers and withdraw ignition key.

Note

It can be necessary to remove battery positive terminal cover, depending on equipment variant.

Check whether battery clamps are secure on battery terminals by moving battery negative cable -1- and battery positive cable -2- back and forth.



WARNING

If the battery terminal clamp is not seated securely on the positive terminal, first disconnect battery terminal clamp from battery negative terminal.

If the battery terminal clamp is not seated securely on positive terminal:

Perform the following jobs:

- Disconnect battery terminal clamp -1- from battery negative terminal first.
- Open battery positive terminal cover.
- Tighten battery terminal clamp -2- on battery positive terminal to specified torque <u>⇒ page 83</u>
- Close battery positive terminal cover.
- Reconnect battery terminal clamp -1- on battery negative terminal and tighten to specified torque \Rightarrow page 83.

If the battery terminal clamp on negative terminal is not seated securely:

Perform the following jobs:

oteniid 104 GUISC Tighten battery terminal clamp -1- on battery positive terminal. to specified torque \Rightarrow page 83.



If the battery has been reconnected, observe procedures described in ⇒ Electrical system; Rep. gr. 27.









9,01 5.4.2 Battery terminal connections



To prevent damage to the battery terminal clamps and the battery terminals, observe the following:

- The battery terminal clamps must only be connected by hand (without using force).
- Battery terminals must not be greased.
- Fit battery terminal clamps in such a way that the battery terminal is flush with the clamp or protrudes from it.
- When connecting the battery, always follow the procedure • described in workshop manual ⇒ Rep. gr. 27
- After tightening the battery terminal clamps to the prescribed torque, they must not be retightened!

For specified torques of battery terminal clamps -1- and additional clamps -2-, refer to table "Specified torques: Battery" Profected by copyright, Copyright, <u>⇒ page 83</u>



5.4.3 **Specified torques: Battery**



Caution

After tightening the battery terminal clamps to the prescri-۵ bed torque, they must not be retightened.

Follow notes regarding battery terminal connections \Rightarrow page 83.

Threaded connections	Specified torques		
Battery -A-: Battery terminal clamps on battery terminals	M6	6 Nm	
Battery -A-: Securing bolt for battery carrier	M8x35	23 Nm	



5.5 Battery: Perform visual check and check magic eye

Perform the following jobs:

- Visual inspection of battery as well as a battery check using "magic eye"
- Battery: Perform visual check \Rightarrow Electrical system; Rep. gr. ٠ 27
- Battery: Check magic eye \Rightarrow Electrical system; Rep. gr. 27
- Battery with black electrolyte level sticker on the battery <u>⇒ page 84</u>

5.5.1 Battery with black electrolyte level sticker on the battery



WARNING

Risk of injury! Take note of the warnings and comply with the The magic eye provides information, concerning the electrolytes not guarantee or accepted of battery.



Note Ritedunes		C C BDT BILLIE
The air bubbles in the battery ris level indicated by the magic eye 2 different display colours are po	ee. In this way, falsification of the is avoided. ossible:	clitty with respect
	vel indication	to the
Electrolyte evel indication:	Electrolyte level in batter ok	correct
Electrolyte level indication: col- ourless or light yellow	Electrolyte level too low The battery must be replaced	ness of
WARNING It is not permissible to test or eye is colourless or light yellow ble either! If the battery is tested or charg out, there is a danger of explose These batteries must be replace	charge batteries whose magic y. Jump starting is not permissi- red or if jump starting is carried sion.	Ion Aqualindos Transo
5.6 Removing relay tion (if fitted)	y for battery disconnec-	



WARNING

5.6 Removing relay for battery disconnection (if fitted)

On vehicles with transport equipment, a battery cut-off relay is fitted on the battery positive terminal in left engine compartment.



On RHD vehicles an additional adapter cable is installed to extend the electrical wiring harness of the battery cut-off relay to connect the brake fluid reservoir in right engine compartment.

The battery cut-off relay protects the battery from discharging by electrical consumers not required during transportation from manufacturer to dealer.

The battery cut-off relay and the adapter cable for RHD vehicles must be removed for delivery inspection, if still fitted.

Notes on invoicing

For removing the battery cut-off relay and/or the RHD adapter cable 20 time units are credited.



- The battery terminal clamps must only be connected by hand without using force, to ensure the battery housing is not damaged.
- Battery terminals must not be greased.
- Disconnecting the battery earth cable ensures safe working on the electrical system.

Special tools and workshop equipment required

Torque wrench -V.A.G 1331- (5-50 Nm)



Procedure for all vehicles

- Switch off ignition and all electrical consumers.
- Disconnect battery terminal clamp -1- on battery negative terminal first.
- Separate connector -1- between vehicle side cable and electrical wiring harness to battery cut-off relay.





Amarok 2011 Maintenance - Edition 10.2012 - Remove cable tie by unscrewing it from stud. Procedure for all vehicles Perform the following jobs: Remove battery cut-off relay with electrical wiring harness and, if necessary, adapter cable for RHD. uthorised by Volkswagen A AG does not guarante G. Volkswag acced Unscrew jump start point (17 mm) -1- from battery positive terminal and remove. Route cable to main fuse box -2- to battery positive terminal. Place the cable in the envisaged position -arrow- in the terminal protector on the battery positive terminal. respect to the correctness of informat SX, Musical processing of the Now secure cable to main fuse box 2- with jump start point -1- to battery positive terminal. Specified torque: 8 ± 1 Nm and a start Copyric Angewexiovyath Remove red terminal cap -1- from ashtray and insert it into thread of jump start point -2-. Reconnect battery terminal clamp to battery negative terminal. Tighten securing bolt of terminal clamp to specified torque \Rightarrow page 83. Install battery cover. Note

If the battery has been reconnected, observe procedures described in \Rightarrow Electrical system; Rep. gr. 27.



5.7 Front passenger front airbag: Check key switch and "On/Off function"

Note

If the airbag is deactivated, the front airbag, side airbag and curtain airbag are deactivated on the front passenger side. All other airbags in the vehicle remain functional.

It is only permissible to deactivate the front passenger airbags if, in exceptional cases, a child's seat has to be used on the front passenger seat

with the child sitting facing backwards.

WARNING



The "PASSENGER AIRBAG ON/OFF" switch is located on the right end of dash panel.

Perform the following jobs:

Check "ON/OFF function" of key switch as follows: _

Deactivating front passenger airbags (deactivated)

- Switch off ignition.
- Using the ignition key, turn key switch to position and "PAS-SENGER AIRBAG OFF", Not State of the second s does not guarantes

The key slot must point in the direction of travel (forwards).

In part or in whole, is not been If ignition is switched on, warning lamp in dash panel "PASSEN-GER AIRBAG OFF" -arrow- must light up continuously.

. ЭА пэремежо/устринос

Switch off ignition.







Note

The DOT number -arrow- is a number sequence stamped on at least one side of the tyre wall on motor vehicles which indicates the production date of the tyre.

The first two digits are for the calendar week (KW); shown as "02" in this example.

The last two digits indicate the year of manufacture; shown as "04" in this example.

In this case, therefore, "0204" means that the tyre was produced in the second week of 2004.



5.8.2 Checking condition of tyre

Tests at delivery inspection

- Check following areas of tyre for damage:
- »Tyre treads«
- »Tyre side walls«



<complex-block><text>

toe and camber settings should be checked:

- Feathering on tread indicates incorrect toe setting.
- One-sided tread wear is mainly attributed to incorrect toe and camber.

If wear of this nature is detected, determine cause by checking alignment (repair measure).

5.8.4 Tyre tread depth (including spare wheel): Check and enter

Perform the following jobs:

Check tyre tread depth.

Minimum tread depth: 1.6 mm

WARNING

The minimum tread depth may vary according to legislation in individual countries.



Note

- The minimum tread depth is reached when the tyres have worn down level with the 1.6 mm high tread wear indicators -arrows- positioned at intervals around the tyre.
- If the tread depth is approaching the minimum allowed depth, inform the customer.



5.8.5 Tyre pressure (including spare wheel): Check using tyre inflator -VAS 5216-, correct tyre pressure if necessary

Special tools and workshop equipment required

Tyre inflator -VAS 5216-



Note

- "Checking tyre inflation pressure" also applies to the spare wheel, if a spare wheel with standard tyres is fitted.
- The pressures in the table apply to cold tyres. Do not reduce increased pressures of warm tyres.
- Winter tyres and summer tyres may be used with the same tyre sizes - check suitability for use with chains.
- Tyre pressures for the relevant model can also be found on a sticker attached to the inside of fuel tank flap.
- Values for pressure are indicated in "bar".
- Adjust the tyre pressure to suit the vehicle load.
- Tyre pressures apply for all tyre sizes fitted in the factory.
- The tyre pressures indicated are valid when towing a trailer up to a speed of 130 km/h (if permitted).

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Explanation for speed indexes used in the table:

- Q: up to 160 km/h
- R: up to 170 km/h
- S: up to 180 km/h
- T: up to 190 km/h
- H: up to 210 km/h



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V: up to 240 km/h

Tyre pressure table:

Applies to all factory-fitted tyre sizes.

Permitted axle load Full load: FA / RA (kg)	Type of tyre	Half payload		Full payload	
		front	rear	front	rear
1370 / 1860	◆ 205 R16 C 110/108 T	2.5	2.5	2.8	4.5
	◆ 245/70 R16 111 T	2.0	2.0	2.0	3.0
	◆ 245/65 R17 111 H	2.0	2.0	2.0	3.0
	◆ 255/60 R18 112 H	2.0	2.0	2.0	3.0
	◆ 255/55 R19 111 H	2.0	2.0	2.0	3.0
1420 / 1860	◆ 205 R16 C 110/108 T	2.7	2.7	3.0	4.5
eduness autrorised by Volkswagen	◆ 245/70 R16 111 T	2.0	2.0	2.0	3.0
	♦ 245/65 R17 414 19 90 30	2.0	2.0	2.0	3.0
	◆ 255/60 R18 112 H	2.0	2.0	2.0	3.0
	◆ 255/55 R19 111 H	2.0	2.0	2.0	3.0

hability with respect to the correctness of information in this occur

Spare wheel with standard tyres

The spare wheel should have the highest tyre pressure determined for the vehicle.

5.9 Brake system: Perform visual check for leaks and damage

- Check following components for leaks and damage:
- Brake servo,
- for anti-lock brake system: hydraulic unit,
- Brake calipers,
- Brake master cylinder.

- Make sure that brake hoses are not twisted ⇒ Brake hydraulic system, regulator, booster; Rep. gr. 47.
- In addition, make sure that brake hoses do not contact other components across entire steering range.
- Check brake hoses for porosity or brittleness.
- Check brake hoses and lines for chafing.
- Check brake connections and fastenings for correct seating, leaks and corrosion.



WARNING

Faults found must always be rectified (repair measure).

5.10 Thickness of brake pads and condition of front brake discs and rear drum brake linings: check

Front disc brake pads: Check thickness > page 93 Rear drum brake pads: Check thickness ⇒ page 94 Condition of brake discs: Check \Rightarrow page 94 Special tools and workshop equipment required ♦ Torque wrench -V.A.G 1332-



- Electric hand torch and mirror ٠
- Fluorescent lamp, 13 watts -VAS 6485+

,00° The adapter for loosening and tightening anti-theft wheel bolts is . ĐA ngeweniov in the vehicle tool kit page 130 Proteci

Note

5 in part

are or commercial purposes, in

A suitable adapter for loosening and tightening anti-theft wheel bolts is provided in the vehicle tool kit.

5.10.1 Front brake pads

- Measure outer and inner brake pad thickness by visually checking through the holes of wheel rim (depending on type).
- If necessary, remove the wheel on the driver's side to make it easier to assess or measure the remaining thickness of the pads.
- Mark position of wheel in relation to brake disc, in order to avoid imbalances on vehicle wheel.
- Unscrew wheel securing bolts and remove wheel.



- Assess or measure inner and outer pad thickness.
- a Pad thickness "without" backplate

Wear limit: 2 mm

WARNING

The brake pads have reached their wear limit at a brake pad thickness of 2 mm (without backplate) and must be renewed (repair measure). Inform customer!



Note

- <text><text><text> When replacing disc brake pads, always check brake discs for wear! Checking and if necessary replacing the brake discs is a repair measure.
- In the case of defective links, please select the described working procedure manually in the relevant information material.

Check brake disc for wear.

Working procedure; Running gear \blacktriangleright Brake system $\blacktriangleright \Rightarrow$ Rep. gr. 46 Brake mechanism ► Repairing front wheel brake.

- If necessary, secure wheel in marked position.
- Tighten wheel securing bolts in criss-cross fashion to following specified torque: specified torque 180 Nm
- Push on wheel trims if necessary.

5.10.2

Check all brake discs for the following damage pattern:

- Cracks
- Scoring
- Rust (no surface rust)
- Degree of wear at the ridge along the circumference



Inform customer if brake disc damage is similar to these damage patterns. Renewing the brake discs is a repair measure.

5.10.3

Perform the following procedure:

- Remove inspection hole cover.
- Check brake lining thickness through inspection holes -arrow- in brake backplates.



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Wear limit: 1.5 mm (lining thickness only).

WARNING

The brake pads have reached their wear limit at a brake pad thickness of 2 mm (without backplate) and must be renewed (repair measure). Inform customer!

Note

- Check linings for brake fluid or grease contamination.
- When replacing drum brake linings, always check brake discs for wear! Checking and if necessary replacing the brake discs is a repair measure.
- In the case of defective links, please select the described working procedure manually in the relevant information material.

Check brake disc for wear.

HIR OD Working procedure; Running gear ► Brake system ► ⇒ Rep, gr. Protectedby 46 Brake mechanism ► Repairing rear wheel brake.

5.11 Brake system and shock absorbers: Perform visual check for leaks and damage

Check following components for leaks and damage:

- Brake master cylinder
- Hydraulic unit
- Brake calipers
- Shock absorber
- Presence of dust caps on brake fluid bleeder valves
- Ensure that brake hoses are not twisted.
- Additionally ensure that brake hoses do not touch any vehicle components when steering is at full lock.
- Check brake hoses for porosity or brittleness.
- Check brake hoses and lines for chafing.
- Also check brake connections and fastenings for correct seating, leaks and corrosion.

WARNING

1

Faults found must always be rectified (repair measure).

5.12 Brake fluid: Change

Observe brake fluid specification \Rightarrow page 99





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- Brake fluid must under no circumstances come into contact with fluids containing mineral oils (oil, petrol, cleaning solutions). Mineral oils will damage seals and sleeves of brake system.
- Brake fluid is poisonous. In addition, due to its corrosive nature, it must not come into contact with paint.
- Brake fluid is hygroscopic, i.e. it attracts moisture from the surrounding air and therefore must always be stored in airtight containers.
- Wash away spilt brake fluid using plenty of water.
- Do not reuse extracted (used) brake fluid!
- Observe disposal regulations!

Special tools and workshop equipment required

Brake filling and bleeding equipment -VAS 5234-Representation of the second secon



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VAS 5234

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Brake pedal actuator -V.A.G 1869/2-

• Upgrade kit and extraction unit -V.A.G 1869/4-



Perform the following procedure:

WARNING

- Unscrew sealing cover -1- from brake fluid reservoir -2-.

The strainer in brake fluid reservoir must not be removed.



Extract as much brake fluid as possible using suction hose 00.51 from brake filling and bleeding equipment -VAS 5234- . Do not reuse extracted (used) brake fluid! MAX MIN

Screw adapter -1- onto brake fluid reservoir -2-.

al purposes, in part or in whole

- Fit brake pedal actuator -V.A.G 1869/2- between driver seat and brake pedal and pretension.
- Connect filler hole from brake filling and bleeding equipment -VAS 5234- to adapter.



נובת הא כסהאנופוני בסהאי הר Observe ⇒ operating instructions for brake filling and bleeding equipment -VAS 5234- !



WARNING

Use an appropriate bleeder hose. It must seat tightly on bleeder valve so that no air can enter the brake system.

Change brake fluid in clutch slave cylinder.

Bleeder valve for clutch slave cylinder is located on left side of gearbox.







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- Pull cover cap off bleeder valve of clutch slave cylinder -arrow-.
- Push collector bottle bleeder hose onto bleeder valve of clutch slave cylinder.
- Open bleeder valve and allow approx. 0.1 litre or 100 cm³ to flow out.
- Close bleeder valve and quickly operate foot pedal 10 to 15 times from stop to stop.
- Open bleeder valve and allow another 0.05 litre or 50 cm³ of brake fluid to flow out.
- Close bleeder valve and push on cover cap.
- Press clutch pedal rapidly several times.
- Remove caps from bleed valves of brake calipers.

Changing brake fluid at rear.

- Push collector bottle bleed hose 🔄 onto rear right bleed valve.
- Open bleeder valve and let appropriate quantity of brake fluid run out (see table).
 Open bleeder valve and let appropriate quantity of brake fluid run out (see table).



BALLER ADDRESS

- Close bleeder valve again.

Repeat procedure on rear left of vehicle.

Change brake fluid at front.

 Push collector bottle bleeder hose -1- onto front right-hand bleeder valve, open bleeder valve and allow appropriate amount of brake fluid to flow out out (see table).





Repeat procedure on front left of vehicle.



Sequence	Recommended quantity of brake fluid to be changed
On clutch slave cylinder ¹⁾	approx. 0.15 litre
Rear right	approx. 0.25 litre
Rear left	approx. 0.25 litre
Front right	approx. 0.25 litre
Front left	approx. 0.25 litre
¹⁾ Only vehicles with manual gearbox	SC OF RCCBOF RD
 Brake fluid quantity to be changed: a (depending on vehicle equipment) 	approx. 1.0 to 1.15 litre
Final checks	ihree
$-\overset{\circ}{\leq}$ Fit cover caps on bleeder values of I	brake calipers.
Set fill lever of brake filling and bleed VAS 5234- to position "B" (see \Rightarrow or	ding equipment - perating instructions).
Remove filler hose from adapter.	
Unscrew adapter from brake fluid re	servoir.
Check brake fluid level and correct i	t if necessary.
¹⁰ Sarow on appling power 1 of brake	fluid reconvoir 2

- ¹⁾ Only vehicles with manual gearbox
- Brake fluid quantity to be changed: approx. 1.0 to 1.15 litre (depending on vehicle equipment)

Final checks

- -§ Fit cover caps on bleeder valves of brake calipers.
- ÷
 - Set fill lever of brake filling and bleeding equipment VAS 5234- to position "B" (see \Rightarrow operating instructions).
 - Remove filler hose from adapter.
- bses, in part Unscrew adapter from brake fluid reservoir.
- ē Check brake fluid level and correct it if necessary.
- Screw on sealing cover -1- of brake fluid reservoir -2-.
- Remove brake pedal actuator.
- Check pressure and free travel of brake pedal.

Free play; max. 1/3 of pedal travel.



5.12.1 Brake fluid specification

The brake fluids are available as replacement part. The part number can be found in \Rightarrow Electronic parts catalogue "ETKA".

Permissible brake fluid specifications

- Volkswagen recommends using new brake fluid acc. to VW Standard 501 14 for optimum function of brake system.
- Alternatively, a brake fluid acc. to requirements of US standard FMVSS 116 DOT4 or DIN ISO 4925 Class 4 can be used.





Specification is stated on brake fluid packaging.

5.13 Brake fluid level: Check

- Checking brake fluid level at delivery inspection <u>⇒ page 100</u>
- Checking brake fluid level at interval service and inspection service \blacktriangleright 2010 \Rightarrow page 100
- Observe brake fluid specification \Rightarrow page 99

WARNING

- Brake fluid must under no circumstances come into contact with fluids containing mineral oils (oil, petrol, cleaning solutions). Mineral oils will damage seals and sleeves of brake sýstem.
- Brake fluid is poisonous. In addition, due to its corrosive nature, it must not come into contact with paint.
- Brake fluid is hygroscopic, i.e. it attracts moisture from the surrounding air and therefore must always be stored in airtight containers.
- Wash away spilt brake fluid using plenty of water.
- Observe disposal regulations!

5.13.1 Checking brake fluid level at delivery inspection

At delivery inspection the fluid level must be at MAX. marking -1-.

Note

In order that brake fluid does not overflow the reservoir, MAX marking -1- must not be exceeded.

5.13.2 Checking brake fluid level at interval service and inspection service

Note

- The fluid level must always be judged in conjunction with lining/pad wear.
- When vehicle is in use, fluid level tends to drop slightly due to lining/pad wear and automatic adjustment.



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2



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Recommended brake fluid level "BEFORE" brake pads are at wear limit:

"At MIN marking or just above", -2-

Then "REPLENISHING IS NOT REQUIRED!"

Recommended brake fluid level, brake pads new or well within wear limit:

"Between MIN. and MAX. marking"

WARNING

If fluid level is below MIN marking -2-, the brake system must be checked before fluid is topped up, "Repair measure"!

5.14 Climatronic: Set temperature to 22 °C



The automatic air conditioning system "Climatronic" only functions when engine is running and the blower is switched on. ,sed by Volkswagen

Perform the following jobs:

- Switch on ignition.
- Check the temperature controllers -2- and -3- to see whether the temperature has been set to 22 °C.

If temperature is not set to 22 °C, then correct it.

- Press Auto The "AUTO High" function (high blower output) has been activated. The right-hand warning lamp in the button lights up.
- Press Autro -1- again. The "AUTO Low " function (low blower output) has been activated. The left-hand warning lamp in the button lights up.
- Turn the temperature controllers -2- and -3- to set the desired temperature for the left-hand and right-hand sides of the interior.
- 22 °C is recommended.



In the automatic mode the air temperature, air quantity and air distribution are regulated automatically so that a specified temperature level is attained as quickly as possible and is maintained Protected by copyright, Co constantly.





5.15 Window regulators: Check positioning (open and close functions)



WARNING

den AG. After batteries have been disconnected and reconnected the roll-back function of the window regulators is disabled. Severe pinching injuries could result!

Note

- The automatic opening and closing functions of the electric windows do not work after the batteries have been disconnected and reconnected.
- Therefore, with immediate effect, before a new vehicle is delivered, the window regulators must be reactivated.
- olkswagen AG does not guarantee or accourant the performence of the performance of the pe Once the windows have been repositioned, the batteries must not be disconnected again.

Perform the following jobs:

- Close all doors and windows completely.
- Insert key in driver's door lock and lock vehicle from outside.
- Unlock vehicle again.
- Lock vehicle again from outside and hold key in lock position for at least 1 second.

The one-touch opening and closing function is now ready for use.

Vehicle diagnosis tester 5.16

- Connect vehicle diagnostic, testing and information system -VAS 5051B- or vehicle diagnostic and service information system -VAS 5052 A- and select functions ⇒ page 102
- 5.16.1 Connect vehicle diagnostic, testing and information system -VAS 5051B- or vehicle diagnostic and service information system -VAS 5052 A- and select functions

Special tools and workshop equipment required

Vehicle diagnostic, testing and information system -VAS 5051B- or subsequent units



Diagnosis cable 5m -VAS 5051B/1-

A UBBEMSHON MANUAL

VAS 5052



W00-1206

Or

Diagnosis cable -VAS 5051/5A-

Or

- Vehicle diagnostic and service information system -VAS 5052 A-
- Diagnosis cable, 2 m -VAS 5052/3 A-٠

Or

28uthorised by Volkswagen AG. Volkswage Diagnosis cable, 5 m -VAS 5052/3 A-1-

Note

- Observe current operating instructions for vehicle diagnostic, testing and information system -VAS 5051B- or vehicle diag-nostic and service information system -VAS 5052 <u>A- , which</u> are shown on display after selecting the functions Administration and Operating manual.
- For diagnosis only use the diagnosis cable indicated above, because this is fitted with CAN bus cables and allows a CAN diagnosis or CAN communication.
- For a road test use diagnostic cable -VAS 5051/5A-, to guarantee the voltage supply of the vehicle diagnostic, testing and information system -VAS 5051B- .



- If the vehicle diagnosis tester is placed within the range of action of an airbag during a test or measuring run,
- there is a risk of severe or fatal injury should an airbag be triggered!
- During the road test, take another person with you who can operate the vehicle diagnosis tester from the rear seat.
- Always secure testing and measuring equipment on the rear seat during a road test.



- Connect diagnosis cable connector to diagnosis connection with ignition switched off.
- Switch on tester.
- Switch on ignition.
- Touch the field on the screen for Guided fault finding or does not guara Select one after anothersed by Volkswag
- Brand
- Туре
- Model year
- Version
- Engine code
- Confirm entered data.



Wait until tester has read all control units in vehicle.

Press Goto button and select Function/component selection function.

Now follow screen display to start desired functions.

5.17 Performing vehicle system test

Connect vehicle diagnostic, testing and information system -VAS 5051B- or vehicle diagnostic and service information system -VAS 5052 A- ⇒ page 102 Protected by copy



Note

Observe current operating instructions for vehicle diagnostic, testing and information system -VAS 5051B- or vehicle diagnostic and service information system -VAS 5052 A-, which are shown on display after selecting the functions Administration and Operating manual



WARNING

- If the vehicle diagnostic, testing and information system -VAS 5051B- or the vehicle diagnostic and service information system -VAS 5052 A- is placed in the range of action of an airbag during a test or measuring run,
- there is a risk of severe or fatal injury should an airbag be triggered!
- During the road test take another person with you who can operate the vehicle diagnostic, testing and information system -VAS 5051B- or vehicle diagnostic and service information system -VAS 5052 A- from the rear seat.
- Always secure testing and measuring equipment on the rear seat during a road test.


Image: State of the separative event memory must not be separate at event mem

- of vehicle diagnostic, testing and information system -VAS 5051B- or vehicle diagnostic and service information system -VAS 5052 A- .

Indicated on display:

- Then perform vehicle identification on vehicle diagnostic, testing and information system -VAS 5051B- or vehicle diagnostic Protected by cor and service information system -VAS 5052 A- .
- Select one after another:
- Brand
- Type
- Model year
- Version
- Engine code
- Confirm vehicle identification
- If the vehicle identification has been performed correctly, confirm with ≥ button.

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Million de Million al Vera				Warkiev.



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Indicated on display:

- dicated on display: Select <u>Vehicle system test</u> function darrow- on display of vehicle diagnostic, testing and information system -VAS 5051B- or vehicle diagnostic and service information system -VAS 5052 A- .
- Start system test by selecting function Start system test on display of vehicle diagnosis, testing and information system -VAS 5051B- or vehicle diagnosis and service information system -VAS 5052 A- ...

Now the event memories of all control units for this type of vehicle are automatically read and any faults stored will be listed.

Note

- If any stored faults are listed, it is useful at this point to change to the Guided troubleshooting mode
- in order to continue working with the vehicle diagnostic, testing and information system -VAS 5051B- or vehicle diagnostic and service information system -VAS 5052 A- and avoid the tester having to perform a second vehicle identification check.
- When the system test indicates the need for a repair measure (fault finding) and this is to be performed immediately, change to operating mode Guided fault finding.
- If the repair measure is to be carried out at a later date, e.g. after completing servicing, end operating mode Guided functions. The event memory will not be cleared.
- Follow the instructions of the vehicle diagnosis, testing and information system -VAS 5051B- or vehicle diagnosis and service information system -VAS 5052 A- on how to proceed for "Guided find finding" or "Guided functions".
- End the system test via function GOTO and End or continue "Guided fault finding" after changing the operating mode.

Caution

The vehicle must always be delivered to the customer with event memory cleared.

Static faults

If one or more static faults have been stored in the event memory,

it is advisable to rectify these faults with the help of "Guided troubleshooting" in consultation with the customer.

Sporadic faults

If only sporadic faults or notes have been stored in the event memory

and the customer makes no complaints regarding an electronic vehicle system, the event memory is to be erased.

Clear event memory.

Start operating mode $\fbox{\sc vehicle self-diagnosis}$ in system start screen of vehicle diagnosis, testing and information system -VAS 5051B- or vehicle diagnosis and service information system -VAS 5052 A- .



There are two ways to clear the event memory:

• Clearing event memory by selecting individual control units:

Perform the following jobs:

- Select control unit in question individually in overview, select Read event memory and then press Delete event memory.
- Clearing event memory via function Collection services:

Perform the following jobs:

- Call up Collection services on display,
- and then select Delete event memory function.

Note

- If all faults have been cleared, it is shown on display.
- The diagnosis log can be sent automatically »online«.

The vehicle system test is completed.

Four-wheel drive: Insert fuse 5.18

Insert fuse 46 on fuse holder C -SC46- "4 x 4" four-wheel drive control unit

Special tools and workshop equipment required

itess authorised by Volkswagen AG. Volkswagen AG Vehicle diagnostic, testing and information system -VAS 5051B- or subsequent units



Diagnosis cable 5m -VAS 5051B/1-

Or

♦ Diagnosis cable - VAS 5051/5A-

Or

- Vehicle diagnostic and service information system -VAS 5052 A-
- Diagnosis cable, 2 me-VAS 5052/3 A-

Or

Diagnosis cable, 5 m -VAS 5052/3 A-1-

Perform the following jobs:

Switch off ignition, all electrical consumers and withdraw igni-Protected by copyrig tion key.

VAS 5052 MSHON MANBURDOS W00-1206

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to the correctnes



Release fuse holder C -SC- -1- -arrows- and fold down fuse holder C -SC- .



Remove "SC fuse / 25 A" -arrow-, which is attached to dash _ panel insert -K- .



- Place fuse 46 on fuse holder C -SC46- in fuse holder C -SC--1- -arrow-, using removed insertion aid if necessary. igen AG. Volks
- Replace insertion aid where it belongs if it has been removed.
- Fold up fuse holder C -SC- and lock in place. _



- thole, is not, Switch on ignition and check if both warning lamps " 4×4 high / 4×4 low" -arrow- in dash panel insert -K- no longer light up. Proposes, in particular on commercial purposes, in particular on commercial purposes in particular on commercial purposes in particular on the particular on
- Switch off ignition. _





Connect vehicle diagnostic, testing and information system -VAS 5051B- or vehicle diagnostic and service information system -VAS 5052 A- <u>⇒ page 102</u>.



- Observe current operating instructions for vehicle diagnostic, testing and information system -VAS 5051B- or vehicle diag-nostic and service information system -VAS 5052 <u>A- , which</u> are shown on display after selecting the functions Administration and Operating manual.
- For diagnosis only use the diagnosis cable indicated above, because this is fitted with CAN bus cables and allows a CAN diagnosis or CAN communication.



- If the vehicle diagnosis tester is placed within the range of action of an airbag during a test or measuring run,



If all faults have been cleared, it is shown on display.

The vehicle system test is completed.

- Switch off ignition and disconnect vehicle diagnosis, testing and information system -VAS 5051B- or vehicle diagnosis and service information system -VAS 5052 A- .
- Remove vehicle diagnosis, testing and information system -VAS 5051B- or vehicle diagnosis and service information system -VAS 5052 A- from vehicle.





5.19 Protective bellows: Visual check

Perform the following jobs:

Check outer and inner CV joint boots -arrows- for leaks and damage.

Note

- Carry out a "firm seating" visual inspection of the rear propshaft or centre mounting (white cap).
- Carry out a "leakage" visual inspection of the front propshaft bellows.



Volkswagen A Dust and pollen filter: Clean housing and 5.20 renew filter element

Note

Before installing the new filter, clean area around the dust and pollen filter in the heater and air conditioner unit.

Removing

The filter is located in front passenger footwell.

Perform the following jobs:

Unscrew bolts -1- and open cover -2- downwards. _ Protectal purpose of commercial purposed



Remove filter element -1- downwards.



Observe disposal regulations!

Installing

Perform the following jobs:



Note installation position.



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- Check poly V-belt -1- for:
- Substructure cracks (cracks, core ruptures, cross sectional breaks)
- Layer separation (top layer, cord strands)
- Base break-up
- Fraying of cord strands
- Flank wear (material wear, frayed flanks, brittle flanks -glassy flanks-, surfàce cracks)
- Traces of oil and grease
- Effect of foreign bodies
- Blue coloration due to heat (danger of slipping) ۲

edbyVolkewagen AG. Volkswagen AG does not guarantee or according. If the visual check shows that something is wrong and the poly Vbelt has to be removed, please check the following components:

- ٠ Examine the poly V-belt for the effect of foreign bodies.
- Bearing damage (turn by hand and examine for noises and smooth running).
- Functional test of the alternator's free wheeling pulley.
- Check poly V-belt tensioner for axial displacement.

Caution

- If faults are found it is absolutely necessary to renew the poly V-belt.
- Failures or functional impairments can be avoided if this is done.
- Renewing the poly V-belt is a repair measure.
- Defective components are to be replaced the tensioner must be replaced in any case.

5.22 Poly V-belt: Renew

The procedure is described in workshop manual \Rightarrow Rep. gr. 13.



Caution

112 5. Descriptions of work

- Renewing the poly V-belt is a repair measure,
- Defective components are to be replaced the tensioner must be replaced in any case! Profected by copyright, Copyright





5.23 Fuel filter: Renew (diesel engine)



Caution

The fuel system must also be vented after replacement of the common rail high-pressure pump and all components that are upstream of the common rail high-pressure pump in the lowpressure fuel system.

For example, fuel filter, fuel lines etc.

The electric fuel pump must be activated once for at least 60 seconds when components that are upstream from the common rail high-pressure pump are replaced.

When the common rail high-pressure pump itself is replaced, the electric fuel pump should be activated for approx. 180 seconds.

(to be done several times according to need).

Fuel system: Bleed (diesel engine) \Rightarrow page 114.

Removing

Perform the following jobs:

Volkswa Fuel filter is located on inside of left longitudinal member under vehicle in area ahead of pedal floor. 94ar

To pull off lines -1- press release buttons on connecting pieces of fuel filter -2-.

To remove fuel filter -1-, press fuel filter from below DA no Dewexio V to her way of the way of the way of the way of the her way of the -movement arrow- upwards out of holder -2- and remove it downwards.

Installing

or commercial purposes, in part or in whole, is not benny Perform the following jobs:



- Note installation position of fuel filter!
- Note fuel line identification on fuel filter!
- Observe disposal regulations!
- Insert new fuel filter into bracket.





- Push fuel lines -1- onto fuel filter connection. When doing this ensure that fuel lines are seated securely on fuel filter. byVolkswager
- Fuel system: Bleed (diesel engine) \Rightarrow page 114.
- Start engine and conduct a visual check of fuel system on fuel filter.



To ensure the engine starts immediately after changing the fuel filter, bleed the fuel system using vehicle diagnostic, testing and information system -VAS 5051B- or vehicle diagnostic and service information system -VAS 5052 A- 3 page 114.

5.24 Fuel system: Bleed (diesel engine)

Using vehicle diagnostic, testing and information system -VAS 5051B- or vehicle diagnostic and service information system -VAS 5052 A-

To ensure the engine starts immediately after changing the fuel filter, bleed the fuel system using vehicle diagnostic, testing and information system -VAS 5051B- or vehicle diagnostic and service information system -VAS 5052 A- .

Perform the following jobs:

- Connect vehicle diagnostic, testing and information system -VAS 5051B- or vehicle diagnostic and service information system -VAS 5052 A- with ignition switched off <u>⇒ page 102</u> Protected by cop
- Switch on ignition.
- Press the Guided functions button on the display.
- Then perform vehicle identification.
- Select following functions one after another:
- "Systems capable of self-diagnosis"
- "Diesel direct injection and glow plug system"
- "Functions"
- "Bleeding fuel system"
- Follow instructions on display of vehicle diagnostic, testing and information system -VAS 5051B- or vehicle diagnostic and service information system -VAS 5052 A- .
- After bleeding fuel system, exit "Guided functions" using Go-To button.
- Touch function End on display.
- Select function End in "End menu".
- Switch off ignition.
- Disconnect diagnosis connector from vehicle.

Bleeding the fuel system is finished.

5.25 Fuel filter: Drain water (diesel engine)

Perform the following jobs:

Unscrew drain plug from bottom end of filter and collect approx. 100 ml of fuel into a suitable container.



Screw drain plug back in, if necessary first fitting it with a new



Observe disposal regulations!

5.26



- <text><text><text><text><text><text><text><text><text><text><text><text><text>

- ♦ Mixture ratio <u>⇒ page 118</u>
- ♦ Mixing coolants ⇒ page 117

5.26.1



Refractometer -T10007-



Note

Read precise value for the following tests at bright/dark boundary. Using a pipette, place a drop of water on the glass to improve the readability of the bright/dark boundary. The bright/dark boundary can be clearly recognised on the "WATERLINE".

Perform the following jobs:

Check concentration of coolant additive using refractometer - Nolkswagen AG. Volkswagen AG does not guarante

The scale -1- of the refractometer is calibrated for coolant additives G 11, G 12; G 12 Plus and G 12 Plus Plus.

The scale -2- is only calibrated for coolant additive G 13 (initially L80).

Note

- Frost protection must be assured to about -25 °C (in arctic climatic countries to about -35 °C).
- If a stronger form of frost protection is required for climatic ٠ reasons, the percentage of G 12 Plus Plus can be increased.
- But only up to 60 % (frost protection down to about -40 °C), as ٠ otherwise frost protection will be reduced again and cooling effectiveness is also reduced.
- If frost protection is insufficient, drain required quantity shown in frost protection table and add coolant additive G 12 Plus Plus.





Plus. Image: Plus. Image: Plus. Observe disposal regulations!	Potonaliti dadan ve o 12 1 lao	Plan wofenstion Aquifundos
Frost prot	ection to °C	Quantity to drain (in litres)
Actual value	Specified value	4-cylinder diesel engine
0	-25	3.5
	-35	4.5
-5	-25	3.0
	-35	4.0
-10	-25	2.5
	-35	3.5

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-15					
			-25		2.0
			-35		2.5
-20			-25		1.5
05			-35		2.5
-25			-35		2.0
-30			-35		1.0
Note	the standard	niing. ^{Bulluso} tousi, ^B oo			
		nd Guine a			
	G12		G12++		
ed from 1994	from 1996	from 2000	from 2005		
X	0	0	0		
2 0	X	0	0		
2+ X ^{1.)}		EX	0		
2++ X ^{1.)}	X	X	X		
		"BUNID			
X" May be mixed		J.	DUIRO		
0" May NOT be mixe	d		·03:496/15		ul fullo
.) Becomes discolou	ed after mixir	ng (brown)	Gaby Copy		SERMSHION NOT
				Protond .E)Angnan

Initial filling / standard filling						
Can be mixed with …	G11 from 1994	G12 from 1996	G12+ from 2000	G12++ from 2005		
G11	Х	0	0 0	0		
G12	0	Х	0	0		
G12+	X ^{1.)}	Х	EX	0		
G12++	X ^{1.)}	Х	X	Х		



Checking coolant level, replenish cool-5.26.3 ant if necessary

Perform the following jobs:

- Check coolant level in expansion tank with engine cold.



Recommended coolant level at delivery inspection:

- Coolant level above "Min. marking" -arrow-.
- ed by ^{Volkswagen} AG. Volkswage Recommended coolant level at inspection service
- Slightly above area -arrow-.
- If coolant is too low, add required amount according to mixture ratio.

Note

If fluid loss is greater than can be expected through normal use, determine source and rectify (repair measure).

5.26.4 Mixture ratio

Frost protection to	Coolant additive G 12 Plus Plus	Water
-25 °C	approx. 40 %	approx. 60 %
-35 °C	approx. 50 %	approx. 50 %
-40 °C	approx. 60 %	approx. 40 %
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Note

- Coolant additive G 12 Plus Plus prevents frost and corrosion damage, scaling and also raises boiling point of coolant. For these reasons, the cooling system must be filled all-yearround with a coolant and corrosion protection additives.
- Because of its high boiling point, the coolant improves engine reliability under heavy loads, particularly in countries with tropical climates.
- The coolant concentration must not be reduced by adding water even in warmer seasons and in warmer countries. The antifreeze portion must be at least 40 %.

5.27 Air filter: Clean housing and renew filter element

Note

- When replacing air filter, make sure that no dirt gets into intake hose, air mass meter -G70- and air filter cover.
- Following each air filter change, programmed values of engine control unit -J623- must be reset using Guided fault finding with vehicle diagnostic, testing and information system -VAS 5051B- or vehicle diagnostic and service information system -VAS 5052 A- <u>⇒ page 121</u> .

Note

In dusty countries, new dust and pollen filter must be fitted as separate job <u>⇒ page 110</u> .

Special tools and workshop equipment required



Perform the following jobs:

Removing

- Before changing air filter, clean outside of components with compressed air.
- Seal all openings of components using caps or hood covers immediately after removal.
- Pull connector -1- off intake air temperature sender -G42- and connector -2- from air mass meter -G70-.
- Remove vacuum hose -3- from air filter cover -6-.
- Remove clamp -4- from intake hose -5- and pull off intake hose -5-.



- Loosen bolts -arrows- of air filter cover.
- Raise air filter upper part and remove upwards.



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with respect to the correctness of informatio

- Remove air filter element -1-. _
- Clean air filter housing if necessary. _

Installing

Perform the following jobs:

- Install new air filter insert -1-.
- Nagen AG. Volksv Remove all caps or hood covers from sealed components.

60



When installing ensure the air filter element -1- is properly seated in housing and check if seal is seated securely and completely.

Note

When installing air filter upper part, ensure that the seal of air filter element is not moved or trapped and that both parts of housing are flush.

Tighten bolts -arrows- of air filter cover. _

Specified torque: 1.6 ± 0.2 Nm.

Push on intake hose -5- and secure clamp -4-. _

Torque setting: 5.5 Nm.

- Push vacuum hose -3- onto all filter cover -6-.
- Then push connector -1- onto intake air temperature sender -G42- and connector -2- onto air mass meter -G70- .

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5.28 Air filter with saturation indicator in dash panel insert:



When rectifying a saturated filter as a separate job, clean air filter housing and renew filter element.

Perform the following jobs:

Saturation indicator is located in dash panel insert -K- and displays contamination of filter element inc. filter housing.

- Clean air filter housing and renew filter element \Rightarrow page 118.
- Resetting programmed values in engine control unit -J623- got saturation indicator <u>⇒ page 121</u>.

Note

In dusty countries, new dust and pollen filter must be fitted as separate job <u>> page 110</u> .

5.29

Resetting programmed values in engine control unit

Perform the following jobs:

Connect vehicle diagnostic, testing and information system -VAS 5051B- or vehicle diagnostic and service information system -VAS 5052 A- with ignition switched off \Rightarrow page 102.



<text> Observe current operating instructions for vehicle diagnostic, testing and information system -VAS 5051B- or vehicle diagnostic and service information system -VAS 5052 A-, which are shown on display after selecting the functions Administration and Operating manual.

- Select "Guided fault finding" on display of vehicle diagnostic, testing and information system -VAS 5051B- or vehicle diag-nostic and service information system -VAS 5052 A- and Select "Powertrain", "Engine" and then "Punctions", SHON AQUELLED Select function "01 Reset programme

- Follow menu instructions to reset programmed values of engine control unit -J623- .
- Switch off ignition and disconnect vehicle diagnostic, testing and information system -VAS 5051B- or vehicle diagnostic and service information system -VAS 5052 A- .





5.31 Engine oil: Drain or extract; renew oil filter and replenish engine oil

In the case of difficult operating conditions such as:

- operation with fuel containing sulphur
- with frequent short trips,
- in areas with high levels of dust,
- with frequent trips carrying a full load or pulling a trailer,
- with a high number of cold starts,
- and when the vehicle is used for a long time in areas with extremely low temperatures,
- the engine oil should be changed more often than indicated in ٠ the service schedule.

Stopping and starting, such as in urban traffic, also puts vehicles with diesel particulate filter under greater stress (severe operating conditions). Use, in these conditions is an additional load on the engine oil which is taken into account by the flexible service interval system.

- Draining or extracting engine oil \Rightarrow page 123
- Renewing oil filter \Rightarrow page 123.
- Replenishing engine oil <u>⇒ page 126</u>.

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5.31.1 Draining or extracting engine oil

Note

For engines with standing oil filter the oil filter must be renewed before changing the engine oil. When removing the filter element a valve is opened, the oil in the filter housing automatically flows into crankcase.

Special tools and workshop equipment required

- Used oil collection and extraction unit -VAS 6622-
- Oil filter strap wrench
- Oil spill cloth -VAS 6204/1-

Draining or extracting engine oil

Note

before changing the engine oil filter the oil filter must be renewed a valve is opened, the oil in the filter housing automotion. **DA** na into crankcase. Prote

Perform the following jobs:

Extract engine oil using used oil collection and extraction unit -VAS 6622-.

Or

- Removing and installing skid plate \Rightarrow page 150.
- Remove oil drain plug.
- Let engine oil drain.



The oil drain plug and seal are one unit and must be renewed together.

Screw in oil drain plug together with seal hand-tight and then tighten to specified torque.

Specified torgues for oil drain plug

- Diesel engines: 30 Nm
- Petrol engines: 30 Nm

WARNING

- Torque specifications must not be exceeded.
- Excessive torgue can cause leaks in the area of the oil drain plug or even damage.

5.31.2 Renewing oil filter

Renewing oil filter, engine with engine codes CDBA, CDCA <u>⇒ page 124</u>



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- Renewing oil filter, engine with engine code CFPA \Rightarrow page 125
- 5.31.3 Renewing oil filter, engine with engine codes CDBA, CDCA

Special tools and workshop equipment required

Torque wrench -V.A.G 1331-



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Removing

Perform the following jobs:

Note

- Before draining or extracting release threaded cap, so that the engine oil can flow out of filter housing.
- Prevent engine oil from dripping onto components in engine Prevent English -compartment. Observe disposal regulations! Notes Notes and Stalling.

- Loosen threaded cover -1- on hexagonal flats or along perimeter and remove.
- Clean sealing surfaces on threaded cap and oil filter housing.

Installing

Perform the following jobs:

- Renew filter element -5-.
- Renew O-rings -2-, -3- and -4-.
- Screwin threaded cover -1- hand-tight and then tighten firmly to prescribed torque.

Specified torque: 25 Nm

5.31.4 Renewing oil filter, engine with engine code CFPA



Or

Or

_

Observe disposal regulations!

Special tools and workshop equipment required

• Torque wrench -V.A.G 1331-



Specified torque: 22 ± 2 Nm



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5.31.5 Replenishing engine oil

VW engine oil standards

Engine oil capacities see \Rightarrow Engine lubrication; Rep. gr. 17

General notes

Perform the following jobs:

After replenishing with oil, wait at least 3 minutes and then check oil level.

Note

It is absolutely necessary to perform oil level check with the engine warm in order to ensure correct assessment of the oil level.

- Pull out dipstick, wipe with a clean cloth and push dipstick in again to limit stop.
- Pull dipstick out again and read oil level.

For dipstick as illustrated:

- A -Oil must not be replenished.
- Yog BILL CODALED I TO BALLED DA - B -Oil may be replenished. It may happen that the oil level afterwards is in the -A- region.
- C -Oil must be replenished. It is sufficient if the oil level is in the -B- region (hatched area) afterwards.

There is a danger of damaging the catalytic converter if the oil level is above the -A- marking.

If the oil level is below the -C- mark, replenish oil up to the -A- mark.

VW engine oil standards

5.32 Engine and components in engine compartment (from above and below): Perform visual check for leaks and damage

Perform the following jobs:

- Check engine and components in engine compartment for leaks and damage.
- Check lines, hoses and connections of
- Fuel system
- Cooling and heating system ٠
- And brake system

for leaks, abrasions, porosity and brittleness.

Note

- Arrange for defects to be rectified as repair measures.
- If fluid loss is greater than can be expected through normal use, determine source and rectify (repair measure).





- Lubricate bonnet catch -arrow- with grease -G 000 150- .
- Unscrew one of two bolts -1- and clean contact surfaces -arrows- with cleaning solution -D 009 401 04- and, for example, universal cloth -VAS 6385- .

Note 1

Do not, under any circumstances, loosen or unscrew both bolts -1-.





Screw cleaned bolt back in hand-tight and then tighten firmly to prescribed torque. эбемежюл Канирил

Specified torque: 25 Nm

- Then unscrew second bolt -1- and clean contact surfaces -arrows- with cleaning solution -D 009 401 04- and, for exam-ple, universal cloth -VAS 6385- .
- Screw second cleaned bolt back in hand-tight and then tighten _ firmly to prescribed torque.

Specified torque: 25 Nm

5.34 Check breakdown set

- ٠ Breakdown set location <u>⇒ page 128</u>
- ◆ Check minimum use-by date <u>⇒ page 129</u>

5.34.1 **Breakdown set location**

Model	Location
2H	In drawer under driver or front passenger seat



If the breakdown set is not found at the fitting location described, this can be found in ⇒ vehicle wallet .

5.34.2 Check minimum use-by date

The breakdown set consists of the compressor and a tyre filler bottle with sealant .

Because the sealant in the tyre filler bottle has a limited expiry date, this date is indicated on the bottle -arrow-.

Perform the following jobs:

Check the expiry date and renew the tyre filler bottle with sealant, if the expiry date is reached.

This example shows that the expiry date 05/2003. The tyre filler bottle with sealant must be renewed.

The type filler bottle with sealant is available as replacement part. The part number can be found in \Rightarrow Electronic parts catalogue "ETKA".



Caution

If the tyre filler bottle with sealant was opened e.g. at a "flat tyre", İt must be renewed.



- Residual tyre sealant or bottles which are filled and the expiry date has been exceeded, must be disposed of,
- Old tyre sealant or residual sealant must not be mixed and disposed of with other fluids.

Disposing of tyre sealant ⇒ Handbook Service Organisation; Environment protection and disposal practice; Chapter 3 Funda-

Performing road test

Which of the following can be checked depends on vehicle equipment and local conditions (urban/country).

Check the following during a road test:

- Engine: Output, misfiring, idling speed, acceleration.
- Clutch: Pulling away, pedal pressure, odours.
- Gear selection: Ease of operation, stick position.
- 5.3:
 Which is ment an.
 Check the
 Engine: C.
 Clutch: Puli.
 Gear selection.
 Braking to clean at 50 to 60 km/h. strongly 3 times. In for approx. 4 minute roller dynamometer.
 Foot brake and handh tiveness, pulling to clean at 50 to 60 km/h. strongly 3 times. In for approx. 4 minute roller dynamometer.
 S function: Prost Struction: Prost with respect to the correctness of information Braking to clear brake discs: drive approx. 500 m in 2nd gear at 50 to 60 km/h. Brake slightly several times, then brake strongly 3 times. It is also possible to allow the brakes to drag for approx. 4 minutes for each vehicle axle on the single-axle
 - Foot brake and handbrake: Function, free travel and effectiveness, pulling to one side, juddering, squeal.
 - ABS function: Pulsing must be felt at the brake pedal during . ĐA nagen AG. ABS-regulated braking.





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- Steering: Function, steering free clearance, steering wheel centred when vehicle is travelling straight ahead
- Radio/radio navigation system: Function, reception, GALA, interference noise
- Multi-function indicator (MFI): Functions
- Air conditioning system: Function
- Vehicle: Pulling to one side when travelling straight-ahead (level road)
- Imbalance: Wheels, drive shafts, propshaft
- Wheel bearings: Noises _
- Engine: Hot starting behaviour _

5.36 Wheel securing bolts: Tighten to speci-Nagen AG. Volkswagen AG does not guar fied torque

Special tools and workshop equipment required

Torque wrench -V.A.G 1332/- (40-200 Nm)

in part or in _{Whole,}



and if necessary, if anti-theft wheel bolts are installed:

Adapter set for tamper-proof wheel bolts -T10101-

Or



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ostenicio guintoo iuguntoo na popolod Blandoo na popolod 190 Adapter set for tamper-proof wheel bolts -T10190-٠

Pulling off wheel hub trim.

Only applies to steel wheel

The puller hooks to remove the cover caps are located with the vehicle tool kit.

Perform the following jobs:

- Insert wire hoop through opening in cover cap.
- Pull off cap with wire hoop.



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Loosening anti-theft wheel bolts. Sit Wheel bold. Nolkswagen AG. Volkswagen AG does not guarante Soloy Volkswagen AG. Volkswagen AG does not guarante



To loosen the theft-resistant wheel bolts a special adapter is required, located in vehicle tool kit or use adapter set for tamperproof wheel bolts -T10101- or adapter set for tamper-proof wheel bolts -T10190-

- Push adapter -2- into anti-theft wheel bolt -1- onto stop.
- Push wheel brace onto adapter -2- onto stop.
- Unscrew wheel bolt by about one turn. 5

Screw in wheel bolts hand-tight and then tighten to prescribed torque setting.



Ensure that wheel bolts are tightened diagonally and alternately to the following specified torque:

Specified torque: 180 Nm

Place puller hooks and adapter with vehicle tool kit after com-. DA negewexto V van given agen A.G. pleting work.



Only valid for vehicles without sticker with serial number and radio code on vehicle data sticker.

Reading radio code using vehicle diagnostic, testing and information system -VAS 5051B- or vehicle diagnostic and service information system -VAS 5052 A-

Authorization prerequisites for reading radio code

- The vehicle diagnostic, testing and information system -VAS 5051B- or vehicle diagnostic and service information system -VAS 5052 A- is connected via the "Central Partner" Network" (CPN) with the central database (Carport, Fazit).
- Available access for the user of the system "GeKo" (secrecy and component protection)



- The radio codes are read in the central database (Carport. Fazit) and are indicated on display of vehicle diagnostic, testing and information system -VAS 5051B- or vehicle diagnostic and service information system -VAS 5052 A- .
- To activate the anti-theft coding the radio code must be entered using radio buttons, as previously <u>> page 133</u>.

Perform the following jobs:

Connect vehicle diagnostic, testing and information system -VAS 5051B- or vehicle diagnostic and service information system -VAS 5052 A- with ignition switched off \Rightarrow page 102.





- Switch on ignition.
- Press the Guided functions button on display of vehicle diagnostic, testing and information system -VAS 5051B- or vehicle diagnostic and service information system -VAS 5052 A- .
- Press > button to confirm selection.
- Then perform vehicle identification on vehicle diagnostic, test-

Exit radio code reading as follows:

Reading radio code using "ElsaWin" (Electronic Service Informa-tion System) and Vehicle Individual Service Notes "FISH"

interventions and the random contraction of the random contraction Service Information System) version 3.1 into Vehicle Individual Service Notes "FISH". Currently this function is only valid for



Note

- Radio codes cannot be read in "FISH" with the previous access authorization for radio codes. Reading only functions with the access authorization for "GeKo" (secrecy and component protection).
- The access authorization for "GeKo" (secrecy and component protection) for reading the radio code using vehicle diagnostic, testing and information system -VAS 5051B- or vehicle diagnostic and service information system -VAS 5052 A- is also valid for reading the radio code in Vehicle Individual Service Notes "FISH".

Authorization prerequisites for reading radio code

Available access for the user of the system "GeKo" (secrecy and component protection)

Perform the following jobs:

Follow the instructions of Vehicle Individual Service Notes "FISH" in Electronic Service Information System "ElsaWin".

Note

- A Haddemond A G does not guarantee or accedent auturn the poor to the oprocess of accedent auturn the poor to the poor to the oprocess of accedent auturn the poor to the oprocess of accedent auturn the poor to the To read the radio code the radio serial number must be entered fully. This can be entered using vehicle diagnostic, testing and information system -VAS 5051B- or vehicle diagnostic and service information system -VAS 5052 A- via "Guided functions" and "Measured value block 81". For this follow instructions of vehicle diagnostic, testing and information system -VAS 5051B- of vehicle diagnostic and service informa-tion system -VAS 5052 A- .
- To enter the radio serial number the 17-digit chassis number is taken from the order.
- If you are authorized to read the radio code via "GeKo" (secrecy and component protection), you will obtain the 4-digit radio code to the radio serial number.



1000 Inform the customer about the radio code Mado Ago

5.38 Radio / radio navigation system: Enter anti-theft coding PIN

The anti-theft coding electronically prevents unauthorized persons from operating the unit after it has been removed from vehicle. The anti-theft codes are also called radio codes or security codes. Security code means that each unit with an anti-theft coding is programmed with its own code number. This security code is not active when leaving the factory. The security code is found on the unit card, if fitted. If the unit card is not fitted, the security code can be read from a central database using vehicle diagnosis tester.



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Note

Ja-ter en-n CD/) > Oper-over adio navi-to 5 mi-vust not vuste not If an incorrect code number is entered when releasing the electronic lock the whole procedure can be repeated once. If an incorrect code number is entered again, the unit is locked for about one hour. That means, it cannot be used. After one hour, during which time the unit must remain switched on, the display extinguishes. The electronic lock can be released as described above. The cycle, two attempts, one hour lock, applies again.

Procedure

Deactivating anti-theft coding \Rightarrow Infotainment; Rep. gr. 91.

5.39 Radio navigation system: Insert navigation CD/DVD and perform update

If no navigation CD/DVD is inserted in the CD/DVD slot, after entering the radio code it can be displayed that no navigation CD/ DVD is inserted.

In this case, insert the navigation CD/DVD according to ⇒ Oper-Protected by copyright ating instructions .



Note

When the navigation CD is inserted the first time, the radio navigation system performs an update, which can take up to 5 minutes. During this process, the radio navigation system must not be pulled of and the ignition key must not be removed, otherwise the navigation system switches off and the update will be interrupted!

5.40 Timing chain: Renew

- The procedure is described in workshop manual \Rightarrow Rep. gr. 15.
- 5.41 Windscreen wash/wipe system and headlight washer system: Check function and settings
- Check antifreeze content of Windscreen Clear with G 052 164, replenish with fluid if necessary \Rightarrow page 134
- Window wash/wipe system: Check spray jet settings and adjust if necessary <u>⇒ page 136</u>
- Checking Windscreen Clear with anti-5.41.1 freeze for windscreen wash/wipe system, replenish with fluid if necessary

Checking antifreeze concentration .

Special tools and workshop equipment required

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The scale -1- of the refractometer is calibrated for Genuine Volkswagen Windscreen Clear with antifreeze G 052 164.

The scale -2- is designed for commercially available windscreen cleanser as well as a mixture of commercially available windscreen cleanser and genuine Volkswagen Windscreen Clear with antifreeze G 052 164.

Mixture ratio

Frost protection to	Windscreen Clear with antifreeze G 052 164	Water	
-17/-18 °C	1 part	3 parts	
-22/-23 °C	1 part	2 parts	
-37/-38 °C	1 part AG. Volk	swagen Ad part	



Replenishing with fluid

The fluid reservoir of the window washer system must be filled completely.

Starting immediately, use only Genuine Volkswagen Windscreen Clear with antifreeze G 052 164 all-year-round when replenishing window wash/wipe system.



- be filled be fil On vehicles with fan-type spray jets, the reservoir must be fil-led with Windscreen Clear with antifreeze G 052 164, as this fluid has a low viscosity at temperatures below freezing. Otherwise the complicated spray jet system can become blocked by the crystallised washer fluid, which affects the spray pattern of the spray jet. Windscreen Clear with antifreeze G 052 164 ensures that the fan-type spray jets remain fully functional even at low temperatures.
- Génuine Volkswagen Windscreen Clear with antifreeze G 052 164 protects the spray jets, fluid reservoir and connecting hoses from freezing.
- Also use Genuine Volkswagen Windscreen Clear with antifreeze G 052 164 in the warmer periods of the year. The powerful cleanser removes wax and oil residue from the glass.
- Copyr Frost protection must be guaranteed to approx. -25 °C (approx. -35 °C in countries with an arctic climate) in the windscreen wash/wipe system . ƏA nəgewexio

5.41.2 Window wash/wipe system: Check spray jet settings and adjust if necessary

Special tools and workshop equipment required

Commercially available Torx screwdriver "T 10"



The spray jets may be cleaned in both directions, also opposite to direction of spray with compressed air or water.



Windscreen spray jet settings:

The washer jets are preset. However, small height differences can be compensated for.

Perform the following jobs:

- If spray field is not at correct height, adjust spray direction upG. Volk Volksw wards or downwards as follows:
- Adjust spray jet by turning with a commercially available Torx screwdriver "T10" at adjuster -1-.
- N01-10965

- "Clockwise" lower.
- "Anti-clockwise" higher.



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Windscreen wiper blades: Check park 5.42 position

cial purposes, in part or in whole, is hor,

- ◆ Windscreen wiper blades: Check park position <u>⇒ page 137</u>.
- Windscreen wiper blades: Check park 5.42.1 Protected by copyrigh position

Windscreen of LHD vehicles



For RHD vehicles the wiper blades are aligned as a mirror image.

Driver side

Perform the following jobs:

- Check park position.

Wiper blade tips should be located at marked position -arrow- on windscreen.

- Adjust park position by moving wiper arm if necessary.

Adjusting windscreen wiper blades \Rightarrow Electrical system; Rep. gr. 92; Windscreen wiper blades - park position .

Front passenger side





Wiper blade tips should be located at marked position -arrow- on windscreen.

- Adjust park position by moving wiper arm if necessary.
- Switch windscreen wiper on and off and let it move into park position.
- Switch off ignition.



5.43 Headlight adjustment: Check, if necessary adjust

- ◆ Adjusting halogen headlights <u>⇒ page 140</u>.
- ◆ Adjusting fog lights and other additional lights <u>⇒ page 141</u>.
- ◆ Test prerequisites <u>⇒ page 138</u>
- Checking headlight adjustment (using new test screen without 15° setting line) <u>⇒ page 139</u>

5.43.1 Test prerequisites

Special tools and workshop equipment required

• Headlight adjustment unit -VAS 5046-



Or

Headlight adjustment unit -VAS 5047-

Test and adjustment conditions

- Tyre pressure OK
- Lenses must not be damaged or dirty.
- Reflectors and bulbs OK
- Vehicle must be loaded.

Loading: With one person or 75 kg on the driver seat and the vehicle otherwise unloaded (unladen weight).

The unladen weight is the weight of vehicle ready for operation with a full fuel tank (at least 90 %) including weight of all equipment normally carried (e.g. spare wheel, tools, jack, fire extinguisher etc.).

If the fuel tank is not at least 90 % full, then load as follows:

with respect to the correctness of information



Perform the following jobs: AG. Volkswagen AG does

 Read fuel level in fuel tank on fuel gauge. Determine additional weight from following table and place weight in luggage compartment.

Fuel gauge table

t Dermit	Fuel level of fuel gauge	Addit	ional weig in kg	ht	Milar
1S 10	1/4		30		
Ð	1/2		20		
	3/4		10		
	Full		0		

Example:

When the fuel tank is half full, an additional weight of 20 kg must be placed in the luggage compartment.

Note

- A fuel can filled with water is the best way of adding additional weight.
- A fuel can filled with 5 litres of water weighs approx. 5 kg.

The vehicle must be rolled forward or backward several metres or front and rear springs must be bounded fully several times so that springs settle. $\sigma_{q_{p_{\Theta_{2}}}}$

- Vehicle and headlight adjuster must be on a level surface ⇒ of headlight adjustment unit -VAS 5046- or ⇒ of headlight adjustment unit -VAS 5047-
- Vehicle and headlight adjuster must be aligned.
- Inclination must be set.

Inclination information in "%" is stamped into trim above headlight. Headlights must be adjusted according to this information. Percentage given is based on a projection distance of 10 metres. For example: inclination of 1.0 % converts to approx. 10 cm.

Vehicles with manually regulated headlight range control

 Headlight range control thumb wheel must be in basic setting -0-.

5.43.2 Checking headlight adjustment (using new test screen without 15° setting line)

Headlights

Perform the following jobs:

- Whether, with the dipped beam switched on, the horizontal bright/dark boundary contacts the dividing line -1- of the test area and
- Whether the breaking point -2- between the horizontal part of the bright/dark boundary on the left and the rising part on the right lies on the vertical line of the central point -3-.




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- Height adjustment bolt -1-
- Height/lateral adjustment bolt -2-
- For height adjustment, turn adjustment screws -1- and -2- with same number of turns.
- For lateral adjustment, only turn adjuster screw -2-.



5.43.4 Adjusting fog lights and other additional lights

Fog light on left in bumper

igen AG. Volkswagen AG does not guarantes of accept abu Location of adjustment screw on right fog light is a mirror image.

Inclination:

Fog lights 20 cm

Adjustment screw for setting fog lights can only be accessed from rear.

Perform the following jobs:

- Move adjustment screw -arrow- to regulate headlight range.

A lateral adjustment is not possible.

Other additional lights

Additionally retrofitted lights of other systems must be checked and set according to valid guidelines.

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Service interval display: Reset 5.44

Resetting service interval display using VAS vehicle diagnosis tester software ⇒ page 142

Resetting service interval display using VAS vehicle diagnosis tester software \Rightarrow page 142

The service interval display must be reset when the following iscarried out:

- **Delivery inspection**
- Every oil change service and interval service.



Note

- Observe the current operating instructions for the vehicle diagnosis system that are shown on the display when the Administration and Operating Manual functions are selected.
- The procedure for resetting the service interval display without the vehicle diagnosis tester is described in the instruction booklet of the vehicle's manuals.

5. Descriptions of work 141



5.44.1Resetting service interval display using VAS vehicle diagnosis tester software

Carry out the following work:

- Connect vehicle diagnosis tester \Rightarrow page 102
- Switch on ignition.
- Select the »Guided functions« field on the screen and carry out vehicle identification.
- Select one after another:
- Brand ٠
- Type
- Model year ٠
- Version
- ٠ Engine code
- Confirm vehicle identification.
- If vehicle identification has been carried out correctly, confirm with the \geq button.
- Select one after another:
- "Dash panel insert."
- "Resetting the service interval display"
- Carry out adaptation according to the information given in "Guided functions".

End adaptation.

in part

- Select the »GoTo« function on the display and then select Volkswag does not »End«.
- Switch off ignition and separate diagnosis connections.

After the ignition is switched on, the type of service is no longer displayed in the distance display in the dash panel insert.

Resetting service interval display using 5.44.2 VAS vehicle diagnosis tester software

Carry out the following work:

Establish a connection to the vehicle \Rightarrow page 102 and switch on the ignition.

Select »Start diagnosis« on the display.

Identify »Basic characteristics of vehicle«.

Deactivate »Work with guided fault finding« and confirm with »Accept«.

with respect to the correctness of information in this

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Select control unit, dash panel insert and select »Guided func-Select vith right model
 tions« with right model
 Execute »Reset service interval«.

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uthorised by Volkswagen AG. Volkswagen AG does not guaran Amarok 2011 Maintenance - Edition 10.2012

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Note

It is not necessary to log in in order to enter or call up vehicle data.

Junies

If the options indicated in the working procedure are not shown on the display \Rightarrow Operating instructions for vehicle diagnosis tester

5.45 Service interval display: Adapt (export)

Caution

Diesel engines: In some regions/countries, an elevated sulphur content may be evident in the diesel fuel. This leads to increased wear of the cylinders and impairs piston cleanliness considerably. Short service intervals therefore apply in this instance.

Note

- Tolura Coprison Coprison With this function, the service interval display is adapted for vehicles without LongLife service (PR number "QG0/QG2").
- If this function is performed on vehicles with LongLife service, the extended service interval (ESI) is deactivated.
- Note the shorter service intervals for the respective country in the chapter entitled »Oil change interval in relation to sulphur content in fuel «

Carry out the following work:

- Connect vehicle diagnosis tester ⇒ page 102
- Switch on ignition.
- Select the »Guided functions« field on the screen and carry out vehicle identification.
- Select one after another:
- Brand
- Type
- Model year
- Version
- Engine code
- Confirm vehicle identification.
- If the vehicle identification has been performed correctly, confirm with > button.
- Select one after another:
- "Dash panel insert."
- "Adapting the service interval"
- Perform adaptation according to the information of "Guided functions".



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End adaptation.

- Confirm end of interval adaptation with the »Done« button.
- Exit "Guided functions".
- Switch off ignition and separate diagnosis connections.

5.46 Track rod ends: Check clearance, security and boots

Perform the following jobs:

With vehicle raised (wheels hanging free), check clearance by moving track rods and wheels:

Clearance: Zero clearance

- Check mountings.
- Check that boots -arrow- are not damaged and are seated correctly. commercial purposes, in part or in wh



Power assisted steering: Check fluid 5.47 Protected by copyright: Cophild ? level

- Oil at operating temperature <u>⇒ page 145</u>
- Fluid cold <u>⇒ page 144</u>

5.47.1 Fluid cold

Test prerequisites

Engine switched off

Perform the following jobs:

- Unscrew sealing cover -arrow- with built-in dipstick from tank.
- Wipe off dipstick using a clean cloth.
- Screw sealing cover on until finger tight and then unscrew again. Following this, fluid level can be checked.

The oil level must be in the area of the "20°C" mark.

Note

- If the fluid level is above the area specified, the excessive fluid must be extracted.
- If the oil level is below the area specified, the hydraulic system must be checked for leaks (repair measure) and, if necessary, topped up with hydraulic oil -G 002 000- .
- Screw sealing cover onto container until finger tight (1.5 + 0.5 Nm).



5.47.2 Oil at operating temperature

Test prerequisites

· Engine switched off

Perform the following jobs:

- Unscrew sealing cover -arrow- with built-in dipstick from tank.
- Wipe off dipstick using a clean cloth.
- Screw sealing cover on until finger tight and then unscrew again, after which fluid level can be checked.

The oil level must be in the area of the "80°C" mark.



- If the fluid level is above the area specified, the excessive fluid must be extracted.
- If the oil level is below the area specified, the hydraulic system must be checked for leaks (repair measure) and, if necessary, topped up with hydraulic oil -G 002 000-.
- Screw sealing cover onto tank until finger tight.

5.48 Doors: Grease door arrester

Perform the following jobs:

- Lubricate door arrester at positions marked -arrows-.
- Use lubricating paste -G 000 150- or lock cylinder lubricating spray -G 052 778 A2- .



Perform the following jobs:

- Visual check on paint for damage and corrosion, interior and exterior when bonnet/rear lid/doors and flaps are open.
- After the visual check, tick the corresponding field in the service record.

If damage is determined during visual check, make entries in the service schedule:

- Put a cross in "Repair recommendation" on "Service record" page in service schedule.
- Additionally describe exactly what part of vehicle is affected or damaged etc. in field "Notes" below "Workshop comments" in the service schedule.



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Note

- Inform the customer when faults are found during visual check and repair measures are necessary.
- narok Faults found must always be rectified (repair measure). Therefore, further damage and corrosion and rusting through can be avoided.

Protective foil: Remove (if fitted) 5.50

Note

The foil must "NOT" be removed from the rear bumper on Amarok models in "Russia" with chrome bumpers.

Reason:

In Russia, the roads are gritted with calcium chloride in winter. This aggressive substance could corrode the chrome coating.

Underbody protection: Perform visual 5.51 check for damage

During visual check, also check floor pan, wheel housings and Protected by copyright, sills.

Note

Faults found must always be rectified (repair measure). This inhibits corrosion and rusting through.

5.52 Clock: Set to correct time

Vehicles without digital tachograph

- Setting buttons -A and B- are located in dash panel insert -K- .



Clock -B- can only be set when the time is displayed in the dash panel insert -K- and is not overlaid with another display.

Perform the following jobs:

- Switch on ignition.



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В

- To access hour display -B- in dash panel insert -K- , press button -A-.
- Briefly pressing 0.0 / SET -A- changes time by one hour for every press.

- Pressing $\fbox{0.0 / SET}$ -A- for longer changes hour value quickly.
- A N01-10964
- Press button -A- again to mark the minute display.
- Briefly pressing 0.0 / SET -A- changes time by one minute gen AG. Volksu for every press.



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• Pressing 0.0 / SET A- for longer changes minute value ratio.

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Wagen Pressing -A- button again finishes time setting



ses, in part 5.53 Camshaft drive toothed belt and toothed belt tensioning roller: Renew

- The procedure is described in workshop manual \Rightarrow Rep. gr. 15.
- 5.54 Camshaft drive toothed belt: Check condition

Applicable to

- Diesel engines in "dusty" regions ٠
- **Diesel engines**

Perform the following jobs:

.rt or in whole, is hot bern.

- dos Aqpak Remove toothed belt guard \Rightarrow Rep. gr. 15.
- Check toothed belt condition, looking for:
- -A- Cracks, cross-sectional breaks, cracks (coating)
- -B- Side contact
- -C- Fraying of cord strands
- -D- Cracks (in teeth base)
- Layer separation (toothed belt body, draw strands)
- Surface cracks (synthetic coating)
- Traces of oil and grease



If faults are found always renew toothed belt. This will avoid possible breakdowns or operating problems. The replacement of a toothed belt is a repair measure.

5.55 Toothed belt for water pump: renew

You can find the operating instruction in the repair guide \Rightarrow Engine cooling; Rep. gr. 19; Removing and installing timing belt for coolant pump.

Toothed belt for balancer shaft: renew 5.56

You can find the operating instruction in the repair guide \Rightarrow Engine cylinder head, timing gear; Rep. gr. 15; Assembly overview - balance shaft timing chain .



5.57 Spark plugs: Renew



Observe disposal regulations!

Special tools and workshop equipment required

• Torque wrench -V.A.G 1331/-





Removing

Perform the following jobs:

Pull out all ignition coils with final output stage from cylinder head approx. 30 mm using puller -T40039- .

- Release connector -arrows- and simultaneously pull all connectors off ignition coils with final output stage.
- Remove ignition coil with output stage.
- Unscrew spark plugs using spark plug socket and extension -VAS 3122B-.

Installing

Perform the following jobs:

Install new spark plugs using spark plug socket and extension _ -VAS 3122B-Specified torques: 30 Nm^{kswagen} AG. Volkswagen AG does not gude

- Insert all ignition coils with output stages loosely into spark _ plug shaft.
- Align ignition coil with final output stage to connector -arrows- and fit simultaneously.

Note

Do not strike with a hammer or other types of tools.

Evenly push ignition coils with final output stages onto spark plugs by hand.

5.58 Removing and installing skid plate

Torque wrench -V.A.G 1331- (6-50 Nm)

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Perform the following jobs: Plant of the foll









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- Unscrew bolts -2-, -3- and -4- one after another. _
- Remove skid plate -1- in -direction of arrow-. _

The assembly steps are basically a reverse of the dismantling procedure.

Screw in bolts hand-tight and then tighten to prescribed torque setting.

Specified torques: 20 Nm



Steering: Check bellows for leaks and 5.59 damage

Perform the following jobs:





Exhaust emissions test 6



Note

Nor is applicable rission regulations vices with diesel 2 years. g. taxis: every code CFPA codes The following exhaust emissions test description is applicable only in countries where no specific exhaust emission regulations have to be adhered to.

Exhaust emissions test intervals in Germany:

Vehicles with regulated catalytic converter or vehicles with diesel engine:

- 3 years after initial registration and then every 2 years. ٠
- Vehicles for commercial passenger transport, e.g. taxis: every 12 months

General for exhaust emissions test \Rightarrow page 152

Exhaust emissions test for petrol engines with engine code CFPA ⇒ page 153

Exhaust emissions test for diesel engines with engine codes CDBA, CDCA <u>⇒ page 160</u>

Exhaust emissions test with OBD ⇒ page 163

6.1 General information for exhaust emis Protected by copy sions test

6.1.1 Exhaust emissions test intervals

Vehicles with petrol and diesel engine and OBD:

Note

- Observe country-specific legal regulations.
- Exhaust emissions test badges are omitted as of 1 January 2010; only the main inspection badges are then available.
- Existing exhaust emissions test badges will be removed from the vehicle by the test centres at the next main inspection or so-called "repair badges" will be affixed over them.
- If the OBD test is carried out, the inspector must issue an exhaust emissions test record according to Annex VIII No. 3.1.1.1 German vehicle licensing regulations.
- No obligation of storage and submission exists for the exhaust emissions test records if the exhaust emissions test record has been transferred to the main inspection test report by the officially recognised expert.

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6.2 Exhaust emissions test for petrol engines with engine code CFPA

I Note

- The following description refers to vehicles fitted with "Onboard diagnosis" (OBD) and regulated catalytic converter.
- The OBD monitors all components and part systems influencing the exhaust emissions quality.

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Special tools and workshop equipment required

Emissions testing station -VAS 6300-



- OBD adapter cable -VAS 5052/16-
- Data sheets for exhaust emissions test



- It is only possible to carry out an exhaust emissions test when all units of the emissions testing station -VAS 6300- are connected properly and combined with each other according to the ⇒ operating instructions.
- All work to be performed is displayed by the emissions testing station -VAS 6300- .

Test prerequisites

- All test conditions and data required for exhaust emissions test ⇒ Data sheets for exhaust emissions test for respective engine
- For bar code reading the EET data sheet must be printed out.
- Manual gearbox: Gear lever in neutral
- Handbrake pulled on
- Perform exhaust emission test according to instructions on display.



_

Initial screen

- Select Exhaust emissions test -arrow- button.
- An overview is displayed to select the respective EET type.

VAS 5052 N01-10145



The display for warm-up phase appears.

Select EET petrol -arrow-.



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- In whole, is hotoers, Continue exhaust emission test according to instructions on display.
- If the EET specification selection is displayed, select respective "EET specification selection" -arrow-.
- "Standard values" when an EET is performed for the first time, ٠
- Select "Last vehicle" when an EET is to be carried out again. ۲
- Select Continue on display, see -item 1-. _

The vehicle data input menu is displayed. Liotected by copyright, Copyright of the

Perform the following jobs:



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6. Exhaust emissions test 155

- Enter items -1...7- of vehicle data from vehicle registration certificate. en AG. Volkswagen AG
- -1- Vehicle manufacturer: "e.g. VOLKSWAGEN VW"
- -2- Vehicle type: "e.g. 2H"

Vehicle data input

Key number -B-

Vehicle type -C-

Vehicle manufacturer -A-

Key number -D- (the first 3 digits) Vehicle identification number -E-

- -3-Key number to 2 (old) or 2.1 (new): "e.g. 0603"
- 4- Key number to 3 (old) or 2.2 (new): "e.g. 358"
- -5- Engine code "e.g. CFPA"
- -6- Registration number: "e.g. WOB-HH 1234"
- -7- Vehicle identification number: "e.g. WV1ZZZ2HZYW123456"
- -8- Odometer reading: "e.g. 32000"
- commercial purposes, in part or in whole
- Note
- Further functions can be called up using GoTo button.
- The test can be interrupted using GoTo button.
 - Select with OBD -arrow-.

Specified data input for EET



- ubindo? If specifications are not available as bar code, they are to be entered manually Palord . DA Nape
- All test conditions and data required for exhaust emissions test ⇒ Data sheets for exhaust emissions test for respective engine

Manual specified data input for EET:

Perform manual data input according to instructions on display.



- Enter displayed values on EET data sheet under "Test values for exhaust emissions test" on display in following sequence:
- 1 -Test speed (idling speed)
- 2 -Warm-up phase for catalytic converter
- 3 -Engine temperature
- Increased idling speed 4 -
- CO content at increased idling speed 5 -
- Lambda at increased idling speed 6 -
- 7 -Idling speed
- Select regulating probe type, either "step-type probe", or or other "step-type probe", or other "step-type probe", or other "step-type probe", or other "step-type probe", or other step-type probe", or other step-type probe "step-type probe", or other step-type probe", or other step-type probe "step-type probe", or other step-type probe", or other step-type probe "step-type probe", or other step-type probe "step-type probe", or other step-type probe", or other step-type probe "step-type probe", or other step-type probe", or other step-type probe "step-type probe", or other step-type probe", or other step-type probe "step-type probe", or other step-type probe", or other step-type probe "step-type probe", or other step-type probe", or other step-type probe "step-type probe", or other step-type probe "step-type probe", or other step-type probe "step-type probe", or other step-type probe", or other step-type probe "step-type probe", or other step-type probe", or other step-type probe "step-type probe", or other step-type probe "step-type probe", or other step-type probe", or other step-type probe "step-type probe", or other step-type probe", or other step-type probe "step-type probe", or other step-type probe", or other step-type probe "step-type probe", or other step-type probe", or other step-type probe "step-type probe", or other step-type probe", or other step-type probe "step-type probe", or other step-type probe", or other step-type probe "step-type probe", or other step-type probe", or other 8 risedby "broad-band probe" -item 1-.

inde or commercial purposes, in

- 9 -Lambda probe value
- When all data have been entered properly, press Continue button -arrow-.

Specified data input for EET as bar code:

_ If EET nominal data is present in bar code format then read in bar code of EET data sheet using reader pen.

All data required are shown on display.

- Press ▶ -button- to continue procedure.

Visual check

- Follow instructions on display.
- Perform visual checks.
- If visual check is OK press OK button. Press -arrow-.

Note

.ofected by copyright: When not OK button is pressed a check will be carried out.

The visual check is displayed with the request to connect the diagnosis connector -arrow A- and to check the MI lamp -arrow B-.

- Follow instructions on display.
- Switch off ignition.









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- Connect diagnosis line connector to EOBD connection.
- Switch on ignition.
- Perform visual check of "MI lamp".
- If lamp lights up, press Lamp On button -arrow C-.

- Follow instruction. Start engine. Perform visual check of MI famp. Comission probe in exhaust tail pipe. - Follow instructions on display, see -arrow C- and -arrow A-.
- Start engine.



The exhaust emissions test is only continued when the test probe is in the exhaust tail pipe.

It is automatically switched to test for readiness of operation.

It is checked here if all tests for readiness of operation supported by the control unit have been performed.

Note

Ĩ

- If all display values have been set to "0", a regulating probe ٠ test is not performed.
- If not all display values have been set to "0", a regulating probe test will be performed later.
- Confirm status of "exhaust emissions warning lamp" -arrow B-.

Catalytic converter conditioning

Cob It is automatically switched to warm-up phase of catalytic con-. DA nagewsylov verter. Protectedby







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Follow instructions on display.

Measurement starts when the engine speed has reached the required level.

Keep engine speed within required rpm range. _

The remaining time to perform the warm-up phase is displayed - arrow A -.



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Warm-up phase

It is automatically switched to display for measuring engine tems automatically a statute rature. Follow instructions on display.^{Volkswagen AG does not guarantee} perature.

_ Note uthorised by



This is only indicated on display if engine temperature has not reached 80 °C.

Bring engine to required temperature. <u>_</u>0

Measurement at increased idling speed:

It is automatically switched to display for measuring increased idling speed.

Follow instructions on display.

Measurement starts when the engine speed has reached the required level.

Note Ĺ

- Measurement can be skipped using button, i.e. the exhaust emissions test has failed.
- Measured values are reset using the button and the test can be repeated. Copyrightby

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- Keep engine speed within required rom range.

The remaining time to perform measurement is displayed -arrow A-.

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Measuring idling speed and CO content

It is automatically switched to display for measuring the idling speed and CO content.

Measurement starts when the engine speed has reached the required level.

ISUITE.. en AG does not guaranteeor; The remaining time to perform measurement is displayed -arrow A-. olkswagen

Regulating probe test



The regulating probe test is only performed if "NOT" all display values have been set to "0".

It is automatically switched to display for regulating probe test.



The regulating probe test is performed for every lambda probe individually.

espect to the correctness of Measurement starts when the engine speed has reached the required level.

- Keep engine speed within required rpm range.

The remaining time to perform measurement is displayed -arrow A-.

Evaluation

When the exhaust emissions test has been performed, the log is shown on display.

The test result is displayed.

пэвемежо Now remarks concerning the exhaust emissions test can be entered -arrow A-. These will then be included in the test log.

- When the exhaust emissions test is classed as passed, select -arrow B-EET sticker issued in drop-down menu and date.
- Then confirm with Yes, see -arrow C-.

After confirmation, the "2" "TEST CERTIFICATES" are printed out automatically.

- If further test certificates are required, press -arrow A-Print button.
- Follow instructions on display.
- Remove exhaust probe from exhaust tailpipe.
- Then press arrow B-.

The exhaust emissions test is completed, a new exhaust emissions test can be performed.

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commercial purposes, in part or in whole.

6.3 Exhaust emissions test for diesel engines with engine codes CDBA, CDCA

Special tools and workshop equipment required

Diesel tester -V.A.G 1743-



- If possible, the test should be completed outdoors following a road test. If this is not possible for various reasons (weather, excessive noise in residential areas), then the test can be carried out in a workshop.
- To reduce noise levels, the bonnet should be closed on first catch during tests.

Perform the following jobs:

Performing visual check of components that influence pollution.

- \Rightarrow Data sheets for exhaust emissions test
- Perform visual check for:
- Installation
- Completeness

- Leakage
- Damage



Faults found are to be rectified.

With ignition switched off, connect testers as follows:

- Pull on handbrake.
- Manual gearbox: Gear lever in neutral
- Connect diesel tester -V.A.G 1743- according to ⇒ operating instructions with ignition switched off.
- Connect engine speed adapter -VAS 6296- .



- Follow ⇒ operating instructions for engine speed adapter -VAS 6296-'!
- W the sarely processing and the sarely process of the sarely proce Strictly follow the safety precautions in the operating instructions!
- Start engine and run at idling speed.

The engine speed mus	t now be displayed	l on diesel t	tester -V.A.G
1743-			ACC6

If the engine speed is displayed incorrectly or not at all, use operating instructions for VAS 1743 or ⇒ operating instructions for VAS 6296 to rectify the cause.

Perform exhaust emissions test according to instructions on diesel tester -V.A.G 1743- display.

If the following is indicated on display:

Unit ready to carry out measurements.

Check idling speed.

Idling speed not within specified range:



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ne or commercial purposes, in part or in whole

The idling speed and maximum speed can be checked but not adjusted.

If the values are not within specified range, a repair measure Press "button for acceleration test" st, a fresh air comparison is a

Performing acceleration test.

First, a fresh air comparison is performed.

If the following is indicated on display:

n rpm	tB	s k 1/m	Gas 1	°C	м
XXX XXXX		x.xx	0	XX	-

Current values for temperature and speed are displayed.

The arrow pointing upwards indicates that the unit is waiting for the throttle burst.

;ct to th	n rpm XXX XXXX	mode B	k x.xx	1/m	T °C XX
e corre					
ectnes					
s of in _i					
format					



- Depress accelerator pedal fully and hold for specified time.
- Check maximum engine speed (not adjustable).

WARNING

If the governed speed (maximum speed) is exceeded, lift off accelerator pedal immediately and perform repair measures.

If the values are not within specified range, a repair measure must be made.

If the unit detects a valid throttle burst (the speed increases continually during measuring period "tx"), the following is indicated on tinually during mean display: If the following is indicated on display: AG. Volkswagen AG does not guarantees

The display remains "frozen" during the evaluation phase (approx. 15 seconds)

After the evaluation phase, the display changes to:

The arrow pointing upwards indicates that the unit is waiting for the next throttle burst.

Repeat test 4 times.

The following is indicated on display after each throttle burst:

In this way, the unit measures and registers at least four throttle bursts. After the fourth and for each further throttle burst sequence, an average of the last three measurements is performed.

The following is indicated on display after each throttle burst:

After 10 seconds, this display changes to:

After 5 seconds, this display changes to:

The display remains until a further throttle burst is performed or another measurement is called up.

If the opacity figures are equal to or less than the prescribed figures, cease measurements. Appload DA N905W2

If the determined opacity figure is above the prescribed figure, locate fault within repair measure framework > Fault finding engine

n rpm	tB s	k 1/m	Gas T	°C	м
XXX XXXX	·		1	XX	_
CC 00					
n rpm	tB s	k 1/m	Gas T	°C	м
XXX XXXX	X.XX	X.XX	1	xx	-
pility with respec					
n rpm	tBs	k 1/m	Gas T	°C	м
xxx xxxx	x.xx	x.xx	X	XX	-
	correctness				
n rpm	tBs	k 1/m	Gas T	°C	м
XXX XXXX	x.xx	X.XX	X	XX	-
Average	tB s	k 1/m	band	width	м
	X.XX	X.XX	X.X	XX	-
Average	tB s	k 1/m	band	width	м
	X.XX	X.XX	Y	XX	-
all					

6.4 Exhaust emissions test with OBD

Note

- Note
 The following exhaust emission test description is call, cable in countries where specific exhaust emission regulations have to be adhered to.
 In motor vehicles with spark ignition engine or compression ignition engine which were initially registered for use on the call of 2008, measurement and processing of the call of all readiness co-
- If "NOT" all readiness codes are set, an exhaust emissions test must be performed <u>⇒ page 152</u>.

Special tools and workshop equipment required

Vehicle diagnostic testing and information system -VAS 5051Binvite of commercial purposes, in part or



- Diagnosis cable 5m -VAS 5051B/1-
- Vehicle diagnostic and service information system -VAS 5052 Protected by copy A-



Diagnosis cable -VAS 5052/3-



Carry out the following procedure:



- Perform visual check:
- Crankcase breather system connected,
- Exhaust system must be leaktight,
- Catalytic converter and particulate filter present and undam-٠ aged.

Checking and adjusting prerequisites:

- Electrical consumers switched off, ٠
- Air conditioner switched off,
- As of an engine oil temperature of at least 60°C, warm the engine to at least 80°C by revving freely 10 times up to the rev. limit.

ľ Note

Faults found are to be rectified.

- Pull on handbrake.
- Manual gearbox: Gear lever in neutral.
- Connect diagnosis cable connector to diagnosis connection with ignition switched off. den AG. Volkswag
- Connect vehicle diagnostic, testing and information system VAS 5051B- or vehicle diagnostic and service information system -VAS 5052- <u>⇒ page 102</u>.
- Switch on ignition. _



- Press Guided functions button -arrow- on display.

ourposes, in part or in whole, is hof

- Vehicle identification begins.
- nicle identificat. Select brand, vehicle mour. Confirm vehicle identification.





- 39 Satisted unessauthonised by Volkswagen AG. Select "Engine" -arrow- in vehicle diagnostic system guided menu.
- Select "Generate readiness code" -arrow-.
- Follow instructions of vehicle diagnostic, testing and information system -VAS 5051B- or vehicle diagnostic and service information system -VAS 5052- .

cial purposes,

Evaluation:

After running through readiness code, result appears on screen.

i	Note
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- * 101 EUISCOD : 1461,1 Exhaust emissions test is PASSED when all "ACTUAL values" correspond to "SPECIFICATIONS". Protec
- If not all readiness codes are set, an exhaust emissions test must be carried out <u>⇒ page 152</u>.
- Print out the evaluation with Print.
- End programme.
- Remove vehicle diagnostic, testing and information system -VAS 5051B- or vehicle diagnostic and service information system -VAS 5052- .
- Complete exhaust emissions test record according to Annex VIII No. 3.1.1.1 German vehicle licensing regulations.
- Close fuse box cover on left under dash panel.



- Exhaust emissions test badges are omitted as of 1 January 2010; only the main inspection badges are then available.
- Existing exhaust emissions test badges will be removed from the vehicle by the test centres at the next main inspection or so-called "repair badges" will be affixed over them.
- No obligation of storage and submission exists for the exhaust emissions test records if the exhaust emissions test record has been transferred to the main inspection test report by the officially recognised expert.

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Glossary 7

These explanations only apply to "Maintenance Manual". They are not necessarily generally valid!

Letter "A" <u>⇒ page 166</u> Letter "B" <u>⇒ page 166</u>

- Letter "C" <u>⇒ page 166</u>
- Letter "D" <u>⇒ page 167</u>

Letter "E" <u>⇒ page 167</u>

Letter "F" <u>⇒ page 167</u>

Letter "L" <u>⇒ page 167</u>

Letter "M" <u>⇒ page 167</u>

Letter "O" <u>⇒ page 167</u>

Letter "P" <u>⇒ page 168</u>

Letter "Q" <u>⇒ page 168</u> Letter "R" <u>⇒ page 168</u>

Letter "S" <u>⇒ page 168</u>

Letter "T" <u>⇒ page 168</u>

Letter "W" <u>⇒ page 169</u>

Letter "A"

Letter "X" <u>⇒ page 16</u>	59 New Wagen AG. Volkswagen AG does
Letter "A"	offeedby Volks
Term	Explanation
All Season	All-season tyres / all weather tyres All season tyres are all-year-round tyres. The tyres are designed to cope with all weather conditions throughout the year.
ABS (anti-lock brake system)	The ABS is a regulating system in the brake system, that prevents locking when braking. This helps to maintain directional stability and steerability.
ATF (Automatic trans- mission fluid)	Gear oil for automatic gearbox
ATF level	Filling level of ATF in gearbox
Letter "B"	urposes, in p
Term	Explanation

Letter "B"

Term	Explanation
Broad-band probe	The broad-band probe is also called universal lambda probe (ULP probe). The voltage of the lambda probe output nearly increases linear. The lambda probe value is determined by a change in voltage. This enables to measure the lambda probe value via a larger measuring range (broad band). The probe is used as before catalytic converter probe.
Letter "C"	Stalingo Hours

Letter "C"

Term	Explanation	Lotected by	USK USBENSHION	
C - tyres	C-mark tyres are used as light to from "Reinforced tyres" to "C-m	uck tyres. Use corree ark tyres".	ct inflation pressure when chang	ging
CARB requirement	"California Air Resources Board	d" - measures to rest	rict airborne pollutants	

Term	Explanation
CO (Carbon monoxide)	Carbon monoxide is produced when fuels containing carbon are not combusted completely.
CN (Cetane number)	Measurement unit for ignition quality of diesel fuel
	thorised by Volter
Letter "D"	IN RESEARCH CORRECTION

Letter "D"

Term	Explanation
DPF (Diesel particulate filter)	The diesel particulate filter is installed behind the catalytic converter and filters soot particles from emissions.
DIN	Deutsches Institut für Normung e.V. (German Standards Authority)
Letter "E"	part or in w

Letter "E"

tpart or in w
European standard
European on board diagnosis
Electronic stabilisation programme (prevents potential vehicle skidding by targeted in- tervention in the brake and engine management systems)
o to a service to the service of co

Letter "F"

	tervention in the brake and engine management	systems)
Letter "F"	5 to are nite to	n in the second
Term	Explanation Charles and Charle	
FAME	Fatty acid methyl ester	auguina.
	Protected by Copy	DA NOBBWENIOV VAL

Letter "L"

Term	Explanation
LongLife service	The LongLife service enables extremely long inspection or oil change intervals, de- pending on individual driving style and the conditions under which the vehicle is used. For the LongLife service a special engine oil is required.
LEV	Low Emission Vehicle

Letter "M"

Term	Explanation
M&S	\$ 36 of StVZO (Germany's highway regulations) defines the identification of a winter tyre as "M&S".
MIL (Malfunction Indica- tor Light)	American designation for MI lamp -K83-

Letter "O"

Term	Explanation
OBD (Onboard diagno- sis)	The OBD monitors all components influencing the exhaust emissions quality.



Letter "P"

DD mumbers		
PR number	Abbreviation for production control number It identifies among other things optional equipment, country-specific deviations	
Letter "Q"	Aunesautoriseo e.	

Letter "Q"

	lequipment, country-specific deviations
Letter "Q"	Aunesautorised
Term	Explanation
QG0	Vehicles are "not" fitted at the factory with components for LongLife service. For main- tenance, the time or distance dependent intervals (non-flexible intervals) apply.
QG1	Vehicles are fitted at the factory with active LongLife service. This means vehicles have a flexible service interval display and are fitted with the following components: Flexible service interval display in dash panel insert Engine oil level sensor Brake pad wear indicator (if fitted)
QG2	 The LongLife service is not active at the factory. This means, vehicles have a non-flexible service interval display (time or distance dependent service intervals) and are fitted with the following components: Non-flexible service interval display in dash panel insert Engine oil level sensor Brake pad wear indicator (if fitted)

Letter "R"

	2. 8 A
Letter "R"	15-15-17-17-17-17-17-17-17-17-17-17-17-17-17-
Term	Explanation Explanation
RON (Research Octane Number)	Measurement unit of the knock resistance of petrol
RF	"Reinforced", reinforced tyre, additional designation for tyres with increased load ca- pacity

Letter "S"

Term	Explanation
SAM (South Ameri- can countries)	South America
Step-type probe	The step-type probe is also called finger probe or planar lambda probe. The voltage of the output signal of the lambda probe jumps rapidly. The lambda probe value is determined by a change in voltage. The probe is used as after catalytic converter probe.

Letter "T"

Term	Explanation
TDI (Turbo Diesel Injec- tion)	Turbo diesel engine with direct injection

Letter "W"

Term	Explanation
ESI	Extended servicing interval

Letter "X"

Term	Explanation
XL	"Extra Load", reinforced tyre, additional designation for tyres with increased load ca- pacity

