Maintenance
Passat 2011 ➤
Passat Variant 2011 ➤

Edition 01.2019

Maintenance

Heading

1. Engine list
2. Service work
3. General information
4. Descriptions of work:
5. Exhaust emissions test
6. Glossary
7. ---Change history---

Technical information should always be available to the foremen and mechanics, because their 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.

Contents

1 Engine list

(VIGG001253; Edition 01.2019)

This chapter provides information on the following subjects:

Note

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

Petrol engines

Engines ⇒	Petrol engine	Petrol engine	Petrol engine	Petrol engine
Displace-ment l	3.6	1.4	2.0	1.8
Engine code	**BWS**	**CAXA**	**CCZB**	**CDAA**
No. of cylinders/valves per cylinder	6/4	4/4	4/4	4/4
Power kW at rpm	220/6500 to 6700	90/5000	155/6200	118/4500 to 6200
Torque Nm at rpm	350/3500 to 3750	200/1500 to 4000	280/1700 to 5200	250/1500 to 4500
Bore ∅ mm	89	76.5	82.5	82.5
Stroke mm	96,35	75.6	92.8	84.2
Compression ratio	11.4	10.0	9.8	9.8
Injection/ignition	Motronic MED 9.1 FSI	Motronic MED 17.5 TSI turbocharger	Motronic MED 17.5 TSI turbocharger	Motronic MED 17.5 TSI turbocharger
RON unleaded, at least	98	95	95	95
Camshaft drive	Chain	Chain	Chain	Chain

Engines ⇒	Petrol engine	Petrol engine	Petrol engine	Petrol engine
Displacement l	1.8	1.4	1.4	1.4
Engine code	**CDAB**	**CDGA**	**CKMA**	**CTHD**
No. of cylinders/valves per cylinder	4/4	4/4	4/4	4/4
Power kW at rpm	112/4300 to 6200	110/5500	118/5800	118/5800
Torque Nm at rpm	250/1500 to 4500	220/1500 to 4500	240/1500 to 4500	240/1500 to 4500
Bore ∅ mm	82,5	76.5	76.5	76.5
Stroke mm	84,2	75.6	75.6	75.6
Compression ratio	9.6	10.0	10.00	10.0
Injection/ignition	Motronic MED 17.5 TSI turbocharger	Motronic MED 17.1 CNG/TSI twin-charger	Motronic MED17.5 MultiFuel TSI twincharger	Motronic MED17.5 TSI twincharger
RON unleaded, at least	95	Natural gas and 95	95	95
RON Ethanol 85	—	---	104	---
Camshaft drive	Chain	Chain	Chain	Chain

Diesel engines

Engines ⇒	Diesel engine	Diesel engine	Diesel engine
Displacement l	1.6	2.0	2.0
Engine code	**CAYC**	**CFFA**	**CFFB**
No. of cylinders/valves per cylinder	4/4	4/4	4/4
Power kW at rpm	77/4400	100/4200	103/4200
Torque Nm at rpm	250/1500 to 2500	320/1750 to 2500	320/1750 to 2500
Bore ∅ mm	79.5	81.0	81.0
Stroke mm	80.5	95.5	95.5
Compression ratio	16.5	16.0	16.0
Injection/ignition	TDI common rail	TDI common rail	TDI common rail
Diesel particulate filter[1)]	Yes	Yes	yes/no[1)]
Camshaft drive	Toothed belt	Toothed belt	Toothed belt

[1)] In certain countries, vehicles are not offered with a diesel particulate filter. Vehicles with a factory-fitted diesel particulate filter can be identified by PR No. 7GG, 7MB, 7ME, 7MG or 7MQ on the vehicle data sticker.

Engines ⇒	Diesel engine	Diesel engine	Diesel engine
Displacement l	2.0	2.0	2.0
Engine code	**CFGB**	**CFGC**	**CLLA**
No. of cylinders/valves per cylinder	4/4	4/4	4/4
Power kW at rpm	125/4200	130/4200	125/4200
Torque Nm at rpm	350/1750 to 2500	380/1750 to 2500	350/1750 to 2500
Bore ∅ mm	81.0	81.0	81.0
Stroke mm	95.5	95.5	95.5
Compression ratio	16.0	16.0	16.0
Injection/ignition	TDI common rail	TDI common rail	TDI common rail
Diesel particulate filter[1)]	Yes	Yes	no PMS[2)]
Camshaft drive	Toothed belt	Toothed belt	Toothed belt

[1)] Vehicles with a factory-fitted diesel particulate filter can be identified by PR no. 7GG, 7MB, 7ME, 7MG or 7MG on the vehicle data sticker.

[2)] PMS: particulate reduction system

2 Service work

Information reference flexible or fixed service ⇒ page 3

Service tables ⇒ page 7

2.1 Information about flexible or fixed service

Service identification ⇒ page 3

Flexible service ⇒ page 3

Fixed service ⇒ page 4

Service interval display ⇒ page 5

2.1.1 Service identification

– Referring to vehicle data sticker ⇒ page 25 , check if vehicle is equipped with following PR numbers:

The PR number is decisive for the service intervals ⇒ page 7 .

Vehicle ID with PR number

Model year	PR number	Service
► 2012	QG1	Flexible service
► 2012	QG0, QG2, QG3	Fixed service
2013 ►	QI6	Flexible service
2013 ►	QI1, QI2, QI3, QI4, QI7	Fixed service

In the past, the PR numbers QG0, QG1 and QG2 determined the type of service.

With immediate effect, these PR numbers only denote whether an engine oil level sensor is installed or not and no longer have an influence on the oil change interval.

2.1.2 Flexible service

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

Note

For the flexible service a special LongLife engine oil is required ⇒ page 7 .

Vehicles with PR number “QG1” or “QI6” are set up for flexible service when they leave the factory. This means that these 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)

For vehicles with flexible service the service interval is determined by the control unit and is indicated on service interval display (SID) ⇒ page 5 .

Therefore the service intervals are flexible.

2.1.3 Fixed service

For vehicles with a fixed service, fixed services are calculated. This means that the mileage or time values are already set by Volkswagen. For normal operating conditions achieving these service intervals is technically assured.

Therefore the service intervals are fixed.

For vehicles

- which were delivered without extended servicing intervals (ESI) (PR numbers “QG0”, “QG2”, “QI1”, “QI2”, “QI3”, “QI4”, “QI7”.
- or for which the extended servicing interval (ESI) was stopped
- or for which no LongLife engine oil was used

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 5 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
- Engine oil level sensor
- Brake pad wear indicator (if fitted)

Vehicles with PR number “QG3”

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 5 and for maintenance the fixed service intervals apply. These vehicles are fitted with the following components:

- Fixed service interval display in dash panel insert
- Brake pad wear indicator (if fitted)

2.1.4 Service interval display

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:

- 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.
- The result of the evaluation is a value for the deterioration of the oil due to thermal loading.
- The oil deterioration is the deciding factor concerning the distance that can still be driven to the next service.

Note

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” ⇒ page 152 .

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

Calculation of service intervals:

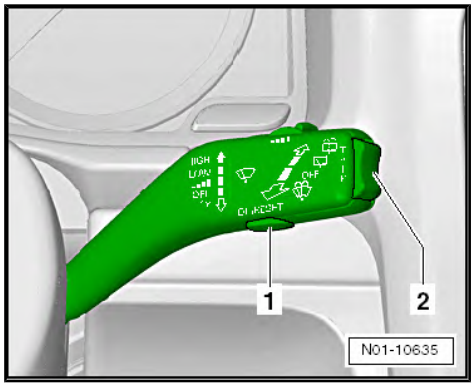
- The service interval for vehicles with a fixed service is calculated in fixed service intervals. This means that the mileage or time values have been previously determined and specified by Volkswagen.
- For normal operating conditions achieving these service intervals is technically assured.

Service type for service due

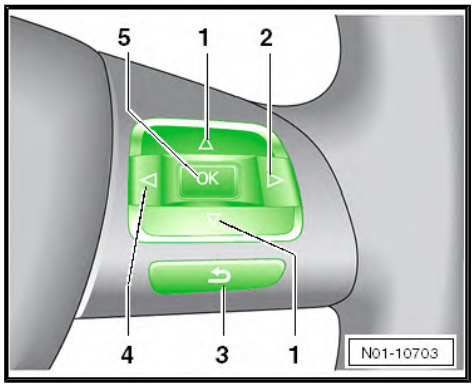
- Vehicles without text messages on the dash panel insert display, a due service is indicated by a gong sound when the ignition is switched on. A flashing “spanner symbol” also appears for a few seconds.
- Vehicles with text messages on dash panel insert, the display “Service now” appears.

The service information disappears after a few seconds or if engine is running.

– It is also possible by pressing “OK button” -1- for multifunction display in windscreen wiper lever



– or return to the original display by pressing “OK button” -5- in the multifunction steering wheel.



Service initial warning

If a service is due, “Service initial warning” appears on dash panel insert display when ignition is switched on.

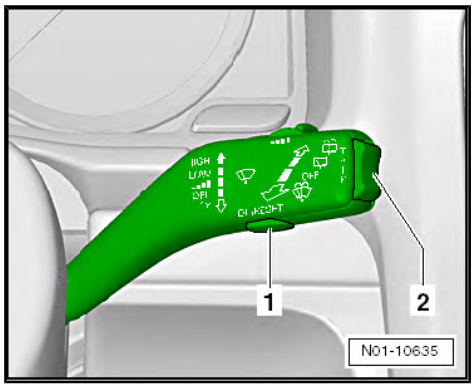
- On vehicles without text messages on dash panel insert display, the following indications appear: “spanner symbol” and “km” with the distance that can be driven until the next service is due.

After 10 seconds the display changes. A “clock symbol” appears with the number of days to the next service.

- On vehicles with text messages on dash panel insert display the following appears: “Service in --- km or --- days”.

The service information disappears after a few seconds or if engine is running.

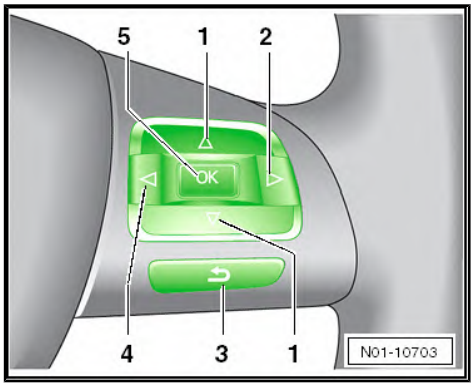
– It is also possible to revert to normal display by pressing “OK button” -1- for multifunction display in windscreen wiper lever



– or return to the original display by pressing OK button -5- in the multifunction steering wheel.

♦ The service initial warning is displayed 20 days before the next service is due.

♦ The remaining distance displayed is always rounded to the nearest 100 km or the remaining time rounded to full days.



Reading service information using rocker switch on windscreen wiper lever or via buttons in the multifunction steering wheel

Note

♦ *The current service information cannot be read until 500 km have been driven after the last service.*

♦ *Dashes will appear on display until that time.*

The current service information can always be read with ignition switched on, engine switched off and vehicle stationary.

– Select menu “Settings” with rocker switch on windscreen wiper lever or using buttons in the multifunction steering wheel.

– In submenu “Service” mark menu option “Info” and press OK button in windscreen wiper lever or in multifunction steering wheel.

♦ Vehicles without text messages on the dash panel insert display, an overdue service is indicated by a minus sign in front of the kilometre/mileage or day information.

♦ On vehicles with text messages on dash panel insert display, the following appears if service is overdue: “Service since --- km or --- days”.

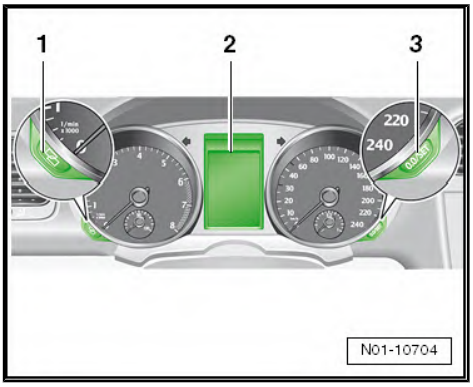
Reading service information using function buttons on dash panel insert

The current service information can always be read with ignition switched on, engine switched off and vehicle stationary.

– Press button -3- twice to change to the Mode menu.

– Press button -1- 4 times.

Service interval display flashes. The remaining time to the next service is displayed in days and kilometres.



2.2 Service tables

Note

♦ *The service tables apply in general with differences depending on the vehicle model and equipment level. There is no relation between individual vehicles and identified vehicle identification numbers.*

♦ *Vehicle-specific time and mileage dependent additional work can only be found in the ⇒ maintenance tables .*

2.2.1 Delivery inspection

Scope of work
– Battery: check battery terminal clamps for secure seating.
– Transportation mode: switch off.
– Service interval display: reset.
– Status of battery: read.
– Event memories of all systems: read.
– Radio/radio navigation system: store local radio stations to station buttons.
– Time and date: set.
– All switches, electrical consumers, sockets, gauges and other controls: check function.
– Front passenger airbag: check key switch and ON/OFF function.
– Window regulators: initialise (activate).
– Vehicle interior: check for cleanliness.
– Protective seat covers and protective carpet film: remove.
– All equipment which has been packed inside vehicle (if part of original equipment): install.
– Two safety hammers: install according to installation instructions.
– Edge protection on doors (plastic film): remove.
– Vehicle exterior: check for cleanliness.
– Tyre pressure: check.
– Wheel bolts: tighten to specified torque.
– Wiper blade protection: remove.
– Tyre Pressure Loss Indicator: calibrate after tyre pressure has been corrected.
– Vehicle: inspect for leaks and damage from above and below.
– Brake system: inspect for leaks and damage.
– Transportation devices: remove (if fitted).
– Vehicle underside (underbody): inspect for damage.
– Windscreen wash/wipe system and headlight washer system: check function and settings.
– Engine oil level: check; observe oil specification when topping up.
– Coolant level: check.
– Brake fluid: renew, if vehicle is older than 6 months.
– Brake fluid level: check that it is at maximum.
– Keys: check number, operation and cleanliness.
– Service Schedule / Digital Service Schedule: enter pre-delivery inspection.
– Owner's literature: check that literature is complete and prepare for delivery to customer.
– Carry out road test.
– Warning stickers: check that they are present.
– Charging cable: check that cable is present and check its condition. • Applies only to BEV and PHEV
– High-voltage battery: charging • Applies only to BEV and PHEV

2.2.2 Scopes of service

Note

- *Depending on the time elapsed and the mileage since the last service, service events may be combined (inspection with oil change).*
- *An extended scope of inspection is carried out in combination with an inspection.*
- *The scopes of service work are generally applicable and differ according to vehicle model and equipment level. There is no relation between individual vehicles and identified vehicle identification numbers.*
- *Scopes of service work for individual vehicles can be found only in the maintenance tables. ⇒ Maintenance tables*

Oil change service	Inspection	Extended scope of inspection (applies only in addition to regular inspection)	Scope of work
Vehicle interior			
		X	– Interior lights: check function of headliner, luggage compartment and glove compartment lights.
	X		– Horn: check function.
	X		– Charging cable: check that cable is present and check its condition. • Applies only to BEV
	X		– High-voltage battery: check charge level, charge as necessary. • Applies only to BEV
Vehicle exterior			
	X		– Headlight washer system: check function.
	X		– Front lighting: check function.
	X		– Static cornering light (cornering light): check function.
	X		– Automatic headlight control: check function.
	X		– Rear lighting: check function.
	X		– Windscreen wash/wipe system: check function and spray jet settings and adjust if necessary; check for damage.
	X		– Wiper blades: move blades to service position and check for damage; check park position.
		X	– Interior and exterior of body: inspect for corrosion.
		X	– Windscreen: inspect for damage.
	X		– High-voltage charging socket in radiator grille: inspect for soiling and damage. • Applies only to PHEV

Oil change service	Inspection	Extended scope of inspection (applies only in addition to regular inspection)	Scope of work
	X		– High-voltage charging socket in radiator grille and tank cap: inspect for soiling and damage. • Applies only to BEV
X			– Reducing agent (AdBlue®): replenish only if customer requests. • If part of equipment
		X	– Bonnet catch hook: grease. • Only applies for: CC, Touran 1T, Golf Cabriolet, EOS, Phaeton, Golf 5K1, Golf Plus, Passat 36, Tiguan 5N, Sharan 7N, Touareg 7P
		X	– Door arrester: grease. • Applies only to Touran 1T, EOS, Golf Cabriolet, CC and Phaeton
		X	– Convertible top: clean and lubricate locking element. • Applies only to Golf Cabriolet and Beetle Cabriolet
		X	– Convertible top: perform water test. • Applies only to Golf Cabriolet and Beetle Cabriolet
		X	– Sunroof: check function, clean guide rails and lubricate with special grease.
Underside of vehicle			
X			– Drain engine oil and renew oil filter.
	X		– Engine and components in engine compartment: inspect for leaks and damage (from below).
	X		– Gearbox, final drive and drive shaft boots: inspect for leaks and damage.
X			– Brakes, front and rear: check thickness of pads/linings and condition of brake discs.
		X	– Poly V-belt: check condition.
		X	– Swivel joints, axle mountings, coupling rod bearings and anti-roll bar rubber mounting: inspect for damage.
		X	– Track rods: checking clearance, attachment and boots
	X		– Brake system and shock absorbers: inspecting for leaks and damage
		X	– Exhaust system: inspect for leaks, firm seating and damage.
		X	– Underbody: inspect for damage to undercoating, underbody cladding, routing of lines, plugs.
		X	– Front and rear coil springs and rubber buffers: inspect for damage.
X			– Warning stickers: check that they are present. • Applies only to high-voltage vehicles

Oil change service	Inspection	Extended scope of inspection (applies only in addition to regular inspection)	Scope of work
	X		– Removable towing bracket: check. • If part of equipment
		X	– Air suspension: check for leaks and damage. • Applies only to Touareg and Phaeton
Tyres			
	X		– Tyre pressure: check.
	X		– Tyre mobility set: check for damage and use.
	X		– Tyres: check condition and wear pattern of tyre; enter tread depth.
Engine compartment			
X			– Engine oil: replenish.
	X		– Oil level: check.
	X		– Battery and, if fitted, second battery: check with battery tester.
	X		– Engine and components in engine compartment: inspect for leaks and damage (from above).
	X		– Brake fluid level (dependent upon brake pad/lining wear): checking
	X		– Cooling system: check frost protection and coolant level.
	X		– Window wash/wipe system: check anti-freeze protection; replenish washer fluid.
	X		– Hybrid components: inspect for damage to high-voltage components and wires. • Applies only to HEV and PHEV
	X		– High-voltage components and high-voltage cables: inspect for damage and correct routing and securing of lines. • Applies only to BEV
X			– Plenum chamber: check for soiling. • Applies only to up!
	X		– Plenum chamber: check for soiling. • Applicable for e-up! only
Final checks			
X			– Service interval display: resetting
	X		– Headlight adjustment: check and adjust as necessary.
	X		– Tyre Pressure Loss Indicator: calibrate after tyre pressure has been corrected.
	X		– Carry out road test.

Oil change service	Inspection	Extended scope of inspection (applies only in addition to regular inspection)	Scope of work
X			– High-voltage battery: charge. • Applies only to PHEV

2.2.3 Service intervals to model year ►2013

Caution

Applies only to diesel engines

- *In some countries, diesel has a higher sulphur content.*
- *The high sulphur content leads to excessive wear of cylinders and it considerably reduces the cleanliness of pistons.*
- *Therefore change engine oil every 7,500 km in countries where the diesel has a high sulphur content.*

Note

- *For extremely uneconomical driving style or use under extreme conditions ⇒ page 28 , the shortest interval for an oil change service is "7,500 km or 1 year".*
- *However, other intervals apply for other countries. Your importer will inform you about this.*

Passat (36) ►2012			
Service intervals			
From - to	**Engine/Engine code/ PR No./Remarks**	**Service events: Intervals**	**Indicated on service interval display (includes oil change)**
From introduction ►2012	Diesel, in countries where the sulphur content in fuel is high	Oil change service: every 7,500 km or 1 year	YES
	QG0/QG2/QG3 or QG1 vehicles coded to non-flexible interval	Oil change service: every 15,000 km or 1 year	YES
		Interval service: every 30,000 km or 2 years	YES
	QG1 vehicles	Interval service: from 15,000 km or 1 year up to max. 30,000 km or 2 years	YES

Passat (36) ▸2012			
Service intervals			
From - to	**Engine/Engine code/ PR No./Remarks**	**Service events: Intervals**	**Indicated on service interval display (includes oil change)**
	For all vehicles	Inspection service: after 3 years or max 60,000 km, then every 2 years or 60,000 km	NO

PASSAT (36) 2013			
Service intervals			
From - to	**PR No.**	**Service events: Intervals**	**Indicated on service interval display (includes oil change)**
2013	QI1	Oil change service (fixed): every 5,000 km or 1 year	YES
	QI2	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
	QI4	Oil change service (fixed): every 15,000 km or 1 year	YES
	QI7	Oil change service (fixed): every 10,000 mi or 1 year	YES
	QI1, QI2, QI3, QI4, QI7	Interval service (fixed): every 30,000 km or 2 years	YES
	QI6	Interval service (flexible): from 15,000 km or 1 year up to max. 30,000 km or 2 years	YES
	QI1, QI2, QI3, QI4, QI6, QI7	Inspection service: after 3 years or max 60,000 km, then every 2 years or 60,000 km	NO

2.2.4 Service intervals as of model year 2014▸

Scope of work	**Climate and traffic conditions usual for passenger vehicles operated on fuels compliant with EN 228 or EN 590**	**For operation with fuels that are »NOT« compliant with standards EN 228 ⇒ page 27 or EN 590 ⇒ page 26**
Oil change service	---	QI1 every 5,000 km or 1 year (fixed) 1)
	---	QI2 every 7,500 km or 1 year (fixed) 1)
	---	QI3 every 10,000 km or 1 year (fixed) 1)
	QI4 every 15,000 km or 1 year (fixed) 1)	
	QI6 max. 30,000 km or 2 years (flexible) 1)	---

Scope of work	Climate and traffic conditions usual for passenger vehicles operated on fuels compliant with EN 228 or EN 590	For operation with fuels that are »NOT« compliant with standards EN 228 ⇒ page 27 or EN 590 ⇒ page 26
	QI7 every 10,000 mi or 1 year (fixed) 1)	---

1) Whichever occurs first.

Scope of work	Climate and traffic conditions usual for passenger vehicles operated on fuels compliant with EN 228 or EN 590	For operation with fuels that are »NOT« compliant with standards EN 228 ⇒ page 27 or EN 590 ⇒ page 26
Inspection	---	QI1 every 10,000 km or 1 year 1)
	---	QI2 every 15,000 km or 1 year 1)
	---	QI3 every 10,000 km or 1 year 1)
	QI4 30,000 km or 2 years then every 30,000 km or 1 year 1)	QI4 every 15,000 km or 1 year 1)
	QI6 30,000 km or 2 years then every 30,000 km or 1 year 1)	---
	QI7 Every 20,000 mi or 2 years 1)	---

1) Whichever occurs first.

Scope of work	Climate and traffic conditions usual for passenger vehicles operated on fuels compliant with EN 228 or EN 590	For operation with fuels that are »NOT« compliant with standards EN 228 ⇒ page 27 or EN 590 ⇒ page 26
Inspection with expanded scope • Applies only in conjunction with regular inspection	After 60,000 km or 3 years then every 60,000 km or 2 years 1)	After 30,000 km or 2 years or after 20,000 km or 2 years 1)

1) Whichever occurs first.

2.2.5 Air filter

Scope of work	Climate and traffic conditions usual for passenger vehicles	Countries with high levels of dust ⇒ page 30
Air filter: cleaning housing and renewing filter element • Applies only to Polo (except for 1.0 TSI) and up! with PFI	Every 60,000 km or 4 years [1)]	Every 30,000 km or 2 years [1)]
Air filter: cleaning housing and renewing filter element	Every 90,000 km or 6 years [1)]	Every 30,000 km or 2 years [1)]

[1)] Whichever occurs first.

2.2.6 Dust and pollen filter

Scope of work	Climate and traffic conditions usual for passenger vehicles	Countries with high levels of dust ⇒ page 30
Dust and pollen filter (cabin filter): renew. • Applies only to Polo (6R1 and 6C1) and up!	Every 30,000 km or 2 years [1)]	Max. 1 year or 30,000 km [1)]
Dust and pollen filter (cabin filter): renew.	Every 60,000 km or 2 years [1)]	Max. 1 year or 30,000 km [1)]

[1)] Whichever occurs first.

2.2.7 Panoramic sliding sunroof

Scope of work	Climate and traffic conditions usual for passenger vehicles	Countries with high levels of dust ⇒ page 30
Panoramic sliding sunroof • If the lubricating paste is grey, clean and grease guide rails and clean wind deflector.	After 60,000 km or 3 years then every 60,000 km or 2 years [1)]	Max. 1 year or 15,000 km [1)]

[1)] Whichever occurs first.

2.2.8 Sliding sunroof drains

Scope of work	Climate and traffic conditions usual for passenger vehicles	Countries with high levels of dust ⇒ page 30
Sliding sunroof drains: checking for blockage, cleaning if necessary	Max. 2 years or 30,000 km [1)]	Max. 1 year or 15,000 km [1)]

[1)] Whichever occurs first.

2.2.9 Toothed belt

Scope of work	Climate and traffic conditions usual for passenger vehicles	Countries with high levels of dust ⇒ page 30
Toothed belt and camshaft drive tensioning roller: renew. • Applies to all diesel engines with toothed belt	Every 210,000 km	Every 120,000 km

1) Whichever occurs first.

2.2.10 Poly V-belt

Scope of work	Climate and traffic conditions usual for passenger vehicles	Countries with high levels of dust ⇒ page 30
Poly V-belt: renewing	---	Every 60,000 km
Poly V-belt for compressor: renew. • Applies only to Touareg	Every 90,000 km	Every 60,000 km

2.2.11 Diesel fuel filter

Scope of work	Diesel compliant with EN 590	Diesel not compliant with EN 590 ⇒ page 26
Diesel fuel filter: renewing • Applies only to Polo (6R1 & 6C1) and Touareg	Every 60,000 km	Every 30,000 km
Diesel fuel filter: renewing	Every 90,000 km	Every 30,000 km

2.2.12 Spark plugs

Scope of work	Petrol engine compliant with EN 228	E100	Petrol engine not compliant with EN 228 ⇒ page 31
Spark plugs: renewing	Every 60,000 km or 4 years 1)	Every 40,000 km or 4 years 1)	Every 30,000 km / 20,000 km or 2 years 1) and every 15,000 km / 10,000 km or 1 year 1)
Spark plugs: renewing • Applies only to engine codes: CDAA, CDAB, CCZB, BWS	Every 90,000 km or 6 years 1)		

1) Whichever occurs first.

2.2.13 Brake fluid

Scope of work	Climate and traffic conditions usual for passenger vehicles	Only for markets outside Europe and with fixed oil change intervals
Brake and clutch system: changing brake fluid • Applies to vehicles as of 2008►	3 years after initial registration, then every 2 years	Every 2 years

2.2.14 Natural gas system

Scope of work	Interval
Natural gas system: inspect natural gas tank for corrosion and leakage. • Italy only	4 years after initial registration, then every 2 years
Natural gas filler connection and sealing cap: check condition, clean if necessary and check seal. • Italy only	4 years after initial registration, then every 2 years

2.2.15 Automatic gearbox

Scope of work	Climate and traffic conditions usual for passenger vehicles	Countries with hot climate ⇒ page 29	North American market
Automatic gearbox: change ATF.	---	Every 60,000 km	---
Automatic gearbox: change ATF.	---	---	Every 80,000 mi

2.2.16 Time and mileage-dependent additional work for the markets Russia and China to model year ►2013

Note

- *This chapter contains only the time or mileage-dependent additional work up to model year ►2013 for the Indian, Russian and Chinese markets.*
- *For information for other markets, refer to the chapter "Service tables" ⇒ page 7 .*

Indian market

Applies up to ►2013	Interval	Description of work
Interval service • (QG0/QG2/QG3) [2] • QI4	Every 15,000 km or 1 year [1]	→ Maintenance tables
Inspection service	Every 30,000 km or 2 years [1]	→ Maintenance tables
– Multi-purpose additive for petrol fuel: adding	At every service.	⇒ page 104
– Dust and pollen filter (cabin filter): renew.	Every 15,000 km or 1 year [1]	⇒ page 155
– Air filter element: renew and clean housing.	Every 15,000 km or 1 year [1]	⇒ page 99
– Diesel fuel filter: renewing	Every 15,000 km	⇒ page 97
– Spark plugs: renewing	Every 30,000 km or 2 years [1]	⇒ page 162

Applies up to ►2013	Interval	Description of work
– Panorama tilting/sliding roof with rear panorama roof: checking function, cleaning and greasing guide rails, and cleaning wind deflector	Every 30,000 km or 2 years 1)	⇒ page 116
– Camshaft drive toothed belt: renew. • Applies only to 1.6 l TDI and 2.0 l TDI Common Rail engines	Every 120,000 km	⇒ page 161

1) Whichever occurs first.

2) Oil change service has been omitted in the Indian market. The interval service is carried out as a substitute. Changing the engine oil is an integral part of the interval service.

Russian market

Applies up to ►2013	Interval	Description of work
Interval service (fixed) • (QG0/QG2/QG3) 2) • QI4 (appears on service interval display)	Every 15,000 km or 1 year 1)	→ Maintenance tables
Inspection service (does not appears on service interval display)	Every 30,000 km or 2 years 1)	→ Maintenance tables
– Multi-purpose additive for petrol fuel: adding	At every service.	⇒ page 104
– Dust and pollen filter (cabin filter): renew.	Every 15,000 km or 1 year 1)	⇒ page 155
– Spark plugs: renewing • Applies only to 1.4 l TSI	Every 30,000 km or 2 years 1)	⇒ page 162
– Diesel fuel filter: renewing	Every 30,000 km	⇒ page 97
– Air filter element: check; renew as needed and clean housing.	Every 30,000 km or 2 years 1)	⇒ page 99
– Panorama tilting/sliding roof with rear panorama roof: checking function, cleaning and greasing guide rails, and cleaning wind deflector	Every 30,000 km or 2 years 1)	⇒ page 116
– Spark plugs: renewing • Applies only to 1.8 l TSI, 2.0 l TSI and 3.6 l FSI engines	every 60,000 km or 4 years 1)	⇒ page 162
– Camshaft drive toothed belt: renew. • Applies only to 1.6 l TDI and 2.0 l TDI common rail	Every 120,000 km	⇒ page 161

1) Whichever occurs first.

2) Oil change service has been omitted in the Russian market. The interval service is carried out as a substitute. Changing the engine oil is an integral part of the interval service.

China market

Note

In the Chinese market no engine oils to VW standard 504 00/507 00 may be used because of poor fuel quality.

Applies up to ►2013	Interval	Description of work
Oil change service (QG0/QG2/QG3) • (QG0/QG2/QG3) (appears on service interval display)	Once after 5,000 km	→ Maintenance tables
Oil change service • (QG0/QG2/QG3) • QI3 (appears on service interval display)	Every 10,000 km or 1 year [1)]	→ Maintenance tables
Interval service (fixed) (appears on service interval display)	Every 20,000 km or 2 years [1)]	→ Maintenance tables
Inspection service (does not appears on service interval display)	Every 30,000 km or 3 years [1)], and then every 30,000 km / 2 years	→ Maintenance tables
– Dust and pollen filter (cabin filter): renew.	Every 10,000 km or 1 year [1)]	⇒ page 155
– Multi-purpose additive for petrol fuel: adding	At every service.	⇒ page 104
– Panorama tilting/sliding roof with rear panorama roof: checking function, cleaning and greasing guide rails, and cleaning wind deflector	Every 10,000 km or 1 years [1)]	⇒ page 116
– Spark plugs: renewing • Applies only to 1.4 l TSI, 1.8 l TSI, 2.0 l TSI and 3.6 l FSI engines	Every 20,000 km or 2 years [1)]	⇒ page 162
– Air filter element: renew and clean housing.	every 30,000 km or 2 years [1)]	⇒ page 99

[1)] Whichever occurs first.

2.2.17 Country-specific additional work dependent on time and mileage

Scope of work	Interval
Reducing agent (AdBlue®/DEF): replenishing • Only if requested by customer, and as a separate charge	At every service.
Renewing buffer stops for air filter housing • Applies only to Scirocco R and Golf R Cabriolet	Every 30,000 km or 2 years [1)]
Dual clutch gearbox (DSG) 02E and 0D9: change gear oil and filter.	Every 60,000 km
Dual clutch gearboxes (DSG) 0DD, 0DL and 0BH: change gear oil.	Every 60,000 km
Dual clutch gearbox (DSG) 0GC: change gear oil.	Every 120,000 km
Idler roller for poly V-belt: renew. • Applies only to Phaeton with V8 petrol engine	Every 120,000 km

Scope of work	Interval
Gearbox mounting: renew • Applies only to Phaeton with towing bracket	Every 150,000 km
Diesel particulate filter: check.	At 180,000 km/210,000 km, then every 30,000 km
All-wheel drive coupling: changing oil	Every 3 years
Natural gas system: inspect natural gas tank for corrosion and leakage. • Europe only (except for Italy)	3 years after initial registration, then every 2 years
Natural gas filler connection and sealing cap: check condition, clean if necessary and check seal. • Europe only (except for Italy)	3 years after initial registration, then every 2 years
Reducing agent (AdBlue®/DEF): changing • Applies only to vehicles driven less than 15,000 km in 4 years	Every 4 years
Natural gas tank: renew.	Every 20 years

3 General information

3.1 Raising vehicle with lifting platform or trolley jack

3.1.1 Safety instructions and work preparation:

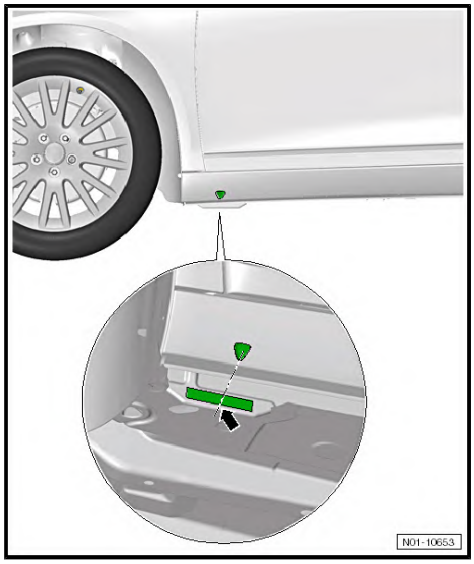
WARNING

- *Before driving onto a lifting platform, make sure that there is sufficient clearance between bottom 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.*
- *To avoid damaging the vehicle underbody or tipping the vehicle, only lift the vehicle at the points indicated in the illustration.*
- *Never start engine and engage a gear with vehicle lifted as long as even one driven wheel has contact with the floor! Disregarding these warnings risks the danger of an accident!*

3.1.2 Lifting points for lifting platform or trolley jack:

Front lifting point:

– Position support plate in area of side member marking at vertical reinforcement of floor pan -arrow-.

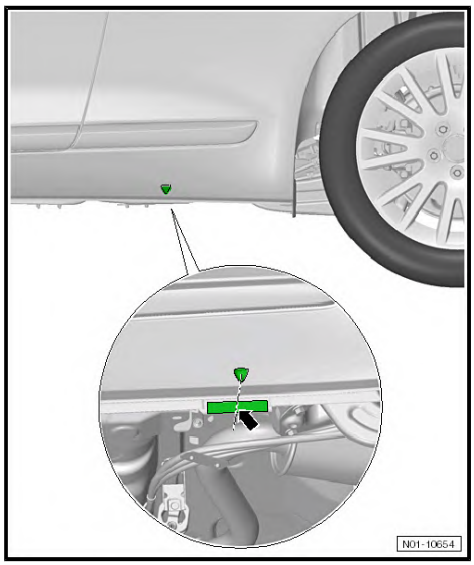


WARNING

Under NO circumstances must vehicle be raised on vertical stiffener of side member.

Rear lifting point:

– Position support plate in area of side member marking at vertical reinforcement of floor pan -arrow-.



3.2 Stickers

In this chapter there are stickers which apply for the German market. The stickers determined for your country can be obtained from your importer.

Attach “Your next service” sticker. ⇒ page 22

Attach “vehicle data sticker” in customer service schedule. ⇒ page 23

Entries in service schedule ⇒ page 23

3.2.1 Attaching “Your next service” sticker

Note

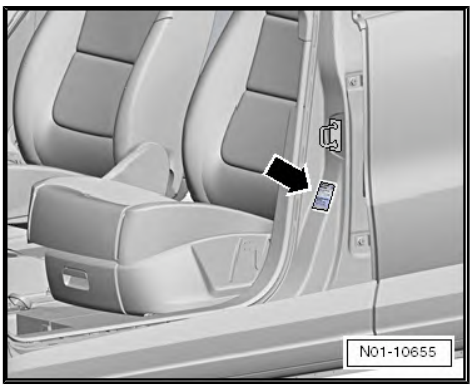
For vehicles from model year 2014►, no service sticker needs to be attached.

Service sticker valid for vehicles to model year ►2013

– Service sticker “Your next service”: Enter a cross in position for next oil change service or inspection service or legal check such as legislative inspection or gas system check (next service due) and enter date and mileage.

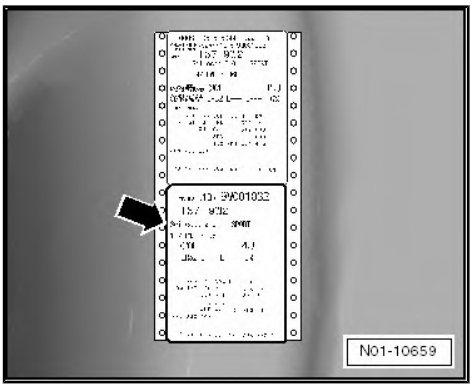
Service intervals ⇒ page 7

– Attach sticker to driver side door pillar (B-pillar) -arrow-.



3.2.2 Attaching “vehicle data sticker” in customer service schedule:

– Apply the lower of the two vehicle data stickers -arrow- in the service schedule.



3.2.3 Entries in service schedule

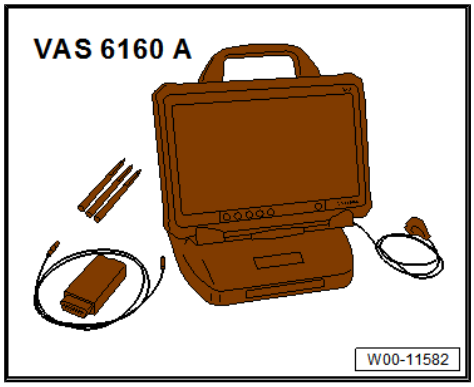
If a component is changed which has a change interval prescribed by the manufacturer, e.g. the toothed belt, the new change interval begins at the time the component is changed.

- Therefore it is very important, every time a component is changed, to document this in the service schedule.
- This also applies to components which were changed before the regular change interval.

3.3 Connecting vehicle diagnostic tester

Special tools and workshop equipment required

- Diagnosis system - VAS 6160 A-



- Diagnosis system VCI - VAS 6150 C-

Note

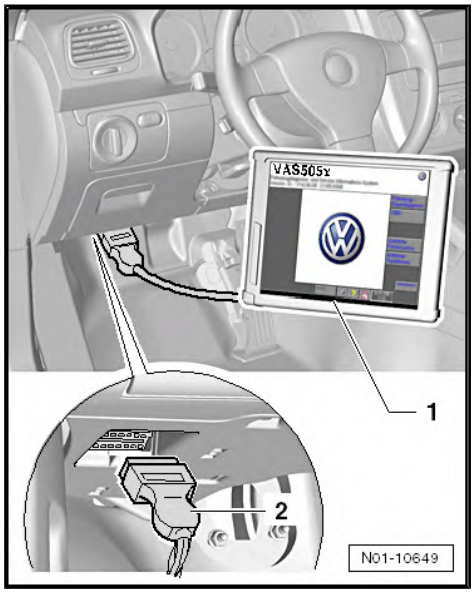
Ensure that the selected vehicle diagnostic tester is used only with the respective diagnostic cable.

WARNING

- ***During a road test, you must always secure testing and measuring equipment on the back seat.***
- ***Only a passenger may operate these devices while the vehicle is in motion.***

– Perform the following procedure:
– Connect diagnostic line connector to diagnostic connection.
– Switch on vehicle diagnostic tester .
– Switch on ignition.

Now follow information given on screen to start desired functions.

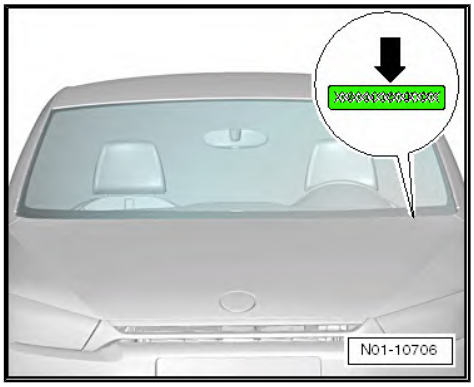


3.4 Vehicle identification number

- Vehicle identification number on lower edge of windscreen ⇒ page 25
- Vehicle identification number on bulkhead above coolant expansion tank ⇒ page 25
- Significance of vehicle identification number ⇒ page 25

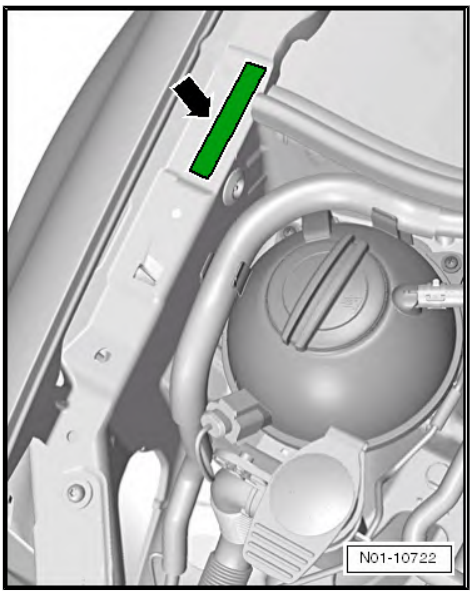
3.4.1 Vehicle identification number on lower edge of windscreen

The vehicle identification number (chassis number) -arrow- is located on the left-hand side of the vehicle in the windscreen near the wiper mounting. It is visible from the outside.



3.4.2 Vehicle identification number on bulkhead above coolant expansion tank

The vehicle identification number is located on the bulkhead above the coolant expansion tank -arrow-.

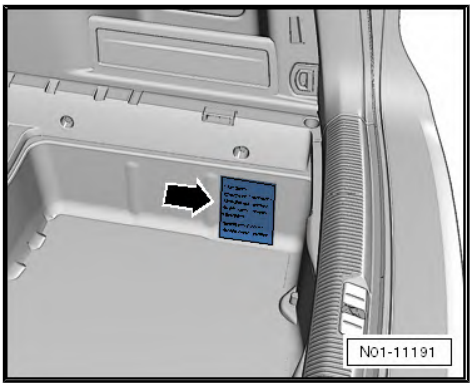


3.4.3 Interpretation of vehicle identification number:

WVV	ZZZ	3C	Z	B	Y	000 001
Manufacturer code	Filler characters	Model	Filler characters	Model year 2011	Production location	Serial number

3.5 Vehicle data sticker

The vehicle data sticker -arrow- is located in luggage compartment on right in spare wheel recess. The vehicle data sticker is also found in the service schedule for the customer.



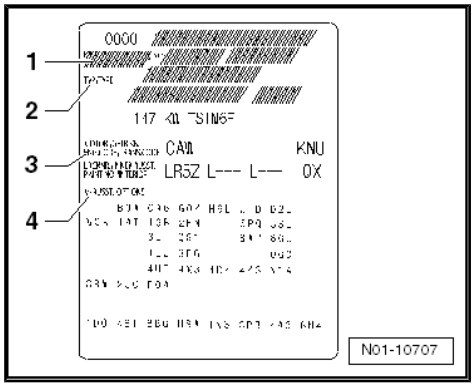
The sticker contains the following data of the vehicle

1 - Vehicle identification number

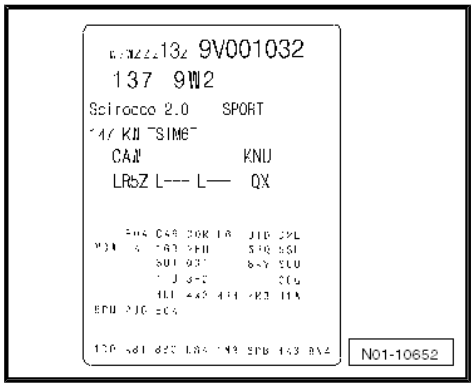
2 - Vehicle type, engine output, gearbox

3 - Engine and gearbox codes, paint number, interior equipment

4 - Optional equipment, PR numbers



The sticker in service schedule includes the same data. The legend can be found below the sticker.



3.6 Country overview for diesel not compliant with EN 590

Examples in fuel inadequacies that can lead to shortened maintenance / exchange intervals:

- High sulphur content
- Elevated amount of biodiesel
- Contaminants in diesel
- Elevated amount of water in diesel

Abu Dhabi	Gambia	Malawi	Sierra Leone
Afghanistan	Georgia	Malaysia	Zimbabwe
Egypt	Ghana	Mali	Singapore
Algeria	Guatemala	Morocco	Somalia
Angola	Guinea	Mauritania	Sri Lanka and the Maldives
Equatorial Guinea	Guinea-Bissau	Mauritius	South Africa
Argentina	Guyana	Macedonia	Sudan
Armenia	Haiti	Mexico	South Sudan
Azerbaijan	Honduras	Moldova	Surinam
Ethiopia	India	Mongolia	Swaziland
Bahamas	Indonesia	Mozambique	Syria
Bahrain	Iraq	Myanmar	Tajikistan
Bangladesh	Iran	Namibia	Tanzania
Belize	Jamaica	Nepal	Thailand
Benin	Yemen	New Caledonia	Togo
Bermudas	Jordan	Nicaragua	Trinidad and Tobago
Bhutan	Cambodia	Dutch Overseas Territories	Chad

Bolivia	Cameroon	Niger	Tunisia
Botswana	Canada	Nigeria	Turkey
Brazil	Cape Verde	North Korea	Turkmenistan
Brunei	Caribbean driving on the left	Oman	Uganda
Burkina Faso	Kazakhstan	Pakistan	Ukraine
Burundi	Qatar	Panama	Uruguay
Cayman Islands	Kenya	Papua New Guinea	USA
China	Kyrgyz Republic	Paraguay	Uzbekistan
Costa Rica	Columbia	Peru	Venezuela
Democratic Republic of the Congo	Cuba	Philippines	United Arab Emirates
Djibouti	Kuwait	Puerto Rico	Vietnam
Dominican Republic	Laos	Republic of Congo	West Sahara
Dubai	Lesotho	Rwanda	Central African Republic
Ecuador	Lebanon	Russia	Ivory Coast
El Salvador	Liberia	Zambia	
Eritrea	Libya	Saudi Arabia	
Fiji	Macao	Senegal	
Gabon	Madagascar	Seychelles	

3.7 Country overview for petrol not compliant with EN 228

Examples in fuel inadequacies that can lead to shortened maintenance / exchange intervals:

- Petrol contaminated with diesel
- High sulphur content
- Poor boiling point / evaporation
- Metallic components / Octane Booster Additive
- Contaminants in petrol

Abu Dhabi	Georgia	Mauritius	Syria
Afghanistan	Ghana	Mexico	Tajikistan
Egypt	Guatemala	Mongolia	Taiwan
Algeria	Guinea	Mozambique	Tanzania
Angola	Guinea-Bissau	Myanmar (Burma)	Thailand
Equatorial Guinea	Haiti	Nepal (Indian subcontinent)	Togo
Armenia	Honduras	New Caledonia	Trinidad and Tobago
Azerbaijan	India	Nicaragua	Chad
Ethiopia	Indonesia	Dutch Overseas Territories	Tunisia
Bahamas	Iraq	Niger	Turkey
Bahrain	Iran	Nigeria	Turkmenistan
Bangladesh	Jamaica	North Korea	Uganda
Belize	Yemen	Oman	Ukraine
Benin (Dahomey)	Jordan	Pakistan	Uruguay
Bermudas	Cameroon	Panama	Uzbekistan

Bhutan	Cape Verde	Papua New Guinea	Venezuela
Bolivia	Caribbean, left-hand traffic	Paraguay	United Arab Emirates
Brunei	Kazakhstan	Peru	Vietnam
Burkina Faso (Upper Volta)	Qatar	Philippines	West Sahara
Burundi	Kenya	Republic of Congo	Central African Republic
Chile	Kyrgyz Republic	Rwanda	Macao
China	Columbia	Russian Federation	Libya
Costa Rica	Cuba	Zambia	
Democratic Republic of the Congo	Kuwait	Saudi Arabia	
Djibouti	Laos	Senegal	
Dominican Republic	Lebanon	Seychelles	
Dubai	Liberia	Sierra Leone	
Ecuador	Madagascar	Singapore	
El Salvador	Malawi	Somalia	
Ivory Coast	Maldives	Sri Lanka	
Eritrea	Malaysia	South Sudan	
Fiji	Mali	Zimbabwe	
Gabon	Morocco	Sudan	
Gambia	Mauritania	Suriname	

3.8 Engine code and engine number

Engine code and engine number are located:

- On vehicle data sticker ⇒ page 25
- On type plate

Or

⇒ ; Rep. gr. 00 ; Identification; Engine number/engine features

3.9 Severe operating conditions

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

- Regular short trips or stop and go operation in urban traffic
- High percentage of cold starts
- Vehicle is used in areas with winter temperatures over a long period
- Regular long periods of idling (e.g. taxis)
- 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
- Countries with generally poor road conditions such as high number of potholes, protrusions, high elevations in the road/ deep “tramlines”.

- High number of gravel roads with poor surface quality, such as irregularities/bumps, elevations, protruding stones, waves.
- Subtropical climates (combination of high ambient temperature and high air humidity)

3.10 Countries with hot climate

- Countries with hot and super hot climates have elevated peak temperatures (50°C) compared with the European average (25°C).
- Locally high ambient temperatures have an influence on the longevity of the engine, gearbox and coolant circuit, such as journeys uphill and at higher speeds as well as start/stop operation.

Australia	Qatar	USA
Abu Dhabi	Lebanon	United Arab Emirates
Algeria	Libya	West Sahara
Egypt	Liberia	Zimbabwe
Afghanistan	Mexico	Central African Republic
Angola	Malaysia	
Equatorial Guinea	Mauritius	
Ethiopia	Morocco	
Bahrain	Madagascar	
Brunei	Mali	
Benin	Mozambique	
Burkina Faso	Malawi	
Botswana	Mauritania	
Burundi	Nigeria	
China	Niger	
Dubai	Oman	
Democratic Republic of the Congo	Puerto Rico	
Djibouti	Palestine	
Ivory Coast	Pakistan	
Eritrea	Republic of Congo	
Gabon	Rwanda	
Gambia	Saudi Arabia	
Ghana	Singapore	
Guinea	Senegal	
Guinea-Bissau	Sudan	
Iran	Zambia	
India	South Sudan	
Indonesia	Sierra Leone	
Iraq	Somalia	
Israel	Syria	
Yemen	Thailand	
Jordan	Tunisia	
Kuwait	Togo	
Cameroon	Tanzania	
Kenya	Uganda	

3.11 Countries with high levels of dust

- High dust content in the air due to road and environmental conditions.
- Dust is categorised according to particle size or type of dust (organic and inorganic material) such as e.g. pollen, bacteria, fungal spores or rock dust, mineral fibres.

Abu Dhabi	Gabon	Macau	Somalia
Afghanistan	Gambia	Madagascar	Sri Lanka
Egypt	Georgia	Malawi	Seychelles
Algeria	Ghana	Maldives	South Sudan
Angola	Guatemala	Mali	Sudan
Equatorial Guinea	Guinea	Morocco	Suriname
Argentina	Guinea-Bissau	Mauritania	Swaziland
Armenia	Guyana	Mauritius	Syria
Azerbaijan	Honduras	Mexico	Tajikistan
Ethiopia	Hong Kong	Mongolia	Tanzania
Australia	India	Mozambique	Thailand
Bahrain	Indonesia	Myanmar (Burma)	Togo
Bangladesh	Iraq	Namibia	Chad
Belize	Israel	Nepal (Indian subcontinent)	Tunisia
Benin (Dahomey)	Yemen	Nicaragua	Turkey
Bhutan	Jordan	Niger	Turkmenistan
Bolivia	Cambodia	Nigeria	Uganda
Botswana	Cameroon	North Korea	Uruguay
Brazil	Cape Verde	Oman	Ukraine
Brunei	Kazakhstan	Pakistan	Uzbekistan
Burkina Faso (Upper Volta)	Qatar	Palestine	Venezuela
Chile	Kenya	Panama	United Arab Emirates
China	Kyrgyz Republic	Papua New Guinea	Vietnam
Costa Rica	Columbia	Paraguay	West Sahara
Democratic Republic of the Congo	Cuba	Peru	Central African Republic
Djibouti	Kuwait	Puerto Rico	
Dominican Republic	Laos	Rwanda	
Dubai	Lesotho	Russian Federation	
Ecuador	Lebanon	Zambia	
El Salvador	Liberia	Saudi Arabia	
Ivory Coast	Libya	Senegal	
Eritrea	Philippines	Sierra Leone	
French Guyana	Burundi	Zimbabwe	
Fiji		South Africa	

3.12 Identification plate

Note

Vehicles for certain export countries have no type plate.

Type plate -arrow- is visible in lower area of B-pillar when front left door is opened.

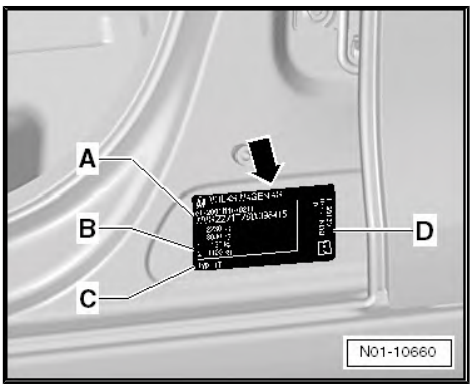
The type plate includes the following vehicle data:

A - Vehicle identification number

B - Variable indications e.g. axle loads, gross vehicle weight rating, gross combination weight

C - Model identification number

D - Engine code



3.13 Shortened intervals for spark plug replacement

Shortened spark plug replacement intervals are necessary if fuel not compliant with DIN EN 228 are used.

Examples in fuel inadequacies that can lead to shortened maintenance / exchange intervals:

- Petrol contaminated with diesel
- High sulphur content
- Poor boiling point / evaporation
- Metallic components / Octane Booster Additive
- Contaminants in petrol

Country	30,000 km / 2 years	20,000 km / 2 years	15,000 km /1 year	10,000 km /1 year
Abu Dhabi	X			
Afghanistan	X			
Egypt	X			
Algeria				X
Angola				X
Equatorial Guinea				X
Armenia	X			
Azerbaijan	X			
Ethiopia				X
Bahamas	X			
Bahrain	X			
Bangladesh	X			
Belize			X	
Benin (Dahomey)				X
Bermudas	X			
Bhutan	X			
Bolivia	X			
Brunei	X			

Country				
	30,000 km / 2 years	20,000 km / 2 years	15,000 km /1 year	10,000 km /1 year
Burkina Faso (Upper Volta)				X
Burundi				X
Chile	X			
China		X		
Costa Rica	X			
Democratic Republic of the Congo				X
Djibouti				X
Dominican Republic	X			
Dubai	X			
Ecuador	X			
El Salvador	X			
Ivory Coast				X
Eritrea				X
Fiji	X			
Gabon				X
Gambia				X
Georgia	X			
Ghana				X
Guatemala	X			
Guinea				X
Guinea-Bissau				X
Haiti	X			
Honduras	X			
India	X			
Indonesia	X			
Iraq	X			
Iran			X	
Jamaica	X			
Yemen	X			
Jordan	X			
Cameroon				X
Cape Verde				X
Caribbean, left-hand traffic	X			
Kazakhstan	X			
Qatar	X			
Kenya				X
Kyrgyz Republic			X	
Columbia	X			
Cuba	X			
Kuwait	X			
Laos	X			
Lebanon	X			
Liberia				X
Libya		X		

Country				
	30,000 km / 2 years	20,000 km / 2 years	15,000 km /1 year	10,000 km /1 year
Macao				X
Madagascar				X
Malawi				X
Malaysia	X			
Mali				X
Morocco		X		
Mauritania				X
Mauritius				X
Mexico	X			
Mongolia	X			
Mozambique				X
Myanmar (Burma)	X			
Nepal (Indian sub-continent)	X			
Nicaragua	X			
Netherlands over-seas territories Aru-ba, Curacao, Sint-Maarten (Dutch)	X			
Niger				X
Nigeria				X
North Korea			X	
Oman	X			
Pakistan			X	
Panama	X			
Papua New Guinea	X			
Paraguay	X			
Peru	X			
Philippines	X			
Republic of Congo				X
Rwanda				X
Russian Federation	X			
Zambia				X
Saudi Arabia	X			
Senegal				X
Seychelles				X
Sierra Leone				X
Singapore	X			
Somalia				X
Sri Lanka	X			
South Sudan				X
Sudan				X
Suriname				X
Syria			X	
Tajikistan	X			
Taiwan	X			
Tanzania				X

Country				
	30,000 km / 2 years	20,000 km / 2 years	15,000 km /1 year	10,000 km /1 year
Thailand	X			
Togo				X
Trinidad and Tobago			X	
Chad				X
Tunisia			X	
Turkey	X			
Turkmenistan	X			
Uganda				X
Ukraine	X			
Uruguay	X			
Uzbekistan	X			
Venezuela	X			
United Arab Emirates	X			
Vietnam	X			
West Sahara				X
Central African Republic				X
Zimbabwe				X

4 Descriptions of work:

Swivel joints, axle mountings, coupling rod bearings and anti-roll bar rubber mountings: visual check for damage ⇒ page 38

Activation of environment monitoring system (Front Assist): checking ⇒ page 39

All-wheel drive coupling: changing oil ⇒ page 89

Automatic headlight control and static cornering light: checking function ⇒ page 39

Front passenger airbag: checking key switch and “ON/OFF function” ⇒ page 40

Battery: checking battery terminal clamps for secure seating ⇒ page 42

Battery: checking with battery tester (always refer to workshop manual) ⇒ page 45 .

Status of battery: reading, sending diagnosis protocol via online connection ⇒ page 45

Tyres: checking condition, wear pattern, tyre pressure and tread depth ⇒ page 51

Brake and clutch system: changing brake fluid ⇒ page 77

Brake system and shock absorbers: inspecting for leaks and damage ⇒ page 81

Brake fluid level: checking ⇒ page 84

Brakes, front and rear: checking thickness of brake pads and condition of brake discs ⇒ page 82

Diesel fuel filter: renewing ⇒ page 97

Diesel particulate filter: checking ⇒ page 85

Dual clutch gearbox 02E: changing gear oil and filter ⇒ page 85

Window regulators: checking positioning (open and close functions) ⇒ page 86

CNG tank: renewing ⇒ page 87

Natural gas system: inspecting natural gas tank for corrosion and leakage ⇒ page 170

Natural gas system: checking wax layer between natural gas fuel tank and fuel tank shut-off valve ⇒ page 175

Natural gas filler connection and sealing cap: checking condition, cleaning if necessary and checking seal ⇒ page 87

Fault memories of all systems: reading with vehicle diagnostic tester and correcting possible faults according to repair guidelines ⇒ page 87

Bonnet: greasing catch hook ⇒ page 88

Gearbox, final drive and drive shaft bellows: inspecting for leaks and damage ⇒ page 88

Interior and exterior body: inspecting for corrosion when doors and flaps are open ⇒ page 93

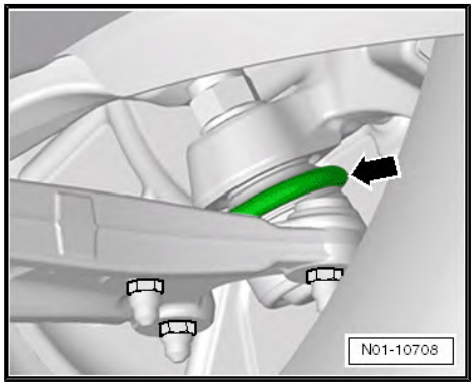
Poly V-belt: renewing ⇒ page 93

Poly V-belt: checking condition ⇒ page 93

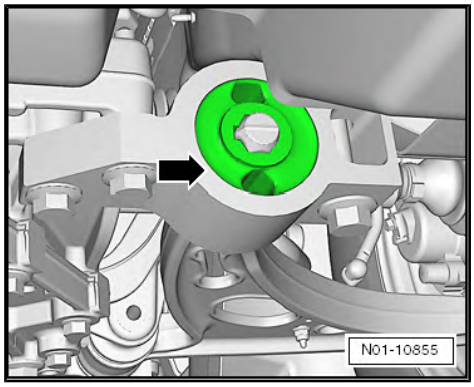
Cooling system: checking frost protection and coolant level ⇒ page 95

4.1 Swivel joints, axle mountings, coupling rod bearings and anti-roll bar rubber mounting: inspecting for damage

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



– Check also suspension link mountings -arrow- for following damage:

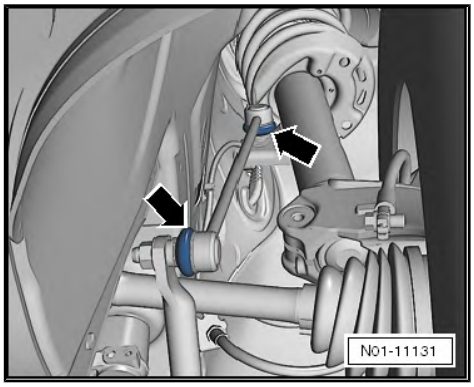


- Large cracks, perforating cracks or cuts in rubber material.
- Complete separation of rubber and metal parts.
- Large play between mounting and suspension link, which has a considerably negative effect on the function of the mounting.

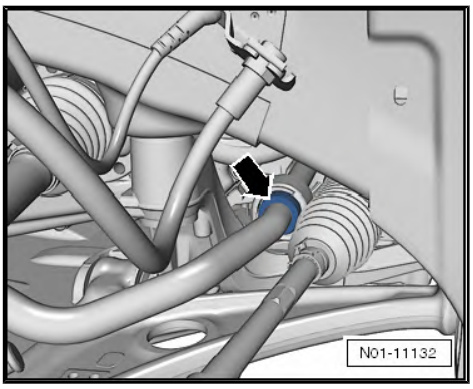
Note

- *Superficial cracks and cuts as well as minor separations of the rubber element from the metal part do not significantly affect the operation of the elasto-kinematic mounting and do not constitute a basis for a complaint.*
- *Damage to the thin rubber skin over cavities due to construction is also permissible.*
- *Play between bearing and axle component is permissible as long as there is no negative effect on the function of the bearing.*

– Check sealing boots of coupling rod -arrows- for damage.

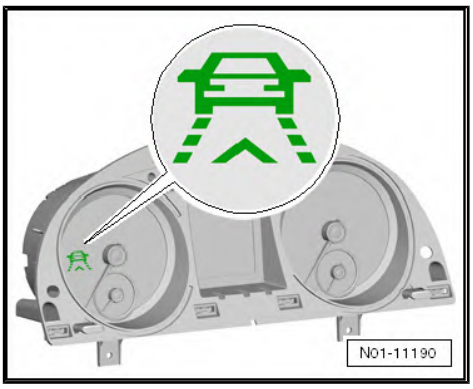


– Check anti-roll bar bearing -arrow- for damage.



4.2 Activation of environment monitoring system (Front Assist): checking

Before vehicle is delivered to customer, the environment monitoring system should be checked to ensure it is active. When ignition is switched on, active status can be recognised by green warning lamp in dash panel insert. Environment monitoring system is fitted depending on equipment. Maintenance point is displayed in maintenance list depending on PR number.



If system is not active, proceed as follows.

– Switch on ignition.
– Select menu “Assist Systems” in dash panel insert menu.
– There, mark “Front Assist” entry, and set tick and confirm with “OK”.
– Switch off ignition.

System is now active.

4.3 Automatic headlight control and static cornering light: checking function

Automatic headlight control

Note

The automatic headlight control was formerly called driving light assist.

- Vehicle must be in natural daylight.

Checking in daylight or brightness

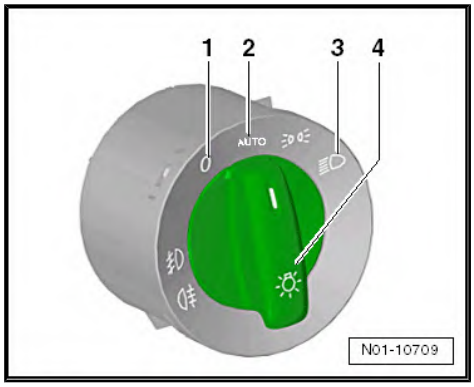
– Switch on ignition.

– Turn light switch -4- to position -2- for automatic headlight control.

The headlights may not light in brightness.

Checking at night or in darkness

- Ignition is switched on.
- Light switch is on automatic headlight control position.

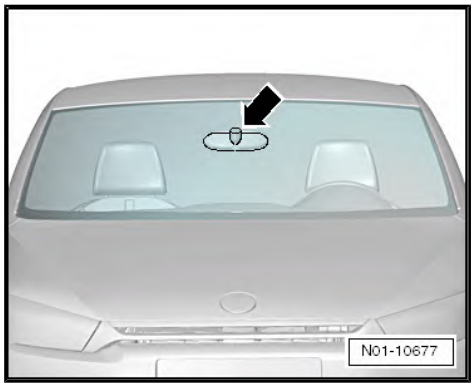


The rain and light sensor is secured on the interior mirror retainer.

The rain and light sensor is located centrally at top of windscreen -arrow-.

– Cover the securing area for interior mirror from outside of windscreen by hand or with a suitable object -arrow-.

This measures the light incidence and the headlights are switched on.

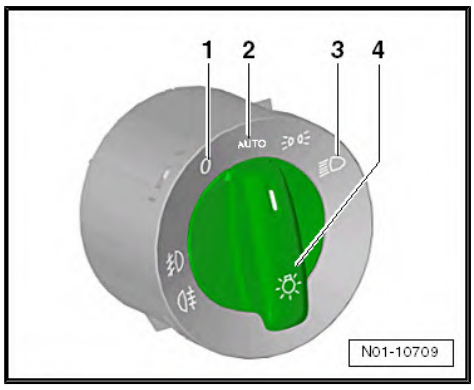


– Turn light switch -4- to position O -1- and switch off ignition.

Static cornering light

Static cornering light integrated into fog light.

– Start engine.
– Switch on dipped beam or driving light assist.
– Switch on turn signal.
– Check cornering light.
– Repeat procedure on other side.



4.4 Front passenger front airbag: checking key switch and “ON/OFF function”

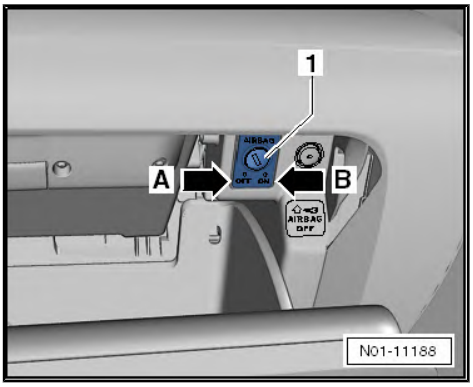
Note

The “Airbag ON/OFF” switch is located in the glove compartment.

Front passenger front airbag: check key switch and “ON/OFF function”.

– Using the ignition key, turn switch -1- to “AIRBAG OFF” position (-arrow A-).

– Switch on ignition.

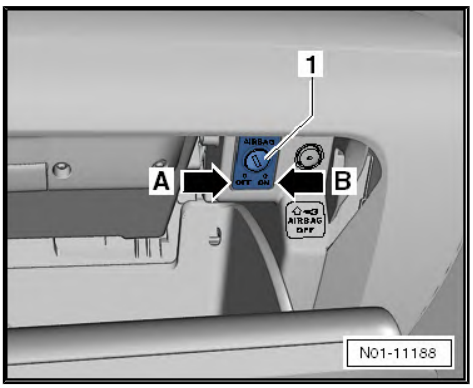


– Warning lamp “PASSENGER AIRBAG OFF” -arrow- must also light up after self-test (passenger airbag deactivated).

– Switch off ignition.

– Using the ignition key, turn switch -1- to “AIRBAG ON” position (-arrow B-).

– Switch on ignition.



– Warning lamp “PASSENGER AIRBAG OFF” -arrow- goes out after self-test (passenger airbag activated).

– Switch off ignition.

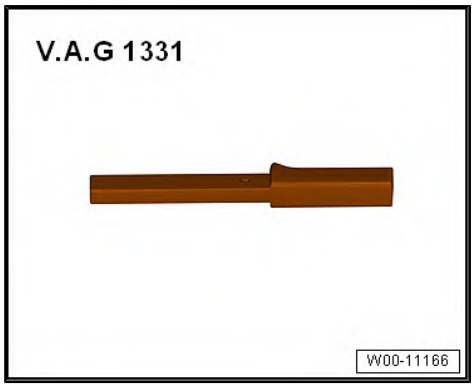
4.5 Battery: checking battery terminal clamps for secure seating

Battery in engine compartment ⇒ page 42

Battery in luggage compartment ⇒ page 44

Special tools and workshop equipment required

- Torque wrench - V.A.G 1331-



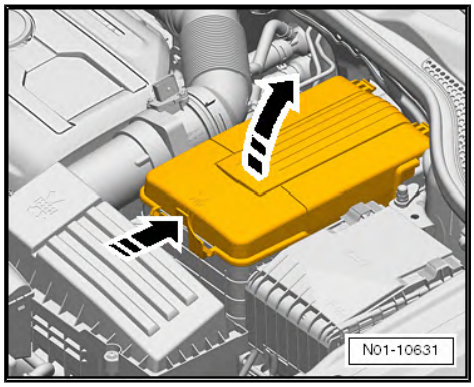
Note

- *A securely seated battery terminal clamp ensures trouble free function and long service life of the battery.*
- *When securing terminal clamp, ensure that it is completely seated on battery terminal.*

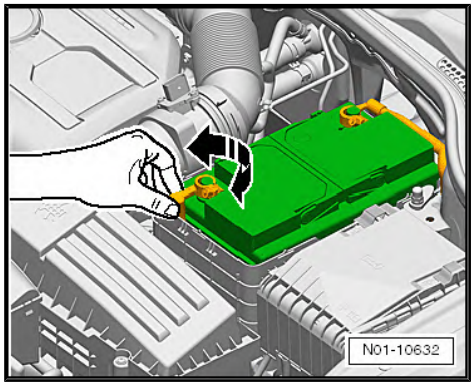
4.5.1 Battery in engine compartment

Carry out following procedure:

– Open battery cladding cover (if fitted).



– Check whether battery terminal clamps are secure on battery terminals by moving battery positive cable and battery negative cable back and forth.

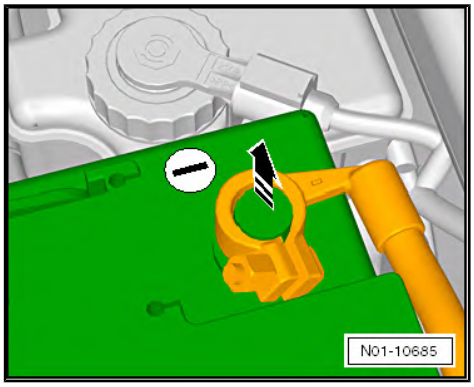


WARNING

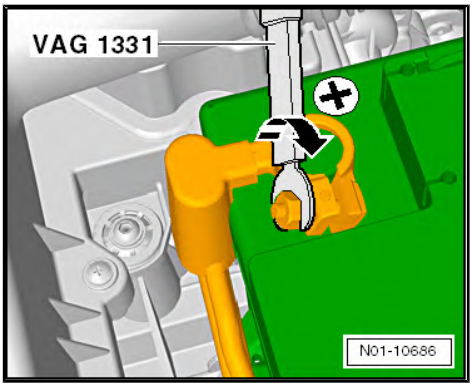
If the battery terminal clamp is not seated securely on the battery positive terminal, first disconnect battery terminal clamp on battery negative terminal to prevent possible accidents.

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

– Loosen the -NEGATIVE- battery terminal clamp and remove.

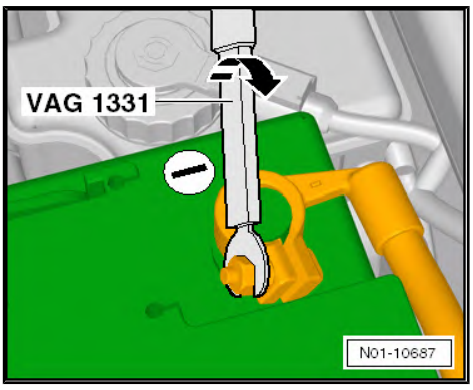


– Tighten -POSITIVE- terminal clamp to 6 Nm using torque wrench - V.A.G 1331- and ratchet - V.A.G. 1331/1- .

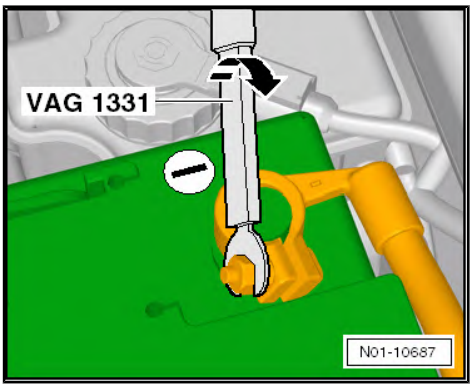


– Reconnect -NEGATIVE- terminal clamp and tighten it to 6 Nm using torque wrench - V.A.G 1331- and ratchet - V.A.G. 1331/1- .

If battery terminal clamp is NOT seated securely on negative terminal:



– Tighten -NEGATIVE- terminal clamp on battery terminal to 6 Nm using torque wrench - V.A.G 1331- and ratchet - V.A.G. 1331/1- .



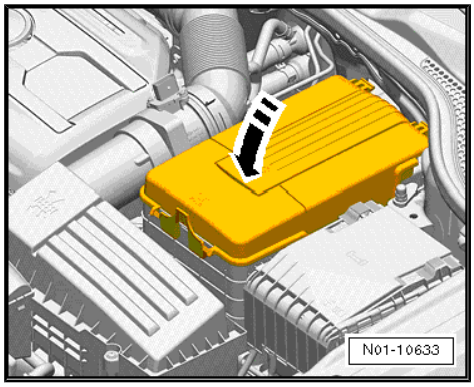
– Install battery cladding cover (if fitted).

Carry out following procedures after connecting battery:

Procedure

⇒ Electrical system; Rep. gr. 27 ; Battery; Disconnecting and connecting battery

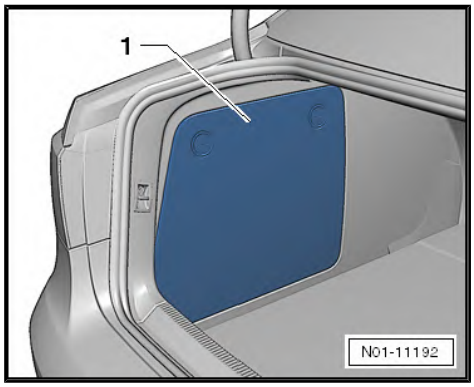
For technical reasons it is possible that several cross references are not directed to the correct chapter. In this case select the procedure manually in the information.



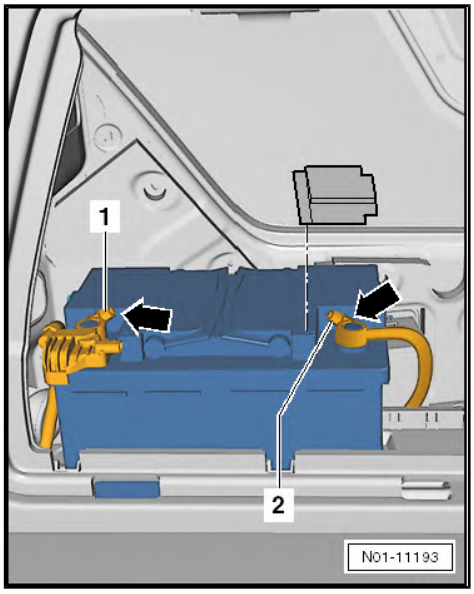
4.5.2 Battery in luggage compartment

Carry out following procedure:

– Open left cover in luggage compartment -1-.
– If necessary, pull inserted storage compartment out upwards.
– Pull positive terminal cover upwards.



– Check whether battery terminal 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 battery positive terminal, first disconnect battery terminal clamp on battery negative terminal to prevent possible accidents.

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

– Disconnect battery terminal clamp -1- from battery negative terminal first.

– Pull positive terminal cover upwards, and tighten battery terminal clamp -2- on battery positive terminal to 6 Nm.

– Engage positive terminal cover again.

– Reconnect battery terminal clamp -1- to battery negative terminal, and tighten it to 6 Nm as well.

If battery terminal clamp is NOT seated securely on negative terminal:

– Tighten battery terminal clamp -1- on negative battery terminal to 6 Nm.

– Fit the storage box in luggage compartment.

Note

After the battery has been reconnected: ⇒ Electrical system; Rep. gr. 27 ; Battery; Disconnecting and connecting battery .

4.6 Battery: checking with battery tester (always refer to workshop manual)

Procedure

⇒ Electrical system, General information; Rep. gr. 27 ; Checking battery; Battery tester with printer VAS 6161

Note

For technical reasons it is possible that several cross references are not directed to the correct chapter. In this case select the procedure manually in the information.

4.7 Status of battery: reading, sending diagnosis protocol online

Note

Applies only to vehicles with start/stop and energy recovery system

Procedure

The battery status is read while the transportation mode is being switched off ⇒ page 156 .

4.8 Reducing agent (AdBlue®/DEF): replenishing

Note

To prevent the descriptions from becoming unclear, the "NO_X reducing agent AUS 32" (AdBlue®) is merely called reducing agent (AdBlue®/DEF) in the following texts.

Caution

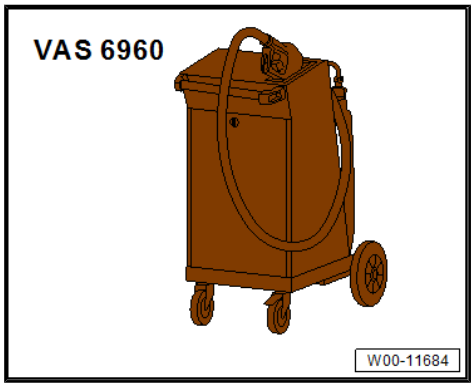
Only the reducing agent (AdBlue®/DEF) can be used in Blue TDI vehicles. NEVER fill in additive which has been used in the past. It can destroy the reducing agent.

Note

- *The following description applies to diesel vehicles with SCR process (selective catalytic reduction).*
- *Additional information on the SCR process and reducing agent (AdBlue ®/DEF) can be found in the glossary ⇒ page 181*

Special tools and workshop equipment required

- Filling device for AdBlue - VAS 6960-



4.8.1 General information

Characteristics

- The reducing agent (AdBlue®/DEF) is not a diesel additive and must not be poured into the diesel fuel tank.

- The reducing agent (AdBlue®/DEF) is used for exhaust treatment to reduce nitrogen oxides in the exhaust gas of diesel powered vehicles.
- The reducing agent (AdBlue®/DEF) reduces these nitrogen oxides to water and nitrogen.
- The reducing agent (AdBlue®/DEF) is a high-purity 32.5% urea solution and is used in systems with exhaust treatment (SCR catalytic converters) ⇒ page 181 for diesel engines.
- The reducing agent (AdBlue®/DEF) is legally required for operating vehicles with SCR.
- AdBlue® is a registered trademark of the Verband der Automobilindustrie e. V. (VDA) in the USA, Germany, the European Union and other countries.

Application

- Do not mix additives with reducing agent (AdBlue®/DEF).
- Do not dilute the reducing agent (AdBlue®/DEF) with water.
- Do not use fluid which has already been used.
- Use only reducing agent (AdBlue®/DEF) in the intended, original containers. Also note the expiry date information.
- Additionally note the reducing agent manufacturer's usage and storage instructions.

Technical data

- “NO_X reducing agent AUS 32” is the designation according to ISO 22241-1.
- The reducing agent (AdBlue®/DEF) is contained in a separate tank in the vehicle. It is NOT therefore mixed with diesel fuel.
- A refill container approved by Volkswagen must be used for replenishing the reducing agent (AdBlue®/DEF).
- The part numbers for available sizes of containers is available in ⇒ ETKA .

Insufficient reducing agent

If the level of reducing agent is low, one of the following messages appears on the dash panel insert:

- From a remaining distance of 2400 km, a gong sounds and “Top up AdBlue (DEF)!” is displayed“ Remaining distance 2400 km”.
- From a remaining distance of 1000 km, a warning buzzer sounds and “Top up AdBlue (DEF)!” is displayed“ No engine starting in 1000 km”
- From a remaining distance of 0 km, a warning buzzer sounds three times and “Top up AdBlue (DEF)!” is displayed“ Engine start no longer possible is shown.”

System malfunction or incorrect filling

Caution

The vehicle is damaged by filling with reducing agent (AdBlue®) NOT in compliance with the standard or with other fluids.

In case of system malfunction or incorrect filling, one of the following messages appears on the dash panel insert:

- From a remaining distance of 1050 km, “Check AdBlue (DEF)!” is displayed“ Remaining distance 1050 km”.
- From a remaining distance of 1000 km, a warning buzzer sounds and “Check AdBlue (DEF)!” is displayed“ No engine start possible in 1000 km”.
- From a remaining distance of 0 km, a warning buzzer sounds three times and “Check AdBlue (DEF)!” is displayed“ Engine start no longer possible”.

WARNING

- *As soon as “Check AdBlue!” appears:“ No engine start possible! ” is displayed and the engine is switched off; the engine cannot be started again.*

– Fault recovery ⇒ Guided fault finding

4.8.2 Health risk and cleaning

WARNING

- *AdBlue®/DEF is corrosive and an irritant that can cause injury on contact with the skin, eyes and respiratory organs.*
- *In the event of AdBlue®/DEF coming into contact with the eyes and skin, wash off immediately with plenty of water for at least 15 minutes and seek medical assistance.*
- *In the event of skin contact with this fluid, immediately wash off with plenty of water.*
- *In the event of AdBlue®/DEF ingestion, rinse out the mouth immediately with plenty of water for at least 15 minutes. Do not induce vomiting unless instructed to do so by a doctor. Seek medical assistance without delay.*

Caution

Never allow reducing agent (AdBlue®/DEF) to come into contact with trim or body parts.

If this happens, wash off the reducing agent (AdBlue®/DEF) with clear water and wipe area with a lint-free cotton cloth.

If the reducing agent (AdBlue®/DEF) has already crystallised, use warm water and a sponge.

Reducing agent that has not been removed will crystallise after a while and may damage the affected surface.

4.8.3 Disposal instructions

Caution

Information reference for storage and disposal ⇒ InfoNet, Operation, Strategy and deadlines, Environment, Handbook Service Environmental Protection ! Ask your importer about country-specific information on storage and disposal.

The refill container must be disposed of in accordance with environmental regulations.

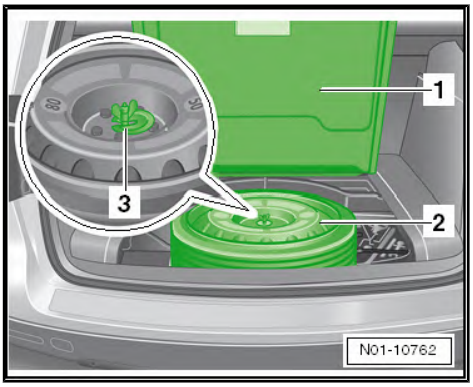
4.8.4 Work preparation for filling reducing agent tank

Note

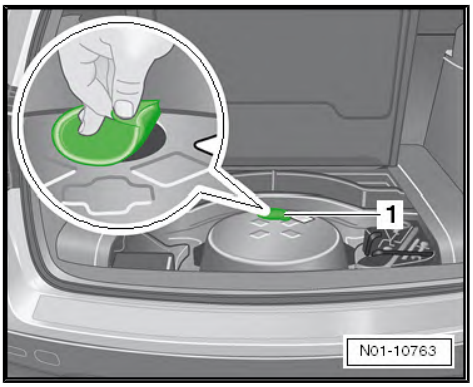
Ensure that vehicle stays on an even ground.

The reducing agent tank's filler aperture is located under the floor covering in the luggage compartment.

– Raise floor covering -1- and push it back or hook it in.
– Remove spare wheel -2-, if available, by unscrewing wing nut -3-.
– Remove foam part, if fitted.



– Remove tank filler neck sealing plug -1-.



4.8.5 Reducing agent tank: filling

Procedure

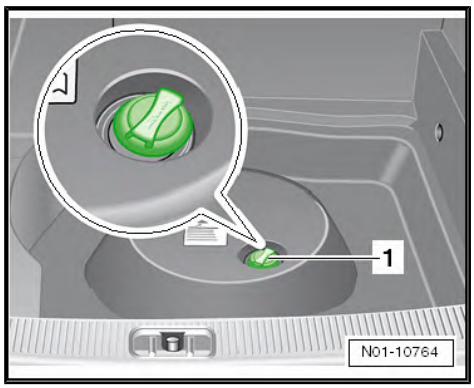
Note

- *Ensure that the vehicle is on a hard, level standing and that the ignition is switched off.*
- *Refer to the ⇒ Operating manual for the filling device for AdBlue - VAS 6960- .*
- *Use only demineralised water for cleaning any components of the AdBlue®/DEF system. Do not use tap water for this.*

– Open tank cap in luggage compartment -1-.

– Clean reducing agent tank filler neck with a water-soaked, lint-free cotton cloth.

– Insert filler nozzle of filling device for AdBlue - VAS 6960- into filler neck of tank for reducing agent, and start filling the tank for reducing agent.



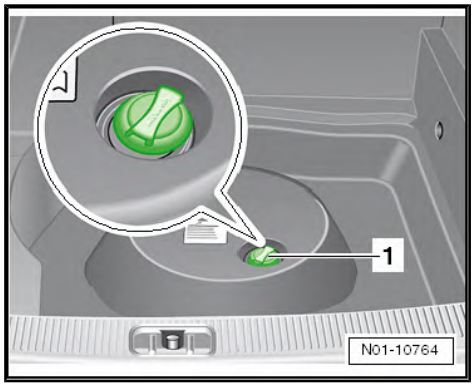
Note

The filler nozzle of the filling device for AdBlue - VAS 6960- stops automatically when the required reducing agent level has been attained.

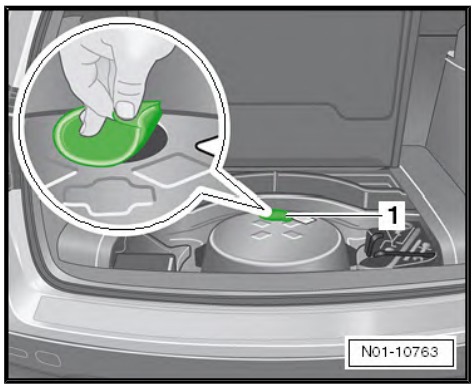
– Remove filler nozzle.

4.8.6 Work after filling reducing agent tank

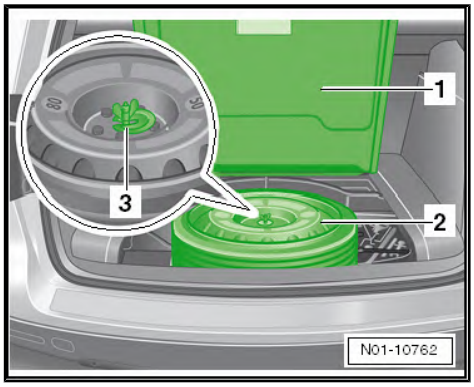
– Screw in tank cap -1- of tank filler neck until it engages.



– Carefully insert sealing plug -1-.



– Install spare wheel -2- (if available), tightening wing nut -3- hand-tight.
– Insert foam part (if fitted) beneath floor covering.
– Fold floor covering -1- down and pull forwards.



Note

After filling the reducing agent tank, switch on the ignition and leave it switched on for at least 30 seconds so that the system can detect the replenishment.

4.9 Reducing agent (AdBlue®/DEF): changing

Procedure

⇒ 4-cylinder diesel engine (2.0 l engine, common rail, generation II); Rep. gr. 26 ; SCR system (selective catalytic reduction); Draining reducing agent tank

4.10 Tyres: checking condition, wear pattern, tyre pressure and tread depth

Checking condition of tyre ⇒ page 51 .

Checking wear pattern ⇒ page 52

Tread depth (including spare wheel): check ⇒ page 52 .

General notes ⇒ page 52

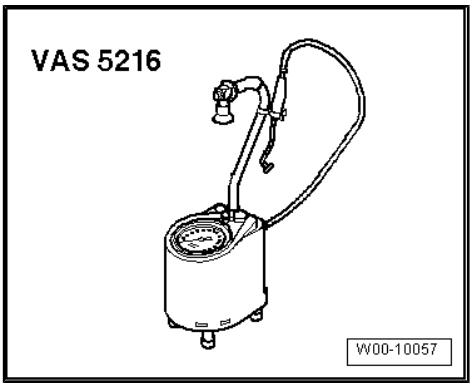
Tyre pressures, Passat Saloon ⇒ page 54

Tyre pressures, Passat Estate ⇒ page 63

Tyre pressures, Passat Estate "Alltrack" ⇒ page 74

Special tools and workshop equipment required

♦ Tyre inflator - VAS 5216-



4.10.1 Tyres: checking condition

WARNING

If damage is determined, always check to see if a new tyre should be fitted.

Tests at delivery inspection:

– Check tyre side walls and treads for damage and foreign bodies such as, for example, nails or glass splinters.

Tests at service:

– Check tyre side walls and treads for damage and foreign bodies such as, for example, nails or glass splinters.

– Check tyres for cupping, one-sided wear, porous side walls, cuts and punctures.

– Check for appropriate direction of rotation, or make sure that the inner and outer sides have not been interchanged.

4.10.2 Wear pattern: checking

The wear pattern on the front tyres will indicate, for example, if toe and camber settings should be checked:

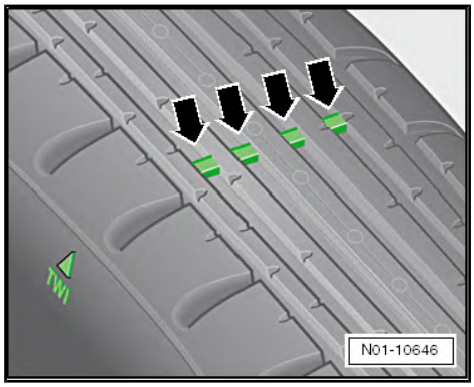
- Feathering on tread indicates incorrect toe setting.
- One-sided tread wear is mainly attributed to incorrect camber.

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

4.10.3 Tyre tread depth (including spare wheel): checking

– Check tyre tread depth.

Minimum tread depth: 1.6 mm



Note

- *This figure may vary according to legislation in individual countries. Your importer will inform you about this.*
- *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.*

4.10.4 General information

WARNING

- ***For safety reasons, only tyres of same type and tread pattern should be fitted on a vehicle! For approved wheel and tyre combinations refer to e.g. ⇒ Wheels and Tyres Guide; Rep. gr. 44 ; Wheel and tyre combinations .***
- ***On vehicles with four-wheel drive, tyres of the same type and tread pattern must be used. Otherwise the centre differential may be damaged.***

Note

- *Tyre pressures for the relevant model can also be found on a sticker. It is attached to the inside of tank flap or to B-pillar.*
- *The pressures on the sticker apply to cold tyres. Do not reduce increased pressures of warm tyres.*
- *Adjust the tyre pressure to suit the vehicle load.*
- *If no inflation pressure is shown for the spare wheel, then inflate the spare wheel to the highest inflation pressure for the vehicle.*
- *Please note that basic setting should be performed on vehicles with Tyre Pressure Loss Indicator after every pressure change* *⇒ page 124* .

M+S tyres

Note

- *Important information on recommended winter tyres can be found in:*
- *⇒ Wheels and Tyres Guide - Standard; Rep. gr. 44 ; Recommended winter tyres*
- *If winter tyres are fitted, a sticker, visible for the customer and indicating the speed limit, must be applied in the interior of the vehicle.*
- *For winter tyres, the tyre pressure does not have be increased. However, this only applies if the winter tyre used corresponds exactly to the standard summer tyre size and the speed index is no higher than “H”. If this is not the case, please refer to the recommendation of the tyre manufacturer.*

Note

For technical reasons it is possible that several cross references are not directed to the correct chapter. In this case select the procedure manually in the information.

4.10.5 Tyre pressures, Passat saloon

Note

- *During delivery inspection, check that tyre inflation pressure sticker is fitted. If the sticker is missing, order a new sticker through ETKA.*
- *The mandatory tyre pressures for the respective model can be found on a sticker attached to the inside of tank flap or to the B-pillar.*
- *If the inflation pressure sticker is missing, proceed as follows:*
- *Locate correct part number for respective vehicle in ETKA.*
- *Using part number, determine respective inflation pressures in tyre inflation table.*
- *Uniform pressure: if tyre sizes are not shown for a part number, then a uniform pressure is valid for all authorised wheel/tyre combinations. ⇒ Wheels and Tyres Guide; Rep. gr. 44 ; Wheel and tyre combinations .*

Check tyre pressure using tyre inflator - VAS 5216- , correct if necessary.

Part number - 3AA 010 800 H-		Passat Saloon		
Part number - 3AA 010 800 J-				
Part number - 3AA 010 000 S-				
	Half payload kPa/bar/psi		Full payload kPa/bar/psi	
Tyre size	**Front**	**Rear**	**Front**	**Rear**
All [1)]	220/2.2/32	220/2.2/32	250/2.5/36	280/2.8/41

[1)] Valid for all authorised wheel/tyre combinations. ⇒ Wheels and Tyres Guide; Rep. gr. 44 ; Wheel and tyre combinations .

Part number - 3AA 010 836 C-		Passat Saloon		
	Half payload kPa/bar/psi		Full payload kPa/bar/psi	
Tyre size	**Front**	**Rear**	**Front**	**Rear**
215/55 R16	220/2.2/32	220/2.2/32	250/2.5/36	280/2.8/41
235/45 R17				
205/55 R16	240/2.4/35	240/2.4/35	260/2.6/38	290/2.9/42
205/50 R17				
235/40 R18				

Part number - 3AA 010 801 G-		Passat Saloon		
Part number - 3AA 010 801 J-				
Part number - 3AA 010 000 M-				
	Half payload kPa/bar/psi		Full payload kPa/bar/psi	
Tyre size	**Front**	**Rear**	**Front**	**Rear**
215/55 R16	220/2.2/32	220/2.2/32	250/2.5/36	280/2.8/41
235/45 R17				

Part number - 3AA 010 801 G-		Passat Saloon		
Part number - 3AA 010 801 J-				
Part number - 3AA 010 000 M-				
	Half payload kPa/bar/psi		Full payload kPa/bar/psi	
Tyre size	**Front**	**Rear**	**Front**	**Rear**
205/50 R17	250/2.5/36	250/2.5/36	280/2.8/41	300/3.0/44
235/40 R18				

Part number - 3AA 010 801 Q-		Passat Saloon		
	Half payload kPa/bar/psi		Full payload kPa/bar/psi	
Tyre size	**Front**	**Rear**	**Front**	**Rear**
205/50 R17	260/2.6/38	260/2.6/38	280/2.8/41	300/3.0/44
235/45 R17				
235/40 R18	280/2.8/41	280/2.8/41	310/3.1/45	330/3.3/48

Part number - 3AA 010 800 N-		Passat Saloon		
Part number - 3AA 010 828 J-				
Part number - 3AA 010 000 AA-				
	Half payload kPa/bar/psi		Full payload kPa/bar/psi	
Tyre size	**Front**	**Rear**	**Front**	**Rear**
All [1)]	230/2.3/33	230/2.3/33	250/2.5/36	280/2.8/41

[1)] Valid for all authorised wheel/tyre combinations. ⇒ Wheels and Tyres Guide; Rep. gr. 44 ; Wheel and tyre combinations .

Part number - 3AA 010 800-		Passat Saloon		
Part number - 3AA 010 802-				
	Half payload kPa/bar/psi		Full payload kPa/bar/psi	
Tyre size	**Front**	**Rear**	**Front**	**Rear**
All [1)]	260/2.6/38	260/2.6/38	260/2.6/38	280/2.8/41

[1)] Valid for all authorised wheel/tyre combinations. ⇒ Wheels and Tyres Guide; Rep. gr. 44 ; Wheel and tyre combinations .

Part number - 3AA 010 836 D-		Passat Saloon		
Part number - 3AA 010 836 G-				
Part number - 3AA 010 000 E-				
	Half payload kPa/bar/psi		Full payload kPa/bar/psi	
Tyre size	**Front**	**Rear**	**Front**	**Rear**
215/55 R16	230/2.3/33	230/2.3/33	250/2.5/36	280/2.8/41
235/45 R17				
205/55 R16	250/2.5/36	250/2.5/36	270/2.7/39	300/3.0/44

Part number - 3AA 010 836 D-		Passat Saloon		
Part number - 3AA 010 836 G-				
Part number - 3AA 010 000 E-				
	Half payload kPa/bar/psi		Full payload kPa/bar/psi	
Tyre size	**Front**	**Rear**	**Front**	**Rear**
205/50 R17				
235/40 R18				

Part number - 3AA 010 836 E-		Passat Saloon		
Part number - 3AA 010 836 H-				
Part number - 3AA 010 802 H-				
Part number - 3AA 010 000-				
	Half payload kPa/bar/psi		Full payload kPa/bar/psi	
Tyre size	**Front**	**Rear**	**Front**	**Rear**
215/55 R16	240/2.4/35	240/2.4/35	260/2.6/38	290/2.9/42
235/45 R17				
205/55 R16	250/2.5/36	250/2.5/36	280/2.8/41	300/3.0/44
205/50 R17				
235/40 R18				

Part number - 3AA 010 836 F-		Passat Saloon		
Part number - 3AA 010 836 J-				
Part number - 3AA 010 000 B-				
	Half payload kPa/bar/psi		Full payload kPa/bar/psi	
Tyre size	**Front**	**Rear**	**Front**	**Rear**
215/55 R16	240/2.4/35	240/2.4/35	260/2.6/38	290/2.9/42
235/45 R17				
205/55 R16	270/2.7/39	270/2.7/39	290/2.9/42	310/3.1/45
205/50 R17				
235/40 R18				

Part number - 3AA 010 801 E-		Passat Saloon		
Part number - 3AA 010 000 P-				
	Half payload kPa/bar/psi		Full payload kPa/bar/psi	
Tyre size	**Front**	**Rear**	**Front**	**Rear**
All [1)]	230/2.3/33	230/2.3/33	260/2.6/38	300/3.0/44

[1)] Valid for all authorised wheel/tyre combinations. ⇒ Wheels and Tyres Guide; Rep. gr. 44 ; Wheel and tyre combinations .

Part number - 3AA 010 801 R-	Passat Saloon			
Part number - 3AA 010 000 L-				
	Half payload kPa/bar/psi		Full payload kPa/bar/psi	
Tyre size	**Front**	**Rear**	**Front**	**Rear**
205/50 R17 M&S	260/2.6/38	260/2.6/38	280/2.8/41	300/3.0/44
235/45 R17				
235/40 R18	280/2.8/41	280/2.8/41	310/3.1/45	330/3.3/48

Part number - 3AA 010 801 S-	Passat Saloon			
	Half payload kPa/bar		Full payload kPa/bar	
Tyre size	**Front**	**Rear**	**Front**	**Rear**
235/45 R17 94W	260/2.6	260/2.6	280/2.8	300/3.0
235/40 R18 95Y	280/2.8	280/2.8	310/3.1	330/3.3

Part number - 3AA 010 844 D-	Passat Saloon			
	Half payload kPa/bar		Full payload kPa/bar	
Tyre size	**Front**	**Rear**	**Front**	**Rear**
235/45 R17 94W	260/2.6	260/2.6	280/2.8	300/3.0
235/40 R18 95W	280/2.8	280/2.8	310/3.1	330/3.3

Part number - 3AA 010 801 L-	Passat Saloon			
	Half payload kPa/bar		Full payload kPa/bar	
Tyre size	**Front**	**Rear**	**Front**	**Rear**
215/55 R16 93W	220/2.2	220/2.2	280/2.8	300/3.0
235/45 R17 94W				
235/40 R18 95Y	250/2.5	250/2.5	280/2.8	300/3.0

Part number - 3AA 010 801 A-	Passat Saloon			
	Half payload kPa/bar		Full payload kPa/bar	
Tyre size	**Front**	**Rear**	**Front**	**Rear**
215/55 R16 93W	220/2.2	220/2.2	250/2.5	280/2.8
235/45 R17 94W				
205/55 R16 91V	240/2.4	240/2.4	260/2.6	290/2.9
235/40 R18 95Y				

Part number - 3AA 010 844 B-	Passat Saloon			
	Half payload kPa/bar		Full payload kPa/bar	
Tyre size	**Front**	**Rear**	**Front**	**Rear**
215/55 R16 97W	220/2.2	220/2.2	250/2.5	280/2.8

Part number - 3AA 010 844 B-	Passat Saloon			
	Half payload kPa/bar		Full payload kPa/bar	
Tyre size	**Front**	**Rear**	**Front**	**Rear**
235/45 R17 94W				
205/55 R16 91V	240/2.4	240/2.4	260/2.6	290/2.9
235/40 R18 95W				

Part number - 3AA 010 800 K-	Passat Saloon			
	Half payload kPa/bar/psi		Full payload kPa/bar/psi	
Tyre size	**Front**	**Rear**	**Front**	**Rear**
215/55 R16 93W	230/2.3/33	230/2.3/33	250/2.5/36	280/2.8/41
235/45 R17 94 W				
205/55 R16 91V	250/2.5/36	250/2.5/36	270/2.7/39	300/3.0/44
235/40 R18 95Y				

Part number - 3AA 010 804 D-	Passat Saloon			
	Half payload kPa/bar		Full payload kPa/bar	
Tyre size	**Front**	**Rear**	**Front**	**Rear**
215/55 R16 93W	240/2.4	240/2.4	260/2.6	290/2.9
235/45 R17 94W				
205/55 R16 91V	250/2.5	250/2.5	280/2.8	300/3.0
235/40 R18 95Y				

Part number - 3AA 010 844 C-	Passat Saloon			
	Half payload kPa/bar		Full payload kPa/bar	
Tyre size	**Front**	**Rear**	**Front**	**Rear**
215/55 R16 97W	240/2.4	240/2.4	260/2.6	290/2.9
235/45 R17 94W				
205/55 R16 91V	250/2.5	250/2.5	280/2.8	300/3.0
235/40 R18 95W				

Part number - 3AA 010 800 L-	Passat Saloon			
	Half payload kPa/bar		Full payload kPa/bar	
Tyre size	**Front**	**Rear**	**Front**	**Rear**
205/55 R16 91V	220/2.2	220/2.2	250/2.5	280/2.8
215/55 R16 93W				
235/45 R17 94W				
235/40 R18 95Y				

Part number - 3AA 010 804 E-	Passat Saloon			
	Half payload kPa/bar		Full payload kPa/bar	
Tyre size	**Front**	**Rear**	**Front**	**Rear**
215/55 R16 93W	240/2.4	240/2.4	260/2.6	290/2.9
235/45 R17 94 W				
205/55 R16 91V	270/2.7	270/2.7	290/2.9	310/3.1
235/40 R18 95Y				

Part number - 3AA 010 705 B- Part number - 3AA 010 705 S-	Passat Saloon			
	Half payload kPa/bar/psi		Full payload kPa/bar/psi	
Tyre size	**Front**	**Rear**	**Front**	**Rear**
All [1)]	220/2.2/32	220/2.2/32	240/2.4/35	280/2.8/41

[1)] Valid for all authorised wheel/tyre combinations. ⇒ Wheels and Tyres Guide; Rep. gr. 44 ; Wheel and tyre combinations .

Part number - 3AA 010 705 C-	Passat Saloon			
	Half payload kPa/bar/psi		Full payload kPa/bar/psi	
Tyre size	**Front**	**Rear**	**Front**	**Rear**
All [1)]	230/2.3/33	230/2.3/33	250/2.5/36	290/2.9/42

[1)] Valid for all authorised wheel/tyre combinations. ⇒ Wheels and Tyres Guide; Rep. gr. 44 ; Wheel and tyre combinations .

Part number - 3AA 010 705 D- Part number - 3AA 010 705 T-	Passat Saloon			
	Half payload kPa/bar/psi		Full payload kPa/bar/psi	
Tyre size	**Front**	**Rear**	**Front**	**Rear**
All [1)]	240/2.4/35	240/2.4/35	260/2.6/38	300/3.0/44

[1)] Valid for all authorised wheel/tyre combinations. ⇒ Wheels and Tyres Guide; Rep. gr. 44 ; Wheel and tyre combinations .

Part number - 3AA 010 705 E-	Passat Saloon			
	Half payload kPa/bar/psi		Full payload kPa/bar/psi	
Tyre size	**Front**	**Rear**	**Front**	**Rear**
215/55 R16	240/2.4/35	240/2.4/35	260/2.6/38	300/3.0/44
235/45 R17				
205/50 R17 M&S	260/2.6/38	260/2.6/38	280/2.8/41	300/3.0/44
235/40 R18				
235/35 R19				

Part number - 3AA 010 705 H-			Passat Saloon	
	Half payload kPa/bar/psi		Full payload kPa/bar/psi	
Tyre size	**Front**	**Rear**	**Front**	**Rear**
205/50 R17 M&S	260/2.6/38	260/2.6/38	280/2.8/41	320/3.2/46
235/45 R17				
235/40 R18	280/2.8/41	280/2.8/41	310/3.1/45	340/3.4/45
235/35 R19				

Part number - 3AA 010 705 F- Part number - 3AA 010 706 A-			Passat Saloon	
	Half payload kPa/bar/psi		Full payload kPa/bar/psi	
Tyre size	**Front**	**Rear**	**Front**	**Rear**
All [1)]	250/2.5/36	250/2.5/36	270/2.7/39	300/3.0/44

[1)] Valid for all authorised wheel/tyre combinations. ⇒ Wheels and Tyres Guide; Rep. gr. 44 ; Wheel and tyre combinations .

Part number - 3AA 010 705 G-			Passat Saloon	
	Half payload kPa/bar/psi		Full payload kPa/bar/psi	
Tyre size	**Front**	**Rear**	**Front**	**Rear**
All [1)]	270/2.7/39	270/2.7/39	290/2.9/42	300/3.0/44

[1)] Valid for all authorised wheel/tyre combinations. ⇒ Wheels and Tyres Guide; Rep. gr. 44 ; Wheel and tyre combinations .

Part number - 3AA 010 705 K-			Passat Saloon	
	Half payload kPa/bar/psi		Full payload kPa/bar/psi	
Tyre size	**Front**	**Rear**	**Front**	**Rear**
All [1)]	260/2.6/38	260/2.6/38	280/2.8/41	320/3.2/46

[1)] Valid for all authorised wheel/tyre combinations. ⇒ Wheels and Tyres Guide; Rep. gr. 44 ; Wheel and tyre combinations .

Part number - 3AA 010 705 L-			Passat Saloon	
	Half payload kPa/bar/psi		Full payload kPa/bar/psi	
Tyre size	**Front**	**Rear**	**Front**	**Rear**
All [1)]	280/2.8/41	280/2.8/41	300/3.0/44	340/3.4/49

[1)] Valid for all authorised wheel/tyre combinations. ⇒ Wheels and Tyres Guide; Rep. gr. 44 ; Wheel and tyre combinations .

Part number - 3AA 010 706-	Passat Saloon			
	Half payload kPa/bar/psi		Full payload kPa/bar/psi	
Tyre size	**Front**	**Rear**	**Front**	**Rear**
215/55 R16	240/2.4/35	240/2.4/35	260/2.6/38	300/3.0/44
235/45 R17				
205/50 R17 M&S	260/2.6/38	260/2.6/38	280/2.8/41	300/3.0/44
235/40 R18				

Part number - 3AA 010 706 B-	Passat Saloon			
	Half payload kPa/bar/psi		Full payload kPa/bar/psi	
Tyre size	**Front**	**Rear**	**Front**	**Rear**
205/50 R17 M&S	260/2.6/38	260/2.6/38	280/2.8/41	320/3.2/46
235/45 R17				
235/40 R18	280/2.8/41	280/2.8/41	310/3.1/45	340/3.4/45

Part number - 3AA 010 705 R-	Passat Saloon			
	Half payload kPa/bar		Full payload kPa/bar	
Tyre size	**Front**	**Rear**	**Front**	**Rear**
235/35 R17	260/2.6	260/2.6	280/2.8	320/3.2
235/40 R18 95Y	280/2.8	280/2.8	310/3.1	340/3.4
235/35 R19 91Y				

Part number - 3AA 010 705 N-	Passat Saloon			
	Half payload kPa/bar		Full payload kPa/bar	
Tyre size	**Front**	**Rear**	**Front**	**Rear**
215/55 R16 93W	240/2.4	240/2.4	260/2.6	300/3.0
235/45 R17 94W				
235/40 R18 95Y	260/2.6	260/2.6	280/2.8	300/3.0
235/35 R19 91Y				

Part number - 3AA 010 705 P-	Passat Saloon			
	Half payload kPa/bar		Full payload kPa/bar	
Tyre size	**Front**	**Rear**	**Front**	**Rear**
205/55 R16 91V	250/2.5	250/2.5	270/2.7	300/3.0
215/55 R16 93W				
235/45 R17 94W				
235/40 R18 95Y				

Part number - 3AA 010 705 Q-	Passat Saloon			
	Half payload kPa/bar		Full payload kPa/bar	
Tyre size	**Front**	**Rear**	**Front**	**Rear**
205/55 R16 91V	270/2.7	270/2.7	290/2.9	300/3.0
215/55 R16 93W				
235/45 R17 94W				
235/40 R18 95Y				

Part number - 3AA 010 800 R-	Passat Saloon			
	Half payload kPa/bar/psi		Full payload kPa/bar/psi	
Tyre size	**Front**	**Rear**	**Front**	**Rear**
215/55 R16	220/2.2/32	220/2.2/32	250/2.5/36	290/2.9/42
235/45 R17				
205/50 R17	240/2.4/35	240/2.4/35	260/2.6/38	290/2.9/42
235/40 R18				

Part number - 3AA 010 804 H- Part number - 3AA 010 802 C-	Passat Saloon			
	Half payload kPa/bar/psi		Full payload kPa/bar/psi	
Tyre size	**Front**	**Rear**	**Front**	**Rear**
215/55 R16	230/2.3/33	230/2.3/33	250/2.5/36	280/2.8/41
235/45 R17				
205/50 R17	250/2.5/36	250/2.5/36	270/2.7/39	300/3.0/44
235/40 R18				

Part number - 3AA 010 802 H- Part number - 3AA 010 802 M-	Passat Saloon			
	Half payload kPa/bar/psi		Full payload kPa/bar/psi	
Tyre size	**Front**	**Rear**	**Front**	**Rear**
215/55 R16	240/2.4/35	240/2.4/35	260/2.6/38	290/2.9/42
235/45 R17				
205/50 R17	250/2.5/36	250/2.5/36	280/2.8/41	300/3.0/44
235/40 R18				

Part number - 3AA 010 802 J- Part number - 3AA 010 804 B-	Passat Saloon			
	Half payload kPa/bar/psi		Full payload kPa/bar/psi	
Tyre size	**Front**	**Rear**	**Front**	**Rear**
215/55 R16	240/2.4/35	240/2.4/35	260/2.6/38	290/2.9/42
235/45 R17				

Part number - 3AA 010 802 J-	Passat Saloon			
Part number - 3AA 010 804 B-				
	Half payload kPa/bar/psi		Full payload kPa/bar/psi	
Tyre size	**Front**	**Rear**	**Front**	**Rear**
205/50 R17	270/2.7/39	270/2.7/39	290/2.9/42	310/3.1/45
235/40 R18				

Part number - 3AA 010 802 D-	Passat Saloon			
	Half payload kPa/bar/psi		Full payload kPa/bar/psi	
Tyre size	**Front**	**Rear**	**Front**	**Rear**
215/55 R16	230/2.3/33	230/2.3/33	250/2.5/36	280/2.8/41
235/45 R17				
205/50 R17	250/2.5/36	250/2.5/36	270/2.7/39	300/3.0/44
235/40 R18				

4.10.6 Tyre pressures, Passat estate

Note

- *During delivery inspection, check that tyre inflation pressure sticker is fitted. If the sticker is missing, order a new sticker through ETKA.*
- *The mandatory tyre pressures for the respective model can be found on a sticker attached to the inside of tank flap or to the B-pillar.*
- *If the inflation pressure sticker is missing, proceed as follows:*
- *Locate correct part number for respective vehicle in ETKA.*
- *Using part number, determine respective inflation pressures in tyre inflation table.*
- *Uniform pressure: if tyre sizes are not shown for a part number, then a uniform pressure is valid for all authorised wheel/tyre combinations. ⇒ Wheels and Tyres Guide; Rep. gr. 44 ; Wheel and tyre combinations .*

Check tyre pressure using tyre inflator - VAS 5216- , correct if necessary.

Part number - 3AA 010 821 A-	Passat Estate
Part number - 3AA 010 765 P-	
Part number - 3AA 010 821-	
Part number - 3AA 010 801 P-	
Part number - 3AA 010 765 R-	
Part number - 3AA 010 765 C-	
Part number - 3AA 010 000 T-	

	Half payload kPa/bar/psi		Full payload kPa/bar/psi	
Tyre size	**Front**	**Rear**	**Front**	**Rear**
All [1)]	220/2.2/32	220/2.2/32	250/2.5/36	300/3.0/44

[1)] Valid for all authorised wheel/tyre combinations. ⇒ Wheels and Tyres Guide; Rep. gr. 44 ; Wheel and tyre combinations .

Part number - 3AA 010 836 K-	Passat Estate			
	Half payload kPa/bar/psi		Full payload kPa/bar/psi	
Tyre size	**Front**	**Rear**	**Front**	**Rear**
215/55 R16	240/2.4/35	240/2.4/35	250/2.5/36	300/3.0/44
235/45 R17				
205/55 R16	240/2.4/35	240/2.4/35	260/2.6/38	300/3.0/44
205/50 R17				
235/40 R18				

Part number - 3AA 010 800 T-	Passat Estate			
Part number - 3AA 010 000 N-				
	Half payload kPa/bar/psi		Full payload kPa/bar/psi	
Tyre size	**Front**	**Rear**	**Front**	**Rear**
215/55 R16	220/2.2/32	220/2.2/32	250/2.5/36	300/3.0/44
235/45 R17				
205/50 R17	250/2.5/36	250/2.5/36	280/2.8/41	310/3.1/45
235/40 R18				
205/55 R16				

Part number - 3AA 010 820 T-	Passat Estate			
	Half payload kPa/bar/psi		Full payload kPa/bar/psi	
Tyre size	**Front**	**Rear**	**Front**	**Rear**
205/50 R17	260/2.6/38	260/2.6/38	280/2.8/41	320/3.2/46
235/45 R17				
235/40 R18	280/2.8/41	280/2.8/41	310/3.1/45	340/3.4/49

Part number - 3AA 010 802 A-	Passat Estate			
	Half payload kPa/bar/psi		Full payload kPa/bar/psi	
Tyre size	**Front**	**Rear**	**Front**	**Rear**
All [1)]	250/2.5/36	250/2.5/36	250/2.5/36	300/3.0/44

[1)] Valid for all authorised wheel/tyre combinations. ⇒ Wheels and Tyres Guide; Rep. gr. 44 ; Wheel and tyre combinations .

Part number - 3AA 010 836 L- Part number - 3AA 010 836 Q- Part number - 3AA 010 000 F- Part number - 3AA 010 000 C-	Passat Estate			
	Half payload kPa/bar/psi		Full payload kPa/bar/psi	
Tyre size	**Front**	**Rear**	**Front**	**Rear**
215/55 R16	230/2.3/33	230/2.3/33	260/2.6/38	300/3.0/44
235/45 R17				
205/55 R16	250/2.5/36	250/2.5/36	270/2.7/39	300/3.0/44
205/50 R17				
235/40 R18				

Part number - 3AA 010 836 M- Part number - 3AA 010 836 R- Part number - 3AA 010 000 A-	Passat Estate			
	Half payload kPa/bar/psi		Full payload kPa/bar/psi	
Tyre size	**Front**	**Rear**	**Front**	**Rear**
215/55 R16	230/2.3/33	230/2.3/33	260/2.6/38	300/3.0/44
235/45 R17				
205/55 R16	250/2.5/36	250/2.5/36	280/2.8/41	300/3.0/44
205/50 R17				
235/40 R18				

Part number - 3AA 010 836 N-	Passat Estate			
	Half payload kPa/bar/psi		Full payload kPa/bar/psi	
Tyre size	**Front**	**Rear**	**Front**	**Rear**
215/55 R16	220/2.2/32	220/2.2/32	250/2.5/36	300/3.0/44
235/45 R17				
205/55 R16	240/2.4/35	240/2.4/35	270/2.7/39	310/3.1/45
205/50 R17				
235/40 R18				

Part number - 3AA 010 836 P-	Passat Estate			
	Half payload kPa/bar/psi		Full payload kPa/bar/psi	
Tyre size	**Front**	**Rear**	**Front**	**Rear**
215/55 R16	230/2.3/33	230/2.3/33	260/2.6/38	300/3.0/44
235/45 R17				
205/55 R16	260/2.6/38	260/2.6/38	280/2.8/41	320/3.2/46
205/50 R17				
235/40 R18				

Part number - 3AA 010 801 F- Part number - 3AA 010 000 Q-	Passat Estate			
	Half payload kPa/bar/psi		Full payload kPa/bar/psi	
Tyre size	**Front**	**Rear**	**Front**	**Rear**
All [1)]	230/2.3/33	230/2.3/33	260/2.6/38	300/3.0/44

[1)] Valid for all authorised wheel/tyre combinations. ⇒ Wheels and Tyres Guide; Rep. gr. 44 ; Wheel and tyre combinations .

Part number - 3AA 010 801 K-	Passat Estate			
	Half payload kPa/bar/psi		Full payload kPa/bar/psi	
Tyre size	**Front**	**Rear**	**Front**	**Rear**
215/55 R16	220/2.2/32	220/2.2/32	250/2.5/36	300/3.0/44
235/45 R17				
205/50 R17	250/2.5/36	250/2.5/36	280/2.8/41	300/3.0/44
235/40 R18				

Part number - 3AA 010 821 B- Part number - 3AA 010 000 K-	Passat Estate			
	Half payload kPa/bar/psi		Full payload kPa/bar/psi	
Tyre size	**Front**	**Rear**	**Front**	**Rear**
205/50 R17 M&S	260/2.6/38	260/2.6/38	280/2.8/41	320/3.2/46
235/45 R17				
235/40 R18	280/2.8/41	280/2.8/41	310/3.1/45	340/3.4/49

Part number - 3AA 010 836 T-	Passat Estate			
	Half payload kPa/bar/psi		Full payload kPa/bar/psi	
Tyre size	**Front**	**Rear**	**Front**	**Rear**
215/55 R16	230/2.3/33	230/2.3/33	260/2.6/38	300/3.0/44
235/45 R17				
205/55 R16	250/2.5/36	250/2.5/36	280/2.8/41	320/3.2/46
205/50 R17				

Part number - 3AA 010 836 T-	Passat Estate			
	Half payload kPa/bar/psi		Full payload kPa/bar/psi	
Tyre size	**Front**	**Rear**	**Front**	**Rear**
235/40 R18				

Part number - 3AA 010 836 S- Part number - 3AA 010 000 H-	Passat Estate			
	Half payload kPa/bar/psi		Full payload kPa/bar/psi	
Tyre size	**Front**	**Rear**	**Front**	**Rear**
215/55 R16	220/2.2/32	220/2.2/32	250/2.5/36	300/3.0/44
235/45 R17				
205/55 R16	240/2.4/35	240/2.4/35	270/2.7/39	300/3.0/44
205/50 R17				
235/40 R18				

Part number - 3AA 010 820 K- Part number - 3AA 010 705 R-	Passat Estate			
	Half payload kPa/bar		Full payload kPa/bar	
Tyre size	**Front**	**Rear**	**Front**	**Rear**
235/45 R17 94W	260/2.6	260/2.6	280/2.8	320/3.2
235/40 R18 95Y	280/2.8	280/2.8	310/3.1	340/3.4

Part number - 3AA 010 844 G-	Passat Estate			
	Half payload kPa/bar		Full payload kPa/bar	
Tyre size	**Front**	**Rear**	**Front**	**Rear**
235/45 R17 94W	260/2.6	260/2.6	280/2.8	320/3.2
235/40 R18 95W	280/2.8	280/2.8	310/3.1	340/3.4

Part number - 3AA 010 801 M-	Passat Estate			
	Half payload kPa/bar		Full payload kPa/bar	
Tyre size	**Front**	**Rear**	**Front**	**Rear**
215/55 R16 93W	220/2.2	220/2.2	250/2.5	300/3.0
235/45 R17 94W				
235/40 R18 95Y	250/2.5	250/2.5	280/2.8	310/3.1

Part number - 3AA 010 801 B-	Passat Estate			
	Half payload kPa/bar		Full payload kPa/bar	
Tyre size	**Front**	**Rear**	**Front**	**Rear**
215/55 R16 93W	220/2.2	220/2.2	250/2.5	300/3.0

Part number - 3AA 010 801 B-	Passat Estate			
	Half payload kPa/bar		Full payload kPa/bar	
Tyre size	**Front**	**Rear**	**Front**	**Rear**
235/45 R17 94W				
205/55 R16 91V	240/2.4	240/2.4	260/2.6	300/3.0
235/40 R18 95Y				

Part number - 3AA 010 844 E-	Passat Estate			
	Half payload kPa/bar		Full payload kPa/bar	
Tyre size	**Front**	**Rear**	**Front**	**Rear**
215/55 R16 97W	220/2.2	220/2.2	250/2.5	300/3.0
235/45 R17 94W				
205/55 R16 91V	240/2.4	240/2.4	260/2.6	300/3.0
235/40 R18 95W				

Part number - 3AA 010 800 Q-	Passat Estate			
	Half payload kPa/bar		Full payload kPa/bar	
Tyre size	**Front**	**Rear**	**Front**	**Rear**
215/55 R16 93W	230/2.3	230/2.3	260/2.6	300/3.0
235/45 R17 94W				
205/55 R16 91V	250/2.5	250/2.5	270/2.7	300/3.0
235/40 R18 95Y				

Part number - 3AA 010 804 F-	Passat Estate			
	Half payload kPa/bar		Full payload kPa/bar	
Tyre size	**Front**	**Rear**	**Front**	**Rear**
215/55 R16 93W	230/2.3	230/2.3	260/2.6	300/3.0
235/45 R17 94W				
205/55 R16 91V	250/2.5	250/2.5	280/2.8	300/3.0
235/40 R18 95Y				

Part number - 3AA 010 844 F-	Passat Estate			
	Half payload kPa/bar		Full payload kPa/bar	
Tyre size	**Front**	**Rear**	**Front**	**Rear**
215/55 R16 97W	230/2.3	230/2.3	260/2.6	300/3.0
235/45 R17 94W				
205/55 R16 91V	250/2.5	250/2.5	280/2.8	300/3.0
235/40 R18 95W				

Part number - 3AA 010 800 M-	Passat Estate			
	Half payload kPa/bar		Full payload kPa/bar	
Tyre size	**Front**	**Rear**	**Front**	**Rear**
205/55 R16 91V	220/2.2	220/2.2	250/2.5	300/3.0
215/55 R16 93W				
235/45 R17 94W				
235/40 R18 95Y				

Part number - 3AA 010 804 G-	Passat Estate			
	Half payload kPa/bar		Full payload kPa/bar	
Tyre size	**Front**	**Rear**	**Front**	**Rear**
215/55 R16 93W	230/2.3	230/2.3	260/2.6	300/3.0
235/45 R17 94 W				
205/55 R16 91V	250/2.5	250/2.5	280/2.8	320/3.2
235/40 R18 95Y				

Part number - 3AA 010 705 D-	Passat Estate			
Part number - 3AA 010 705 T-				
Part number - 3AA 010 791 G-				
	Half payload kPa/bar/psi		Full payload kPa/bar/psi	
Tyre size	**Front**	**Rear**	**Front**	**Rear**
All [1)]	240/2.4/35	240/2.4/35	260/2.6/38	300/3.0/44

[1)] Valid for all authorised wheel/tyre combinations. ⇒ Wheels and Tyres Guide; Rep. gr. 44 ; Wheel and tyre combinations .

Part number - 3AA 010 705 E-	Passat Estate			
	Half payload kPa/bar/psi		Full payload kPa/bar/psi	
Tyre size	**Front**	**Rear**	**Front**	**Rear**
215/55 R16	240/2.4/35	240/2.4/35	260/2.6/38	300/3.0/44
235/45 R17				
205/50 R17 M&S	260/2.6/38	260/2.6/38	280/2.8/41	300/3.0/44
235/40 R18				
235/35 R19				

Part number - 3AA 010 705 H-	Passat Estate			
	Half payload kPa/bar/psi		Full payload kPa/bar/psi	
Tyre size	**Front**	**Rear**	**Front**	**Rear**
205/50 R17	260/2.6/38	260/2.6/38	280/2.8/41	320/3.2/46
235/45 R17				
235/40 R18	280/2.8/41	280/2.8/41	310/3.1/45	340/3.4/45

Part number - 3AA 010 765 Q-			Passat Estate	
Part number - 3AA 010 765 T-				
	Half payload kPa/bar/psi		Full payload kPa/bar/psi	
Tyre size	**Front**	**Rear**	**Front**	**Rear**
All [1)]	260/2.6/38	260/2.6/38	280/2.8/41	300/3.0/44

[1)] Valid for all authorised wheel/tyre combinations. ⇒ Wheels and Tyres Guide; Rep. gr. 44 ; Wheel and tyre combinations .

Part number - 3AA 010 705 G-			Passat Estate	
	Half payload kPa/bar/psi		Full payload kPa/bar/psi	
Tyre size	**Front**	**Rear**	**Front**	**Rear**
All [1)]	270/2.7/39	270/2.7/39	290/2.9/42	300/3.0/44

[1)] Valid for all authorised wheel/tyre combinations. ⇒ Wheels and Tyres Guide; Rep. gr. 44 ; Wheel and tyre combinations .

Part number - 3AA 010 705 K-			Passat Estate	
	Half payload kPa/bar/psi		Full payload kPa/bar/psi	
Tyre size	**Front**	**Rear**	**Front**	**Rear**
All [1)]	260/2.6/38	260/2.6/38	280/2.8/41	320/3.2/46

[1)] Valid for all authorised wheel/tyre combinations. ⇒ Wheels and Tyres Guide; Rep. gr. 44 ; Wheel and tyre combinations .

Part number - 3AA 010 705 L-			Passat Estate	
	Half payload kPa/bar/psi		Full payload kPa/bar/psi	
Tyre size	**Front**	**Rear**	**Front**	**Rear**
All [1)]	280/2.8/41	280/2.8/41	300/3.0/44	340/3.4/49

[1)] Valid for all authorised wheel/tyre combinations. ⇒ Wheels and Tyres Guide; Rep. gr. 44 ; Wheel and tyre combinations .

Part number - 3AA 010 706-			Passat Estate	
	Half payload kPa/bar/psi		Full payload kPa/bar/psi	
Tyre size	**Front**	**Rear**	**Front**	**Rear**
215/55 R16	240/2.4/35	240/2.4/35	260/2.6/38	300/3.0/44
235/45 R17				
205/50 R17 M&S	260/2.6/38	260/2.6/38	280/2.8/41	300/3.0/44
235/40 R18				

Part number - 3AA 010 706 B-	Passat Estate			
	Half payload kPa/bar/psi		Full payload kPa/bar/psi	
Tyre size	**Front**	**Rear**	**Front**	**Rear**
205/50 R17 M&S	260/2.6/38	260/2.6/38	280/2.8/41	320/3.2/46
235/45 R17				
235/40 R18	280/2.8/41	280/2.8/41	310/3.1/45	340/3.4/45

Part number - 3AA 010 705 R-	Passat Estate			
	Half payload kPa/bar		Full payload kPa/bar	
Tyre size	**Front**	**Rear**	**Front**	**Rear**
235/45 R17	260/2.6	260/2.6	280/2.8	320/3.2
235/40 R18 95Y	280/2.8	280/2.8	310/3.1	340/3.4
235/35 R19 91Y				

Part number - 3AA 010 705 N-	Passat Estate			
	Half payload kPa/bar		Full payload kPa/bar	
Tyre size	**Front**	**Rear**	**Front**	**Rear**
215/55 R16 93W	240/2.4	240/2.4	260/2.6	300/3.0
235/45 R17 94W				
235/40 R18 95Y	260/2.6	260/2.6	280/2.8	300/3.0
235/35 R19 91Y				

Part number - 3AA 010 705 M-	Passat Estate			
	Half payload kPa/bar		Full payload kPa/bar	
Tyre size	**Front**	**Rear**	**Front**	**Rear**
205/55 R16 91V	240/2.4	240/2.4	260/2.6	300/3.0
215/55 R16 93W				
235/45 R17 94W				
235/40 R18 95Y				

Part number - 3AA 010 765 S-	Passat Estate			
	Half payload kPa/bar		Full payload kPa/bar	
Tyre size	**Front**	**Rear**	**Front**	**Rear**
205/55 R16 91V	260/2.6	260/2.6	280/2.8	300/3.0
215/55 R16 93W				
235/45 R17 94W				
235/40 R18 95Y				

Part number - 3AA 010 705 Q-	Passat Estate			
	Half payload kPa/bar		Full payload kPa/bar	
Tyre size	**Front**	**Rear**	**Front**	**Rear**
205/55 R16 91V	270/2.7	270/2.7	290/2.9	300/3.0
215/55 R16 93W				
235/45 R17 94W				
235/40 R18 95Y				

Part number - 3AA 010 800 S-	Passat Estate			
	Half payload kPa/bar/psi		Full payload kPa/bar/psi	
Tyre size	**Front**	**Rear**	**Front**	**Rear**
215/55 R16	220/2.2/32	220/2.2/32	250/2.5/36	300/3.0/44
235/45 R17				
205/50 R17	240/2.4/35	240/2.4/35	260/2.6/38	300/3.0/44
235/40 R18				

Part number - 3AA 010 801 H-	Passat Estate			
	Half payload kPa/bar/psi		Full payload kPa/bar/psi	
Tyre size	**Front**	**Rear**	**Front**	**Rear**
215/55 R16	220/2.2/32	220/2.2/32	250/2.5/36	300/3.0/44
235/45 R17				
205/50 R17	250/2.5/36	250/2.5/36	280/2.8/41	300/3.0/44
235/40 R18				

Part number - 3AA 010 804 J-	Passat Estate			
	Half payload kPa/bar/psi		Full payload kPa/bar/psi	
Tyre size	**Front**	**Rear**	**Front**	**Rear**
215/55 R16	230/2.3/33	230/2.3/33	260/2.6/38	300/3.0/44
235/45 R17				
205/50 R17	250/2.5/36	250/2.5/36	270/2.7/39	300/3.0/44
235/40 R18				

Part number - 3AA 010 802 K-	Passat Estate			
	Half payload kPa/bar/psi		Full payload kPa/bar/psi	
Tyre size	**Front**	**Rear**	**Front**	**Rear**
215/55 R16	230/2.3/33	230/2.3/33	260/2.6/38	300/3.0/44
235/45 R17				
205/50 R17	250/2.5/36	250/2.5/36	280/2.8/41	300/3.0/44
235/40 R18				

Part number - 3AA 010 802 G-		Passat Estate		
	Half payload kPa/bar/psi		Full payload kPa/bar/psi	
Tyre size	**Front**	**Rear**	**Front**	**Rear**
215/55 R16	220/2.2/32	220/2.2/32	250/2.5/36	300/3.0/44
235/45 R17				
205/50 R17	240/2.4/35	240/2.4/35	270/2.7/39	310/3.1/45
235/40 R18				

Part number - 3AA 010 802 L-		Passat Estate		
	Half payload kPa/bar/psi		Full payload kPa/bar/psi	
Tyre size	**Front**	**Rear**	**Front**	**Rear**
215/55 R16	230/2.3/33	230/2.3/33	260/2.6/38	300/3.0/44
235/45 R17				
205/50 R17	250/2.5/36	250/2.5/36	280/2.8/41	320/3.2/46
235/40 R18				

Part number - 3AA 010 801 N-		Passat Estate		
	Half payload kPa/bar/psi		Full payload kPa/bar/psi	
Tyre size	**Front**	**Rear**	**Front**	**Rear**
215/55 R16	230/2.3/33	230/2.3/33	260/2.6/38	300/3.0/44
235/45 R17				
205/50 R17	260/2.6/38	260/2.6/38	280/2.8/41	320/3.2/46
235/40 R18				

Part number - 3AA 010 802 D-		Passat Estate		
Part number - 3AA 010 802 N-				
	Half payload kPa/bar/psi		Full payload kPa/bar/psi	
Tyre size	**Front**	**Rear**	**Front**	**Rear**
215/55 R16	230/2.3/33	230/2.3/33	260/2.6/38	300/3.0/44
235/45 R17				
205/50 R17	250/2.5/36	250/2.5/36	270/2.7/39	300/3.0/44
235/40 R18				

Part number - 3AA 010 804 C-		Passat Estate		
	Half payload kPa/bar/psi		Full payload kPa/bar/psi	
Tyre size	**Front**	**Rear**	**Front**	**Rear**
215/55 R16	230/2.3/33	230/2.3/33	260/2.6/38	300/3.0/44
235/45 R17				

Part number - 3AA 010 804 C-		Passat Estate		
	Half payload kPa/bar/psi		Full payload kPa/bar/psi	
Tyre size	**Front**	**Rear**	**Front**	**Rear**
205/50 R17	250/2.5/36	250/2.5/36	280/2.8/41	320/3.2/46
235/40 R18				

4.10.7 Tyre pressures, Passat Estate "Alltrack"

Note

- *During delivery inspection, check that tyre inflation pressure sticker is fitted. If the sticker is missing, order a new sticker through ETKA.*
- *The mandatory tyre pressures for the respective model can be found on a sticker attached to the inside of tank flap or to the B-pillar.*
- *If the inflation pressure sticker is missing, proceed as follows:*
- *Locate correct part number for respective vehicle in ETKA.*
- *Using part number, determine respective inflation pressures in tyre inflation table.*
- *Uniform pressure: if tyre sizes are not shown for a part number, then a uniform pressure is valid for all authorised wheel/tyre combinations. ⇒ Wheels and Tyres Guide; Rep. gr. 44 ; Wheel and tyre combinations .*

Check tyre pressure using tyre inflator - VAS 5216- , correct if necessary.

Part number - 3AA 010 819 G- Part number - 3AA 010 819 K- Part number - 3AA 010 000 G-		Passat Estate "Alltrack"		
	Half payload kPa/bar/psi		Full payload kPa/bar/psi	
Tyre size	**Front**	**Rear**	**Front**	**Rear**
225/50 R17	220/2.2/32	220/2.2/32	240/2.4/35	280/2.8/41
225/45 R18				
205/50 R17 M&S	250/2.5/36	250/2.5/36	270/2.7/39	310/3.1/45
215/55 R16[1)]	340/3.4/49			

[1)] Spare wheel

Part number - 3AA 010 819 F- Part number - 3AA 010 819 J-		Passat Estate "Alltrack"		
	Half payload kPa/bar/psi		Full payload kPa/bar/psi	
Tyre size	**Front**	**Rear**	**Front**	**Rear**
225/50 R17	220/2.2/32	220/2.2/32	240/2.4/35	280/2.8/41
225/45 R18				
205/50 R17 M&S	240/2.4/35	240/2.4/35	260/2.6/38	300/3.0/44

Part number - 3AA 010 819 F-	Passat Estate "Alltrack"			
Part number - 3AA 010 819 J-				
	Half payload kPa/bar/psi		Full payload kPa/bar/psi	
Tyre size	**Front**	**Rear**	**Front**	**Rear**
215/55 R16[1)]	340/3.4/49			

1) Spare wheel

Part number - 3AA 010 820 H-	Passat Estate "Alltrack"			
Part number - 3AA 010 820 J-				
	Half payload kPa/bar/psi		Full payload kPa/bar/psi	
Tyre size	**Front**	**Rear**	**Front**	**Rear**
225/50 R17	240/2.4/35	240/2.4/35	260/2.6/38	300/3.0/44
225/45 R18				
205/50 R17 M&S	260/2.6/38	260/2.6/38	280/2.8/41	320/3.2/46
215/55 R16[1)]	340/3.4/49			

1) Spare wheel

Part number - 3AA 010 830 L-	Passat Estate "Alltrack"			
Part number - 3AA 010 830 M-				
Part number - 3AA 010 000 D-				
Part number - 3AA 010 800 P-				
	Half payload kPa/bar/psi		Full payload kPa/bar/psi	
Tyre size	**Front**	**Rear**	**Front**	**Rear**
225/50 R17	240/2.4/35	240/2.4/35	260/2.6/38	300/3.0/44
225/45 R18				
205/50 R17 M&S	270/2.7/39	270/2.7/39	290/2.9/420	330/3.3/48
215/55 R16[1)]	340/3.4/49			

1) Spare wheel

Part number - 3AA 010 819 H-	Passat Estate "Alltrack"			
Part number - 3AA 010 819 L-				
Part number - 3AA 010 000 J-				
	Half payload kPa/bar/psi		Full payload kPa/bar/psi	
Tyre size	**Front**	**Rear**	**Front**	**Rear**
225/50 R17	230/2.3/33	230/2.3/33	250/2.5/36	290/2.9/42
225/45 R18				
205/50 R17 M&S	260/2.6/38	260/2.6/38	280/2.8/41	320/3.2/46
215/55 R16[1)]	340/3.4/49			

1) Spare wheel

Part number - 3AA 010 819 M-	Passat Estate "Alltrack"			
	Half payload kPa/bar		Full payload kPa/bar	
Tyre size	**Front**	**Rear**	**Front**	**Rear**
225/50 R17 94V	220/2.2	220/2.2	240/2.4	280/2.8
225/45 R18 95W				
215/55 R16 97W 1)	340/3.4			

1) Spare wheel

Part number - 3AA 010 819 N- Part number - 3AA 010 830 K-	Passat Estate "Alltrack"			
	Half payload kPa/bar		Full payload kPa/bar	
Tyre size	**Front**	**Rear**	**Front**	**Rear**
225/50 R17 94V	240/2.4	240/2.4	260/2.6	300/3.0
225/45 R18 95W				
215/55 R16 97W 1)	340/3.4			

1) Spare wheel

Part number - 3AA 010 819 P-	Passat Estate "Alltrack"			
	Half payload kPa/bar		Full payload kPa/bar	
Tyre size	**Front**	**Rear**	**Front**	**Rear**
225/50 R17 94V	230/2.3	230/2.3	250/2.5	290/2.9
225/45 R18 95W				
215/55 R16 97W 1)	340/3.4			

1) Spare wheel

Part number - 3AA 010 801-	Passat Estate "Alltrack"			
	Half payload kPa/bar		Full payload kPa/bar	
Tyre size	**Front**	**Rear**	**Front**	**Rear**
225/50 R17 98V	220/2.2	220/2.2	240/2.4	280/2.8
225/45 R18 95W				
215/55 R16 97W 1)	340/3.4			

1) Spare wheel

Part number - 3AA 010 801 C-	Passat Estate "Alltrack"			
	Half payload kPa/bar		Full payload kPa/bar	
Tyre size	**Front**	**Rear**	**Front**	**Rear**
225/50 R17 98V	240/2.4	240/2.4	260/2.6	300/3.0
225/45 R18 95W				

Part number - 3AA 010 801 C-	Passat Estate "Alltrack"			
	Half payload kPa/bar		Full payload kPa/bar	
Tyre size	**Front**	**Rear**	**Front**	**Rear**
215/55 R16 97W [1]	340/3.4			

[1] Spare wheel

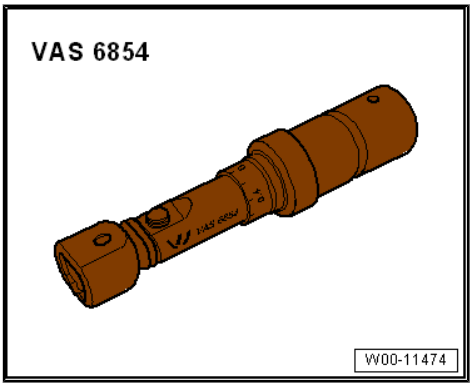
Part number - 3AA 010 801 D-	Passat Estate "Alltrack"			
	Half payload kPa/bar		Full payload kPa/bar	
Tyre size	**Front**	**Rear**	**Front**	**Rear**
225/50 R17 98V	230/2.3	230/2.3	250/2.5	290/2.9
225/45 R18 95W				
215/55 R16 97W [1]	340/3.4			

[1] Spare wheel

4.11 Brake and clutch system: changing brake fluid

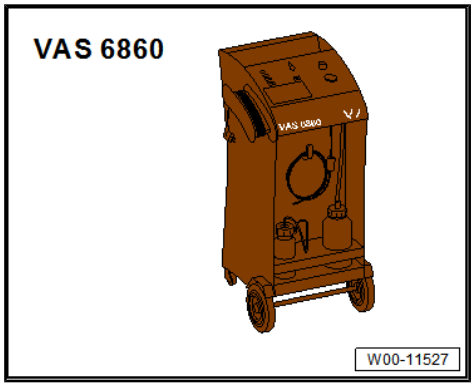
Special tools and workshop equipment required

- Torque wrench - VAS 6854-

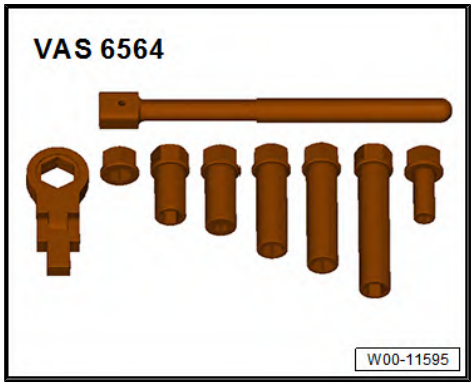


- Brake filling and bleeding equipment - VAS 5234-

- Brake filling and bleeding equipment - VAS 6860-



- Brake bleeding tool - VAS 6564-

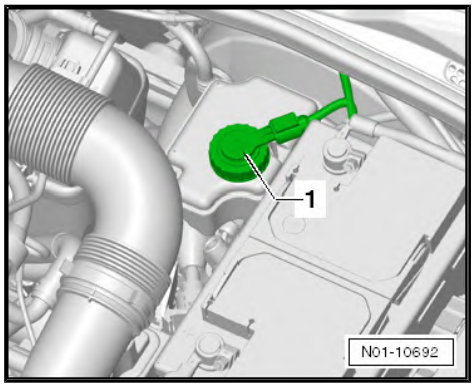


WARNING

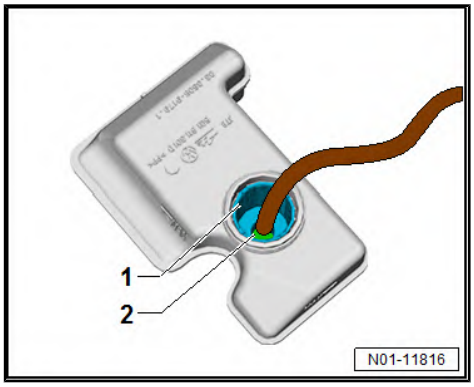
- *Never allow brake fluid to come into contact with fluids that contain mineral oils (e.g. oil, petrol, cleaning agents). Mineral oils will damage seals and rubber grommets of brake system.*
- *Brake fluid is poisonous. In addition, due to its corrosive nature, it must not come into contact with paint.*
- *Brake fluid is hygroscopic, which means it absorbs moisture from the ambient air and should therefore always be stored in air-tight containers.*
- *Rinse off spilled brake fluid using plenty of water.*
- *Do not reuse extracted (used) brake fluid!*
- *Observe relevant disposal regulations.*

Extracting brake fluid

– Unscrew cap -1- from brake fluid reservoir.



– Using the suction hose from brake filling and bleeding unit , extract as much brake fluid -2- from the brake fluid reservoir as possible through the strainer -1-.



Note

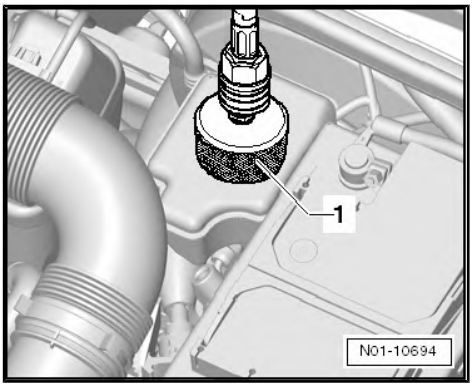
- *The strainer in brake fluid reservoir must remain in place.*
- *Ensure that no brake fluid runs through the strainer after completing the extraction (the brake fluid level in the reservoir must be even with the lower edge of the strainer).*

Connecting brake filling and bleeding equipment

– Screw adapter -1- onto brake fluid reservoir.

– Connect filler hose from brake filling and bleeding unit to adapter -1-.

– Set correct pressure on brake filling and bleeding equipment ⇒ Operating Manual , and switch on brake filling and bleeding equipment .

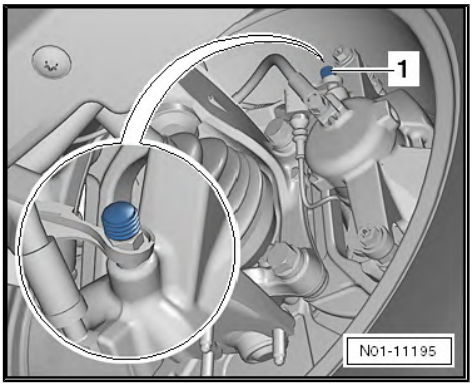


Note

- *The bleeder hose must be firmly seated on bleeder valve so that no air can enter the brake system.*
- *There must always be sufficient brake fluid in the brake reservoir so that no air can enter the brake system through the reservoir.*

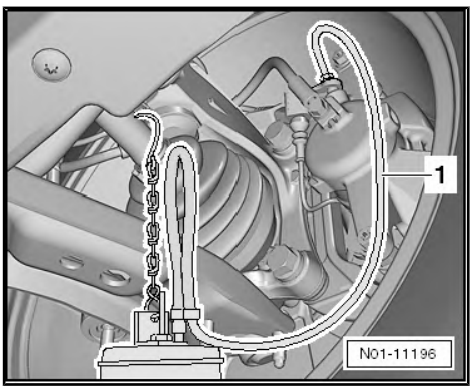
Front axle

– Remove cap -1- from bleeder valve of front left brake caliper.



– Push collector bottle bleeder hose -1- onto front left bleeder valve, open bleeder valve and let appropriate quantity of brake fluid run out (see table). Close bleeder valve. Torque: ⇒ Brake system; Rep. gr. 47 ; Front brake caliper; Assembly overview - front brake caliper .

– Fit again cover cap on bleeder valve of front left brake caliper.

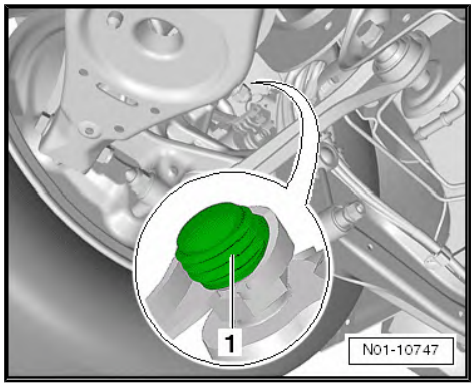


Repeat procedure on right-hand side of vehicle at front.

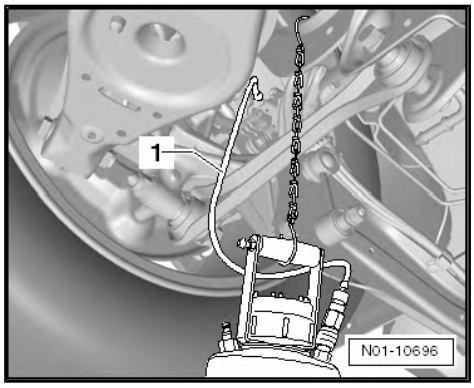
Rear axle

– If necessary, remove both wheels on rear axle to reach the bleed screws.

– Remove cover cap -1- from bleeder valve of rear left brake caliper.



– Push collector bottle bleeder hose -1- onto rear left bleeder valve.
– Open bleeder valve and let appropriate quantity of brake fluid run out (see table). Close bleeder valve. Torque: ⇒ Brake system; Rep. gr. 47 ; Rear brake caliper; Assembly overview - rear brake caliper .
– Fit again cover cap on bleeder valve of rear left brake caliper.
– Repeat procedure on right-hand side of vehicle at rear.



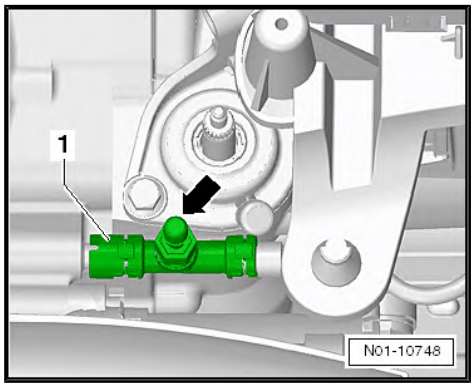
Bleeding clutch slave cylinder

Note

Applies only to vehicles with manual gearbox.

– If necessary, remove air filter housing ⇒ Rep. gr. 23 ; Air filter - assembly overview .

– Push bleeder hose onto bleeder valve -arrow- of clutch slave cylinder -1-.
– Open valve and allow approx. 50 ml of brake fluid to flow out.
– Close valve and depress clutch pedal 10 to 15 times quickly in succession.
– Open valve again and allow approx. 50 ml of brake fluid to flow out.
– Close valve, remove bleeder hose and depress clutch pedal several times.
– Install air filter housing accordingly in reverse order.

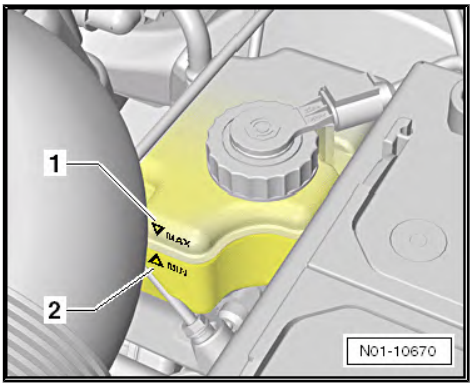


Sequence and quantity of brake fluid

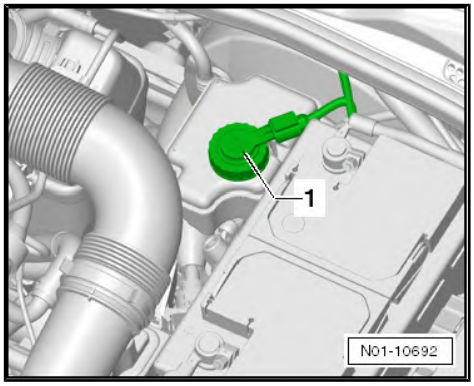
Sequence bleeder valves:	Brake fluid quantity which must flow out of bleeder valves:
Brake caliper	
Front left	0.20 l
Front right	0.20 l
Wheel brake cylinder/brake caliper	
Rear left	0.30 l
Rear right	0.30 l
Clutch slave cylinder	0.15 l

Sequence bleeder valves:	Brake fluid quantity which must flow out of bleeder valves:
Total quantity for automatic gearbox including the quantity extracted from the brake fluid reservoir	approx. 1.00 l
Total quantity for manual gearbox including the quantity extracted from the brake fluid reservoir	approx. 1.15 l

– Switch off brake filling and bleeding unit .
– Take filler hose off adapter.
– Unscrew adapter from brake fluid reservoir.
– Check brake fluid level and correct if necessary. It must be between position -1- and -2-.



– Screw on cap -1- of brake fluid reservoir.
– Reinstall rear wheels, if removed previously ⇒ page 120 .
– Perform functional check during road test.



4.12 Brake system and shock absorbers: inspecting for leaks and damage

Check following components for leaks and damage:

- Brake master cylinder
- Brake servo (for anti-lock brake system: hydraulic unit)
- Brake pressure regulator and
- Brake caliper
- Shock absorbers (during inspection only)
- Presence of dust caps on brake fluid bleeder screws
- Presence of caps on guide bushes

– 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 abrasion, porosity and brittleness.
– Check brake lines for corrosion.
– Check brake connections and fastenings for correct seating, leaks and corrosion.
– Check brake lines and brake hoses for correct seating and attachment in retainers.

WARNING

Faults found must always be rectified (repair measure).

4.13 Brakes, front and rear: checking thickness of brake pads and condition of brake discs

This chapter provides information on the following subjects:

Front disc brake pads: checking thickness ⇒ page 82

Rear disc brake pads: checking thickness ⇒ page 83

Brake discs: checking condition ⇒ page 84

Special tools and workshop equipment required

♦ Torque wrench - V.A.G 1332-

♦ Electric hand torch and mirror

Carry out following procedure:

Note

The adapter to loosen and tighten the anti-theft wheel bolts can be found in the vehicle tool kit.

4.13.1 Front disc brake pads: checking thickness

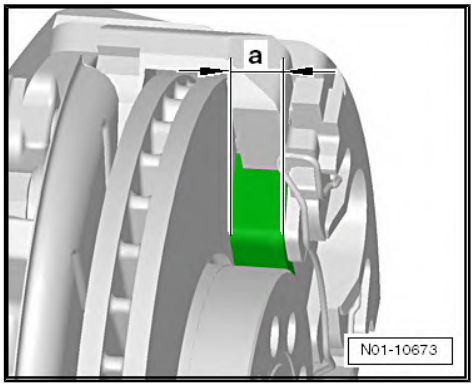
– For better evaluation of remaining pad thickness, use a test mirror and, if necessary, remove the wheel on the side where the brake pad wear indicator is installed.
– Pull off wheel bolt covers if necessary ⇒ page 120 .
– Mark position of wheel relative to brake disc.
– Unbolt wheel bolts and remove wheel.

– Measure inner and outer pad thickness.

a - Pad thickness “without” backplate

Wear dimension: 2 mm

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



Note

- *When replacing brake pads, always check brake discs as well for wear!*
- *Checking and if necessary replacing the brake discs is a repair measure.*

– Check brake disc for wear:

Procedure

⇒ Brake system; Rep. gr. 46 ; Front brake; Assembly overview - front brake

Note

For technical reasons it is possible that several cross references are not directed to the correct chapter. In this case select the procedure manually in the information.

– Install wheel in marked position.

– Tighten wheel bolts diagonally and alternately, specified torque ⇒ page 120 .

– Place adapter in vehicle tool kit after completing work.

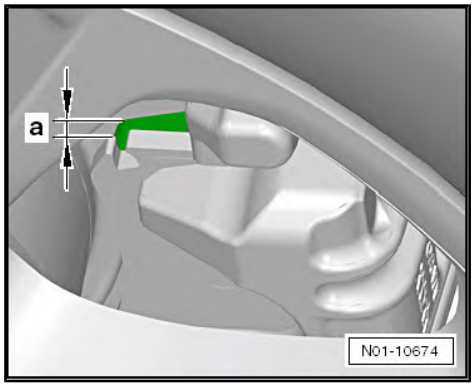
– Fit wheel bolt covers if necessary .

4.13.2 Rear disc brake pads: checking thickness

– Illuminate area behind hole in rim using an electric hand torch.

– Inspect outer pad to determine its thickness.
– Illuminate inner pad with an electric hand torch and mirror.
– Determine thickness of inner pad by inspecting.

a - Inner and outer pad thickness without backplate



Wear dimension: 2 mm

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

Note

When replacing brake pads, always check brake discs as well for wear! Checking and if necessary replacing the brake discs is a repair measure.

– Check brake disc for wear:

Procedure

⇒ Brake system; Rep. gr. 46 ; Rear brake; Assembly overview - rear brake

Note

For technical reasons it is possible that several cross references are not directed to the correct chapter. In this case select the procedure manually in the information.

4.13.3 Brake discs: checking condition

Check all brake discs for the following damage pattern:

- Cracks
- Scoring
- Rust (no surface rust)
- Burrs on circumference of brake disc

Note

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

4.14 Brake fluid level: checking

Note the following:

Note

On right-hand drive vehicles, the brake fluid reservoir is located on the right side in engine compartment.

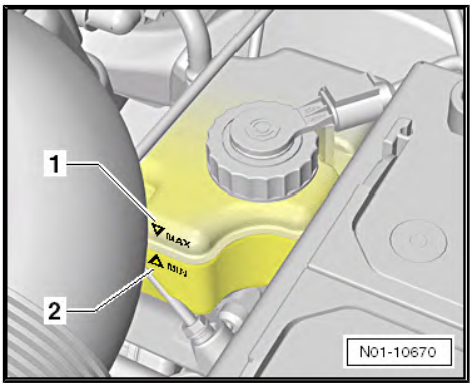
- The brake fluid is dependent on pad wear.
- Brake fluid VW 501 14 with part number -B 000 750- must be used.

WARNING

- *Never allow brake fluid to come into contact with fluids that contain mineral oils (e.g. oil, petrol, cleaning agents). Mineral oils will damage seals and rubber grommets 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, which means it absorbs moisture from the ambient air and should therefore always be stored in air-tight containers.*
- *Rinse off spilled brake fluid using plenty of water.*
- *Observe relevant disposal regulations.*

Brake fluid level at delivery inspection:

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



Note

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

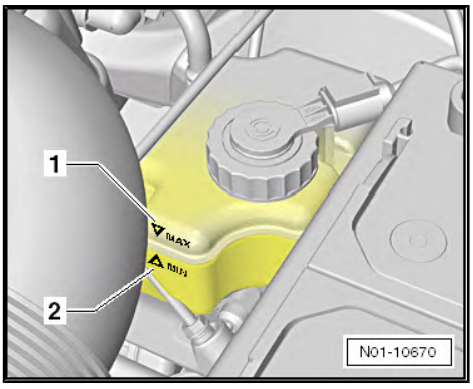
Brake fluid level at inspection service

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.

- Recommended brake fluid level, if brake pads are almost at wear limit:

“At MIN marking or just above” -2-, “REPLENISHING IS NOT REQUIRED”.



- Recommended brake fluid level when brake pads are new or well within pad wear limit:

“Between MIN and MAX marking”.

WARNING

If fluid level is below MIN marking -2-, leak-tightness of brake system must be checked before fluid is topped up, “Repair measure”.

4.15 Diesel particulate filter: checking

– Check ash loading ⇒ Vehicle diagnostic tester.

4.16 Dual clutch gearbox 02E: changing gear oil and filter

Procedure

⇒ 6-speed dual clutch gearbox 02E; Rep. gr. 34 ; Gear oil; Draining and filling gear oil

⇒ 6-speed dual clutch gearbox 02E; Rep. gr. 34 ; Gear oil circuit; Removing and installing gear oil filter

Note

For technical reasons it is possible that several cross references are not directed to the correct chapter. In this case select the procedure manually in the information.

4.17 Electric windows: checking positioning (open and close functions)

Note

The automatic opening and closing features for the electric windows do not function after disconnecting and reconnecting the battery. Therefore, before a new vehicle is delivered, the window regulators must be reactivated. Once the windows have been reactivated, the battery must not be disconnected again.

WARNING

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

Carry out the following procedure to reactivate the automatic functions of the window regulators:

Note

The following work description applies to the front left window regulator. Reactivate the other window automatic functions in the same manner by operating the respective switch in the driver door.

– Switch on ignition.
– Close all doors and windows completely.
– Pull window regulator buttons up and hold for at least one second in this position.
– Release buttons, pull up and hold again.

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

Note

The positioning of one or more window regulators can be reactivated at the same time.

– Switch off ignition.

4.18 Natural gas tank: renew.

WARNING

Service and maintenance on the high pressure part of natural gas system must only be performed by specially trained personnel.

Natural gas is highly flammable and, in combination with air, creates a combustible mixture.

There must be no open flame or source of ignition near the natural gas system.

Inhaling natural gas can lead to light-headedness and lung damage. High concentrations may lead to suffocation due to lack of oxygen.

Natural gas is NOT odourless because a gas having a strong odour is added.

⇒ Fuel supply system - natural gas engines; Rep. gr. 20 ; Fuel tanks; Removing and installing natural gas tank .

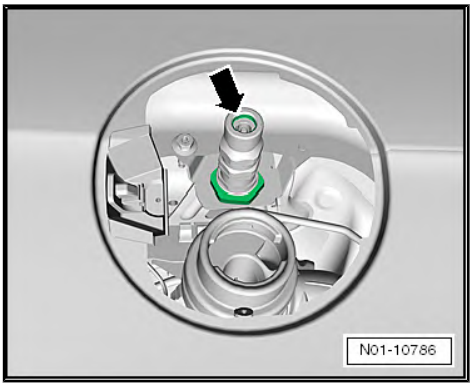
4.19 Natural gas filler connection and sealing cap: check condition, clean if necessary and check seal.

Special tools and workshop equipment required

- ♦ Lint-free cloth

– Open tank flap and remove protective cap from natural gas filler neck.

– Check if seal is fitted and its condition -arrow-.



– Check natural gas filler neck for dirt, damage, and surface corrosion. Clean natural gas filler neck ONLY from outside.

– If the filler neck is dirty, clean off dirt using compressed air. The filler neck will not be damaged as a result.

– If corrosion is found on the surface of the natural gas filler neck, remove it using a lint-free cloth.

4.20 Fault memory of all systems: reading with vehicle diagnostic tester , correcting possible faults according to repair guidelines

– Read event memory ⇒ Vehicle diagnostic tester.

– Repair all faults according to repair guidelines.

Caution

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

Static faults

If one or more static faults are found in the event memory, we recommend seeking agreement from the customer to rectify these faults using Guided Fault Finding.

Sporadic faults

If only sporadic faults or notes are stored in the event memory and the customer has no complaints regarding the electronic vehicle system, erase event memory.

4.21 Bonnet catch hook: grease.

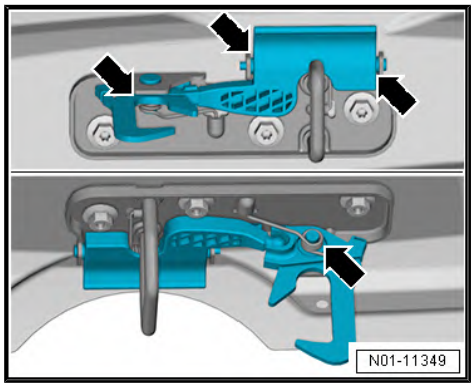
Special tools and workshop equipment required

- Universal oil spray G 000 115 A2

Note

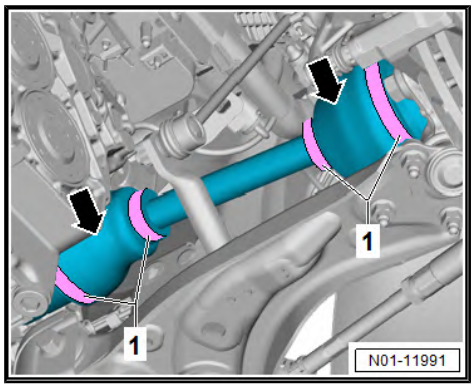
Vehicle must be at least at room temperature.

- Lubricate bonnet arrester with universal oil spray G 000 115 A2 at points marked with -arrows-.
- Operate moving parts several times so that universal oil is able to penetrate.
- Remove any excess lubricant using a lint-free cloth.

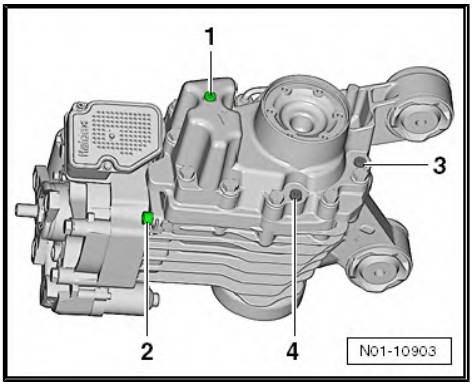


4.22 Gearbox, final drive and drive shaft boots: inspect for leaks and damage.

- Check outer and inner boots -arrows- for leaks and damage.
- Ensure clamps -1- are fitted on boots.



4.23 All-wheel drive coupling: changing oil

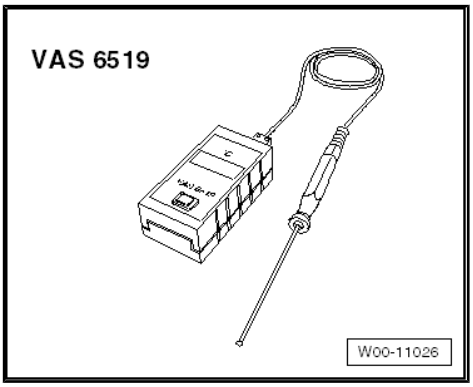


Note

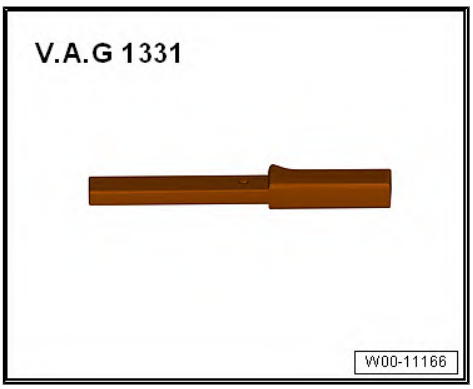
- *On vehicles with all-wheel drive coupling the drain plugs and sealing plugs of both systems are often interchanged owing to the integrated housing construction of all-wheel drive coupling and final drive. Caution must be exercised during maintenance and servicing as incorrect fitting can cause the all-wheel drive coupling and the final drive to fail.*
- *The all-wheel drive coupling and the final drive are one system with separate oil systems.*
- *-1- Sealing plug for filler hole of all-wheel drive coupling oil*
- *-2- Drain plug for all-wheel drive coupling oil*
- *-3- Sealing plug for gear oil filler hole*
- *-4- Drain plug for gear oil*

Special tools and workshop equipment required

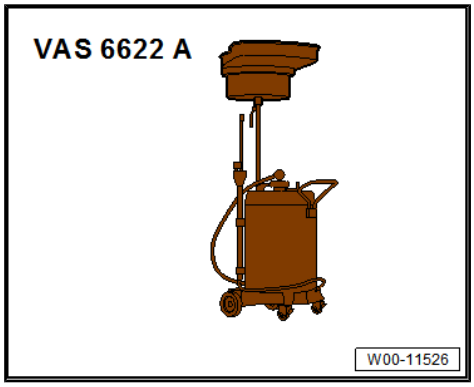
- Temperature gauge - VAS 6519-



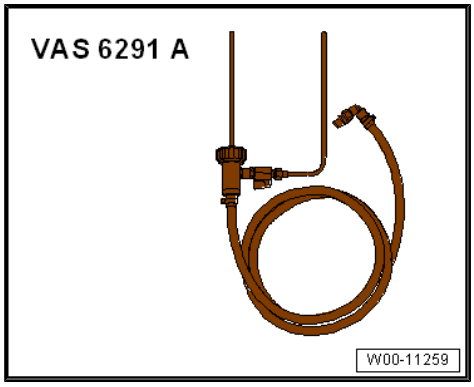
- Torque wrench - V.A.G 1331-



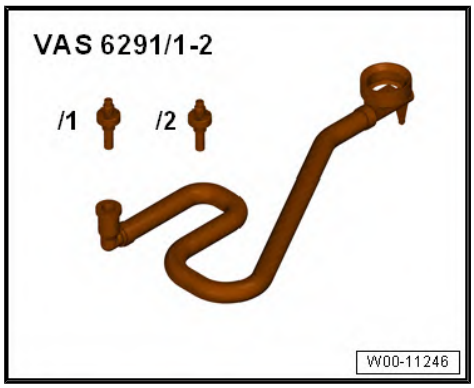
- Used oil collector and extractor - VAS 6622A-



- -VAS 6291 A-



- Adapter for oil filling - VAS 6291/1-

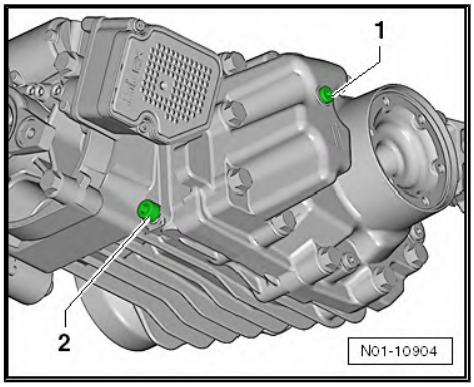


- Drip tray for workshop hoist - VAS 6208-

Draining oil

– Raise vehicle with lifting platform and position used oil collection and extraction unit - VAS 6622A- under all-wheel drive coupling.

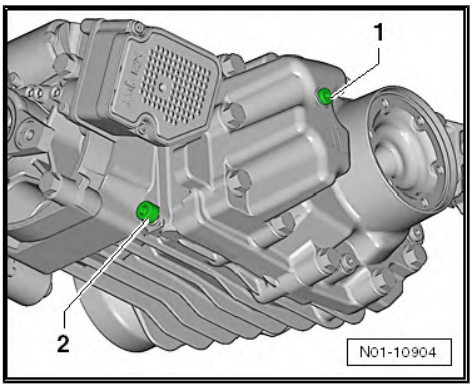
– Unscrew oil drain plug -2- and fully drain high performance oil.
– Screw in new oil drain plug with new seal and tighten it to specified torque. Oil drain plug is fitted with captive seal.



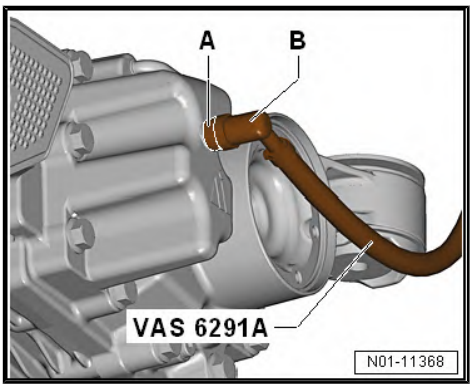
Specified torque	Nm
Oil drain plug	30

Filling with oil

– Remove oil filler plug -1-.



– Separate angled piece -B- from adapter -A- and screw adapter fully in oil filler hole.
– Reconnect angled piece and route hose above drive shaft to prevent sagging.
– Place drip tray for workshop hoist - VAS 6208- under final drive.
– The vehicle can be lowered as soon as the hose above the rear left wheel leads away from the vehicle.

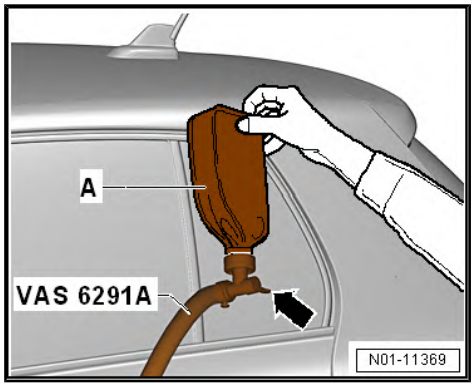


Note

- *The prescribed temperature range for oil during oil level check is 20°C to 40°C.*
- *Observe the temperature of oil container when topping up oil.*
- *After topping up oil, the temperature gauge - VAS 6519- can be used for measuring oil temperature.*

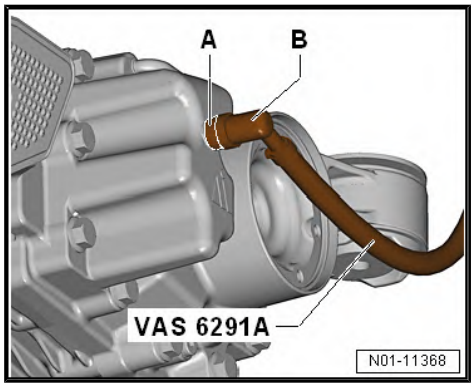
Oil capacity and oil specification ⇒ page 92

– Screw oil container -A- onto charging device -VAS 6291 A- with valve closed -arrow-.
– Open valve -arrow- and hold oil container as shown in the illustration.
– Fill enough oil in system with charging device -VAS 6291 A- until it starts to escape between adapter and gearbox housing.
– Remove charging device -VAS 6291 A- .
– Unscrew adapter -A-.

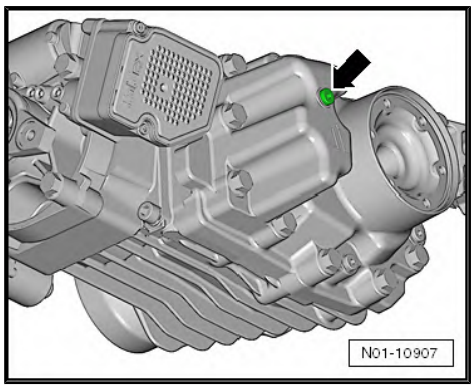


– Let any excess oil flow out until it is only dripping out of hole.

The oil level is correct if oil is dripping out of the oil filler hole.



– Screw in new oil filler plug -arrow- with captive seal and tighten it to specified torque.



Specified torque	Nm
Oil filler plug	15

Ensure adherence to prescribed temperature range during oil level check if oil temperature was not within prescribed temperature range of 20 °C to 40 °C when topping up oil.

The oil temperature can be measured using temperature gauge - VAS 6519- .

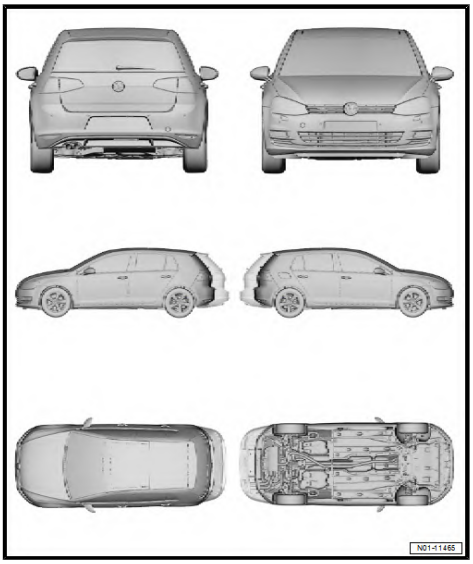
If the oil temperature is not between 20 and 40°C, adherence to prescribed temperature range must be ensured by running gearbox warm or allowing it to cool down.

Oil capacity and oil specification	
Oil capacity, 4MOTION	⇒ Rear propshaft and final drive; Rep. gr. 00 ; Technical data; Capacities
Oil specifications	⇒ Electronic parts catalogue (ETKA)

4.24 Interior and exterior body: inspecting for corrosion with doors and flaps open

Test locations

- Sliding roof frame
- Inner and outer door frame
- Area around trim strips
- Windscreen roof edge
- Outer and inner A-pillar
- Bonnet
- Wheel arches
- Inner and outer tailgate



4.25 Poly V-belt: renewing

Procedure

⇒ Rep. gr. 13 ; Cylinder block belt pulley end; Removing and installing poly V-belt

Note

For technical reasons it is possible that several cross references are not directed to the correct chapter. In this case select the procedure manually in the information.

4.26 Poly V-belt: check condition

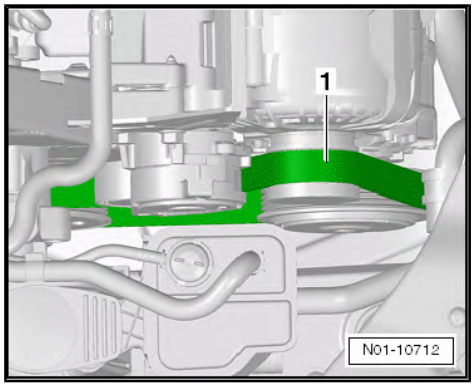
Carry out following procedure:

– Remove “bottom” engine compartment cover (noise insulation) ⇒ page 109 .

– Use a suitable socket to turn the engine at the vibration damper/belt pulley.

Check poly V-belt -1- for:

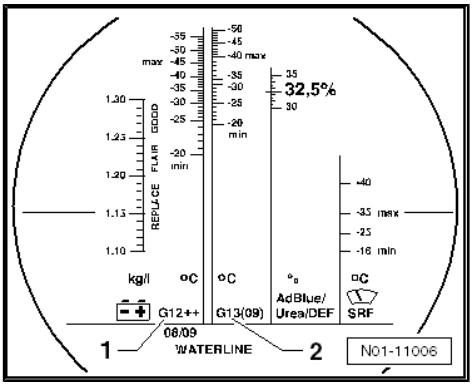
- Sub-surface cracks (cracks, core ruptures, cross sectional breaks)
- Layer separation (top layer, cord strands)
- Base break-up
- Frayed cord strands
- Flank wear (material wear, frayed flanks, flank brittleness - glassy flanks-, surface cracks)



Caution

- *If faults are found, it is absolutely necessary to renew the poly V-belt.*
- *In the case of diesel engines, toothed belts which came into contact with oil, brake fluid, fuel or reducing agent, must always be renewed.*
- *In the case of petrol engines, toothed belts which came into contact with oil, brake fluid, fuel or coolant, must always be renewed.*
- *This can avoid breakdowns and malfunctions.*
- *The replacement of a poly V-belt is a repair measure.*

4.27 Cooling system: checking frost protection and coolant level



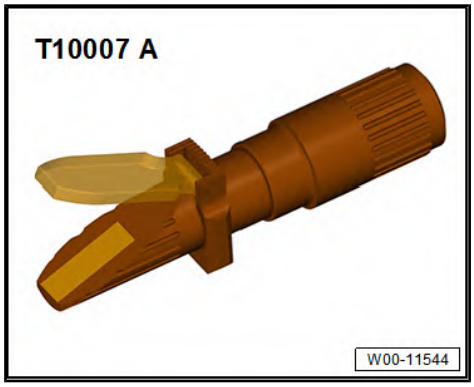
Note

- *The water used for mixing has a major influence on the effectiveness of the coolant. Because the water quality differs from country to country and even from region to region, the quality of the water to be used in the cooling system has been specified by Volkswagen. Distilled water fulfils all requirements. Therefore, only ever use distilled water when mixing coolant for topping up or renewing coolant.*
- *Use only coolant additives which conform with the ⇒ Electronic parts catalogue (ETKA) . Other coolant additives may reduce corrosion protection substantially. The resulting damage could lead to loss of coolant and subsequent severe damage to the motor.*
- *Mixed in the proper proportions, coolant inhibits frost and corrosion damage as well as scaling. Furthermore, the boiling point is raised. For these reasons, the cooling system must be filled all year round with a coolant additive.*
- *Because of its high boiling point, the coolant improves engine reliability under heavy loads, particularly in countries with tropical climates.*
- *Use ONLY refractometer - T10007A- for determining current anti-freeze value.*
- *Frost protection must be guaranteed down to -25°C as a minimum and, in countries with arctic conditions, down to approx. -36°C. Increasing the frost protection is permissible only if climatic conditions require stronger frost protection. It may, however, be increased only to a maximum of -48°C. Otherwise, the cooling effect will be impaired.*
- *Do not reduce the coolant concentration by adding water even in the warm season or in hot countries. Frost protection must be guaranteed down to at least -25°C.*
- *Read anti-freeze figures from the respective scale for type of anti-freeze added.*
- *The temperature read off the refractometer - T10007A- corresponds the »ice flocculation point«. Flakes of ice may start forming in the coolant at this temperature.*
- *Never reuse old coolant.*
- *Use only a water/coolant additive mixture as a slip agent for coolant hoses.*

4.27.1 Frost protection: checking, replenishing coolant additive if necessary

Special tools and workshop equipment required

♦ Refractometer - T10007 A-



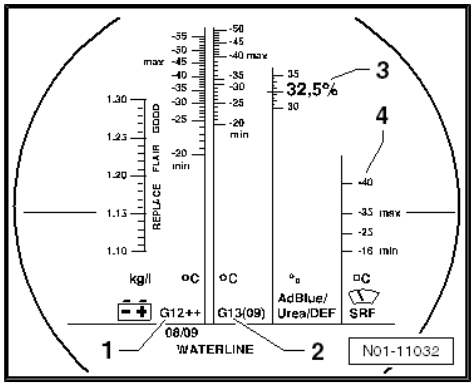
Note

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

– Check concentration of coolant additive using refractometer - T10007 A- (refer to operating instructions).

The scale -1- of the refractometer is calibrated for coolant additives G12; G12 Plus, G12 Plus Plus and G11.

The scale -2- is only calibrated for coolant additive G13.



– If frost protection is insufficient, drain coolant and supplement coolant additive ⇒ page 96 .

Note

♦ *If the currently used coolant additive cannot be determined precisely, use the scale -2- for coolant additive G13.*

♦ *Please observe disposal instructions!*

– Check coolant additive concentration after road test again.

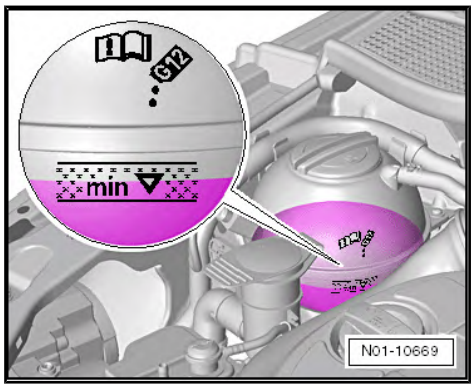
4.27.2 Coolant level: checking, replenishing coolant if necessary

– Check coolant level in expansion tank when engine is cold.

♦ Delivery inspection: coolant level above “min” marking -arrow-

♦ Inspection service: coolant level above “min” marking -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).

4.27.3 Mixing ratio:

Caution

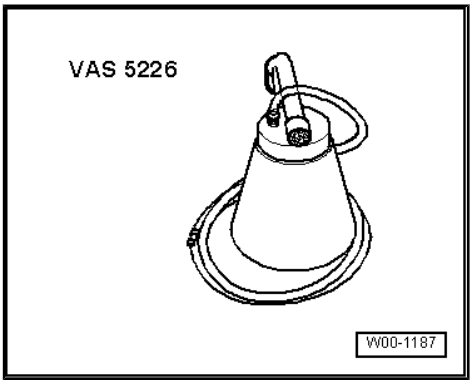
Use only distilled water for mixing coolant additives. The use of distilled water ensures optimum protection against corrosion.

Frost protection to	Coolant additive portion	Distilled water
-25 °C	approx. 40%	approx. 60 %
-36 °C	approx. 50 %	approx. 50 %

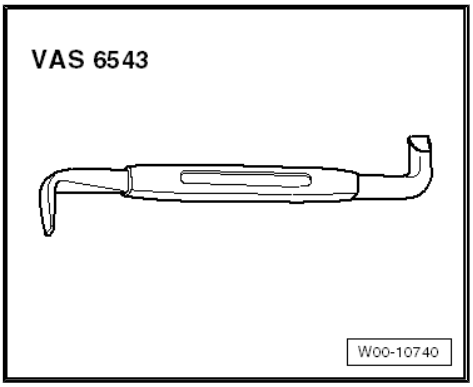
4.28 Diesel fuel filter: renewing

Special tools and workshop equipment required

- Diesel extractor - VAS 5226-



- Angled screwdriver - VAS 6543-



Removing:

Caution

- *Ensure that no diesel fuel contacts other components in the engine compartment. Clean immediately, if necessary.*

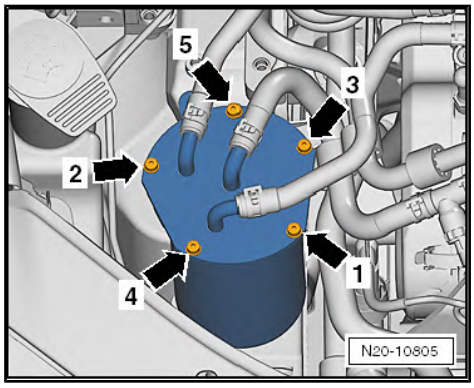
Remove engine cover panel ⇒ page 106 .

Note

- *Please observe disposal instructions!*
- *After the diesel fuel filter has been changed, the fuel system must be bled.*

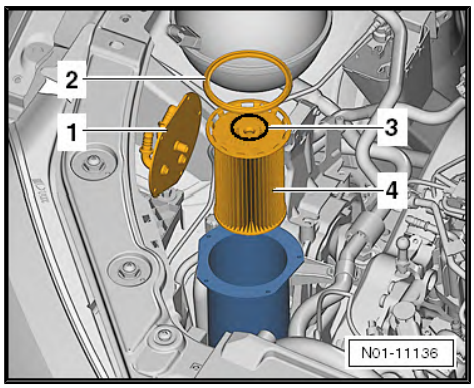
Carry out following procedure:

– Remove bolts in the sequence shown.



– Remove upper part of diesel fuel filter -1- together with connected fuel hoses.

– Remove diesel fuel filter element -4- from lower part of fuel filter.



Note

Please observe disposal instructions!

Caution

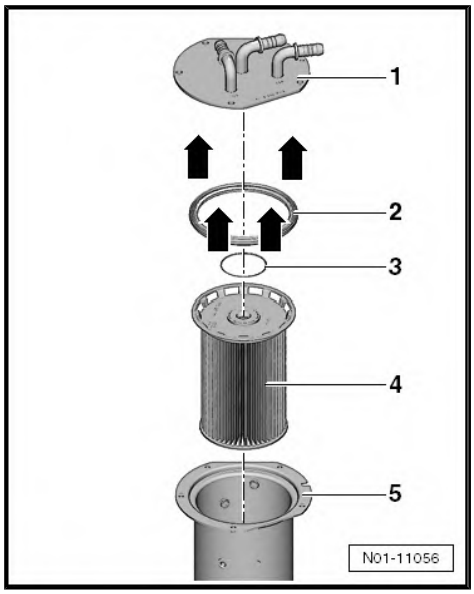
Remove all diesel, dirt and water residues from fuel filter lower part using diesel extractor - VAS 5226- .

Installing:

Caution

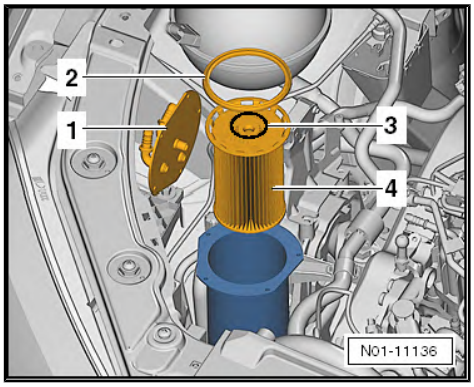
The seals -2- and -3- and diesel fuel filter element -4- must be renewed.

Always moisten new seal -2- slightly with diesel fuel to avoid malfunctions!



– Insert new diesel fuel filter element -4- in diesel fuel filter lower part and turn slightly to limit stop.

– Fit upper part of diesel fuel filter -1- and seal on lower part of fuel filter and then screw in bolts approx. one turn.

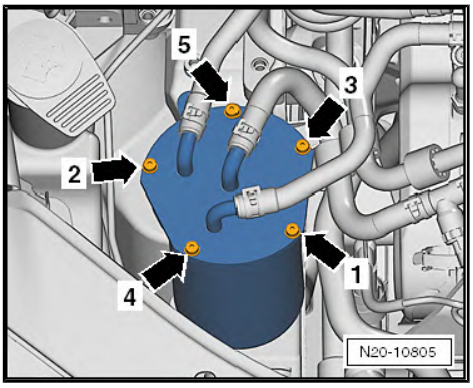


Caution

Ensure correct installation position of diesel fuel filter upper part to corresponding lower part.

– Tighten bolts in the sequence shown.

– Tighten bolts to 5 Nm torque.



Bleeding fuel system

- There must be sufficient fuel in the tank.

– Activate fuel pump ⇒ Vehicle diagnostic tester.

– After the fuel system has been bled, start engine.

– Allow engine to run for several minutes at mid revs, then switch engine off again.

– Read event memory and erase if necessary.

– Carry out a leakage test of the fuel system.

Note

If there is still air in the fuel system, the engine can change to emergency running mode during road test. In this case, switch engine off and erase fault memory. Then continue with a road test.

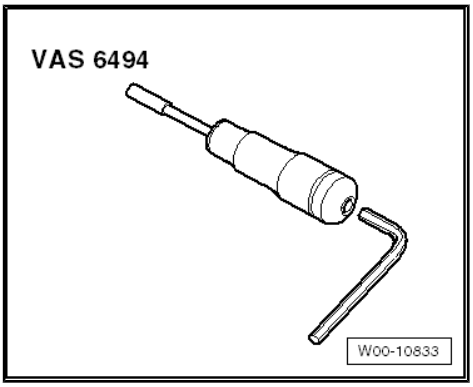
4.29 Air filter: cleaning housing and renewing filter element

Removing and installing air filter element, 6-cylinder FSI petrol engines ⇒ page 100

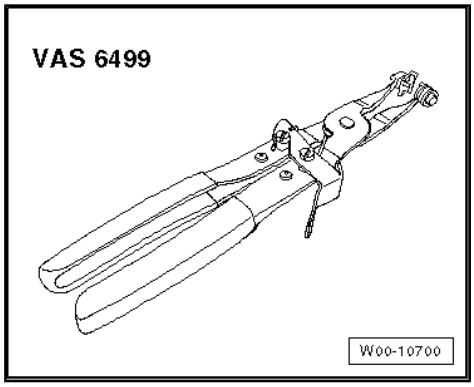
Removing and installing air filter element, diesel engines, 1.4 l, 1.8 l and 2.0 l TSI engines ⇒ page 100

Special tools and workshop equipment required

♦ Torque screwdriver - VAS 6494-



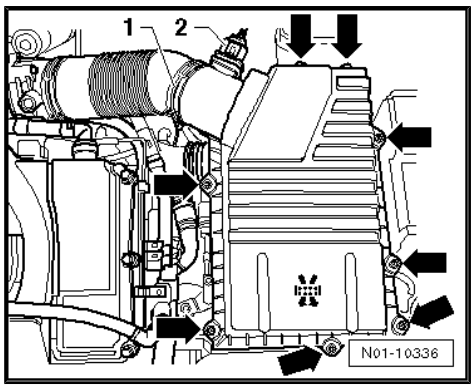
- Spring-type clip pliers - VAS 6499-



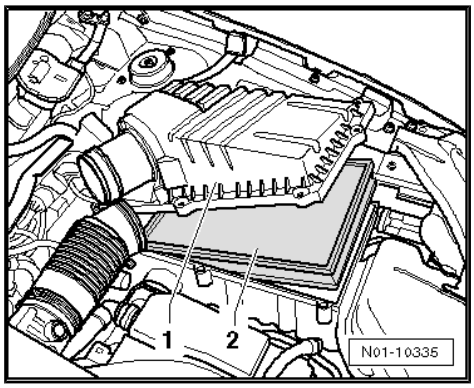
4.29.1 Air filter element: removing and installing, 6-cylinder FSI engines

– Pull off connector -2- and loosen clip -1- using spring-type clip pliers - VAS 6499- .

– Unscrew bolts -arrows- and remove air filter housing upper part.



– Renew air filter element -2-.



Note

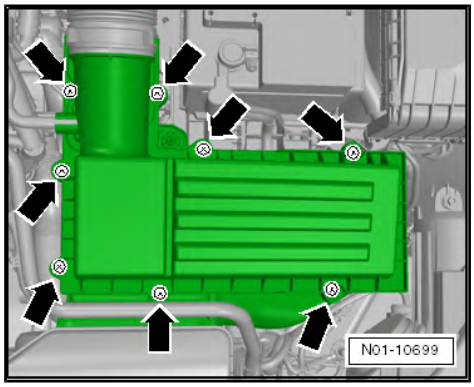
Please observe disposal instructions!

– Tighten bolts of upper part of air filter housing -1- to 1.6 ±0.2 Nm.

– Refit clamp, and push on connector until it engages.

4.29.2 Air filter element: removing and installing, diesel engines, 1.4 l, 1.8 l and 2.0 l TSI engines

– Unscrew bolts -arrows-.



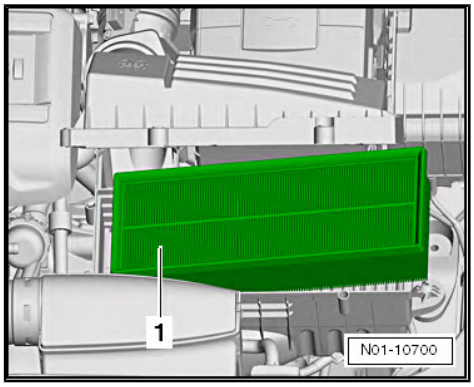
– Pull vacuum hose off air filter housing.

– If necessary, pull off connector from air mass sensor.

Caution

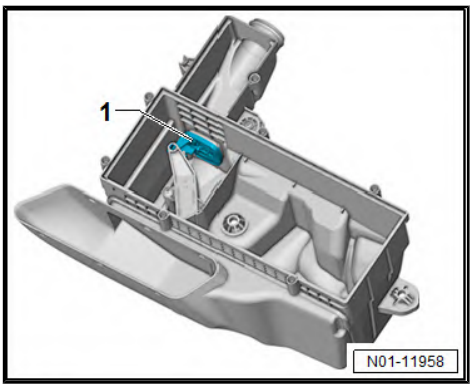
To prevent damage to the connection and to vacuum hose, do not use sharp-edged tools when pulling hose off.

– Remove air filter upper part and take out air filter element -1-.



Checking position of warm air flap

– Check position of warm air flap -1- in lower part of air filter. The warm air flap must close completely at temperatures above +12°C.

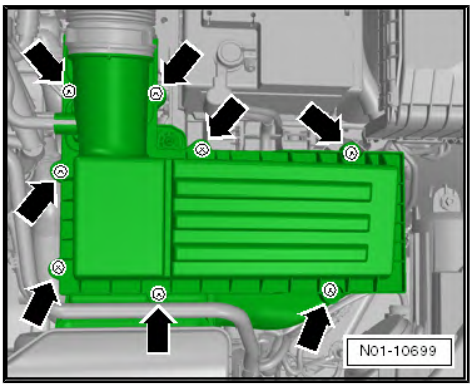


Note

The warm air flap is not installed in all vehicles.

– Clean upper part of air filter.
– Insert new air filter element and install air filter upper part.

– Tighten air filter upper part with bolts -arrows- to 1.6 Nm.
– Connect vacuum hose to air filter housing.
– If necessary, connect connector to air mass sensor.



4.30 Multi-purpose additive for diesel fuel: adding

4.30.1 Specification for using multi-purpose additive for diesel fuel

Note

- *In the three markets mentioned below there is a particularly high risk of deposits forming on the injectors and inlet valves owing to the quality of the fuel.*
- *To counteract the formation of deposits, a multi-purpose additive for diesel fuel must be added.*
- *Only additives compliant with VW 505 26 (multi-purpose additive G 001 790 M3) may be used.*
- *After adding the additive, it is extremely important to fully refuel the vehicle to achieve optimal effectiveness of the additive.*

– During each change oil service, fill entire bottle of multi-purpose additive for diesel fuel into regular fuel tank.

Country		
China	India	Russia

4.30.2 Recommendation for using multi-purpose additive for diesel fuel

Note

- *In the following markets with a high risk of coke and deposit formation, the addition of a multi-purpose additive is recommended owing to the lower concentration of additives in the diesel fuel.*
- *Only additives compliant with VW 505 26 (multi-purpose additive G 001 790 M3) may be used.*
- *After adding the additive, it is extremely important to fully refuel the vehicle to achieve optimal effectiveness of the additive.*
- *The multi-purpose additive can also be used in all other markets that are not listed in the table.*

– During each change oil service, fill entire bottle of multi-purpose additive for diesel fuel into regular fuel tank.

Country	
Afghanistan	Mali
Egypt	Morocco
Albania	Mauritania
Equatorial Guinea	Macedonia
Argentina	Moldova
Azerbaijan	Myanmar
Belize	Dutch Overseas Territories

Country	
Benin	Nigeria
Bhutan	Pakistan
Brazil	Panama
Brunei	Paraguay
Burkina Faso	Saudi Arabia
Cayman Islands	Senegal
Democratic Republic of the Congo	Sierra Leone
Dominican Republic	Zimbabwe
El Salvador	Sri Lanka and the Maldives
Ivory Coast	South Africa
Fiji	Sudan
Gambia	South Sudan
Georgia	Surinam
Ghana	Syria
Guatemala	Thailand
Guinea	Togo
Guinea-Bissau	Trinidad and Tobago
Guyana	Chad
Haiti	Turkmenistan
Honduras	Ukraine
Indonesia	USA
Iraq	Belarus
Jamaica	Venezuela
Jordan	Central African Republic
Cambodia	Zimbabwe
Cameroon	
Canada	
Cape Verde	
Caribbean, left-hand traffic	
Columbia	
Laos	
Lebanon	
Liberia	

4.31 Multi-purpose additive for petrol fuel: adding

4.31.1 Specification for using multi-purpose additive for petrol fuel

Note

- *In the three markets mentioned below there is a particularly high risk of deposits forming on the injectors and inlet valves owing to the quality of the fuel.*
- *To counteract the formation of deposits, a multi-purpose additive for petrol fuel must be added.*
- *Only additives compliant with VW 507 53 B (multi-purpose additive G 001 780 M3) may be used.*
- *Observe the dosing instructions on the additive container.*
- *After adding the additive, it is extremely important to fully refuel the vehicle to achieve optimal effectiveness of the additive.*

– Fill multi-purpose additive for petrol fuels into regular fuel tank during each oil change service.

Country		
China	India	Russia

4.31.2 Recommendation for using multi-purpose additive for petrol fuel

Note

- *In the following markets with a high risk of coke and deposit formation, the addition of a multi-purpose additive is recommended owing to the elevated olefin content and aromatics in the petrol.*
- *Only additives compliant with VW 507 53 B (multi-purpose additive G 001 780 M3) may be used.*
- *Observe the dosing instructions on the additive container.*
- *After adding the additive, it is extremely important to fully refuel the vehicle to achieve optimal effectiveness of the additive.*
- *The multi-purpose additive can also be used in all other markets that are not listed in the table.*

– Fill multi-purpose additive for petrol fuels into regular fuel tank during each oil change service.

Country	
Algeria	Mauritius
Bahrain	Niger
Bolivia	Nigeria
Brazil	Oman
Ghana	Pakistan

Country	
Indonesia	Peru
Iraq	Philippines
Iran	Saudi Arabia
Japan	Senegal
Yemen	Singapore
Jordan	Surinam
Cambodia	Syria
Qatar	Chad
Columbia	Uzbekistan
Kuwait	United Arab Emirates
Lebanon	Vietnam
Malaysia	

4.32 Memory seat: initialising

All memories and settings will be cleared during the initialisation process. The memory buttons can then be reprogrammed and resynchronised with a remote control key.

– Open driver door.

– Move seat and seat backrest forwards to stop.

– When the seat backrest is fully forwards, release switch and press again until a gong sounds after a few seconds.

4.33 Engine and components in engine compartment: inspecting for leaks and damage (from above and below)

– Remove engine cover panel, if necessary ⇒ page 106 :

– If necessary, remove engine cover panel (noise insulation) - bottom- ⇒ page 109 .

Inspect as follows:

– Check engine and components in engine compartment for leaks and damage.

– Lines, hoses and connections

♦ Fuel system

♦ Cooling and heating system

♦ Lubrication system

♦ Air conditioning system

♦ Intake system

♦ And brake system

Check for leaks, abrasion, porousness, cracks, correct seating and attachment in retainers.

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).*

4.34 Engine cover panel “top”: removing and installing

Caution

- *Do not hit engine cover panel with the fist or a tool when installing. It could be damaged.*

Engine cover panel: removing and installing, 1.4 l TSI engines ⇒ page 106

Engine cover panel: removing and installing, 1.8 l TSI and 2.0 l TSI petrol direct injection engines ⇒ page 108

Removing and installing engine cover, 4-cylinder CR diesel engines ⇒ page 108 .

4.34.1 Engine cover panel: removing and installing, 1.4 l TSI engines

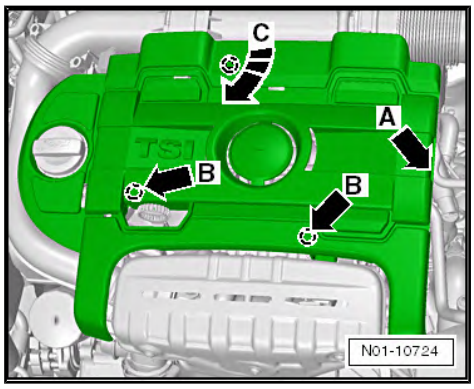
Engine cover design type 1 (TSI twincharger)

Removing:

– If fitted, pull hose off connection -arrow A -.

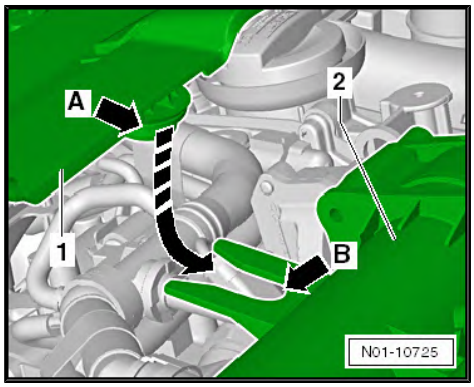
– Disengage engine cover panel at securing points -arrows B- and raise.

– Then pull out of bracket -arrow C-.

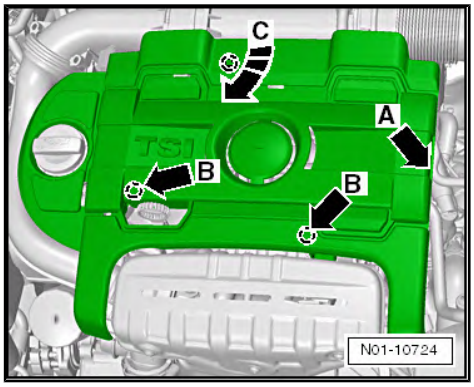


Installing:

– Push engine cover panel -1- with lug -arrow A- at securing point -2- into bracket -arrow B-.

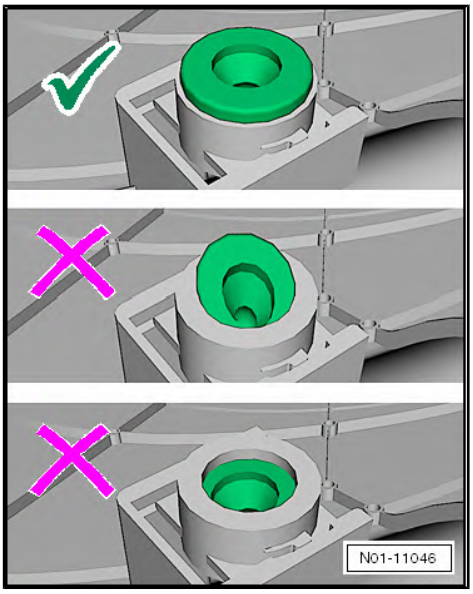


– Then fit engine cover panel at the other securing points -arrows B- and press on, until they noticeably engage.
– If fitted, connect hose at connection -arrow A-.



– When installing, make sure that rubber buffers are correctly -at top in illustration- inserted into mountings.

Engine cover design type 2 (TSI twincharger)

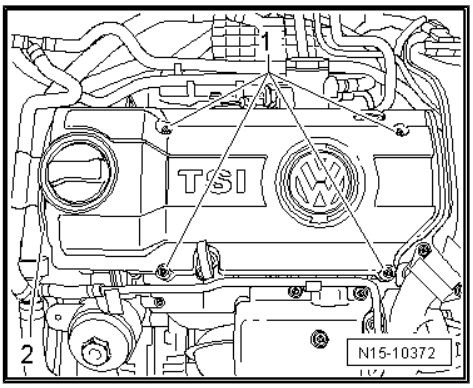


Removing:

– Remove securing bolts -1- of engine cover panel.
– Detach coolant hoses -2- on engine cover panel and pull engine cover panel upwards.

Installing:

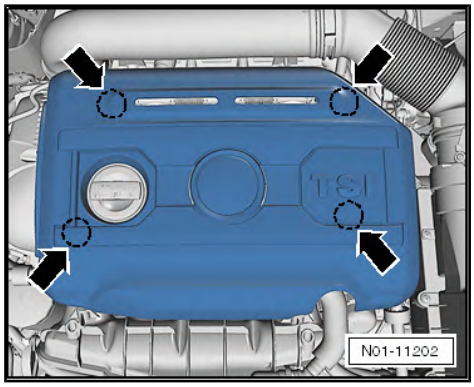
– Attach coolant hoses -2- on engine cover panel and fit engine cover panel onto camshaft housing.
– Tighten securing bolts -1- to 8 Nm.



4.34.2 Engine cover panel: removing and installing, 1.8 l TSI and 2.0 l TSI petrol direct injection engines

Removing:

– Disengage engine cover panel at the securing points -arrows- and remove upwards.

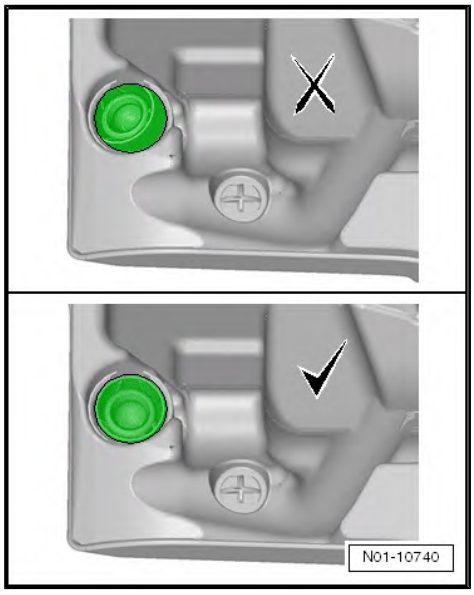


Installing:

> **Caution**
>
> *Before installing engine cover panel, check the 4 securing elements (ball sockets) in the correct positions. Reset to correct position, if necessary. Otherwise the engine cover panel will be damaged.*

– Push ball sockets of engine cover panel to correct installation position, if necessary.

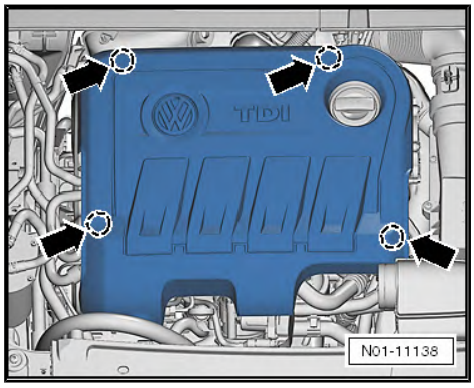
– Fit engine cover panel at securing points -arrows- and press on until it engages.



4.34.3 Engine cover panel: removing and installing, CR diesel engines

Removing:

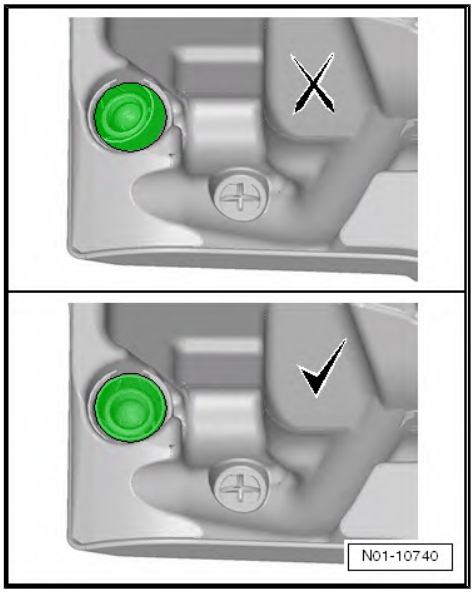
– Disengage engine cover panel at securing points -arrow- and raise.



Installing:

> **Caution**
>
> *Before installing engine cover panel, check the 4 securing elements (ball sockets) in the correct positions. Reset to correct position, if necessary. Otherwise the engine cover panel will be damaged.*

– Push ball sockets of engine cover panel to correct installation position, if necessary.
– Fit engine cover panel onto securing points and press on at edges to engage.



4.35 Engine compartment cover (noise insulation) “bottom”: removing and installing

Procedure

The procedure of removing the engine cover panel -bottom- (noise insulation) can be found in Workshop Manual under:

⇒ General body repairs, exterior; Rep. gr. 66 ; Noise insulation

Note

For technical reasons it is possible that several cross references are not directed to the correct chapter. In this case select the procedure manually in the information.

4.36 Engine oil level: checking

Note the following:

– After shutting off engine, wait at least 3 minutes so that the oil can flow back into the sump.
– Pull out dipstick, wipe with a clean cloth and push dipstick in again to limit stop.
– Pull dipstick out again and read oil level.

Note

- *Oil level must always be in area A for the delivery inspection. This way, you will achieve the greatest possible customer satisfaction.*
- *The oil-change quantity in the service table was determined experimentally and is sufficient for the technical functionality of the engine in all operating conditions. During all other service events, the oil level must be checked and corrected as necessary if the customer requests this. This enables an additional topping-up to the specified oil quantity to the upper limit of the dip stick. Due to tolerances, the oil temperature and the drip time, various quantities may be required for topping up.*

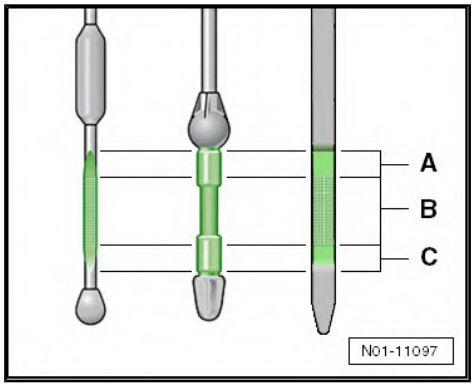
A - Do not top up oil.

B - Oil can be replenished up to area -A-.

C - Oil must be replenished. The oil level must then be at least in the upper half of the measuring area -B-.

– If oil level is above -A- marking, drain or extract excess oil in order to avoid damage to catalytic converter.

– If the oil level is below marking -C- replenish a sufficient amount of oil (at least 0.5 l) ⇒ page 116 .



4.37 Engine oil: draining or extracting, renewing oil filter and replenishing engine oil

Draining or extracting engine oil ⇒ page 110

Oil filter: renewing, 1.4 l TSI engines ⇒ page 111

Oil filter: renewing, 1.8 l TSI and 2.0 l TSI engines ⇒ page 113

Oil filter: renewing, 6-cylinder petrol engines ⇒ page 113

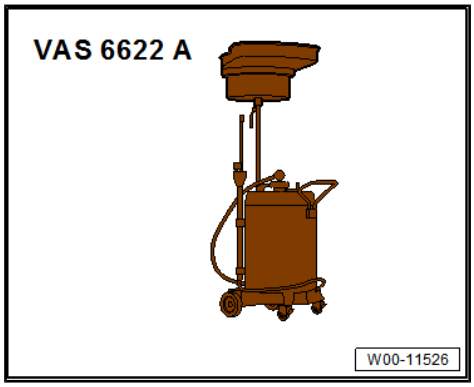
Oil filter: renewing, CR diesel engines ⇒ page 114

Engine oil: replenishing ⇒ page 116

4.37.1 Engine oil: draining or extracting

Special tools and workshop equipment required

♦ Used oil collector and extractor - VAS 6622A-



♦ Oil spill cloth

Engine oil: draining or extracting

Carry out following procedure:

Note

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

♦ *If the engine oil is drained and not extracted with an used oil collection and extraction unit , replace drain plug. This prevents leaks.*

♦ *Please observe disposal instructions!*

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

Or

– If necessary, remove “lower” engine cover panel (noise insulation) ⇒ page 109 .
– Remove oil drain plug.
– Let engine oil drain.

Note

Please observe disposal instructions!

– Screw in oil drain plug together with seal hand-tight and then tighten to specified torque.
– Replenishing engine oil ⇒ page 116 .

Engine oil capacity:

- ⇒ Maintenance tables
- Engine oil: capacities and specifications ⇒ page 116

Specified torques for oil drain plug:

- M14: 30 Nm
- M24: 50 Nm

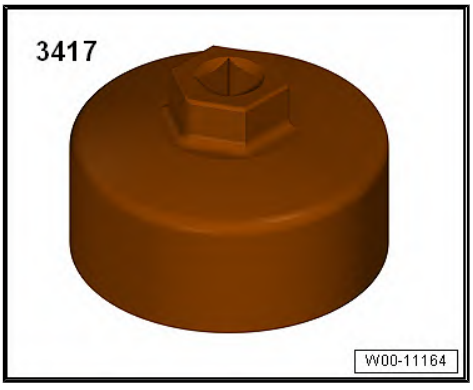
WARNING

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

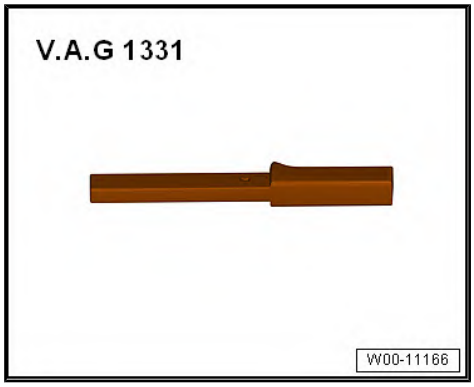
4.37.2 Oil filter: renewing, 1.4 l TSI engines

Special tools and workshop equipment required

- Oil filter tool - 3417-



- Torque wrench - V.A.G 1331-



Removing

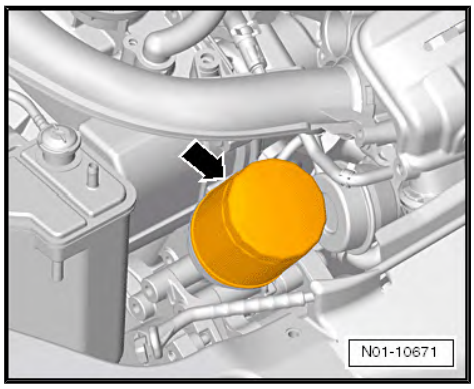
Note

- *Prevent engine oil from dripping onto components.*
- *Cover alternator with cloth before removing.*

– Loosen oil filter -arrow- first, using a strap or oil filter tool - 3417- before removing oil filter completely.

– Wait a few minutes, so that engine oil can flow back from filter into engine.

– Then remove oil filter.



Caution

When removing oil filter, make certain that the old seal is also removed and is not stuck to the valve timing housing.

Ensure that no engine oil drips onto poly V-belt or alternator.

Installing

Note

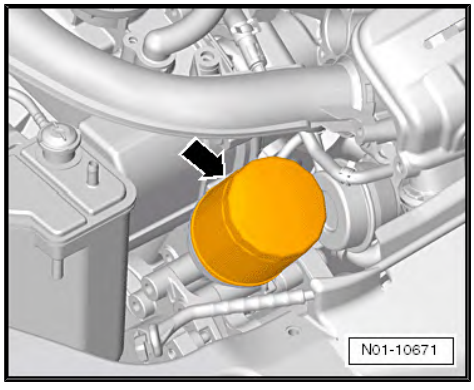
- *Observe fitting instructions on oil filter!*
- *Please observe disposal instructions!*

– Clean oil filter sealing surface on valve timing housing.

– Lightly oil seal on new filter.

– Screw new oil filter -arrow- in by hand.

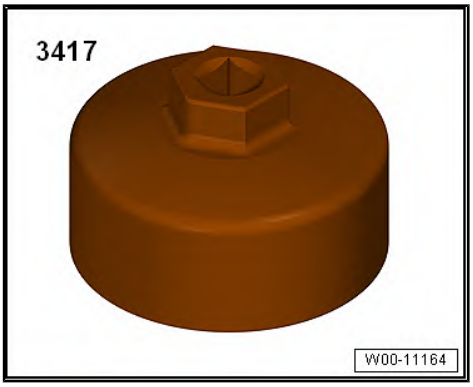
– Then tighten to 20 Nm.



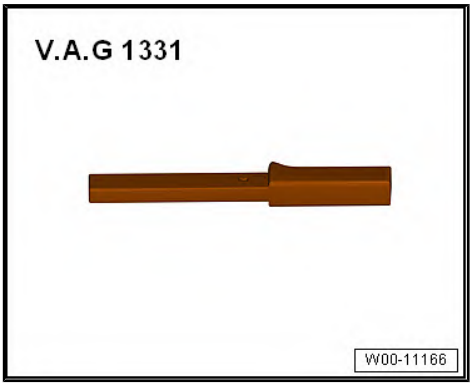
4.37.3 Oil filter: renewing, 1.8 l TSI and 2.0 l TSI engines

Special tools and workshop equipment required

- Oil filter tool - 3417-



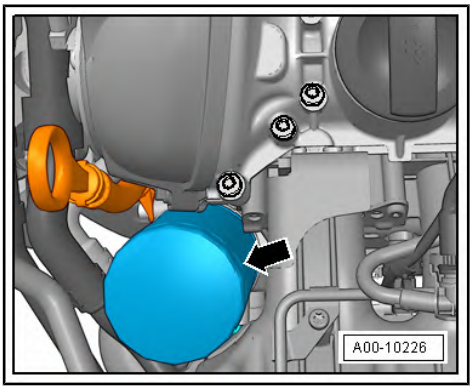
- Torque wrench - V.A.G 1331-



Removing

– Loosen oil filter cartridge -arrow- using oil filter tool - 3417- .

– Loosen filter by a few turns. Wait a few seconds to allow the oil between filter and housing to flow back into sump. Now unscrew filter completely.



Note

Please observe disposal instructions!

Installing

– Clean sealing surface before installing oil filter cartridge.

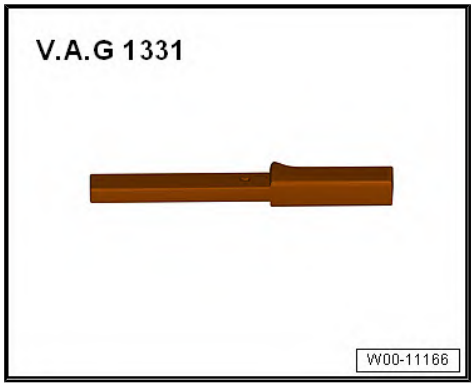
– Oil rubber seal lightly on new filter. This ensures best possible sealing when the filter is tightened.

– Tighten filter to 22 Nm using torque wrench - V.A.G 1331- .

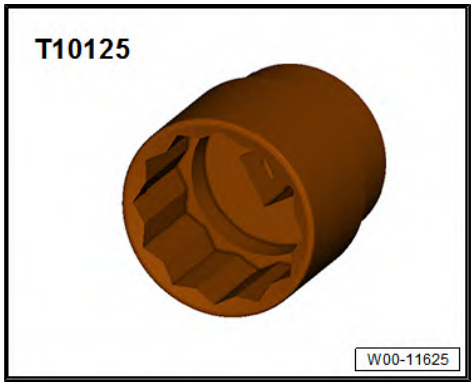
4.37.4 Oil filter on 6-cylinder petrol engine: renewing

Special tools and workshop equipment required

- Torque wrench - V.A.G 1331-



- 36 mm socket - T10125-

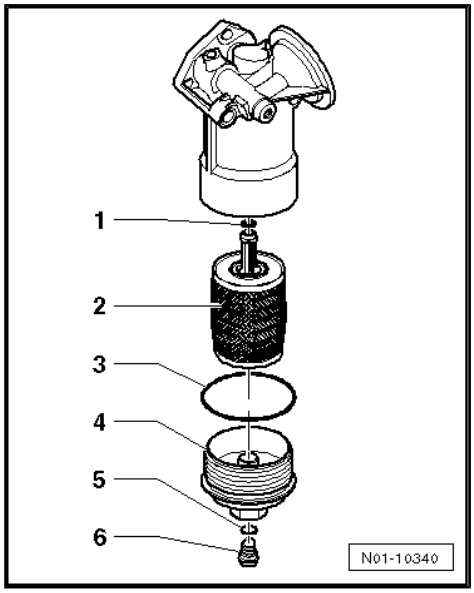


– Open oil drain plug -6- to empty oil filter housing.
– Release threaded cap with combination spanner, 36 mm - T10125- -4-.
– Remove oil filter insert -2-.

Note

Please observe disposal instructions!

– Renew O-rings -1,3,5- and lightly oil them before installing.
– Now insert new oil filter insert.
– Tighten oil threaded cap -4- to 25 Nm.
– The oil drain plug -6- is tightened to 10 Nm.



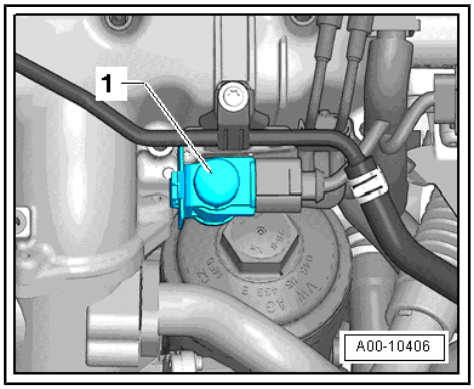
4.37.5 Oil filter: renewing, CR diesel engines

Removing

Note

- *Please observe disposal instructions!*
- *Oil new O-rings before installing.*

– Unclip solenoid changeover valve -1-.

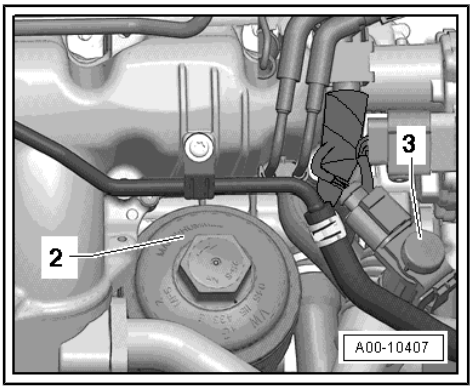


– Loosen filler cap -2- e.g. using an appropriate combination spanner or socket.

Note

Before draining or extracting release sealing cap, so that the engine oil can flow out of filter housing.

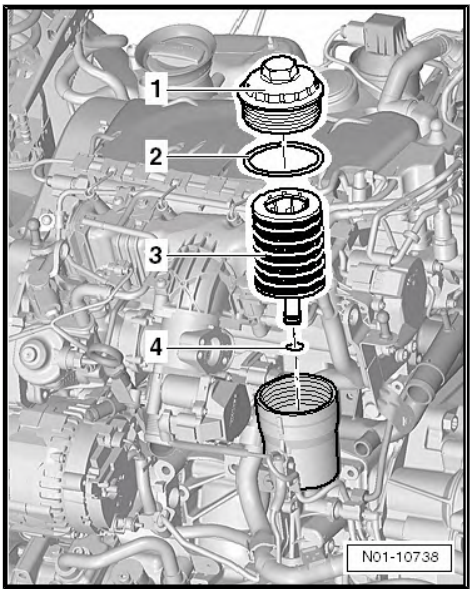
– Clean sealing surfaces on threaded cap and oil filter housing.



Installing

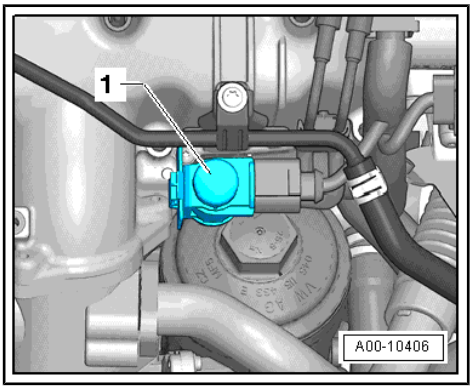
– Renew filter element -3-.

– Renew O-rings -2 and 4-.



– Install threaded cap and tighten to 25 Nm.

Further assembly is basically a reverse of the dismantling sequence. Ensure that the solenoid change-over valve -1- audibly engages.



4.37.6 Engine oil: replenishing

Engine oil: capacities and specifications ⇒ page 116

Oil level: checking ⇒ page 109

4.38 Engine oil: capacities and specifications

Passat 36				
Petrol engines		Oil quantity with filter (l)	VW engine oil standards	
Engine code	Capacity / output		With flexible service	With fixed service
BWS	3.6 l 220kW	5.5	504 00	502 00
CAXA	1.4 l 90kW	3.6	504 00	502 00
CCZB	2.0 l 155kW	4.7	504 00	502 00
CDAA	1.8 l 118kW	4.7	504 00	502 00
CDAB	1.8 l 112kW	4.7	---	502 00
CDGA	1.4 l 110kW	3.6	---	502 00
CKMA	1.4 l 118kW	3.6	---	502 00
CTHD	1.4 l 118kW	3.6	504 00	502 00

Passat 36				
Diesel engines		Oil quantity with filter (l)	VW engine oil standards	
Engine code	Capacity / output		With flexible service	With fixed service
CAYC	1.6 l 77kW	4.3	507 00	507 00
CFFA	2.0 l 100kW	4.3	507 00	507 00
CFFB [1)]	2.0 l 103kW	4.3	507 00	507 00
CFFB [2)]	2.0 l 103kW	4.3	507 00	505 01
CFGB	2.0 l 125kW	4.3	507 00	507 00
CFGC	2.0 l 130kW	4.3	507 00	507 00
CLLA	2.0 l 125kW	4.3	---	505 01

[1)] With diesel particulate filter Vehicles with a factory-fitted diesel particulate filter can be identified by PR No. 7GG, 7MB, 7ME, 7MG or 7MQ on the vehicle data sticker.

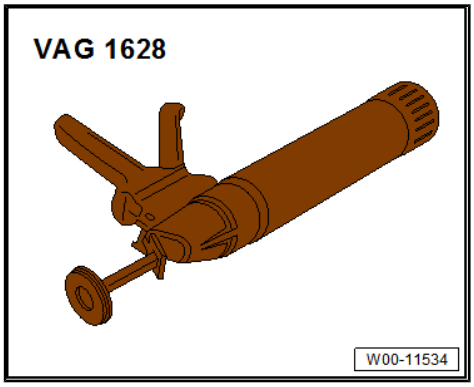
[2)] Without diesel particulate filter

4.39 Panorama tilting/sliding roof with rear panorama roof: checking function, cleaning and greasing guide rails, and cleaning wind deflector

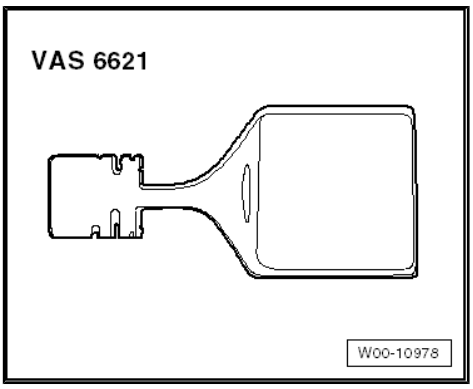
Special tools and workshop equipment required

- Lint-free cloth
- Wet and dry vacuum cleaner
- Lubricating paste G 060 751 A2

♦ Hand cartridge gun - V.A.G 1628-



♦ Grease stone - VAS 6621-



4.39.1 Sunroof: checking function, cleaning and lubricating guide rails

– Check roof system for damage.

– Check function of roof system, i.e. open and close glass panel and sliding headliner/roller blind completely.

– Open roof system and remove any excessive dirt.

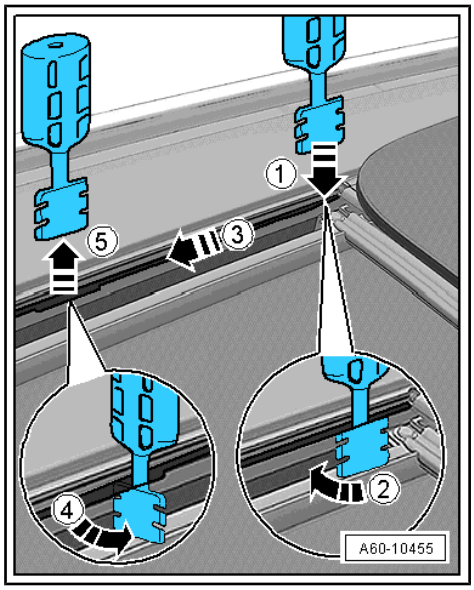
• Only grease stone - VAS 6621- is allowed to be used for cleaning and lubricating.

Caution

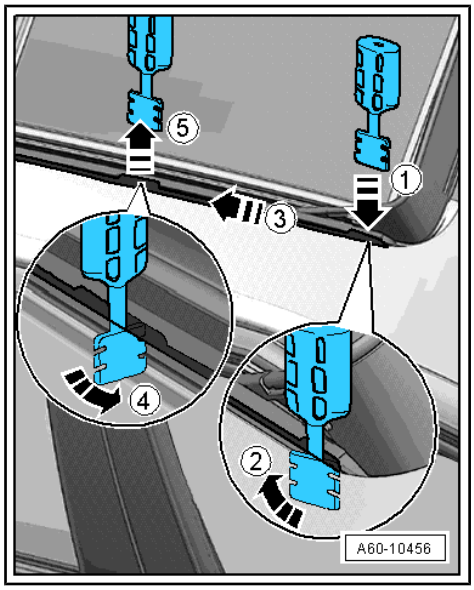
In order to prevent the vehicle interior from being soiled hold a cloth under the respective work area.

Cleaning

- Open glass panel completely.
- Insert -VAS 6621- in rear part of guide rail -1- and turn by 90° -2-.
- Move grease stone -VAS 6621- as far as centre of guide rail in -direction of arrow 3-.
- Turn -VAS 6621- by 90° -4- and remove tool -5-.
- Remove residual grease and dirt from inner area of guide rail using a lint-free cloth. (if necessary, remove sand and dust from the guide rail using a workshop vacuum cleaner).
- The described procedure can be repeated several times, depending on the degree of soiling.

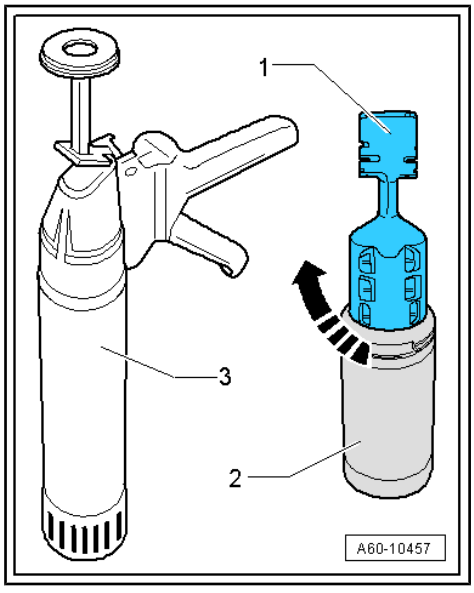


- Insert -VAS 6621- in front part of guide rail (near wind deflector) -1- and turn it by 90° -2-.
- Move grease stone -VAS 6621- as far as centre of guide rail in -direction of arrow 3-.
- Turn -VAS 6621- by 90° -4- and remove tool -5-.
- Remove residual grease and dirt from inner area of guide rail using a lint-free cloth. (if necessary, remove sand and dust from the guide rail using a workshop vacuum cleaner).
- The described procedure can be repeated several times, depending on the degree of soiling.
- Repeat the process on the other side of the vehicle.

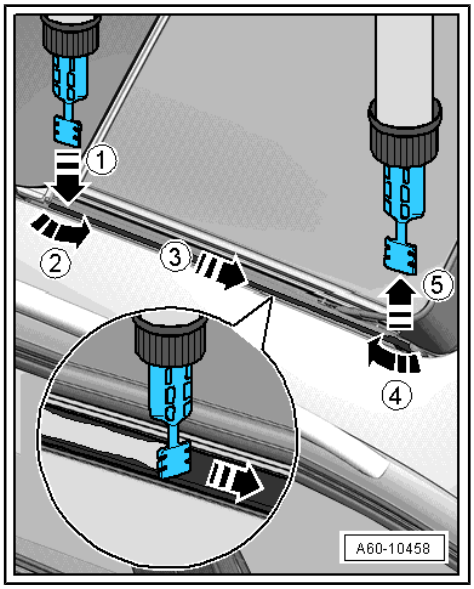


Grease

- Screw grease stone - VAS 6621- -1- onto thread of lubricant - G 060 751 A2- for guide rails -2- in direction of -arrow- and insert in hand-cartridge gun - V.A.G 1628- -3-.



– Insert hand-cartridge gun with -VAS 6621- at rear end of guide rail -1- and turn it by 90° -2-.
– Apply lubricant - G 060 751 A2- for guide rails in direction of -arrow 3- towards front of guide rail, applying uniform pressure while operating hand-cartridge gun .
– Turn hand-cartridge gun with -VAS 6621- by 90° -4- and remove it -5-.
– After lubricating, open and close panoramic sliding roof once, then remove excess grease.
– Repeat the process on the other side of the vehicle.

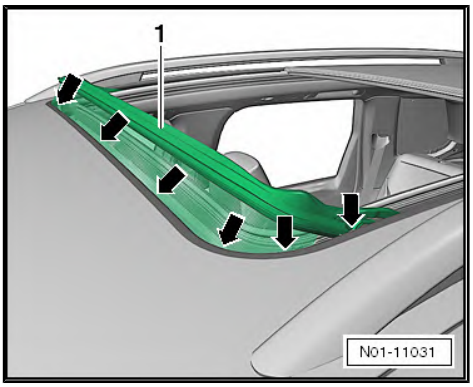


Caution

Faults found must always be rectified (repair measure).

4.39.2 Wind deflector: clean.

– Check wind deflector -1- for soiling. Thoroughly check lower part of wind deflector for soiling -arrows-.
– Remove dirt deposits with e.g. wet and dry vacuum cleaner.
– To remove insects and particles from the net and wind deflector frame, use a sponge and a soapy solution.



Mixing ratio for soapy solution: 3 drops of washing-up liquid to 1 litre of water

Caution

Do not use a commercially available insect remover or other solvents, because these products have not been tested and approved.

– Then remove insects and particles using a vacuum cleaner with a suitable nozzle.

Caution

The net on the wind deflector could be damaged if a wrong nozzle is used.

– When doing this, ensure that no dirt drops into vehicle interior.

4.40 Road test: performing (driving behaviour, noises, air conditioner etc.)

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

- Automatic gearbox: Selector lever position, shift lock/ignition key removal lock, shift behaviour, dash panel insert display
- 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 ABS-regulated braking
- Steering: function, steering free clearance, steering wheel centred when vehicle is travelling straight ahead
- Tilting roof: function
- Radio/radio navigation system: function, reception, GALA, interference noise
- Multi-function indicator (MFI): functions
- Air conditioning system: check function (At low temperatures the function of air conditioner must be checked in a workshop).
- Vehicle: pulls to one side when travelling straight ahead (level road).
- Imbalance: wheels, drive shafts, propshaft
- Noise/vibration: wheel bearing, exhaust system
- Engine: hot starting behaviour

4.41 Wheel securing bolts: tightening to specified torque

- Pulling off wheel hub trim: ⇒ page 120
- Pulling off wheel trim ⇒ page 121
- Pulling off wheel bolt caps: ⇒ page 121
- Loosening/tightening anti-theft wheel bolts ⇒ page 121
- Tightening wheel bolts ⇒ page 122
- Installing wheel centre cover, wheel bolt cover caps and wheel cover ⇒ page 122

Pulling off wheel hub trim

Caution

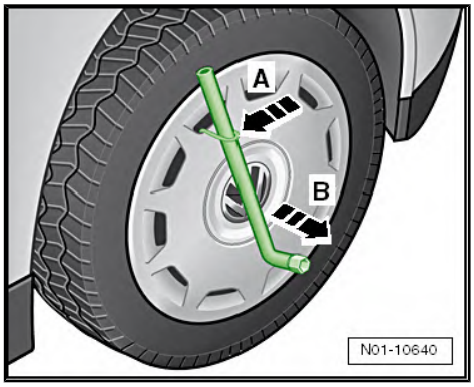
On vehicles with light alloy wheels do not lever wheel hub trim off with screwdriver, only use the special tool for this purpose (puller hook in vehicle tool kit).

The puller hook -1- to remove the cover caps is located with the vehicle tool kit.

– Hook puller hook into one drilling of wheel hub trim and pull off in -direction of arrow-.

Pulling off wheel trim

– On vehicles with wheel trim, loosen wheel trim all around as shown, e.g. using puller hook and wheel brace from vehicle tool kit -A- and pull off -arrow B-.



Pulling cover caps off wheel bolts

Caution

On vehicles with light alloy wheels do not lever wheel bolt caps off with screwdriver, only use the special tool for this purpose (puller hook in vehicle tool kit).

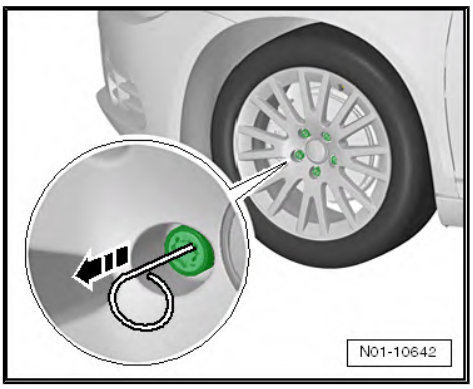
Note

Before loosening or tightening the wheel bolts, remove the cover caps.

The puller hook to remove the cover caps is located with the vehicle tool kit.

– Place the puller hook through opening in cover cap.

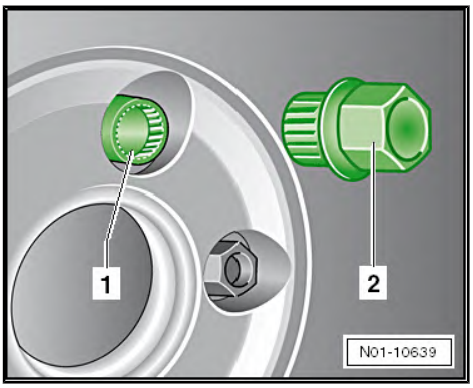
– Pull off cap using the puller hook.



Loosening/tightening anti-theft wheel bolts

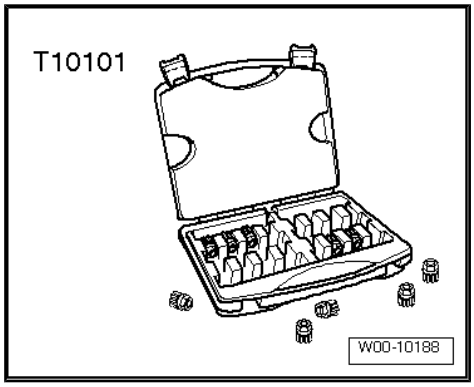
Note

- *To loosen/tighten the anti-theft wheel bolts a special adapter, located in vehicle tool kit, is required.*
- *To loosen the anti-theft wheel bolts (lockable wheel bolts) do not use an impact screwdriver.*
- *If the adapter to loosen or tighten the anti-theft wheel bolts is not available in the vehicle, use the corresponding adapter set for tamper-proof wheel bolts.*

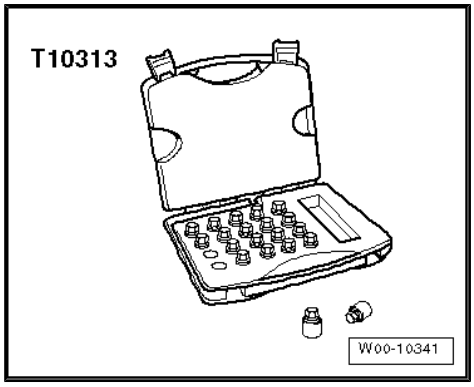


Special tools and workshop equipment required

- Adapter set for tamper-proof wheel bolts - T10101-



- Adapter set for tamper-proof wheel bolts - T10313-



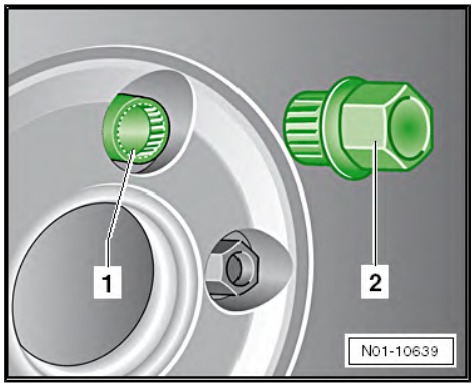
- Torque wrench - V.A.G 1332-

– Slide adapter -2- into anti-theft wheel bolt -1- onto stop.
– Slide the wheel bolt wrench onto adapter -2- onto stop.

Tightening wheel bolts

– Tighten the wheel bolts diagonally and alternately to the following torque setting:

- 120 Nm

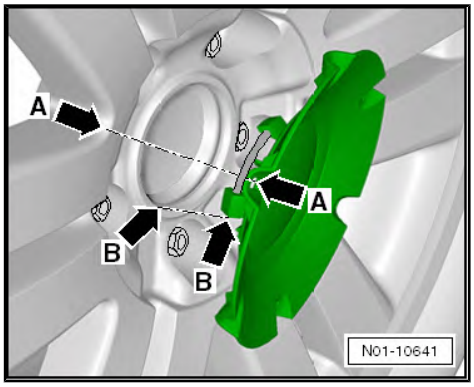


WARNING

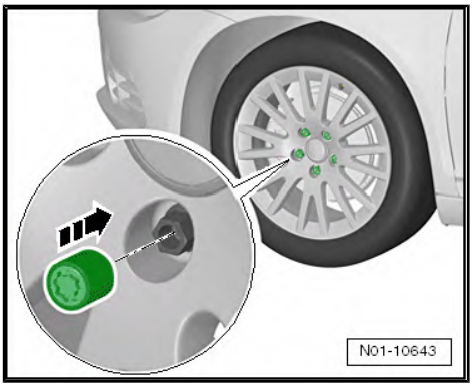
Never use an impact screwdriver to tighten the wheel bolts!

Installing wheel centre cover, wheel bolt cover caps and wheel cover

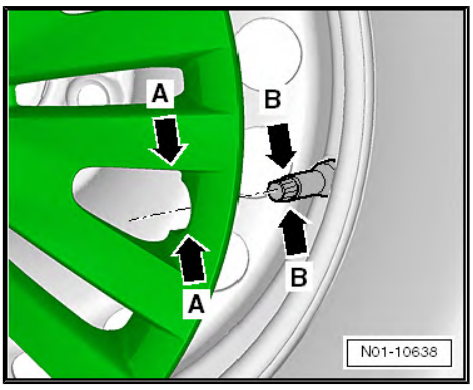
– Push wheel hub trim into opening of wheel hub. Ensure that -A and B- are accurately fitted on rim.



Fit cover caps on wheel bolts.



Install wheel trim by inserting trim evenly into steel wheel. Ensure that valve -B- seats in cut-out -A- of wheel trim.



Note

Place adapter and puller hooks properly in vehicle tool kit after completing work.

4.42 Radio code: reading using vehicle diagnostic tester

Authorization prerequisites for vehicle diagnostic tester

- The vehicle diagnostic tester 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)

Note

- *The radio codes are also called security codes. They can be read in the central database and displayed on the vehicle diagnostic tester .*
- *For radio activation the codes must be entered via radio buttons, as previously ⇒ page 124 .*

– Radio code: reading ⇒ Vehicle diagnostic tester.

4.43 Radio/navigation system: entering PIN of anti-theft coding and storing local radio stations to station buttons

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 using vehicle diagnostic tester of a central database ⇒ page 123 .

Note

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

⇒ Communication; Rep. gr. 91 →Select radio and navigation system→Determine anti-theft code of anti-theft coding via VAS tester and deactivate anti-theft coding.

Vehicle electrics→Communication→Rep. Gr. 91→Select radio and navigation system→Anti-theft coding→Determine anti-theft code of anti-theft coding via VAS tester and deactivate anti-theft coding.

For technical reasons it is possible that several cross references are not directed to the correct chapter. In this case select the procedure manually in the information.

4.44 Tyre pressure monitoring : performing basic setting

Note

- *During normal vehicle operation, Tyre Pressure Monitoring System (TPMS) with autolocation (direct measurement) function is automatically calibrated to the driver-defined tyre pressures.*
- *Therefore, basic setting of the Tyre Pressure Monitoring System (TPMS) is no longer necessary.*

Applicable only for tyre pressure indicator with PR number 7K6 (indirect measurement)

To model year ►2011: ⇒ page 125

From model year 2012►: ⇒ page 126

Note

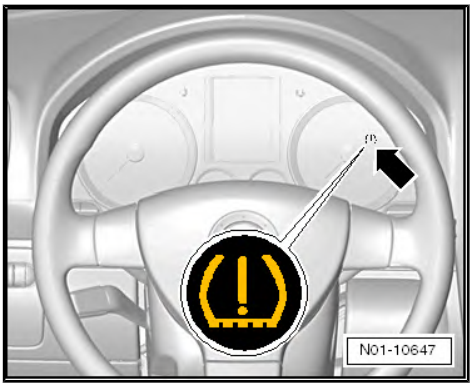
- *Basic setting of the Tyre Pressure Loss Indicator should not be performed until "after" the tyre pressure has been corrected to the prescribed values.*
- *If no pressure loss and tyre damage are found after a tyre pressure warning, the incorrect warning can be rectified by a basic setting.*

The tyre pressure monitoring warning lamp compares the speed and the rolling circumference of the individual wheels via the ABS sensors. When the rolling circumference of one wheel is changed this is displayed by the tyre pressure monitoring. The rolling circumference of tyre changes if:

- The tyre pressure is too low.
- The tyre has structural damage.
- The vehicle is loaded more heavily on one side.
- The wheels on one axle are loaded more heavily (e.g. when towing a trailer or when driving in mountains).
- Snow chains are fitted.
- The temporary spare wheel is fitted.
- One wheel per axle has been changed.

To model year ►2011:

The tyre pressure monitoring warning lamp has a yellow warning lamp in the dash panel insert -arrow-.

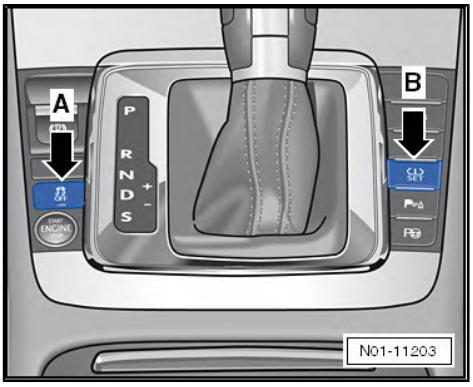


- "FLASHING LIGHT" means that the "INITIAL BASIC SETTING" has not been performed.
- A "PERMANENT LIGHTING-UP" in conjunction with a warning tone, means "WARNING", pressure loss has been recognised, check tyre pressure and perform system basic setting.

Perform "INITIAL" basic setting

– Switch ignition on.

– Press ESP OFF -arrow A- and SET -arrow B- buttons simultaneously and for longer than 2 seconds in the centre console.



If ESP is not fitted, press TCS button.

The start of basic setting will be confirmed by an acoustic signal.

When switching on ignition again, no warning is indicated.

Perform basic settings

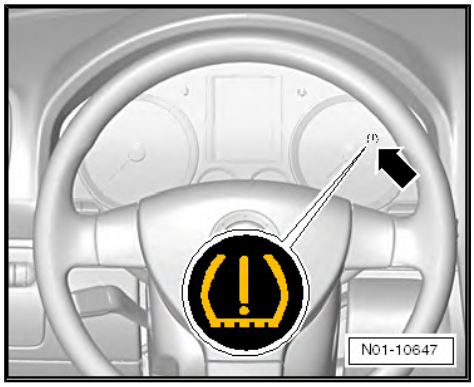
– Switch ignition on.

– Press button SET in centre console for longer than 2 seconds.

The tyre pressure monitoring warning lamp in dash panel insert -arrow- lights up as long as the button is pressed.

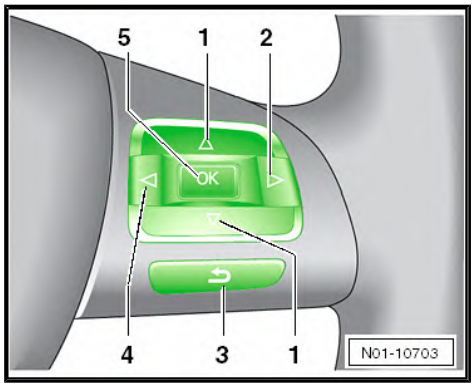
The start of basic setting will be confirmed by an acoustic signal.

When switching on ignition again, no warning is indicated.



From model year 2012►:

Use corresponding buttons on multifunction steering wheel to perform basic setting:

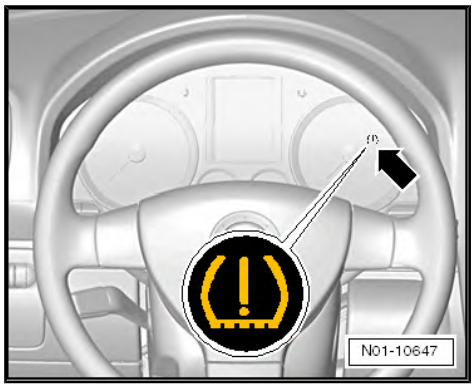


Button -5- is used to confirm menu options.

Press arrow buttons -1- -2- and -4- to change the menu.

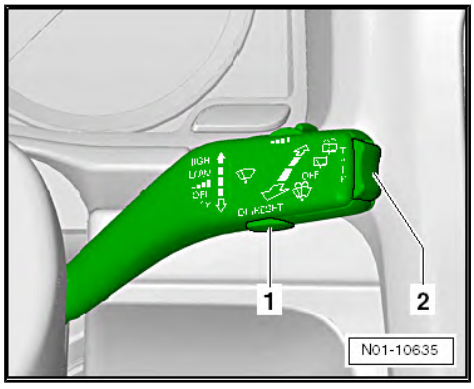
- Switch on ignition.
- Press respective arrow buttons -2- and -4- of multifunction steering wheel repeatedly, until “Settings” menu is displayed.
- Press arrow buttons -1- until submenu “Tyre pressure” is displayed.
- Press OK button -5-.
- Press OK button -5- to confirm tyre pressure.
- Press OK button -5- again to confirm the confirmation prompt displayed.

Tyre pressure monitor display warning lamp lights up briefly in dash panel insert -arrow- to confirm that basic setting has been completed successfully.



Use corresponding buttons on windscreen wiper lever to perform basic setting:

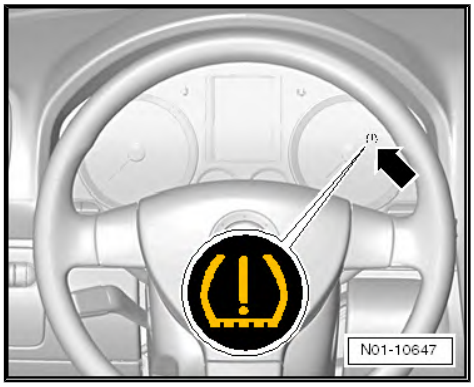
Button -1- is used to confirm menu options.



Rocker lever -2- is used to change the menu.

- Switch on ignition.
- Push button -2- until the main menu is displayed. Then, use the button to scroll to the “Settings” menu.
- Press button -1-.
- Press rocker lever -2- repeatedly until “Tyre pressure” sub-menu appears.
- Press button -1-.
- Press button -1- to save the tyre pressure values.
- Confirm resulting security question again with button -1-.

Tyre pressure monitor display warning lamp lights up briefly in dash panel insert -arrow- to confirm that basic setting has been completed successfully.



4.45 Tyre repair set: checking

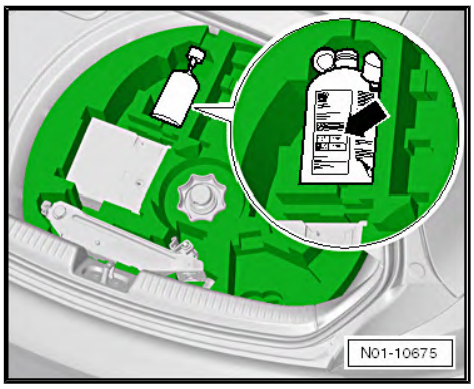
Note

- *The tyre repair set is located in the spare wheel recess.*
- *The tyre repair set also contains a bottle with tyre sealant.*

Expiry date: checking

– Check the expiry date.

The expiry date is printed on a sticker on the tyre sealant container -arrow-.



– Enter the expiry date in maintenance table.

– Renew tyre sealant if the expiry date has been reached. (The tyre sealant must not be more than 4 years old).

Note

- *If the tyre sealant has been used, the container must be renewed.*
- *Please observe disposal instructions!*

4.46 Window wash/wipe system and headlight washer system: checking function

Checking anti-freeze protection of fluid, topping up fluid ⇒ page 127

Window wash/wipe system: check spray jet settings and adjust if necessary ⇒ page 129

Headlight washer system: checking spray jet settings ⇒ page 130

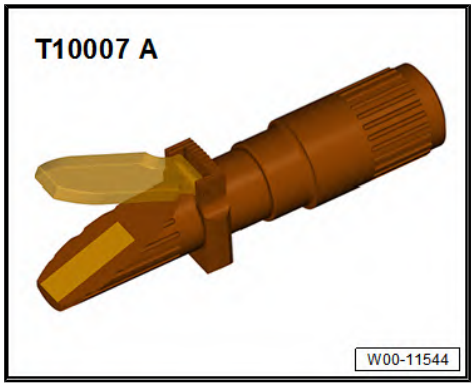
Windscreen wiper blades: check park position ⇒ page 131 .

Rear window wiper blades: checking park position ⇒ page 131

4.46.1 Anti-freeze: checking protection of fluid, topping up fluid if necessary

Special tools and workshop equipment required

♦ Refractometer - T10007 A-



Note

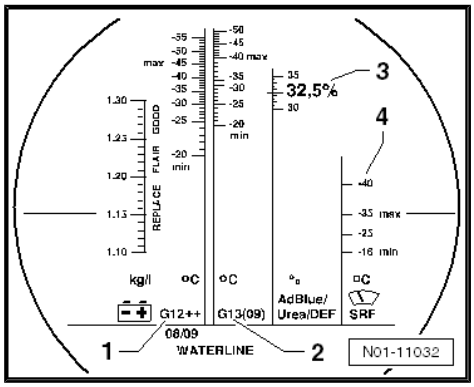
In countries and regions where no frost occurs due to the local climatic conditions, the anti-freeze protection does not need to be checked.

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

– Check concentration of anti-freeze additive using refractometer - T10007 A- .

The scale -4- of the refractometer is applicable for the anti-freeze protection of the window wash/wipe system.

Mixing ratio:



Frost protection to	Genuine washer fluid ⇒ ETKA	Water
-17/-18°C	1 part	3 parts
-22/-23 °C	1 part	2 part
-37/-38 °C	1 part	1 part

– Top up fluid in window wash/wipe system (only if customer requests to do so).

Use genuine washer fluid ⇒ ETKA throughout all year to fill window wash/wipe system.

Depending on season, a winter product with anti-freeze protection or a summer product with increased cleaning capabilities should be used.

Ready-to-use window cleaner (Ready Mix) does not need to be mixed with water.

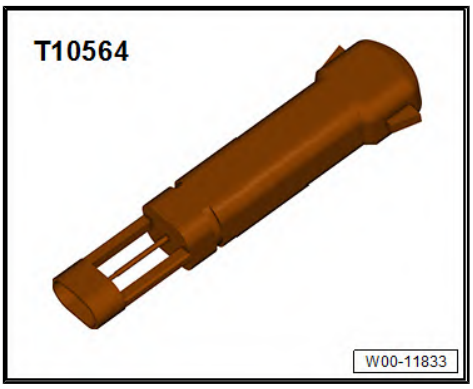
Note

- *Genuine washer fluid ⇒ ETKA prevents the spray jets, washer fluid reservoirs and connecting hoses from freezing.*
- *In vehicles with fan jets, the reservoir must be filled with Genuine washer fluid, 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. Genuine washer fluid ensures that the fan jets remain fully functional at low temperatures.*
- *Genuine washer fluid ⇒ ETKA can also be used in the summer. The powerful cleanser easily removes wax and oil residue from the glass.*
- *Frost protection must be guaranteed to approx. -25°C (approx. -35°C in countries with an arctic climate) in the windscreen wash/wipe system.*

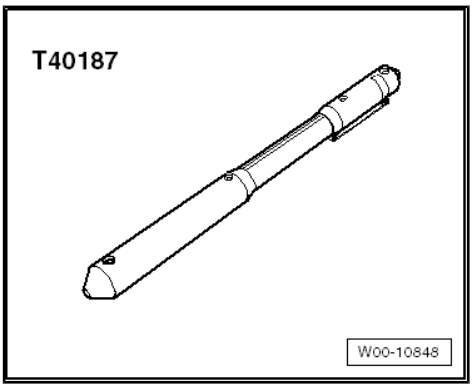
4.46.2 Window wash/wipe system: checking spray jet settings and adjusting if necessary

Special tools and workshop equipment required

- Adjusting tool - T10564-



- or adjusting tool - T40187-

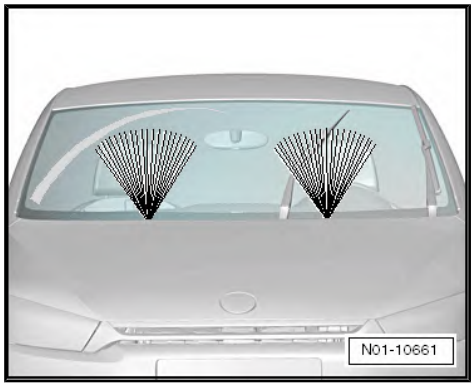


Note

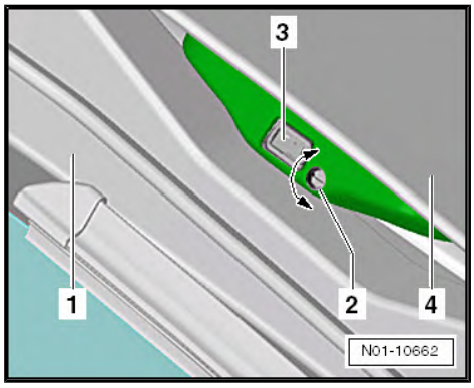
If the spray field is uneven due to soiling in the spray jet, remove the spray jet. Rinse it then with water opposite to direction of spray. Subsequent blowing through with compressed air against the spraying direction is permitted. Never use solid objects to clean the washer jets!

Windscreen spray jet settings:

The spray jets are preset. However, small differences in height may be corrected.



– If both spray fields are not at same height, adjust spray direction upwards or downwards as follows:



1 - Cowl panel in front of windscreen

2 - Adjusting tool

3 - Fan jet

4 - Bonnet

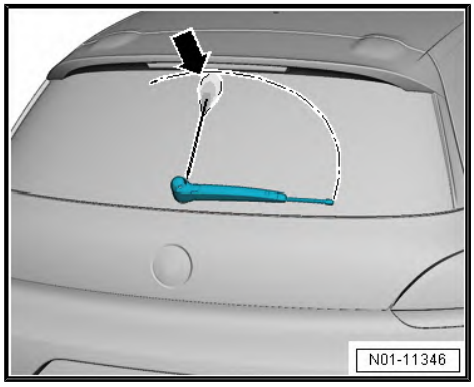
– Adjust the washer jet -3- by turning the adjuster -2- using a suitable screwdriver.

♦ “Clockwise” lower.

♦ “Anti-clockwise” higher.

Rear window spray jet setting:

– Adjust spray jet using adjusting tool - T10564- or adjusting tool - T40187- so that the water jet sprays onto the upper third of rear window.

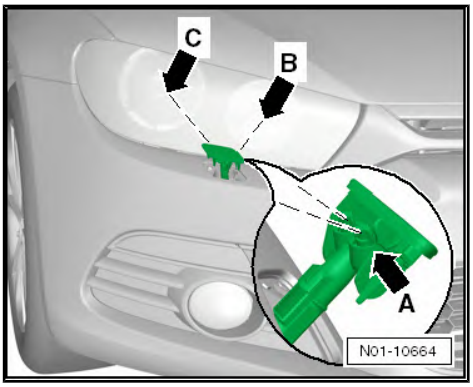


4.46.3 Headlight washer system: checking spray jet settings

Caution

Only control function of spray jets but do not adjust them.

Washer spray jet: checking settings



Jet adjustment dimensions for the right-hand headlight (left-hand mirror image).

– Switch dipped beam on.

– Operate windscreen washer system.

The headlights are washed if the windscreen wiper lever is held in “wipe position” for at least 1.5 seconds.

The washer jet must spray to centre of headlights, see -B- and -C-.

If spray pattern deviates from specifications, carry out repair measures.

4.46.4 Wiper blades: checking park position

Procedure

⇒ Electrical system; Rep. gr. 92 ; Windscreen wiper system; Adjusting windscreen wiper arms

Note

- *Adjusting the wiper blades is a repair measure.*
- *The repair measure is carried out subject to a separate charge.*

4.46.5 Rear window wiper blade: checking park position

Procedure

⇒ Electrical system; Rep. gr. 92 ; Rear window wiper system; Adjusting wiper arm

Note

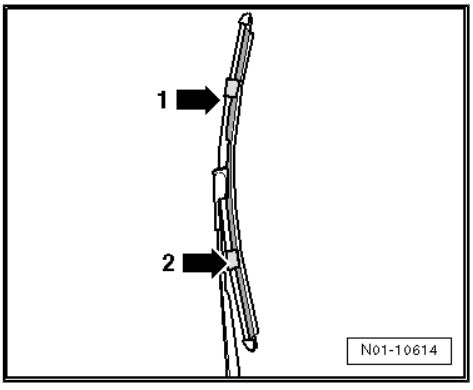
- *Adjusting the wiper blades is a repair measure.*
- *The repair measure is carried out subject to a separate charge.*

4.47 Wiper blade protection: removing

Note

There are 3 different versions of wiper blade protection:

Version 1: wiper blade with protective strip and 2 securing clips



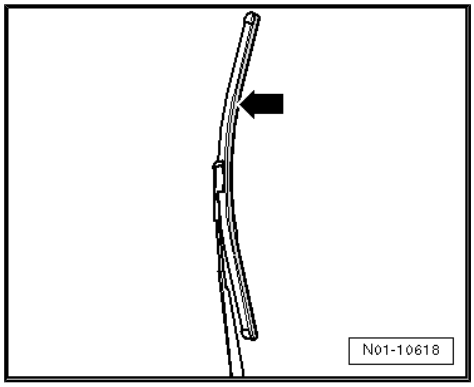
- Identification, protective strip with two securing clips -arrows 1 + 2-

Wiper blade protection, version 1: removing ⇒ page 132

Version 2: wiper blade with slide-on protective strip

- Identification, blade protector -arrow- is slid on wiper blade

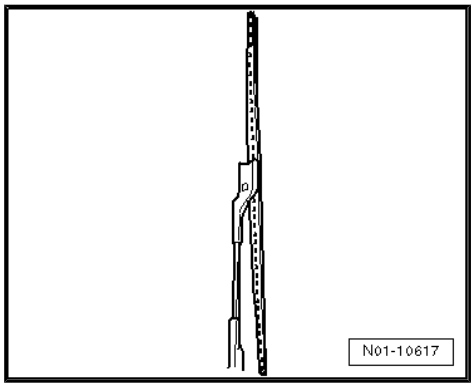
Wiper blade protection, version 2: removing ⇒ page 133



Version 3: transport wiper blade

- Identification: the transport wiper blade is fitted without wind deflector and must be replaced by the standard wiper blade.

Wiper blade protection, version 3: removing "transport wiper blade" ⇒ page 133



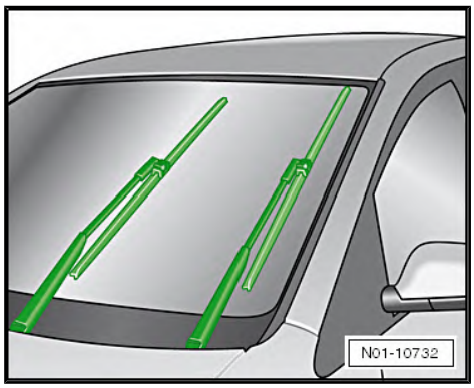
4.47.1 Wiper blade protection, version 1: removing

– Switch ignition on and off briefly with bonnet closed.

– When engine is switched off, move wiper lever down to touch-wipe function within 10 seconds.

The wiper blades move to the service position.

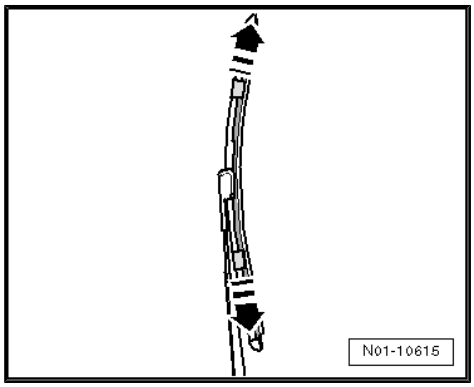
– Lift the wiper arm away from windscreen.



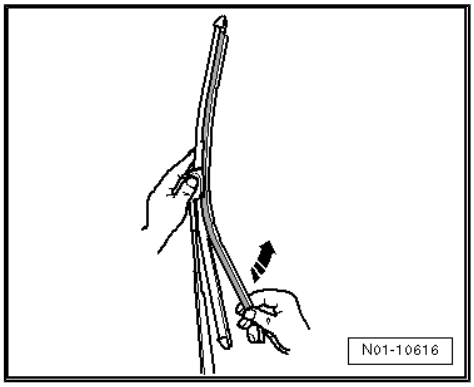
Caution

When doing this, do not touch the wiper blade to prevent damage.

– Remove upper securing clip upwards and lower securing clip downwards -arrows-.



– Pull protective strip off wiper blade from bottom to top, as shown in illustration.
– Carefully place wiper arm back onto windscreen.
– Switch ignition on and briefly press the wiper lever to move the wipers back to park position. Switch ignition off again.

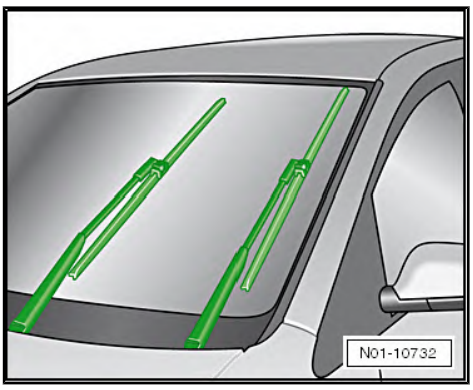


4.47.2 Wiper blade protection, version 2: removing

– Switch ignition on and off briefly with bonnet closed.
– When engine is switched off, move wiper lever down to touch-wipe function within 10 seconds.

The wiper blades move to the service position.

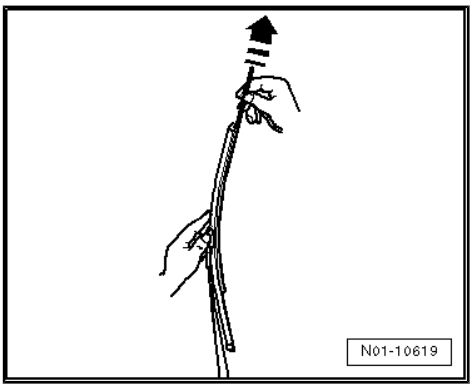
– Lift the wiper arm away from windscreen.



Caution

When doing this, do not touch the wiper blade to prevent damage.

– Pull protective strip off wiper blade upwards, as shown in illustration.
– Carefully place wiper arm back onto windscreen.
– Switch ignition on and briefly press the wiper lever to move the wipers back to park position. Switch ignition off again.

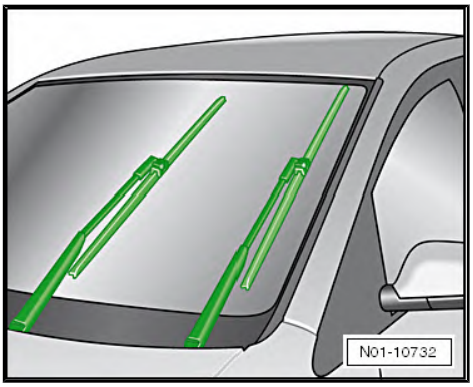


4.47.3 Wiper blade protection, version 3: removing “transport wiper blade”

– Switch ignition on and off briefly with bonnet closed.
– When engine is switched off, move wiper lever down to touch-wipe function within 10 seconds.

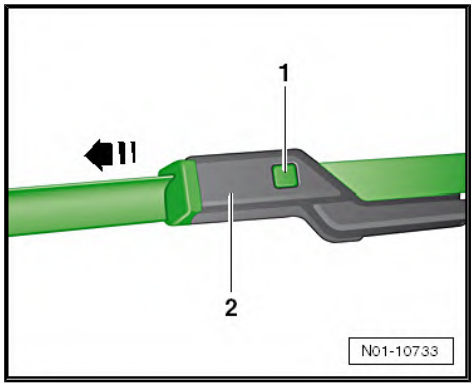
The wiper blades move to the service position.

– Lift the wiper arm away from windscreen.



– Depending on type, turn wiper blade with lip upwards and pull it off. Or detach the wiper blade at the hinged point -3- by pressing the locking element -1- in the holder -2- and pulling out the wiper blade.

– Slide the standard wiper blade into mounting and ensure that it audibly engages.



Caution

When doing this, do not touch the wiper blade to prevent damage.

– Carefully place wiper arm back onto windscreen.

– Switch ignition on and briefly press the wiper lever to move the wipers back to park position. Switch ignition off again.

4.48 Headlight adjustment: checking halogen headlights

Note

- *Additional weights are no longer used.*
- *Instead, a different inclination setting on the headlight adjustment unit is used.*
- *If the maintenance tables are used, the settings are displayed in the vehicle-specific maintenance list as of model year 2014.*
- *In the US, Canadian and Mexican markets SAE-compliant headlights are used.*
- *As of model year 2014 the headlight adjustment is subject to a separate charge.*

Test and adjustment conditions ⇒ page 134

Check headlight adjustment (ECE). ⇒ page 134

Check headlight adjustment (SAE). ⇒ page 135

Halogen headlights: adjusting ⇒ page 137 .

4.48.1 Test and adjustment conditions

- Tyre pressure OK
- Lenses must not be damaged or dirty.
- Reflectors and bulbs OK.
- The vehicle must be rolled forward and backward several metres or front and rear springs must be bounced fully several times so that springs settle.
- Vehicle and headlight adjuster must be on a level surface.
- Vehicle and headlight adjuster must be aligned.
- Inclination must be set.
- Refer to the ⇒ operating instructions for headlight adjustment units .

4.48.2 Headlight adjustment (ECE): adjusting

Special tools and workshop equipment required

- Headlight adjustment unit - VAS 5046 A-
- Headlight adjustment unit - VAS 5047 A-
- Headlight adjustment unit - VAS 621 001-

Note

For certain export markets, halogen headlights with manually regulated headlight range control are not offered.

– Check headlight height adjustment by setting the maximum level and monitoring the headlights' light.
– If fitted, then set the headlight range control thumb wheel to position 0.

The inclination on the headlight adjustment unit is set according to the fuel level in the fuel tank.

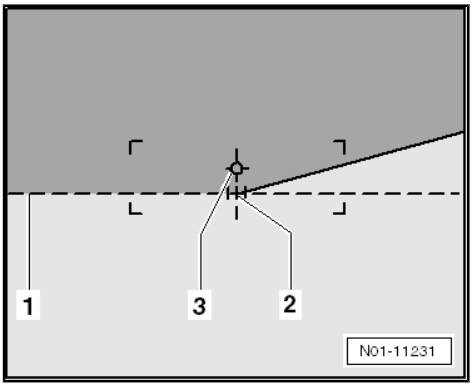
Inclination setting for ECE-compliant headlights

Fill level of fuel gauge	Inclination
0 to 1/2	1.2 %
1/2 to 1	1.0 %

Test pattern with dipped headlights

Check the following:

– Whether, with the dipped beam switched on, the horizontal bright/dark boundary contacts the dividing line -1- of the test area and
– Check whether the breaking point -2- between the horizontal part of the light/dark border on the left and the rising part on the right lies on the vertical line of the central point -3-. The bright core of the light beam must be to the right of the vertical line.



Note

- *To simplify the determination of the breaking point -2-, cover and uncover left (from driver perspective) half of the headlight a few times. Then check dipped beam again.*
- *After correct adjustment of dipped beams, the centre point of the main beam must lie on the centre mark -3-.*

4.48.3 Headlight adjustment (SAE): checking

Special tools and workshop equipment required

- Headlight adjustment unit - VAS 5046 A-
- Headlight adjustment unit - VAS 5047 A-
- Headlight adjustment unit - VAS 621 001-

Note

- *The VOL/VOR marking is visible on the outside the headlight.*
- *The lateral adjustment mechanism is sealed on SAE-compliant headlights.*
- *For certain export markets, halogen headlights with manually regulated headlight range control are not offered.*

– Check headlight height adjustment by setting the maximum level and monitoring the headlights' light.

– If fitted, then set the headlight range control thumb wheel to position 0.

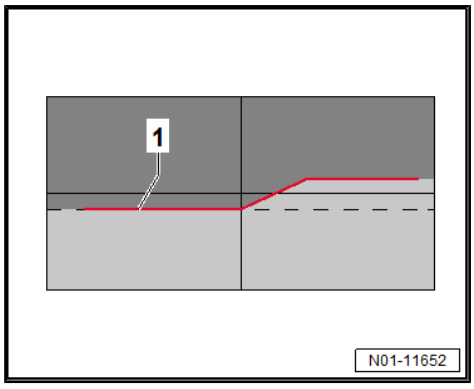
The inclination on the headlight adjustment unit is set according to the fuel level in the fuel tank.

Inclination for SAE VOL halogen headlights

Fill level of fuel gauge	Inclination
0 to 1/2	0.9 %
1/2 to 1	0.7 %

VOL: Visual Optical Aim Left -1-

– Check whether the left horizontal light-dark border touches the separating line -1- in the test area of the headlight adjustment unit.

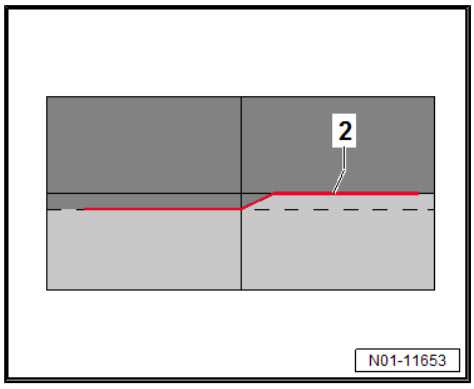


Inclination for SAE VOR halogen headlights

Fill level of fuel gauge	Inclination
0 to 1/2	0.2 %
1/2 to 1	0.0 %

VOR: Visual Optical Aim Right -2-

– Check whether the right horizontal light-dark border touches the separating line -2- in the test area of the headlight adjustment unit.



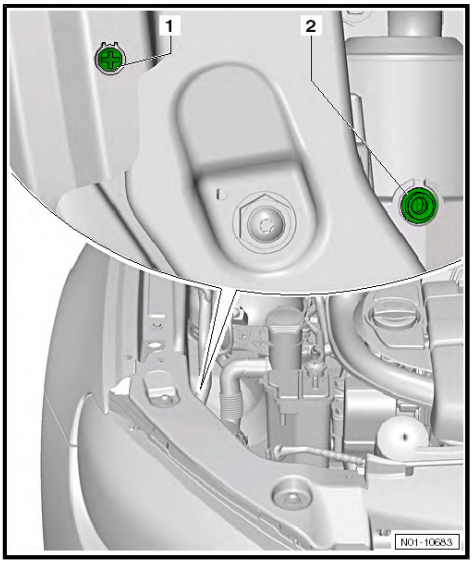
4.48.4 Halogen headlights: adjusting

Note

As of model year 2014 the headlight adjustment is subject to a separate charge.

Adjusting right headlight:

The adjustment bolts for the left headlight are a mirror image.



- Lateral adjustment screw (hexagon socket insert) of bright/dark boundary for dipped beam -1- (sealed for the NAR market)
- Height adjustment screw (hexagon socket insert) of bright/dark boundary for dipped beam -2-

– First turn height adjustment bolt of bright/dark boundary -2-.

– Then check lateral adjustment, if necessary correct with adjustment screw -1-.

4.49 Headlight adjustment: checking gas discharge headlights without DLA

Note

- *Additional weights are no longer used.*
- *Instead, a different inclination setting on the headlight adjustment unit is used.*
- *If the maintenance tables are used, the settings are displayed in the vehicle-specific maintenance list as of model year 2014.*
- *In the US, Canadian and Mexican markets SAE-compliant headlights are used.*
- *As of model year 2014 the headlight adjustment is subject to a separate charge.*

Test and adjustment prerequisites ⇒ page 137

Check headlight adjustment (ECE). ⇒ page 138

Check headlight adjustment (SAE). ⇒ page 139

Gas discharge headlights without “Dynamic Light Assist” dynamic main beam regulation: adjusting ⇒ page 140

4.49.1 Test and adjustment conditions

- Tyre pressure OK
- Headlight lenses must not be damaged or dirty.
- Reflectors and lights OK

- The initialisation of the headlight range control must have been completed. [1)]
- The vehicle must be rolled forward and backward several metres or front and rear springs must be bounced fully several times so that springs settle.
- Vehicle and headlight adjuster must be on a level surface.
- Vehicle and headlight adjustment unit must be aligned.
- Inclination must be set.
- Event memory must be cleared.
- If the headlight adjustment unit has an adjustment mode, select it.
- Refer to the ⇒ operating instructions for headlight adjustment units .

[1)] During the initialisation, the step motors for the headlight range control are reset to dipped beam position. The initialisation of the headlight range control is performed during vehicle start or after an "on" signal is applied to terminal 15.

4.49.2 Headlight adjustment (ECE): adjusting

Special tools and workshop equipment required

- Headlight adjustment unit - VAS 5046 A-
- Headlight adjustment unit - VAS 5047 A-
- Headlight adjustment unit - VAS 621 001-
- Vehicle diagnostic tester

The inclination on the headlight adjustment unit is set according to the fuel level in the fuel tank.

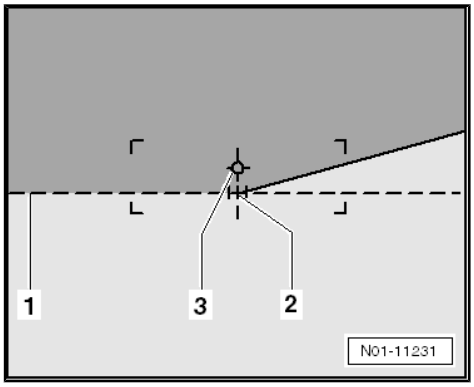
Inclination setting for ECE-compliant gas discharge headlights, LED headlights and DLA headlights

Fill level of fuel gauge	Inclination
0 to 1/2	1.0 %
1/2 to 1	1.0 %

Test pattern with dipped headlights

Check the following:

– With the dipped beam switched on, the lowest part of the horizontal light-dark border must be aligned with the dividing line -1- of the test area.
– The breaking point -2- between the horizontal part of the light-dark border on the left and the slope on the right should be on the vertical line passing through the centre mark.



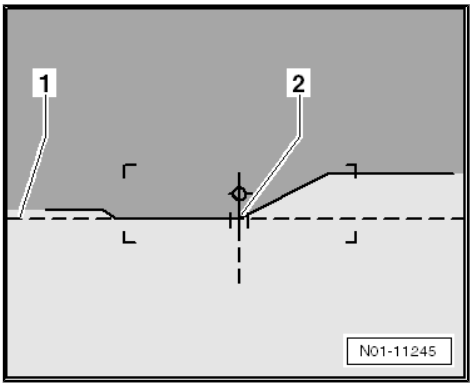
Note

- *To simplify the determination of the breaking point -2-, cover and uncover left (from driver perspective) half of the headlight a few times. Then check dipped beam again.*
- *After correct adjustment of dipped beams, the centre point of the main beam must lie on the centre mark -3-.*

Light pattern for dimmed beam, version 2:

Check the following:

– With the dipped beam switched on, the lowest part of the horizontal light-dark border must touch the dividing line -1- of the test area
– The breaking point -2- between the horizontal part of the light-dark border on the left and the slope on the right should be on the vertical line passing through the centre mark.



Note

To simplify the determination of the breaking point -2-, cover and uncover left (from driver perspective) half of the headlight a few times. Then check dipped beam again.

4.49.3 Headlight adjustment (SAE): checking

Special tools and workshop equipment required

- Headlight adjustment unit - VAS 5046 A-
- Headlight adjustment unit - VAS 5047 A-
- Headlight adjustment unit - VAS 621 001-
- Vehicle diagnostic tester

Note

- *The VOL/VOR marking is visible on the outside the headlight.*
- *The lateral adjustment mechanism is sealed on SAE-compliant headlights.*

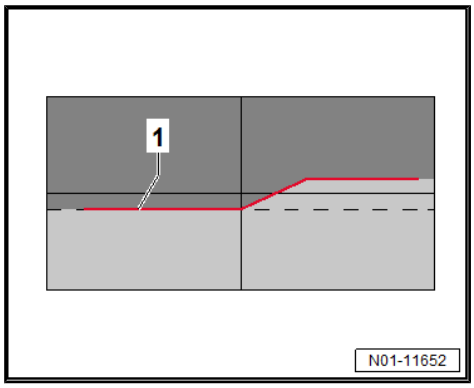
The inclination on the headlight adjustment unit is set according to the fuel level in the fuel tank.

Inclination setting for SAE-compliant VOL gas discharge headlights, LED headlights and DLA headlights

Fill level of fuel gauge	Inclination
0 to 1/2	0.7 %
1/2 to 1	0.7 %

VOL: Visual Optical Aim Left -1-

– Check whether the left horizontal light-dark border touches the separating line -1- in the test area of the headlight adjustment unit.

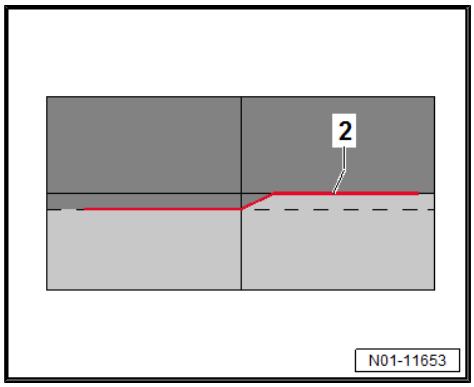


Inclination setting for SAE-compliant VOR gas discharge headlights, LED headlights and DLA headlights

Fill level of fuel gauge	Inclination
0 to 1/2	0.0 %
1/2 to 1	0.0 %

VOR: Visual Optical Aim Right -2-

– Check whether the right horizontal light-dark border touches the separating line -2- in the test area of the headlight adjustment unit.



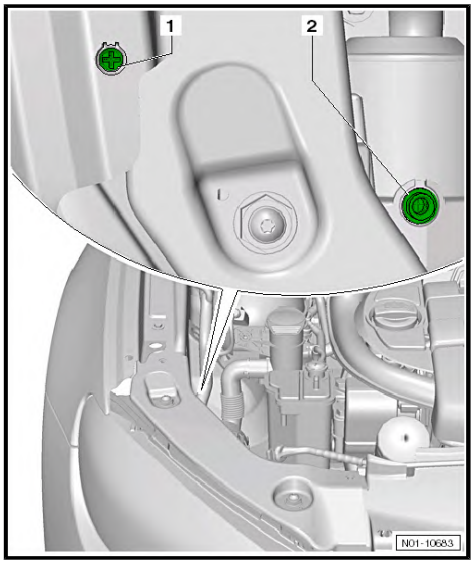
4.49.4 Gas discharge headlights without “Dynamic Light Assist” dynamic main beam regulation: adjusting

Note

As of model year 2014 the headlight adjustment is subject to a separate charge.

– Carrying out basic setting of headlight range control ⇒ Vehicle diagnostic tester

Adjusting right headlight



1 - Lateral adjustment

2 - Height adjustment

– Turn height adjustment screw -2- until setting is correct.

Note

In some markets, the adjustment bolt for lateral adjustment is -1- encapsulated. Lateral adjustment is not permissible here.

– Turn lateral adjustment screw -1- until setting is correct.

Note

- *Adjustment of the left headlight is carried out in the same sequence.*
- *The adjustment bolts for the left headlight are a mirror image.*

4.50 Headlight adjustment: checking gas discharge headlights with DLA

Note

- *Additional weights are no longer used.*
- *Instead, a different inclination setting on the headlight adjustment unit is used.*
- *If the maintenance tables are used, the settings are displayed in the vehicle-specific maintenance list as of model year 2014.*
- *In the US, Canadian and Mexican markets SAE-compliant headlights are used.*
- *As of model year 2014 the headlight adjustment is subject to a separate charge.*

DLA: “Dynamic Light Assist”, dynamic high beam regulation.

Conditions for testing and adjustment: ⇒ page 141

Check headlight adjustment (ECE). ⇒ page 142

Check headlight adjustment (SAE). ⇒ page 143

Gas discharge headlights with “Dynamic Light Assist” dynamic main beam regulation: adjusting ⇒ page 146

4.50.1 Conditions for testing and adjustment:

- Tyre pressure OK
- Headlight lenses must not be damaged or dirty.
- Reflectors and lights OK
- The initialisation of the headlight range control must have been completed. [1)]
- The vehicle must be rolled forward and backward several metres or front and rear springs must be bounced fully several times so that springs settle.

- Vehicle and headlight adjuster must be on a level surface.
- Vehicle and headlight adjustment unit must be aligned.
- Inclination must be set.
- Event memory must be cleared.
- If the headlight adjustment unit has an adjustment mode, select it.
- Refer to the ⇒ operating instructions for headlight adjustment units .

[1] During the initialisation, the step motors for the headlight range control are reset to dipped beam position. The initialisation of the headlight range control is performed during vehicle start or after an "on" signal is applied to terminal 15.

4.50.2 Headlight adjustment (ECE): adjusting

Special tools and workshop equipment required

- Headlight adjustment unit - VAS 5046 A-
- Headlight adjustment unit - VAS 5047 A-
- Headlight adjustment unit - VAS 621 001-
- Vehicle diagnostic tester

The inclination on the headlight adjustment unit is set according to the fuel level in the fuel tank.

Inclination setting for ECE-compliant gas discharge headlights, LED headlights and DLA headlights

Fill level of fuel gauge	Inclination
0 to 1/2	1.0 %
1/2 to 1	1.0 %

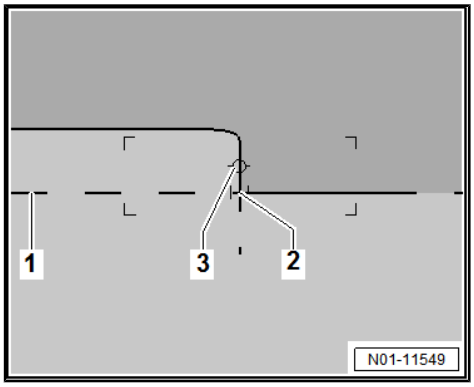
Test pattern with dynamic main beam

Note

- *For dynamic main beam test pattern, headlights need to be reset to basic settings using vehicle diagnostic tester .*
- *The basic settings can only be reset using vehicle diagnostic tester . After resetting, DLA main beam distribution is actuated automatically.*
- *Pay special attention to correct alignment of the adjustment sighting device on the headlight adjuster. Only when this has been done can you adjust the headlights to ensure that they do not dazzle other road users.*
- *In vehicles with DLA the dipped headlight setting can be checked as an alternative.* *⇒ page 143*
- *DLA: “Dynamic Light Assist”, dynamic high beam regulation.*

Check the following:

– Whether the horizontal light-dark border touches the separating line -1- in the test area when the main beam is on.
– Whether the breaking point -2- between horizontal part of the light-dark border on the right and the rising part on the left lies on the vertical line of the central point -3-. The bright core of the light beam must be to the left of the vertical line.



Note

The setup pattern applies only to the left headlight. The setup pattern for the right headlight is a mirror image.

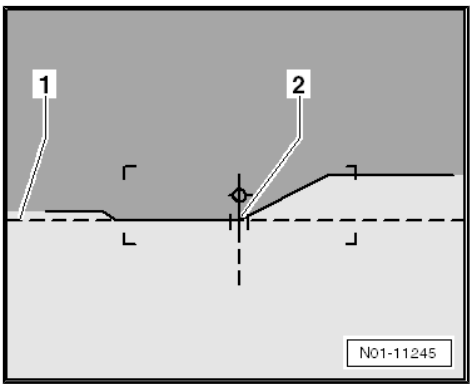
Test pattern with dipped headlights

Testing may also be carried out with dipped headlights switched on. Nevertheless, said dynamic main beam test pattern is preferred.

For checking dipped headlight it is not necessary to use the vehicle diagnostic tester .

Headlight adjustment, on the other hand, can only be carried out using the test pattern with dynamic main beam. The controller only uses the DLA main beam distribution test program.

– With the dipped beam switched on, the lowest part of the horizontal light-dark border must touch the dividing line -1- of the test area
– The breaking point -2- between the horizontal part of the light-dark border on the left and the slope on the right should be on the vertical line passing through the centre mark.



4.50.3 Headlight adjustment (SAE): checking

Special tools and workshop equipment required

- Headlight adjustment unit - VAS 5046 A-
- Headlight adjustment unit - VAS 5047 A-
- Headlight adjustment unit - VAS 621 001-
- Vehicle diagnostic tester

Note

- *The VOL/VOR marking is visible on the outside the headlight.*
- *The lateral adjustment mechanism is sealed on SAE-compliant headlights.*

The inclination on the headlight adjustment unit is set according to the fuel level in the fuel tank.

Inclination setting for SAE-compliant VOL gas discharge headlights, LED headlights and DLA headlights

Fill level of fuel gauge	Inclination
0 to 1/2	0.7 %
1/2 to 1	0.7 %

Test pattern with dynamic main beam

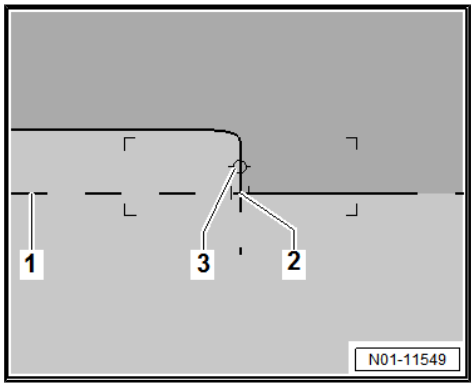
Note

- *For dynamic main beam test pattern, headlights need to be reset to basic settings using vehicle diagnostic tester .*
- *The basic settings can only be reset using vehicle diagnostic tester . After resetting, DLA main beam distribution is actuated automatically.*
- *Pay special attention to correct alignment of the adjustment sighting device on the headlight adjuster. Only when this has been done can you adjust the headlights to ensure that they do not dazzle other road users.*
- *In vehicles with DLA the dipped headlight setting can be checked as an alternative.* *⇒ page 144*
- *DLA: "Dynamic Light Assist", dynamic high beam regulation.*

Check the following:

– Whether the horizontal light-dark border touches the separating line -1- in the test area when the main beam is on.

– Whether the breaking point -2- between horizontal part of the light-dark border on the right and the rising part on the left lies on the vertical line of the central point -3-. The bright core of the light beam must be to the left of the vertical line.



Note

The setup pattern applies only to the left headlight. The setup pattern for the right headlight is a mirror image.

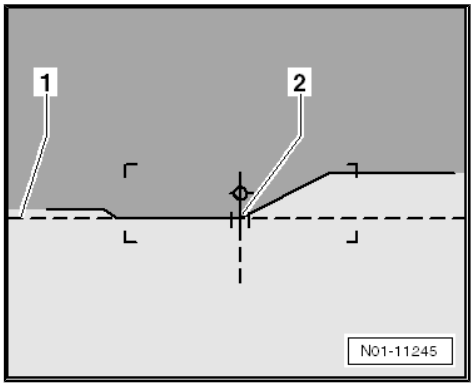
Test pattern with dipped headlights

Testing may also be carried out with dipped headlights switched on. Nevertheless, said dynamic main beam test pattern is preferred.

For checking dipped headlight it is not necessary to use the vehicle diagnostic tester .

Headlight adjustment, on the other hand, can only be carried out using the test pattern with dynamic main beam. The controller only uses the DLA main beam distribution test program.

– With the dipped beam switched on, the lowest part of the horizontal light-dark border must touch the dividing line -1- of the test area
– The breaking point -2- between the horizontal part of the light-dark border on the left and the slope on the right should be on the vertical line passing through the centre mark.



Inclination setting for SAE-compliant VOR gas discharge headlights, LED headlights and DLA headlights

Fill level of fuel gauge	Inclination
0 to 1/2	0.0 %
1/2 to 1	0.0 %

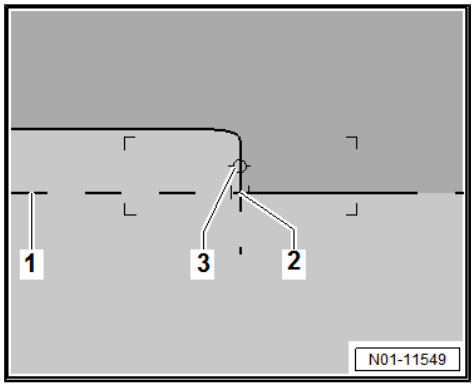
Test pattern with dynamic main beam

Note

- *For dynamic main beam test pattern, headlights need to be reset to basic settings using vehicle diagnostic tester .*
- *The basic settings can only be reset using vehicle diagnostic tester . After resetting, DLA main beam distribution is actuated automatically.*
- *Pay special attention to correct alignment of the adjustment sighting device on the headlight adjuster. Only when this has been done can you adjust the headlights to ensure that they do not dazzle other road users.*
- *In vehicles with DLA the dipped headlight setting can be checked as an alternative.* *⇒ page 146*
- *DLA: “Dynamic Light Assist”, dynamic high beam regulation.*

Check the following:

– Whether the horizontal light-dark border touches the separating line -1- in the test area when the main beam is on.
– Whether the breaking point -2- between horizontal part of the light-dark border on the right and the rising part on the left lies on the vertical line of the central point -3-. The bright core of the light beam must be to the left of the vertical line.



Note

The setup pattern applies only to the left headlight. The setup pattern for the right headlight is a mirror image.

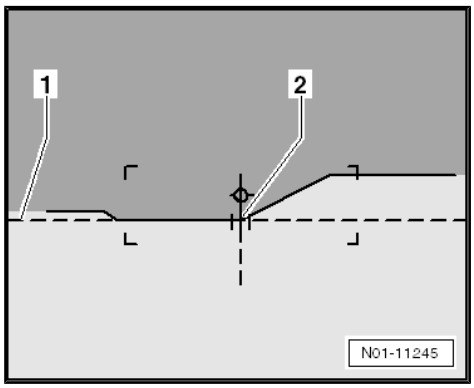
Test pattern with dipped headlights

Testing may also be carried out with dipped headlights switched on. Nevertheless, said dynamic main beam test pattern is preferred.

For checking dipped headlight it is not necessary to use the vehicle diagnostic tester .

Headlight adjustment, on the other hand, can only be carried out using the test pattern with dynamic main beam. The controller only uses the DLA main beam distribution test program.

– With the dipped beam switched on, the lowest part of the horizontal light-dark border must touch the dividing line -1- of the test area
– The breaking point -2- between the horizontal part of the light-dark border on the left and the slope on the right should be on the vertical line passing through the centre mark.



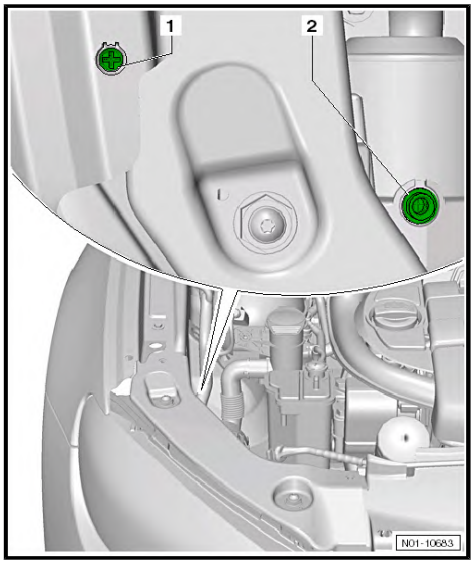
4.50.4 Gas discharge headlights with “Dynamic Light Assist” dynamic main beam regulation: adjusting

Note

As of model year 2014 the headlight adjustment is subject to a separate charge.

– Carrying out basic setting of headlight range control ⇒ Vehicle diagnostic tester

Adjusting right headlight



1 - Lateral adjustment

2 - Height adjustment

– Turn height adjustment screw -2- until setting is correct.

Note

In some markets, the adjustment bolt for lateral adjustment is -1- encapsulated. Lateral adjustment is not permissible here.

– Turn lateral adjustment screw -1- until setting is correct.

The adjustment bolts for the left headlight are a mirror image.

Subsequent check of right headlight

Caution

The subsequent check of the headlight is performed using the test pattern for the dipped beam headlight.

It is not permitted to change the lateral setting of the headlight any more during the check. Readjusting the vertical setting is permissible.

– Check headlight setting.

– Adjust height setting of headlight, if necessary.

Note

- *Adjustment of the left headlight is carried out in the same sequence.*
- *The adjustment bolts for the left headlight are a mirror image.*

4.51 Headlight adjustment: checking fog lights

Note

- *Additional weights are no longer used.*
- *Instead, a different inclination setting on the headlight adjustment unit is used.*
- *If the maintenance tables are used, the settings are displayed in the vehicle-specific maintenance list as of model year 2014.*
- *As of model year 2014 the headlight adjustment is subject to a separate charge.*

Test and adjustment prerequisites ⇒ page 147

Check headlight adjustment. ⇒ page 148

Adjusting fog lights and other auxiliary lights. ⇒ page 148

4.51.1 Test and adjustment conditions

- Tyre pressure OK

- Lenses must not be damaged or dirty.
- Reflectors and bulbs OK.
- The vehicle must be rolled forward and backward several metres or front and rear springs must be bounced fully several times so that springs settle.
- Vehicle and headlight adjuster must be on a level surface.
- Vehicle and headlight adjuster must be aligned.
- Inclination must be set.
- Refer to the ⇒ operating instructions for headlight adjustment units .

4.51.2 Headlight adjustment: checking

Special tools and workshop equipment required

- ♦ Headlight adjustment unit - VAS 5046 A-
- ♦ Headlight adjustment unit - VAS 5047 A-
- ♦ Headlight adjustment unit - VAS 621 001-

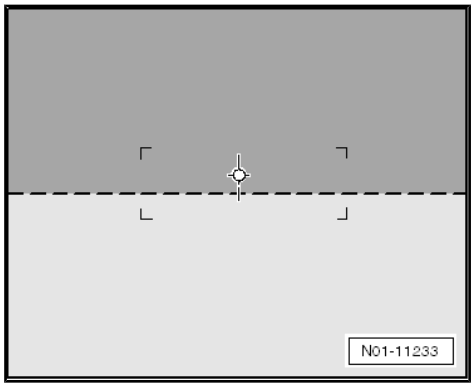
The inclination on the headlight adjustment unit is set according to the fuel level in the fuel tank.

Inclination setting for fog lights

Fill level of fuel gauge	Inclination
0 to 1/2	2.2 %
1/2 to 1	2.0 %

Fog lights:

– Check whether the upper light-dark border touches the setting line and runs horizontally over the entire width of the test screen.



Other additional lights:

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

4.51.3 Fog lights and other auxiliary lights: adjusting

Note

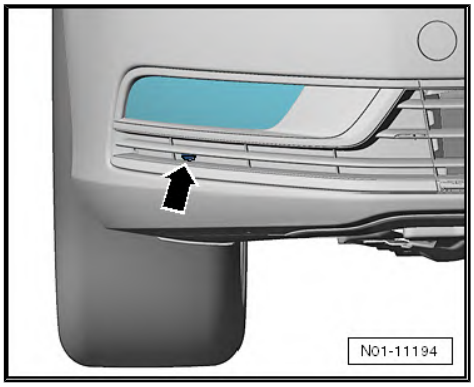
As of model year 2014 the headlight adjustment is subject to a separate charge.

Fog light in right bumper:

Location of adjustment screw on left-hand fog light is a mirror image.

– Turn adjustment screw -arrow A- to adjust beam range.

There is no provision for lateral adjustment.



Note

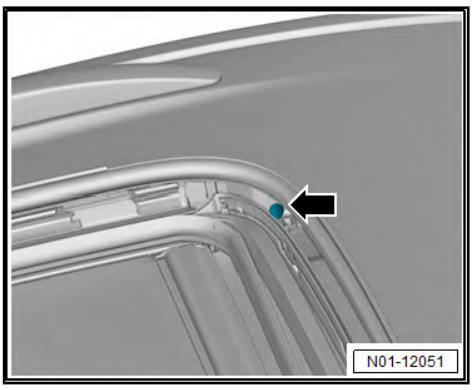
The adjuster screw for the left fog light is a mirror image.

Other additional lights

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

4.52 Sliding sunroof drains: checking for blockage, cleaning if necessary

Open sliding sunroof completely.



– Check water drain at front -arrows- for contamination, and clean if necessary.
– Carefully pour tap water from a measuring beaker into water drain at front. Proceed with caution to make sure no water enters the vehicle interior.
– Check under vehicle if water emerges in area of front wheel housing.
– Repeat procedure on other side of vehicle.
– If no water emerges at relevant positions, clean sunroof drains.

Note

Cleaning of the sliding sunroof drains is a repair measure which is subject to a separate charge when performed.

4.53 Service interval display: resetting

Resetting service interval display using vehicle diagnostic tester ⇒ page 150

Resetting service interval display without vehicle diagnostic tester ⇒ page 150

Additional information for service interval display ⇒ page 5

The service interval display must be reset (adapted) during

- delivery inspection
- Every oil change service and interval service.
- each oil change (flexible/fixed)

.

Until now, only service events linked to oil changes could be displayed in the service interval display. Service stickers have been used for all other service events.

Model year	Service interval display for oil change service / interval service (channel 1)	Service interval display for inspection service (channel 2)
►2013	yes	no

From model year 2014, a second service channel is provided so that both service events, even those not linked to an oil change, can be conveniently displayed.

Model year	Service interval display for oil change service (flexible/fixed) (channel 1)	Service interval display for inspection (channel 2)
2014►	yes	yes

Note

- *It is also possible to reset the service interval display (SID) manually. However, bear in mind that, on vehicles coded to flexible interval, the SID needs to be coded to fixed intervals. This also modifies the adaptation channel for oil quality.*
-

4.53.1 Service interval display: resetting using vehicle diagnostic tester

– Reset service interval display ⇒ Vehicle diagnostic tester.

– Select the respective service which is to be reset.

4.53.2 Service interval display: resetting without vehicle diagnostic tester

Only up to ►2013 ⇒ page 150

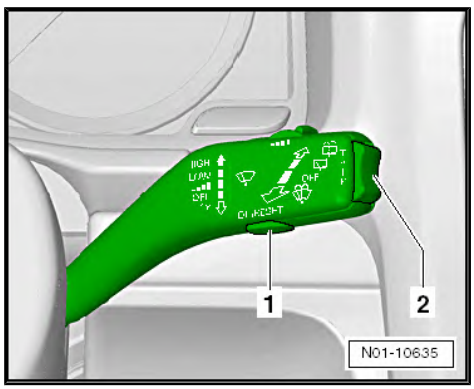
Applies from 2014► ⇒ page 151

Applies only up to ►2013

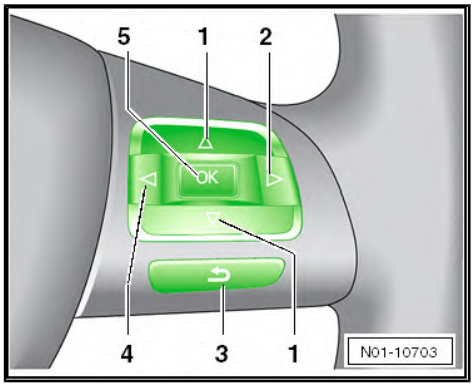
With rocker switch on windscreen wiper lever or using buttons in the multifunction steering wheel

– Select menu “Settings” using rocker on windscreen wiper lever.

Or



– Select menu “Settings” using buttons in the multifunction steering wheel.
– Mark menu option “Reset” in sub-menu “Service” and reset service interval display by pressing OK button -1- on windscreen wiper lever or on multifunction steering wheel -5-.
– Confirm resulting security question again with OK button.

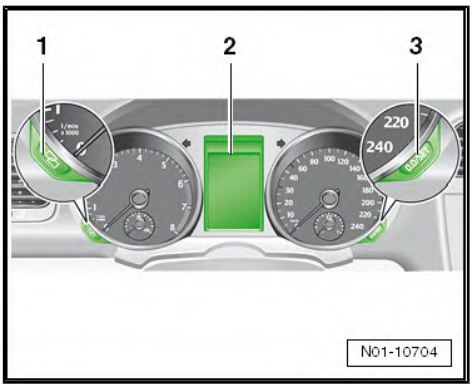


With function buttons on dash panel insert

– With ignition switched off, press and hold button -3-.
– Switch on ignition.
– Release button -3- and press clock setting button -1- once briefly.

The service interval display is now in the resetting mode.

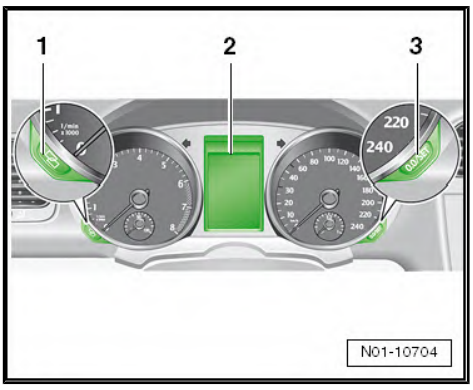
After a short time the display switches back to the original display.



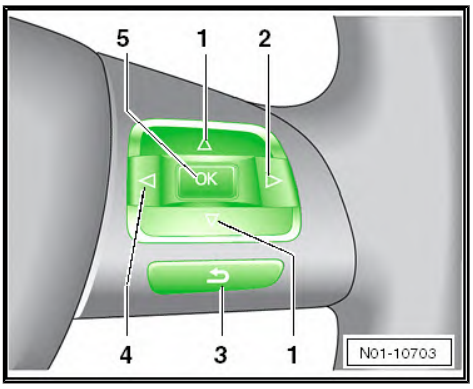
Applies as of 2014►

Oil change service interval display: resetting

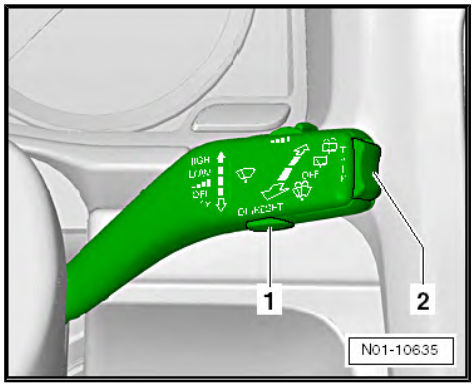
– With ignition switched off, press and hold button -3-.
– Switch on ignition.
– Release button -3-.



The service interval display is now in the resetting mode.



– Reset oil change service information by pressing OK button -5- on multifunction steering wheel or OK button -1- on windscreen wiper lever.



After a short time the display switches back to the original display.

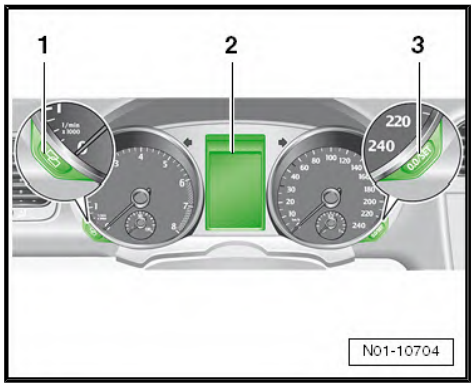
Inspection service interval display: resetting

– Switch on hazard warning lights.

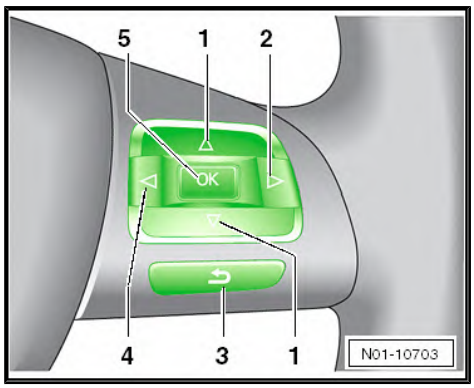
– With ignition switched off, press and hold button -3-.

– Switch on ignition.

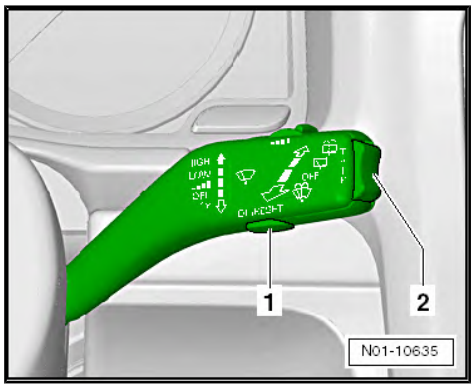
– Release button -3-.



The service interval display is now in the resetting mode.



– Reset inspection service interval display by pressing OK button -5- on multifunction steering wheel or OK button -1- on windscreen wiper lever.



After a short time the display switches back to the original display.

4.54 Service interval display: recoding

Recoding from flexible to fixed intervals

ODIS Service
– Connect vehicle diagnostic tester .
– Switch on ignition.
– Carry out identification of vehicle.

ODIS Service
– Enter task data, or select “Without task”.
– Select “Control units”.
– Select “Dash panel insert”.
– Select “Guided Functions”.
– Select “Change flexible/fixed intervals”.
– Carry out adaptation according to the information of “Guided functions”.

Changing values for maximum distance to be driven (km) until next oil change service (fixed) during delivery inspection

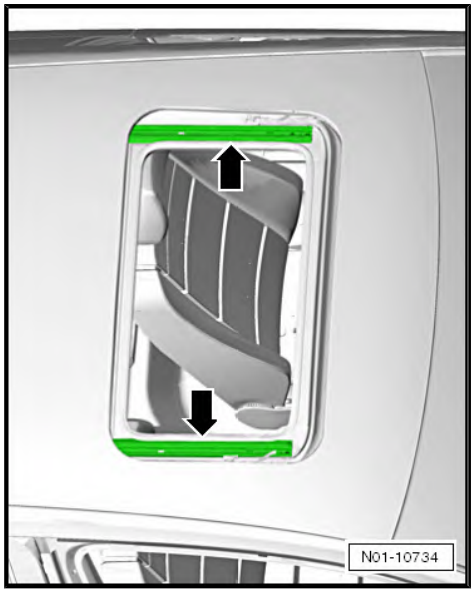
ODIS Service
– Connect vehicle diagnostic tester .
– Switch on ignition.
– Carry out identification of vehicle.
– Enter task data, or select “Without task”.
– Select “Control units”.
– Select “Dash panel insert”.
– Select “Guided Functions”.
– Select “Oil change service (fixed)”.
– Follow instructions in “Guided functions” mode.
– Reset “-1- Oil change service (fixed)”.
– Follow instructions in “Guided functions” mode.
The current values for maximum distance to be driven (km) until next oil change service are shown in the display of the vehicle diagnostic tester .
– Select “No”.
– Select value for maximum distance to be driven until next oil change service, according to specifications valid in your country.
– Carry out adaptation according to the information of “Guided functions”.

4.55 Sunroof: checking function, cleaning and greasing guide rails

Carry out following procedure:

– Check function of sunroof.

– Clean guide rails -arrows- and grease with special grease G 060 751 A2.

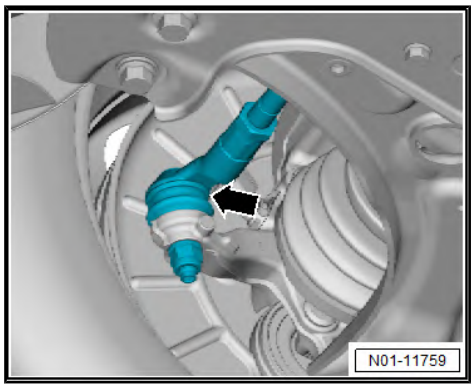


4.56 Track rods: checking clearance, attachment and boots

Procedure

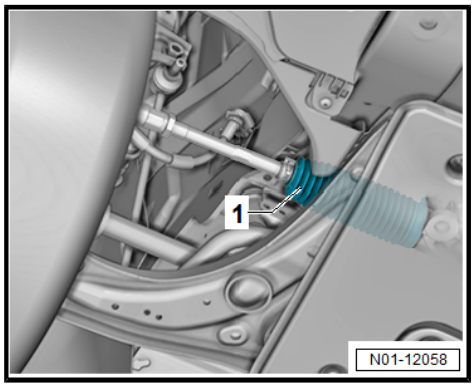
– Check play by moving track rods and wheels with the vehicle raised (wheels hanging free). Clearance (specified): no clearance:

– Check that boots -arrow- are not damaged and are seated correctly.



– Make sure that boots -1- of steering rack are not damaged and are seated correctly.

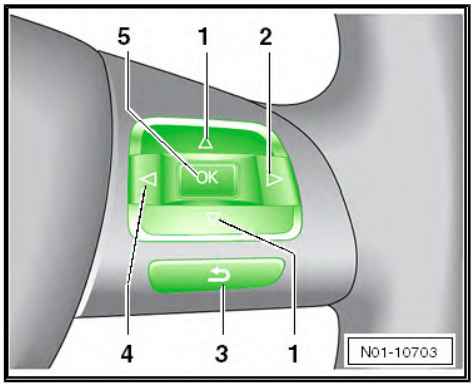
– Perform visual inspection for leaks and damage in area of steering rack including track rods.



4.57 Auxiliary heater: setting weekday in menu of dash panel insert

As the weekday in the menu for the auxiliary heater is not linked to the time and date setting for the dash panel insert, it must be set separately.

Setting weekday using buttons on multifunction steering wheel



Button -5- is used to confirm menu options.

Press arrow buttons -1- -2- and -4- to change the menu.

1. Select main menu:

– Switch on ignition. A vehicle symbol is displayed.

– Press OK button -5- in multifunction steering wheel.

– Press respective arrow buttons -2- and -4- repeatedly in multifunction steering wheel until menu “Auxiliary heater” is displayed.

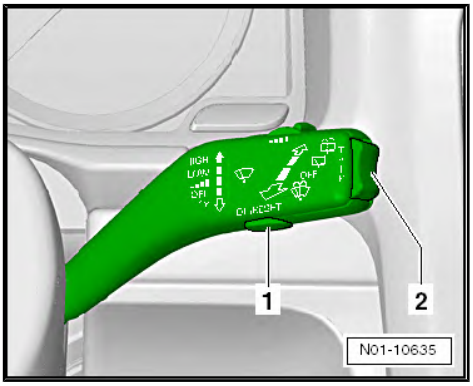
– Press OK button -5-.

2. Select weekday:

– Press arrow buttons -1- until menu “Setting start time” is displayed.

– Select “Weekday”.

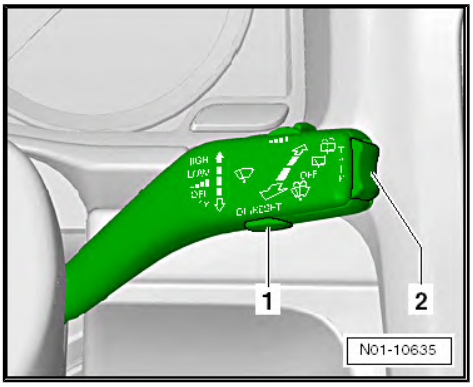
Setting weekday using buttons on windscreen wiper lever



Button -1- is used to confirm menu options.

Rocker lever -2- is used to change the menu.

1. Select main menu:



– Switch on ignition. A vehicle symbol is displayed.

– Press button -1- once.

– To return to main menu, press rocker switch -2- and hold for about one second. Or select menu option “Back” and press button -1-.

– Press rocker -2- up or down to mark a menu item.

The marked menu option is found between the two horizontal lines. Additionally there is a triangle on the right.

– Mark menu item “Auxiliary heater” and press button -1- in windscreen wiper lever.

2. Select weekday:

– Press rocker -2- up or down to mark a menu item “Setting start time”.

– Select “Weekday” and confirm with button -1-.

4.58 Dust and pollen filter: cleaning housing and renewing filter element

Procedure

⇒ Heating, air conditioning; Rep. gr. 80 ; Front heater and air conditioning unit; Removing and installing dust and pollen filter .

Note

For technical reasons it is possible that several cross references are not directed to the correct chapter. In this case select the procedure manually in the information.

4.59 Transportation mode: switching off

Note

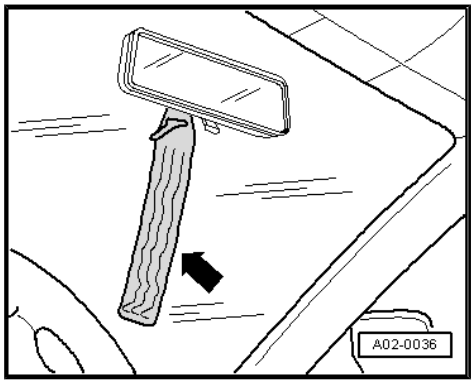
- *The transportation mode is responsible for assuring the starting capability of vehicle.*
- *Battery discharging is reduced by the transportation mode, because electrical consumers are switched off.*
- *All vehicle functions which are not necessarily used during vehicle transportation and require no-load voltage or battery capacity are switched off with the activated transportation mode, with regard to the service life of battery.*
- *These are especially all functions in the vehicle which can reduce the battery capacity when being misused.*
- *Examples are radios, electronically operated flaps and attachments and anti-theft alarm systems which can produce faults during transportation.*

Procedure

– Switch transportation mode off/on ⇒ Vehicle diagnostic tester.

4.60 Transportation devices: removing blocking pieces from springs on front axle

Blocking pieces are fitted to front axle springs of vehicles with sports running gear. These vehicles are identified by a warning tag on the mirror -arrow-.



Note

The blocking pieces prevent spring compression and possible damage to the vehicle when being driven onto a vehicle transporter or railway wagon.

WARNING

The blocking pieces must be removed without reservation before delivering the vehicle. A notice reading "Warning!" and attached to the interior mirror, specifically reminds of this.

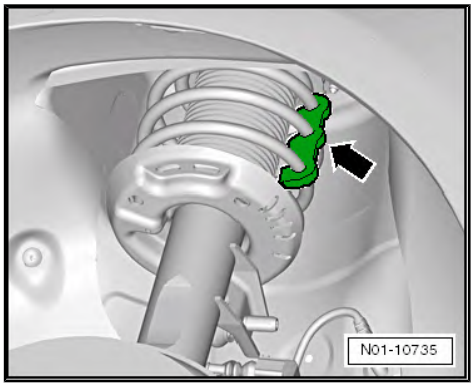
Carry out following procedure:

Note

- *There is no requirement to remove the wheels.*
- *Ensure that the surface of the springs is not damaged.*

– Relieve weight on springs by raising vehicle with a hoist.

– Push blocking piece -arrow- off coil spring.



4.61 Transportation devices: removing tie-down rings

General notes ⇒ page 158

Passat Saloon ⇒ page 159

Passat Estate ⇒ page 159

4.61.1 General information

Towing eyes/fastening rings are used to secure vehicles on transporters or during shipping.

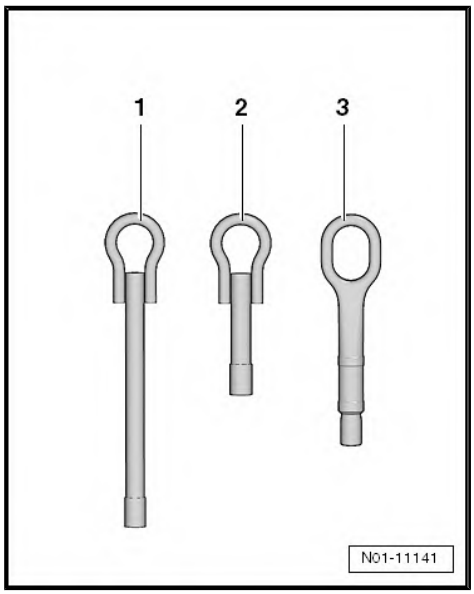
The towing eyes/tie-down rings are screwed into the towing eye brackets.

- Tie-down rings must be removed from the vehicle and scrapped prior to vehicle delivery.
- Add-on parts removed to install the towing eyes/tie-down rings must be reinstalled again.

– Ascertain which rings are installed on the vehicle to determine which rings have to be scrapped.

Caution

Do not place tie-down rings in the vehicle tool kit under any circumstances.



Externally, towing eyes and fastening rings are distinguished by the fact that fastening rings -1- and -2- have no surface protection and are designed as welded parts.

The long version of the tie-down ring -1- has the part number 3C0 802 994 A.

The short version of the tie-down ring -2- has the part number 3C0 802 994.

In contrast, the towing eye -3- has surface protection and is a forged part, i.e. no weld seams are visible.

The towing eye is part of the onboard tools in the luggage compartment. It is not permissible to scrap it.

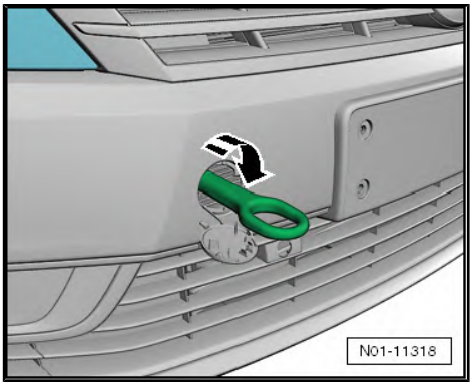
Note

Vehicles which are factory-fitted with a towing attachment have no mounting bracket for the screw-in towing eye.

♦ The cover caps are fitted with a retaining strap. They are covered with adhesive tape to protect them against damage.

4.61.2 Passat Saloon

Towing eye in front right bumper:



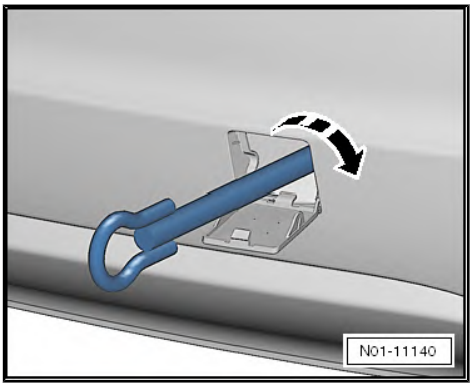
– Unscrew towing eye -arrow- clockwise.

Caution

When installing the cover, make sure that the vehicle's paintwork is not damaged.

– Remove cover cap bond, if fitted.
– Fasten cover cap.
– Place the towing eye in the luggage compartment with the other onboard tools.

Tie-down ring in rear right bumper:



Note

Note that the cover cap is fitted with a retaining strap, and that the range of movement is therefore limited.

– Unscrew tie-down ring -arrow- clockwise.

Caution

When installing the cover, make sure that the vehicle's paintwork is not damaged.

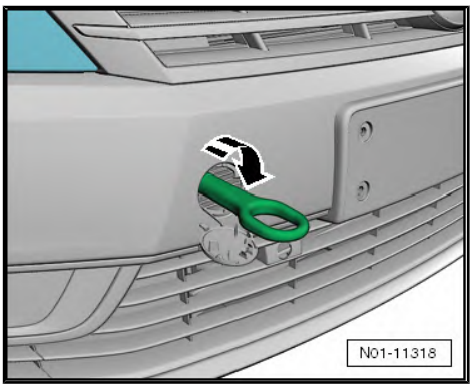
– Remove cover cap bond, if fitted.
– Fasten cover cap.

4.61.3 Passat Estate

Note

One towing eye must remain with the vehicle if two towing eyes are used to secure the vehicle during transportation. The additional towing eye can be scrapped.

Towing eye in front right bumper:



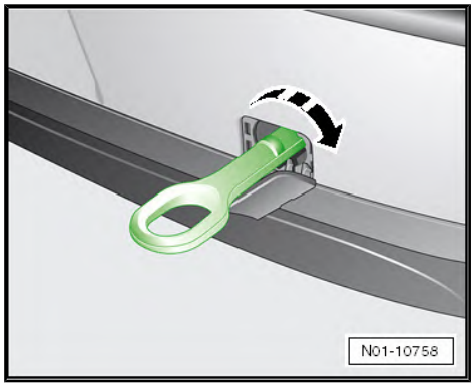
– Unscrew towing eye -arrow- clockwise.

Caution

When installing the cover, make sure that the vehicle's paintwork is not damaged.

– Remove cover cap bond, if fitted.
– Fasten cover cap.
– Place the towing eye in the luggage compartment with the other onboard tools.

Towing eye in rear right bumper:



Note

Note that the cover cap is fitted with a retaining strap, and that the range of movement is therefore limited.

– Unscrew tie-down ring -arrow- clockwise.

Caution

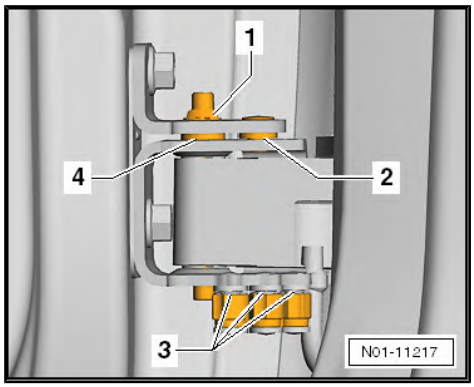
When installing the cover, make sure that the vehicle's paintwork is not damaged.

– Remove cover cap bond, if fitted.
– Fasten cover cap.

4.62 Door arrester: grease.

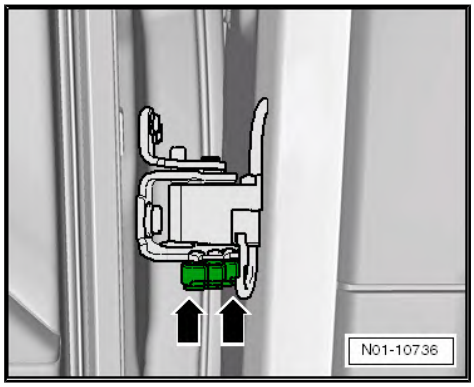
Perform the following procedure:

– Lubricate door arrester at positions -1-, -2-, -3- and -4- with universal oil spray - G 000 115 A2- .



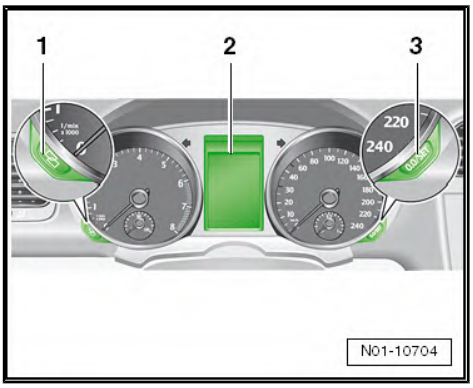
Ensure universal oil penetrates by moving door several times over all detents.

– Wipe off excess universal oil with a cloth.
– Then, lubricate door arrester rollers with lubricating paste - G 000 150- at positions marked with an -arrow-.



4.63 Clock and date: setting

Clock with buttons in dash panel insert



The clock can be set when the time is displayed in the dash panel insert and is not overlaid with another display.

The time is set using buttons -1- and -3- in the dash panel insert.

– Press button -1- to mark the hours on dash panel insert display.
– Press button -3- briefly to advance the time one hour. Keep the button pressed to fast-forward through the hours.
– Press button -1- again to select minute display.
– Press button -3- briefly to advance the time one hour.
– Keep the button pressed to fast-forward through the minutes.
– Press button -1- again to complete setting the clock.

4.64 Underbody: inspecting for damage to underbody sealant, underbody panels, routing of lines, plugs

Caution

- *During inspection, also check floor pan, wheel housings and sills.*
- *Always ensure that all lines are secured in their mountings, all plugs are available and that there is no visible damage on the underbody.*
- *Faults found must always be rectified (repair measure). This inhibits corrosion and rusting through.*

4.65 Camshaft drive toothed belt (diesel engines): renewing

TDI common rail engines:

– Removing and installing toothed belt:

⇒ Rep. gr. 15 ; Cylinder head; Removing and installing toothed belt

– Power unit→Select engine→Rep. Gr. 15→Cylinder head→Removing, installing and tensioning toothed belt.

Note

For technical reasons it is possible that several cross references are not directed to the correct chapter. In this case select the procedure manually in the information.

4.66 Spark plugs: renewing

Spark plugs: renewing, 1.4 l TSI engines, turbocharger
⇒ page 163

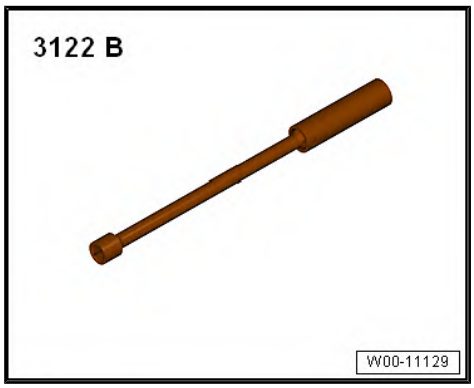
Spark plugs: renewing, 1.4 l TSI engines, twincharger
⇒ page 166

Spark plugs: renewing, 1.8 l TSI and 2.0 l TSI engines
⇒ page 168

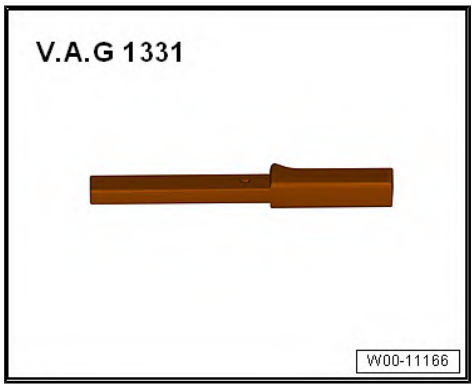
Spark plugs: renewing, 6-cylinder FSI engines ⇒ page 170

Special tools and workshop equipment required

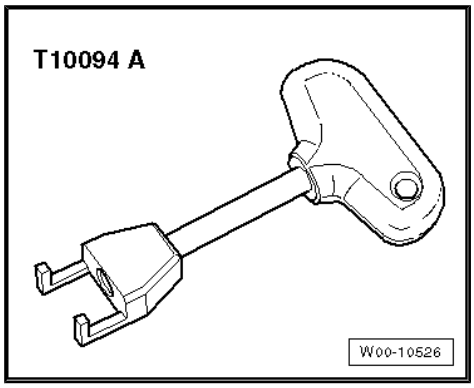
- Spark plug socket - 3122 B-



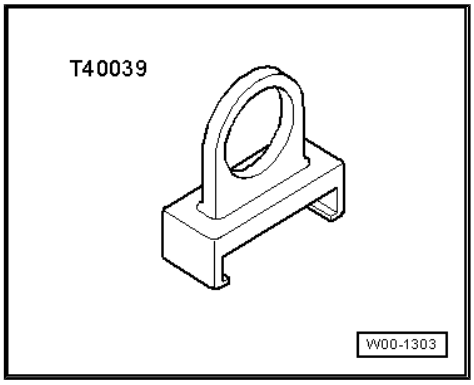
- Torque wrench - V.A.G 1331-



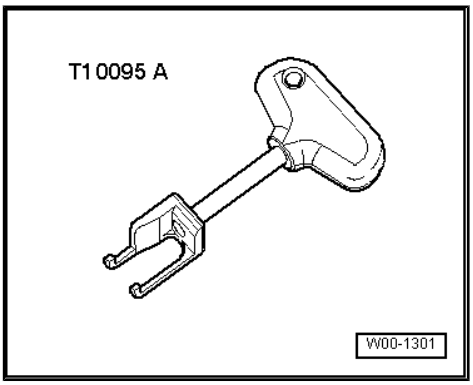
- Puller - T10094 A- for 1.4 l TSI engines



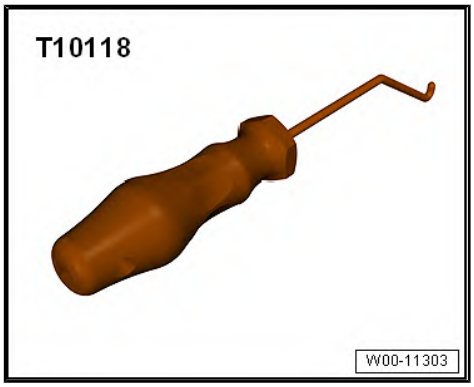
- Puller - T40039- for 1.8 l TSI and 2.0 l TSI engines



- Puller - T10095 A- for 3.6 l FSI engines



- Assembly tool - T10118- for 3.6 l FSI and 1.4 l TSI engines

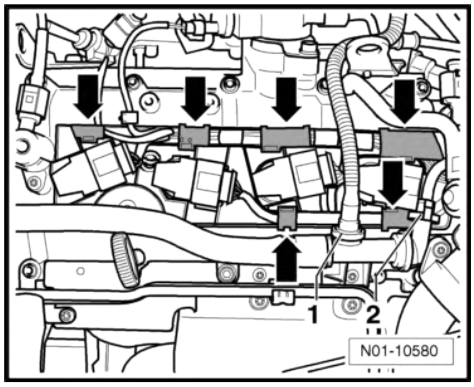


4.66.1 Spark plugs: renewing, 1.4 l TSI engines, turbocharger

Removing:

– Remove engine cover panel ⇒ page 106 .

– Disengage clamps of cable guide -arrows-.
– Remove hoses -1- and -2-.



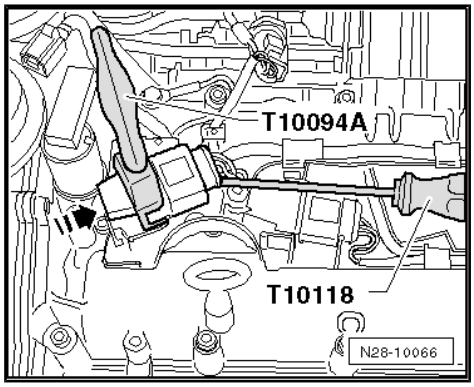
Note

- *When pulling out the ignition coils with output stages, the wires or ignition coil connectors can remain connected.*
- *Note installation position of ignition coils with output stages.*

Caution

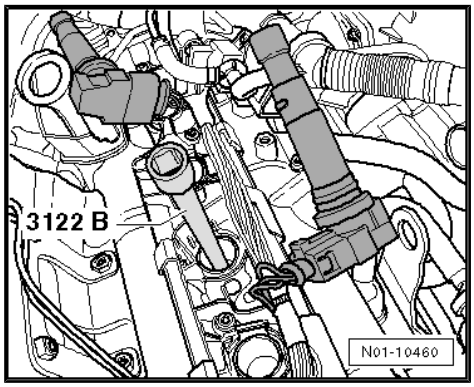
Ensure that the cables are not kinked or damaged.

– Place puller - T10094 A- on ignition coil with output stage -arrow-.
– Slightly pull out ignition coil with output stage.
– Fit assembly tool - T10118- as illustrated.
– Release connector locking device carefully and pull off connector.



– Unscrew spark plugs using spark plug socket - VAS 3122B- .

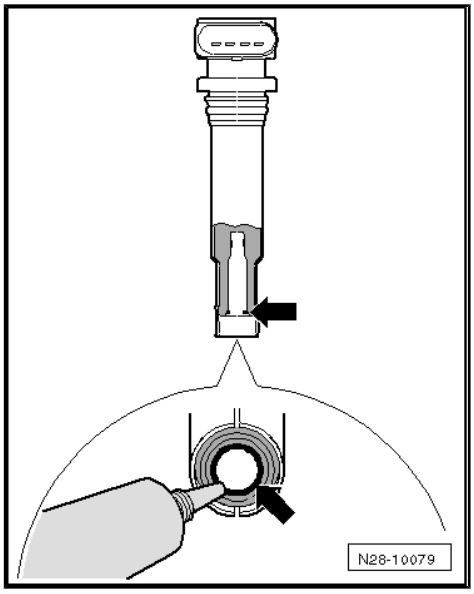
Installing:



Note

- *When installing new spark plugs, regrease ignition coils with output stage using silicone paste ⇒ ETKA .*
- *The applicable silicone paste is stated in the ETKA along with the corresponding ignition coil and/or spark plug.*

– Apply a thin bead of silicone paste on the circumference of the sealing hose of the ignition coil with output stage -arrow-.
– Install new spark plugs using spark plug socket and extension - VAS 3122B- .

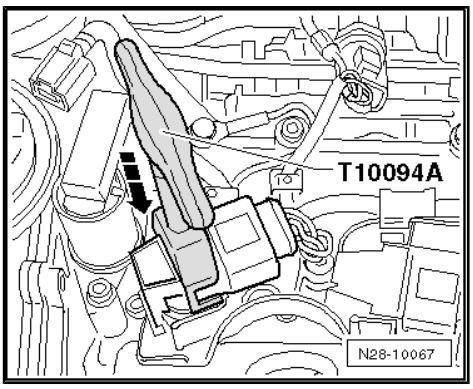


Note

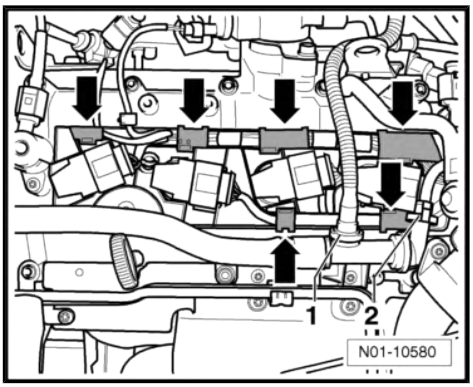
- *Spark plug designation and specified torque: »Power unit« ⇒ Power unit; Rep. gr. 28 ; Test data, spark plugs »Test data, spark plugs«.*
- *Please observe disposal instructions!*

– Seat puller - T10094 A- on ignition coil with output stage.
– Slide connector on ignition coil with output stage until it audibly engages.

– Push ignition coil with output stage in direction of -arrow- into cylinder head.
– Route cables properly in cable guide.



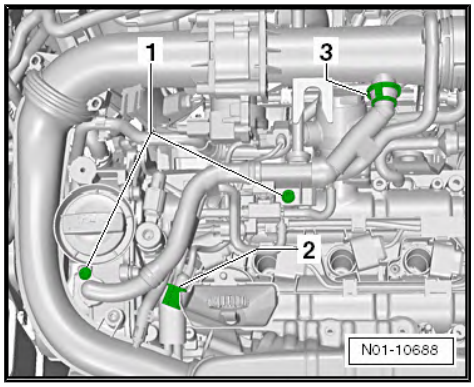
– Secure cable guide clips -arrows-.
– Connect hoses -1- and -2-.
– Install engine cover panel ⇒ page 106 .



4.66.2 Spark plugs: renewing, 1.4 l TSI engines, twincharger

Removing

– Remove engine cover panel ⇒ page 106 .



Note

To simplify removing and installing spark plugs, loosen some components and place them to side.

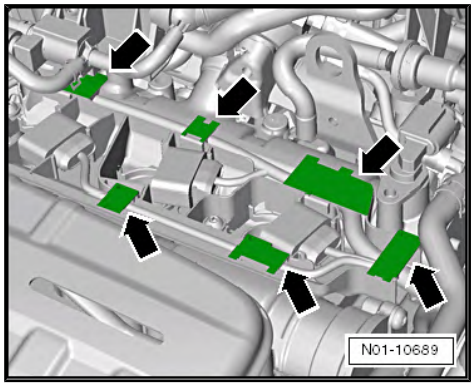
– Pull off connector -2-.

– Pull off hose end -3-, (press together to release).

– Unscrew bolts -1-.

– Raise hose with bracket and charge pressure control solenoid valve and place to side.

– Disengage clamps of cable guide -arrows-.



Note

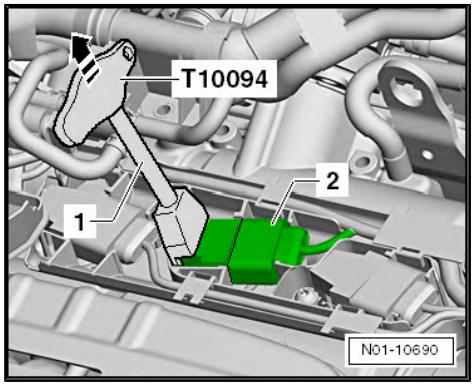
- *When pulling out the ignition coils with output stages, the wires or ignition coil connectors can remain connected.*
- *Note installation position of ignition coils with output stages.*

Caution

Ensure that the cables are not kinked or damaged.

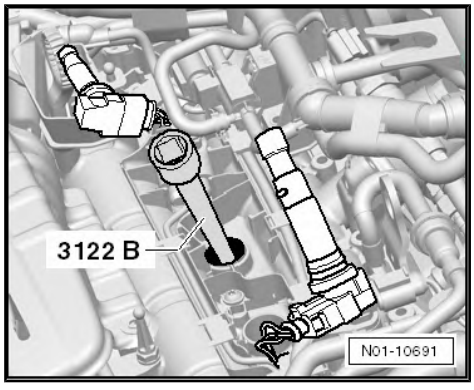
– Seat puller - T10094 A- on ignition coil with output stage.

– Pull out ignition coil with output stage and connected wires and carefully place to side.



– Unscrew spark plugs using spark plug socket - VAS 3122B- .

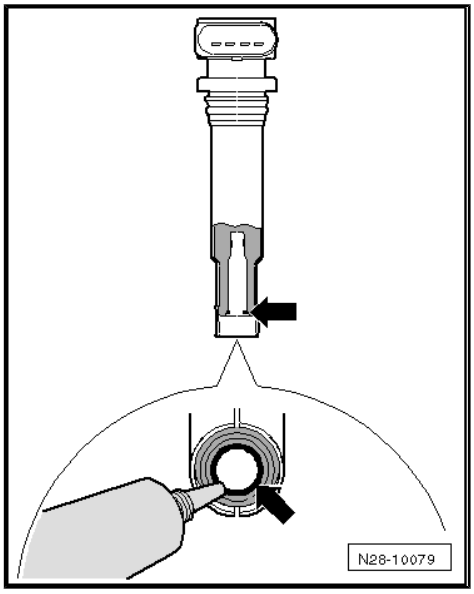
Installing:



Note

- *When installing new spark plugs, regrease ignition coils with output stage using silicone paste ⇒ ETKA .*
- *The applicable silicone paste is stated in the ETKA along with the corresponding ignition coil and/or spark plug.*

– Apply a thin bead of silicone paste on the circumference of the sealing hose of the ignition coil with output stage -arrow-.
– Install new spark plugs using spark plug socket and extension - VAS 3122B- .
– Screw in new spark plugs using spark plug socket and extension - VAS 3122B- .

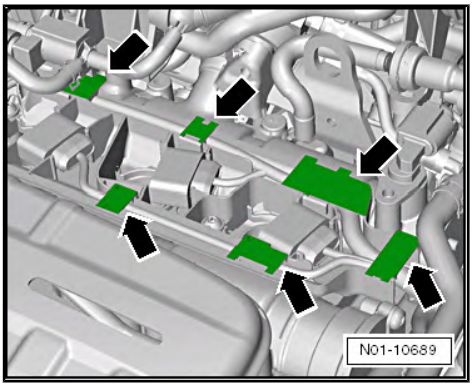


Note

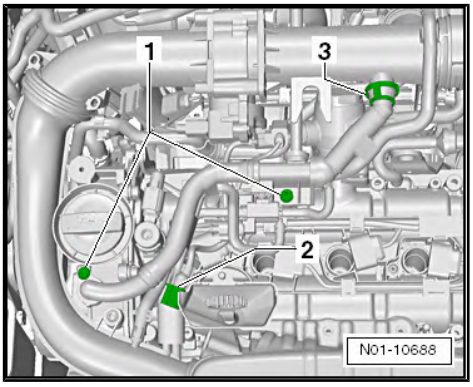
- *Spark plug designation and torque setting: »Power unit« ⇒ Rep. gr. 28 »Repairing ignition system/test data«.*
- *Please observe disposal instructions!*

– Place puller - T10094 A- on ignition coil with output stage.
– Push ignition coil with output stage into cylinder head until they noticeably engage.
– Route cables properly in cable guide.

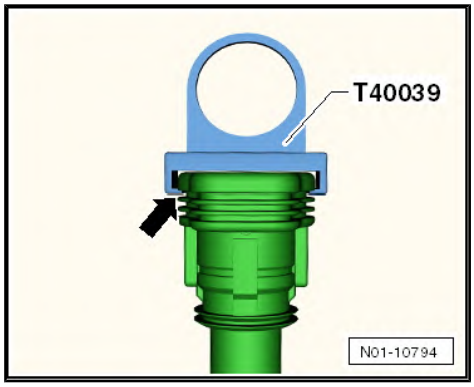
– Engage clamps of cable guide -arrows-.
– Set hose with bracket and charge pressure control solenoid valve to original installation position.



– Tighten bolts -1- (10 Nm).
– Push on connector -2-.
– Connect hose end -3-.
– Install engine cover panel ⇒ page 106 .



4.66.3 Spark plugs: renewing, 1.8 l TSI and 2.0 l TSI engines



Removing:

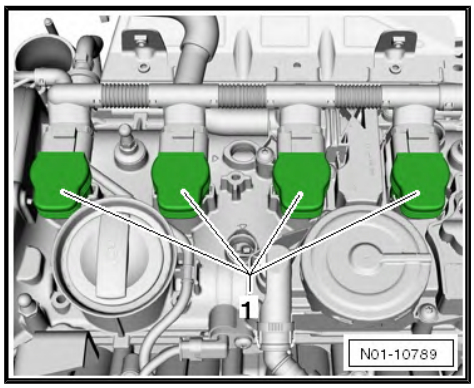
Carry out following procedure:

Note

- *To pull off spark plugs, fit puller - T40039- on top, thick rib -arrow- of ignition coils with final output stages.*
- *If the lower ribs are used, they could be damaged.*

– Remove engine cover panels ⇒ page 106 .

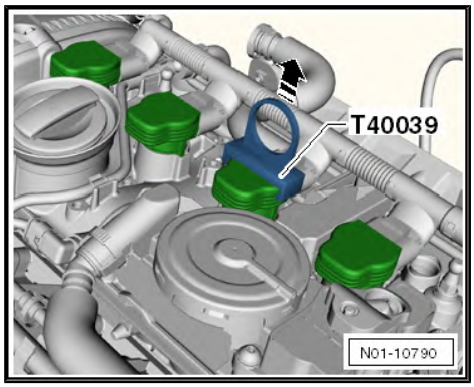
The spark plugs are located below the ignition coils with output stages -2-.



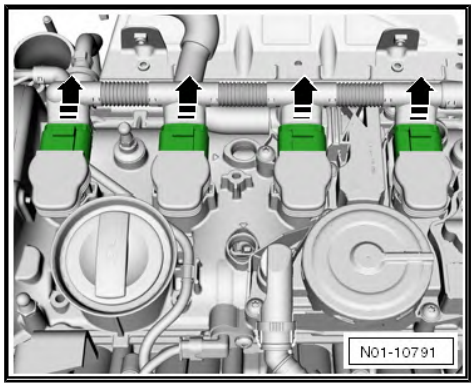
Note

Note installation position of ignition coils with output stages.

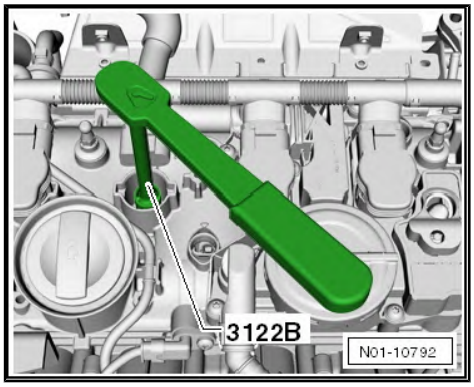
– Pull all ignition coils out of cylinder head approx. 30 mm in direction of arrow using puller - T40039- .



– Press connectors in direction of ignition coils with output stages, press onto catch by hand and pull connectors -arrows- off.



– Unscrew spark plugs using spark plug socket - 3122 B- .

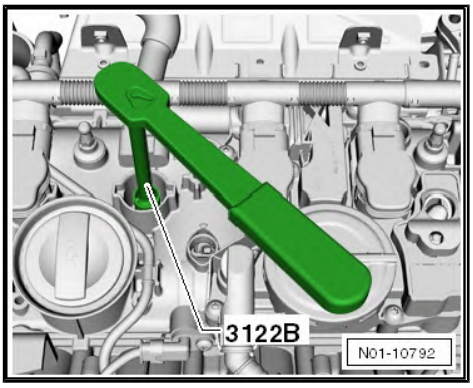


Note

- *Spark plug designation and specified torque, »Power unit« ⇒ Power unit; Rep. gr. 28 ; Test data, spark plugs »Test data, spark plugs«.*
- *Please observe disposal instructions!*

Installing

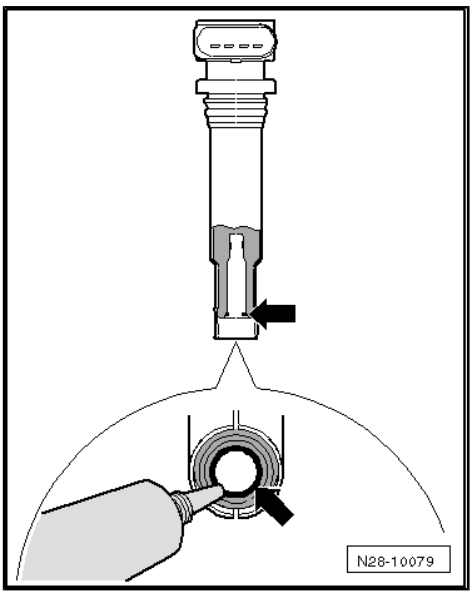
– Screw in new spark plugs using spark plug socket and extension - 3122 B- .



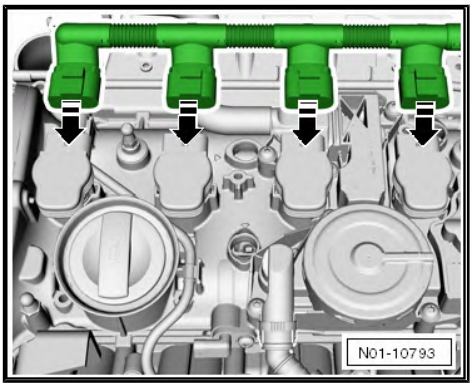
Note

- *When installing new spark plugs, regrease ignition coils with output stage using silicone paste ⇒ ETKA .*
- *The applicable silicone paste is stated in the ETKA along with the corresponding ignition coil and/or spark plug.*

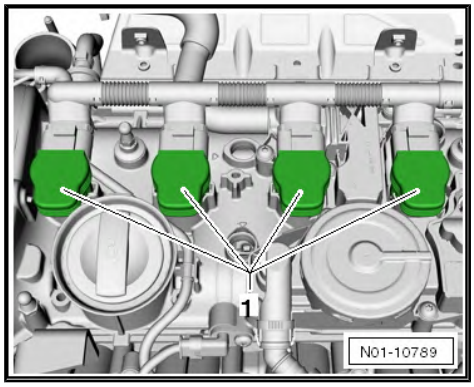
– Apply a thin bead of silicone paste on the circumference of the sealing hose of the ignition coil with output stage -arrow-.



– Insert ignition coils with output stages into cylinder head.
– Align ignition coils with output stages in respective recesses of cylinder head cover.
– Fit all connectors onto ignition coils -arrows-.



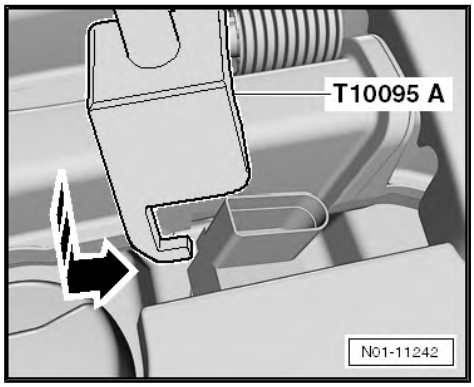
– Press ignition coils with output stages on spark plugs until stop by hand. They must be felt to engage.
– Install engine cover panel.



4.66.4 Spark plugs: renewing, 6-cylinder FSI engines

Carry out following procedure:

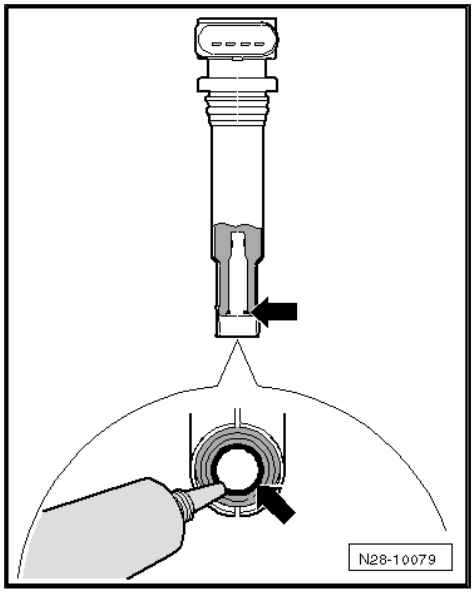
– Release connection locking device carefully using assembly tool - T10118- and pull off connector.
– Fit puller - T10095 A- onto ignition coils with output stage and remove them.
– Unscrew spark plugs using spark plug socket - 3122 B- .



Note

- *When installing new spark plugs, regrease ignition coils with output stage using silicone paste ⇒ ETKA .*
- *The applicable silicone paste is stated in the ETKA along with the corresponding ignition coil and/or spark plug.*

– Apply a thin bead of silicone paste on the circumference of the sealing hose of the ignition coil with output stage -arrow-.
– Install new spark plugs using spark plug socket and extension - VAS 3122B- .
– Screw in new spark plugs using spark plug socket and extension - 3122 B- .



Note

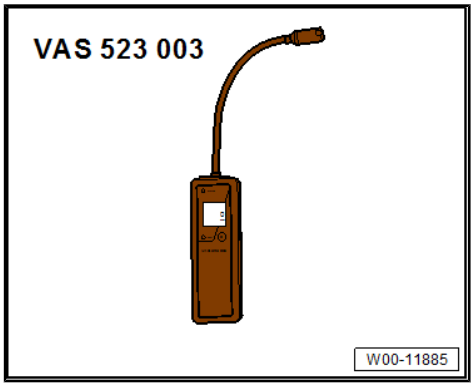
- *Spark plug designation and specified torque, »Power unit« ⇒ Power unit; Rep. gr. 28 ; Test data, spark plugs »Test data, spark plugs«.*
- *Please observe disposal instructions!*

– Press ignition coils with output stage onto spark plugs.
– Slide connectors onto ignition coils with output stage until they can be heard to engage.

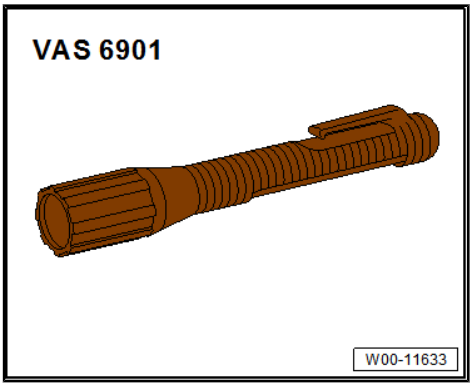
4.67 Natural gas system: inspect natural gas tank for corrosion and leakage.

Special tools and workshop equipment required

- Gas leak detector - VAS 523 003-



- Mirror
- Battery lamp - VAS 6901-



- Leak detecting spray

WARNING

For reasons of safety, service and maintenance of the natural gas system may only be meticulously carried out by specially trained personnel.

Natural gas is highly flammable and, in combination with air, creates a combustible mixture.

There must be no open flame or source of ignition near the natural gas system.

Inhaling natural gas can lead to light-headedness and lung damage. High concentrations may lead to suffocation due to lack of oxygen.

Natural gas is NOT odourless because a gas having a strong odour is added.

Condition for testing:

- All parts of the natural gas system to be checked must be reached easily.
- The exhaust gas warning lamp in the dash panel insert must not light up and there must be no entries concerning natural gas in the event memory of the engine control unit.
- Working environment free of draught

Note

- *Every draught of air above 1.8 km/h (slight gust of wind) will result in falsification of the measuring result. Therefore, it is essential to work in a draught-free environment.*
- *When working on the natural gas system always ensure for tidiness and cleanliness!*

Inspection

– Remove underbody cover. ⇒ General body repairs, exterior; Rep. gr. 66 ; Natural gas tank covers

– Check underbody trim from inside for soiling and clean with normal workshop cleaning agents if needed.

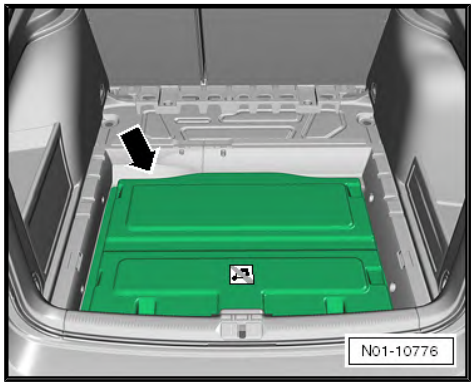
– Check the natural gas system for damage, corrosion and security.

– With the aid of a mirror, inspect complete natural gas tank.

– For German market only: make sure gap between natural gas fuel tank and fuel tank shut-off valve is sufficiently waxed ⇒ page 175 .

Applicable procedure for assessment of steel and CFRP fuel tanks: ⇒ Gas engines - general information; Rep. gr. 20 ; Fuel tanks; Damage assessment catalogue for natural gas tanks

– Check whether the natural gas tank cover in the luggage compartment -arrow- is damage-free.



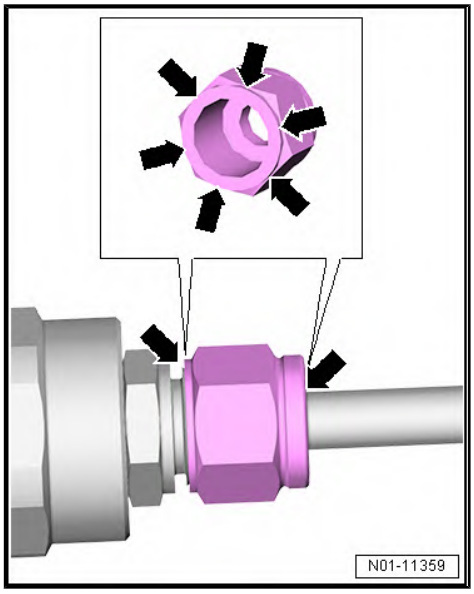
Testing for leaks

– Start engine to set pressures in gas system to operating state. For the leakage test, the engine can be switched off.

Caution

- ***Pressurised natural gas may escape from natural gas tanks.***
- ***Natural gas is highly flammable and, in combination with air, creates a combustible mixture.***
- ***Close fuel tank shut-off valves manually. ⇒ Fuel supply system – natural gas engines; Rep. gr. 20 ; Fuel tanks; Closing fuel tank shut-off valves N361/N362 manually***

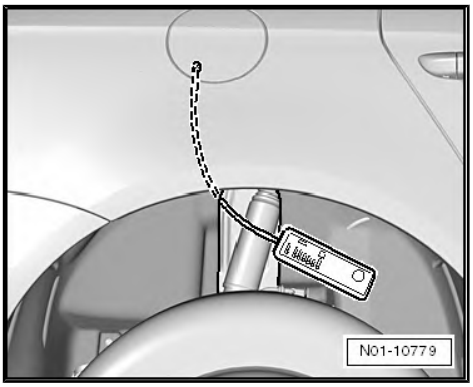
– Using gas leak detecting system - VAS 523 003- , check the indicated test locations -arrows- for leaks. It is absolutely necessary to check all threaded connections of the gas system.

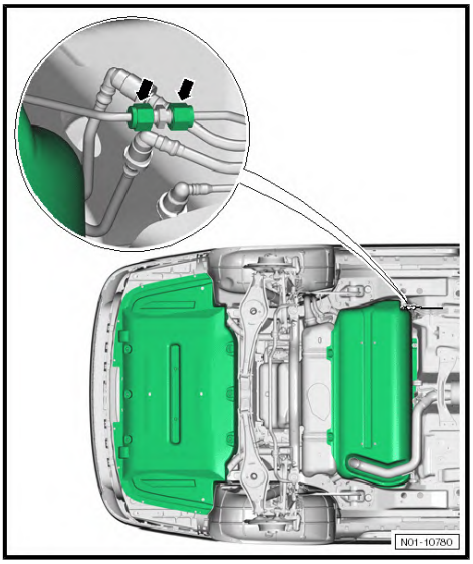


Note

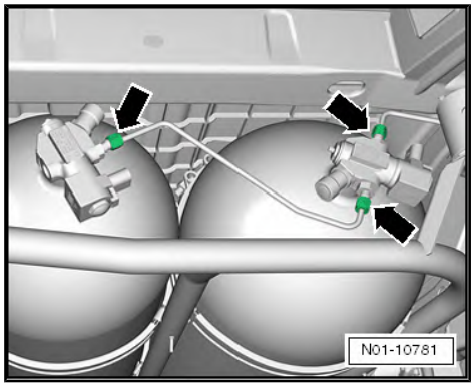
- *Refer to operating instructions for the gas leak detector - VAS 523 003- .*
- *With the gas leak detector - VAS 523 003- it is only possible to determine whether gas is present in the air immediately surrounding the area being tested.*
- *If the gas leak detector - VAS 523 003- detects a leak, a leak detector spray must be used to prove conclusively whether the gas is actually escaping from the vehicle system. When a leak detector spray is used, no bubbles may escape from the sprayed area within a test period of 3 minutes. Should leaks occur, these must be repaired, after which the gas system must be retested.*

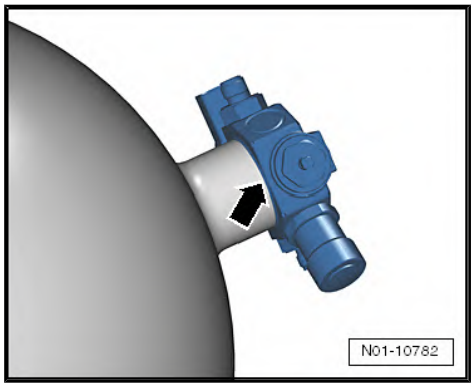
Test locations

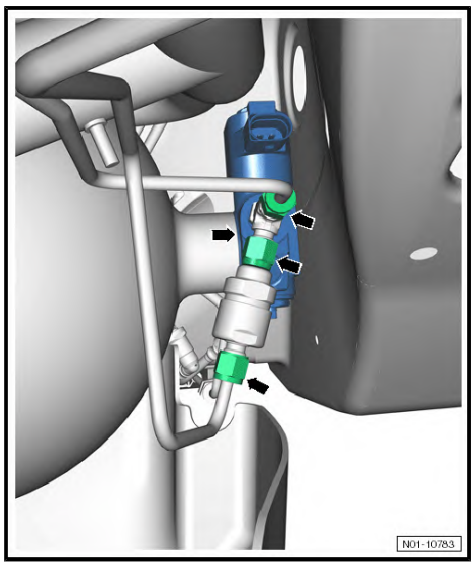


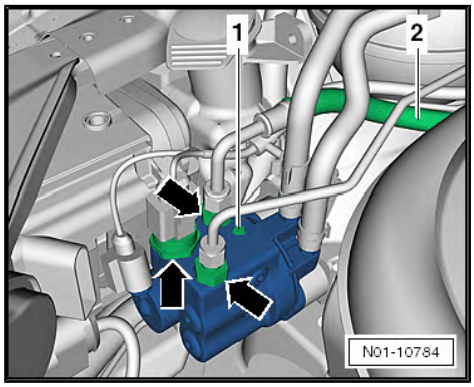


- Test area of filler connection in wheel housing (measure total concentration, if »not OK« remove wheel housing liner and repeat test more carefully)
- Coupling point for high-pressure line -arrow- from natural gas tank 3 to high-pressure valve for gas mode on underbody
- Tank shut-off valves for natural gas tanks 1 and 2 with all connections, threaded connections and mechanical shut-off valves -arrows-



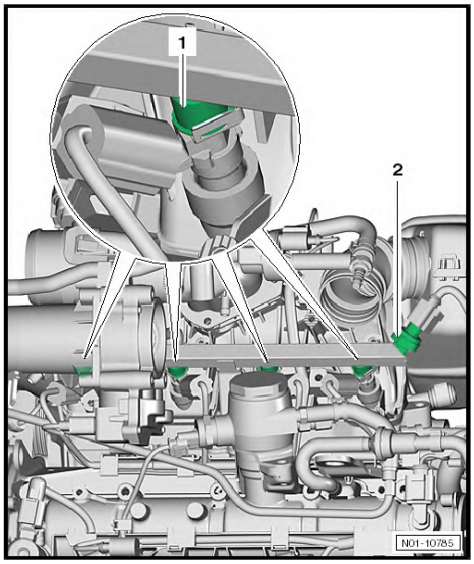






- ♦ Tank shut-off valve for natural gas tank 3 with respective high-pressure line coupling point with all connections, threaded connections and bleed valves -arrows-
- ♦ Check electromechanical high-pressure regulator for gas mode with all connections and threaded connections -arrows-. Also check whether rubber stopper of pressure relief valve -1- is fitted as well as condition of low-pressure hose -2-.
- ♦ Gas rail with gas injection valve -1- and gas rail sensor -2- (installed) and without removal of the exhaust gas turbocharger pressure pipe (see illustration: view when removed)

– Install underbody cover. ⇒ General body repairs, exterior; Rep. gr. 66 ; Natural gas tank covers



4.68 Natural gas system: checking wax layer between natural gas fuel tank and fuel tank shut-off valve

Note

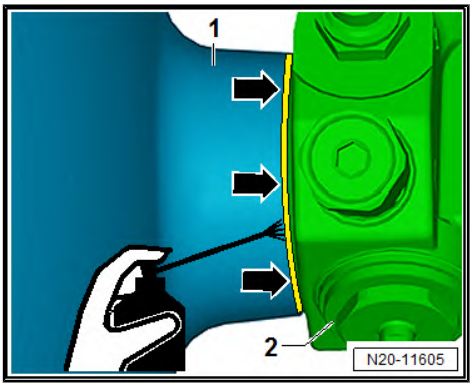
Applies only to German market.

Special tools and workshop equipment required

- ♦ Wax ⇒ ETKA

– Make sure gap between natural gas fuel tank and -1- and fuel tank shut-off valve -2- is sufficiently waxed.

– If necessary, spray wax over entire circumference -arrows-.



5 Exhaust emissions test

This chapter provides information on the following subjects:

Note

- *Please observe the country specific legal regulations.*
- *The exhaust emissions test described below has been created according to the legal regulations valid in Germany.*

5.1 Exhaust emissions test for petrol engines

Special tools and workshop equipment required

- Exhaust gas testing station L - VAS 7320 A-

Note

- *The following description refers to vehicles fitted with "On-board diagnosis" OBD.*
- *The OBD monitors all components and part systems influencing the exhaust emissions quality.*
- *It is possible to carry out an exhaust emissions test only when all units of the emissions testing station are connected properly and joined to each other according to the operating instructions.*
- *All work to be performed is displayed by the emissions testing station .*

Conditions for testing

- All test conditions and data required for exhaust emissions test are found on EET data sheet for the respective engine.
- For bar code reading the EET data sheet must be printed out.
- Automatic gearbox: selector lever in position "P" or "N".
- Manual gearbox: gear lever in neutral
- Parking brake applied
- 12V battery fully charged (if battery charge is too low, raise idling speed if necessary).

– Perform exhaust emissions test according to instructions on display.

Vehicle data input

– Enter the following data:

- Registration number
- Key numbers
- Vehicle identification number
- Fuel type
- Mileage

The following vehicle data can be found in the vehicle registration certificate part 1:

- Registration number: “e.g. WOB-HH 1234”
- Emission key number “Field 14.1 (code for field 14)”
- Vehicle manufacturer: “Field 2”, “Field 2.1 (code for field 2)”
- Vehicle identification number “field E”
- Type and version “Field D2 (type only)”, “Field 2.2 (code for field D.2)”

Specified data input for EET

There are different ways to enter the specified data:

- 1. By manual input
- 2. By bar code input from EET data sheet
- 3. Through ELSA web service

Note

- *To use the ELSA web service, the exhaust gas testing station L which is used for the exhaust emissions test must be integrated in the workshop network.*
- *The ELSA web service automatically transmits the data for the specific vehicle via the network to the respective mask.*

Manual specified data input for EET:

Note

All test conditions and data required for exhaust emissions test can be found in the ⇒ Data sheets for exhaust emissions test for respective engine.

– Perform manual data input according to instructions on display.

– Enter displayed values on EET data sheet in column “Test values for exhaust emissions test” on display as follows:

1 - Test speed (idling speed)

2 - Warm-up phase for catalytic converter

3 - Engine temperature

4 - Increased idling speed

5 - CO content at increased idling speed

6 - Lambda at increased idling speed

7 - Idling speed

8 - Select regulating probe type; either “Step-type probe” or “Broad-band probe”.

9 - Lambda probe value

Specified data input for EET as bar code:

– If specified data for EET are available as bar code, read bar code of EET data sheet with bar code reader.

All data required are shown on display.

Inspection

– Inspect all exhaust emissions relevant components.

– Check if exhaust system is fitted and complete and check for leaks and damage.

Procedure

– Follow instructions from exhaust gas testing station .

5.2 Exhaust emissions test for diesel engines

Special tools and workshop equipment required

♦ Exhaust gas testing station L - VAS 7320 A-

Note

♦ *The following description refers to vehicles fitted with "On-board diagnosis" OBD.*

♦ *The OBD monitors all components and part systems influencing the exhaust emissions quality.*

♦ *It is possible to carry out an exhaust emissions test only when all units of the emissions testing station are connected properly and joined to each other according to the operating instructions.*

♦ *All work to be performed is displayed by the emissions testing station .*

Conditions for testing

- All test conditions and data required for exhaust emissions test are found on EET data sheet for the respective engine.
- Automatic gearbox: selector lever in "P" position
- Manual gearbox: gear lever in neutral
- Parking brake applied
- 12V battery fully charged (if battery charge is too low, raise idling speed if necessary).

– Perform exhaust emissions test according to instructions on display.

Vehicle data input

– Enter the following data:

♦ Registration number

♦ Key numbers

♦ Vehicle identification number

♦ Fuel type

♦ Mileage

The following vehicle data can be found in the vehicle registration certificate part 1:

♦ Registration number: "e.g. WOB-HH 1234"

♦ Emission key No. "field 14.1 (code for field 14)"

♦ Vehicle manufacturer: "Field 2", "Field 2.1 (code for field 2)"

♦ Vehicle identification number "field E"

- Type and version “Field D2 (type only)”, “Field 2.2 (code for field D.2)”
- Nominal speed “field P4”

Specified data input for EET

There are different ways to enter the specified data:

- 1. By manual input
- 2. By automatic data acceptance from the exhaust-emission station database

Note

- *Regarding Euro 6 vehicles with manual gearbox and infotainment system, the deactivation of the idle speed limitation is carried out in the infotainment system.* *⇒ page 179*
- *Euro 6 vehicles with automatic gearbox, manufactured from week no. 48/18 do not have idle speed limitation any more.*
- *If there is no* `ESP` *or softkey in the infotainment system to deactivate the speed limitation, the governed speed can be measured using the engine speed limited by the control unit. To do this, all the EET specifications must be entered manually.*
- *For all Euro 6 vehicles an opacity figure of max. 0.25 m^{-1} applies.*

Deactivation of idle speed limitation of Euro 6 vehicles with manual gearbox:

– Switch on ignition.

– Switch on infotainment system.

– Press `Home` function button.

– Press `Vehicle` function button.

– Press `Setup` function button.

– Press `ESC system` function button and deactivate TCS.

Manual specified data input for EET:

Note

- *For the relevant test requirements and all the necessary data for the exhaust emissions test, refer to the ⇒ Data sheets for exhaust emissions test of the respective engine.*
- *The nominal speed is located in field P4 of the registration certificate part 1 or field 7 of the vehicle document and must always be entered manually.*
- *If the idle speed limitation cannot be deactivated, enter the value 2500 ± 200 rpm in the box for rev limit and 2500 in the box for engine speed for conditioning.*

– Perform manual data input according to instructions on display.

– Enter displayed values on EET data sheet in column “Test values for exhaust emissions test” on display as follows:

1 - Speed for conditioning

2 - Number of throttle bursts for conditioning

3 - Engine oil temperature (min. value)

4 - Select engine oil temperature measurement procedure

5 - Idling speed

6 - Governed speed

7 - Nominal speed (registration certification part 1, vehicle document)

8 - Governed speed measuring period (1 second)

9 - Type plate value ⇒ page 180

10 - Select probe type (No. of probe)

11 - Select measuring mode

12 - Measured period portion

Note

- *When performing the exhaust emissions test for Euro 5 vehicles, the respective engineer must always use the vehicle-specific exhaust emissions limit value indicated on the type plate.*
- *If no value is indicated on the type plate, the opacity figure specified by the manufacturer and indicated in ELSA must be used.*
- *If no value is indicated on the type plate and no opacity figure has been specified by the manufacturer, the statutory opacity figures (2.5 m^{-1} or 1.5 m^{-1}, depending on date of initial registration) must be used.*

The nominal speed can only be entered manually.

If the opacity figure of Euro 5 vehicles on the EET data sheet is different from the value indicated on the type plate, enter the type plate value manually.

Inspection

– Inspect all exhaust emissions relevant components.

– Check if exhaust system is complete and check for leaks and damage.

Procedure

– Follow instructions from exhaust gas testing station .

Evaluation

Note

If the exhaust emissions test was performed at idle speed limitation, the log note "governed speed <90 % of the nominal speed (idle speed limitation)" is entered in the log.

6 Glossary

Term	Explanation
ABS	Anti-locking 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.
All-wheel drive coupling	Term to be used in place of “Haldex” with immediate effect. Legal implications make this step necessary. The term may nevertheless appear in older documents but need not be replaced.
TCS	Traction control system The TCS prevents the wheels from slipping when the vehicle is driven off.
ATF	Automatic Transmission Fluid. Gear oil for automatic gearbox.
EET	Exhaust emissions test
AUS 32	Abbreviation for “Aqueous Urea Solution” with 32.5% urea content, see also (AdBlue®) ⇒ page 181
AdBlue®	Is an invented name. This fluid is also referred to as “NOx reducing agent AUS 32”, “AUS 32” or “Diesel Exhaust Fluid” (in the US). AdBlue® is a colourless reducing agent that is used for exhaust post-treatment in order to reduce nitrous oxides and particulates. AdBlue® is a registered trademark of the VDA (Verband der Automobilindustrie - German association of the automotive industry) in the USA, Germany, the European Union and other countries. The AdBlue urea solution is not mixed with diesel fuel, but is carried in a separate tank in the vehicle.
ATF level	Filling level of ATF in gearbox
BEV	Battery Electric Vehicle. Electric vehicle
CNG	Compressed Natural Gas. Compressed natural gas
CO	Carbon monoxide. Produced when fuels containing carbon are not combusted completely
Common rail “CR”	This term refers to a common high-pressure injection line, the “rail”, which supplies all cylinders of the relevant cylinder bank with fuel.
Diesel exhaust fluid	Designation used in the US for the NOx reducing agent AUS 32, or the AdBlue®.
DIN	Deutsches Institut für Normung e.V. (German Standards Authority)
DLA	Dynamic Light Assist: a system with variable road illumination allows the vehicle to be driven permanently with main beam without dazzling oncoming traffic.
DPF	Diesel particulate filter
DS	Direct shift
DSP	Digital service plan
DSG	Dual clutch gearbox
ATA	Anti-theft alarm
ECE	Economic Commission for Europe
ETKA	Electronic parts catalogue
Part no.	Abbreviation for part number
EN	European standard
EOBD	European On-Board Diagnosis
ESP	Electronic stabilisation program. Prevents potential vehicle skidding by targeted intervention in the brake and engine management systems.
FAME	Fatty acid methyl ester
GJ	All-season tyre All-season tyres (also called all-weather tyres) can be used in the summer and also the winter.
HEV	Hybrid Electric Vehicle. Hybrid vehicle
MM	Maintenance manual

Term	Explanation
LongLife service	The LongLife service enables extremely long inspection or oil change intervals, depending on individual driving style and conditions under which the vehicle is used. For the LongLife service a special engine oil is required.
LED	Light-emitting diode LED
LPG	Liquefied petroleum gas. Liquefied petroleum gas or LPG
MIL	Malfunction indicator light. American designation for exhaust emissions warning lamp K83
MPI	Multi-point injection
M&S	Winter tyre (M+S tyre). Winter tyres are designed for low temperatures and wintery road conditions.
NAR	North American region
NSC	National Sales Company
NOx reducing agent AUS 32	Designation of aqueous urea solution according to DIN ISO 22241-1, see also (AdBlue®) ⇒ page 181
NO_X reducing agent AUS 32	Designation of aqueous urea solution according to DIN ISO 22241-1, see also (AdBlue®) ⇒ page 181
OBD	On-board diagnosis. The OBD monitors all components influencing the exhaust emissions quality.
OBD-II	American onboard diagnosis
PHEV	Plug-in hybrid electric vehicle. A vehicle with hybrid drive whose battery can also be recharged externally using mains electricity.
PR No.	Abbreviation for production control number. It identifies among other things optional equipment, country-specific deviations
PM	Particulate matter. Soot particle value for diesel engine emissions
PMS	Particulate reduction system
QG0	Vehicles are “not” factory-fitted with components for LongLife service. For maintenance, the intervals based on time and distance (non-flexible intervals) apply.
QG1	Vehicles are factory-fitted 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 lining wear indicator
QG2	The LongLife service is not factory-activated. This means vehicles have a fixed service interval display (time and mileage dependent service intervals): These vehicles are fitted with the following components: ♦ Non-flexible service interval display in dash panel insert ♦ Engine oil level sensor ♦ Brake lining wear indicator
QG3	The LongLife service is not factory-activated. This means vehicles have a fixed service interval display (time and mileage dependent service intervals): These vehicles are fitted with the following components: ♦ Non-flexible service interval display in dash panel insert ♦ Brake lining wear indicator
®	Registered trademark
Readiness code	8-digit binary code which indicates if all exhaust relevant diagnoses have been performed by the electronic engine management.
RON	Research Octane Number. Measurement unit of the knock resistance of petrol
SPF	Particulate filter
TPMS, TPLI	Tyre Pressure Monitoring System, Tyre Pressure Loss Indicator

Term	Explanation
SAE	Society of Automotive Engineers. Association which creates proposals/guidelines for implementing legal requirements (e.g. standards).
SCR	With the SCR process (selective catalytic reduction) the noxious nitrogen oxides emissions are reduced to a great extent and are converted to steam and nitrogen by the urea solution. A special urea solution (AdBlue®) is injected into the exhaust system upstream of a special catalytic converter.
PFI	Intake manifold injection system (indirect injection system)
SULEV	Super Ultra Low Emission Vehicle
TSI	TSI turbocharger. Charging with turbocharger only.
	TSI twincharger. Charging with turbocharger and compressor
TGI	Charging with turbocharger and natural gas injection system
TDI	Turbo diesel engine - direct injection
ULEV	Ultra low emission vehicle
VDA	German association of the automotive industry
VW	Volkswagen
ESI	Extended servicing interval
ZEV	Zero Emission Vehicle
ASSY	Assembly

7 ---Change history---

Date	Chapter	Scope of modification
2019-01-25	Exhaust emissions test for diesel engines ⇒ page 178	Chapter updated.
	Natural gas system: inspecting natural gas tank for corrosion and leakage ⇒ page 170	Chapter updated.
2018-11-30	Service tables ⇒ page 7	Chapter updated.
	Sliding sunroof drains: checking for blockage, cleaning if necessary ⇒ page 149	Chapter updated.
	Natural gas system: inspecting natural gas tank for corrosion and leakage ⇒ page 170	Chapter updated.
	Road test (performance, handling, noises, air conditioner etc.): carrying out ⇒ page 119	Chapter updated.
	Track rods: checking clearance, attachment and boots ⇒ page 154	Chapter updated.
23.02.2018	Exhaust emissions test ⇒ page 176	Chapter updated.
22/12/2017	Service tables ⇒ page 7	Chapter updated.
	Multi-purpose additive for diesel fuel: adding ⇒ page 102	Chapter updated.
	Protective bellows: inspecting ⇒ page 88	"Checking clamps" added to procedure.
	Brake system and shock absorbers: inspecting for leaks and damage ⇒ page 81	"Checking caps on guide bushes" added to procedure.
	Multi-purpose additive for petrol fuels: adding ⇒ page 104	Chapter updated.