

Maintenance

Audi A6 2005 ➤

Edition 05.2017



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Maintenance

Heading

1. General information
2. Preparations
3. Maintenance
4. Exhaust emissions test



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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.

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1 General information

(AIGG000852; Edition 05.2017)

Change history ⇒ [page 1](#)

Engine number ⇒ [page 1](#)

Vehicle identification number ⇒ [page 4](#)

Vehicle data sticker ⇒ [page 4](#)

1.1 --- Change history ---

N o.	Date	Chapter	Changes made
8	01.05.2017	Engine, gearbox, final drive and steering: checking for leaks and damage ⇒ page 48	Procedure modified to include: Checking belt drives
		Battery: checking that battery and battery cables are securely fitted	Chapter deleted
		Fuel tank: adding fuel additive ⇒ page 141	Chapter updated
7	02.11.2016	Spark plugs: renewing ⇒ page 87	Tightening torques for spark plugs adjusted
6	30.05.2016	Spark plugs: renewing ⇒ page 87	Procedure modified to include: Lubricating ignition coils



Note

For greater clarity, only the last three updates to the document are listed.

1.2 Engine number



Note

The engine number consists of the engine code letters (3 or 4 characters) and the serial number.

4-cyl. petrol engine 2.0 ltr. TFSI ⇒ [page 2](#)

6-cyl. petrol engine 2.4 ltr. MPI/2.8 ltr. FSI/3.0 ltr. MPI/3.0 ltr. TFSI/
3.2 ltr. FSI ⇒ [page 2](#)

8-cyl. petrol engine 4.2 ltr. MPI/4.2 ltr. FSI ⇒ [page 2](#)

10-cyl. petrol engine 5.0 ltr. TFSI ⇒ [page 3](#)

10-cyl. petrol engine 5.2 ltr. FSI ⇒ [page 3](#)

4-cyl. diesel engine 2.0 ltr. TDI ⇒ [page 3](#)

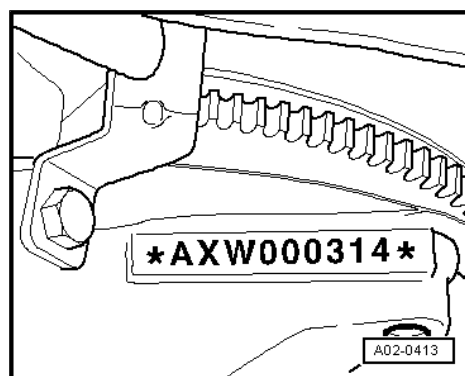
6-cyl. diesel engine 2.7 ltr. TDI/3.0 ltr. TDI ⇒ [page 3](#)

1.2.1 4-cyl. petrol engine 2.0 ltr. TFSI

The engine number is stamped on the left side at the joint between the engine and the gearbox -arrow-.

The engine number is also given on the sticker on the toothed belt cover (top).

In addition, the engine code letters are listed on the vehicle data sticker ⇒ [page 4](#) .

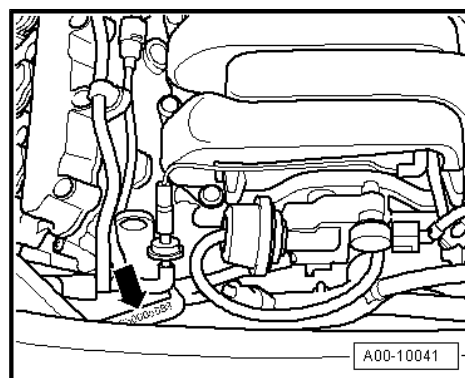


1.2.2 6-cyl. petrol engine 2.4 ltr. MPI/2.8 ltr. FSI/3.0 ltr. MPI/3.0 ltr. TFSI/3.2 ltr. FSI

The engine number is stamped on the left side at the joint between the engine and the gearbox -arrow-.

The engine number is also given on the sticker on the toothed belt cover (top).

In addition, the engine code letters are listed on the vehicle data sticker ⇒ [page 4](#) .

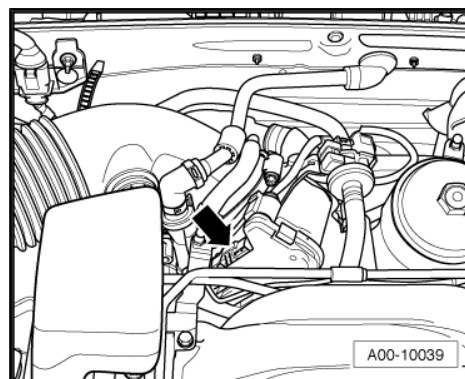


1.2.3 8-cyl. petrol engine 4.2 ltr. MPI/4.2 ltr. FSI

The engine number is stamped on the left side at the joint between the engine and the gearbox -arrow-.

The engine number is also given on the sticker on the toothed belt cover (top).

In addition, the engine code letters are listed on the vehicle data sticker ⇒ [page 4](#) .



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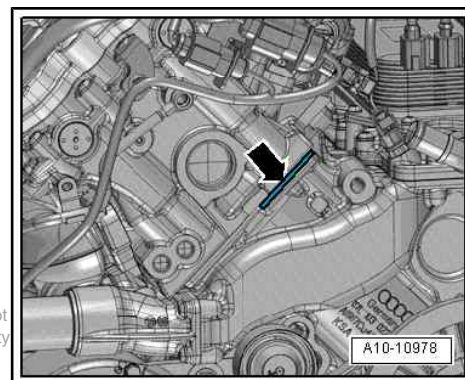
1.2.4 10-cyl. petrol engine 5.0 ltr. TFSI

The engine number is stamped on the left side at the joint between the engine and the gearbox -arrow-.

The engine number is also given on the sticker on the toothed belt cover (top).

In addition, the engine code letters are listed on the vehicle data sticker [⇒ page 4](#).

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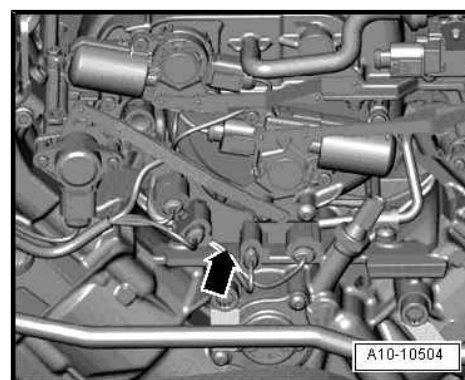


1.2.5 10-cyl. petrol engine 5.2 ltr. FSI

The engine number is stamped on the left side at the joint between the engine and the gearbox -arrow-.

The engine number is also given on the sticker on the toothed belt cover (top).

In addition, the engine code letters are listed on the vehicle data sticker [⇒ page 4](#).

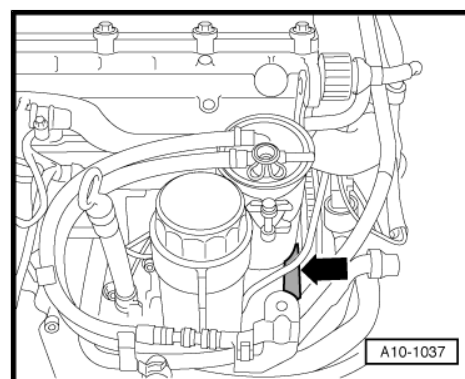


1.2.6 4-cyl. diesel engine 2.0 ltr. TDI

The engine number is stamped on the left side at the joint between the engine and the gearbox -arrow-.

The engine number is also given on the sticker on the toothed belt cover (top).

In addition, the engine code letters are listed on the vehicle data sticker [⇒ page 4](#).

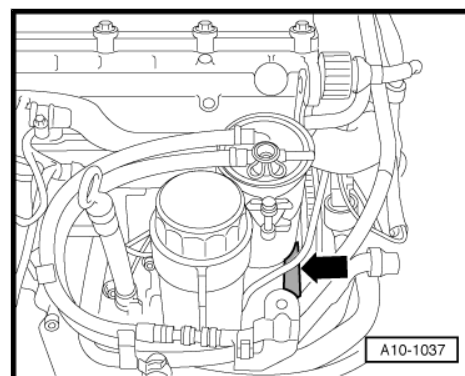


1.2.7 6-cyl. diesel engine 2.7 ltr. TDI/3.0 ltr. TDI

The engine number is stamped on the left side at the joint between the engine and the gearbox -arrow-.

The engine number is also given on the sticker on the toothed belt cover (top).

In addition, the engine code letters are listed on the vehicle data sticker [⇒ page 4](#).

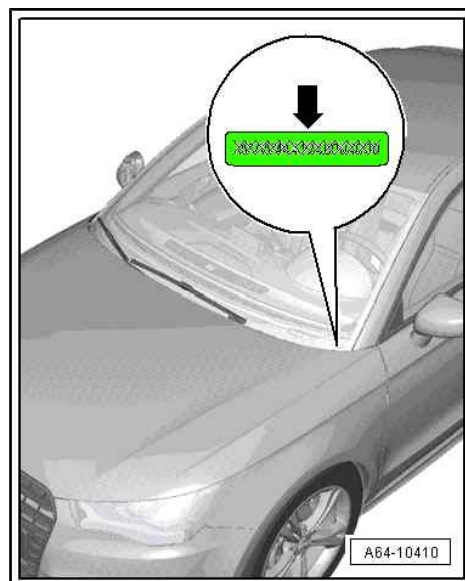


1.3 Vehicle identification number

Depending on the equipment and country-specific version, the vehicle identification number is located:

- ◆ At the bottom left edge of the windscreen
- ◆ Optional: In the MMI under »Car systems«
- ◆ On the bulkhead of the engine compartment
- ◆ On the vehicle data sticker ⇒ [page 4](#)

The vehicle identification number consists of the following:

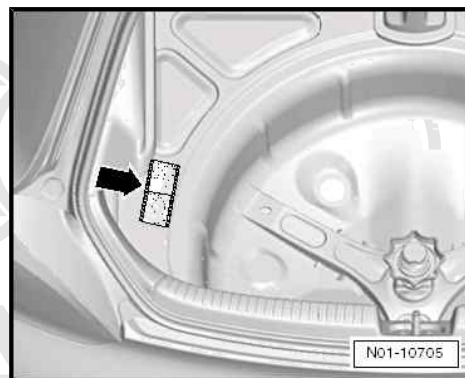


WAU	ZZZ	4F	Z	B	A/N	000 234
Manufacturer code	Filler characters	Type	Filler characters	Model year	Production location	Serial number

1.4 Vehicle data sticker

The vehicle data sticker is located:

- ◆ In the Service Schedule
- ◆ In the area of the spare wheel well under the floor covering -arrow-



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The vehicle data sticker contains the following vehicle data:

- 1 - Vehicle identification number
- 2 - Vehicle model, manufacturer's code, engine type and power output, production month and year
- 3 - Engine and gearbox code letters (not specified on some export models)
- 4 - Paint number, interior equipment number
- 5 - Numbers for optional extras
- 6 - Fuel consumption: urban, extra urban, combined, CO2 (not specified on some export models)

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1	XXXXXX XX XXXX XXX					
2	XXX XXX					
	XX	Xxx.		X.X	XX	
	XXX	XX		XX	XX/XX	
3	XXXX xxx xxx					
4	LY9C/LY9C N5D/FZ					
5	E0A	7MG	AUF	6XL	5SL	5RU
	1KW	JOP	1LL			1BK
	3FE			5MG	7X8	
	F0A				0YZ	0JZ
	T8T		8BP	U1A	X9X	1N7
	2ZD		8Q3		8Z5	D79
	7T6	CP5	7K6		2K1	
	3PN	SOR	4KC	3Y8	4F2	5D7
	1SA	5ZO		Q1A		4GQ
6	XX.X	X.X		X.X		XXX

A00-11039

2 Preparations

Vehicle: raising ⇒ [page 6](#)

Engine cover panel: removing and installing ⇒ [page 8](#)

Noise insulation: removing and installing ⇒ [page 14](#)

Window regulators: activating automatic open/close function
⇒ [page 14](#)

Vehicle diagnostic tester: connecting ⇒ [page 14](#)

2.1 Vehicle: raising

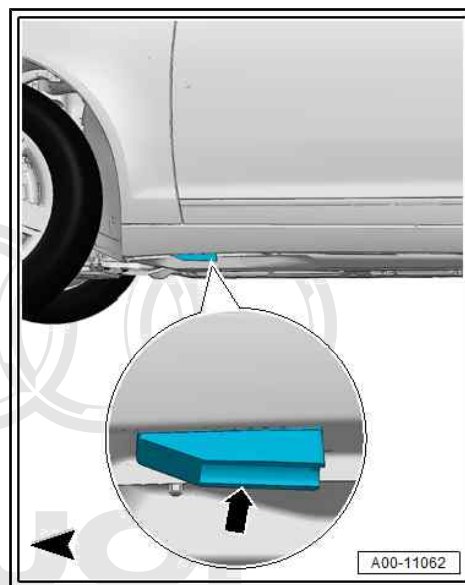
CAUTION

Risk of damage to vehicle due to incorrect use of lifting platform.

- ◆ Do not exceed the permissible lifting capacity of the lifting platform.
- ◆ The vehicle should be lifted only at the points shown in the illustration.
- ◆ Position support plates so that they are aligned centrally below the lifting points.
- ◆ Ensure sufficient clearance between low-mounted vehicle components and the lifting platform.

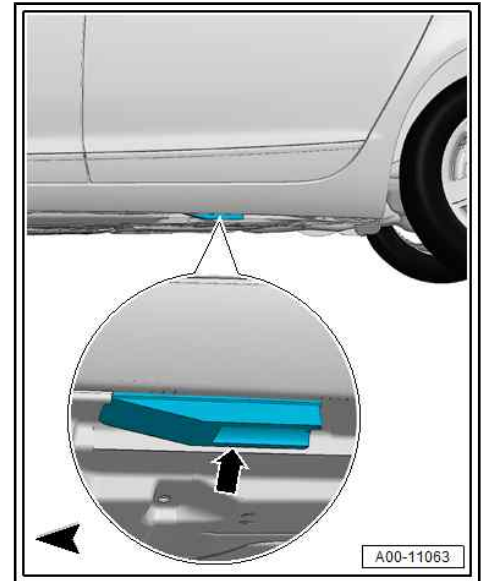
Procedure:

- For vehicles with adaptive air suspension: Activate jacking mode before lifting vehicle ⇒ [page 7](#).
- Front: Position support plates of lifting platform under plastic mountings -arrow- on underside of side member trim.



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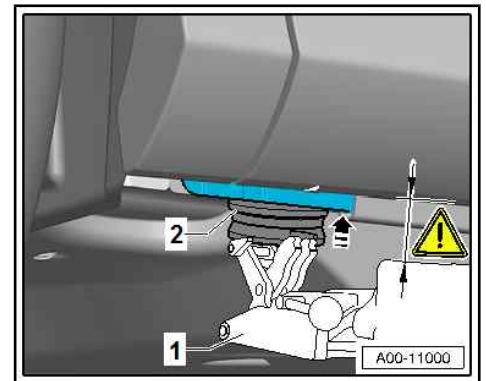
- Rear: Position support plates of lifting platform under plastic mountings -arrow- on underside of side member trim.



Note

- ◆ The location of the lifting points is indicated by markings stamped on the side member trim.
- ◆ Applies to RS 6: Extend all support plates -2- far enough so that the lifting arm of the lifting platform does not touch the vehicle trim.

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2.1.1 Activating jacking mode

Procedure:

- Switch on ignition and activate MMI.
- Press function selector button **CAR**.
- Under »Systems«, navigate through following menu structure:
 - ◆ adaptive air suspension
 - ◆ SETUP
- Use MMI rotary pushbutton to select “Jacking mode” and set to “on”.



Note

- ◆ Jacking mode is switched off again automatically once a speed higher than 15 km/h is reached.
- ◆ If jacking mode is activated for a longer period of time, the pressure in the suspension struts may dissipate, thereby lowering the vehicle. If necessary, start the engine briefly to reactivate jacking mode.

2.2 Engine cover panel: removing and installing

4-cyl. petrol engine 2.0 ltr. TFSI ⇒ [page 8](#)

6-cyl. petrol engine 2.4 ltr. MPI/2.8 ltr. FSI/3.2 ltr. FSI (version 1)
⇒ [page 8](#)

6-cyl. petrol engine 3.0 ltr. MPI ⇒ [page 9](#)

6-cyl. petrol engine 3.0 ltr. TFSI ⇒ [page 10](#)

6-cyl. petrol engine 3.2 ltr. FSI (version 2) ⇒ [page 10](#)

8-cyl. petrol engine 4.2 ltr. MPI ⇒ [page 11](#)

8-cyl. petrol engine 4.2 ltr. FSI ⇒ [page 11](#)

10-cyl. petrol engine 5.0 ltr. TFSI ⇒ [page 12](#)

10-cyl. petrol engine 5.2 ltr. FSI ⇒ [page 12](#)

4-cyl. diesel engine 2.0 ltr. TDI (version 1) ⇒ [page 13](#)

4-cyl. diesel engine 2.0 ltr. TDI (version 2) ⇒ [page 13](#)

6-cyl. diesel engine 2.7 ltr. TDI/3.0 ltr. TDI ⇒ [page 13](#)

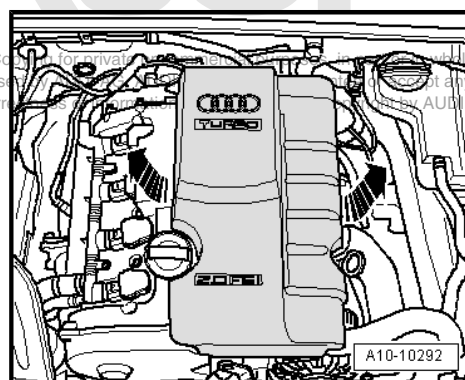
2.2.1 4-cyl. petrol engine 2.0 ltr. TFSI

Procedure for removing:

- Carefully pull engine cover panel off retaining pins one after another -arrows-.

Procedure for installing:

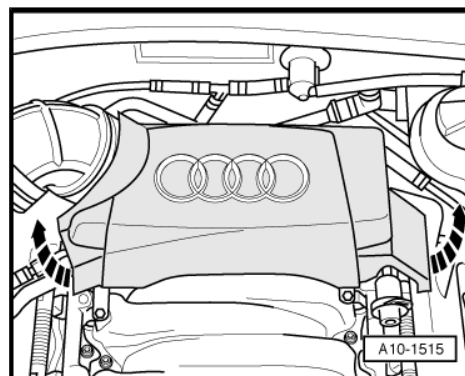
- Position engine cover panel on retaining pins and then use your hands to press it onto retaining pins, one after the other.



2.2.2 6-cyl. petrol engine 2.4 ltr. MPI/2.8 ltr. FSI/3.2 ltr. FSI (version 1)

Procedure for removing:

- Carefully pull engine cover panel (rear) off retaining pins one after another -arrows-.



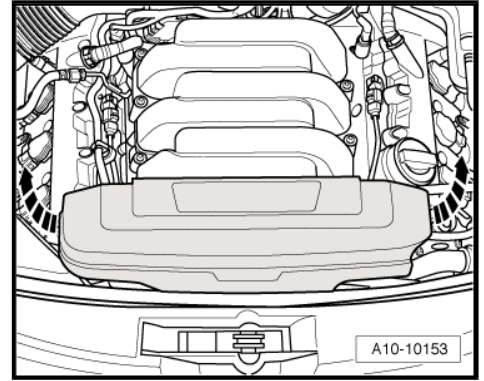
- Carefully pull engine cover panel (front) off retaining pins one after another -arrows-.

Procedure for installing:

- Position engine cover panels on retaining pins and then use your hands to press it onto retaining pins, one after the other.



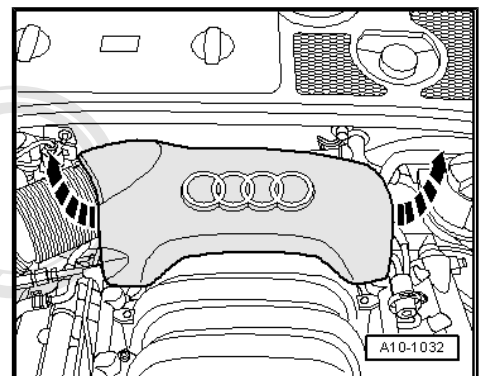
There are additional versions of the engine cover panel for the 6-cylinder 3.2 ltr. FSI petrol engine => [page 10](#).



2.2.3 6-cyl. petrol engine 3.0 ltr. MPI

Procedure for removing:

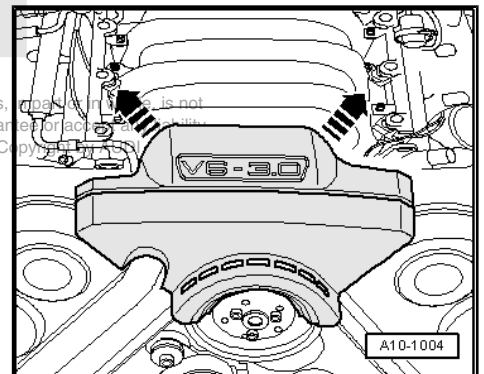
- Carefully pull engine cover panel (rear) off retaining pins one after another -arrows-.



- Carefully pull engine cover panel (front) off retaining pins one after another -arrows-.

Procedure for installing:

- Position engine cover panels on retaining pins and then use your hands to press it onto retaining pins, one after the other.



2.2.4 6-cyl. petrol engine 3.0 ltr. TFSI

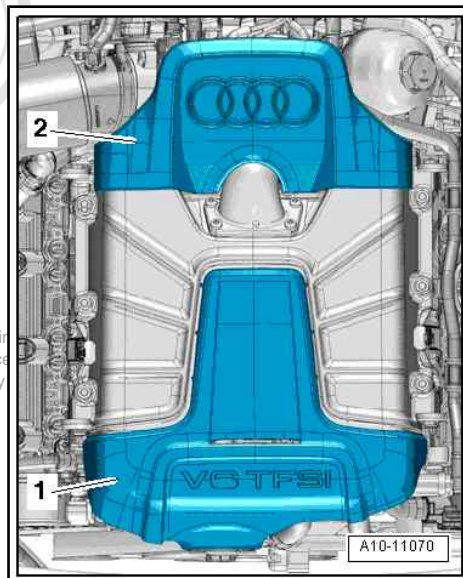
Procedure for removing:

- Carefully pull engine cover panels -1- and -2- off retaining pins one after another.

Procedure for installing:

- Position engine cover panels on retaining pins and then use your hands to press it onto retaining pins, one after the other.

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2.2.5 6-cyl. petrol engine 3.2 ltr. FSI (version 2)

Procedure for removing:

- Carefully pull engine cover panels off retaining pins one after another -arrows-.

Procedure for installing:

- Position engine cover panels on retaining pins and then use your hands to press it onto retaining pins, one after the other.



Note

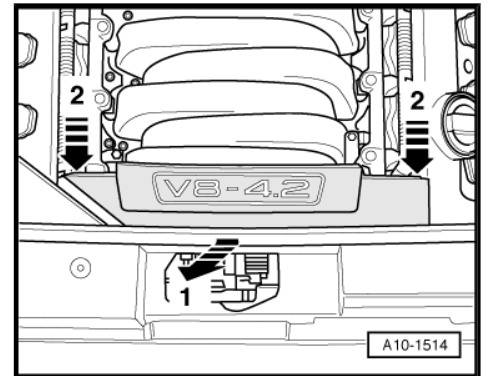
There are additional versions of the engine cover panel for the 6-cylinder 3.2 ltr. FSI petrol engine ⇒ [page 8](#).



2.2.6 8-cyl. petrol engine 4.2 ltr. MPI

Procedure for removing:

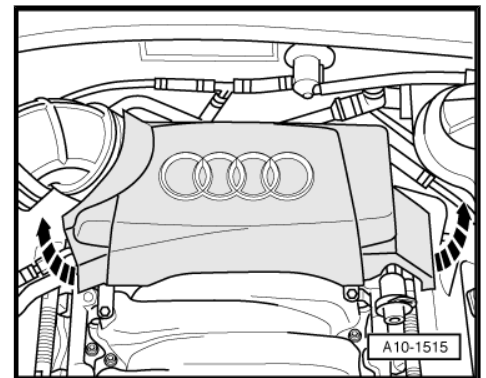
- Carefully pull engine cover panel (front) off retaining pins one after another -arrows-.



- Carefully pull engine cover panel (rear) off retaining pins one after another -arrows-.

Procedure for installing:

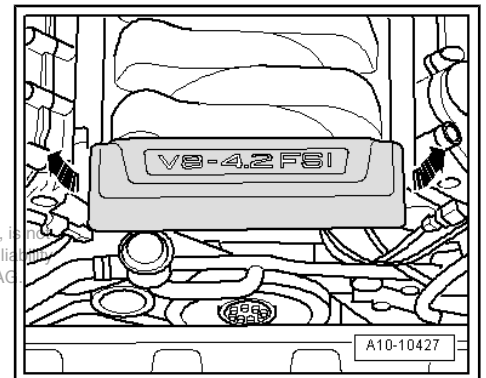
- Position engine cover panels on retaining pins and then use your hands to press it onto retaining pins, one after the other.



2.2.7 8-cyl. petrol engine 4.2 ltr. FSI

Procedure for removing:

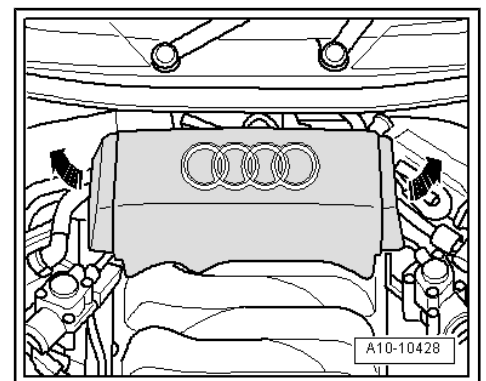
- Carefully pull engine cover panel (front) off retaining pins one after another -arrows-.



- Carefully pull engine cover panel (rear) off retaining pins one after another -arrows-.

Procedure for installing:

- Position engine cover panels on retaining pins and then use your hands to press it onto retaining pins, one after the other.



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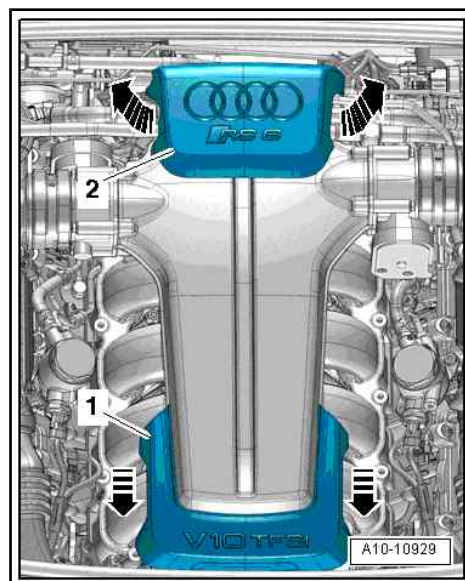
2.2.8 10-cyl. petrol engine 5.0 ltr. TFSI

Procedure for removing:

- Carefully pull engine cover panels -1- and -2- off retaining pins one after another -arrows-.

Procedure for installing:

- Position engine cover panels on retaining pins and then use your hands to press it onto retaining pins, one after the other.



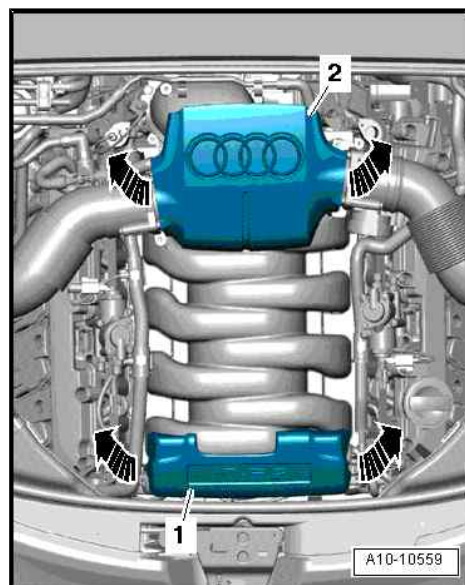
2.2.9 10-cyl. petrol engine 5.2 ltr. FSI

Procedure for removing:

- Carefully pull engine cover panels -1- and -2- off retaining pins one after another -arrows-.

Procedure for installing:

- Position engine cover panels on retaining pins and then use your hands to press it onto retaining pins, one after the other.



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2.2.10 4-cyl. diesel engine 2.0 ltr. TDI (version 1)

Procedure for removing:

- Pull oil dipstick -1- out of guide tube.
- Carefully pull engine cover panel off retaining pins one after another -arrows-.

Procedure for installing:

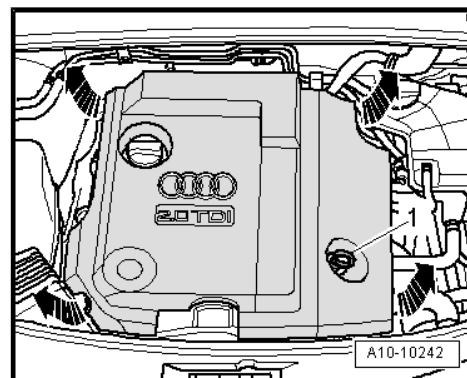
- Position engine cover panel on retaining pins and then use your hands to press it onto retaining pins, one after the other.
- Insert dipstick into guide tube.



Note

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There is more than one version of the engine cover panel for the 4-cylinder 2.0 ltr. TDI diesel engine ➔ [page 13](#).



2.2.11 4-cyl. diesel engine 2.0 ltr. TDI (version 2)

Procedure for removing:

- Carefully pull engine cover panel off retaining pins one after another -arrows-.

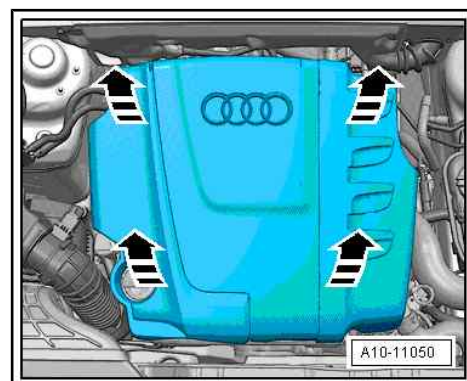
Procedure for installing:

- Position engine cover panel on retaining pins and then use your hands to press it onto retaining pins, one after the other.



Note

There is more than one version of the engine cover panel for the 4-cylinder 2.0 ltr. TDI diesel engine ➔ [page 13](#).



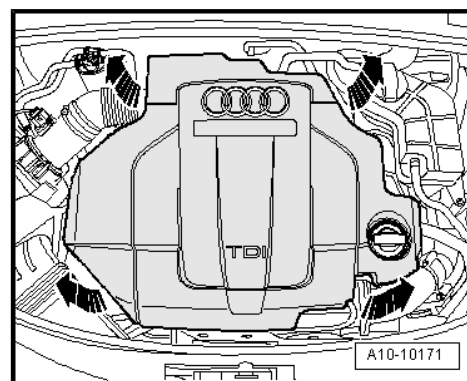
2.2.12 6-cyl. diesel engine 2.7 ltr. TDI/3.0 ltr. TDI

Procedure for removing:

- Carefully pull engine cover panel off retaining pins one after another -arrows-.

Procedure for installing:

- Position engine cover panel on retaining pins and then use your hands to press it onto retaining pins, one after the other.



2.3 Noise insulation: removing and installing

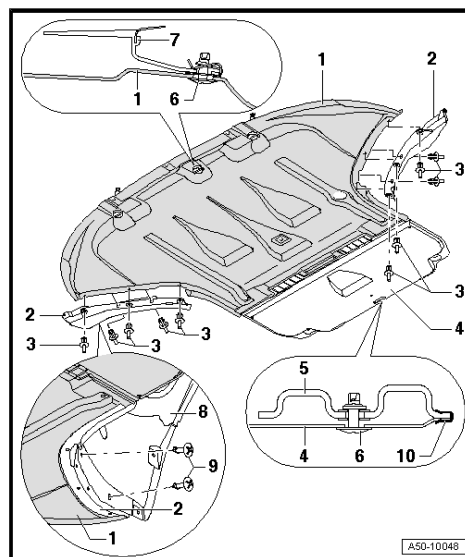
Procedure for removing:

- Remove 5 spreader pins -3- on each side at connection between wheel housing liner and noise insulation. To do so, press in locking pin and remove spreader pin.
- Loosen striker pins -9-.
- Remove quick-release fasteners -6-.
- Pull noise insulation towards rear out of bottom section of bumper cover and detach.

Procedure for installing:

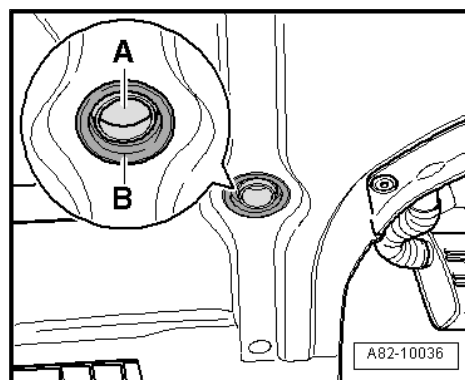
Installation is carried out in reverse sequence.

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Note

- ◆ Ensure that you feel the quick-release fasteners engage when installing.
- ◆ On vehicles with supplementary heater, opening of exhaust pipe must be routed vertically through grommet in noise insulation.



2.4 Window regulators: activating automatic open/close function

If the vehicle battery was disconnected, the automatic open/close function for the electric windows must be reactivated.

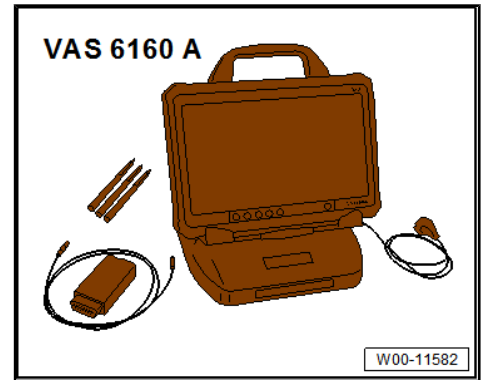
Procedure:

- Pull up on window regulator switch until windows are completely closed.
- Release switch and pull on it again for at least one second.
- Repeat procedure with all window regulators.

2.5 Vehicle diagnostic tester: connecting

Special tools and workshop equipment required

◆ Diagnosis system - VAS 6160 A-



◆ Remote diagnosis head - VAS 5054A-

◆ Or: diagnosis interface - VAS 5055-

Procedure:

- Plug connector for remote diagnosis head - VAS 5054A- into diagnostic connection in vehicle.
- Switch on diagnostic system - VAS 6160 A- .
- Switch on ignition.
- Follow the menu on the screen to start the desired functions.



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3 Maintenance

Display instruments: setting time and date ➔ [page 145](#)

Automatic gearbox (multitronic): changing ATF ➔ [page 145](#)

Battery: determining and recording state of charge (SOC)
➔ [page 26](#)

Battery: checking electrolyte level ➔ [page 24](#)

Battery: reading out status and sending diagnostic log
➔ [page 23](#)

Axles (front and rear): checking components for play, secure attachment and damage, and checking protective boots
➔ [page 44](#)

Passenger airbag: checking key switch on / off and setting to "on"
➔ [page 60](#)

Tyres (except spare wheel): checking tyre pressures and adjusting to 3.5 bar if necessary ➔ [page 40](#)

Tyres: checking tyre pressures and adjusting if necessary
➔ [page 39](#)

Tyres: checking condition and wear pattern, and checking and recording tread depth ➔ [page 38](#)

Brake system: checking condition of brake hoses, and checking that caps are fitted on bleeder screws ➔ [page 35](#)

Brake pads: checking thickness ➔ [page 36](#)

Brake fluid (vehicles older than 12 months): changing
➔ [page 35](#)

Brake fluid: checking fluid level ➔ [page 35](#)

Brake fluid: changing ➔ [page 30](#)

Brake discs: checking for surface rust and operating brakes to clean if necessary ➔ [page 37](#)

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Checklist "Documentation of cleaning and care routine": checking that list is present ➔ [page 144](#)

Checklist "Documentation of cleaning and care routine": signing and placing in vehicle wallet ➔ [page 144](#)

Roof insert - sliding/tilting sunroof: cleaning and lubricating
➔ [page 49](#)

Roof insert: checking operation ➔ [page 49](#)

Diesel particulate filter: reading out ash deposit volume
➔ [page 20](#)

Throttle valve module: cleaning air duct ➔ [page 131](#)

Event memory: reading out and erasing ➔ [page 21](#)

Headlights and reversing lights, side lights, number plate lights, turn signals, hazard warning lights: checking operation
➔ [page 57](#)

Mirror hanger indicating defective battery: renewing battery on affected vehicles ➔ [page 29](#)

Vehicle exterior: checking unprotected areas for dirt, and cleaning if necessary ➔ [page 142](#)

Vehicle interior and exterior: checking for and documenting any damage ➔ [page 60](#)



Vehicle interior: removing any objects other than those protecting interior surfaces ⇒ [page 60](#)

Vehicle key(s), wheel covers and owner's literature: checking availability and recording number present ⇒ [page 61](#)

Vehicle key: removing from ignition lock ⇒ [page 61](#)

Vehicle key(s): checking operation and recording number of keys given to customer ⇒ [page 60](#)

Cleaning and care: checking that required measures have been carried out on time ⇒ [page 144](#)

Bonnet arrester hook: lubricating ⇒ [page 51](#)

Suspension struts on front and rear axle: removing locking elements and correctly fitting bump stops ⇒ [page 42](#)

Car cover: renewing according to manufacturer's instructions ⇒ [page 142](#)

Luggage compartment cover and sun blind: checking that they are rolled up and rolling up if necessary ⇒ [page 61](#)

Glove box light, interior lighting and reading light: checking operation ⇒ [page 59](#)

Hydraulic system: checking fluid level ⇒ [page 114](#)

Interior mirror: calibrating compass ⇒ [page 145](#)

Vehicles parked outdoors: covering unprotected vehicles with protective transport film and car cover (not for vehicles with control number 5K0) ⇒ [page 143](#)

Vehicles parked outdoors: locking ⇒ [page 143](#)

Body: checking vehicle paintwork for damage and corrosion from below and with bonnet, rear lid and doors open ⇒ [page 143](#)

Poly V-belt for supercharger with charge air coolers: renewing ⇒ [page 145](#)

Poly V-belts for ancillaries and for pulleys for coolant pump and power steering pump: renewing ⇒ [page 146](#)

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Luggage compartment lighting: checking operation ⇒ [page 58](#)

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Fuel tank: adding fuel additive ⇒ [page 141](#)

Fuel filter: renewing ⇒ [page 137](#)

Coolant level: checking (fill level should be at top marking on coolant expansion tank; level may be above top marking, but not below it ⇒ [page 115](#))

Air cleaner: renewing filter element and cleaning housing ⇒ [page 118](#)

Engine, gearbox, final drive and steering: checking for leaks and damage ⇒ [page 48](#)

Engine oil: draining ⇒ [page 62](#)

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Navigation system (MMI basic): releasing eject button and running CD for languages ⇒ [page 21](#)

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Wheel bolts: tightening to specified torque ⇒ [page 41](#)

Tyre Pressure Loss Indicator: storing changed tyre pressures ⇒ [page 41](#)

Tyre repair kit: checking that set is complete, and checking and recording expiry date ⇒ [page 41](#)

Manual gearbox/automatic gearbox: selecting 1st gear/park ⇒ [page 145](#)

Windscreen washer system: checking spray pattern and adjusting if necessary ⇒ [page 54](#)

Wiper blades: checking for damage ⇒ [page 55](#)

Headlight washer system: checking operation ⇒ [page 56](#)

Headlights: checking for correct adjustment ⇒ [page 56](#)

Gas strut for rear lid: checking bolt connection of socket for ball-head pin ⇒ [page 53](#)

Snow screen: cleaning ⇒ [page 135](#)

Service interval display: resetting service ⇒ [page 21](#)

Horn: checking operation ⇒ [page 59](#)

Sun visors: checking that they are folded up and folding up if necessary ⇒ [page 61](#)

Stock vehicles: observing measures specified in Maintenance table for stock vehicles (see "Before handing vehicle over to customer") ⇒ [page 144](#)

Dust and pollen filter: renewing ⇒ [page 135](#)

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Stock vehicle care management: deciding and recording date of next check ⇒ [page 145](#)

Transport mode: checking activation and activating if necessary ⇒ [page 22](#)

Transport mode: deactivating ⇒ [page 22](#)

Protective transport film and car cover: checking position and correcting if necessary ⇒ [page 142](#)

Protective transport film: renewing according to manufacturer's instructions ⇒ [page 142](#)

Door hinges with arresters and locking cylinders: lubricating ⇒ [page 52](#)

Underbody: checking trim, wheel housing liners, side members and pipes/wiring for damage, and checking that they are properly secured ⇒ [page 48](#)

Shipping mode: deactivating ⇒ [page 23](#)

Plenum chamber and water drains: checking for dirt ⇒ [page 133](#)

Toothed belt for camshaft drive, and drive sprockets for camshaft, crankshaft and high-pressure pump: renewing ⇒ [page 146](#)

Toothed belt for camshaft drive and tensioning roller: renewing ⇒ [page 146](#)

Toothed belt for camshaft drive: renewing ⇒ [page 146](#)

Toothed belt for camshaft drive: renewing belt and checking tensioning system and idler rollers ➔ [page 87](#)

Spark plugs: renewing ➔ [page 87](#)

3.1 Diesel particulate filter: reading out ash deposit volume

Table of test values and procedure guidelines:

Engine	Engine code	Measured value designation for diagnostic tester	Maximum value for ash deposit
4-cyl. diesel engine 2.0 ltr. TDI unit injector	All engine codes	Measured value block 68/zone 2	Oil ash deposit mass: 60 g
4-cyl. diesel engine 2.0 ltr. TDI common rail	All engine codes	Particulate filter, oil ash deposit volume	Oil ash deposit volume: 175 ml
6-cyl. diesel engine 2.7 ltr. TDI/3.0 ltr. TDI	ASB, BHQ, BMK, BNG, BPP, BSG, CANB	Measured value block 104/zone 1	Oil ash deposit volume: 460 ml
	CANA, CANC, CAND, CDYA, CDYB, CDYC	Measured value block 104/zone 1	Oil ash deposit volume: 360 ml

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Procedure:

- Connect vehicle diagnostic tester ➔ [page 14](#) .
- Select **Diagnosis** mode and begin diagnosis.
- Perform vehicle identification.
- De-select “Working with Guided Fault Finding” by removing **√** and press **Apply**.
- Continue to follow instructions on screen.
- Switch to “Control units” tab.
- Select control unit “01 — Engine electronics” and carry out following functions via right mouse button:
 - ◆ Identify control unit
 - ◆ Guided Functions
 - ◆ 01 - Read measured values
- Select desired measured value (see table of test values and procedure guidelines ➔ [page 20](#)) by entering **√** and confirming with **OK**.
- Evaluate measured value and follow further instructions on screen.
- Perform the following measures according to the measured value:

Result:

Measure:

Measured value < critical value

Vehicle can be driven for a further 30,000 km (19,000 miles).

Measured value ≥ critical value

Renew diesel particulate filter and reset measured value to zero ➔ Rep. gr. 26 ; Exhaust system .

3.2 Event memory: reading out and erasing

Procedure:

- Connect vehicle diagnostic tester ➔ [page 14](#) .
- Select **Diagnosis** mode and begin diagnosis.
- Perform vehicle identification.
- Select “Working with Guided Fault Finding” by entering **V** and press **Apply**.

The control unit is then identified, and the event memory is interrogated. Observe notes and test conditions.

- Switch to “Control units” tab and call up “Event memory list” for an overview of all entries stored in event memory.
- Correct relevant faults and erase event memory.



Note

The event memory is erased automatically if the Guided Fault Finding is closed correctly.

3.3 Navigation system (MMI basic): releasing eject button and running CD for languages

Step 1 - releasing eject button:

- Connect vehicle diagnostic tester ➔ [page 14](#) .
- Select **Diagnosis** mode and begin diagnosis.
- Perform vehicle identification.
- De-select “Working with Guided Fault Finding” by removing **V** and press **Apply**.
- Switch to “Special functions” tab and select following program:
 - ◆ 5F - Lock / release eject button
- Start program by selecting **Carry out check**.
- Continue to follow instructions on screen.

Step 2 - installing language:

- Activate MMI.
- Take “Navigation cues and speech dialogue system” CD out of glove box and insert it into CD/DVD drive.
- Press function selector button **SETUP**.
- Select following menu under control button »Settings«:
 - ◆ Language
- Use MMI rotary pushbutton to select desired language.
- Put CD back when finished.

3.4 Service interval display: resetting service

Procedure:

- Connect vehicle diagnostic tester ➔ [page 14](#) .

- Select **Diagnosis** mode and begin diagnosis.
- Perform vehicle identification.
- De-select “Working with Guided Fault Finding” by removing **V** and press **Apply**.
- Switch to “Special functions” tab.
- Select service setting to be reset (e.g. “17 — Inspection”).
- Start program by selecting **Carry out check**.
- Continue to follow instructions on screen.

**Note**

Please refer to the relevant Maintenance table for information on which service channel to reset and what data to enter.

3.5 Transport mode: deactivating

Procedure:

- Connect vehicle diagnostic tester ⇒ [page 14](#) .
- Select **Diagnosis** mode and begin diagnosis.
- Perform vehicle identification.
- De-select “Working with Guided Fault Finding” by removing **V** and press **Apply**.
- Switch to “Special functions” tab and select following program:
 - ◆ 19 - Activating / deactivating transport mode
- Start program by selecting **Carry out check**.
- Continue to follow instructions on screen.

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**Note**

- ◆ *The transport mode serves to maintain the vehicle's ability to start.*
- ◆ *When the vehicle is in transport mode, many functions, e.g. radio, are restricted or unavailable.*

3.6 Transport mode: checking activation and activating if necessary

Checking transport mode ⇒ [page 22](#)

Activating transport mode ⇒ [page 23](#)

3.6.1 Checking transport mode

Procedure:

- Switch on ignition.
- Check whether »Transport mode on« is shown in instrument cluster.
- If necessary, activate transport mode ⇒ [page 23](#) .

3.6.2 Activating transport mode

Procedure:

- Connect vehicle diagnostic tester ➔ [page 14](#) .
- Select **Diagnosis** mode and begin diagnosis.
- Perform vehicle identification.
- De-select “Working with Guided Fault Finding” by removing ☐ and press **Apply**.
- Switch to “Special functions” tab and select following program:
 - ◆ 19 - Activating / deactivating transport mode
- Start program by selecting **Carry out check**.
- Continue to follow instructions on screen.



Note

- ◆ *The transport mode serves to maintain the vehicle's ability to start.*
- ◆ *When the vehicle is in transport mode, many functions, e.g. radio, are restricted or unavailable.*

3.7 Shipping mode: deactivating

Procedure:

- Connect vehicle diagnostic tester ➔ [page 14](#) .
- Select **Diagnosis** mode and begin diagnosis.
- Perform vehicle identification.
- De-select “Working with Guided Fault Finding” by removing ☐ and press **Apply**.
- Switch to “Special functions” tab and select following program:
 - ◆ 34 - Activating / deactivating shipping mode
- Start program by selecting **Carry out check**.
- Continue to follow instructions on screen.



Note

Deactivating shipping mode may cause the height of the vehicle to drop.

3.8 Battery: reading out status and sending diagnostic log

Procedure:

- Connect vehicle diagnostic tester ➔ [page 14](#) .
- Select **Diagnosis** mode and begin diagnosis.
- Perform vehicle identification.
- Select “Working with Guided Fault Finding” by entering ☐ and press **Apply**.
- Switch to “Special functions” tab and select following program:

◆ A - Battery, Testing

- Start program by selecting **Carry out check**.
- Continue to follow instructions on screen.
- Use results of test to determine following measures:

Result on vehicle diagnostic test- Measure:

"Battery OK"	No further measures necessary.
"Charge battery"	Charge battery ⇒ Rep. gr. 27 ; Battery; Charging battery .
"Battery is no longer of the same quality as when shipped"	Renew battery after consulting with customer ⇒ Rep. gr. 27 ; Battery; Removing and installing battery .

- Switch to **Control units** tab.
- Press **X Diagnosis** button and close diagnosis program.
- Send off diagnosis log online.



Note

- ◆ *A working network connection is necessary to send the diagnostic log file online.*
- ◆ *After the diagnosis is complete, you will receive confirmation that the test log was sent successfully.*

3.9 Battery: checking electrolyte level



Note

Batteries must not be opened.

Battery without magic eye ⇒ [page 24](#)

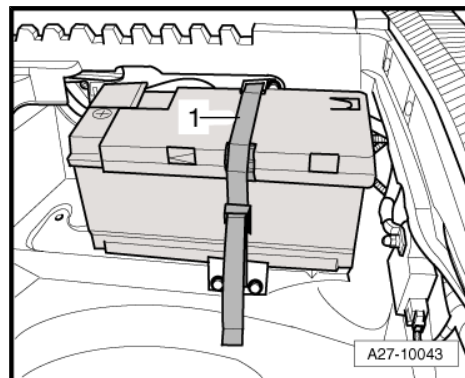
Battery with magic eye ⇒ [page 25](#)

3.9.1 Battery without magic eye

The battery is located in the luggage compartment.

Removal steps:

- Lift luggage compartment floor and secure in position.
- If fitted, take out cover for spare wheel.
- If fitted, release battery retaining strap -1-.



- Release retaining clips -2- and remove battery cover -1- in direction of -arrows-.

Procedure:

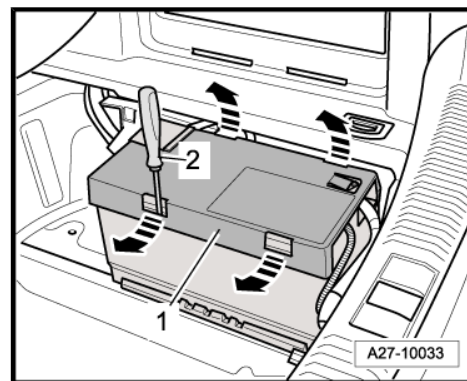
- Check battery housing for the following:
 - ◆ Battery terminals are not corroded or damaged
 - ◆ Mechanical damage to battery housing and cover, indicated by electrolyte leakage or crystals at the damaged area
- Damaged batteries must be renewed.
- Check electrolyte level of all battery cells using markings on housing.
- If electrolyte level of one or more battery cells is below MIN marking: Renew battery.

Install in reverse sequence.



Note

- ◆ *A bright hand-held light helps to better see the MIN and MAX markings on the housing.*
- ◆ *If battery is difficult to see: Use a small mirror to check the electrolyte level (shine a bright hand-held light at a right angle onto the battery cells).*



3.9.2 Battery with magic eye

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WARNING

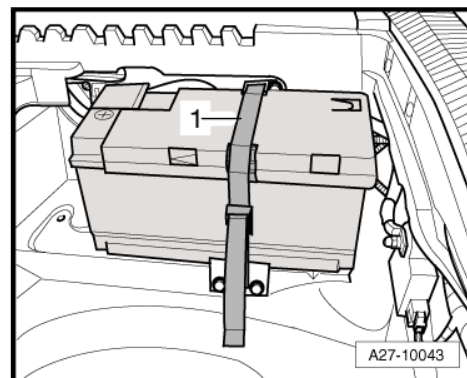
Risk of explosion if magic eye is colourless or light yellow!

- ◆ Do not attempt to jump-start vehicle.
- ◆ Do not check or charge battery.
- ◆ Renew battery.

The battery is located in the luggage compartment.

Removal steps:

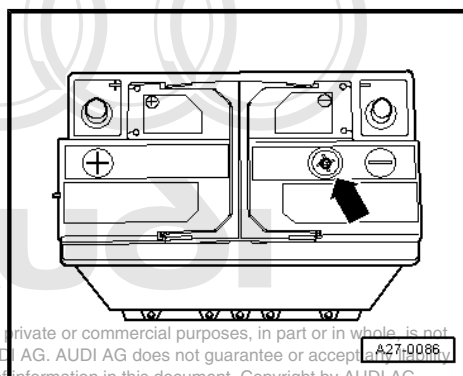
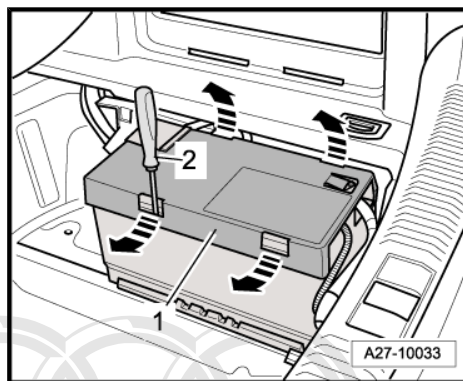
- Lift luggage compartment floor and secure in position.
- If fitted, take out cover for spare wheel.
- If fitted, release battery retaining strap -1-.



- Release retaining clips -2- and remove battery cover -1- in direction of -arrows-.

Procedure:

- Check battery housing for the following:
 - ◆ Battery terminals are not corroded or damaged
 - ◆ Mechanical damage to battery housing and cover, indicated by electrolyte leakage or crystals at the damaged area
- Damaged batteries must be renewed.
- Before checking electrolyte level: Tap magic eye -arrow- carefully with handle of a screwdriver.
- Read off battery electrolyte level according to colour display. Two different results are possible:



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Colour of magic eye:

Measure:

Black or green

Electrolyte level OK: No further measures necessary

Colourless or light yellow

Electrolyte level too low: Battery must be renewed

Install in reverse sequence.



Note

- ◆ The magic eye is also referred to as an ALI (acid level indicator).
- ◆ The magic eye is only for use in determining the electrolyte level.
- ◆ During battery charging or vehicle operation, air bubbles can form underneath the magic eye which could falsify the colour display. Tap magic eye lightly to release any bubbles.

3.10 Battery: determining and recording state of charge (SOC)

Vehicles with transport mode ON ⇒ [page 26](#)

Vehicles with transport mode OFF ⇒ [page 27](#)

3.10.1 Vehicles with transport mode ON

Procedure:

- Read off battery charge level on instrument cluster.
- Use results of test to determine following measures:

State of charge (SOC): Measure:

“≥ 80% (12.5 V)” No further measures necessary.

State of charge (SOC): **Measure:**

“SOC < 80% (12.5 V) and SOC ≥ 10% (11.6 V)” Charge battery ⇒ Rep. gr. 27 ; Battery; Charging battery .

“< 10% (11.6 V)” Charge battery ⇒ Rep. gr. 27 ; Battery; Charging battery , and attach mirror hanger for “Battery defective”.

- Record charge level in maintenance table.



Note

If it is not possible to read off the state of charge in the instrument cluster, measure the battery's no load voltage ⇒ [page 28](#) .

3.10.2 Vehicles with transport mode OFF

Special tools and workshop equipment required

- ◆ Battery tester - VAS 6161-

The battery is located under the luggage compartment floor.

Removal steps:

Saloon:

- Lift luggage compartment floor and secure in position.
- Open battery terminal covers.

Avant:

- Take out luggage compartment floor cover -1- and spare wheel cover (low version) -2-.

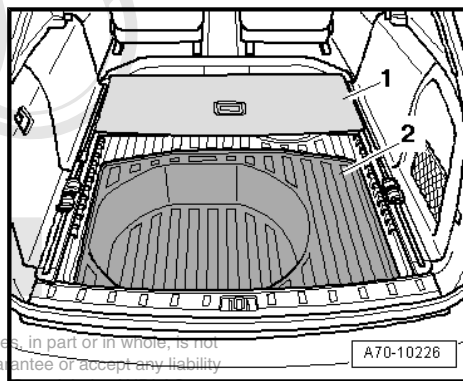


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- Open battery terminal covers.

Procedure:

- Switch on battery tester - VAS 6161- and select “QC check, new vehicles”.
- Use battery tester - VAS 6161- to measure voltage between battery clamps.
- Use results of test to determine following measures:



Battery tester shows:

Measure:

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“Battery Good”	No further measures necessary.
“Charge fully now”	Charge battery ⇒ Rep. gr. 27 ; Battery; Charging battery .
“Battery Faulty”	Charge battery ⇒ Rep. gr. 27 ; Battery; Charging battery , and attach mirror hanger for “Battery defective”.

- Record charge level in maintenance table.



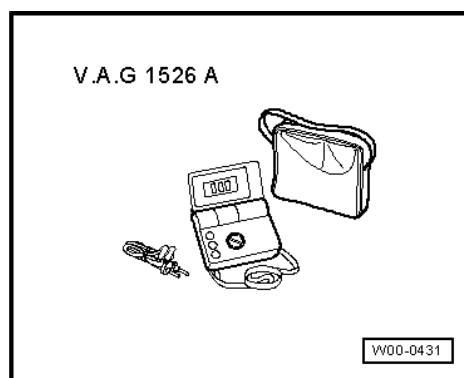
Note

- ◆ When using battery tester - VAS 6161- , ensure that the software is up to date.
- ◆ If it is not possible to measure the state of charge with battery tester - VAS 6161- , measure the battery's no load voltage ⇒ [page 28](#) .

3.10.3 Measuring no load voltage of battery

Special tools and workshop equipment required

- ◆ Hand-held multimeter - V.A.G. 1526 C-



- ◆ Or: digital multimeter - V.A.G. 1715-

Requirements:

- Battery must not be placed under load from connected electrical equipment for at least 2 hours before test.
- Battery must not have been charged for at least 2 hours before test.
- Engine must remain off for at least 2 hours before test.
- Ignition switched off during test.

Removal steps:

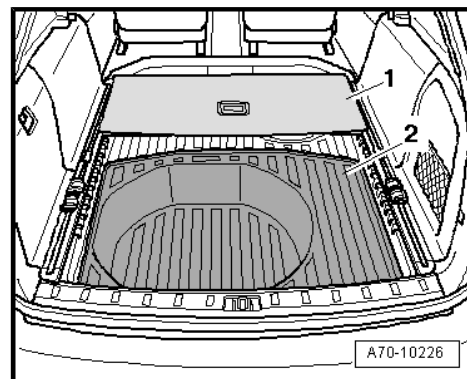
Saloon:

- Lift luggage compartment floor and secure in position.
- Open battery terminal covers.

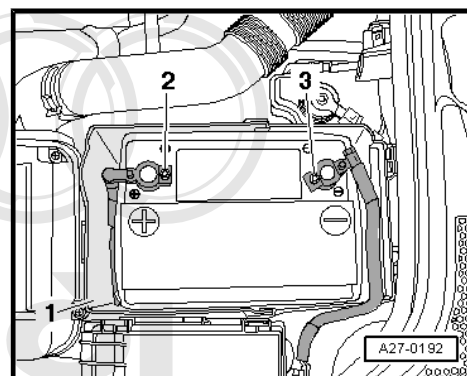
Avant:

- Take out luggage compartment floor cover -1- and spare wheel cover (low version) -2-.
- Open battery terminal covers.

Procedure:



- Use hand-held multimeter - V.A.G. 1526 C- to measure voltage between battery clamps -2- and -3-.
- Use results of test to determine following measures:



State of charge (SOC):

Measure:

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"≥ 12.5 V"	No further measures necessary.
"SOC < 12.5 V and SOC ≥ 11.6 V"	Charge battery ⇒ Rep. gr. 27 ; Battery; Charging battery .
"< 11.6 V"	Charge battery ⇒ Rep. gr. 27 ; Battery; Charging battery , and attach mirror hanger for "Battery defective".

- Record charge level in maintenance table.

Install in reverse sequence.

3.11 Mirror hanger indicating defective battery: renewing battery on affected vehicles

Only for vehicles with mirror hanger for "Battery defective".

Procedure:

- Wait until shortly before vehicle delivery, then renew battery according to instructions in workshop manual ⇒ Rep. gr. 27 ; Battery; Removing and installing battery .

3.12 Brake fluid: changing

WARNING

Risk of accident if the brake pedal has too much free play.

- ◆ Make sure that the brakes work properly before the vehicle is driven on the road.

WARNING

Risk of injury due to caustic brake fluid.

- ◆ Avoid contact with skin.

CAUTION

Risk of damage due to improper handling of brake fluid.

- ◆ Avoid contact with vehicle paint.
- ◆ Avoid contact with liquids containing mineral oils (oil, petrol, cleaning agents).

Special tools and workshop equipment required

- ◆ Brake filling and bleeding equipment - VAS 5234-



- ◆ Tool set for brake bleeding - VAS 6564-

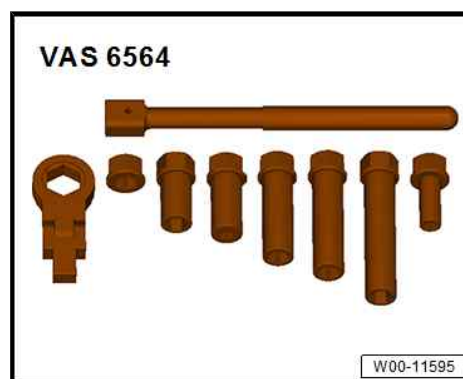


Table of test values and procedure guidelines:

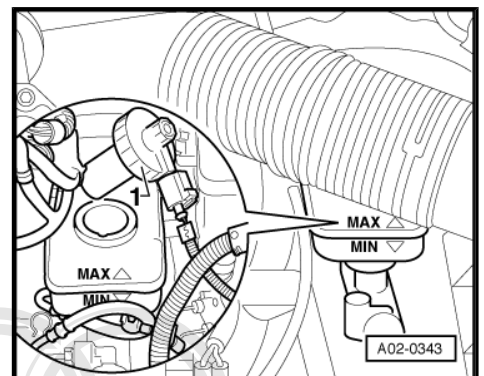
The value given in the table is for one brake caliper, i.e. if there are two bleeder screws on one caliper, the sum of the quantities discharged from both bleeder screws must equal the value given in the table.

Sequence of opening bleeder screws:	Quantity of brake fluid to discharge:
Brake calipers	

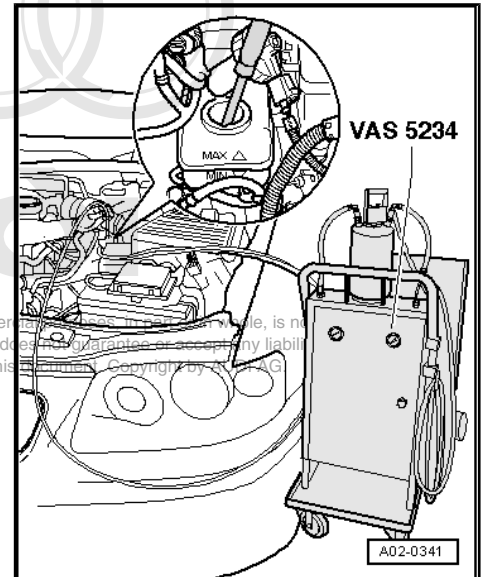
Sequence of opening bleeder screws:		Quantity of brake fluid to discharge:
Front axle on driver's side	1.	0.20 ltr.
Front axle on passenger's side	2.	0.20 ltr.
Rear axle on driver's side	3.	0.30 ltr.
Rear axle on passenger's side	4.	0.30 ltr.
Clutch slave cylinder	5.	0.15 ltr.
⇒ Total quantity, automatic gearbox		1.00 ltr.
⇒ Total quantity, manual gearbox		1.15 ltr.

Step 1 - connecting brake filling and bleeding equipment:

- Unscrew filler cap -1- from brake fluid reservoir.



- Use extraction hose included in brake filling and bleeding equipment - VAS 5234- to extract brake fluid from reservoir (with strainer installed) until fluid is level with bottom edge of strainer. Make sure that no more fluid flows back into reservoir from strainer after extracting fluid.



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- Screw adapter -1- onto brake fluid reservoir.
- Connect filling hose -2- included with brake filling and bleeding equipment - VAS 5234- to adapter.
- Set pressure on brake filling and bleeding equipment - VAS 5234- (see operating instructions).

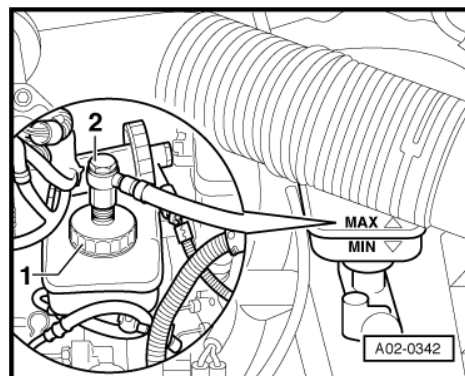
Step 2 - bleeding and filling brake system:

If there are two bleeder screws on each brake caliper, first bleed the inner, then the outer bleeder screw.

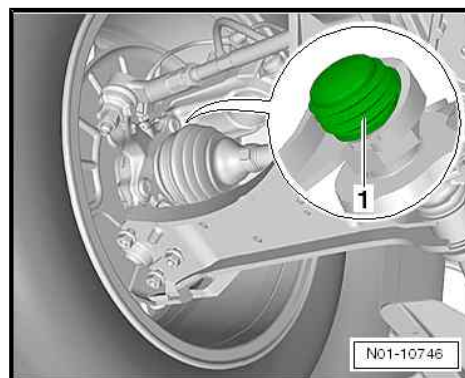
- Raise vehicle ⇒ [page 6](#) .

Front axle:

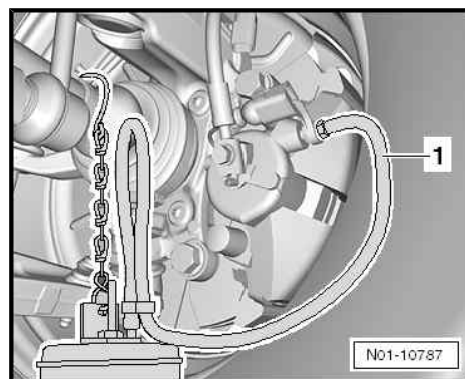
- Brake caliper (driver's side): Remove cap(s) -1- from bleeder screw(s).



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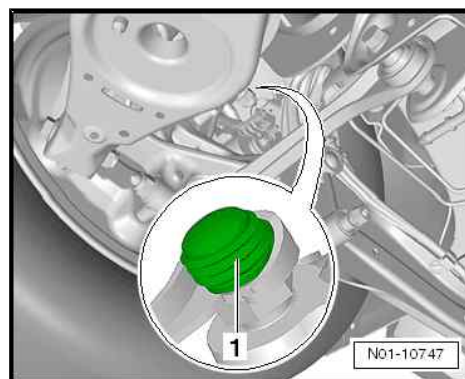


- Fit bleeder hose -1- attached to collector container onto bleeder screw from inside of rim.
- Open bleeder screw and allow brake fluid to discharge. Refer to table for correct quantity of brake fluid to discharge ⇒ [page 30](#) .
- Close bleeder screw.
- If there are two bleeder screws on each brake caliper: Repeat procedure with second bleeder screw.
- Refit cap on bleeder screw(s).
- Repeat procedure on passenger's side.

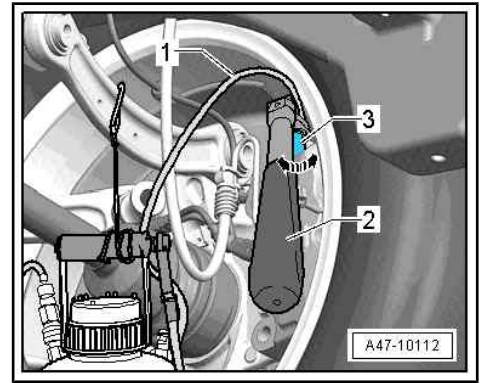


Rear axle:

- Brake caliper (driver's side): Remove cap(s) -1- from bleeder screw(s).
- Take reversible ratchet and appropriate socket from tool set for brake bleeding - VAS 6564- and fit together.



- Run bleeder hose -1- from inside of rim through reversible ratchet -2- and socket -3- and fit onto bleeder screw.
- Open bleeder screw with ratchet -2- and allow brake fluid to discharge. Refer to table for correct quantity of brake fluid to discharge ⇒ [page 30](#) .
- Close bleeder screw.



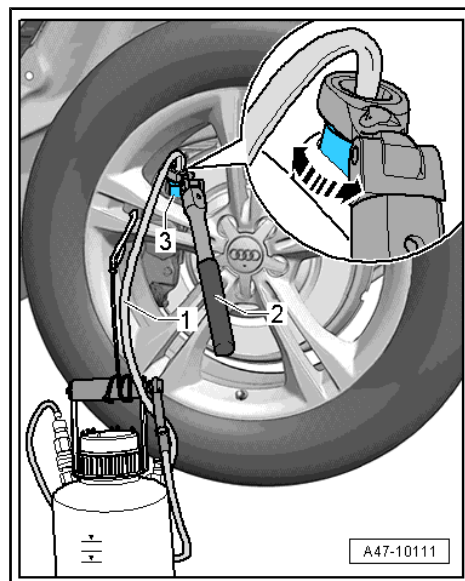
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- If there are two bleeder screws on each brake caliper: Working from outside of rim, apply reversible ratchet -2- and socket -3- and repeat procedure.
- Refit cap on bleeder screw(s) on brake caliper.
- Repeat procedure on passenger's side.

Step 3 - bleeding clutch slave cylinder

Only for vehicles with manual gearbox

- Remove components necessary for access; refer to ⇒ Rep. gr. 30 ; Clutch mechanism; Bleeding clutch mechanism .
- Fit bleeder hose attached to collector container -1- onto bleeder screw of clutch slave cylinder.
- Open bleeder screw and allow correct amount of brake fluid to flow out (see table of test values and procedure guidelines ⇒ [page 30](#)).
- Close bleeder screw and fit cap.



Step 4 - final steps:

- Close filling lever of brake filling and bleeding equipment - VAS 5234- .
- Detach filling hose from adapter.
- Unscrew adapter from brake fluid reservoir.
- Check brake fluid level and adjust if necessary (depending on brake pad wear) ⇒ [page 36](#) .
- Screw cap onto brake fluid reservoir.
- Operate clutch pedal several times.
- Check pedal pressure and free travel: No more than $\frac{1}{3}$ of total pedal travel.
- Make sure that the brakes work properly before the vehicle is driven on the road.
- If free travel of brake pedal is greater than specified, or if brake function is impaired: Check brake system for leaks and renew brake fluid again.



Note

- ◆ The bleeder hose must fit tightly on the bleeder screw to prevent air from entering the brake system.
- ◆ In the case of certain wheel combinations, the wheels may have to be removed.
- ◆ With the aid of the tool set for brake bleeding - VAS 6564- , the rear brakes or, depending on version, the front and rear brakes can be bled without having to remove the wheels.
- ◆ Use genuine Audi brake fluid; see Electronic parts catalogue (ETKA).
- ◆ Do not reuse brake fluid.
- ◆ Always observe the relevant environmental regulations for disposal of brake fluid.

3.13 Brake fluid (vehicles older than 12 months): changing

Only applies to vehicles older than 12 months (from date of manufacture).

Procedure:

- Change brake fluid ⇒ [page 30](#).

3.14 Brake fluid: checking fluid level

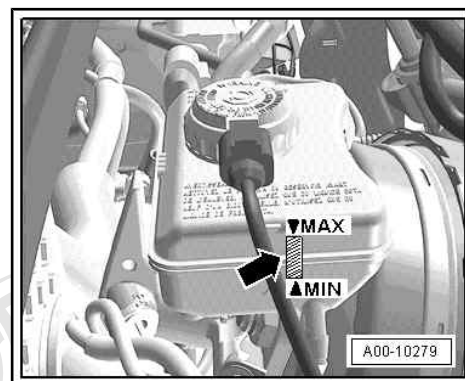
Table of test values and procedure guidelines:

Type of service:	Fluid level specification:
Delivery Inspection	Fluid level must be at MAX marking.
Brake fluid change	Fluid level must be between MAX marking and MIN marking according to wear level of brake pads.

Checking the brake system for leaks is a repair measure and should be charged separately.

Procedure:

- Evaluate brake fluid level according to markings -arrows- on brake fluid reservoir.
- Perform the following measures according to the results of the check:



Fluid level:	Evaluation/measure:
Above MAX marking	Extract brake fluid.
Below specified level	Carry out brake system leak test ⇒ Rep. gr. 47 ; Hydraulic system; Leak test .



Note

When the vehicle is in use, the fluid level drops due to wear and automatic adjustment of the brake pads.

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3.15 Brake system: checking condition of brake hoses, and checking that caps are fitted on bleeder screws

Requirements:

- Brake hoses must not touch any components when steering is on full lock.
- Brake hoses must not be twisted.

Procedure:

- Check that all brake hoses are secured properly; when doing so, ensure that the conditions listed are met:
- Check all brake hoses for abrasion, porosity, blistering and cracking.
- Check that brake connections are seated correctly, and check for corrosion and leaks.
- If faults are found on brake hoses: Repair/renew relevant component.
- Check that caps are fitted and secured on bleeder screws of all brake calipers.
- Renew any missing caps.

3.16 Brake pads: checking thickness

Special tools and workshop equipment required

- ♦ Test pin - T40139- : Use the side with the thin probe (brake symbol) to measure brake pad thickness.

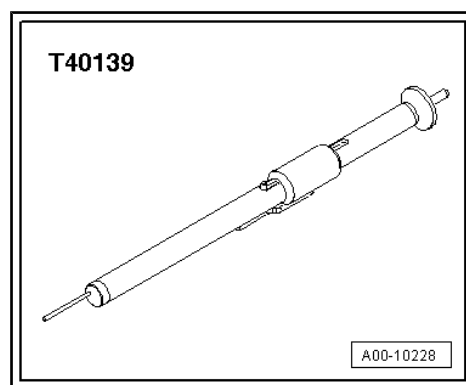


Table of test values and procedure guidelines:

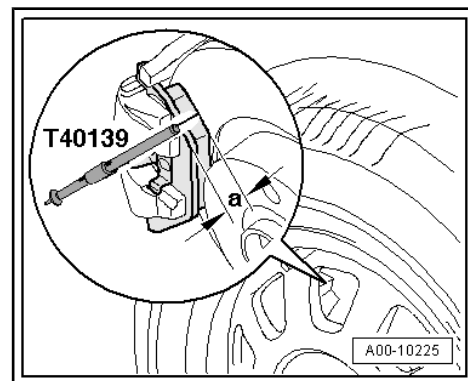
Model	Brake version, front axle	Brake pad wear limit including backplate and damper plate [mm]
Front axle:		
All models except RS 6	All	11
RS 6	Steel-version brakes	8.5
RS 6	Ceramic brakes	10
Rear axle:		
All models except RS 6	All	8
RS 6	Steel-version brakes	9
RS 6	Ceramic brakes	9

Check only the thickness of the outer brake pads.

Procedure:

- Before you begin: Push sliding ring towards tip of test pin as far as it will go.
- Bring tip of test pin into contact with brake disc.

- Slide test pin towards brake pad until test pin makes contact with backplate of brake pad.
- Remove test pin and read off brake pad wear value -a- from scale on tool.
- Repeat procedure for all wheels.
- If brake pad thickness has reached wear limit (see table of test values and procedure guidelines ⇒ [page 36](#)): Renew brake pads ⇒ Rep. gr. 46 ; Brake pads; Removing and installing brake pads .



 Note

- ◆ *When removing the test gauge, take care not to move the sliding ring. This would give an incorrect measurement.*
- ◆ *Note where the test gauge makes contact on the rear of the brake pad and include the thickness of the damper plate in the calculation if necessary.*
- ◆ *In the case of certain wheel combinations, the wheels must be removed.*

3.17 Brake discs: checking for surface rust and operating brakes to clean if necessary

Checking brake discs ⇒ [page 37](#)

Operating brakes to clean brake discs ⇒ [page 37](#)

3.17.1 Checking brake discs

Procedure:

- Check outside of all brake discs for surface rust.
- If necessary, operate brakes to clean brake discs ⇒ [page 37](#) .

 Note

The brake discs can be damaged irreparably if surface rust is not removed at the specified intervals.

3.17.2 Operating brakes to clean brake discs

Procedure:

- Accelerate vehicle to 40 km/h, then brake gently to 10 km/h (do this five times).
- Accelerate vehicle to 40 km/h, then brake sharply to a standstill (do this five times).

 Note

The wheels should not spin or lock during acceleration and braking.

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3.18 Parking brake: releasing

Mechanical parking brake ⇒ [page 38](#)

Electromechanical parking brake ⇒ [page 38](#)

3.18.1 Mechanical parking brake

Procedure:

- Release parking brake.

3.18.2 Electromechanical parking brake

Procedure:

- Press brake pedal, then press switch for electromechanical parking brake.

3.19 Tyres: checking condition and wear pattern, and checking and recording tread depth

Special tools and workshop equipment required

- ♦ Test pin - T40139- : Use the side with the thick probe and shoulder (scale marked with tyre symbol) to measure tread depth.

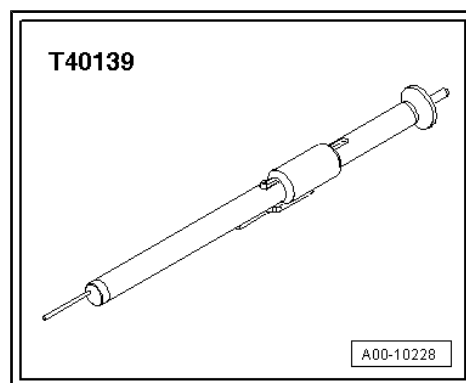


Table of test values and procedure guidelines:

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Country-specific regulations for minimum tread depth apply for countries not listed, evaluate values according to the country's specifications.

Country	Minimum tread depth [mm]
EU countries	1.6 ¹⁾
Brazil	1.6
China	1.6
India	1.6
Japan	1.6
Norway	1.6 ¹⁾
Russia	1.6
Switzerland	1.6
Turkey	1.6
Ukraine	1.6 ¹⁾
USA	1.6

1) Larger values for winter tyres where these are mandatory

Performing wheel alignment is a repair measure and should be charged separately.

Step 1 - checking condition:

- Check for and remove any foreign bodies in tyre tread.
- Check all tyres for following types of damages:
 - ◆ Cuts, cracks, tears
 - ◆ Scuffing or flattened areas on tyre tread
 - ◆ Porous sidewalls
 - ◆ Blisters on sidewalls
- If damage is found: Renew tyres.

Step 2 - checking tyre wear pattern:

- Check tyre wear pattern of front wheels; check for the following:
 - ◆ Feathering on tread indicating possible incorrect toe setting
 - ◆ One-sided tread wear indicating possible incorrect camber
- If the above types of wear are found: Check wheel alignment to determine the cause.

Step 3 - checking tread depth:

- Measure tread depth on all tyres (including spare tyre) at several points using test pin - T40139- . Uneven tread depth indicates damage.
- Record average measurement for each tyre in Maintenance table.
- If minimum tread depth has been reached (as specified for your country; see table of test values and procedure guidelines => [page 38](#)): Renew tyre.

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Note

Vehicles with four-wheel drive must be fitted with tyres with the same tread pattern. Otherwise the centre differential may be damaged.

3.20 Tyres: checking tyre pressures and adjusting if necessary



Note

The tyre valves have to be sealed with valve caps. Otherwise, dirt could enter the valve, which will then become blocked and will no longer seal properly.

Front and rear axles ⇒ [page 40](#)

Spare wheel and temporary spare wheel ⇒ [page 40](#)

3.20.1 Front and rear axle

The tyre pressure specifications are listed on the sticker on the B-pillar (driver's side).

Tyre sizes not listed: See Wheel/tyre guide for tyre pressure specification ⇒ Rep. gr. 44 ; Wheels, tyres, vehicle geometry; Tyre pressures .

Procedure:

- Check tyre pressure of all tyres.
- If necessary, adjust to correct tyre pressures.



Note

The tyre pressures listed only apply to cold tyres. When the tyres are warm, the actual pressures will be higher, but must not be reduced.



3.20.2 Spare wheel and temporary spare wheel

The following parameters apply to the tyre pressure specifications:

- Spare wheel with standard-size tyre: Inflate to maximum tyre pressure indicated on tyre pressure sticker.
- Temporary spare wheel: The correct tyre pressure is indicated on the sidewall.

Procedure:

- Check tyre pressure of spare wheel/temporary spare wheel.
- If necessary, adjust to correct tyre pressures.



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Depending on equipment version, there may only be a tyre repair kit supplied; see Maintenance table.

3.21 Tyres (except spare wheel): checking tyre pressures and adjusting to 3.5 bar if necessary



Note

The tyre valves must be sealed with valve caps. Otherwise, dirt could enter the valve, which will then become blocked and will no longer seal properly.

Procedure:

- Check tyre pressure of all tyres.

- If necessary, adjust tyre pressure to 3.5 bar and record pressure in maintenance table.

3.22 Tyre Pressure Loss Indicator: storing changed tyre pressures

The Tyre Pressure Loss Indicator must be initialised after every time the tyre pressures are changed or the tyres are renewed.

Requirements:

- The inflation pressures of all tyres must be adjusted to the correct values before the pressures are stored.

Procedure:

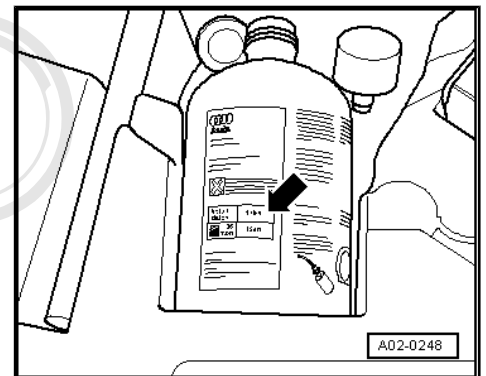
- Switch on ignition and activate MMI.
- Press function selector button **CAR**.
- Under »Systems«, navigate through following menu structure:
 - ◆ Tyre pressure monitoring
 - ◆ Store now
- Use MMI rotary pushbutton to select option to store tyre pressures.

3.23 Tyre repair kit: checking that set is complete, and checking and recording expiry date

The tyre repair kit is located in the spare wheel well.

Procedure:

- Check that the following components of the tyre repair kit are present:
 - ◆ Compressor
 - ◆ Tyre filler bottle incl. filler hose
- Take out the bottle and check the expiry date (printed on bottle -arrow-).
- Record expiry date in Maintenance table.
- If expiry date has been exceeded or if bottle has already been used: Renew tyre filler bottle.



3.24 Wheel bolts: tightening to specified torque

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Special tools and workshop equipment required

- ◆ Torque wrench - V.A.G 1332- , measuring range 40 to 200 Nm
- ◆ Or: torque wrench - V.A.G 1576- , measuring range 80 to 400 Nm

Table of test values and procedure guidelines:

Fastener	Tightening torque [Nm]
Wheel bolts	120

The adapter for loosening and tightening anti-theft wheel bolts is included in the vehicle tool kit.

Procedure:

- Tighten wheel bolts in a diagonal sequence to specified torque (see table of test values and procedure guidelines [⇒ page 42](#)).
- If adapter for anti-theft wheel bolts was used from tool kit: Put adapter back in tool kit.

3.25 Suspension struts on front and rear axle: removing locking elements and correctly fitting bump stops



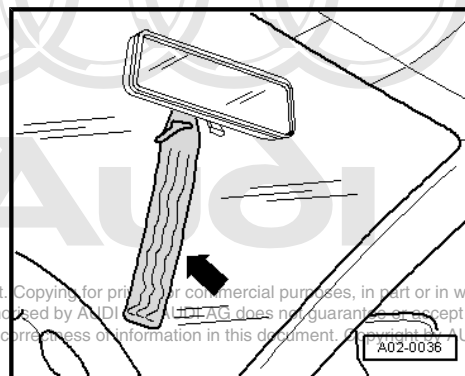
Note

- ◆ *These vehicles are identified by a coloured tag fixed to the mirror -arrow-.*
- ◆ *It is not necessary to remove the wheels to perform this operation.*

Suspension struts on front axle [⇒ page 42](#)

Suspension struts on rear axle [⇒ page 43](#)

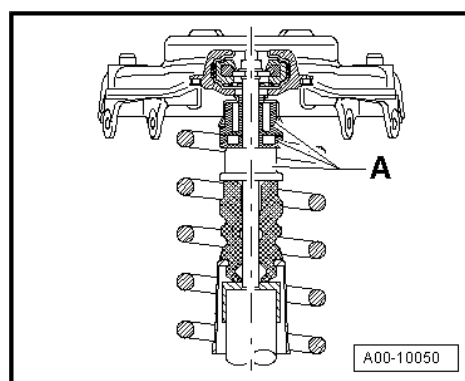
Pressing in bump stop [⇒ page 44](#)



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3.25.1 Suspension struts on front axle

- Push all locking elements -A- off piston rod.
- When all locking elements have been removed from vehicle: Remove tag on interior mirror.

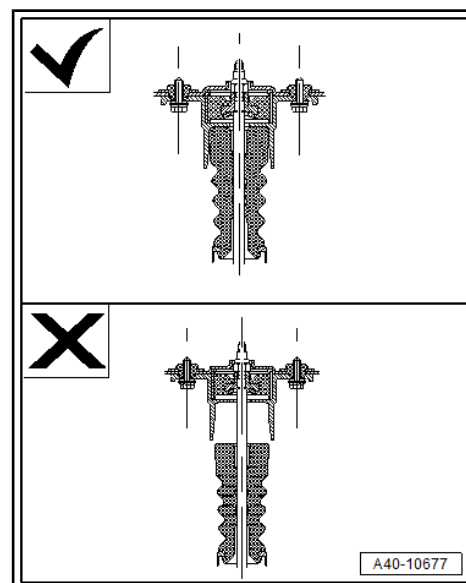


- After road test: Check that all bump stops are firmly seated in shock absorber mountings.
- If necessary, press any loose bump stops into shock absorber mountings ➔ [page 44](#).



Note

The bump stops of the suspension struts are pressed into the shock absorber mountings due to the compression movements during the road test.



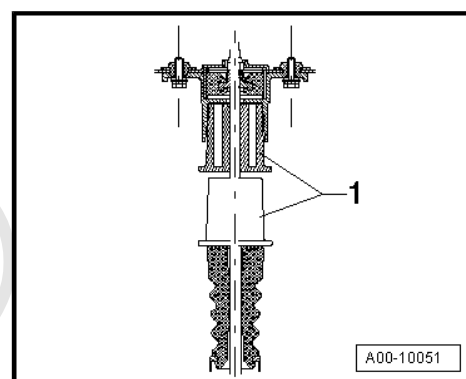
3.25.2 Suspension struts on rear axle

Requirements:

- Vehicle suspension extended

Procedure:

- Push all locking elements -1- off piston rod.
- When all locking elements have been removed from vehicle: Remove tag on interior mirror.



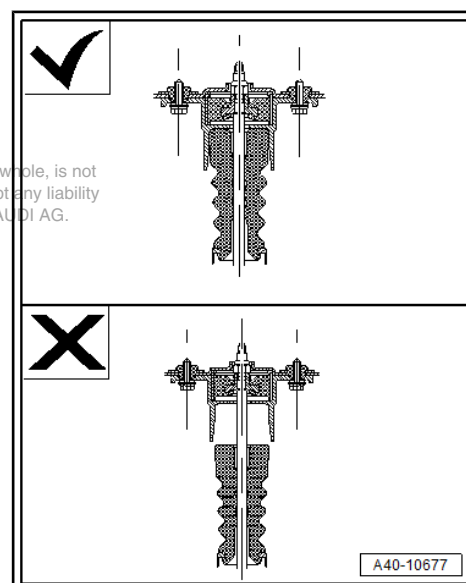
- After road test: Check that all bump stops are firmly seated in shock absorber mountings.
- If necessary, press any loose bump stops into shock absorber mountings ➔ [page 44](#).



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The bump stops of the suspension struts are pressed into the shock absorber mountings due to the compression movements during the road test.



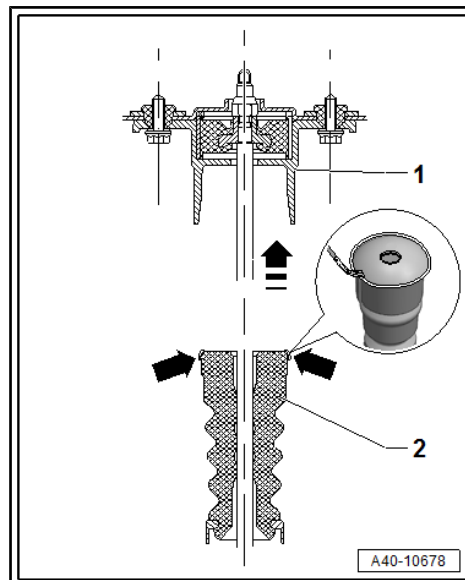
3.25.3 Pressing in bump stop

Special tools and workshop equipment required

- ◆ Soap-based lubricant, e.g. tyre assembly paste

Procedure:

- Remove coarse dirt from top edge of loose bump stop and coat with tyre assembly paste.
- Press loose bump stop firmly into shock absorber mounting by hand.



3.26 Axles (front and rear): checking components for play, secure attachment and damage, and checking protective boots

The following applies to all components shown below:

- There must be no noticeable or visual play.
- As a rule you can identify damage to the boots/drive shaft boots by emerging grease.
- Check that retaining rings and spring-type clips are seated correctly.

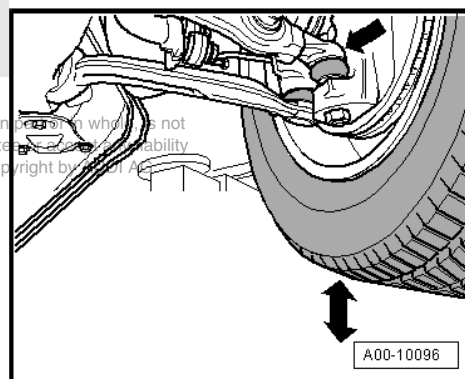
Front axle ⇒ [page 44](#)

Rear axle ⇒ [page 47](#)

3.26.1 Front axle

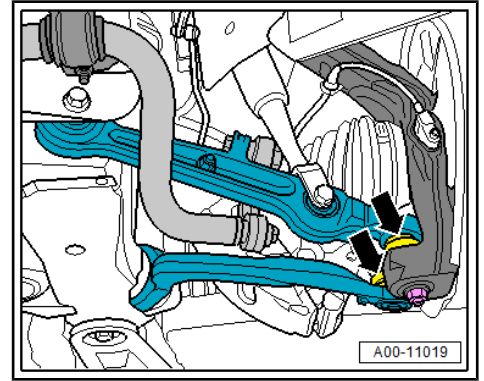
Track control links and guide links:

- Check relative movement between wheel bearing housing and track control link/guide link.



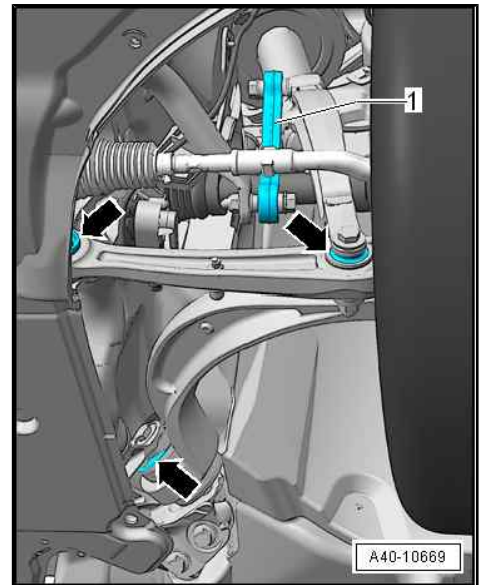
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- Track control links and guide links: Check boots -arrows- of swivel joint all around for damage and make sure they are seated correctly.
- Check swivel joints for play.



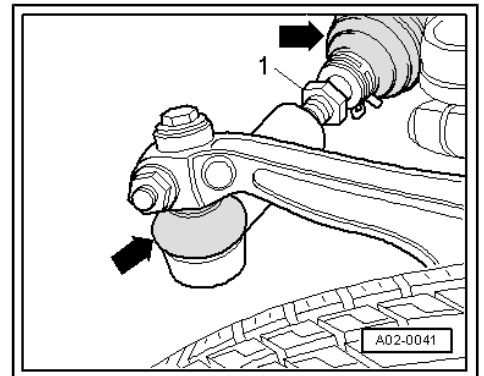
- Check all bonded rubber bushes -arrows- of track control links and guide links for play.

Track rod ball joint:



- Check boot for track rod joint -arrow- all around for damage and make sure it is seated correctly.
- Check play at track rod ball joint.

Upper links:



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- Upper links -2-: Check bushes of swivel joints all around for damage and make sure they are seated correctly.
- Check swivel joints for play.
- Check bonded rubber bushes -3- and -4- of both swivel joints (top) for play.

Coupling rod and anti-roll bar:



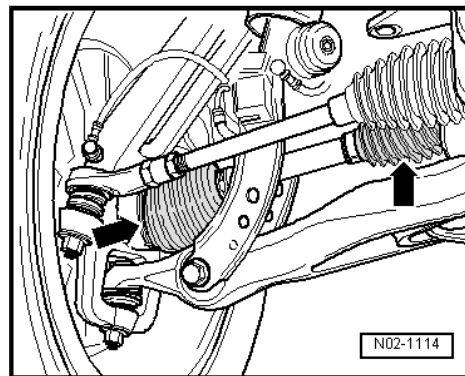
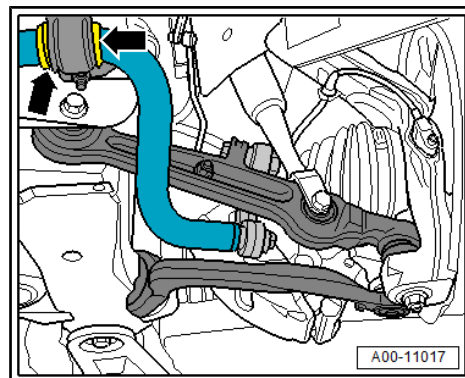
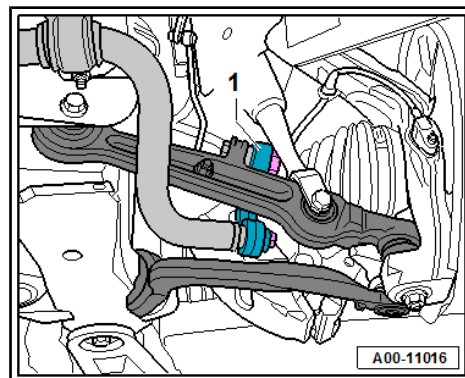
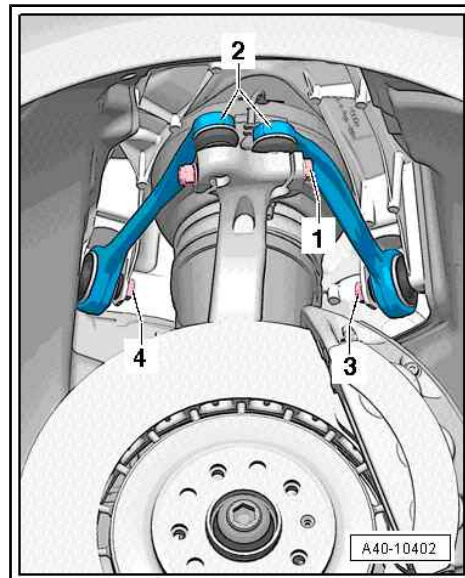
- Check play at coupling rod -1-.

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- Check anti-roll bar bush -arrows- for damage.

Drive shaft and steering rack:

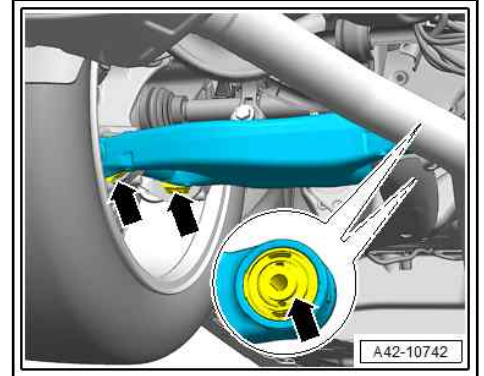
- With steering turned: Check drive shaft boots -arrows- all around for damage and make sure they are seated correctly.
- Check boot of steering rack all around for damage and correct seating.
- Repeat checks for components on opposite side of vehicle.
- If faults are found on any of the above components: Renew relevant component.



3.26.2 Rear axle

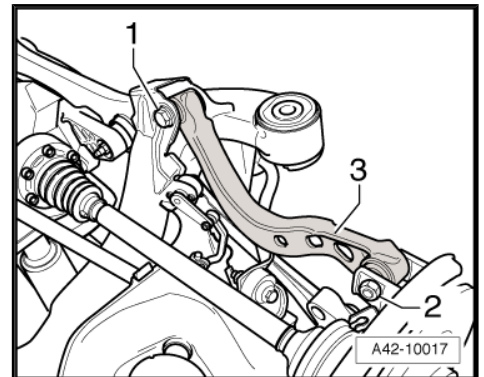
Lower and upper transverse links:

- Check relative movement between wheel bearing housing and both transverse links.
- Check bonded rubber bushes -arrows- of lower transverse link for play.



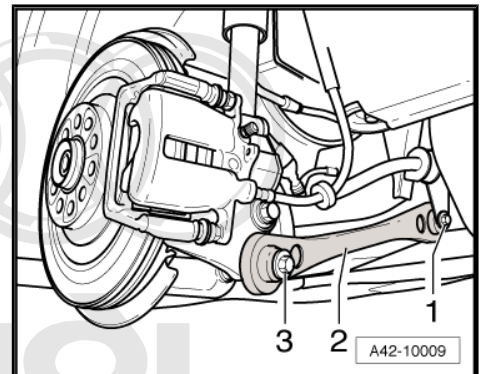
- Check bonded rubber bushes -1- and -2- of upper transverse link -3- for play.

Track rod:

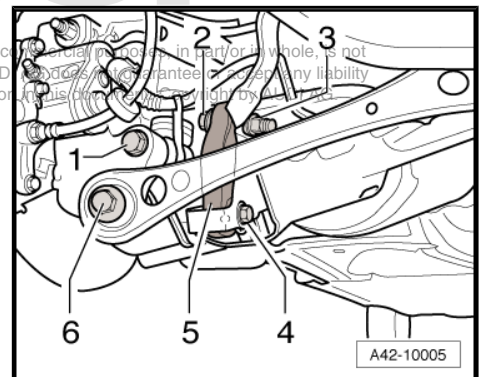


- Check bonded rubber bushes -1- and -3- of track rod -2- for play.

Coupling rod and anti-roll bar:



- Check play at coupling rod -5-.

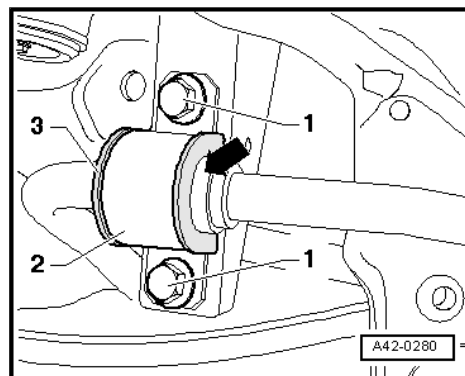


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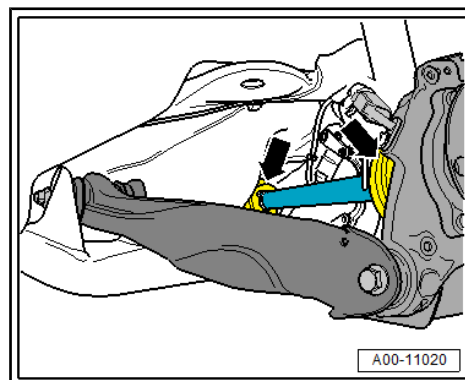
- Check anti-roll bar bush -arrow- for damage.

Drive shaft:

Only applies to vehicles with four-wheel drive.



- Check drive shaft boots -arrows- for damage and make sure they are seated correctly.
- Repeat checks for components on opposite side of vehicle.
- If faults are found on any of the above components: Renew relevant component.



3.27 Engine, gearbox, final drive and steering: checking for leaks and damage

Remove noise insulation for inspection every 60,000 km (38,000 miles)/4 years.

Removal steps:

- If necessary, remove noise insulation → [page 14](#).

Procedure:

- Check engine and engine ancillaries from below for leaks and damage.
- Check visible area of belt drives for damage.
- Check radiator and cooling circuit for leaks and damage.
- Check refrigerant circuit for damage (check air conditioner compressor, condenser and refrigerant lines including connections).
- Check gearbox, final drive and steering for leaks and damage.
- If faults are found: repair or renew relevant component.

3.28 Underbody: checking trim, wheel housing liners, side members and pipes/wiring for damage, and checking that they are properly secured

Procedure:

- Check all underbody trim panels and wheel housing liners for tears and cracks.
- Use your hands to check that all underbody trim panels and wheel housing liners are secured correctly and check for missing fasteners.

- Inspect side members for deformations.
- Check visible area of pipes/wiring and connections for damage and ensure they are secured correctly.
- If faults are found: Renew missing fastener or damaged component.

3.29 Roof insert: checking operation

Only applies to equipment version with sliding/tilting sunroof.

Cleaning and lubricating the roof insert is a repair measure and should be charged separately.

Procedure:

- Open and close roof system completely and check for unusual noises and stiffness/sticking.
- If there is unusual noise or stiffness/sticking: Clean and lubricate roof insert ⇒ [page 49](#).

3.30 Roof insert - sliding/tilting sunroof: cleaning and lubricating

Special tools and workshop equipment required

- ◆ Lubricating paste - G 060 751 A2-
- ◆ Krytox lubricating paste - G 052 141 A2-
- ◆ Cleaning solution - D 009 401 04-
- ◆ Industrial vacuum cleaner, e.g. wet/dry vacuum cleaner - VAS 5128-
- ◆ Commercially available paintbrush: approx. 15 mm wide and bent by approx. 40°
- ◆ Fine-pored sponge (e.g. a piece of household sponge without a scouring surface)

Cleaning and lubricating the roof insert is a repair measure and should be charged separately.

Protect vehicle interior from becoming dirty.

Step 1 - cleaning and lubricating glass panel seal:

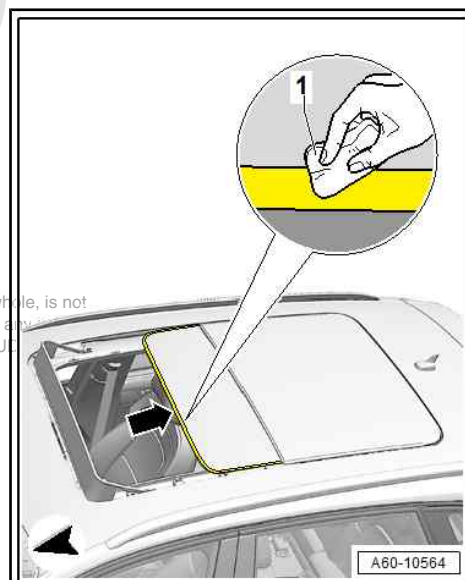
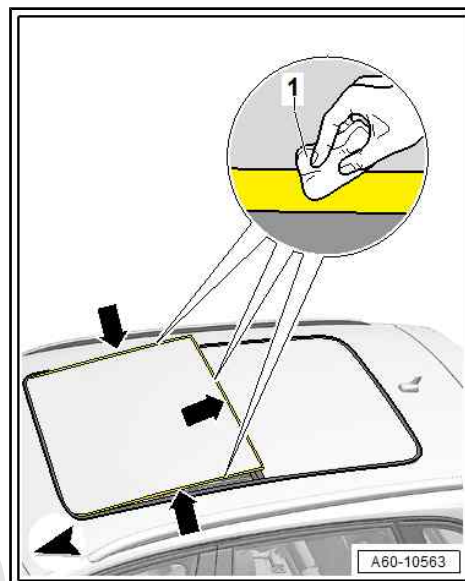
- Tilt open glass panel at rear.
- Remove all accessible grease and dirt residue from glass panel seal using cleaning solution - D 009 401 04- and a lint-free cloth.

- Use a fine-pored sponge -1- to lubricate sides and rear of glass panel seal -arrows- with Krytox lubricating paste - G 052 141 A2- . Make sure that no coarse residue remains visible after applying lubricant.
- Open glass panel completely.
- Using cleaning solution - D 009 401 04- and a lint-free cloth, remove any grease or dirt residue from front of glass panel seal in area that has not been lubricated yet.
- Use a fine-pored sponge -1- to lubricate glass panel seal at front -arrow- with Krytox lubricating paste - G 052 141 A2- . Make sure that no coarse residue remains visible after applying lubricant.

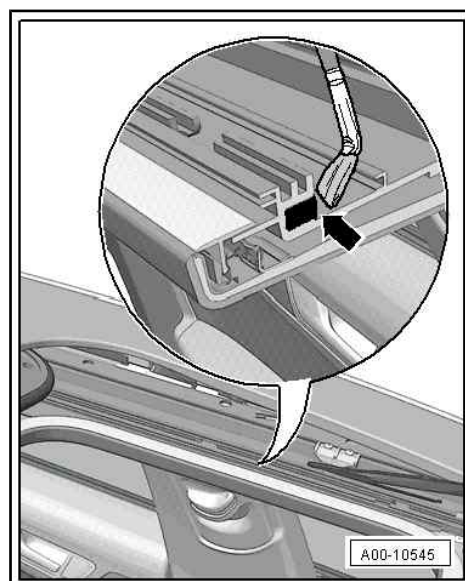
Step 2 - cleaning and lubricating guide rail:

Glass panel opened completely.

- First use an industrial vacuum cleaner to remove any loose residue from guide rails.
- Remove grease and dirt from guide rails with a lint-free cloth.

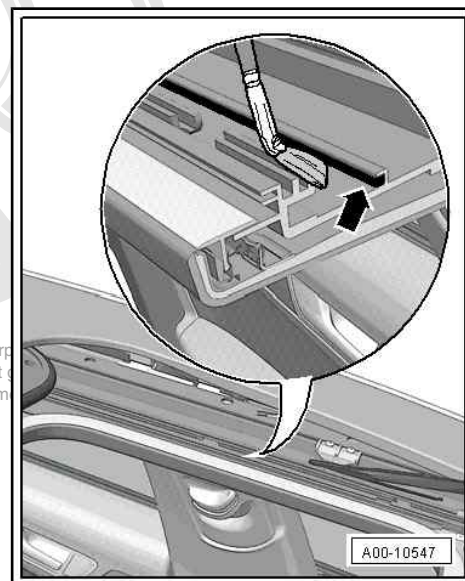


- Use a paintbrush to lubricate inside of guide rail -arrow- with lubricating paste - G 060 751 A2- .

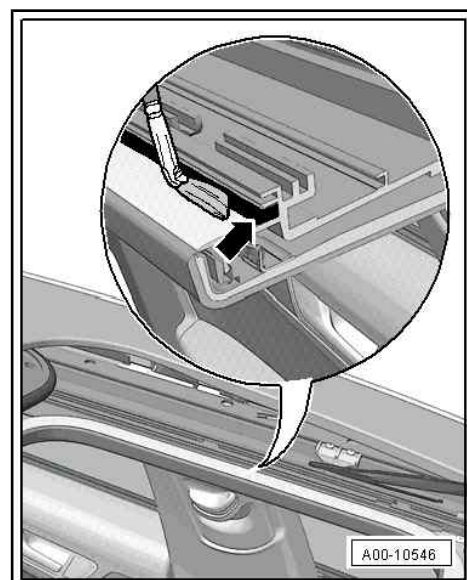


- Use a paintbrush to lubricate outside of guide rail -arrow- with lubricating paste - G 060 751 A2- .

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- Use a paintbrush to lubricate side guide rail of sliding headliner -arrow- with lubricating paste - G 060 751 A2- .
- Remove surplus lubricant on guide rails with a lint-free cloth.
- Repeat procedure on opposite side of vehicle.
- Open and close roof system completely and check again for surplus lubricant.



3.31 Bonnet arrester hook: lubricating

Special tools and workshop equipment required

- ◆ Universal spray oil - G 000 115 A2-

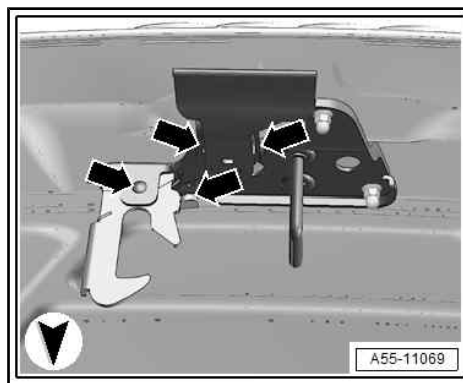
Requirements:

- The vehicle must be at least at room temperature.

Procedure:

- First clean all lubricating points with a lint-free cloth.

- Lubricate arrester hook with universal spray oil - G 000 115 A2- at points marked -arrows-.
- Operate moving parts several times so that the lubricant is able to penetrate.
- Remove surplus lubricant with cloth.



3.32 Door hinges with arresters and locking cylinders: lubricating

Special tools and workshop equipment required

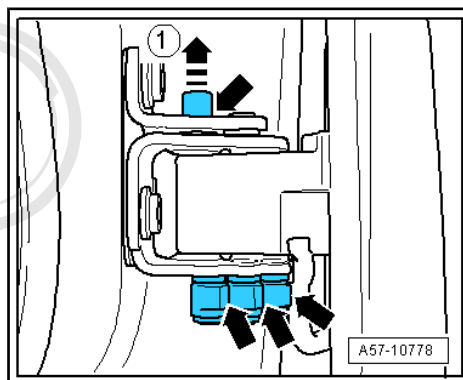
- ◆ Universal spray oil - G 000 115 A2- for door arresters and hinges
- ◆ Spray-on grease - G 052 778 A2- for locking cylinders

Requirements:

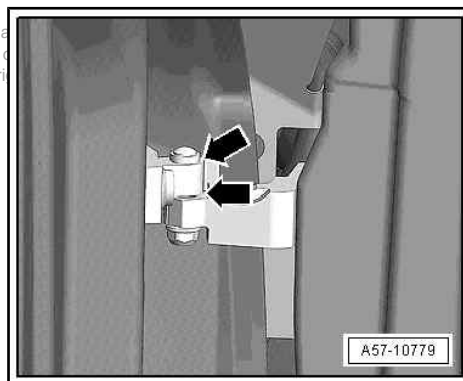
- The vehicle must be at least at room temperature.

Procedure:

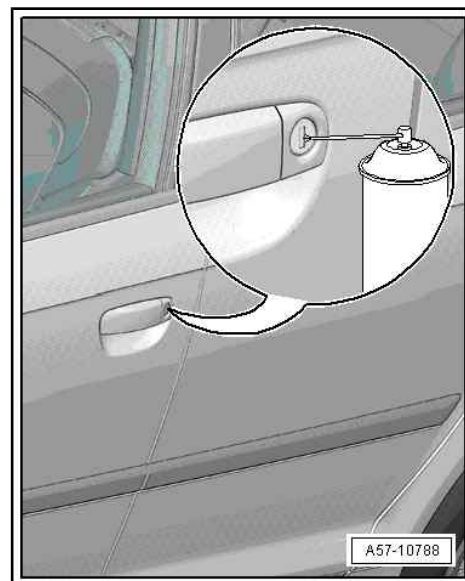
- Remove protective cap -1- from door hinge with arrester in direction of -arrow-.
- First clean all lubricating points with a lint-free cloth.
- Lubricate door hinge with arrester with universal spray oil - G 000 115 A2- at points marked with -arrows-.
- Re-attach cap.



- Lubricate top door hinge with universal spray oil - G 000 115 A2- at points marked with -arrows-.
- Move door several times so that the universal spray oil is able to penetrate.
- Use cloth to remove surplus lubricant from all door hinges.



- Lubricate lock cylinder with spray-on grease - G 052 778 A2- ; see -illustration-.
- Repeat cleaning and lubricating procedure on all remaining doors of vehicle.



3.33 Gas strut for rear lid: checking bolt connection of socket for ball-head pin

Special tools and workshop equipment required

- ◆ Torque wrench - V.A.G 1331- , measuring range 6 to 50 Nm
- ◆ Or: torque wrench - VAS 6583- , measuring range 3 to 60 Nm
- ◆ Or: torque wrench - VAS 5820- , measuring range 20 to 100 Nm
- ◆ Thin spanner insert, 13 mm - VAG 1331/14-

Table of test values and procedure guidelines:

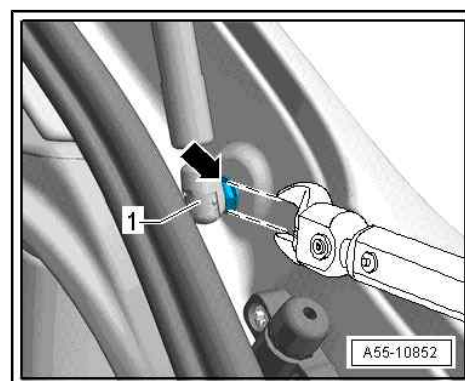
Fastener	Tightening torque [Nm]
Bolt connection of ball-head pin	21

Procedure:

- Apply torque wrench to hexagon flats -arrow- of ball-head pin -1- and tighten to specified torque (see table of test values and procedure guidelines ⇒ [page 53](#)).
- Repeat procedure on opposite side of vehicle.

Note

- ◆ *Sockets for ball-head pins not fitted with hexagon nuts are welded to the body and must not be tightened.*
- ◆ *Only tighten ball-head pin on body.*



3.34 Windscreen/rear window washer system: checking spray pattern and adjusting if necessary

Checking windscreen spray pattern: dual washer jets
⇒ [page 54](#)

Checking windscreen spray pattern: triple washer jets
⇒ [page 54](#)

Checking spray pattern on rear window ⇒ [page 55](#)

Adjusting windscreen washer jets ⇒ [page 55](#)

Adjusting rear window washer jets ⇒ [page 55](#)

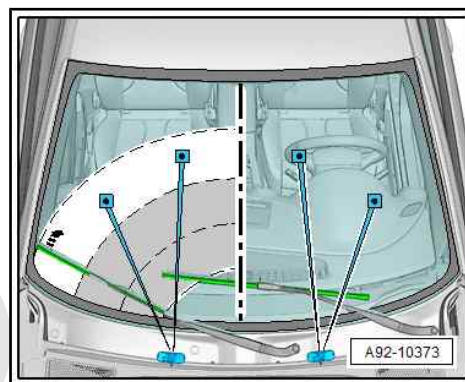
3.34.1 Checking windscreen spray pattern: dual washer jets

The spray pattern must meet the following specifications:

- Evenly distributed, symmetrical spray pattern
- Uniform, precise jets of water
- Jet unit (passenger's side): Water from all washer jets makes contact within upper third of wiper area -illustration-
- Jet unit (driver's side): Spray pattern symmetrically opposite that of jet unit on passenger's side

Procedure:

- Operate windscreen washer system and check spray pattern.
- If spray pattern is not as specified, adjust windscreen washer jets ⇒ [page 55](#).



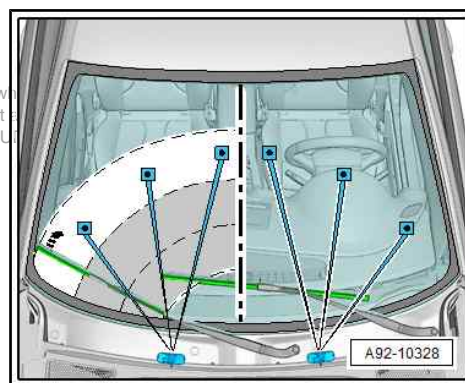
3.34.2 Checking windscreen spray pattern: triple washer jets

The spray pattern must meet the following specifications:

- Evenly distributed, symmetrical spray pattern
- Uniform, precise jets of water
- Jet unit (passenger's side): Water from all washer jets makes contact within upper third of wiper area -illustration-
- Jet unit (driver's side): Spray pattern symmetrically opposite that of jet unit on passenger's side

Procedure:

- Operate windscreen washer system and check spray pattern.
- If spray pattern is not as specified, adjust windscreen washer jets ⇒ [page 55](#).



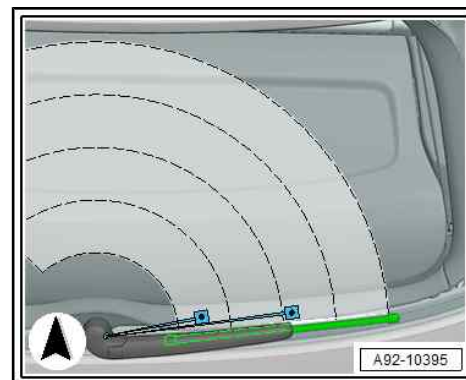
3.34.3 Checking spray pattern on rear window

The spray pattern must meet the following specifications:

- Water from both spray jets makes contact just above wiper blade
- Uniform, precise jets of water
- Water from inner spray jet makes contact within approx. first quarter of wiper blade length -illustration-
- Water from outer spray jet makes contact approx. at or just beyond centre of wiper blade length -illustration- (third quarter)

Procedure:

- Operate rear window washer system and check spray pattern.
- If spray pattern is not as specified, adjust windscreen washer jets ⇒ [page 55](#).



3.34.4 Adjusting windscreen washer jets

Special tools and workshop equipment required

- ◆ Commercially available adjusting tool (e.g. adjusting tool - T10127-) or suitable needle

Procedure:

- Use adjusting tool to align washer jets as required according to specification.
- If the spray pattern still cannot be set as specified, clean appropriate washer jets ⇒ Rep. gr. 92 ; Windscreen wiper system; Adjusting washer jets .

3.34.5 Adjusting rear window washer jets

Special tools and workshop equipment required

- ◆ Commercially available adjusting tool (e.g. adjusting tool - T10127-) or suitable needle

Procedure:

- Use adjusting tool to align washer jets as required according to specification.
 - If the spray pattern still cannot be set as specified, clean washer jets ⇒ Rep. gr. 92 ; Rear window wiper system; Adjusting washer jet .
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3.35 Wiper blades: checking for damage

Step 1 - service position:

- Switch on ignition and activate MMI.
- Press function selector button **CAR**.
- Under »Systems«, navigate through following menu structure:
 - ◆ Windscreen wipers
 - ◆ Service position
- Use MMI rotary pushbutton to activate service position for windscreen wipers.

Step 2 - checking:

- Lift windscreen wipers and check each wiper blade for tears, cuts, abraded areas or other damage.

- Repeat check on rear window.
- If you find damage: Renew relevant wiper blade. Windscreen wiper system ⇒ Rep. gr. 92 ; Windscreen wiper system; Removing and installing wiper blade ; rear window wiper system ⇒ Rep. gr. 92 ; Rear window wiper system; Removing and installing wiper blade .

3.36 Headlight washer system: checking operation

Not all vehicles are equipped with a headlight washer system (depending on equipment version).

Procedure:

- Operate headlight washer system and check function.
- If water jet does not contact headlight: Renew relevant washer jets ⇒ Rep. gr. 92 ; Headlight washer system; Removing and installing washer jets .



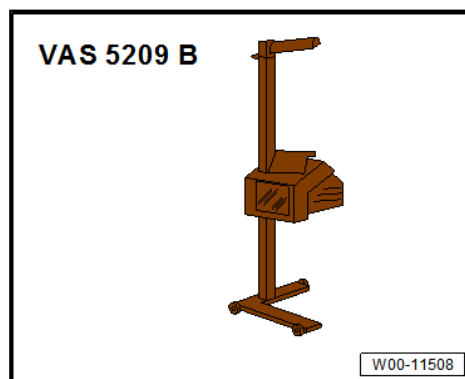
Note

The headlight washer jets are set by the manufacturer and therefore cannot be adjusted.

3.37 Headlights: checking for correct adjustment

Special tools and workshop equipment required

- ◆ Headlight adjustment unit - VAS 5209B-



- ◆ Or: headlight adjustment unit - VAS 621 001-

Performed as part of an inspection, this check is merely an abbreviated form of the headlight adjustment check required, for example, after a repair, and does not take the place of a full headlight adjustment check.

Do not adjust the vehicle load or the tyre pressures for this procedure.

Do not adjust the headlights to their basic setting using the vehicle diagnostic tester.

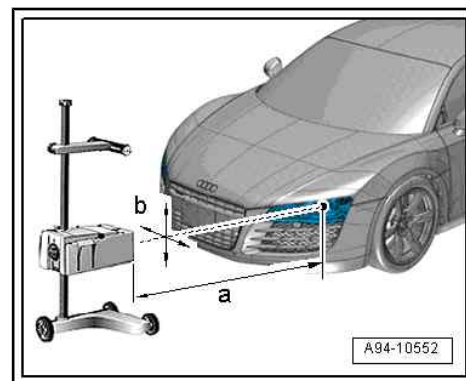
Checking and adjusting the headlights according to the instructions in the Workshop Manual is a repair measure and must be charged separately.

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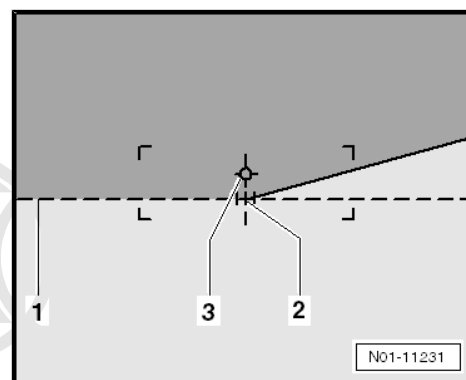
Procedure:

- For vehicles with manually adjustable headlight range control: Use manual adjuster to set to basic setting.

- Activate dipped headlights.
- Align headlight adjustment unit parallel to vehicle and position it centrally in front of headlight at a distance of 30 to 70 cm -distance a-; deviation from centre of light emission surface must not exceed 3 cm -distance b-.



- Adjust dip setting of headlight adjustment unit so that beam of headlight falls on test screen according to following parameter: Horizontal light-dark border should coincide with setting line -1-.
- Read off dip setting of headlight adjuster.
- Repeat procedure on opposite side.
- Compare dip setting on left and right sides.
- If the difference between them is 2.0% or more: Check and adjust headlight setting according to procedure specified in Workshop Manual ⇒ Rep. gr. 94 .



3.38 Headlights and reversing lights, side lights, number plate lights, turn signals, hazard warning lights: checking operation

Check the lights/signals listed below from the outside to ensure they function properly.

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Procedure:

- Activate side lights and check that the following exterior lights function properly:
 - ◆ Side lights (front)
 - ◆ Side lights (rear)
 - ◆ If applicable: additional tail light under open rear lid
- Switch on ignition.
- Check operation of daytime running lights (front).
- Operate right turn signal, left turn signal and hazard warning lights, and check that corresponding turn signal lamps at front, rear and side function properly.
- Activate dipped headlights and check that the following exterior lights function properly:
 - ◆ Dipped headlights
 - ◆ Taillights
 - ◆ Number plate lights
- Use appropriate switch to activate fog lights and check that they function properly.
- Check that main beam headlights function properly.

- Operate brakes and check function of all brake lights.
- Engage reverse gear and check that all reversing lights function properly. As a general rule, this model is fitted with two reversing lights; some equipment versions may only have one reversing light.
- Pull switch to activate rear fog light and check that it functions properly. As a general rule, this model is fitted with two rear fog lights; some equipment versions may only have one rear fog light.
- Renew any defective bulbs.

**Note**

It is possible to deactivate the daytime running lights intentionally via the appropriate MMI setup menu.

3.39 Luggage compartment lighting: checking operation

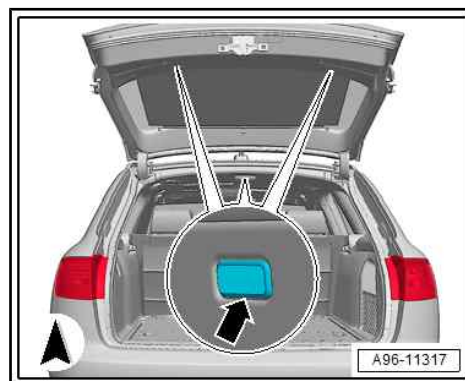
A6 Avant ⇒ [page 58](#)

A6 Saloon ⇒ [page 59](#)

3.39.1 A6 Avant

Procedure:

- Check that luggage compartment lights shown -arrows- function properly.



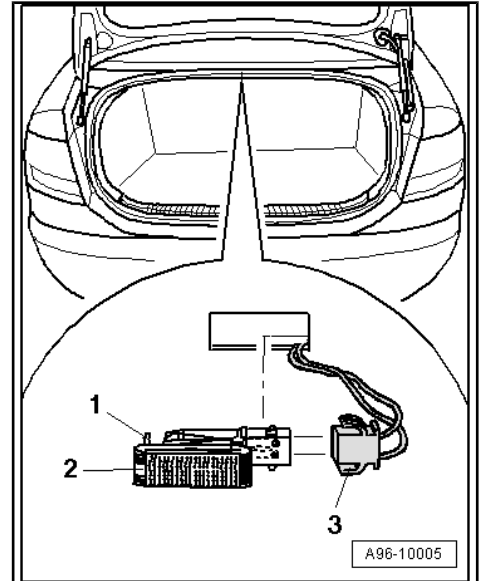
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3.39.2 A6 Saloon

Procedure:

- Check that luggage compartment light shown -arrow- functions properly.

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3.40 Glove box light, interior lighting and reading light: checking operation

Procedure:

- Open glove box and check that glove box light functions properly.
- Use the appropriate switches to activate the following interior lights and check that the lights function properly:
 - ◆ Interior lights in headliner at front
 - ◆ Interior lights in headliner at rear



Checking the ambient lighting is NOT part of the inspection.

3.41 Horn: checking operation

Procedure:

- Switch on ignition.
- Operate horn and check proper function of treble horn and bass horn.



Perform this check outdoors, e.g. when driving the vehicle to the workshop or during a road test.

3.42 Passenger airbag: checking key switch on / off and setting to "on"

Switch for "Airbag ON/OFF" is located in glove box -arrow-.

Procedure:

- Turn switch to "AIRBAG OFF" position.
- Switch ignition on and wait for vehicle to complete initial system check.
- Check that "PASSENGER AIRBAG OFF" display lights up in instrument cluster.
- Switch off ignition.
- Turn switch to "AIRBAG ON" position.
- Switch ignition on and wait for vehicle to complete initial system check.
- Check that "PASSENGER AIRBAG OFF" disappears.
- Switch off ignition.



Note

The amount of time needed for the vehicle system check varies depending on the model and equipment.

3.43 Vehicle interior: removing any objects other than those protecting interior surfaces

Procedure:

- Remove any objects from vehicle other than those which are protecting interior surfaces.

3.44 Vehicle interior and exterior: checking for and documenting any damage

Procedure:

- Check interior of vehicle for damage and document any damage found.
- Check exterior of vehicle for damage and document any damage found.

3.45 Vehicle keys: checking operation and recording number of keys given to customer

Procedure:

- Open key ring to check each key individually.
- Start engine with each key individually.
- Record number of keys which have been matched and handed over in Maintenance table.
- If a vehicle key has not been matched: Re-match all keys to vehicle using Guided Function of vehicle diagnostic tester via online tool GeKo.

- If there is reason to suspect improper use (e.g. missing key):
See current notices from AUDI AG under “Technical information ► Anti-theft protection” on ServiceNet.



Note

- ◆ *Only the key being checked may be inside the vehicle. Place all other keys out of transmission range.*
- ◆ *If the key has not been matched, the engine will turn off after a few seconds. In addition, the warning lamp for the immobiliser or the display “SAFE” will appear in the instrument cluster, depending on the vehicle equipment.*

3.46 Vehicle key: removing from ignition lock

Only applies to vehicles with ignition lock.

Procedure:

- Remove vehicle key from ignition lock.

3.47 Vehicle key(s), wheel covers and owner's literature: checking availability and recording number present

Procedure:

- Check whether there are keys for the vehicle and record number of keys in maintenance table.
- Check whether there are wheel covers for the vehicle and record number of wheel covers in maintenance table.
- Check whether owner's literature is in place and record number of copies in maintenance table.
- Wait until shortly before vehicle delivery to renew any missing components.

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3.48 Sun visors: checking that they are folded up and folding up if necessary

Procedure:

- Check that sun visors are folded up, and fold them up if necessary.

3.49 Luggage compartment cover and sun blind: checking that they are rolled up and rolling up if necessary

Procedure:

- If a luggage compartment cover is fitted, check that it is rolled up (roll it up if necessary).
- Check that sun blinds are folded up (fold them up if necessary).

3.50 Engine oil: draining



Note

- ◆ Oil should always be changed when engine is warm.
- ◆ Always observe the relevant environmental regulations for disposal.
- ◆ Keep components clean.

4-cyl. petrol engine 2.0 ltr. TFSI ⇒ [page 62](#)

6-cyl. petrol engine 2.4 ltr. MPI/3.2 ltr. FSI (version 1)
⇒ [page 64](#)

6-cyl. petrol engine 2.8 ltr. FSI/3.0 ltr. TFSI/3.2 ltr. FSI (version 2)
⇒ [page 65](#)

6-cyl. petrol engine 3.0 ltr. MPI ⇒ [page 66](#)

8-cyl. petrol engine 4.2 ltr. FSI ⇒ [page 67](#)

8-cyl. petrol engine 4.2 ltr. MPI ⇒ [page 68](#)

10-cyl. petrol engine 5.0 ltr. TFSI ⇒ [page 69](#)

10-cyl. petrol engine 5.2 ltr. FSI ⇒ [page 70](#)

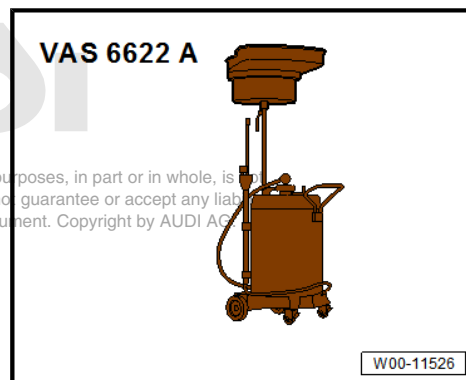
4-cyl. diesel engine 2.0 ltr. TDI ⇒ [page 71](#)

6-cyl. diesel engine 2.7 ltr. TDI/3.0 ltr. TDI ⇒ [page 72](#)

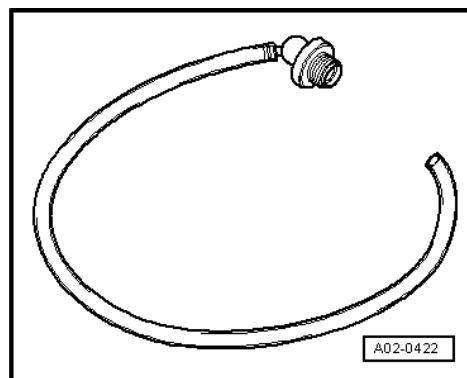
3.50.1 4-cyl. petrol engine 2.0 ltr. TFSI

Special tools and workshop equipment required

- ◆ Used oil collection and extraction unit - V.A.S 6622 A-



- ◆ Oil drain adapter - T 40057-



- ◆ Torque wrench - V.A.G 1331- , measuring range 6 to 50 Nm
- ◆ Or: torque wrench - VAS 6583- , measuring range 3 to 60 Nm

- ◆ Or: torque wrench - VAS 5820- , measuring range 20 to 100 Nm

Table of tightening torques for installation:

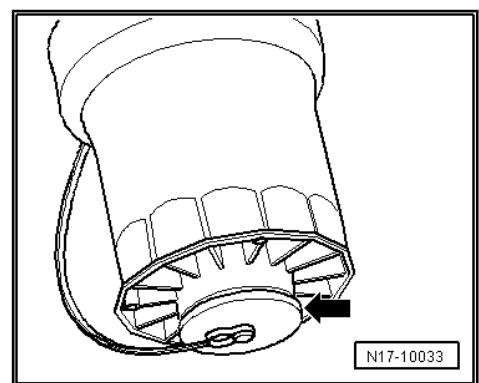
Component/fastener	[Nm]
Oil drain plug on sump	30

Removal steps:

- Remove noise insulation ⇒ [page 14](#) .

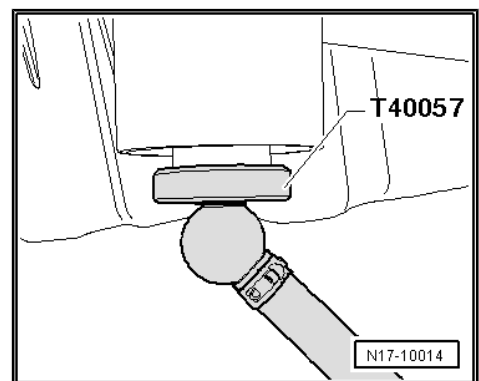
Procedure:

- Unscrew protective cap -arrow- from oil filter housing.
- Place oil drip tray under engine sump.
- Hold hose of oil drain adapter -T40057- in used oil collection and extraction unit .

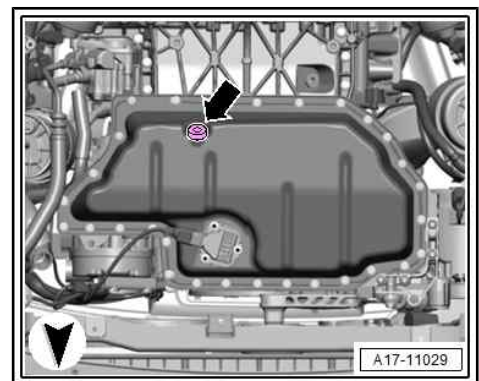


Screw oil drain adapter - T40057- into oil filter housing. This opens a valve in oil filter housing, and oil will then be drained.

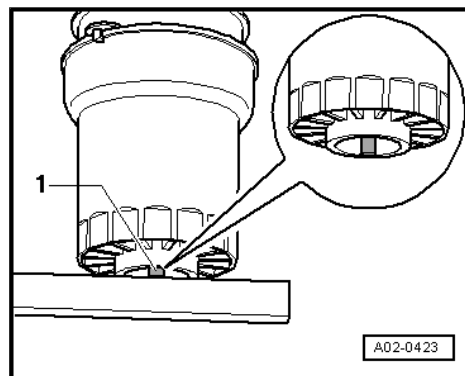
- Drain engine oil from oil filter housing.



- Remove oil drain plug -arrow- from sump and drain engine oil completely.



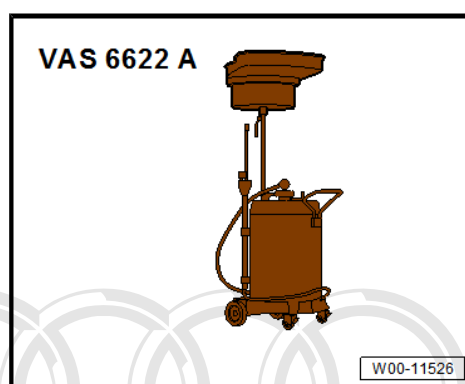
- Unscrew oil drain adapter - T 40057- from oil filter housing and check that base valve -1- is flush and level.
- Screw protective cap back onto oil filter housing.
- Renew seal for oil drain plug for sump.
- Screw oil drain plug into sump and tighten to specified torque (see table of tightening torques for installation ⇒ [page 63](#)).



3.50.2 6-cyl. petrol engine 2.4 ltr. MPI/3.2 ltr. FSI (version 1)

Special tools and workshop equipment required

- ◆ Used oil collection and extraction unit - V.A.S 6622 A-



- ◆ Torque wrench - V.A.G 1331- , measuring range 6 to 50 Nm
- ◆ Or: torque wrench - VAS 6583- , measuring range 3 to 60 Nm
- ◆ Or: torque wrench - VAS 5820- , measuring range 20 to 100 Nm

Table of tightening torques for installation:

Component/fastener	[Nm]
Oil drain plug on sump	30

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Removal steps:

- Remove noise insulation ⇒ [page 14](#) .

Procedure:

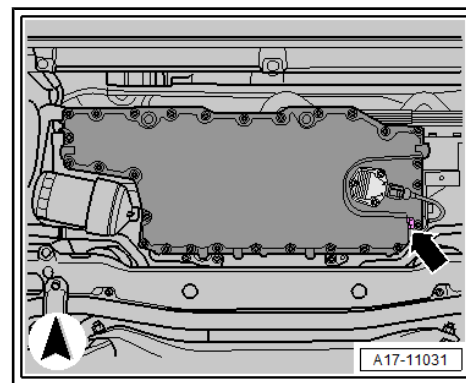
- Place oil drip tray under engine sump.

- Unscrew oil drain plug of sump -arrow-.
- Drain engine oil from sump.
- Renew seal for oil drain plug.
- Screw oil drain plug into sump and tighten to specified torque (see table of tightening torques for installation ⇒ [page 64](#)).

Continue installation in reverse sequence.



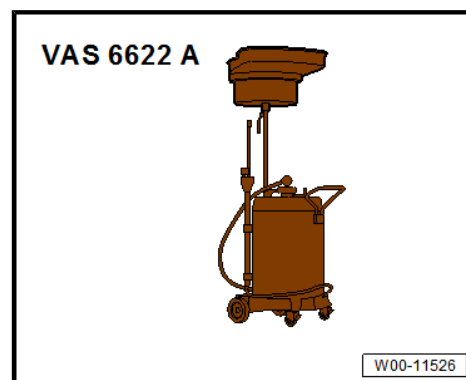
There is more than one version of the oil drain plug for the 6-cylinder 3.2 ltr. FSI petrol engine ⇒ [page 65](#) .



3.50.3 6-cyl. petrol engine 2.8 ltr. FSI/3.0 ltr. TFSI/3.2 ltr. FSI (version 2)

Special tools and workshop equipment required

- ◆ Used oil collection and extraction unit - V.A.S 6622 A-



- ◆ Torque wrench - V.A.G 1331- , measuring range 6 to 50 Nm
- ◆ Or: torque wrench - VAS 6583- , measuring range 3 to 60 Nm
- ◆ Or: torque wrench - VAS 5820- , measuring range 20 to 100 Nm

Table of tightening torques for installation:

Component/fastener	[Nm]
Oil drain plug on sump	30

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Removal steps:

- Remove noise insulation ⇒ [page 14](#) .

Procedure:

- Place oil drip tray under engine sump.

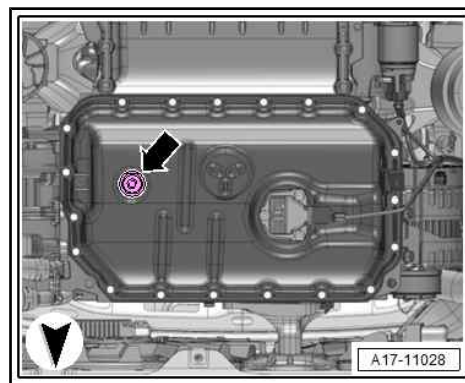
- Unscrew oil drain plug of sump -arrow-.
- Drain engine oil from sump.
- Renew seal for oil drain plug.
- Screw oil drain plug into sump and tighten to specified torque (see table of tightening torques for installation ⇒ [page 65](#)).

Continue installation in reverse sequence.



Note

There is more than one version of the oil drain plug for the 6-cylinder 3.2 ltr. FSI petrol engine ⇒ [page 64](#) .

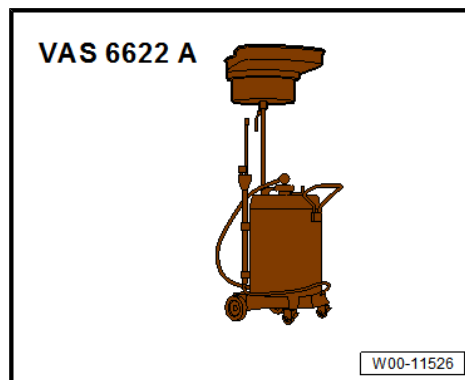


3.50.4 6-cyl. petrol engine 3.0 ltr. MPI

Special tools and workshop equipment required

- ◆ Used oil collection and extraction unit - V.A.S 6622 A-

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- ◆ Torque wrench - V.A.G 1331- , measuring range 6 to 50 Nm
- ◆ Or: torque wrench - VAS 6583- , measuring range 3 to 60 Nm
- ◆ Or: torque wrench - VAS 5820- , measuring range 20 to 100 Nm

Table of tightening torques for installation:

Component/fastener	[Nm]
Oil drain plug on sump	30

Removal steps:

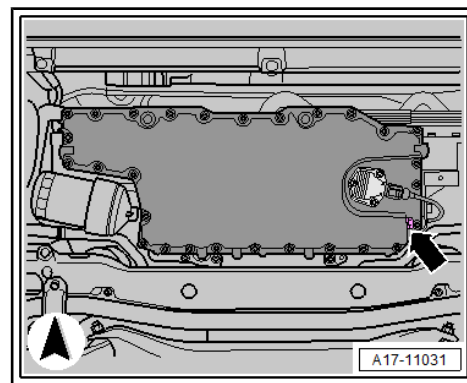
- Remove noise insulation ⇒ [page 14](#) .

Procedure:

- Place oil drip tray under engine sump.

- Unscrew oil drain plug of sump -arrow-.
- Drain engine oil from sump.
- Renew seal for oil drain plug.
- Screw oil drain plug into sump and tighten to specified torque (see table of tightening torques for installation ⇒ [page 66](#)).

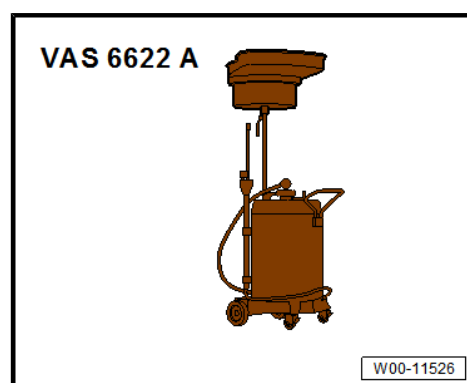
Continue installation in reverse sequence.



3.50.5 8-cyl. petrol engine 4.2 ltr. FSI

Special tools and workshop equipment required

- ◆ Used oil collection and extraction unit - V.A.S 6622 A-



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- ◆ Torque wrench - V.A.G 1331- , measuring range 6 to 50 Nm
- ◆ Or: torque wrench - VAS 6583- , measuring range 3 to 60 Nm
- ◆ Or: torque wrench - VAS 5820- , measuring range 20 to 100 Nm

Table of tightening torques for installation:

Component/fastener	[Nm]
Oil drain plug on sump	25

Removal steps:

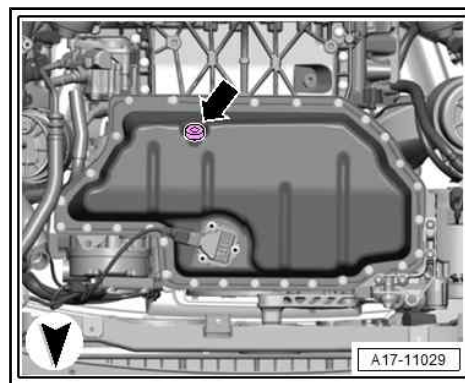
- Remove noise insulation ⇒ [page 14](#) .

Procedure:

- Place oil drip tray under engine sump.

- Unscrew oil drain plug of sump -arrow-.
- Drain engine oil from sump.
- Renew seal for oil drain plug.
- Screw oil drain plug into sump and tighten to specified torque (see table of tightening torques for installation ⇒ [page 67](#)).

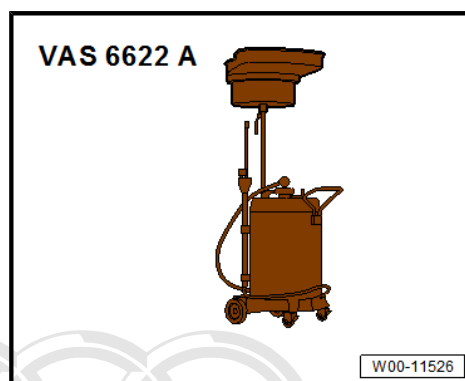
Continue installation in reverse sequence.



3.50.6 8-cyl. petrol engine 4.2 ltr. MPI

Special tools and workshop equipment required

- ◆ Used oil collection and extraction unit - V.A.S 6622 A-



- ◆ Torque wrench - V.A.G 1331- , measuring range 6 to 50 Nm
- ◆ Or: torque wrench - VAS 6583- , measuring range 3 to 60 Nm
- ◆ Or: torque wrench - VAS 5820- , measuring range 20 to 100 Nm
- ◆ Or: torque wrench - V.A.G 1332- , measuring range 40 to 200 Nm

Table of tightening torques for installation:

Component/fastener	[Nm]
Oil drain plug on sump	50

Removal steps:

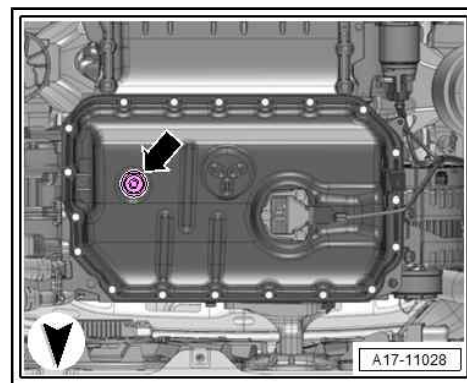
- Remove noise insulation ⇒ [page 14](#) .

Procedure:

- Place oil drip tray under engine sump.

- Unscrew oil drain plug of sump -arrow-.
- Drain engine oil from sump.
- Renew seal for oil drain plug.
- Screw oil drain plug into sump and tighten to specified torque (see table of tightening torques for installation ⇒ [page 68](#)).

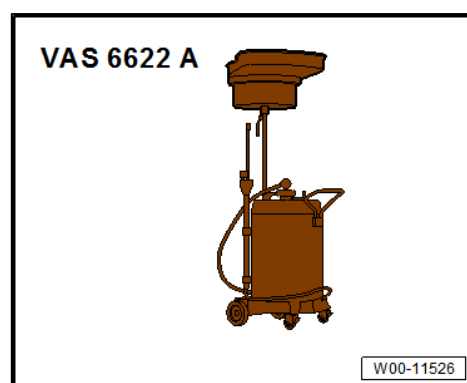
Continue installation in reverse sequence.



3.50.7 10-cyl. petrol engine 5.0 ltr. TFSI

Special tools and workshop equipment required

- ◆ Used oil collection and extraction unit - V.A.S 6622 A-



- ◆ Torque wrench - V.A.G 1331- , measuring range 6 to 50 Nm
- ◆ Or: torque wrench - VAS 6583- , measuring range 3 to 60 Nm

Table of tightening torques for installation:

Component/fastener	[Nm]
Oil drain plug for intake module	25
Oil drain plugs for engine oil cooler	40
Oil drain plug for thermostat	25

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Removal steps:

- Remove noise insulation ⇒ [page 14](#) .

Procedure:

- Place oil drip tray under engine sump.

- Unscrew oil drain plugs -2-, -4- and -8- from return line and supply line to engine oil cooler (front), as well as oil drain plug -6- in thermostat and drain engine oil.



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- Unscrew oil drain plug -arrow- on intake module and drain engine oil from intake module.
- Renew seals for oil drain plugs.
- Screw oil drain plugs into return line and supply line to engine oil cooler (front), into thermostat and into intake module (tighten to specified torque; see table of tightening torques for installation ⇒ [page 69](#)).
- Extract remaining oil from oil reservoir via opening for oil dipstick ⇒ [page 73](#) .

Continue installation in reverse sequence.



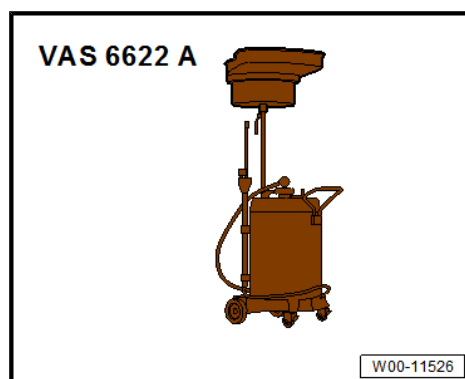
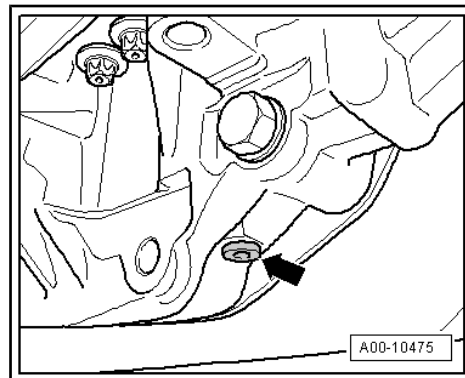
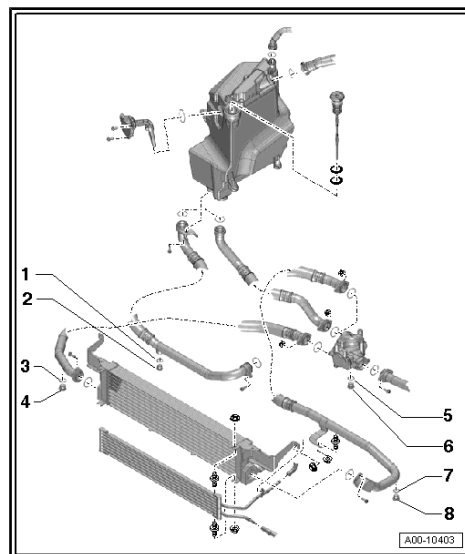
Note

Depending on the equipment version, the number of oil drain plugs can vary from two to five.

3.50.8 10-cyl. petrol engine 5.2 ltr. FSI

Special tools and workshop equipment required

- ◆ Used oil collection and extraction unit - V.A.S 6622 A-



- ◆ Torque wrench - V.A.G 1331- , measuring range 6 to 50 Nm
- ◆ Or: torque wrench - VAS 6583- , measuring range 3 to 60 Nm
- ◆ Or: torque wrench - VAS 5820- , measuring range 20 to 100 Nm

Table of tightening torques for installation:

Component/fastener	[Nm]
Oil drain plug on sump	25

Removal steps:

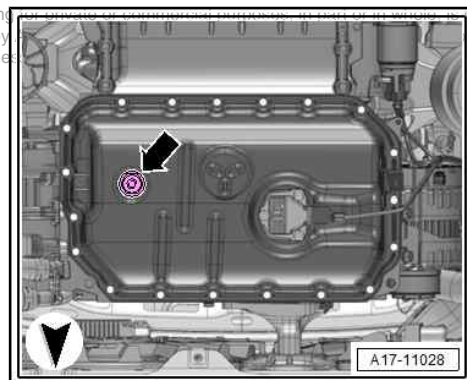
- Remove noise insulation ⇒ [page 14](#) .

Procedure:

- Place oil drip tray under engine sump.
- Unscrew oil drain plug of sump -arrow-.
- Drain engine oil from sump.
- Renew seal for oil drain plug.
- Screw oil drain plug into sump and tighten to specified torque (see table of tightening torques for installation ⇒ [page 71](#)).

Continue installation in reverse sequence.

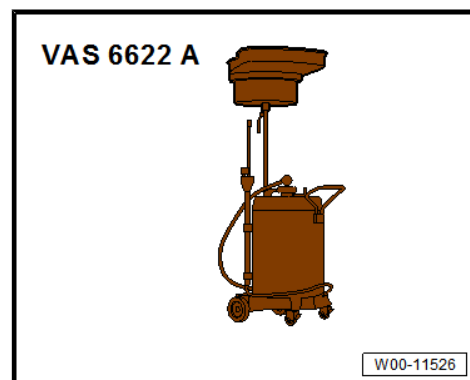
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3.50.9 4-cylinder diesel engine 2.0 ltr. TDI

Special tools and workshop equipment required

- ◆ Used oil collection and extraction unit - V.A.S 6622 A-



- ◆ Torque wrench - V.A.G 1331- , measuring range 6 to 50 Nm
- ◆ Or: torque wrench - VAS 6583- , measuring range 3 to 60 Nm
- ◆ Or: torque wrench - VAS 5820- , measuring range 20 to 100 Nm

Table of tightening torques for installation:

Component/fastener	[Nm]
Oil drain plug on sump	30

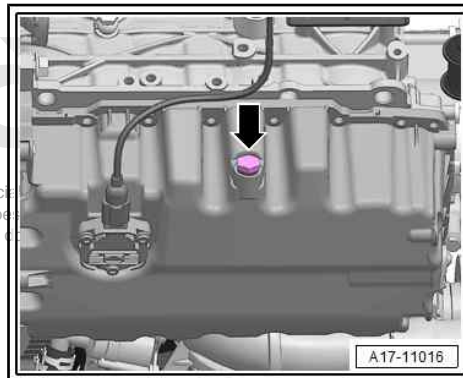
Removal steps:

- Remove noise insulation ⇒ [page 14](#) .

Procedure:

- Place oil drip tray under engine sump.
- Unscrew oil drain plug of sump -arrow-.
- Drain engine oil from sump.
- Renew seal for oil drain plug.
- Screw oil drain plug into sump and tighten to specified torque (see table of tightening torques for installation ⇒ [page 71](#)).

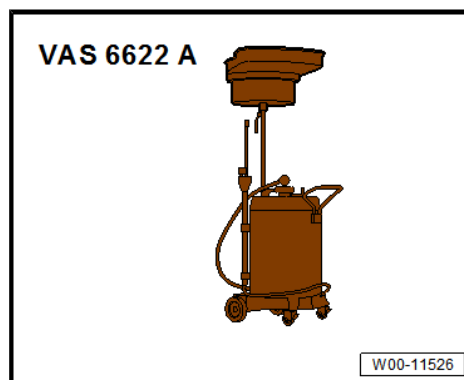
Continue installation in reverse sequence.



3.50.10 6-cyl. diesel engine 2.7 ltr. TDI/3.0 ltr. TDI

Special tools and workshop equipment required

- ◆ Used oil collection and extraction unit - V.A.S 6622 A-



- ◆ Torque wrench - V.A.G 1331- , measuring range 6 to 50 Nm
- ◆ Or: torque wrench - VAS 6583- , measuring range 3 to 60 Nm
- ◆ Or: torque wrench - VAS 5820- , measuring range 20 to 100 Nm

Table of tightening torques for installation:

Component/fastener	[Nm]
Oil drain plug on sump, M 14	30
Oil drain plug on sump, M 24	50

Removal steps:

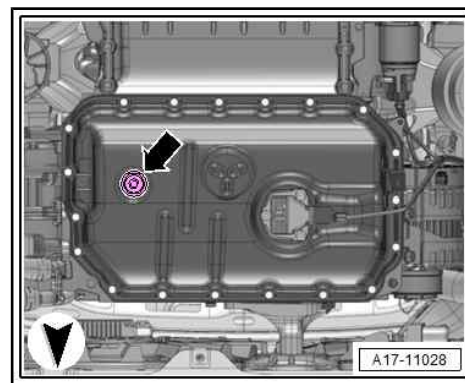
- Remove noise insulation ⇒ [page 14](#) .

Procedure:

- Place oil drip tray under engine sump.

- Unscrew oil drain plug of sump -arrow-.
- Drain engine oil from sump.
- Renew seal for oil drain plug.
- Screw oil drain plug into sump and tighten to specified torque (see table of tightening torques for installation ⇒ [page 72](#)).

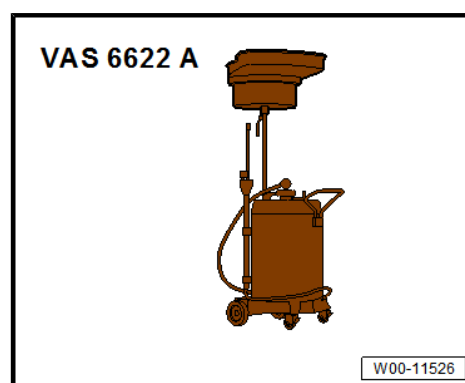
Continue installation in reverse sequence.



3.51 Engine oil: extracting

Special tools and workshop equipment required

- ◆ Used oil collection and extraction unit - V.A.S 6622 A-



Procedure:

- Pull oil dipstick/sealing plug out of guide tube.
- Insert extraction probe of oil extraction unit into guide tube. Use flexible extraction probe with largest possible diameter and insert without using any significant force. Otherwise the tip can become diverted on the bottom of the sump and a large amount of used oil will remain in the engine.
- Extract engine oil completely. Observe operating instructions for extraction unit.
- Finally, install oil dipstick/sealing plug.



Note

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 ◆ ~~Oil should always be changed when engine is warm.~~

- ◆ *Always observe the relevant environmental regulations for disposal.*

- ◆ *Keep components clean.*

3.52 Engine oil: renewing oil filter

4-cyl. petrol engine 2.0 ltr. TFSI ⇒ [page 74](#)

6-cyl. petrol engine 2.4 ltr. MPI/2.8 ltr. FSI/3.0 ltr. TFSI/3.2 ltr. FSI
⇒ [page 75](#)

6-cyl. petrol engine 3.0 ltr. MPI ⇒ [page 76](#)

8-cyl. petrol engine 4.2 ltr. FSI ⇒ [page 77](#)

8-cyl. petrol engine 4.2 ltr. MPI ⇒ [page 78](#)

10-cyl. petrol engine 5.0 ltr. TFSI ⇒ [page 79](#)

10-cyl. petrol engine 5.2 ltr. FSI ⇒ [page 80](#)

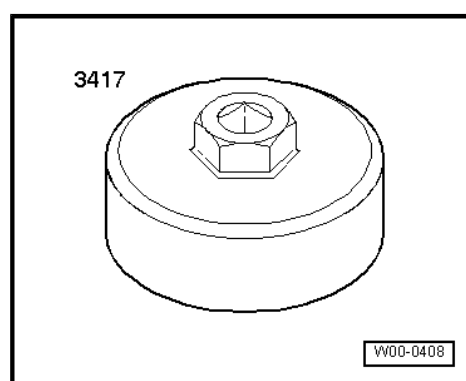
4-cyl. diesel engine 2.0 ltr. TDI ⇒ [page 81](#)

6-cyl. diesel engine 2.7 ltr. TDI/3.0 ltr. TDI ⇒ [page 82](#)

3.52.1 4-cyl. petrol engine 2.0 ltr. TFSI

Special tools and workshop equipment required

- ◆ Oil filter tool - 3417-



- ◆ Or: Hazet strap wrench - 2171-1-
- ◆ Torque wrench - V.A.G 1331- , measuring range 6 to 50 Nm
- ◆ Or: torque wrench - VAS 6853- , measuring range 3 to 60 Nm
- ◆ Or: torque wrench - VAS 5820- , measuring range 20 to 100 Nm

Table of tightening torques for installation:

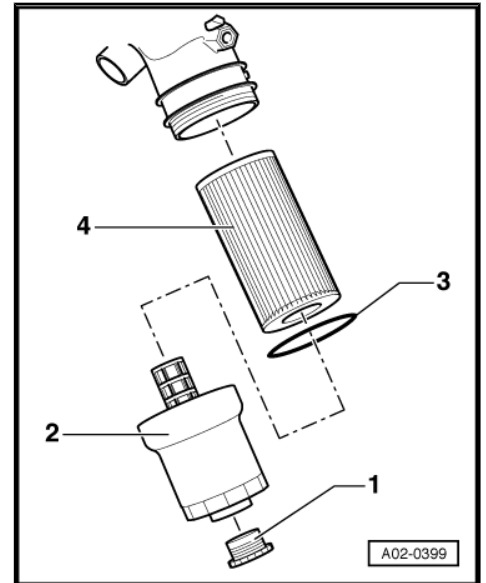
Component/fastener	[Nm]
Sealing cap	30

Requirements:

- Engine oil drained.

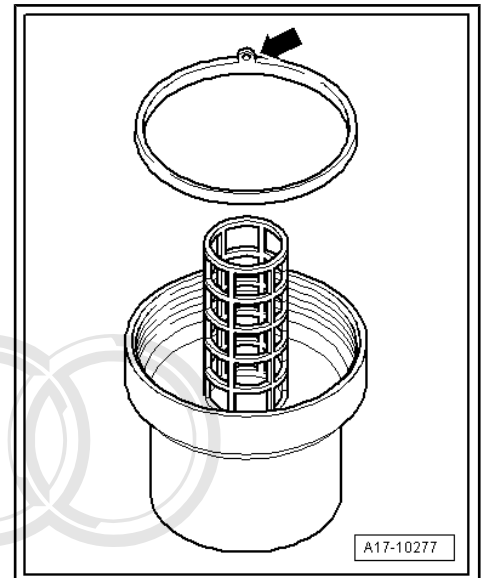
Procedure:

- Using oil filter tool - 3417- , Hazet strap wrench - 2171-1- or socket (36 mm) , loosen and unscrew oil filter housing -2-.
- Remove oil filter element -4- and seal -3-.
- Clean sealing surface on oil filter housing.



- Lightly lubricate new seal with engine oil and insert into oil filter housing. Note position of service tab on seal -arrow-. Flat side of seal profile must face outwards.
- Fit new filter element in oil filter housing.
- Screw oil filter housing into mounting on crankcase and tighten to specified torque using oil filter tool - 3417- or socket (36 mm) (see table of tightening torques for installation ⇒ [page 74](#)).

Continue installation in reverse sequence.



3.52.2 6-cyl. petrol engine 2.4 ltr. MPI/2.8 ltr. FSI/3.0 ltr. TFSI/3.2 ltr. FSI

Special tools and workshop equipment required

- ◆ Torque wrench - V.A.G 1331- , measuring range 6 to 50 Nm
- ◆ Or: torque wrench - VAS 6583- , measuring range 3 to 60 Nm
- ◆ Or: torque wrench - VAS 5820- , measuring range 20 to 100 Nm

Table of tightening torques for installation:

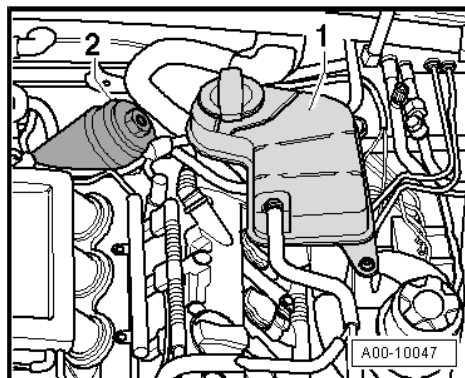
Component/fastener	[Nm]
Sealing cap	25

Removal steps:

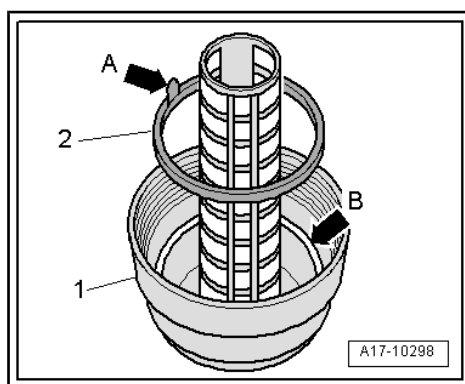
- Remove engine cover panel ➔ [page 8](#) .

Procedure:

- Remove coolant expansion tank -1- and move it to the side with coolant hoses attached.
- Loosen sealing cap -arrow- of oil filter using socket (36 mm) . This causes a valve to open.
- Wait a few minutes to allow engine oil to drain from filter housing into crankcase.
- Completely remove sealing cap. Make sure that no engine oil drips onto engine.

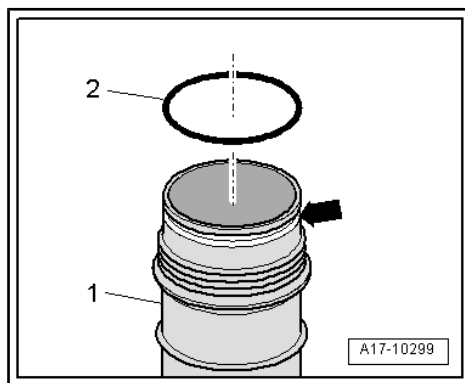


- Pull oil filter element and seal -2- out of sealing cap -1-.
- Clean sealing surface -B- of sealing cap -1-.
- Lightly lubricate new seal -2- with engine oil and insert into sealing cap. Note position of service tab -A- on seal. Flat side of seal profile must face outwards.



- Remove O-ring -2- on oil filter housing -1-.
- Lightly lubricate new O-ring -2- with engine oil and insert into groove -arrow-.
- Fit new oil filter element in sealing cap.
- Screw sealing cap into oil filter housing and tighten it to specified torque using socket (36 mm) (see table of tightening torques for installation ➔ [page 75](#)).

Continue installation in reverse sequence.

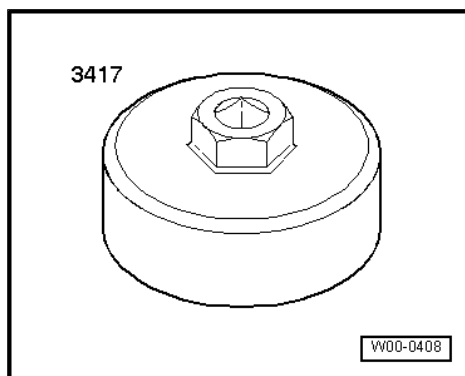


3.52.3 6-cyl. petrol engine 3.0 ltr. MPI

Special tools and workshop equipment required

- ◆ Oil filter tool - 3417-

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- ◆ Hazet strap wrench - 2171-1-
- ◆ Torque wrench - V.A.G 1331- , measuring range 6 to 50 Nm
- ◆ Or: torque wrench - VAS 6583- , measuring range 3 to 60 Nm
- ◆ Or: torque wrench - VAS 5820- , measuring range 20 to 100 Nm

Table of tightening torques for installation:

Component/fastener	[Nm]
Oil filter cartridge	20

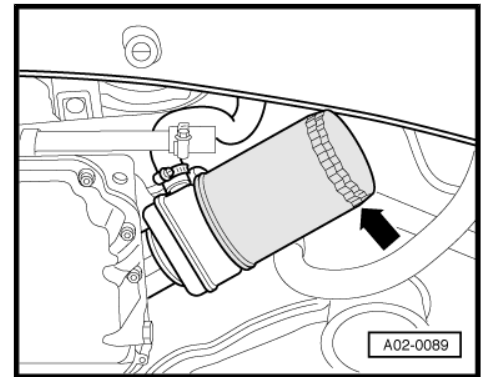
Requirements:

- Engine oil drained.

Procedure:

- Use Hazet strap wrench - 2171-1- or oil filter tool - 3417- to slacken oil filter cartridge -arrow- and then remove it.
- Clean sealing surface for oil filter at engine.
- Lubricate rubber seal on new oil filter cartridge with engine oil.
- Fit new oil filter cartridge on engine and tighten to specified torque (see table of tightening torques for installation [⇒ page 76](#)).

Continue installation in reverse sequence.



3.52.4 8-cyl. petrol engine 4.2 ltr. FSI

Special tools and workshop equipment required

- ◆ Torque wrench - V.A.G 1331- , measuring range 6 to 50 Nm
- ◆ Or: torque wrench - VAS 6583- , measuring range 3 to 60 Nm
- ◆ Or: torque wrench - VAS 5820- , measuring range 20 to 100 Nm

Table of tightening torques for installation:

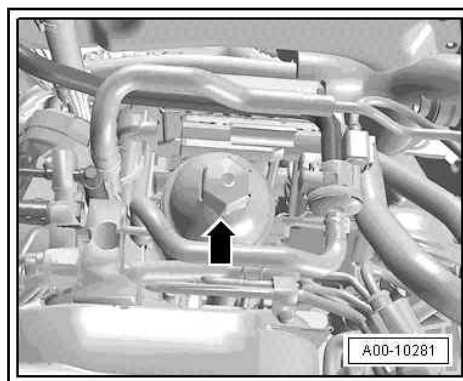
Component/fastener	[Nm]
Sealing cap	25

Removal steps:

- Remove engine cover panel [⇒ page 8](#) .

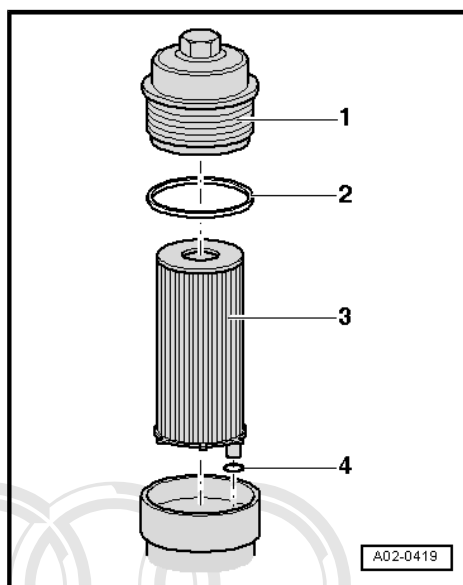
Procedure:

- Loosen sealing cap -arrow- of oil filter using socket (32 mm) . This causes a valve to open.
- Wait a few minutes to allow engine oil to drain from filter housing into crankcase.
- Completely remove sealing cap. Make sure that no engine oil drips onto engine.



- Pull oil filter element -1- and O-ring -2- out of sealing cap -3-.
- Clean sealing surfaces of sealing cap -1-.
- Lightly lubricate new O-rings -2- and -4- with engine oil and insert O-rings.
- Fit new oil filter element -1- in sealing cap -3-.
- Screw sealing cap -1- into oil filter housing and tighten it to specified torque using socket (32 mm) (see table of tightening torques for installation ⇒ [page 77](#)).

Continue installation in reverse sequence.



3.52.5 8-cyl. petrol engine 4.2 ltr. MPI

Special tools and workshop equipment required

- ◆ Torque wrench - V.A.G 1331- , measuring range 6 to 50 Nm
- ◆ Or: torque wrench - VAS 6583- , measuring range 3 to 60 Nm
- ◆ Or: torque wrench - VAS 5820- , measuring range 20 to 100 Nm

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Table of tightening torques for installation:

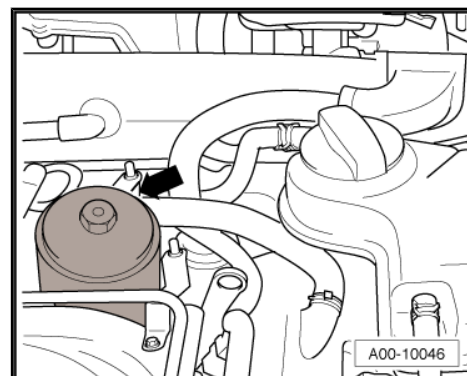
Component/fastener	[Nm]
Sealing cap	25

Removal steps:

- Remove engine cover panel ⇒ [page 8](#) .

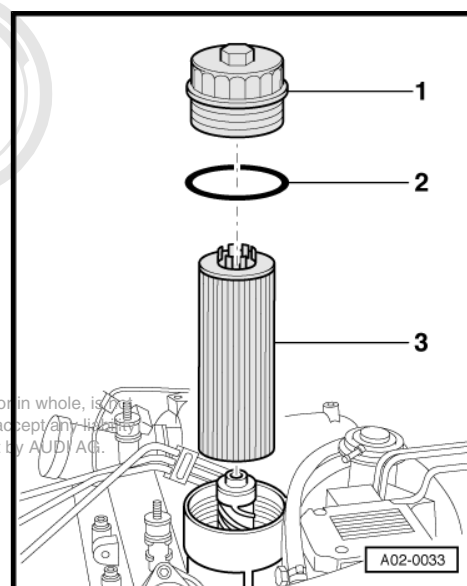
Procedure:

- Loosen sealing cap -arrow- of oil filter using socket (36 mm) . This causes a valve to open.
- Wait a few minutes to allow engine oil to drain from filter housing into crankcase.
- Completely remove sealing cap. Make sure that no engine oil drips onto engine.



- Pull oil filter element -3- and O-ring -2- out of sealing cap -1-.
- Clean sealing surfaces of sealing cap -1-.
- Lightly lubricate new O-ring -2- with engine oil and insert O-ring.
- Fit new oil filter element -3- in sealing cap -1-.
- Screw sealing cap -1- into oil filter housing and tighten it to specified torque using socket (36 mm) (see table of tightening torques for installation ⇒ [page 78](#)).

Continue installation in reverse sequence.



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3.52.6 10-cyl. petrol engine 5.0 ltr. TFSI

Special tools and workshop equipment required

- ◆ Torque wrench - V.A.G 1331- , measuring range 6 to 50 Nm
- ◆ Or: torque wrench - VAS 6583- , measuring range 3 to 60 Nm
- ◆ Or: torque wrench - VAS 5820- , measuring range 20 to 100 Nm

Table of tightening torques for installation:

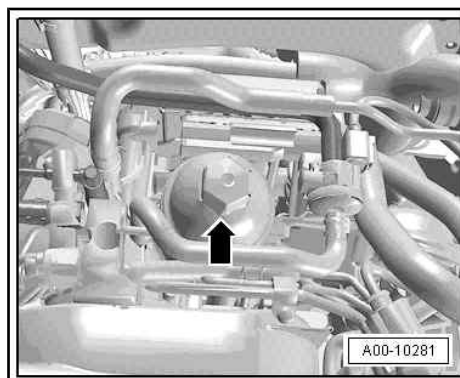
Component/fastener	[Nm]
Sealing cap	25

Removal steps:

- Remove engine cover panel ⇒ [page 8](#) .

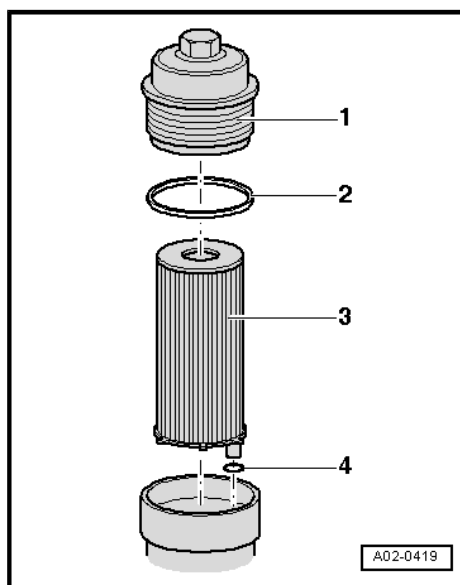
Procedure:

- Loosen sealing cap -arrow- of oil filter using socket (32 mm) . This causes a valve to open.
- Wait a few minutes to allow engine oil to drain from filter housing into crankcase.
- Completely remove sealing cap. Make sure that no engine oil drips onto engine.



- Pull oil filter element -1- and O-ring -2- out of sealing cap -3-.
- Clean sealing surfaces of sealing cap -1-.
- Lightly lubricate new O-rings -2- and -4- with engine oil and insert O-rings.
- Fit new oil filter element -1- in sealing cap -3-.
- Screw sealing cap -1- into oil filter housing and tighten it to specified torque using socket (32 mm) (see table of tightening torques for installation ⇒ [page 79](#)).

Continue installation in reverse sequence.



3.52.7 10-cyl. petrol engine 5.2 ltr. FSI

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Special tools and workshop equipment required

- ◆ Torque wrench - V.A.G 1331- , measuring range 6 to 50 Nm
- ◆ Or: torque wrench - VAS 6583- , measuring range 3 to 60 Nm
- ◆ Or: torque wrench - VAS 5820- , measuring range 20 to 100 Nm

Table of tightening torques for installation:

Component/fastener	[Nm]
Sealing cap	25

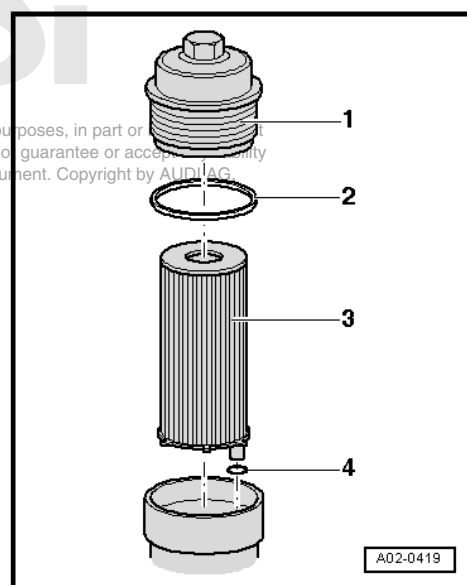
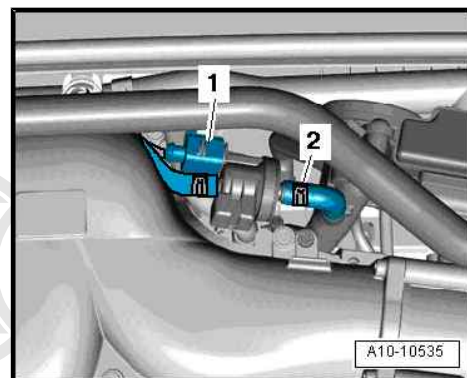
Removal steps:

- Remove engine cover panel ⇒ [page 8](#) .

Procedure:

- Unplug electrical connector -1- at activated charcoal filter solenoid valve 1 - N80- .
- Detach vacuum hose -2- from activated charcoal filter solenoid valve 1 - N80- .
- Take activated charcoal filter solenoid valve 1 - N80- out of bracket and move to side with hose attached.
- Loosen sealing cap of oil filter using socket (32 mm) . This causes a valve to open.
- Wait a few minutes to allow engine oil to drain from filter housing into crankcase.
- Completely remove sealing cap. Make sure that no engine oil drips onto engine.
- Pull oil filter element -1- and O-ring -2- out of sealing cap -3-.
- Clean sealing surfaces of sealing cap -1-.
- Lightly lubricate new O-rings -2- and -4- with engine oil and insert O-rings.
- Fit new oil filter element -1- in sealing cap -3-.
- Screw sealing cap -1- into oil filter housing and tighten it to specified torque using socket (32 mm) (see table of tightening torques for installation).

Continue installation in reverse sequence.



3.52.8 4-cyl. diesel engine 2.0 ltr. TDI

Special tools and workshop equipment required

- ◆ Torque wrench - V.A.G 1331- , measuring range 6 to 50 Nm
- ◆ Or: torque wrench - VAS 6583- , measuring range 3 to 60 Nm
- ◆ Or: torque wrench - VAS 5820- , measuring range 20 to 100 Nm

Table of tightening torques for installation:

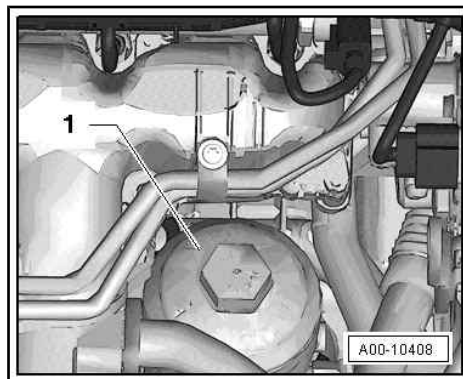
Component/fastener	[Nm]
Sealing cap	25

Removal steps:

- Remove engine cover panel ⇒ [page 8](#) .

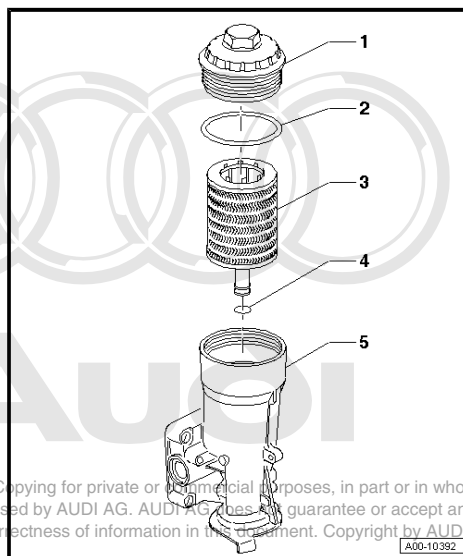
Procedure:

- Loosen sealing cap -1- of oil filter using socket (32 mm) . This causes a valve to open.
- Wait a few minutes to allow engine oil to drain from filter housing into crankcase.
- Completely remove sealing cap. Make sure that no engine oil drips onto engine.



- Pull oil filter element -3- and O-ring -2- out of sealing cap -1-.
- Clean sealing surfaces of sealing cap -1-.
- Lightly lubricate new O-rings -2- and -4- with engine oil and insert O-rings.
- Fit new oil filter element -3- in sealing cap -3-.
- Screw sealing cap -1- into oil filter housing -5- and tighten it to specified torque using socket (32 mm) (see table of tightening torques for installation ⇒ [page 81](#)).

Continue installation in reverse sequence.



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3.52.9 6-cyl. diesel engine 2.7 ltr. TDI/3.0 ltr. TDI

Special tools and workshop equipment required

- ◆ Torque wrench - V.A.G 1331- , measuring range 6 to 50 Nm
- ◆ Or: torque wrench - VAS 6583- , measuring range 3 to 60 Nm
- ◆ Or: torque wrench - VAS 5820- , measuring range 20 to 100 Nm

Table of tightening torques for installation:

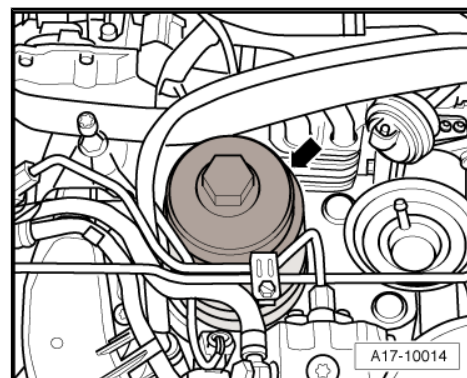
Component/fastener	[Nm]
Sealing cap	35

Removal steps:

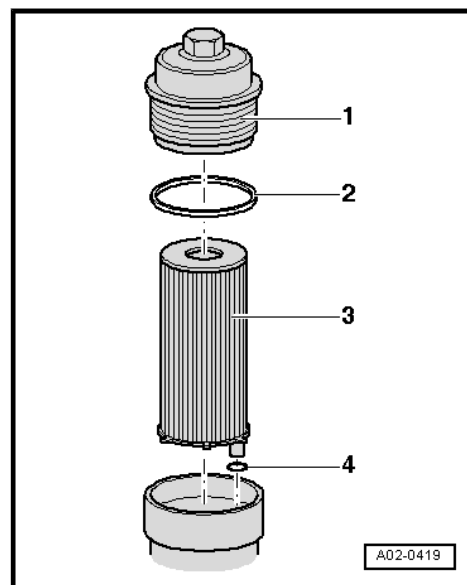
- Remove engine cover panel ⇒ [page 8](#) .

Procedure:

- Loosen sealing cap -arrow- using socket (32 mm) . This causes a valve to open.
- Wait a few minutes to allow engine oil to drain from filter housing into crankcase.
- Completely remove sealing cap. Make sure that no engine oil drips onto engine.



- Pull oil filter element -3- and O-ring -2- out of sealing cap -1-.
- Clean sealing surfaces of sealing cap -1-.
- Lightly lubricate new O-rings -2- and -4- with engine oil and insert O-rings.
- Fit new oil filter element -3- in sealing cap -1-.
- Screw sealing cap -1- into oil filter housing and tighten it to specified torque using socket (32 mm) (see table of tightening torques for installation ⇒ [page 82](#)).



Continue installation in reverse sequence.

3.53 Engine oil: filling up

CAUTION

Risk of engine damage if the engine is revved too soon after changing the oil!

- ◆ The engine must only run at idling speed as long as the oil pressure warning lamp in the instrument cluster is on.
- ◆ Increase the engine speed only after the warning lamp has gone out.

Refer to ELSA maintenance table for engine-specific oil capacities and oil grades.

10-cyl. petrol engines 5.0 ltr. TFSI ⇒ [page 83](#)

All engines except 10-cyl. petrol engines 5.0 ltr. TFSI

⇒ [page 84](#)

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3.53.1 10-cyl. petrol engines 5.0 ltr. TFSI

Procedure:

- Fill 5.0 ltr. of engine oil into oil reservoir.
- Start engine and run at idling speed.
- After 30 seconds at idling speed, turn engine off.

- Add another 1.5 ltr. of engine oil into oil reservoir.
- Then check oil level and adjust if necessary ⇒ [page 84](#) .

3.53.2 All engines except 10-cyl. petrol engines 5.0 ltr. TFSI

Special tools and workshop equipment required

- ◆ Oil filler funnel - VAS 6842-



Procedure:

- Fill up engine oil using oil filler funnel - VAS 6842- .
- Then check oil level and adjust if necessary ⇒ [page 84](#) .

3.54 Engine oil: checking oil level and correcting if necessary

⚠ CAUTION

Risk of damage to catalytic converter if engine oil level is too high!

- ◆ Drain engine oil until level meets specification.

Requirements for all engines except V6 diesel engines and V8 petrol engines:

- Engine oil temperature at least 60 °C
- Wait a few minutes after switching off the engine to allow the oil to flow back into the sump.
- Vehicle must be level (horizontal).

Requirements for V6 diesel engines:

- The engine must be at operating temperature (90 °C oil temperature).
- Wait approx. two minutes after switching off the engine to allow the oil to drain back into the sump.
- Vehicle must be level (horizontal).

Requirements for V8 petrol engines:

- The engine must be at operating temperature (90 °C oil temperature).
- Allow engine to run at idling speed for approx. one minute.
- Switch off engine and wait approx. five minutes (to allow oil to flow back slowly).
- Check engine oil level within one minute.
- Vehicle must be level (horizontal).

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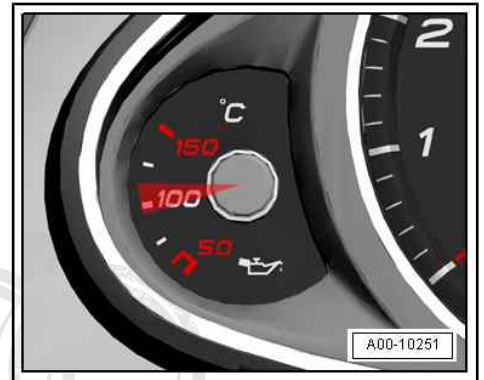
Test requirements for V10 petrol engine (Audi RS 6):

- Engine oil temperature from 100 °C to 110 °C (-shaded area-).
- Vehicle must be level (horizontal).

All models except Audi RS 6: checking oil level with dipstick
⇒ [page 85](#)

All models except Audi RS 6: checking oil level on MMI
⇒ [page 85](#)

Audi RS 6 ⇒ [page 86](#)

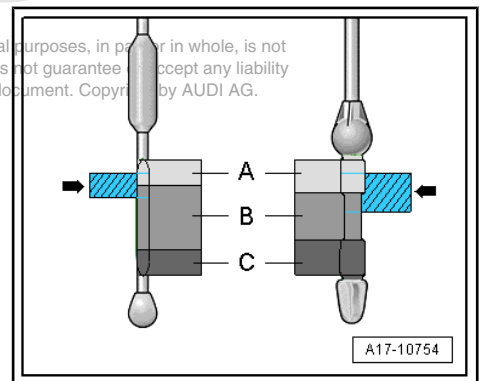


3.54.1 All models except Audi RS 6: checking oil level with dipstick

Procedure:

- Pull out dipstick and wipe it off with a clean cloth.
- Re-insert dipstick into guide tube as far as it will go.
- Pull oil dipstick out again and read off oil level on marked area.
- Evaluate oil level and determine any necessary measures accordingly:

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Fluid level:	Evaluation/measure:
Marked area -arrow-	Optimum oil level.
Area A	Oil must not be topped up.
Area B	Oil can be topped up.
Area C	Oil must be topped up.

Note

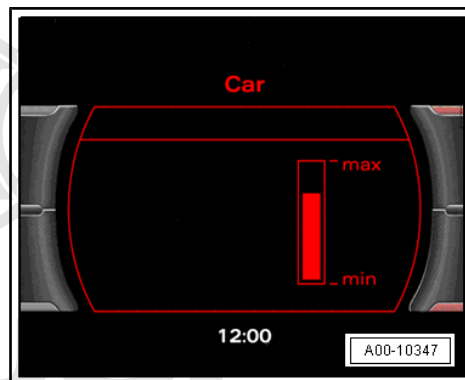
Some engines are not fitted with an oil dipstick; if this is the case, use the oil level display in the MMI system ⇒ [page 85](#).

3.54.2 All models except Audi RS 6: checking oil level on MMI

Procedure:

- If necessary, close bonnet.
- Switch on ignition and activate MMI.
- Press function selector button **CAR**.

- Under »Car systems«, navigate through following menu structure:
 - ◆ Servicing & checks
 - ◆ Fluid level
- Read off and evaluate oil level on display.
- If necessary, correct oil level:



Fluid level	Evaluation/measure
At or just under "max"	Optimum oil level!
Significantly under "max"	Fill up engine oil to optimum level (close bonnet to refresh oil level display).



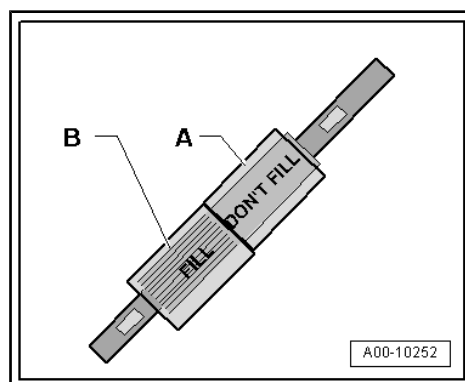
Note

- ◆ The oil level display on the MMI is not refreshed when the bonnet is open.
- ◆ A warning lamp in the driver information system indicates that the level is too low.

3.54.3 Audi RS 6

Procedure:

- Allow engine to run at idling speed for at least 3 minutes at operating temperature (100 °C to 110 °C).
- Switch off engine and wait two minutes.
- Pull out dipstick and wipe it off with a clean cloth.
- Pull oil dipstick out again and read off oil level on marked area.
- Evaluate oil level and determine any necessary measures accordingly:



Fluid level:	Evaluation/measure:
In section -A- ("DON'T FILL")	Oil level OK.
In section -B- ("FILL")	Oil must be topped up: required quantity approx. 1 ltr.

 Note

- ◆ *Optimum oil level: approx. 5 mm below top edge of »DON'T FILL« section.*
- ◆ *Do NOT operate vehicle with oil level above section -A- or below section -B-.*

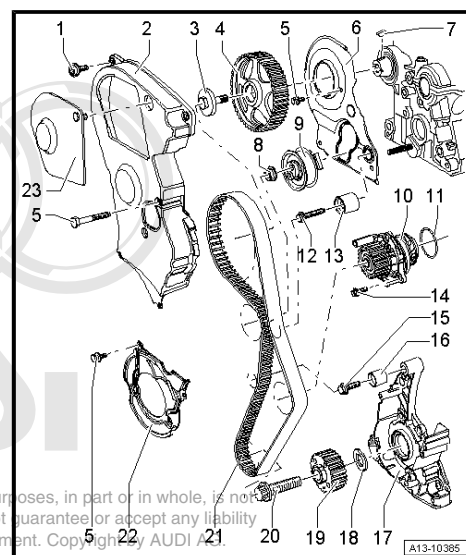
3.55 Toothed belt for camshaft drive: renewing belt and checking tensioning system and idler rollers

Procedure:

- Renew toothed belt for camshaft drive according to specifications in Workshop Manual ⇒ Rep. gr. 15 ; Toothed belt drive; Removing and installing toothed belt .

If toothed belt has been removed:

- Ensure that both idler rollers -13- and -16- turn freely, and check them for mechanical damage.
- Ensure that tensioning roller -9- turns freely and functions properly, and check it for mechanical damage.
- If faults are found: Renew relevant component.



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3.56 Spark plugs: renewing

4-cyl. petrol engine 2.0 ltr. TFSI ⇒ [page 87](#)

6-cyl. petrol engine 2.4 ltr. MPI ⇒ [page 89](#)

6-cyl. petrol engine 2.8 ltr. FSI/3.2 ltr. FSI (version 1)
⇒ [page 92](#)

6-cyl. petrol engine 3.0 ltr. TFSI ⇒ [page 94](#)

6-cyl. petrol engine 3.0 ltr. MPI ⇒ [page 97](#)

6-cyl. petrol engine 3.2 ltr. FSI (version 2) ⇒ [page 100](#)

8-cyl. petrol engine 4.2 ltr. MPI ⇒ [page 103](#)

8-cyl. petrol engine 4.2 ltr. FSI ⇒ [page 106](#)

10-cyl. petrol engine 5.0 ltr. TFSI ⇒ [page 108](#)

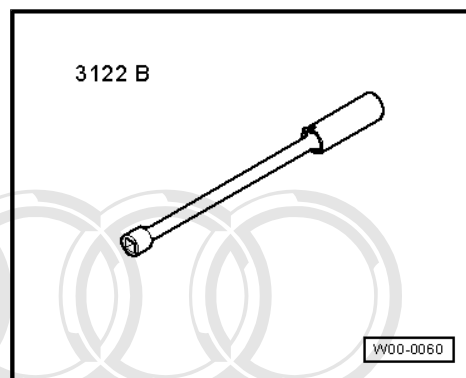
10-cyl. petrol engine 5.2 ltr. FSI ⇒ [page 110](#)

Lubricating ignition coils ⇒ [page 113](#)

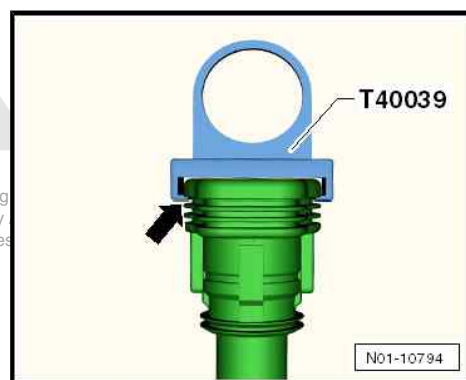
3.56.1 4-cyl. petrol engine 2.0 ltr. TFSI

Special tools and workshop equipment required

◆ Spark plug spanner - 3122B-



◆ Puller - T40039-



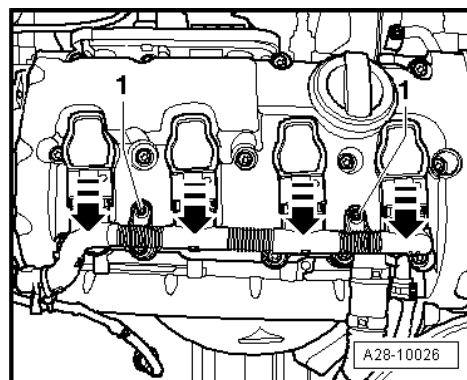
◆ Torque wrench - VAS 6583- , measuring range 3 to 60 Nm

Table of tightening torques for installation:

Component/fastener	[Nm]
Spark plugs with M12 thread	20+5
Spark plugs with M14 thread	30+5
Securing bolts for connector rail	5

Step 1 - removing spark plugs:

- Unscrew bolts -1- for connector rail.
- Release connectors for ignition coils and unplug all connectors from ignition coils at the same time in direction of -arrow-.
- Place connector rail slightly to one side. Make sure that wiring is not kinked or damaged.

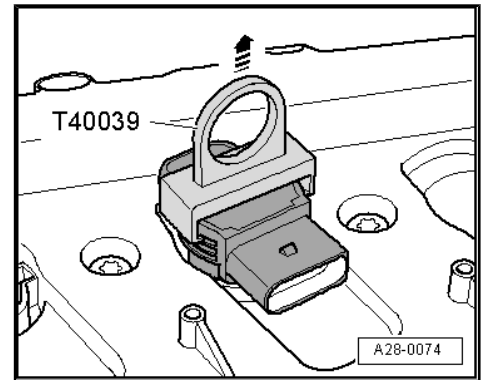


- Position puller - T40039- on thick rib at top of ignition coils and detach all ignition coils from spark plugs one after the other in direction of -arrow-.
- Unscrew spark plugs from cylinder head using spark plug socket - VAS 3122B- .

Step 2 - installing spark plugs:

- Install new spark plugs using spark plug socket and extension - VAS 3122B- and tighten to specified torque (see table of tightening torques for installation ⇒ [page 88](#)).
- Lubricate ignition coils ⇒ [page 113](#) .
- Fit all ignition coils loosely into spark plug apertures and align with connectors of connector rail.
- Push ignition coils evenly onto spark plugs by hand (do not attempt to knock in coils with any kind of tool).
- Align connector rail and plug all connectors simultaneously onto ignition coils so that they engage.
- Install connector rail, screwing in securing bolts to specified torque (see table of tightening torques for installation ⇒ [page 88](#)).

Continue installation in reverse sequence.

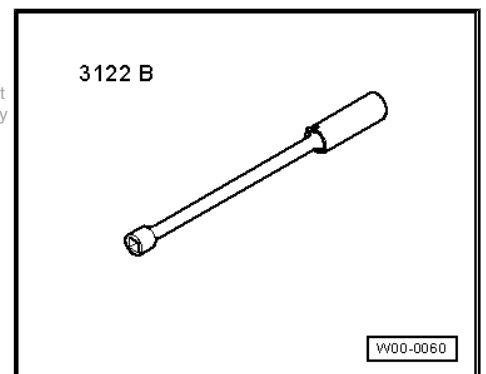


3.56.2 6-cyl. petrol engine 2.4 ltr. MPI

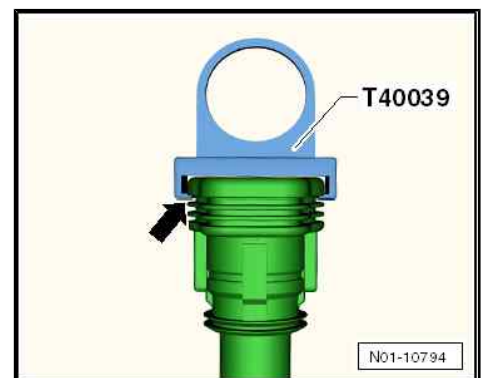
Special tools and workshop equipment required

- ◆ Spark plug spanner - 3122B-

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- ◆ Puller - T40039-



- ◆ Torque wrench - VAS 6583- , measuring range 3 to 60 Nm

Table of tightening torques for installation:

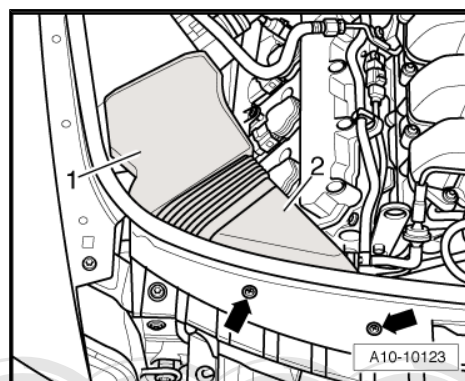
Component/fastener	[Nm]
Spark plugs with M12 thread	20+5
Spark plugs with M14 thread	30+5
Securing bolts for connector rail	5

Removal steps:

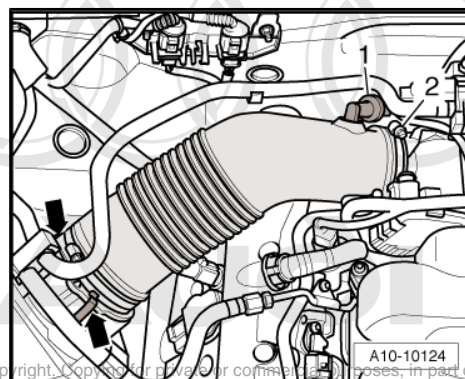
- Remove engine cover panel ⇒ [page 8](#) .

Step 1 - removing spark plugs, cylinder bank (right-side):

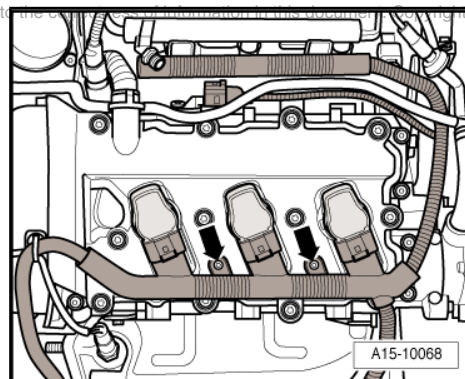
- Unscrew securing bolts -arrows- and detach air ducts -1- and -2-



- Detach non-return valve -1- from air pipe.
- Unfasten hose clip -2-, release retaining clips -arrows- and detach air pipe.



- Unscrew bolts -arrows- for connector rail.
- Release connectors for ignition coils and unplug all connectors from ignition coils at the same time.
- Place connector rail slightly to one side. Make sure that wiring is not kinked or damaged.



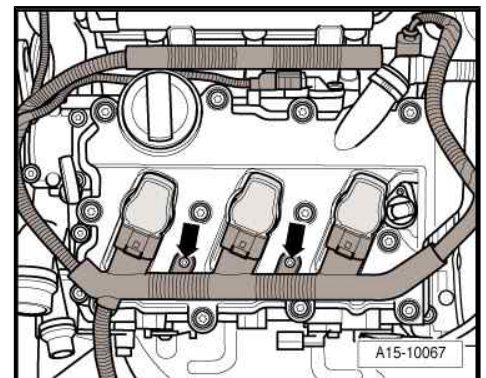
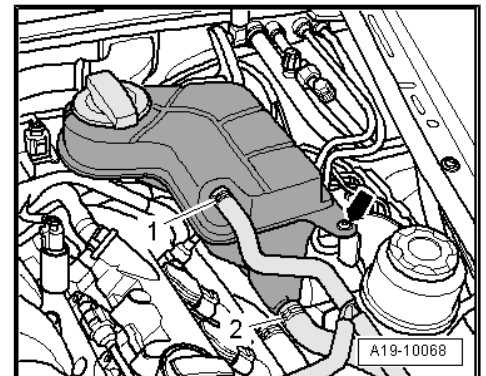
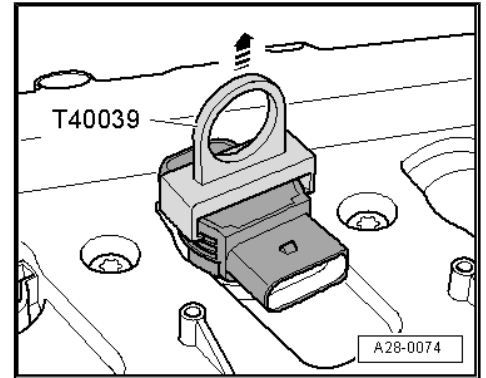
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- Position puller - T40039- on thick rib -arrow- at top of ignition coils and detach all ignition coils from spark plugs one after the other in direction of -arrow-.
- Unscrew spark plugs from cylinder head using spark plug socket - VAS 3122B- .

Step 2 - removing spark plugs, cylinder bank (left-side):

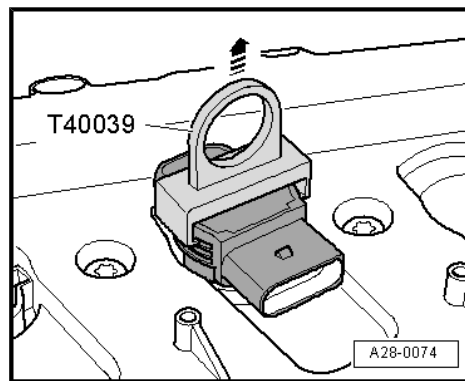
- Unplug electrical connector for coolant shortage indicator switch - F66- .
- Unscrew bolt -arrow- on coolant expansion tank.
- Move coolant expansion tank to one side with coolant hoses -1- and -2- attached.

- Unscrew bolts -arrows- for connector rail.
- Release connectors for ignition coils and unplug all connectors from ignition coils at the same time.
- Place connector rail slightly to one side. Make sure that wiring is not kinked or damaged.



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- Position puller - T40039- on thick rib at top of ignition coils and detach all ignition coils from spark plugs one after the other in direction of -arrow-.
- Unscrew spark plugs from cylinder head using spark plug socket - VAS 3122B- .



Step 3 - installing spark plugs:

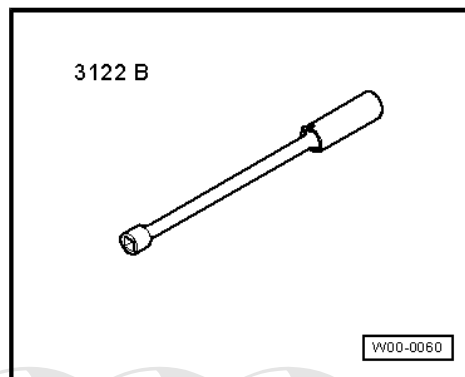
- Install new spark plugs using spark plug socket and extension - VAS 3122B- and tighten to specified torque (see table of tightening torques for installation ⇒ [page 90](#)).
- Lubricate ignition coils ⇒ [page 113](#) .
- Fit all ignition coils loosely into spark plug apertures and align with connectors of connector rail.
- Push ignition coils evenly onto spark plugs by hand (do not attempt to knock in coils with any kind of tool).
- Align connector rail and plug all connectors simultaneously onto ignition coils so that they engage.
- Install connector rail, screwing in securing bolts to specified torque (see table of tightening torques for installation ⇒ [page 90](#)).

Continue installation in reverse sequence.

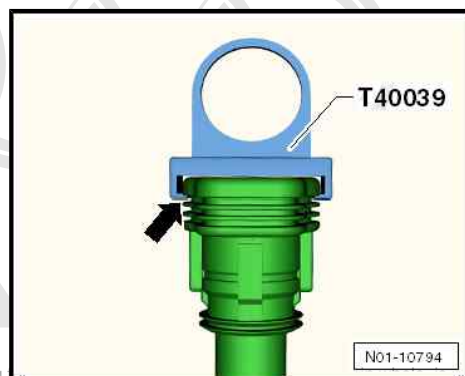
3.56.3 6-cyl. petrol engine 2.8 ltr. FSI/3.2 ltr. FSI (version 1)

Special tools and workshop equipment required

- ◆ Spark plug spanner - 3122B-



- ◆ Puller - T40039-



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- ◆ Torque wrench - VAS 6583- , measuring range 3 to 60 Nm

Table of tightening torques for installation:

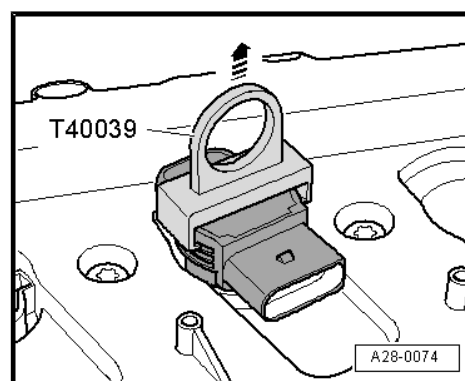
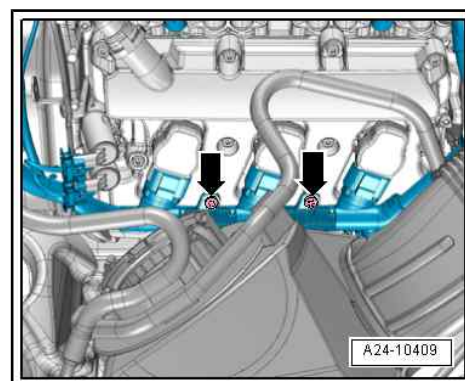
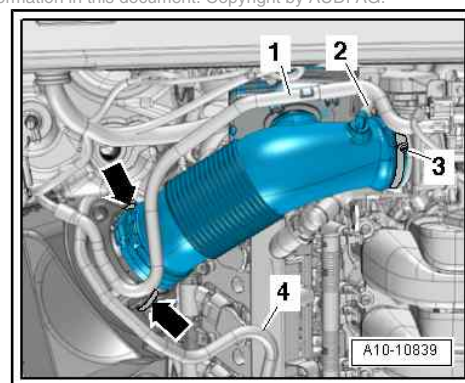
Component/fastener	[Nm]
Spark plugs with M12 thread	20+5
Spark plugs with M14 thread	30+5
Securing bolts for connector rail	5

Removal steps:

- Remove engine cover panel [⇒ page 8](#).

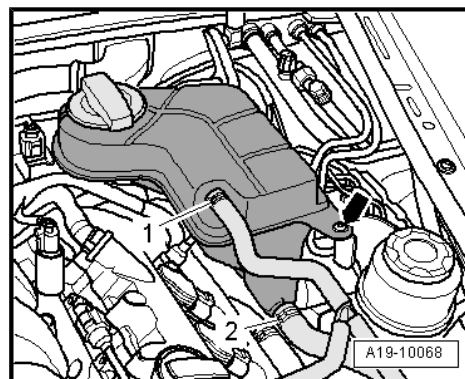
Step 1 - removing spark plugs, cylinder bank (right-side):

- Move line -1- clear at air pipe.
- Disconnect vacuum hose -2- from air pipe.
- Unfasten hose clip -3-, release retaining clips -arrows- and detach air pipe.
- Unscrew bolts -arrows- for connector rail.
- Release connectors for ignition coils -arrows- and unplug all connectors from ignition coils at the same time.
- Place connector rail slightly to one side. Make sure that wiring is not kinked or damaged.
- Position puller - T40039- on thick rib at top of ignition coils and detach all ignition coils from spark plugs one after the other in direction of -arrow-.
- Unscrew spark plugs from cylinder head using spark plug socket - VAS 3122B- .

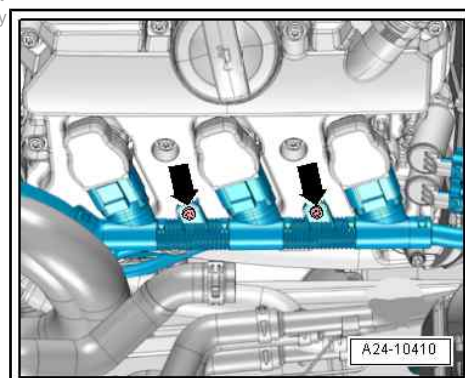


Step 2 - removing spark plugs, cylinder bank (left-side):

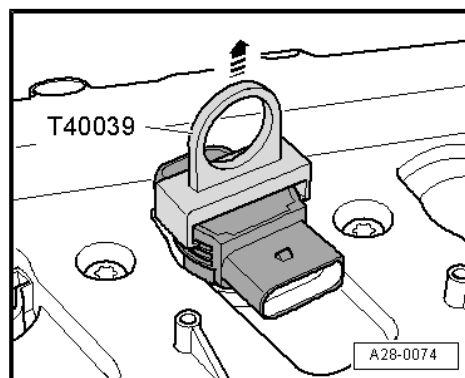
- Unplug electrical connector for coolant shortage indicator switch - F66- .
- Unscrew bolt -arrow- on coolant expansion tank.
- Move coolant expansion tank to one side with coolant hoses -1- and -2- attached.



- Unscrew bolts -arrows- for connector rail.
- Release connectors for ignition coils -arrows- and unplug all connectors from ignition coils at the same time.
- Place connector rail slightly to one side. Make sure that wiring is not kinked or damaged.



- Position puller - T40039- on thick rib at top of ignition coils and detach all ignition coils from spark plugs one after the other in direction of -arrow-.
- Unscrew spark plugs from cylinder head using spark plug socket - VAS 3122B- .



Step 3 - installing spark plugs:

- Install new spark plugs using spark plug socket and extension - VAS 3122B- and tighten to specified torque (see table of tightening torques for installation ⇒ [page 93](#)).
- Lubricate ignition coils ⇒ [page 113](#) .
- Fit all ignition coils loosely into spark plug apertures and align with connectors of connector rail.
- Push ignition coils evenly onto spark plugs by hand (do not attempt to knock in coils with any kind of tool).
- Align connector rail and plug all connectors simultaneously onto ignition coils so that they engage.
- Install connector rail, screwing in securing bolts to specified torque (see table of tightening torques for installation ⇒ [page 93](#)).

Continue installation in reverse sequence.



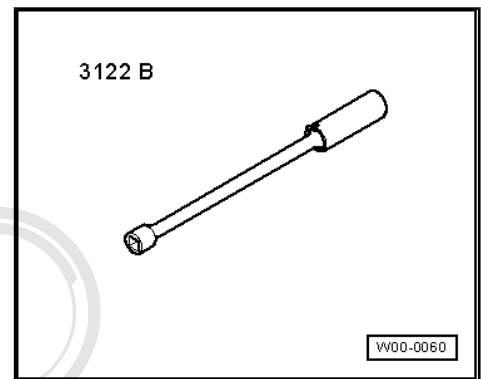
Note

There are additional spark plug versions for the 6-cylinder 3.2 ltr. FSI petrol engine ⇒ [page 100](#) .

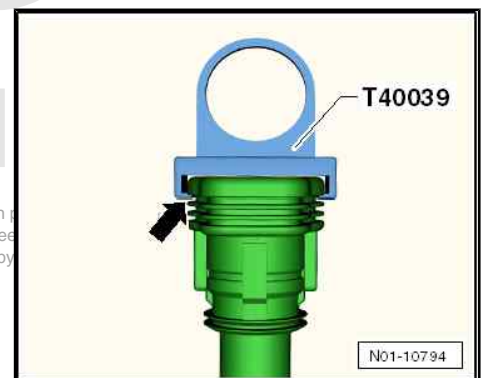
3.56.4 6-cyl. petrol engine 3.0 ltr. TFSI

Special tools and workshop equipment required

◆ Spark plug spanner - 3122B-



◆ Puller - T40039-



◆ Torque wrench - VAS 6583- , measuring range 3 to 60 Nm

Table of tightening torques for installation:

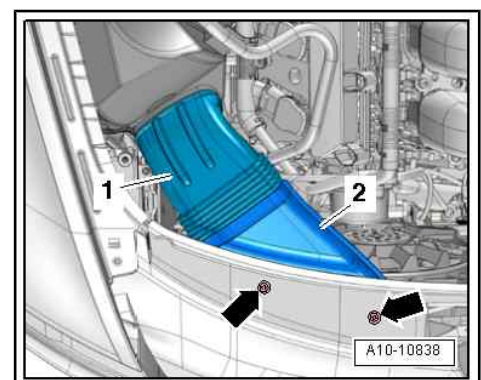
Component/fastener	[Nm]
Spark plugs with M12 thread	20+5
Spark plugs with M14 thread	30+5
Securing bolts for connector rail	5

Removal steps:

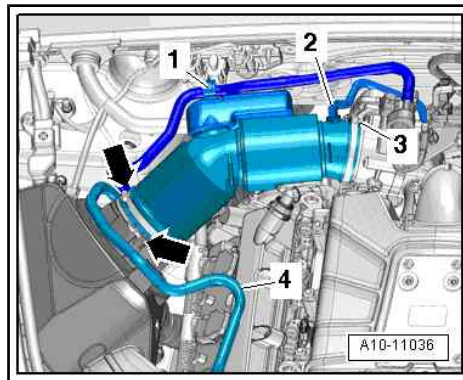
- Remove engine cover panel ⇒ [page 8](#) .

Step 1 - removing spark plugs, cylinder bank (right-side):

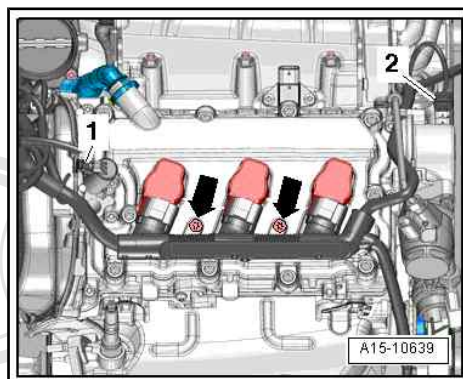
- Unscrew bolts -arrows- and detach air ducts -1- and -2-.



- Move fuel line -4- and line -1- clear at air cleaner housing and at air pipe.
- Disconnect vacuum hose -2- from air pipe.
- Unfasten hose clip -3-, release retaining clips -arrows- and remove air pipe.



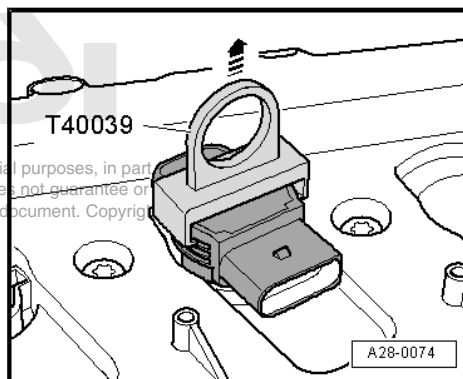
- Unscrew bolts -arrows- for connector rail.
- Release connectors for ignition coils and unplug all connectors from ignition coils at the same time.
- Place connector rail slightly to one side. Make sure that wiring is not kinked or damaged.



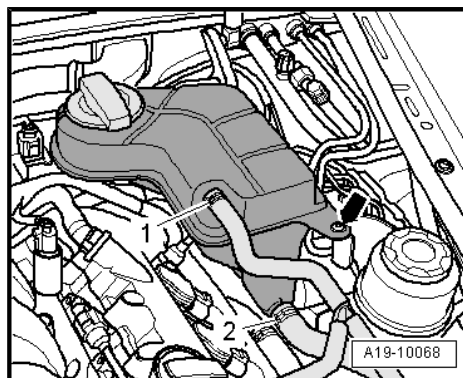
- Position puller - T40039- on thick rib at top of ignition coils and detach all ignition coils from spark plugs one after the other in direction of -arrow-.
- Unscrew spark plugs from cylinder head using spark plug socket - VAS 3122B- .

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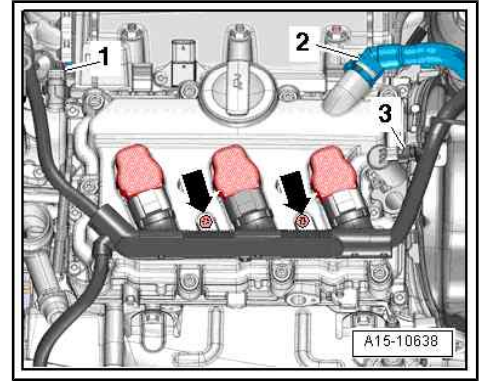
Step 2 - removing spark plugs, cylinder bank (left-side):



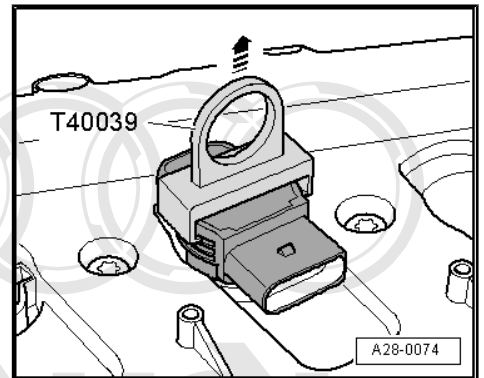
- Unplug electrical connector for coolant shortage indicator switch - F66- .
- Unscrew bolt -arrow- on coolant expansion tank.
- Move coolant expansion tank to one side with coolant hoses -1- and -2- attached.



- Unscrew bolts -arrows- for connector rail.
- Release connectors for ignition coils -arrows- and unplug all connectors from ignition coils at the same time.
- Place connector rail slightly to one side. Make sure that wiring is not kinked or damaged.



- Position puller - T40039- on thick rib at top of ignition coils and detach all ignition coils from spark plugs one after the other in direction of -arrow-.
- Unscrew spark plugs from cylinder head using spark plug socket - VAS 3122B- .



Step 3 - installing spark plugs:

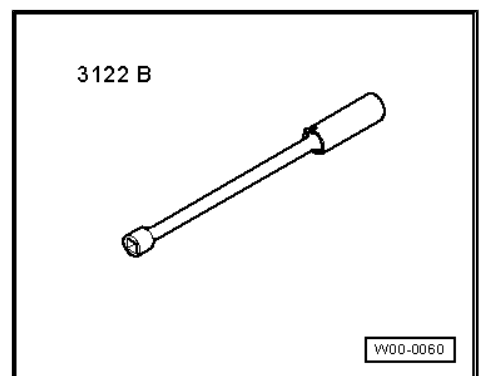
- Install new spark plugs using spark plug socket and extension - VAS 3122B- and tighten to specified torque (see table of tightening torques for installation ⇒ [page 95](#)).
- Lubricate ignition coils ⇒ [page 113](#) .
- Fit all ignition coils loosely into spark plug apertures and align with connectors of connector rail.
- Push ignition coils evenly onto spark plugs by hand (do not attempt to knock in coils with any kind of tool).
- Align connector rail and push all connectors onto ignition coils so that they engage.
- Install connector rail, screwing in securing bolts to specified torque (see table of tightening torques for installation ⇒ [page 95](#)).

Continue installation in reverse sequence.

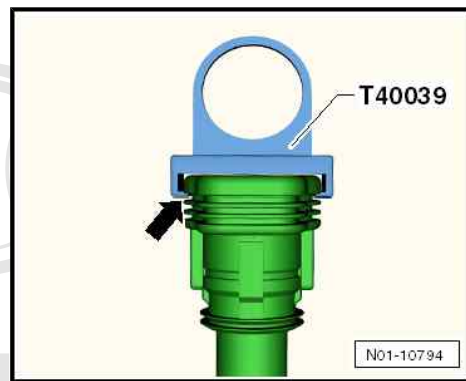
3.56.5 6-cyl. petrol engine 3.0 ltr. MPI

Special tools and workshop equipment required

- ◆ Spark plug spanner - 3122B-



◆ Puller - T40039-



◆ Torque wrench - VAS 6583- , measuring range 3 to 60 Nm

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Table of tightening torques for installation:

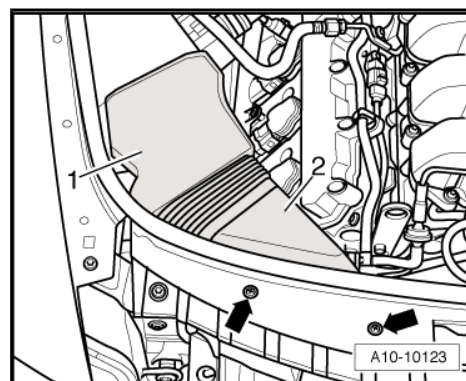
Component/fastener	[Nm]
Spark plugs with M12 thread	20+5
Spark plugs with M14 thread	30+5
Securing bolts for connector rail	5

Removal steps:

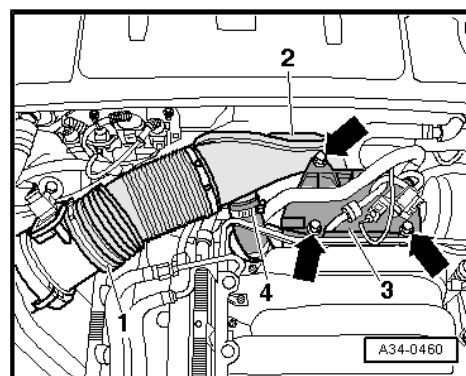
- Remove engine cover panel ⇒ [page 8](#) .

Step 1 - removing spark plugs, cylinder bank (right-side):

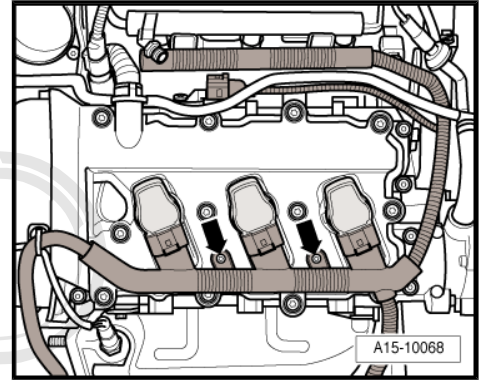
- Unscrew bolts -arrows- and detach air ducts -1- and -2-.



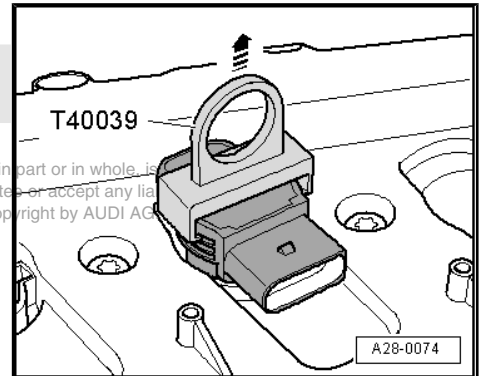
- Release retaining clips -1- and detach air pipe.



- Unscrew bolts -arrows- for connector rail.
- Release connectors for ignition coils and unplug all connectors from ignition coils at the same time.
- Place connector rail slightly to one side. Make sure that wiring is not kinked or damaged.

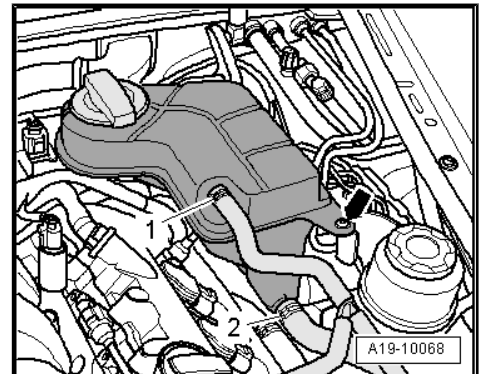


- Position puller - T40039- on thick rib at top of ignition coils and detach all ignition coils from spark plugs one after the other in direction of -arrow-.
- Unscrew spark plugs from cylinder head using spark plug socket - VAS 3122B- .

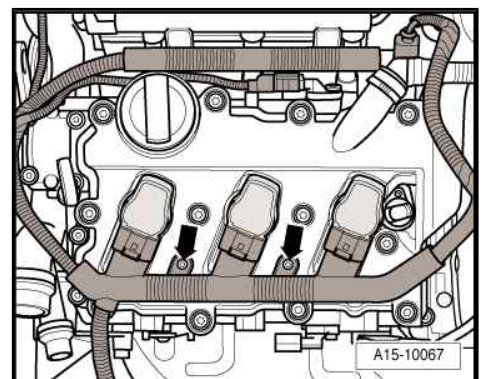


Step 2 - removing spark plugs, cylinder bank (left-side):

- Unplug electrical connector for coolant shortage indicator switch - F66- .
- Unscrew bolt -arrow- on coolant expansion tank.
- Move coolant expansion tank to one side with coolant hoses -1- and -2- attached.



- Unscrew bolts -arrows- for connector rail.
- Release connectors for ignition coils -arrows- and unplug all connectors from ignition coils at the same time.
- Place connector rail slightly to one side. Make sure that wiring is not kinked or damaged.



- Position puller - T40039- on thick rib at top of ignition coils and detach all ignition coils from spark plugs one after the other in direction of -arrow-.
- Unscrew spark plugs from cylinder head using spark plug socket - VAS 3122B- .

Step 3 - installing spark plugs:

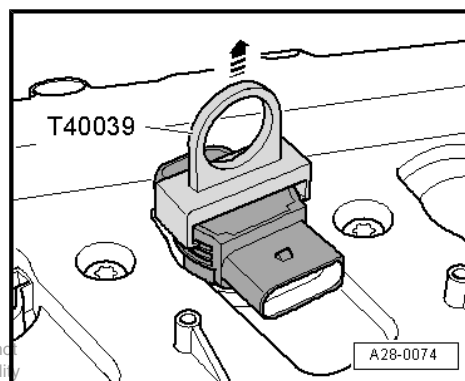
- Install new spark plugs using spark plug socket and extension - VAS 3122B- and tighten to specified torque (see table of tightening torques for installation [⇒ page 98](#)).
- Lubricate ignition coils [⇒ page 113](#) .
- Fit all ignition coils loosely into spark plug apertures and align with connectors of connector rail.
- Push ignition coils evenly onto spark plugs by hand (do not attempt to knock in coils with any kind of tool).
- Align connector rail and plug all connectors simultaneously onto ignition coils so that they engage.
- Install connector rail, screwing in securing bolts to specified torque (see table of tightening torques for installation [⇒ page 98](#)).

Continue installation in reverse sequence.

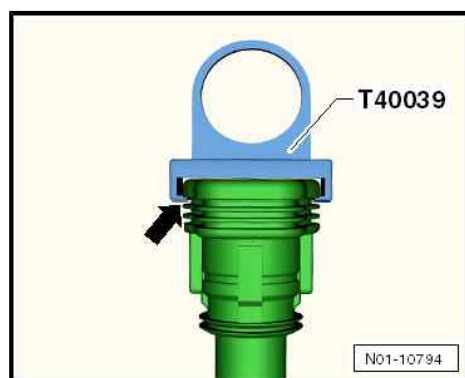
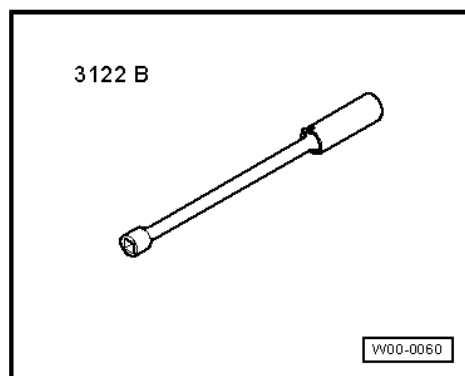
3.56.6 6-cyl. petrol engine 3.2 ltr. FSI (version 2)

Special tools and workshop equipment required

- ◆ Spark plug spanner - 3122B-



- ◆ Puller - T40039-



- ◆ Torque wrench - VAS 6583- , measuring range 3 to 60 Nm

Table of tightening torques for installation:

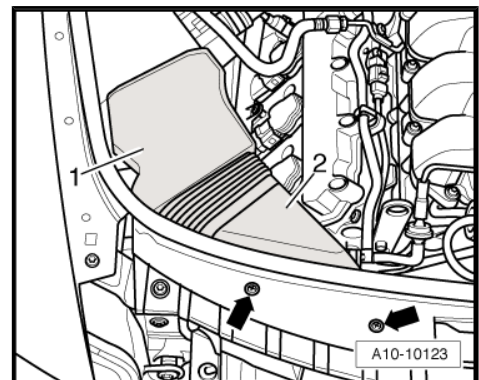
Component/fastener	[Nm]
Spark plugs with M12 thread	20+5
Spark plugs with M14 thread	30+5
Securing bolts for connector rail	5

Removal steps:

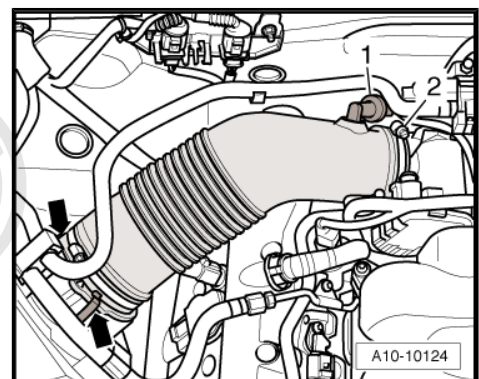
- Remove engine cover panel [⇒ page 8](#) .

Step 1 - removing spark plugs, cylinder bank (right-side):

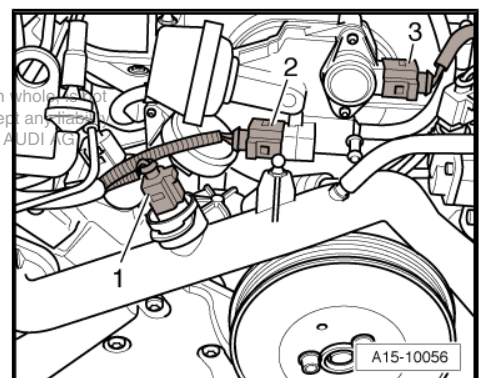
- Unscrew bolts -arrows- and detach air ducts -1- and -2-.



- Detach non-return valve -1- from air pipe.
- Unfasten hose clip -2-, release retaining clips -arrows- and detach air pipe.

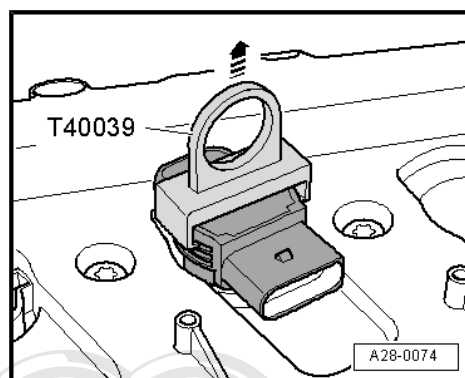
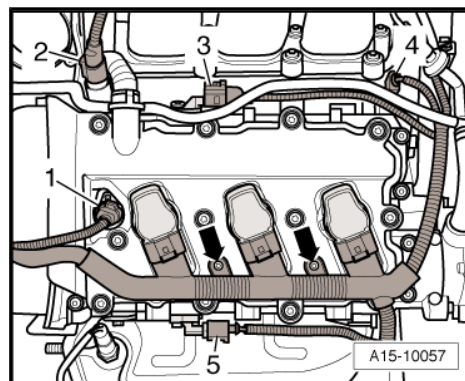


- Unplug electrical connector at coolant temperature sender - G62- -1- and variable intake manifold flap changeover valve - N239- -2-.



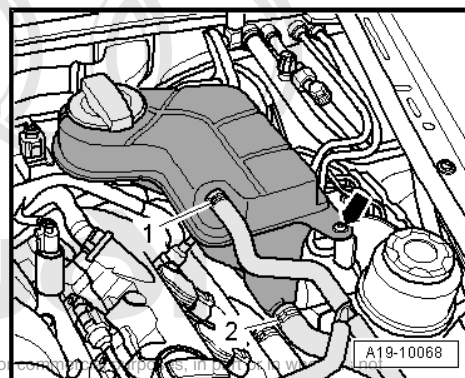
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- Unplug electrical connector for exhaust camshaft control valve - N318- -1-, camshaft control valve 1 - N205- -2-, Hall sender - G40- -3-, intake manifold flap potentiometer - G336- -4- and Hall sender 3 - G300- -5-.
- Unscrew bolts -arrows- for connector rail.
- Release connectors for ignition coils -arrows- and unplug all connectors from ignition coils at the same time.
- Place connector rail slightly to one side. Make sure that wiring is not kinked or damaged.
- Position puller - T40039- on thick rib at top of ignition coils and detach all ignition coils from spark plugs one after the other in direction of -arrow-.
- Unscrew spark plugs from cylinder head using spark plug socket - VAS 3122B- .

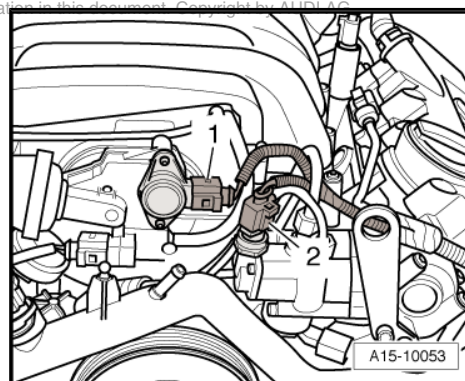


Step 2 - removing spark plugs, cylinder bank (left-side):

- Unplug electrical connector for coolant shortage indicator switch - F66- .
- Unscrew bolt -arrow- on coolant expansion tank.
- Move coolant expansion tank to one side with coolant hoses -1- and -2- attached.

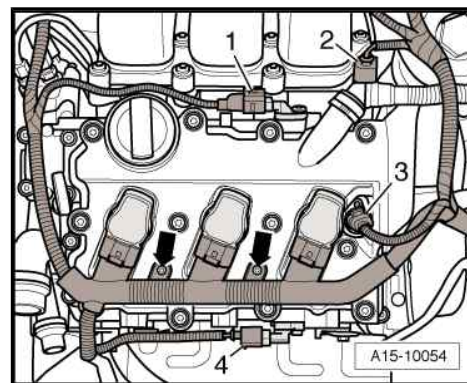


- Unplug electrical connectors for variable intake manifold position sender - G513- -1- and at high-pressure pump -2-.

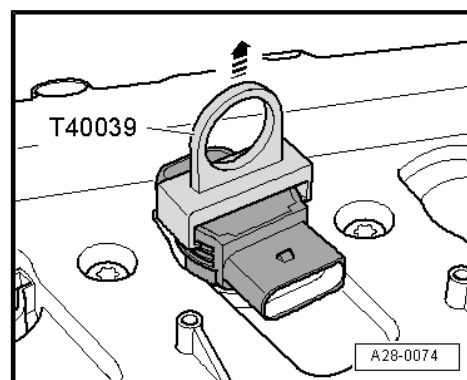


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- Unplug electrical connector for Hall sender 2 - G163- -1-, camshaft control valve 2 - N208- -2-, exhaust camshaft control valve 2 - N319- -3- and Hall sender 4 - G301- -4-.
- Unscrew bolts -arrows- for connector rail.
- Release connectors for ignition coils and unplug all connectors from ignition coils at the same time.
- Place connector rail slightly to one side. Make sure that wiring is not kinked or damaged.



- Position puller - T40039- on thick rib at top of ignition coils and detach all ignition coils from spark plugs one after the other in direction of -arrow-.
- Unscrew spark plugs from cylinder head using spark plug socket - VAS 3122B- .



Step 3 - installing spark plugs:

- Install new spark plugs using spark plug socket and extension - VAS 3122B- and tighten to specified torque (see table of tightening torques for installation ➤ [page 101](#)).
- Lubricate ignition coils ➤ [page 113](#) .
- Fit all ignition coils loosely into spark plug apertures and align with connectors of connector rail.
- Push ignition coils evenly onto spark plugs by hand (do not attempt to knock in coils with any kind of tool).
- Align connector rail and plug all connectors simultaneously onto ignition coils so that they engage.
- Install connector rail, screwing in securing bolts to specified torque (see table of tightening torques for installation ➤ [page 101](#)).

Continue installation in reverse sequence.



Note

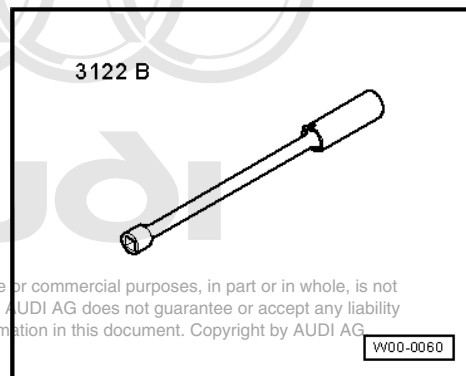
There are additional spark plug versions for the 6-cylinder 3.2 ltr. FSI petrol engine ➤ [page 92](#) .

3.56.7 8-cyl. petrol engine 4.2 ltr. MPI

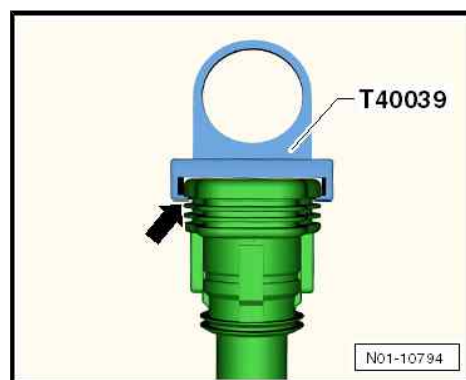
Special tools and workshop equipment required

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◆ Spark plug spanner - 3122B-



◆ Puller - T40039-



◆ Torque wrench - VAS 6583- , measuring range 3 to 60 Nm

Table of tightening torques for installation:

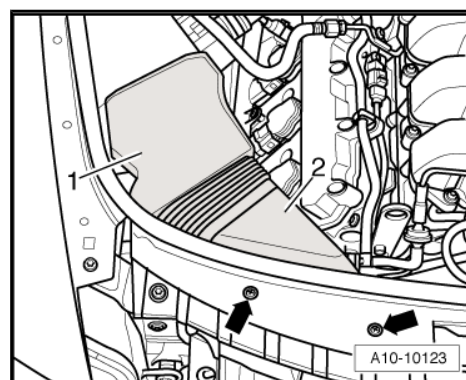
Component/fastener	[Nm]
Spark plugs with M12 thread	20+5
Spark plugs with M14 thread	30+5
Securing bolts for connector rail	5

Removal steps:

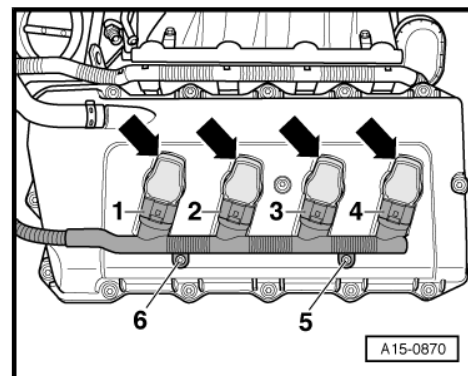
- Remove engine cover panel ⇒ [page 8](#) .

Step 1 - removing spark plugs, cylinder bank (right-side):

- Unscrew bolts -arrows- and detach air ducts -1- and -2-.
- Release hose clips and detach air pipe.

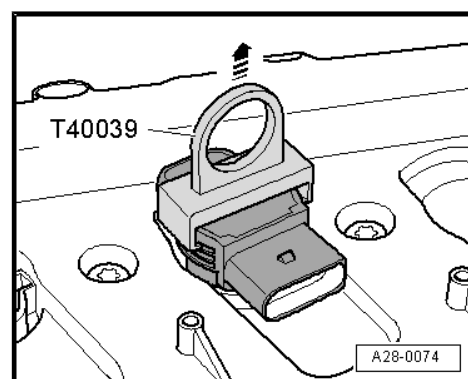


- Remove bolts -5- and -6- for connector rail.
- Release connectors -1-, -2-, -3- and -4- and unplug all connectors from ignition coils at the same time.
- Place connector rail slightly to one side. Make sure that wiring is not kinked or damaged.



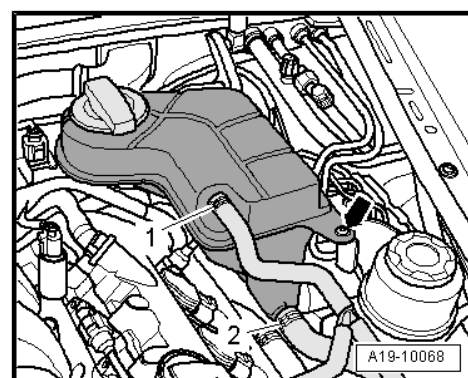
- Position puller - T40039- on thick rib at top of ignition coils and detach all ignition coils from spark plugs one after the other in direction of arrow.
- Unscrew spark plugs from cylinder head using spark plug socket - VAS 3122B- .

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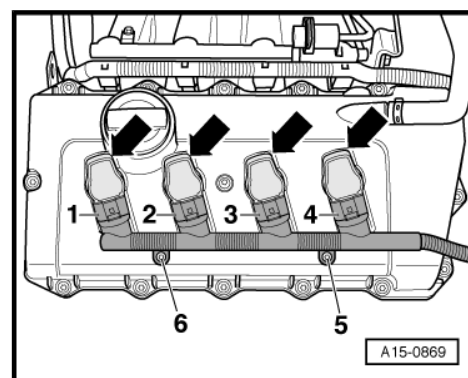


Step 2 - removing spark plugs, cylinder bank (left-side):

- Unplug electrical connector for coolant shortage indicator switch - F66- .
- Unscrew bolt -arrow- on coolant expansion tank.
- Move coolant expansion tank to one side with coolant hoses -1- and -2- attached.



- Remove bolts -5- and -6- for connector rail.
- Release connectors for ignition coils -1-, -2-, -3- and -4- and unplug all connectors from ignition coils at the same time.
- Place connector rail slightly to one side. Make sure that wiring is not kinked or damaged.



- Position puller - T40039- on thick rib at top of ignition coils and detach all ignition coils from spark plugs one after the other in direction of -arrow-.
- Unscrew spark plugs from cylinder head using spark plug socket - VAS 3122B- .

Step 3 - installing spark plugs:

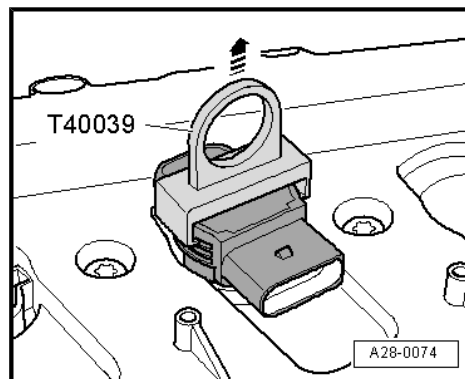
- Install new spark plugs using spark plug socket and extension - VAS 3122B- and tighten to specified torque (see table of tightening torques for installation ⇒ [page 104](#)).
- Lubricate ignition coils ⇒ [page 113](#) .
- Fit all ignition coils loosely into spark plug apertures and align with connectors of connector rail.
- Push ignition coils evenly onto spark plugs by hand (do not attempt to knock in coils with any kind of tool).
- Align connector rail and push all connectors onto ignition coils so that they engage.
- Install connector rail, screwing in securing bolts to specified torque (see table of tightening torques for installation ⇒ [page 104](#)).

Continue installation in reverse sequence.

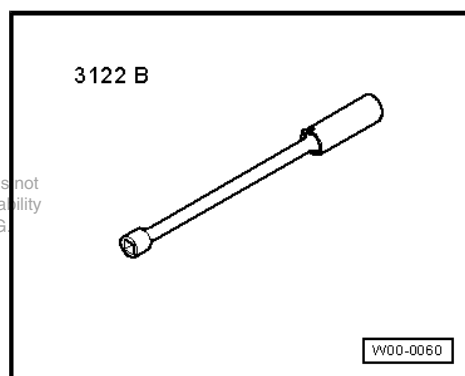
3.56.8 8-cyl. petrol engine 4.2 ltr. FSI

Special tools and workshop equipment required

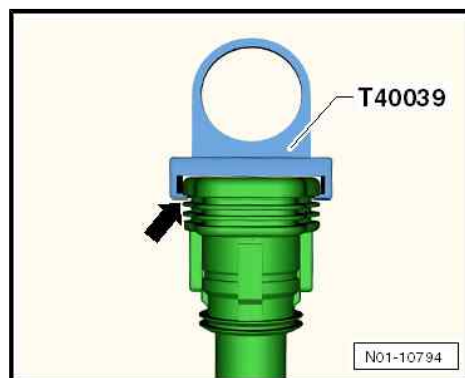
- ◆ Spark plug spanner - 3122B-



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- ◆ Puller - T40039-



- ◆ Torque wrench - VAS 6583- , measuring range 3 to 60 Nm

Table of tightening torques for installation:

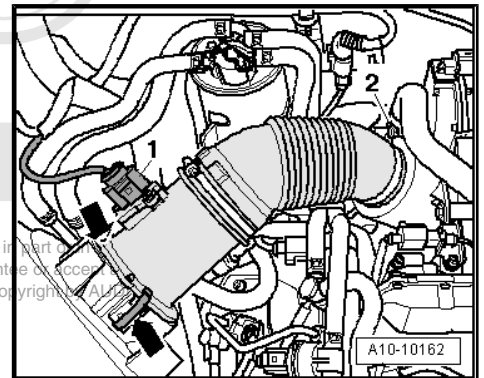
Component/fastener	[Nm]
Spark plugs with M12 thread	20+5
Spark plugs with M14 thread	30+5
Securing bolts for connector rail	5

Removal steps:

- Remove engine cover panel ➔ [page 8](#) .

Step 1 - removing spark plugs, cylinder bank (right-side):

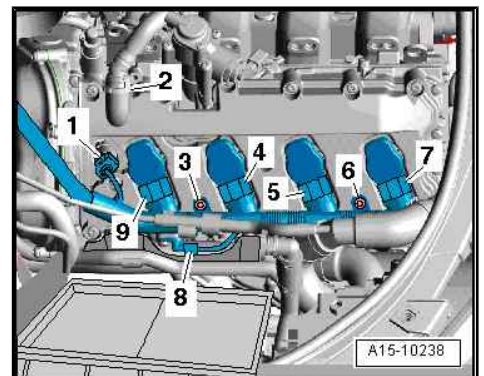
- Unplug electrical connector -1- at air mass meter - G70- .
- Unfasten hose clip -2-, release retaining clips -arrows- and detach air pipe.



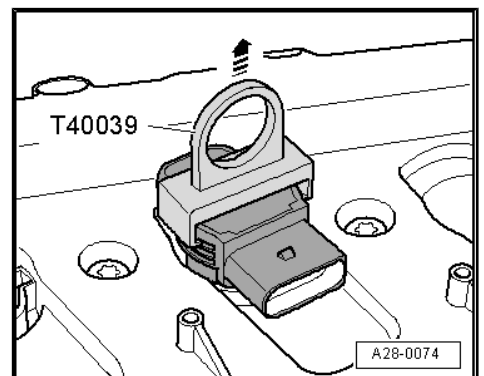
- Remove bolts -3- and -6- for connector rail.

Unplug electrical connectors -1- and -8-.

- Release connectors for ignition coils -4-, -5-, -7- and -9- and unplug all connectors from ignition coils at the same time.
- Place connector rail slightly to one side. Make sure that wiring is not kinked or damaged.

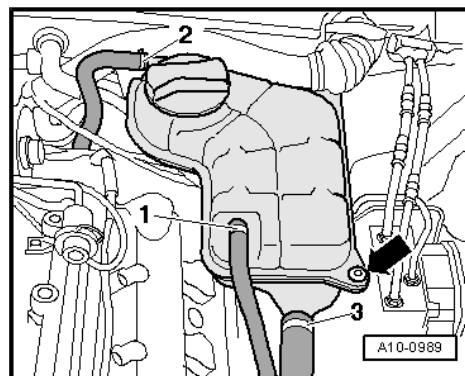


- Position puller - T40039- on thick rib at top of ignition coils and detach all ignition coils from spark plugs one after the other in direction of -arrow-.
- Unscrew spark plugs from cylinder head using spark plug socket - VAS 3122B- .



Step 2 - removing spark plugs, cylinder bank (left-side):

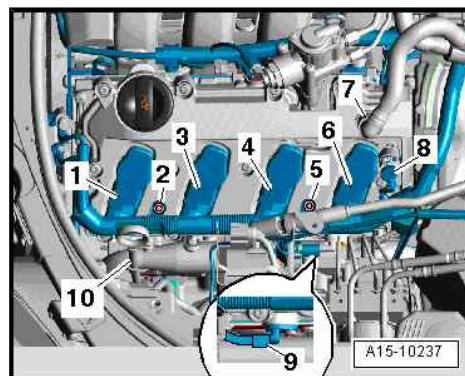
- Unplug electrical connector for coolant shortage indicator switch - F66- .
- Unscrew bolt -arrow- on coolant expansion tank.
- Move coolant expansion tank to one side with coolant hoses -1- and -2- attached.



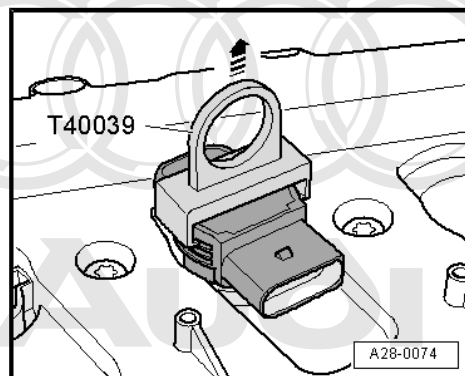
- Remove bolts -2- and -5- for connector rail.

Unplug electrical connectors -8- and -9-.

- Release connectors for ignition coils -1-, -3-, -4- and -6- and unplug all connectors from ignition coils at the same time.
- Place connector rail slightly to one side. Make sure that wiring is not kinked or damaged.



- Position puller - T40039- on thick rib at top of ignition coils and detach all ignition coils from spark plugs one after the other in direction of -arrow-.
- Unscrew spark plugs from cylinder head using spark plug socket - VAS 3122B- .



Step 3 - installing spark plugs:

- Install new spark plugs using spark plug socket and extension - VAS 3122B- and tighten to specified torque (see table of tightening torques for installation ⇒ [page 107](#)).
- Lubricate ignition coils ⇒ [page 113](#) .
- Fit all ignition coils loosely into spark plug apertures and align with connectors of connector rail.
- Push ignition coils evenly onto spark plugs by hand (do not attempt to knock in coils with any kind of tool).
- Align connector rail and plug all connectors simultaneously onto ignition coils so that they engage.
- Install connector rail, screwing in securing bolts to specified torque (see table of tightening torques for installation ⇒ [page 107](#)).

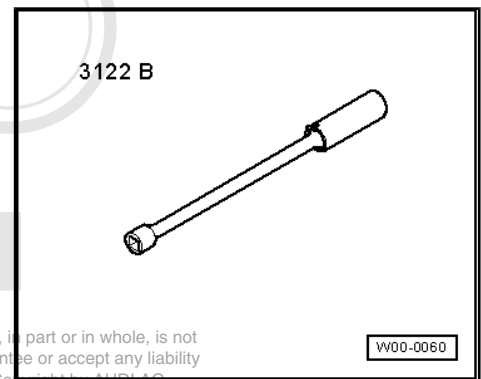
Continue installation in reverse sequence.

3.56.9 10-cyl. petrol engine 5.0 ltr. TFSI

Special tools and workshop equipment required

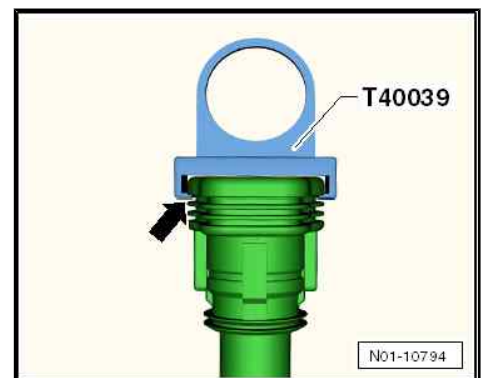
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◆ Spark plug spanner - 3122B-

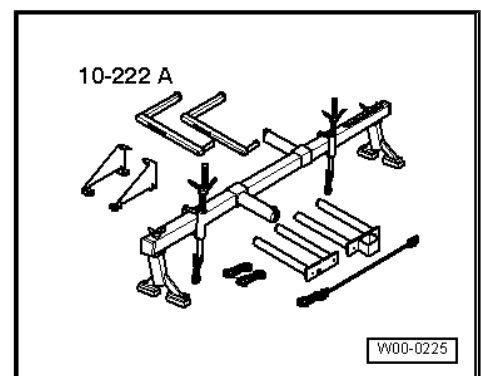


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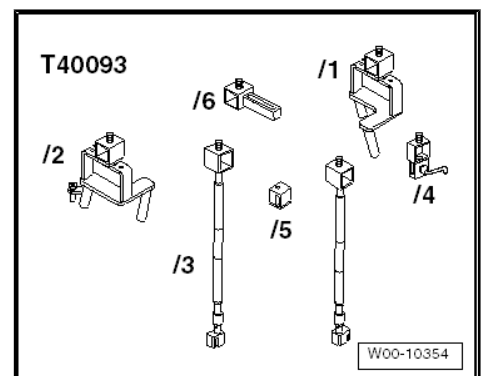
◆ Puller - T40039-



◆ Support bracket - 10 - 222 A-



◆ Support bracket supplement set - T40093- (5.0 ltr. TFSI)



- ◆ Torque wrench - V.A.G 1331- , measuring range 6 to 50 Nm
- ◆ Or: torque wrench - VAS 6583- , measuring range 3 to 60 Nm
- ◆ Or: torque wrench - VAS 5820- , measuring range 20 to 100 Nm

Table of tightening torques for installation:

Tightening torque	[Nm]
Spark plugs	30+5

Step 1 - removing spark plugs, cylinder bank (right-side):

- Remove ignition coils for cylinders 1 to 5 ⇒ Rep. gr. 28 ; Servicing ignition system; Removing and installing ignition coils for cylinders 1 ... 5 .
- Unscrew spark plugs from cylinder head using spark plug socket - VAS 3122B- .

Step 2 - removing spark plugs, cylinder bank (left-side):

- Remove ignition coils for cylinders 6 to 9 ⇒ Rep. gr. 28 ; Servicing ignition system; Removing and installing ignition coils for cylinders 6 ... 9 .
- Remove ignition coils for cylinder 10 ⇒ Rep. gr. 28 ; Servicing ignition system; Removing and installing ignition coil for cylinder 10 .
- Unscrew spark plugs from cylinder head using spark plug socket - VAS 3122B- .

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Step 3 - installing spark plugs:

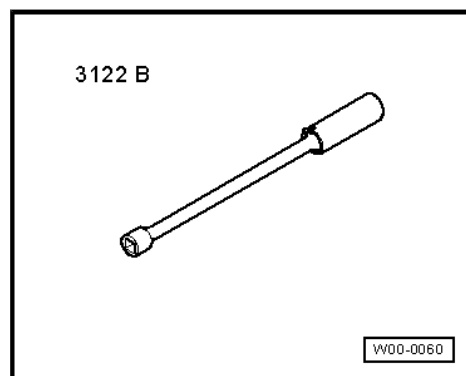
- Install new spark plugs using spark plug socket and extension - VAS 3122B- and tighten to specified torque (see table of tightening torques for installation ⇒ [page 110](#)).
- Lubricate ignition coils ⇒ [page 113](#) .
- Fit all ignition coils loosely into spark plug apertures and align with connectors of connector rail.
- Push ignition coils evenly onto spark plugs by hand (do not attempt to knock in coils with any kind of tool).
- Align connector rail and plug all connectors simultaneously onto ignition coils so that they engage.
- Install connector rail, screwing in securing bolts to specified torque (see table of tightening torques for installation ⇒ [page 110](#)).

Continue installation in reverse sequence.

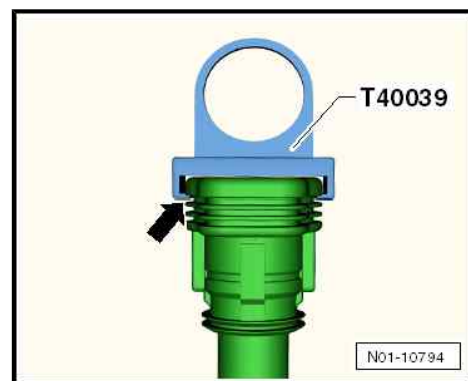
3.56.10 10-cyl. petrol engine 5.2 ltr. FSI

Special tools and workshop equipment required

- ♦ Spark plug spanner - 3122B-



◆ Puller - T40039-



◆ Torque wrench - VAS 6583- , measuring range 3 to 60 Nm

Table of tightening torques for installation:

Component/fastener	[Nm]
Spark plugs with M12 thread	20+5
Spark plugs with M14 thread	30+5
Securing bolts for connector rail	5

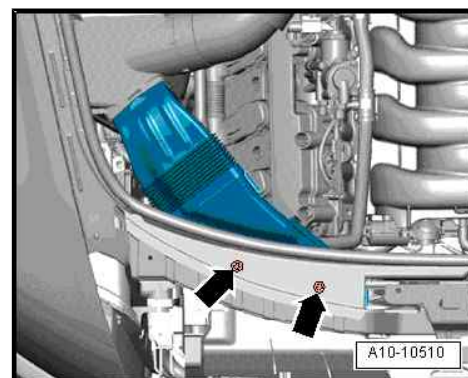
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Removal steps:

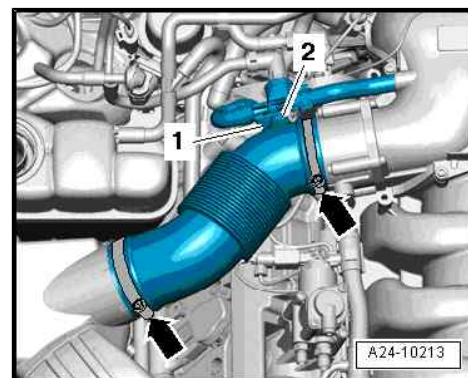
- Remove engine cover panel ➔ [page 8](#) .

Step 1 - removing spark plugs, cylinder bank (right-side):

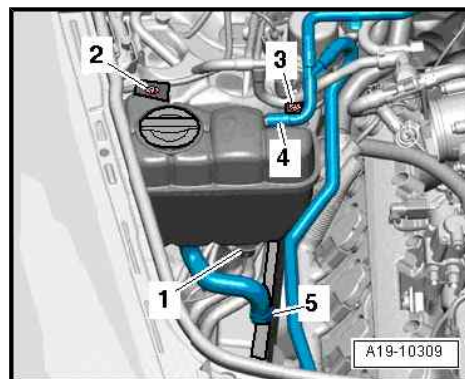
- Unscrew bolts -arrows- and detach air pipe.



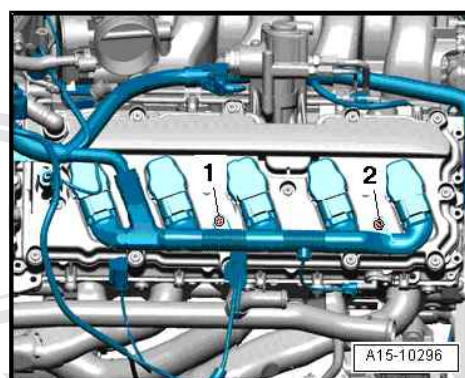
- Release hose clips -arrows- and detach air pipe.



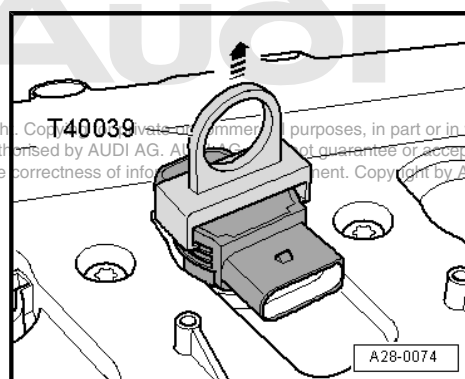
- Unplug electrical connector for coolant shortage indicator switch - F66- .
- Unscrew bolts -2- and -3- on coolant expansion tank.
- Move coolant expansion tank to one side with coolant hoses -4- and -5- attached.



- Remove bolts -1- and -2- for connector rail.
- Release connectors for ignition coils -arrows- and unplug all connectors from ignition coils at the same time.
- Place connector rail slightly to one side. Make sure that wiring is not kinked or damaged.

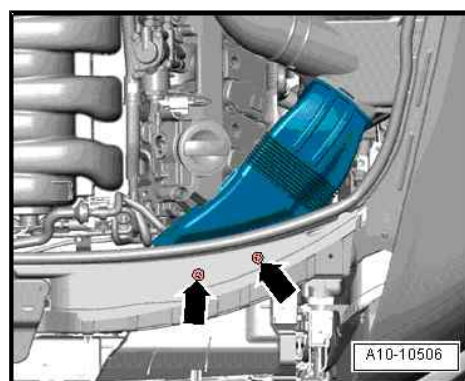


- Position puller - T40039- on thick rib at top of ignition coils and detach all ignition coils from spark plugs one after the other in direction of -arrow-.
- Unscrew spark plugs from cylinder head using spark plug socket - VAS 3122B- .

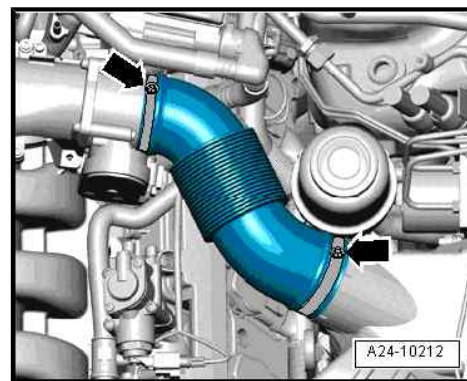


Step 2 - removing spark plugs, cylinder bank (left-side):

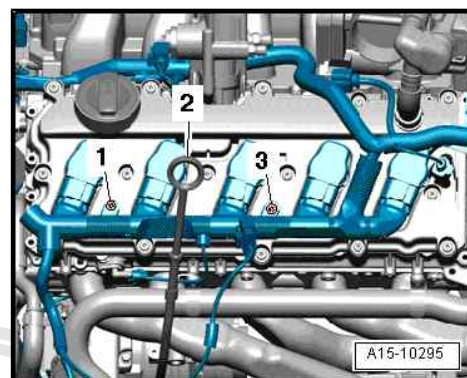
- Unscrew bolts -arrows- and detach air pipe.



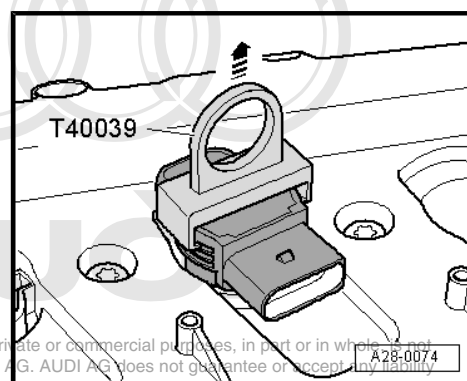
- Release hose clips -arrows- and detach air pipe.



- Pull oil dipstick -2- out of guide tube.
- Remove bolts -1- and -3- for connector rail.
- Release connectors for ignition coils -arrows- and unplug all connectors from ignition coils at the same time.
- Place connector rail slightly to one side. Make sure that wiring is not kinked or damaged.



- Position puller - T40039- on thick rib at top of ignition coils and detach all ignition coils from spark plugs one after the other in direction of -arrow-.
- Unscrew spark plugs from cylinder head using spark plug socket - VAS 3122B- .



Step 3 - installing spark plugs:

- Install new spark plugs using spark plug socket and extension - VAS 3122B- and tighten to specified torque (see table of tightening torques for installation ⇒ [page 111](#)).
- Lubricate ignition coils ⇒ [page 113](#) .
- Fit all ignition coils loosely into spark plug apertures and align with connectors of connector rail.
- Push ignition coils evenly onto spark plugs by hand (do not attempt to knock in coils with any kind of tool).
- Align connector rail and plug all connectors simultaneously onto ignition coils so that they engage.
- Install connector rail, screwing in securing bolts to specified torque (see table of tightening torques for installation ⇒ [page 111](#)).

Continue installation in reverse sequence.

3.56.11 Lubricating pencil-type ignition coils

Special tools and workshop equipment required

- ◆ Spark plug connector grease - G 052 141 A2-

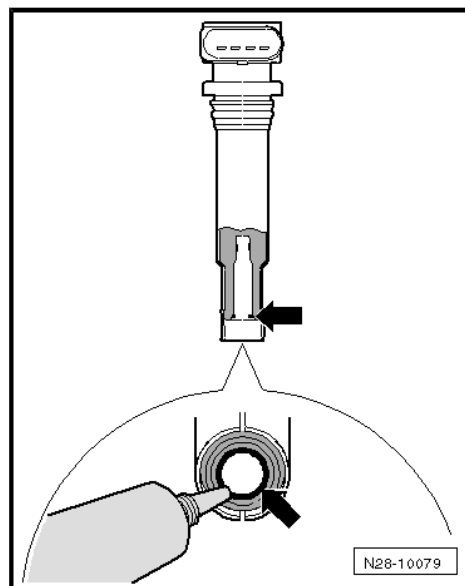
Procedure:

- Apply a bead of spark plug connector grease - G 052 141 A2- (1 to 2 mm thick) around circumference of sealing hose -arrow- of ignition coil.



Note

New ignition coils are already lubricated when they are delivered; it is not necessary to lubricate them again when installing.



3.57 Hydraulic system: checking fluid level

Table of test values and procedure guidelines:

Hydraulic fluid temperature:	Fluid level specification:
Ambient temperature (approx. 20 °C)	Fluid level within area -A-
Hydraulic fluid at operating temperature (approx. 80 °C)	Fluid level within area -B-

The hydraulic fluid reservoir is located in the engine compartment.

Checking the hydraulic system for leaks is a repair measure and should be charged separately.

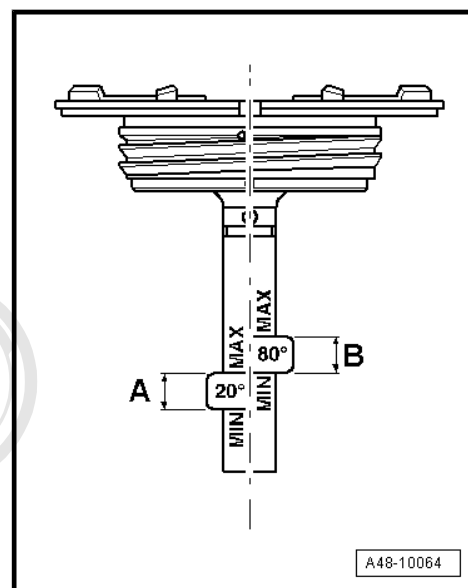
Requirements:

- Engine switched off
- Bring front wheels into straight-ahead position.

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Procedure:

- Unscrew filler cap with dipstick.
- Clean dipstick with a clean cloth.
- Screw cap on hand tight and unscrew again.
- Check fluid level according to scale on dipstick.
- If fluid level does not meet specification: Perform following measures as appropriate:



Fluid level:

Measure:

Above specified level Extract hydraulic fluid.

Below specified level Check hydraulic power steering system for leaks. Rep. gr. 48 ; Checking fluid level, bleeding steering system and checking for leaks; Checking steering system for leaks .

3.58 Coolant level: checking (fill level should be at top marking on coolant expansion tank; level may be above top marking, but not below it)

WARNING

Coolant expansion tank under pressure - risk of injuries!

◆ Only open coolant expansion tank when engine is cold.



Note

- ◆ *Coolant additives may only be mixed with distilled water, as the effectiveness of the coolant and the corrosion protection it provides are greatly influenced by the quality of the water with which the coolant is mixed. To ensure an adequate water quality, the coolant additive should be mixed with distilled water.*
- ◆ *For approved coolant additives, refer to Electronic parts catalogue (ETKA).*
- ◆ *Coolant additives G12EVO, G13 and G12++ may be mixed together.*
- ◆ *G12EVO, G13 and G12++ may be mixed with coolant additives G11, G12 and G12+.*
- ◆ *G12 and G11 may NOT be mixed together.*
- ◆ *Do not reuse coolant.*
- ◆ *Only use water/coolant additive as a lubricant for coolant hoses.*
- ◆ *It is permissible to operate the vehicle if the coolant level is above the MAX marking on the coolant expansion tank (this is by technical design). Do NOT extract coolant.*

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Checking coolant level and anti-freeze ⇒ [page 116](#)

Filling up coolant ⇒ [page 118](#)

3.58.1 Checking coolant level and anti-freeze

Special tools and workshop equipment required

- ◆ Refractometer - T10007 A-

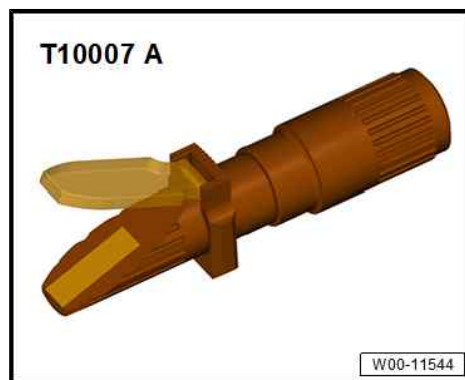


Table of test values and procedure guidelines:

Type of service:	Coolant level specification:
Delivery Inspection	Coolant at least at level of MAX marking.
Inspection	Coolant level between MIN and MAX markings.

Checking the cooling system for leaks is a repair measure and should be charged separately.

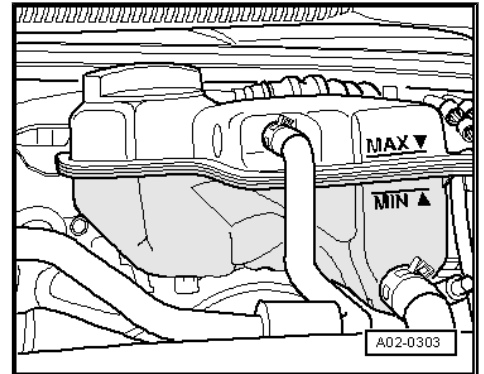
Requirements:

- Anti-freeze protection must be guaranteed to -25 °C (in countries with an arctic climate to -36 °C); note specification in Maintenance table.

- The proportion of coolant additive must not exceed 55 % (gives anti-freeze protection down to -48 °C); beyond this concentration the frost protection and the cooling efficiency are reduced again.
- The vehicle must be parked on a level surface.

Step 1 - checking coolant level:

- Check coolant level (according to marking -illustration-) in coolant expansion tank with engine cold.
- If coolant level is too low: Add required amount (using correct mixture ratio) ➔ [page 118](#) .
- If fluid losses are greater than can be reasonably expected: First use a leak test to determine the cause ➔ Rep. gr. 19 ; Radiator/radiator fan(s); Checking cooling system for leaks .



Step 2 - checking anti-freeze:

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Use a pipette to place a drop of coolant on glass of refractometer - T10007 A - Light-dark border will now be clearly visible through refractometer.

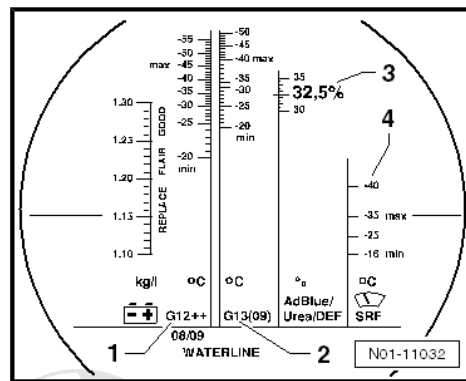
- Check level of anti-freeze protection using corresponding scale on refractometer; to do so, read off value on light-dark border.
- If anti-freeze protection level does not meet specification in Maintenance table: Perform following measures:

Anti-freeze protection level: Evaluation/measure:

- | | |
|-----------------|---|
| > Specification | Depending on deviation from specification, remove a small amount of coolant and replace it with distilled water. Repeat procedure until coolant mixture meets correct specification. |
| < Specification | Depending on deviation from specification, remove a small amount of coolant and replace it with coolant additive. Repeat procedure until coolant mixture meets correct specification. |
- Check coolant additive concentration once more following road test.

 Note

- ◆ The refractometer - T10007 A- must be used to determine the current anti-freeze concentration.
- ◆ Scale -1- on the refractometer applies to coolant additives G11, G12, G12+ and G12++.
- ◆ Scale -2- refers only to coolant additive G13.
- ◆ If more than one type of coolant additive has been used: Always use the scale for G13 to determine the anti-freeze protection.
- ◆ The temperature indicated on the refractometer - T10007 A- corresponds to the temperature at which the first ice crystals can form in the coolant.
- ◆ It is essential that anti-freeze be used in the cooling system all year round. In the correct concentration, coolant additives prevent scaling and frost and corrosion damage, and also raise the boiling point of the coolant.
- ◆ Because of its high boiling point, the coolant improves engine reliability under heavy loads in countries with tropical climates.



3.58.2 Filling cooling system

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Frost protection to:	Coolant additive:	Water:
-25 °C	approx. 40 %	approx. 60 %
-36 °C	approx. 50 %	approx. 50 %

Procedure:

- Add required amount (using mixture ratio according to anti-freeze protection specification in Maintenance table). Use the table as a reference for the coolant mixture ratio.

 Note

Small quantities of coolant can simply be topped up. Use the cooling system charge unit - VAS 6096- to add larger quantities of coolant.

3.59 Air cleaner: renewing filter element and cleaning housing

 Note

- ◆ Use only silicone-free lubricants when installing intake hoses.
- ◆ Secure all hose connections with hose clips (same as original equipment); see Electronic parts catalogue (ETKA).

Air cleaner housing: cleaning ⇒ [page 131](#)

4-cyl. petrol engine 2.0 ltr. TFSI ⇒ [page 119](#)

6-cyl. petrol engine 2.4 ltr. MPI/2.8 ltr. FSI/3.0 ltr. MPI/3.0 ltr. TFSI/
3.2 ltr. FSI ⇒ [page 120](#)

8-cyl. petrol engine 4.2 ltr. MPI/4.2 ltr. FSI ⇒ [page 122](#)

10-cyl. petrol engine 5.0 ltr. TFSI ⇒ [page 123](#)

10-cyl. petrol engine 5.2 ltr. FSI ⇒ [page 125](#)

4-cyl. diesel engine 2.0 ltr. TDI ⇒ [page 128](#)

6-cyl. diesel engine 2.7 ltr. TDI/3.0 ltr. TDI ⇒ [page 129](#)

3.59.1 4-cyl. petrol engine 2.0 ltr. TFSI

Special tools and workshop equipment required

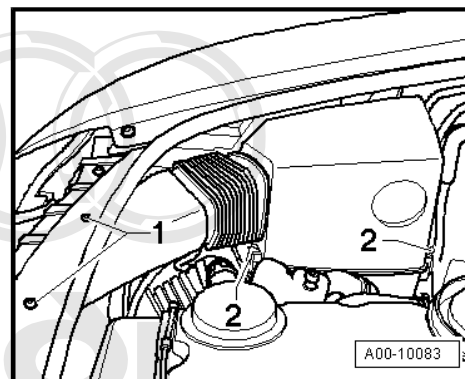
- ◆ Torque screwdriver - VAS 6494- , measuring range 1.5 to 3 Nm
- ◆ Or: torque screwdriver - V.A.G 1624- , measuring range 1 to 5 Nm

Table of tightening torques for installation:

Component/fastener:	[Nm]
Securing bolts for air pipe	1.5

Step 1 - removing air filter element:

- Remove securing bolts -1- and detach air pipe.
- Release retaining clips -2- and detach air cleaner (top section).

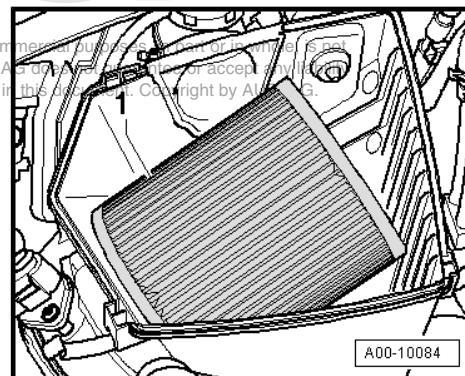


- Take out filter element -1- upwards.

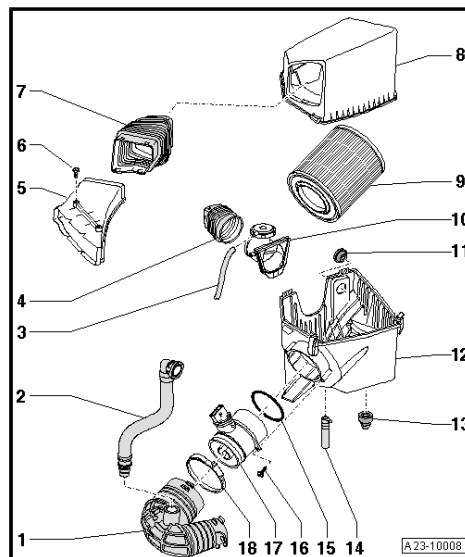
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Step 2 - installing air filter element:

- Check for dirt in housing and water drains and clean if necessary ⇒ [page 131](#) .



- Insert new filter element -9- centrally in mounting in air cleaner (bottom section) -12-.
- Fit air cleaner (top section) -8- onto air cleaner (bottom section) -12- without applying any significant force. Ensure that top and bottom sections of air cleaner are flush.
- Attach retaining clips.
- Connect air pipes -7- and -5- to air cleaner (top section), fit securing bolts and tighten them to specified torque (see table of tightening torques for installation ⇒ [page 119](#)).



3.59.2 6-cyl. petrol engine 2.4 ltr. MPI/2.8 ltr. FSI/3.0 ltr. MPI/3.0 ltr. TFSI/3.2 ltr. FSI

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Special tools and workshop equipment required

- ◆ Torque screwdriver - VAS 6494- , measuring range 1.5 to 3 Nm
- ◆ Or: torque screwdriver - V.A.G 1624- , measuring range 1 to 5 Nm

Table of tightening torques for installation:

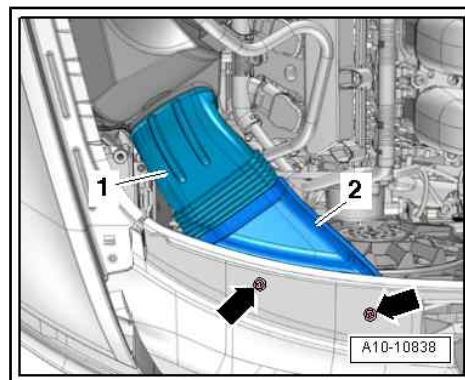
Component/fastener:	[Nm]
Securing bolts for air filter element	1.5
Securing bolt for air pipe	1.5

Removal steps:

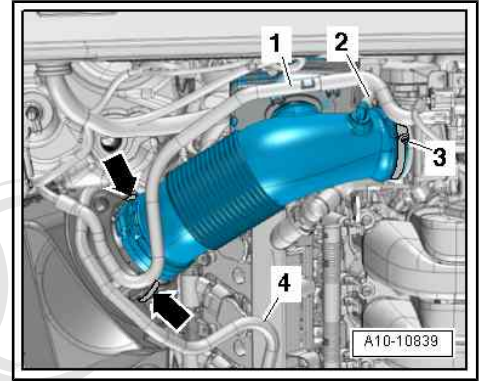
- Remove engine cover panel ⇒ [page 8](#) .

Step 1 - removing air filter element:

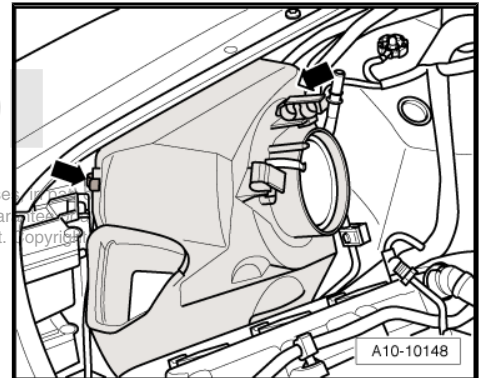
- Unscrew securing bolts -arrows- and detach air pipes -1- and -2-.



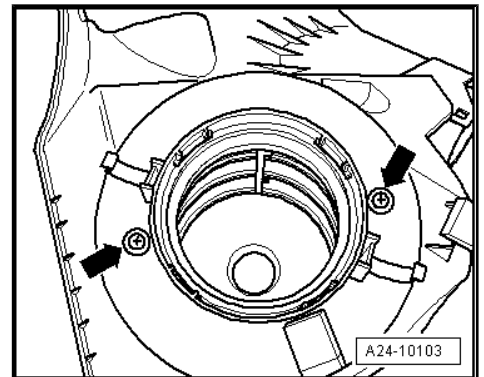
- Disengage fuel line -4- and hose -1- leading to activated charcoal filter from retainer on air cleaner (top section).
- Disconnect vacuum hose -2- from air pipe.
- Release hose clip -3- and detach air pipe.



- Release retaining clips -arrows- and detach air cleaner (top section).



- Remove filter element from air cleaner (top section) by unscrewing both bolts -arrows-; remove snow screen if fitted. Snow screen is not installed in all vehicles.



Step 2 - installing air filter element:

- Check for dirt in housing and water drains and clean if necessary ⇒ [page 131](#) .

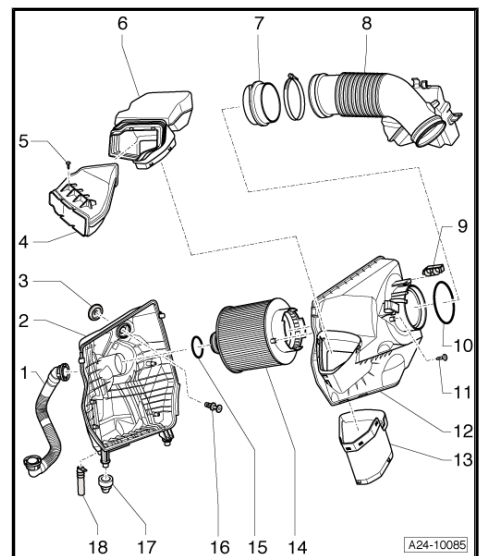
- If fitted: clean snow screen and insert into air cleaner (top section).
- Fit new filter element -14- into mounting in air cleaner (bottom section) -2- so that it is centred and tighten both securing bolts to specified torque (see table of tightening torques for installation ⇒ [page 120](#)).
- Fit air cleaner (top section) -12- onto air cleaner (bottom section) -2- without applying any significant force. Ensure that top and bottom sections of air cleaner are flush.
- Attach retaining clips.
- Attach air pipe to air cleaner (top section), fit securing bolts and tighten them to specified torque (see table of tightening torques for installation ⇒ [page 120](#)).

Continue installation in reverse sequence.



Note

Different versions of air pipe are possible.



3.59.3 8-cyl. petrol engine 4.2 ltr. MPI/4.2 ltr. FSI

Special tools and workshop equipment required

- ◆ Torque screwdriver - VAS 6494- , measuring range 1.5 to 3 Nm
- ◆ Or: torque screwdriver - V.A.G 1624- , measuring range 1 to 5 Nm

Table of tightening torques for installation:

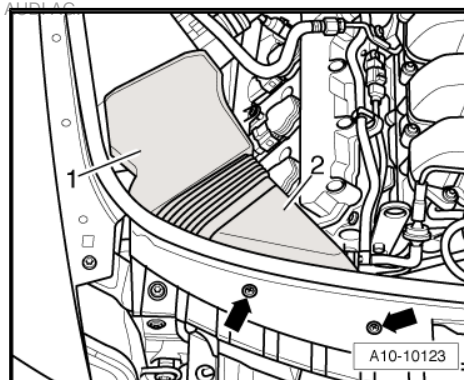
Component/fastener:	[Nm]
Securing bolts for air filter element	1.5
Securing bolt for air pipe	1.5

Removal steps:

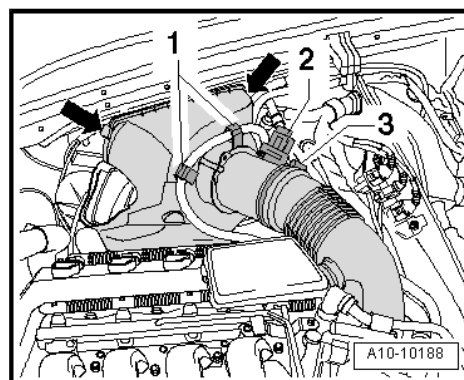
- Remove engine cover panel ⇒ [page 8](#) .

Step 1 - removing air filter element:

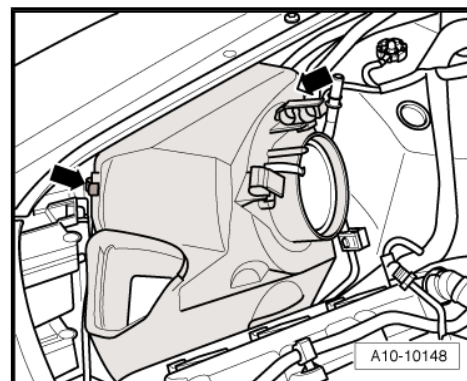
- Remove securing bolts -arrows- and detach air pipes -1- and -2-.



- If fitted: Disengage fuel line -1- from air cleaner (top section).
- Unplug electrical connector -2- for air mass meter - G70- .
- Loosen hose clip -3- and detach air pipe from air cleaner housing (top section).



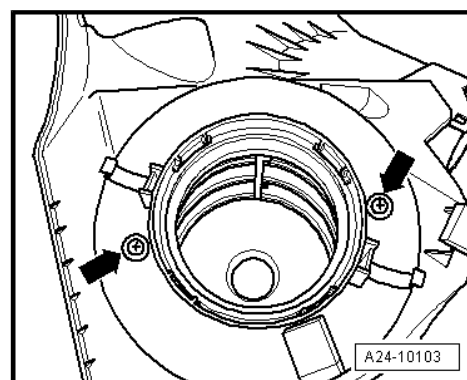
- Release retaining clips -arrows-.



- Take out filter element by unscrewing both bolts -arrows-.

Step 2 - installing air filter element:

- Check for dirt in housing and water drains and clean if necessary ⇒ [page 131](#) .
- If fitted: clean snow screen and insert into air cleaner (top section).
- Fit new filter element into mounting in air cleaner (top section) so that it is centred and tighten both securing bolts to specified torque (see table of tightening torques for installation ⇒ [page 122](#)).
- Place top section of air cleaner onto bottom section of air cleaner without applying any significant force. Ensure that top and bottom sections of air cleaner are flush.
- Attach retaining clips.
- Attach air pipe to air cleaner (top section), fit securing bolts and tighten them to specified torque (see table of tightening torques for installation ⇒ [page 122](#)).



Continue installation in reverse sequence.

3.59.4 10-cyl. petrol engine 5.0 ltr. TFSI

Special tools and workshop equipment required

- ◆ Torque wrench - V.A.G 1783- , measuring range 2 to 10 Nm
- ◆ Or: torque screwdriver - V.A.G 1624- , measuring range 1 to 5 Nm
- ◆ Or: torque wrench - V.A.G 1410- , measuring range 4 to 20 Nm
- ◆ Or: torque wrench - VAS 6583- , measuring range 3 to 60 Nm

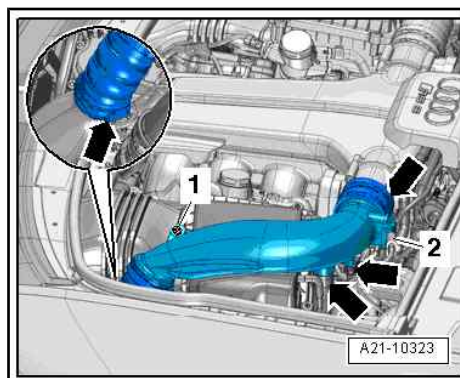
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Table of tightening torques for installation:

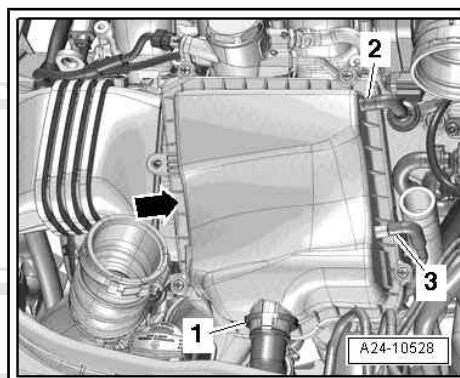
Component/fastener:	[Nm]
Securing bolts for air pipe	5
Securing bolts for air cleaner (top section)	4.5

Step 1 - removing air filter element (left-side):

- Unplug electrical connector -2- for charge pressure sender 2 - G447- .
- Remove securing bolt -1-.
- Loosen hose clips -arrows- and detach air pipe.



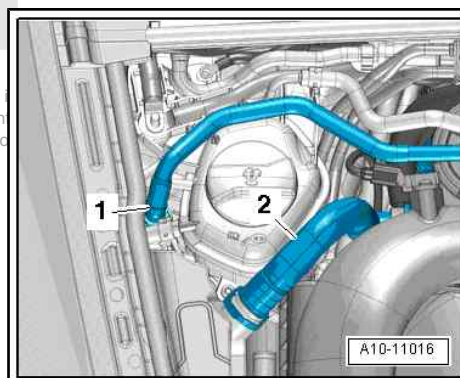
- Press release tab and disconnect crankcase breather hose -1- from air cleaner housing.
- Detach vacuum hoses -2- and -3- from air cleaner (top section).
- Remove securing bolts and detach air cleaner (top section) -arrow-.
- Take out filter element and snow screen (if fitted). Snow screen is not installed in all vehicles.



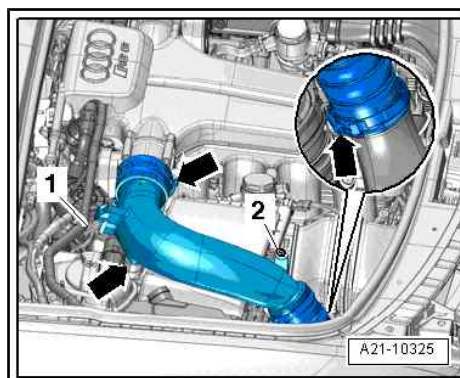
Step 2 - removing air filter element (right-side):

- Press release tab and disconnect crankcase breather hose -2-.

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- Unplug electrical connector -1- for charge pressure sender - G31- .
- Remove securing bolt -2-.
- Loosen hose clips -arrows- and detach air pipe.

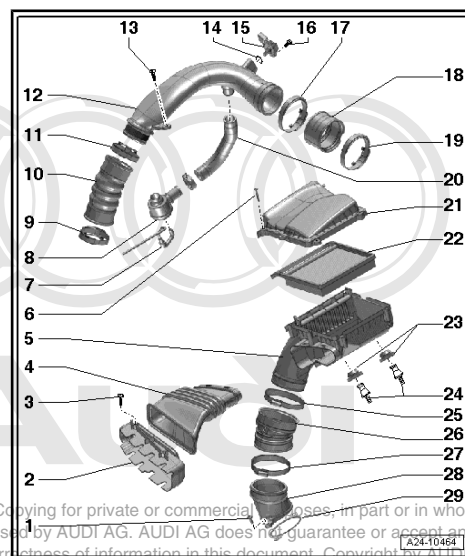
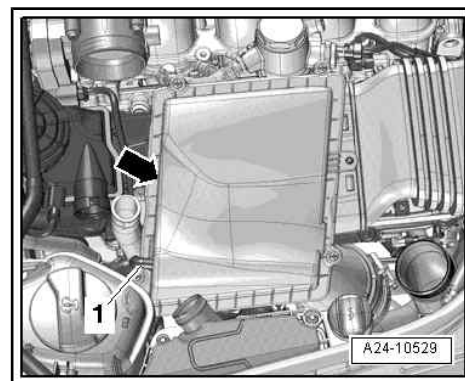


- Pull vacuum hose -1- off air cleaner (top section).
- Remove securing bolts and detach air cleaner (top section) -arrow-.
- Take out filter element and snow screen (if fitted). Snow screen is not installed in all vehicles.

Step 3 - installing air filter elements:

- Check for dirt in housing and water drains and clean if necessary ⇒ [page 131](#) .
- If fitted: clean snow screen and insert into air cleaner (bottom section) -5-.
- Insert new filter element -22- centrally in mounting in air cleaner (bottom section) -5-.
- Fit air cleaner (top section) -21- onto air cleaner (bottom section) -5- without applying any significant force. Ensure that top and bottom sections of air cleaner are flush.
- Fit securing bolts in air cleaner (top section) and tighten to specified torque (see table of tightening torques for installation ⇒ [page 123](#)).
- Attach air pipe to air cleaner (top section) and fit hose clip.
- Attach vacuum hoses to air cleaner (top section).
- Plug electrical connector for charge pressure sender 2 - G447- back in.
- Repeat procedure on opposite side.

Continue installation in reverse sequence.



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3.59.5 10-cyl. petrol engine 5.2 ltr. FSI

Special tools and workshop equipment required

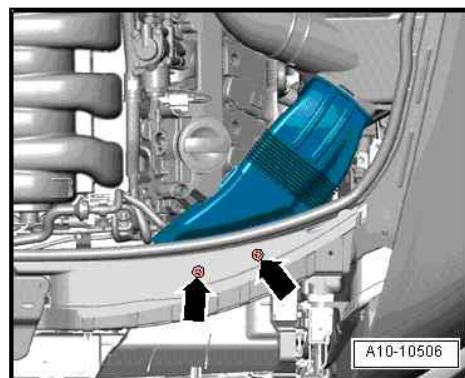
- ◆ Torque screwdriver - VAS 6494- , measuring range 1.5 to 3 Nm
- ◆ Or: torque screwdriver - V.A.G 1624- , measuring range 1 to 5 Nm

Table of tightening torques for installation:

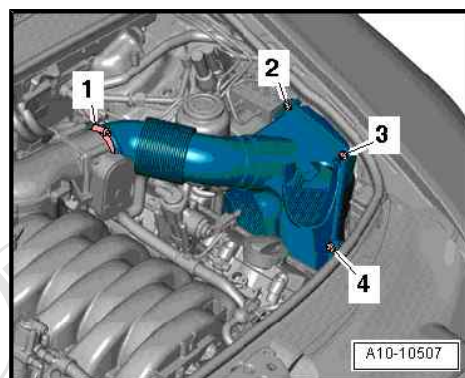
Component/fastener:	[Nm]
Securing bolts for air pipe	1.5
Securing bolts for air cleaner (top section)	1.5

Step 1 - removing air filter element (left-side):

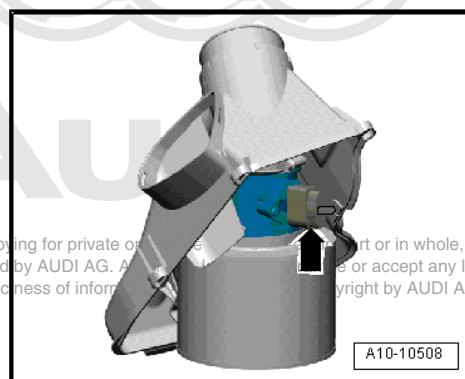
- Remove securing bolts -arrows- and detach air pipe.



- Release hose clip -1- and detach air pipe.
- Remove securing bolts -2-, -3- and -4-.

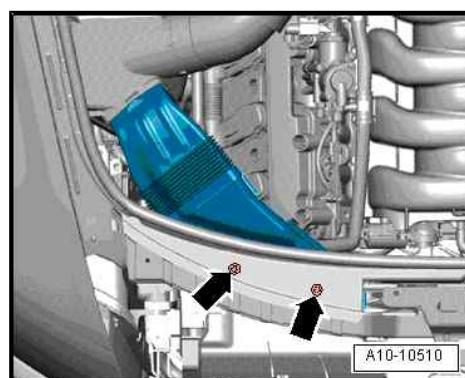


- Unplug electrical connector -arrow- for air mass meter 2 - G246- .
- Detach air cleaner (top section).
- Take out filter element and snow screen (if fitted). Snow screen is not installed in all vehicles.



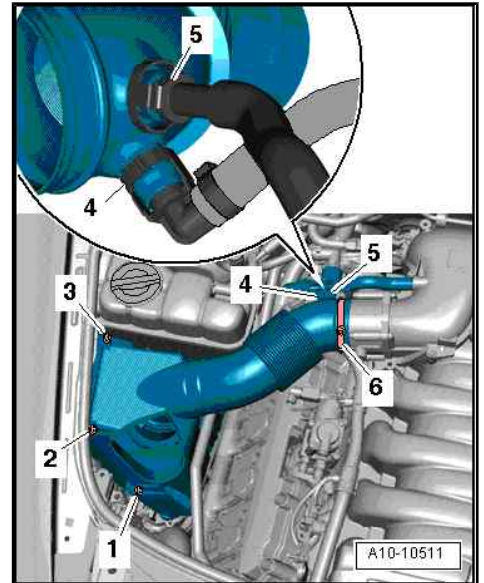
Step 2 - removing air filter element (right-side):

- Remove securing bolts -arrows- and detach air pipe.



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- Press release tabs and disconnect vacuum hoses -4- and -5- from air pipe.
- Release hose clip -6- and detach air pipe.
- Remove securing bolts -1-, -2- and -3- from air cleaner (top section).

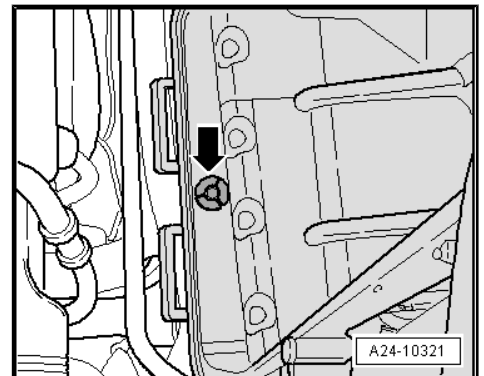
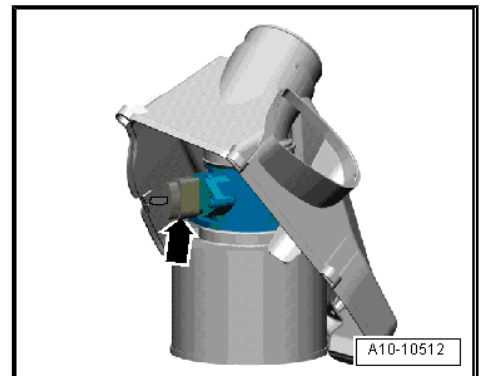


- Unplug electrical connector -arrow- for air mass meter - G70- .
- Detach air cleaner (top section).
- Take out filter element and snow screen (if fitted). Snow screen is not installed in all vehicles.

Step 3 - installing air filter elements:

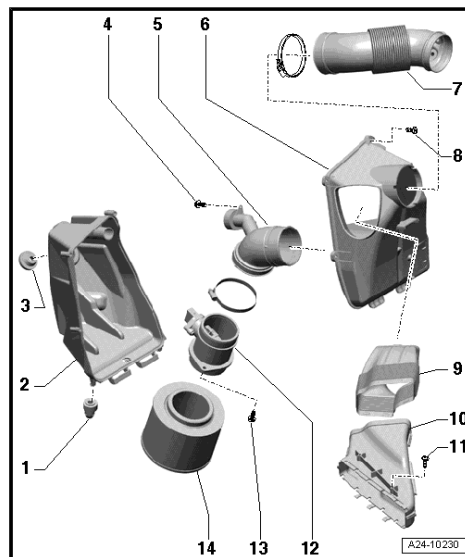
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- Check for dirt in housing and water drain -arrow- and clean if necessary => [page 131](#) .



- If fitted: clean snow screen and insert into air cleaner (bottom section).
- Insert new filter element -14- centrally in mounting in air cleaner (bottom section) -2-.
- Plug electrical connector for air mass meter - G70- back in.
- Fit air cleaner (top section) -6- onto air cleaner (bottom section) -2- without applying any significant force. Ensure that top and bottom sections of air cleaner are flush.
- Fit securing bolts in air cleaner (top section) and tighten to specified torque (see table of tightening torques for installation ⇒ [page 125](#)).
- Attach vacuum hoses to air cleaner (top section).
- Attach air pipe to air cleaner (top section) and fit hose clip.

Continue installation in reverse sequence. Note tightening torques (see table of tightening torques for installation ⇒ [page 125](#)).



3.59.6 4-cyl. diesel engine 2.0 ltr. TDI

Special tools and workshop equipment required

- ◆ Torque screwdriver - VAS 6494- , measuring range 1.5 to 3 Nm

Table of tightening torques for installation:

Component/fastener:	[Nm]
Securing bolts for air pipe	1.5

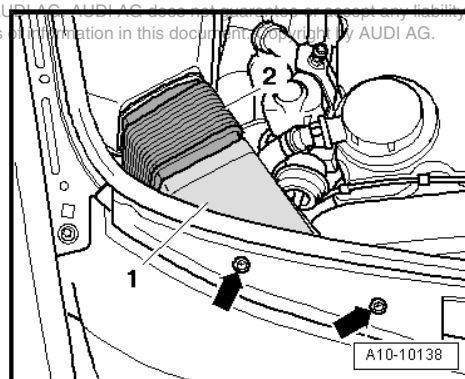
Removal steps:

- Remove engine cover panel ⇒ [page 8](#) .

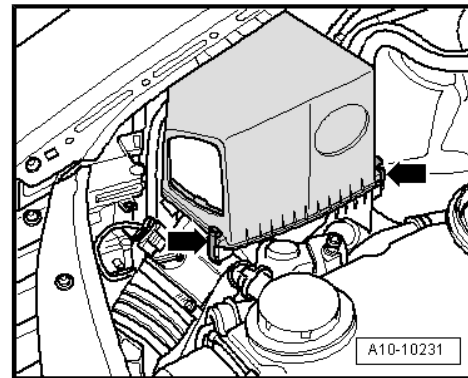
Step 1 - removing air filter element:

- Unscrew securing bolts -arrows- and detach air pipes -1- and -2-

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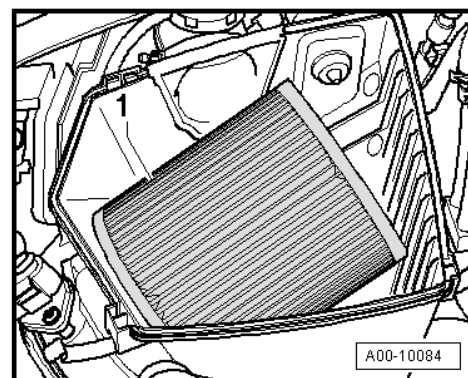
- Release retaining clips -arrows- and detach air cleaner (top section) to side.



- Take out filter element -1- upwards.

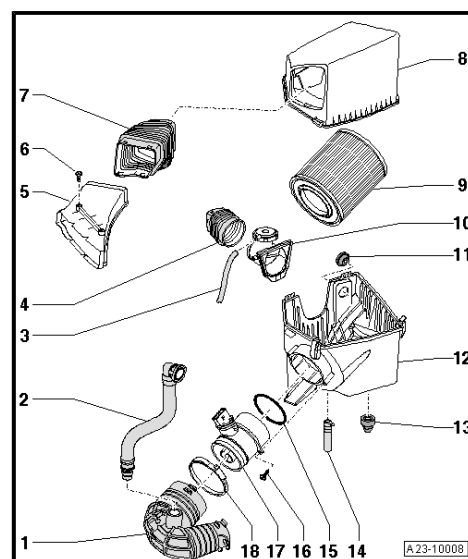
Step 2 - installing air filter element:

- Check for dirt in housing and water drains and clean if necessary ⇒ [page 131](#) .



- Insert new filter element -9- centrally in mounting in air cleaner (bottom section) -12-.
- Place top section of air cleaner onto bottom section of air cleaner without applying any significant force. Ensure that top and bottom sections of air cleaner are flush.
- Secure retaining clips.

Continue installation in reverse sequence. Note tightening torques (see table of tightening torques for installation ⇒ [page 128](#)).



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3.59.7 6-cyl. diesel engine 2.7 ltr. TDI/3.0 ltr. TDI

Special tools and workshop equipment required

- ◆ Torque screwdriver - VAS 6494- , measuring range 1.5 to 3 Nm
- ◆ Or: torque screwdriver - V.A.G 1624- , measuring range 1 to 5 Nm

Table of tightening torques for installation:

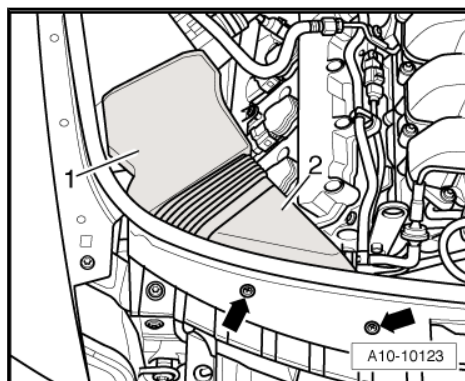
Component/fastener:	[Nm]
Securing bolts for air pipe	1.5
Securing bolts for air filter element	1.5

Removal steps:

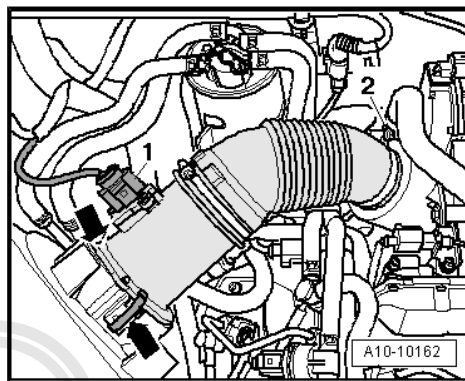
- Remove engine cover panel ⇒ [page 8](#) .

Step 1 - removing air filter element:

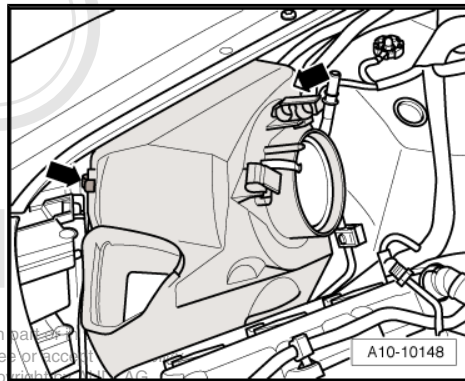
- Unscrew securing bolts -arrows- and detach air pipes -1- and -2-



- Unplug electrical connector -1- for air mass meter - G70- .
- Release hose clip -2- and detach air pipe.



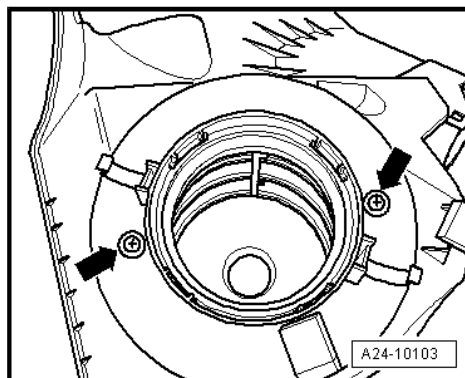
- Release retaining clips -arrows- and detach air cleaner (top section).



- Take out filter element by unscrewing both bolts -arrows-.

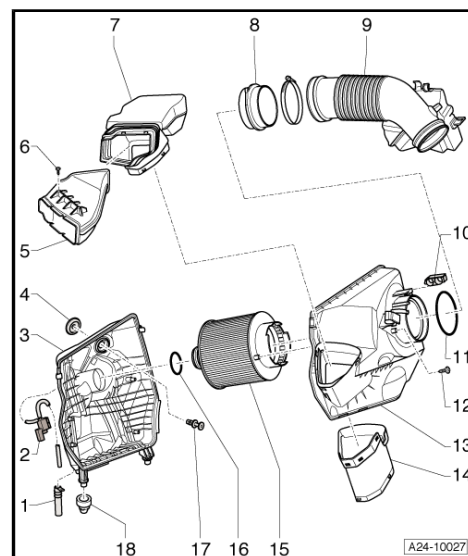
Step 2 - installing air filter element:

- Check for dirt in housing and water drains and clean if necessary ⇒ [page 131](#) .



- If fitted: clean snow screen and insert into air cleaner (top section) -13-.
- Fit new filter element -15- into mounting in air cleaner (top section) -13- so that it is centred and tighten both securing bolts -12- to specified torque (see table of tightening torques for installation).
- Place top section of air cleaner onto bottom section of air cleaner without applying any significant force. Ensure that top and bottom sections of air cleaner are flush.
- Attach retaining clips.
- Attach air pipe to air cleaner (top section), fit securing bolts and tighten them to specified torque (see table of tightening torques for installation ⇒ [page 129](#)).

Continue installation in reverse sequence.



3.59.8 Cleaning air cleaner housing

Procedure:

- Remove any loose dirt or leaves out of air cleaner housing (top and bottom sections).
- Check whether water drain hose in air cleaner (bottom section) is dirty or blocked and clean if necessary.



Note

- ◆ When cleaning air cleaner housing with compressed air: Cover air mass meter with a clean cloth.
- ◆ On vehicles for cold countries, the snow screen in the intake section must also be cleaned; see specification in ELSA Maintenance table.

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3.60 Throttle valve module: cleaning air duct

Special tools and workshop equipment required

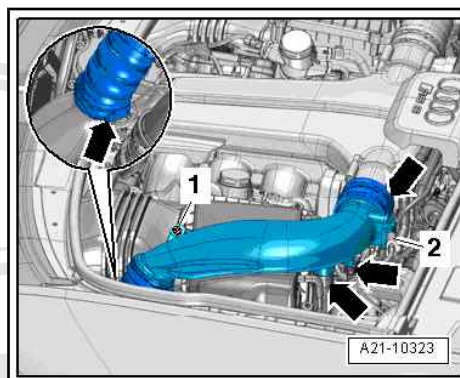
- ◆ Torque wrench - VAS 6854- , measuring range 5 to 13 Nm
- ◆ Or: torque wrench - V.A.G 1410- , measuring range 4 to 20 Nm
- ◆ Or: torque wrench - VAS 6854- , measuring range 3 to 60 Nm
- ◆ Cleaning fluid

Table of tightening torques for installation:

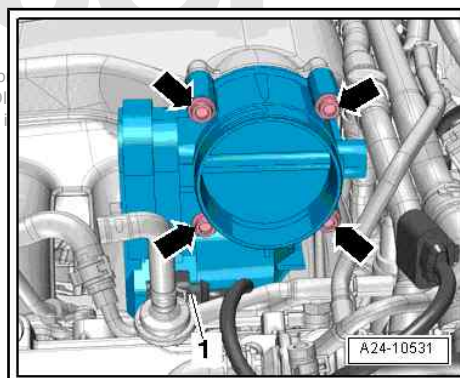
Component/fastener:	[Nm]
Securing bolts for throttle valve module	9
Securing bolt for air duct	5

Step 1 - cleaning throttle valve module (left-side):

- Unplug electrical connector -2- for charge pressure sender 2 - G447- .
- Remove securing bolt -1- for air pipe.
- Loosen hose clips -arrows- and detach air pipe.

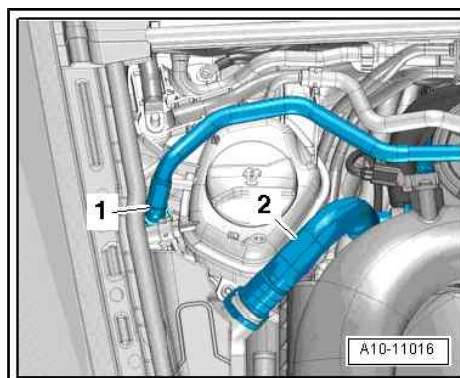


- Unplug electrical connector -1-.
- Unscrew securing bolts -arrows- and detach throttle valve module - J544- .
- Clean air duct in throttle valve module - J544- with a lint-free cloth and cleaning fluid.

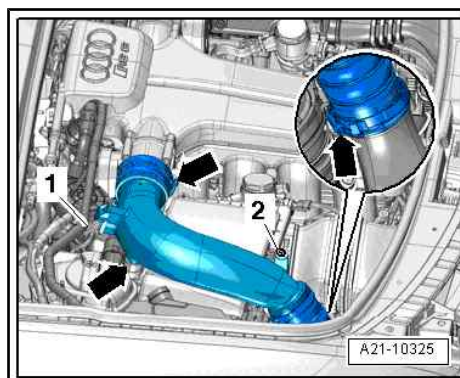


Step 2 - cleaning throttle valve module (right-side):

- Press release tab and detach air hose -2-.



- Unplug electrical connector -1- for charge pressure sender - G31- .
- Remove securing bolt -2- for air pipe.
- Loosen hose clips -arrows- and detach air pipe.

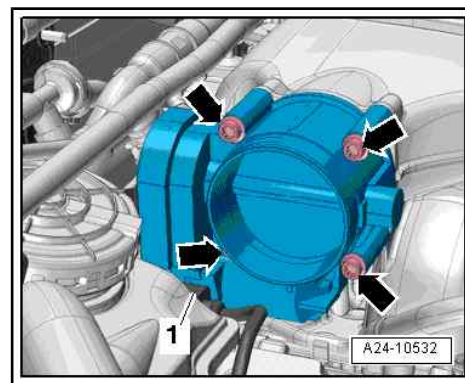


- Unplug electrical connector -1-.
- Unscrew securing bolts -arrows- and detach throttle valve module - J338- .
- Clean air duct in throttle valve module - J338- with a lint-free cloth and cleaning fluid.

Step 3 - installing throttle valve modules:

- Fit new seals/gaskets for throttle valve modules.

Continue installation in reverse sequence. Note tightening torques (see table of tightening torques for installation [⇒ page 131](#)).



Step 4 - performing basic setting for throttle valves:

- Connect vehicle diagnostic tester [⇒ page 14](#) .
- Select **Diagnosis** mode and begin diagnosis.
- Perform vehicle identification.
- De-select “Working with Guided Fault Finding” by removing ☒ and press **Apply**.
- Switch to “Special functions” tab and select the following programs:
 - ◆ J623 - Throttle valve control unit, adapt
 - ◆ J624 - Throttle valve control unit 2, adapt
- Start both programs one after another by selecting **Carry out check**.
- Continue to follow instructions on screen.



Note

- ◆ *For approved seal/gasket for throttle valve module, refer to Electronic parts catalogue (ETKA).*
- ◆ *Observe the installation position of the hose clips at the air pipes to ensure that there is enough clearance at the crash sensors.*

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3.61 Plenum chamber and water drains: checking for dirt

Checking plenum chamber and water drains for dirt
[⇒ page 133](#)

Cleaning plenum chamber and water drains [⇒ page 134](#)

3.61.1 Checking plenum chamber and water drains for dirt

Cleaning the plenum chamber, as well as the removal procedures required, are a repair measure and should be charged separately.

Removal steps:

- Remove plenum chamber cover -1- ⇒ Rep. gr. 50 ; Body - front; Removing and installing cowl panel trim .

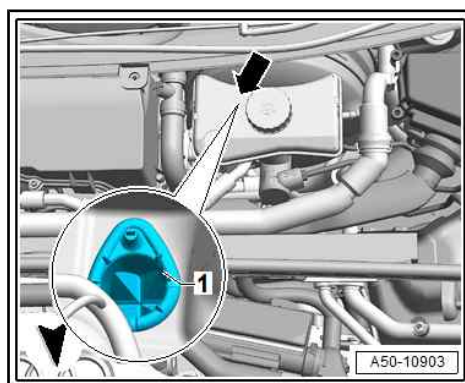
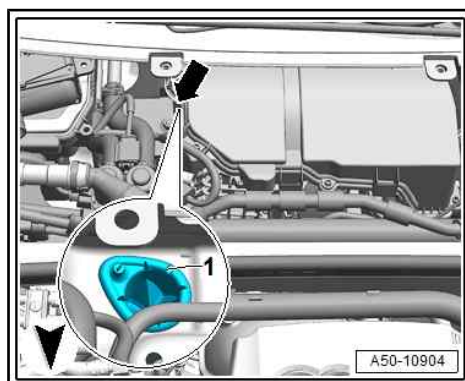
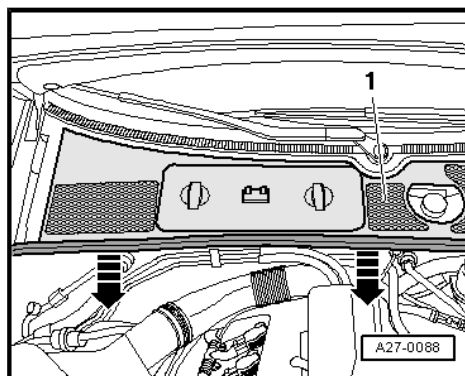
Step 1 - checking plenum chamber and water drains (passenger's side):

- Use a hand-held light to check for dirt in plenum chamber and water drain grommet -1-.
- If necessary, clean plenum chamber and water drains ⇒ [page 134](#) .

Step 2 - checking plenum chamber and water drains (driver's side):

- Use a hand-held light to check for dirt in plenum chamber and water drain grommet -1-.
- If necessary, clean plenum chamber and water drains ⇒ [page 134](#) .

Install in reverse sequence.



3.61.2 Cleaning plenum chamber and water drains

Special tools and workshop equipment required

- ◆ Suction feed spray-gun - VAG 1538-
- ◆ Nylon probe - VAG 1538/2-
- ◆ Flexible picking tool

Cleaning the plenum chamber, as well as the removal procedures required, are a repair measure and should be charged separately.

Procedure:

- Remove coarse dirt from plenum chamber and water drain grommets with a flexible picking tool.
- Remove fine dirt using suction-feed spray gun - V.A.G 1538- and nylon probe - V.A.G 1538/2- or a thin water hose.

3.62 Snow screen: cleaning

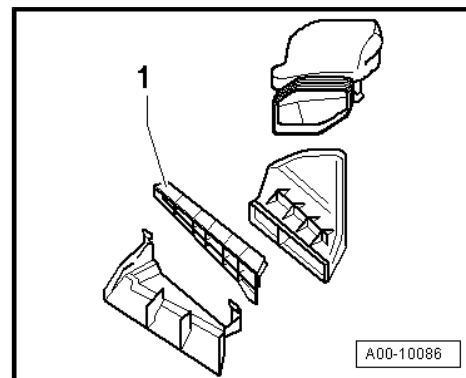
Removal steps:

- Remove intake air duct for air cleaner: diesel engines ⇒ Rep. gr. 23 ; Air cleaner; Exploded view - air cleaner housing ; petrol engines ⇒ Rep. gr. 24 ; Air cleaner; Exploded view - air cleaner housing .

Procedure:

- Remove snow screen -1- and clean using compressed air.
- Use a suitable blunt tool to remove persistent dirt.
- If the snow screen is damaged it must be renewed.

Install in reverse sequence. When doing so, note the following:



3.63 Dust and pollen filter: renewing

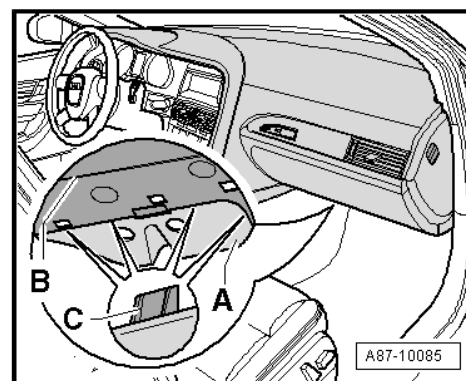
The dust and pollen filter is fitted under the glove box.

Removal steps:

- On vehicles with special equipment used by driving schools: Remove pedal cluster if necessary; see installation instructions for equipment for driving schools.

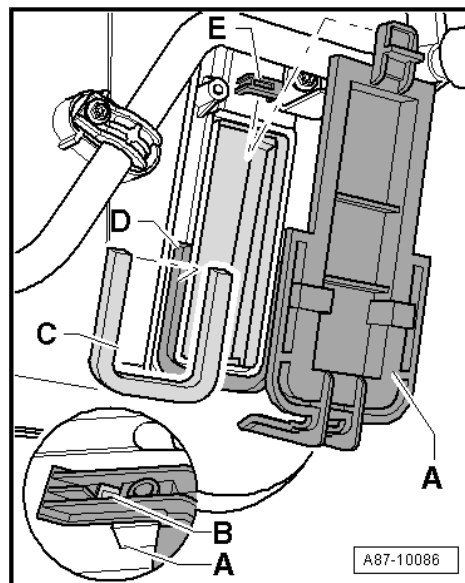
Step 1 - removing filter element:

- Cover footwell beneath dust and pollen filter with paper.
- Remove cover -A- from bottom cover of glove box -B-. To do so, release retainers -C- in bottom cover of glove box.



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- Release tab -B- and detach aperture cover -A- from air conditioning unit.

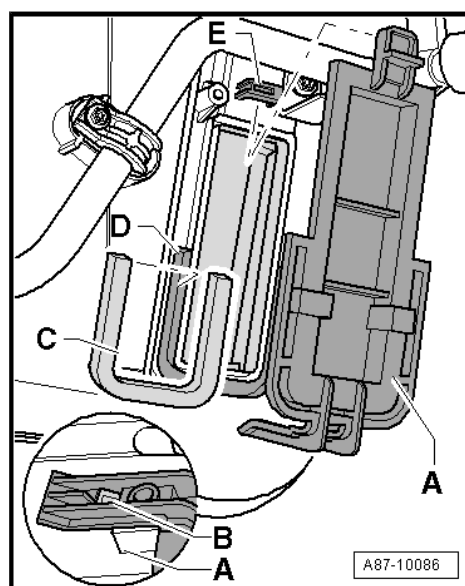
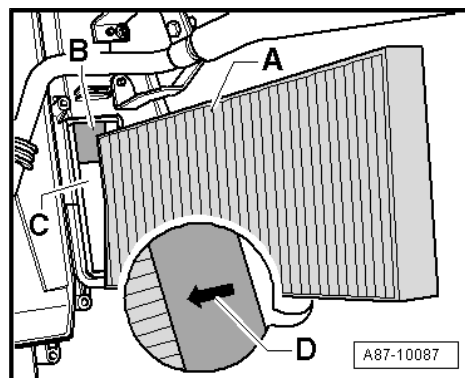


- Pull filter element -A- out of aperture -C-.
- Pull filter element -B- out of aperture -C-.

Step 2 - installing filter element:

- Clean aperture -C- with an industrial vacuum cleaner before fitting new filter element.
- Fit new top filter element -B- correctly: direction of flow is indicated with arrows -D- on filter.
- Push new top filter element -B- upwards and hold in position.
- Fit new bottom filter element -A- correctly: direction of flow is indicated with arrows -D- on filter.
- Check position of seal -C- in groove -D-.
- Engage aperture cover -A- in mounting -E- and click into place on opposite side -B-.

Continue installation in reverse sequence.



3.64 Fuel filter: renewing

4-cyl. diesel engine 2.0 ltr. TDI unit injector ➔ [page 137](#)

4-cyl. diesel engine 2.0 ltr. TDI common rail ➔ [page 138](#)

6-cyl. diesel engine 2.7 ltr. TDI/3.0 ltr. TDI, fuel filter with regulating valve ➔ [page 139](#)

6-cyl. diesel engine 2.7 ltr. TDI/3.0 ltr. TDI, fuel filter without regulating valve ➔ [page 140](#)

Petrol engines ➔ [page 141](#)

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3.64.1 4-cyl. diesel engine 2.0 ltr. TDI unit injector

Special tools and workshop equipment required

- ◆ Torque wrench - V.A.G 1783- , measuring range 2 to 10 Nm
- ◆ Or: Torque wrench - V.A.G 1410- , measuring range 4 to 20 Nm
- ◆ Or: torque wrench - VAS 6854- , measuring range 5 to 13 Nm
- ◆ Or: torque wrench - VAS 6583- , measuring range 3 to 60 Nm
- ◆ Or: torque wrench - V.A.G 1331- , measuring range 6 to 50 Nm

Table of tightening torques for installation:

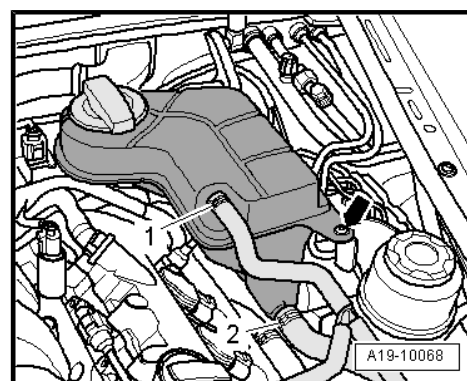
Fastener	Tightening torque [Nm]
Nut on bracket	8

The fuel filter is located in the engine compartment.

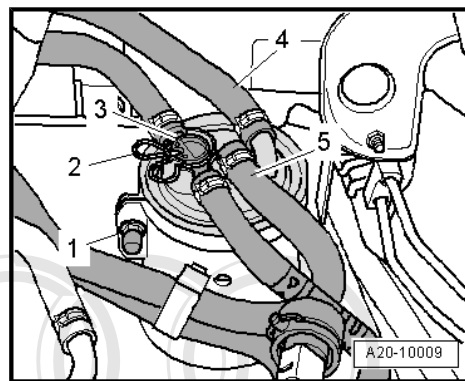
Removal steps:

- Remove engine cover panel ➔ [page 8](#) .
- Unscrew bolt -arrow- on coolant expansion tank -1- and move coolant expansion tank -1- to one side (coolant hoses remain connected).

Step 1 - removing:



- Detach retaining clip -3-, then remove O-rings and regulating valve with fuel hoses attached.
- Use hose clip pliers - VAS 6362- to disconnect fuel supply hoses -4- and -5-.
- Loosen nut -1- on bracket and remove fuel filter.



Step 2 - installing fuel filter:

- Fill new fuel filter with diesel.

Install in reverse sequence. Note tightening torques (see table of tightening torques for installation ⇒ [page 137](#)).

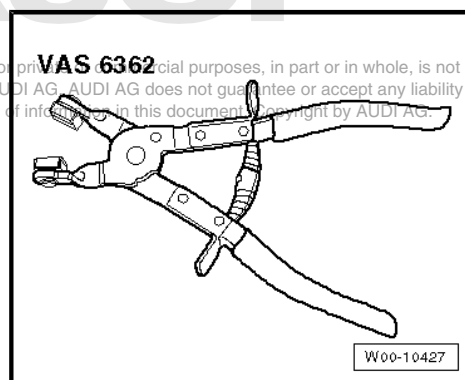
Flow direction is indicated by arrows on filter housing.

3.64.2 4-cyl. diesel engine 2.0 ltr. TDI common rail

Special tools and workshop equipment required

- ◆ Hose clip pliers - VAS 6362-

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- ◆ Torque wrench - V.A.G 1783- , measuring range 2 to 10 Nm
- ◆ Or: Torque wrench - V.A.G 1410- , measuring range 4 to 20 Nm
- ◆ Or: torque wrench - VAS 6854- , measuring range 5 to 13 Nm
- ◆ Or: torque wrench - VAS 6583- , measuring range 3 to 60 Nm
- ◆ Or: torque wrench - V.A.G 1331- , measuring range 6 to 50 Nm

Table of tightening torques for installation

Fastener	Tightening torque [Nm]
Nut on bracket	8

The fuel filter is located at the plenum chamber partition panel in the engine compartment.

Removal steps:

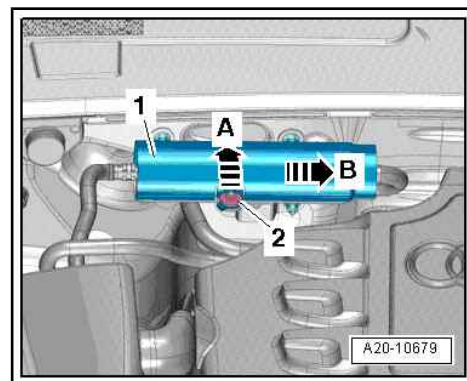
- Remove engine cover panel ⇒ [page 8](#) .

Step 1 - removing:

- Observe the safety precautions when working on the fuel system ⇒ Rep. gr. 20 ; Notes for working on the fuel supply

system; Safety precautions when working on the fuel supply system .

- Unscrew nut -2- on bracket.
- Release retainer -1- in direction of -arrow A- and detach in direction of -arrow B-.



- Using hose clip pliers - VAS 6362- , disconnect fuel supply hoses -1- and -3- and remove fuel filter.

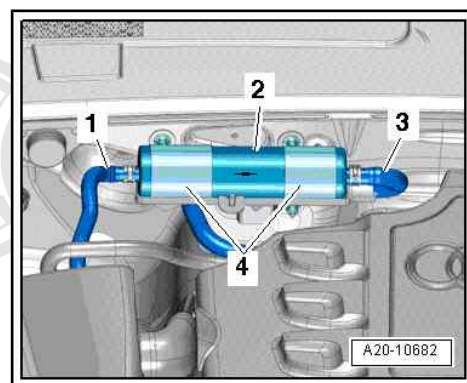
Step 2 - installing:

- Fill new fuel filter with diesel.

Flow direction is indicated by arrows on filter housing.

Install in reverse sequence. Note tightening torques (see table of tightening torques for installation ➔ [page 138](#)).

- Finally, bleed fuel system ➔ Rep. gr. 20 ; Fuel filter; Bleeding fuel system .



3.64.3 6-cyl. diesel engine 2.7 ltr. TDI/3.0 ltr. TDI, fuel filter with regulating valve

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Special tools and workshop equipment required

- ◆ Torque wrench - V.A.G 1783- , measuring range 2 to 10 Nm
- ◆ Or: Torque wrench - V.A.G 1410- , measuring range 4 to 20 Nm
- ◆ Or: torque wrench - VAS 6854- , measuring range 5 to 13 Nm
- ◆ Or: torque wrench - VAS 6583- , measuring range 3 to 60 Nm
- ◆ Or: torque wrench - V.A.G 1331- , measuring range 6 to 50 Nm

Table of tightening torques for installation

Fastener	Tightening torque [Nm]
Nut on bracket	8

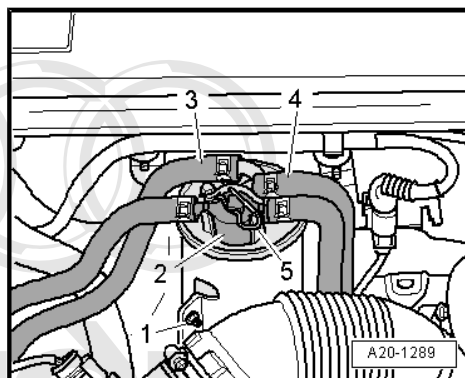
The fuel filter is located in the engine compartment.

Removal steps:

- Remove engine cover panel ➔ [page 8](#) .

Step 1 - removing:

- Detach retaining clip -5-, then remove O-rings and regulating -2- valve with fuel hoses attached.
- Use hose clip pliers - VAS 6362- to disconnect fuel supply hoses -3- and -4-.
- Loosen nut -1- on bracket and remove fuel filter.



Step 2 - installing:

- Fill new fuel filter with diesel.

Install in reverse sequence. Note tightening torques (see table of tightening torques for installation ⇒ [page 139](#)).

3.64.4 6-cyl. diesel engine 2.7 ltr. TDI/3.0 ltr. TDI, fuel filter without regulating valve

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Special tools and workshop equipment required

- ◆ Torque wrench - V.A.G 1783- , measuring range 2 to 10 Nm
- ◆ Or: Torque wrench - V.A.G 1410- , measuring range 4 to 20 Nm
- ◆ Or: torque wrench - VAS 6854- , measuring range 5 to 13 Nm
- ◆ Or: torque wrench - VAS 6583- , measuring range 3 to 60 Nm
- ◆ Or: torque wrench - V.A.G 1331- , measuring range 6 to 50 Nm

Table of tightening torques for installation:

Fastener	Tightening torque [Nm]
Nut on bracket	8

The fuel filter is located in the engine compartment.

Removal steps:

- Remove engine cover panel ⇒ [page 8](#) .

Step 1 - removing fuel filter:

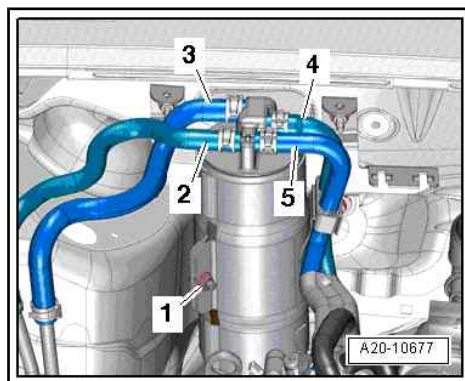
- Use hose clip pliers - VAS 6362- to disconnect fuel hoses -2-, -3-, -4- and -5-.
- Loosen nut -1- on bracket and remove fuel filter.

Step 2 - installing:

Flow direction is indicated by arrows on filter housing.

Install in reverse sequence. Note tightening torques (see table of tightening torques for installation ⇒ [page 140](#)).

- Finally, bleed fuel system ⇒ Rep. gr. 20 ; Fuel filter; Bleeding fuel system .



3.64.5 Petrol engines

WARNING

Fuel is hot and under pressure - risk of injuries!

- ◆ Put on protective gloves.
- ◆ Put on safety goggles.
- ◆ Allow connections of fuel lines to cool down.
- ◆ Place cloths around connections and loosen them carefully.

Procedure:

- Observe the safety precautions when working on the fuel system ⇒ Rep. gr. 20 ; Notes for working on the fuel supply system; Safety precautions when working on the fuel supply system .

Renew fuel filter according to Workshop Manual ⇒ Rep. gr. 20 ;
Fuel filter - all vehicles; Removing and installing fuel filter .

3.65 Fuel tank: adding fuel additive

Special tools and workshop equipment required

- ◆ Or: multi-purpose additive for petrol fuels - G 001 780 M3-

Table of test values and procedure guidelines:

China, Middle East	Russia	India
VW 507 53 B: Applies to all petrol engines	VW 507 53 B: Applies to all petrol engines VW 507 53 A: Applies to all petrol engines except g-tron and E85 flexible fuel	VW 507 53 B: Applies to all petrol engines VW 507 53 A: Applies to all petrol engines except g-tron and E85 flexible fuel
Multi-purpose additive for petrol fuels - G 001 780 M3-	Multi-purpose additive for petrol fuels - G 001 780 M3-	Multi-purpose additive for petrol fuels - G 001 780 M3-

This maintenance item only applies to certain countries: Note specification in Maintenance table.

Procedure:

- Follow measuring guidelines on fuel additive container and add fuel additive to fuel tank according to current fuel tank level.



Note

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- ◆ *Use only fuel additives that correspond to the standard VW 507 53 A or VW 507 53 B.*
- ◆ *After adding fuel additive, it is very important to tell the customer to fill up the fuel tank.*
- ◆ *Use no more than one container per filling, even if the tank has a capacity > 60 litres.*

3.66 Vehicle exterior: checking unprotected areas for dirt, and cleaning if necessary

Procedure:

- Check unprotected areas of vehicle exterior not covered by car cover or protective transport film for dirt/soiling.
- Clean any dirty areas.

3.67 Protective transport film and car cover: checking position and correcting if necessary

Procedure:

- Check, and if necessary, correct position of car cover on vehicle body.
- Check, and if necessary, correct position of protective transport film.

3.68 Protective transport film: renewing according to manufacturer's instructions

Procedure:

- Go to "<http://www.tesa.com/extranet>" and log in using the following details:
 - ◆ Login / E-mail: Bodyguard 50530
 - ◆ Password: PflegeVW
- Order protective transport film, adding the following note:
 - ◆ For Audi vehicles
 - ◆ Ordering number: APS 277 140 (1400 mm)
- Apply new protective transport film according to manufacturer's instructions.



Note

- ◆ *Do not apply protective transport film to vehicles with PR number "5K0" on the windscreen; these have been ordered intentionally without film.*
- ◆ *On vehicles with a fabric convertible roof, do not remove the protective transport covering put in place at the factory.*

3.69 Car cover: renewing according to manufacturer's instructions

Procedure:

- Remove car cover.
- Cover vehicle with a new car cover according to manufacturer's instructions.

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3.70 Body: checking vehicle paintwork for damage and corrosion from below and with bonnet, rear lid and doors open

Procedure:

- Open all vehicle doors, bonnet and rear lid.
- Check vehicle paintwork on inside and outside of body for damage and corrosion.
- Rectify defects of any kind (repair measure).

3.71 Vehicles parked outdoors: locking

Procedure:

- Use vehicle key to lock vehicle if it is parked outdoors.

3.72 Vehicles parked outdoors: covering unprotected vehicles with protective transport film and car cover (not for vehicles with control number 5K0)

Procedure:

- Apply protective transport film ➔ [page 142](#) .
- Cover vehicle with car cover ➔ [page 142](#) .



Note

Do not apply protective transport film to vehicles with PR number "5K0" on the windscreen; these have been ordered intentionally without film.

3.73 Road test

Procedure:

- The following points must be checked during the road test:
 - ◆ Engine: performance, misfiring, idling speed, acceleration, starting behaviour (engine cold and warm), engine noise
 - ◆ Clutch: pulling away, pedal pressure, odours, noise due to load change
 - ◆ Manual gearbox: ease of operation, gear lever position, gearbox noise
 - ◆ Automatic gearbox: selector lever position, shift lock / ignition key lock, gearbox noise, kickdown, shift behaviour, instrument cluster display
 - ◆ Brake pedal and handbrake: operation, travel and effectiveness, pulling to one side, response (delayed braking), juddering, squeal
 - ◆ ABS function: pulsing must be felt at brake pedal when performing ABS-controlled braking.
 - ◆ Steering: operation, steering free play, steering wheel centred when wheels are in straight-ahead position, moving off line when travelling straight
 - ◆ Imbalance: wheels, drive shafts
 - ◆ Wheel bearings: noises

- ◆ Roof insert: unusual noise during operation
- ◆ Horn: checking

**Note**

To what extent all of these can be checked depends on vehicle equipment and local conditions (urban/country).

3.74 Stock vehicles: observing measures specified in Maintenance table for stock vehicles (see "Before handing vehicle over to customer")

This maintenance item only applies to stock vehicles.

Procedure:

- Before handing vehicle over to customer: Check whether the following three measures for stock vehicles (as specified in the Maintenance table) are due, and carry them out as necessary:
- ◆ For vehicles older than 12 months (from date of manufacture): Renew brake fluid ⇒ [page 30](#) .
- ◆ For vehicles with defective battery: Renew battery ⇒ Rep. gr. 27 ; Battery; Removing and installing battery .
- ◆ Check brake discs for surface rust; if necessary, operate brakes to remove rust according to manufacturer's instructions.
- Record measures performed in maintenance table for stock vehicles.

3.75 Checklist "Documentation of cleaning and care routine": checking that list is present

Procedure:

- Check that checklist "Documentation of cleaning and care routine" is in glove box.
- If missing, place checklist "Documentation of cleaning and care routine" in glove box.

3.76 Checklist "Documentation of cleaning and care routine": signing and placing in vehicle wallet

Procedure:

- Sign checklist "Documentation of cleaning and care routine" and place it in vehicle wallet.

3.77 Cleaning and care: checking that required measures have been carried out on time

Procedure:

- Check that all cleaning and care measures due previously were carried out on time.
- Carry out and document any cleaning and care which is due.

3.78 Stock vehicle care management: deciding and recording date of next check

Procedure:

- Decide date of next check with person in charge of stock vehicle care management.
- Record chosen date in maintenance table.

3.79 Display instruments: setting time and date

Procedure:

- Change settings of display instruments: Refer to Operating Manual for radio/sound system/MMI system.

3.80 Manual gearbox/automatic gearbox: selecting 1st gear/park

Procedure:

Vehicles with manual gearbox: Select 1st gear.

Vehicles with automatic gearbox: Select park.

3.81 Automatic gearbox (multitronic): changing ATF

Procedure:

- Change gear oil according to Workshop Manual ⇒ Rep. gr. 37 ; Power transmission; ATF in gearbox; Changing ATF or filling up after performing repairs .

3.82 Interior mirror: calibrating compass

Procedure:

- Calibrate compass according to Workshop Manual ⇒ Rep. gr. 68 ; Interior mirror; Calibrating digital compass .

3.83 Poly V-belt for supercharger with charge air coolers: renewing

Procedure:

- Renew poly V-belt for supercharger with charge air coolers according to specifications in Workshop Manual ⇒ Rep. gr. 13 ; Cylinder block (pulley end); Removing and installing poly V-belt for supercharger .

3.84 Poly V-belts for ancillaries: renewing

Procedure:

- Renew poly V-belt for ancillaries according to specifications in Workshop Manual ⇒ Rep. gr. 13 ; Cylinder block (pulley end); Removing and installing poly V-belt .

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3.85 Poly V-belt for ancillaries and pulleys for coolant pump and power steering pump: renewing

Procedure:

- Renew poly V-belt for ancillaries according to specifications in Workshop Manual ⇒ Rep. gr. 13 ; Cylinder block (pulley end); Removing and installing poly V-belt .
- Renew pulleys according to Workshop Manual ⇒ Rep. gr. 13 ; Cylinder block (pulley end); Exploded view - cylinder block (pulley end) .

3.86 Instrument cluster: resetting driver information system

Procedure:

- Reset single journey memory and total journey memory of driver information system; refer to vehicle Owner's Manual.

3.87 Toothed belt for camshaft drive: renewing

Procedure:

- Renew toothed belt for camshaft drive according to specifications in Workshop Manual ⇒ Rep. gr. 15 ; Toothed belt drive; Removing and installing toothed belt .

3.88 Toothed belt for camshaft drive, and drive sprockets for camshaft, crankshaft and high-pressure pump: renewing

Procedure:

- Renew toothed belt for camshaft drive according to specifications in Workshop Manual ⇒ Rep. gr. 15 ; Toothed belt drive; Removing and installing toothed belt .
- Renew drive sprockets for camshaft, crankshaft and high-pressure pump according to Workshop Manual ⇒ Rep. gr. 15 ; Toothed belt drive; Exploded view - toothed belt .

3.89 Toothed belt for camshaft drive and tensioning roller: renewing

Procedure:

- Renew toothed belt for camshaft drive according to specifications in Workshop Manual ⇒ Rep. gr. 15 ; Toothed belt drive; Removing and installing toothed belt .
- Renew tensioning roller according to Workshop Manual ⇒ Rep. gr. 15 ; Toothed belt drive; Exploded view - toothed belt .

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4 Exhaust emissions test



Note

- ◆ Please observe the statutory regulations applicable to your country.
- ◆ The exhaust emissions test described below conforms to the statutory regulations applicable in Germany.

Petrol engines: performing exhaust emissions test ⇒ [page 147](#)

Diesel engines: performing exhaust emissions test ⇒ [page 154](#)

4.1 Petrol engines: performing exhaust emissions test

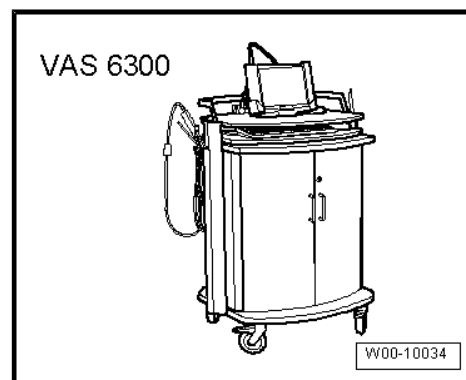


Note

- ◆ The following description refers to vehicles equipped with on-board diagnosis (OBD) with a closed-loop catalytic converter.
- ◆ The OBD monitors all components and (sub)systems which affect the exhaust gas quality.

Special tools and workshop equipment required

- ◆ Emissions test station - VAS 6300-



- ◆ Adapter wire, OBD communication - VAS 5052/16-1-



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- ◆ In order for the exhaust emissions test to be carried out, all components of the emissions test station - VAS 6300- must be properly plugged in and connected to one another as specified in the operating instructions.
 - ◆ All the required steps are displayed on the emissions test station - VAS 6300-.

Test requirements

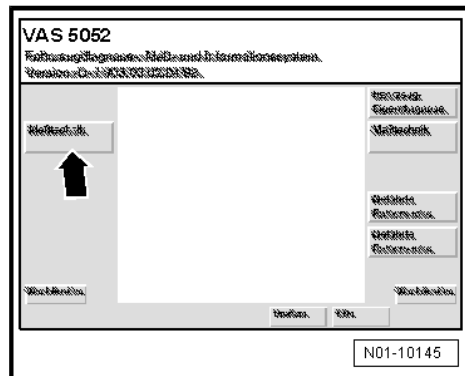
- All test requirements and data for the exhaust emissions test are stated on the exhaust emissions test data sheet for the required engine.
- If the specifications for the exhaust emissions test will be scanned in using a bar code, the data sheet must be available as a printout.

- Automatic gearbox: selector lever in position "P" or "N"
- Manual gearbox: gear lever in neutral
- Handbrake applied
- Follow instructions shown on display.

Start screen

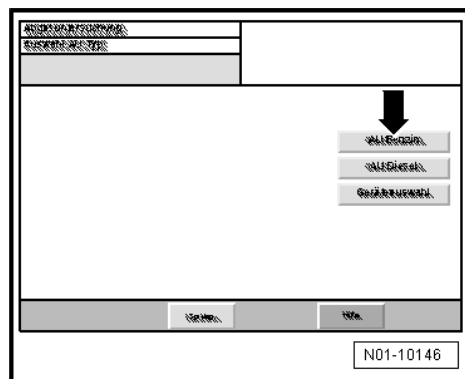
- Select "Emissions test" button -arrow-.

An overview of exhaust emissions test types will appear.

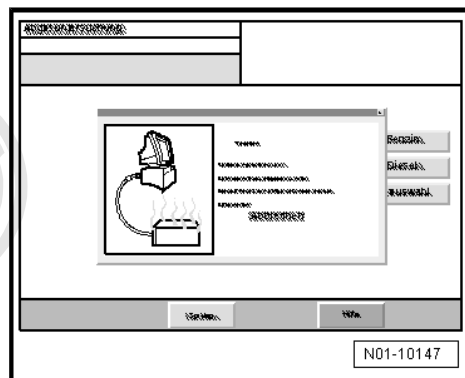


- Select "Emissions test, petrol" -arrow-.

A display for the warm-up period will be shown.



- Continue exhaust emissions test according to the instructions on the display.

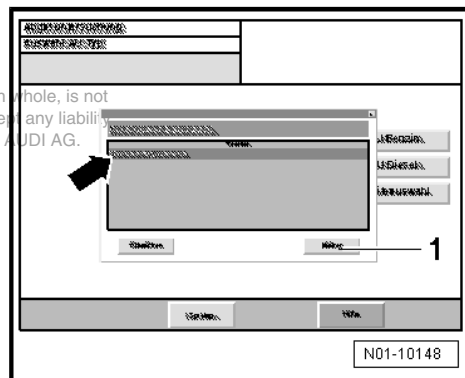


- When the options for the exhaust emissions test specifications are shown, select the option required -arrow-:

♦ Either "Standard specifications" (for an initial exhaust emissions test) permitted unless authorised by AUDI AG. AUDI AG does not guarantee or accept any liability with respect to the correctness of information in this document. Copyright by AUDI AG.

♦ Or "Last vehicle" (to repeat a previous exhaust emissions test)

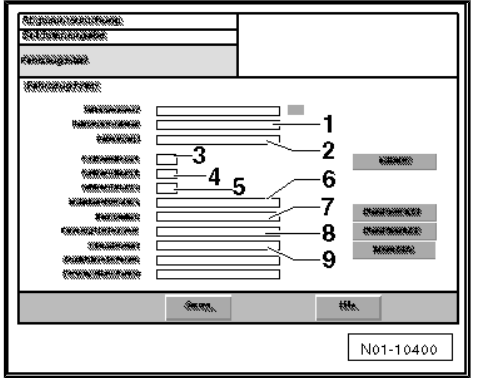
- Confirm **Next** -item 1- on display.



Entering vehicle data

The input menu for vehicle data will be shown.

- Enter the following data from the registration document (part 1):
- ◆ -1- Vehicle manufacturer, e.g. Audi
- ◆ -2- Vehicle model, e.g. A6 / 4G
- ◆ -3- Code for 14.1, e.g. 0572
- ◆ -4- Code for 2.1, e.g. 0588
- ◆ -5- Code for 2.2, e.g. 846
- ◆ -6- Engine code: e.g. CHVA
- ◆ -7- Number plate: e.g. IN-MV 1234
- ◆ -8- Vehicle identification number, e.g. WAUZZZ4GZAN001234
- Enter mileage (km), e.g. 33350, at -item 9-.

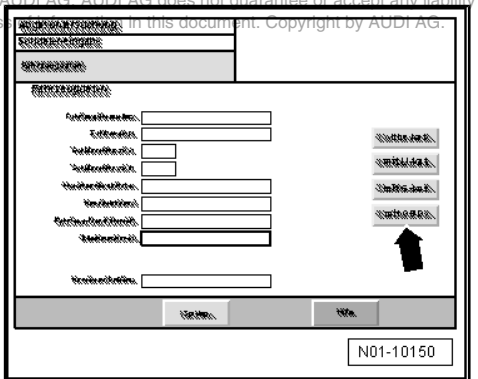


Note

- ◆ Additional functions can be selected using the **Go to** button.
- ◆ The **Go to** button can be used to cancel the test.

- Select “With OBD” -arrow-.

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Entering exhaust emissions test specifications



Note

- ◆ *The specifications must be entered manually if they are not available as a bar code.*
- ◆ *Refer to ⇒ Data sheets for exhaust emissions test (for required engine) for all test requirements and data for the exhaust emissions test.*

Entering exhaust emissions test specifications manually

- Follow instructions on display to enter data manually.
- Enter data listed on emissions test data sheet under “Test values for exhaust emissions test” on display in following order:
 - 1 - Test engine speed (idling speed)
 - 2 - Warm-up period of 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 control probe type: either »two-state probe« or »broad-band probe« -item 1-
 - 9 - Lambda probe value
- Once you have entered all data correctly, confirm your entry with **Next** button -arrow-.

Entering exhaust emissions test specifications with a bar code

- If exhaust emissions test specifications are available as a bar code, use scanner pen to scan bar code on data sheet.

All required data will be shown on display.

- Press  button -arrow- to continue procedure.

Visual inspection

- Follow instructions shown on display.
- Inspect all components relevant to exhaust emissions.
- Check that all components of exhaust system are fitted, complete and free of leaks and damage.
- If results of inspection are OK, press button for “OK” -arrow-.



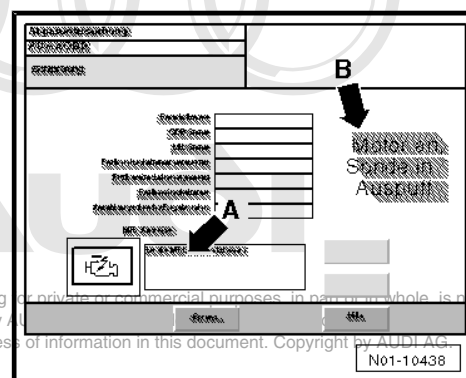
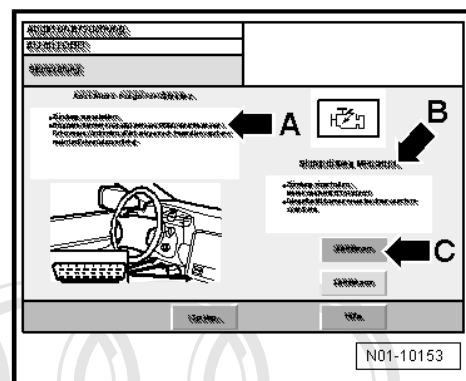
Note

Pressing the button for “Not OK” will start a test.

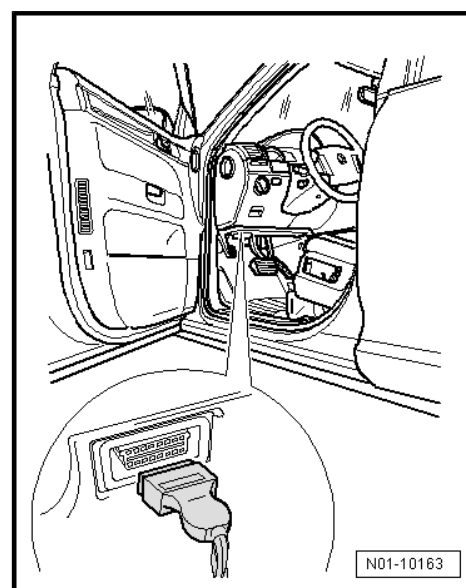
Plugging in diagnostic connector

The screen for the visual inspection must be shown with prompts to plug in the diagnostic connector -arrow A- and to check exhaust emissions warning lamp -arrow B-.

- Follow instructions shown on display -arrow A- and -arrow B-.
- Switch off ignition.



- Plug connector of diagnosis cable into EOBD connection.



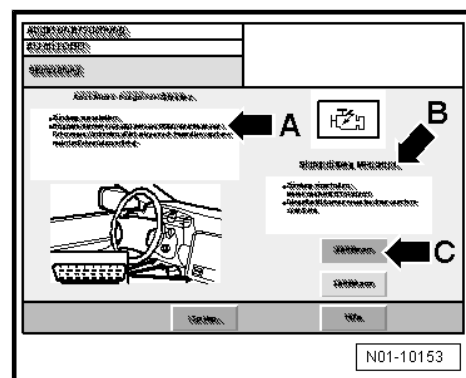
Visual check of exhaust emissions warning lamp with engine off

- Switch on ignition.
- Check exhaust emissions warning lamp.
- If lamp lights up, press button for "Lamp on" -arrow C-.



Note

The exhaust emissions test is failed if the exhaust emissions warning lamp does not light up during the visual check.



Visual check of exhaust emissions warning lamp with engine on

- Start engine and confirm that it is running by selecting “Yes” on display.
- Check exhaust emissions warning lamp; it must not light up or flash.
- Insert emission probe into exhaust pipe.



Note

Do not continue the exhaust emissions test until the test probe is in the exhaust pipe.

The system will automatically switch over to a test readiness check.

This checks that all test readiness checks supported by the control unit have been carried out.

- Confirm status of exhaust emissions warning lamp -arrow-.



Note

- ♦ *If all the display values are set to zero, a control probe test will not be performed.*
- ♦ *If not all the display values are set to zero, a control probe test will be performed in a later step.*

Catalytic converter temperature conditioning

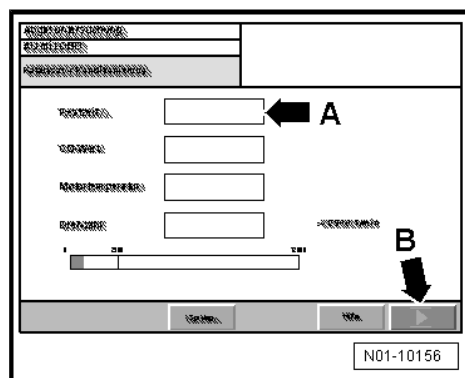
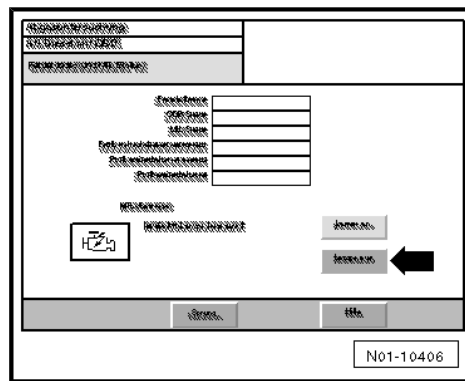
The system will automatically switch over to the warm-up phase of the catalytic converter.

- Follow instructions shown on display.

The measurement starts when the engine has reached the required speed.

- Keep engine speed within required range.

The remaining time for carrying out the warm-up phase will be shown -arrow A-.



Warm-up period

The system will automatically switch over to the screen for measuring the engine temperature.

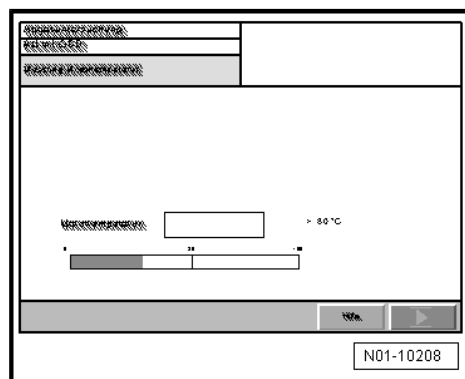
- Follow instructions shown on display.



Note

This screen is only shown if the engine temperature has not yet reached 80 degrees Celsius.

- Bring engine up to required temperature.



Measurement at increased idling speed

The system will automatically switch over to the screen for measuring at increased idling speed.

- Follow instructions shown on display.

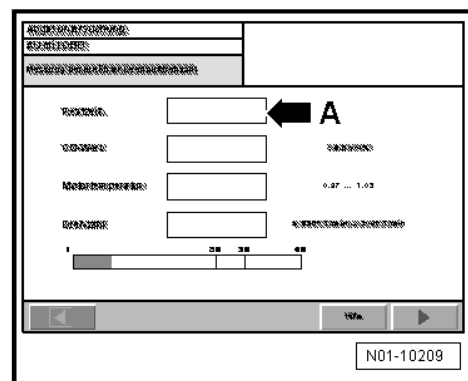
The measurement starts when the engine has reached the required speed.



Note

- ◆ You can skip the measurement by pressing the  button (the emissions test will be failed).
- ◆ You can reset the test values with the  button and repeat the test.
- Keep engine speed within required range.

The remaining time for carrying out the measurement will be shown -arrow A-.

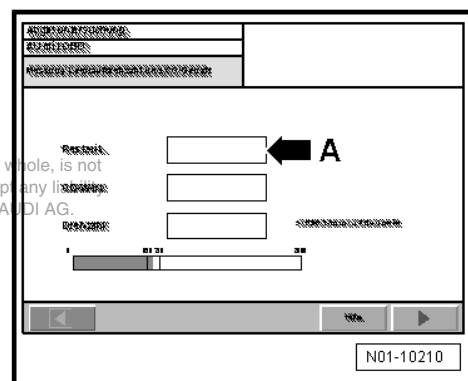


Measuring idling speed and CO content

The system will automatically switch over to the screen for idling speed and CO content.

The measurement starts when the engine has reached the required speed.

The remaining time for carrying out the measurement will be shown -arrow A-.



Control probe test



Note

The control probe test cannot be carried out unless all values displayed from the test readiness check are NOT set to zero.

The system will automatically switch over to the screen for the control probe test.



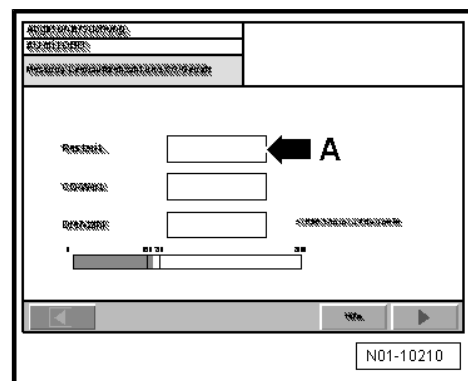
Note

The control probe test is carried out individually for each Lambda probe.

The measurement starts when the engine has reached the required speed.

- Keep engine speed within required range.

The remaining time for carrying out the measurement will be shown -arrow A-.



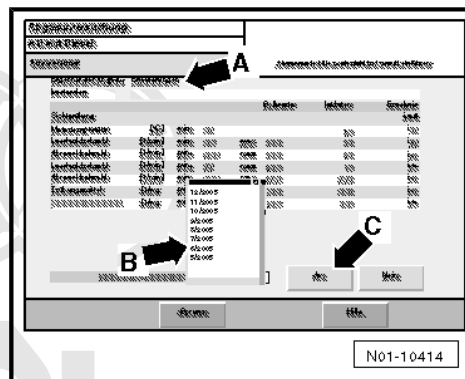
Evaluation

Once the exhaust emissions test is completed, the test log is displayed on the screen.

The result of the test will be shown.

You can enter remarks on the exhaust emissions test here -arrow A-. These will be added to the test log.

- If emissions test is passed, select date and “Emissions test seal granted” from drop-down menu -arrow B-.
- Confirm with “Yes” -arrow C-.

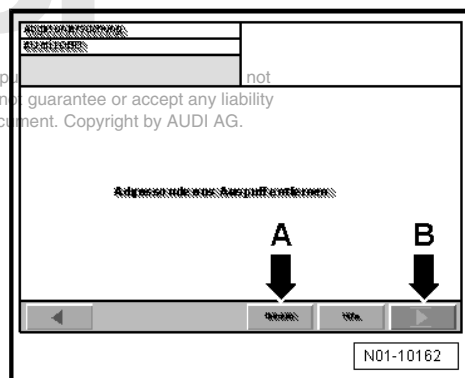


Printing

Following confirmation, two test certificates will be printed automatically.

- If additional certificates are required, press button for “Print” -arrow A-.
- Follow instructions shown on display.
- Remove emission probe from exhaust pipe.
- Then press button -arrow B-.

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



4.2 Diesel engines: performing exhaust emissions test

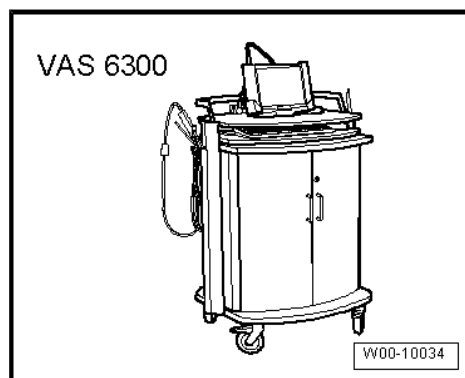


Note

- ◆ The following description refers to vehicles equipped with on-board diagnosis (OBD).
- ◆ The OBD monitors all components and (sub)systems which affect the exhaust gas quality.

Special tools and workshop equipment required

- ◆ Emissions test station - VAS 6300-



- ◆ Adapter wire, OBD communication - VAS 5052/16-1-

 Note

- ◆ *In order for the exhaust emissions test to be carried out, all components of the emissions test station - VAS 6300- must be properly plugged in and connected to one another as specified in the operating instructions.*
- ◆ *All the required steps are displayed on the emissions test station - VAS 6300- .*

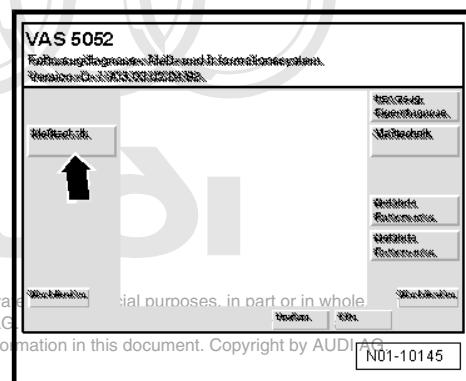
Test requirements

- All test requirements and data for the exhaust emissions test are stated on the exhaust emissions test data sheet for the required engine.
- If the specifications for the exhaust emissions test will be scanned in using a bar code, the data sheet must be available as a printout.
- Automatic gearbox: selector lever in position "P" or "N"
- Manual gearbox: gear lever in neutral
- Handbrake applied
- Follow instructions shown on display.

Start screen

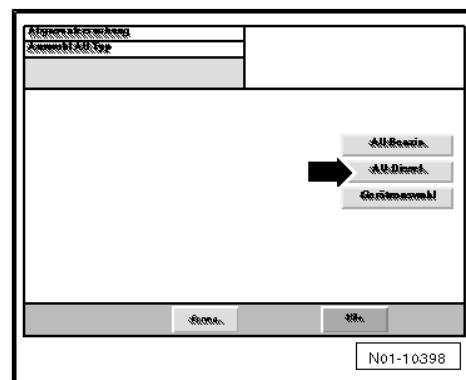
- Select "Emissions test" button -arrow-.

An overview of exhaust emissions test types will appear.

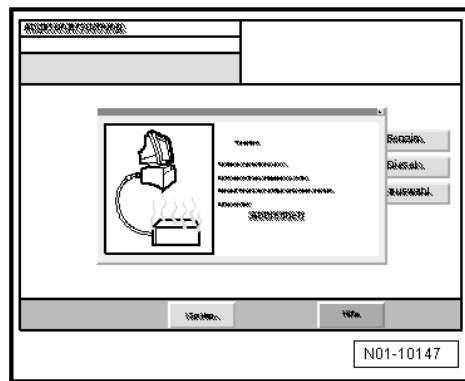


- Select "Emissions test, diesel" -arrow-.

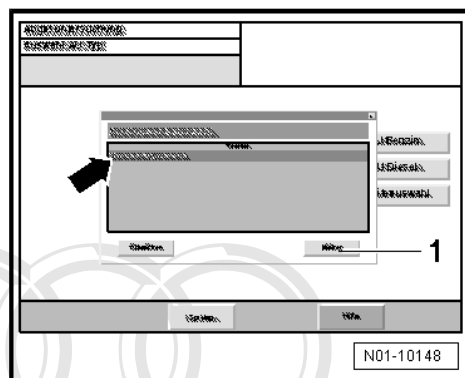
A display for the warm-up period will be shown.



- Continue exhaust emissions test according to the instructions on the display.



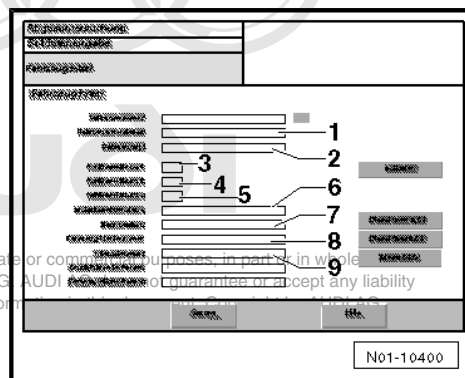
- When the options for the exhaust emissions test specifications are shown, select the option required -arrow-:
- ◆ Either “Standard specifications” (for an initial exhaust emissions test)
- ◆ Or “Last vehicle” (to repeat a previous exhaust emissions test)
- Confirm **Next** -item 1- on display.



Entering vehicle data

The input menu for vehicle data will be shown.

- Enter the following data from the registration document (part 1):
- ◆ -1- Vehicle manufacturer, e.g. Audi
- ◆ -2- Vehicle model, e.g. A6 / 4G
- ◆ -3- Code for 14.1, e.g. 0572
- ◆ -4- Code for 2.1, e.g. 0588
- ◆ -5- Code for 2.2, e.g. 846
- ◆ -6- Engine code: e.g. CHVA
- ◆ -7- Number plate: e.g. IN-MV 1234
- ◆ -8- Vehicle identification number, e.g. WAUZZZ4GZAN001234
- Enter mileage (km), e.g. 33350, at -item 9-.



Note

- ◆ Additional functions can be selected using the **Go to** button.
- ◆ The **Go to** button can be used to cancel the test.

- Select “Diesel OBD” -arrow-.

Entering exhaust emissions test specifications

There are various ways of entering the specifications:

- ◆ 1. Manually
- ◆ 2. By scanning the bar code from the emissions test data sheet
- ◆ 3. Via the ELSA web service



Note

- ◆ To use the ELSA web service, the vehicle diagnostic tester being used to perform the exhaust emissions test must be integrated in the workshop network.
- ◆ When using the ELSA web service, the vehicle specifications are entered on the corresponding screen automatically via the network.

Entering exhaust emissions test specifications manually



Note

Refer to ⇒ Data sheets for exhaust emissions test (for required engine) for all test requirements and data for the exhaust emissions test.

- Follow instructions on display to enter data manually.
- Enter data listed on emissions test data sheet under “Test values for exhaust emissions test” on display in following order:

- 1 - Engine speed for temperature conditioning
- 2 - Number of times engine revved up for temperature conditioning
- 3 - Engine oil temperature (minimum value)
- 4 - Select method for measuring engine oil temperature
- 5 - Idling speed
- 6 - Governed speed
- 7 - Governed speed measuring time (to nearest second)
- 8 - Turbidity value (arithmetic mean)
- 9 - Select probe type (probe number)
- 10 - Select measurement mode
- 11 - Time required for measurement

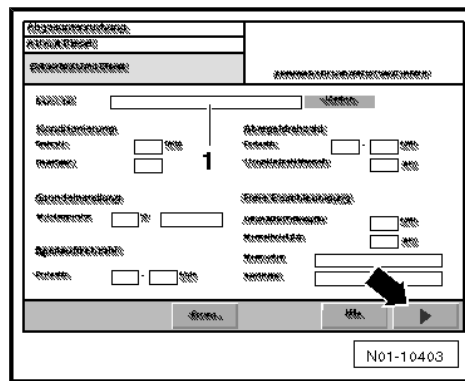
- Once you have entered all data correctly, confirm your entry with  button -arrow-.

Entering exhaust emissions test specifications with a bar code

- If exhaust emissions test specifications are available as a bar code, use scanner pen to scan bar code on data sheet.

All required data will be shown on display -1-.

- Press  button -arrow- to continue procedure.



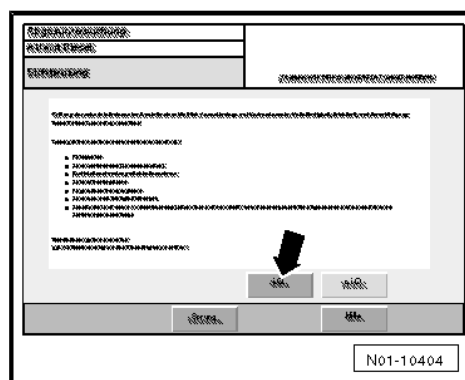
Visual inspection

- Follow instructions shown on display.
- Inspect all components relevant to exhaust emissions.
- Check that all components of exhaust system are fitted, complete and free of leaks and damage.
- If results of inspection are OK, press button for “OK” -arrow-.



Note

Pressing the button for “Not OK” will start a test.

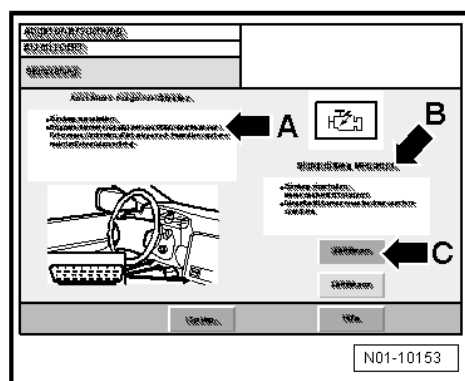


Plugging in diagnostic connector

- Ignition is switched off.

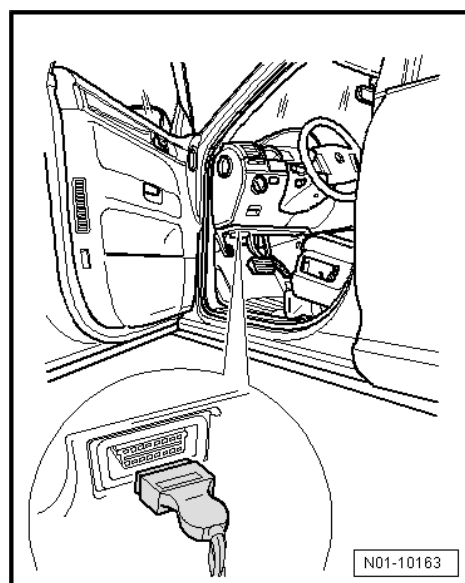
The screen for the visual inspection must be shown with prompts to plug in the diagnostic connector -arrow A- and to check exhaust emissions warning lamp -arrow B-.

- Follow instructions shown on display.
- Plug connector of diagnosis cable into EOBD connection.



Visual check of exhaust emissions warning lamp with engine off

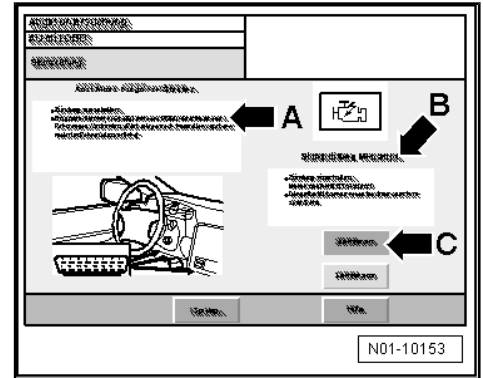
- Switch on ignition.
- Check exhaust emissions warning lamp.



- If lamp lights up, press button for “Lamp on” -arrow C-.



The exhaust emissions test is failed if the exhaust emissions warning lamp does not light up during the visual check.

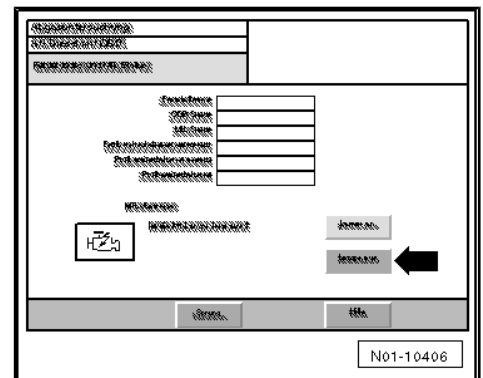


Visual check of exhaust emissions warning lamp with engine on

- Start engine and confirm that it is running by selecting “Yes” on display.
- Check exhaust emissions warning lamp; it must not light up or flash.
- Confirm status of exhaust emissions warning lamp -arrow-.

The system will automatically switch over to a test readiness check.

This checks that all test readiness checks supported by the control unit have been carried out.

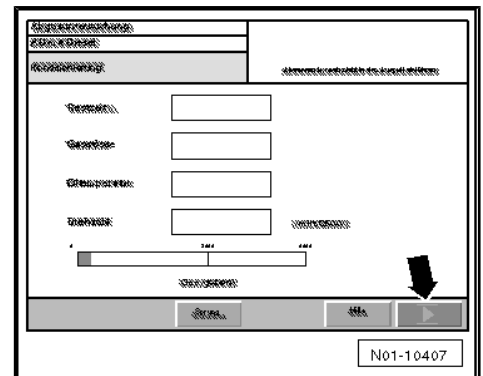


Temperature conditioning

In the temperature conditioning phase, the engine and any emission control systems are brought up to operating temperature by revving up the engine several times; this makes them ready for the exhaust emissions test.

- Follow instructions shown on display.
- Keep engine speed within required range.

If you are certain that no temperature conditioning is necessary, press  button -arrow- to proceed to next measurement.



Reading out the engine temperature

The engine temperature is read out from the engine control unit via the diagnostic connector.

After the required engine temperature has been reached, the system will automatically switch over to the screen for measuring the idling speed.



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Measuring the idling speed

- Follow instructions shown on display.

The measurement starts when the engine has reached the required speed.

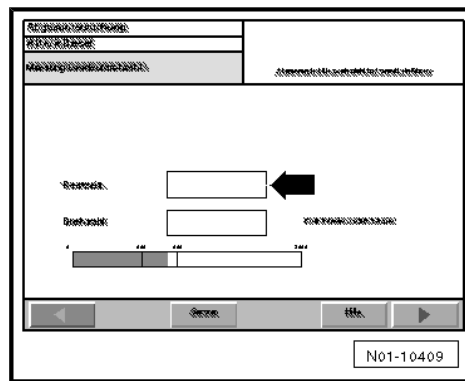


Note

- ◆ Do not insert emission probe into exhaust pipe yet.
- ◆ You can skip the measurement by pressing the  button (the emissions test will be failed).
- ◆ The  button can be used to repeat the test.

- Keep engine speed within required range.

The remaining time for carrying out the measurement will be shown -arrow-.



Measuring the governed speed

The system will automatically switch over to the screen for measuring the governed speed.

The measurement starts when the engine has reached the required speed.

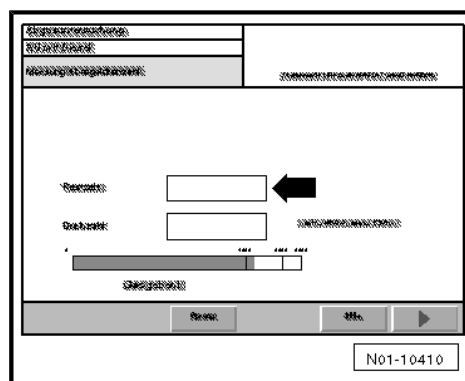
- Press the accelerator pedal down without delay and hold until measurement has been completed.



Note

- ◆ If the rev limiter is activated, deactivate it before performing the exhaust emissions test.
- ◆ Switch on the ignition and then press and hold the  button until the corresponding symbol flashes in the instrument cluster.

The remaining time for carrying out the measurement will be shown -arrow-.



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- ◆ Do not insert emission probe into exhaust pipe yet.
 - ◆ You can skip the measurement by pressing the  button (the emissions test will be failed).

Air quality check

An air quality check is started before the free acceleration procedure is performed. The emission probe must NOT be in the exhaust pipe at this stage. Otherwise, measurement errors or error messages may occur during the subsequent measurement procedures.

- After air quality check is completed, insert emission probe in exhaust pipe.

Free acceleration

The system will automatically switch over to the screen for the free acceleration procedure.

In the free acceleration procedure, the engine is accelerated as quickly as possible (without load) until the governed speed is reached.

The free acceleration test consists of at least four individual accelerations.

Free acceleration - phase 1

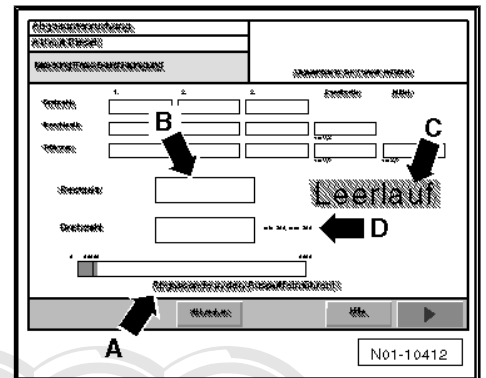
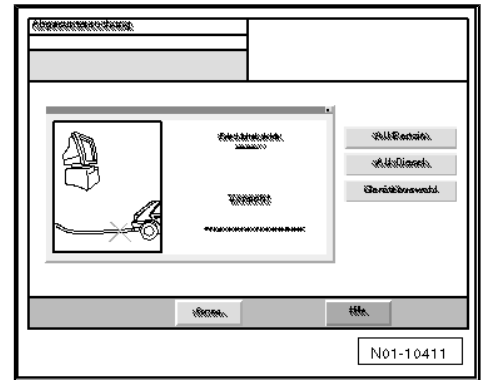
- Follow instructions shown on display -arrow A- and -arrow C-.
- Keep idling speed in specified speed range -arrow D-.

The remaining time for carrying out the measurement will be shown -arrow B-.



Note

- ◆ The emission probe must be in the exhaust pipe.
- ◆ If the engine speed is not within the specified speed range, the measurement procedure is re-started.
- ◆ You can skip the measurement by pressing the  button (the emissions test will be failed).



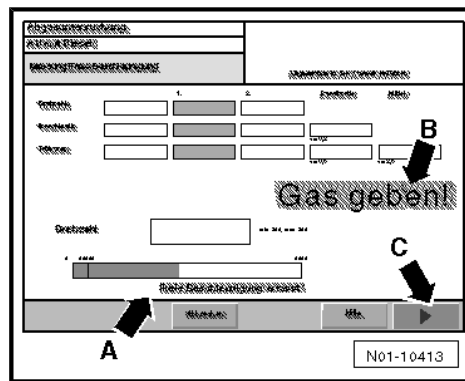
Free acceleration - phase 2

- Follow instructions shown on display -arrow B-.
- Press accelerator pedal down fully when prompted to do so and hold it until display prompts you to let engine idle.

Free acceleration - phase 3

- Take your foot off accelerator pedal as soon as display shows prompt for engine idling speed -arrow B-, and let engine idle.

The result of the measurement procedure and information about the most recently performed free acceleration procedure will appear on the display -arrow A-. If the measured values are not OK, you will be informed at this stage about the reasons why the free acceleration test was failed.



Note

- ◆ If the field is white, the measured value is within the tolerated range.
- ◆ If the field is red, the measured value is outside the tolerated range.
- ◆ If the field is yellow, the measured value is outside the tolerated range but is subject to the judgement of the person performing the test.

Further individual accelerations

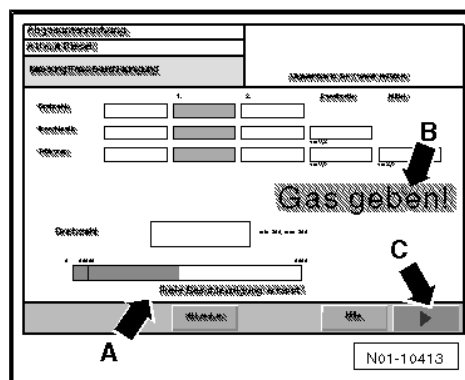
The next individual acceleration is now performed, beginning with phase 1 of the free acceleration procedure.

It is possible to perform as many free acceleration procedures as desired until:

- ◆ Three free acceleration procedures in a row have been passed, and the acceleration range is OK.
- ◆ All values are OK with the exception of the acceleration range, and the  button -arrow C- has been pressed to continue the test procedure (in this case, the person performing the test judges whether or not the value is OK).
- ◆ The values are not OK, and the → button -arrow C- has been pressed to end/skip the measurement.

If all measured values are OK after the engine has been revved up three times (i.e. all fields are white), the exhaust emissions test has been passed.

If all measured values are OK after the engine has been revved up three times, the exhaust emissions test has been passed.



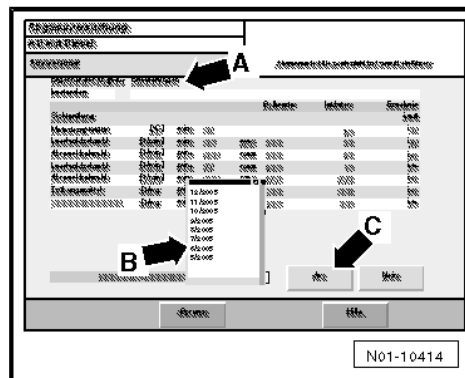
Evaluation

Once the exhaust emissions test is completed, the test log is displayed on the screen.

The result of the test will be shown.

You can enter remarks on the exhaust emissions test here -arrow A-. These will be added to the test log.

- If emissions test has been passed, select date and "Emissions test seal granted" from drop-down menu -arrow B-.
- Confirm with "Yes" -arrow C-.

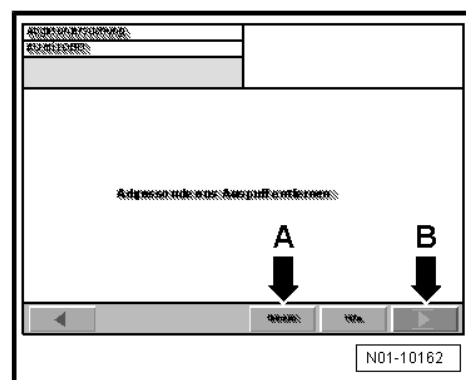
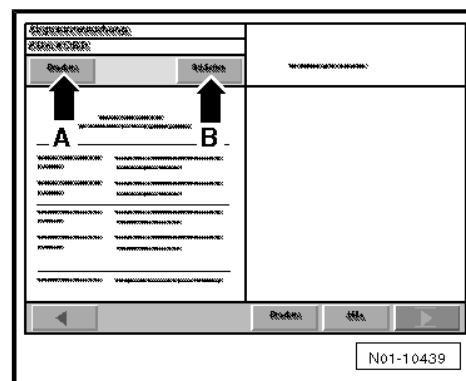


The emissions test log appears on the screen and can be printed out as often as desired using the "Print" button -arrow A- in the "Print preview" menu.

- You can close the "Print preview" menu by using the "Close" button -arrow B-.
- Follow instructions shown on display.
- Remove emission probe from exhaust pipe.

- Then press  button -arrow B-.

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



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