

Workshop Manual

Audi A3 2013 ➤

Audi A3 Sportback China 2014 ➤

4-cylinder direct injection engine (2.0 ltr. 4-valve TFSI,
EA 888 Gen. III, B cycle)

Engine ID	CZP B	CZR A	DBF B	DKZ A	DKV A				
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Edition 06.2018

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List of Workshop Manual Repair Groups



Repair Group

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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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4-cylinder direct injection engine (2.0 ltr. 4-valve TFSI, EA 888 Gen. III, B cycle) - Edition 06.2018



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00 – Technical data

1 Identification

(ARL005804; Edition 06.2018)

All information can be found in ⇒ Servicing 4-cylinder engine, 2.0 ltr. 4-valve TFSI; Rep. gr. 00 ; Identification .



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2 Safety precautions

All information can be found in ⇒ Servicing 4-cylinder engine, 2.0 ltr. 4-valve TFSI; Rep. gr. 00 ; Safety precautions .



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3 Repair instructions

All information can be found in ⇒ Servicing 4-cylinder engine, 2.0
ltr. 4-valve TFSI; Rep. gr. 00 ; Repair instructions .



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10 – Removing and installing engine

1 Removing and installing engine

⇒ [“1.1 Removing engine”, page 4](#)

⇒ [“1.2 Separating engine and gearbox”, page 18](#)

⇒ [“1.3 Securing engine to engine and gearbox support”, page 18](#)

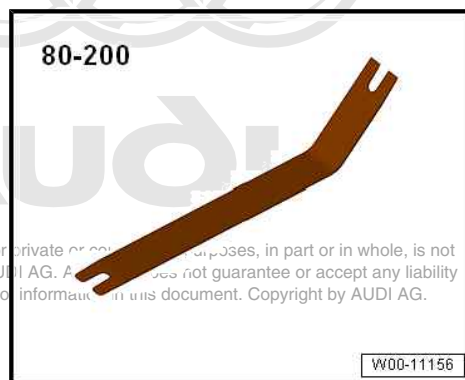
⇒ [“1.4 Installing engine”, page 18](#)

1.1 Removing engine

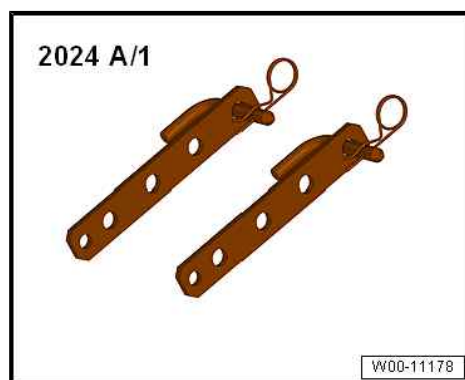
Special tools and workshop equipment required

◆ Removal lever - 80-200-

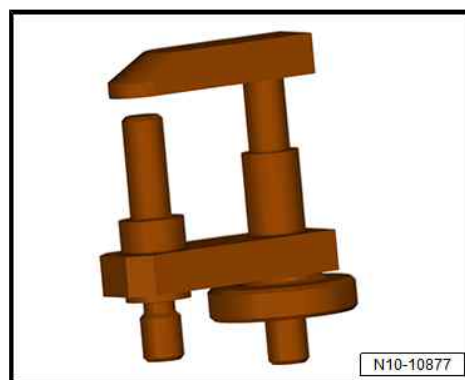
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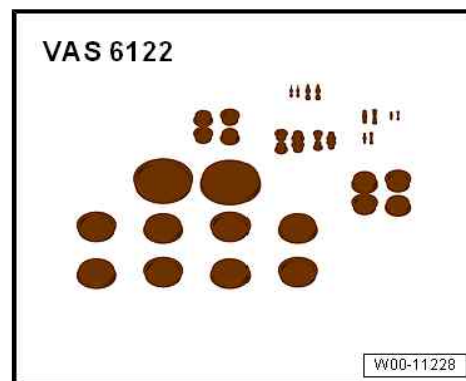
◆ Extension -2024 A /1- for lifting tackle - 2024 A-



◆ Locking element included with gearbox support - 3282-



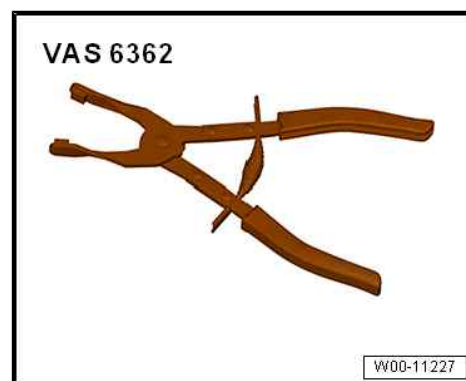
- ◆ Engine bung set - VAS 6122-



- ◆ Coolant collecting system - VAS 5014- or drip tray for workshop hoist - VAS 6208-



- ◆ Hose clip pliers - VAS 6362-



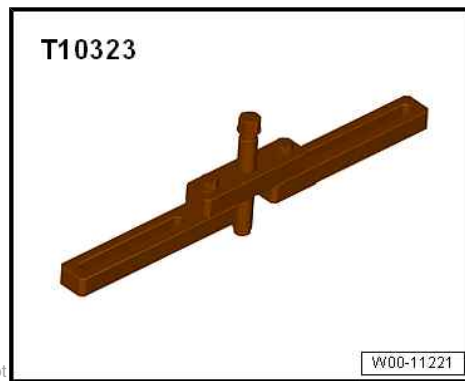
- ◆ Engine and gearbox jack - VAS 6931-



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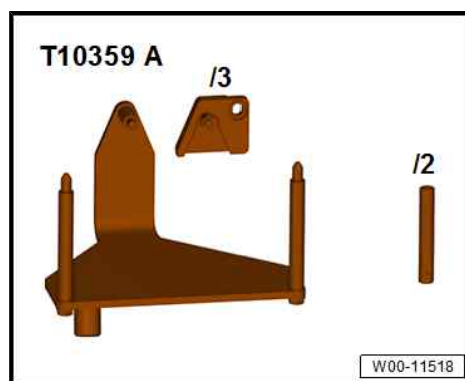


- ◆ Support bridge - T10323- for four-wheel drive vehicles



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- ◆ Engine bracket - T10359A-



- ◆ Stepladder (commercially available)
- ◆ Safety goggles
- ◆ Protective gloves

Procedure

- The engine is removed from below with the gearbox.
- Re-install all cable ties in the same locations when installing.

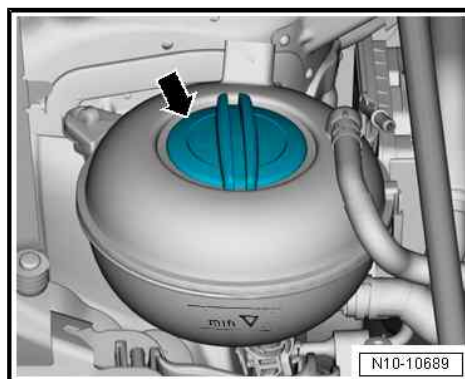
CAUTION

The cooling system is under pressure when the engine is hot.
Risk of scalding due to hot steam and hot coolant.

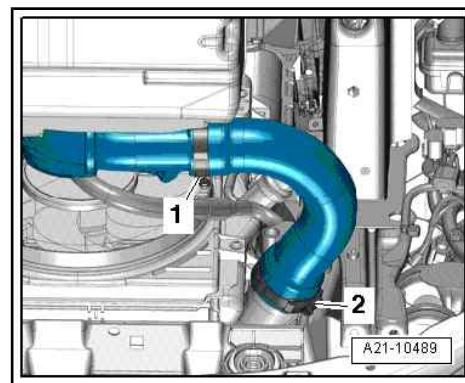
Danger of scalding skin and other parts of the body.

- Put on protective gloves.
- Put on safety goggles.
- Cover filler cap on expansion tank with a cloth and open carefully to release pressure.

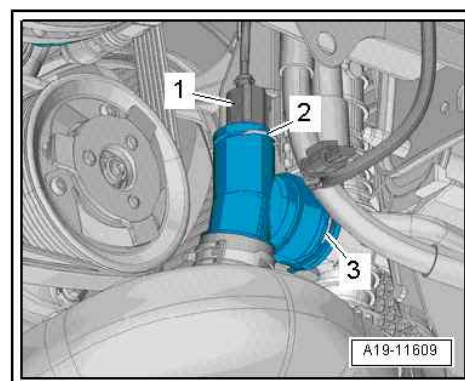
- Open filler cap -arrow- on coolant expansion tank.
- Remove subframe without steering rack ⇒ Running gear, axles, steering; Rep. gr. 40 ; Subframe; Removing and installing subframe without steering rack .



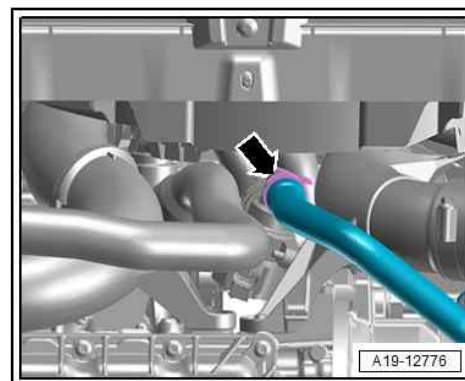
- Release hose clips -1, 2- and detach air hose.
- Seal off open lines and connections with clean plugs from engine bung set - VAS 6122- .



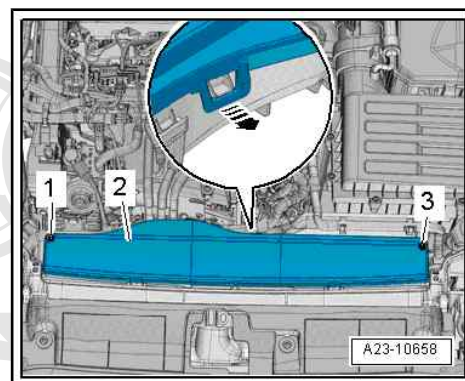
- Place coolant collecting system - VAS 5014- or drip tray for workshop hoist - VAS 6208- underneath.
- Lift retaining clip -2-, disconnect coolant hose (bottom right) from radiator and drain off coolant.



- Release hose clip -arrow- and disconnect coolant hose; hold coolant hose downwards and drain off remaining coolant.



- Remove bolts -1, 3-.
- Release fastener -arrow- and remove cover -2-.

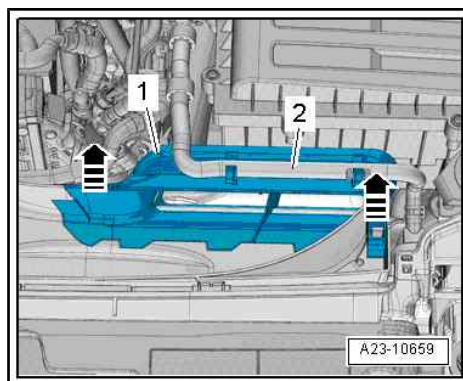


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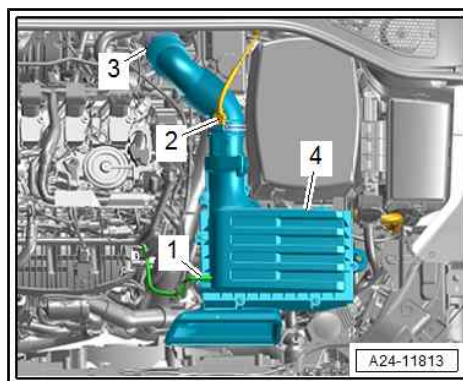
- Carefully pull engine cover panel off retaining pins one after another -arrows-. Do not jerk engine cover panel away, and do not try to pull on one side only.



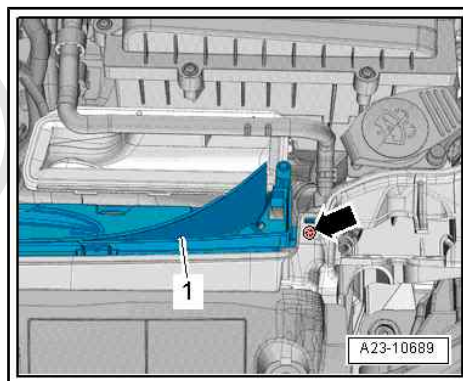
- Move coolant hose -2- clear.
- Release fasteners -arrows- and detach air duct (top section) -1-.



- Unplug electrical connector -2- at air mass meter - G70- .
- Disconnect vacuum hose -1-.
- Release hose clip -3- and detach air hose.
- Lift air cleaner housing -4- off bracket and detach.

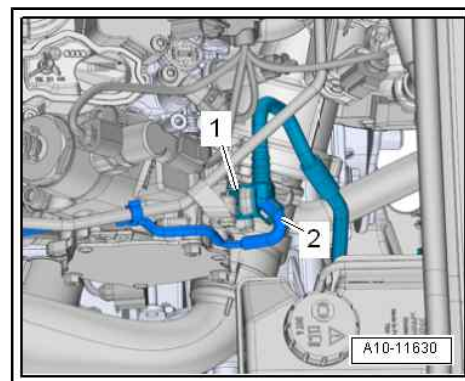


- Remove bolt -arrow- on both sides.
- Unclip air duct (bottom section) -1- and detach.
- Remove battery tray ➔ Electrical system; Rep. gr. 27 ; Battery; Removing and installing battery tray .



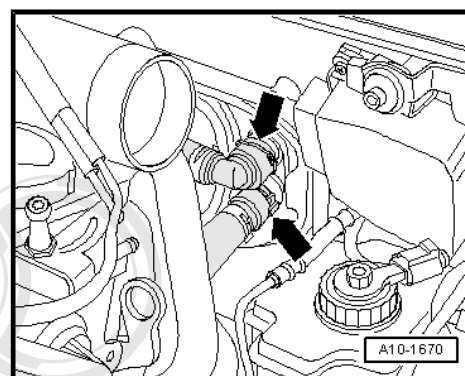
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- Disconnect vacuum hose -2-.
- Press release tabs on vacuum hose -1- and detach hose from vacuum pump.



Vehicle without auxiliary heater:

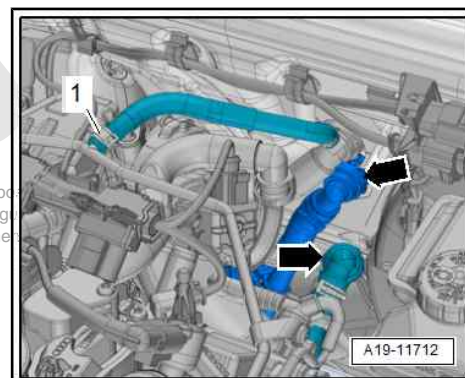
- Place a cloth underneath heat exchanger for heater to catch escaping coolant.
- Lift retaining clips -arrows- and disconnect coolant hoses from heat exchanger for heater.
- Guide coolant hoses downwards and drain off coolant.



Vehicle with auxiliary heater:

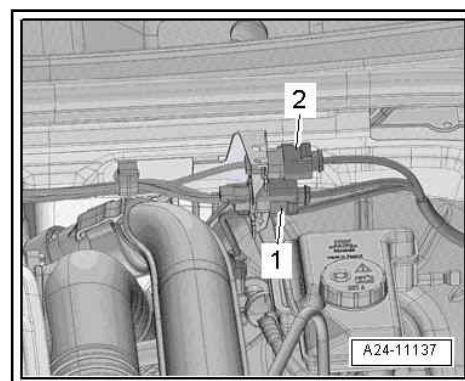
- Place a cloth underneath heat exchanger for heater to catch escaping coolant.
- Release hose clip -1-, lift retaining clips -arrows- and disconnect coolant hoses.

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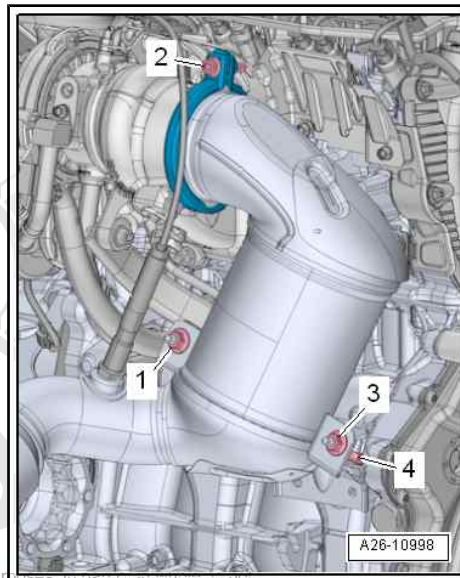


All vehicles (continued):

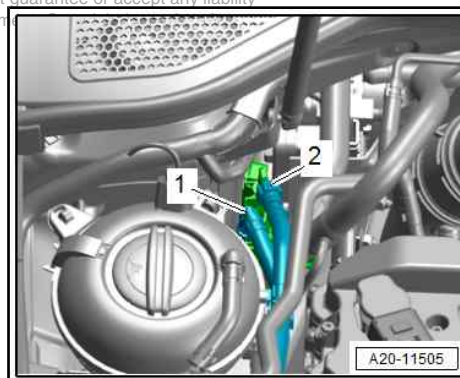
- Detach electrical connectors -1 and 2- from bracket, unplug and move electrical wiring clear.



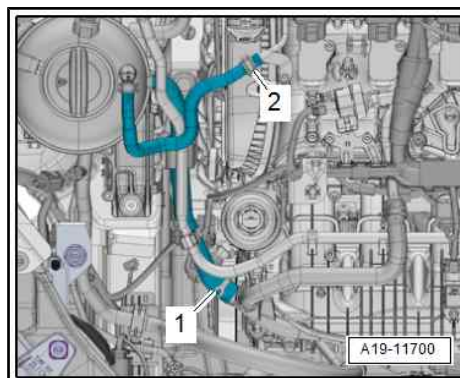
- Unscrew bolt -2- and remove screw-type clip.
- Remove nuts -1 and 3- (shown with engine removed).



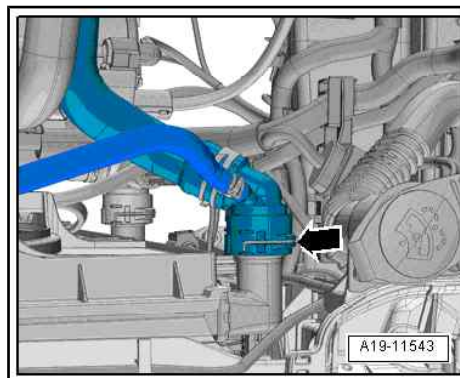
- Disconnect fuel supply line -1- ➤ **Fuel supply system; Rep. gr. 20 ; Plug-in connectors; Disconnecting plug-in connectors .**
- Press release tabs, disconnect hose -2- for activated charcoal filter system and move hose clear.



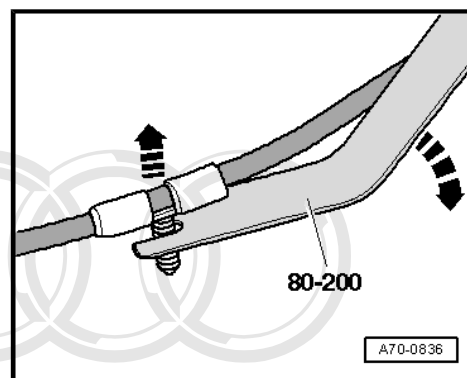
- Release hose clips -1, 2- and disconnect coolant hoses.



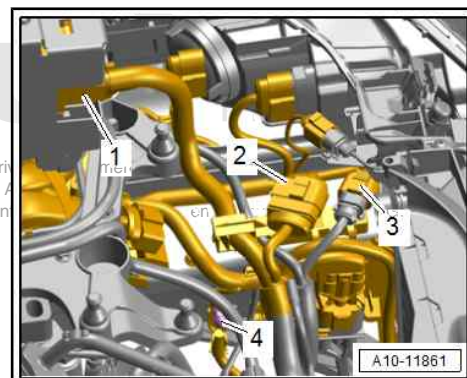
- Lift retaining clip -arrow- and disconnect coolant hose (top left) from radiator.



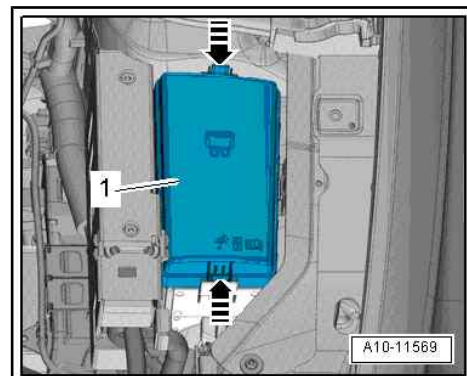
- Use removal lever - 80-200- to lever out the wiring clips when performing the next work steps.



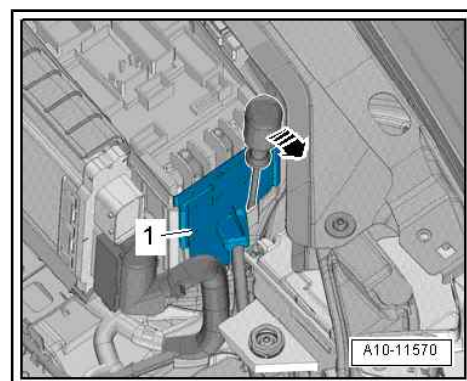
- Unplug electrical connector -1- at engine control unit - J623- ➔ [page 86](#) .
- Detach electrical connectors -2 and 3- from bracket, unplug and move electrical wiring clear.
- Remove nut -4- and move earth wire clear.



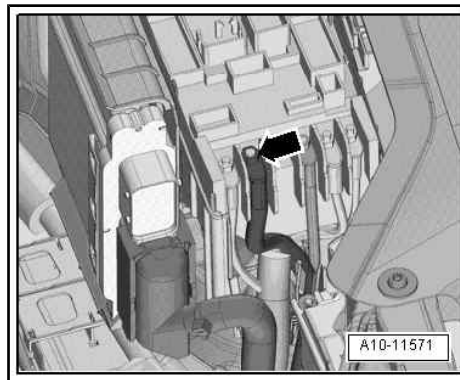
- Release catches -arrows- and detach cover -1- for electronics box in engine compartment.



- Release catch using a screwdriver -arrow- and detach cover -1- for electronics box in engine compartment upwards.



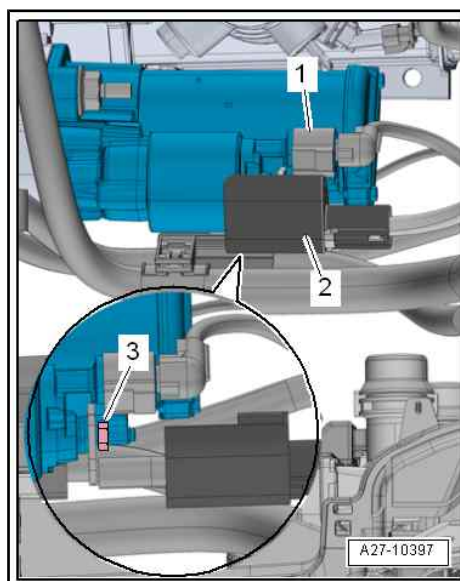
- Remove nut -arrow-, detach electrical wiring and move clear.



- Unplug electrical connector -1- (push retainer towards rear and press down release catch).

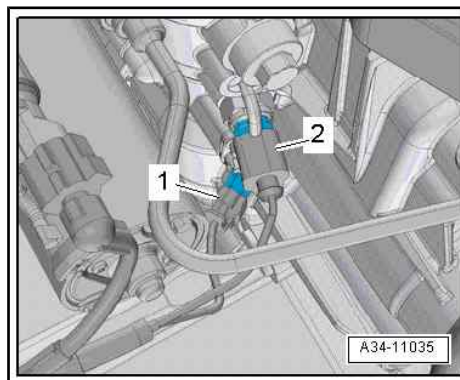


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Vehicles with manual gearbox:

- Unplug electrical connectors on gearbox (front left):
 - 1 - For gearbox neutral position sender - G701-
 - 2 - For reversing light switch - F4-
- Detach gear selector cable and gate selector cable from gearbox, remove cable support bracket and place to one side with selector cables attached ⇒ Gearbox; Rep. gr. 34 ; Selector mechanism; Removing and installing selector mechanism .
- Detach pipe/hose assembly from bleeder connection on clutch slave cylinder ⇒ Rep. gr. 30 ; Clutch mechanism; Removing and installing lines for clutch hydraulics .



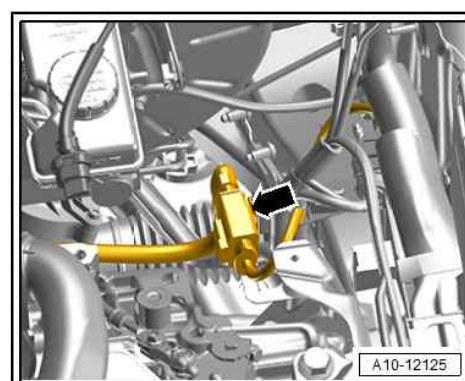
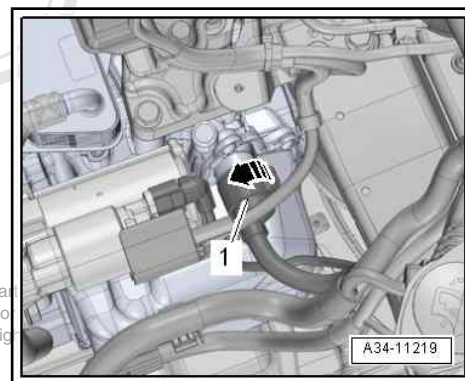
Vehicles with dual clutch gearbox:

- Detach selector lever cable from gearbox and pull it out of cable support bracket ⇒ Rep. gr. 34 ; Selector mechanism; Removing and installing selector mechanism .

NOTICE

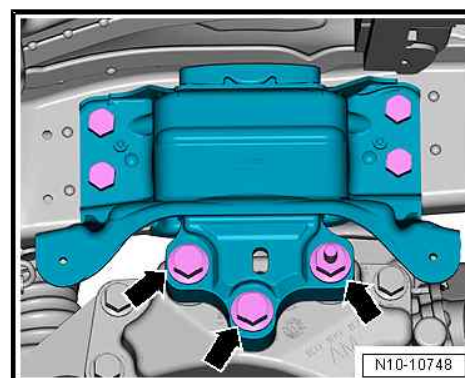
Risk of irreparable damage due to electrostatic discharge.

- Do not touch connector contacts with your hands.
- Touch the lifting platform or other earthed object to discharge static electricity.
- Turn retainer catch anti-clockwise -arrow- and unplug electrical connector -1- for mechatronic unit for dual clutch gearbox - J743- .
- Unplug electrical connector -arrow- for differential lock.

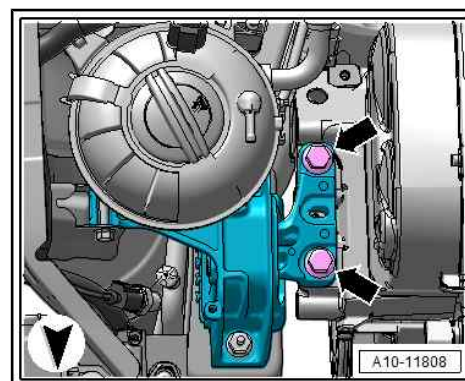


All vehicles (continued):

- Loosen bolts -arrows- for gearbox mounting approx. 2 turns.

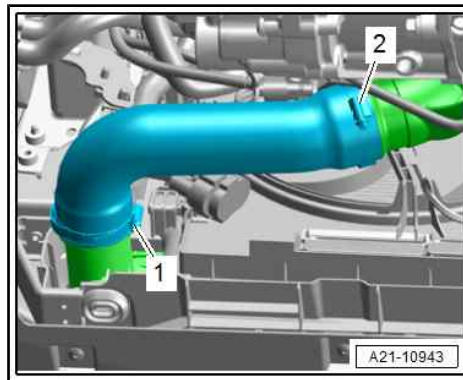


- Unscrew bolts -arrows- for engine mounting approx. 2 turns.

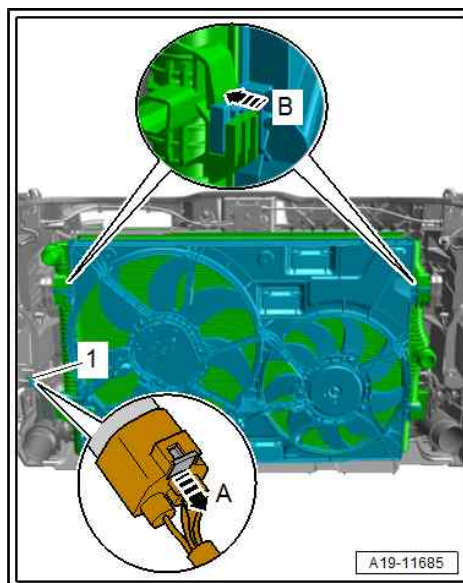




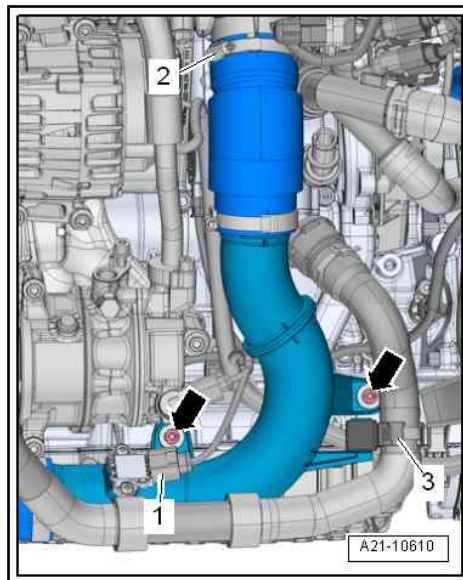
- Release hose clip -1- and detach air hose from charge air cooler.



- Unplug electrical connector -1- for radiator fan (push retainer in direction of -arrow A- and press release catch down).
- Press locking tabs on left and right sides of radiator cowl simultaneously -arrow B- and detach radiator cowl downwards from radiator.

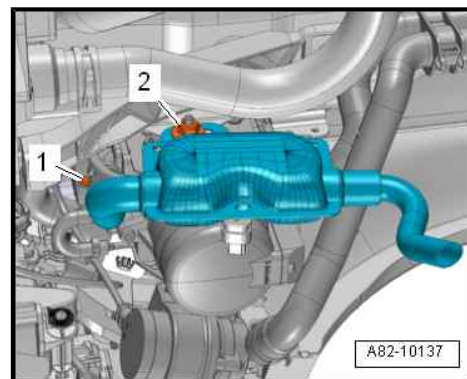


- Release hose clip -2-.
- Move coolant hose -3- clear.
- Remove bolts -arrows-.
- Unplug electrical connector -1- from charge pressure sender - G31- .
- Detach air pipe (right-side).



Vehicle with auxiliary heater:

- Open clip -1-, unscrew bolt -2- and detach silencer for auxiliary heater.

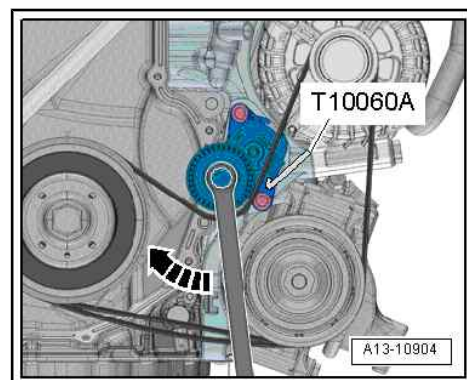


All vehicles (continued):

NOTICE

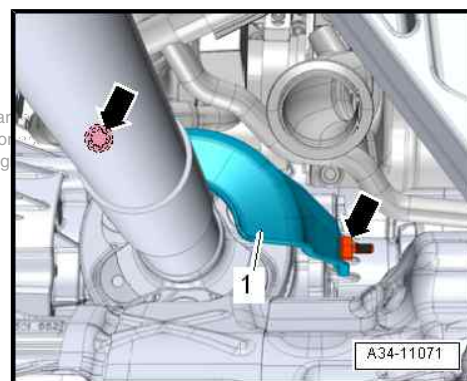
Risk of irreparable damage due to running a used belt in the opposite direction when it is refitted.

- Mark running direction before removing.
- Pay attention to running direction when reinstalling.
- To slacken poly V-belt, turn tensioner in clockwise direction -arrow-.
- Remove poly V-belt from pulley of air conditioner compressor and release tensioner.
- Remove air conditioner compressor from bracket and tie up to right side with refrigerant lines still attached ⇒ Heating, air conditioning; Rep. gr. 87 ; Air conditioner compressor; Detaching and attaching air conditioner compressor at bracket .



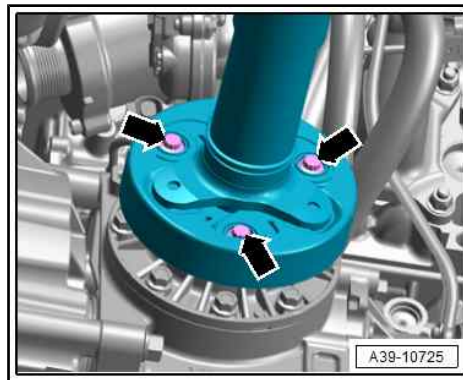
Vehicles with four-wheel drive:

- Remove heat shield for drive shaft (right-side) ⇒ Running gear, axles, steering; Rep. gr. 40 ; Drive shaft; Removing and installing heat shield for drive shaft .
- Remove bolts -arrows- and detach heat shield -1-.



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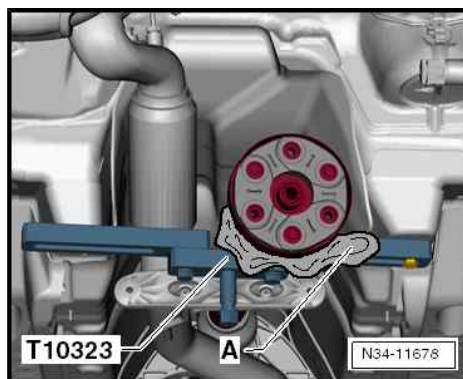
- Mark position of flexible coupling and flange for bevel box in relation to each other for re-installation.
- Unbolt propshaft at bevel box -arrows- (counterhold using a suitable lever at the triangular flange).



- Secure support bridge - T10323- to inner rear threaded hole for subframe with one bolt.
- This can be done with the subframe securing bolt.
- Place a cloth -A- on the support bridge .
- Detach propshaft from bevel box and place down.

All vehicles (continued):

- Unbolt drive shaft from flange shaft (or press it off) on left and right ⇒ Running gear, axles, steering; Rep. gr. 40 ; Drive shaft; Removing and installing drive shaft .
- Tie up drive shafts to rear.
- Make sure you do not damage surface coating on drive shaft.

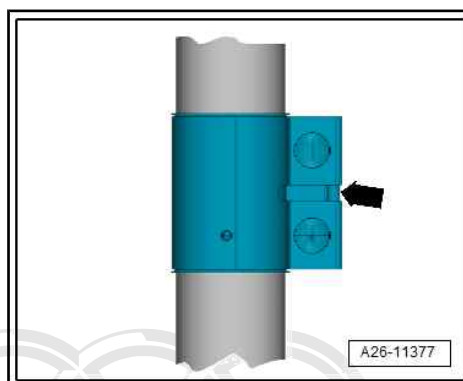


- Loosen clamp -arrow- and push towards rear.

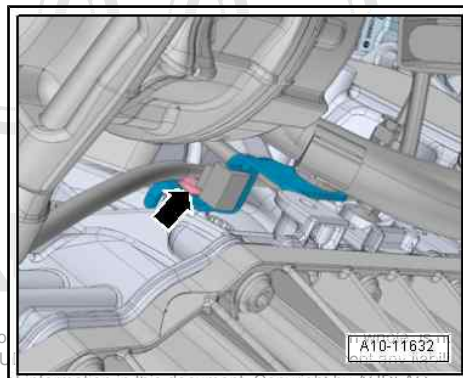
NOTICE

Risk of damage to flexible joint if handled incorrectly.

- Do not bend flexible joint more than 10°.
- Install flexible joint so that it is not under tension.
- Detach catalytic converter with front exhaust pipe.



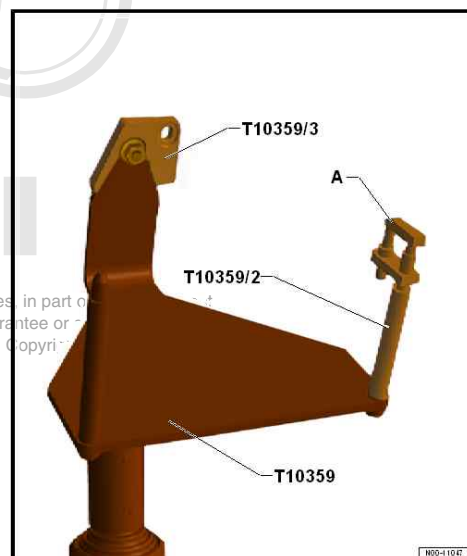
- Remove bolt -arrow- and push bracket for electrical wiring harness to one side.



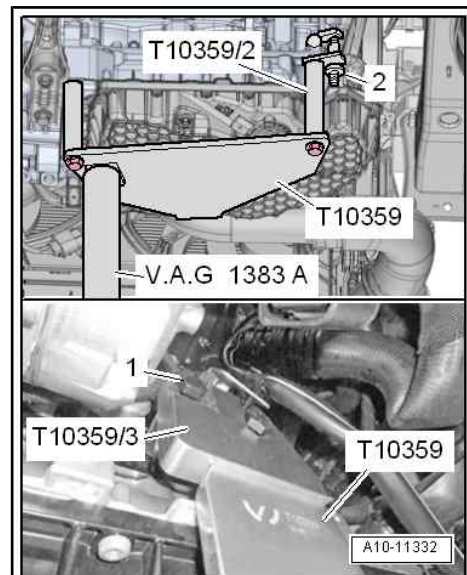
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- Secure adapter -T10359/3- to engine bracket - T10359- as shown in illustration.
- Use locking element -A- from gearbox support - 3282- to secure pin -T10359/2- to engine bracket.
- Insert engine support - T10359- in engine and gearbox jack - VAS 6931- .

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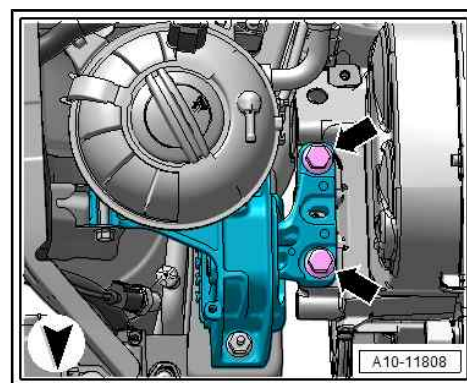
- Use bolt -1- to fix engine support - T10359- with 20 Nm to cylinder block and secure with locking element -2- from gearbox support - 3282- .
- Insert engine and gearbox jack in engine bracket -T10359- and raise engine/gearbox assembly slightly.



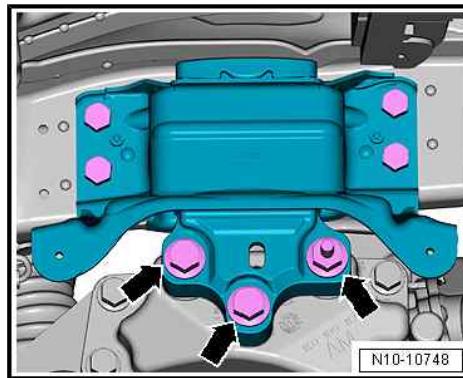
Note

Use a stepladder when unscrewing bolts for assembly mounting.

- Remove bolts -arrows- for engine mounting.



- Remove bolts -arrows- securing gearbox mounting.
- Carefully let engine/gearbox assembly down; while doing so, check that all vacuum lines and electrical wiring between engine, gearbox and body have been detached.



1.2 Separating engine and gearbox

All procedures are described in ⇒ Servicing 4-cylinder engine, 2.0 ltr. 4-valve TFSI; Rep. gr. 10 ; Removing and installing engine; Separating engine and gearbox .

1.3 Securing engine to engine and gearbox support

All procedures are described in ⇒ Servicing 4-cylinder engine, 2.0 ltr. 4-valve TFSI; Rep. gr. 10 ; Removing and installing engine; Securing engine to engine and gearbox support .

1.4 Installing engine

Tightening torques

- ♦ Tightening torques apply only to lightly greased, oiled, phosphated or black-finished nuts and bolts.
- ♦ Additional lubricants such as engine or gear oil may be used, but do not use lubricants containing graphite.
- ♦ Do not use degreased parts.
- ♦ Tolerance for tightening torques: $\pm 15 \%$.

Component		Nm
Bolts/nuts	M6	10
	M7	15
	M8	20
	M10	40
	M12	65

- ♦ Assembly mountings
⇒ ["2.1 Exploded view - assembly mountings", page 22](#)
- ♦ Securing gearbox to engine ⇒ Gearbox; Rep. gr. 34 ; Removing and installing gearbox; Tightening torques for gearbox

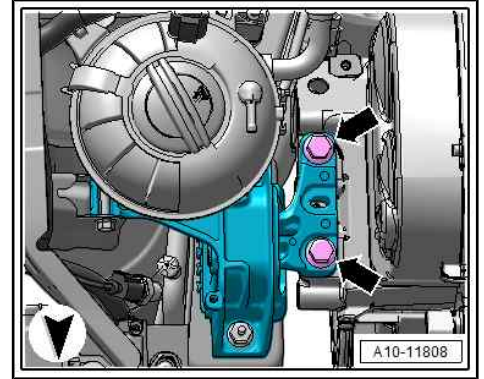
Procedure

- Renew bolts tightened with specified tightening angle.
- Renew self-locking nuts and bolts as well as seals, gaskets and O-rings.
- Secure all hose connections with correct type of hose clips (as original equipment) ⇒ Electronic parts catalogue .
- Re-install all cable ties in the same locations when installing.
- Do not reuse coolant.

- Fit gearbox to engine ⇒ Gearbox; Rep. gr. 34 ; Removing and installing gearbox; Installing gearbox .
- Install starter ⇒ Electrical system; Rep. gr. 27 ; Starter; Removing and installing starter .
- Guide engine/gearbox assembly into body.
- Initially screw in bolts -arrows- for engine mounting by hand until they make contact.

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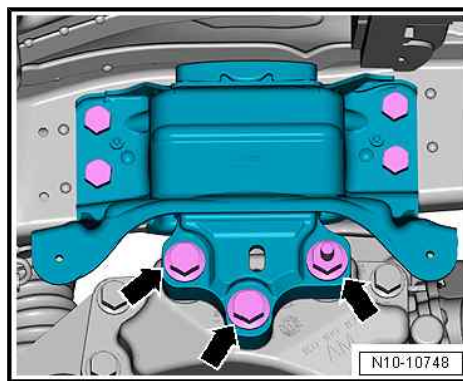


- Initially screw in bolts -arrows- for gearbox mounting by hand until they make contact.

Note

The bolts are tightened to final torque only after adjusting the assembly mountings ⇒ [page 22](#) .

- Remove engine bracket - T10359- from engine.
- Install drive shafts ⇒ Running gear, axles, steering; Rep. gr. 40 ; Drive shaft; Exploded view - drive shaft .
- Install heat shield for drive shaft ⇒ Running gear, axles, steering; Rep. gr. 40 ; Drive shaft; Removing and installing heat shield for drive shaft .



Vehicles with four-wheel drive:

- Secure propshaft to bevel box ⇒ Rear final drive; Rep. gr. 39 ; Propshaft; Exploded view - propshaft .

All vehicles (continued):

- Install air conditioner compressor ⇒ Heating, air conditioning; Rep. gr. 87 ; Air conditioner compressor; Exploded view - air conditioner compressor drive unit .
- Install poly V-belt ⇒ Servicing 4-cylinder engine, 2.0 ltr. 4-valve TFSI; Rep. gr. 13 ; Cylinder block (pulley end); Removing and installing poly V-belt .
- Install silencer for auxiliary heater ⇒ Auxiliary heater, supplementary heater; Rep. gr. 82 ; Auxiliary/supplementary heater; Removing and installing exhaust system .
- Install air pipes and hoses ⇒ Servicing 4-cylinder engine, 2.0 ltr. 4-valve TFSI; Rep. gr. 21 ; Charge air system; Exploded view - hose connections for charge air system .
- Install radiator cowl ⇒ [page 59](#) .

Vehicles with manual gearbox:

- Install cables with cable support bracket ⇒ Gearbox; Rep. gr. 34 ; Selector mechanism; Exploded view - selector cables .
- Attach pipe/hose assembly to bleeder connection ⇒ Gearbox; Rep. gr. 30 ; Clutch mechanism; Removing and installing lines for clutch hydraulics .

Vehicles with dual clutch gearbox:

- Install and adjust selector lever cable ⇒ Gearbox; Rep. gr. 34 ; Selector mechanism; Exploded view - selector mechanism .

All vehicles (continued):

- Adjust assembly mountings ⇒ [page 27](#) .
- Connect fuel supply line ⇒ Fuel supply system; Rep. gr. 20 ; Plug-in connectors; Disconnecting plug-in connectors .
- Install catalytic converter ⇒ Servicing 4-cylinder engine, 2.0 ltr. 4-valve TFSI; Rep. gr. 26 ; Emission control system; Removing and installing catalytic converter .
- Install battery tray ⇒ Electrical system; Rep. gr. 27 ; Battery; Exploded view - battery .
- Electrical connections and routing ⇒ Electrical system; Rep. gr. 97 ; Relay carriers, fuse carriers, electronics boxes; Overview of fitting locations - relay carriers, fuse carriers, electronics boxes and ⇒ Current flow diagrams, Electrical fault finding and Fitting locations.

- Install air cleaner housing ⇒ [page 76](#) .
- Install subframe ⇒ Running gear, axles, steering; Rep. gr. 40 ; Subframe; Removing and installing subframe without steering rack .
- Install engine cover panel ⇒ Servicing 4-cylinder engine, 2.0 ltr. 4-valve TFSI; Rep. gr. 10 ; Engine cover panel; Removing and installing engine cover panel .
- Top up engine oil/check oil level ⇒ Maintenance ; Booklet 821 .

 NOTICE

Risk of irreparable damage to control units because of excessive voltage.

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- **Do not use a battery charger to boost starting.**
- Connect coolant hoses with plug-in connector ⇒ [page 57](#) .
- Fill up with coolant ⇒ [page 46](#) .
- Erase entries in engine control unit event memory ⇒ Vehicle diagnostic tester.

Additional steps required after renewing engine:

- ◆ Reset misfire adaptations.
- ◆ Adapt chain elongation.

2 Assembly mountings

⇒ [“2.1 Exploded view - assembly mountings”, page 22](#)

⇒ [“2.2 Supporting engine in installation position”, page 23](#)

⇒ [“2.3 Removing and installing engine mountings”, page 24](#)

⇒ [“2.4 Removing and installing gearbox mounting”, page 25](#)

⇒ [“2.5 Removing and installing pendulum support”, page 26](#)

⇒ [“2.6 Checking adjustment of assembly mountings \(engine/gearbox mountings\)”, page 27](#)

⇒ [“2.7 Adjusting assembly mountings”, page 27](#)

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2.1 Exploded view - assembly mountings

1 - Bolt

- ☐ Renew after removing
- ☐ Tightening torques and sequence
⇒ [Fig. “Engine support - tightening torque and sequence”, page 23](#)

2 - Engine support

- ☐ Removing and installing
⇒ [page 30](#)

3 - Engine mounting

- ☐ With support arm
- ☐ Removing and installing
⇒ [page 24](#)

4 - Bolt

- ☐ Renew after removing
- ☐ 40 Nm +90°

5 - Bolt

- ☐ Renew after removing
- ☐ 20 Nm +90°

6 - Bolt

- ☐ Renew after removing
- ☐ 40 Nm +90°

7 - Bolt

- ☐ Renew after removing
- ☐ 60 Nm +90°

8 - Pendulum support

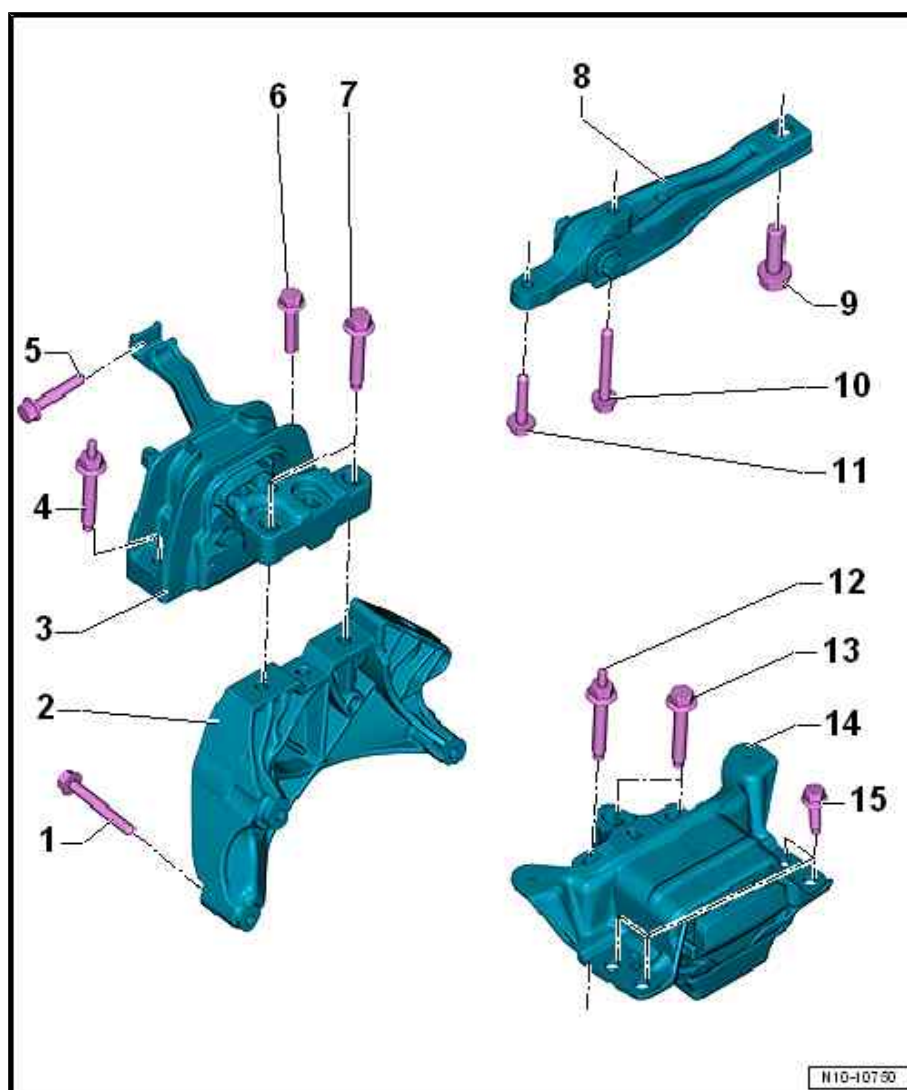
- ☐ Removing and installing
⇒ [page 26](#)

9 - Bolt

- ☐ Renew after removing
- ☐ Tightening torques and sequence ⇒ [page 23](#)

10 - Bolt

- ☐ Renew after removing
- ☐ Tightening torques and sequence ⇒ [page 23](#)



11 - Bolt

- ☐ Renew after removing
- ☐ Tightening torques and sequence ⇒ [page 23](#)

12 - Bolt

- ☐ Renew after removing
- ☐ 60 Nm +90°

13 - Bolt

- ☐ Renew after removing
- ☐ 60 Nm +90°

14 - Gearbox mounting

- ☐ With support arm
- ☐ Removing and installing ⇒ [page 25](#)

15 - Bolt

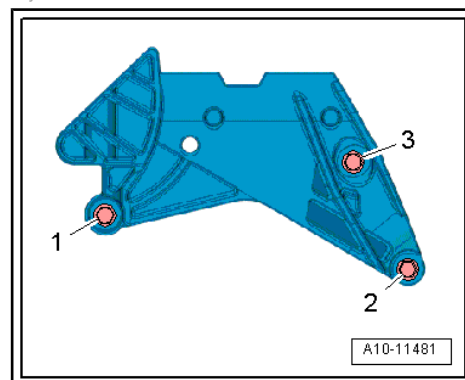
- ☐ Renew after removing
- ☐ 50 Nm +90°

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Engine support - tightening torque and sequence

- Renew bolts tightened with specified tightening angle.
- Tighten bolts in stages in the sequence shown:

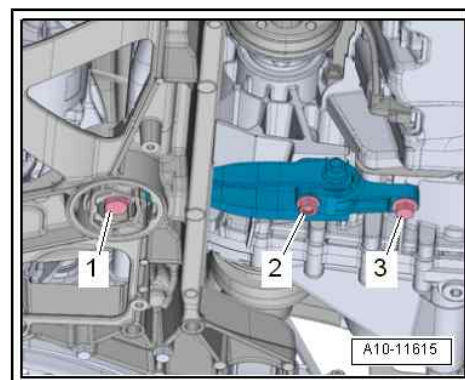
Stage	Bolts	Tightening torques/angle specification
1.	-1 ... 3-	7 Nm
2.	-1 ... 3-	40 Nm
3.	-1 ... 3-	Turn 90° further



Pendulum support - tightening torques and sequence

- Renew bolts tightened with specified tightening angle.
- Tighten bolts in stages in the sequence shown:

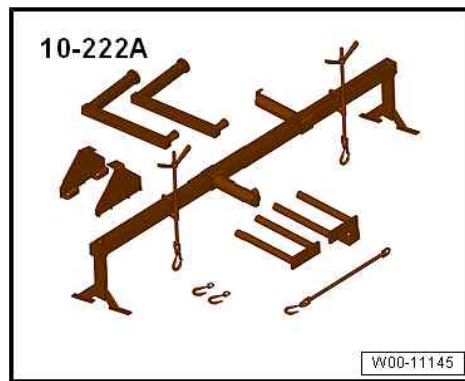
Stage	Bolts	Tightening torques/angle specification
1.	-2, 3-	50 Nm
2.	-1-	130 Nm
3.	-1 ... 3-	Turn 90° further



2.2 Supporting engine in installation position

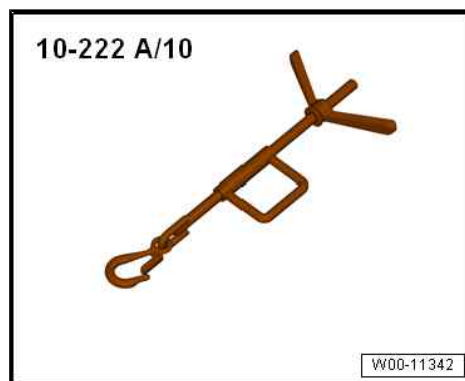
Special tools and workshop equipment required

◆ Support bracket - 10-222A-



◆ Support - 10-222A/1A-

◆ Hook - 10-222A/10-



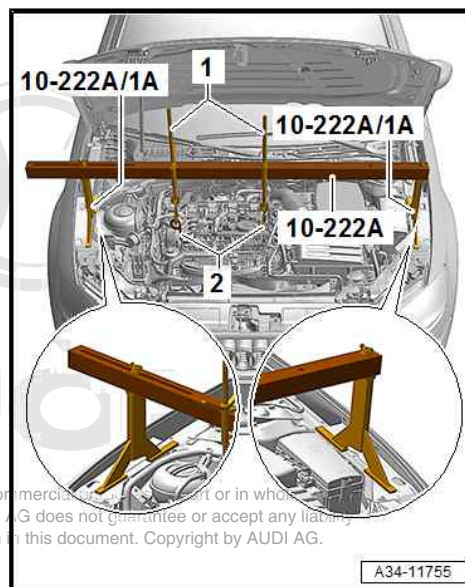
Procedure

- Remove engine cover panel ⇒ Servicing 4-cylinder engine, 2.0 ltr. 4-valve TFSI; Rep. gr. 10 ; Engine cover panel; Removing and installing engine cover panel .
- Set up support bracket - 10-222A- on upper wheel housing longitudinal members (left and right) with hooks - 10-222A/10- item 1- and supports - 10-222A/1A- , as shown.
- Attach snap elements -item 2- of hooks - 10-222A/10- item 1- to engine lifting eyes.
- Tighten spindle slightly to take up weight of engine/gearbox assembly; do not lift.

Attaching

Assembly is carried out in reverse sequence; note the following:

- Detach support bracket - 10-222A- from engine.
- Install engine cover panel ⇒ Servicing 4-cylinder engine, 2.0 ltr. 4-valve TFSI; Rep. gr. 10 ; Engine cover panel; Removing and installing engine cover panel .

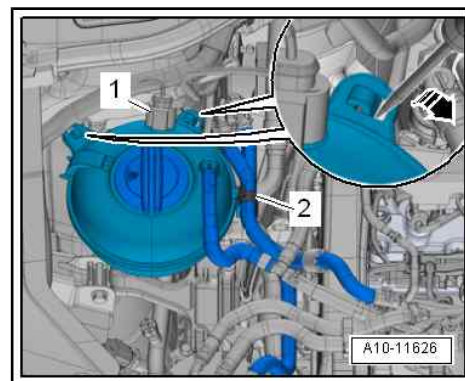


2.3 Removing and installing engine mountings

Removing

- ⇒ [“2.2 Supporting engine in installation position”, page 23](#)

- Unplug electrical connector -1-.
- Move retaining clip -2- clear with hose for activated charcoal filter system and fuel hose.
- Using a screwdriver, release fasteners -arrow- and move coolant expansion tank to one side.

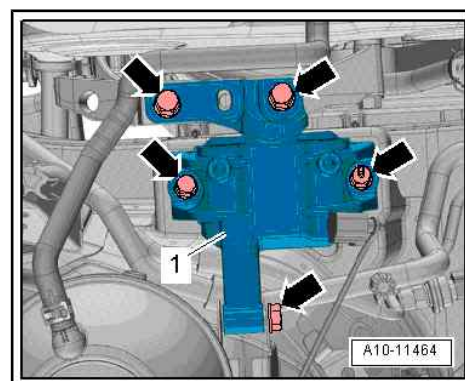


- Remove bolts -arrows- and detach engine mounting -1-.

Installing

Installation is carried out in reverse order; note the following:

- Check adjustment of assembly mountings (engine/gearbox mountings) ⇒ [page 27](#) .
- Detach support bracket - 10-222A- from engine.
- Install engine cover panel ⇒ Servicing 4-cylinder engine, 2.0 ltr. 4-valve TFSI; Rep. gr. 10 ; Engine cover panel; Removing and installing engine cover panel .



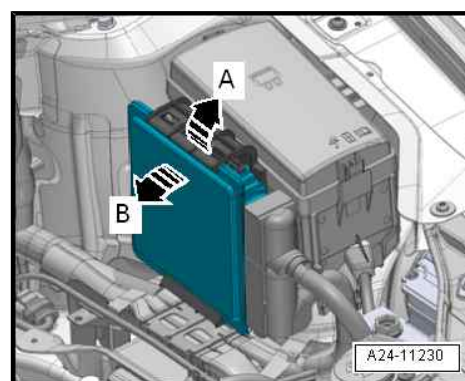
Tightening torques

- ◆ ⇒ [“2.1 Exploded view - assembly mountings”, page 22](#)

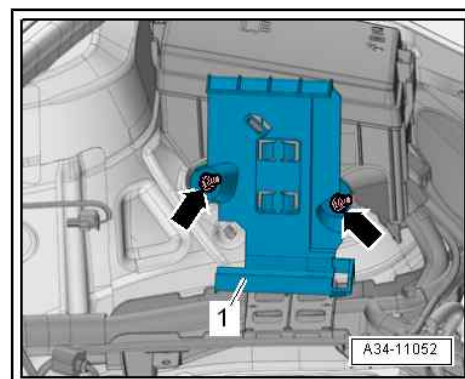
2.4 Removing and installing gearbox mounting

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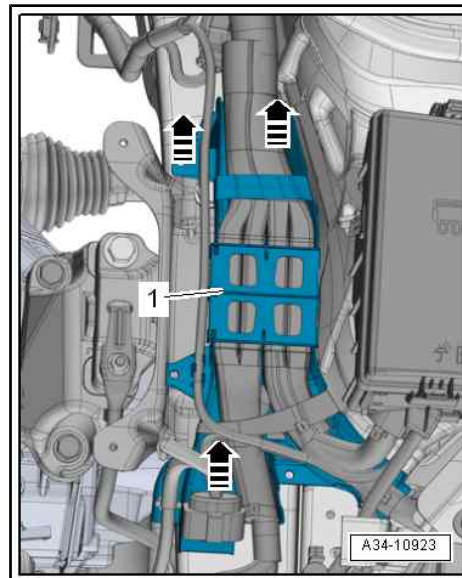
- **Remove battery tray** ⇒ [Electrical system; Rep. gr. 27; Battery; Removing and installing battery tray](#) .
- Take engine control unit - J623- out of bracket ⇒ [page 86](#) .



- Remove nuts -arrows- and detach bracket -1-. (Different types depending on production version.)



- Unclip wire guide -1- upwards -arrows- and push slightly to one side.
- Support engine in installation position ➔ [page 23](#) .

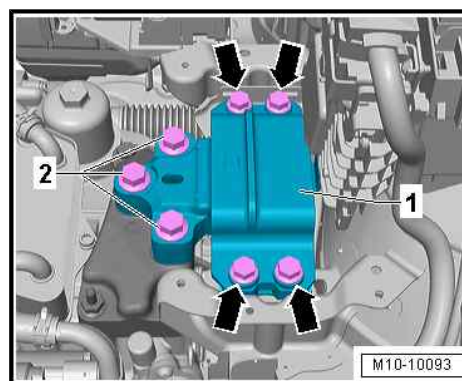


- Remove bolts -2- and then remove bolts -arrows- and detach gearbox mounting -1-.

Installing

Installation is carried out in reverse order; note the following:

- Renew bolts tightened with specified tightening angle.
- Tighten gearbox mounting on longitudinal member.
- Gearbox support and support arm of gearbox mounting must be perfectly parallel to each other before screwing in bolts. If necessary, lift gearbox at rear using trolley jack.
- Lift gearbox with spindle of support bracket until gearbox support makes contact with support arm of gearbox mounting.
- Fit bolts by hand (make sure that bolts are straight).
- Check adjustment of assembly mountings (engine/gearbox mountings) ➔ [page 27](#) .
- Detach support bracket - 10-222A- from engine.
- Install engine control unit - J623- ➔ [page 86](#) .



Tightening torques

- ◆ ➔ [“2.1 Exploded view - assembly mountings”, page 22](#)
- ◆ ➔ Electrical system; Rep. gr. 27 ; Battery; Exploded view - battery

2.5 Removing and installing pendulum support

Removing

- Remove noise insulation ➔ General body repairs, exterior; Rep. gr. 66 ; Noise insulation; Removing and installing noise insulation .

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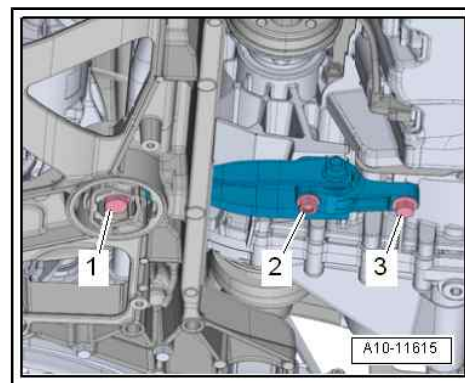
- Remove bolts -1, 2, 3- and remove pendulum support.

Installing

Installation is carried out in reverse sequence.

Tightening torques

- ◆ ⇒ Fig. ““Pendulum support - tightening torques and sequence””, page 23
- ◆ ⇒ General body repairs, exterior; Rep. gr. 66 ; Noise insulation; Exploded view - noise insulation



2.6 Checking adjustment of assembly mountings (engine/gearbox mountings)

Procedure

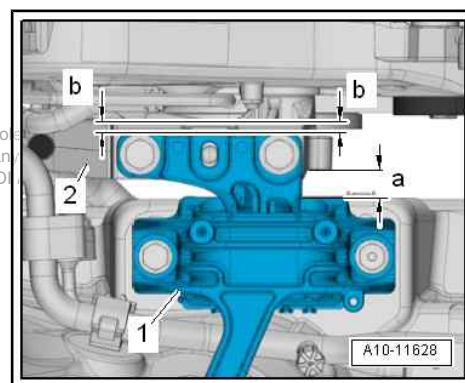
The following specifications must be obtained:

- There must be a distance of -a- = 10 mm between engine support -2- and engine mounting -1-.
- Side surface of the engine support casting should be located parallel to support arm of engine mounting.
- Distance -b- = distance -b-.

Note

Distance -a- = 10 mm can also be checked with a metal rod of suitable size, or similar.

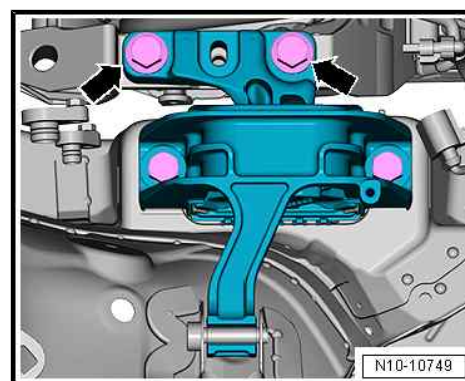
- If the distance measured is too large or small, the assembly mountings must be adjusted ⇒ [page 27](#) .



2.7 Adjusting assembly mountings

Procedure

- Remove battery tray ⇒ Electrical system; Rep. gr. 27 ; Battery; Removing and installing battery tray .
- Support engine in installation position ⇒ [page 23](#) .
- Remove bolts -arrows- for engine mounting one by one and renew (if they were not renewed when installing engine).
- Initially fit bolts hand-tight.

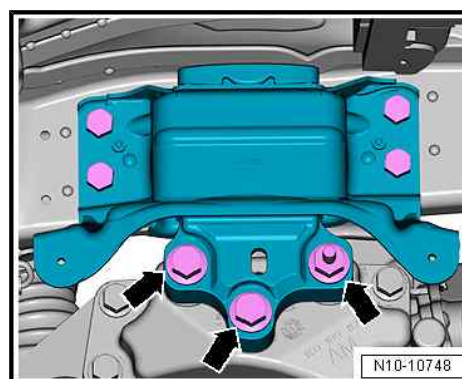
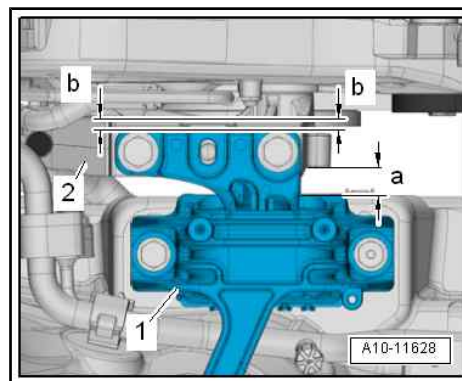


- Using assembly lever, adjust engine/gearbox assembly until specifications listed below are attained:
- There must be a distance of -a- = 10 mm between engine support -2- and engine mounting -1-.
- Side surface of the engine support casting should be located parallel to support arm of engine mounting.
- Distance -b- = distance -b-.

Note

Distance -a- = 10 mm can also be checked with a metal rod of suitable size, or similar.

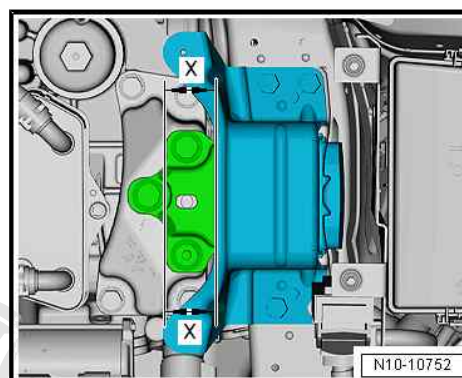
- Tighten bolts for engine mounting.
- Remove bolts -arrows- for gearbox mounting one by one and renew (if they were not renewed when installing engine).
- Initially fit bolts hand-tight.



- Ensure that support arm (on gearbox side) and gearbox mounting are parallel.
- Dimension -x- = dimension -x-.
- Tighten bolts for gearbox mounting.
- Detach support bracket ⇒ [page 23](#) .

Tightening torques

- ◆ ⇒ ["2.1 Exploded view - assembly mountings", page 22](#)
- ◆ ⇒ Electrical system; Rep. gr. 27 ; Battery; Exploded view - battery



3 Engine cover panel

All procedures can be found in ⇒ Servicing 4-cylinder engine, 2.0
ltr. 4-valve TFSI; Rep. gr. 10 ; Engine cover panel .



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13 – Crankshaft group

1 Cylinder block (pulley end)

⇒ [“1.1 Exploded view - cylinder block \(pulley end\)”, page 30](#)

⇒ [“1.2 Removing and installing poly V-belt”, page 30](#)

⇒ [“1.3 Removing and installing tensioner for poly V-belt”, page 30](#)

⇒ [“1.4 Removing and installing vibration damper”, page 30](#)

⇒ [“1.5 Removing and installing bracket for ancillaries”, page 30](#)

⇒ [“1.6 Removing and installing engine support”, page 30](#)

1.1 Exploded view - cylinder block (pulley end)

All components are described in ⇒ Servicing 4-cylinder engine, 2.0 ltr. 4-valve TFSI; Rep. gr. 13 ; Cylinder block (pulley end); Exploded view - cylinder block (pulley end) .

1.2 Removing and installing poly V-belt

All procedures are described in ⇒ Servicing 4-cylinder engine, 2.0 ltr. 4-valve TFSI; Rep. gr. 13 ; Cylinder block (pulley end); Removing and installing poly V-belt .

1.3 Removing and installing tensioner for poly V-belt

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All procedures are described in ⇒ Servicing 4-cylinder engine, 2.0 ltr. 4-valve TFSI; Rep. gr. 13 ; Cylinder block (pulley end); Removing and installing poly V-belt tensioner .

1.4 Removing and installing vibration damper

All procedures are described in ⇒ Servicing 4-cylinder engine, 2.0 ltr. 4-valve TFSI; Rep. gr. 13 ; Cylinder block (pulley end); Removing and installing vibration damper .

1.5 Removing and installing bracket for ancillaries

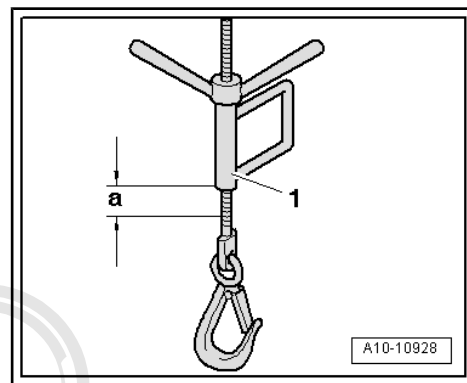
All procedures are described in ⇒ Servicing 4-cylinder engine, 2.0 ltr. 4-valve TFSI; Rep. gr. 13 ; Cylinder block (pulley end); Removing and installing bracket for ancillaries .

1.6 Removing and installing engine support

Removing

- Remove engine mounting ⇒ [page 24](#) .

- Using spindle - 10-222A/11- -item 1-, raise engine through distance -a-.
- Distance -a- = approx. 30 mm.



- Unscrew bolts -1, 2 and 3- and detach engine support.

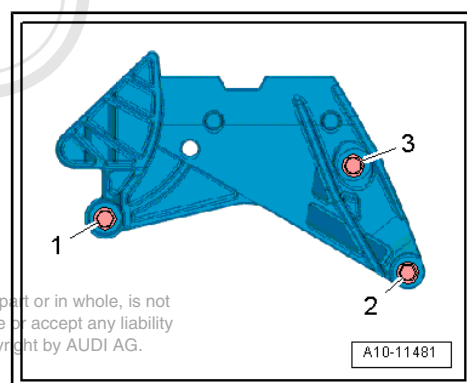
Installing

Installation is carried out in reverse order; note the following:

- Install engine mountings ⇒ [page 24](#) .

Tightening torques

- ◆ ⇒ Fig. ““Engine support - tightening torque and sequence””, [page 23](#)



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2 Cylinder block (gearbox end)

All procedures and components can be found in ⇒ Servicing 4-cylinder engine, 2.0 ltr. 4-valve TFSI; Rep. gr. 13 ; Cylinder block (gearbox end) .



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3 Crankshaft

All procedures and components can be found in ⇒ Servicing 4-cylinder engine, 2.0 ltr. 4-valve TFSI; Rep. gr. 13 ; Crankshaft .



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4 Balance shaft

All procedures and components can be found in ⇒ Servicing 4-cylinder engine, 2.0 ltr. 4-valve TFSI; Rep. gr. 13 ; Balance shaft .



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5 Pistons and conrods

All procedures and components can be found in ⇒ Servicing 4-cylinder engine, 2.0 ltr. 4-valve TFSI; Rep. gr. 13 ; Pistons and conrods .



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15 – Cylinder head, valve gear

1 Timing chain cover

All procedures and components can be found in ⇒ Servicing 4-cylinder engine, 2.0 ltr. 4-valve TFSI; Rep. gr. 15 ; Timing chain cover .



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2 Chain drive

All procedures and components can be found in ⇒ Servicing 4-cylinder engine, 2.0 ltr. 4-valve TFSI; Rep. gr. 15 ; Chain drive .



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3 Cylinder head

⇒ [“3.1 Exploded view - cylinder head”, page 38](#)

⇒ [“3.2 Removing and installing cylinder head”, page 38](#)

⇒ [“3.3 Checking compression”, page 38](#)

3.1 Exploded view - cylinder head

All components are described in ⇒ Servicing 4-cylinder engine, 2.0 ltr. 4-valve TFSI (EA888 Gen III BZ); Rep. gr. 15 ; Cylinder head; Exploded view - cylinder head .

3.2 Removing and installing cylinder head

Removing

- Remove air cleaner housing ⇒ [page 76](#) .
- Remove bolt -arrow- on both sides.
- Unclip air duct (bottom section) -1- and detach.

All further procedures are described in ⇒ Servicing 4-cylinder engine, 2.0 ltr. 4-valve TFSI; Rep. gr. 19 ; Coolant pump/thermostat assembly; Removing and installing toothed belt for coolant pump .

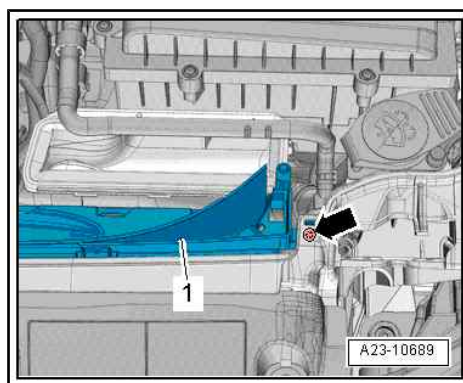
Installing

Additional work:

- Install air cleaner housing ⇒ [page 76](#) .

Tightening torques

- ◆ ⇒ [“2.1 Exploded view - air cleaner housing”, page 75](#)



3.3 Checking compression

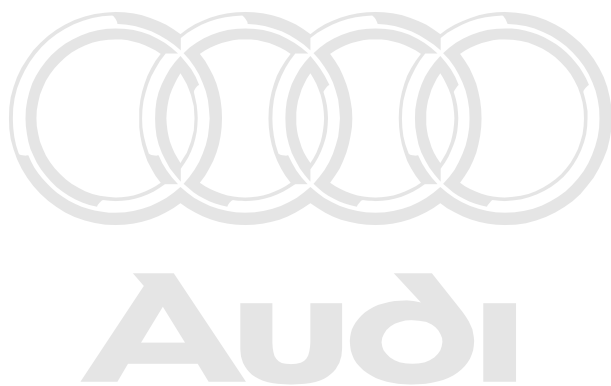
All procedures are described in ⇒ Servicing 4-cylinder engine, 2.0 ltr. 4-valve TFSI (EA888 Gen III BZ); Rep. gr. 15 ; Cylinder head; Checking compression .



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4 Valve gear

All procedures and components can be found in ⇒ Servicing 4-cylinder engine, 2.0 ltr. 4-valve TFSI; Rep. gr. 15 ; Valve gear .



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5 Inlet and exhaust valves

All procedures can be found in ⇒ Servicing 4-cylinder engine, 2.0 ltr. 4-valve TFSI; Rep. gr. 15 ; Inlet and exhaust valves .



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17 – Lubrication

1 Sump/oil pump

⇒ [“1.1 Exploded view - sump/oil pump”, page 41](#)

⇒ [“1.2 Engine oil”, page 41](#)

⇒ [“1.3 Removing and installing sump \(bottom section\)”, page 41](#)

⇒ [“1.4 Removing and installing oil pump”, page 41](#)

⇒ [“1.5 Removing and installing sump \(top section\)”, page 41](#)

⇒ [“1.6 Removing and installing oil level and oil temperature sender G266”, page 41](#)

1.1 Exploded view - sump/oil pump

All components are described in ⇒ Servicing 4-cylinder engine, 2.0 ltr. 4-valve TFSI; Rep. gr. 17 ; Sump/oil pump; Exploded view - sump/oil pump .

1.2 Engine oil

- ◆ Refer to ⇒ Maintenance ; Booklet 821 for instructions on draining and filling up engine oil, checking oil level, removing and installing oil filter element.
- ◆ Oil capacities, oil specifications and viscosity grades ⇒ Maintenance tables .

1.3 Removing and installing sump (bottom section)

All procedures are described in ⇒ Servicing 4-cylinder engine, 2.0 ltr. 4-valve TFSI; Rep. gr. 17 ; Sump/oil pump; Removing and installing sump (bottom section) .

1.4 Removing and installing oil pump

All procedures are described in ⇒ Servicing 4-cylinder engine, 2.0 ltr. 4-valve TFSI; Rep. gr. 17 ; Sump/oil pump; Removing and installing oil pump .

1.5 Removing and installing sump (top section)

All procedures are described in ⇒ Servicing 4-cylinder engine, 2.0 ltr. 4-valve TFSI; Rep. gr. 17 ; Sump/oil pump; Removing and installing sump (top section) .

1.6 Removing and installing oil level and oil temperature sender - G266-

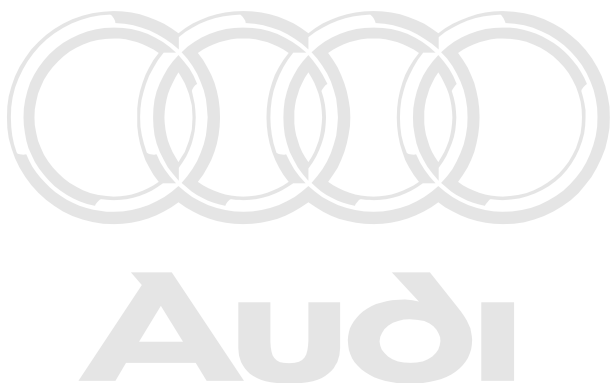
All procedures are described in ⇒ Servicing 4-cylinder engine, 2.0 ltr. 4-valve TFSI; Rep. gr. 17 ; Sump/oil pump; Removing and installing oil level and oil temperature sender - G266- .

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2 Engine oil cooler

All procedures and components can be found in ⇒ Servicing 4-cylinder engine, 2.0 ltr. 4-valve TFSI; Rep. gr. 17 ; Engine oil cooler .



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3 Crankcase breather

All procedures and components can be found in ⇒ Servicing 4-cylinder engine, 2.0 ltr. 4-valve TFSI; Rep. gr. 17 ; Crankcase breather .



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4 Oil filter/oil pressure switches

All procedures and components can be found in ⇒ Servicing 4-cylinder engine, 2.0 ltr. 4-valve TFSI; Rep. gr. 17 ; Oil filter/oil pressure switches .



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19 – Cooling

1 Cooling system/coolant

⇒ [“1.1 Connection diagram - coolant hoses”, page 45](#)

⇒ [“1.2 Checking cooling system for leaks”, page 46](#)

⇒ [“1.3 Draining and filling cooling system”, page 46](#)

1.1 Connection diagram - coolant hoses

- ◆ Blue = Large coolant circuit
- ◆ Red = Small coolant circuit
- ◆ Brown = Heating circuit
- ◆ Green = Coolant circuit for gearbox
- ◆ Arrows = Direction of coolant flow

1 - Radiator

2 - Radiator outlet coolant temperature sender - G83-

3 - Actuator for engine temperature regulation - N493-

4 - Cylinder block/cylinder head

5 - Restrictor

6 - Auxiliary heater

- ☐ With circulation pump - V55-
- ☐ Optional equipment

7 - Coolant expansion tank

8 - Filler cap

- ☐ Checking pressure relief valve ⇒ Servicing 4-cylinder engine, 2.0 ltr. 4-valve TFSI; Rep. gr. 19 ; Cooling system/coolant; Checking cooling system for leaks

9 - Non-return valve

10 - Exhaust manifold

- ☐ Integrated in cylinder head

11 - Turbocharger

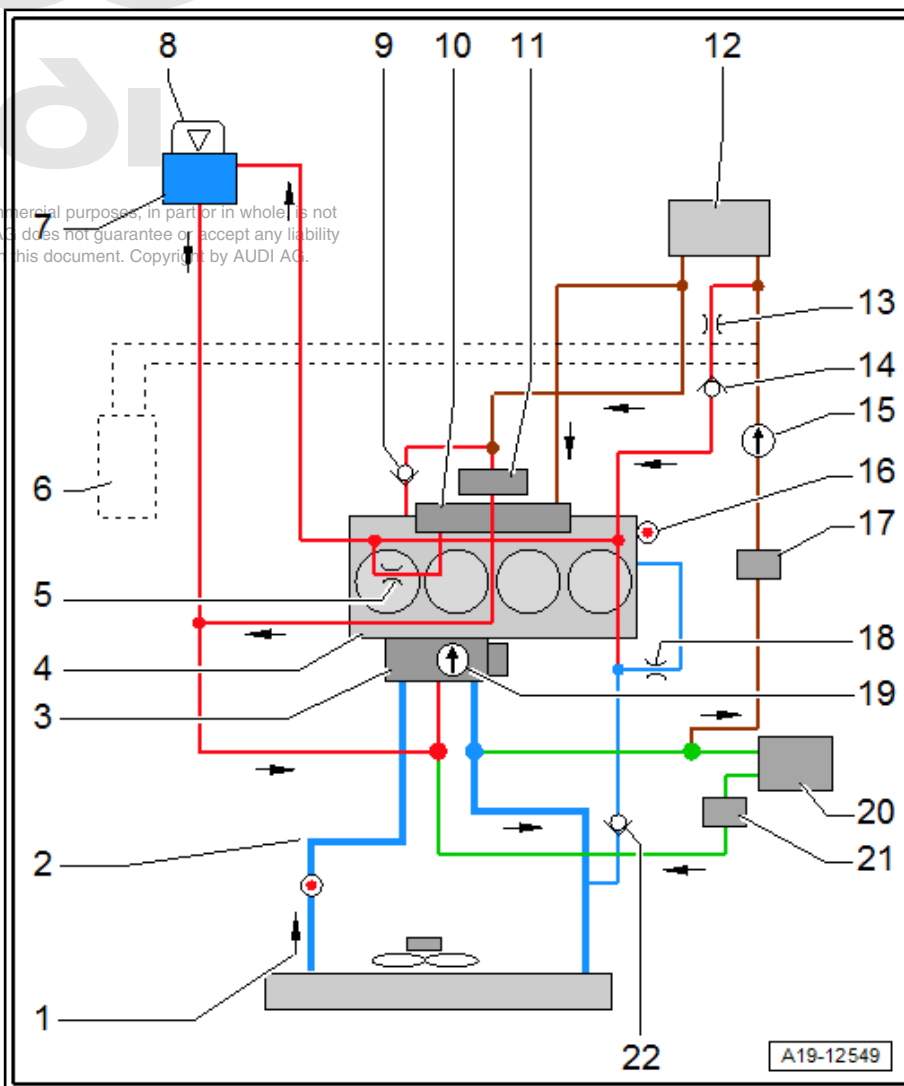
12 - Heat exchanger for heater

13 - Restrictor

14 - Non-return valve

15 - Continued coolant circulation pump - V51-

- ☐ For equipment version with dual clutch gearbox



16 - Coolant temperature sender - G62-

17 - Coolant shut-off valve - N82-

18 - Restrictor

19 - Coolant pump

20 - ATF cooler

❑ For equipment version with dual clutch gearbox

21 - Coolant valve for gearbox - N488-

22 - Non-return valve

1.2 Checking cooling system for leaks

All procedures are described in ⇒ Servicing 4-cylinder engine, 2.0 ltr. 4-valve TFSI; Rep. gr. 19 ; Cooling system/coolant; Checking cooling system for leaks .

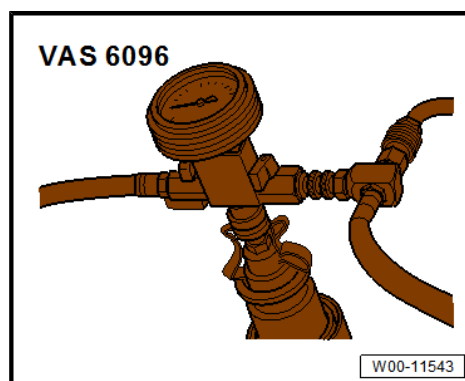
1.3 Draining and filling cooling system

Special tools and workshop equipment required

◆ Adapter for cooling system tester - V.A.G 1274/8-



◆ Cooling system charge unit - VAS 6096-



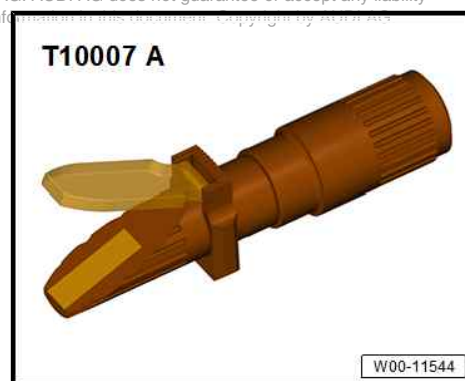
- ◆ Coolant collecting system - VAS 5014- or drip tray for workshop hoist - VAS 6208-



- ◆ Hose clip pliers - VAS 6362-



- ◆ Refractometer - T10007A-



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Draining



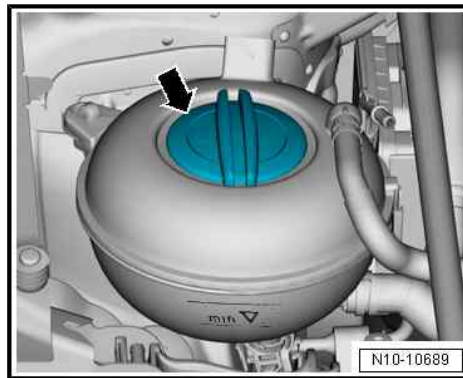
CAUTION

The cooling system is under pressure when the engine is hot.
Risk of scalding due to hot steam and hot coolant.

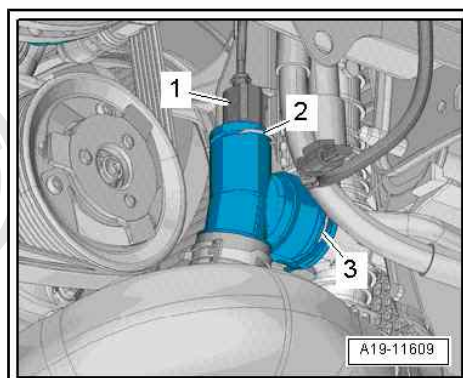
Danger of scalding skin and other parts of the body.

- Put on protective gloves.
- Put on safety goggles.
- Cover filler cap on expansion tank with a cloth and open carefully to release pressure.

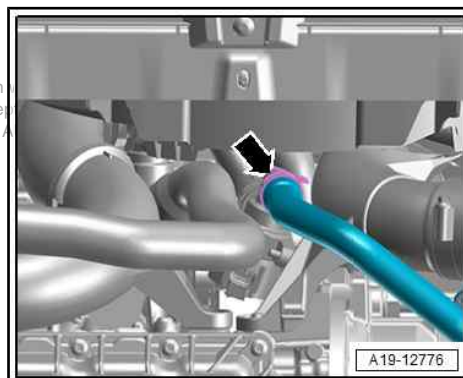
- Open filler cap -arrow- on coolant expansion tank.
- Remove noise insulation ⇒ General body repairs, exterior; Rep. gr. 66 ; Noise insulation; Removing and installing noise insulation .



- Place coolant collecting system - VAS 5014- or drip tray for workshop hoist - VAS 6208- underneath.
- Lift retaining clip -3-, disconnect coolant hose (bottom right) from radiator and drain off coolant.



- Release hose clip -arrow- and disconnect coolant hose; hold coolant hose downwards and drain off remaining coolant.
- Secure all hose connections with correct type of hose clips (as original equipment) ⇒ Electronic parts catalogue
- Re-connect coolant hose.
- Connect coolant hose with plug-in connector ⇒ [page 57](#) .



Coolant specifications

All information can be found in ⇒ Servicing 4-cylinder engine, 2.0 ltr. 4-valve TFSI; Rep. gr. 19 ; Cooling system/coolant; Draining and filling cooling system .

Recommended mixture ratio for coolant

- Coolant (40 %) and distilled water (60 %) for frost protection to -25 °C
- Coolant (50 %) and distilled water (50 %) for frost protection to -36 °C
- Coolant ⇒ Electronic parts catalogue (ETKA)



NOTICE

Danger of corrosion damage if unsuitable mixtures of water and coolant additives are used.

- Always use distilled water as this ensures optimum corrosion protection.

Filling cooling system



Note

Do not reuse coolant.

- Fill reservoir of -VAS 6096- with 10 litres of premixed coolant (according to recommended ratio; for recommended ratio see ➔ [page 48](#)).
- Fit adapter for cooling system tester - V.A.G 1274/8- onto coolant expansion tank.
- Attach cooling system charge unit - VAS 6096- to adapter - V.A.G 1274/8- .
- Run vent hose -2- into a small container -3-.

Note

The vented air draws along a small amount of coolant, which should be collected.

- Close both valves -A- and -B- (turn lever at right angles to direction of flow).
- Connect hose -4- to compressed air supply.
- Pressure: 7 ... 10 bar.

- Open valve -B- by setting lever in direction of flow.

- The suction jet pump generates a partial vacuum in the cooling system; the needle on the gauge should move into the green zone.

- Also briefly open valve -A- (turn lever in direction of flow) so that hose on reservoir of -VAS 6096- can fill with coolant.

- Close valve -A- again.

- Leave valve -B- open for another 2 minutes.

- The suction jet pump continues to generate a partial vacuum in the cooling system; the needle on the gauge should remain in the green zone.

- **Close valve -B-.**

- The needle on the gauge should stop in the green zone. The vacuum level in the cooling system is then sufficient for subsequent filling.

- If the needle does not reach the green zone, repeat the process.

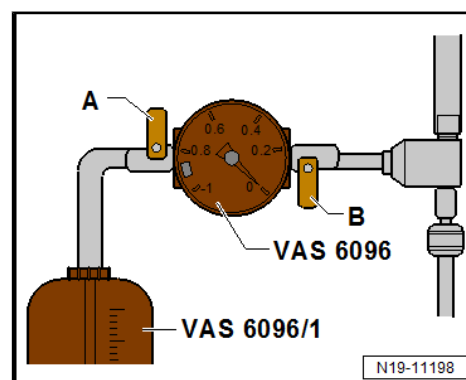
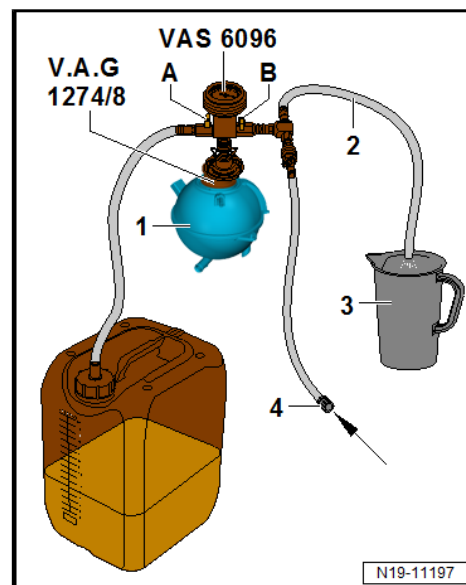
- Check cooling system for leaks if the vacuum is not maintained.

- Detach compressed air hose.

- Open valve -A-.

- The vacuum in the cooling system causes the coolant to be drawn out of the reservoir of -VAS 6096- ; the cooling system is then filled.

- Detach cooling system charge unit - VAS 6096- from adapter -V.A.G 1274/8- on coolant expansion tank.



Bleeding cooling system

- Top up coolant to “max” mark.
- On vehicles with auxiliary heater, switch heater on (for about 30 seconds) and then off again.
- Start engine.

Time period	Engine speed	Air conditioner/heater setting
3 minutes	2000 rpm	• Air conditioning system “OFF”, LED in AC button not lit • Heating at “HI”, select lowest possible blower speed (= 0)
Until both large coolant hoses at radiator become warm	Idling speed	• Air conditioning system “OFF” • Heating at “HI”
2 minutes	2000 rpm	• Air conditioning system “OFF” • Heating at “HI”

- Switch off engine.

Checking coolant level



CAUTION

The cooling system is under pressure when the engine is hot. Risk of scalding due to hot steam and hot coolant.

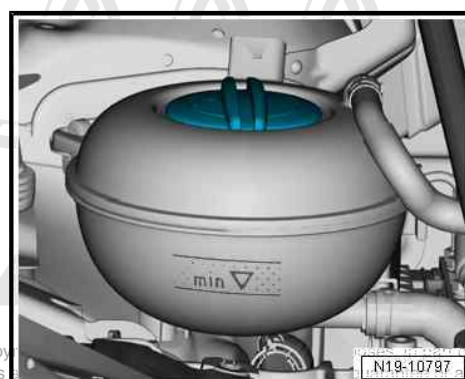
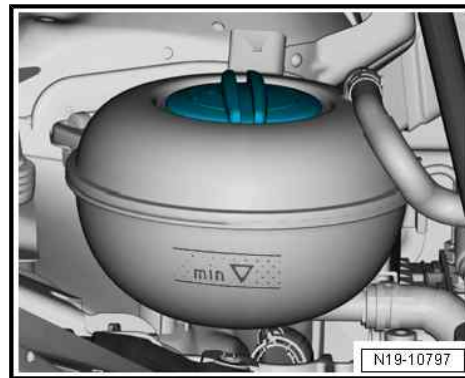
Danger of scalding skin and other parts of the body.

- Put on protective gloves.
- Put on safety goggles.
- Cover filler cap on expansion tank with a cloth and open carefully to release pressure.

- The coolant level must be at the “MAX” marking when the engine is cold.
- The coolant level can be above the “MAX” marking when the engine is warm.
- Top up with coolant again if necessary.

Tightening torques

- ◆ ⇒ General body repairs, exterior; Rep. gr. 66 ; Noise insulation; Exploded view - noise insulation



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⇒ “2.10 Removing and installing coolant valves”, page 53

- Remove bolt -arrow- on both sides.
- Unclip air duct (bottom section) -1- and detach.

All further procedures are described in ⇒ Servicing 4-cylinder engine, 2.0 ltr. 4-valve TFSI; Rep. gr. 19 ; Coolant pump/thermostat assembly; Removing and installing coolant pump .

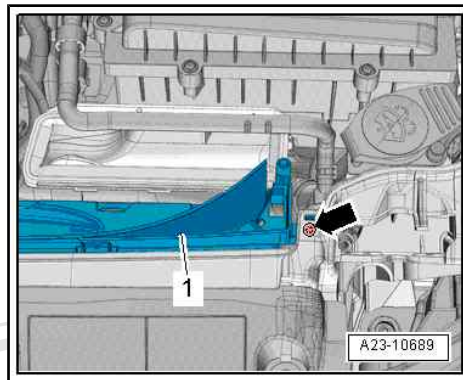
Installing

Additional work:

- Install air cleaner housing ⇒ [page 76](#) .
- Fill up with coolant ⇒ [page 46](#) .

Tightening torques

- ♦ ⇒ [“2.1 Exploded view - air cleaner housing”, page 75](#)



2.6 Removing and installing toothed belt for coolant pump

Removing

- Drain coolant ⇒ [page 46](#) .
- Remove air cleaner housing ⇒ [page 76](#) .
- Remove bolt -arrow- on both sides.
- Unclip air duct (bottom section) -1- and detach.

All further procedures are described in ⇒ Servicing 4-cylinder engine, 2.0 ltr. 4-valve TFSI; Rep. gr. 19 ; Coolant pump/thermostat assembly; Removing and installing toothed belt for coolant pump .

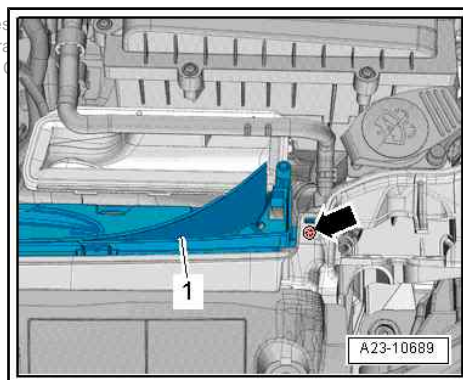
Installing

Additional work:

- Install air cleaner housing ⇒ [page 76](#) .
- Fill up with coolant ⇒ [page 46](#) .

Tightening torques

- ♦ ⇒ [“2.1 Exploded view - air cleaner housing”, page 75](#)



2.7 Removing and installing actuator for engine temperature regulation - N493-

All procedures are described in ⇒ Servicing 4-cylinder engine, 2.0 ltr. 4-valve TFSI; Rep. gr. 19 ; Coolant pump/thermostat assembly; Removing and installing actuator for engine temperature regulation - N493- .

2.8 Removing and installing coolant temperature sender - G62-

Removing

- Remove noise insulation ⇒ General body repairs, exterior; Rep. gr. 66 ; Noise insulation; Removing and installing noise insulation .

All further procedures are described in ⇒ Servicing 4-cylinder engine, 2.0 ltr. 4-valve TFSI; Rep. gr. 19 ; Coolant pump/thermostat assembly; Removing and installing coolant temperature sender - G62- .

Tightening torques

- ◆ ⇒ General body repairs, exterior; Rep. gr. 66 ; Noise insulation; Exploded view - noise insulation

2.9 Removing and installing radiator outlet coolant temperature sender - G83-

Removing

- Remove noise insulation ⇒ General body repairs, exterior; Rep. gr. 66 ; Noise insulation; Removing and installing noise insulation .

All further procedures are described in ⇒ Servicing 4-cylinder engine, 2.0 ltr. 4-valve TFSI; Rep. gr. 19 ; Coolant pump/thermostat assembly; Removing and installing radiator outlet coolant temperature sender - G83- .

Tightening torques

- ◆ ⇒ General body repairs, exterior; Rep. gr. 66 ; Noise insulation; Exploded view - noise insulation

2.10 Removing and installing coolant valves

All procedures are described in ⇒ Servicing 4-cylinder engine, 2.0 ltr. 4-valve TFSI; Rep. gr. 19 ; Coolant pump/thermostat assembly; Removing and installing coolant valves .



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3 Coolant pipes

⇒ [“3.1 Exploded view - coolant pipes”, page 54](#)

⇒ [“3.2 Removing and installing coolant pipes”, page 54](#)

⇒ [“3.3 Removing and installing coolant pipes for gearbox”, page 55](#)

3.1 Exploded view - coolant pipes

All components are described in ⇒ Servicing 4-cylinder engine, 2.0 ltr. 4-valve TFSI; Rep. gr. 19 ; Coolant pipes; Exploded view - coolant pipes .

3.2 Removing and installing coolant pipes

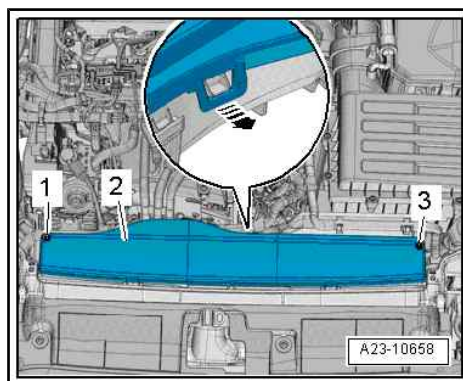
⇒ [“3.2.1 Removing and installing coolant pipe \(left-side\)”, page 54](#)

⇒ [“3.2.2 Removing and installing coolant pipe \(top\)”, page 55](#)

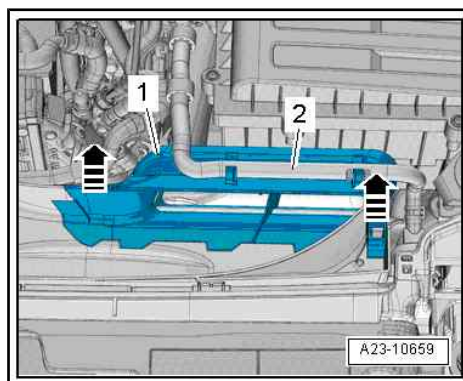
3.2.1 Removing and installing coolant pipe (left-side)

Removing

- Remove bolts -1, 3-.
- Release fastener -arrow- and remove cover -2-.



- Move coolant hose -2- clear.
- Release fasteners -arrows- and detach air duct (top section) -1-.

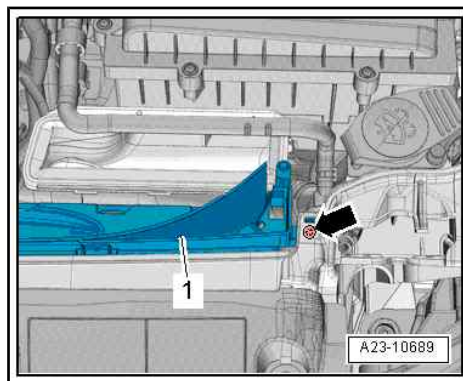


- Remove bolt -arrow- on both sides.
- Unclip air duct (bottom section) -1- and detach.

All further procedures are described in ⇒ Servicing 4-cylinder engine, 2.0 ltr. 4-valve TFSI; Rep. gr. 19 ; Coolant pipes; Removing and installing coolant pipes .

Tightening torques

◆ ⇒ [“2.1 Exploded view - air cleaner housing”, page 75](#)

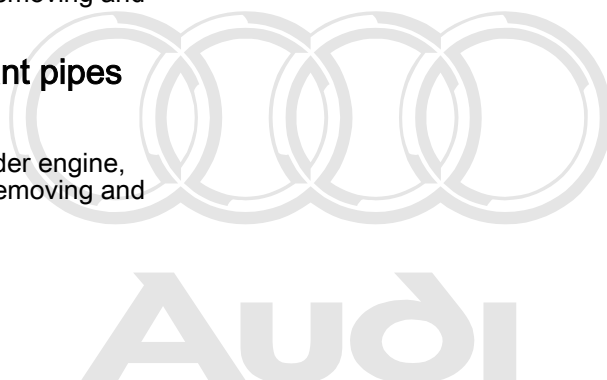


3.2.2 Removing and installing coolant pipe (top)

All procedures are described in ⇒ Servicing 4-cylinder engine,
2.0 ltr. 4-valve TFSI; Rep. gr. 19 ; Coolant pipes; Removing and
installing coolant pipes .

3.3 Removing and installing coolant pipes for gearbox

All procedures are described in ⇒ Servicing 4-cylinder engine,
2.0 ltr. 4-valve TFSI; Rep. gr. 19 ; Coolant pipes; Removing and
installing coolant pipes for gearbox .



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4 Radiator/radiator fan

⇒ ["4.1 Exploded view - radiator/radiator fan", page 56](#)

⇒ ["4.2 Removing and installing radiator", page 57](#)

⇒ ["4.3 Removing and installing radiator cowl", page 59](#)

⇒ ["4.4 Removing and installing radiator fan V7 ", page 60](#)

4.1 Exploded view - radiator/radiator fan

Radiator

1 - Retaining clip

- ☐ For radiator outlet coolant temperature sender - G83-

2 - Coolant hose

- ☐ Lift retaining clip to detach
- ☐ Connecting ⇒ [page 57](#)

3 - O-rings

- ☐ Renew after removing
- ☐ Lubricate with coolant

4 - Radiator outlet coolant temperature sender - G83-

- ☐ Exploded view ⇒ Servicing 4-cylinder engine, 2.0 ltr. 4-valve TFSI; Rep. gr. 19 ; Coolant pump/thermostat assembly; Exploded view - coolant temperature senders

5 - Radiator

- ☐ If there are slight impressions on the fins, refer to ⇒ Servicing 4-cylinder engine, 2.0 ltr. 4-valve TFSI; Rep. gr. 00 ; Repair notes; Installing radiators and condensers
- ☐ Removing and installing ⇒ [page 57](#)
- ☐ If renewed, refill system with fresh coolant

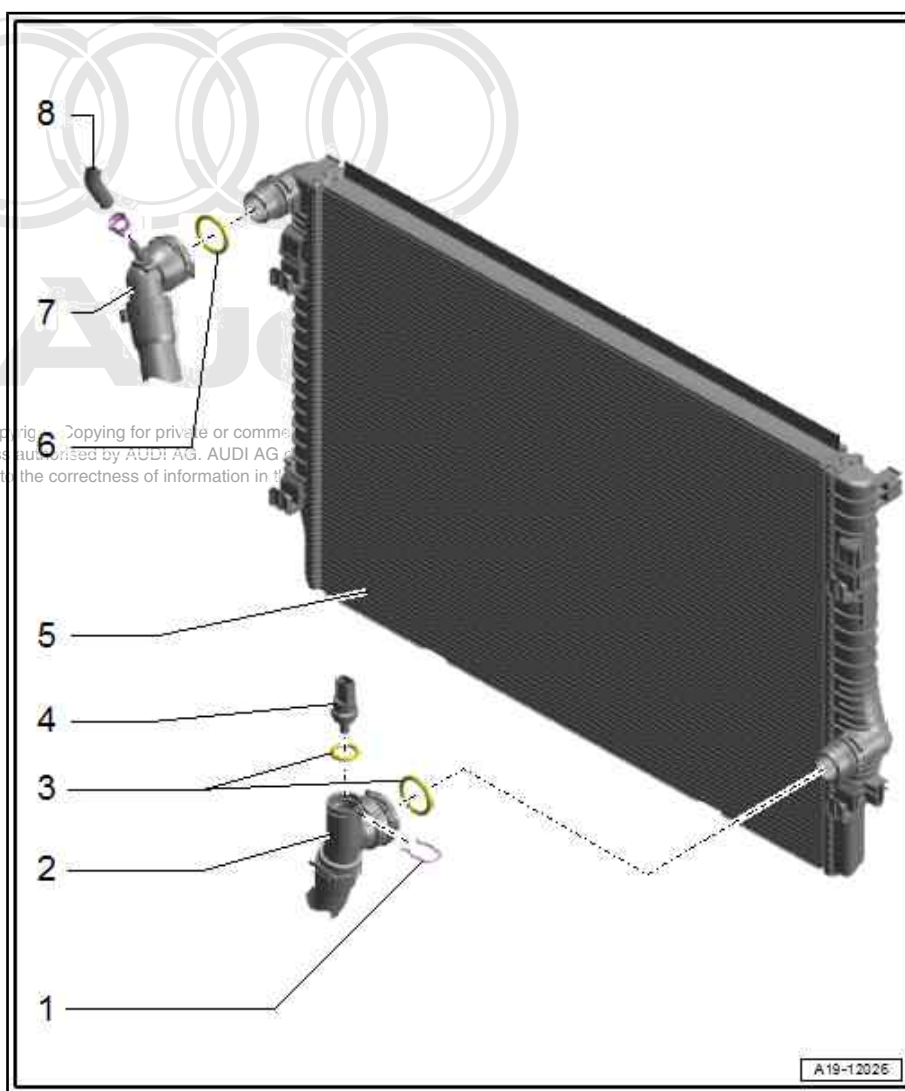
6 - O-ring

- ☐ Renew after removing
- ☐ Lubricate with coolant

7 - Coolant hose

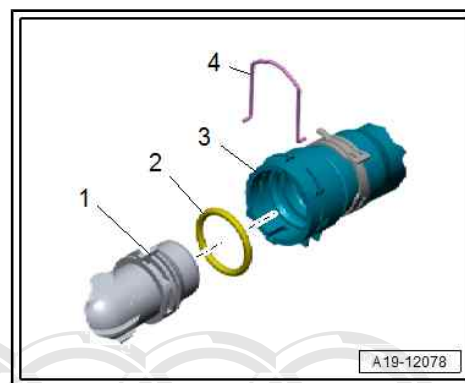
- ☐ Lift retaining clip to detach
- ☐ Connecting ⇒ [page 57](#)

8 - Coolant hose



Connecting coolant hose with plug-in connector

- If damaged, renew retaining clip -4-.
- Remove old O-ring -2- from coolant hose -3-.
- Lightly lubricate new O-ring with coolant and fit O-ring in coolant hose.
- Press coolant hose onto coolant pipe -1- until it engages with a click.
- Press coolant hose in again and then pull to check that plug-in connector is correctly engaged.



Radiator cowl and single radiator fan

1 - Radiator blind

- ☐ Different versions available; for allocation refer to ⇒ Electronic parts catalogue

2 - Radiator cowl

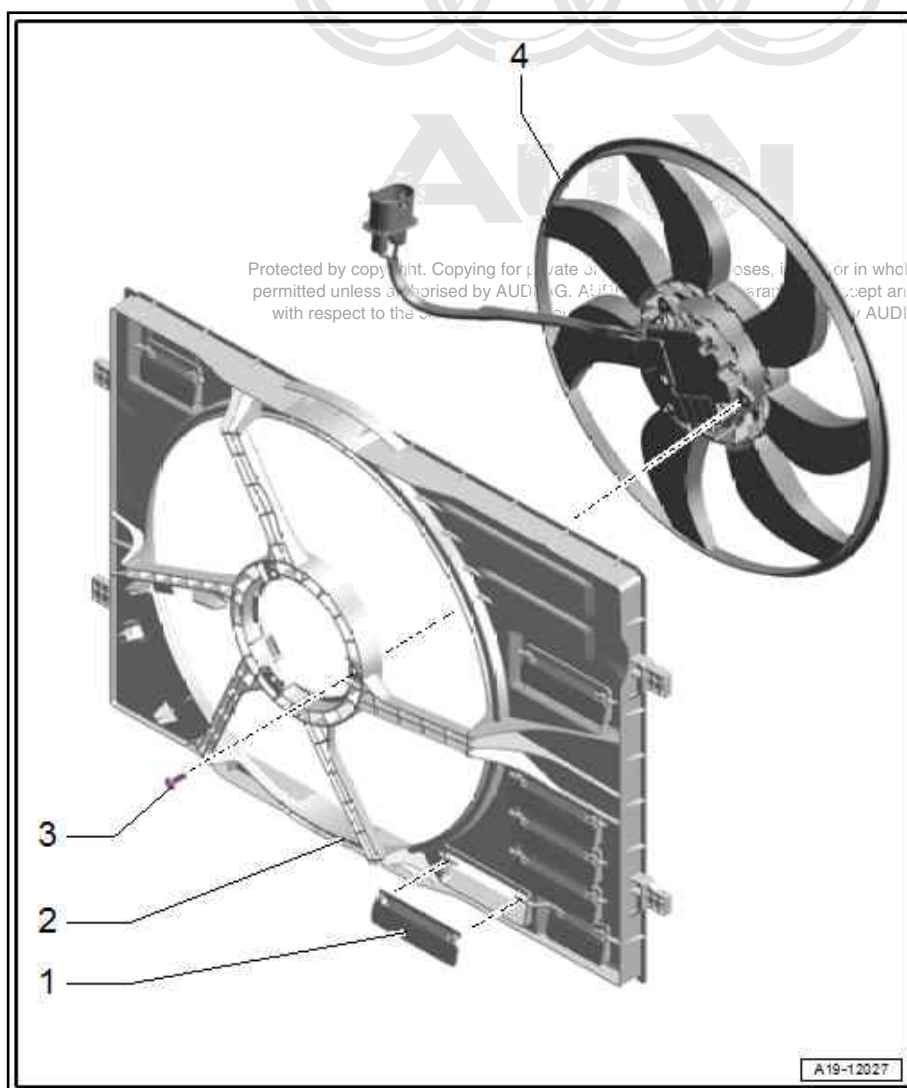
- ☐ Removing and installing ⇒ [page 59](#)

3 - Bolt

- ☐ 5 Nm

4 - Radiator fan - V7-

- ☐ Removing and installing ⇒ [page 60](#)



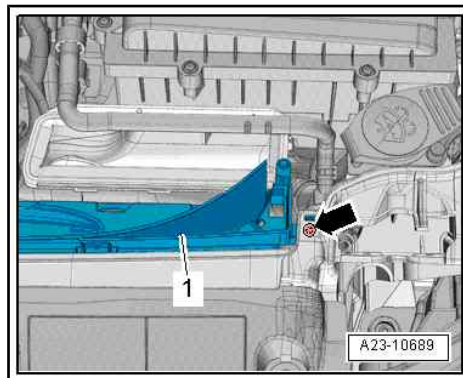
4.2 Removing and installing radiator

The radiator must be removed and installed together with the radiator cowl.

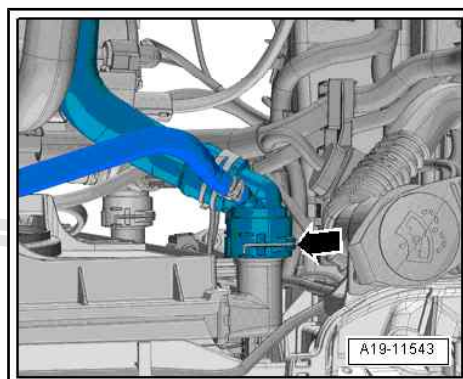
Removing

- Drain coolant ⇒ [page 46](#) .

- Remove air cleaner housing ➔ [page 76](#) .
- Remove radiator cowl ➔ [page 59](#) .
- Remove bumper cover (front) ➔ General body repairs, exterior; Rep. gr. 63 ; Bumper (front); Removing and installing bumper cover .
- Remove bolt -arrow- on both sides.
- Unclip air duct (bottom section) -1- and detach.



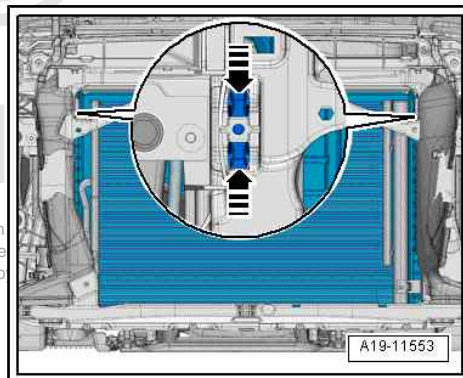
- Lift retaining clip -arrow- and disconnect coolant hose (top left) from radiator.



Radiator mountings with fasteners:

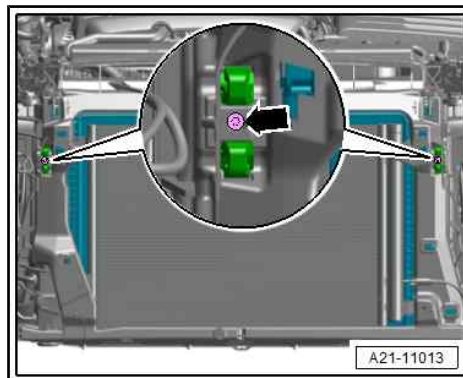
- Pinch off fasteners (both sides) -arrows- on rubber mounting with side-cutting pliers; push radiator and charge air cooler slightly towards rear at top.

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Radiator mountings with bolted connections:

- Unscrew bolt -arrow- (left and right) and push radiator with charge air cooler slightly towards rear.



Continued:

- Press locking tabs on left and right sides of radiator simultaneously -arrow- and detach radiator from charge air cooler.
- Secure charge air cooler.

Installing

Installation is carried out in reverse order; note the following:

- If there are slight impressions on the fins, refer to ⇒ Servicing 4-cylinder engine, 2.0 ltr. 4-valve TFSI; Rep. gr. 00 ; Repair notes; Installing radiators and condensers
- The radiator mounting with fasteners removed can be re-used. It is bolted to the lock carrier. For bolts, refer to ⇒ Electronic parts catalogue .
- Do not reuse coolant.
- Connect coolant hose with plug-in connector ⇒ [page 57](#) .
- Install radiator cowl ⇒ [page 59](#) .
- Install air cleaner housing ⇒ [page 76](#) .
- Fill up with coolant ⇒ [page 46](#) .

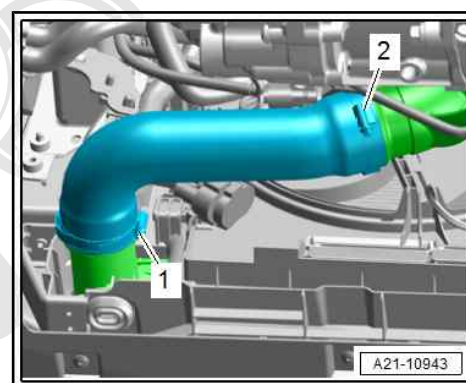
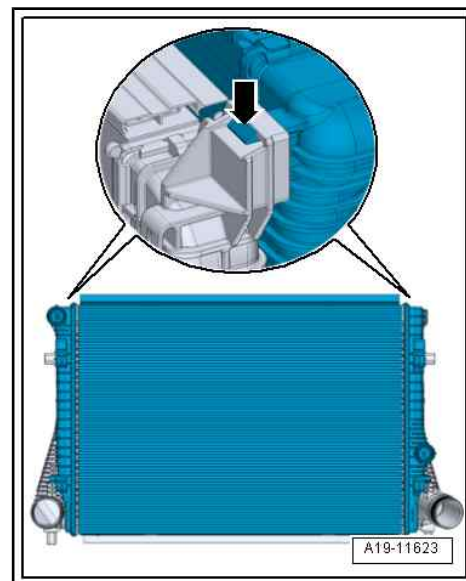
Tightening torques

- ◆ ⇒ ["2.1 Exploded view - charge air system", page 62](#)
- ◆ ⇒ General body repairs, exterior; Rep. gr. 50 ; Lock carrier; Exploded view - lock carrier

4.3 Removing and installing radiator cowl

Removing

- Remove noise insulation ⇒ General body repairs, exterior; Rep. gr. 66 ; Noise insulation; Exploded view - noise insulation .
- Release hose clip -1- and detach air hose from charge air cooler.



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CAUTION

Your hands can be injured if the radiator fan starts up automatically.

- Do not reach into the radiator fan when unplugging the connector.

- Unplug electrical connector -1- for radiator fan (push retainer in direction of -arrow A- and press release catch down).
- Press locking tabs on left and right sides of radiator cowl simultaneously -arrow B-, lift radiator cowl off radiator and remove from below.

Installing

Installation is carried out in reverse sequence.

Tightening torques

- ◆ ⇒ [“4.1 Exploded view - radiator/radiator fan”, page 56](#)
- ◆ ⇒ Servicing 4-cylinder engine, 2.0 ltr. 4-valve TFSI; Rep. gr. 21 ; Charge air system; Exploded view - hose connections for charge air system
- ◆ ⇒ General body repairs, exterior; Rep. gr. 66 ; Noise insulation; Exploded view - noise insulation

4.4 Removing and installing radiator fan - V7-

Removing

- Re-install all cable ties in the same locations when installing.
- Remove radiator cowl ⇒ [page 59](#) .
- Move electrical wiring harness clear.
- Unscrew bolts -arrows- and remove radiator fan.

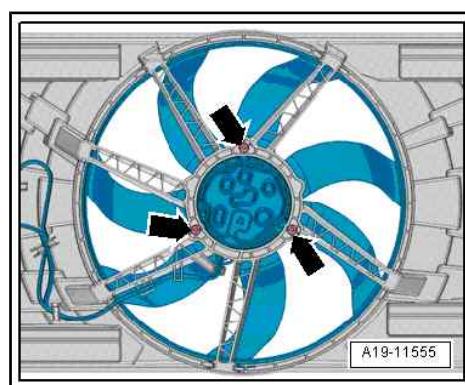
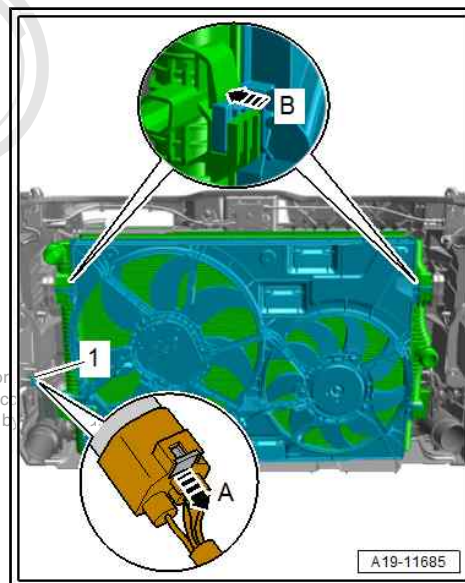
Installing

Installation is carried out in reverse order; note the following:

- Install radiator cowl ⇒ [page 59](#) .

Tightening torques

- ◆ ⇒ [“4.1 Exploded view - radiator/radiator fan”, page 56](#)



21 – Turbocharging/supercharging

1 Turbocharger

All procedures and components can be found in ⇒ Servicing 4-cylinder engine, 2.0 ltr. 4-valve TFSI; Rep. gr. 21 ; Turbocharger .



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2 Charge air system

⇒ ["2.1 Exploded view - charge air system", page 62](#)

⇒ ["2.2 Exploded view - hose connections for charge air system", page 63](#)

⇒ ["2.3 Removing and installing charge air cooler", page 63](#)

⇒ ["2.4 Removing and installing charge pressure sender G31", page 64](#)

⇒ ["2.5 Checking charge air system for leaks", page 65](#)

2.1 Exploded view - charge air system

- Check that all air pipes, hoses and vacuum lines are correctly fitted and that there are no leaks before carrying out tests or repairs.

1 - Air pipe

2 - Grommet

3 - Spacer sleeve

4 - Bolt

- 7 Nm

5 - Air hose

- Installing ⇒ Servicing 4-cylinder engine, 2.0 ltr. 4-valve TFSI; Rep. gr. 21 ; Charge air system; Exploded view - hose connections for charge air system

6 - Air duct

7 - Charge air cooler

- Removing and installing ⇒ [page 63](#)

- If there are slight impressions on the fins, refer to ⇒ Servicing 4-cylinder engine, 2.0 ltr. 4-valve TFSI; Rep. gr. 00 ; Repair notes; Installing radiators and condensers

8 - Rubber mounting

- For charge air cooler

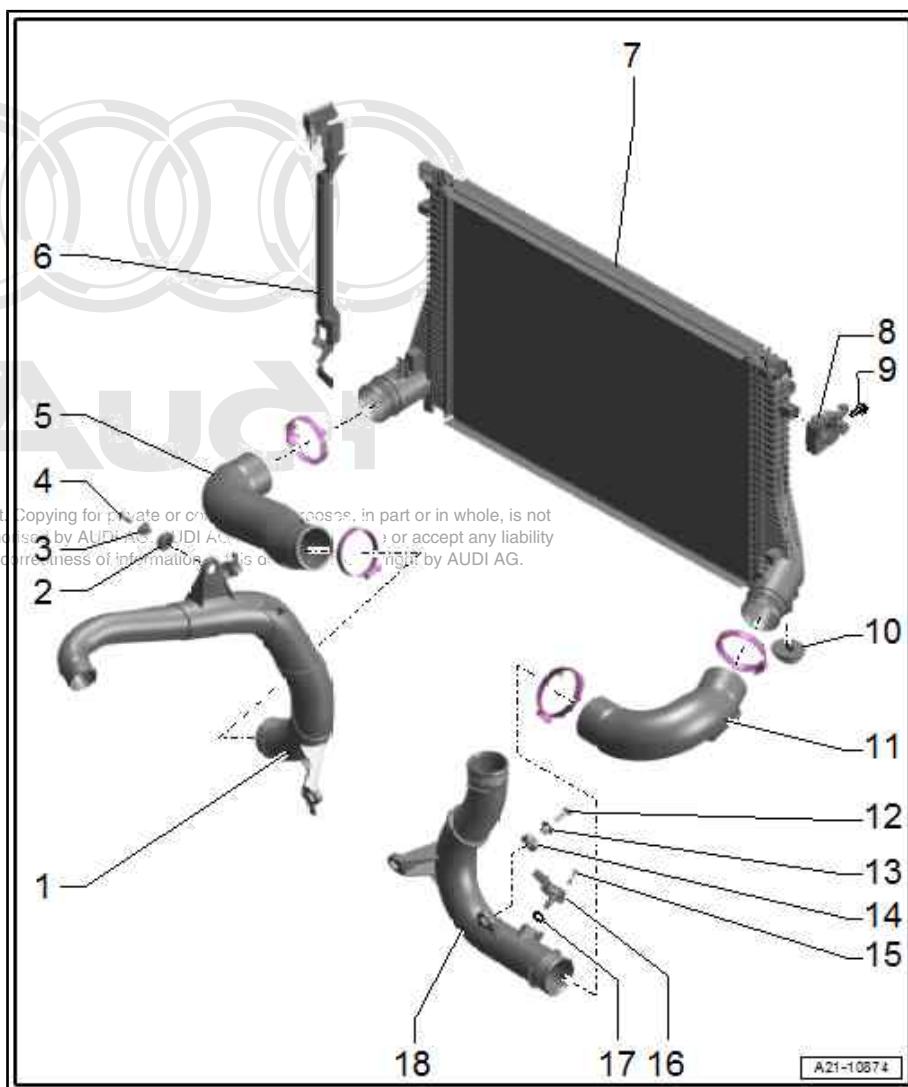
9 - Bolt

- Thread-forming
- Fit and screw in bolt by hand so that it is screwed into old thread. Then tighten bolt to torque

- 5.5 Nm

10 - Rubber mounting

- For charge air cooler



11 - Air hose

- ☐ Installing ⇒ Servicing 4-cylinder engine, 2.0 ltr. 4-valve TFSI; Rep. gr. 21 ; Charge air system; Exploded view - hose connections for charge air system

12 - Bolt

- ☐ 7 Nm

13 - Spacer sleeve

14 - Grommet

15 - Bolt

- ☐ 5 Nm

16 - Charge pressure sender - G31-

- ☐ Removing and installing ⇒ [page 64](#)

17 - O-ring

- ☐ Renew

18 - Air pipe

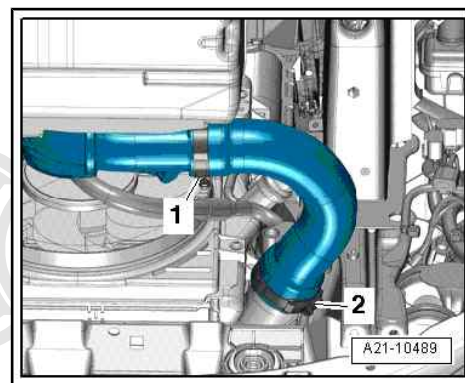
2.2 Exploded view - hose connections for charge air system

All components are described in ⇒ Servicing 4-cylinder engine, 2.0 ltr. 4-valve TFSI; Rep. gr. 21 ; Charge air system; Exploded view - hose connections for charge air system .

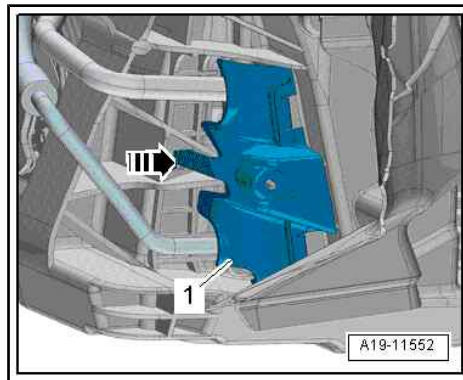
2.3 Removing and installing charge air cooler

Removing

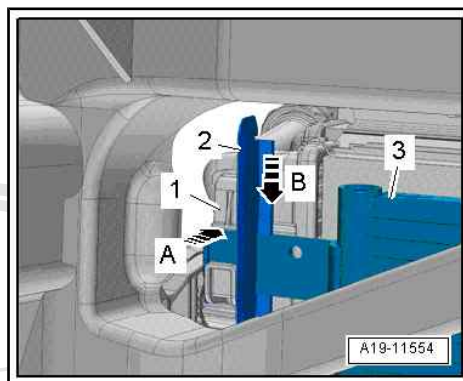
- Observe rules for cleanliness ⇒ Servicing 4-cylinder engine, 2.0 ltr. 4-valve TFSI; Rep. gr. 00 ; Repair notes; Rules for cleanliness .
- Remove radiator ⇒ [page 57](#) .
- Release hose clips -1, 2- and remove air hose.
- Seal off open lines and connections with clean plugs from engine bung set - VAS 6122- .



- Release fastener -arrow- and remove cover -1- towards front.



- Unclip air duct -2- downwards on both sides -arrow B-.
- Release catches on both sides -arrow A- and disengage condenser -3- from charge air cooler -1-.
- Tie up condenser to lock carrier.
- Detach charge air cooler.
- Take out charge air cooler from underneath.



Installing

Installation is carried out in reverse order; note the following:

- If there are slight impressions on the fins, refer to ⇒ Servicing 4-cylinder engine, 2.0 ltr. 4-valve TFSI; Rep. gr. 00 ; Repair notes; Installing radiators and condensers
- Secure all hose connections with correct type of hose clips (as original equipment) ⇒ Electronic parts catalogue .
- Install radiator ⇒ [page 57](#) .

Tightening torques

- ♦ ⇒ Servicing 4-cylinder engine, 2.0 ltr. 4-valve TFSI; Rep. gr. 21 ; Charge air system; Exploded view - hose connections for charge air system

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2.4 Removing and installing charge pressure sender - G31-

Removing

- Remove noise insulation ⇒ General body repairs, exterior; Rep. gr. 66 ; Noise insulation; Removing and installing noise insulation .
- Unplug electrical connector -2-.
- Unscrew bolts -1- and pull charge pressure sender - G31- out of air pipe.

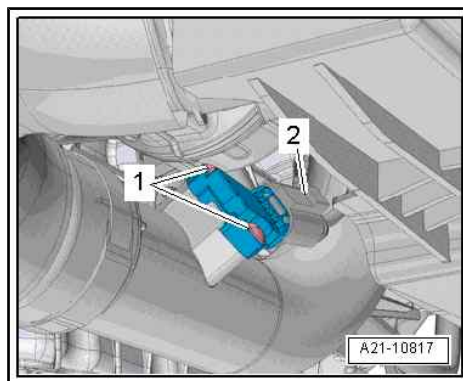
Installing

Installation is carried out in reverse order; note the following:

- Renew O-ring after removal.

Tightening torques

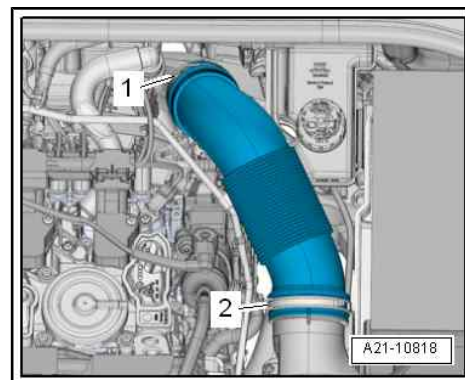
- ♦ ⇒ [“2.1 Exploded view - charge air system”, page 62](#)
- ♦ ⇒ General body repairs, exterior; Rep. gr. 66 ; Noise insulation; Exploded view - noise insulation



2.5 Checking charge air system for leaks

Procedure

- Loosen hose clips -1, 2- and remove air pipe.



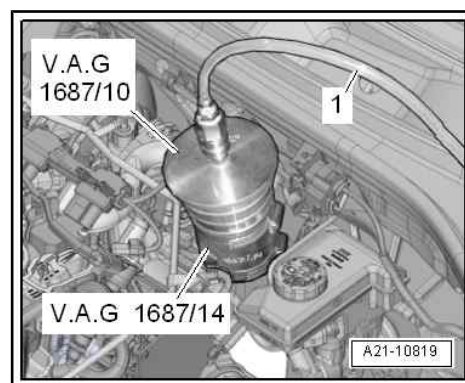
- Connect adapter - V.A.G 1687/10- with -V.A.G 1687/14- to turbocharger.
- Connect charge air system tester - V.A.G 1687- to adapter.

All further procedures are described in ⇒ Servicing 4-cylinder engine, 2.0 ltr. 4-valve TFSI; Rep. gr. 21 ; Charge air system; Checking charge air system for leaks .

Attaching

Assembly is carried out in reverse sequence; note the following:

- Secure all hose connections with correct type of hose clips (as original equipment) ⇒ Electronic parts catalogue .



Tightening torques

- ◆ ⇒ Servicing 4-cylinder engine, 2.0 ltr. 4-valve TFSI; Rep. gr. 21 ; Charge air system; Exploded view - hose connections for charge air system



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24 – Mixture preparation - injection

1 Injection system

⇒ [“1.1 Overview of fitting locations - injection system”, page 66](#)

1.1 Overview of fitting locations - injection system

Overview of fitting locations - engine compartment

1 - Radiator outlet coolant temperature sender - G83-

- ☐ Fitting location
⇒ [page 68](#)

2 - Accelerator position sender - G79- and accelerator position sender 2 - G185-

- ☐ Fitting location
⇒ [page 67](#)

3 - Brake light switch - F-

- ☐ Fitting location
⇒ [page 67](#)

4 - Clutch position sender - G476-

- ☐ For equipment version with manual gearbox
- ☐ Fitting location
⇒ [page 67](#)

5 - Engine control unit - J623-

6 - Gearbox neutral position sender - G701- / reversing light switch - F4-

- ☐ For equipment version with manual gearbox
- ☐ Fitting location
⇒ [page 68](#)

7 - Air mass meter - G70-

- ☐ Exploded view
⇒ [page 75](#)

8 - Coolant shut-off valve - N82-

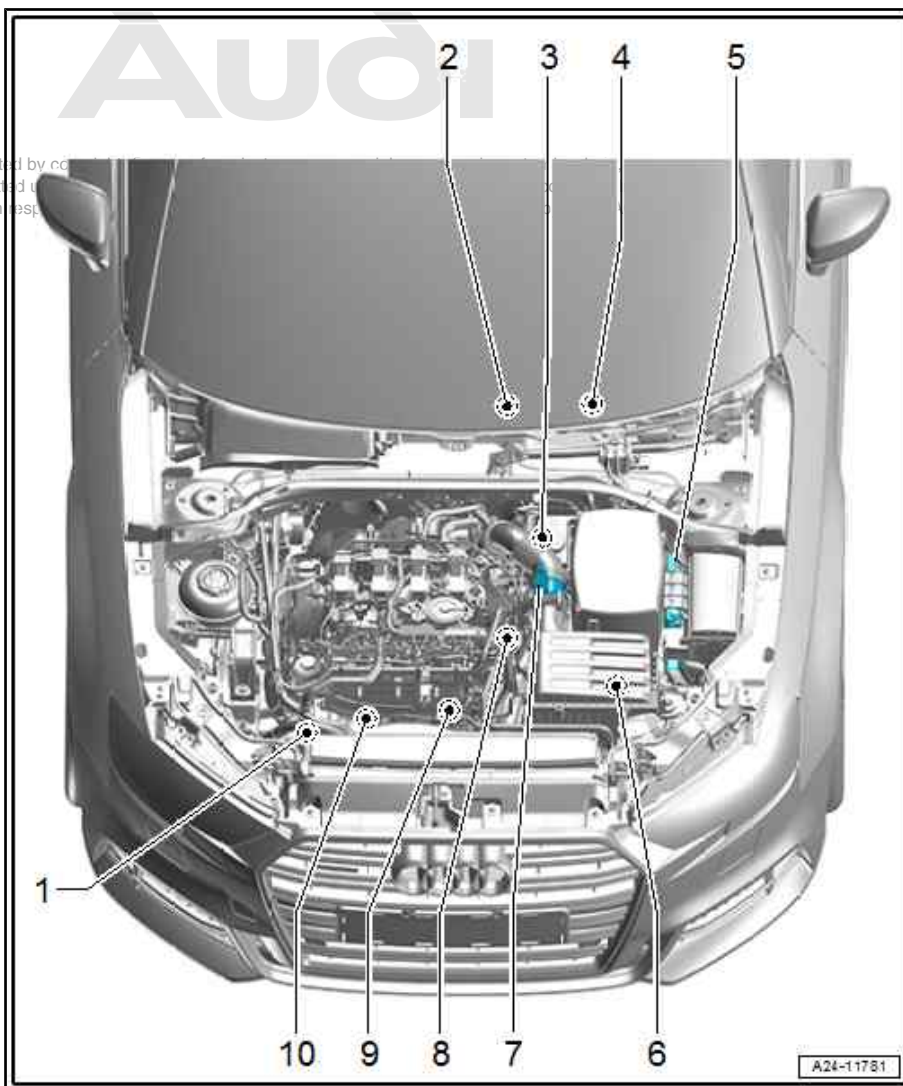
- ☐ On equipment version with auxiliary heating:
heater coolant shut-off valve - N279-

9 - Coolant valve for gearbox - N488-

- ☐ For equipment version with dual clutch gearbox
- ☐ Fitting location ⇒ [page 68](#)

10 - Charge pressure sender - G31-

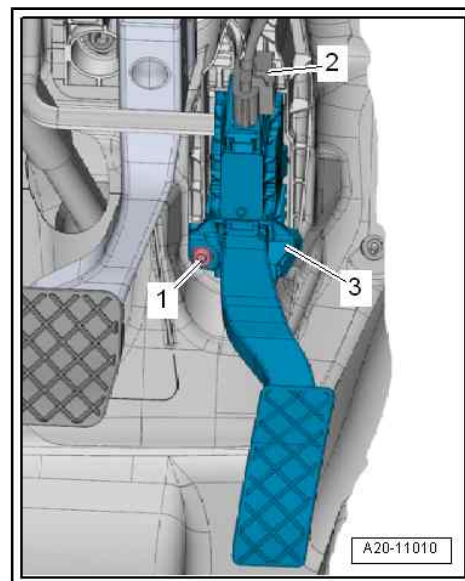
- ☐ Fitting location ⇒ [page 69](#)



Accelerator position sender - G79- and accelerator position sender 2 - G185-

- ◆ Integrated in accelerator pedal module -3-. Accelerator position senders cannot be renewed separately if defective.

Exploded view ⇒ Fuel supply system; Rep. gr. 20 ; Accelerator mechanism; Exploded view - accelerator pedal module

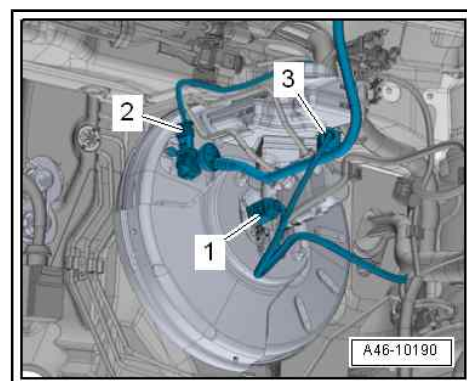


Fitting location of brake light switch - F-

- ◆ In engine compartment on brake master cylinder

1 - Brake light switch - F-

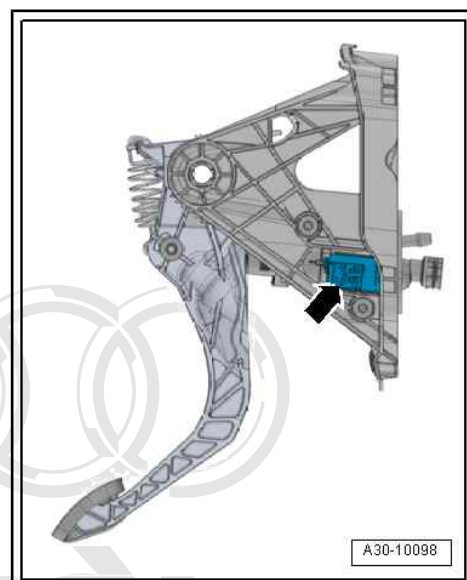
Exploded view ⇒ Brake system; Rep. gr. 47 ; Brake servo/brake master cylinder; Exploded view - brake servo/brake master cylinder



Fitting location of clutch position sender - G476-

- On mounting bracket for clutch pedal -arrow-

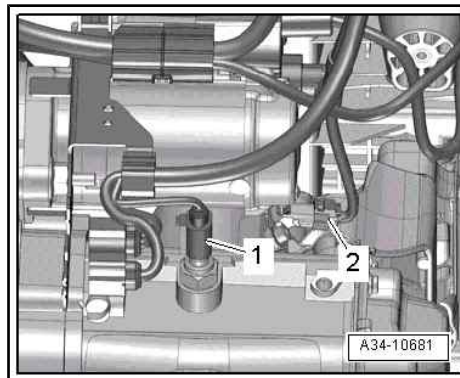
Exploded view ⇒ Manual gearbox; Rep. gr. 30 ; Clutch mechanism; Exploded view - pedal cluster .



Fitting location of gearbox neutral position sender - G701- / reversing light switch - F4-

- ◆ On gearbox (front left)

- 1 - Electrical connector for gearbox neutral position sender - G701-
- 2 - Electrical connector for reversing light switch - F4-

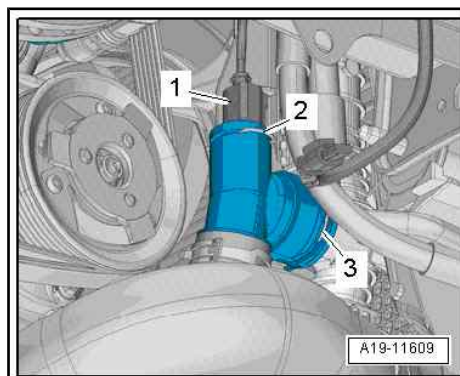


Fitting location of radiator outlet coolant temperature sender - G83-

- ◆ In coolant connection on radiator at bottom left

- 1 - Electrical connector for radiator outlet coolant temperature sender - G83-

Exploded view ⇒ Servicing 4-cylinder engine, 2.0 ltr. 4-valve TFSI; Rep. gr. 19; Coolant pump/thermostat assembly; Exploded view - coolant temperature senders

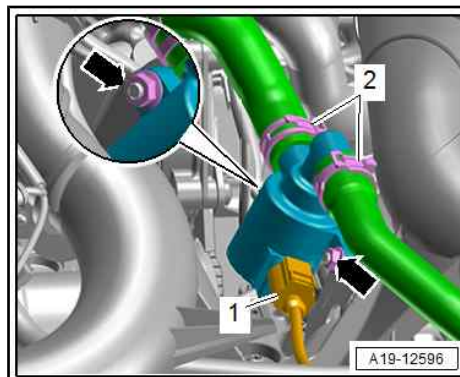


Fitting location of coolant valve for gearbox - N488-

- ◆ At front of engine

- 1 - Electrical connector for coolant valve for gearbox - N488-

Exploded view ⇒ Servicing 4-cylinder engine, 2.0 ltr. 4-valve TFSI; Rep. gr. 19; Coolant pump/thermostat assembly; Exploded view - electric coolant pump

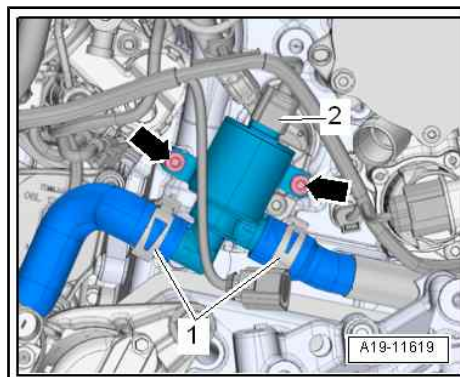


Fitting location of coolant shut-off valve - N82-

- ◆ On left side of cylinder head

- 2 - Electrical connector for coolant shut-off valve - N82-

Exploded view ⇒ Servicing 4-cylinder engine, 2.0 ltr. 4-valve TFSI; Rep. gr. 19; Coolant pump/thermostat assembly; Exploded view - electric coolant pump

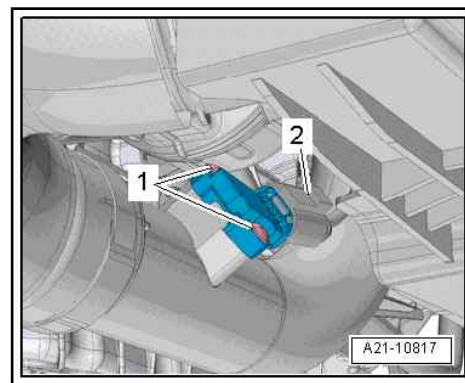


Fitting location of charge pressure sender - G31-

- ◆ In air pipe (front) on engine

2 - Connect electrical connector for charge pressure sender - G31-

Exploded view ⇒ [page 62](#)



Overview of fitting locations - engine (view from above)

1 - Injector 2, cylinder 2 - N533- , MPI

- Exploded view ⇒ Servicing 4-cylinder engine, 2.0 ltr. 4-valve TFSI; Rep. gr. 24 ; Injectors; Exploded view - fuel rail with injectors

2 - Intake manifold flap potentiometer - G336-

- Exploded view ⇒ Servicing 4-cylinder engine, 2.0 ltr. 4-valve TFSI; Rep. gr. 24 ; Intake manifold; Exploded view - intake manifold

3 - Injector 2, cylinder 1 - N532- , MPI

- Exploded view ⇒ Servicing 4-cylinder engine, 2.0 ltr. 4-valve TFSI; Rep. gr. 24 ; Injectors; Exploded view - fuel rail with injectors

4 - Activated charcoal filter solenoid valve 1 - N80-

5 - Ignition coil 1 with output stage - N70-

- Exploded view ⇒ Servicing 4-cylinder engine, 2.0 ltr. 4-valve TFSI; Rep. gr. 28 ; Ignition system; Exploded view - ignition system

6 - Ignition coil 2 with output stage - N127-

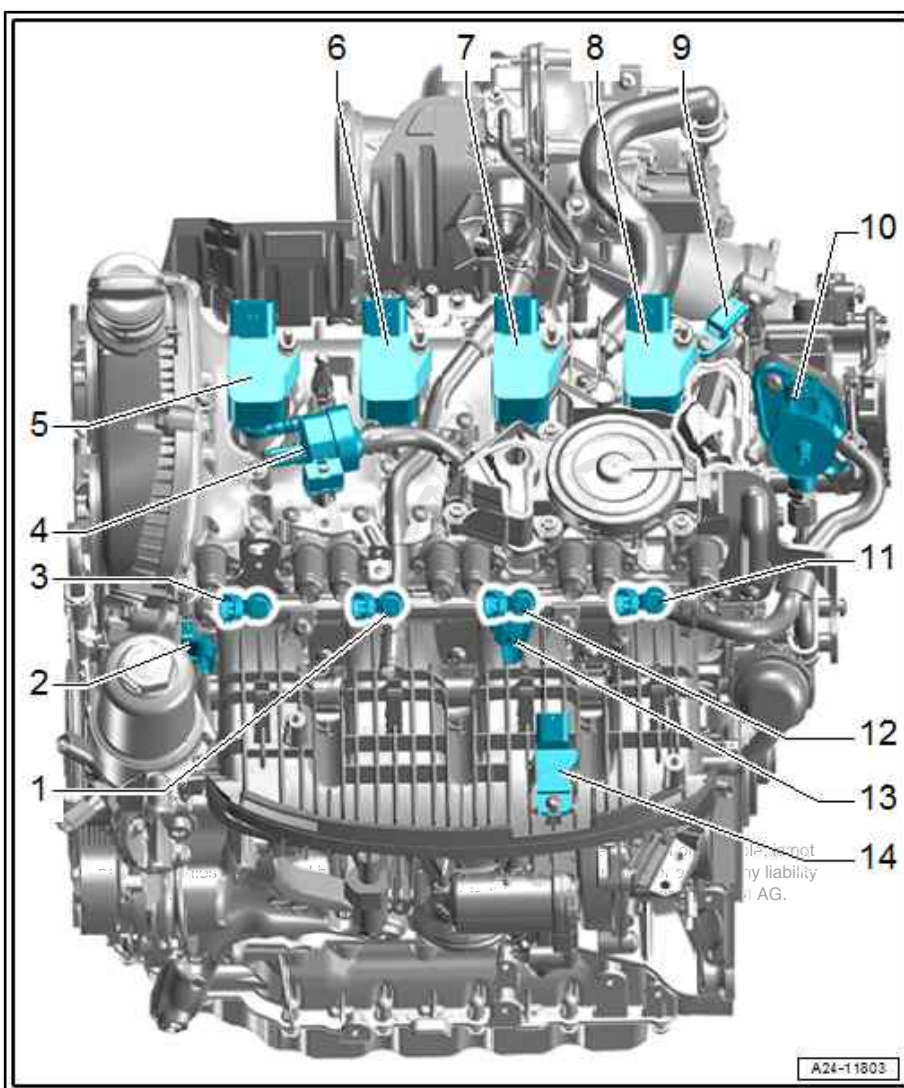
- Exploded view ⇒ Servicing 4-cylinder engine, 2.0 ltr. 4-valve TFSI; Rep. gr. 28 ; Ignition system; Exploded view - ignition system

7 - Ignition coil 3 with output stage - N291-

- Exploded view ⇒ Servicing 4-cylinder engine, 2.0 ltr. 4-valve TFSI; Rep. gr. 28 ; Ignition system; Exploded view - ignition system

8 - Ignition coil 4 with output stage - N292-

- Exploded view ⇒ Servicing 4-cylinder engine, 2.0 ltr. 4-valve TFSI; Rep. gr. 28 ; Ignition system; Exploded view - ignition system





9 - Hall sender 3 - G300-

- ☐ Exploded view ⇒ Servicing 4-cylinder engine, 2.0 ltr. 4-valve TFSI; Rep. gr. 28 ; Ignition system; Exploded view - ignition system

10 - Fuel pressure regulating valve or fuel metering valve

- ☐ Depending on version of high-pressure pump:
- ◆ Fuel pressure regulating valve - N276- or
- ◆ Fuel metering valve - N290-
 - ☐ Integrated in high-pressure pump

11 - Injector 2, cylinder 4 - N535- , MPI

- ☐ Exploded view ⇒ Servicing 4-cylinder engine, 2.0 ltr. 4-valve TFSI; Rep. gr. 24 ; Injectors; Exploded view - fuel rail with injectors

12 - Injector 2, cylinder 3 - N534- , MPI

- ☐ Exploded view ⇒ Servicing 4-cylinder engine, 2.0 ltr. 4-valve TFSI; Rep. gr. 24 ; Injectors; Exploded view - fuel rail with injectors

13 - Fuel pressure sender for low pressure - G410- , MPI

- ☐ Exploded view ⇒ Servicing 4-cylinder engine, 2.0 ltr. 4-valve TFSI; Rep. gr. 28 ; Ignition system; Exploded view - ignition system

14 - Intake air temperature sender - G42- / intake manifold pressure sender - G71-

- ☐ Exploded view ⇒ Servicing 4-cylinder engine, 2.0 ltr. 4-valve TFSI; Rep. gr. 24 ; Intake manifold; Exploded view - intake manifold

Overview of fitting locations - engine (inlet side)



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1 - Oil level and oil temperature sender - G266-

- ❑ Exploded view ⇒ Servicing 4-cylinder engine, 2.0 ltr. 4-valve TFSI; Rep. gr. 17 ; Sump/oil pump; Exploded view - sump/oil pump

2 - Actuator for engine temperature regulation - N493-

- ❑ Exploded view ⇒ Servicing 4-cylinder engine, 2.0 ltr. 4-valve TFSI; Rep. gr. 19 ; Coolant pump/thermostat assembly; Exploded view - coolant pump/thermostat

3 - Injector, cylinder 2 - N31- , FSI

- ❑ Exploded view ⇒ Servicing 4-cylinder engine, 2.0 ltr. 4-valve TFSI; Rep. gr. 24 ; Injectors; Exploded view - fuel rail with injectors

4 - Injector, cylinder 1 - N30- , FSI

- ❑ Exploded view ⇒ Servicing 4-cylinder engine, 2.0 ltr. 4-valve TFSI; Rep. gr. 24 ; Injectors; Exploded view - fuel rail with injectors

5 - Fuel pressure sender - G247-

- ❑ Exploded view ⇒ Servicing 4-cylinder engine, 2.0 ltr. 4-valve TFSI; Rep. gr. 24 ; Injectors; Exploded view - fuel rail with injectors

6 - Throttle valve module - J338-

- ❑ with

◆ Throttle valve drive (for electric throttle) - G186-

◆ Throttle valve drive angle sender - G187-

◆ Throttle valve drive angle sender 2 - G188-

- ❑ Exploded view ⇒ Servicing 4-cylinder engine, 2.0 ltr. 4-valve TFSI; Rep. gr. 24 ; Intake manifold; Exploded view - intake manifold

7 - Actuator 1 for camshaft adjustment - F366- (for cylinder No. 1)

- ❑ Exploded view ⇒ Servicing 4-cylinder engine, 2.0 ltr. 4-valve TFSI; Rep. gr. 15 ; Valve gear; Exploded view - valve gear

8 - Actuator 2 for camshaft adjustment - F367- (for cylinder No. 1)

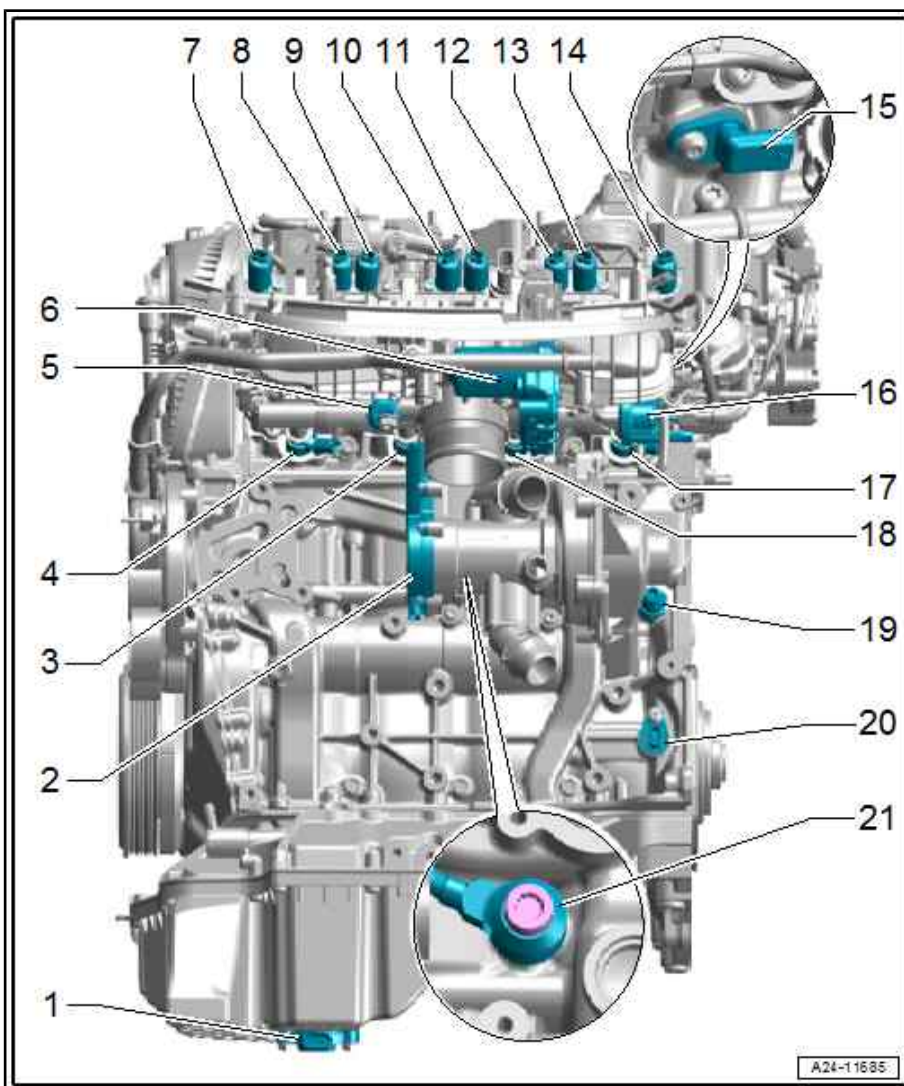
- ❑ Exploded view ⇒ Servicing 4-cylinder engine, 2.0 ltr. 4-valve TFSI; Rep. gr. 15 ; Valve gear; Exploded view - valve gear

9 - Actuator 3 for camshaft adjustment - F368- (for cylinder No. 2)

- ❑ Exploded view ⇒ Servicing 4-cylinder engine, 2.0 ltr. 4-valve TFSI; Rep. gr. 15 ; Valve gear; Exploded view - valve gear

10 - Actuator 4 for camshaft adjustment - F369- (for cylinder No. 2)

- ❑ Exploded view ⇒ Servicing 4-cylinder engine, 2.0 ltr. 4-valve TFSI; Rep. gr. 15 ; Valve gear; Exploded view - valve gear





11 - Actuator 5 for camshaft adjustment - F370- (for cylinder No. 3)

- ❑ Exploded view ⇒ Servicing 4-cylinder engine, 2.0 ltr. 4-valve TFSI; Rep. gr. 15 ; Valve gear; Exploded view - valve gear

12 - Actuator 6 for camshaft adjustment - F371- (for cylinder No. 3)

- ❑ Exploded view ⇒ Servicing 4-cylinder engine, 2.0 ltr. 4-valve TFSI; Rep. gr. 15 ; Valve gear; Exploded view - valve gear

13 - Actuator 7 for camshaft adjustment - F372- (for cylinder No. 4)

- ❑ Exploded view ⇒ Servicing 4-cylinder engine, 2.0 ltr. 4-valve TFSI; Rep. gr. 15 ; Valve gear; Exploded view - valve gear

14 - Actuator 8 for camshaft adjustment - F373- (for cylinder No. 4)

- ❑ Exploded view ⇒ Servicing 4-cylinder engine, 2.0 ltr. 4-valve TFSI; Rep. gr. 15 ; Valve gear; Exploded view - valve gear

15 - Hall sender - G40-

- ❑ Exploded view ⇒ Servicing 4-cylinder engine, 2.0 ltr. 4-valve TFSI; Rep. gr. 28 ; Ignition system; Exploded view - ignition system

16 - Intake manifold flap valve - N316-

- ❑ Exploded view ⇒ Servicing 4-cylinder engine, 2.0 ltr. 4-valve TFSI; Rep. gr. 24 ; Intake manifold; Exploded view - intake manifold

17 - Injector, cylinder 4 - N33- , FSI

- ❑ Exploded view ⇒ Servicing 4-cylinder engine, 2.0 ltr. 4-valve TFSI; Rep. gr. 24 ; Injectors; Exploded view - fuel rail with injectors

18 - Injector, cylinder 3 - N32- , FSI

- ❑ Exploded view ⇒ Servicing 4-cylinder engine, 2.0 ltr. 4-valve TFSI; Rep. gr. 24 ; Injectors; Exploded view - fuel rail with injectors

19 - Stage 3 oil pressure switch - F447-

- ❑ Exploded view ⇒ Servicing 4-cylinder engine, 2.0 ltr. 4-valve TFSI; Rep. gr. 17 ; Oil filter/oil pressure switches; Exploded view - oil pressure switches/oil pressure control

20 - Engine speed sender - G28-

- ❑ Exploded view ⇒ Servicing 4-cylinder engine, 2.0 ltr. 4-valve TFSI; Rep. gr. 28 ; Ignition system; Exploded view - ignition system

21 - Knock sensor 1 - G61-

- ❑ Exploded view ⇒ Servicing 4-cylinder engine, 2.0 ltr. 4-valve TFSI; Rep. gr. 28 ; Ignition system; Exploded view - ignition system

Overview of fitting locations - engine (pulley end)

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1 - Oil level and oil temperature sender - G266-

- ❑ Exploded view ⇒ Servicing 4-cylinder engine, 2.0 ltr. 4-valve TFSI; Rep. gr. 17 ; Sump/oil pump; Exploded view - sump/oil pump

2 - Exhaust camshaft control valve 1 - N318-

- ❑ Exploded view ⇒ Servicing 4-cylinder engine, 2.0 ltr. 4-valve TFSI; Rep. gr. 15 ; Timing chain cover; Exploded view - timing chain cover

3 - Camshaft control valve 1 - N205-

- ❑ Exploded view ⇒ Servicing 4-cylinder engine, 2.0 ltr. 4-valve TFSI; Rep. gr. 15 ; Timing chain cover; Exploded view - timing chain cover

4 - Oil pressure switch - F22-

- ❑ Exploded view ⇒ Servicing 4-cylinder engine, 2.0 ltr. 4-valve TFSI; Rep. gr. 17 ; Oil filter/oil pressure switches; Exploded view - oil pressure switches/oil pressure control

5 - Oil pressure switch for reduced oil pressure - F378-

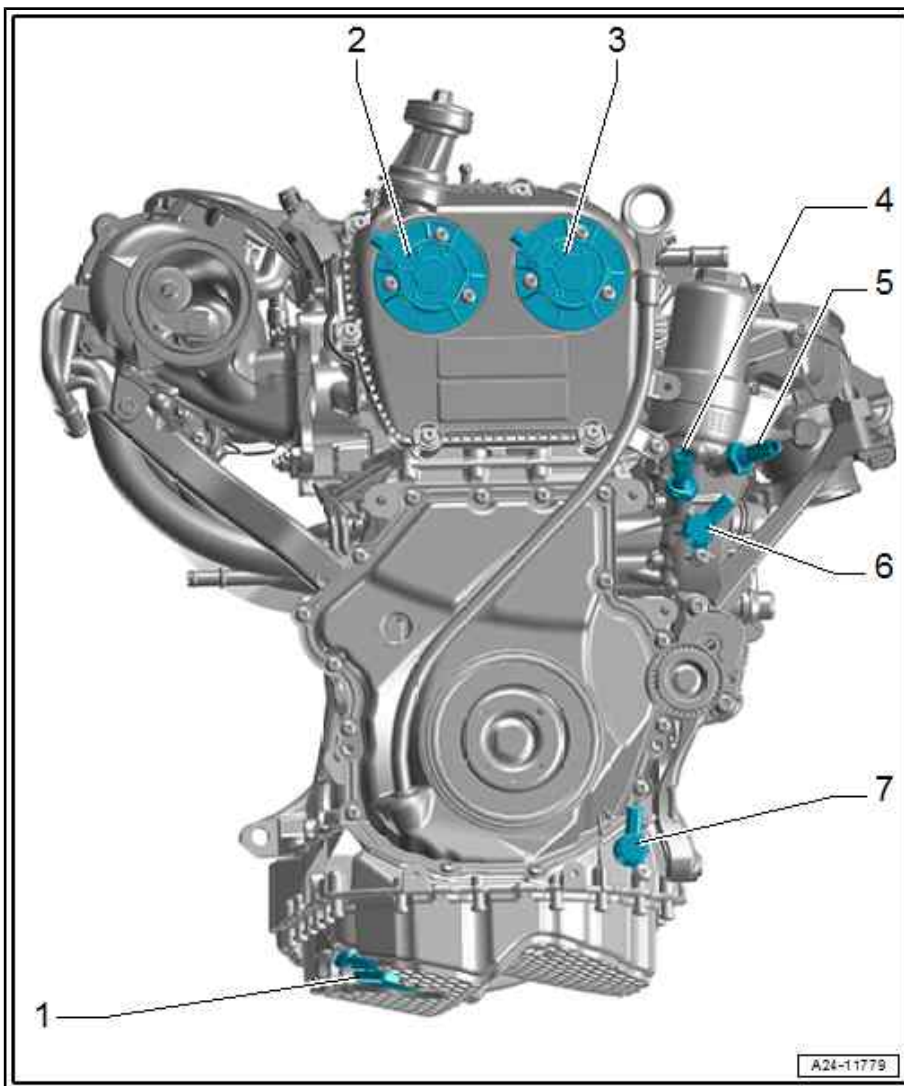
- ❑ Exploded view ⇒ Servicing 4-cylinder engine, 2.0 ltr. 4-valve TFSI; Rep. gr. 17 ; Oil filter/oil pressure switches; Exploded view - oil pressure switches/oil pressure control

6 - Piston cooling jet control valve - N522-

- ❑ Exploded view ⇒ Servicing 4-cylinder engine, 2.0 ltr. 4-valve TFSI; Rep. gr. 17 ; Oil filter/oil pressure switches; Exploded view - oil pressure switches/oil pressure control

7 - Valve for oil pressure control - N428-

- ❑ Exploded view ⇒ Servicing 4-cylinder engine, 2.0 ltr. 4-valve TFSI; Rep. gr. 17 ; Oil filter/oil pressure switches; Exploded view - oil pressure switches/oil pressure control



Overview of fitting locations - engine (gearbox end)

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1 - Turbocharger air recirculation valve - N249-

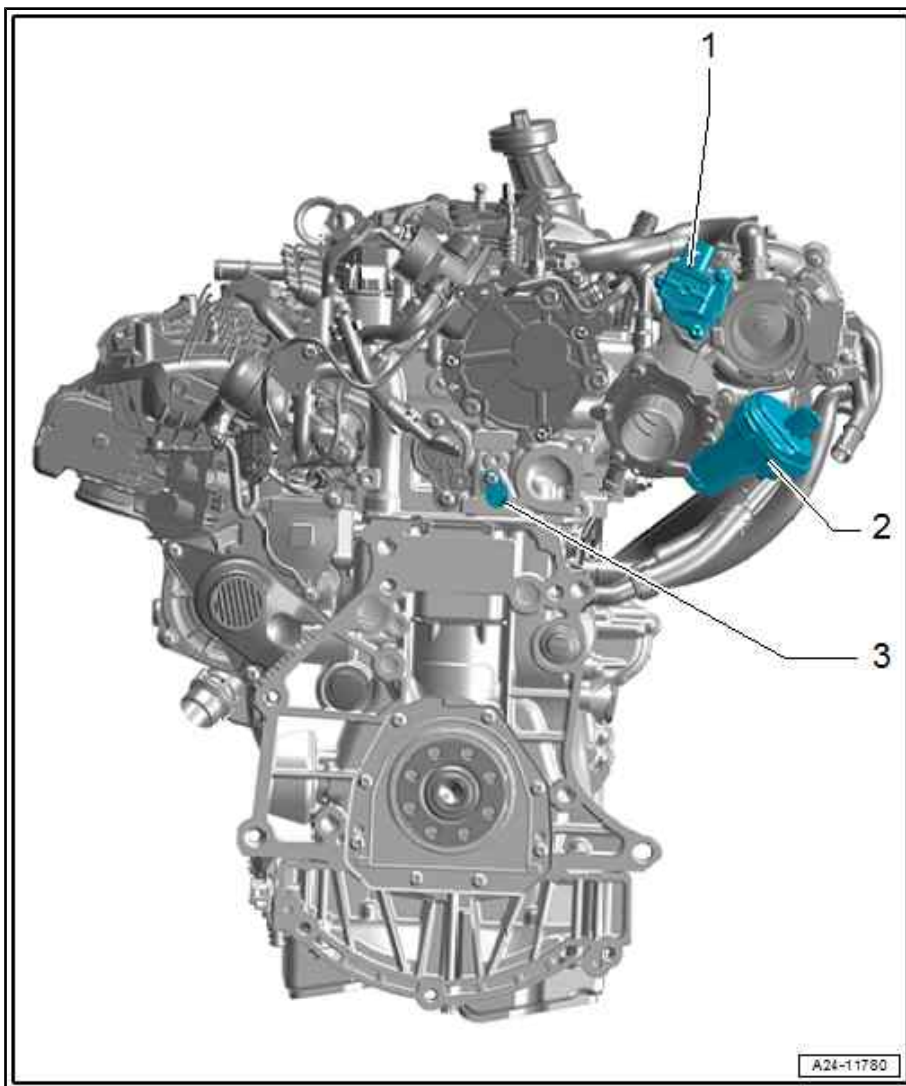
- ❑ Exploded view ⇒ Servicing 4-cylinder engine, 2.0 ltr. 4-valve TFSI; Rep. gr. 21 ; Turbocharger; Exploded view - turbocharger

2 - Charge pressure positioner - V465-

- ❑ Exploded view ⇒ Servicing 4-cylinder engine, 2.0 ltr. 4-valve TFSI; Rep. gr. 21 ; Turbocharger; Exploded view - turbocharger

3 - Coolant temperature sender - G62-

- ❑ Exploded view ⇒ Servicing 4-cylinder engine, 2.0 ltr. 4-valve TFSI; Rep. gr. 19 ; Coolant pump/thermostat assembly; Exploded view - coolant temperature senders



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2 Air cleaner

⇒ [“2.1 Exploded view - air cleaner housing”, page 75](#)

⇒ [“2.2 Removing and installing air cleaner housing”, page 76](#)

2.1 Exploded view - air cleaner housing

1 - Air duct

- ☐ On air cleaner (bottom section)

2 - Air duct (bottom section)

- ☐ On lock carrier

3 - Bolt

- ☐ 2 Nm

4 - Air duct (top section)

- ☐ On lock carrier

5 - Cover

- ☐ For air duct

6 - Bolt

- ☐ 2 Nm

7 - Vacuum hose

8 - Hose

- ☐ For version with secondary air system

9 - O-ring

- ☐ For version with secondary air system
- ☐ Renew after removing

10 - Air cleaner (top section)

- ☐ Clean out dirt and salt deposits

11 - O-ring

- ☐ Renew if damaged

12 - Air mass meter - G70-

- ☐ Removing and installing
⇒ [page 81](#)

13 - Air hose

14 - Bolt

- ☐ 1.5 Nm

15 - Bolt

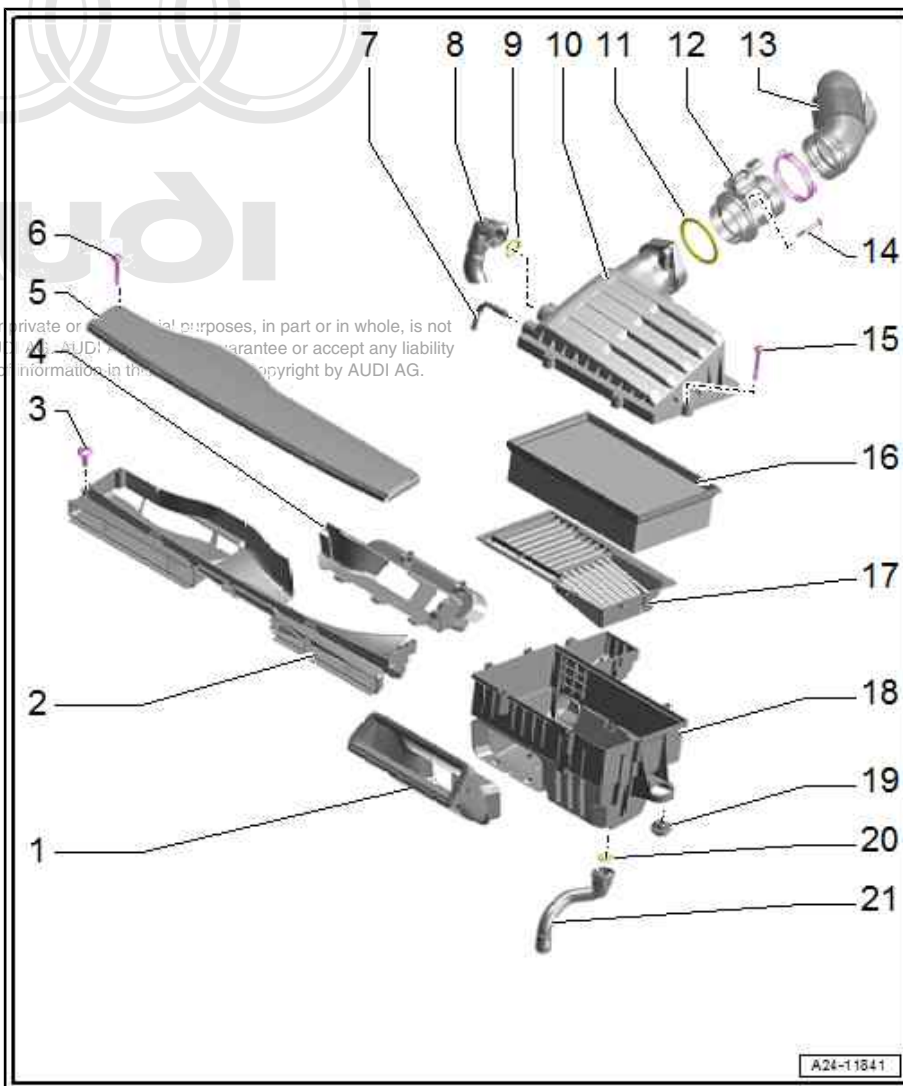
- ☐ 1.5 Nm

16 - Air filter element

- ☐ Use genuine air filter element ⇒ Electronic parts catalogue
- ☐ Change intervals ⇒ Maintenance tables
- ☐ Removing and installing ⇒ Maintenance ; Booklet 821

17 - Insert

- ☐ For air cleaner (bottom section)



18 - Air cleaner (bottom section)

- ☐ Clean out dirt and salt deposits

19 - Rubber buffer

20 - O-ring

- ☐ Check for damage
- ☐ Supplied with ➔ [Item 21 \(page 76\)](#)

21 - Water drain hose

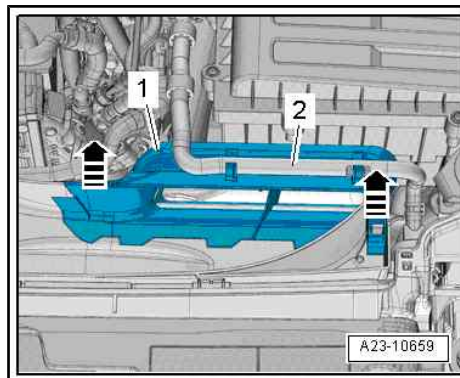
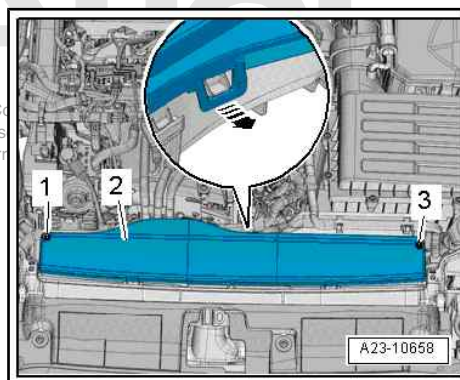
- ☐ With valve
- ☐ Clean

2.2 Removing and installing air cleaner housing

Removing

- Remove bolts -1, 3-.
- Release catch -arrow- and detach cover -2-.
- Move coolant hose -2- clear.
- Release catches -arrows- and detach air duct (top section) -1-.

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- Disconnect vacuum hose -1-.
- On versions with secondary air system: disconnect hose -2-.
- Unplug electrical connector -3- at air mass meter - G70- .
- Release hose clip -4- and detach air hose.
- Lift air cleaner housing -5- off bracket and detach.

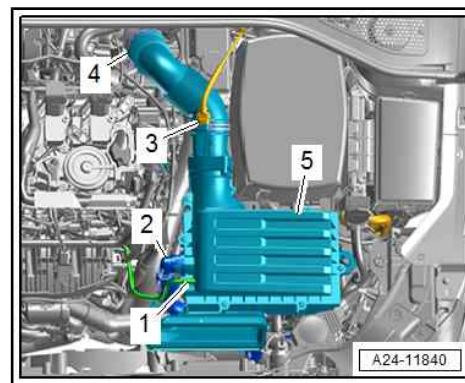
Installing

Installation is carried out in reverse order; note the following:

- The air cleaner housing must always be clean.
- Use silicone-free lubricant when fitting air hose.
- Secure all hose connections with correct type of hose clips (as original equipment) ⇒ Electronic parts catalogue .
- Check water drain in air cleaner (bottom section) for dirt and other obstructions and clean if necessary.
- Check for dirt in air duct going from lock carrier to air cleaner housing.

Tightening torques

- ◆ ⇒ [“2.1 Exploded view - air cleaner housing”, page 75](#)
- ◆ ⇒ Servicing 4-cylinder engine, 2.0 ltr. 4-valve TFSI; Rep. gr. 21 ; Charge air system; Exploded view - hose connections for charge air system



3 Intake manifold

⇒ ["3.1 Exploded view - intake manifold", page 78](#)

⇒ ["3.2 Removing and installing intake manifold", page 78](#)

⇒ ["3.3 Removing and installing throttle valve module J338", page 78](#)

⇒ ["3.4 Cleaning throttle valve module", page 79](#)

⇒ ["3.5 Checking intake manifold change-over function", page 79](#)

3.1 Exploded view - intake manifold

All procedures are described in ⇒ Servicing 4-cylinder engine, 2.0 ltr. 4-valve TFSI; Rep. gr. 24 ; Intake manifold; Exploded view - intake manifold .

3.2 Removing and installing intake manifold

Removing

- Remove air cleaner housing ⇒ [page 76](#) .
- Remove bolt -arrow- on both sides.
- Unclip air duct (bottom section) -1- and detach.

All further procedures are described in ⇒ Servicing 4-cylinder engine, 2.0 ltr. 4-valve TFSI; Rep. gr. 24 ; Intake manifold; Removing and installing intake manifold .

Installing

Additional work:

- Install air cleaner housing ⇒ [page 76](#) .

Tightening torques

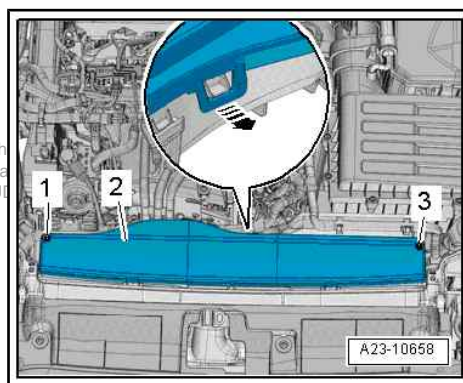
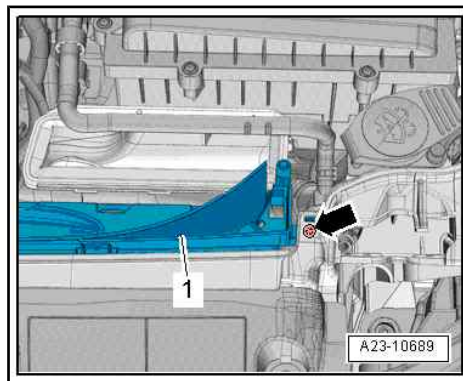
- ♦ ⇒ ["2.1 Exploded view - air cleaner housing", page 75](#)

3.3 Removing and installing throttle valve module - J338-

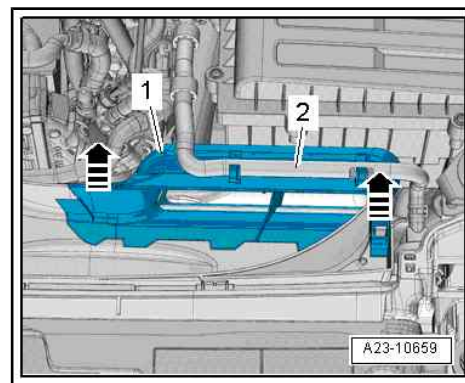
Removing

- Remove bolts -1, 3-.
- Release fastener -arrow- and remove cover -2-.

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- Move coolant hose -2- clear.
- Release fasteners -arrows- and detach air duct (top section) -1-.

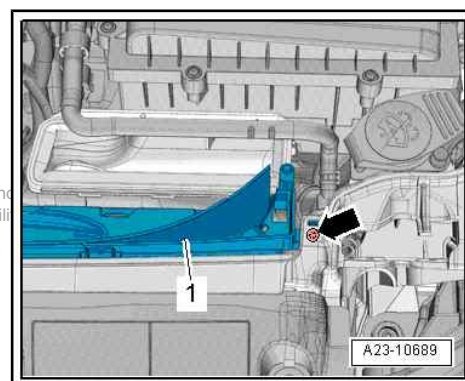


- Remove bolt -arrow- on both sides.
- Unclip air duct (bottom section) -1- and detach.

All further procedures are described in ⇒ Servicing 4-cylinder engine, 2.0 ltr. 4-valve TFSI; Rep. gr. 24 ; Intake manifold; Removing and installing throttle valve module - J338- .

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♦ ⇒ [“2.1 Exploded view - air cleaner housing”, page 75](#)



3.4 Cleaning throttle valve module

All procedures are described in ⇒ Servicing 4-cylinder engine, 2.0 ltr. 4-valve TFSI; Rep. gr. 24 ; Intake manifold; Cleaning throttle valve module .

3.5 Checking intake manifold change-over function

All procedures are described in ⇒ Servicing 4-cylinder engine, 2.0 ltr. 4-valve TFSI; Rep. gr. 24 ; Intake manifold; Checking intake manifold change-over function .



4 Injectors

All procedures and components can be found in ⇒ Servicing 4-cylinder engine, 2.0 ltr. 4-valve TFSI; Rep. gr. 24 ; Injectors .

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5 Senders and sensors

⇒ [“5.1 Removing and installing intake air temperature sender G42 / intake manifold pressure sender G71”, page 81](#)

⇒ [“5.2 Removing and installing air mass meter G70”, page 81](#)

⇒ [“5.3 Removing and installing fuel pressure sender G247”, page 82](#)

⇒ [“5.4 Checking fuel pressure sender G247”, page 83](#)

⇒ [“5.5 Removing and installing fuel pressure sender for low pressure G410”, page 83](#)

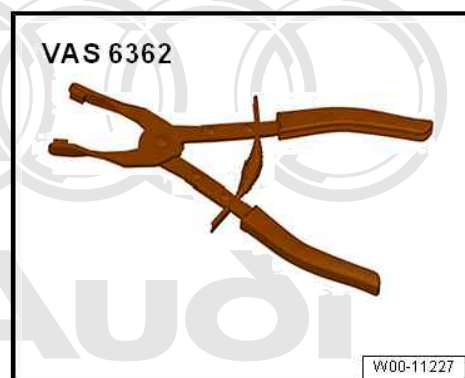
5.1 Removing and installing intake air temperature sender - G42- / intake manifold pressure sender - G71-

All procedures are described in ⇒ Servicing 4-cylinder engine, 2.0 ltr. 4-valve TFSI; Rep. gr. 24 ; Senders and sensors; Removing and installing intake air temperature sender - G42- / intake manifold pressure sender - G71- .

5.2 Removing and installing air mass meter - G70-

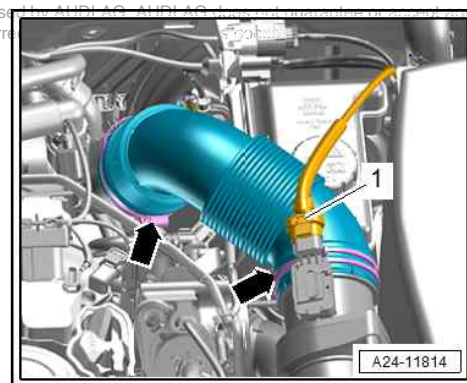
Special tools and workshop equipment required

- ◆ Hose clip pliers - VAS 6362-



Removing

- Remove engine cover panel ⇒ Servicing 4-cylinder engine, 2.0 ltr. 4-valve TFSI; Rep. gr. 10 ; Engine cover panel; Removing and installing engine cover panel .
- Unplug electrical connector -1-.
- Release hose clips -arrows- and detach air pipe.



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- Remove bolt -1-.
- Turn air mass meter - G70- -item 2- anti-clockwise -arrow B- and detach.

Installing

Installation is carried out in reverse order; note the following:

To ensure that the air mass meter -G70- functions correctly, it is important to observe the following notes and procedures.

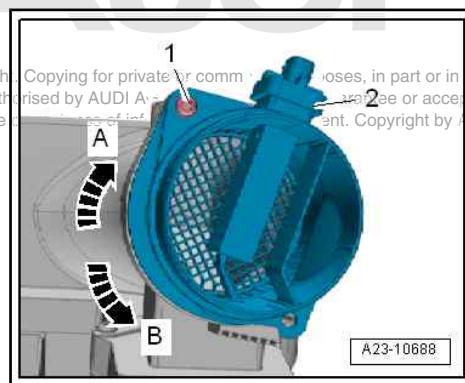
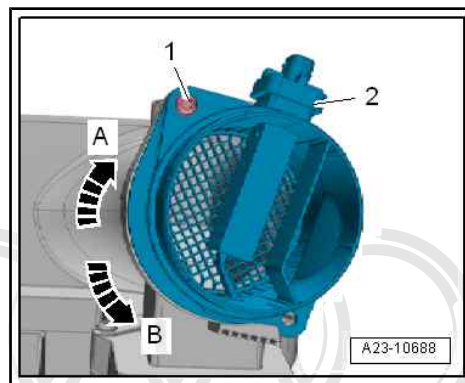
- If the air filter element is very dirty or wet, dirt particles or water can reach the air mass meter and falsify the detected air mass values. This will cause a loss of power, as the calculated injection quantities will be too low.
- Check air filter element and inside of air cleaner housing for dirt and clean if necessary ⇒ Maintenance ; Booklet 821 .
- Secure all hose connections with correct type of hose clips (as original equipment) ⇒ Electronic parts catalogue .

- Turn air mass meter - G70- -item 2- clockwise -arrow B- and secure.

- Install engine cover panel ⇒ Servicing 4-cylinder engine, 2.0 ltr. 4-valve TFSI; Rep. gr. 10 ; Engine cover panel; Removing and installing engine cover panel .

Tightening torques

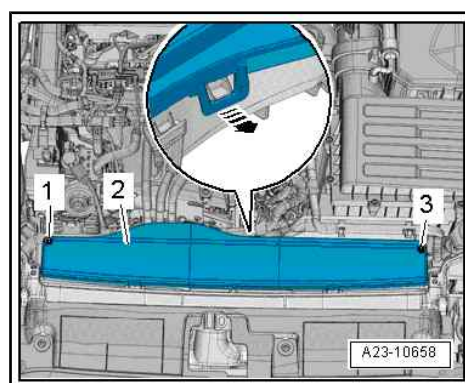
- ♦ ⇒ [“2.1 Exploded view - air cleaner housing”, page 75](#)
- ♦ ⇒ Servicing 4-cylinder engine, 2.0 ltr. 4-valve TFSI; Rep. gr. 21 ; Charge air system; Exploded view - hose connections for charge air system



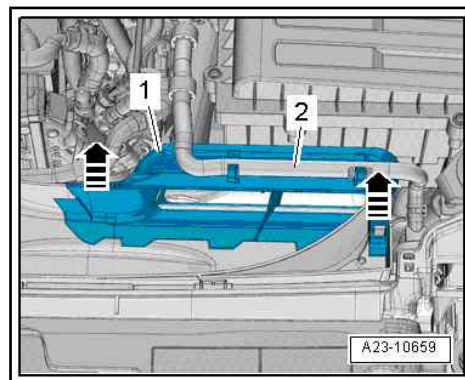
5.3 Removing and installing fuel pressure sender - G247-

Removing

- Remove bolts -1, 3-.
- Release fastener -arrow- and remove cover -2-.



- Move coolant hose -2- clear.
- Release fasteners -arrows- and detach air duct (top section) -1-.

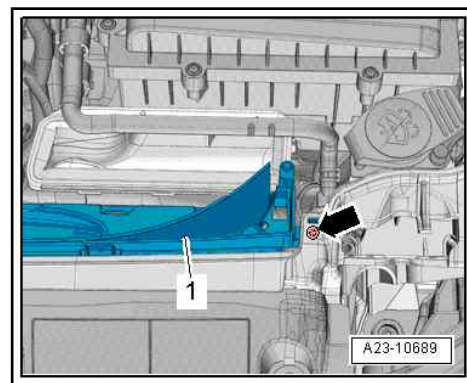


- Remove bolt -arrow- on both sides.
- Unclip air duct (bottom section) -1- and detach.

All further procedures are described in ⇒ Servicing 4-cylinder engine, 2.0 ltr. 4-valve TFSI; Rep. gr. 24 ; Senders and sensors; Removing and installing fuel pressure sender - G247- .

Tightening torques

- ◆ ⇒ [“2.1 Exploded view - air cleaner housing”, page 75](#)



5.4 Checking fuel pressure sender - G247-

All procedures are described in ⇒ Servicing 4-cylinder engine, 2.0 ltr. 4-valve TFSI; Rep. gr. 24 ; Senders and sensors; Checking fuel pressure sender - G247- .

5.5 Removing and installing fuel pressure sender for low pressure - G410-

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All procedures can be found in ⇒ Servicing 4-cylinder engine, 2.0 ltr. 4-valve TFSI; Rep. gr. 24 ; Injectors; Exploded view - fuel rail with injectors .



6 High-pressure pump

All procedures and components can be found in ⇒ Servicing 4-cylinder engine, 2.0 ltr. 4-valve TFSI; Rep. gr. 24 ; High-pressure pump .



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7 Lambda probe

All procedures and components can be found in ⇒ Servicing 4-cylinder engine, 2.0 ltr. 4-valve TFSI; Rep. gr. 24 ; Lambda probe .



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8 Engine control unit

⇒ ["8.1 Removing and installing engine/motor control unit J623 ", page 86](#)

8.1 Removing and installing engine/motor control unit - J623-

⇒ ["8.1.1 Removing and installing engine control unit J623 without protective housing", page 86](#)

⇒ ["8.1.2 Removing and installing engine control unit J623 with protective housing", page 87](#)

8.1.1 Removing and installing engine control unit - J623- without protective housing

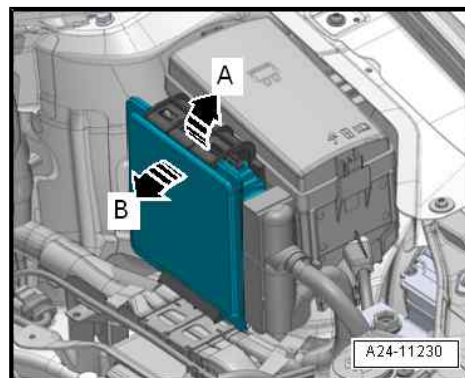
Special tools and workshop equipment required

- ◆ Vehicle diagnostic tester

Removing

If engine control unit - J623- is to be renewed, adaption values must be read out:

- Connect vehicle diagnostic tester , switch on ignition and select Replace engine control module in Guided functions mode.
- Switch off ignition.
- Remove battery ⇒ Electrical system; Rep. gr. 27 ; Battery; Removing and installing battery .
- Release retainer -arrow A- and take out engine control unit - J623- -arrow B-.
- Release and unplug connectors for engine control unit - J623- .



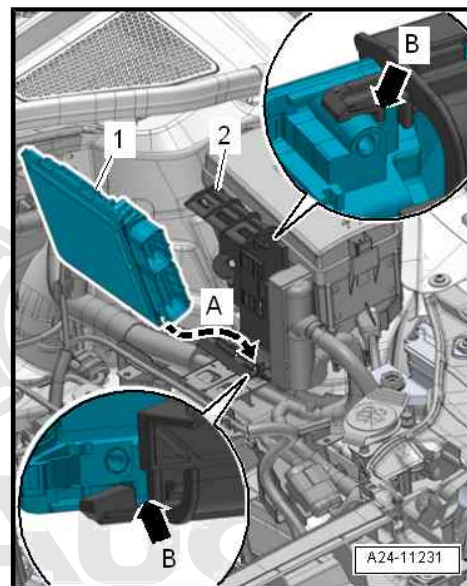
Installing

Installation is carried out in reverse order; note the following:

- Insert engine control unit - J623- -item 1- bottom edge first into bracket -2- -arrow A- and lock at top edge.
- Lugs on engine control unit must engage in notches at top and bottom of bracket -arrows B-.
- Install battery ⇒ Electrical system; Rep. gr. 27 ; Battery; Removing and installing battery .

After installing a new engine control unit:

- Activate engine control unit ⇒ Vehicle diagnostic tester, Guided Functions, Replace engine control unit.

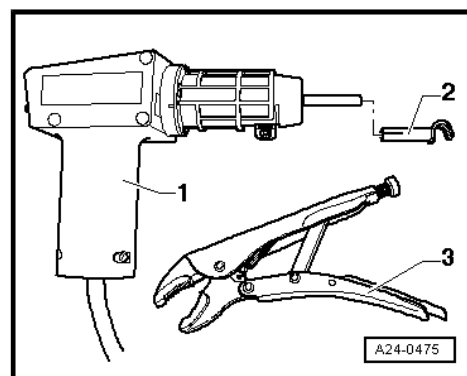


8.1.2 Removing and installing engine control unit - J623- with protective housing

Removing

Special tools and workshop equipment required

- ◆ Hot air blower - VAS 1978/14A- -item 1- with nozzle attachment -2- from wiring harness repair set - VAS 1978 B-



- ◆ Small grinder (commercially available)
- ◆ Vehicle diagnostic tester

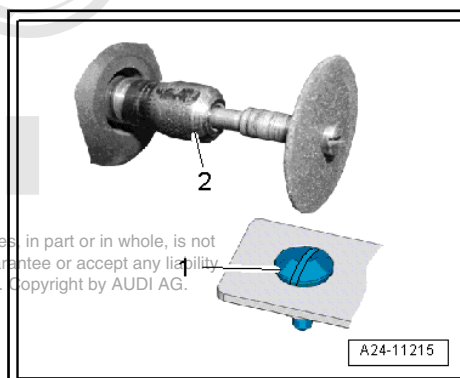
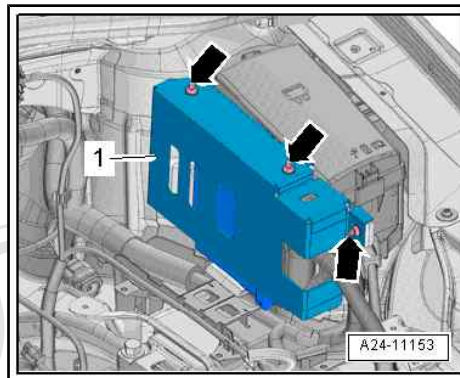
Removing

If engine control unit - J623- is to be renewed, adaption values must be read out:

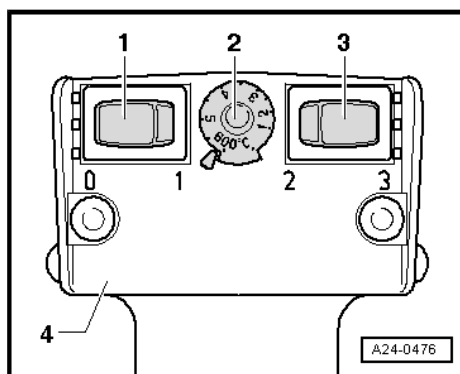
- Connect vehicle diagnostic tester , switch on ignition and select Replace engine control module in Guided functions mode.
- Switch off ignition.
- Remove battery ⇒ Electrical system; Rep. gr. 27 ; Battery; Removing and installing battery .

To remove protective housing -1-, unscrew shear bolts -arrows- as follows:

- Make groove (for a screwdriver) in head of shear bolt -1- using a small grinder -2-.



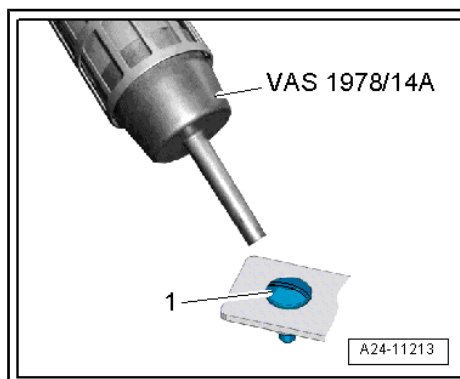
- The threads of the shear bolts are secured with locking fluid. To unscrew these bolts, the threads must be heated with the hot air blower.
- Set potentiometer -2- for temperature adjustment on hot air blower to maximum heating output and set switch -3- for air flow to setting "3".



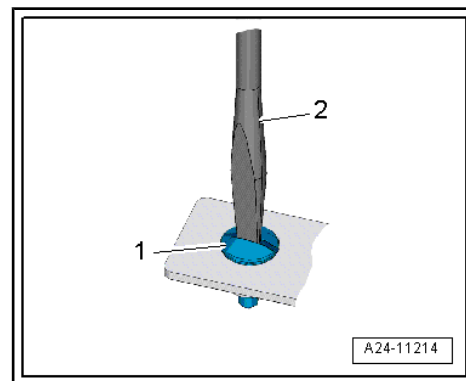
NOTICE

Risk of damage to surrounding components caused by hot air blower (overheating).

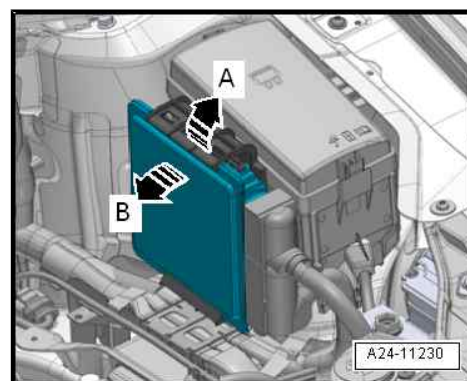
- Cover surrounding components if necessary.
- Heat head of shear bolt -1- for 20 to 30 seconds.



- Unscrew shear bolt -1- using screwdriver -2-.
- Detach protective housing from engine control unit - J623- .



- Release retainer -arrow A- and take out engine control unit - J623- -arrow B-.
- Release and unplug connectors for engine control unit - J623- .



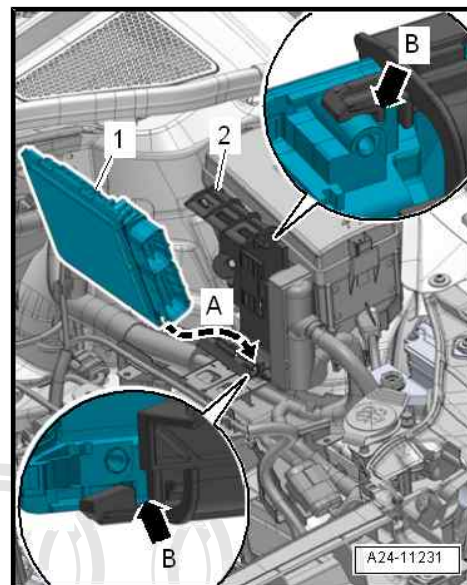
Installing

Installation is carried out in reverse order; note the following:

- Insert engine control unit - J623- -item 1- bottom edge first into bracket -2- -arrow A- and lock at top edge.
- Lugs on engine control unit must engage in notches at top and bottom of bracket -arrows B-.
- Make sure you fit protective housing back on engine control unit - J623- .
- Clean threaded holes for shear bolts to remove any residue from locking fluid. This can be done using a thread tap.
- Use new shear bolts.
- Install battery ⇒ Electrical system; Rep. gr. 27 ; Battery; Removing and installing battery .

After installing a new engine control unit:

- Activate engine control unit ⇒ Vehicle diagnostic tester, Guided Functions, Replace engine control unit.



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26 – Exhaust system

1 Exhaust pipes/silencers

⇒ [“1.1 Exploded view - silencers”, page 90](#)

⇒ [“1.2 Separating exhaust pipes/silencers”, page 93](#)

⇒ [“1.3 Removing and installing silencers”, page 95](#)

⇒ [“1.4 Stress-free alignment of exhaust system”, page 97](#)

⇒ [“1.5 Checking exhaust system for leaks”, page 97](#)

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1.1 Exploded view - silencers

⇒ [“1.1.1 Exploded view - silencers, vehicles with front-wheel drive”, page 90](#)

⇒ [“1.1.2 Exploded view - silencers, vehicles with four-wheel drive”, page 92](#)

1.1.1 Exploded view - silencers, vehicles with front-wheel drive

1 - Bolt

- ☐ 20 Nm

2 - Bracket

3 - Rubber mounting

- ☐ Renew if damaged

4 - Rear silencer

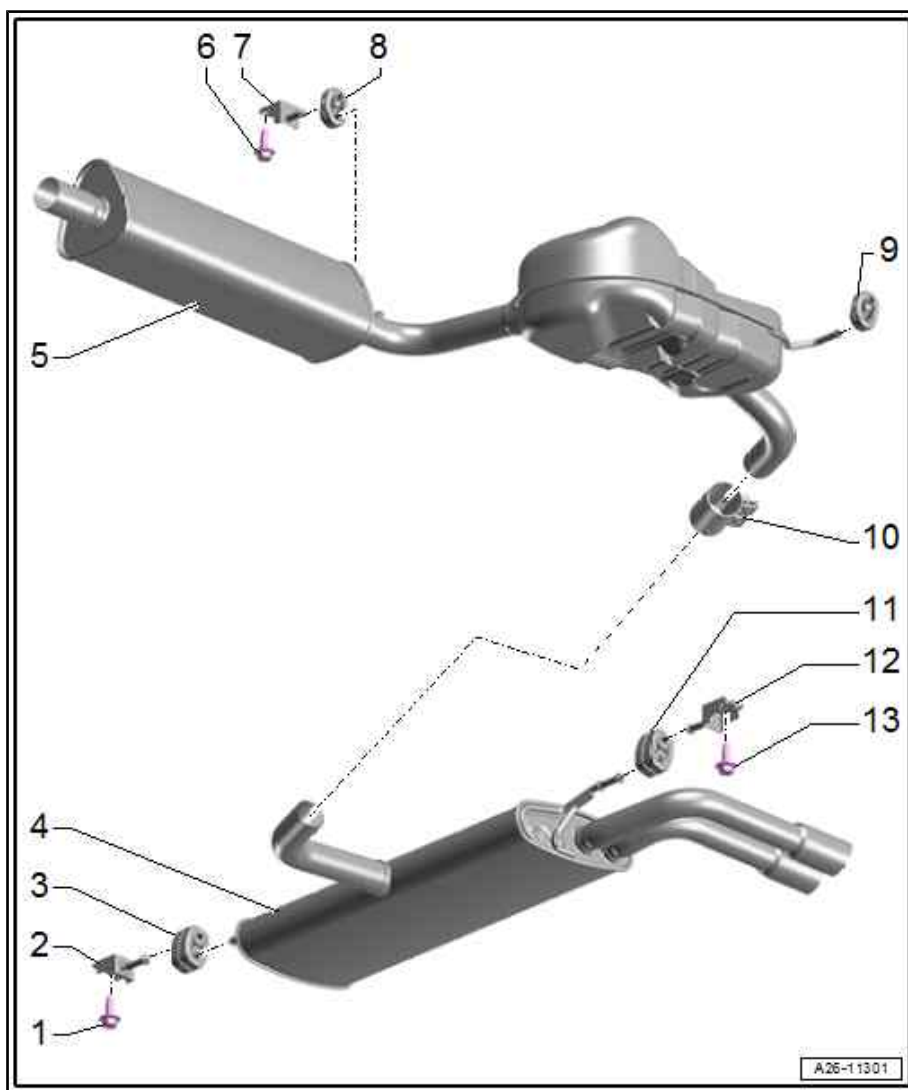
- ☐ Combined in one unit with rear silencer as original equipment. Can be renewed separately for repair purposes
- ☐ Removing and installing
⇒ [page 95](#)
- ☐ Cutting point
⇒ [page 93](#)
- ☐ Align exhaust system so it is free of stress
⇒ [page 97](#)

5 - Centre silencer

- ☐ Combined in one unit with rear silencer as original equipment. Can be renewed separately for repair purposes
- ☐ Removing and installing
⇒ [page 95](#)
- ☐ Cutting point
⇒ [page 93](#)
- ☐ Align exhaust system so it is free of stress
⇒ [page 97](#)

6 - Bolt

- ☐ 20 Nm



7 - Bracket

8 - Rubber mounting

- ☐ Renew if damaged

9 - Rubber mounting

- ☐ Renew if damaged

10 - Clamp (rear)

- ☐ Before tightening, align exhaust system so it is free of stress ⇒ [page 97](#)
- ☐ Installation position ⇒ [page 93](#)
- ☐ Tighten bolted connections evenly

11 - Rubber mounting

- ☐ Renew if damaged

12 - Bracket

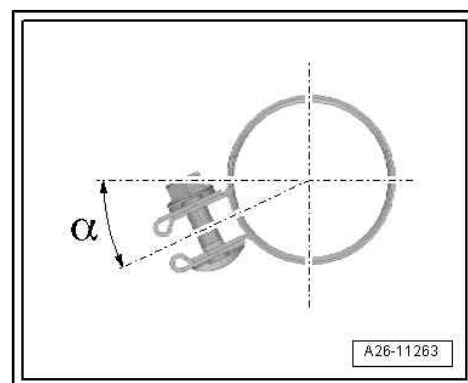
13 - Bolt

- ☐ 20 Nm

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Installation position of rear clamp

- Fit clamp in position shown.
- Angle α = approx. 20°
- Bolt connections face to rear.
- Nuts facing upwards



1.1.2 Exploded view - silencers, vehicles with four-wheel drive

1 - Bolt

- ☐ 20 Nm

2 - Bracket

3 - Rubber mounting

- ☐ Renew if damaged

4 - Rubber mounting

- ☐ Renew if damaged

5 - Clamp (rear)

- ☐ Before tightening, align exhaust system so it is free of stress
⇒ [page 97](#)
- ☐ Installation position
⇒ [page 91](#)
- ☐ Tighten bolted connections evenly

6 - Nut

- ☐ 20 Nm

7 - Centre silencer

- ☐ Combined in one unit with rear silencer as original equipment. Can be renewed separately for repair purposes
- ☐ Removing and installing ⇒ [page 95](#)
- ☐ Cutting point ⇒ [page 93](#)
- ☐ Align exhaust system so it is free of stress
⇒ [page 97](#)

8 - Rubber mounting

- ☐ Renew if damaged

9 - Bracket

10 - Bolt

- ☐ 20 Nm

11 - Rubber mounting

- ☐ Renew if damaged

12 - Bracket

13 - Bolt

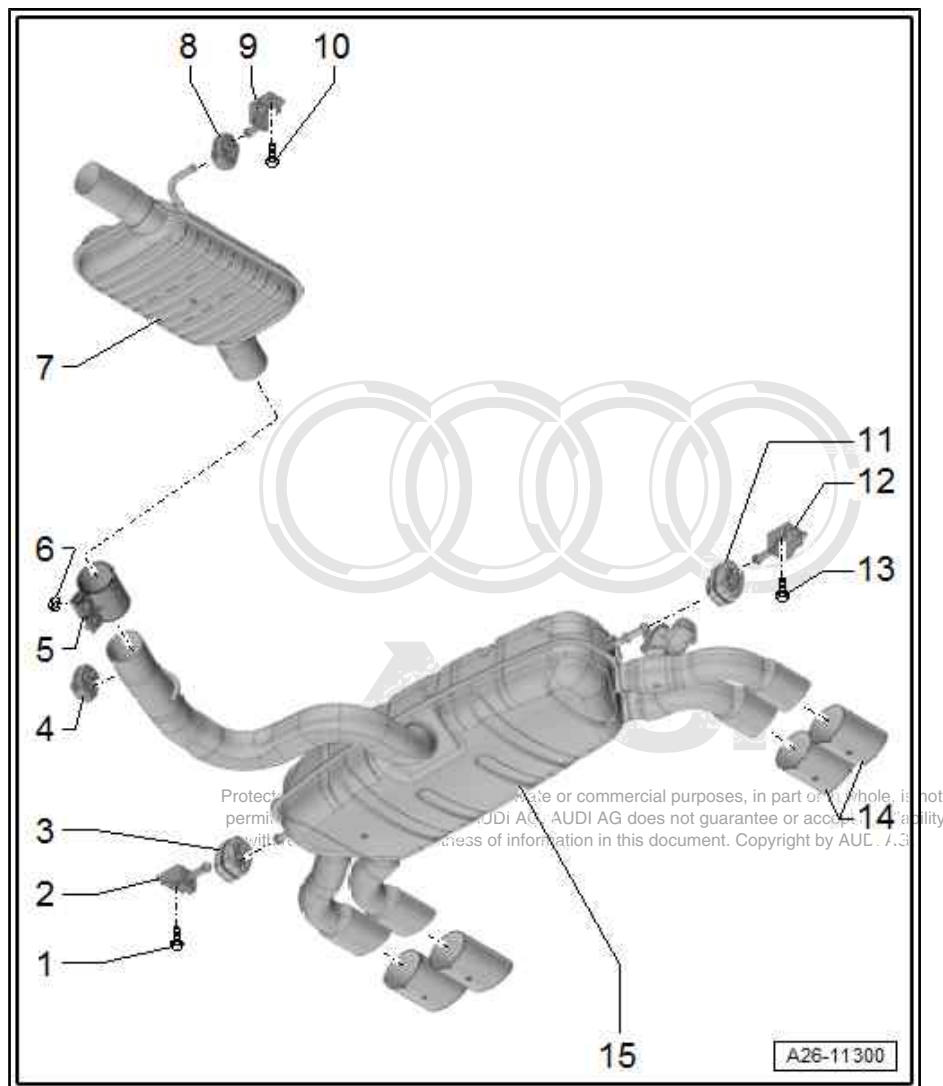
- ☐ 20 Nm

14 - Trim

- ☐ For tailpipes

15 - Rear silencer

- ☐ Combined in one unit with rear silencer as original equipment. Can be renewed separately for repair purposes
- ☐ Removing and installing ⇒ [page 95](#)
- ☐ Cutting point ⇒ [page 93](#)

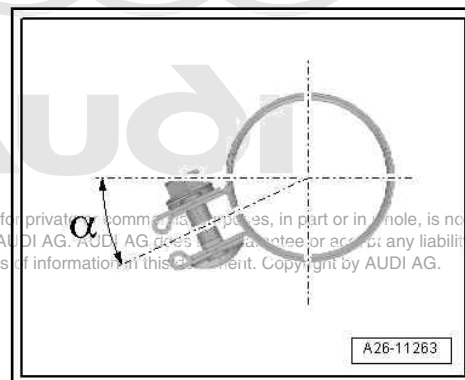


- ❑ Align exhaust system so it is free of stress ➔ [page 97](#)

Installation position of rear clamp

- Fit clamp in position shown.
- Angle $-\alpha-$ = approx. 20°
- Bolt connections face to left
- Nuts facing upwards

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1.2 Separating exhaust pipes/silencers

➔ ["1.2.1 Separating exhaust pipes/silencers - vehicles with front-wheel drive", page 93](#)

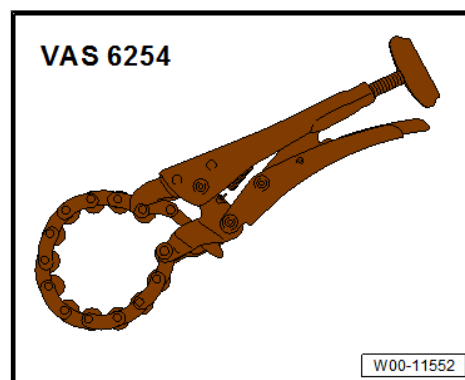
➔ ["1.2.2 Separating exhaust pipes/silencers - vehicles with four-wheel drive", page 94](#) -

1.2.1 Separating exhaust pipes/silencers - vehicles with front-wheel drive

- ◆ The connecting pipe can be cut through at the cutting location in order to renew the centre and rear silencers separately.
- ◆ The cutting point is marked by an indentation on the circumference of the exhaust pipe.

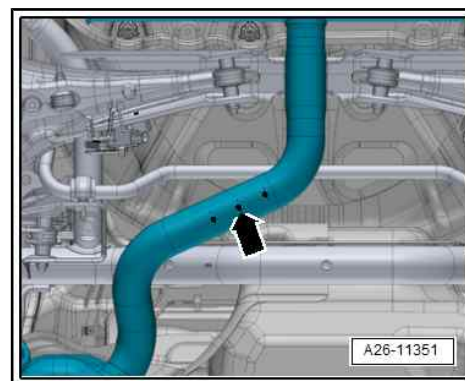
Special tools and workshop equipment required

- ◆ Chain pipe cutter - VAS 6254-

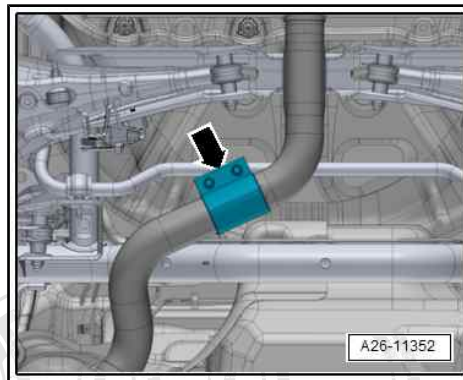


Procedure

- Cut through exhaust pipe at right angles at the position marked -arrow- using chain pipe cutter - VAS 6254- .



- When installing, position centre of clamp -arrow- over cutting location.
- Fit rear clamp ⇒ [page 91](#) .
- Align the exhaust system so it is free of stress ⇒ [page 97](#) .



1.2.2 Separating exhaust pipes/silencers - vehicles with four-wheel drive

- ♦ The connecting pipe can be cut through at the cutting location in order to renew the centre and rear silencers separately.
- ♦ The cutting point is marked by an indentation on the circumference of the exhaust pipe.

Special tools and workshop equipment required

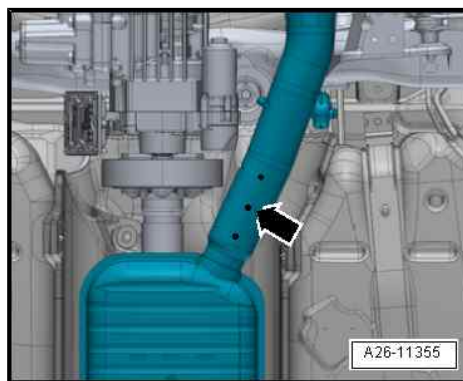
- ♦ Chain pipe cutter - VAS 6254-

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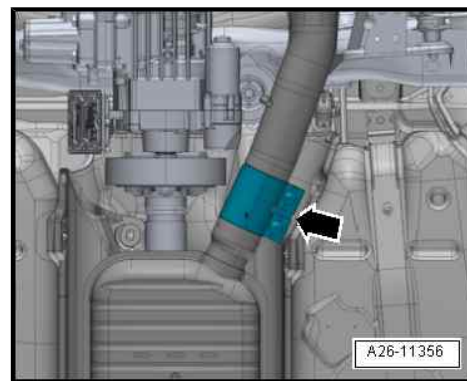


Procedure

- Cut through exhaust pipe at right angles at the position marked -arrow- using chain pipe cutter - VAS 6254- .



- When installing, position centre of clamp -arrow- over cutting location.
- Fit rear clamp ⇒ [page 93](#) .
- Align the exhaust system so it is free of stress ⇒ [page 97](#) .



1.3 Removing and installing silencers

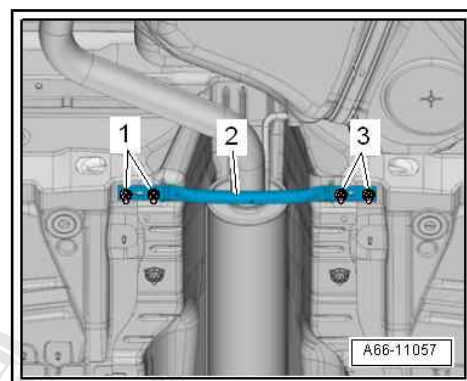
⇒ [“1.3.1 Removing and installing silencers - vehicles with front-wheel drive”, page 95](#)

⇒ [“1.3.2 Removing and installing silencers - vehicles with four-wheel drive”, page 96](#)

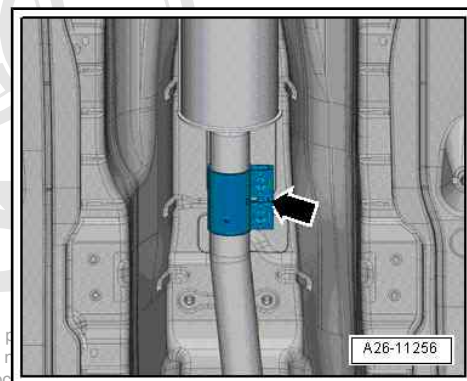
1.3.1 Removing and installing silencers - vehicles with front-wheel drive

Removing

- Remove tunnel cross-piece (rear) -2- ⇒ General body repairs, exterior; Rep. gr. 66 ; Underbody trim; Exploded view - underbody trim .



- Loosen clamp -arrow- and push towards rear.



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- Disengage mounting -2- at exhaust system (rear).

CAUTION

Risk of accident caused by weight of silencers.

- Perform the following work with the assistance of a second mechanic.

- Remove bolt -3- (left and right) and bolt -4- and detach silencers -1-.

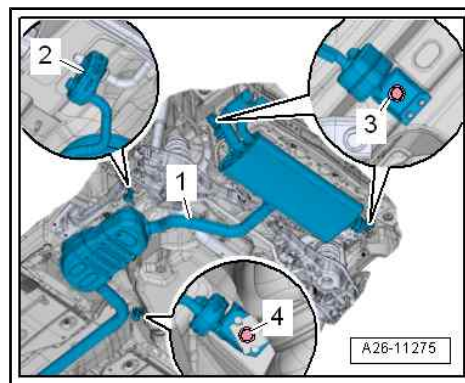
Installing

Installation is carried out in reverse order; note the following:

- Align the exhaust system so it is free of stress ➔ [page 97](#) .

Tightening torques

- ♦ ➔ [“1.1 Exploded view - silencers”, page 90](#)
- ♦ Tunnel cross-piece ➔ General body repairs, exterior; Rep. gr. 66 ; Underbody trim; Exploded view - underbody trim



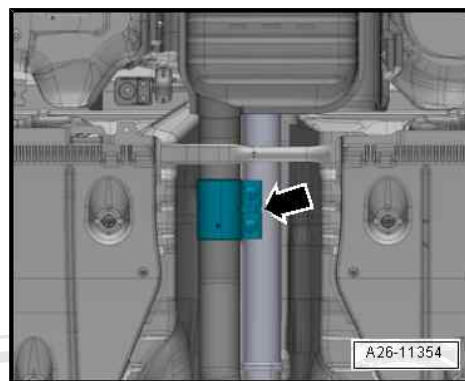
1.3.2 Removing and installing silencers - vehicles with four-wheel drive

Removing

- Loosen bolt connections for front clamp -arrow-.

A3 Cabriolet:

- Remove relevant diagonal strut ➔ Running gear, axles, steering; Rep. gr. 42 ; Subframe; Exploded view - subframe .



All vehicles (continued):

- Disengage mounting -3- at exhaust system (rear).

CAUTION

Risk of accident caused by weight of silencers.

- Perform the following work with the assistance of a second mechanic.

- Unscrew bolts -1, 2- and remove silencers.

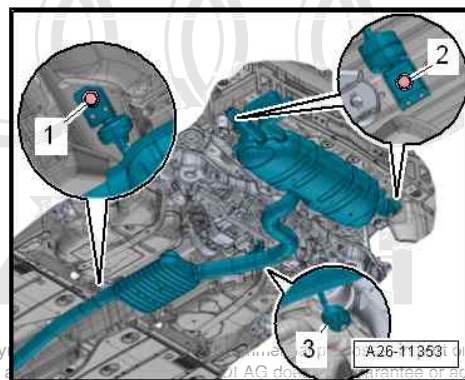
Installing

Installation is carried out in reverse order; note the following:

- Align the exhaust system so it is free of stress ➔ [page 97](#) .

Tightening torques

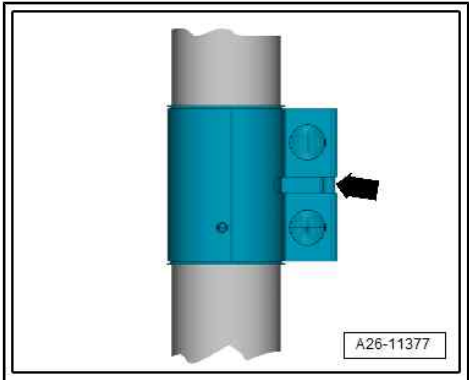
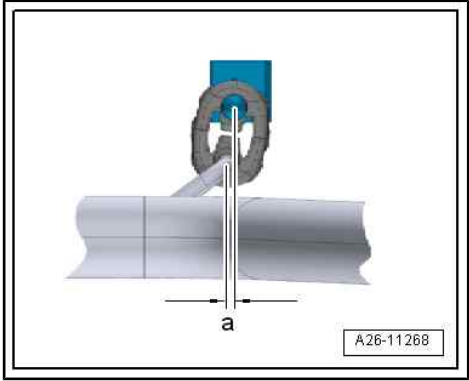
- ♦ ➔ [“1.1 Exploded view - silencers”, page 90](#)
- ♦ Diagonal strut ➔ Running gear, axles, steering; Rep. gr. 42 ; Subframe; Exploded view - subframe



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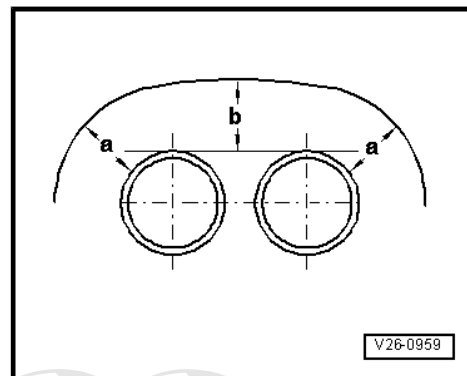
1.4 Stress-free alignment of exhaust system

Procedure

- The exhaust system must be aligned when it is cool.
 - Loosen bolt connections for front clamp -arrow-.
- 
- A26-11377
- Push exhaust system towards front of vehicle until preloading at mounting for exhaust pipe -a- = 5 mm.
 - Fit front clamp ⇒ Servicing 4-cylinder engine, 2.0 ltr. 4-valve TFSI; Rep. gr. 26 ; Emission control system; Exploded view - emission control system .
- 
- A26-11268
- Align rear silencer so that there is an equal distance -a- and -b- between bumper cut-out and tailpipes.
 - Unfasten rear silencer mounting to align tailpipes.

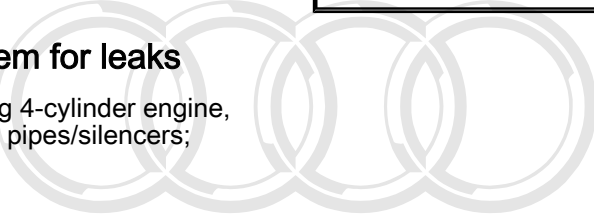
Tightening torques

- ◆ ⇒ ["1.1 Exploded view - silencers", page 90](#)



1.5 Checking exhaust system for leaks

All procedures are described in ⇒ Servicing 4-cylinder engine, 2.0 ltr. 4-valve TFSI; Rep. gr. 26 ; Exhaust pipes/silencers; Checking exhaust system for leaks .


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2 Emission control system

All procedures and components can be found in ⇒ Servicing 4-cylinder engine, 2.0 ltr. 4-valve TFSI; Rep. gr. 26 ; Emission control system .



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3 Secondary air system

⇒ [“3.1 Exploded view - secondary air system”, page 99](#)

⇒ [“3.2 Removing and installing secondary air pump motor V101”, page 100](#)

⇒ [“3.3 Removing and installing secondary air inlet valve N112”, page 100](#)

⇒ [“3.4 Removing and installing sender 1 for secondary air pressure G609”, page 101](#)

3.1 Exploded view - secondary air system

1 - Bolt

- ☐ 9 Nm

2 - O-ring

- ☐ Check for damage
- ☐ Supplied with
⇒ [Item 17 \(page 100\)](#)
- ☐ Lubricate lightly with engine oil

3 - O-ring

- ☐ Check for damage
- ☐ Supplied with
⇒ [Item 4 \(page 99\)](#)
- ☐ Lubricate lightly with engine oil

4 - Sender 1 for secondary air pressure - G609

- ☐ Removing and installing
⇒ [page 101](#)

5 - O-ring

- ☐ Check for damage
- ☐ Supplied with
⇒ [Item 16 \(page 100\)](#)
- ☐ Lubricate lightly with engine oil

6 - Air cleaner housing

- ☐ Removing and installing
⇒ [page 76](#)

7 - O-ring

- ☐ Check for damage
- ☐ Supplied with
⇒ [Item 16 \(page 100\)](#)
- ☐ Lubricate lightly with engine oil

8 - Secondary air pump motor - V101-

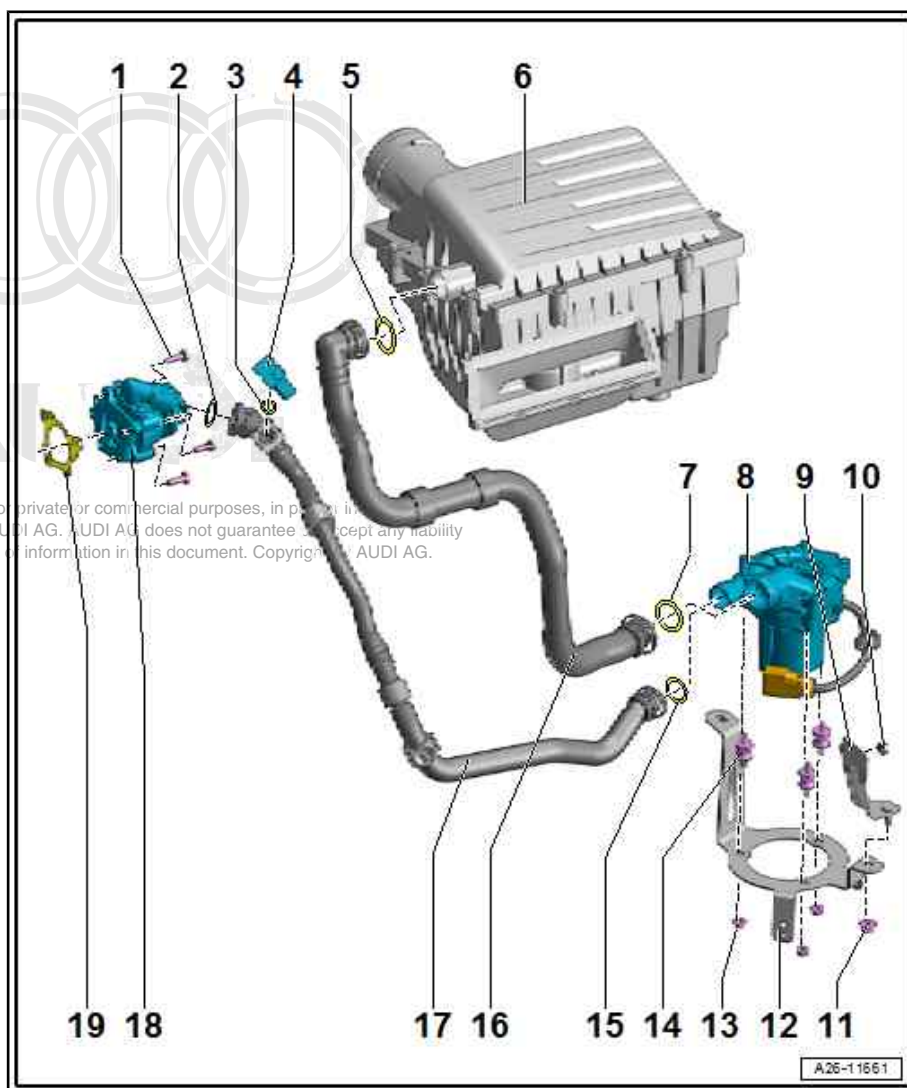
- ☐ ⇒ [“3.2 Removing and installing secondary air pump motor V101”, page 100](#)

9 - Bracket

- ☐ To body

10 - Nut

- ☐ 8 Nm



11 - Nut

- ☐ 8 Nm

12 - Bracket

- ☐ Secondary air pump motor

13 - Nut

- ☐ 8 Nm

14 - Rubber mounting

15 - O-ring

- ☐ Check for damage
- ☐ Supplied with ➔ [Item 17 \(page 100\)](#)
- ☐ Lubricate lightly with engine oil

16 - Connecting line

- ☐ Suction pipe
- ☐ From air cleaner housing to secondary air pump motor

17 - Connecting line

- ☐ Pressure line
- ☐ From secondary air inlet valve to secondary air pump motor

18 - Secondary air inlet valve

- ☐ Removing and installing ➔ [page 100](#)

19 - Gasket

- ☐ Renew

3.2 Removing and installing secondary air pump motor - V101-

Removing

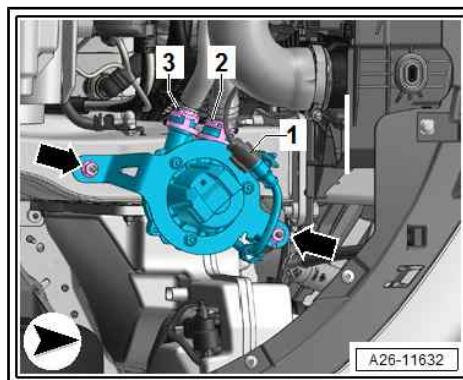
- Remove noise insulation ➔ General body repairs, exterior; Rep. gr. 66 ; Noise insulation; Exploded view - noise insulation .
- Remove front wheel housing liner (left-side) ➔ General body repairs, exterior; Rep. gr. 66 ; Wheel housing liners; Removing and installing wheel housing liner (front) .
- Unplug electrical connector -1-.
- Release catches -2 ... 3- and disconnect lines from secondary air pump motor - V101- .
- Remove nuts -arrows- and detach secondary air pump motor - V101- with bracket.

Installing

Installation is carried out in reverse order; note the following:

Tightening torques

- ◆ ➔ ["3.1 Exploded view - secondary air system", page 99](#)

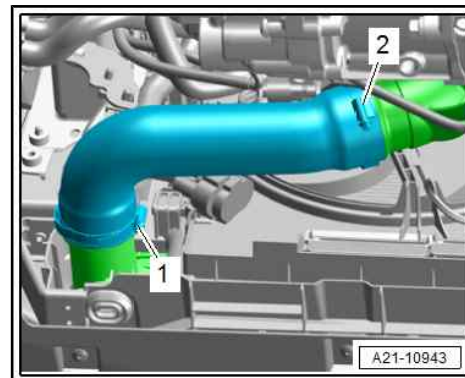


3.3 Removing and installing secondary air inlet valve - N112-

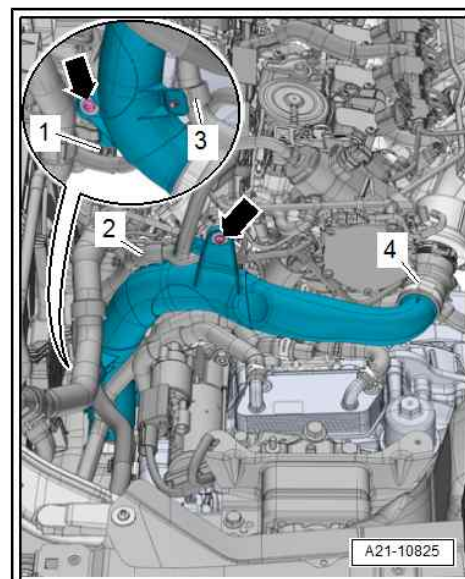
- Flange must not be separated from secondary air inlet valve.
- Secondary air inlet valve can only be renewed together with flange.

Removing

- Remove air cleaner housing ➔ [page 76](#) .
- Remove battery tray ➔ Electrical system; Rep. gr. 27 ; Battery; Removing and installing battery tray .
- Release hose clip -2- and detach air hose from air pipe.



- Move electrical wiring harnesses -1, 2- clear at air pipe.
- Unfasten screw-type clip -4-.
- Unscrew bolts -arrows- and detach air pipe.



- Unplug electrical connector -1-.
- Press locking ring in on both sides and detach connecting pipe -2-.
- Remove bolts -arrows- and detach secondary air inlet valve - N112- -3-.

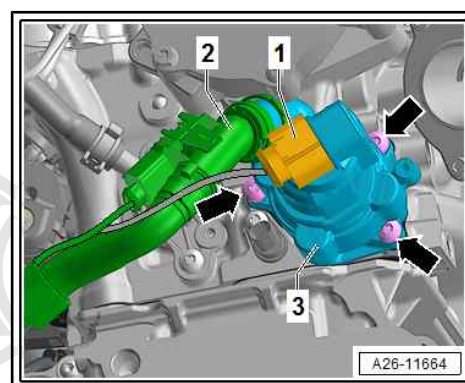
Installing

Installation is carried out in reverse order; note the following:

- Renew gasket.

Tightening torques

- ◆ ➔ ["3.1 Exploded view - secondary air system", page 99](#)



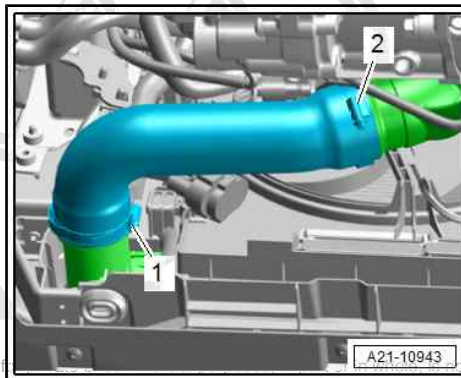
3.4 Removing and installing sender 1 for secondary air pressure - G609-

Removing

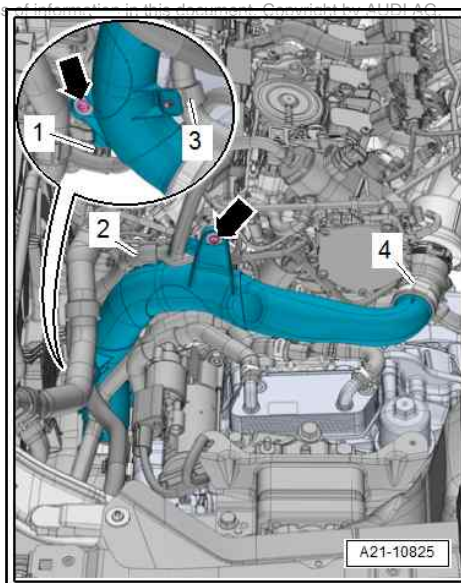
- Remove air cleaner housing ➔ [page 76](#) .

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- Release hose clip -2- and detach air hose from air pipe.



- Move electrical wiring harnesses -1, 2- clear at air pipe.
- Unfasten screw-type clip -4-.
- Unscrew bolts -arrows- and detach air pipe.



- Unplug electrical connector -1-.
- Release catches and detach sender 1 for secondary air pressure - G609- -2-.

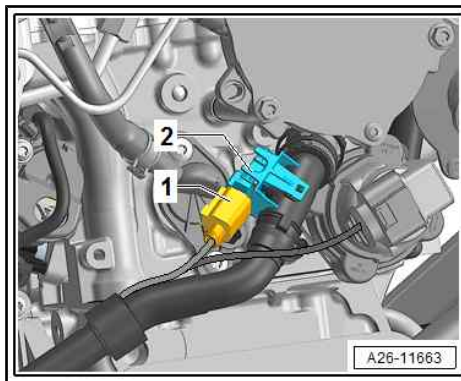
Installing

Installation is carried out in reverse order; note the following:



Note

Fit new O-ring.



28 – Ignition system

1 Ignition system

All procedures and components can be found in ⇒ Servicing 4-cylinder engine, 2.0 ltr. 4-valve TFSI; Rep. gr. 28 ; Ignition system; Exploded view - ignition system .



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