



00 – Technical data

1 Safety information

(VRL015283; Edition 02.2021)

⇒ [r1.1 regulations for working on fuel supply", page 1](#)

⇒ [m1.2 measures when working on vehicles with a start/stop system", page 1](#)

⇒ [p1.3 precautions when using testers and measuring instruments during a road test", page 2](#)

⇒ [p1.4 precautions when working on ignition system", page 2](#)

⇒ [p1.5 precautions when working on the cooling system", page 2](#)

⇒ [p1.6 precautions when working on exhaust system", page 3](#)

1.1 Safety regulations for working on fuel supply

Risk of injury from highly pressurised fuel.

The fuel system is pressurised. Injury from fuel spray possible.

Before opening the fuel system:

- Wear protective goggles.
- Wear protective gloves.
- To release pressure, wrap a clean cloth around the connection and carefully loosen the connection.

Danger of fire caused by escaping fuel

When the battery is connected and the driver door opens, the door contact switch activates the fuel pump. Escaping fuel can ignite and cause a fire.

- Disconnect voltage supply to fuel pump before opening the fuel system.

1.2 Safety measures when working on vehicles with a start/stop system

Risk of injury due to unexpected engine/motor start

If the vehicle's start/stop system is activated, the engine can start unexpectedly. A message in the dash panel insert indicates whether the start/stop system is activated.

- Deactivate start/stop system by switching off the ignition.



1 - Poly V-belt

- Check for wear
- Do not kink
- Poly V-belt routing ⇒ [page 84](#)
- Removing and installing ⇒ [page 85](#)
- When installing, make sure it is properly seated on pulleys.

2 - Tensioning device for poly V-belt

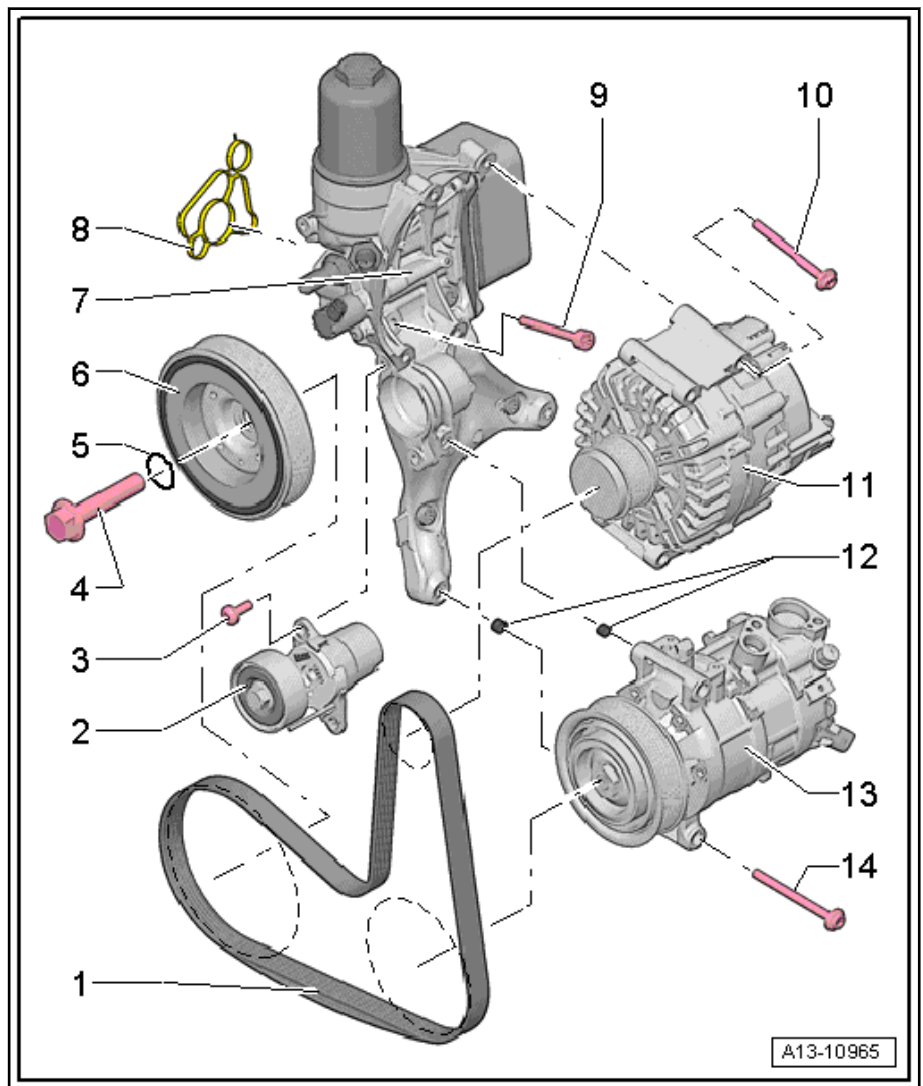
- Swing with open-end spanner to slacken poly V-belt.
- Lock with locking pin - T10060 A-.
- Removing and installing ⇒ [page 87](#)
- Specified torque for tensioning roller to tensioner: 60 Nm

3 - Bolt

- Renew
- 8 Nm +45°

4 - Bolt

- Renew
- Moisten O-ring with oil.
- Use counter-hold tool - T10355- to loosen and tighten
- See ⇒ Electronic parts catalogue (ETKA) for allocation



Property class 8.8: 150 Nm +90

Property class 10.9: 100 Nm +180

- Removing and installing ⇒ [page 88](#)

5 - O-ring

- Not a replacement part. Included in items supplied with bolt.

6 - Vibration damper

- With poly V-belt pulley
- Removing and installing ⇒ [page 88](#)
- Renew seal for vibration damper ⇒ [page 100](#)

7 - Ancillary bracket

- With oil filter and engine oil cooler
- Removing and installing ancillary bracket ⇒ [page 95](#) .
- Removing and installing engine oil cooler ⇒ [page 251](#)

8 - Seal

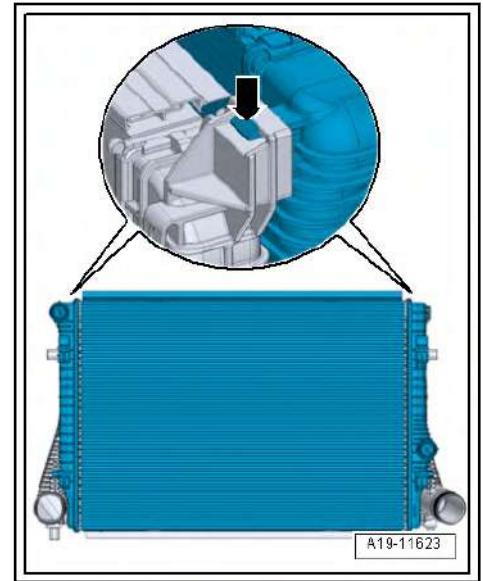
- Renew

9 - Bolt

- Renew



Installing



- If there are minor dents in the fins, refer to [⇒ page 8](#) .
- Renew O-rings.
- Insert radiator at an angle into lower charge air cooler mounting, and engage radiator in charge air cooler -arrow-. Ensure proper engagement by pulling.
- Install radiator cowl [⇒ page 364](#) .
- Connect coolant hose with plug-in connector [⇒ page 349](#) .
- Fill with new coolant [⇒ page 286](#) .

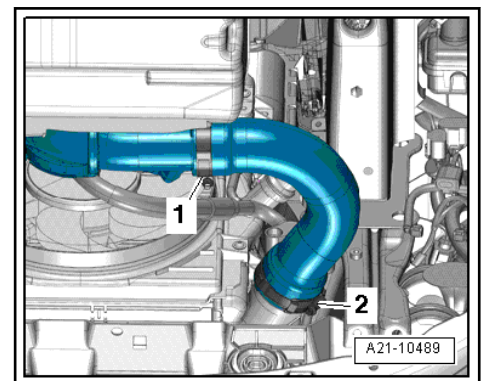
Specified torques

- ◆ [⇒ o4.1 overview – radiator”, page 348](#)

4.4.2 Removing and installing radiator, Shar-an

Removing

- Drain coolant [⇒ page 278](#) .
- Remove air filter housing [⇒ page 443](#) .
- Remove radiator cowl [⇒ page 364](#) .
- Release hose clips -1, 2- and remove right charge air hose.



- Unscrew securing bolts -arrows- for charge air cooler -2- on right and left.



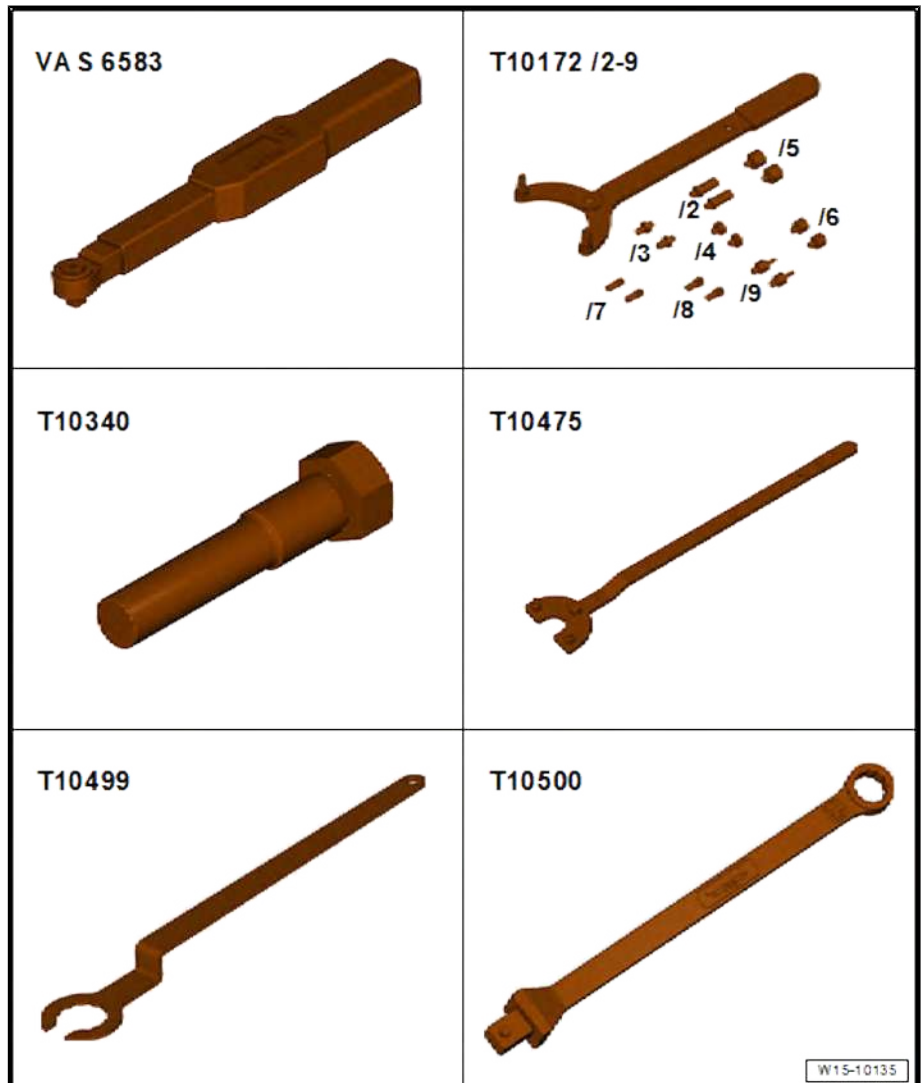
⇒ Fig. “Tightening toothed belt pulley for exhaust camshaft to specified final torque:”, page 178 .

Specified torques

- ◆ ⇒ “2.2 Assembly overview - toothed belt”, page 137
- ◆ ⇒ “1.2 Assembly overview - camshaft housing”, page 125
- ◆ ⇒ “2.1 Assembly overview - coolant pump, thermostat”, page 235
- ◆ ⇒ “2.1 Assembly overview - air filter housing”, page 320
- ◆ ⇒ Brake system; Rep. gr. 45 ; Control unit and hydraulic unit; Assembly overview - control unit and hydraulic unit
- ◆ ⇒ Brake system; Rep. gr. 47 ; Brake servo/brake master cylinder, Assembly overview - brake servo/brake master cylinder

2.8 Removing toothed belt from camshaft

Special tools and workshop equipment required



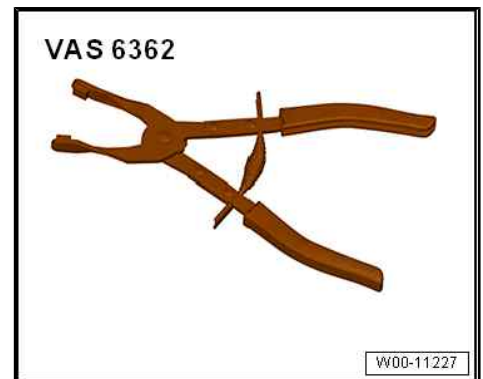
- ◆ Torque wrench - VAS 6583-
- ◆ Counterhold - T10172- with adapter -T10172/1-
- ◆ Locating bolt - T10340-
- ◆ Counter-hold tool - T10475-



- ◆ Drip tray for workshop hoist - VAS 6208-

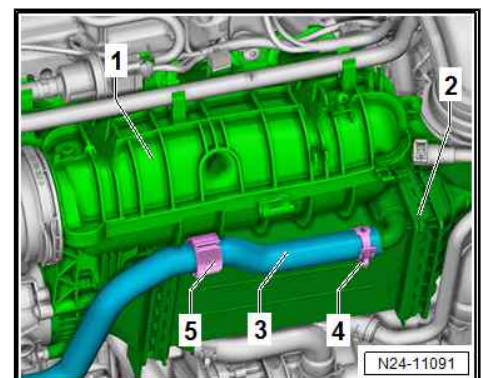


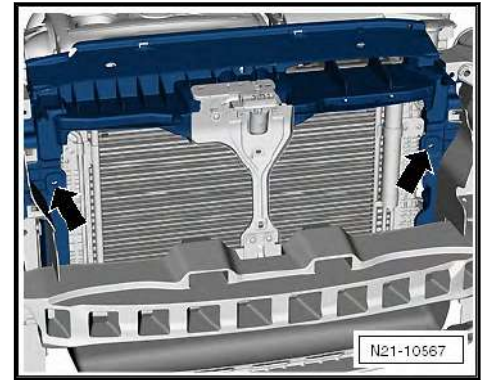
- ◆ Spring-type clip pliers - VAS 6362-



Removing

- Remove noise insulation ⇒ General body repairs, exterior; Rep. gr. 66 ; Noise insulation; Assembly overview - noise insulation .
- Drain coolant
⇒ [“1.3 Draining and adding coolant”, page 222](#) .
- Remove electrical coolant pump
⇒ [“2.4 Removing and installing electric coolant pump”, page 244](#) .
- Release and open clip -5-, and detach coolant hose -3-.
- Open clamp -4-, and pull off coolant hose -3- off charge air cooler.
- Remove intake manifold -1-
⇒ [“3.2 Removing and installing intake manifold”, page 349](#) .





- Install front bumper cover ⇒ General body repairs, exterior; Rep. gr. 63; Front bumper; Removing and installing bumper cover.
- Install radiator cowl ⇒ [page 345](#) .
- Check O-rings for damage, renew if necessary.
- Connect coolant hose with plug-in connector ⇒ [page 335](#) .

! NOTICE

Risk of damage to surfaces on inside of components

- **After renewing radiator, flush cooling system and replace coolant.**
- Flush cooling system ⇒ [page 274](#) .

If the existing radiator has been installed:

- Add coolant ⇒ [page 252](#) .

Torque settings

Component	Specified torque
Bolts for rubber bushes if reusing	5 Nm

- ◆ ⇒ [o4.1 overview - radiator/radiator fan](#)”, [page 333](#)
- ◆ ⇒ [o4.2 overview – radiator cowl and radiator fan](#)”, [page 336](#)
- ◆ ⇒ [o3.1 overview - air filter housing](#)”, [page 410](#)
- ◆ ⇒ General body repairs, exterior; Rep. gr. 50; Lock carrier; Assembly overview - lock carrier
- ◆ ⇒ General body repairs, exterior; Rep. gr. 66; Noise insulation; Assembly overview - noise insulation

4.5 Removing and installing radiator cowl

Removing

- Remove noise insulation ⇒ General body repairs, exterior; Rep. gr. 66; Noise insulation; Assembly overview - noise insulation.
- Remove air duct on lock carrier ⇒ [page 414](#) .
- If necessary, lift retaining clip -arrow- and remove upper left coolant hose from radiator.

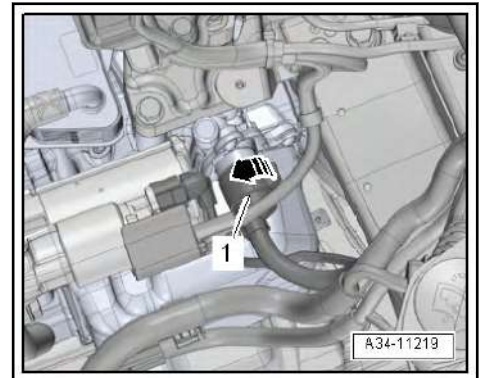


- To become electrostatically discharged, touch an earthed object by hand (without gloves).

i Note

Some connectors of the rotary fastener have a retaining ring. After releasing the connector, the retaining ring is rendered useless and must be renewed.

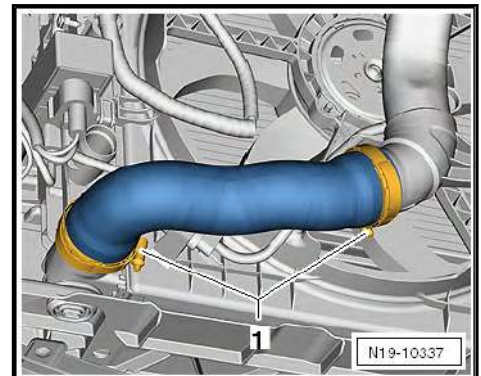
- Release rotary fastener of connector for mechatronic unit -1- by turning in direction of starter and pull off connector.



- Remove noise insulation ⇒ General body repairs, exterior; Rep. gr. 66; Noise insulation; Assembly overview - noise insulation.

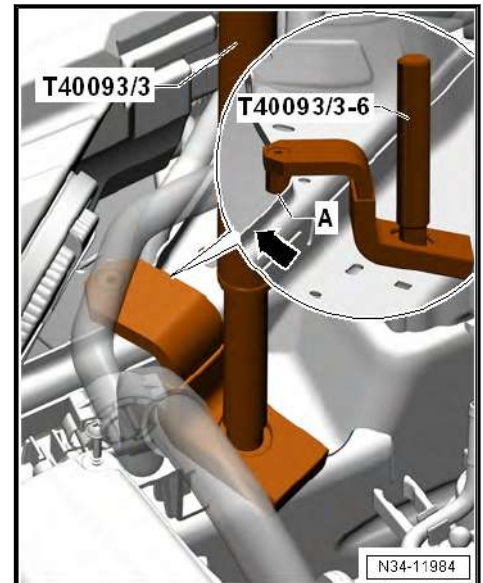
Vehicles with 1.8 l or 2.0 l petrol engine

- Remove connecting hose between charge air cooler and charge air pipe ⇒ Rep. gr. 21; Charge air system; Assembly overview - charge air system.

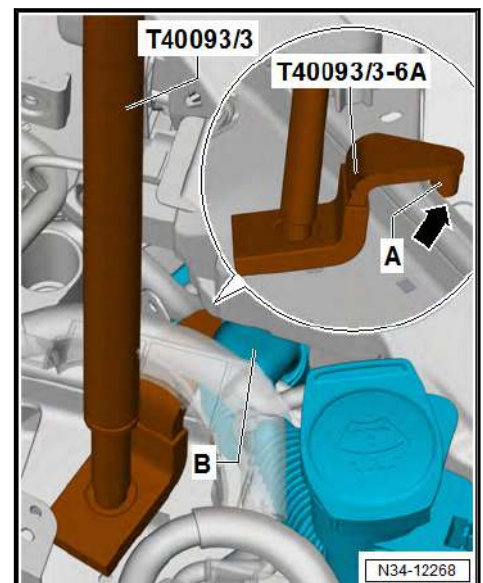


Vehicles with 1.4 l petrol engine

- Remove lower front coolant hose from radiator ⇒ Rep. gr. 19; Cooling system/coolant; Draining and filling cooling system.



- Place adapters -T40093/3-6A- onto both longitudinal members (illustration shows right longitudinal member).
- If necessary, carefully unclip any pipes for air conditioning system in front area. Do not disconnect pipe/hose system => Heating, air conditioning; Rep. gr. 87; Refrigerant circuit; System overview - refrigerant circuit.
- Position adapter -T40093/3-6A- on left longitudinal member directly behind filler pipe for washer fluid reservoir.



- Each of the adapters -T40093/3-6A- locks with pin -A- behind the web of the longitudinal member -arrow-.
- Screw on spindle from engine support supplement set -T40093 /3-, connect it via square tube -T40091/1- to engine support bracket -10-222 A- and fasten connection (=> previous fig.).
- The square tube -T40091/1- must be flush with the connecting piece -T40091/3- and the engine support supplement set -T40093 /3- (=> previous figure).
- Then attach spindles to engine support eyes.



2 Overview of fitting locations

⇒ "2.1 Overview of fitting locations - ABS/ESP", page 10

2.1 Overview of fitting locations - ABS/ESP

1 - ABS control unit - J104-

- ❑ Installation location: on hydraulic unit, on passenger side of engine compartment.
- ❑ Do not separate connector before successfully completing self-diagnosis. Switch ignition off before separating connector.

The following components are integrated into the control unit:

- ◆ Control unit for electromechanical parking brake - J540-
- ◆ Lateral acceleration sender - G200-
- ◆ Yaw rate sender - G202-
- ◆ Longitudinal acceleration sender - G251- (depending on equipment fitted)
- ◆ The components cannot be renewed individually.
- ❑ Removing and installing ⇒ [page 16](#)

2 - ABS hydraulic unit - N55-

- ❑ Fitting location: on passenger side of engine compartment

The hydraulic unit consists of the components:

- ◆ ABS hydraulic pump - V64-
- ◆ Brake pressure sender - G201-
- ◆ Valve block (contains inlet and outlet valves).
- ❑ ABS hydraulic pump - V64- and valve block must not be separated from one another.
- ❑ Removing and installing ⇒ [page 16](#)

3 - Brake pad warning lamp - K32-

- ❑ Location: in dash panel insert.

4 - ABS warning lamp - K47-

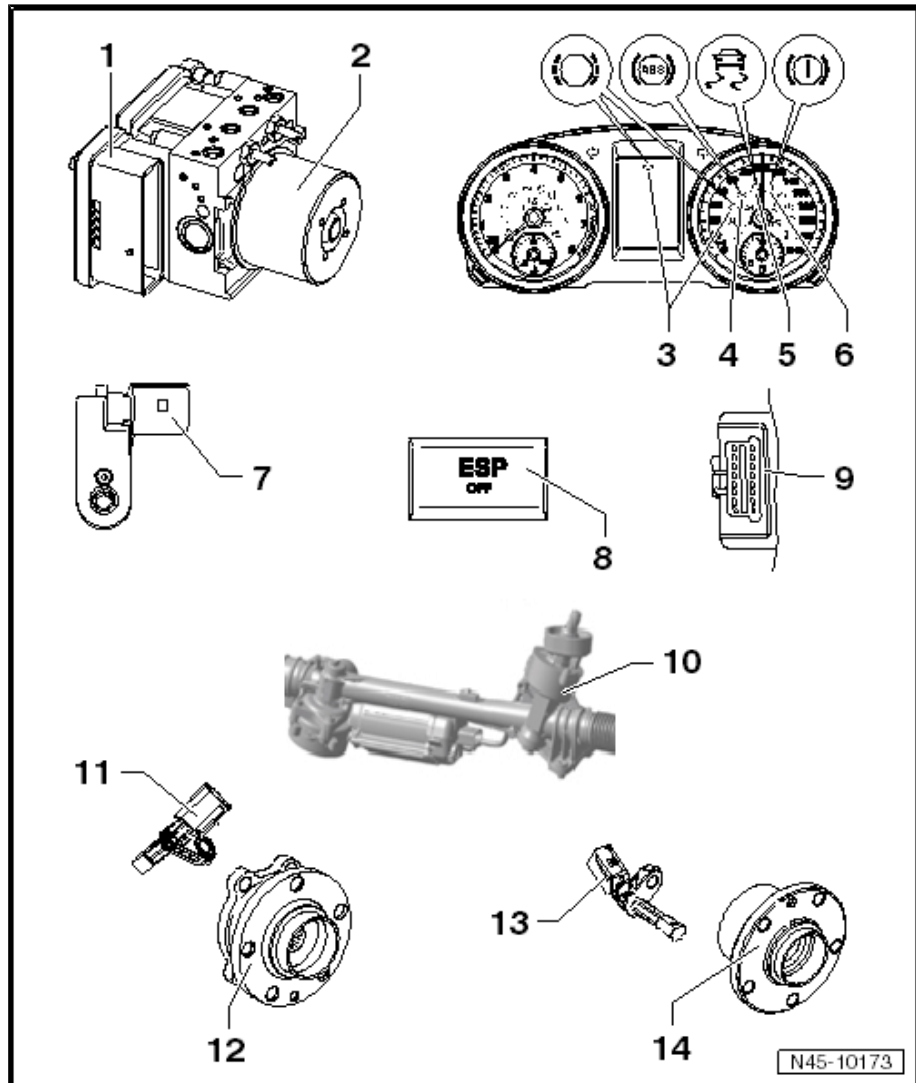
- ❑ Location: in dash panel insert.

5 - ESP and TCS warning lamp - K155-

- ❑ Location: in dash panel insert.

6 - Brake system warning lamp - K118-

- ❑ Location: in dash panel insert.



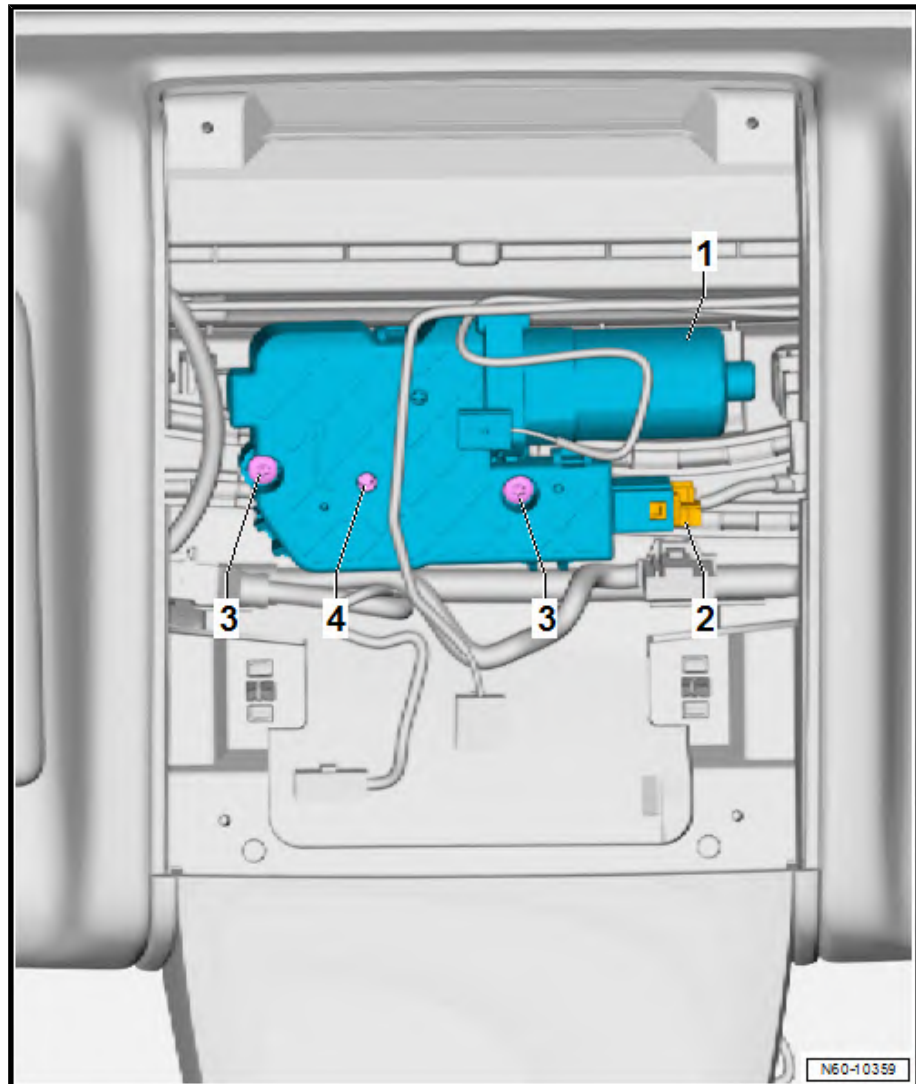


Removing



Note

Remove or install drive for panorama tilting sunroof glass panel only when sunroof is closed ("0" position).



- Remove front lights and operating unit ⇒ General body repairs, interior; Rep. gr. 68 ; Compartments/covers; Removing and installing storage compartment in roof headliner .
- Switch off ignition, remove key, and open door.
- This situation must be maintained until drive has been installed.
- Remove or install drive for panorama tilting sunroof glass panel only when sunroof is closed ("0" position).
- Unscrew bolts -3-.
- Lower sliding roof motor -1- slightly and tilt out to rear.
- Disconnect connection -2-.

Installing



- ◆ Removal tool - T40280-



Removing



Note

Removal and installation is described for the left vehicle side.
Follow same instructions for the right side as appropriate.

- Remove A-pillar gap cover ⇒ [page 214](#) .
- Detach upper A-pillar trim -1- from door seal beading.
- Carefully release upper A-pillar trim -1- starting at top and continuing up to first catch -arrow A- and -arrow B- using removal wedge - 3409- .



Caution

When carrying out the steps below, the curtain airbag may become damaged. For this reason, proceed with extreme caution when bending the barbs.

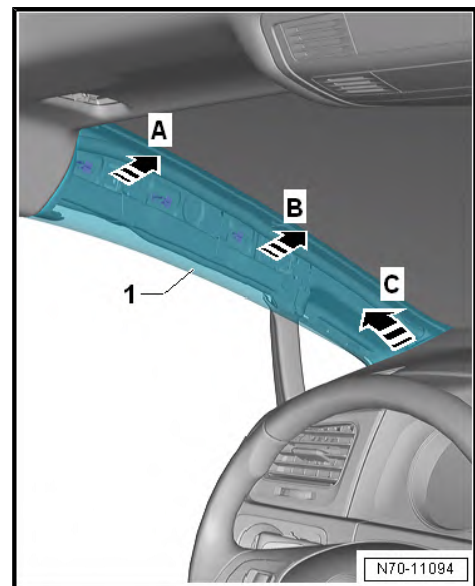
- Insert a screwdriver between body and curtain airbag in area of each of the 2 upper retaining clips.
- Bend barbs of the 2 retaining clips with the screwdriver until the retaining clips can be removed.



Caution

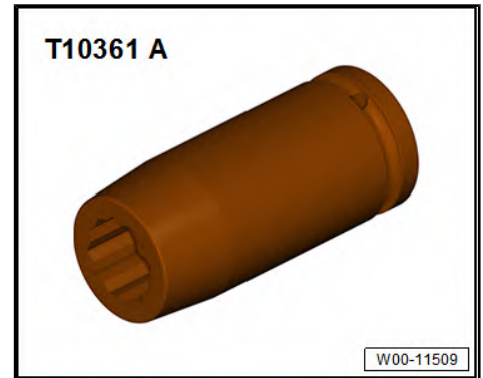
Before installing, always renew the 2 upper retaining clips.

- Pull upper A-pillar trim -1- upwards out of dash panel -arrow C-.
- Disconnect connector on treble loudspeaker and remove upper A-pillar trim -1-.

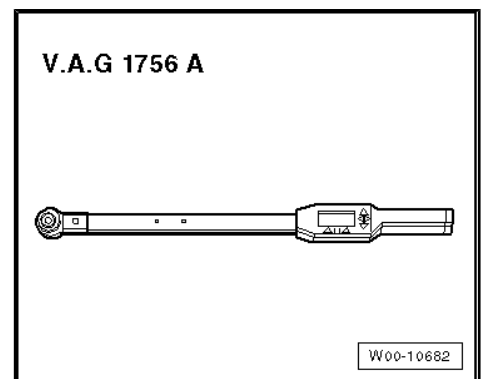




- ◆ Socket, 24 mm - T10361A-



- ◆ Torque angle wrench - V.A.G 1756 A-



Caution

Wheel bearings must not be subjected to load after bolt securing drive shaft to wheel hub has been loosened.

If wheel bearings are loaded with weight of vehicle, bearing will be damaged. This reduces the service life of the wheel bearing.

It is not permissible to loosen drive shaft bolt more than 90° if vehicle is standing on its wheels.

Do not attempt to move the vehicle without the drive shafts fitted as this would damage the wheel bearing. If a vehicle must nevertheless be moved, comply with the following:

- ◆ *Install an outer joint instead of the drive shaft.*
- ◆ *Tighten outer joint to 120 Nm.*

Loosening twelve-point head bolt

- To avoid damage to wheel bearing, do not loosen twelve-point bolt using 24 mm socket - T10361A- further than 90° with vehicle still standing on its wheels.
- Raise vehicle so that wheels are off the ground.
- Have second mechanic apply brakes.



1.6.2 Overview of fitting locations – lights in roof trim, with panorama tilting sunroof

1 - Front passenger side illuminated vanity mirror - W14-

- In the case of vanity mirrors with LED lighting, the entire light must be renewed in the event of a fault.
- Removing and installing ⇒ [page 211](#)

2 - Rear left interior light - W47-

- Removing and installing ⇒ [page 213](#)

3 - Rear interior light - WX2-

- With rear reading light - W11- / -W12-
- Removing and installing ⇒ [page 240](#)
- Removing and installing bulb for rear interior light - W43- ⇒ [page 212](#)
- Removing and installing bulb for rear reading light - W11- / -W12- ⇒ [page 212](#)

4 - Rear right interior light - W48-

- Removing and installing ⇒ [page 213](#)

5 - Driver side illuminated vanity mirror - W20-

- In the case of vanity mirrors with LED lighting, the entire light must be renewed in the event of a fault.

- Removing and installing ⇒ [page 211](#)

6 - Front interior light - WX1-

- With driver side reading light - W19- and front passenger reading light - W13-
- Removing and installing ⇒ [page 238](#)
- Removing and installing bulb for front interior light - WX1- ⇒ [page 211](#)
- Removing and installing bulb for front passenger reading light - W13- ⇒ [page 211](#)
- In the case of an LED-operated front interior light - WX1- , the entire light must be renewed in the event of a fault ⇒ [page 238](#) .

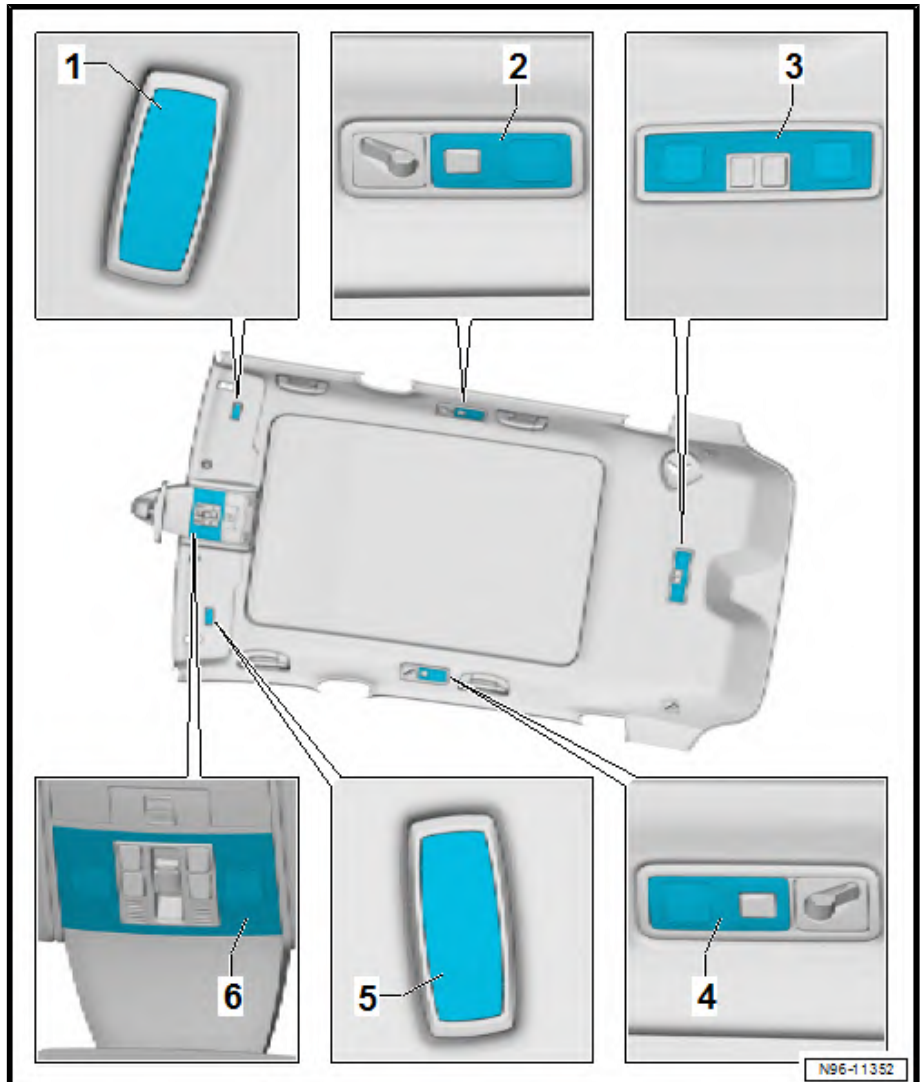
7 - Roof ambient lighting bulb -W76- / -W77-

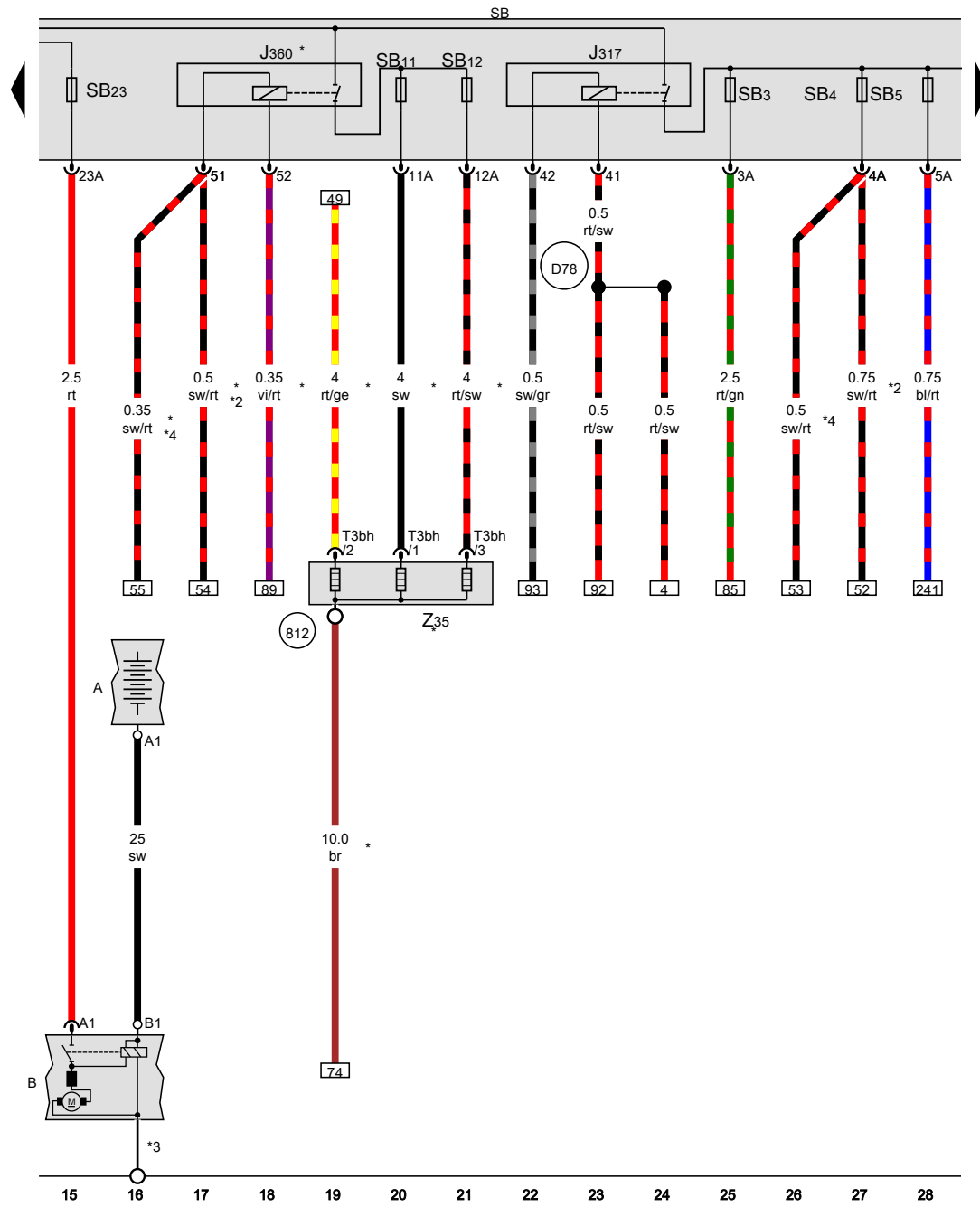


Note

Not illustrated

- Roof ambient lighting bulb, left - W76-
- Roof ambient lighting bulb, right - W77-
- Removing and installing ⇒ [page 206](#)





Battery, Starter, Terminal 30 voltage supply relay, High heat output relay, Fuse holder B, Auxiliary air heater element

- A Battery
- B Starter
- J317 Terminal 30 voltage supply relay
- J360 High heat output relay
- SB Fuse holder B
- SB3 Fuse 3 on fuse holder B
- SB4 Fuse 4 on fuse holder B
- SB5 Fuse 5 on fuse holder B
- SB11 Fuse 11 on fuse holder B
- SB12 Fuse 12 on fuse holder B
- SB23 Fuse 23 on fuse holder B
- T3bh 3-pin connector, black
- Z35 Auxiliary air heater element

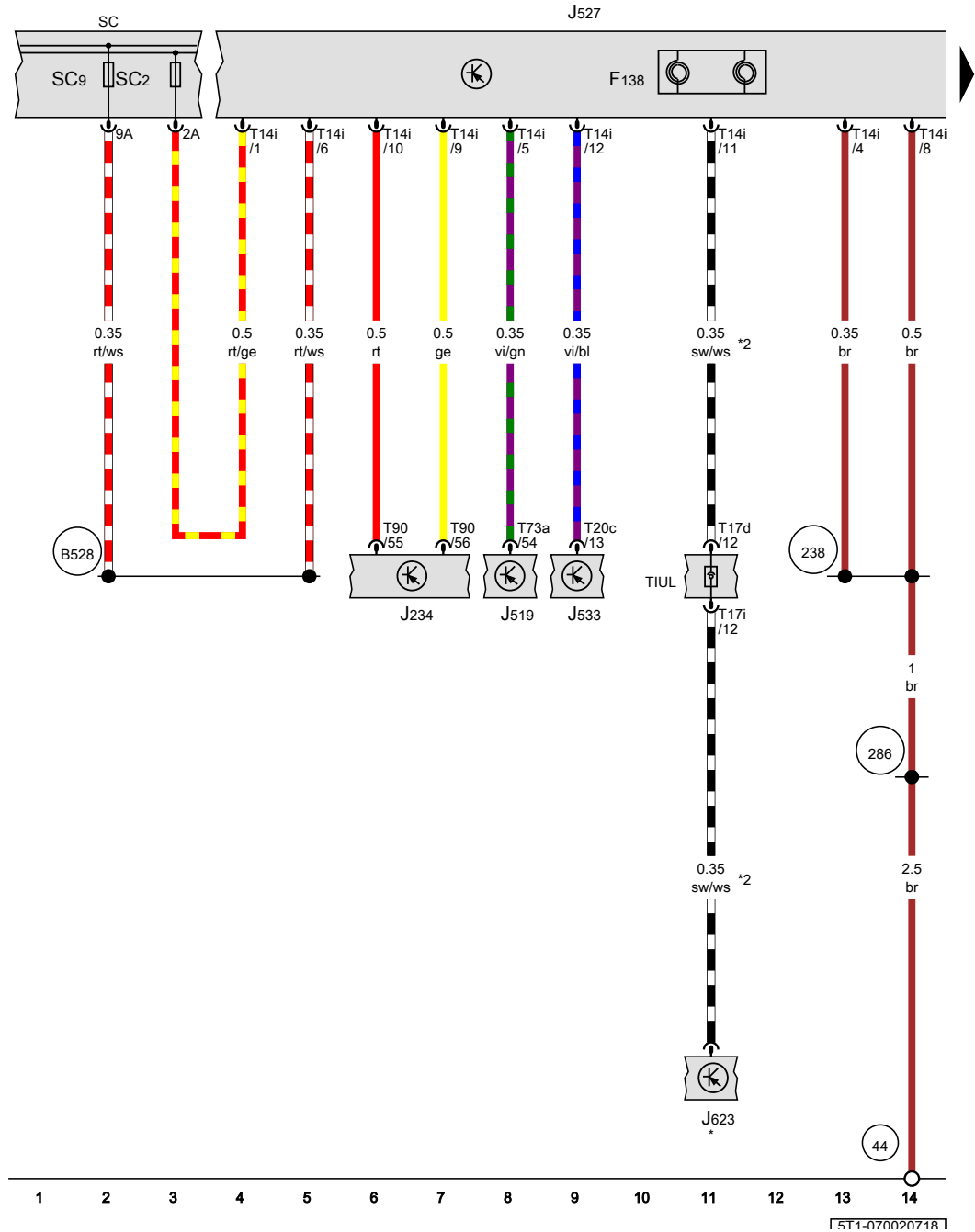
812 Earth point on heater element for auxiliary air heating

D78 Positive connection 1 (30a), in engine compartment wiring harness

- * For models with no air conditioning system/Climatronic
- *2 Up to July 2018
- *3 Earth supply via housing
- *4 From July 2018

- ws = white
- sw = black
- ro = red
- rt = red
- br = brown
- gn = green
- bl = blue
- gr = grey
- li = purple
- vi = purple
- ge = yellow
- or = orange
- rs = pink

[5T1-037031118]



Airbag control unit, Onboard supply control unit, Steering column electronics control unit, Data bus diagnostic interface, Engine/motor control unit, Fuse holder C

- F138 Airbag coil connector and return ring with slip ring
- J234 Airbag control unit
- J519 Onboard supply control unit
- J527 Steering column electronics control unit
- J533 Data bus diagnostic interface
- J623 Engine/motor control unit
- SC Fuse holder C
- SC2 Fuse 2 on fuse holder C
- SC9 Fuse 9 on fuse holder C
- T14i 14-pin connector, black
- T17d 17-pin connector, blue
- T17i 17-pin connector, blue
- T20c 20-pin connector, red
- T73a 73-pin connector, black
- T90 90-pin connector, yellow
- TIUL Coupling point in interior, below left

- 44 Earth point, lower part of left A-pillar
- 238 Earth connection 1, in interior wiring harness
- 286 Earth connection 8, in interior wiring harness
- B528 Connection 1 (LIN bus) in main wiring harness
- * see applicable current flow diagram for engine
- *2 For models with cruise control system (CCS)

- ws = white
- sw = black
- ro = red
- rt = red
- br = brown
- gn = green
- bl = blue
- gr = grey
- li = purple
- vi = purple
- ge = yellow
- or = orange
- rs = pink