

Water Heater Unit

Thermo Top V Auxiliary Heating



Installation Instructions

Mercedes Benz R Class (W251)

Gasoline and diesel

From model year 2006

For left-hand drive vehicles only



WARNING!

Hazard warning:

Incorrect installation or repair of Webasto heating systems may cause a fire or result in the emission of carbon monoxide, which can be fatal. Serious or fatal injuries can be caused as a result.

Specialist company training, technical documentation, specialized tools and equipment are required to install and repair Webasto heating and cooling systems.

NEVER attempt to install or repair Webasto heating or cooling systems if you have not successfully completed the company training and thereby acquired the required technical skills or if you do not have access to the required technical documentation, tools and equipment needed to carry out correct installation and repairs.

ALWAYS follow all Webasto installation and repair instructions and observe all warning instructions.

Webasto does not accept any liability for defects and damage that are attributable to an installation by untrained staff.

Mercedes Benz R Class (W251)

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Validity

Manufacturer	Model	Type	EG-BE No. / ABE
Daimler-Chrysler	R Class	W251	e1 * 2001 / 116 * 0341

Engine type	Engine type	Power in kW	Engine capacity in cm ³
280 CDI	Diesel	140	2987
320 CDI	Diesel	165	2987
350	Gasoline	200	3498
500	Gasoline	225	4966

Vehicle and engine types, equipment variants as well as national specifications, which are not listed in these installation instructions, have not been tested. Installation according to these installation instructions may, however, be possible.

The installation location of the key switch should be confirmed with the end customer before installation.

Mercedes Benz R Class (W251)

Heater Unit / Installation Kit

Amount	Description	Order no.:
1	Scope of delivery TT-V (B) DC R class	9015892A
1	Scope of delivery TT-V (D) DC R class	9015893A

Optional control element selection:

Amount	Description	Order no.:
1	Thermo Call TC 1.1	9001132B
1	Thermo Call TC 2	9013656A

Foreword

These installation instructions apply to vehicles Mercedes Benz R Class (W251) with Gasoline and diesel engines.

– Re. validity, see page 2 – from model year 2006 and later, assuming technical modifications to the vehicle do not affect installation, any liability claims excluded. Depending on the vehicle version and equipment, modifications may be necessary during installation with respect to these installation instructions.

However, where this is the case the stipulations in the "installation instructions" and "operating and maintenance instructions" for the *Thermo Top V* should be observed.

The corresponding rules of technology and any information from the vehicle manufacturer should be observed during the installation work.

General Instructions

Installation should be carried out according to the general, standard rules of technology. Unless specified otherwise, fasten hoses, lines and cable harnesses to original vehicle lines and cable harnesses using cable clips.

Sharp edges should be fitted with edge protectors (split open plastic hose).

Spray unfinished body areas, such as for example bore holes, with anti-corrosion wax (Tectyl 100K, Order No. 111329)!

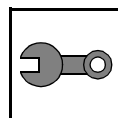
Special Tools

- Vice-grip wrench
- Riveting nut tool
- 20mm punched metal

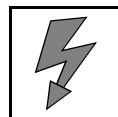
Explanatory Notes on the Document

To provide you with a quick overview of the individual working steps, you will find an identification mark on the outside top right corner of the page in question.

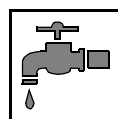
Mechanics



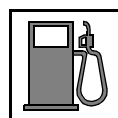
Electrics



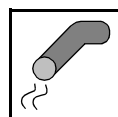
Water connection



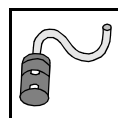
Fuel connection



Exhaust system



Combustion air



Special features are highlighted using the following symbols:



Specific risk of injury or fatal accidents.



Specific risk of damage to components.



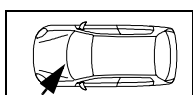
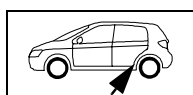
Specific risk of fire or explosion.



Reference to general installation instructions of Webasto components or to the manufacturer's vehicle-specific documents.



Reference to a special technical feature.

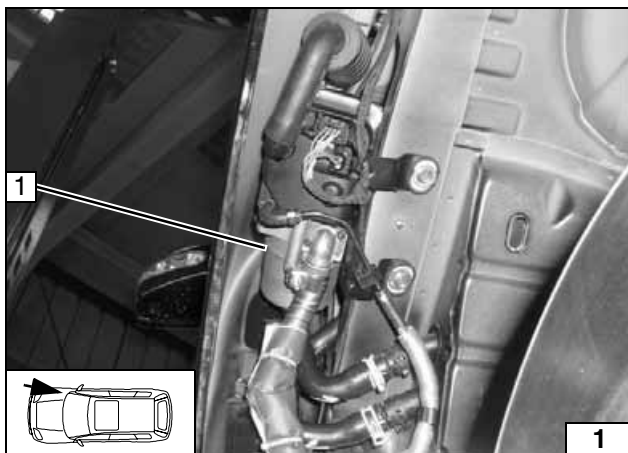


The arrow in the vehicle icon indicates the position on the vehicle and the viewing angle.

Preliminary Work

WARNING!

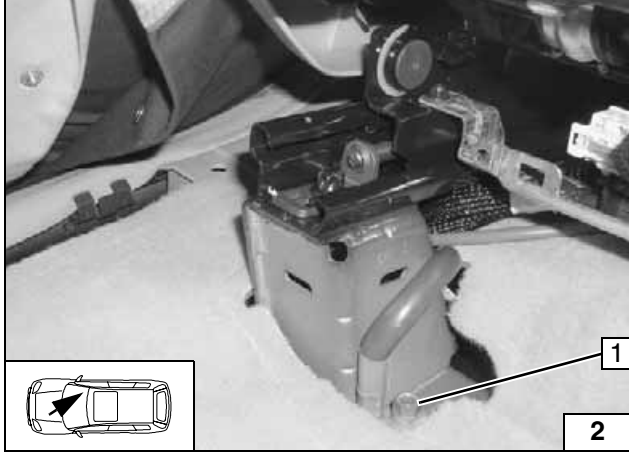
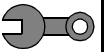
- Disconnect the battery.
- Remove front right rocker panel strip.
- Remove front right footwell panel.
- Remove the front right A-pillar panel.
- Remove right side dashboard cover.
- Remove the rear right seat bench cover.
- Loosen the plug on the seat plug strip
- Remove the rear right seat.
- Fold back the floor cover, loosen and remove the metal cover that is adhered to the **right** side of the tank mounting when looking in the direction of travel.
- Let off pressure in the cooling system.
- Copy the factory number from the original type label to the duplicate type label.
- Remove years that do not apply from the duplicate label.
- Attach the duplicate label (type label) in the appropriate place.
- Remove the windshield wiper arms.
- Remove the cooling water reservoir cover
- Remove the windshield wiper arm and motor.
- Remove the engine cover gasket that runs across the engine.
- Remove the metal engine cover.
- Pull off the designer engine cover.
- Remove the 2 piece passenger compartment filter housing.
- Remove the metal cover over the cable feed-through behind the equalizing reservoir
- Remove the left segment of the motor separating panel next to the wiper motor.
- Open the tank cap, ventilate the tank.
- Close the tank cap again.
- Remove the right front wheel.
- Remove the 2-piece front right wheel house case
- Remove the right underbody panel.



Heater Unit Installation Location

- 1 Heater unit

Installation location

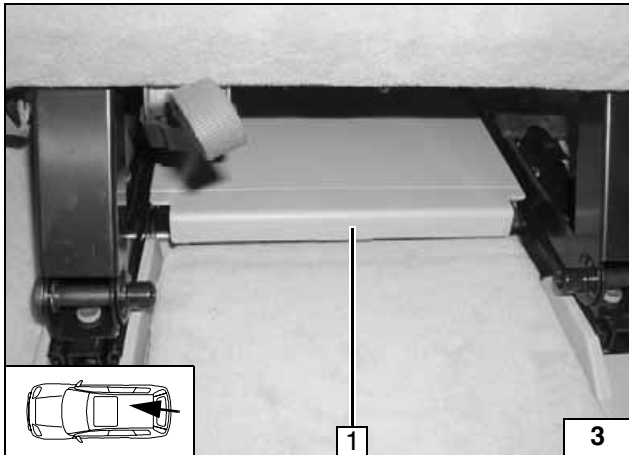


Special Technical Instructions

Remove the right seat track panelling on the passenger seat, loosen the ground connection **1** on the fastening lug.

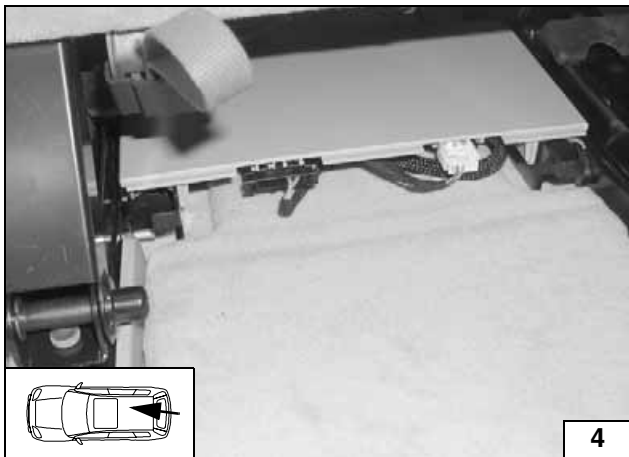


Battery ground connection



1 Rear seat connector cover

Remove cover before removing the seat

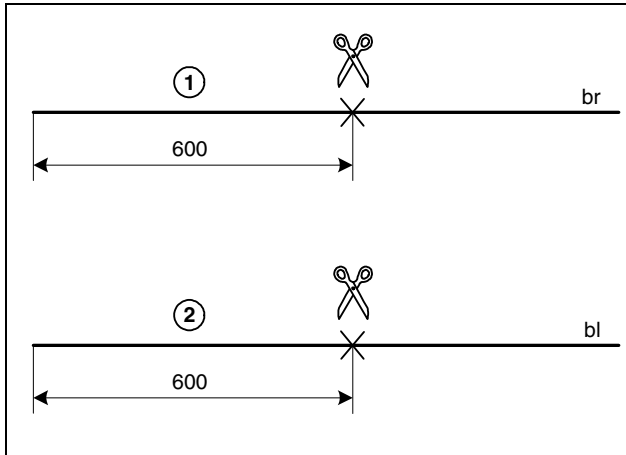


Rear seat connectors

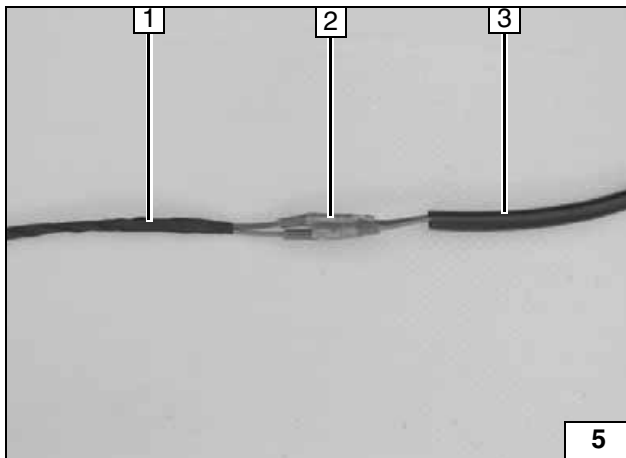


Preparing the Electronics

Pull lines 1 and 2 into the protective tube.

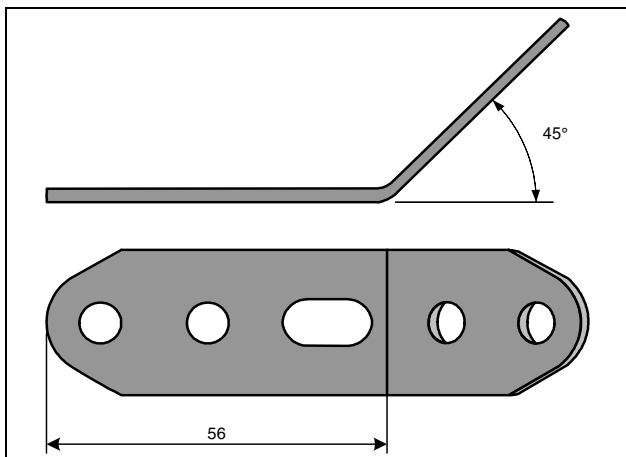


Cutting wires into sections



- 1 Metering pump cable harness
- 2 Crimp connectors [2x]
- 3 Protective tube

Extend the metering pump cable harness



Bend the fastening strap for the fuse holder

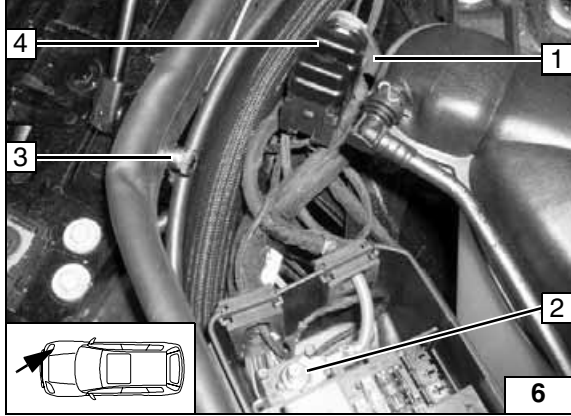


Electrical Connections



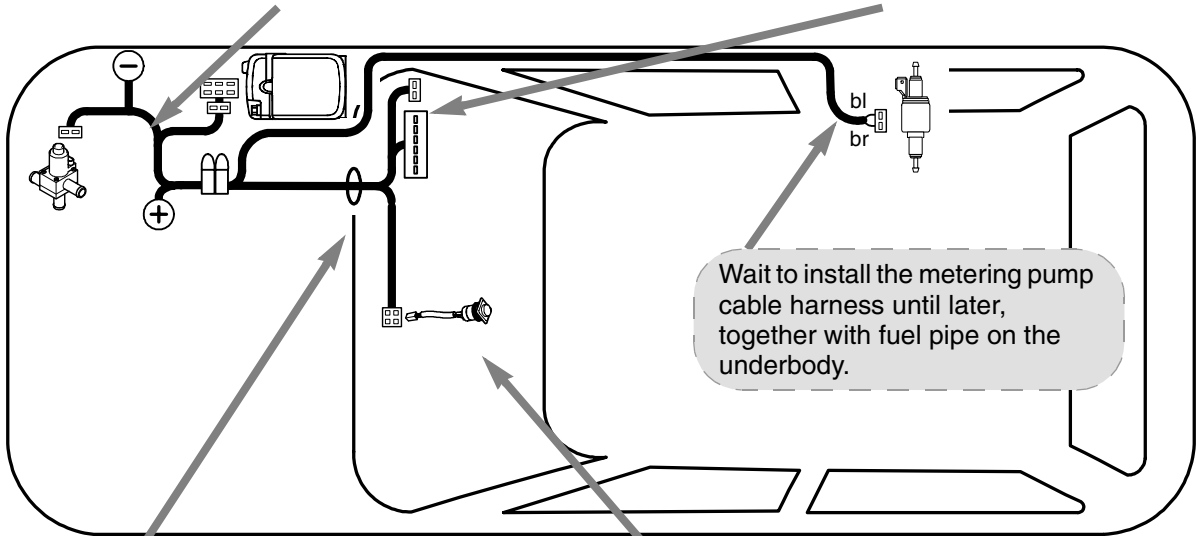
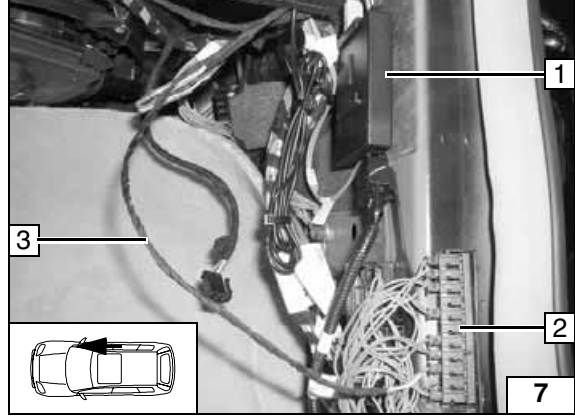
Fuse holder, power supply, ground point

- 1 Original vehicle stay bolts, fastening strap, flanged nut
- 2 Fuse box positive connection
- 3 Grounding point
- 4 Fuse holder retaining plate, screw M5x16, washers, nuts

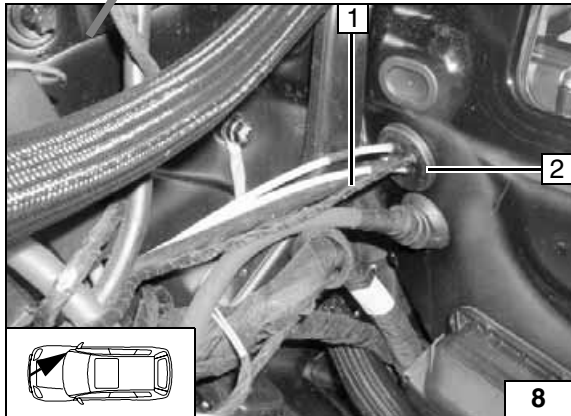


CAN bus, remote start

- 1 Remote start
- 2 CAN bus connector
- 3 CAN bus cable harness

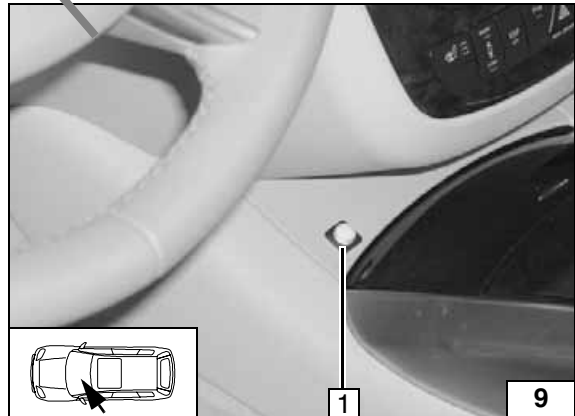


Cable harness installation diagram



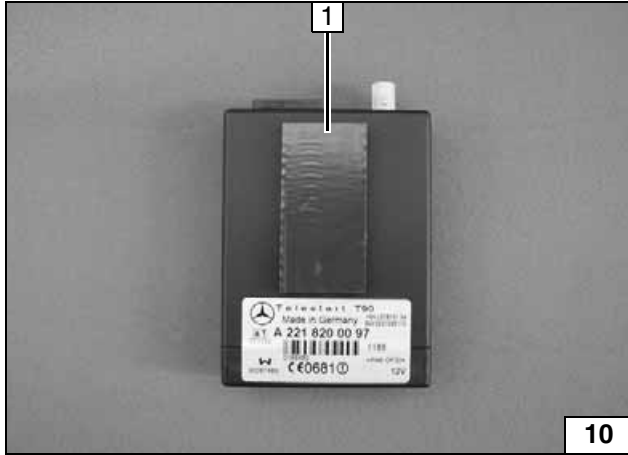
Cable harness feed-through

- 1 Cable harness
- 2 Protective rubber sleeve



Tip switch/operating display

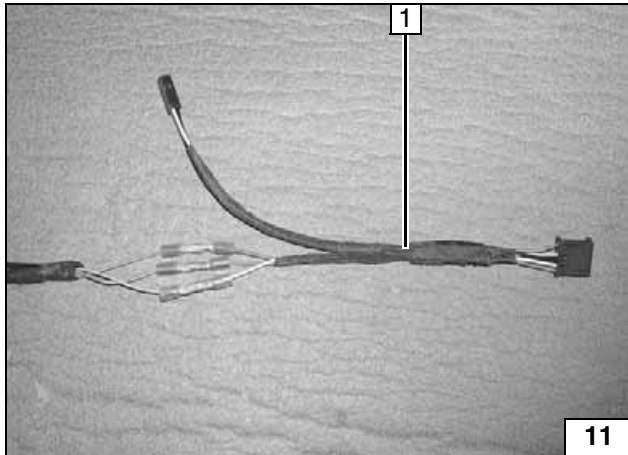
- 1 Tip switch



Remote start assembly

1 Velcro tape

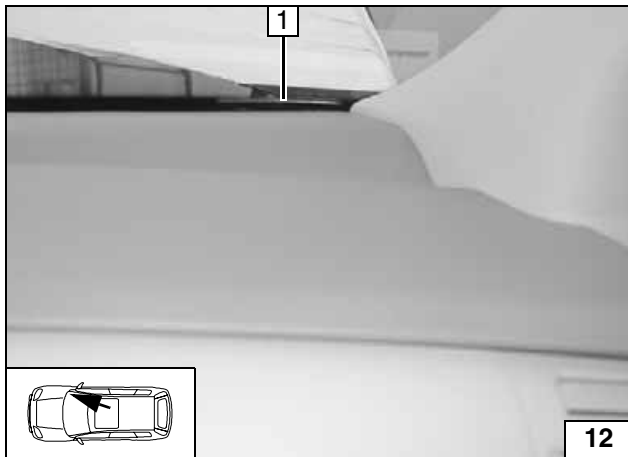
**Attach
Velcro**



Connect the cable harness with the same color remote start 1 adapter cable harness.

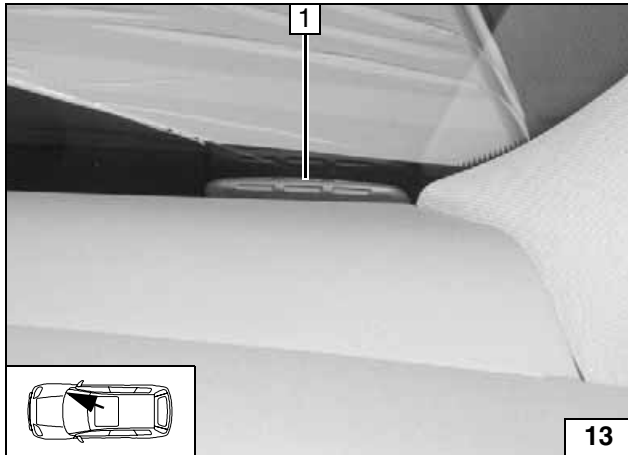


**Connect-
ing the
cable
harness**



1 Antenna

**Assem-
bling the
antenna**

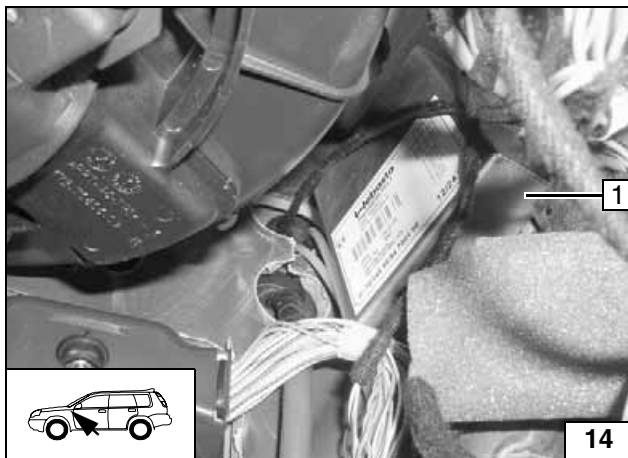


Thermo Call Option

1 Antenna

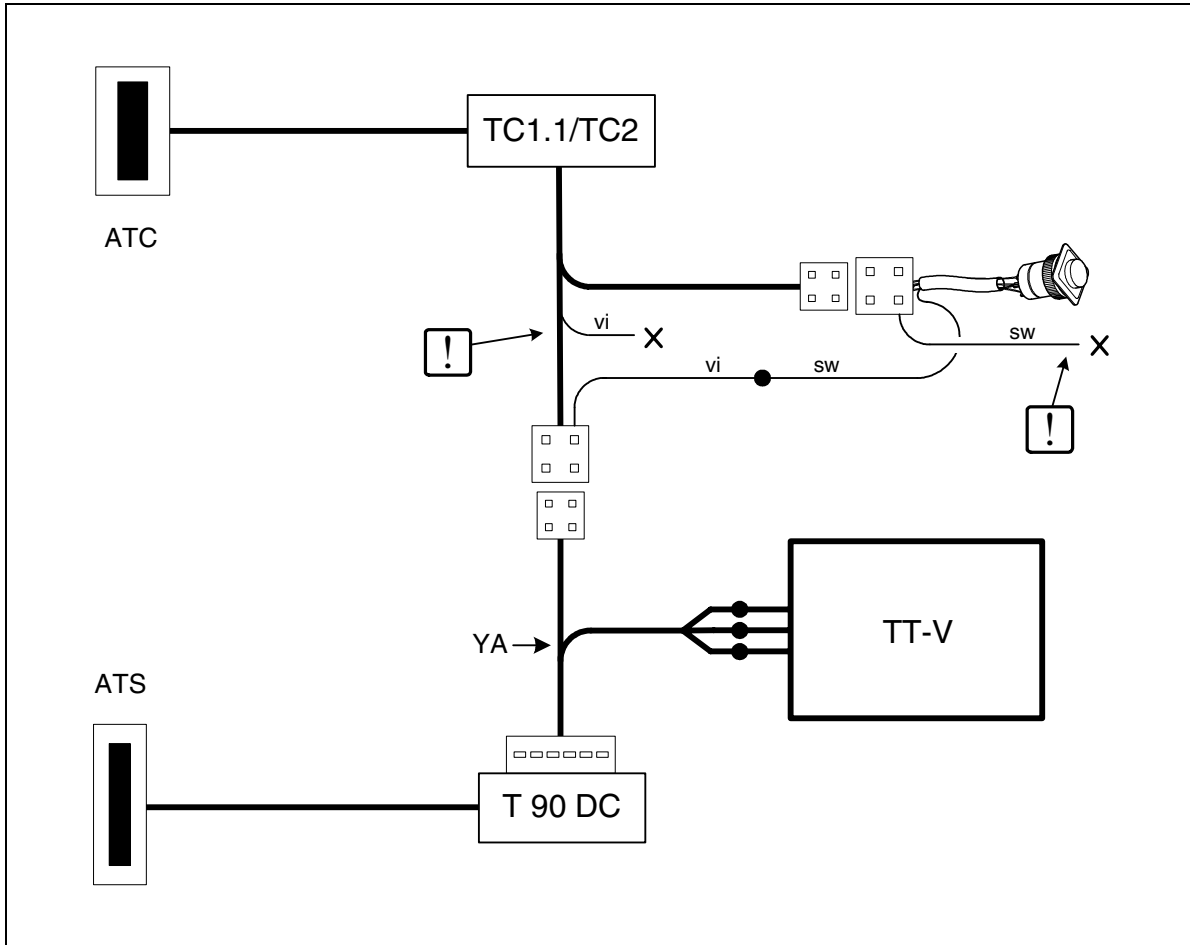


Assembling the antenna



1 Thermo Call

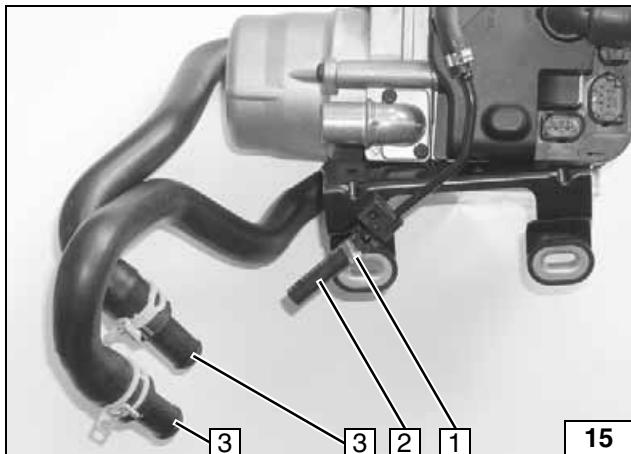
Assembling the Thermo Call



Thermo Call circuit diagram

Webasto components		Colors and symbols	
TT-V	Heater unit	sw	black
YA	Y adapter 9014604A	vi	purple
T90 DC	Remote start T90 DC configuration	!	Insulate wire ends and tie back
TC 1.1	Thermo Call 1.1	X	Splitting point
TC 2	Thermo Call 2		
ATC	Thermo Call antenna		
ATS	Remote start antenna		
●	Butt connector		

Legend

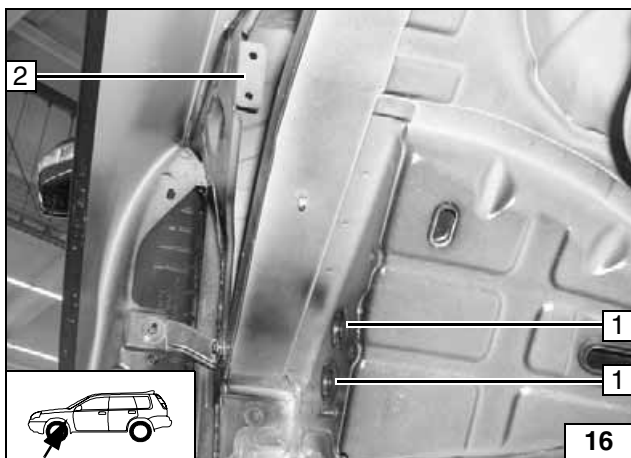


Preparing the Heater Unit

Replace the fuel pipe with hose section 2 and fasten with hose clips 1 Ø 10mm. Insert connecting pipe 3 Ø 18x20 [2x] in water hose and fasten with hose clamps.



Fuel hose, insert connecting pipes



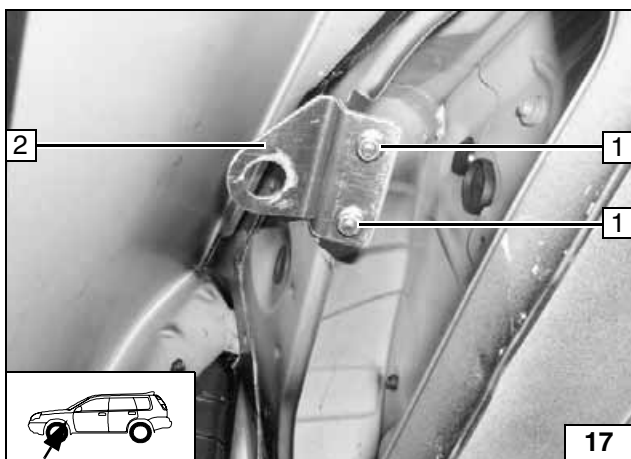
Preparing the Installation Location

Punch Ø 20mm holes in the middle of the grommet

- 1 Grommets [2x]
- 2 Mounting bracket fastening lug

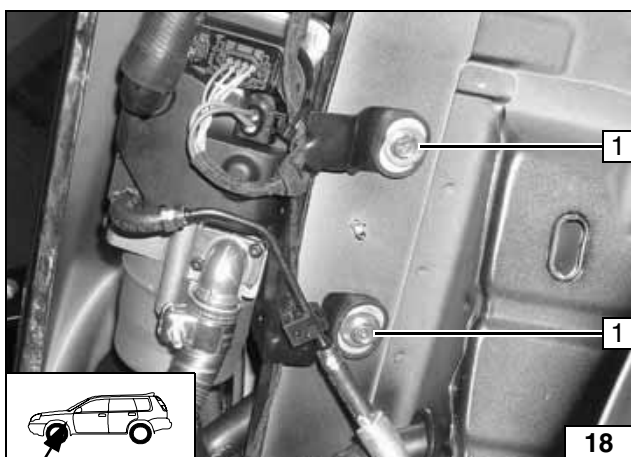


Removing the grommets



- 1 M6x12 bolt, flanged nuts [2x]
- 2 Mounting bracket

Attach mounting bracket



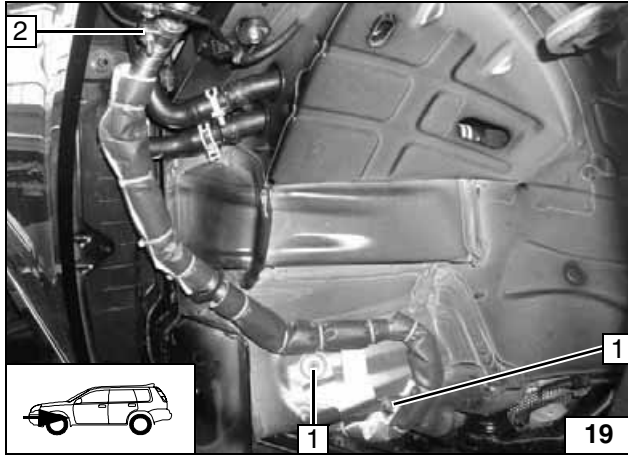
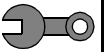
Installing the Heater Unit

Insert the bracket rubber piece in the mounting bracket, transfer hole image, drill Ø 9.1mm bore hole [2x], tighten rivet nuts

- 1 M6x20 bolt [2x], body washer [2x]

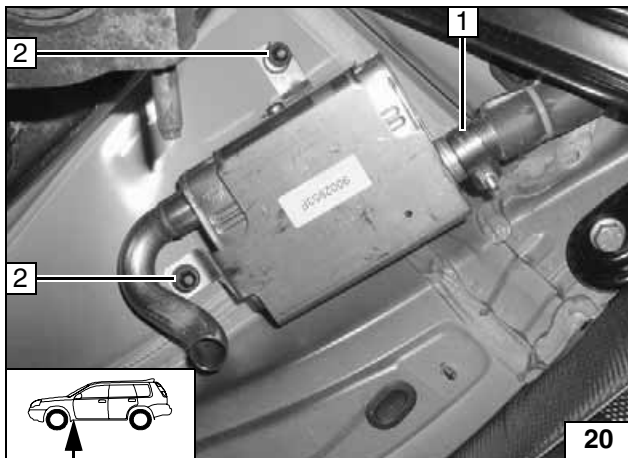


Assembling the heater unit



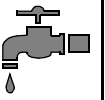
- 1 Original vehicle stay bolts, flanged nut M6 [2x]
- 2 Hose clamp

Assembling the exhaust pipe.



- 1 Hose clamp
- 2 Original vehicle stay bolts, metal nut [2x]

Assembling the silencer



Water Connection

WARNING!

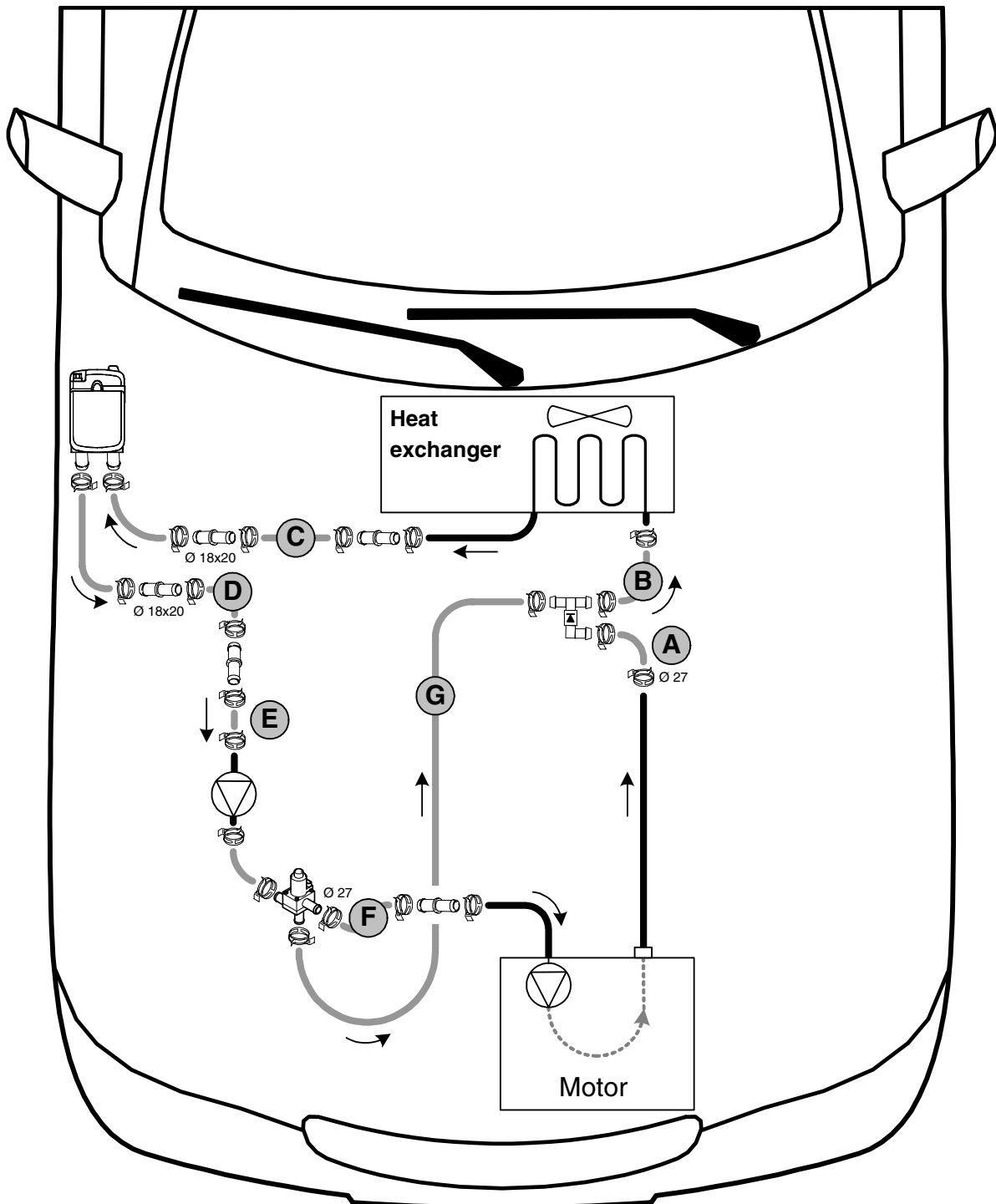
Tighten all hose clamps to 2.0 + 0.5 Nm.

Any coolant running off should be collected using an appropriate container.

Route hoses so that they are kink-free. Unless specified otherwise, always fasten using cable clips.

Position hose clamps and spring band clamps so that no other hose can be damaged.

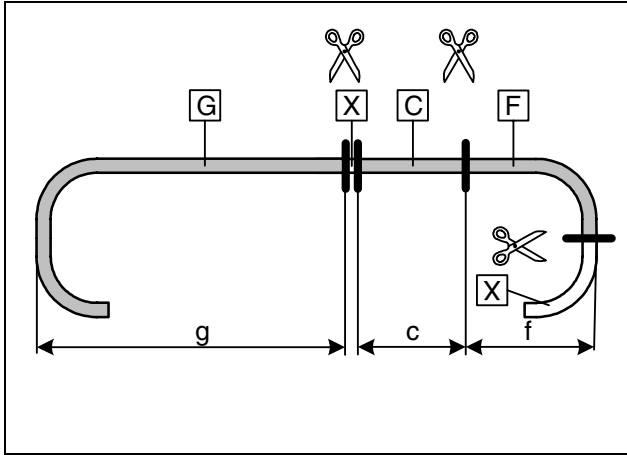
The connection is based on the following diagram:



Water installation diagram

All undesigantated clamps = Ø 25mm spring band clamps!
 All undesigantated connecting pipes = Ø 18x18.

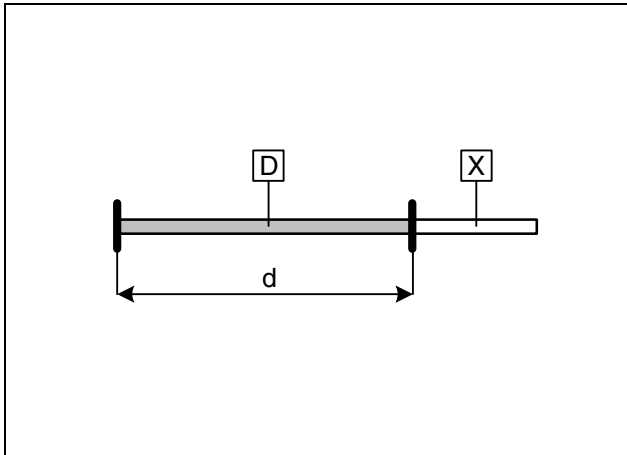




c = 250mm
f = 130mm
g = 1800mm

Dispose of section **X**
Slide the short braided protective hose onto hose **C**. Slide the long braided protective hoses onto hose **G** and cut into sections.

Cutting water hoses to length

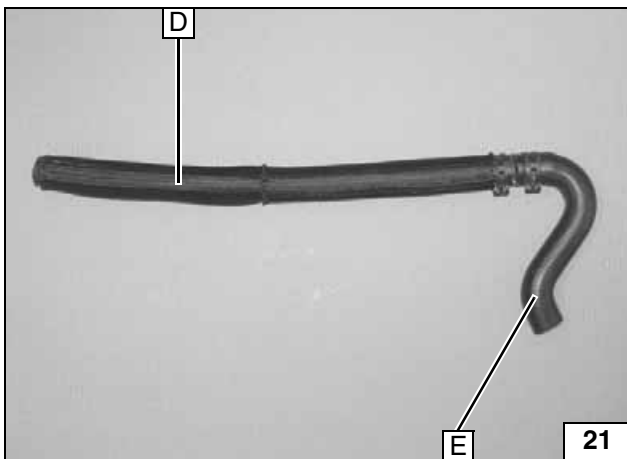


d = 370mm

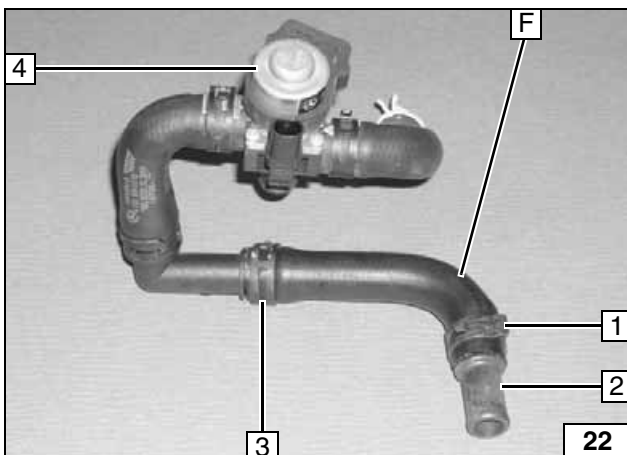
Slide the 2 short braided protective hoses onto hose **D**.

Molded hose **A** = Nr. 63159A
Molded hose **B** = No. 431397
Molded hose **E** = No. 88383A

Cutting water hoses to length

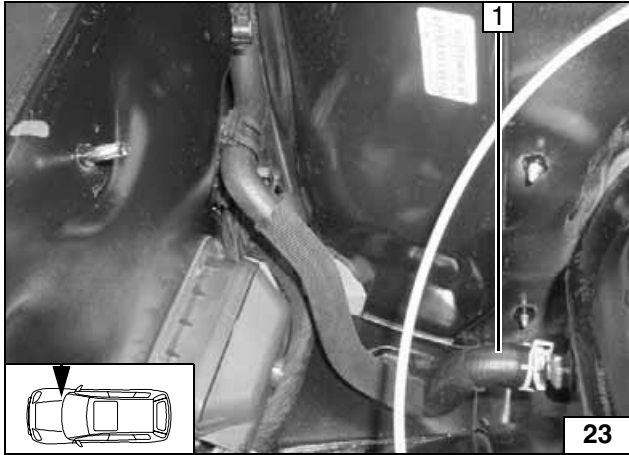


Connecting water hoses



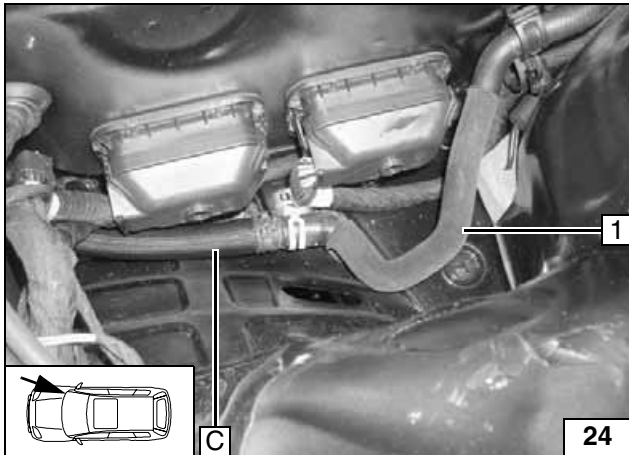
- 2 Molded hose
- 1 Spring band clamp Ø 25 mm
- 2 Connecting pipe Ø 18x18
- 3 Spring band clamp Ø 27mm
- 4 Pre-assembled solenoid valve

Preparing the solenoid valve



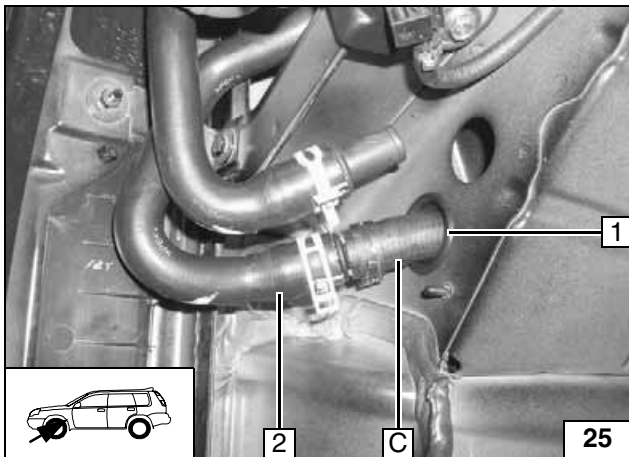
1 Heat exchanger outlet hose

Pull hose off water pipe



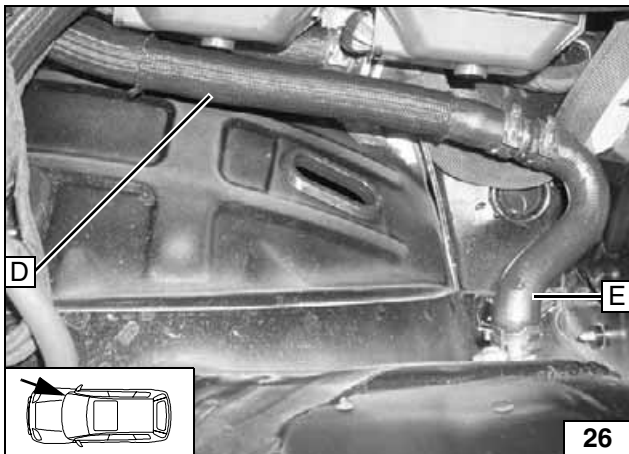
1 Heat exchanger outlet hose
C hose

Placement in the engine compartment

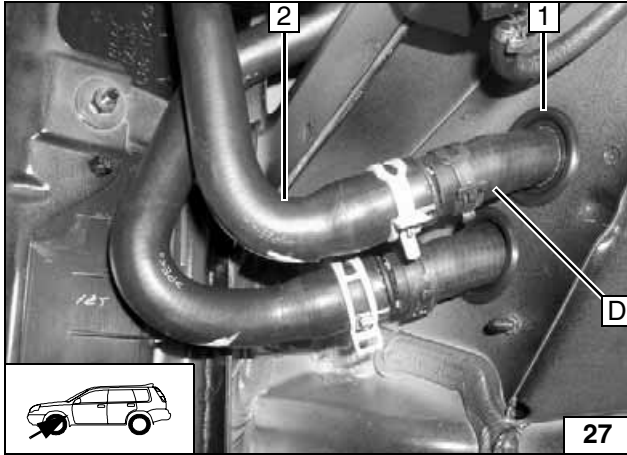


1 Grommet
C hose
3 Heater unit inlet hose

Connection to Heater Unit Inlet

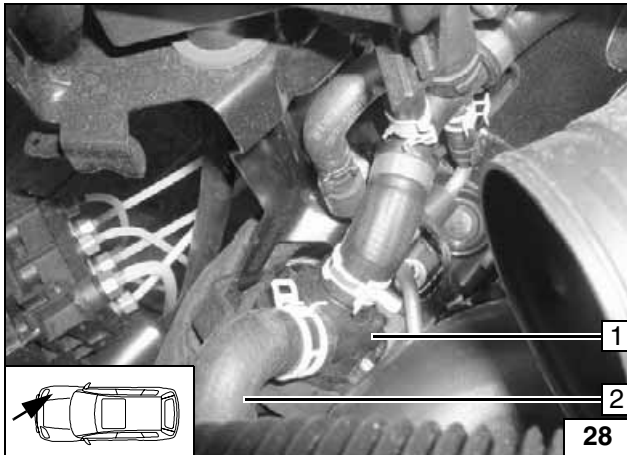


Connect hose group to water pipe



- 1 Grommet
- D Hose
- 2 Connecting to the heater unit outlet

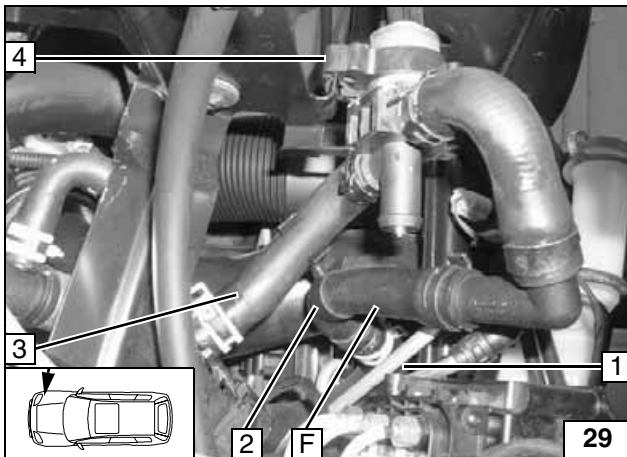
**Conne-
ction to
Heater Unit
Outlet**



Pull the hose 2 off the original vehicle circulation pump 1.



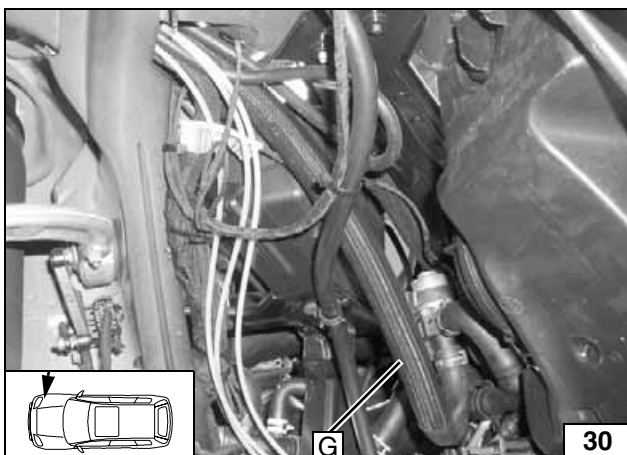
**Disassem-
bling the
hose**



Slide the solenoid valve bracket 4 on the fastening lug, assemble the hose 3 on the circulation pump, connect the hose F with the disconnected motor hose 1, assemble the spacer 2.

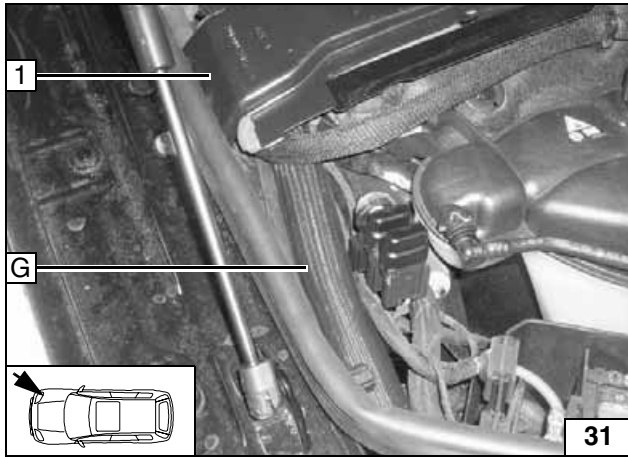


**Assem-
bling the
solenoid
valve**



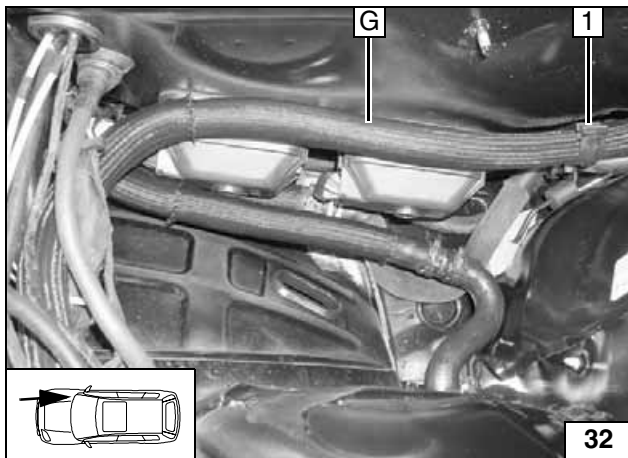
G Hose to the heat exchanger

**Assemble
the hose
on the
solenoid
valve**



- G** Hose
- 1** Cover plate

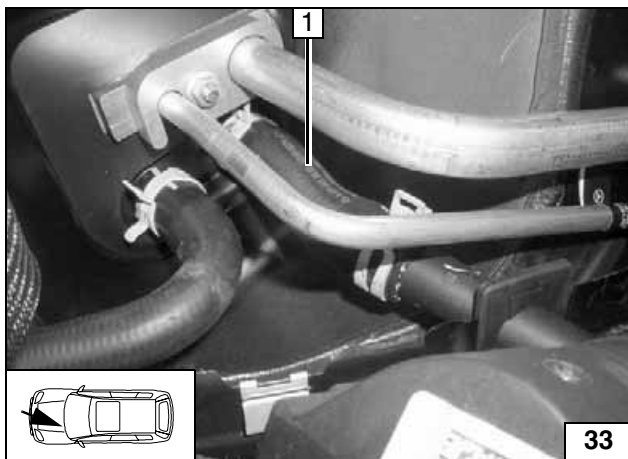
Run the water hose under the cover plate



Fasten the hose **G** in the upper hose holder **1**, insert the original vehicle hose in the lower mounting.

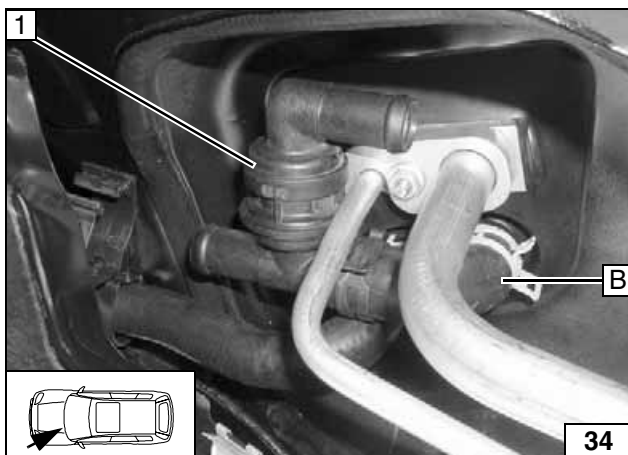


Installing in the engine compartment



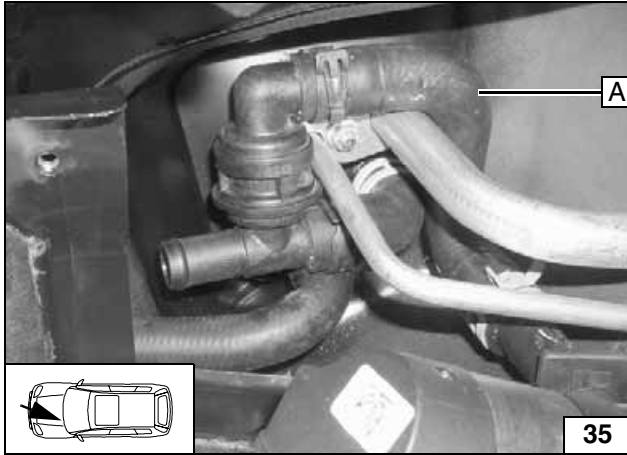
- 1** Engine outlet hose to the heat exchanger inlet

Remove hose



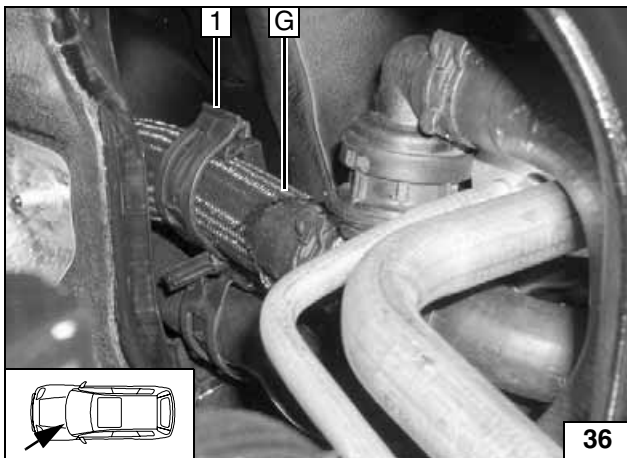
- B** Molded hose
- 1** Check valve

Assemble the check valve



A Molded hose

Assembling the molded hose



1 Original vehicle hose bracket
G Hose

Connect the check valve



Fuel Connection

CAUTION!

Open the vehicle's tank-cap lock, ventilate the tank and then re-close the tank lock.

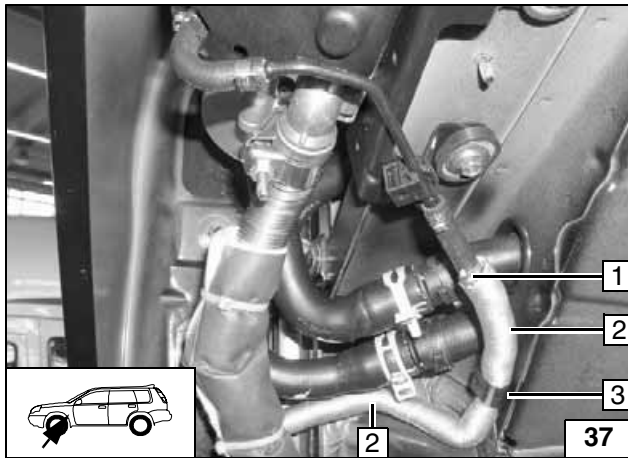
Catch any fuel running off with an appropriate container.

Install fuel line and metering pump cable harness so that they are protected against stone impact. Unless specified otherwise, always fasten using cable clips.

Fit the fuel line and cable harness with edge protectors around sharp edges.

WARNING!

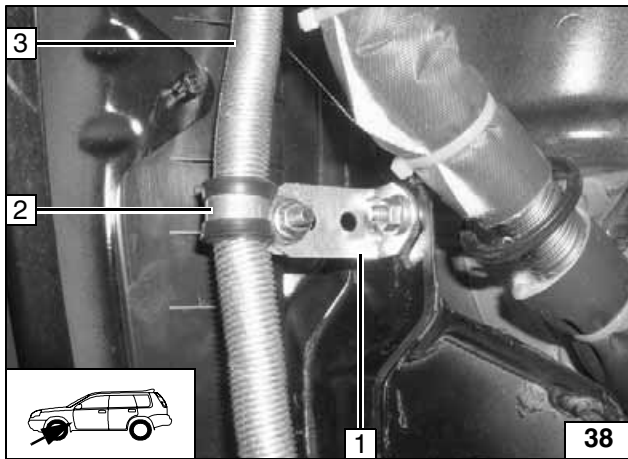
The fuel line and cable harness to the metering pump should be installed based on the cable harness installation diagram.



Insert the fuel line in the heat protection sleeve. Screw the fastening lug **3** onto the original vehicle stay bolt.

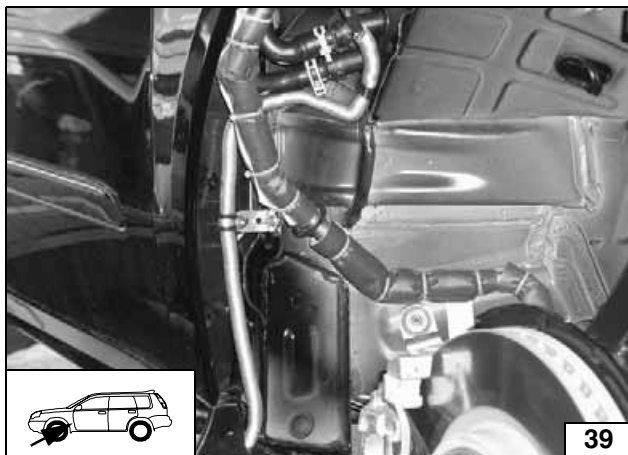
- 1 Ø 10 mm hose clamp
- 2 Heat protection hose

Connect-
ing to the
heater unit

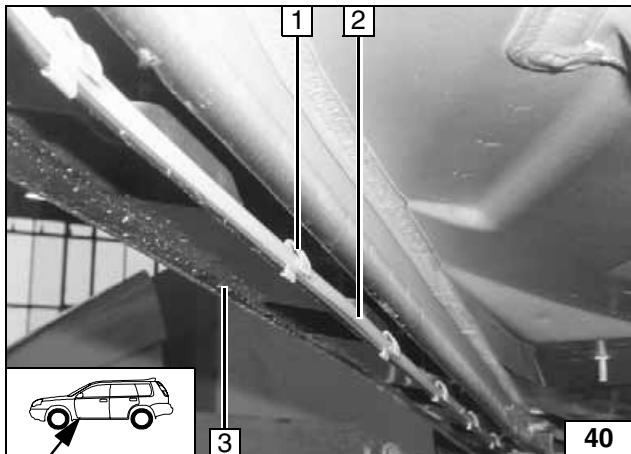


- 1 Bracket, M6x16 bolt, body washer, flanged nut
- 2 Tube clamp, M6x12 bolt, flanged nut
- 3 Heat protection hose

Fasten
angle
bracket



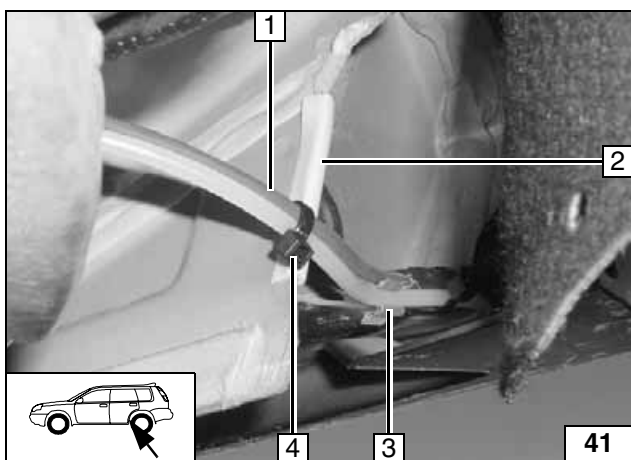
Placement
of the heat
protection
hose



Fasten the fuel pipe 2 together with the metering pump cable harness to the rocker panel cover 3 with clips 1 [6x].

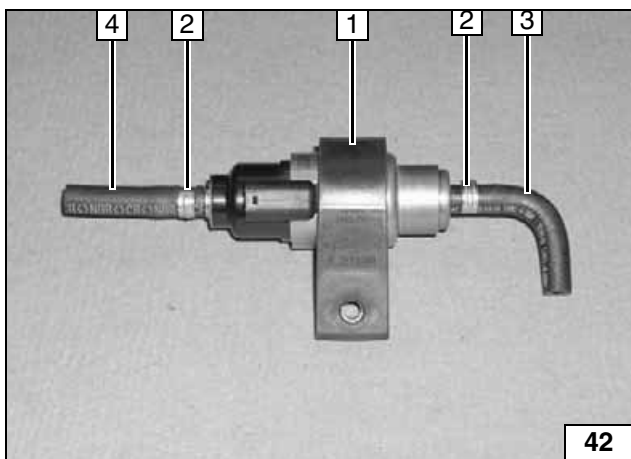


Installing the fuel line



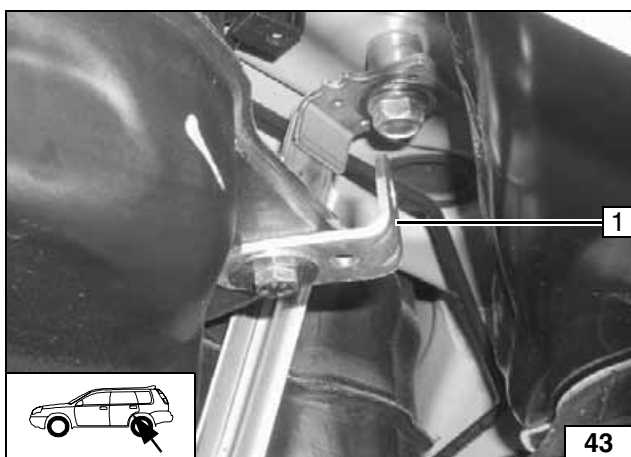
- 1 Metering pump cable harness
- 2 Edge protection
- 3 Fastening lug
- 4 Cable clips

Installing the fuel line



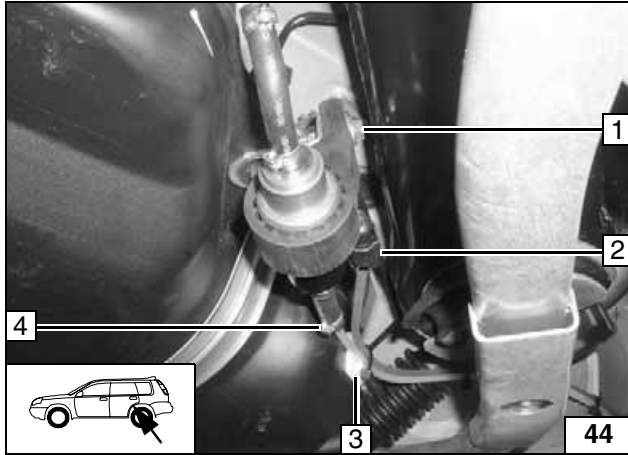
- 1 Metering pump bracket
- 2 Hose clamp Ø 10 mm [2x]
- 3 Molded hose
- 4 Sleeve

Pre-assembling the metering pump



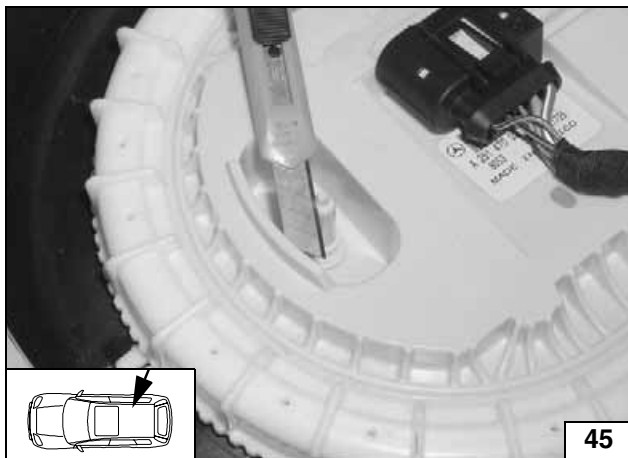
- 1 Bracket, M6x20 bolt, body washer, flanged nut

Assembling the angle bracket

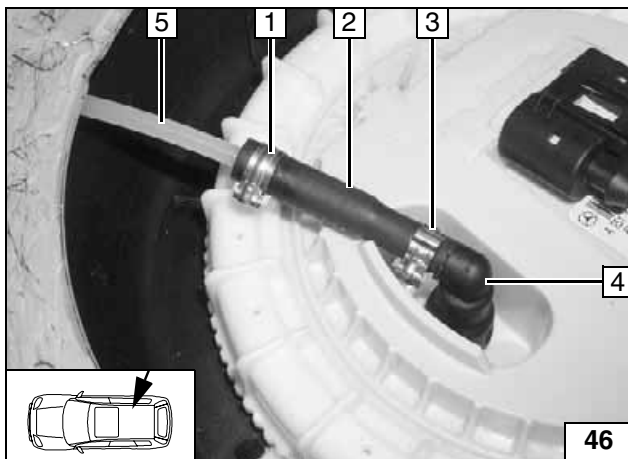


- 1 M6x30 bolt, flanged nut
- 2 Metering pump connector
- 3 Adhesive socket, cable clips
- 4 Hose clamp Ø 10 mm

Assembling the metering pump



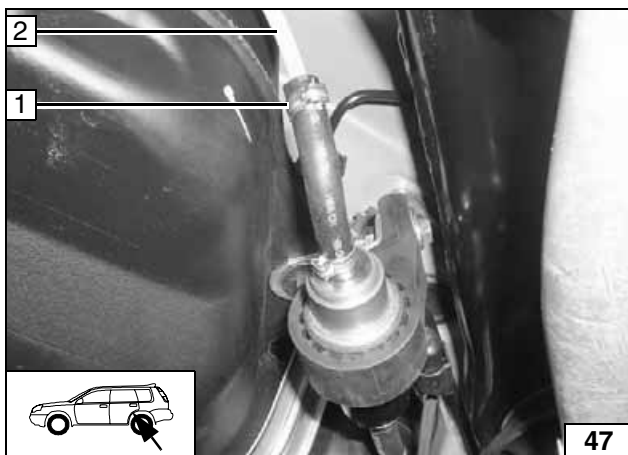
Cut nipple off fuel supports



- 1 Ø 10mm hose clamp
- 2 Molded hose Ø 3.5 mm x 4.5 mm
- 3 Ø 8mm hose clamp
- 4 Fuel connector
- 5 Fuel line



Connection to tank mounting



- 1 Ø 10mm hose clamp
- 2 Fuel line



Connection to intake side

Final Work



Train the "remote start" control sender.

- Connect the battery.
- Pull the remote start fuse (1A) from the fuse holder in the engine compartment and put it back after about 5 seconds.
- Within 7 seconds, press the "off" button (right) on the hand-held transmitter for about 1 second.

Reset the remote start parameter to the button function.

- Pull the remote start fuse (1A) from the fuse holder in the engine compartment and put it back after about 5 seconds.
- Within 7 seconds, press the "off" button (right) on the hand-held transmitter for about 1 second.
- When this is pressed again (switch on), the button must remain lit; if not, repeat the procedure.

Only when Thermo Call is used

The remote start parameters are only to be reset to the clock function when the Thermo Call telephone remote control is added as a modification. The Remote Start control is configured to the clock function by default when delivered.

- Pull the remote start fuse (1A) from the fuse holder in the engine compartment and put it back after about 5 seconds.
- Press and hold the button within the next 7 seconds.

WARNING!

Reassemble disassembled components in reverse order.

Check that all hose lines, hose, spring band clamps and universal clips, and all electrical connections are securely fastened.

Secure all loose cables using cable clips.

Check and adjust any disassembled or loose headlights after installation.

Spray heating unit components with anti-corrosion wax (Tectyl 100K, Order No. 111329).

- Start engine, bleed coolant circuit according to the vehicle manufacturer's specifications, top up with coolant.
- Warning! Only use manufacturer-approved coolant.
- Check the coolant system for leaks according to the manufacturer's instructions.
- Attach the "Switch off auxiliary heating before re-fuelling" sticker in the tank flap or the left side of the B-pillar.
- After assembly, follow the manufacturer's instructions for star diagnosis to activate the auxiliary heater.
- Open the vehicle error memory and delete any errors for the heater and air conditioning system.
- Check that the auxiliary heating operates properly, see operating instructions / installation instructions.

Webasto

Feel the drive

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