Water Heater

Webasto
Feel the Drive

***Thermo Top Evo 4* Parking Heater** E1 00 0258

Installation Documentation
Mercedes Benz A-Class (W176), B-Class (W246) and CLA (C117)

Validity

Manufacturer	Model	Type	EG-BE No. / ABE
Mercedes Benz	A-Class	W176	e1 * 2007 / 46 * 0928 * ...

Motorisation	Fuel	Transmission type	Output in kW	Displacement in cm³	Engine code
A 180	Petrol	SG / 7-speed DCT	90	1595	M 270
A 200	Petrol	SG / 7-speed DCT	115	1595	M 270
A 250	Petrol	7-gear DCT	155	1991	M 270

Manufacturer	Model	Type	EG-BE No. / ABE
Mercedes Benz	B-Class	W246	e1 * 2007 / 46 * 0751 * ...

Motorisation	Fuel	Transmission type	Output in kW	Displacement in cm³	Engine code
B 180	Petrol	SG	90	1595	M 270
B 200	Petrol	SG	115	1595	M 270
B 250	Petrol	7-gear DCT	155	1991	M 270

Manufacturer	Model	Type	EG-BE No. / ABE
Mercedes Benz	CLA	C117	e1 * 2007 / 46 * 1007 * ...

Motorisation	Fuel	Transmission type	Output in kW	Displacement in cm³	Engine code
CLA 180	Petrol	6-speed SG	90	1595	M 270
CLA 200	Petrol	7-gear DCT	115	1595	M 270

SG = Manual transmission
DCT = Automatic transmission

From Model Year 2012
Left-hand drive vehicle

Verified equipment variants: Thermatic / Thermotronic
Headlight washer system
Daytime running lights
Blue Efficiency
ECO Start-Stop
Euro 5 and 6

Not verified: Passenger compartment monitoring
Front fog light

Total installation time: about 9.5 hours

Mercedes Benz A-Class (W176), B-Class (W246) and CLA (C117)

Table of Contents

Necessary Components

- Basic delivery scope of *Thermo Top Evo 4*based on price list
- Installation kit for Mercedes Benz A-/B-class / CLA 2012 Petrol: **1321291A**
- Heater control in accordance with price list and upon consultation with end customer
- In case of Telestart, indicator lamp in accordance with price list and in consultation with end customer

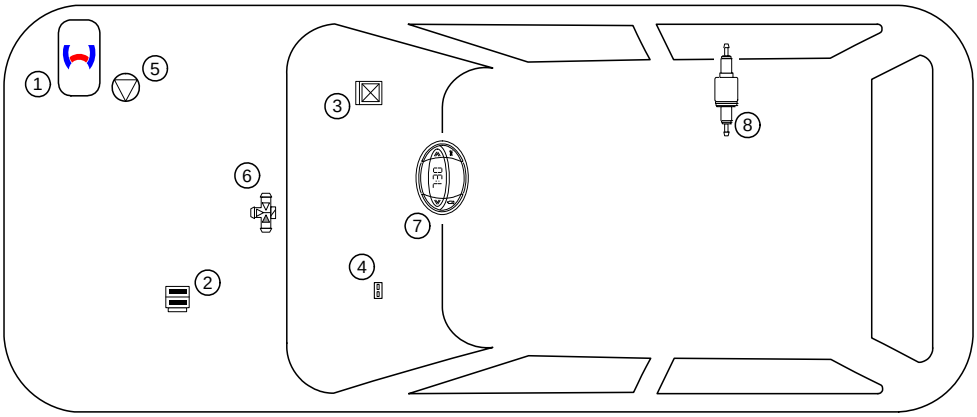
Installation instructions:

- Arrange for the vehicle to be delivered with the tank only about ¼ full!
- The installation location of the push button in the case of Telestart or Thermo Call should be confirmed with the end customer.
- Depending on the available space and manufacturer's instructions, we recommend the use of a vehicle battery with more electrical capacity.
- In case of the "island" integration of the coolant circuit, only *TT-Evo 4* may be installed.
- In case of "island" integration, there is no engine pre-heating during parking heater operation.

Installation Overview

Legend:

1. Heater
2. Fuse holder of engine compartment
3. CAN-Module W-Bus
4. CAN-node
5. Circulating pump
6. Solenoid valve
7. Digital timer
8. Metering pump



Notes on Total Installation Time

The total installation time includes the time needed for mounting and demounting of the vehicle-specific components, the heater specific installation time and all other times required for the system integration and initial start-up of the heater.
The total installation time may vary for vehicle equipment other than provided.

Mercedes Benz A-Class (W176), B-Class (W246) and CLA (C117)

Information on Operating and Installation Instructions

1 Important Information (not complete)

1.1 Installation and Repair

The improper installation or repair of Webasto heating and cooling systems can cause fire or the leakage of deadly carbon monoxide, leading to serious injury or death.

To install and repair Webasto heating and cooling systems you need to have completed a special company training course and have the appropriate technical documentation, special tools and special equipment.

Installation and repair may ONLY be carried out by persons trained and certified in a Webasto training course. NEVER try to install or repair Webasto heating or cooling systems if you have not completed a Webasto training course, you do not have the necessary technical skills and you do not have the technical documentation, tools and equipment available to ensure that you can complete the installation and repair work properly.

Only use genuine Webasto parts. See the Webasto air and water heaters accessories catalogue for this purpose.

1.2 Operation

To ensure safe operation, we recommend having the heater checked every two years by an authorised Webasto dealer, especially when used over a long period and/or under extreme environmental conditions.

Do not operate the heater in closed rooms due to the danger of poisoning and suffocation.

Always switch off the heater before refuelling.

The heater may only be used with the prescribed fuel Diesel (DIN EN 590) or petrol (DIN EN 227).

The heater may not be cleaned with a high-pressure cleaner.

1.3 Please note

ALWAYS follow all Webasto installation and operating instructions and observe all warnings.

To become familiar with and understand all functions and properties of the heater, the operating instructions must be read carefully and observed at all times.

For proper, safe installation and repair work, the installation instructions with all warnings and safety information must be carefully read and observed at all times. Please always contact a workshop authorised by Webasto for all installation and repair work.

Important

Webasto shall assume no liability for defects, damage and injuries resulting from a failure to observe the installation, repair and operating instructions of the information contained in them.

This liability exclusion particularly applies to improper installations and repairs, installations and repairs by untrained persons or in the case of a failure to use genuine spare parts.

The liability due to culpable disregard to life, limb or health and due to damage or injuries caused by a wilful or reckless breach of duty remain unaffected, as does the obligatory product liability.

Installation should be carried out according to the general, standard rules of technology. Unless specified otherwise, fasten hoses, lines and wiring harnesses to original vehicle lines and wiring harnesses using cable ties. Insulate loose wire ends and tie back. Connectors on electronic components must audibly snap into place during assembly.

Sharp edges should be fitted with rub protection. Spray unfinished body areas, e.g. drilled holes, with anti-corrosion wax (Tectyl 100K, Order No. 111329).

Observe the instructions and guidelines of the respective vehicle manufacturer for demounting and mounting vehicle specific components!

The initial startup is to be executed with the Webasto Thermo Test Diagnosis.

When installing an IPCU, the corresponding settings must be checked or adjusted before the installation.

2 Statutory regulations governing installation

Guidelines	Thermo Top Evo
Heating Directive ECE R122	E1 00 0258
EMC Directive ECE R10	E1 04 5627

Note

The regulations of these guidelines are binding in the scope of the Directive 70/156/EEC and/or 2007/46/EC (for new vehicle models from 29/04/2009) and should also be observed in countries in which there are no special regulations.

Important

Failure to follow the installation instructions will result in the invalidation of the type approval for the heater and therefore invalidation of the general **homologation of the vehicle**.

Note

For vehicles with an EU permit, no entry in accordance with § 19 Sub-Section 4 of Annex VIII b to the Road Traffic Act is required.

2.1 Excerpt from the directive 2001/56/EC Appendix VII for the installation of the heater

Beginning of excerpt.

ANNEX VII

REQUIREMENTS FOR COMBUSTION HEATERS AND THEIR INSTALLATION

1. GENERAL REQUIREMENTS

1.7.1. A clearly visible tell-tale in the operator's field of view shall inform when the combustion heater is switched on or off.

2. VEHICLE INSTALLATION REQUIREMENTS

2.1. Scope

2.1.1. Subject to paragraph 2.1.2. combustion heaters shall be installed according to the requirements of this Annex.

2.1.2. Vehicles of category O having liquid fuel heaters are deemed to comply with the requirements of this Annex.

2.2. Positioning of heater

2.2.1. Body sections and any other components in the vicinity of the heater must be protected from excessive heat and the possibility of fuel or oil contamination.

2.2.2. The combustion heater shall not constitute a risk of fire, even in the case of overheating. This requirement shall be deemed to be fulfilled if the installation ensures an adequate distance to all parts and suitable ventilation, by the use of fire resistant materials or by the use of heat shields.

2.2.3. In the case of M2 and M3 vehicles, the heater must not be positioned in the passenger compartment. However, an installation in an effectively sealed envelope which also complies with the conditions in paragraph 2.2.2 may be used.

2.2.4. The label referred to in paragraph 1.4 or a duplicate, must be positioned so that it can be easily read when the heater is installed in the vehicle.

2.2.5. Every reasonable precaution should be taken in positioning the heater to minimise the risk of injury and damage to personal property.

2.3. Fuel supply

2.3.1. The fuel filler must not be situated in the passenger compartment and must be provided with an effective cap to prevent fuel spillage.

2.3.2. In the case of liquid fuel heaters, where a supply separate to that of the vehicle is provided, the type of fuel and its filler point must be clearly labelled.

2.3.3. A notice, indicating that the heater must be shut down before refuelling, must be affixed to the fuelling point. In addition a suitable instruction must be included in the manufacturer's operating manual.

2.4. Exhaust system

2.4.1. The exhaust outlet must be located so as to prevent emissions from entering the vehicle through ventilators, heated air inlets or opening windows.

2.5. Combustion air inlet

2.5.1. The air for the combustion chamber of the heater must not be drawn from the passenger compartment of the vehicle.

2.5.2. The air inlet must be so positioned or guarded that blocking by rubbish or luggage is unlikely.

2.6. Heating air inlet

2.6.1. The heating air supply may be fresh or recirculated air and must be drawn from a clean area not likely to be contaminated by exhaust fumes emitted either by the propulsion engine, the combustion heater or any other vehicle source.

2.6.2. The inlet duct must be protected by mesh or other suitable means.

2.7. Heating air outlet

2.7.1. Any ducting used to route the hot air through the vehicle must be so positioned or protected that no injury or damage could be caused if it were to be touched.

2.7.2. The air outlet must be so positioned or guarded that blocking by rubbish or luggage is unlikely.

End of excerpt.

In multilingual versions the German language is binding.

Mercedes Benz A-Class (W176), B-Class (W246) and CLA (C117)

Information on Validity

This installation documentation applies to Mercedes Benz A-Class (W176), B-Class (W246) and CLA (C117) Petrol vehicles - for validity, see page 1 - from model year 2012 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 this installation documentation.

Vehicle and engine types, equipment variants and other specifications not listed in this installation documentation have not been tested. However, installation according to this installation documentation may be possible.

Technical Information

Special Tools

- Hose clamp pliers for self-clamping hose clamps
- Hose clamp pliers for Clic hose clamps of type W
- Automatic wire stripper 0.2 - 6mm²
- Crimping pliers for cable lug / tab connector 0.5 - 6mm²
- Torque wrench for 2.0 - 10 Nm
- Hose clamping pliers
- Metric thread-setter kit
- Webasto Thermo Test diagnosis with current software

Dimensions

- All dimensions are in mm.

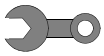
Tightening torque values

- Tightening torque values of 5x13 heater bolts = 8Nm.
- Tightening torque values of 5x15 retaining plate of water connection piece bolt = 7Nm.
- Tighten other bolt connections in accordance with manufacturer's instructions or in accordance with state-of-the-art-technology.

Explanatory Notes on Document

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

Mechanical system



Electrical system

Coolant circuit

Combustion air

Fuel

Exhaust gas

Software

Special features are highlighted using the following symbols:

Specific risk of injury or fatal accidents

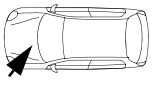
Specific risk of damage to components

Specific risk of fire or explosion.

Reference to general installation instructions of the 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.



Mercedes Benz A-Class (W176), B-Class (W246) and CLA (C117)

Preliminary Work

Vehicle

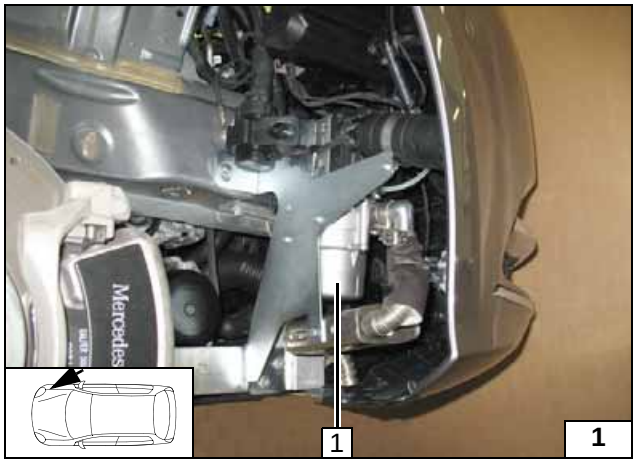
- Open the fuel tank cap.
- Ventilate the tank.
- Close the fuel tank cap again.
- Remove the engine cover.
- Depressurise the cooling system.
- Disconnect the battery.
- Remove the right front wheel.
- Remove the wheel well trim on the right side.
- Remove the coolant expansion tank.
- Remove the right and left underride protection.
- Remove the instrument panel in accordance with the manufacturer's instructions (CAN-node).
- Remove the lower A-pillar trim on the front passenger's side (only in case of Telestart and / or Thermo Call).

Only carry out the following steps during the corresponding installation sequence:

- Remove the lower engine trim.
- Lower the exhaust system.
- Remove the heat shield plate of the fuel tank.
- Remove the fuel tank according to the manufacturer's instructions.
- Remove the fuel-tank sending unit in accordance with the manufacturer's instructions.

Heater

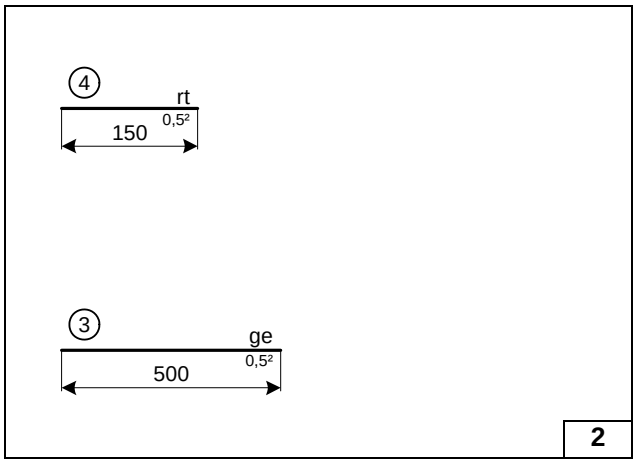
- Remove years that do not apply from the type and duplicate label.
- Attach the duplicate label (type label) in the appropriate place inside the engine compartment.



Heater Installation Location

1 Heater

Installation location

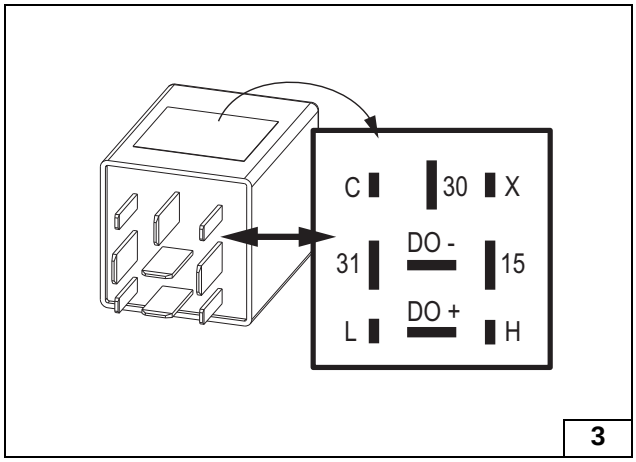


2

Preparing Electrical System

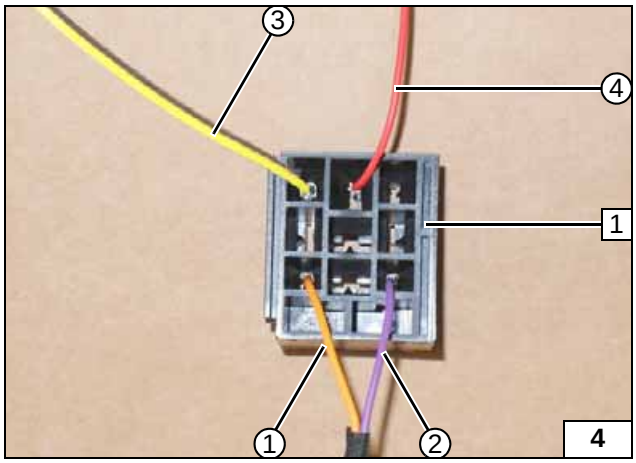
Wire sections retain their numbering in the entire document.

Assigning wires



3

Preparing CAN-module

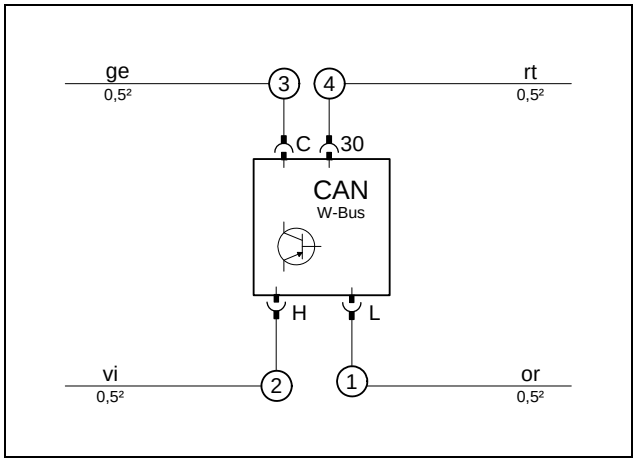


4

Connect wires according to the wiring diagram (see following image). Connect CAN wiring harness with wires ① and ② . CAN-Module is only inserted after installation.

1 Relay socket
① Orange (or) wire of CAN-Module/L
② Violet (vi) wire of CAN-Module/H
③ Yellow (ge) wire of CAN-Module/C
④ Red (rt) wire of CAN-Module/30

Premounting wires



Connect wires to relay socket. View of CAN-Module on contact side.

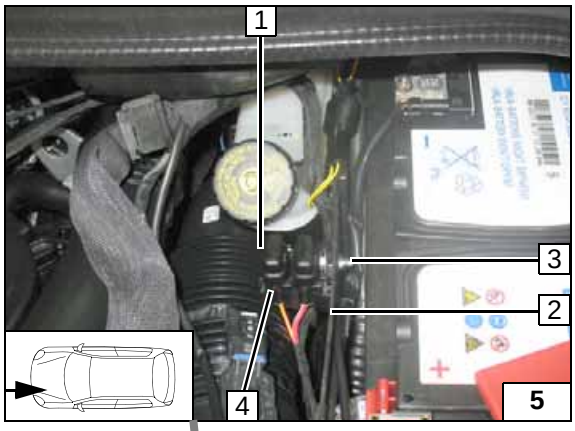
Preparing CAN-module

Electrical System

Fuse holder of engine compartment

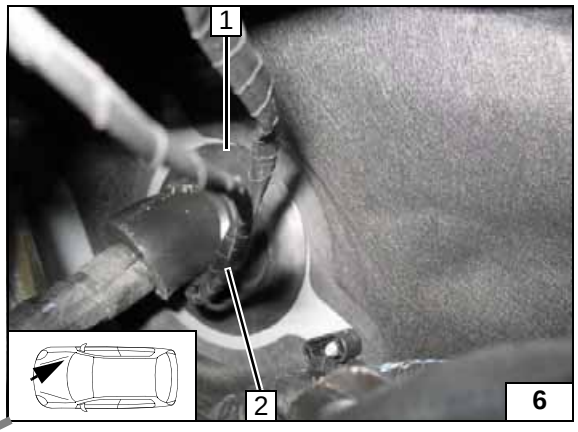
Ensure sufficient distance to intake manifold at position **1**.

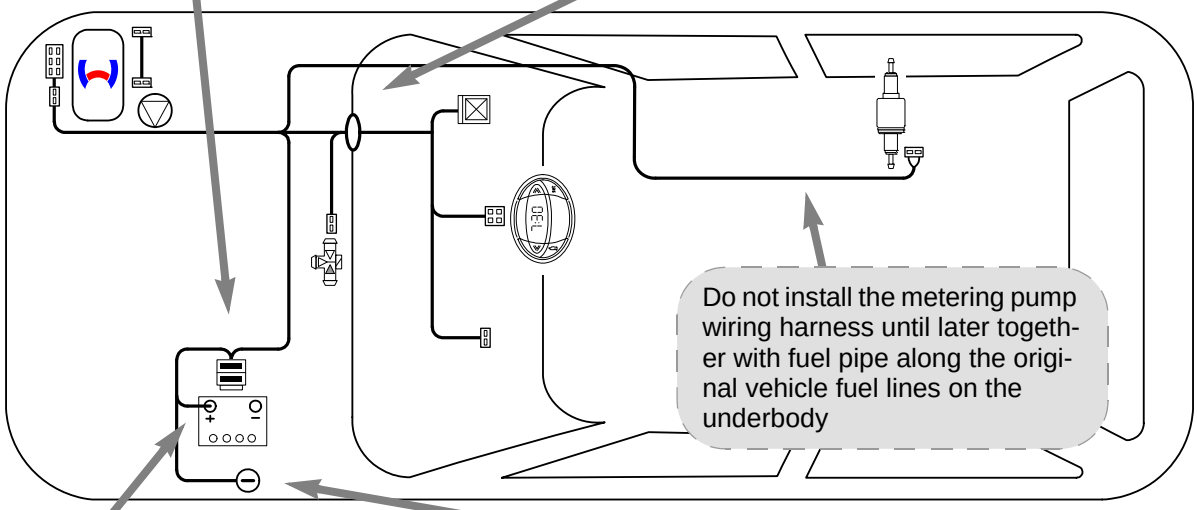
2 M5x16 bolt, washer, retaining plate of fuse holder, 6mm dia. hole, washer, nut
3 Battery box
4 F1-2 fuses



Wiring harness pass through

1 Protective rubber plug
2 Wiring harnesses of heater, heater control and wiring harness of solenoid valve (leave approx. 500mm of the side with the connector in the engine compartment)

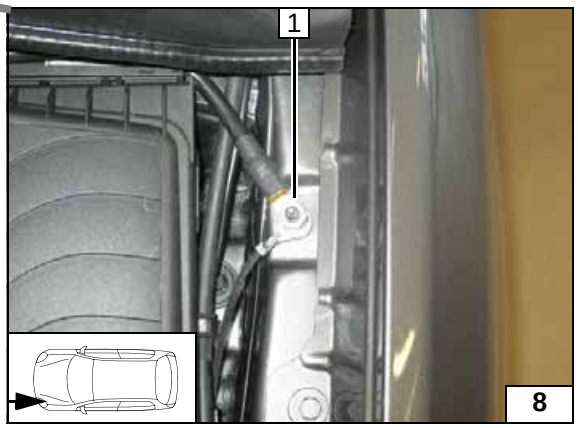




Wiring harness routing diagram

Positive wire

1 Positive wire on positive battery terminal

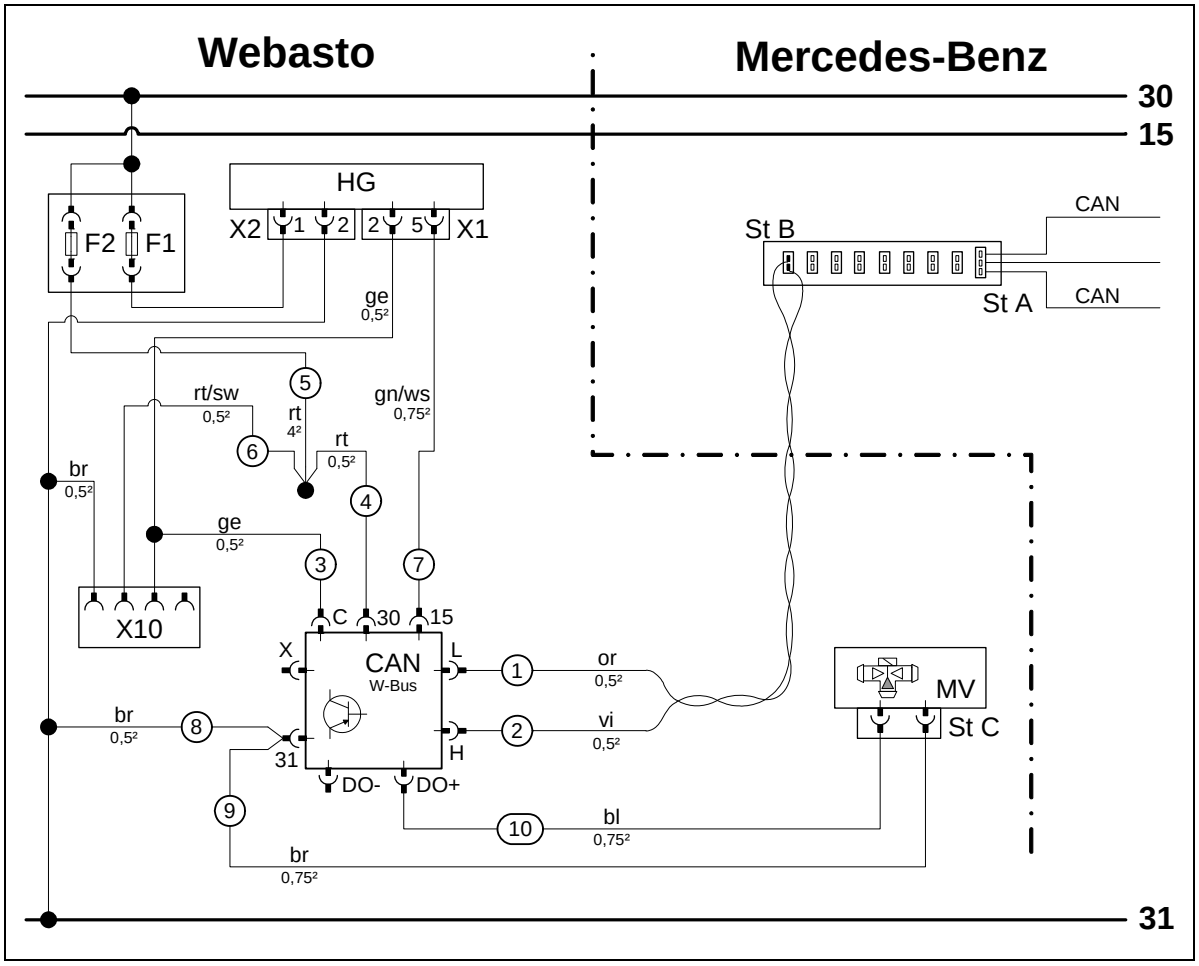


Earth wire

1 Earth wire on original vehicle earth support point

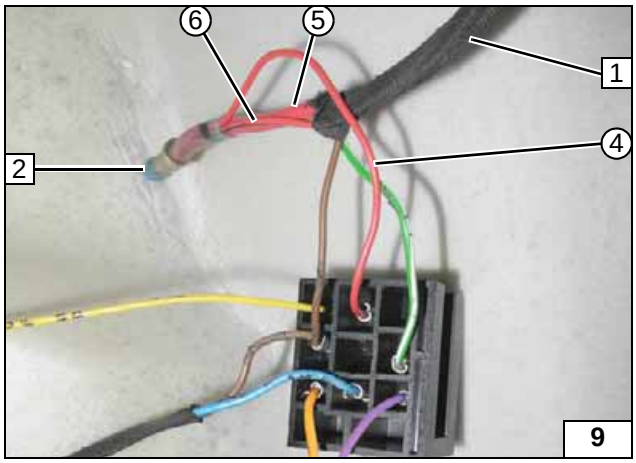
Fan Controller

Wiring diagram



Legend

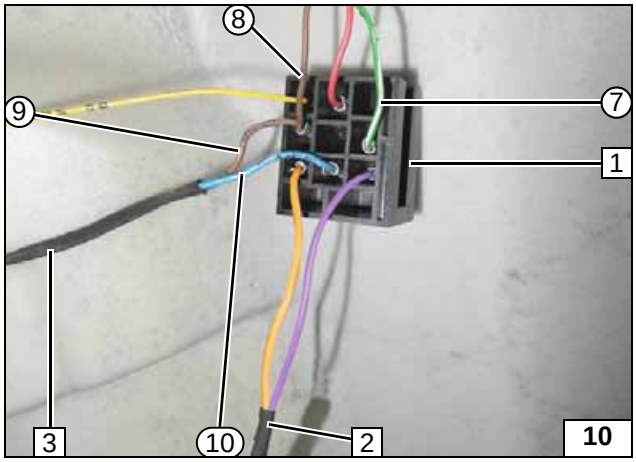
Webasto components		Vehicle components		Colours and symbols	
HG	TT-Evo heater	St A	CAN-node	rt	red
X1	6-pin heater connector			sw	black
X2	2-pin heater connector			ge	yellow
F1	20A fuse			gn	green
F2	Replace 30A fuse with 3A fuse.			bl	blue
				ws	white
X10	4-pin connector of heater control			or	orange
				br	brown
CAN	CAN-module			vi	violet
ST B	Connector of CAN wires wiring harness			rt/sw	red/black
				gn/ws	green/white
MV	Solenoid valve			Wiring colours may vary.	
ST C	2-pin connector MV				



Connect wires ④, ⑤ and ⑥ to solder wire terminator **2** according to wiring diagram in passenger compartment.

1 Wiring harness of heater
④ Red (rt) wire of CAN-Module/30
⑤ Red (rt) wire of fuse F2
⑥ Red/black (rt/sw) wire of connector X10

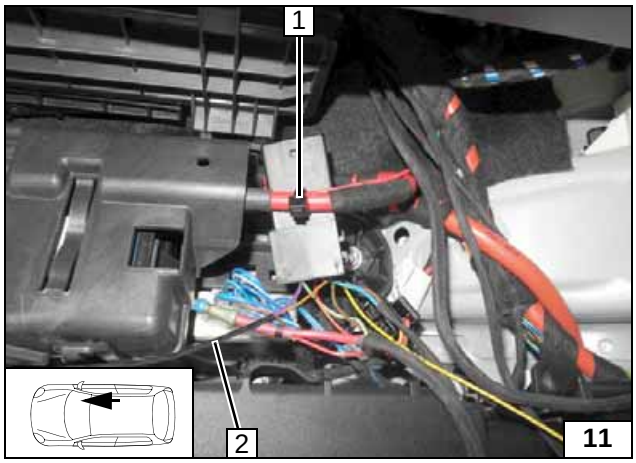
Connecting wires



Shorten wiring harness of solenoid valve **3** with wires ⑨ and ⑩ by 3800mm on the side without the connector and connect it to relay socket **2**.

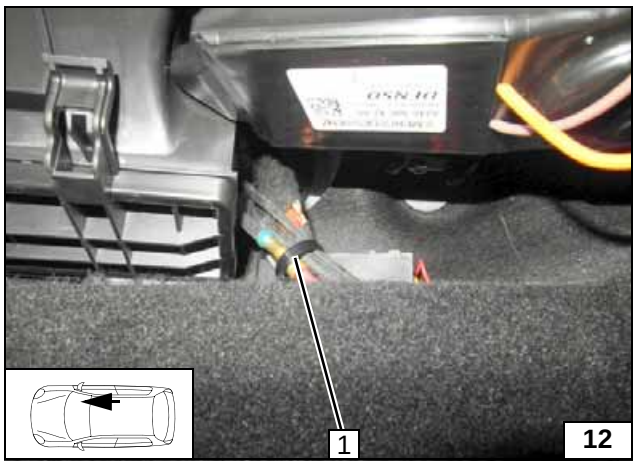
1 Relay socket
2 Wiring harness of CAN lines
⑦ Green/white (gn/ws) wire of CAN-Module/15
⑧ Brown (br) wire of CAN-Module/31
⑨ Brown (br) wire of CAN-Module/31
⑩ Blue (bl) wire of CAN-Module/DO+

Connecting wires



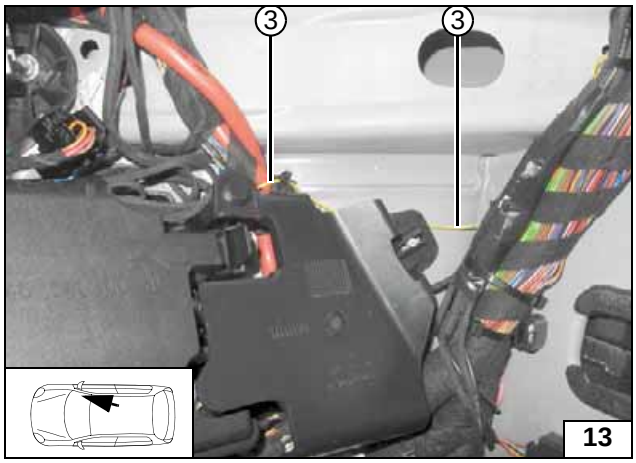
Attach CAN-Module to socket and fasten it to original vehicle wiring harness with cable tie **1**. Route wiring harness of CAN wires **2** to the left side of the vehicle.

Installing CAN-module



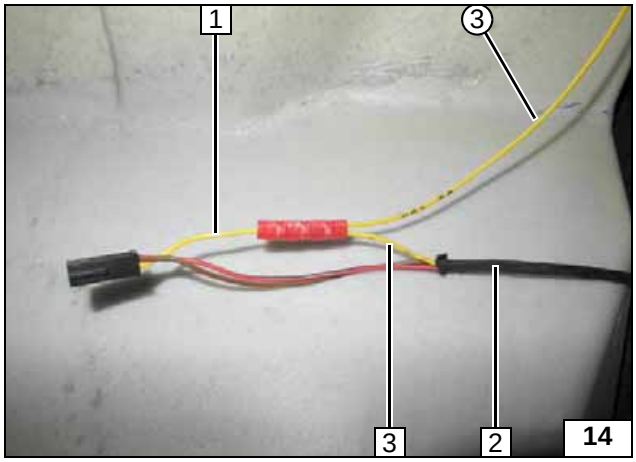
Secure lines with cable tie **1**.

Routing lines



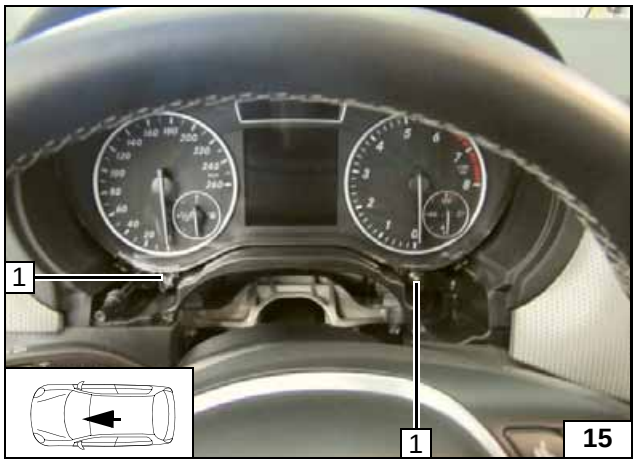
Route yellow (ge) wire ③ to connector of heater control.

Routing yellow (ge) wire



1 Yellow (ge) wire of 4-pin connector X10
2 Wiring harness of heater control
3 Yellow (ge) wire of heater connector X1/2
③ Yellow (ge) wire of CAN-Module/C

Connecting yellow (ge) wire



Remove instrument panel in accordance with manufacturer's instructions to facilitate installation of the CAN-connector.
Remove window frame, loosen bolts [2x] at position **1** and remove instrument panel.

Removing instrument panel

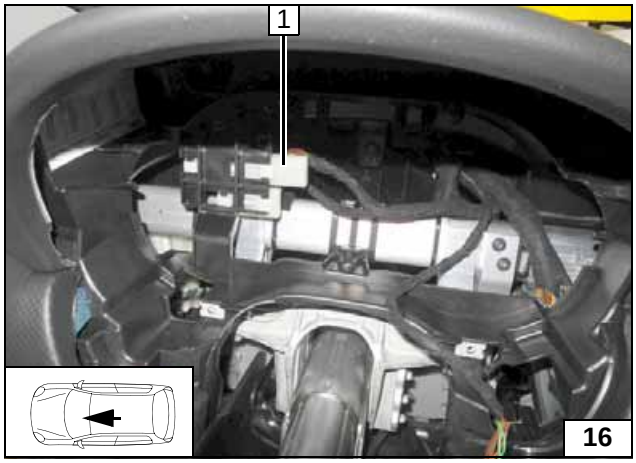


Image shows A-class.

1 Unclip plug connector of CAN-node

Unclipping plug connector of CAN-node

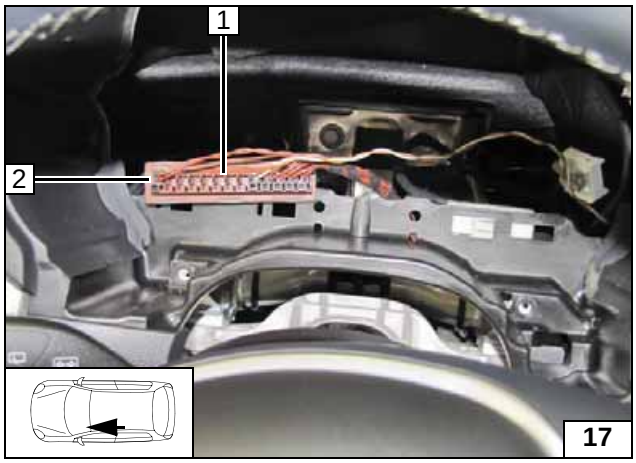
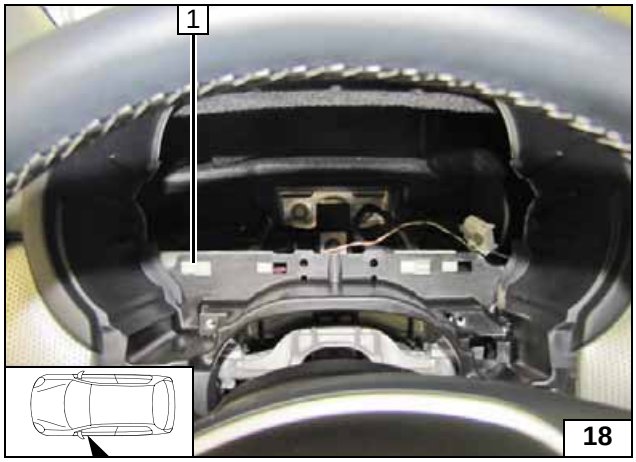


Image shows B-class.
Insert connector of CAN-module into free socket.

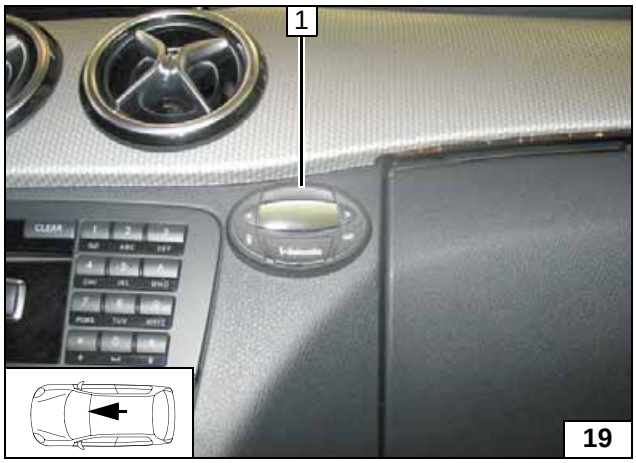
1 CAN-node
2 Connector of CAN-module (St B)

Connection of CAN-bus



All vehicles. Image shows B-class.
Re-install plug connector of CAN-node. Reinstall instrument panel.

Completing instrument panel



Digital Timer

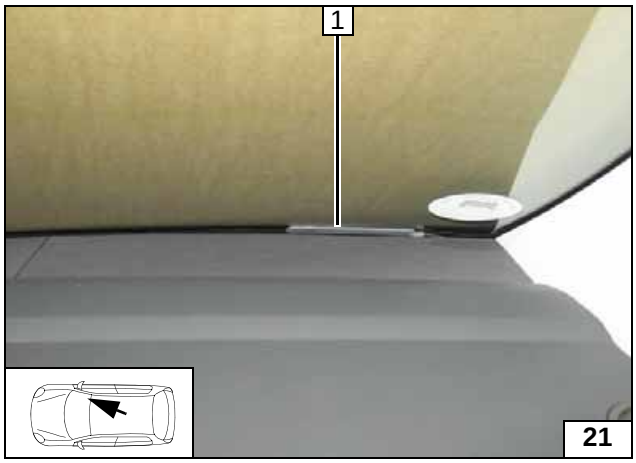
1 Digital timer

Installing digital timer

Remote Option (Telestart)

Fasten receiver **1** with adhesive tape.

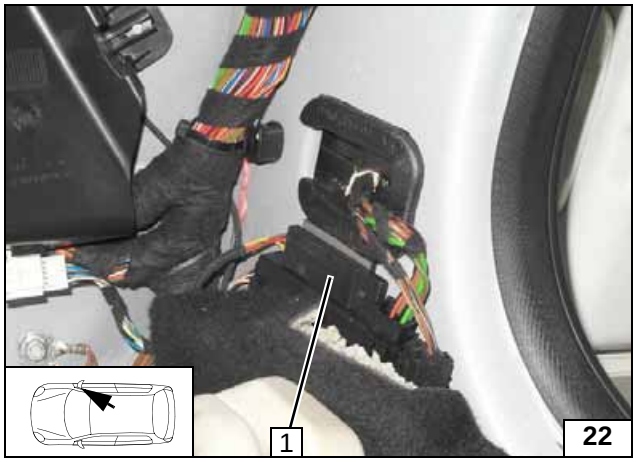
Installing receiver



All vehicles

1 Antenna

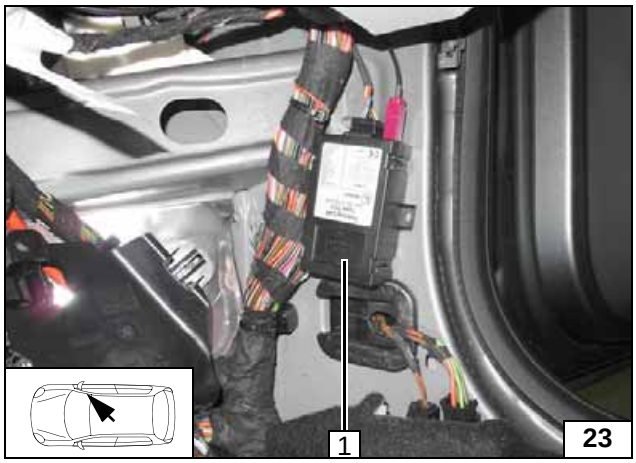
Installing antenna



Temperature sensor T100 HTM

Fasten temperature sensor **1** with adhesive tape.

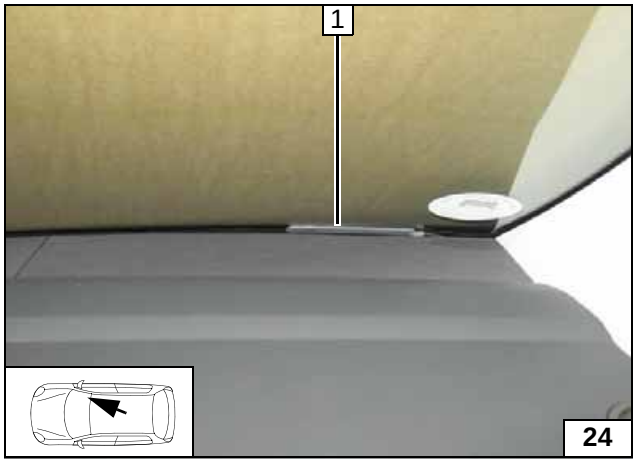
Mounting tempera-ture sensor



Remote Option (Thermo Call)

Fasten receiver **1** with adhesive tape.

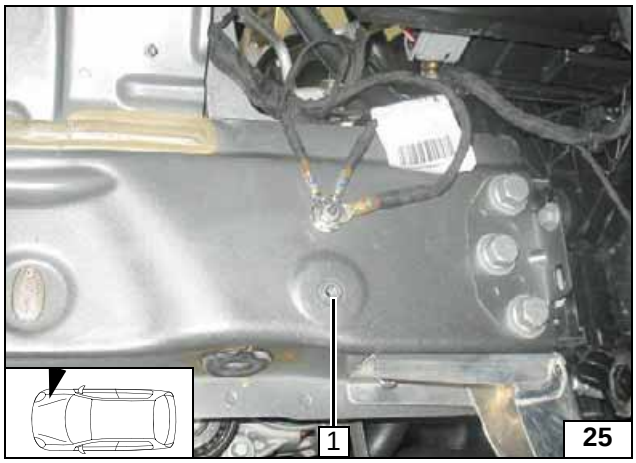
Installing receiver



All vehicles

1 Antenna

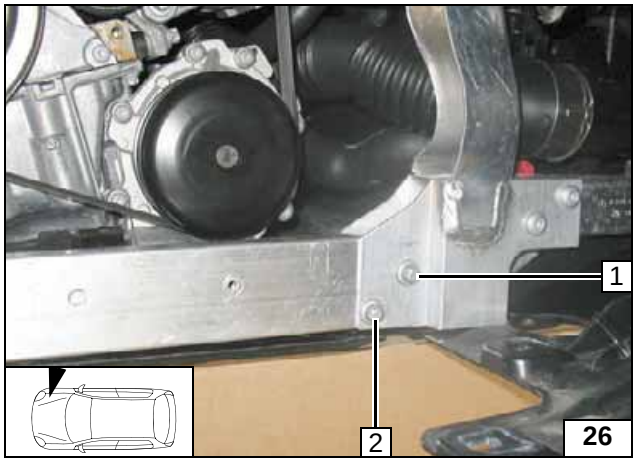
Installing antenna



Preparing Installation Location

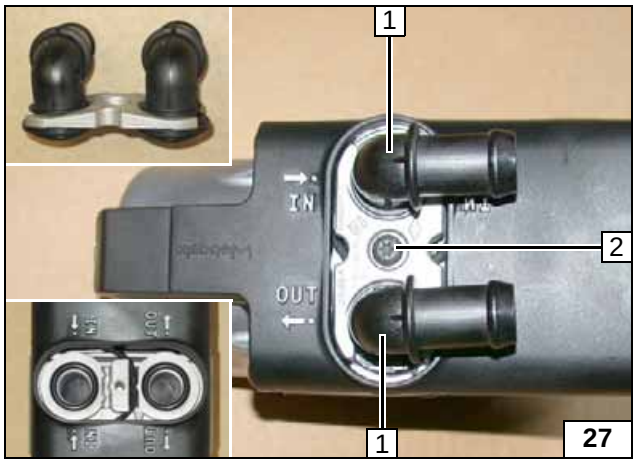
1 Rivet nut, existing hole

Installing rivet nut



1 Unscrew original vehicle bolt by approx. 5mm
2 Remove original vehicle bolt, will be re-used

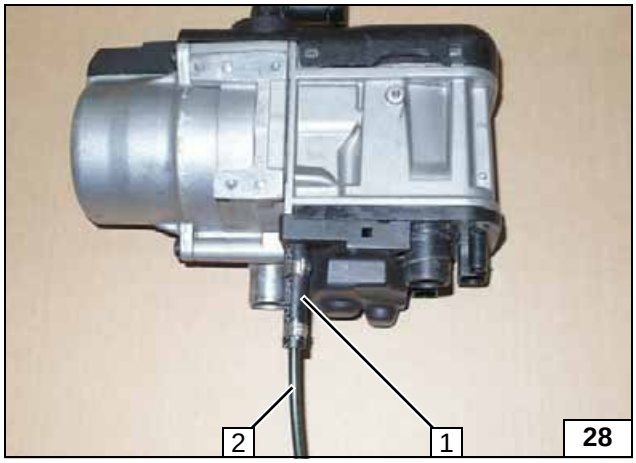
Preparing Installation Location



Preparing Heater

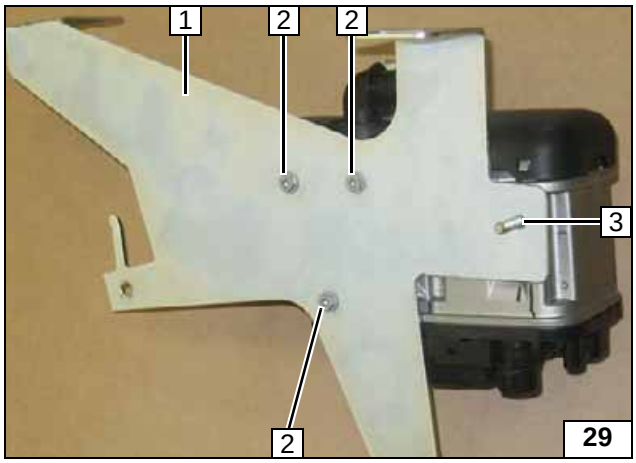
1 Water connection piece, sealing ring [2x each]
2 5x15 self-tapping bolt, retaining plate of water connection piece

Installing water connection piece



1 Hose section, 10 mm dia. clamp [2x]
2 Fuel line

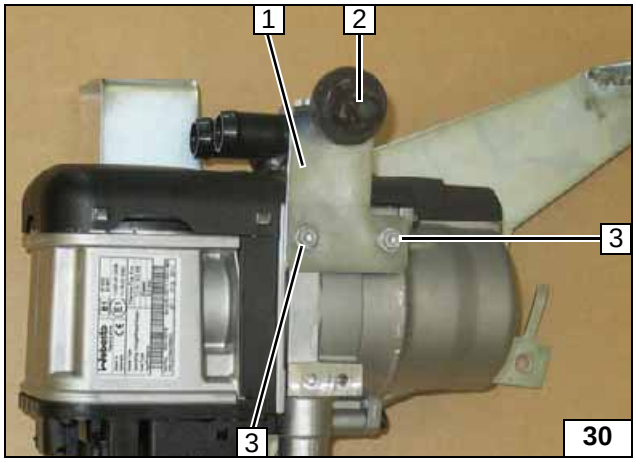
Premounting fuel line



Insert M6x25 bolt **3** into hole prior to installation.

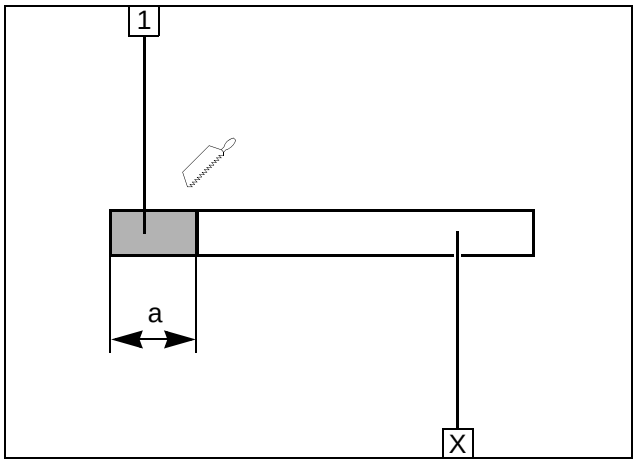
1 Part 1 of bracket
2 5x13 self-tapping bolt [3x]

Installing section 1 of bracket



1 Part 2 of bracket
2 Attach rubber bearing
3 5x13 self-tapping bolt [2x]

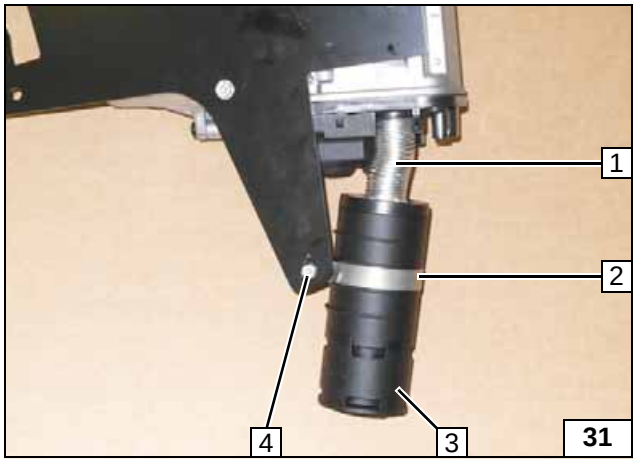
Installing section 2 of bracket



Discard section X.

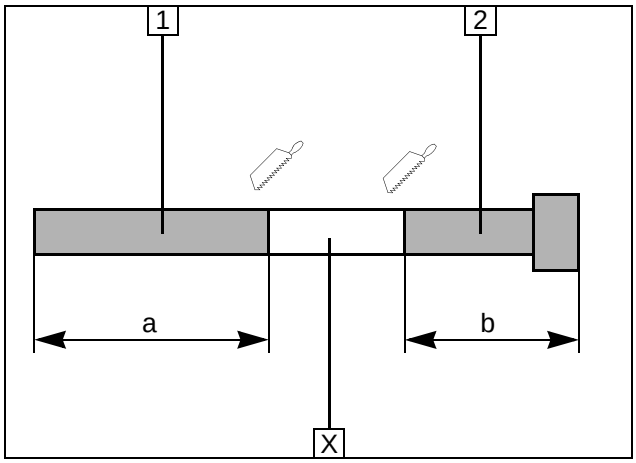
1 Combustion air pipe
a = 45

Cutting combustion air pipe to length



1 Combustion air pipe
2 51mm dia. clamp
3 Combustion air silencer
4 M5x16 bolt, flanged nut

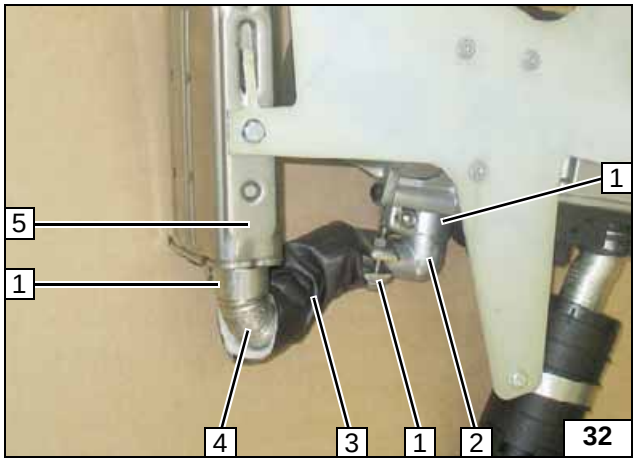
Premounting combustion air silencer



Discard section **X**.

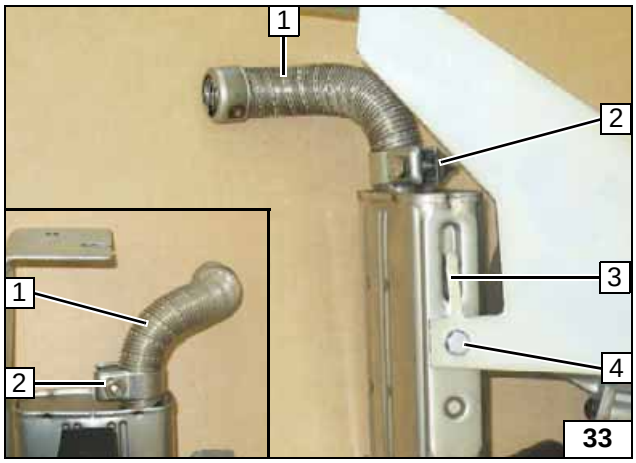
1 Exhaust pipe
a = 150
2 Exhaust end section
b = 140

Preparing exhaust pipe



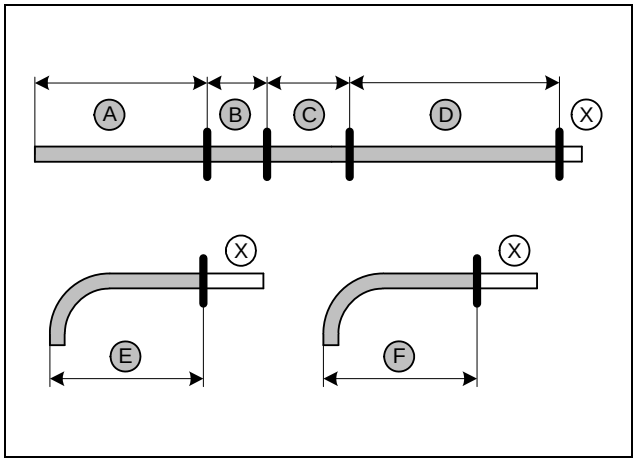
1 Hose clamp [3x]
2 Exhaust manifold
3 120mm exhaust insulation
4 Exhaust pipe
5 Silencer

Premounting exhaust system



1 Exhaust end section
2 Hose clamp
3 Twist protection
4 M6x16 bolt, spring lockwasher

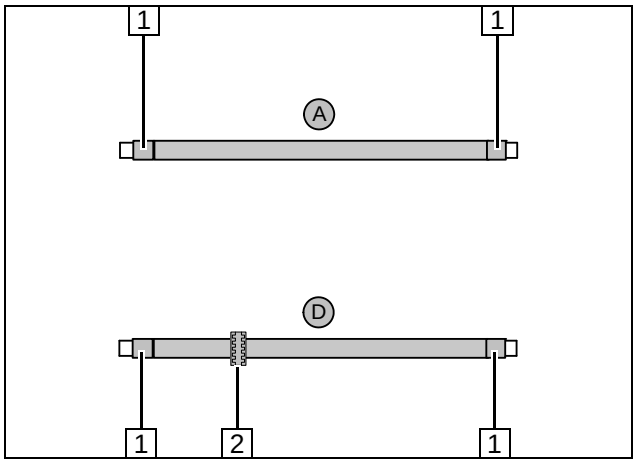
Premounting exhaust system



Discard section **X**.
Hose **E** = 90°, 18x20mm dia. moulded hose, shorten on the 20mm dia. side
Hose **F** = 90°, 18x20mm dia. moulded hose, shorten on the 20mm dia. side

A = 1020
B = 70
C = 90
D = 970
E = 90
F = 100

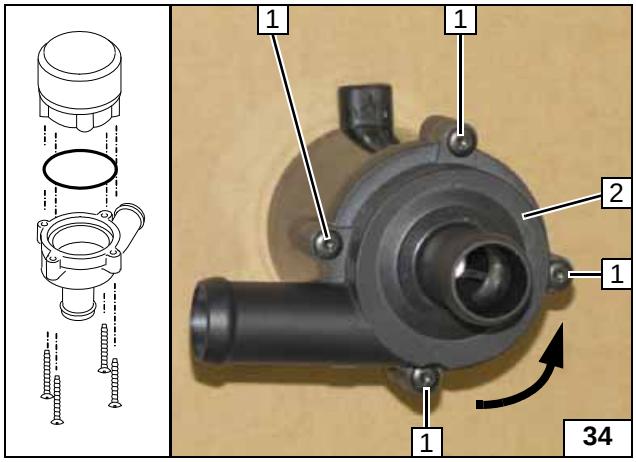
Preparing hoses



Push braided protection hoses onto hose **A** and **D** and cut to length.
Cut heat shrink plastic tubing to size.

1 25 mm long heat shrink plastic tubing [4x]
2 Push on black (sw) rubber isolator

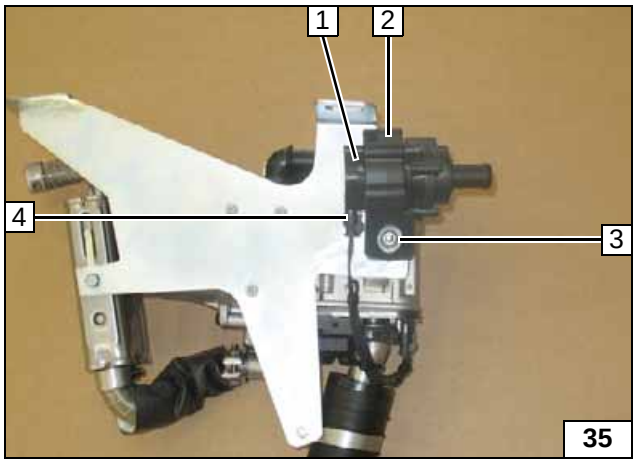
Preparing hoses



Ensure proper seating of rubber gasket.

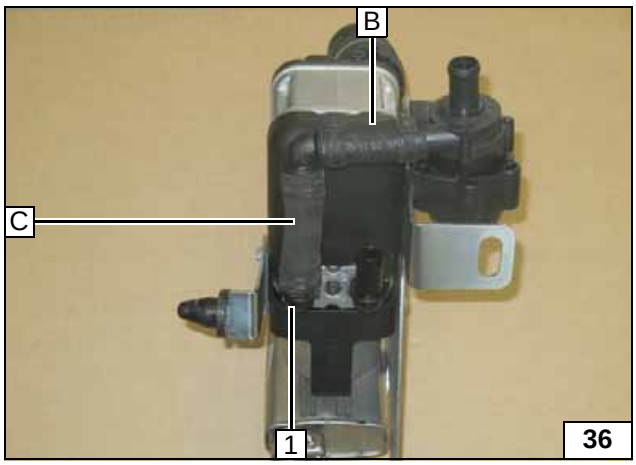
1 Torx screw [4x]
2 Cover of circulating pump, twisted by 90°

Twisting cover of circulating pump



1 Circulating pump
2 Circulating pump support
3 Large diameter washer, flanged nut
4 Wiring harness of circulating pump

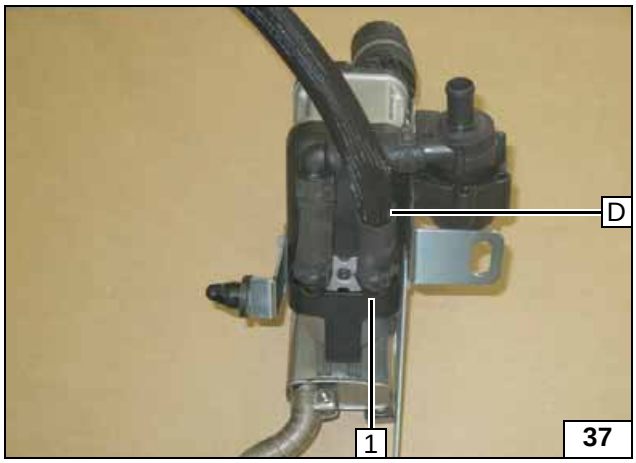
Installing circulating pump



All spring clips = 25 mm dia.

1 Connection piece on heater inlet

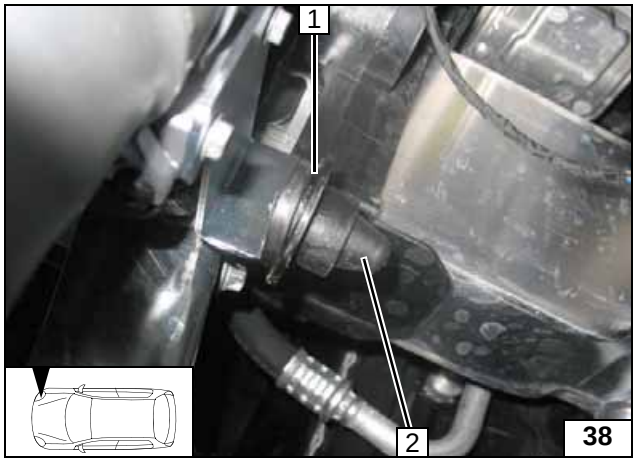
Installing hoses B and C



Spring clip = 25 mm dia.!

1 Connection piece on heater outlet

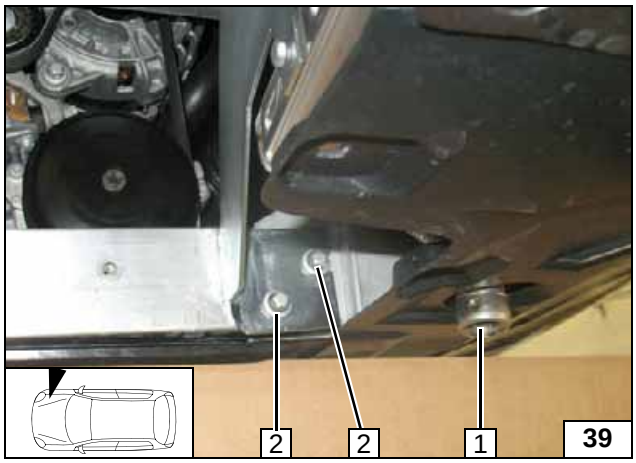
Premounting hose D



Installing Heater

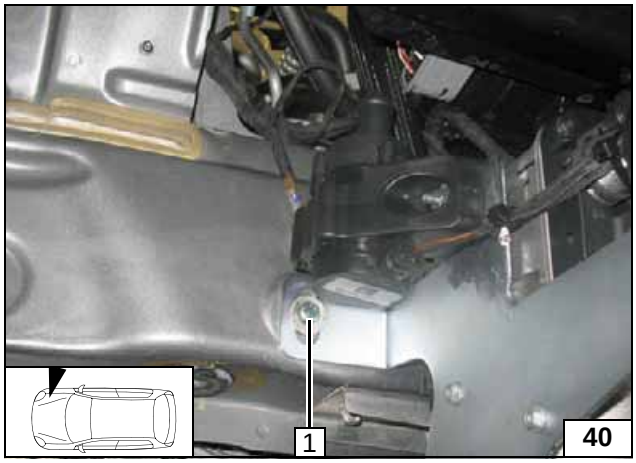
Insert bracket section 2 with rubber bearing **2** into original vehicle mounting **1**.

Installing heater



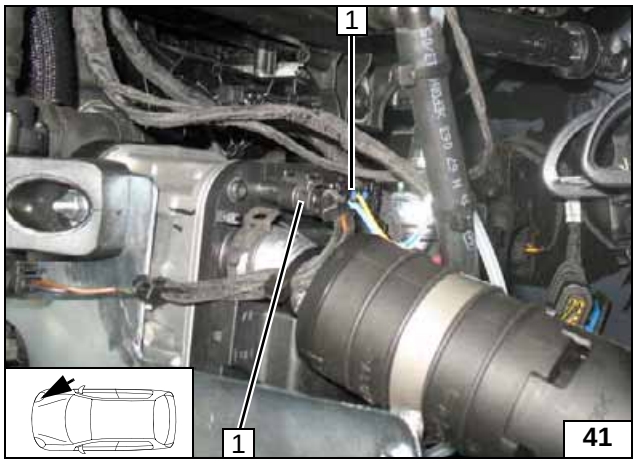
1 Exhaust end section
2 Original vehicle bolt [2x]

Installing heater



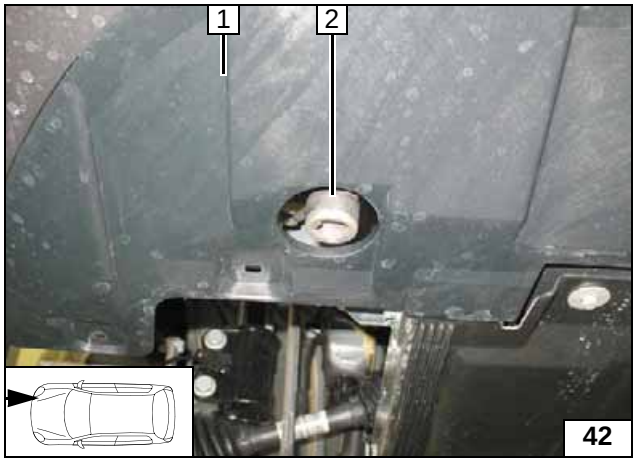
1 M6x20 bolt, spring lock washer, large diameter washer

Installing heater



1 Wiring harness of heater [2x]

Mounting wiring harness on heater

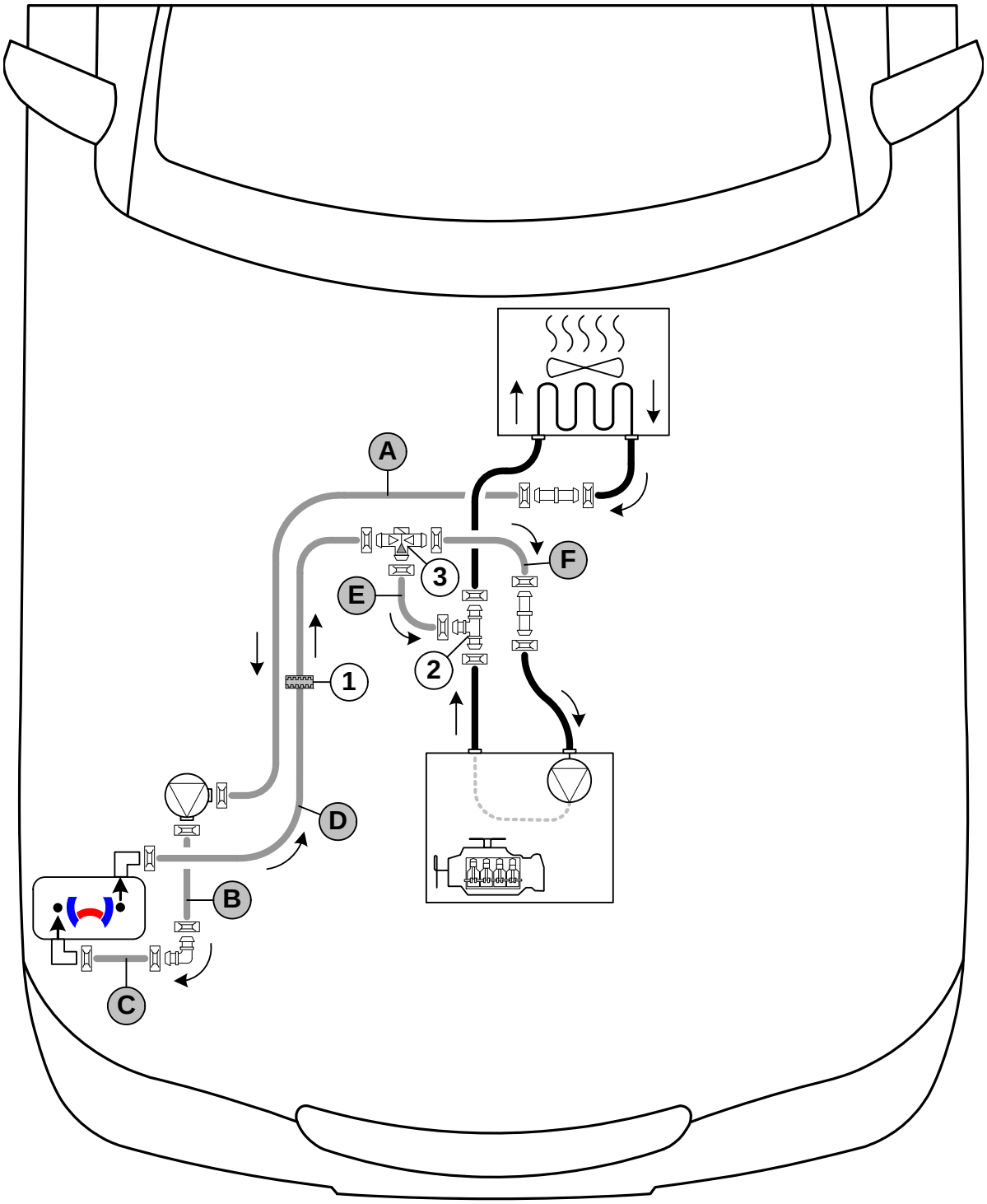


Centrally align exhaust end section **2** with hole and flush with underride protection **1**.

Aligning exhaust end section

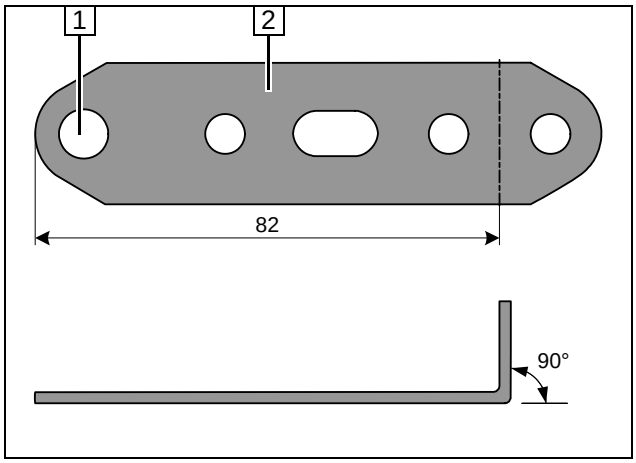
Coolant Circuit

WARNING!
Any coolant running off should be collected using an appropriate container. Install hoses so that they are kink-free. Unless specified otherwise, always fasten using cable ties. Position clamps so that no other hose can be damaged. When installing the hoses, the heater must be filled with coolant.
The connection should be "island" based on the following diagram:



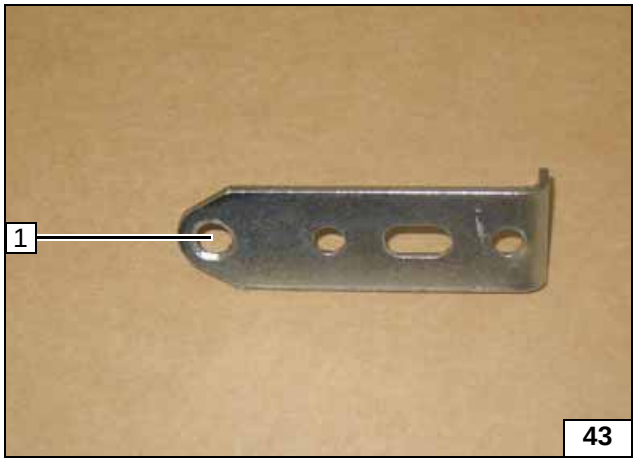
Hose routing diagram

All spring clips = 25 mm dia. **1** = Black (sw) rubber isolator . **2** = T-piece = 18x18x18mm dia. **3** = Solenoid valve ! All connecting pipes and =18x18mm dia.



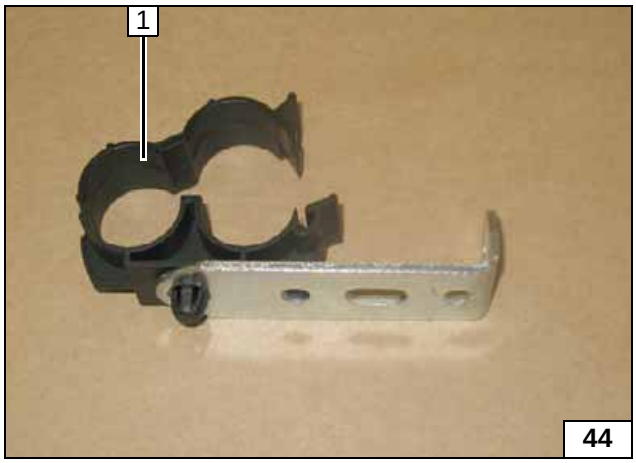
1 Drill out hole to 8 mm dia.
2 Perforated bracket

Preparing perforated bracket



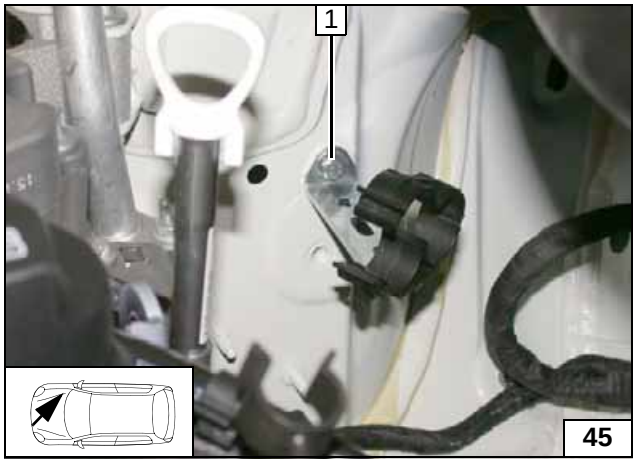
1 Countersink hole with 10mm dia. drill

Preparing perforated bracket



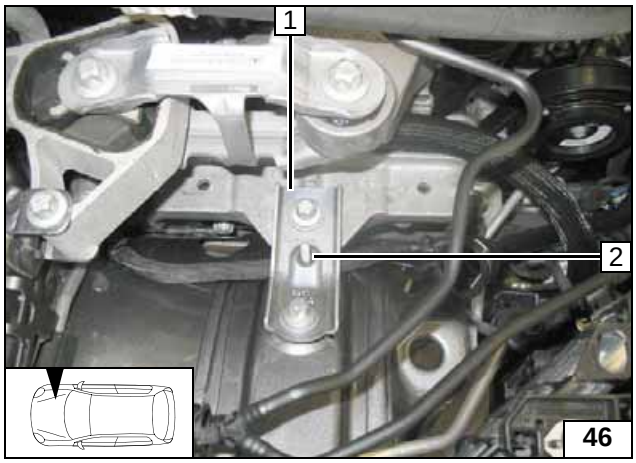
1 Install hose bracket

Preparing perforated bracket



1 M6x20 bolt, spring lockwasher, original vehicle threaded hole

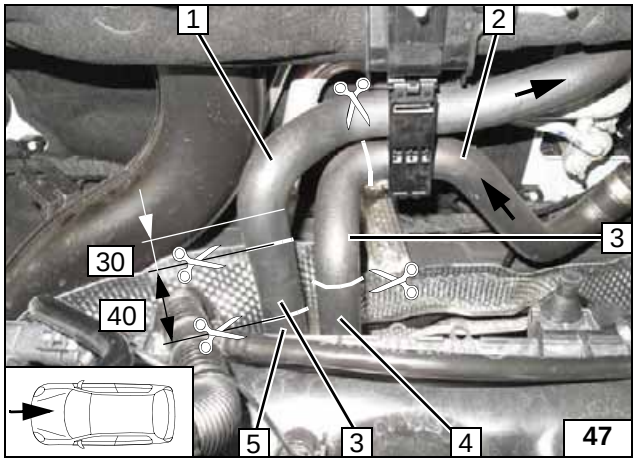
Preparing routing



Loosen strut **1** to facilitate installation.

2 M6x25 bolt, original vehicle hole, pin lock

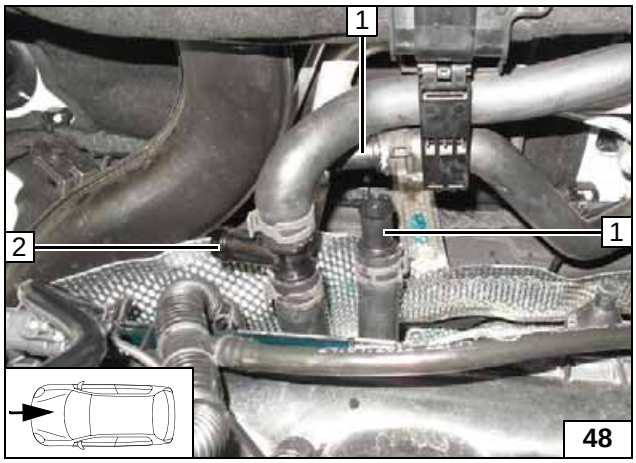
Preparing routing



Cut hose of engine outlet / heat exchanger inlet at the markings [2x].
Cut hose of engine inlet / heat exchanger outlet at the markings [2x].

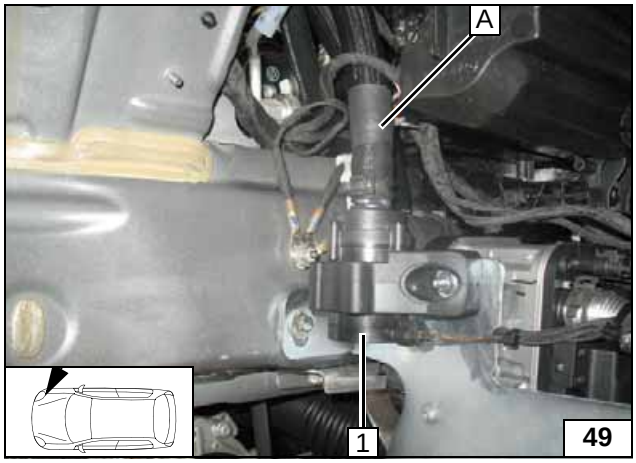
1 Hose section of heat exchanger inlet
2 Hose section on heat exchanger outlet
3 Discard hose section [2x]
4 Hose section of engine inlet
5 Engine outlet hose section

Cutting point



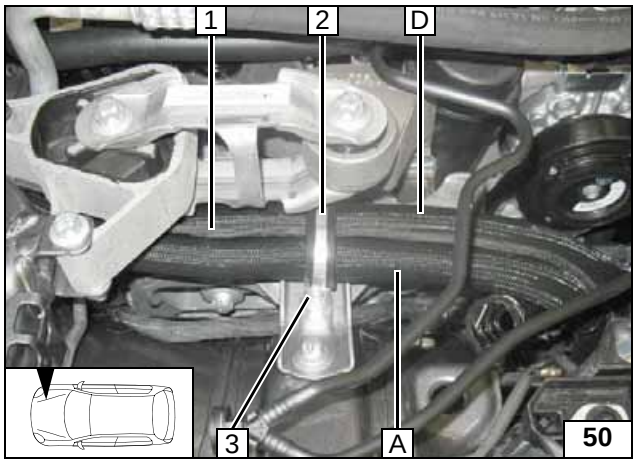
1 18x18mm dia. connecting pipe, 25mm dia. spring clip [2x each]
2 18x18x18mm dia. T-piece, 25mm dia. spring clip [2x]

Preparing hoses



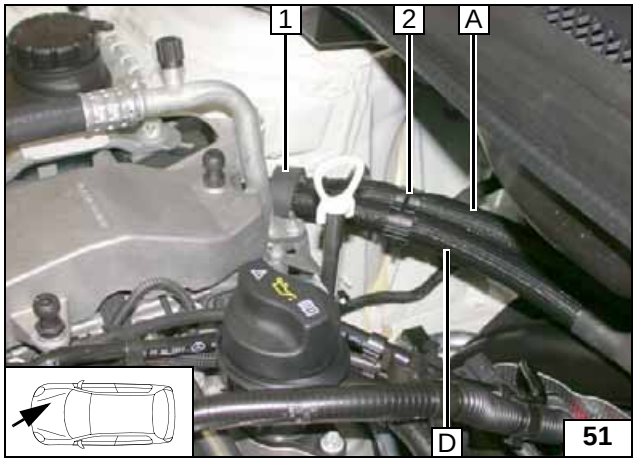
1 Circulating pump

Connection of hose A



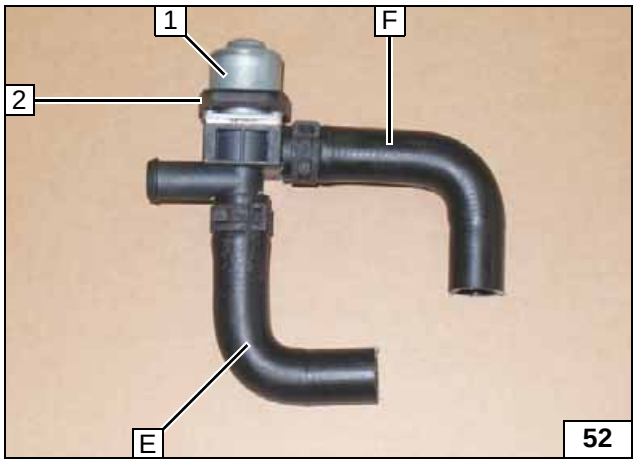
1 Wiring harness of heater
2 38mm dia. rubber-coated p-clamp
3 10mm spacer, flanged nut

Routing in engine compartment



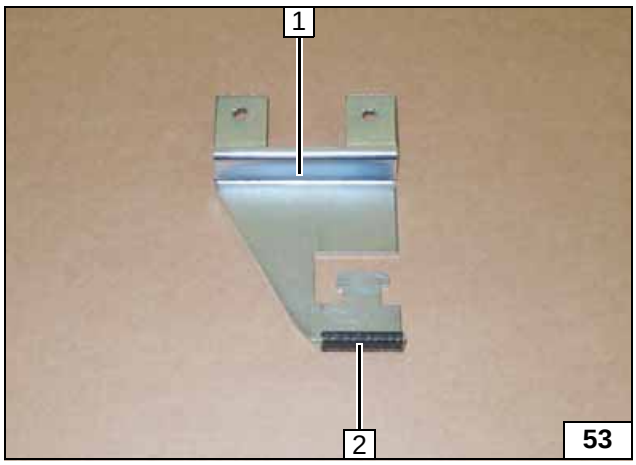
1 Position black (sw) rubber isolator
2 Hose bracket

Routing in engine compartment



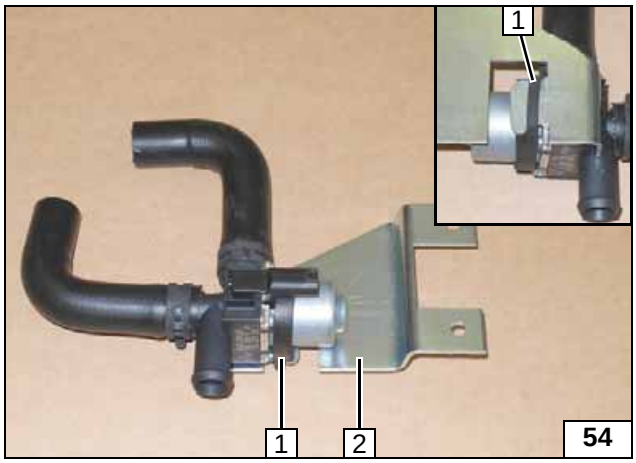
1 Solenoid valve
2 Push on mounting of solenoid valve

Premounting solenoid valve



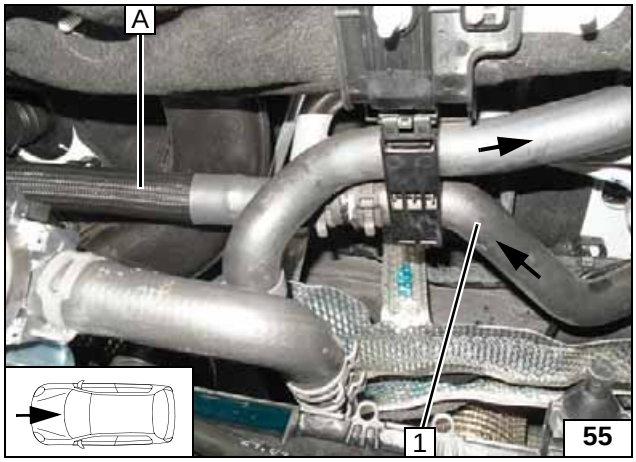
1 Bracket of solenoid valve
2 Cut 35mm edge protection to length and install it

Preparing bracket of solenoid valve



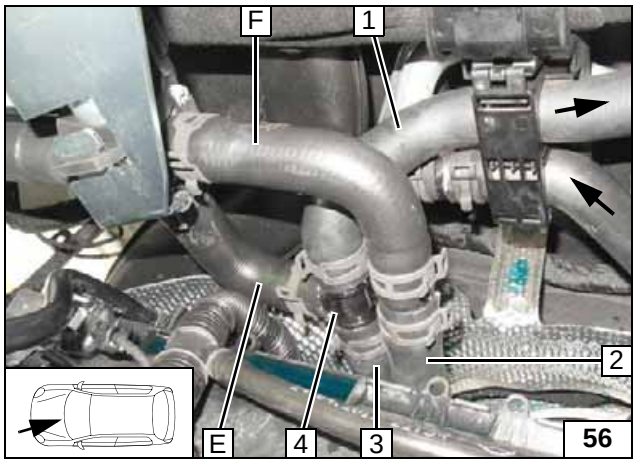
Insert solenoid valve mounting **1** into tab of bracket **2** and position it.

Premounting solenoid valve



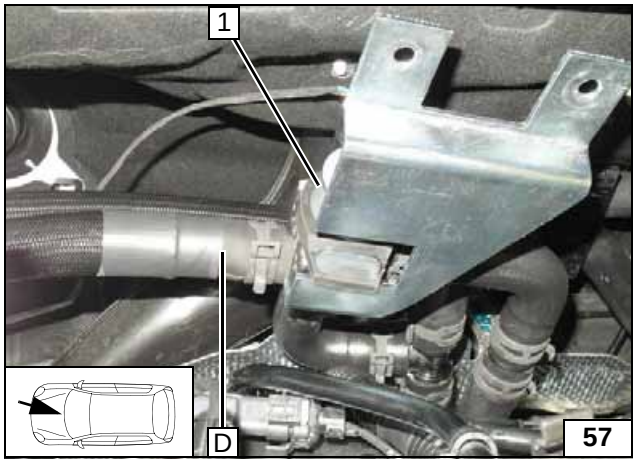
1 Hose of heat exchanger outlet

Connection on heat exchanger outlet



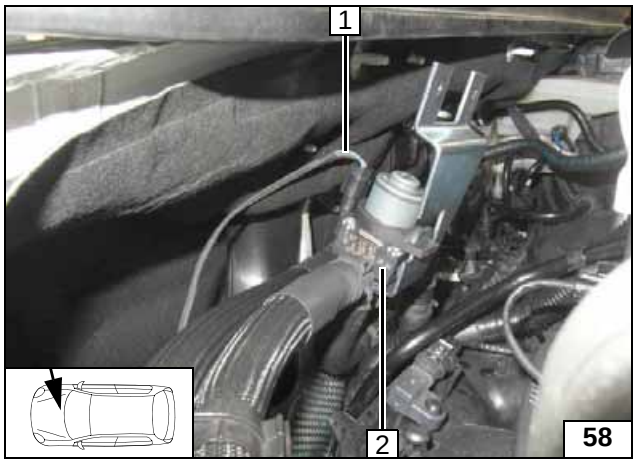
1 Hose on heat exchanger inlet
2 Hose on engine inlet
3 Hose of engine outlet
4 T-piece

Connection of T-piece and solenoid valve



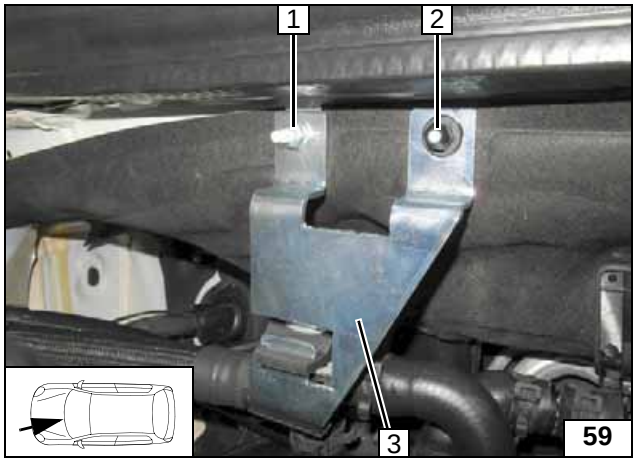
1 Solenoid valve

Connection of solenoid valve



1 Wiring harness of solenoid valve
2 Solenoid valve

Mounting wiring harness



Align hoses. Ensure sufficient distance from neighbouring components, ensure freedom of movement, correct if necessary.

1 M6 flanged nut on original vehicle stud bolt
2 Plastic nut on original vehicle stud bolt
3 Bracket of solenoid valve

Installing bracket of solenoid valve

Fuel

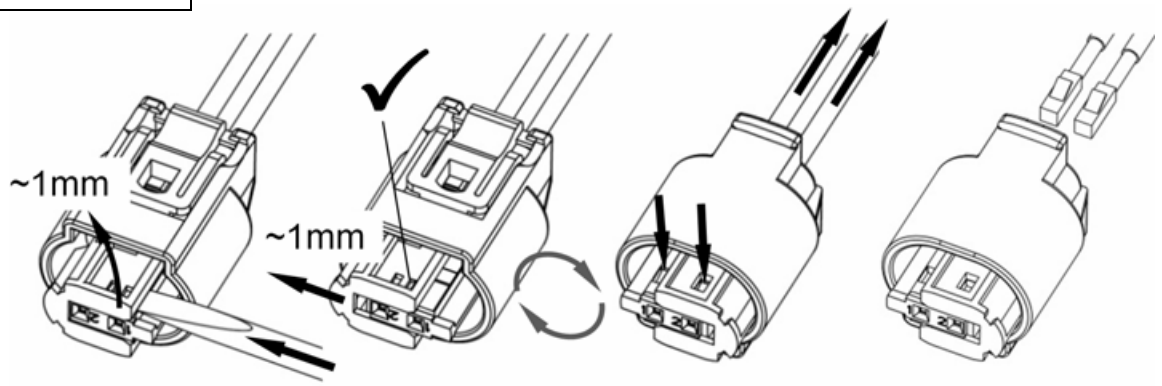
CAUTION!
Open the vehicle's fuel tank cap, ventilate the tank and then re-close the tank lock.

Catch any fuel running off in an appropriate container.

Route fuel line and metering pump wiring harness so that they are protected against stone impact. Unless specified otherwise, always fasten using cable ties.
Provide rub protection for fuel line and wiring harness in areas where there are sharp edges.

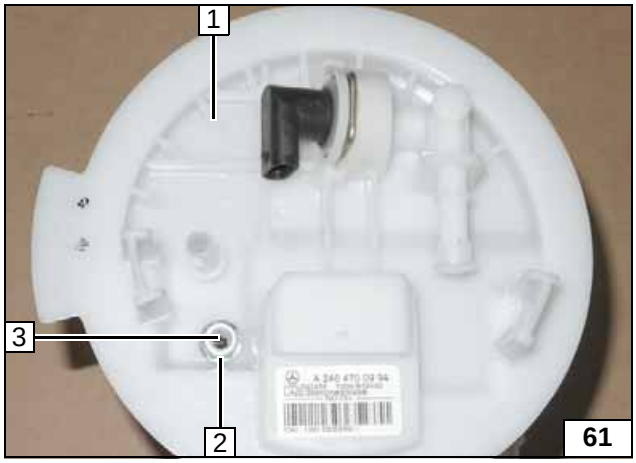
WARNING!
The fuel line and wiring harness are routed to the metering pump as shown in the wiring harness routing diagram.

Connector X7



60

Removing metering pump connector



61

Remove fuel tank according to manufacturer's instructions. Remove fuel-tank sending unit **1** in accordance with manufacturer's instructions.

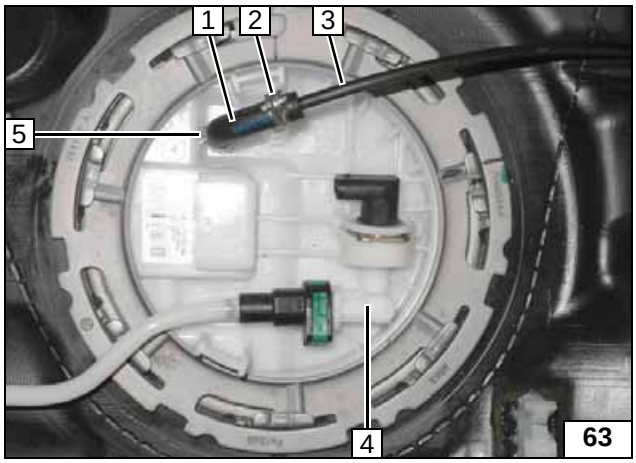
Fuel extraction

2 Flanged nut
3 Copy hole pattern, 6 mm dia. hole

62

Shape fuel standpipe **1** according to template and cut to length.

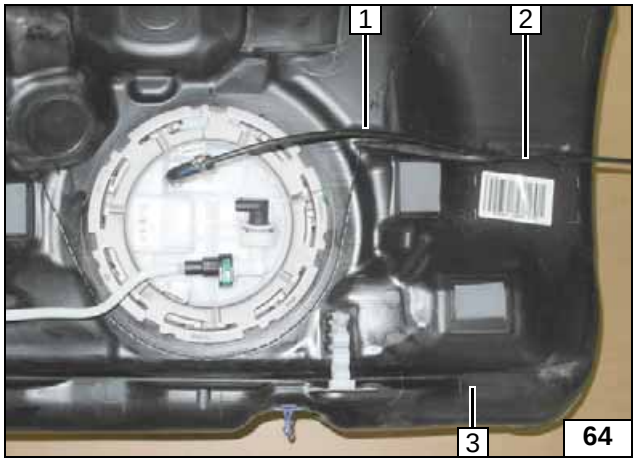
Installing fuel standpipe



Install fuel-tank sending unit **4** in accordance with manufacturer's instructions.

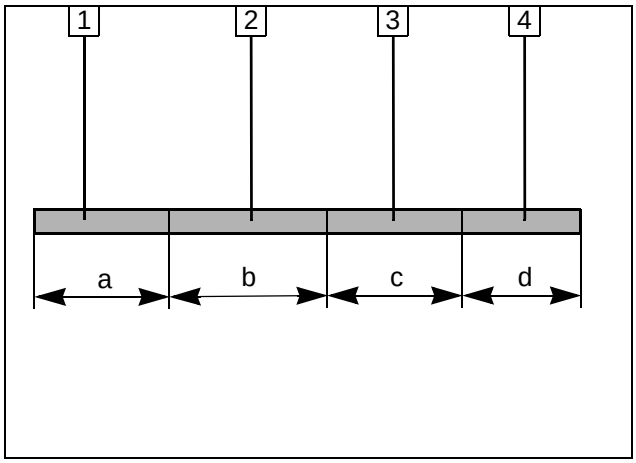
1 90°, 3.5x4.5mm dia. moulded hose (with 3.5mm dia. on fuel standpipe)
2 10mm dia. clamp
3 Fuel line
5 9 mm dia. clamp

Connecting fuel line



Fasten fuel line **1** to position **2**. Install fuel-tank **3** according to manufacturer's instructions.

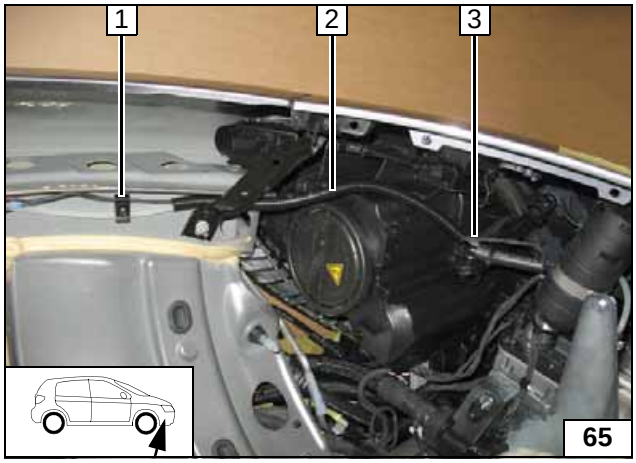
Routing fuel line



Cut 10mm dia. corrugated tube to length.

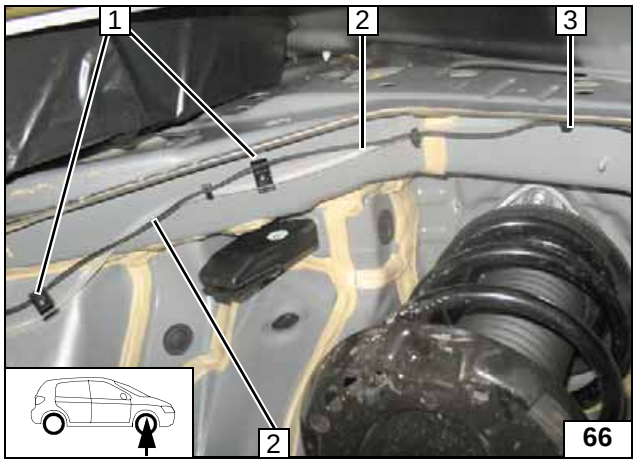
1 Corrugated tube 1
a = 300
2 Corrugated tube 2
b = 330
3 Corrugated tube 3
c = 200
4 Corrugated tube 4
d = 300

Preparing corrugated tube



1 Line holder
2 Corrugated tube 1
3 Fuel line and wiring harness of metering pump

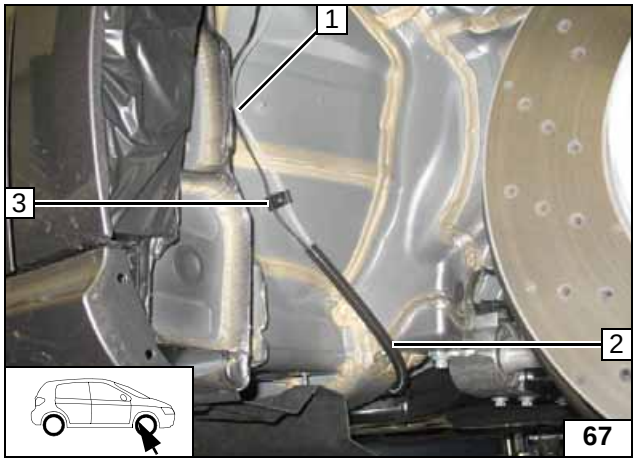
Routing lines



Route fuel line and wiring harness of metering pump at position **3** in elbow for later installation of wheel-well inner panel.

1 Line holder
2 Fuel line and wiring harness of metering pump

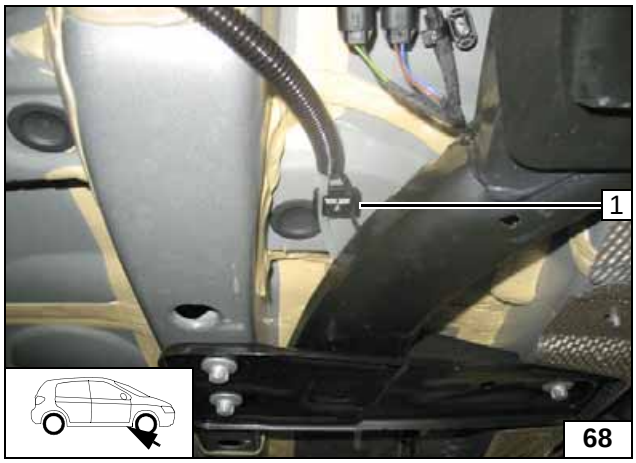
Routing lines



Route fuel line and wiring harness of metering pump at position **1** in elbow to keep it from coming into contact with wheel-well inner panel.

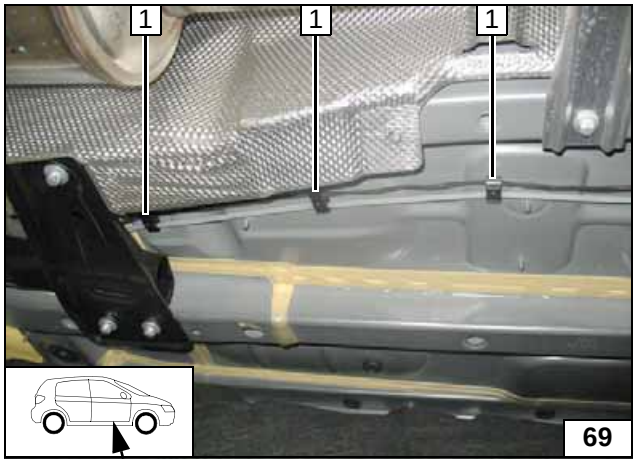
2 Corrugated tube 2
3 Line holder

Routing lines



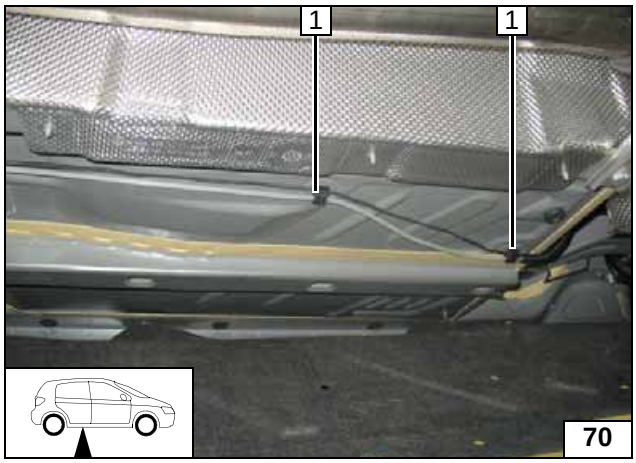
1 Line holder

Routing lines



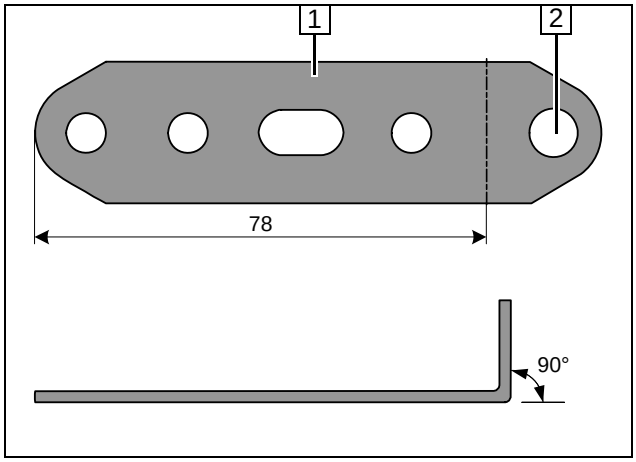
1 Line holder [3x]

Routing lines



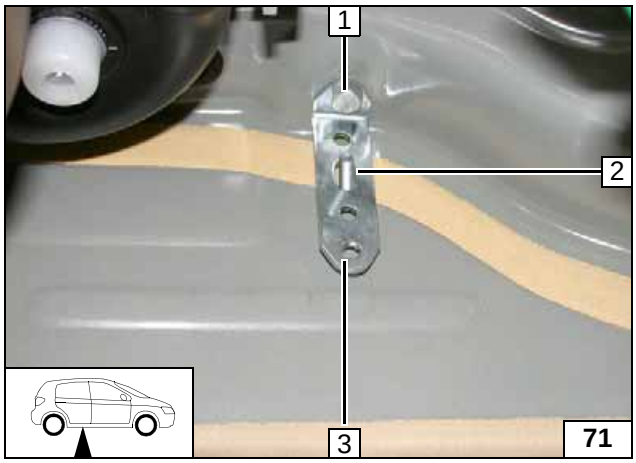
1 Line holder [2x]

Routing lines



1 Perforated bracket
2 Drill out hole to 9 mm dia.

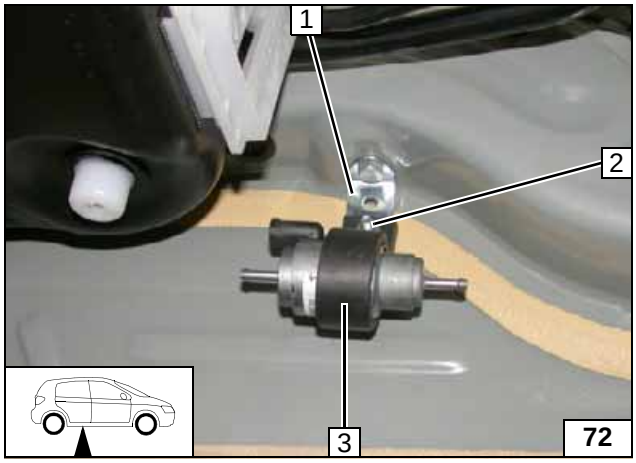
Preparing perforated bracket



Discard rubber plug at position **1** prior to installation.

1 M8x20 bolt, spring lockwasher, original vehicle threaded hole
3 Plug through M6x25 bolt
3 Perforated bracket

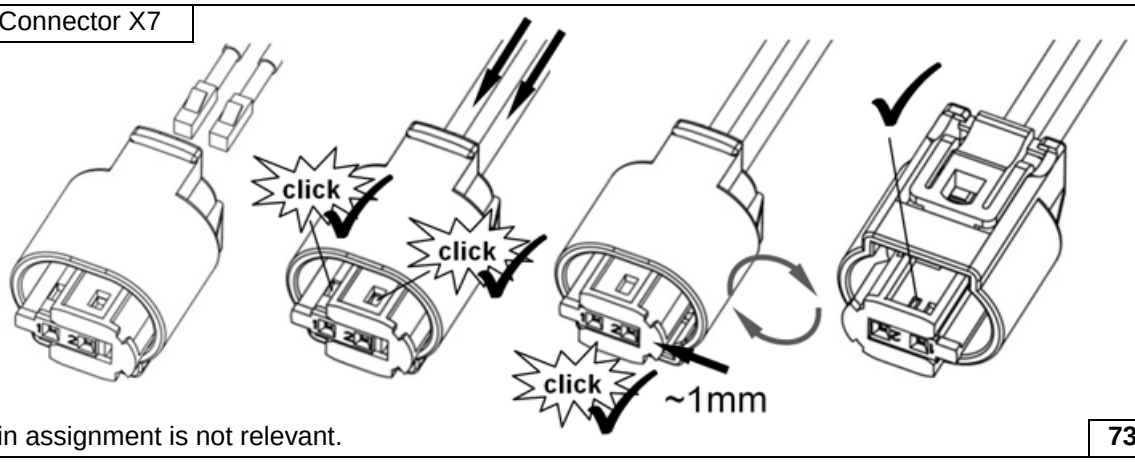
Installing perforated bracket



1 Perforated bracket
2 Support angle bracket, flanged nut
3 Metering pump support

Installing metering pump

Connector X7



Pin assignment is not relevant.

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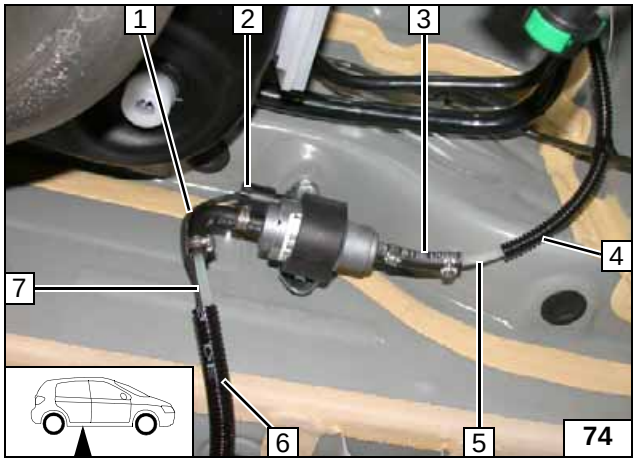
Completing connector of metering pump



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Check the position of the components; correct if necessary. Check that they have freedom of movement.

1 90° moulded hose, 10 mm dia. clamp [2x]
2 Wiring harness of metering pump, connector mounted
3 Hose, 10 mm dia. clamp [2x]
4 Corrugated tube 4
5 Fuel line of fuel standpipe
6 Corrugated tube 3
7 Fuel line of Heater

Connection of metering pump

Final Work

WARNING!
Reassemble the disassembled components in reverse order. Check all hoses, clamps and all electrical connections for firm seating. Insulate and tie back all loose wires.
Only use manufacturer-approved coolant. Spray the heater components with anti-corrosion wax (Tectyl 100K, Order No. 111329).

- **Connect the battery.**
- **Fill and bleed the coolant circuit according to the vehicle manufacturer's instructions.**
- **Adjust digital timer, teach Telestart transmitter**
- **Place caution label "Switch off parking heater before refuelling" in the area of the filler neck.**
- **For initial start-up and function check, see installation instructions**

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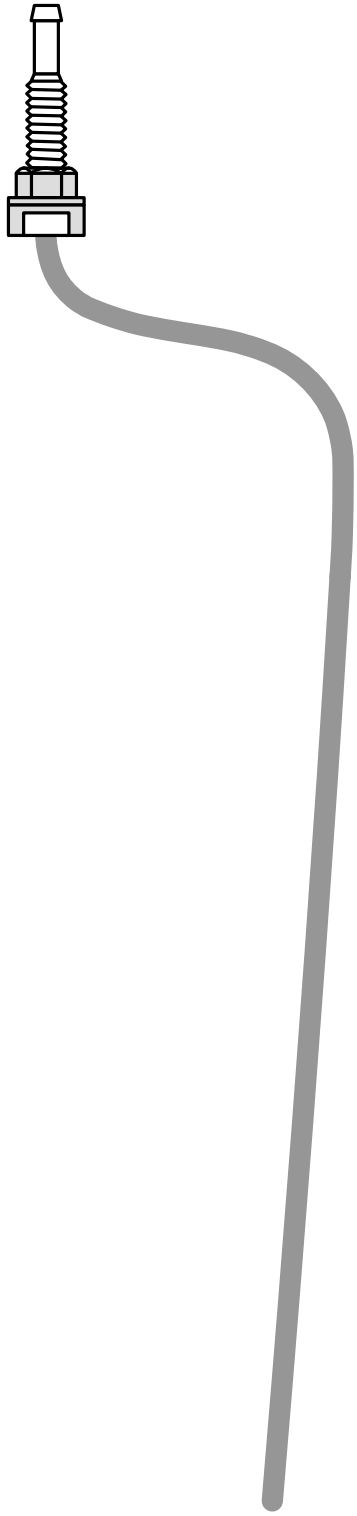
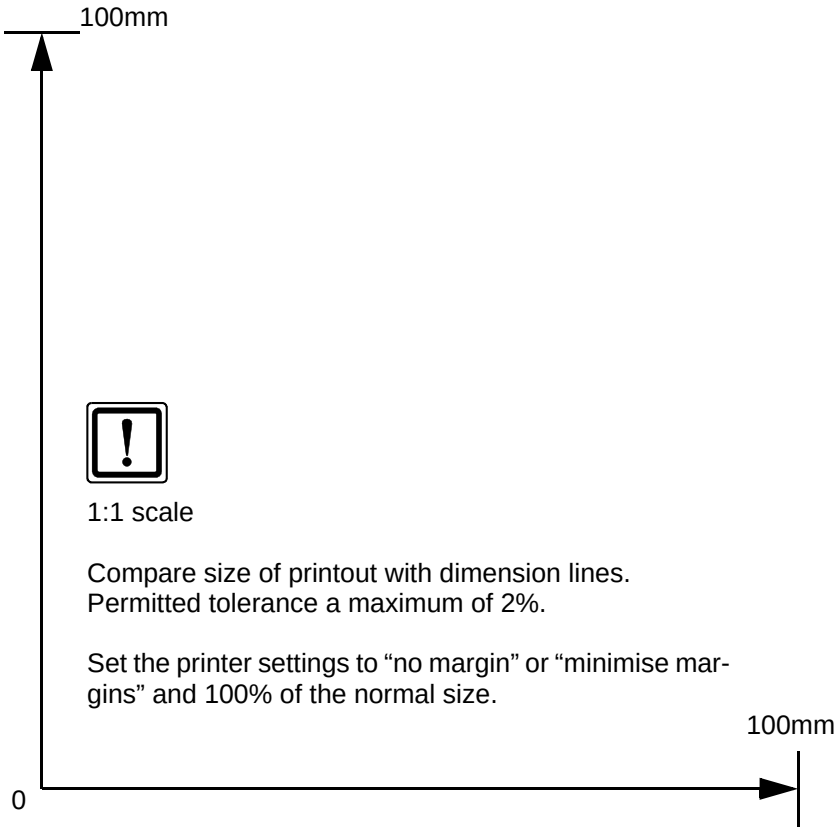
82199 Gilching
Germany
Internet: www.webasto.com
Technical Extranet:
http://dealers.webasto.com

Template for Fuel Standpipe





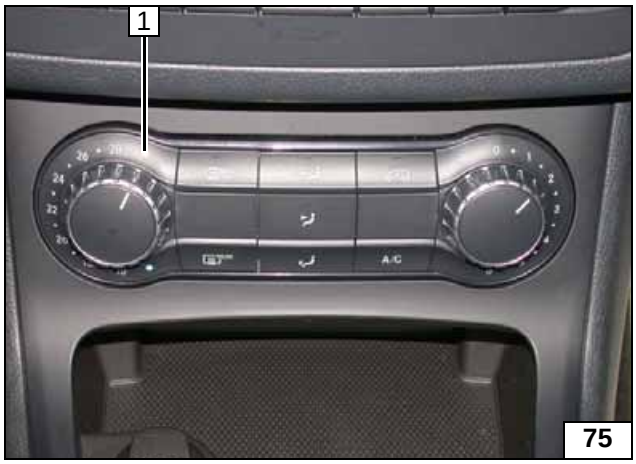
Operating Instructions for Thermatik

Please remove page and add to the vehicle operating instructions.

Note:
We recommend matching the heating time to the driving time.
Heating time = driving time
Example:
For a driving time of approx. 20 min. (in one direction), we recommend not exceeding a switch-on time of 20 min.

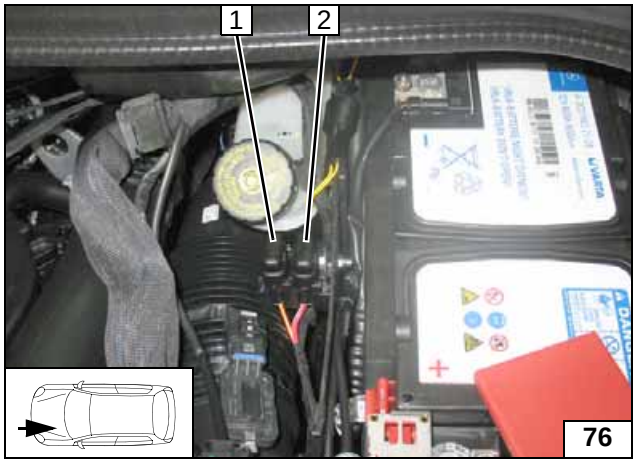
If vehicles have passenger compartment monitoring, this must be deactivated in addition to vehicle settings for the heating operation.
Deactivation instructions can be found in the operating instructions of the vehicle.

The following settings are to be made prior to turning off the vehicle in order to improve heating.



1 Set temperature to "max."

A/C control panel



1 20A heater fuse F1
2 3A fuse F2 of heater control

Engine compartment fuses

Operating Instructions for Thermotronik

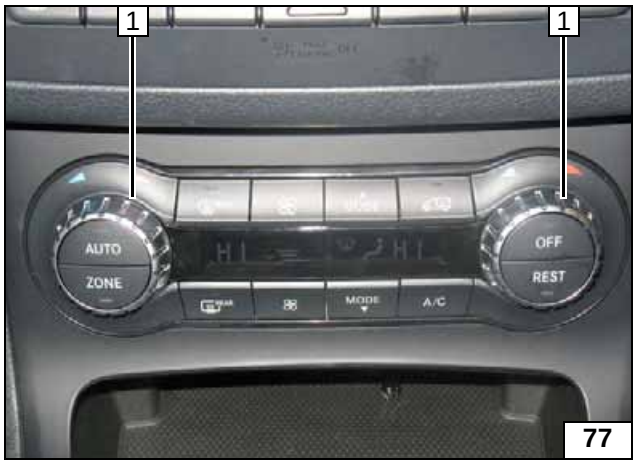
Please remove page and add to the vehicle operating instructions.

Note:
We recommend matching the heating time to the driving time.
Heating time = driving time
Example:
For a driving time of approx. 20 min. (in one direction), we recommend not exceeding a switch-on time of 20 min.

If vehicles have passenger compartment monitoring, this must be deactivated in addition to vehicle settings for the heating operation.
Deactivation instructions can be found in the operating instructions of the vehicle.

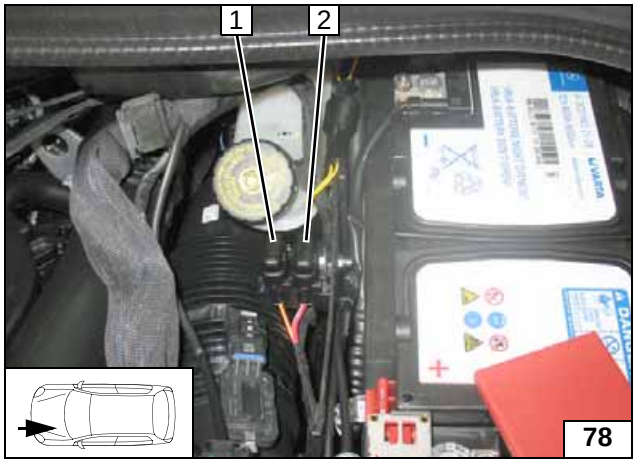
The following settings are to be made prior to turning off the vehicle to improve the heat input:

A/C control panel



1 Set temperature on both sides to "HI"

Engine compartment fuses



1 20A heater fuse F1
2 3A fuse F2 of heater control