Water Heater Unit

Feel the drive

***Thermo Top E* Additional Heater** e1 00 0003

***Thermo Top C* Additional Heater** e1 00 0002

Installation Instructions

Fiat 500

Gasoline
from Model Year 2007
Left-hand drive vehicle

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 warnings.

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

Ident. No.:1313401A_EN Fee Euro 10.00
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Table of Contents

Validity

Manufacturer	Model	Type	EG-BE No./ABE
Fiat	500	150	e3 * 2001/116 * 0261 * ...

Engine type	Engine model	Output in kW	Displacement in cm³
169A4000	Gasoline	51	1242
169A3000	Gasoline	74	1368

Vehicle and engine types, equipment variants and national specifications not listed in these installation instructions have not been tested. However, installation according to these installation instructions may be possible.

The installation location of a digital timer and summer/winter switch should be confirmed with the end customer before installation.

Note:
When the vehicle is delivered, the fuel tank should only be half filled; drain off fuel if necessary.

Heater Unit/Installation Kit

Quantity	Description	Order No.:
1	Retail accessories with desired heater control	See price list
1	Installation kit for Fiat 500 Gasoline	1313387A

Optional heater control either:

Quantity	Description	Order No.:
1	Telestart T80, T91, T100 HTM	See price list
1	Thermo Call Comfort, Connect, Locate	See price list

Heater unit recommended for the respective vehicle class:

Vehicle	Heater unit
Compact car	Thermo Top E
Mid-size car, station wagon	Thermo Top C

The selection of the heater unit is based on the passenger compartment size of the vehicle and the level of comfort required by the customer!

Foreword

These installation instructions apply to Fiat 500 Gasoline vehicles - for validity, see page 2 - from model year 2007 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, the stipulations in the "installation instructions" and "operating and maintenance instructions" for the *Thermo Top C/E* must always 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 wiring harnesses to original vehicle lines and wiring harnesses using cable ties.
Sharp edges should be fitted with edge protectors (split-open plastic hose).
Spray unfinished body areas, e.g. drilled holes, with anti-corrosion wax (Tectyl 100K, Order No. 111329).

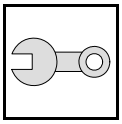
Special Tools

- Torque wrench for 2.0 - 10 Nm
- Hose clamping pliers
- Metric thread-setter kit

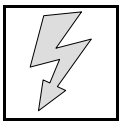
Explanatory Notes on Document

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.

Mechanical system

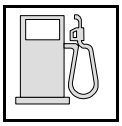


Electrical system



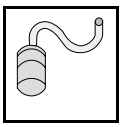
Water

Fuel



Exhaust gas

Combustion air



Special features are highlighted using the following symbols:

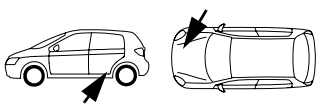
Specific risk of injury or fatal accidents.

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.

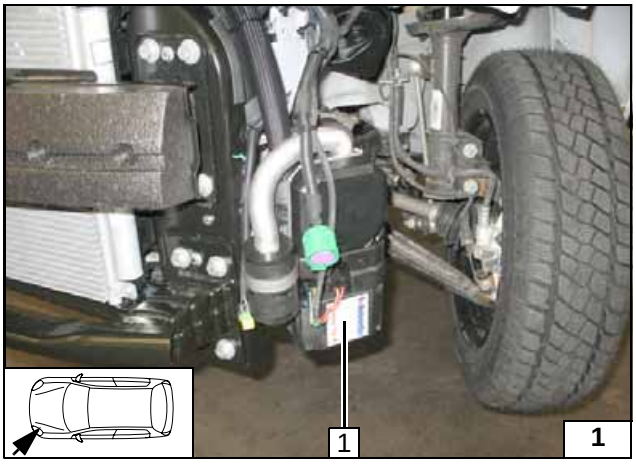
All dimensions are in mm!
Tightening torque of hose clamps = 2.0 + 0.5 Nm!
Tightening torque of Ejot screws, Ejot studs = 10 Nm!

Preliminary Work

WARNING!

- Open fuel tank cap, ventilate tank.
- Close the tank cap again.
- Disconnect the battery "earth" or "ground" connection.
- Depressurize 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.
- Completely remove the battery together with the carrier.
- Remove the air intake hose (1.4 liter only).
- Detach and remove the right and left-hand wheel well trim.
- Remove the bumper.
- Remove the horn on the left.
- Detach the central electrical box in the engine compartment on the left.
- Remove the underride protection in the engine compartment (1.4 liter only).
- Remove the cover of the fuel line on the vehicle underbody.
- Detach the bracket of the fuel line/fuel tank ventilation on the right next to the fuel tank.
- Remove the storage compartment on the left next to the steering wheel.
- Remove the cover of the central electrical box in the footwell of the driver's side.

Remove page 30 "Operating Instructions for End Customer" and add to the vehicle operating instructions.



Heater unit installation location

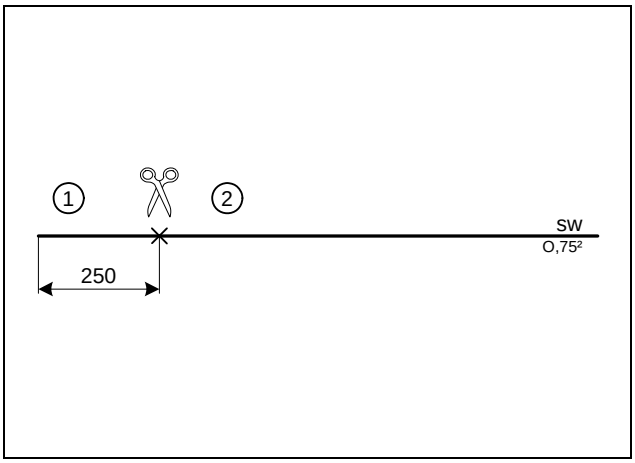
1 Heater unit

Installation location

Preparing electrical system

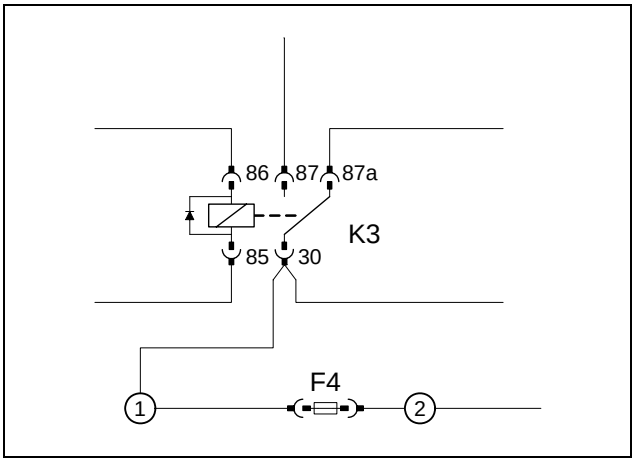
Only with automatic air-conditioning

Cutting wires to length



Produce connections as shown in wiring diagram. Install wire section **2** in the protective sleeving provided.

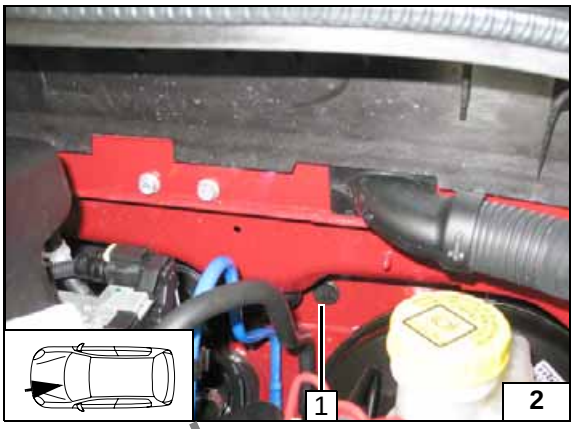
Preparing fuse F4



Electrical system

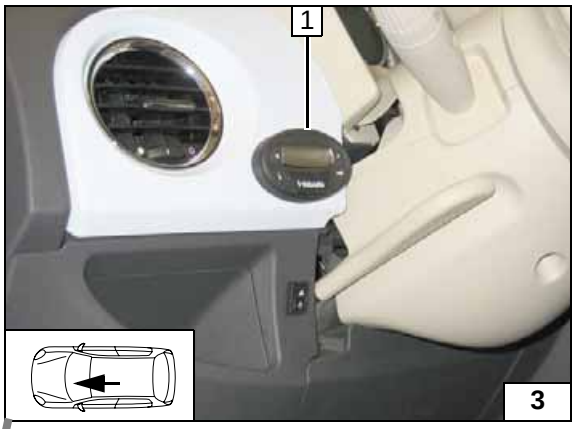
Wiring harness pass through

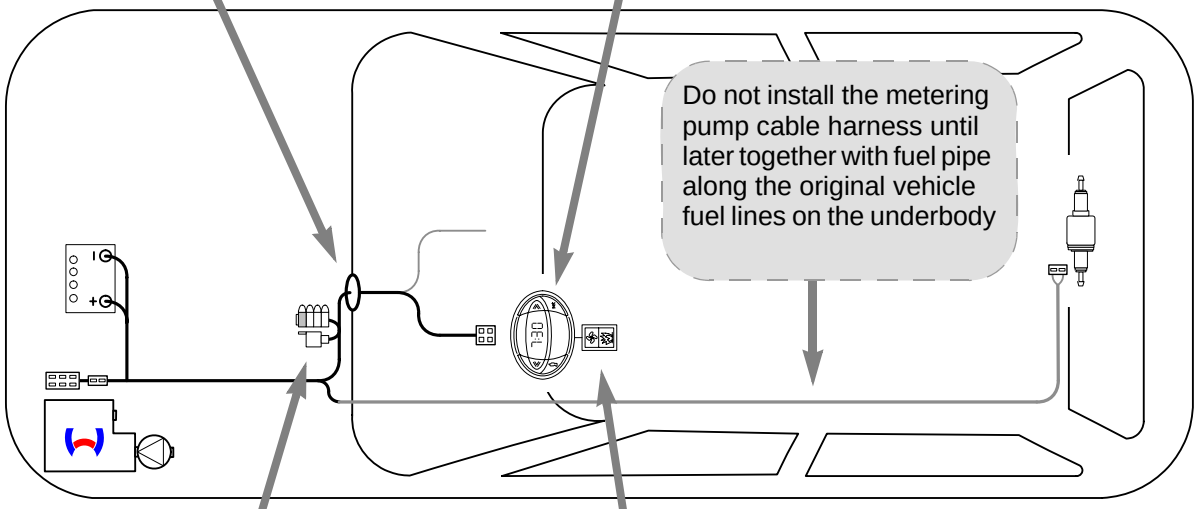
1 Protective rubber plug



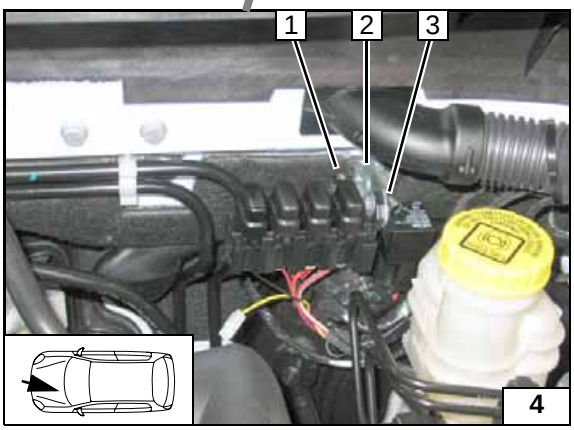
Digital timer

1 Digital timer





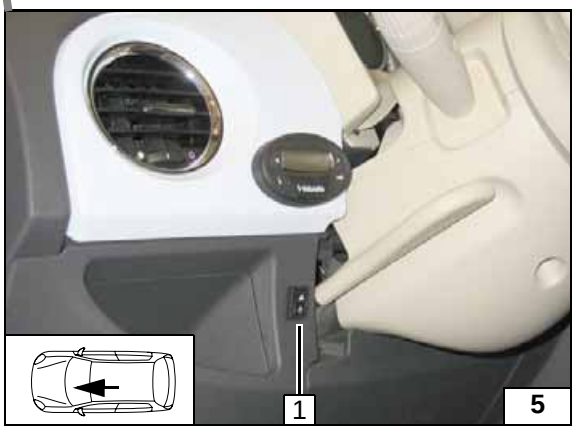
Wiring harness installation diagram



Fuse holder, relay K3

Fuse F4 only with automatic air-conditioning

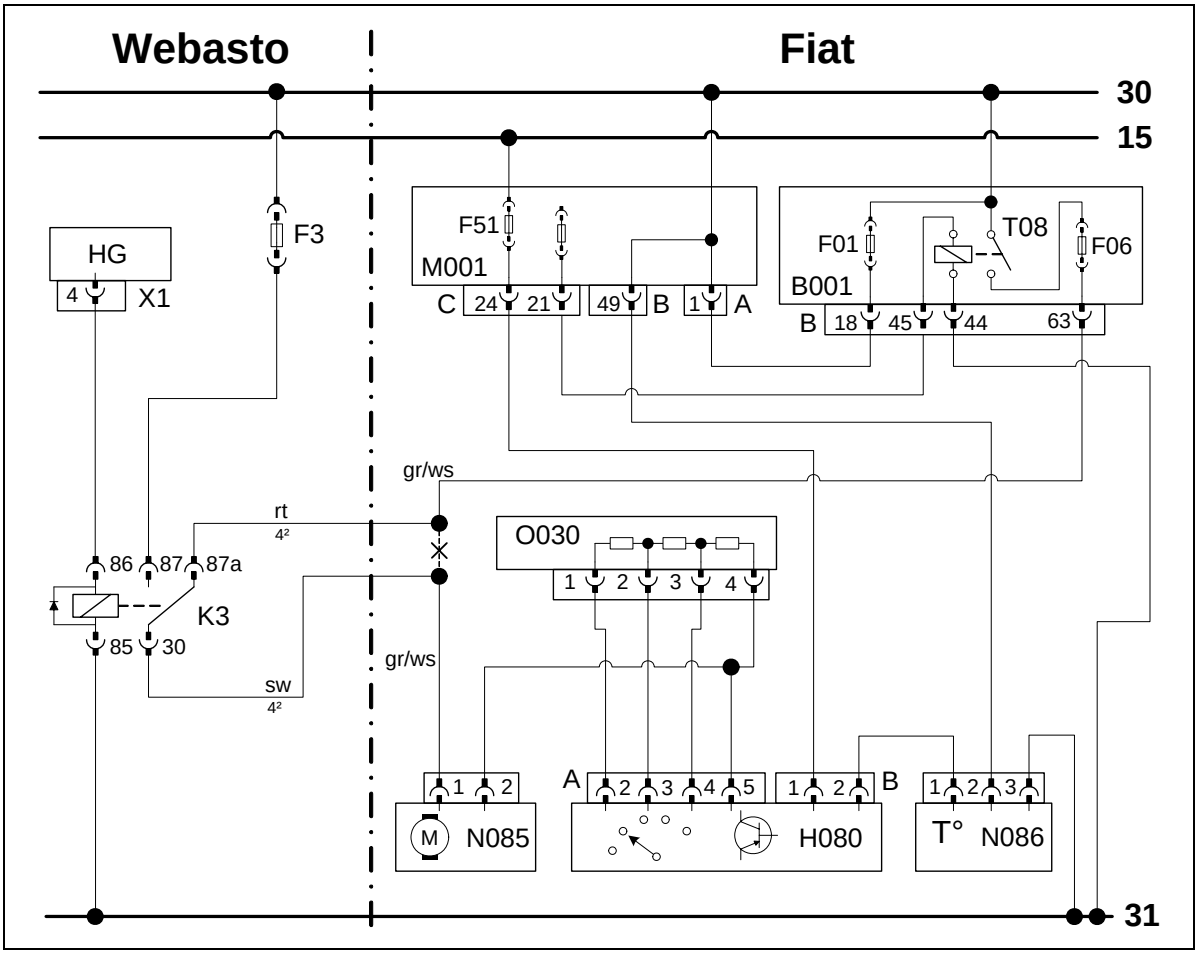
1 Original vehicle stud bolt, plastic nut
2 Angle bracket
3 Retaining plate of fuse holder, M5x16 bolt, washers, angle bracket, K3 relay, M5 nut



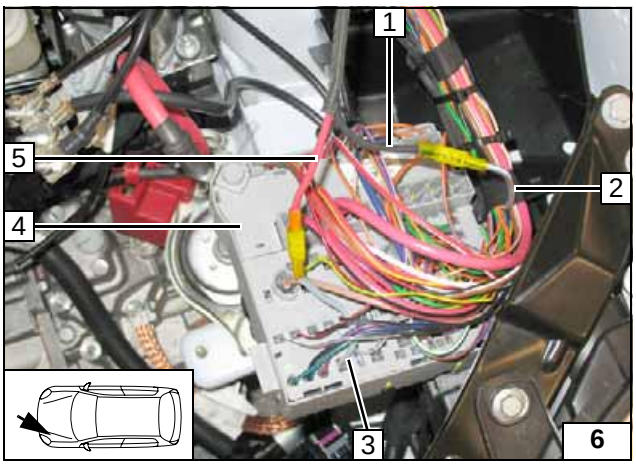
Summer/winter switch option

1 Summer/winter switch, drilled hole 12 mm dia.

Fan controller for manual air conditioning



Webasto components		Vehicle components		Colors and symbols	
HG	Heater unit TT-C/E	M001	Body computer	rt	red
X1	6-pin heater unit connector	B001	Central electrical box in engine compartment	ws	white
F3	25 A fuse	O030	Resistor group	sw	black
K3	Fan relay	N085	Fan motor	gr	gray
		T08	Fan relay		
		N086	Electr. thermostat		
		F51	Fuse, 7.5 A		
		F01	Fuse 60A		
		F06	Fuse 30A	**X**	Cutting point
		H080	Switch/A/C control panel	Wiring colors may vary.	



Connection on fan relay T08 of central electrical box in engine compartment **4**. Produce connections as shown in wiring diagram.

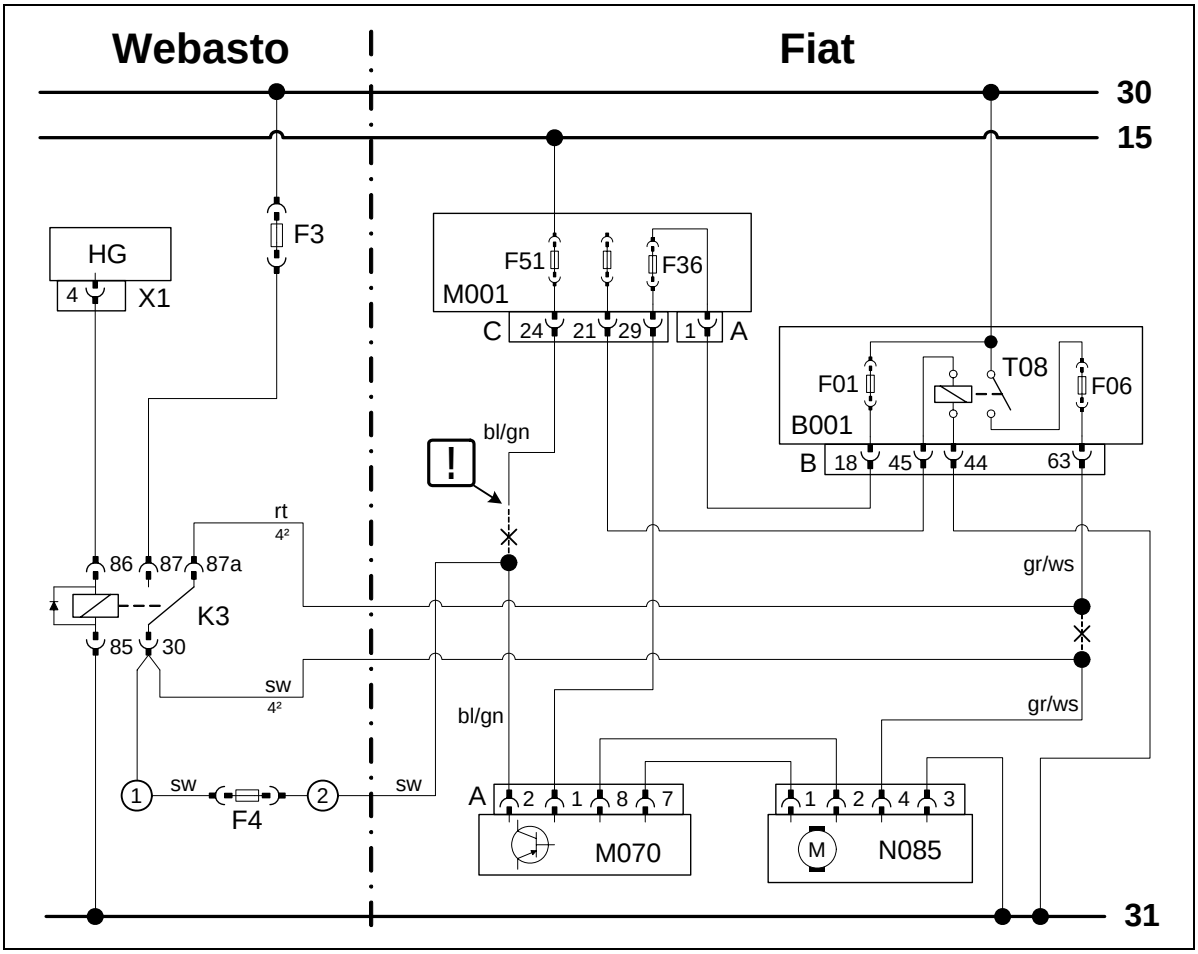
1 Black (sw) wire from K3/30
2 Gray/white (gr/ws) wire of fan motor N085, Pin 1
3 Gray/white (gr/ws) wire of connector B from B001, Pin 63
5 Red (rt) wire from K3/87a

Wiring diagram

Legend

Connection to fan relay

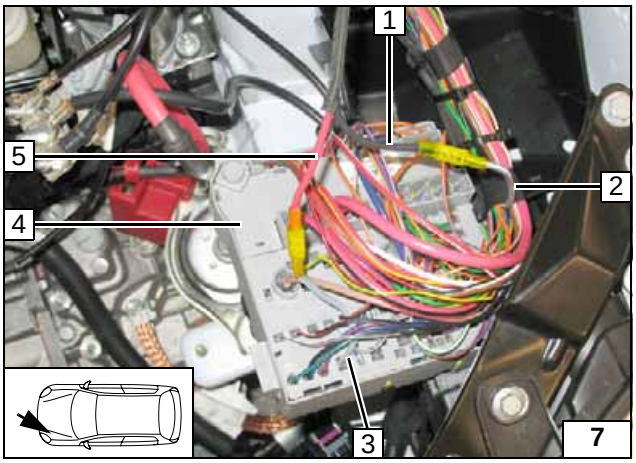
Automatic air-conditioning fan controller



Webasto components		Vehicle components		Colors and symbols	
HG	Heater unit TT-C/E	M001	Body computer	rt	red
X1	6-pin heater unit connector	B001	Central electrical box in engine compartment	ws	white
K3	Fan relay	M070	Air-conditioning control panel	sw	black
F3	25 A fuse	N085	Fan motor	gr	gray
F4	Fuse, 7.5 A	T08	Fan relay	gn	green
		F36	10 A fuse	bl	blue
		F51	Fuse, 7.5 A		
		F01	Fuse 60A	!	Insulate wire ends and tie back
		F06	Fuse 30A		
				X	Cutting point
				Wiring colors may vary.	

Wiring diagram

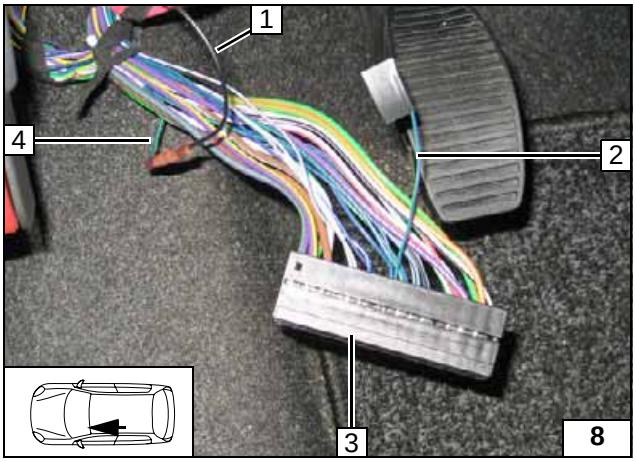
Legend



Connection on fan relay T08 of central electrical box in engine compartment **4**. Produce connections as shown in wiring diagram.

1 Black (sw) wire from K3/30
2 Gray/white (gr/ws) wire of fan motor N085, Pin 4
3 Gray/white (gr/ws) wire of connector B from B001, Pin 63
5 Red (rt) wire from K3/87a

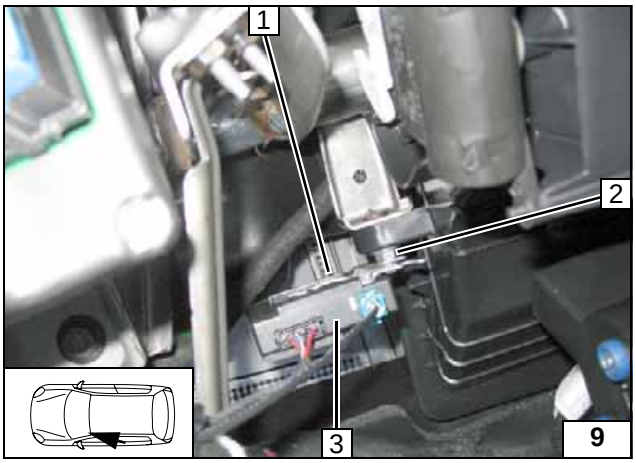
Connection to fan relay



Connection on 32-pin of black (sw) connector C **3** from body computer M001.
Produce connections as shown in wiring diagram.

1 Black (sw) wire from F4
2 Insulate blue/green (bl/gn) wire of connector C, Pin 24 and tie back
4 Blue/green (bl/gn) wire of A/C control panel M070 connector A, Pin 2

Connecting A/C control panel

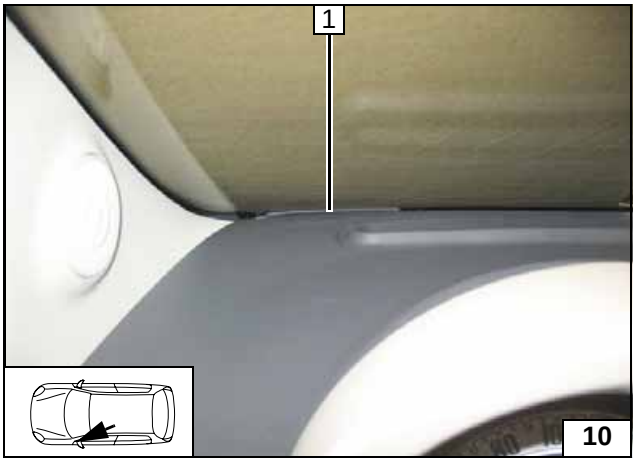


Remote option (Telestart)

Drill out bracket **1** to 6.5 mm dia. at position **2**.

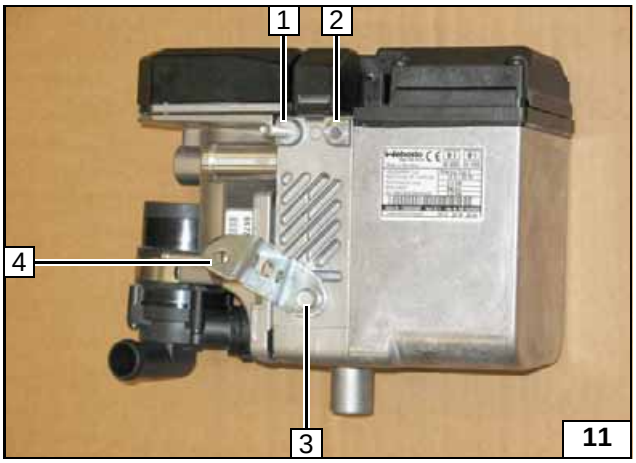
2 M6 flanged nut on original vehicle stud bolt
3 Receiver

Installing receiver



1 Antenna

Installing antenna

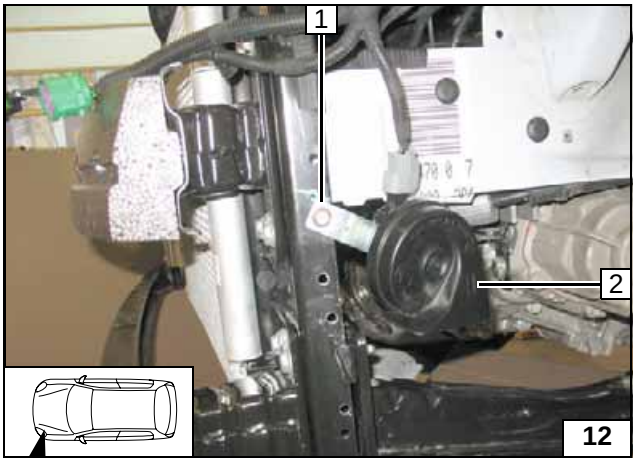


Preparing heater unit

Bend perforated bracket **C** according to template. Precut thread at position **2**.

1 Ejot stud
3 Ejot screw
4 Perforated bracket **C**

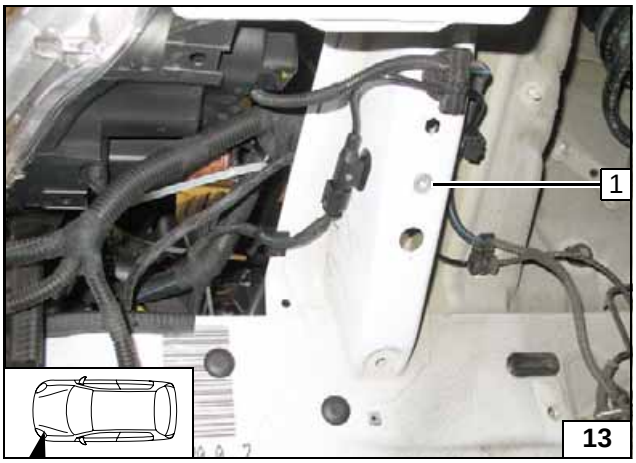
Premounting heater unit



Preparing installation location

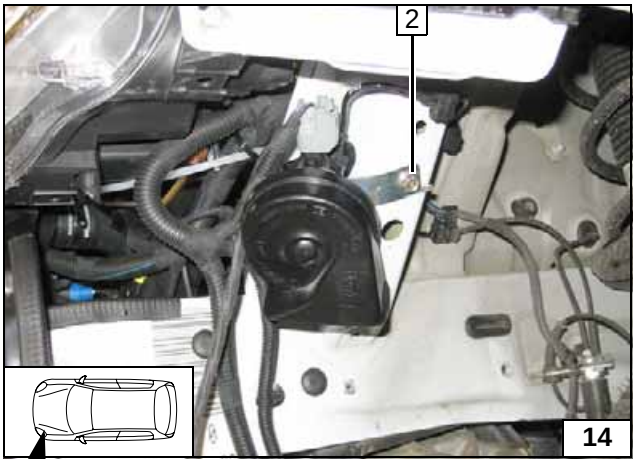
Remove horn **2** with bracket. Original vehicle bolt **1** will be reused.

Removing horn



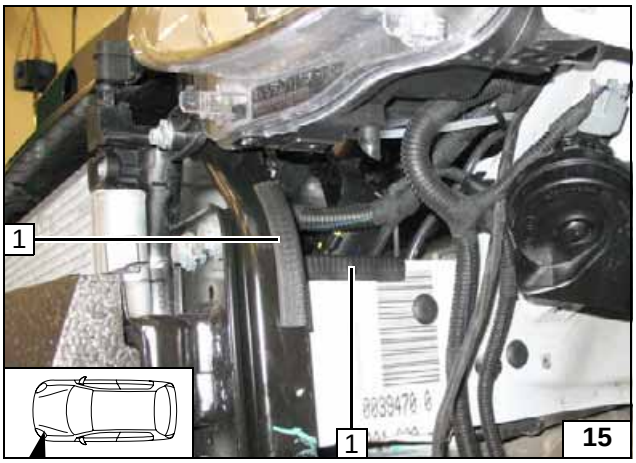
1 Existing hole; mount rivet nut (aluminum)

Installing rivet nut



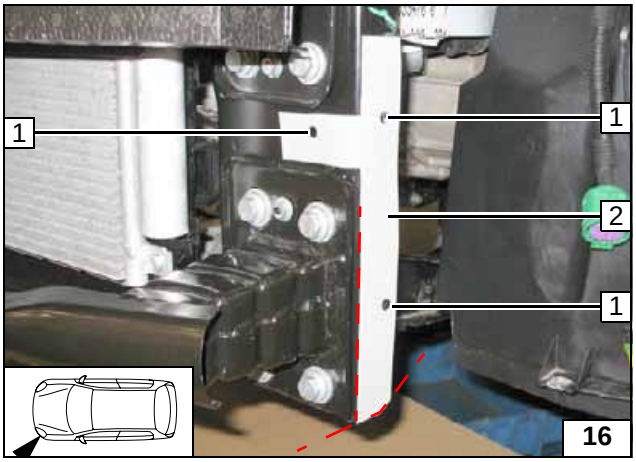
1 Align horn
2 Original vehicle bolt, spring lockwasher on rivet nut

Installing horn



1 Edge protection 100 [2x]

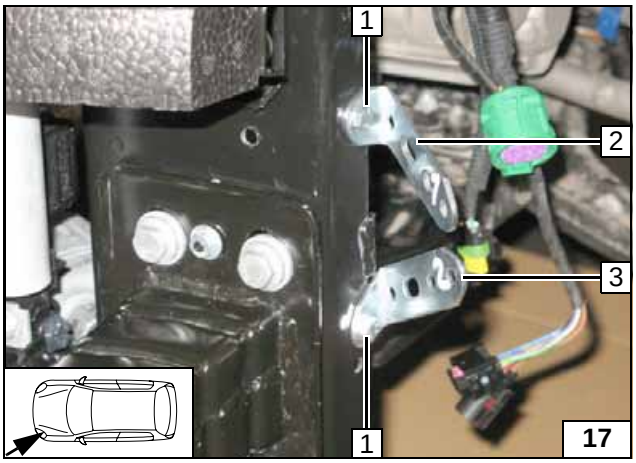
Installing edge protection



Cut out template **2** and lay on cross member (see marking).

1 7 mm dia. hole [3x]

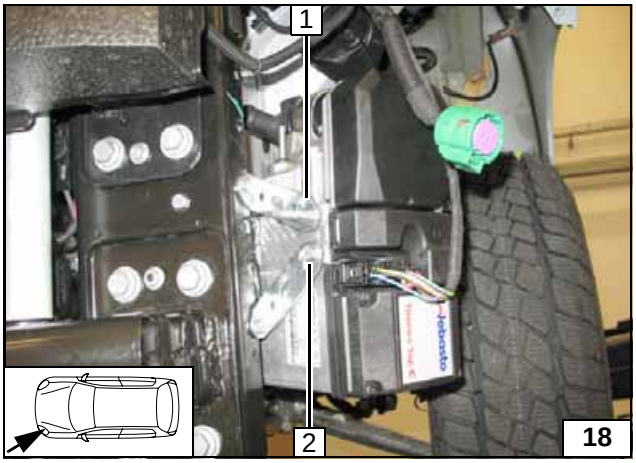
Holes in cross member



Bend perforated bracket **A** and **B** according to template.

1 Loosely mount M6x20 bolt, flanged nut [2x each]
2 Perforated bracket **A**
3 Perforated bracket **B**

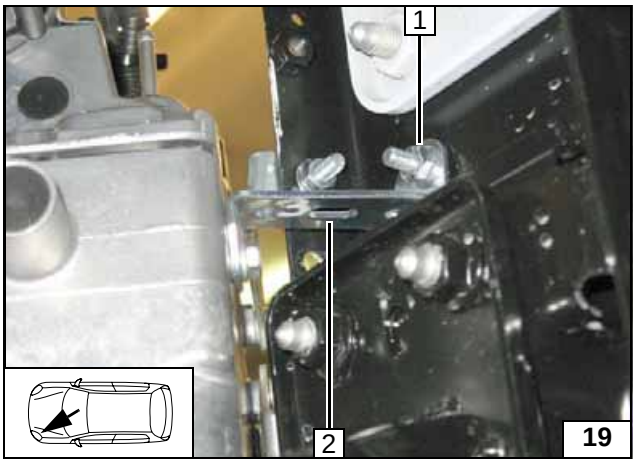
Loosely mounting perforated brackets



Installing heater unit

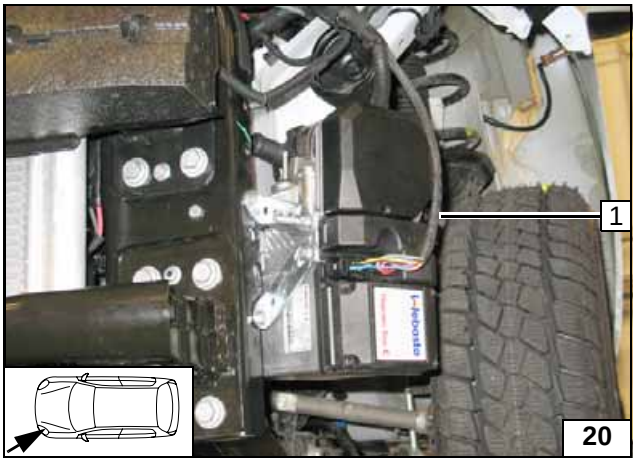
1 Flanged nut on Ejot stud
2 Ejot screw

Installing heater unit



1 Loosely mount M6x20 bolt, flanged nut
2 Perforated bracket **C**

Installing heater unit



Check position of all components and adjust if necessary. Check that they have free clearance.
Align heater unit and tighten all bolts.
Connect wiring harness of heater unit **1**.

Installing heater unit

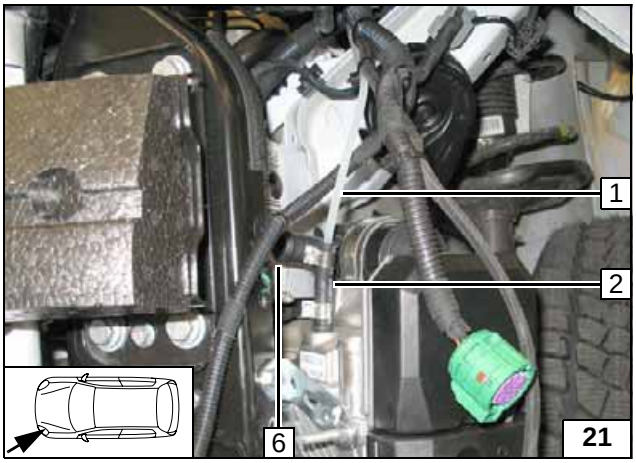
Fuel

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

Catch any fuel running off with an appropriate container.

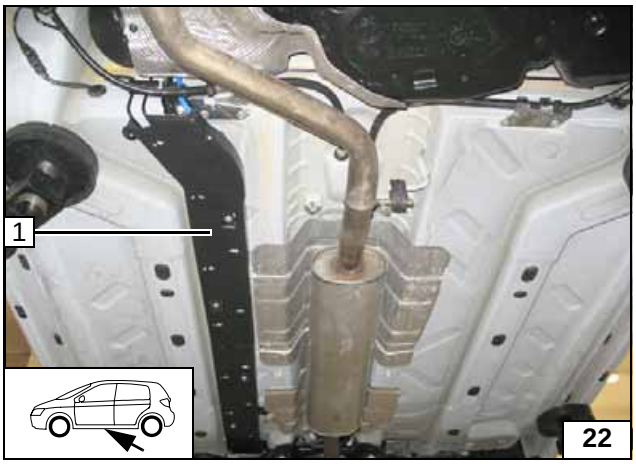
Install fuel line and metering-pump wiring harness so that they are protected against stone impact.
Unless specified otherwise, always fasten using cable ties.
Mount the fuel line and wiring harness with rub protection on sharp edges.

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



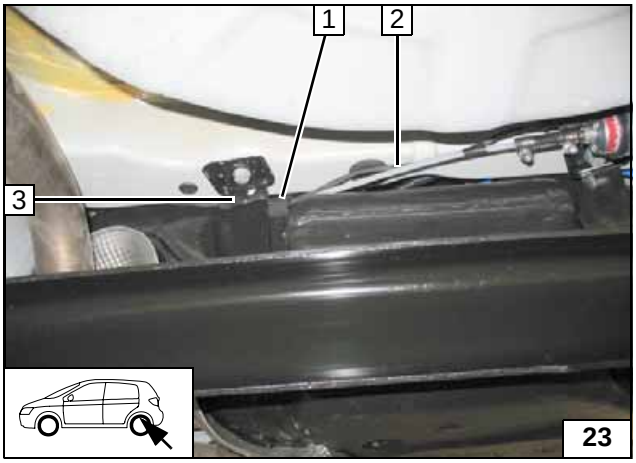
1 Fuel line
2 Hose section, 10 mm dia. clamp [2x]

Connecting heater unit



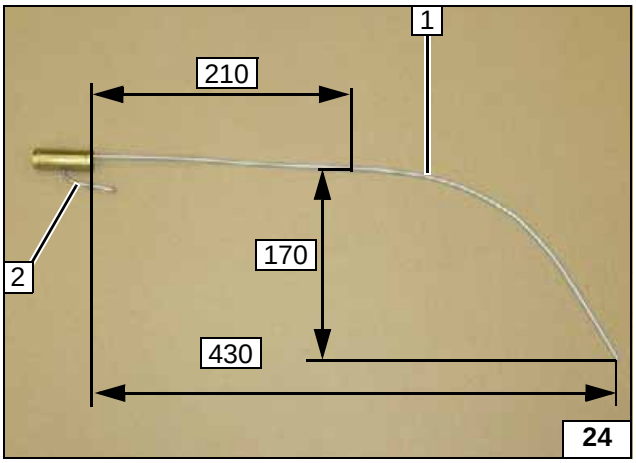
Route fuel line and wiring harness of metering pump behind cover **1** along original vehicle fuel lines to installation location of metering pump.

Installing lines



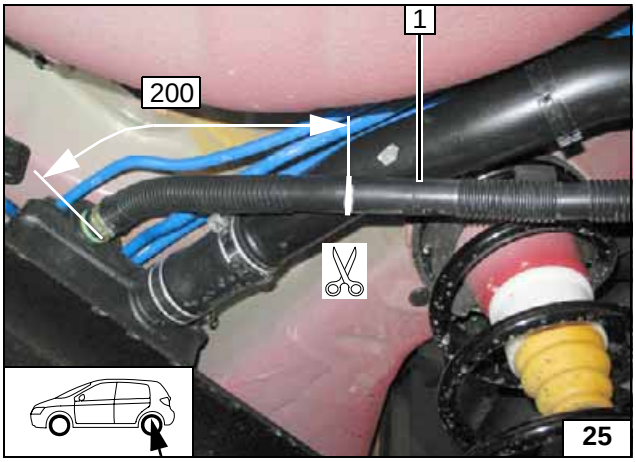
Cut open fuel hose **1** lengthwise, slide onto fuel line and wiring harness of metering pump **2** and secure on strut with cable tie **3**.

Installing lines



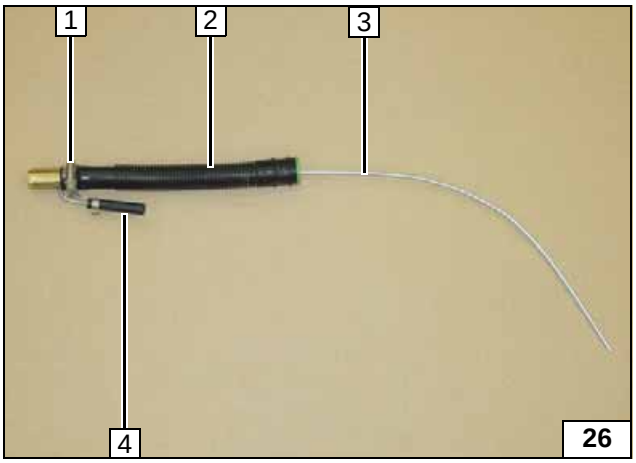
Short standpipe **1** by 210 mm and shape as shown. Bend connection piece **2** by 90°.

Removing fuel



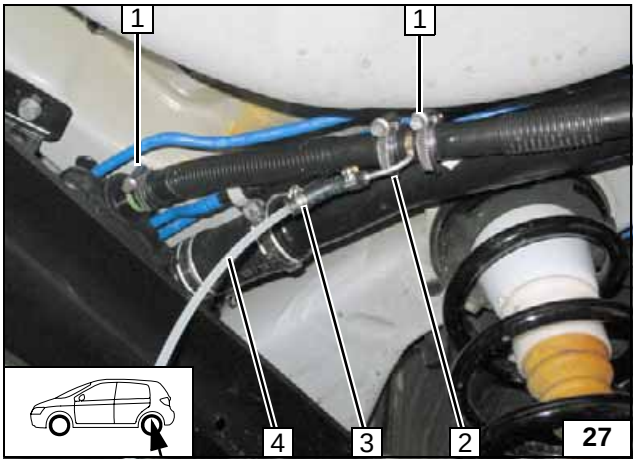
Remove fuel-tank vent line **1** from bracket and cut off approx. 200 mm before fuel tank connection piece. Remove section on connection piece.

Cutting point



1 16-24 mm dia. clamp
2 Fuel-tank vent line
3 Fuel standpipe
4 Dia. 3.5 x 4.5 mm hose section; 8 mm dia. Caillau clamp

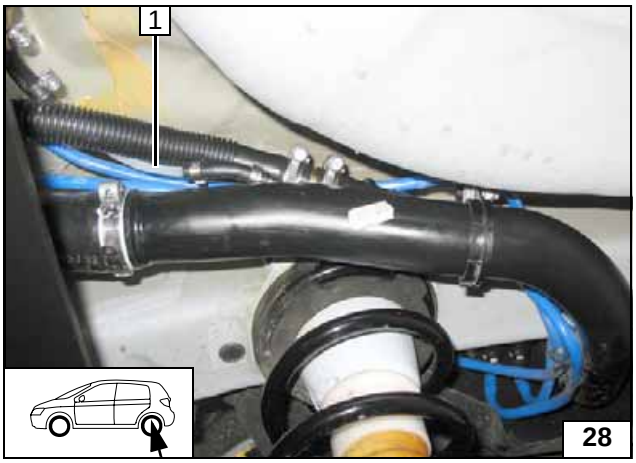
Premounting fuel standpipe



When installing, align standpipe of fuel standpipe **2** to fuel tank bottom.

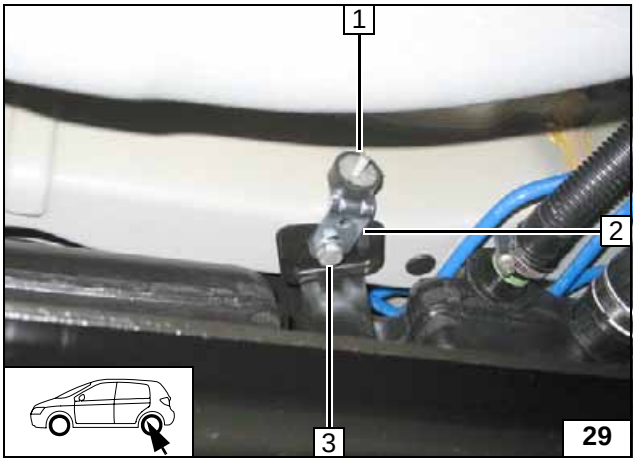
1 16-24 mm dia. clamp [2x]
2 Fuel standpipe
3 10 mm dia. Caillau clamp
4 Fuel line

Installing fuel standpipe



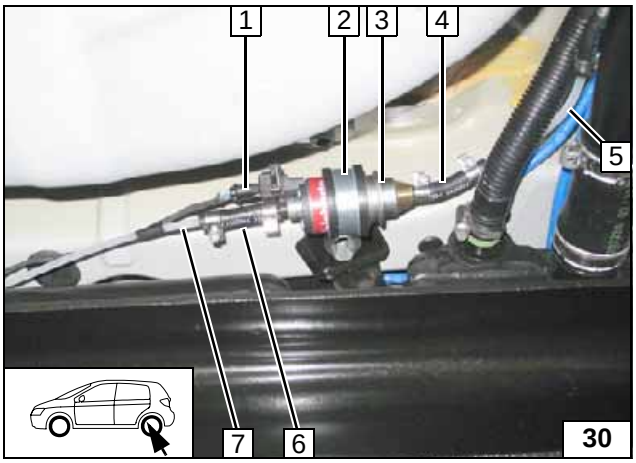
Insert fuel-tank vent line in bracket again. Route fuel line **1** to metering pump.

Aligning fuel-tank vent line



1 Silentblock, flanged nut
2 Angle bracket
3 Original vehicle bolt

Installation location of metering pump



Check the position of the components; adjust if necessary. Check that they have free clearance.

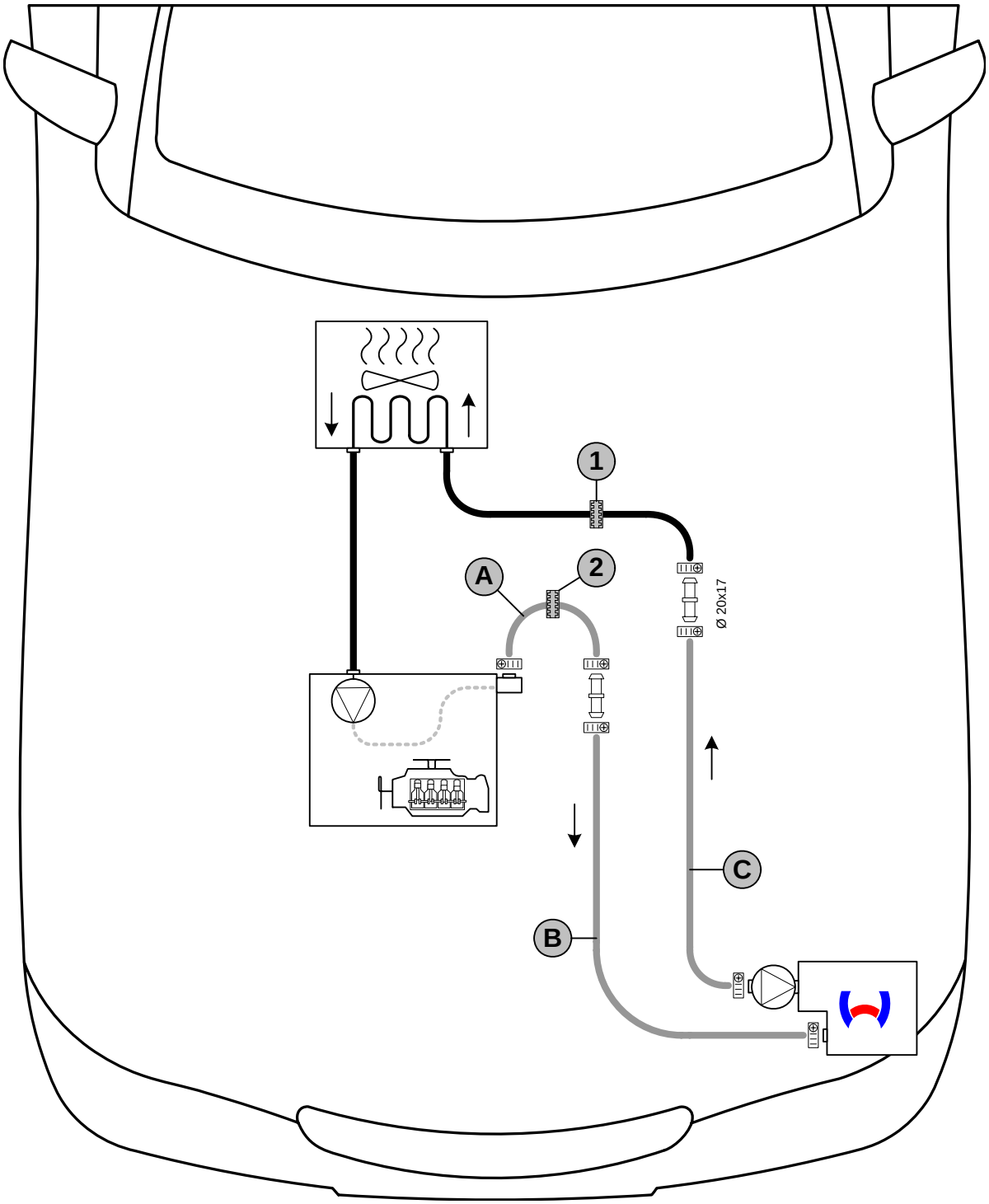
1 Wiring harness of metering pump, connector mounted
2 Rubber-coated p-clamp, flanged nut on silent block
3 Metering pump
4 Hose section, 10 mm dia. clamp [2x]
5 Fuel line from fuel standpipe
6 Hose section, 10 mm dia. clamp [2x]
7 Fuel line from heater unit

Connecting metering pump

Coolant routing

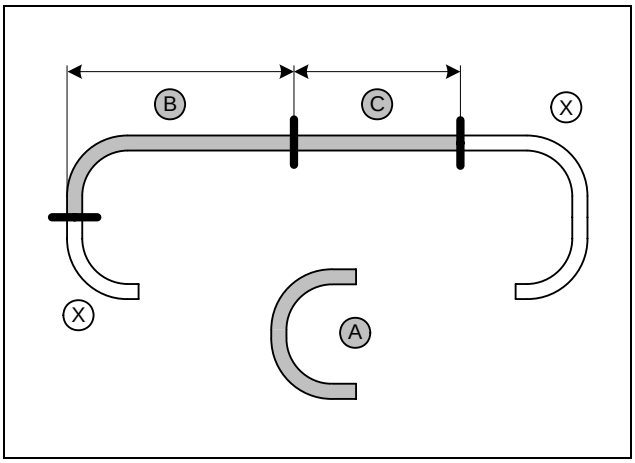
WARNING!
Any coolant running off should be collected using an appropriate container. Install hoses so that they are kink-free. Unless specified otherwise, always fasten using cable ties. Position clamps so that no other hose can be damaged! When installing the coolant hose, the heater unit must be filled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

Coolant routing diagram



All hose clamps = 20-27 mm dia.! All connecting pipes without a specific designation = dia. 20x20.
1 = Black (sw) rubber isolator (with 1.2 liter engine).
1 and **2** = Black (sw) rubber isolator (with 1.4 liter engine).

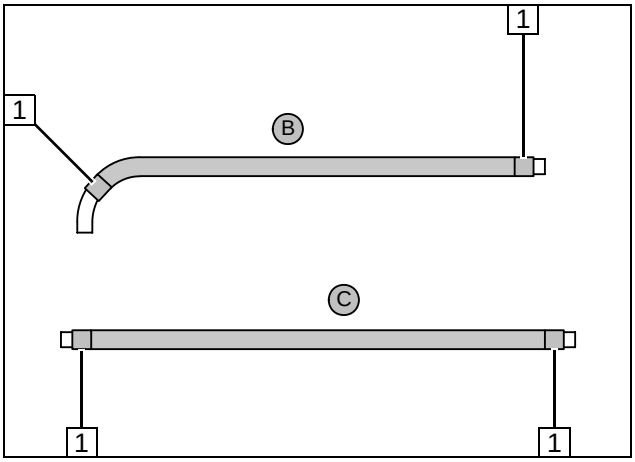
Coolant on 1.2 liter



b = 655
c = 720

Hose **A** = 17x20 180° molded hose
Discard section **X**

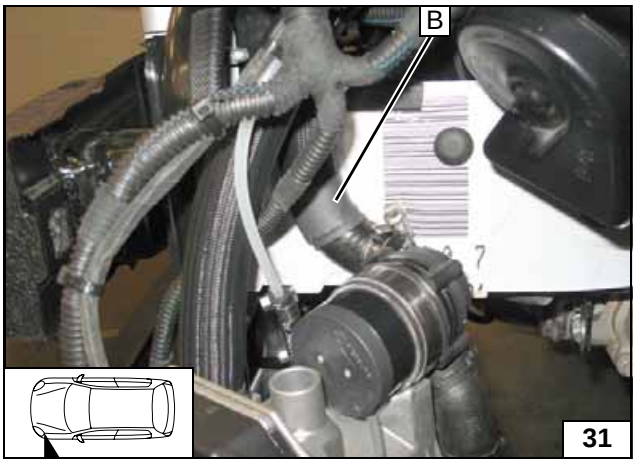
Cutting coolant hoses to length



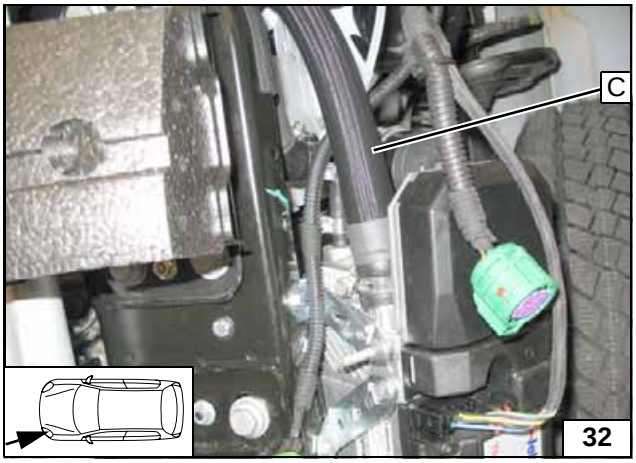
Push braided protection hoses onto hose **B** and **C** and cut to length.
Cut heat shrink plastic tubing to length.

1 25 mm long heat shrink plastic tubing [4x]

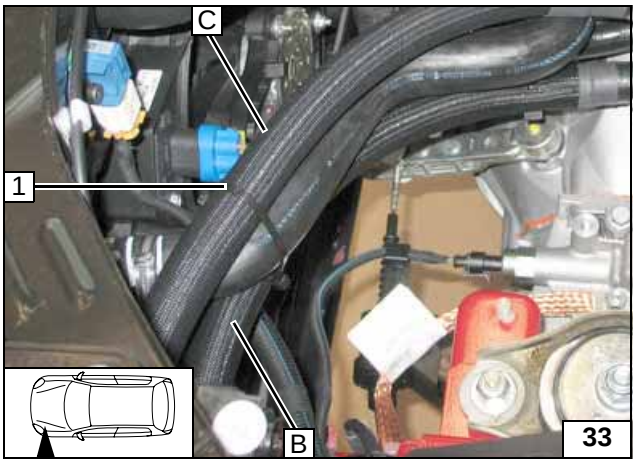
Preparing coolant hoses



Connecting heater unit inlet

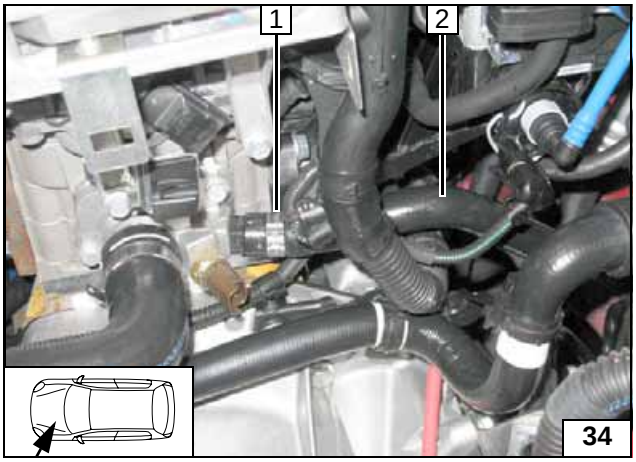


Connecting heater unit outlet



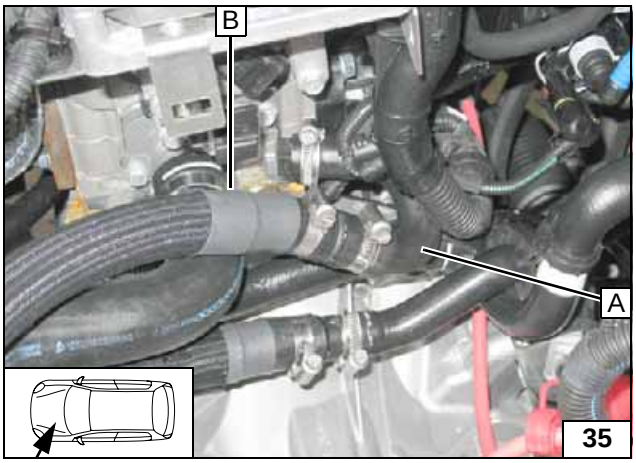
1 Cable tie

Routing in engine compartment



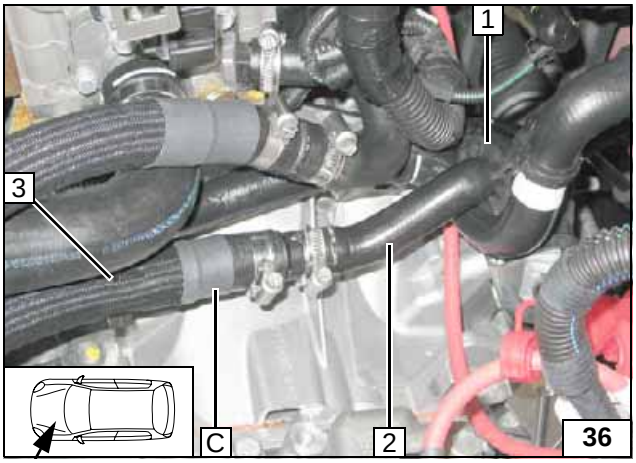
Disconnect hose to engine outlet/heat exchanger inlet **2** at connection piece of engine outlet. Discard clamp **1**

Cutting point



Fasten hose **A** with small diameter on connection piece on engine outlet.

Connecting engine outlet

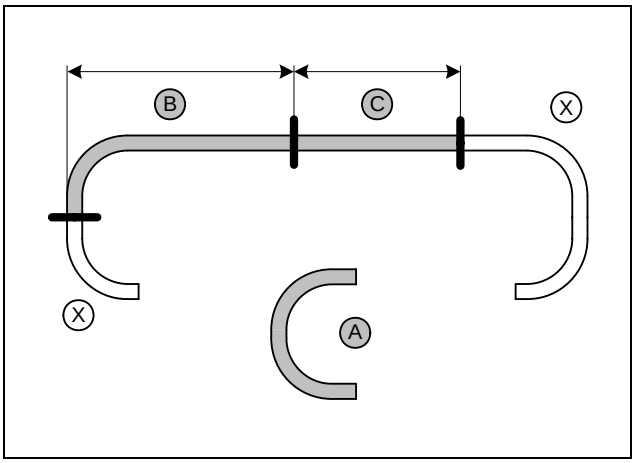


Ensure sufficient distance to neighboring components.

1 Black (sw) rubber isolator
2 Hose on heat exchanger inlet
3 Spacer bracket

Connecting heat exchanger inlet

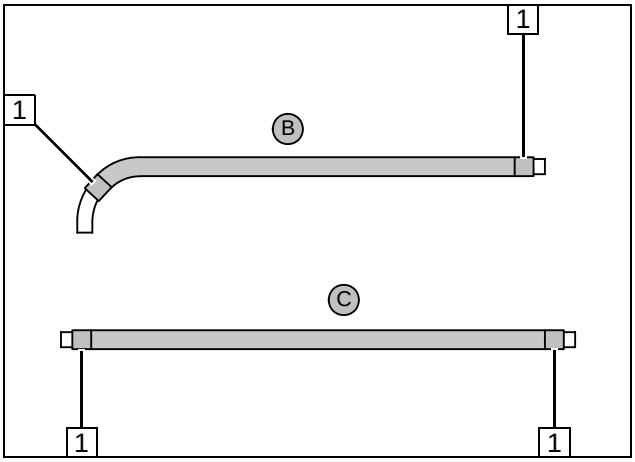
Coolant on 1.4 liter



b = 630
c = 720

Hose **A** = 17x20 180° molded hose
Discard section **X**

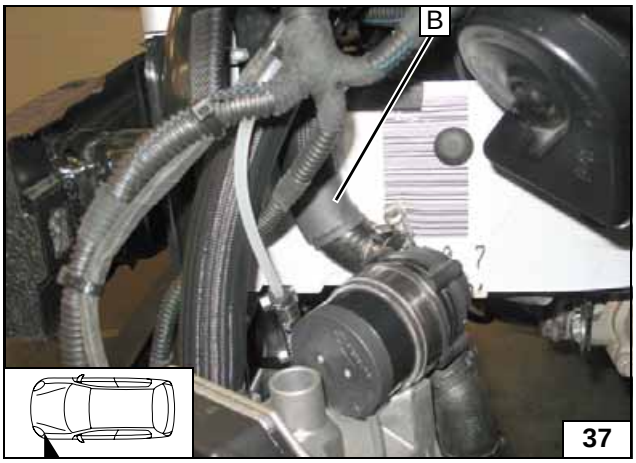
Cutting coolant hoses to length



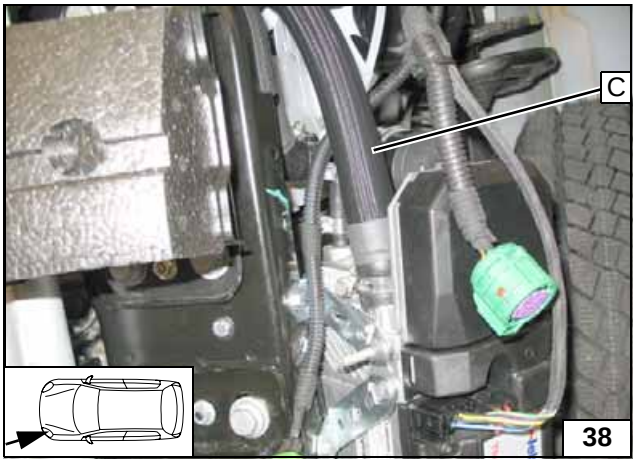
Push braided protection hoses onto hose **B** and **C** and cut to length.
Cut heat shrink plastic tubing to length.

1 25 mm long heat shrink plastic tubing [4x]

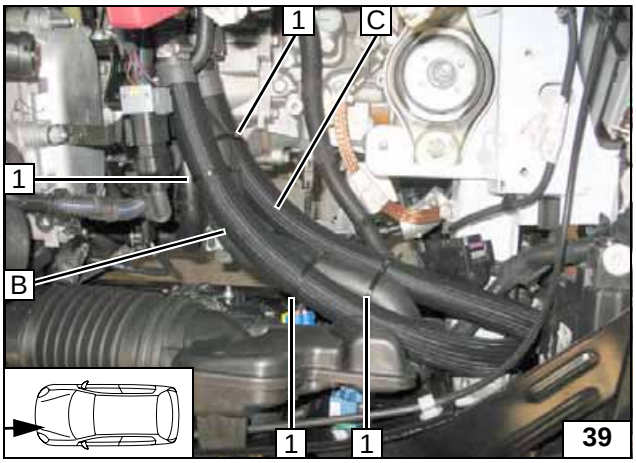
Preparing coolant hoses



Connecting heater unit inlet

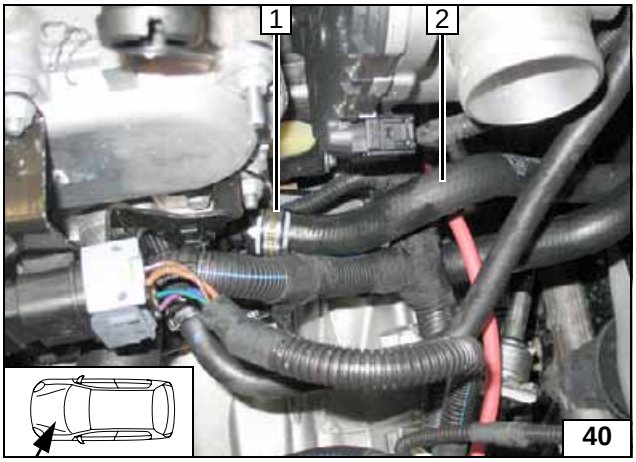


Connecting heater unit outlet



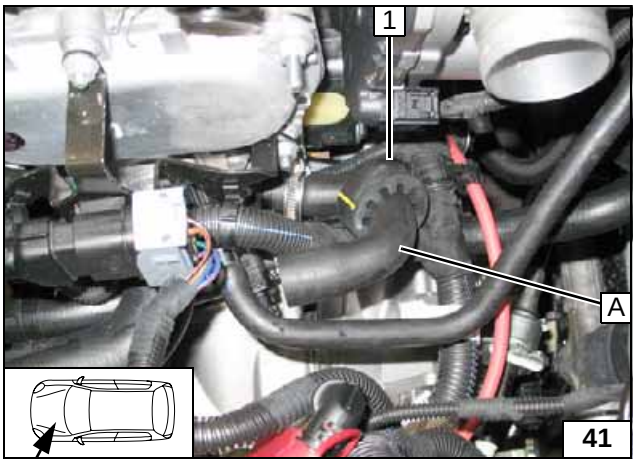
1 Cable tie [4x]

Routing in engine compartment



Disconnect hose to engine outlet/heat exchanger inlet **2** at connection piece of engine outlet. Discard clamp **1**

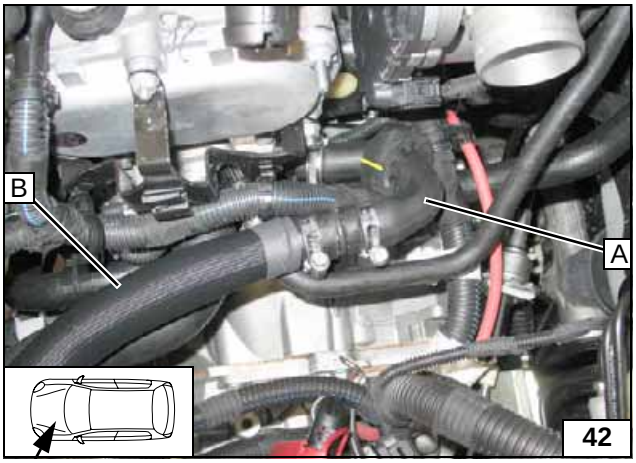
Cutting point



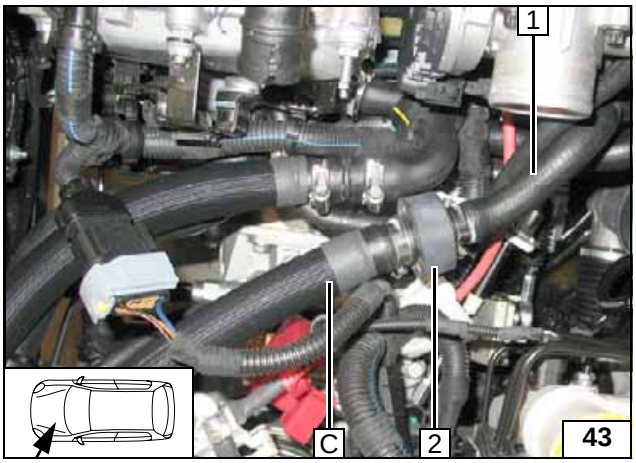
Fasten hose **A** with small diameter on connection piece on engine outlet.

1 Black (sw) rubber isolator

Connecting engine outlet

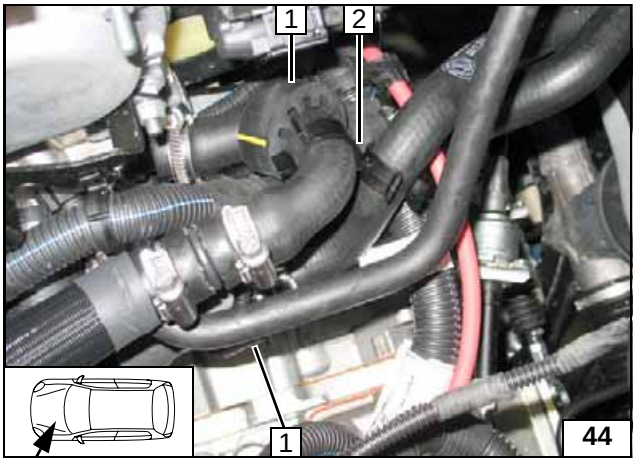


Connecting engine outlet



1 Hose on heat exchanger inlet
2 Black (sw) rubber isolator
3 Spacer bracket

Connecting heat exchanger inlet

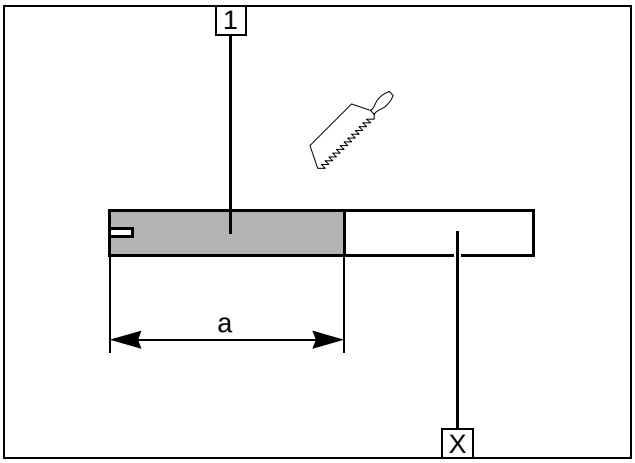


Align black (sw) rubber isolator **1** [2x]. Ensure sufficient distance to neighboring components.

2 Spacer bracket

Aligning hoses

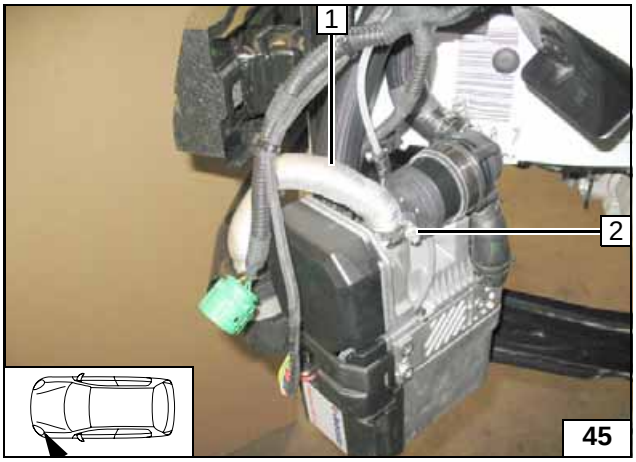
Combustion air



1 Combustion air pipe
a = 240

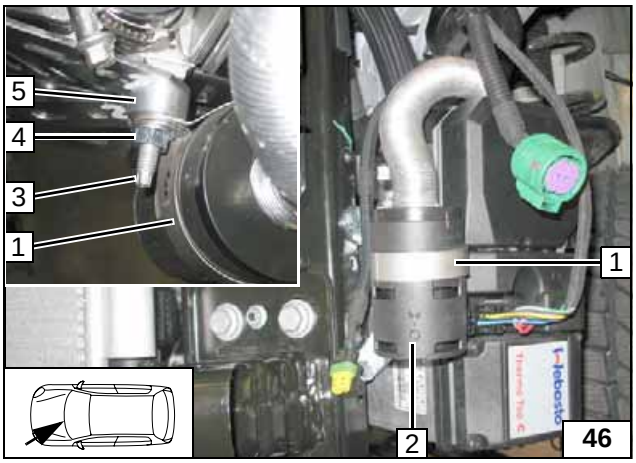
Discard section **X**

Cutting combustion air pipe to length



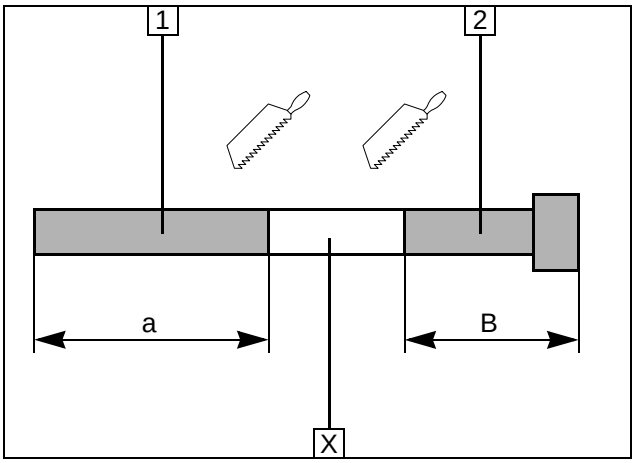
1 Combustion air pipe
2 27 mm dia. clamp

Installing combustion air pipe



1 Flanged nut **4**, 48 mm dia. clamp, 10 mm shim **5** on Ejot stud **3**
2 Muffler

Installing muffler

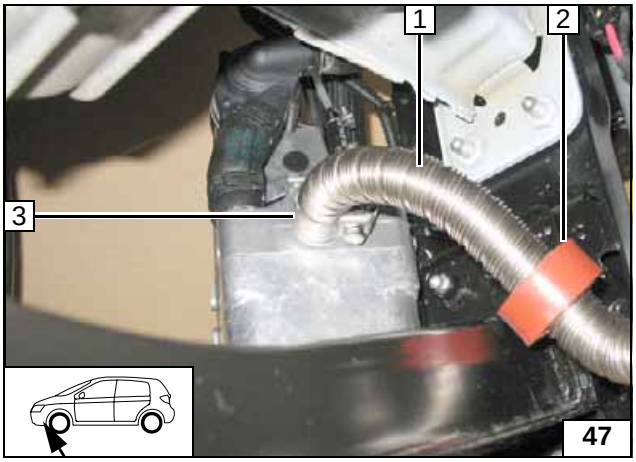


Exhaust gas

1 Exhaust pipe
a = 270
2 Exhaust end section
b = 95

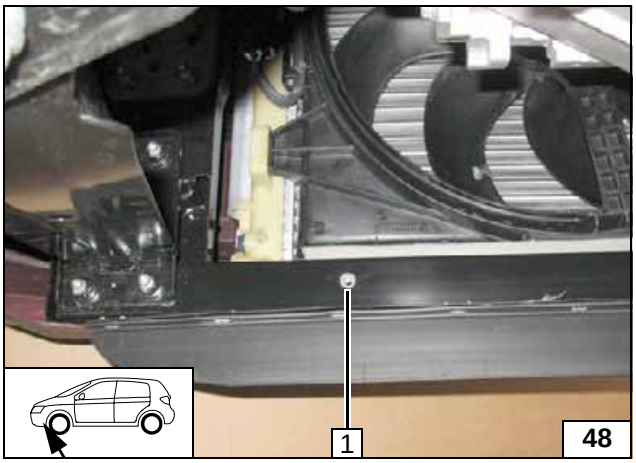
Discard section **X**

Preparing exhaust pipe



1 Exhaust pipe
2 Red (rt) rubber isolator
3 Hose clamp

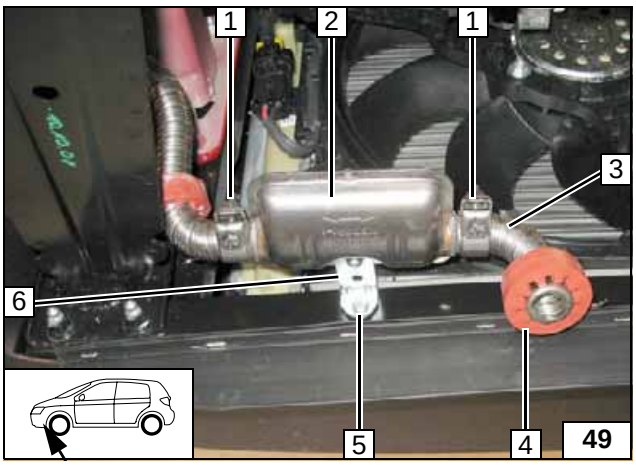
Installing exhaust pipe



1.2 liter engine

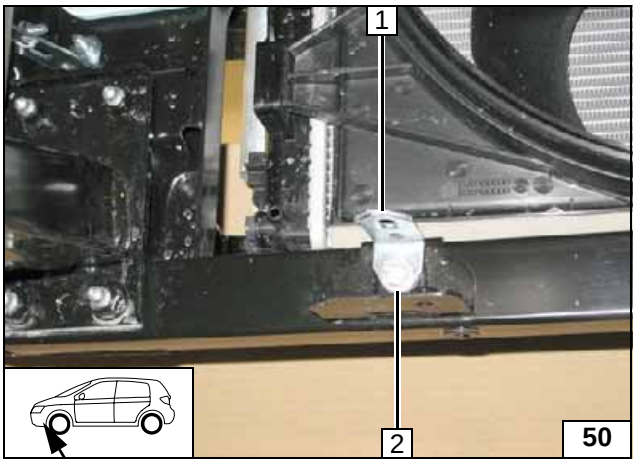
1 Existing hole; mount rivet nut (steel)

Installing rivet nut



1 Hose clamp [2x]
2 Muffler, M6x20 bolt, large diameter washer, flanged nut on angle bracket
3 Exhaust end section
4 Red (rt) rubber isolator with groove
5 M6x20 screw, spring lockwasher on rivet nut
6 Angle bracket

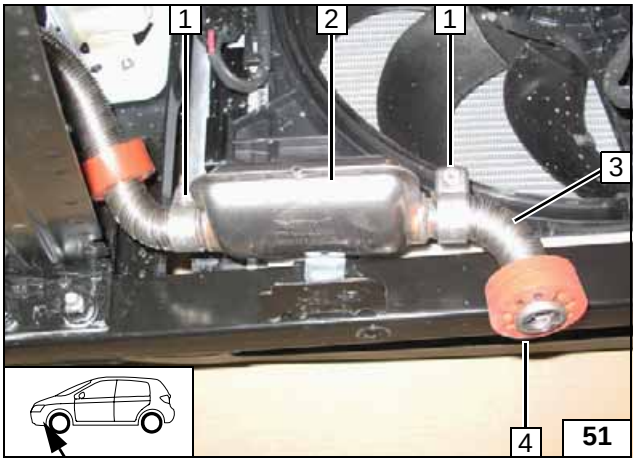
Installing muffler and end section



1.4 liter engine

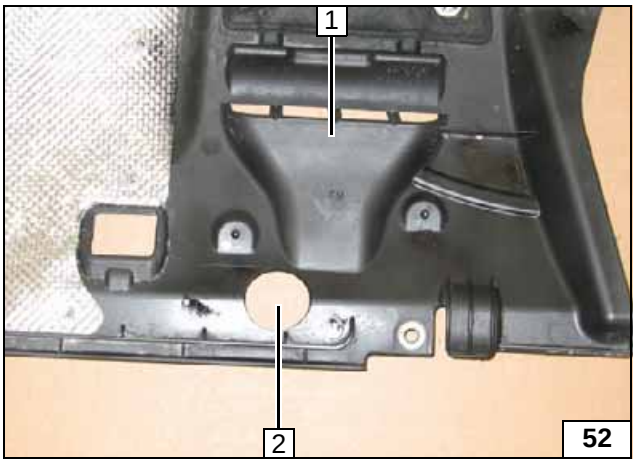
1 Angle bracket
2 Original vehicle bolt

Installing angle bracket



1 Hose clamp [2x]
2 Muffler, M6x20 bolt, large diameter washer, flanged nut on angle bracket
3 Exhaust end section
4 Red (rt) rubber isolator with groove

Installing muffler and end section

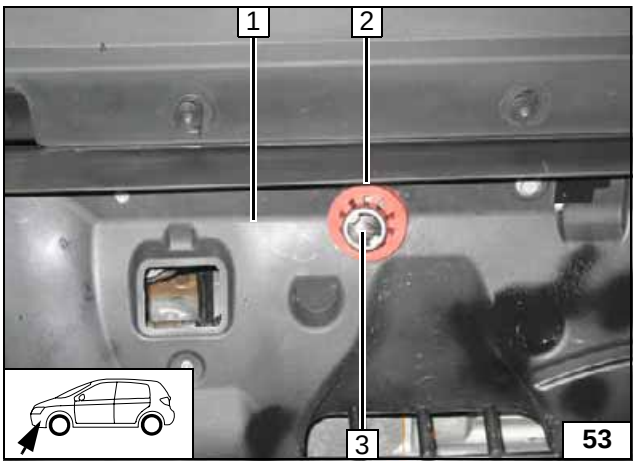


Vehicle with underride protection

Remove insulation mat.

1 Underride protection
2 42 mm dia. hole

Cutting out underride protection



Align exhaust end section **3** flush on red rubber isolator **2**.
Ensure sufficient distance to neighboring components.

1 Underride protection

Position-ing rubber isolator

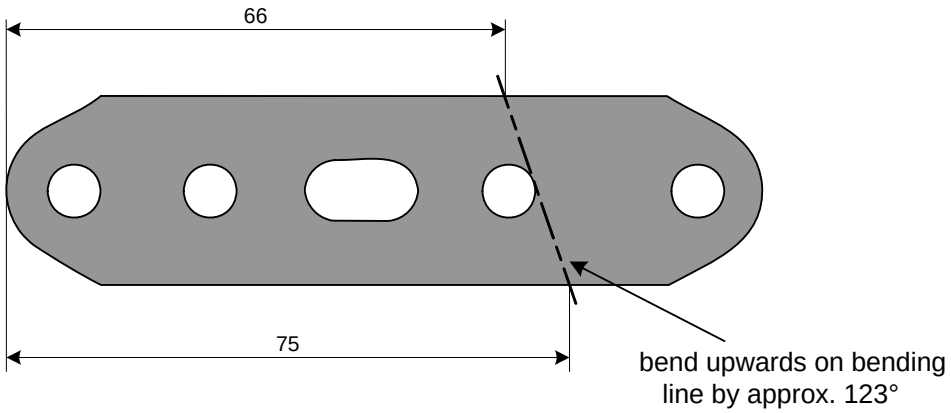
Final Work

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

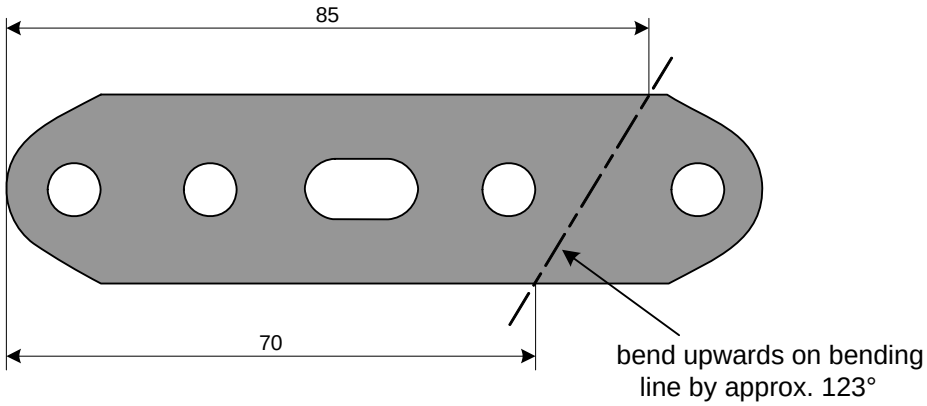
- Connect the battery
- Fill and bleed the coolant circuit according to the vehicle manufacturer's specifications.
- Set the digital timer.
- Make settings on A/C control panel according to the "Operating Instructions for End Customer".
- Check the proper operation of the additional heater, see the operating instructions/installation instructions.
- Attach the "Switch off additional heater before refueling" sticker to the left-hand B-pillar.

Webasto
Feel the drive

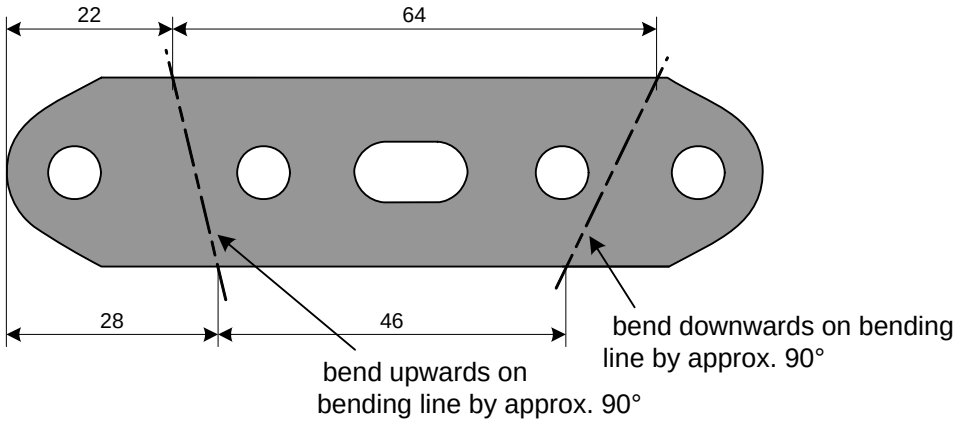
Template for Perforated Bracket A

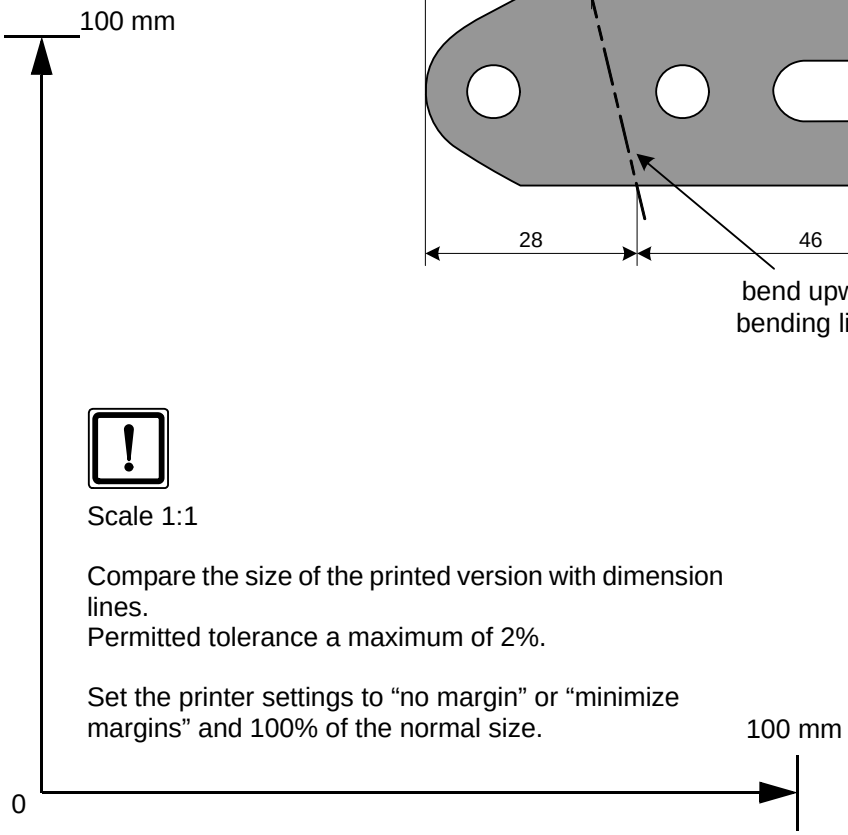


Template for Perforated Bracket B



Template for Perforated Bracket C



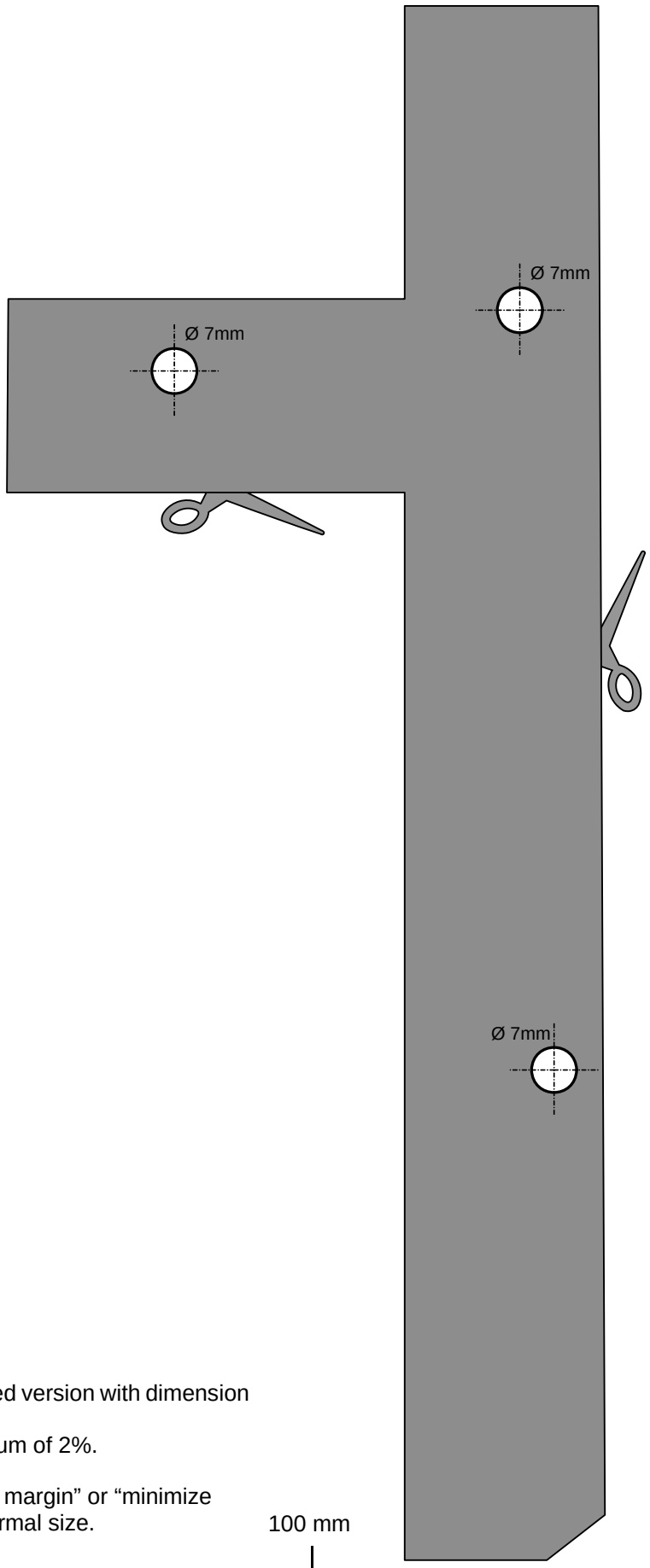


Scale 1:1

Compare the size of the printed version with dimension lines.
Permitted tolerance a maximum of 2%.

Set the printer settings to “no margin” or “minimize margins” and 100% of the normal size.

Template for Bracket



100 mm

Scale 1:1

Compare the size of the printed version with dimension lines.
Permitted tolerance a maximum of 2%.

Set the printer settings to “no margin” or “minimize margins” and 100% of the normal size.

100 mm

0

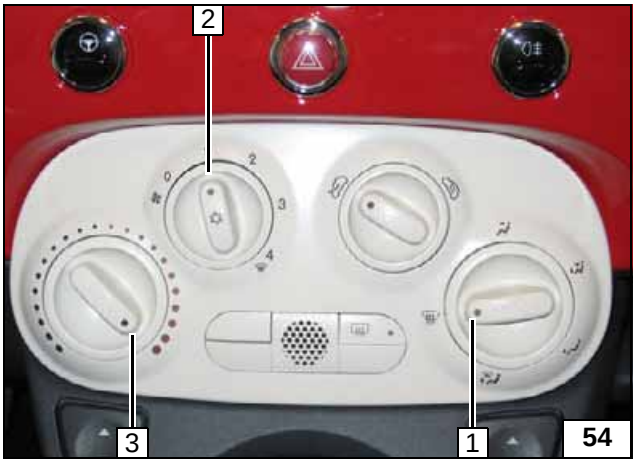
Operating Instructions for End Customer

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 the summer/winter switch option has been installed, this must be switched in accordance with the time of year. The heater unit will then only switch on the vehicle fan to ventilate the vehicle interior in the position Winter heat and in the position Summer .

Before parking the vehicle, make the following settings:



1 Air outlet to windshield
2 Set fan to level "1", or possibly "2"
3 Set temperature to "max."

1 Air outlet faces "upward"
2 Set temperature to "32.0°C"
3 Set fan to level "2", or possibly "3"