

# Water Heater Unit



**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.

## Table of Contents

Validity	2	Fuel	15
Heater Unit/Installation Kit	3	Coolant routing	18
Foreword	3	Coolant on 1.2 liter	19
General Instructions	3	Coolant on 1.4 liter	21
Special Tools	3	Combustion air	24
Explanatory Notes on Document	4	Exhaust gas	25
Preliminary Work	5	1.2 liter engine	25
Heater unit installation location	5	1.4 liter engine	26
Preparing electrical system	6	Vehicle with underride protection	26
Electrical system	7	Final Work	27
Fan controller for manual air conditioning	8	Template for Perforated Bracket A	28
Automatic air-conditioning fan controller	9	Template for Perforated Bracket B	28
Remote option (Telestart)	11	Template for Perforated Bracket C	28
Preparing heater unit	12	Template for Bracket	29
Preparing installation location	12	Operating Instructions for End Customer	30
Installing heater unit	13		

## Validity

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

Engine type	Engine model	Output in kW	Displacement in cm <sup>3</sup>
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).

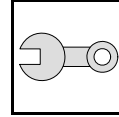
**Special Tools**

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

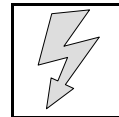
**Explanatory Notes on Document**

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.

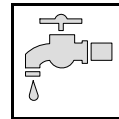
**Mechanical system**



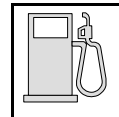
**Electrical system**



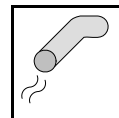
**Water**



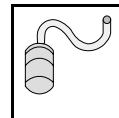
**Fuel**



**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 Ejet screws, Ejet 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.

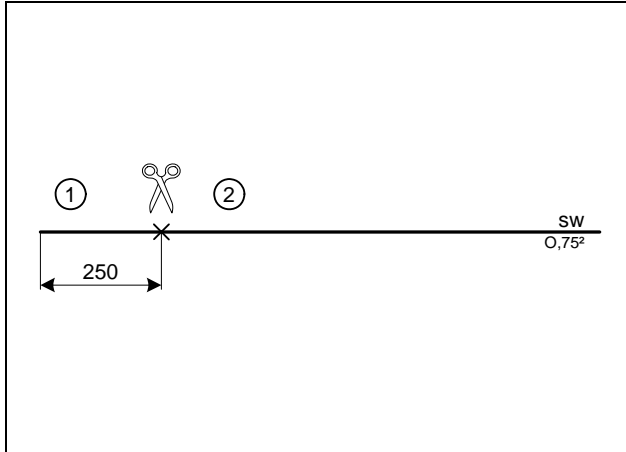
Remove page 30 "Operating Instructions for End Customer" and add to the vehicle operating instructions.



### Heater unit installation location

1 Heater unit

Installation location

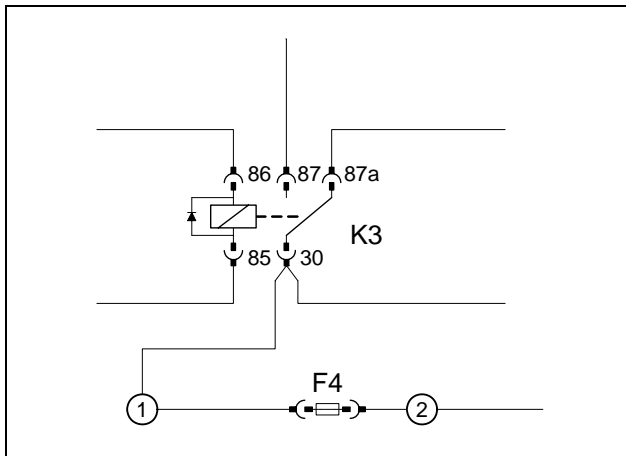


**Preparing electrical system**

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.



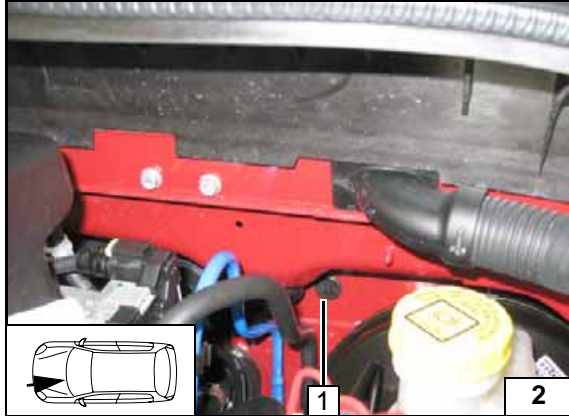
**Preparing fuse F4**



**Electrical system**

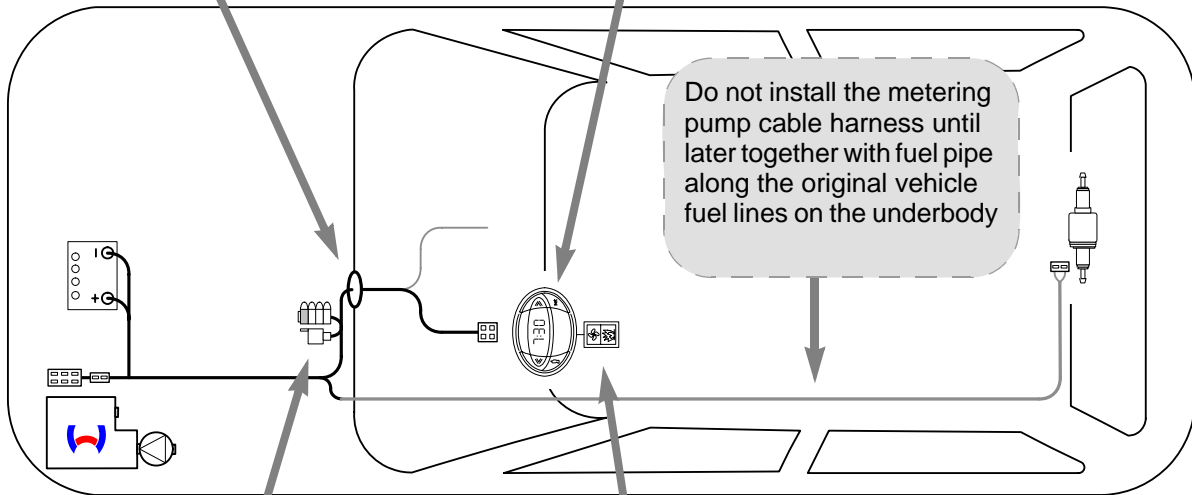
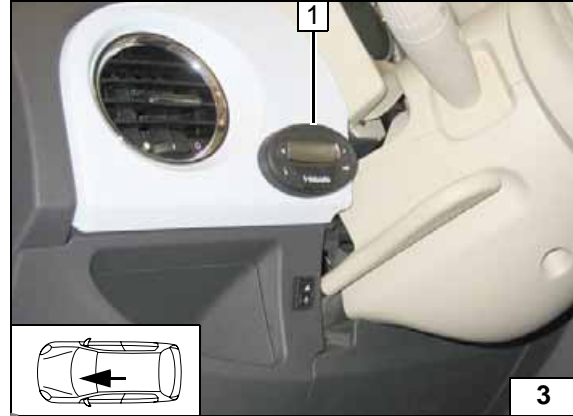
**Wiring harness pass through**

1 Protective rubber plug

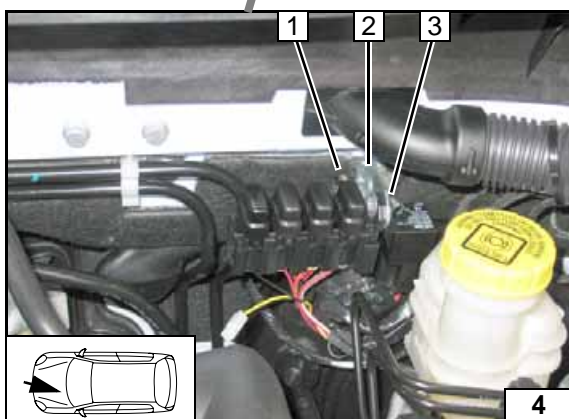


**Digital timer**

1 Digital timer



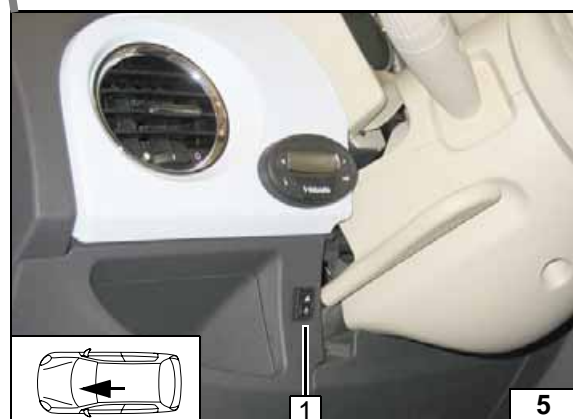
**Wiring harness installation diagram**



**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

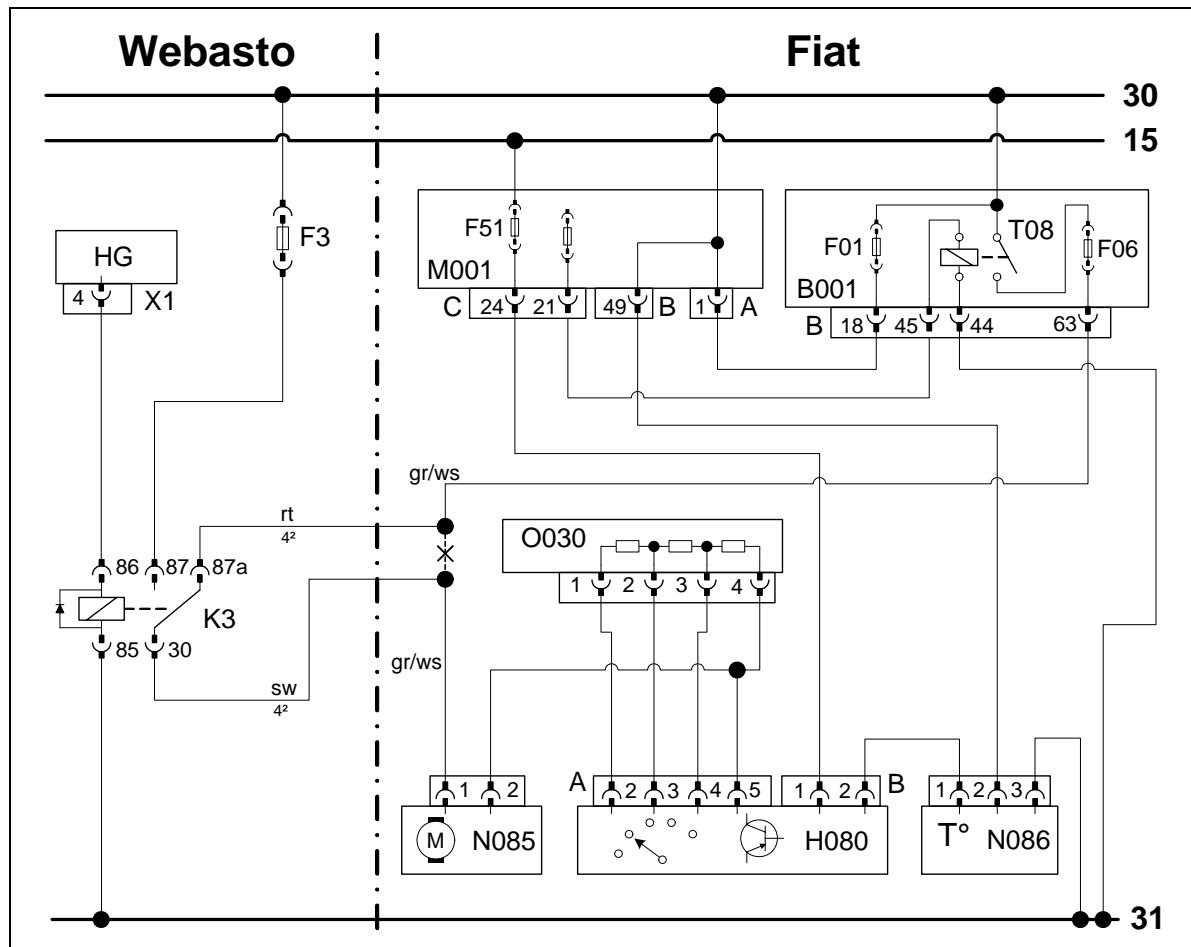


**Summer/winter switch option**

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



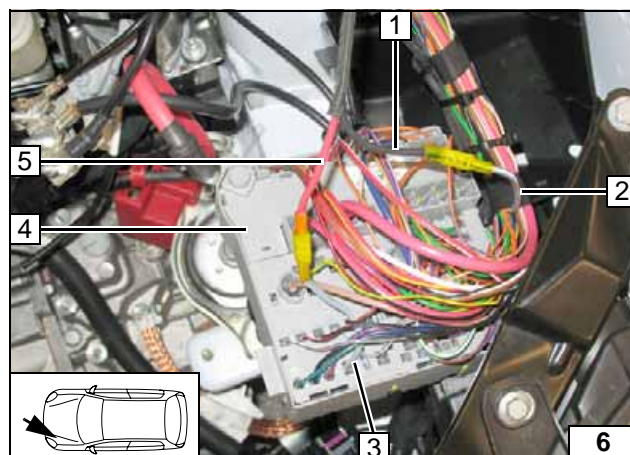
Fan controller for manual air conditioning



Wiring diagram

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.	

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 1
- 3 Gray/white (gr/ws) wire of connector B from B001, Pin 63
- 5 Red (rt) wire from K3/87a

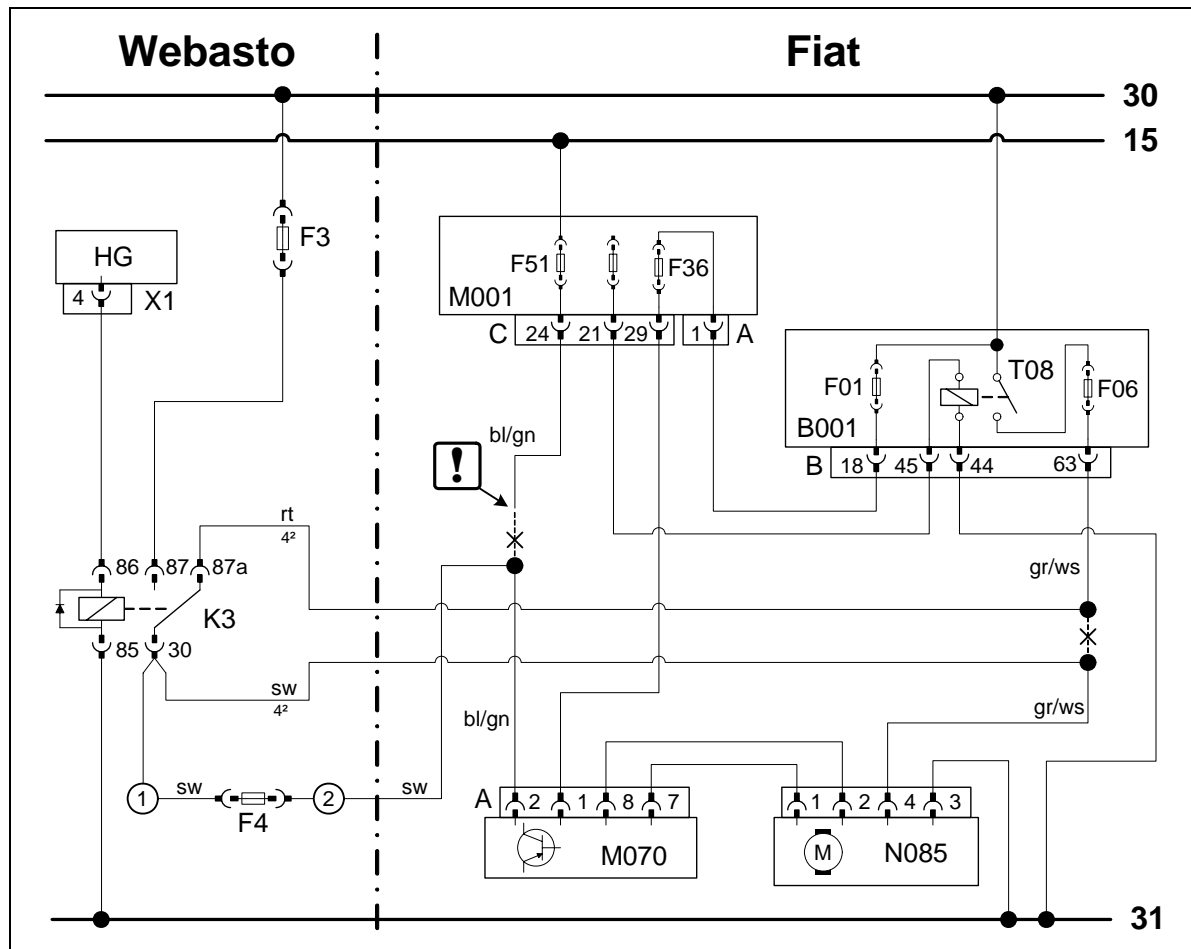


Connection to fan relay





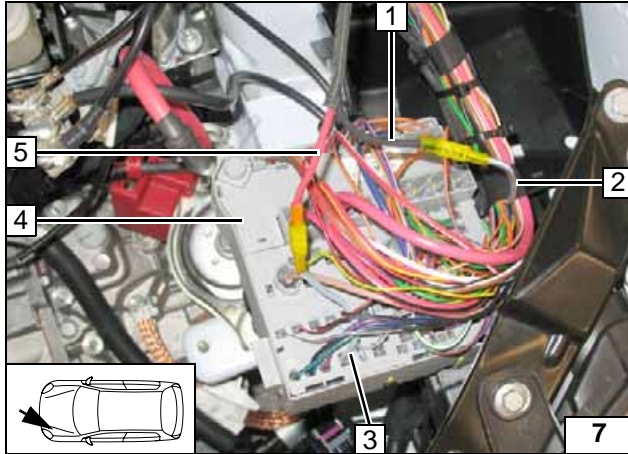
Automatic air-conditioning fan controller



Wiring diagram

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.	

Legend

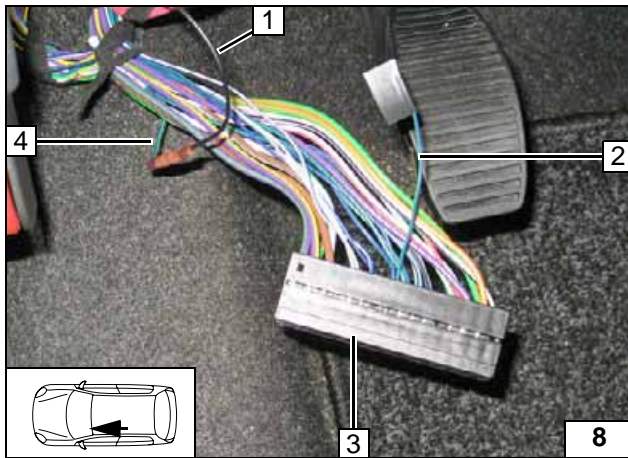


Connection on fan relay T08 of central electrical box in engine compartment 4. Produce connections as shown in wiring diagram.

- 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



**Connec-  
tion to fan  
relay**

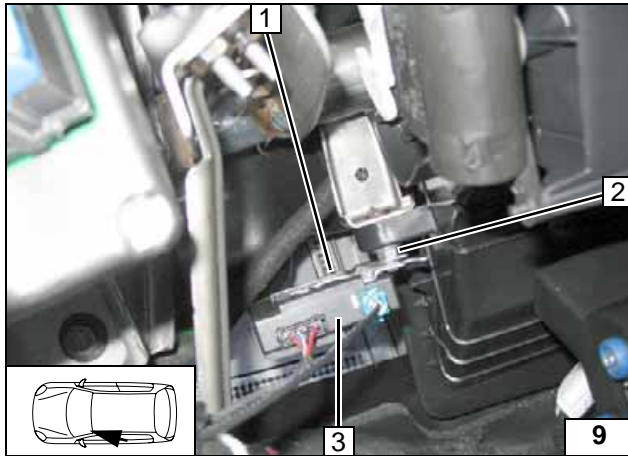


Connection on 32-pin of black (sw) connector C 3 from body computer M001. Produce connections as shown in wiring diagram.

- 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



**Connect-  
ing A/C  
control  
panel**



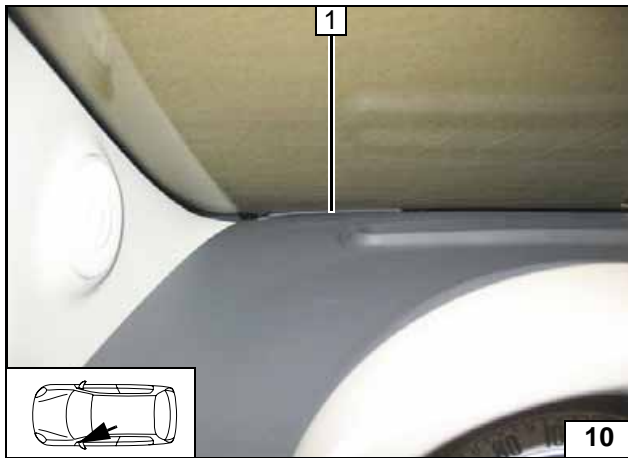
**Remote option (Telestart)**

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

- 2 M6 flanged nut on original vehicle stud bolt
- 3 Receiver

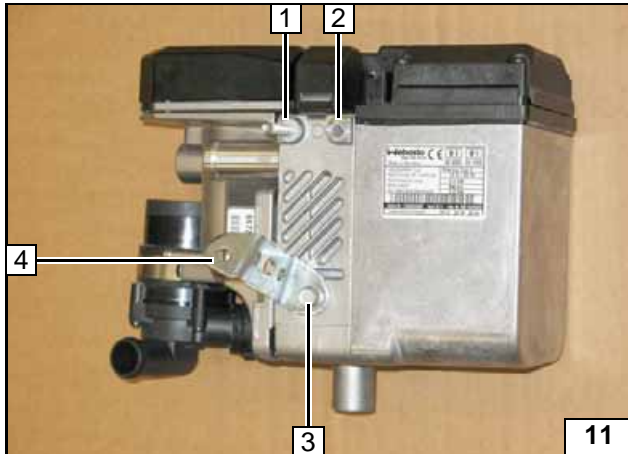
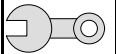


**Installing receiver**



- 1 Antenna

**Installing antenna**



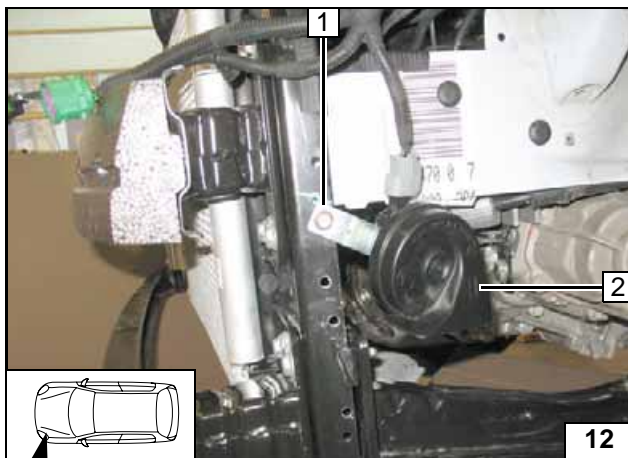
**Preparing heater unit**

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

- 1 Eجت stud
- 3 Eجت screw
- 4 Perforated bracket **C**



**Premounting heater unit**

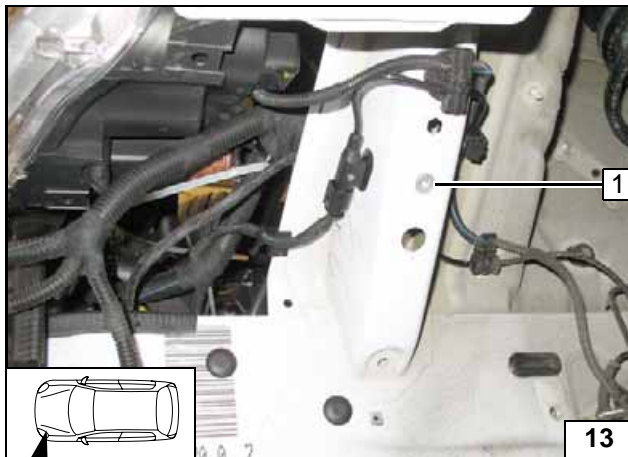


**Preparing installation location**

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

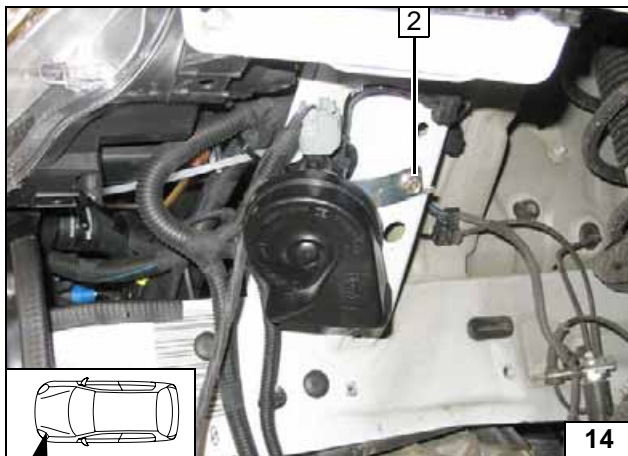


**Removing horn**



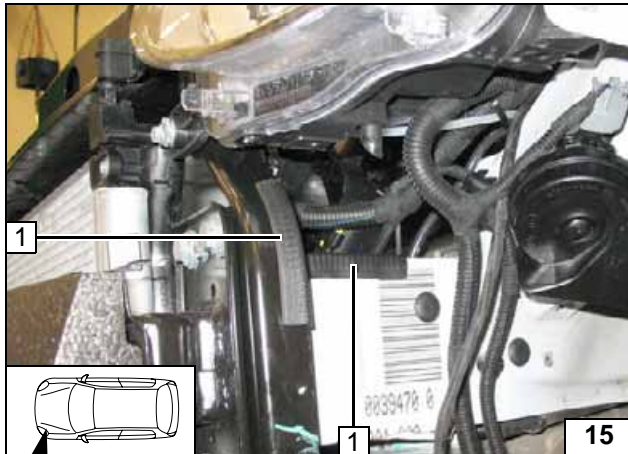
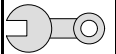
- 1 Existing hole; mount rivet nut (aluminum)

**Installing rivet nut**



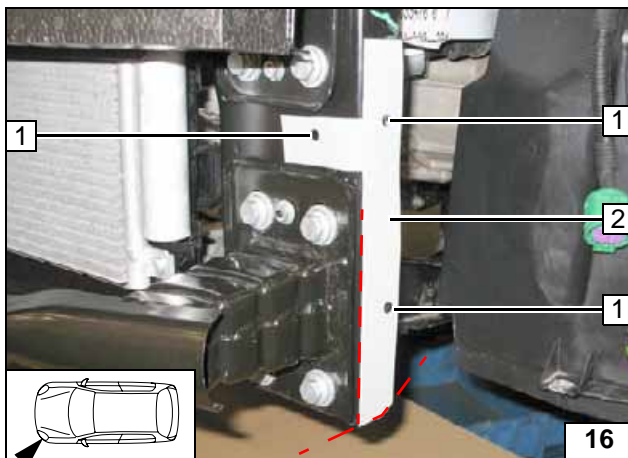
- 1 Align horn
- 2 Original vehicle bolt, spring lockwasher on rivet nut

**Installing horn**



1 Edge protection 100 [2x]

Installing edge protection

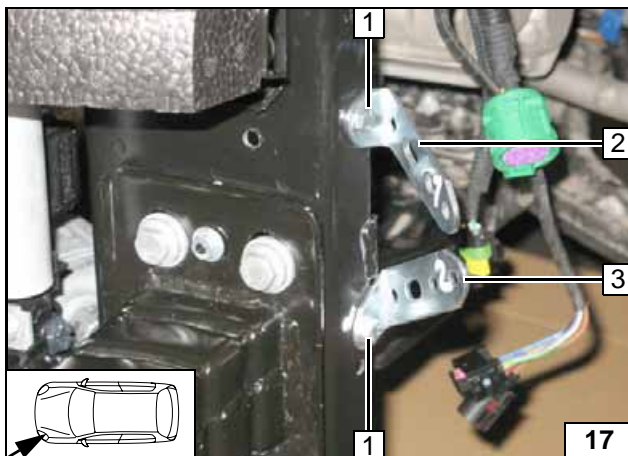


Cut out template 2 and lay on cross member (see marking).



1 7 mm dia. hole [3x]

Holes in cross member



Bend perforated bracket A and B according to template.

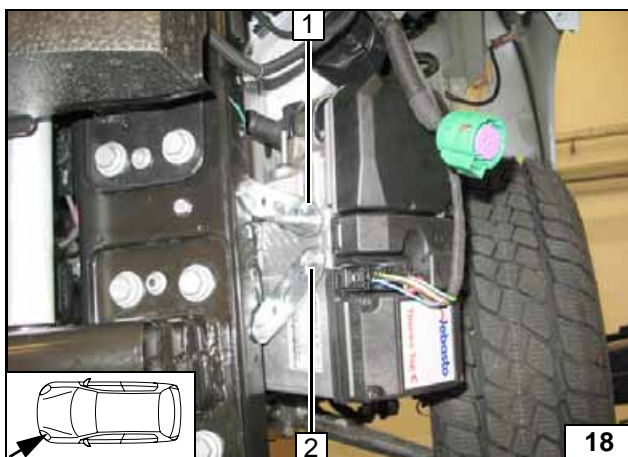


1 Loosely mount M6x20 bolt, flanged nut [2x each]

2 Perforated bracket A

3 Perforated bracket B

Loosely mounting perforated brackets

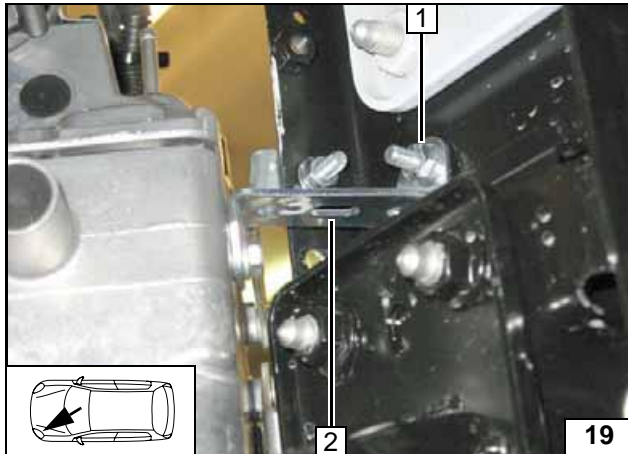
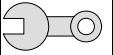


**Installing heater unit**

1 Flanged nut on E-jot stud

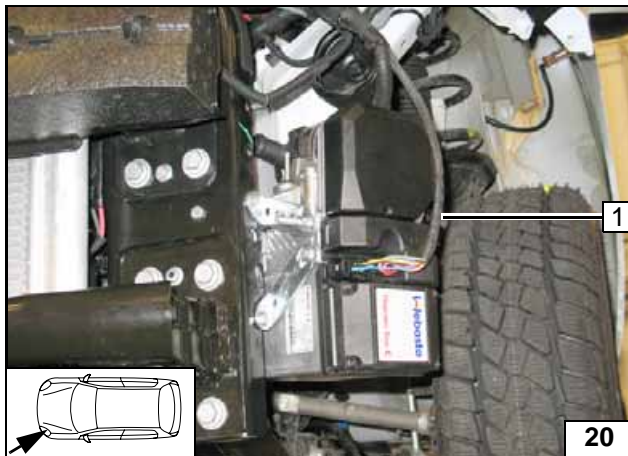
2 E-jot screw

Installing heater unit



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

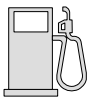
Installing heater unit



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!**

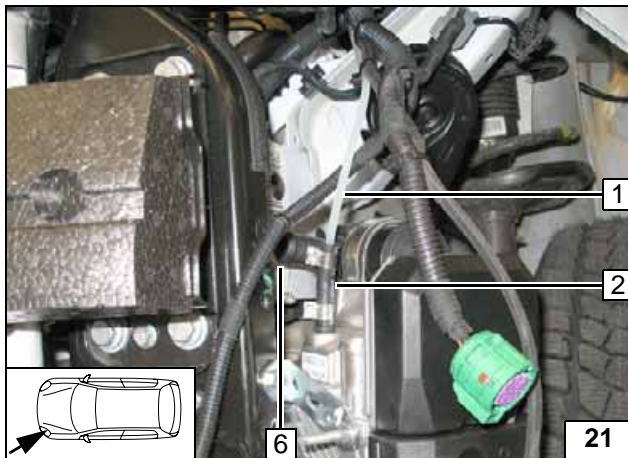
Open the vehicle's fuel tank cap, ventilate the tank and then re-close the tank lock.

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.

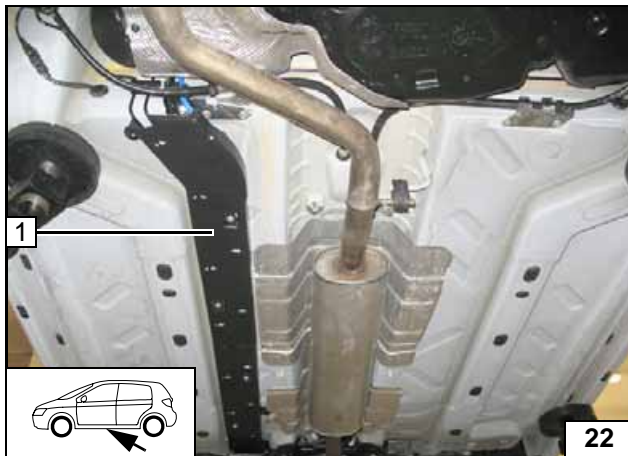
**WARNING!**

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]

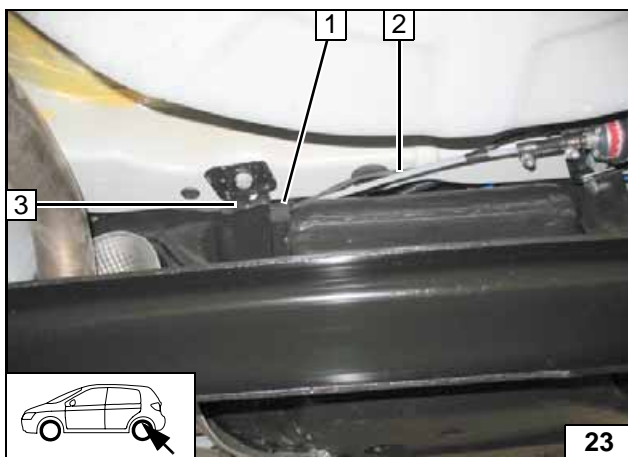
**Connect-  
ing heater  
unit**



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



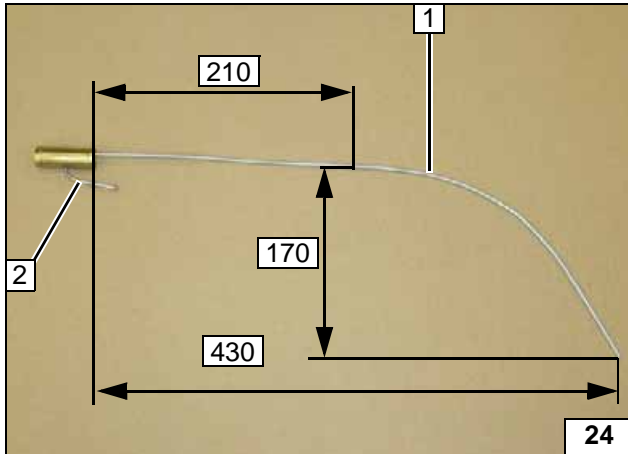
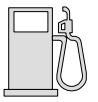
**Installing  
lines**



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.



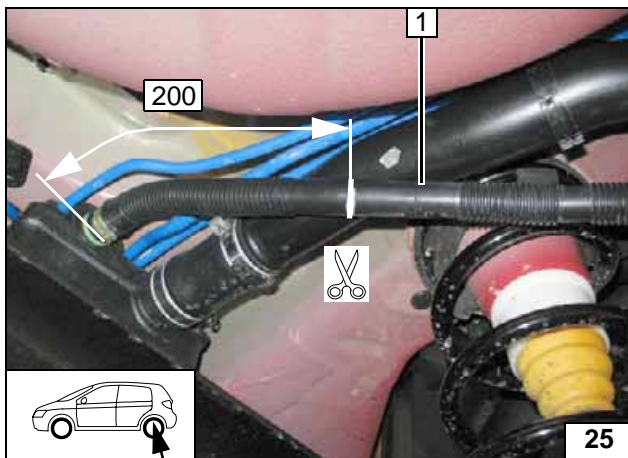
**Installing  
lines**



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



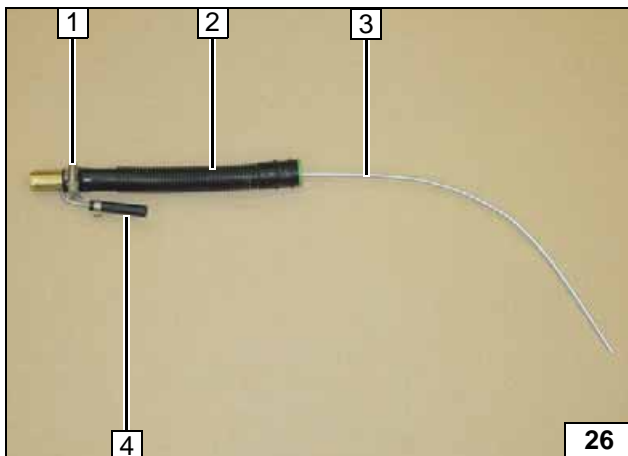
Removing fuel



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

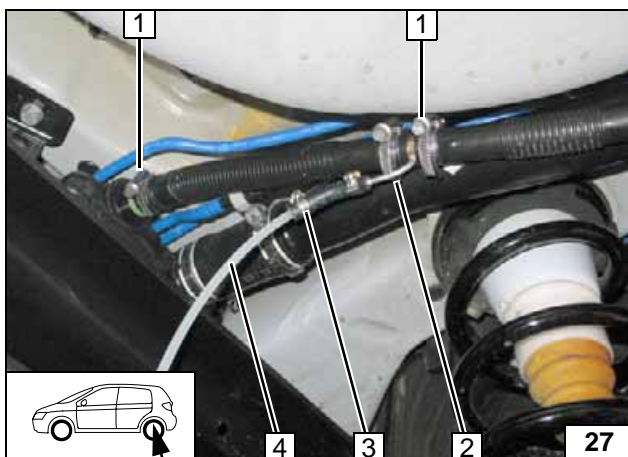


Cutting point



- 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



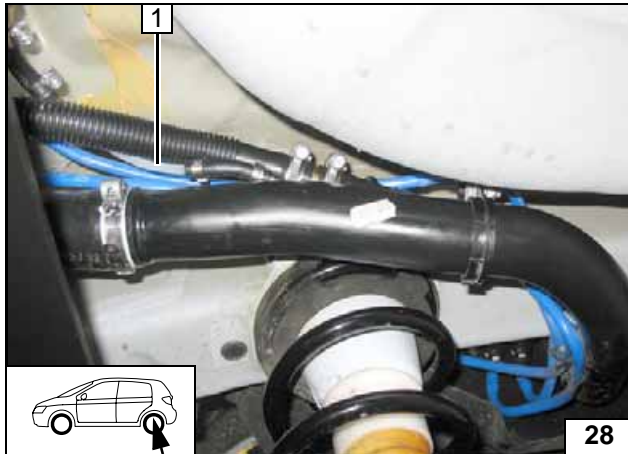
When installing, align standpipe of fuel standpipe 2 to fuel tank bottom.

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



Installing fuel standpipe

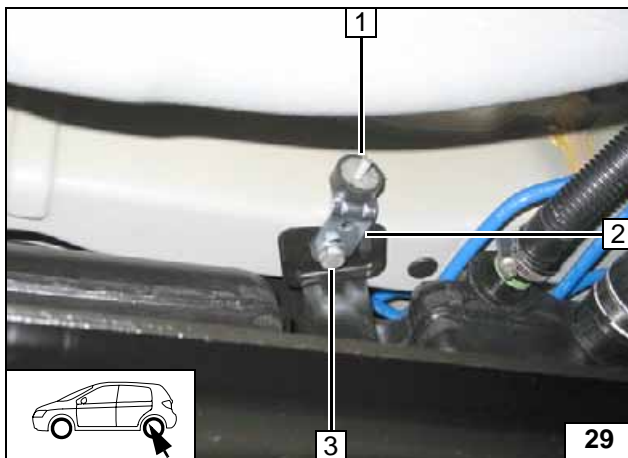




Insert fuel-tank vent line in bracket again.  
Route fuel line 1 to metering pump.

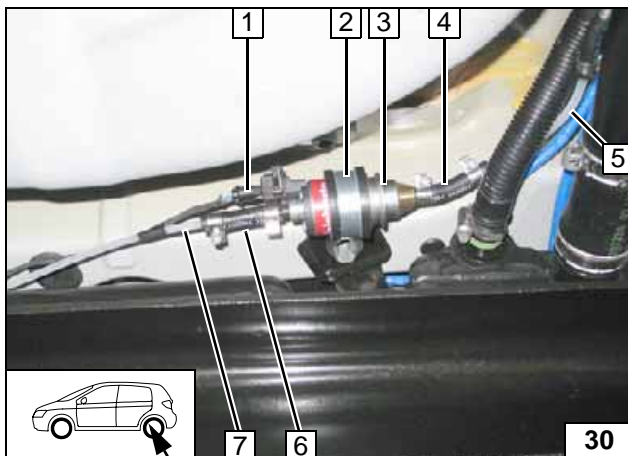


**Aligning  
fuel-tank  
vent line**



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

**Installation  
location of  
metering  
pump**

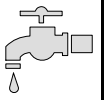


Check the position of the components; adjust if necessary. Check that they have free clearance.



**Connect-  
ing meter-  
ing pump**

- 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

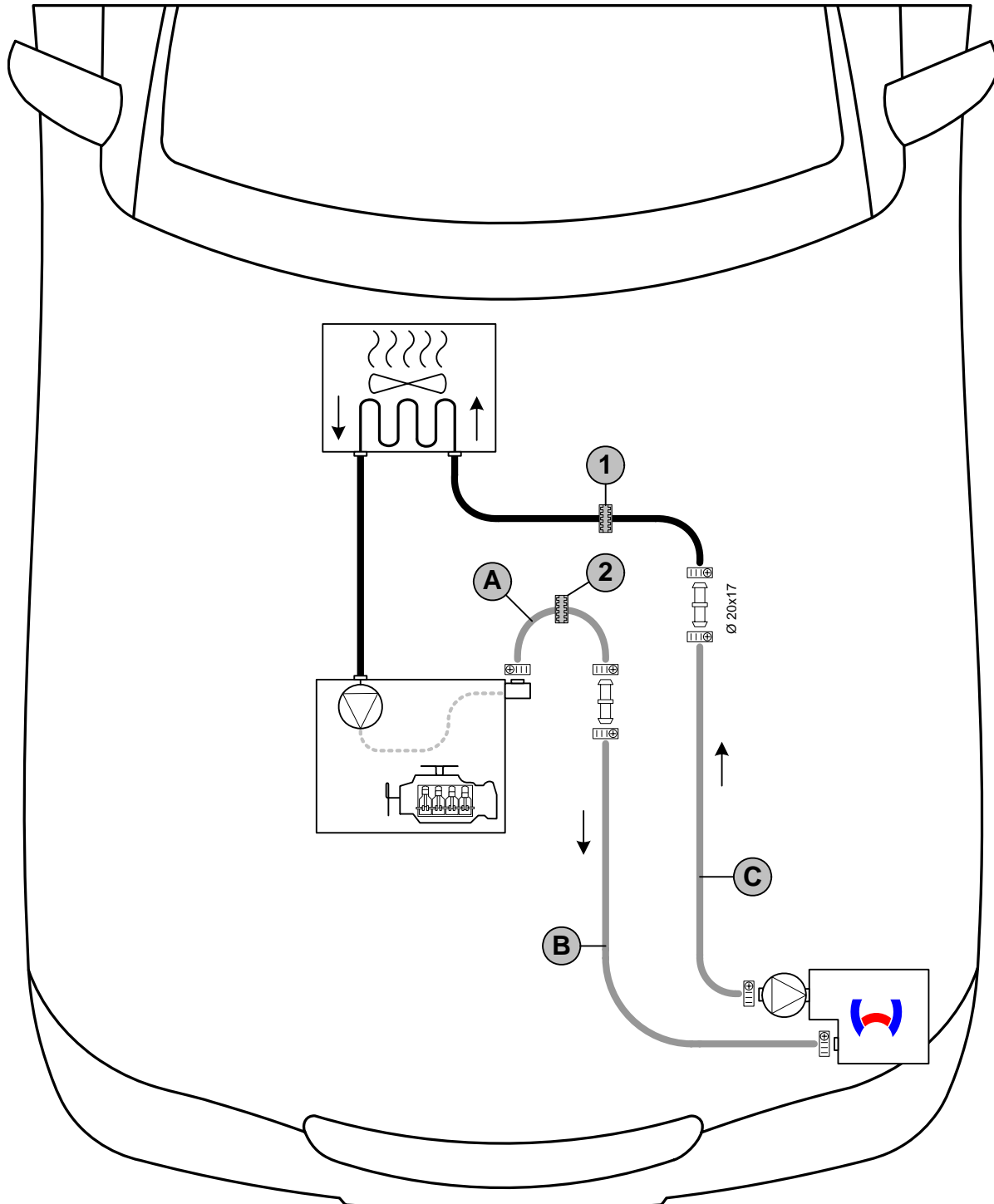


### Coolant routing

**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.

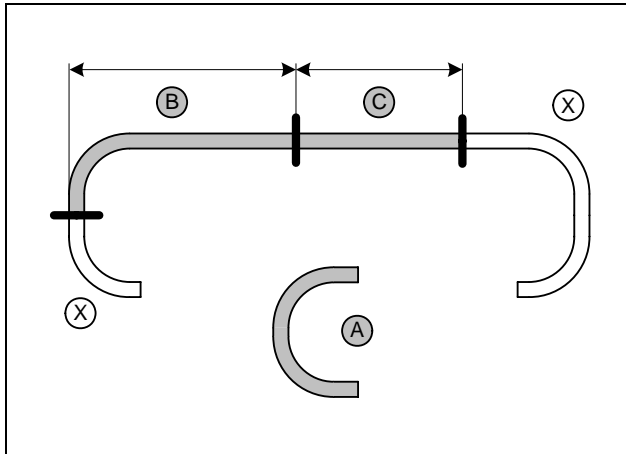
The connection should be "inline" based on the following diagram:



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).



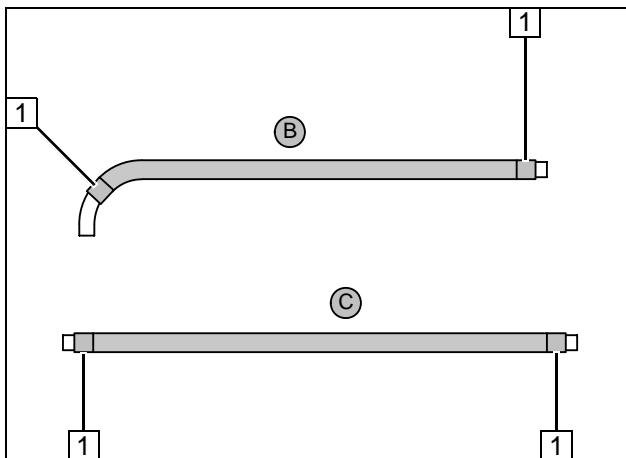


**Coolant on 1.2 liter**

b = 655  
c = 720

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

**Cutting coolant hoses to length**

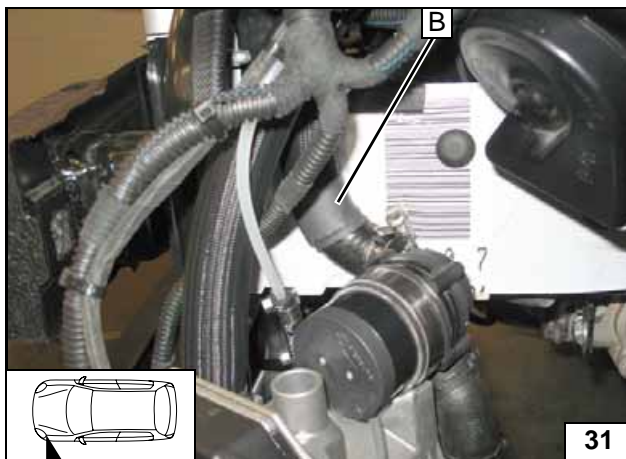


Push braided protection hoses onto hose B and C and cut to length.  
Cut heat shrink plastic tubing to length.



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

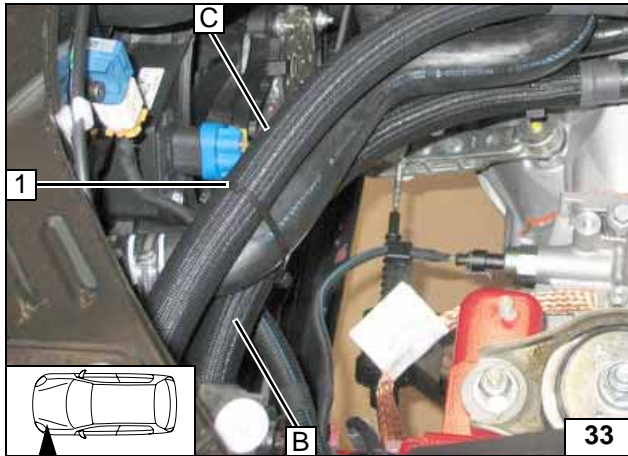
**Preparing coolant hoses**



**Connecting heater unit inlet**

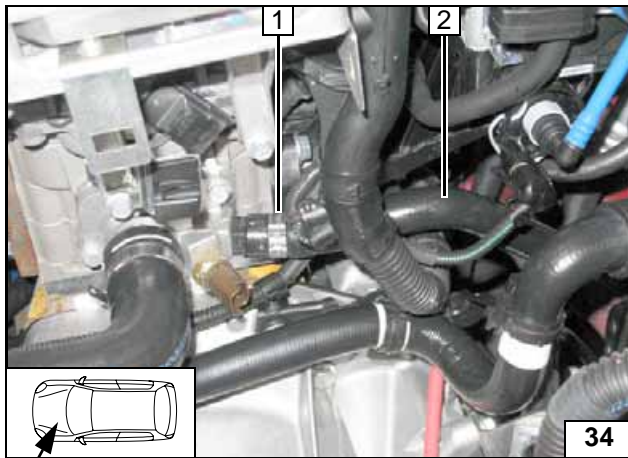


**Connecting heater unit outlet**



1 Cable tie

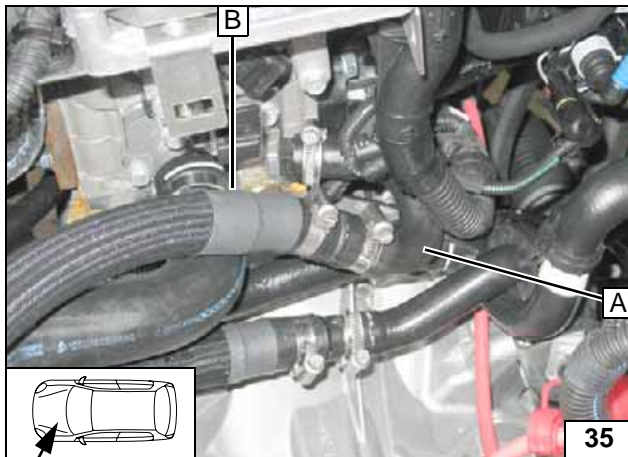
Routing in engine compartment



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



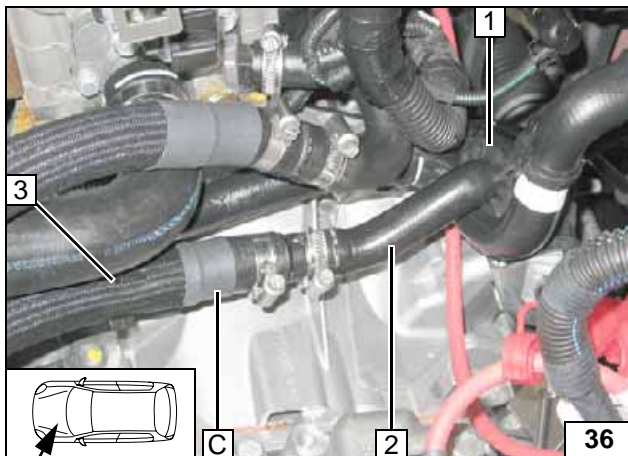
Cutting point



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



Connecting engine outlet

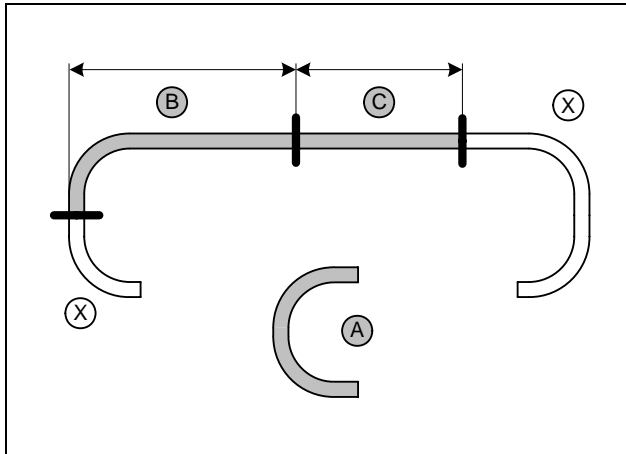


Ensure sufficient distance to neighboring components.

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



Connecting heat exchanger inlet

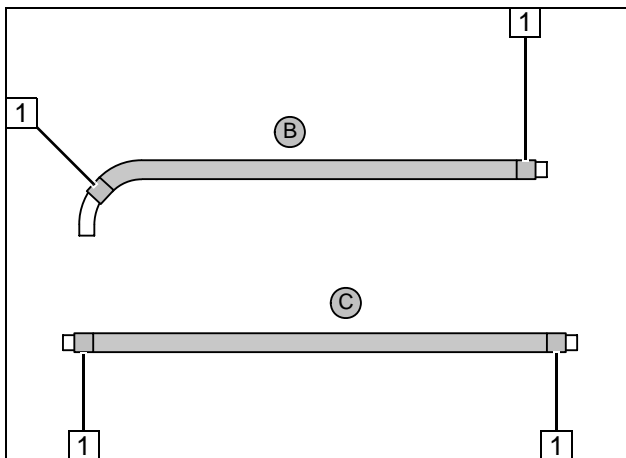


**Coolant on 1.4 liter**

b = 630  
c = 720

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

**Cutting coolant hoses to length**

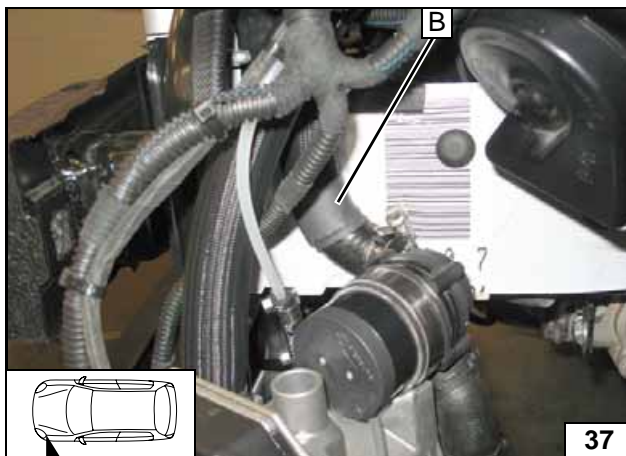


Push braided protection hoses onto hose B and C and cut to length.  
Cut heat shrink plastic tubing to length.



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

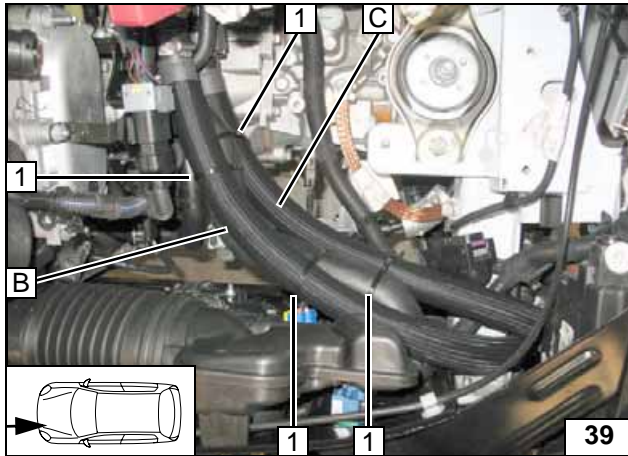
**Preparing coolant hoses**



**Connecting heater unit inlet**

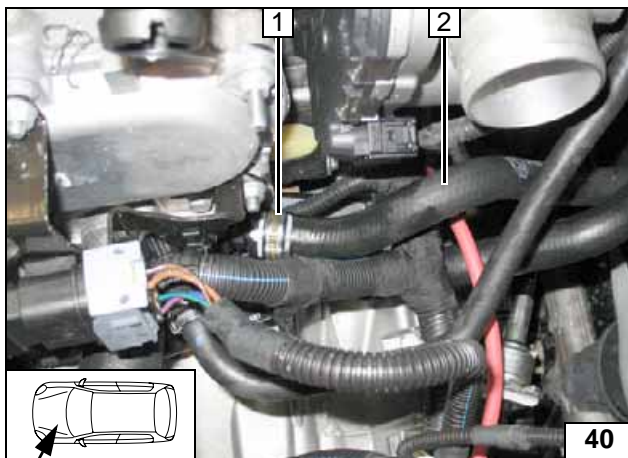


**Connecting heater unit outlet**



1 Cable tie [4x]

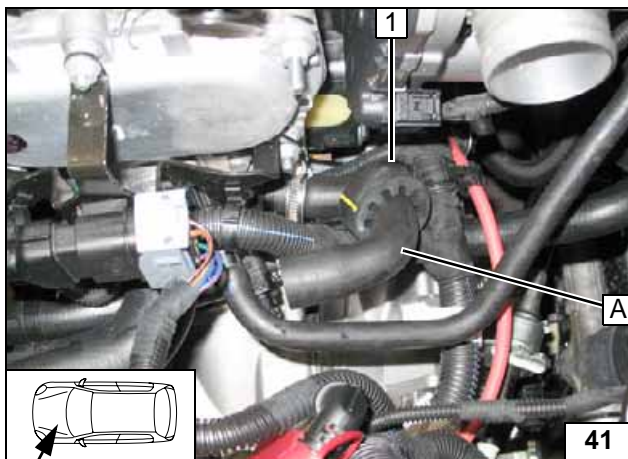
Routing in engine compartment



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



Cutting point

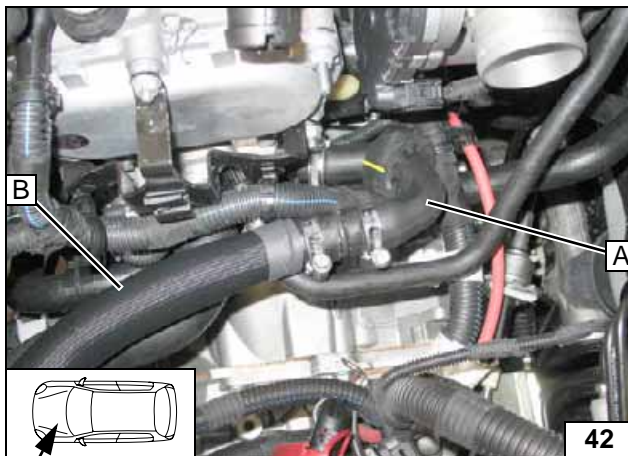


Fasten hose A with small diameter on connection piece on engine outlet.

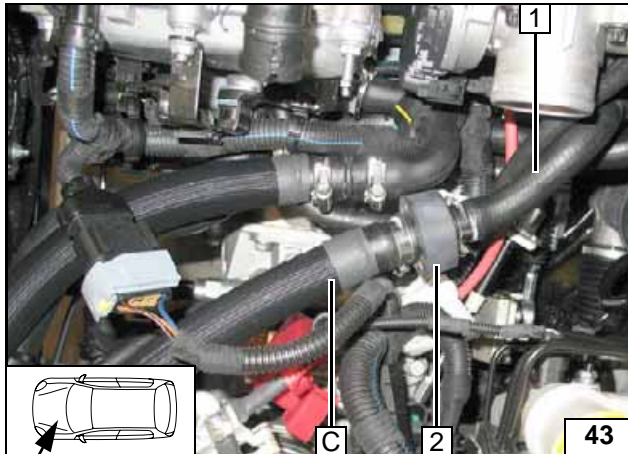


1 Black (sw) rubber isolator

Connecting engine outlet

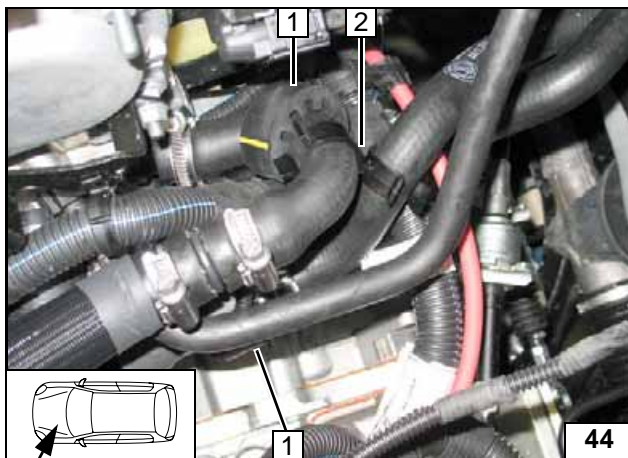


Connecting engine outlet



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

Connect-  
ing heat  
exchanger  
inlet

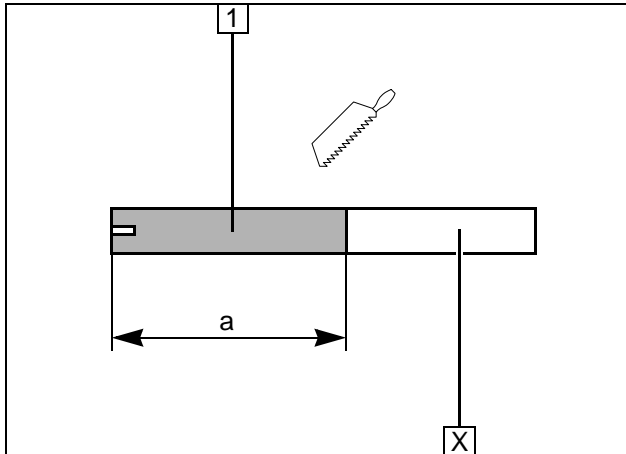
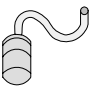


Align black (sw) rubber isolator 1 [2x].  
Ensure sufficient distance to neighboring  
components.

- 2 Spacer bracket



Aligning  
hoses

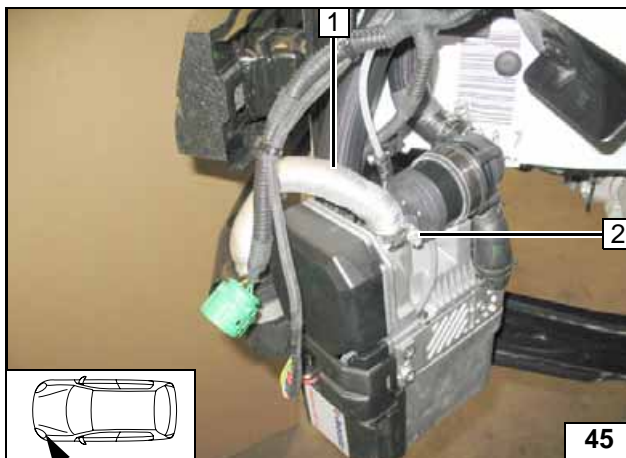


**Combustion air**

- 1 Combustion air pipe  
a = 240

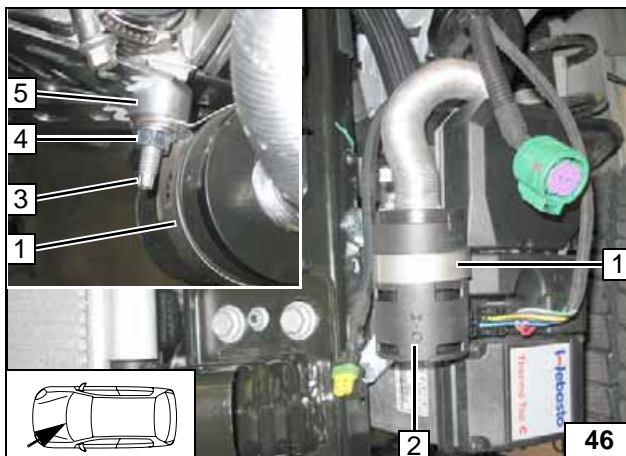
Discard section X

**Cutting combustion air pipe to length**



- 1 Combustion air pipe
- 2 27 mm dia. clamp

**Installing combustion air pipe**

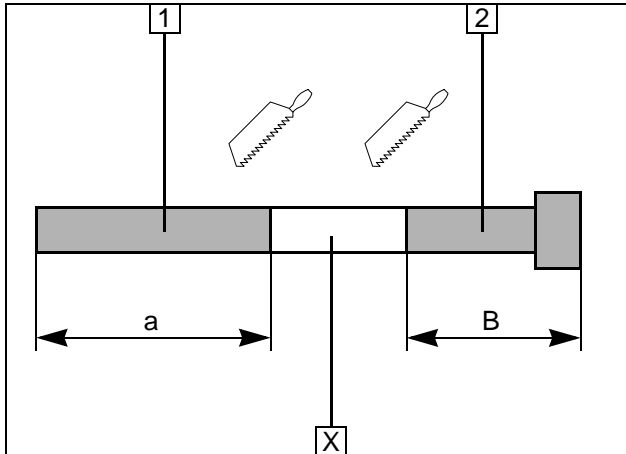
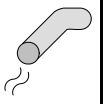


- 1 Flanged nut 4, 48 mm dia. clamp, 10 mm shim 5 on E-jot stud 3
- 2 Muffler



**Installing muffler**



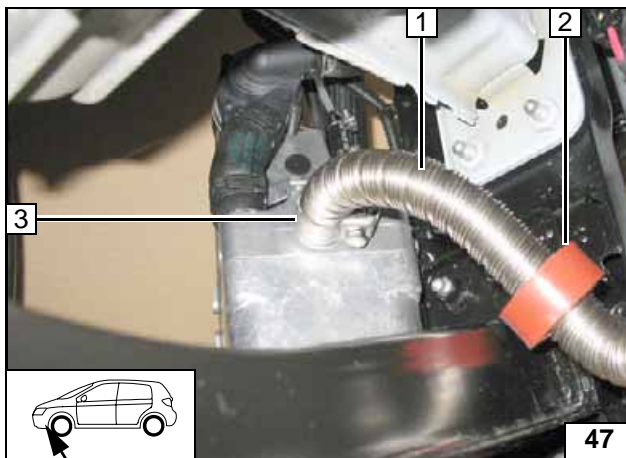


**Exhaust gas**

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

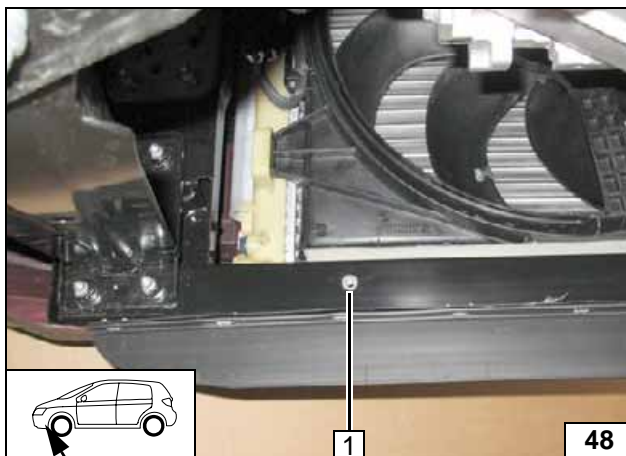
Discard section X

**Preparing exhaust pipe**



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

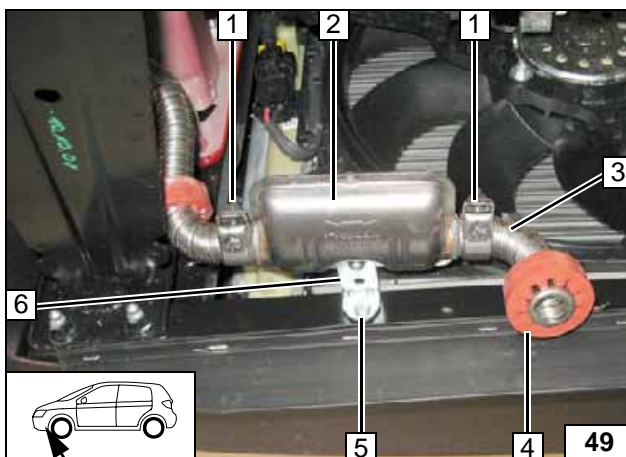
**Installing exhaust pipe**



**1.2 liter engine**

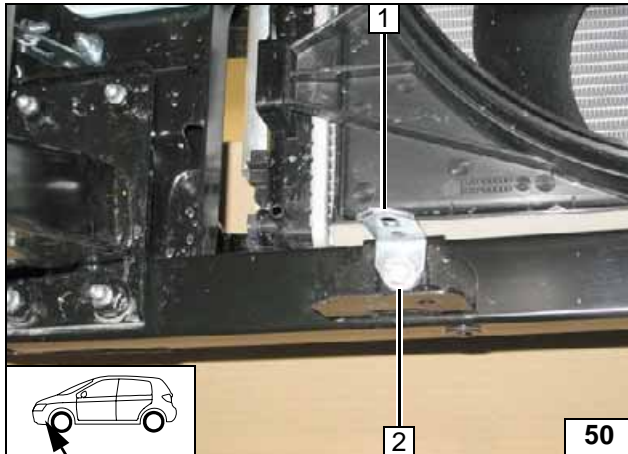
- 1 Existing hole; mount rivet nut (steel)

**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

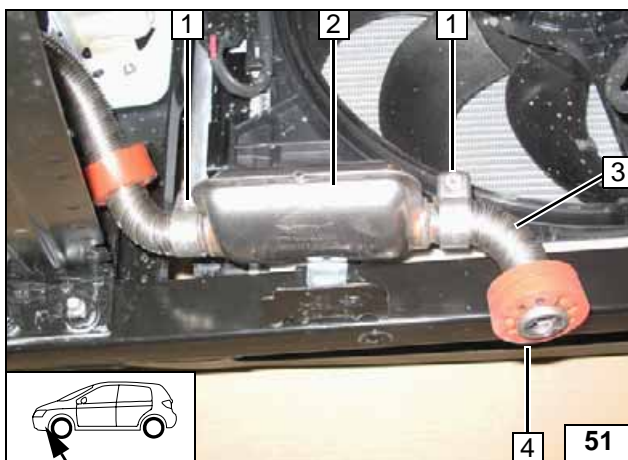
**Installing muffler and end section**



**1.4 liter engine**

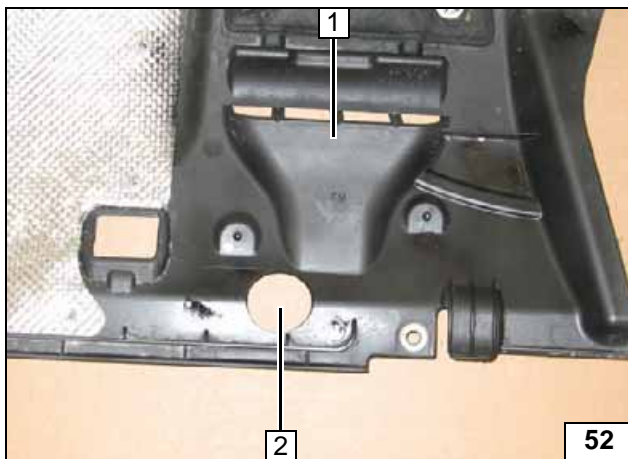
- 1 Angle bracket
- 2 Original vehicle bolt

**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**



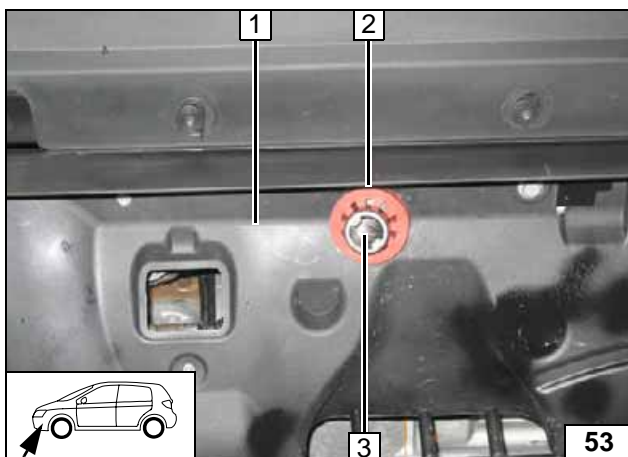
**Vehicle with underride protection**

Remove insulation mat.

- 1 Underride protection
- 2 42 mm dia. hole



**Cutting out underride protection**

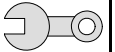


Align exhaust end section **3** flush on red rubber isolator **2**.  
Ensure sufficient distance to neighboring components.

- 1 Underride protection



**Positioning 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.

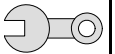
Only use manufacturer-approved coolant.

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

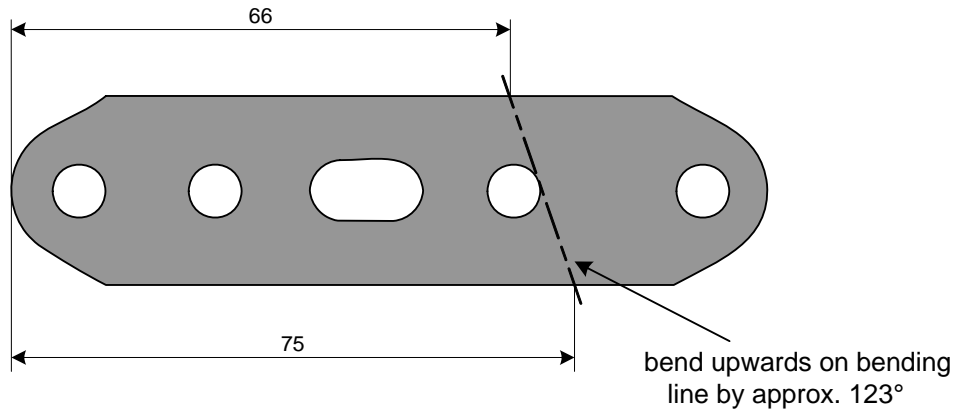
- Connect the battery
- Fill and bleed the coolant circuit according to the vehicle manufacturer's specifications.
- Set the digital timer.
- Make settings on A/C control panel according to the "Operating Instructions for End Customer".
- Check the proper operation of the additional heater, see the operating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



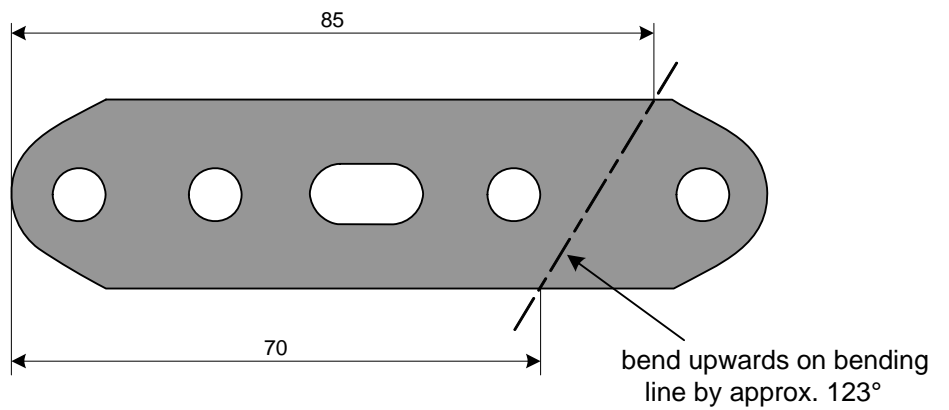
Webasto AG  
Postfach 80 - 82132 Stockdorf  
Hotline 01805 / 932278 - Hotfax 0395 / 5592-353  
<http://www.webasto.de>



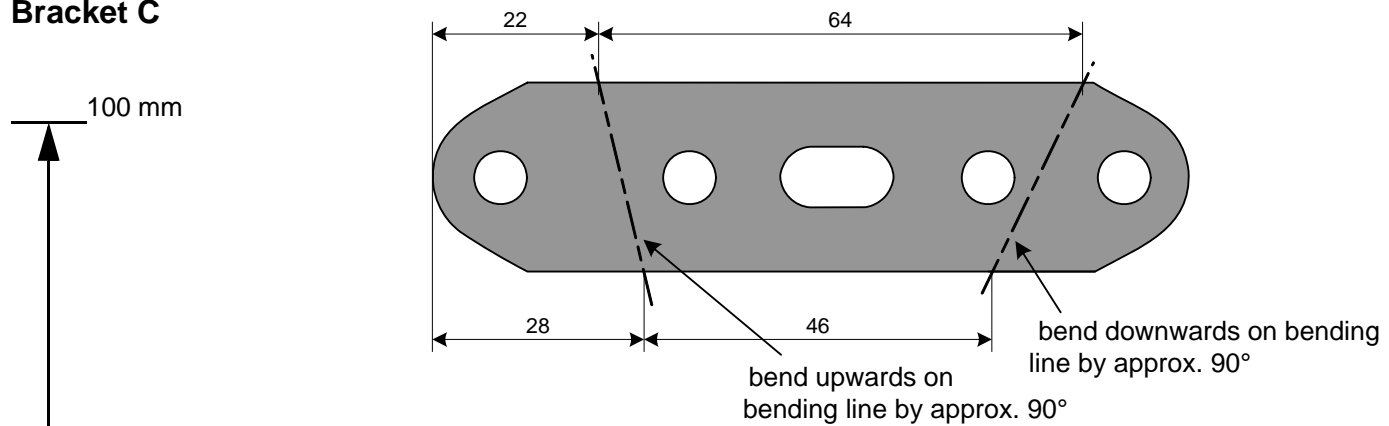
**Template for Perforated Bracket A**



**Template for Perforated Bracket B**



**Template for Perforated Bracket C**



Scale 1:1

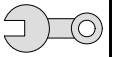
Compare the size of the printed version with dimension lines.

Permitted tolerance a maximum of 2%.

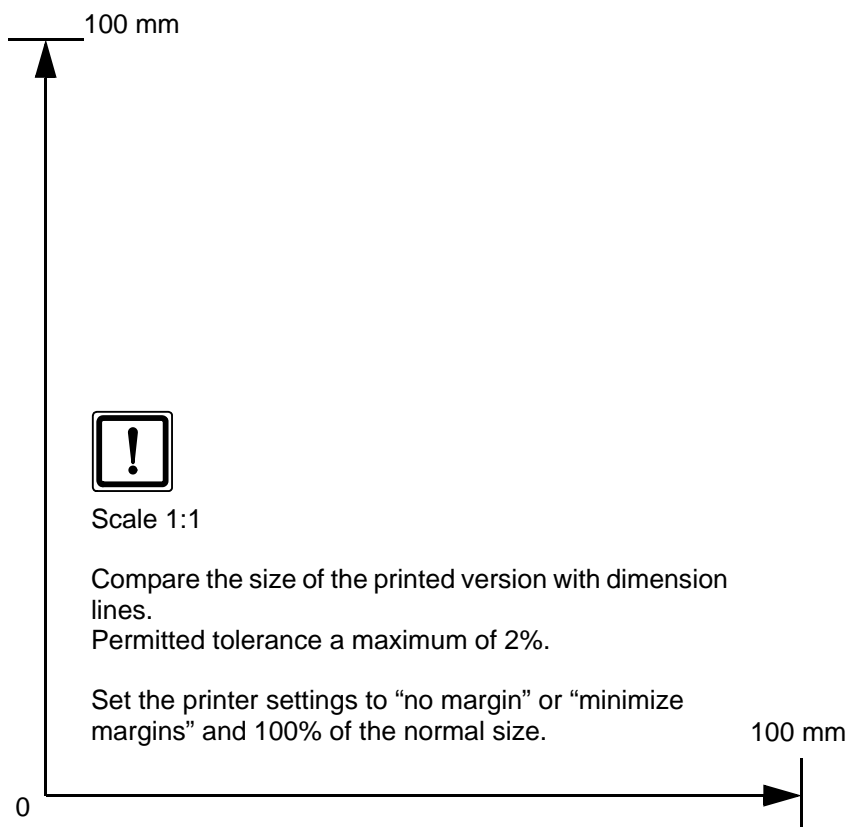
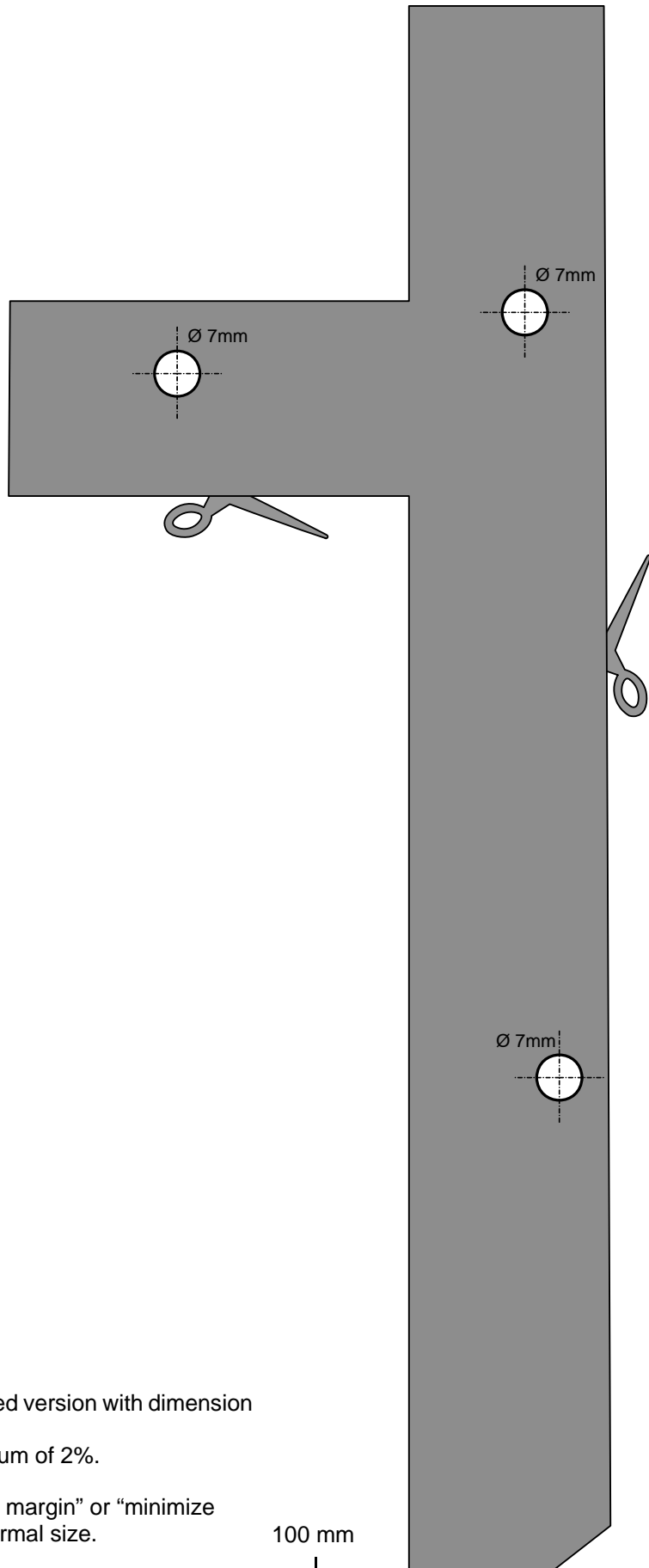
Set the printer settings to "no margin" or "minimize margins" and 100% of the normal size.

100 mm

0



Template for Bracket



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.

**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

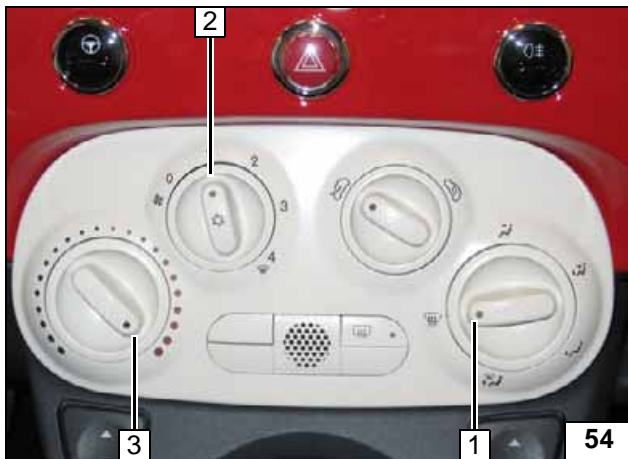
**Example:**

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."

**Manual air conditioning**



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

**Automatic air-conditioning**