

# Water Heater Unit



**Thermo Top C Additional Heater** <sup>e1</sup> 00 0002

## Installation Instructions

### Ford Transit

Diesel  
from Model Year 2007  
For left-hand drive vehicles only



#### **WARNING!**

Hazard warning:

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

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

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

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

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

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**Validity**

Manufacturer	Model	Type	EG-BE No./ABE
Ford	Transit	F*6	e11 * 2001 / 116 * 0284 * ...

Engine type	Engine model	Output in kW	Displacement in cm <sup>3</sup>
QVFA	Diesel	81 / 96	2198

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.

**Heater Unit/Installation Kit**

Quantity	Description	Order No.:
1	Delivery scope of Ford Transit Diesel without heater control	1311717A
	or	
1	Installation kit for Ford Transit Diesel in conjunction with <i>Thermo Top C</i> retail accessories	1311724A

**Optional heater control either:**

Quantity	Description	Order No.:
1	Digital timer	9010869A
1	Telestart T91	9016028A
1	Thermo-Call TC2	9016027A

**Foreword**

These installation instructions apply to Ford Transit Diesel 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/P/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).

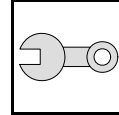
**Special Tools**

- Torque wrench for 2.0 - 10 Nm
- Hose clamping pliers
- Metric Thread-Setter Kit

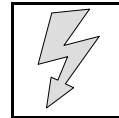
**Explanatory Notes on Document**

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.

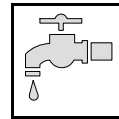
**Mechanical system**



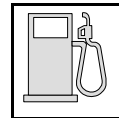
**Electrical system**



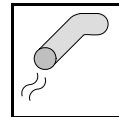
**Coolant connection**



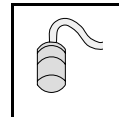
**Fuel connection**



**Exhaust system**



**Combustion air**



Special features are highlighted using the following symbols:



Specific risk of injury or fatal accidents.



Specific risk of damage to components.



Specific risk of fire or explosion.



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



Reference to a special technical feature.



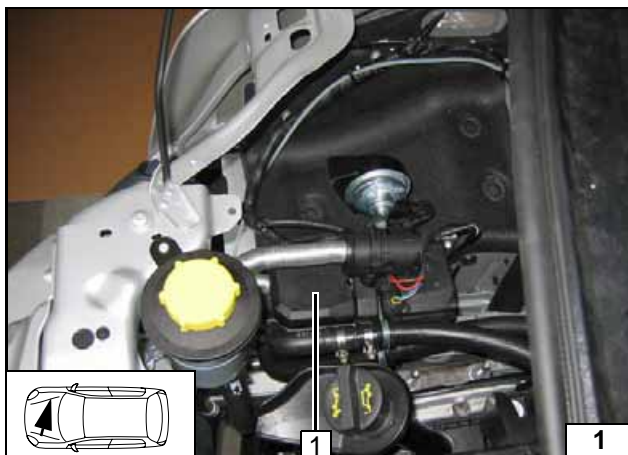
The arrow in the vehicle icon indicates the position on the vehicle and the viewing angle.

**Preliminary Work**

**WARNING!**

- Open the fuel tank cap, ventilate the 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.
- Remove the right-hand headlight
- Expose the central electrical box in the footwell of the front passenger side

Remove page 20 "Operating Instructions for End Customer" and insert with vehicle operating instructions.



**Heater unit installation location**

1 Heater unit

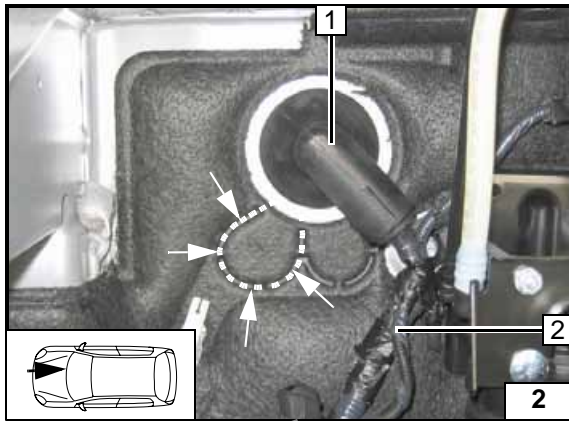
**Installation location**



## Electrical Connections

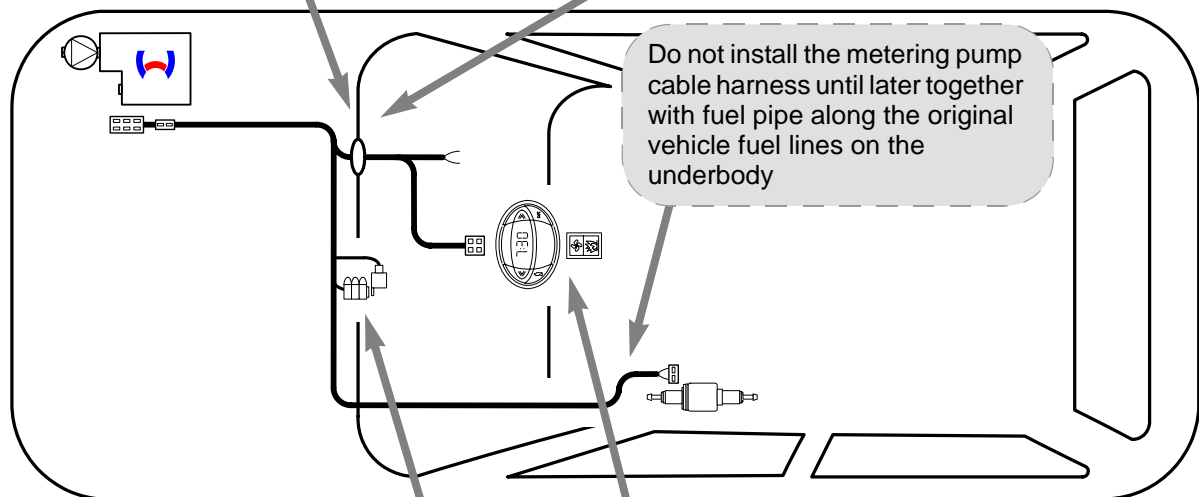
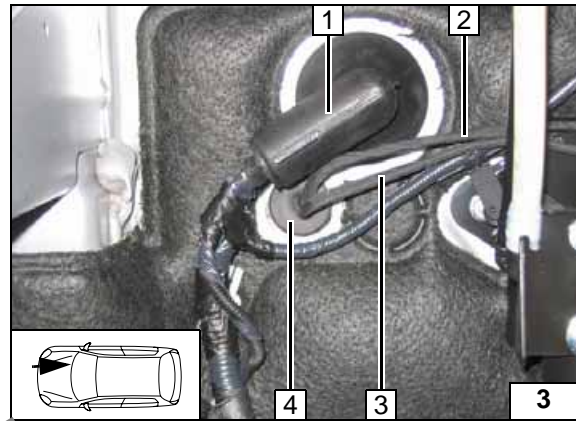
### Preparing wiring harness pass through

Disconnect original vehicle wiring harness **2** and twist wiring harness pass through **1** to right as shown in illustration below. Cut out insulation mat at marking.

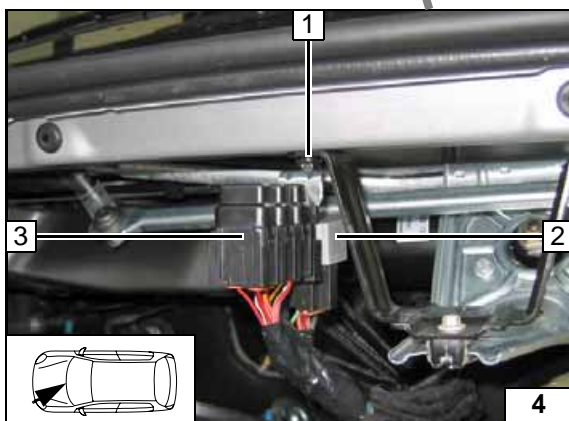


### Wiring harness pass through

- 1 Wiring harness pass through turned
- 2 Wiring harness of fan controller
- 3 Wiring harness of digital timer
- 4 Original vehicle protective rubber plug

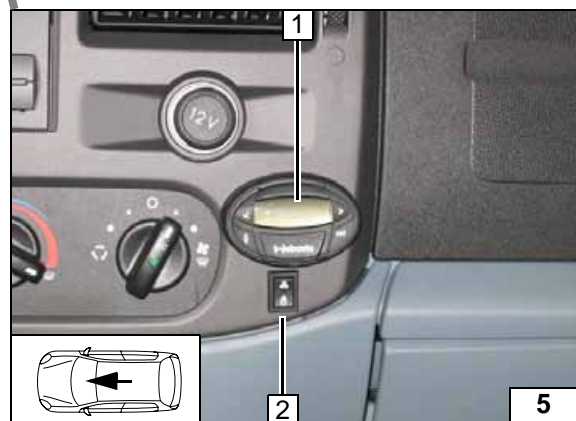


Wiring harness installation diagram



### Fuse holder, relay K3

- 1 Angle bracket, flanged nut on original vehicle bolt
- 2 K3 relay, M5x12 bolt, retaining plate of fuse holder, M5 flanged nut
- 3 Fuse holder

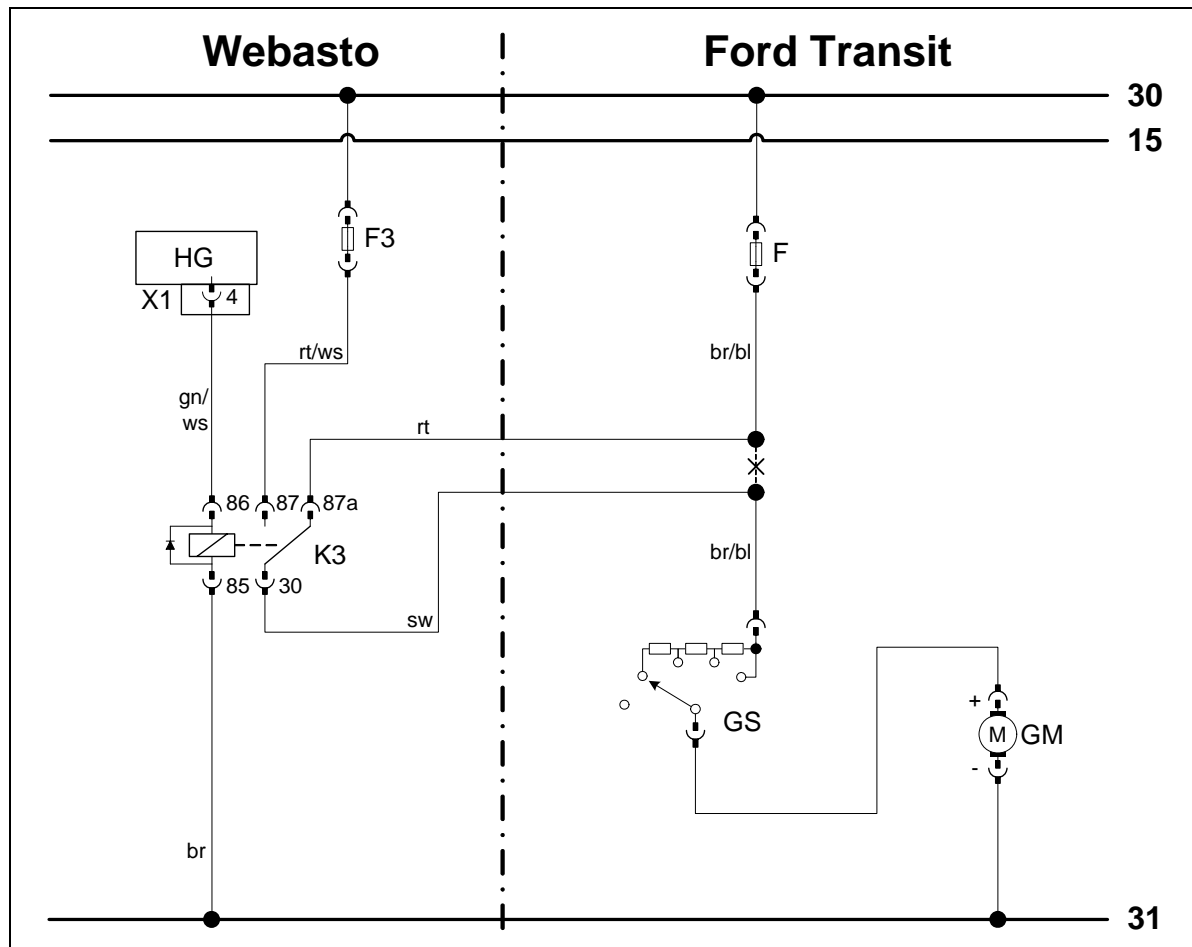


### Digital timer and summer/winter switch option

- 1 Digital timer
- 2 Summer/winter switch, drilled hole 12 mm dia.



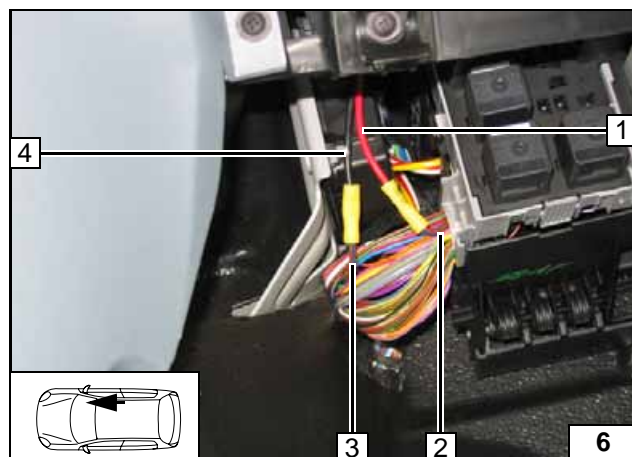
Fan controller for manual air conditioning



Wiring diagram

Webasto components		Vehicle components		Colors and symbols	
HG	Heater unit TT-C/E	GM	Fan motor	rt	red
X1	6-pin connector	GS	Fan switch	ws	white
F3	Fuse, 25 A	F	Fuse 40A	sw	black
K3	Fan relay			br	brown
				gn	green
				bl	blue
				X	Cutting point
				Wiring colors may vary.	

Legend

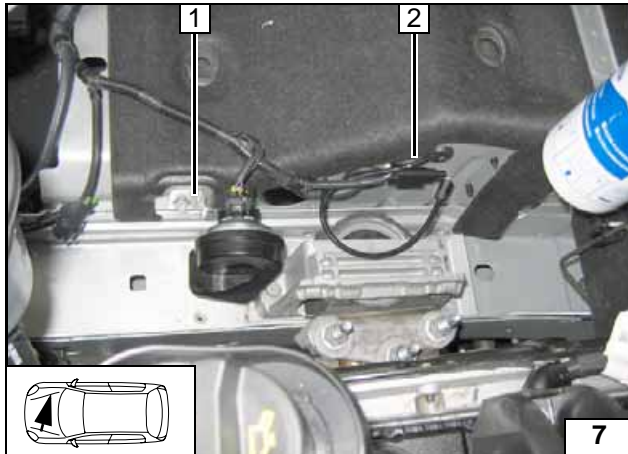
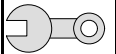


Connection to central electrical box. Produce connections as shown in wiring diagram.

- 1 Red (rt) wire to K3/87a
- 2 Brown/blue (br/bl) wire to fan switch
- 3 Brown/blue (br/bl) wire from 40 A fuse
- 4 Black (sw) wire from K3/30



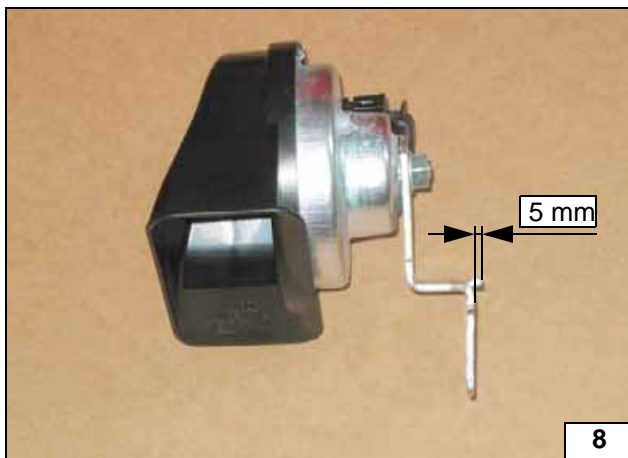
Connection to central electrical box



**Preparing installation location**

- 1 Remove horn with bracket
- 2 Detach retaining clip from original vehicle wiring harness

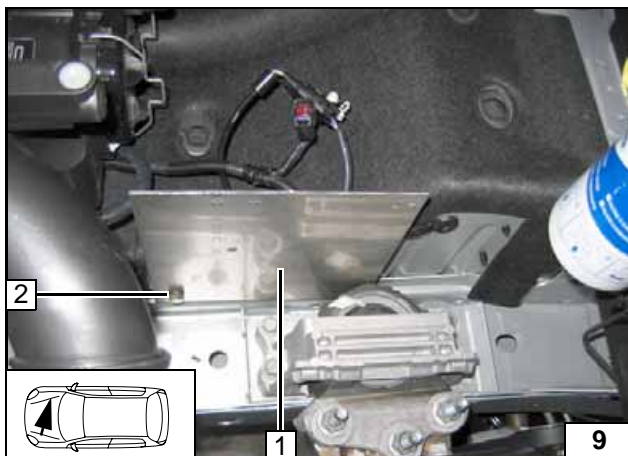
**Removing horn**



Shorten lug of horn bracket to 5 mm.



**Preparing bracket**

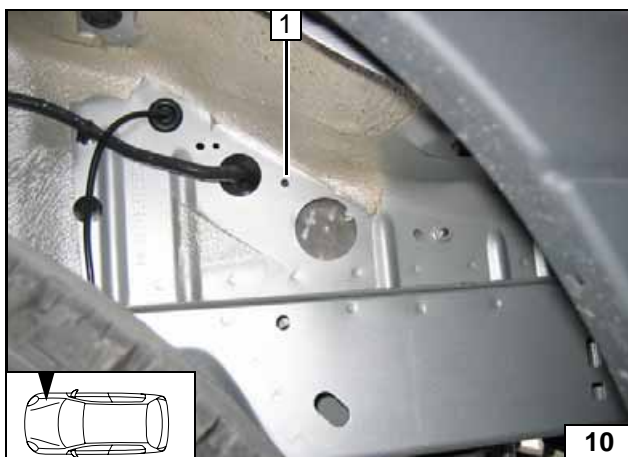


Drill out bracket 1 at position 2 to 8.5 mm dia. before installation.

- 2 Loosely mount M8x30 bolt, spring lockwasher, 15 mm spacer sleeve in existing threaded hole



**Loosely preassembling bracket**



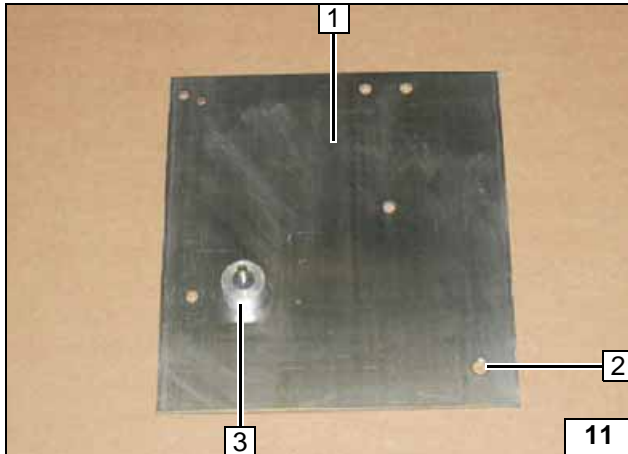
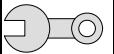
Remove bracket after copying.

- 1 Copy hole pattern to bracket and drill out hole in body to 7 mm dia.



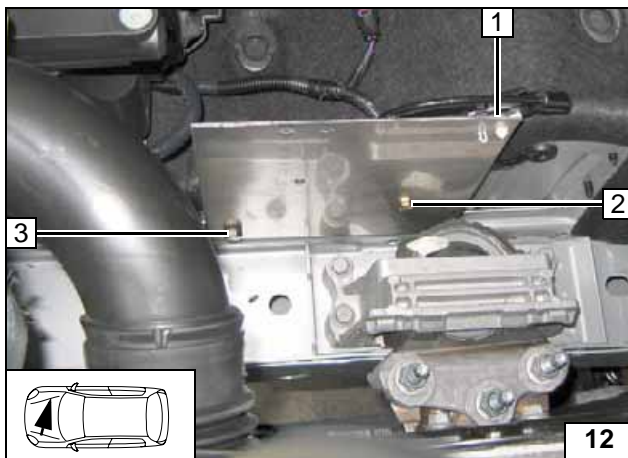
**Copying hole pattern**





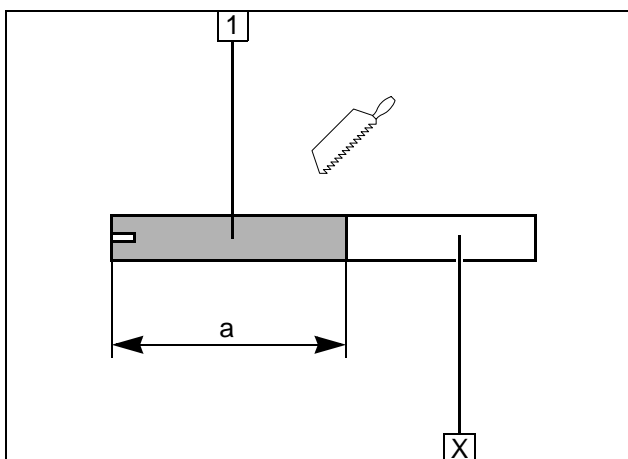
- 1 Bracket
- 2 Drill out 8 mm dia. hole
- 3 7 mm dia. hole, M6x30 bolt, 15 mm spacer sleeve of pin lock

Preparing bracket



- 1 Mount retaining clip of original vehicle wiring harness in hole
- 2 Flanged nut on preassembled bolt
- 3 M8x30 bolt, spring lockwasher, 15 mm spacer sleeve in existing threaded hole

Installing bracket

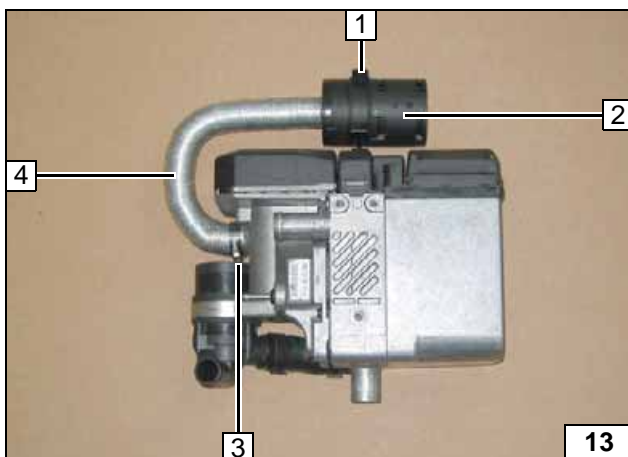


**Preparing heater unit**

- 1 Combustion air pipe  
a = 260 mm

Discard section X

Cutting combustion air pipe to length

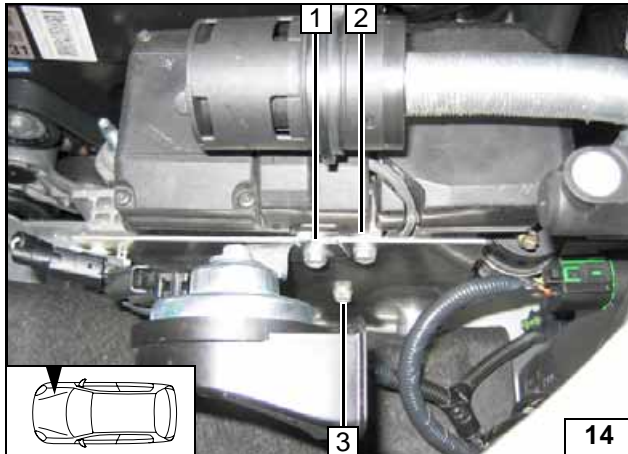
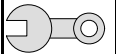


Ensure proper installation position of air intake muffler, see "Installation Instructions". Break through perforation on heater unit cover and mount retaining clip 1.

- 2 Combustion-air intake muffler
- 3 27 mm dia. hose clamp
- 4 Combustion-air intake pipe



Preassembling intake muffler



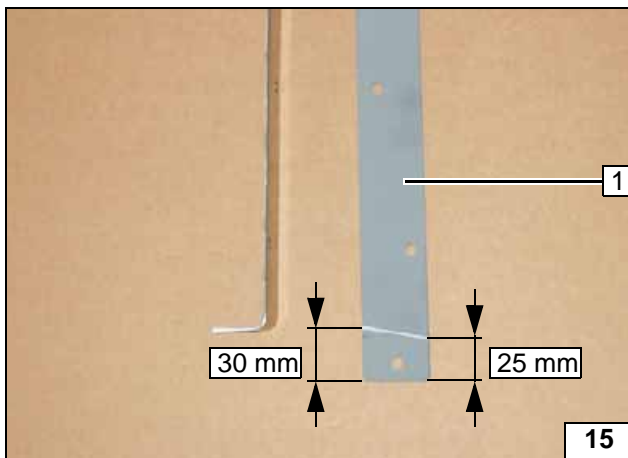
**Installing heater unit**

Insert two washers between heater unit and bracket at position 3.  
First install E-jot screw at position 3.

- 1 E-jot screw, horn with bracket
- 2 E-jot screw
- 3 E-jot screw, washer [2x]

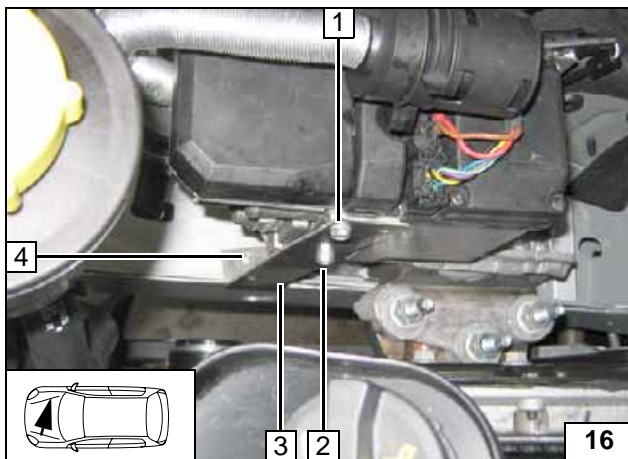


**Loosely mounting heater unit**



- 1 Angle down strut

**Preparing strut**

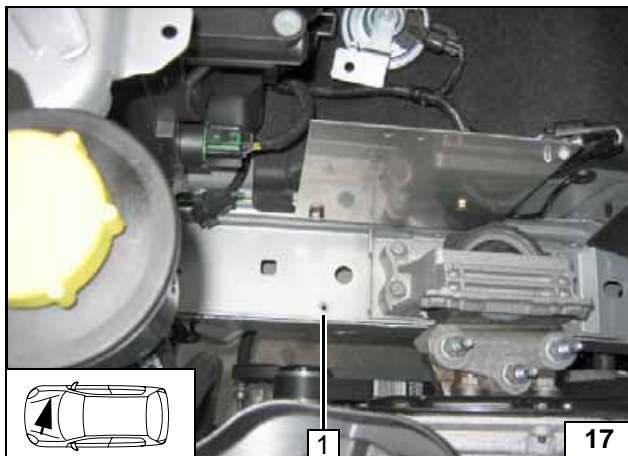


Insert two washers between heater unit and strut 3 at position 2.

- 1 E-jot screw
- 2 E-jot screw, washer [2x]
- 4 Copy hole pattern



**Loosely mounting strut**

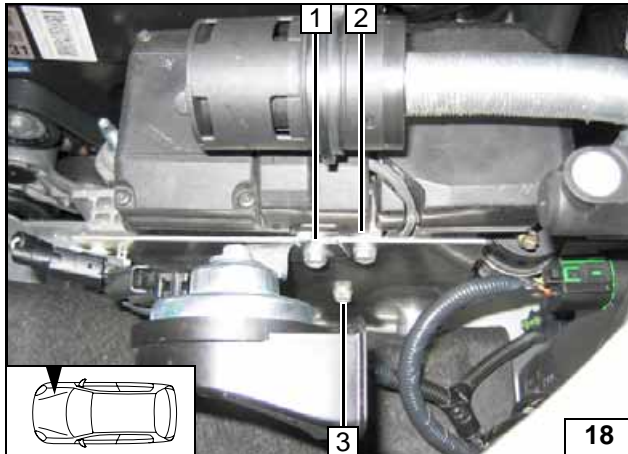
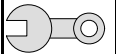


Remove heater unit with strut.

- 1 Drill 9.1 mm dia. hole; install M6 rivet nut



**Installing rivet nut**

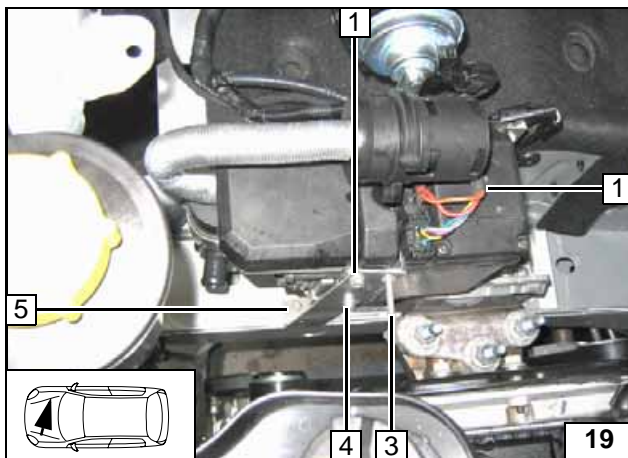


Tighten E-JOT screws to 10 Nm!  
 Insert two washers between heater unit and bracket at position 3.  
 First install E-jot screw at position 3.

- 1 E-jot screw, horn with bracket
- 2 E-jot screw
- 3 E-jot screw, washer [2x]



**Installing heater unit**

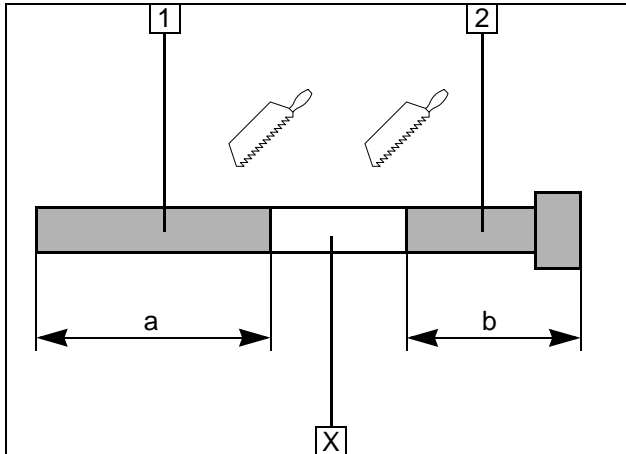
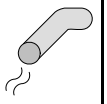


Tighten E-jot screws, E-jot stud to 10 Nm.

- 1 E-jot screw
- 1 Push on wiring harness
- 3 E-jot stud
- 4 E-jot screw, washer [2x]
- 5 M8x50 bolt, spring lockwasher, 30 mm spacer sleeve in rivet nut



**Installing strut**

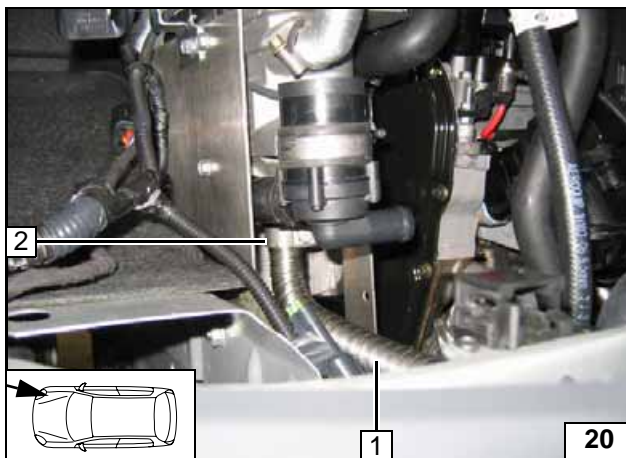


**Exhaust system**

- 1 Exhaust pipe  
a = 520 mm
- 2 Exhaust end section  
b = 70 mm

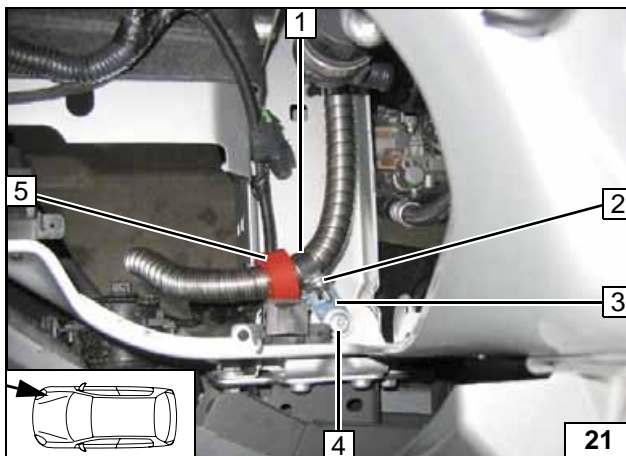
Discard section X

**Preparing exhaust pipe**



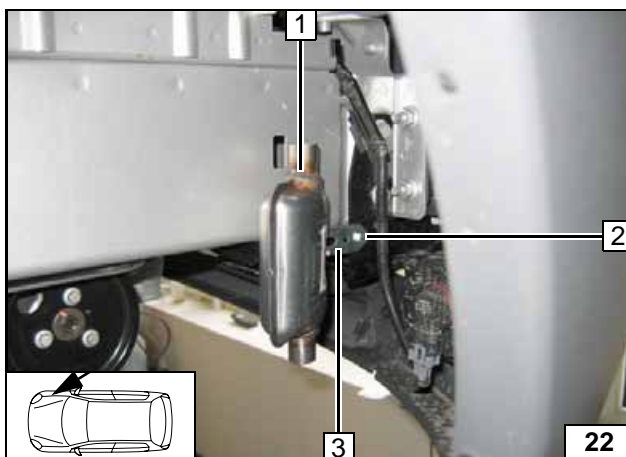
- 1 Exhaust pipe
- 2 Hose clamp

**Installing exhaust pipe**



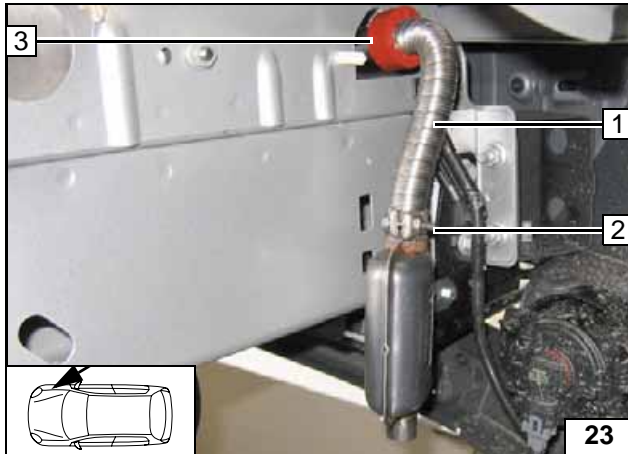
- 1 P-clamp
- 2 M6x20 bolt, flanged nut
- 3 Angle bracket
- 4 Original vehicle bolt
- 5 Push on red (rt) rubber isolator

**Routing exhaust pipe**



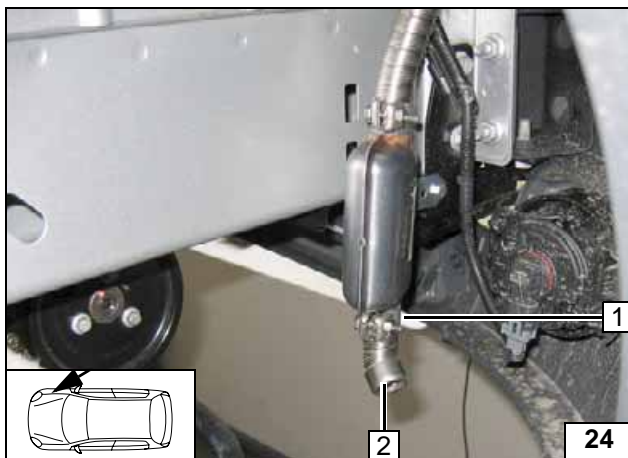
- 1 Exhaust muffler, M6x20 bolt, flanged nut on perforated bracket
- 2 Mount M6x20 bolt, flanged nut in existing hole
- 3 Perforated bracket

**Installing muffler**



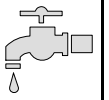
- 1 Exhaust pipe
- 2 Hose clamp
- 3 Position red (rt) rubber isolator

**Installing exhaust pipe**



- 1 Hose clamp
- 2 Exhaust end section

**Installing end section**



### Coolant connection for diesel engine

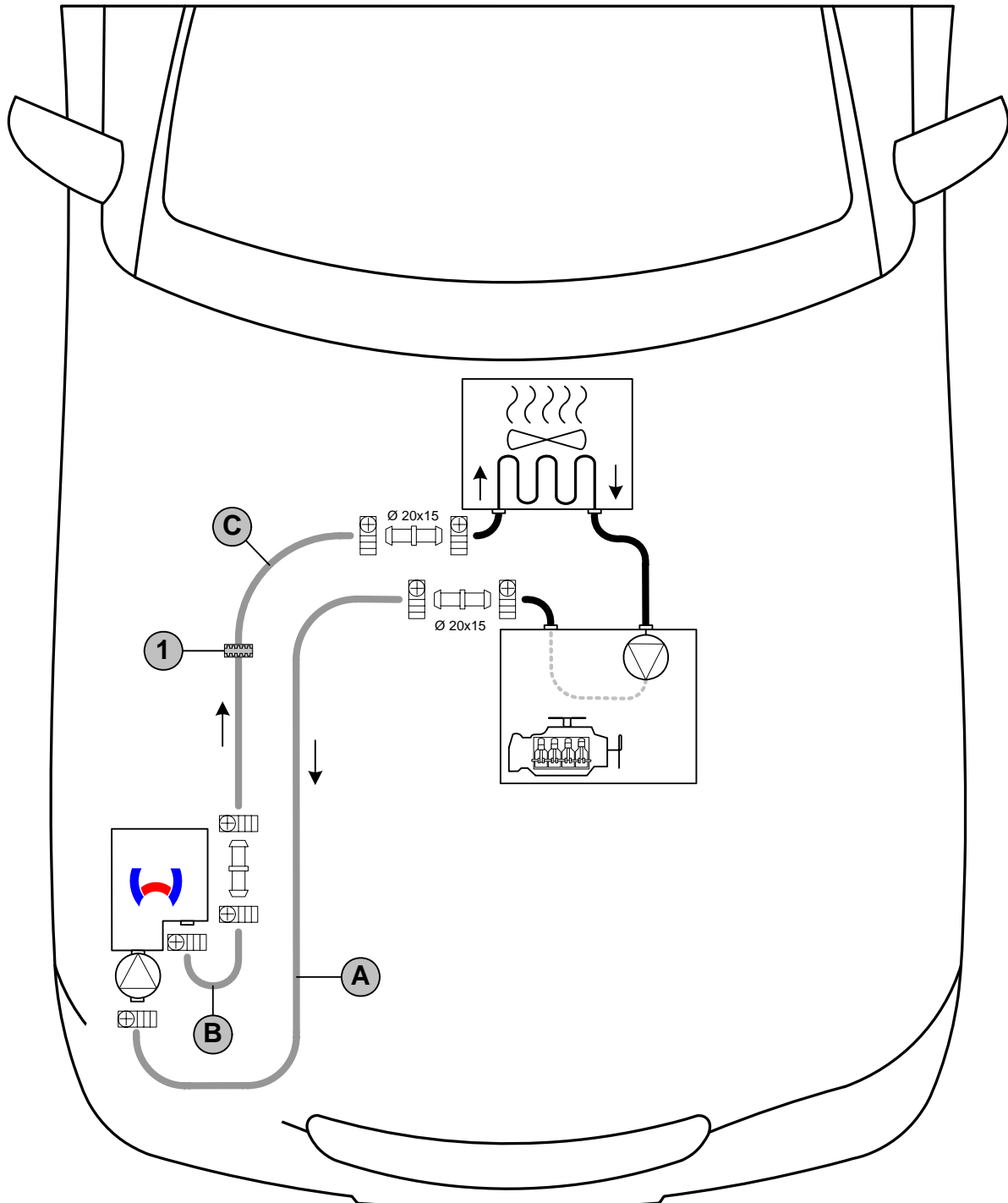
**WARNING!**

Tighten all hose clamps to 2.0 + 0.5 Nm.

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 hose clamps and spring band clamps so that no other hose can be damaged. The connection should be "inline" based on the following diagram:



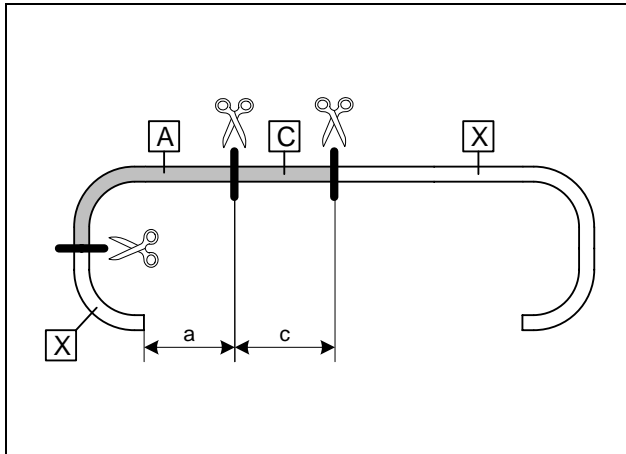
Coolant routing diagram

All connecting pipes without a specific designation (□□□) = dia. 18x20.

All hose clamps (⊕□□) = 20-27 mm dia.!

1 = Black (sw) rubber isolator (⊕□□□)

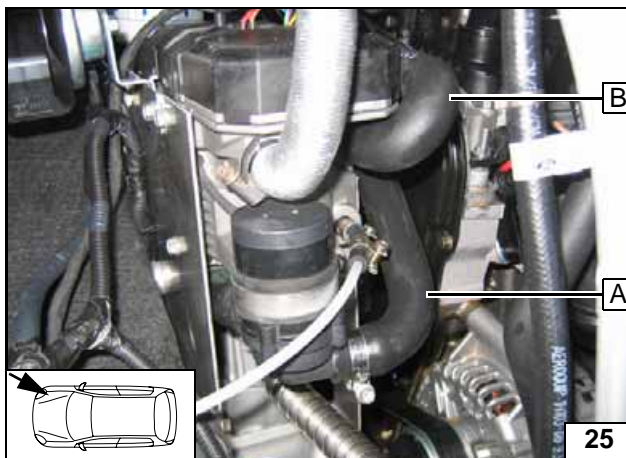




a = 470 mm  
c = 400 mm

Discard section X

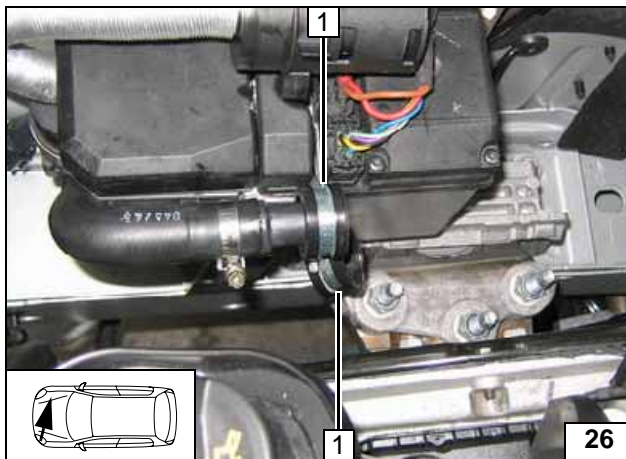
Cutting coolant hoses to length



Hose B (180° elbow included) with short leg on heater unit outlet.

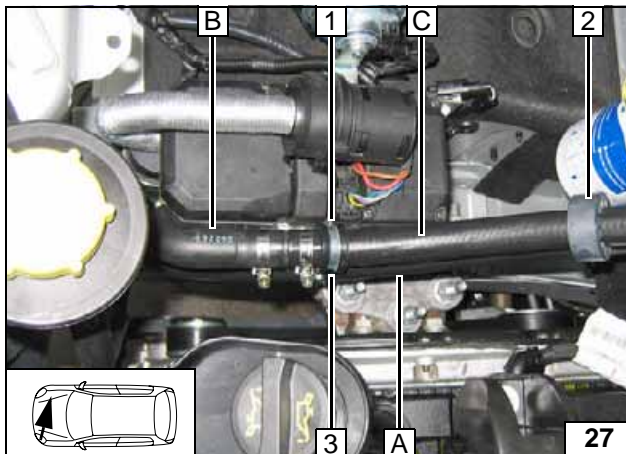


Connecting heater unit



1 Rubber-coated p-clamp [2x], flanged nut on stud bolt

Installing p-clamps



Connect hose B and C  
Route hose A through lower p-clamp 3 and hose C through upper p-clamp 1.

2 Black rubber isolator

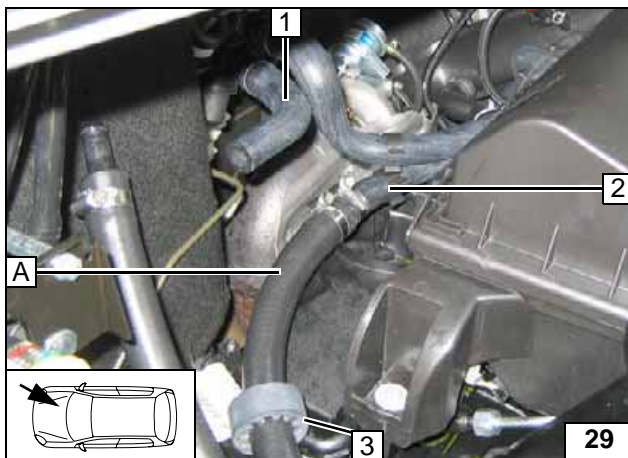


Routing in engine compartment



1 Hose on engine outlet/heat exchanger inlet

Cutting point

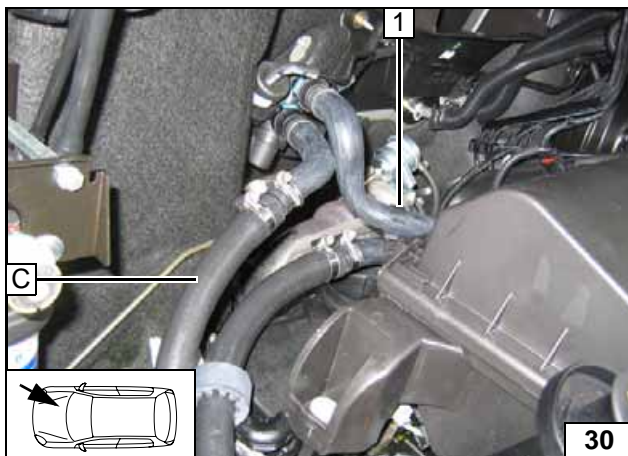


Turn hose section of heat exchanger inlet 1 on connection piece to right.

- 2 Engine outlet hose section
- 3 Push on black (sw) rubber isolator and position



Connecting engine outlet



Before connecting, fill the coolant hoses with coolant.

- 1 Spacer bracket



Connecting heat exchanger inlet





**Fuel Connection**

**CAUTION!**

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

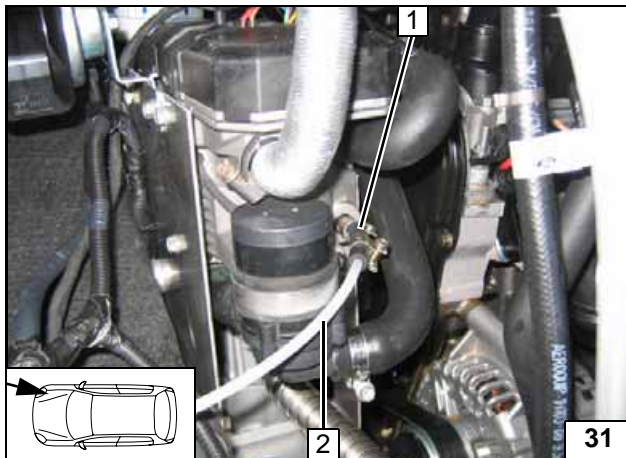
Catch any fuel running off with an appropriate container.

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.

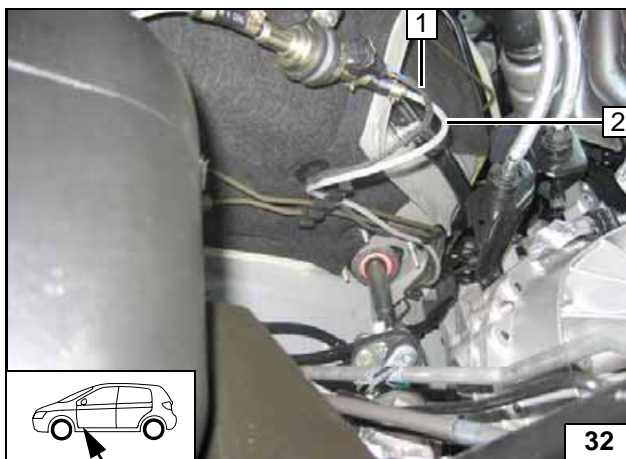
**WARNING!**

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



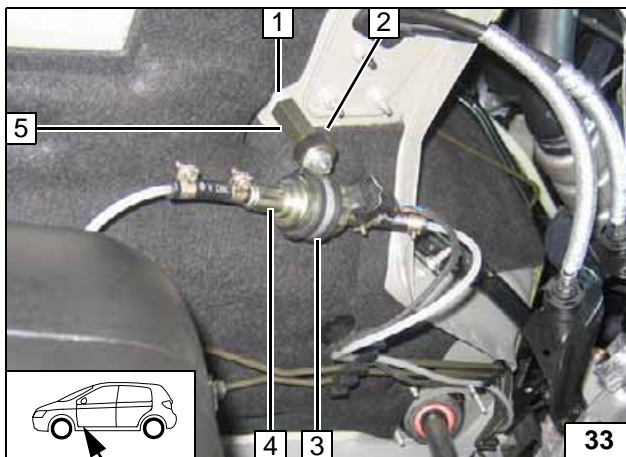
- 1 Hose section, 10 mm dia. hose clamp [2x]
- 2 Fuel line

Con-  
necting  
heater unit



- 1 Metering pump wiring harness
- 2 Fuel line

Installing  
lines

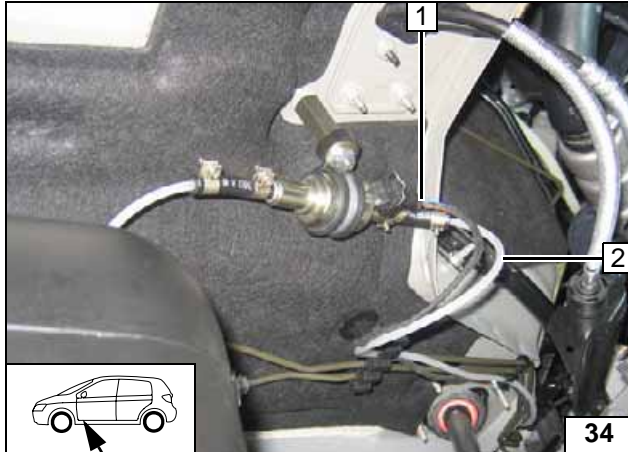
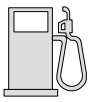


Ensure proper installation position of metering pump 4, see "Installation Instructions".

- 1 Original vehicle stud bolt
- 2 Silentblock, flanged nut
- 3 Rubber-coated pipe clamp
- 5 M6x40 spacer nut



Installing  
metering  
pump

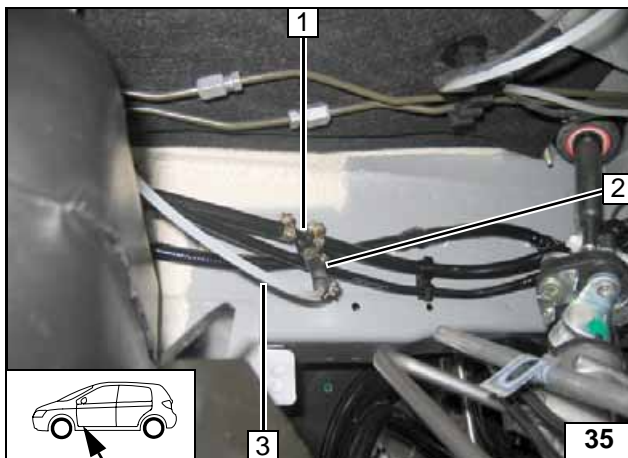


Connect fuel line **2** from heater unit to pressure side of metering pump [side with connector].

- 1 Wiring harness of metering pump, single-wire seal, tab connector, connector housing



**Con-necting metering pump**

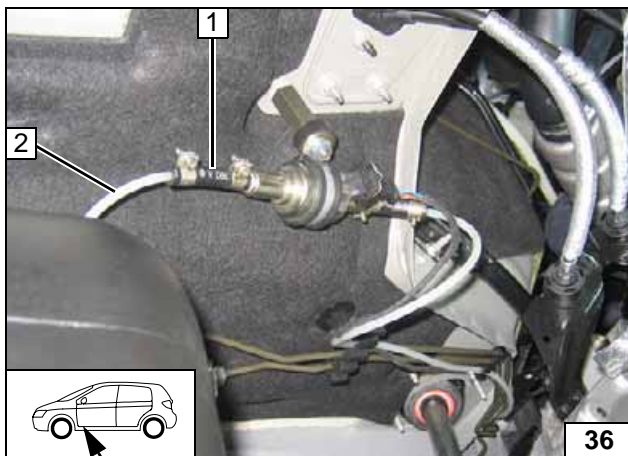


Separate fuel supply line at position **1**.

- 1 Fuel standpipe, 12 mm dia. hose clamps [2x]
- 2 Hose section, 10 mm dia. hose clamp [2x]
- 3 Fuel line



**Removing fuel**

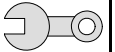


Fuel line **2** from fuel standpipe on intake side of metering pump [side without connector]. Check the position of the components; adjust if necessary. Check that they have free clearance.

- 1 Hose section, 10 mm dia. hose clamp [2x]



**Con-necting metering pump**



## 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.
- Set the manual air conditioning or automatic air conditioning according to the "operating instructions for the 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>

**Operating Instructions for End Customer**

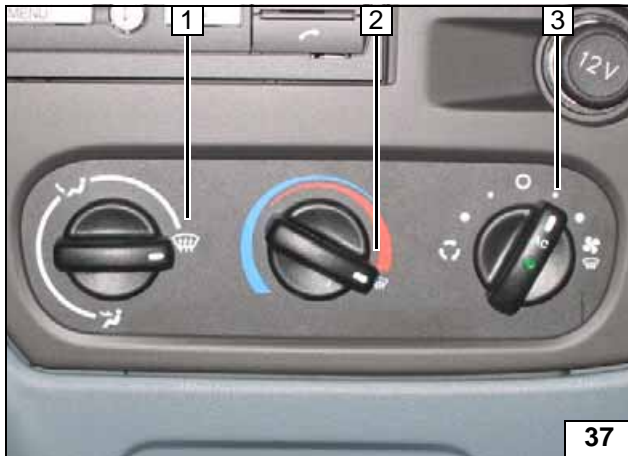
Please remove page and add to the vehicle operating instructions.



**When operating over short distances, it is recommended that additional electrical consumers not be used!**

**Rule of thumb for operating additional heater: driving time = heating time!**

Before parking the vehicle, make the following settings:



- 1 Air outlet to windshield
- 2 Set temperature to "max."
- 3 Set fan to level "1"

**For vehicles with manual air conditioning**