

# Water Heater Unit



Feel the drive

**Thermo Top E Additional Heater**

  
00 0003

**Thermo Top C Additional Heater**

  
00 0002

**Thermo Top P Additional Heater**

  
00 0104

## Installation Instructions

### VW Polo

Diesel

from Model Year 2006

For left-hand drive vehicles only



#### **WARNING!**

**Hazard warning:**

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

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

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

**ALWAYS follow all Webasto installation and repair instructions and observe all 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
VW	Polo	9N	e1 * 2001/116 * 0174 * ...

Engine type	Engine model	Output in kW	Displacement in cm <sup>3</sup>
AMF	Diesel	55	1422
BNM	Diesel	51	1422
BNV	Diesel	59	1422

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	Retail accessories with desired heater control	See price list
1	Installation kit for VW Polo Diesel	9015698A

### Also required with Climatronic:

Quantity	Description	Order No.:
1	Climatronic kit	9013645A

### Heater unit recommended for the respective vehicle class:

Vehicle	Heater unit
Compact car	Thermo Top E
Mid-size car, station wagon	Thermo Top C
Full-size car, van, offroader	Thermo Top P

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 VW Polo vehicles with a Diesel engine - for validity, see page 2 - from model year 2006 and later, assuming technical modifications to the vehicle do not affect installation, any liability claims excluded. Depending on the vehicle version and equipment, modifications may be necessary during installation with respect to these installation instructions.

However, 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
- Hose clamping pliers
- M8 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**



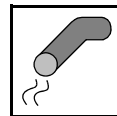
**Coolant connection**



**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.



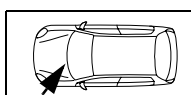
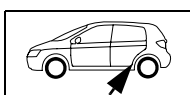
Specific risk of fire or explosion.



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



Reference to a special technical feature.



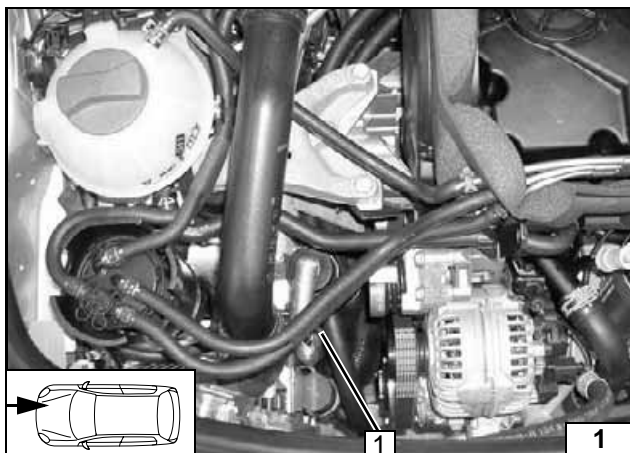
The arrow in the vehicle icon indicates the position on the vehicle and the viewing angle.

**Preliminary Work**

**WARNING!**

- 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 air filter together with the intake hose.
- Remove the wiper arms.
- Remove the coolant reservoir cap.
- Remove the coolant reservoir.
- Open the fuel tank cap, ventilate the tank.
- Close the tank cap again.
- Open the right-hand fuel sender service lid.
- Remove the fuel-tank sending unit in accordance with the manufacturers specifications.
- Remove the underdrive protection
- Remove the fuse box of the central electrical box.
- Take off the cover of the relay box for the central electrical box (only with Climatronic).
- Remove the A/C control panel according to the manufacturer's instructions (only with Climatronic).

Present the customer with Page 31 of the operating instructions.



**Heater unit installation location**

1 Heater unit

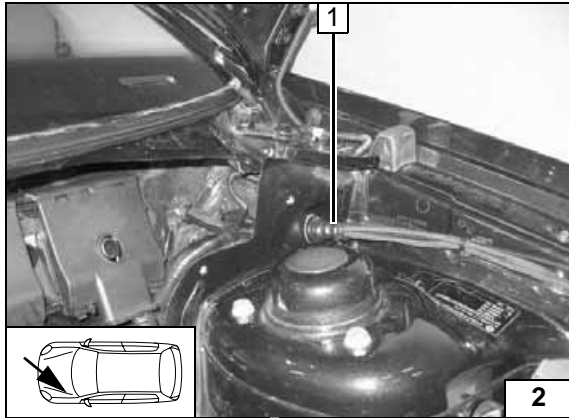
**Installation location**



**Electrical Connections**

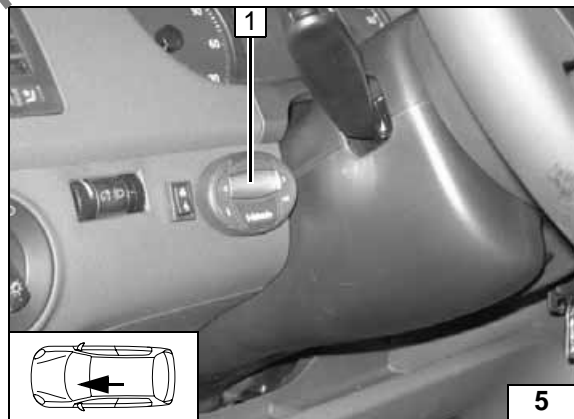
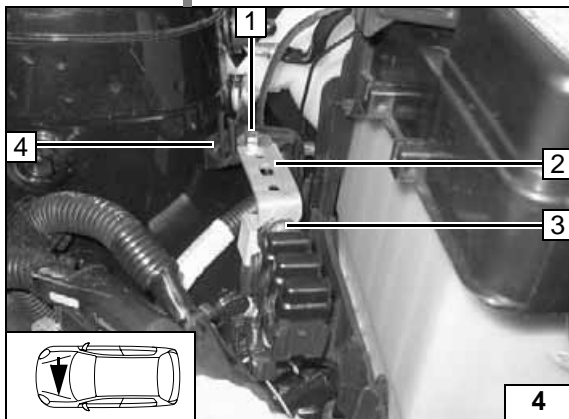
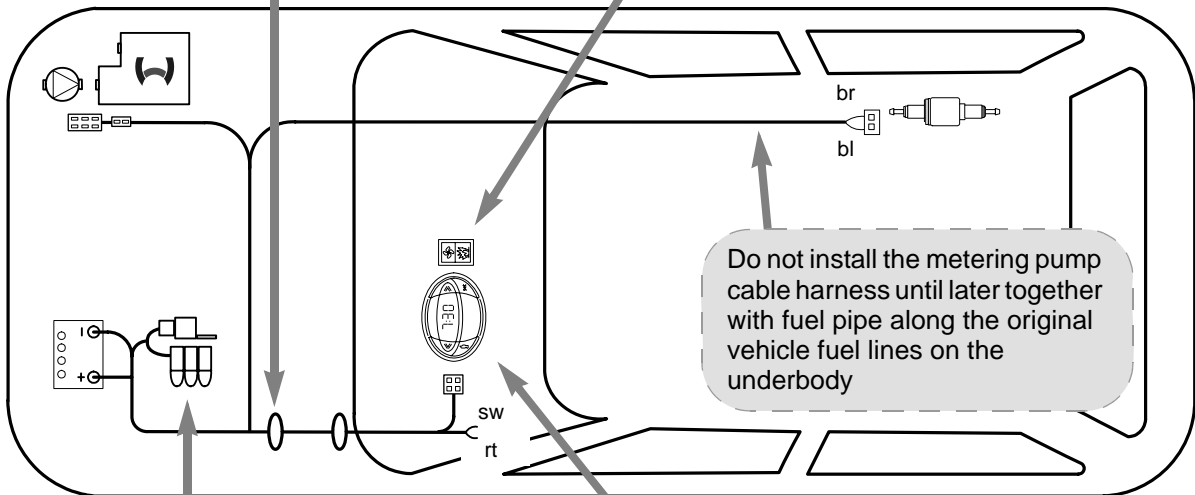
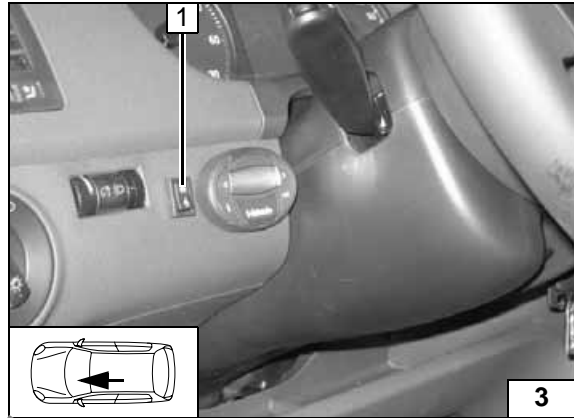
**Wiring harness pass through**

1 Protective rubber plug of Bowden cable



**Summer/winter switch option**

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



**Fuse holder, relay K3**

Also connect green/white (gn/ws) wire to K3/86 with Climatronic and also route into passenger compartment.

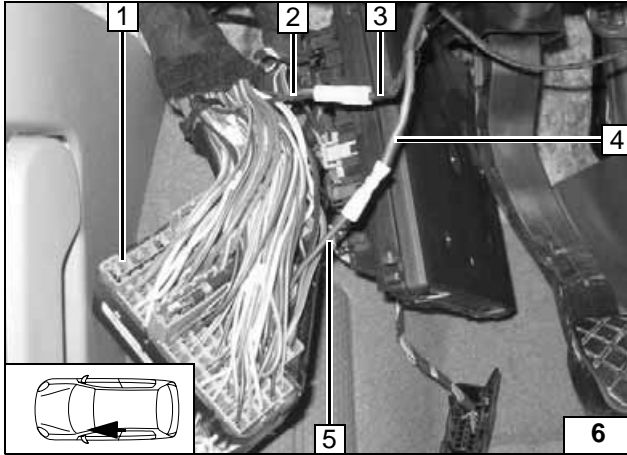
- 1 M6x20 bolt, large diameter washer, M6 flanged nut
- 2 Perforated bracket, angled down, see drawing on Page 24
- 3 M5x12 bolt, washer, fuse holder, K3 relay, M5 flanged nut
- 4 Original vehicle bracket, drill out hole to 6 mm dia.

**Digital timer**

1 Digital timer



**Wiring harness installation diagram**



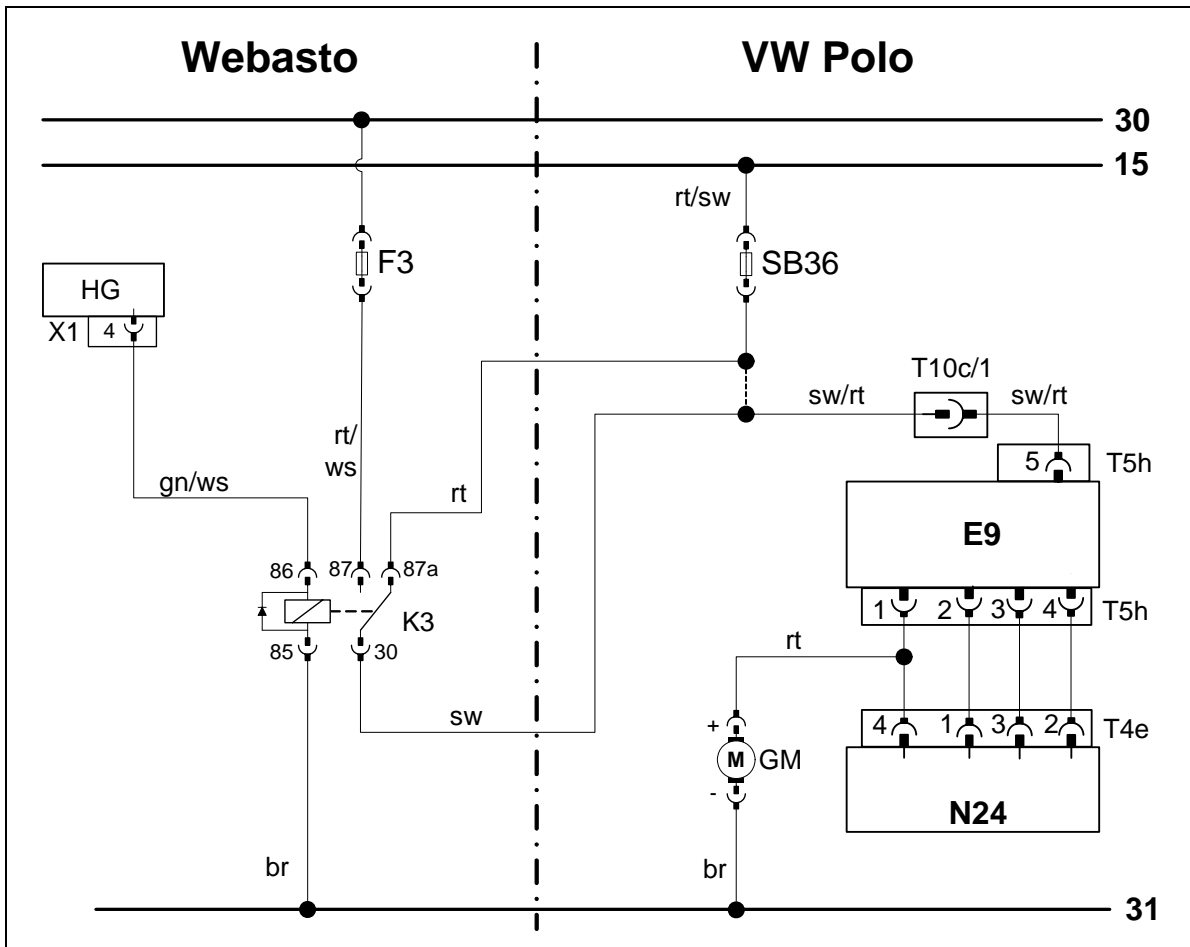
### Climatic fan controller

Connection on central electrical box 1 to fan motor. Produce connections as shown in wiring diagram.

- 2 Black/red (sw/rt) to fan motor
- 3 Black (sw) wire from K3/30
- 4 Red (rt) wire to K3/87a
- 5 Black/red (sw/rt) wire from fuse SB36, 25 A



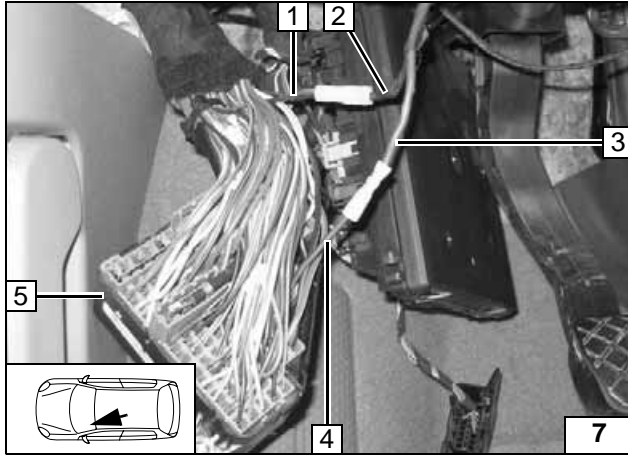
Conne-  
ction to cen-  
tral  
electrical  
box



Wiring dia-  
gram for  
manual air  
condition-  
ing

Webasto components		Components of VW Polo		Colors and symbols	
HG	Heater unit	GM	Fan motor - V2	rt	red
X1	6-pin heater unit connector	SB36	25 A fuse	ws	white
F3	25 A fuse	N24	Resistor group	sw	black
K3	Fan relay	E9	Switch unit	br	brown
		T...	Connector	gn	green
				bl	blue
				X	Cutting point
				Wiring colors may vary.	

Legend

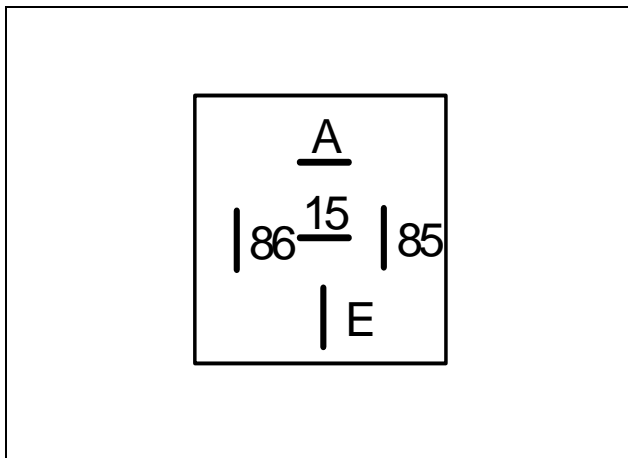


**Climatronic fan controller**

Connection on central electrical box **5** to fan module. Produce connections as shown in wiring diagram.

- 1 Black/red (sw/rt) wire to connector T6ac
- 2 Black (sw) wire from K3/30
- 3 Red (rt) wire to K3/87a
- 4 Black/red (sw/rt) wire from fuse SB36, 25 A

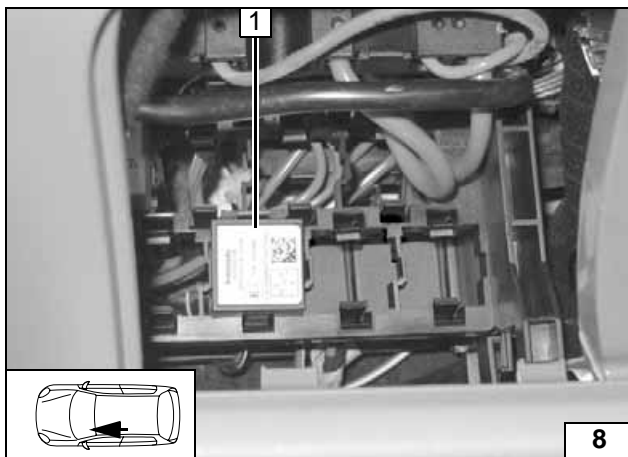
**Conne-  
ction to central  
electrical  
box**



**Programming IPCU:**

- Duty cycle: 100 %
- Frequency: 14 kHz
- Voltage: 3,7 V
- Function: High side active

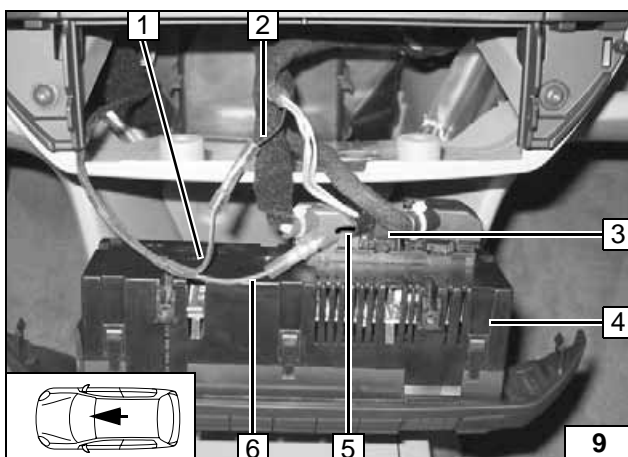
**Preparing  
IPCU**



Before mounting, program IPCU accordingly (see IPCU adjustment values). Insert IPCU base in free socket. Produce connections as shown in wiring diagram.

- 1 IPCU

**Preparing  
IPCU**



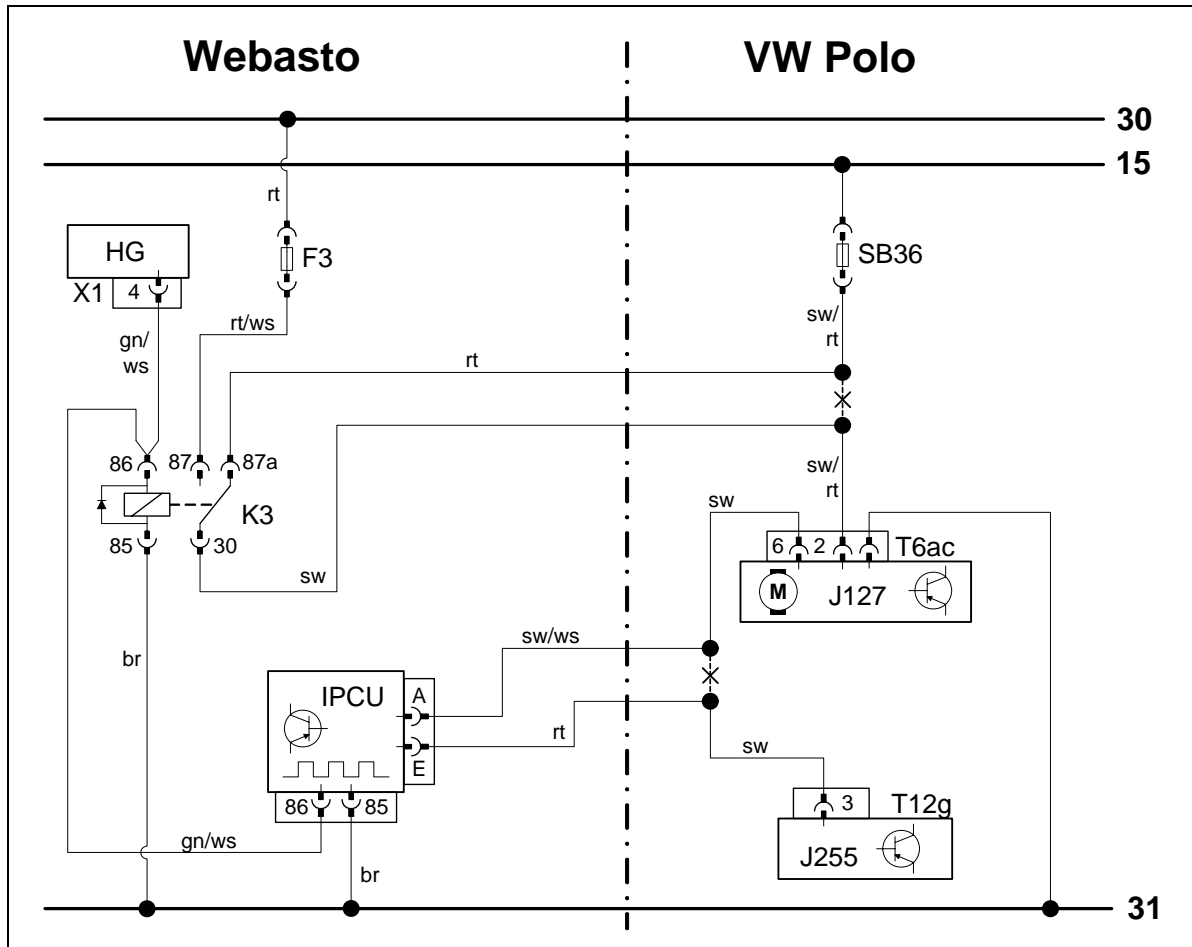
Connection on connector T12g **3**, Pin 3 from A/C control panel **4**. Produce connections as shown in wiring diagram.

- 1 Black/white (sw/ws) wire from IPCU/A
- 2 Black (sw) wire from fan unit
- 5 Black (sw) wire to connector T12g
- 6 Red (rt) wire to IPCU/E

**Connect-  
ing air-con-  
ditioning  
control ele-  
ment**



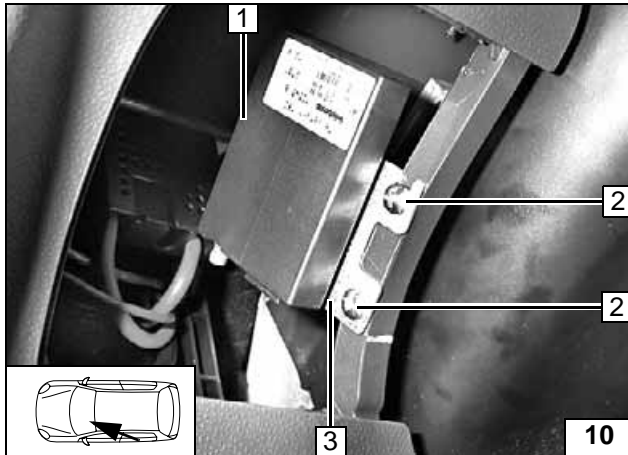




Climatronic wiring diagram

Webasto components		Components of VW Polo		Colors and symbols	
HG	Heater unit	J127	Fan unit	rt	red
X1	6-pin heater unit connector	J255	Air-conditioning control panel	ws	white
F3	25 A fuse	SB36	25 A fuse	sw	black
K3	Fan relay	T...	Connector	br	brown
IPCU	Pulse width generator			gn	green
<b>Programming IPCU:</b>					
Duty cycle: 100 %					
Frequency: 14 kHz					
Voltage: 3,7 V				X	Cutting point
Function: High side active				Wiring colors may vary.	

Legend

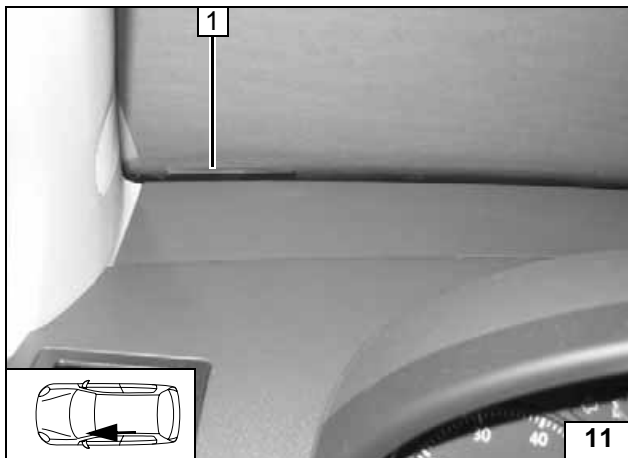


**Remote option (Telestart)**

- 1 Receiver
- 2 4 mm dia. hole [2x], 4.8x13 self-tapping screw [2x]
- 3 Bracket

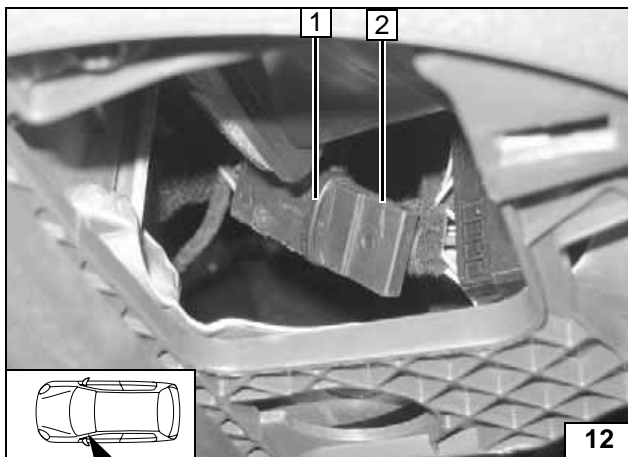


**Installing receiver**



- 1 Antenna

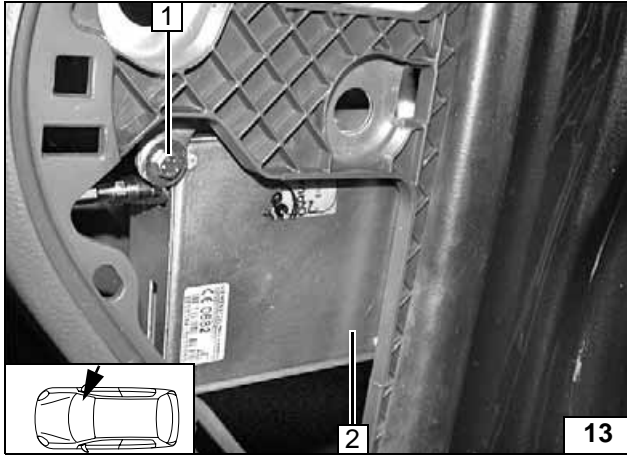
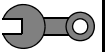
**Installing antenna**



**Temperature sensor for HTM100 only**

- 1 Cable tie
- 2 Temperature sensor

**Installing temperature sensor**



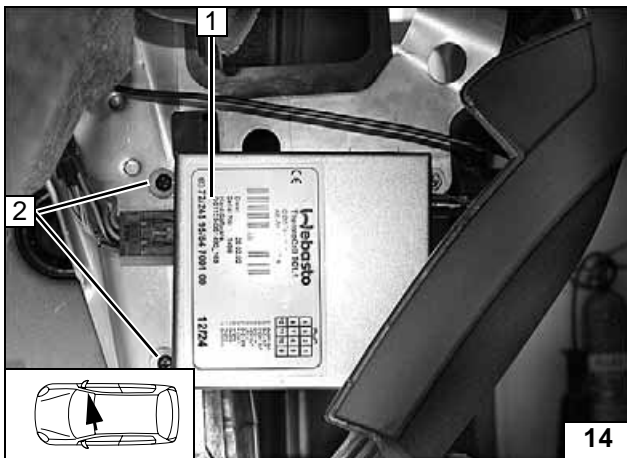
**Remote option (Thermo Call)**

Mount TC receiver on A-pillar as shown; mounting materials not included in delivery scope!

- 1 M5x16 bolt, large diameter washer, M5 flanged nut
- 2 Receiver



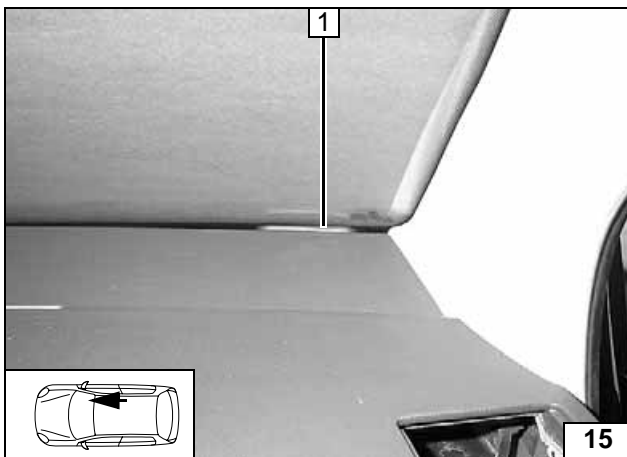
**Installing receiver**



Copy hole pattern 2 of TC receiver 1 to right-hand A-pillar as shown. Fasten receiver with self-tapping screws.



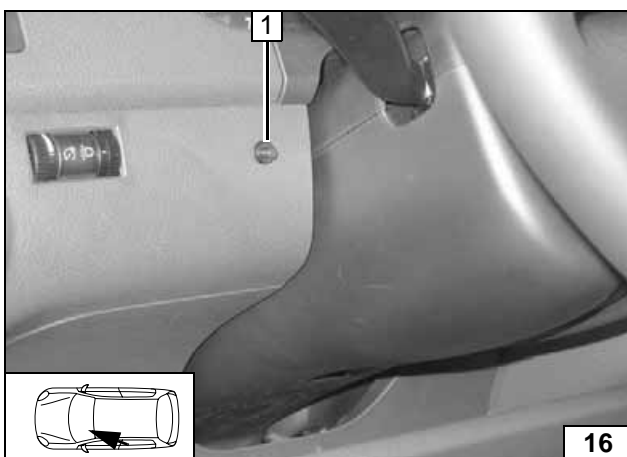
**Installing receiver**



- 1 Antenna



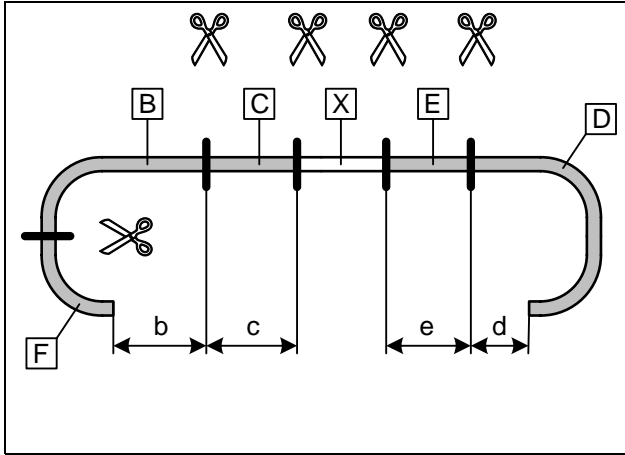
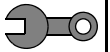
**Installing antenna**



- 1 Pushbutton



**Installing push button**



**Preparing heater unit**

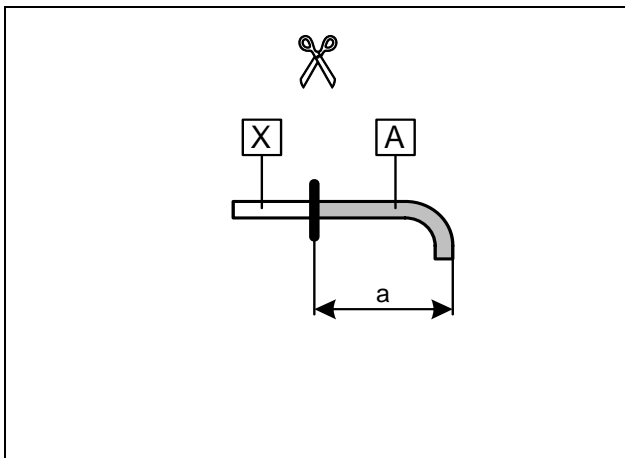
**Only on vehicles with engine code letters: AMF!**

Discard section **X**  
Cut heat protection hose in half, compress and push onto hose **B** and **E**.

- b = 1050 mm
- c = 210 mm
- e = 730 mm
- d = 40 mm



**Cutting coolant hose to length**

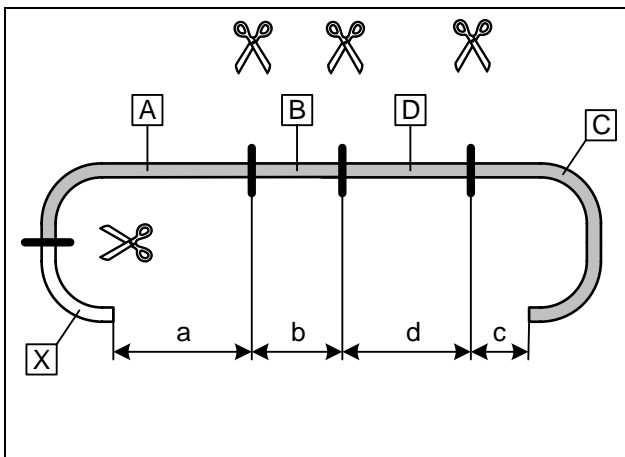


Discard section **X**

- a = 210 mm



**Cutting coolant hose to length**



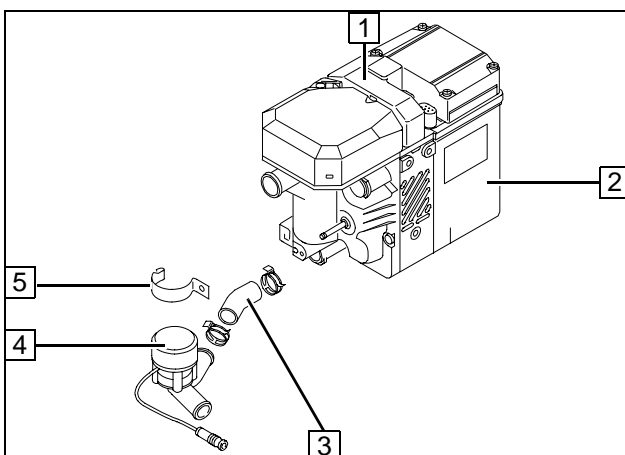
**Only on vehicles with engine code letters: BNV and BNM!**

Discard section **X**  
Compress heat protection hose and push onto hose **D**.

- a = 930 mm
- b = 210 mm
- d = 880 mm
- c = 40 mm



**Cutting coolant hose to length**



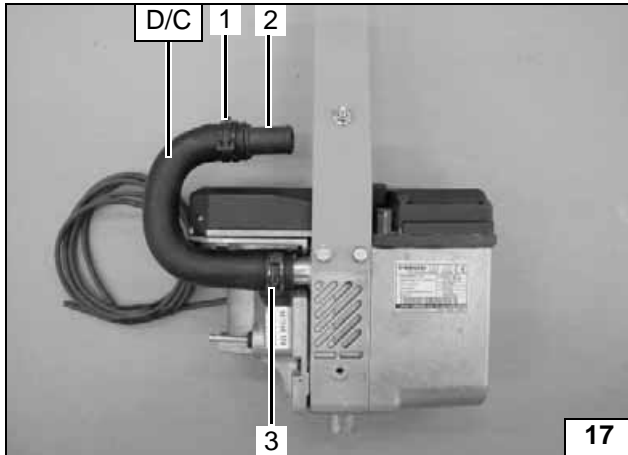
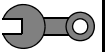
**For all vehicles!**

Remove heater unit cover **1** and replace cable of circulating pump with wiring harness extension. The spring clips will be reused.

- 2** Heater unit
- 3** Discard hose section
- 4** Circulating pump
- 5** Discard clamp



**Removing circulating pump from heater unit**

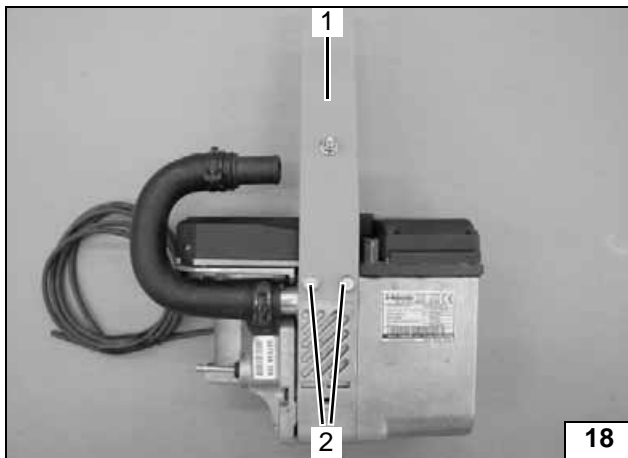


Hose **D** with engine code letters: AMF!  
Hose **C** with engine code letters: BNV and BNM!

- 1 27 mm dia. spring clip from water pump
- 2 20x20 connecting pipe
- 3 27 mm dia. spring clip from water pump



**Installing coolant hose on heater unit**

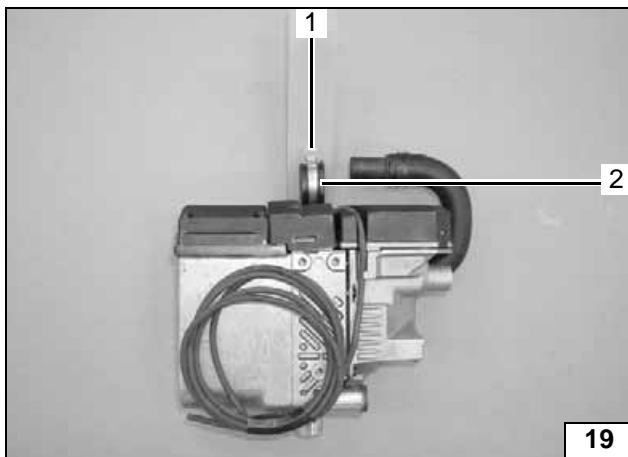


Eject screw, tightening torque 10 Nm!

- 1 Strut
- 2 Loosely mount Eject screw

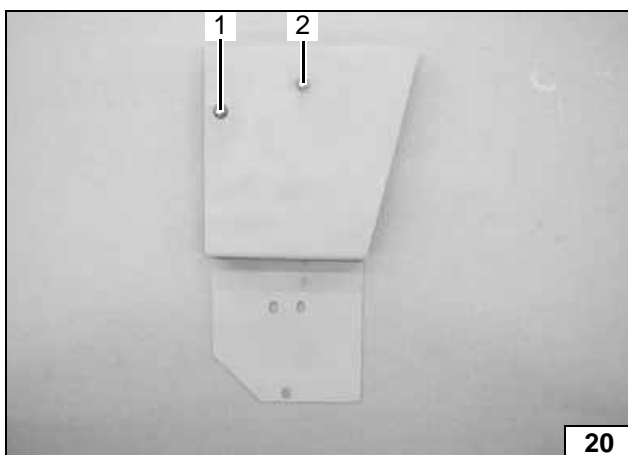


**Installing strut on heater unit**



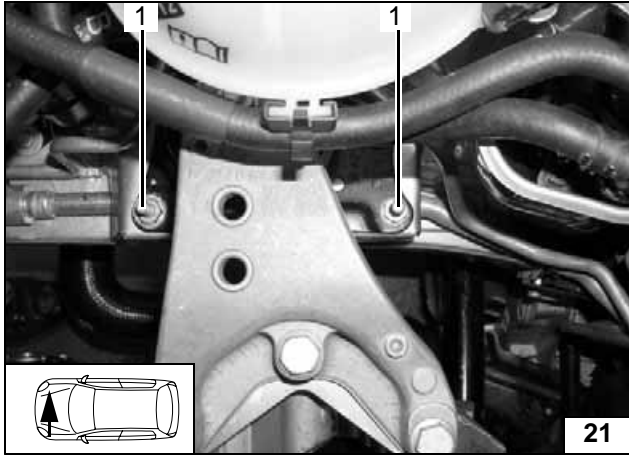
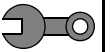
- 1 M6x16 bolt, M6 flanged nut
- 2 29 mm dia. rubber-coated p-clamp

**Installing p-clamp**



- 1 M6x16 bolt, pin lock
- 2 M6x12 bolt, pin lock

**Preparing bracket**



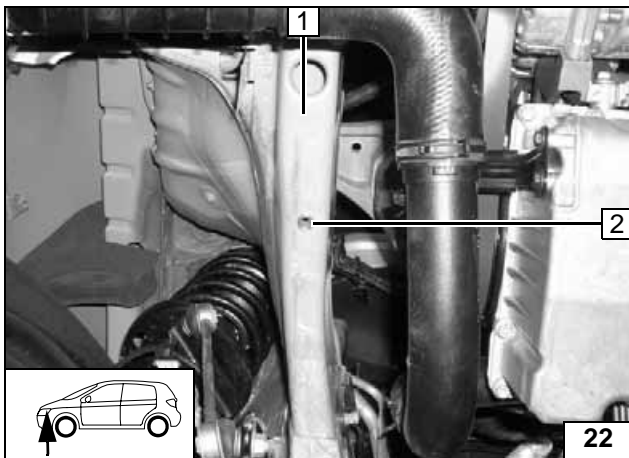
**Preparing installation location**

Discard original vehicle bolts from engine mount and replace with included double bolts. Observe tightening torque according to manufacturer.

- 1 Double bolt [2x]

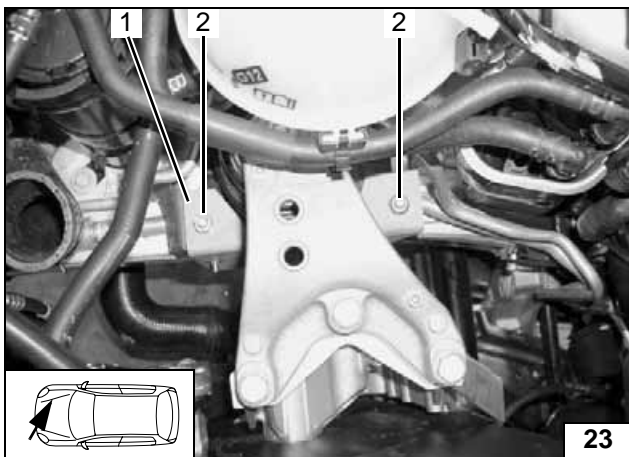


**Preparing installation location**



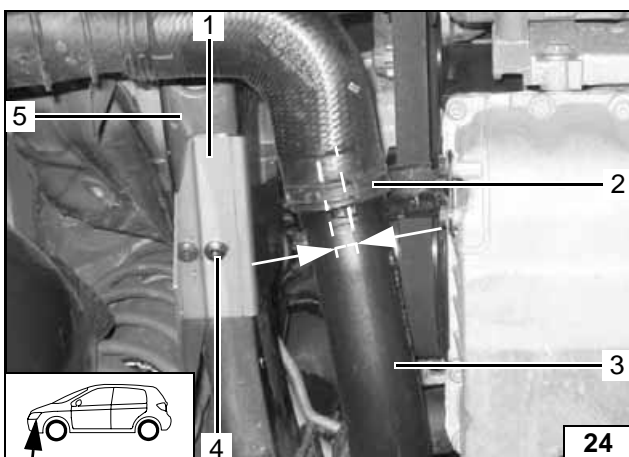
- 1 Right-hand frame side member.
- 2 M8 rivet nut

**Installing rivet nut**



- 1 Loosely mount bracket
- 2 M8 flanged nut [2x]

**Installing bracket**

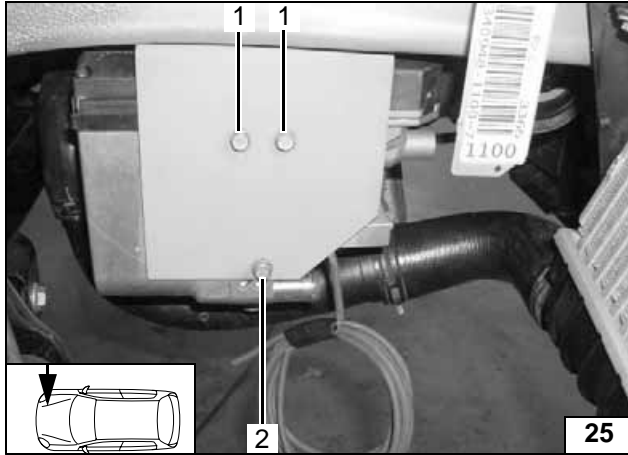
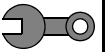


Loosen clamp at position 2 and twist hose from turbocharger 3 as shown. (Distance to heater unit)

- 1 Bracket
- 4 M8x30 Torx screw
- 5 Frame side member



**Installing bracket**



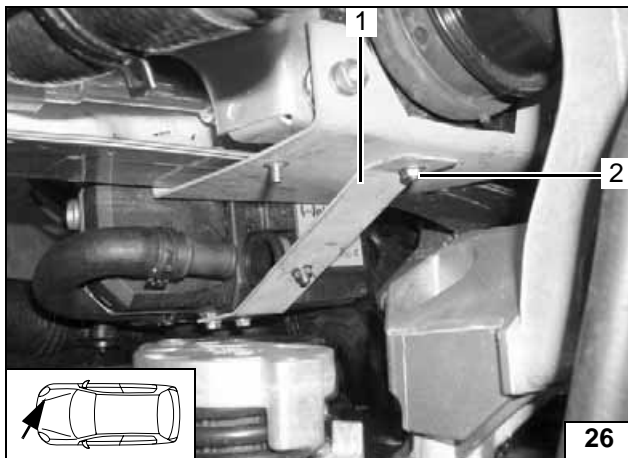
**Installing heater unit**

Before installing heater unit, tighten fastening bolts of bracket. Tighten EJOT screws to 10 Nm. Insert two 6 mm dia. washers between heater unit and bracket at position 2.

- 1 Ejot screw
- 2 Ejot screw, washer [2x]



**Installing heater unit**



Tighten strut on heater unit following installation. Tighten EJOT screws to 10 Nm!

- 1 Strut
- 2 M6 flanged nut



**Installing heater unit**



**Coolant connection with engine code letters: AMF**

**WARNING!**

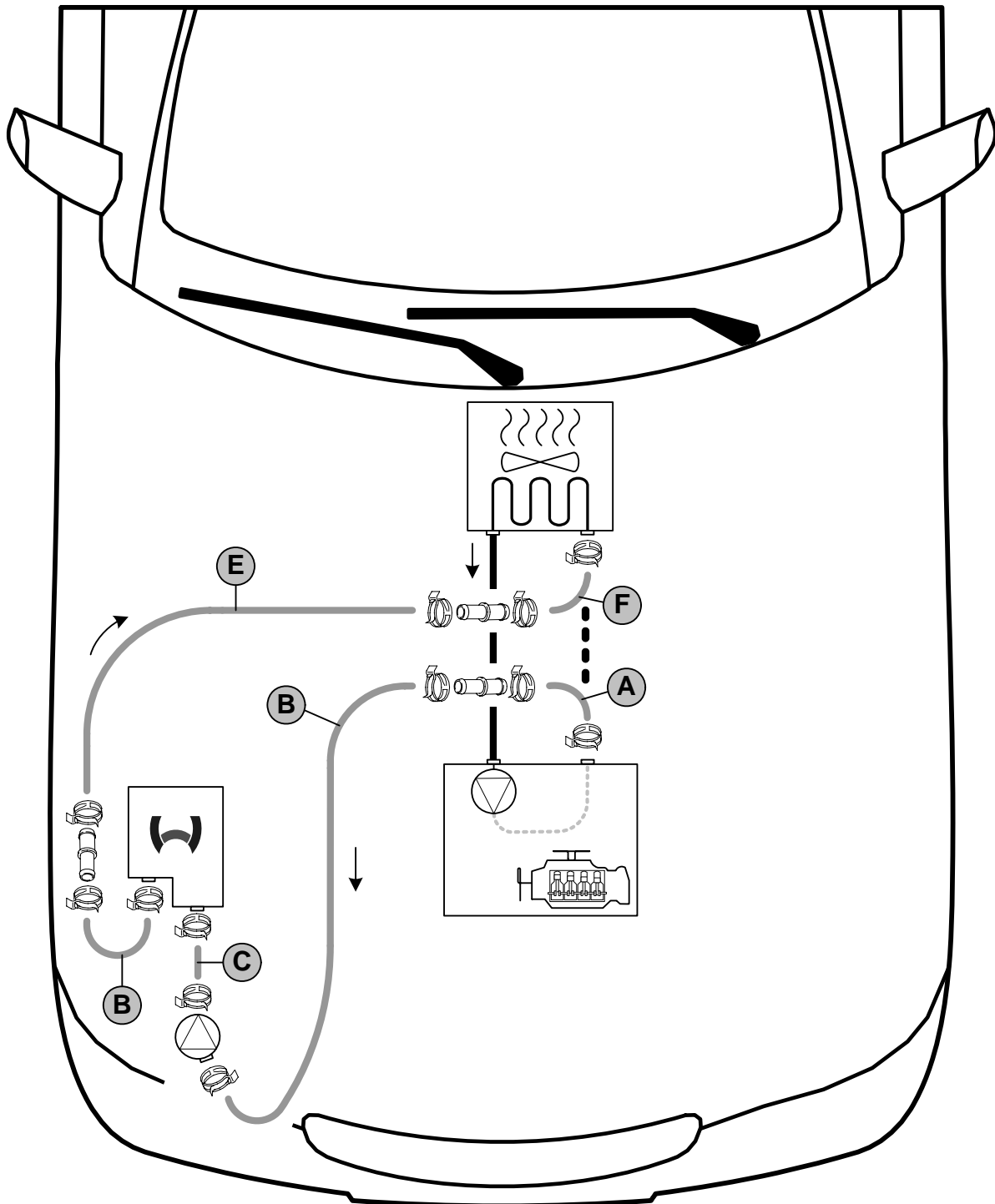
Tighten all hose clamps to 2.0 + 0.5 Nm.

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:

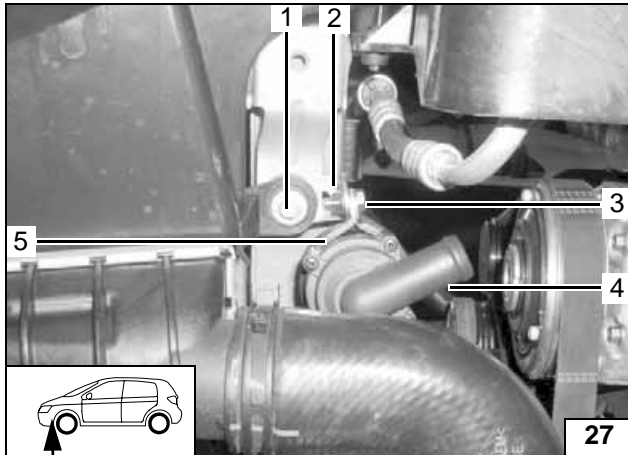


Coolant routing diagram

All spring clips = 27 mm dia.!  
 Al connecting pipes = 20x20 mm

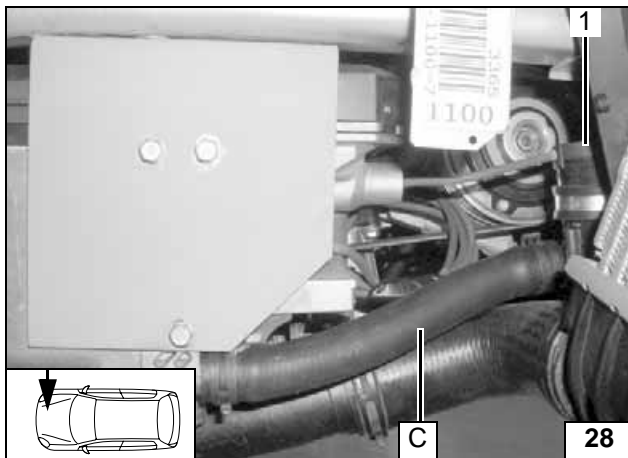






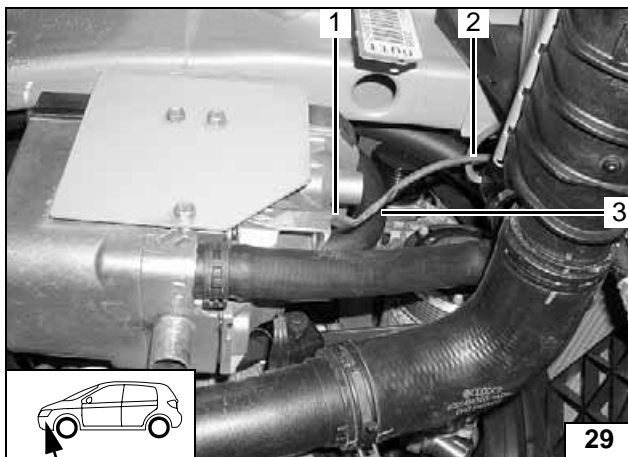
- 1 Original vehicle bolt
- 2 Angle bracket with long leg under bolt
- 3 M6x16 bolt, M6 flanged nut
- 4 Circulating pump
- 5 Rubber-coated pipe clamp, 48 mm dia.

Fastening circulating pump



- 1 Circulating pump

Connection to heater unit and circulating pump

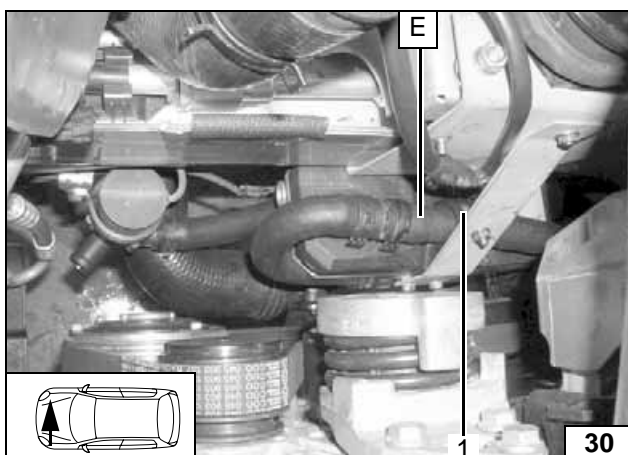


Before producing electrical connection, cut connector off cable of circulating pump and cut wiring harness extension to length.

- 1 Wiring harness extension
- 2 Cable of circulating pump
- 3 Connector [2x]



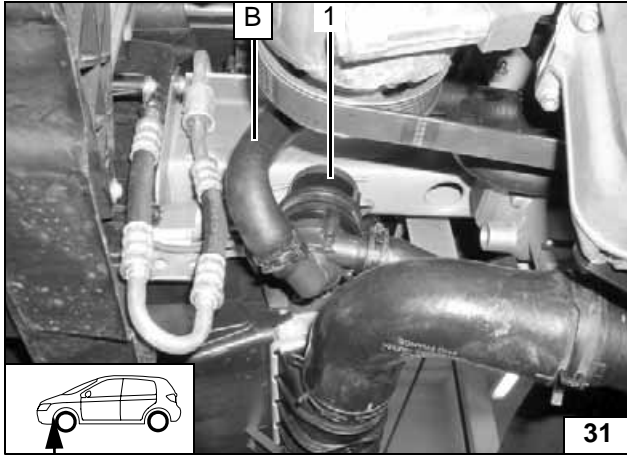
Electrical connection to circulating pump



Before installing coolant hoses, connect wiring harness to heater unit. Guide coolant hose **E** through premounted rubber-coated p-clamp **1**.



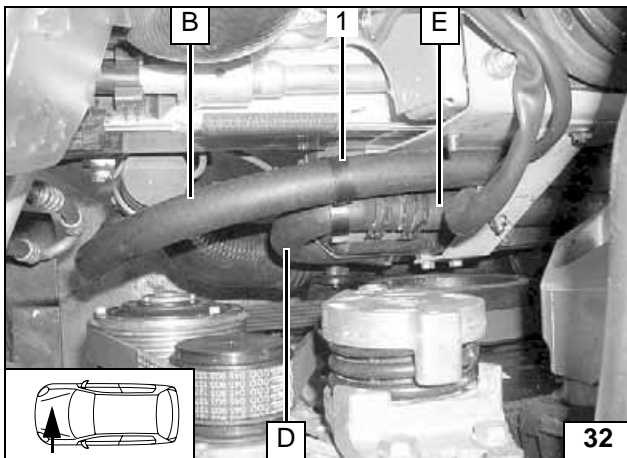
Connection to heater unit outlet



Install hose **B** with 90° elbow on circulating pump **1**.

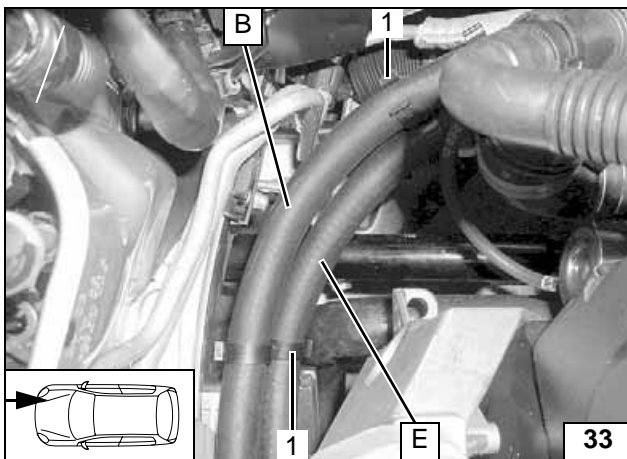


Conne-  
ction to cir-  
culating  
pump



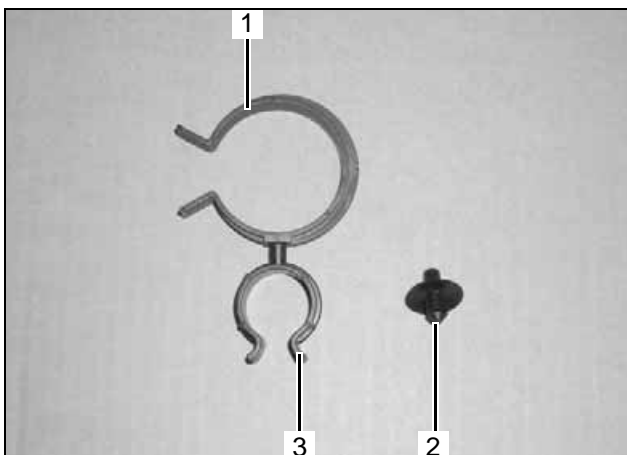
1 Spacer bracket

Routing in  
engine  
compart-  
ment



1 Spacer bracket [2x]

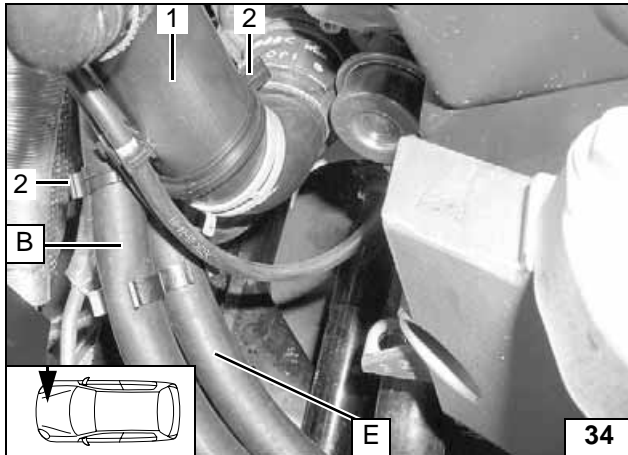
Routing in  
engine  
compart-  
ment



Install individual spacer bracket **3** with bracket for air intake muffler **1**. Dispose of mounting clip **2**.

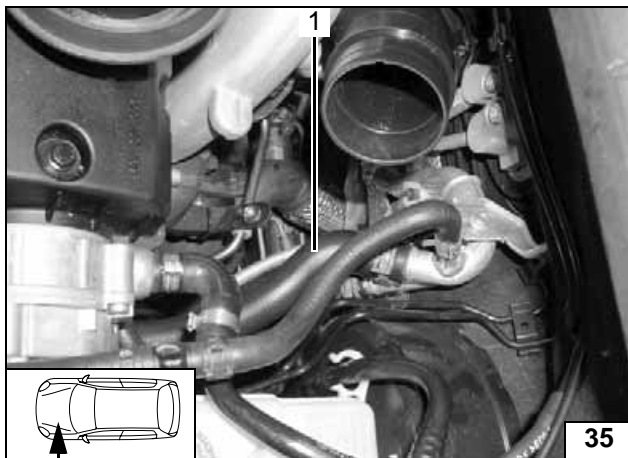


Premount-  
ing spacer  
bracket



- 1 Charge-air intake pipe
- 2 Premounted spacer bracket

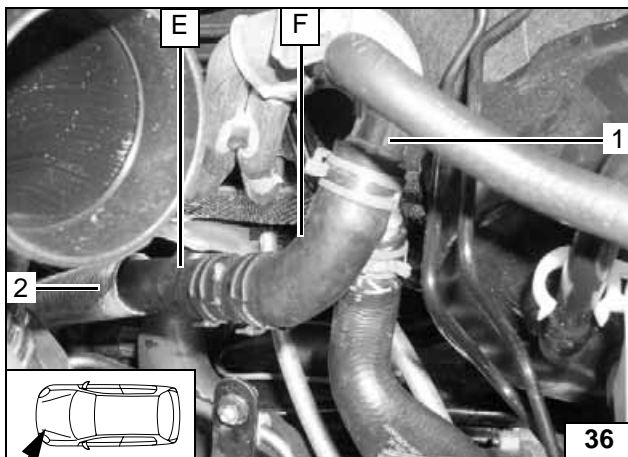
Routing in engine compartment



Remove and dispose of original vehicle coolant hose 1. The spring clips will be reused.

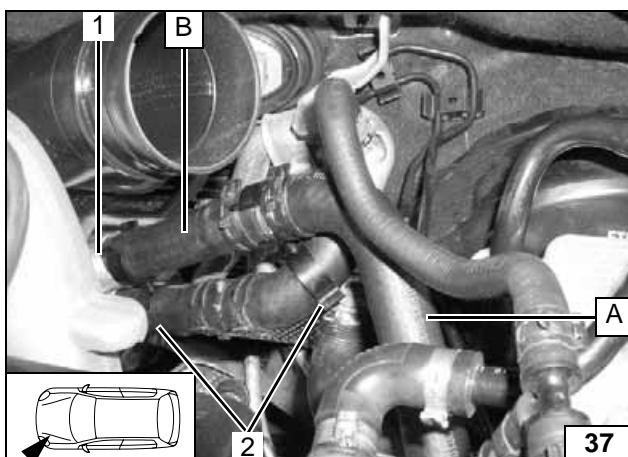


Removing coolant hose



- 1 Heat exchanger inlet
- 2 Heat protection hose

Connection to heat exchanger inlet



Fasten hose A on connection piece of engine outlet with original spring clip

- 1 Heat protection hose
- 2 Spacer bracket



Connection to engine outlet



**Coolant connection with engine code letters: BNV and BNM**

**WARNING!**

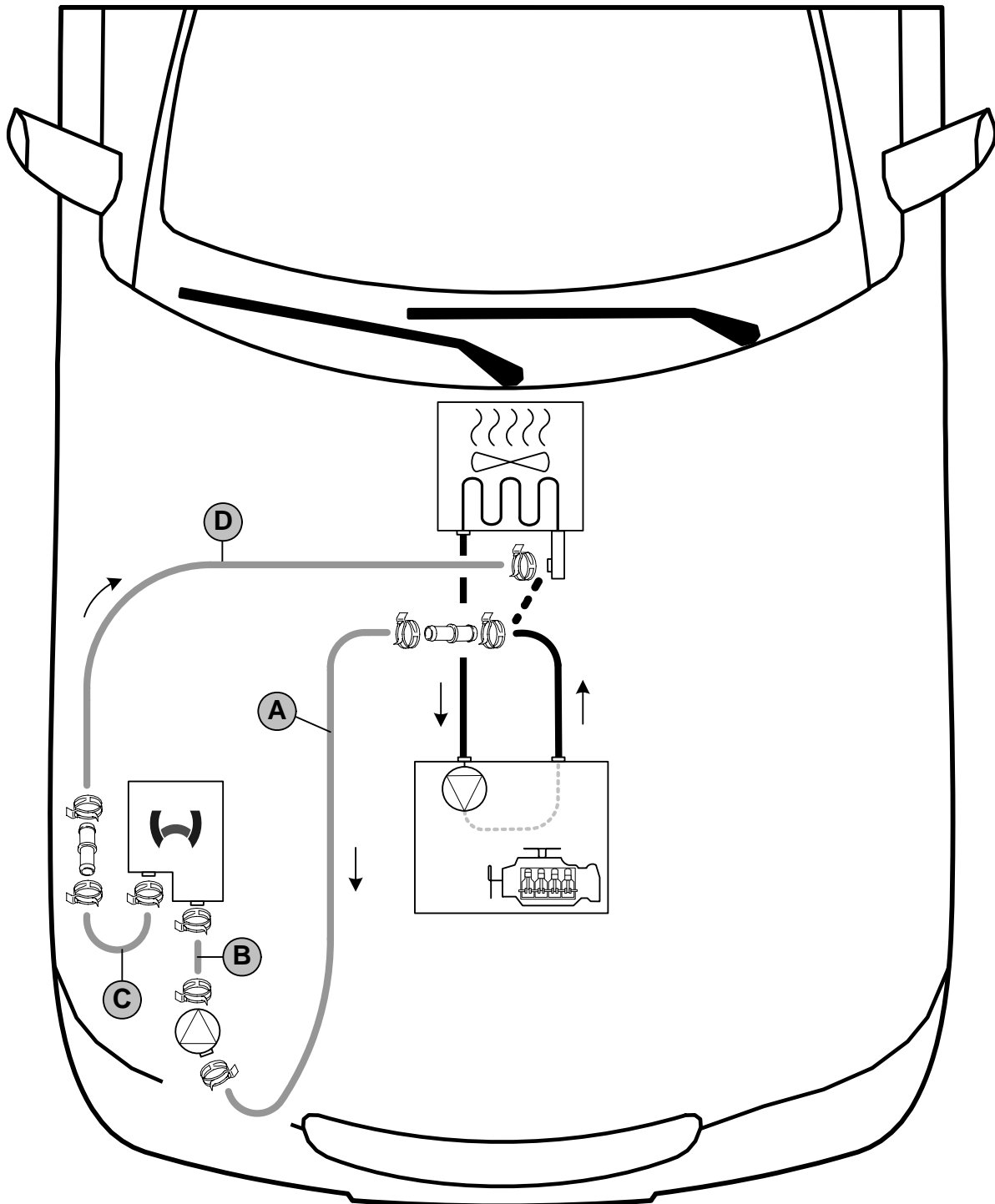
Tighten all hose clamps to 2.0 + 0.5 Nm.

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.

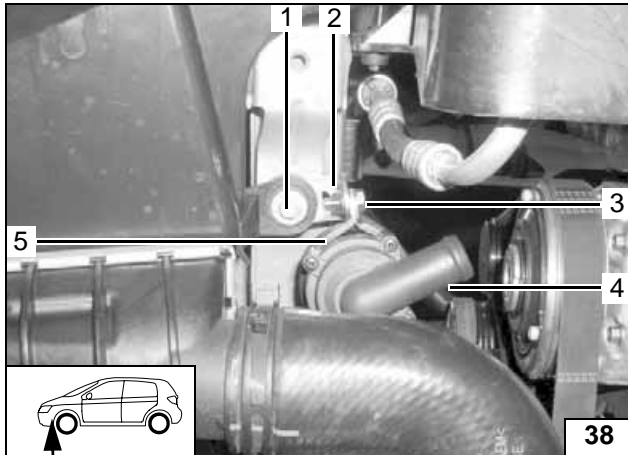
The connection should be "inline" based on the following diagram:



Coolant routing diagram

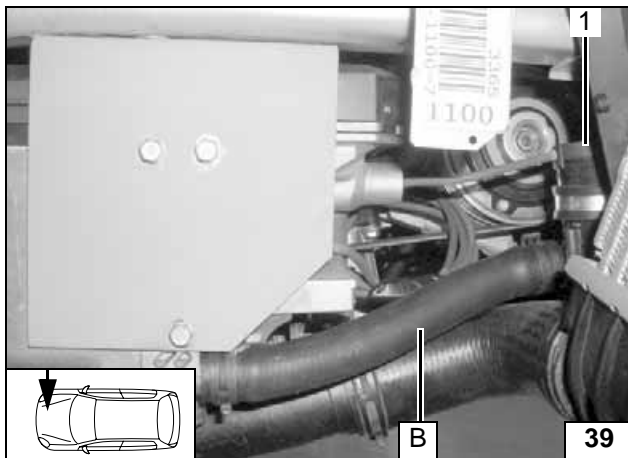
All spring clips = 27 mm dia.!  
Connecting pipe = 20x20 mm!





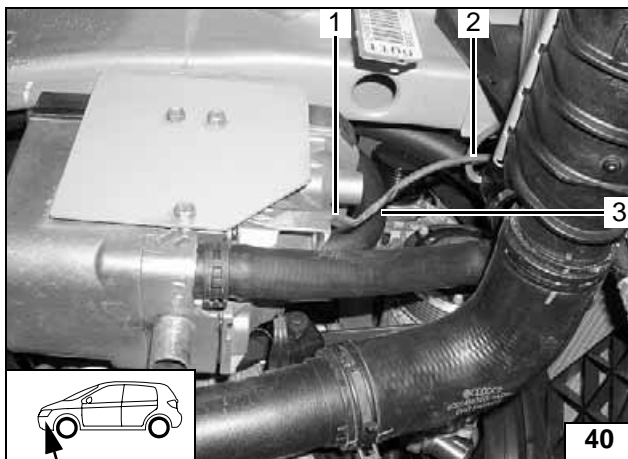
- 1 Original vehicle bolt
- 2 Angle bracket with long leg under bolt
- 3 M6x16 bolt, M6 flanged nut
- 4 Circulating pump
- 5 Rubber-coated pipe clamp, 48 mm dia.

Fastening circulating pump



- 1 Circulating pump

Connection to heater unit and circulating pump

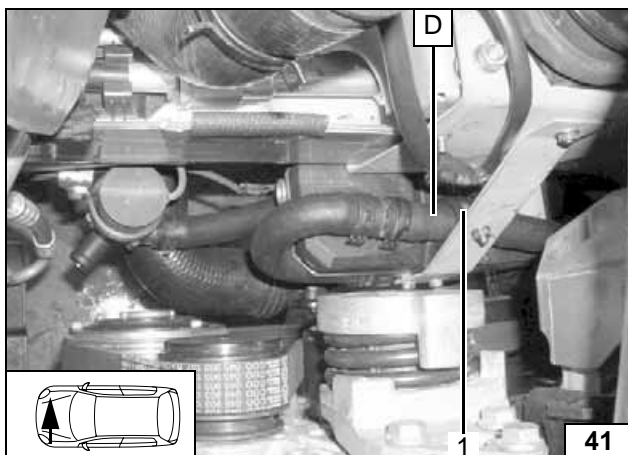


Before producing electrical connection, cut connector off cable of circulating pump and cut wiring harness extension to length.

- 1 Wiring harness extension
- 2 Cable of circulating pump
- 3 Connector [2x]



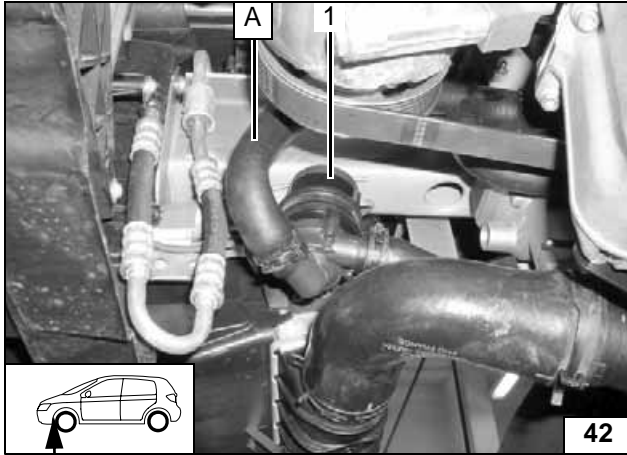
Electrical connection to circulating pump



Before installing coolant hoses, connect wiring harness to heater unit. Guide coolant hose **D** through premounted rubber-coated p-clamp 1.



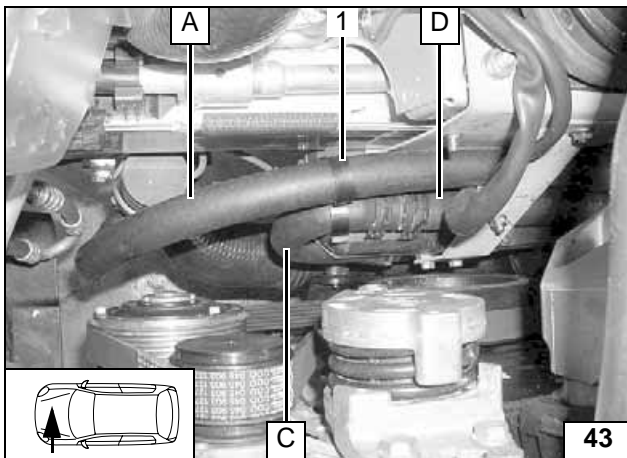
Connection to heater unit outlet



Install hose **A** with 90° elbow on circulating pump **1**.

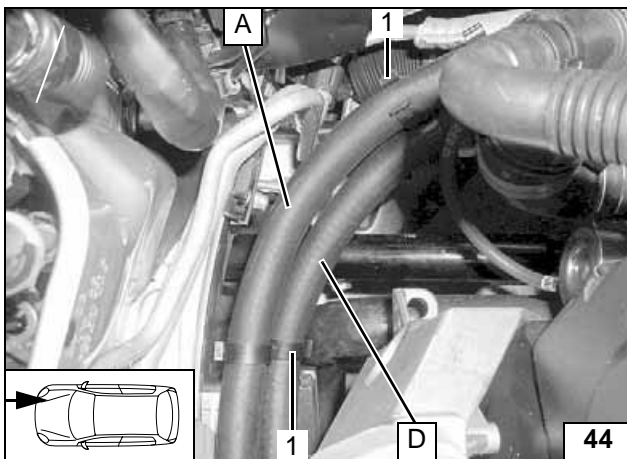


Conne-  
ction to cir-  
culating  
pump



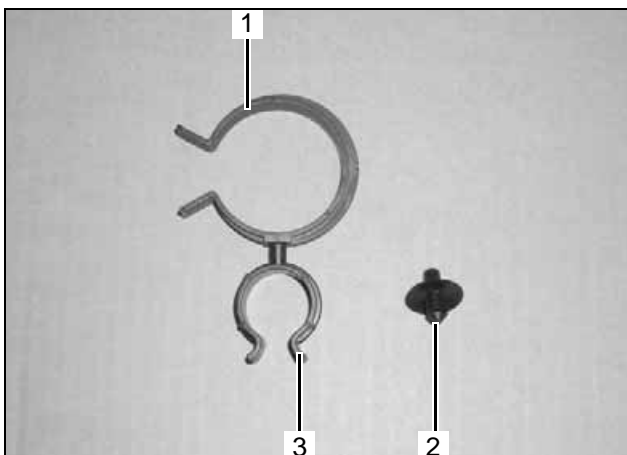
1 Spacer bracket

Routing in  
engine  
compart-  
ment



1 Spacer bracket [2x]

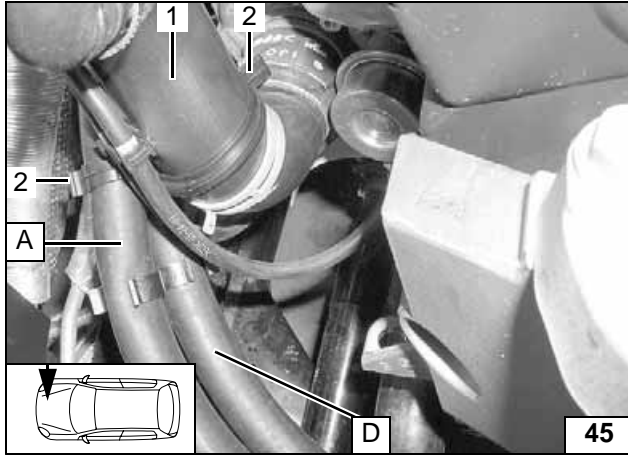
Routing in  
engine  
compart-  
ment



Install individual spacer bracket **3** with bracket for air intake muffler **1**. Dispose of mounting clip **2**.

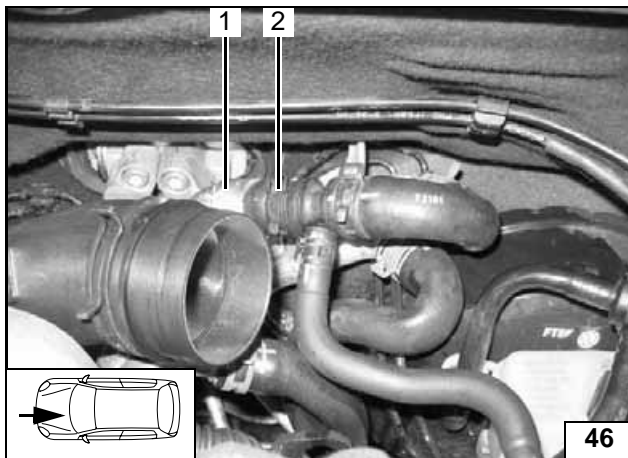


Premount-  
ing spacer  
bracket



- 1 Charge-air intake pipe
- 2 Premounted spacer bracket

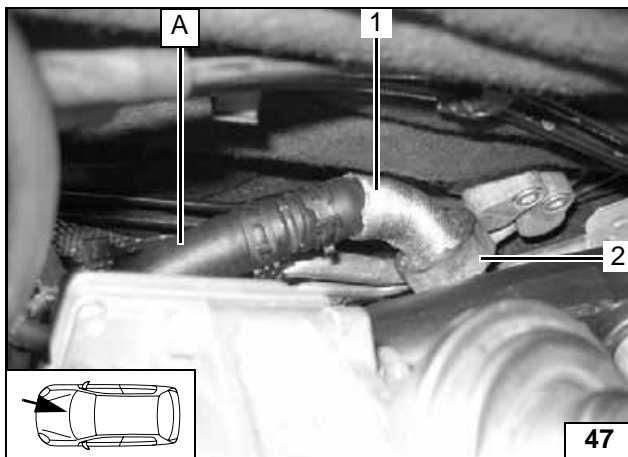
Routing in engine compartment



Pull original vehicle coolant hose 1 off connection piece and turn toward right-hand side of vehicle. Spring clip 2 will be reused.



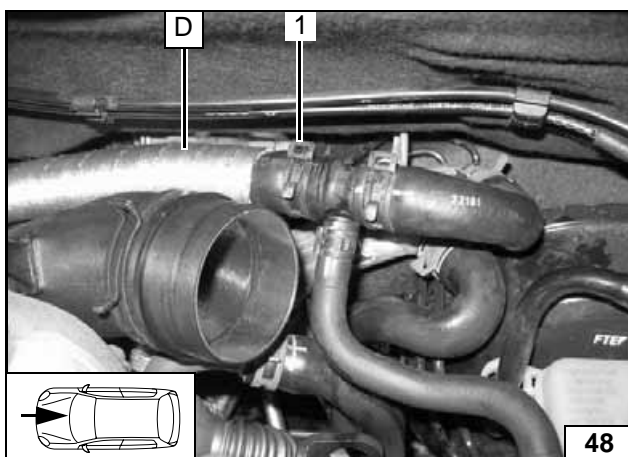
Preparing coolant



Before installing, push black (sw) rubber isolator 2 onto original vehicle coolant hose 1.

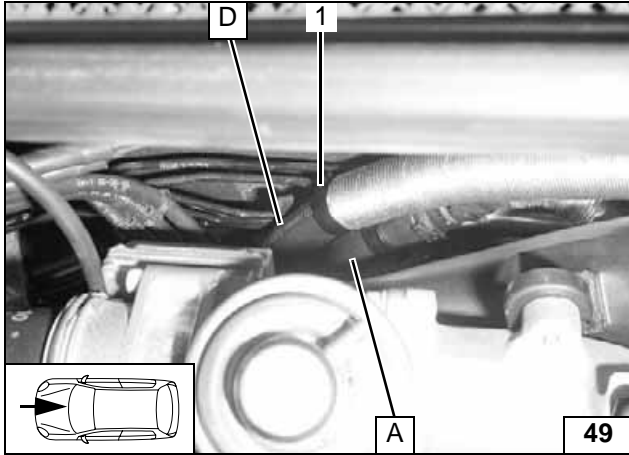


Connection to engine outlet



- 1 Original spring clip

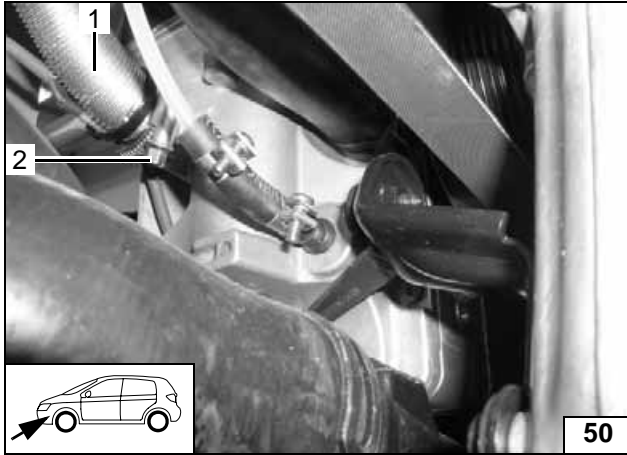
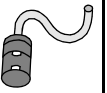
Connection to heat exchanger inlet



1 Spacer bracket

Installing  
spacer  
bracket



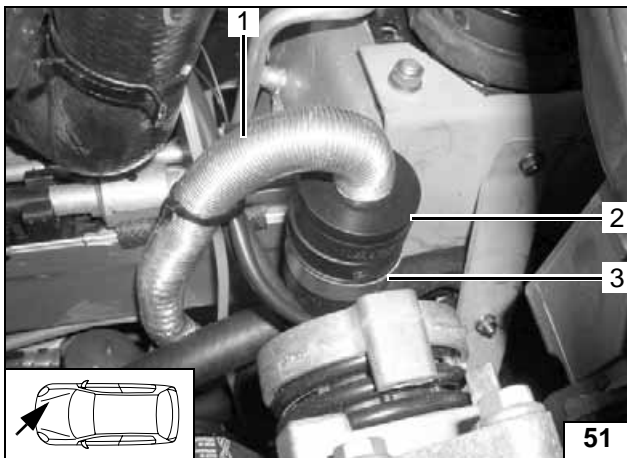


**Combustion air**

- 1 Flexible tube
- 2 20-27 mm dia. hose clamp



**Installing  
intake pipe**



- 1 Combustion-air intake pipe
- 2 Intake muffler
- 3 48 mm dia. clamp, flanged nut on premounted M6x16 bolt

**Installing  
muffler**



**Fuel Connection**

**CAUTION!**

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

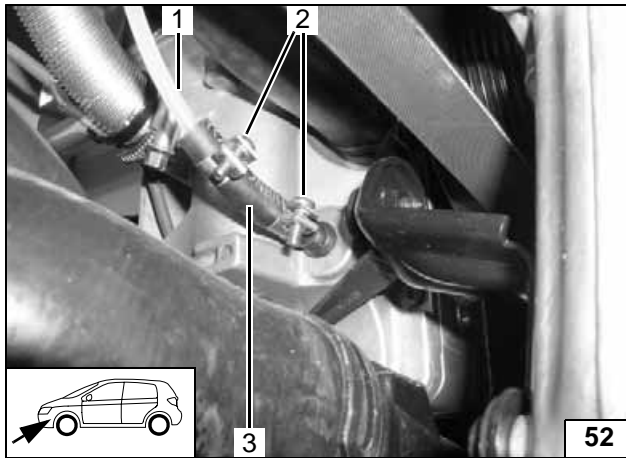
Catch any fuel running off with an appropriate container.

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.

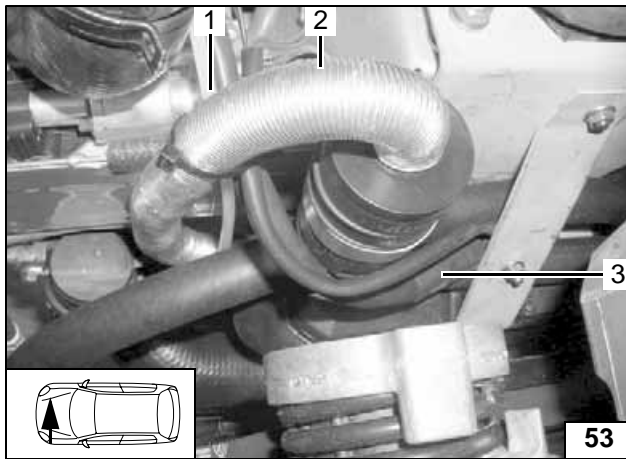
**WARNING!**

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



- 1 Mecanyl fuel line
- 2 10 mm dia. hose clamp
- 3 Hose section

Conne-  
tion on  
heater unit

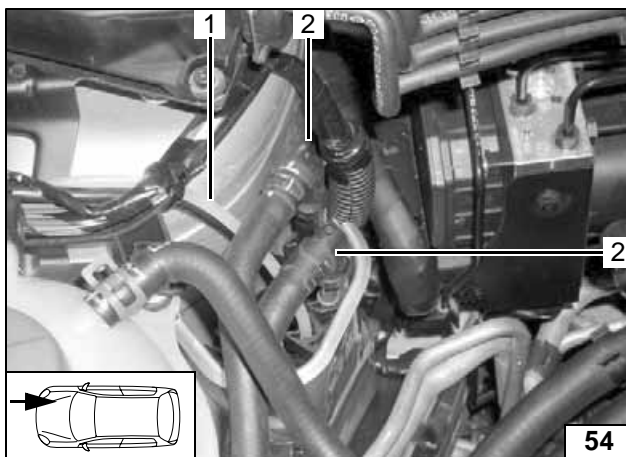


Route fuel line along wiring harness of heater unit.

- 1 Mecanyl fuel line
- 2 Flexible tube
- 3 Wiring harness of heater unit



Routing  
line

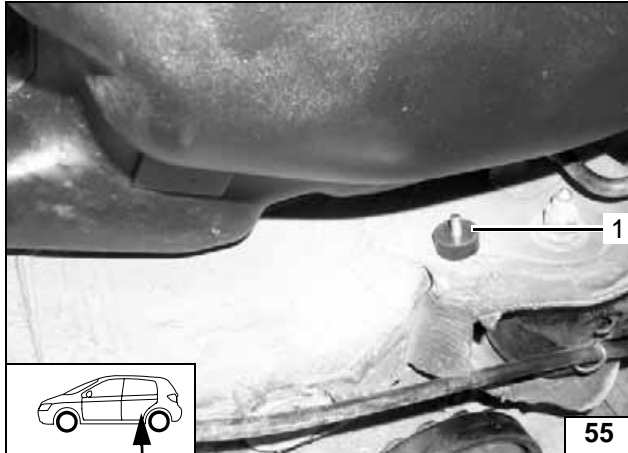


Route fuel line and wiring harness of metering pump along original vehicle fuel lines to installation location of metering pump.

- 1 Wiring harness of metering pump and Mecanyl fuel line
- 2 Original vehicle fuel line [2x]



Routing  
line

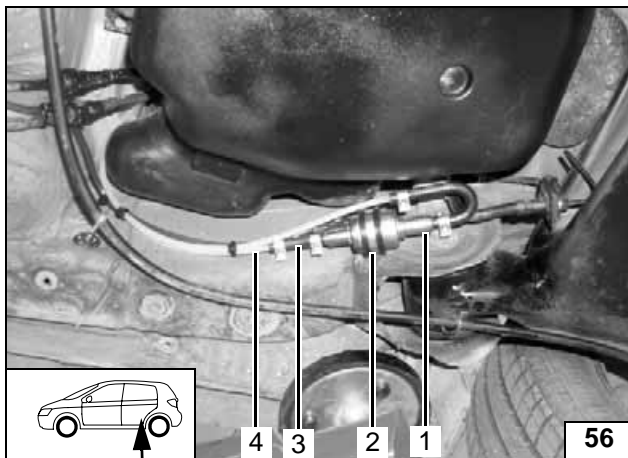


Remove stoneguard in area of hole.

- 1 Silent block, M6 flanged nut in existing hole

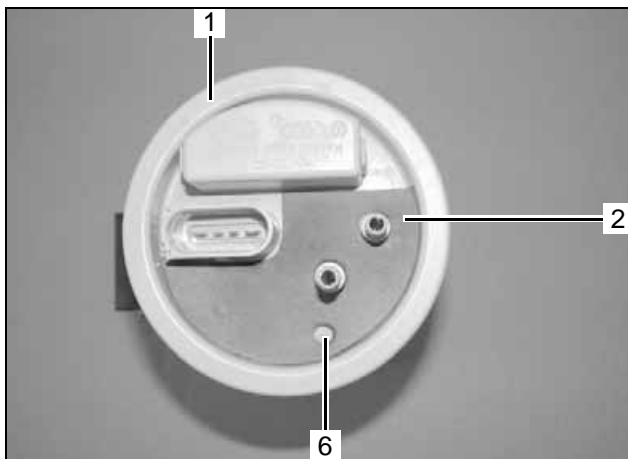


**Installing metering pump**



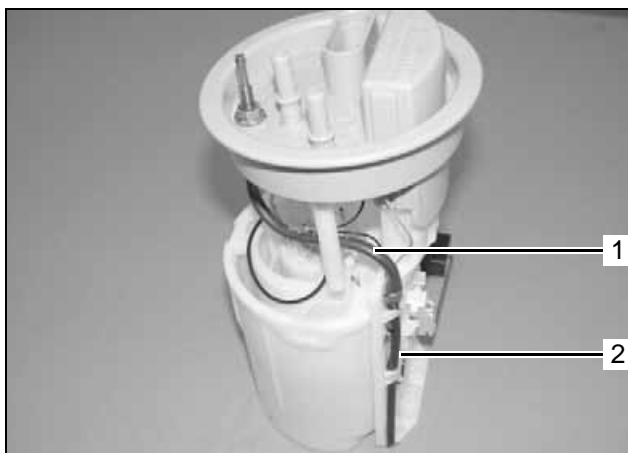
- 1 Metering pump
- 2 Rubber-coated p-clamp, M6 flanged nut on silent block
- 3 Hose section
- 4 Mecanyl fuel line from heater unit on pressure side of metering pump, 10 mm dia. hose clamp [2x]

**Installing metering pump**



- 1 Fuel sender
- 2 Template
- 3 Hole pattern for 6 mm dia. hole

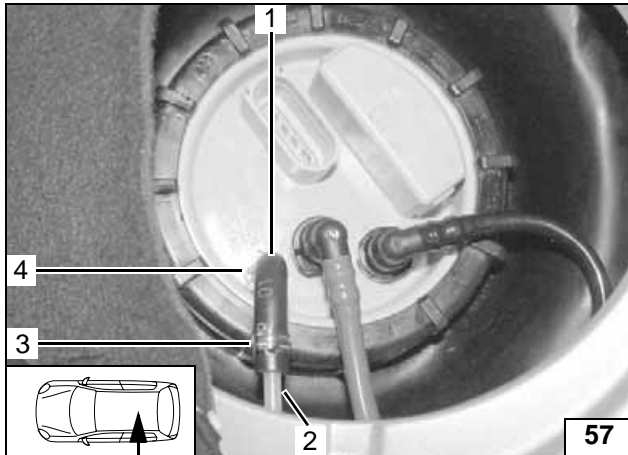
**Copying hole pattern**



Cut fuel hose 2 and standpipe 3 to length and install in accordance with template. Watch for possible kinking!



**Installing fuel standpipe**

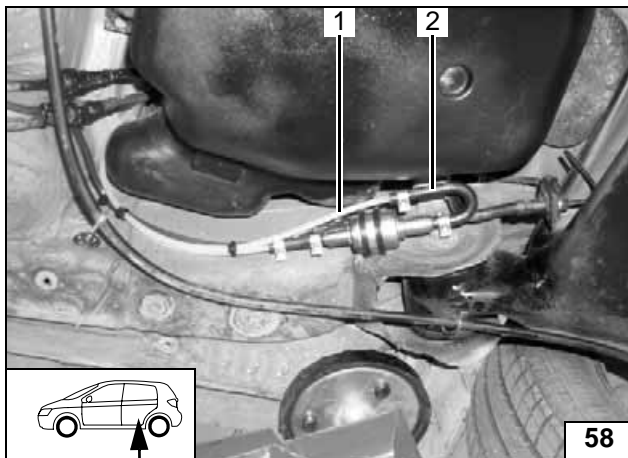


Install fuel-tank sending unit according to manufacturer's specifications. Shorten molded hose by 10 mm on 3.5 mm dia. side and mount on fuel standpipe.

- 1 Molded hose, 3.5 mm dia. 4.5 mm
- 2 Mecanyl fuel line
- 3 10 mm dia. Caillau clamp
- 4 8 mm dia. Caillau clamp



**Connect-  
ing fuel  
line**



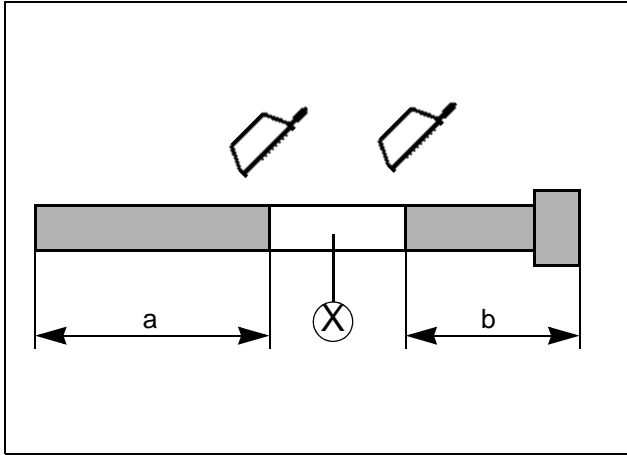
Route Mecanyl fuel line from fuel standpipe on intake side of metering pump [side without connector].

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

- 1 Mecanyl fuel line
- 2 Molded fuel hose, 10 mm dia. hose clamp [2x]



**Conne-  
tion to me-  
tering  
pump**

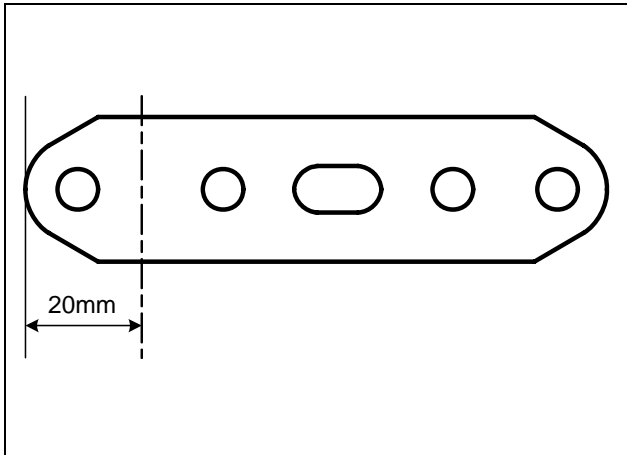


**Exhaust system**

Exhaust pipe  
 a = 380 mm  
 Exhaust end section  
 b = 320 mm

Discard section ⊗

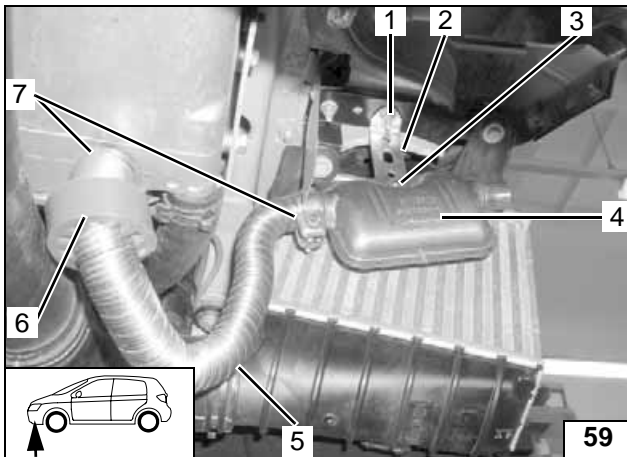
**Preparing exhaust pipe**



Angle down perforated bracket 90°.

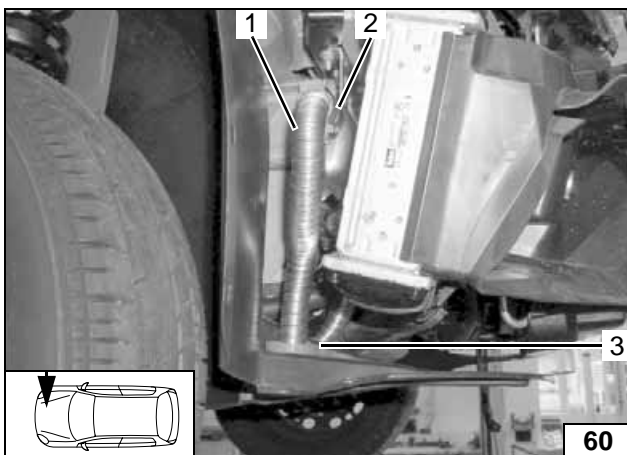


**Angling down perforated bracket**



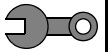
- 1 Original vehicle nut
- 2 Angled-down perforated bracket
- 3 M6x12 bolt, flanged nut M6
- 4 Exhaust muffler
- 5 Exhaust pipe
- 6 Red (rt) rubber isolator
- 7 Exhaust p-clamp [2x]

**Installing muffler and exhaust pipe**



- 1 Exhaust end section
- 2 Exhaust p-clamp
- 3 Red (rt) rubber isolator with groove

**Installing end piece**



## Final Work

### WARNING!

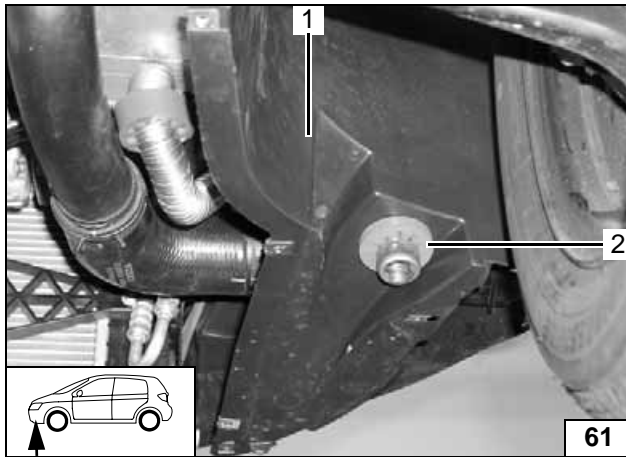
Reassemble the disassembled components in reverse order.

Check all hoses, hose, spring and Caillau clamps, as well as 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
- Bleed and fill 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.



- 1 Underride protection
- 2 42 mm dia. hole, red (rt) rubber isolator with groove



**Cutting out underride protection**

# Webasto

*Feel the drive*

Webasto AG  
Postfach 80 - 82132 Stockdorf, Germany - Hotline +49-  
(0)1805-932278  
Hotfax +49-(0)395-5592-353 - <http://www.webasto.de>

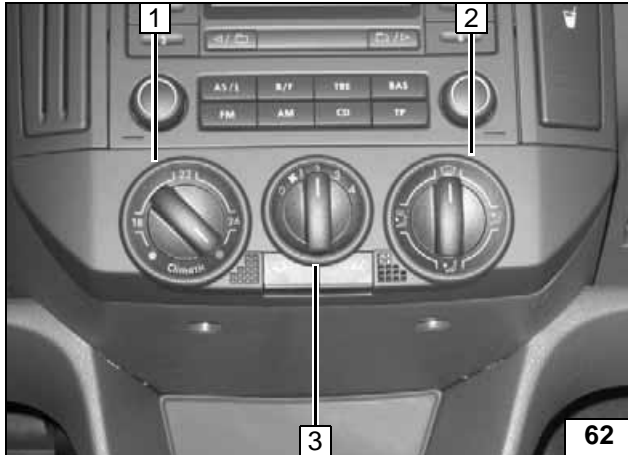
**Operating Instructions for End Customer**

Please remove page and add to the vehicle operating instructions.



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

Before parking the vehicle, make the following settings:



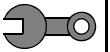
- 1 Set temperature to "max."
- 2 Air outlet to "windshield"
- 3 Set fan to level "1", or possibly "2"

**For vehicle without and with Climatronic**



- 1 Set temperature to "max."
- 2 Set defrost switch to "on"

**For vehicles with Climatronic**



Template for Fuel Standpipe and Fuel-Tank Sending Unit

No.	Description
1	Fuel hose
2	90° molded hose
3	Standpipe
4	Fuel standpipe
5	Single-lug clamp, 8.0 mm dia.
6	Single-lug clamp, 6.6 mm dia.
7	Caillau clamp, 9.0 mm dia.
8	Caillau clamp, 10.0 mm dia.
9	Mecanyl fuel line
10	Mecanyl fuel line

