

Water Heater Unit



Thermo Top E Additional Heater


00 0003

Thermo Top C Additional Heater


00 0002

Thermo Top P Additional Heater


00 0104

Installation Instructions

VW Golf VI

1.4 TSI

from Model Year 2008

Left-hand drive vehicle

Adjustment of sensitivity of passenger compartment monitoring not checked!



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	Golf VI	1K	e1 * 2001/116 * 0242

Engine type	Engine model	Output in kW	Displacement in cm ³
CAVD	Gasoline/TSI	118	1390

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 Golf VI 1.4 TSI	1314420A

Also required with Climatronic

Quantity	Description	Order No.:
1	IPCU Kit for Climatronic	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 Golf VI 1.4 TSI vehicles - for validity, see page 2 - from model year 2008 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).

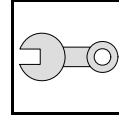
Special Tools

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

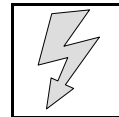
Explanatory Notes on Document

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.

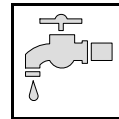
Mechanical system



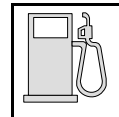
Electrical system



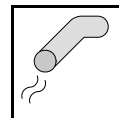
Coolant



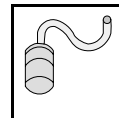
Fuel



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.



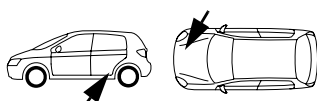
Specific risk of fire or explosion.



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!

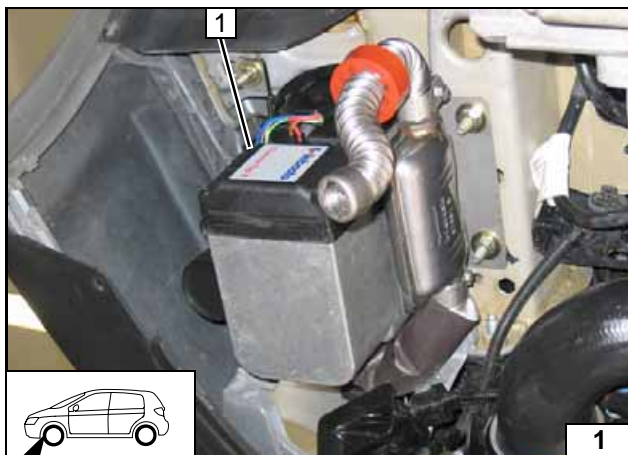
Tightening torque of Ejet screws, Ejet studs = 10 Nm!

Preliminary Work

WARNING!

- Open fuel tank cap, ventilate tank.
- Close the tank cap again.
- 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.
- Disconnect the battery "earth" or "ground" connection.
- Completely remove the battery with the battery carrier.
- Remove the engine cover.
- Detach the coolant reservoir cap.
- Remove the left front wheel
- Remove the front section of the left front wheel well trim.
- Remove the left-hand front fog light or, on vehicles without front fog lights, the left-hand cover.
- Remove the underride protection.
- Remove the right-hand underbody trim.
- Remove the rear bench seat.
- Open the right-hand fuel sender service lid.
- Remove the footwell trim on the driver's side
- Remove the lower instrument panel trim on the driver's side
- Only vehicles with Climatronic: Remove the footwell trim on the front passenger side

Remove page 26 "Operating Instructions for End Customer" and add to the vehicle operating instructions.



Heater unit installation location

- 1 Heater unit

Installation location



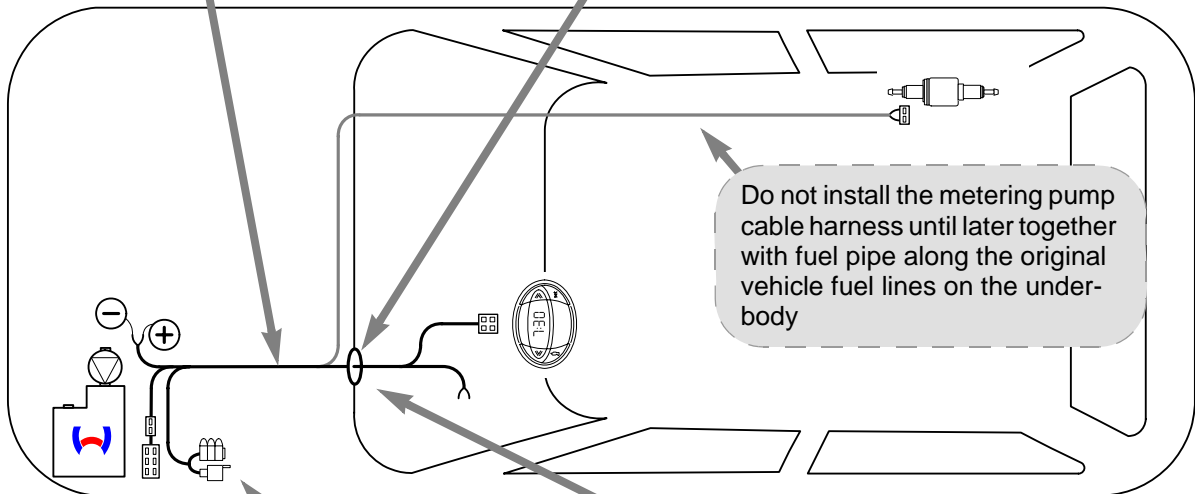
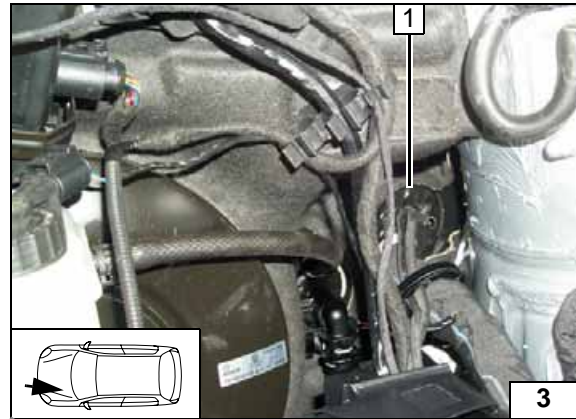
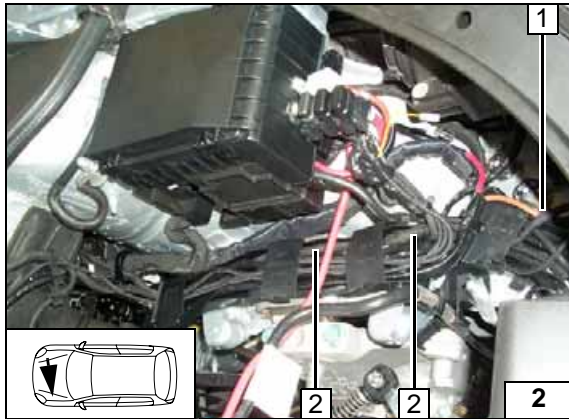
Electrical system

Wiring harness routing

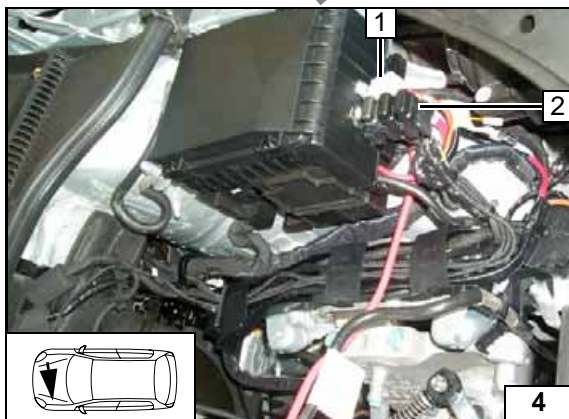
Route excess lengths from wiring harness 1 in cable duct 2 below battery and secure with cable ties.

Wiring harness pass through

1 Original vehicle wiring harness pass through

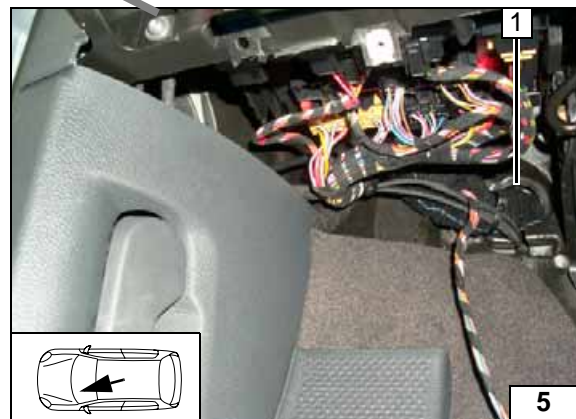


Wiring harness installation diagram



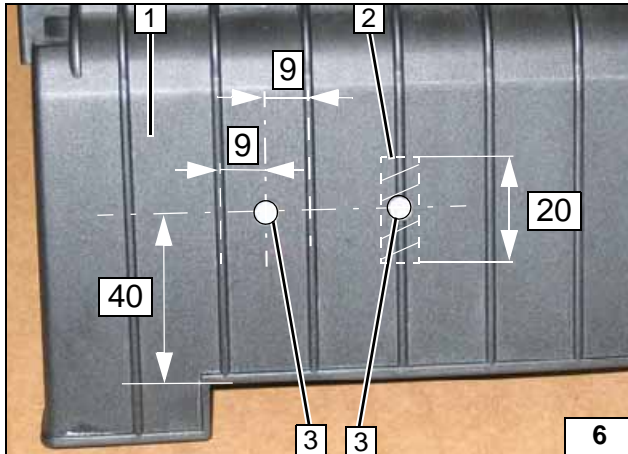
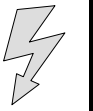
Fuse holder, relay K3

Description of installation for K3 relay 1 and fuse carrier 2 on Page 7



Wiring harness pass through

1 Original vehicle wiring harness pass through



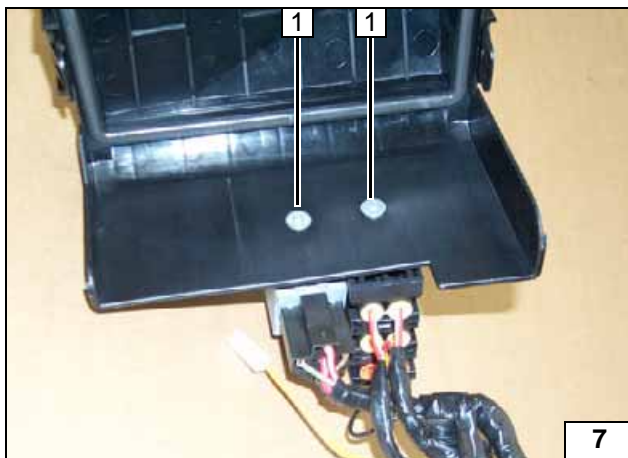
Fuse holder and relay K3

Countersink holes **3** from behind for M5 countersunk head screws.

- 1** Cover of fuse/relay carrier in engine compartment
- 2** Cut away bar in shaded area
- 3** 5 mm dia. hole [2x]

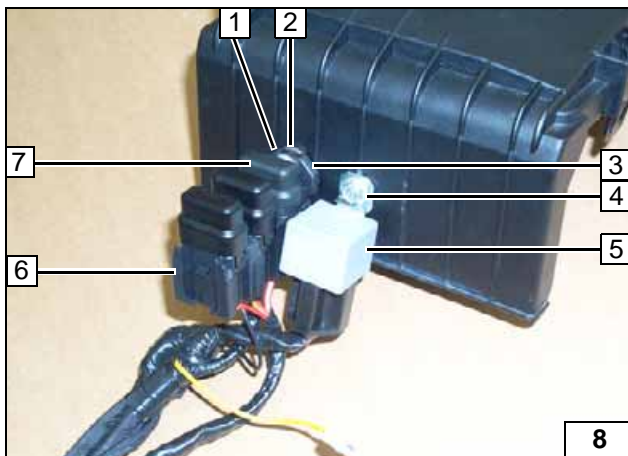


Holes in cover



- 1** M5x12 countersunk head screw [2x]

Installing fuse holder and K3 relay

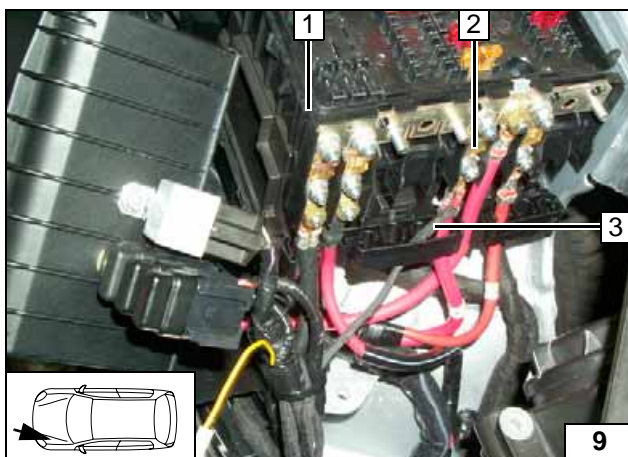


On vehicles with Climatronic, replace 25 A fuse F3 **7** with 3 A fuse provided.

- 1** M5 flanged nut
- 2** Large diameter washer (between cover and retaining plate)
- 3** Retaining plate
- 4** M5 flanged nut
- 5** Relay K3
- 6** Fuse holder



Installing fuse holder and K3 relay



Route brown (br) ground wire to original vehicle ground support point below headlight and connect.

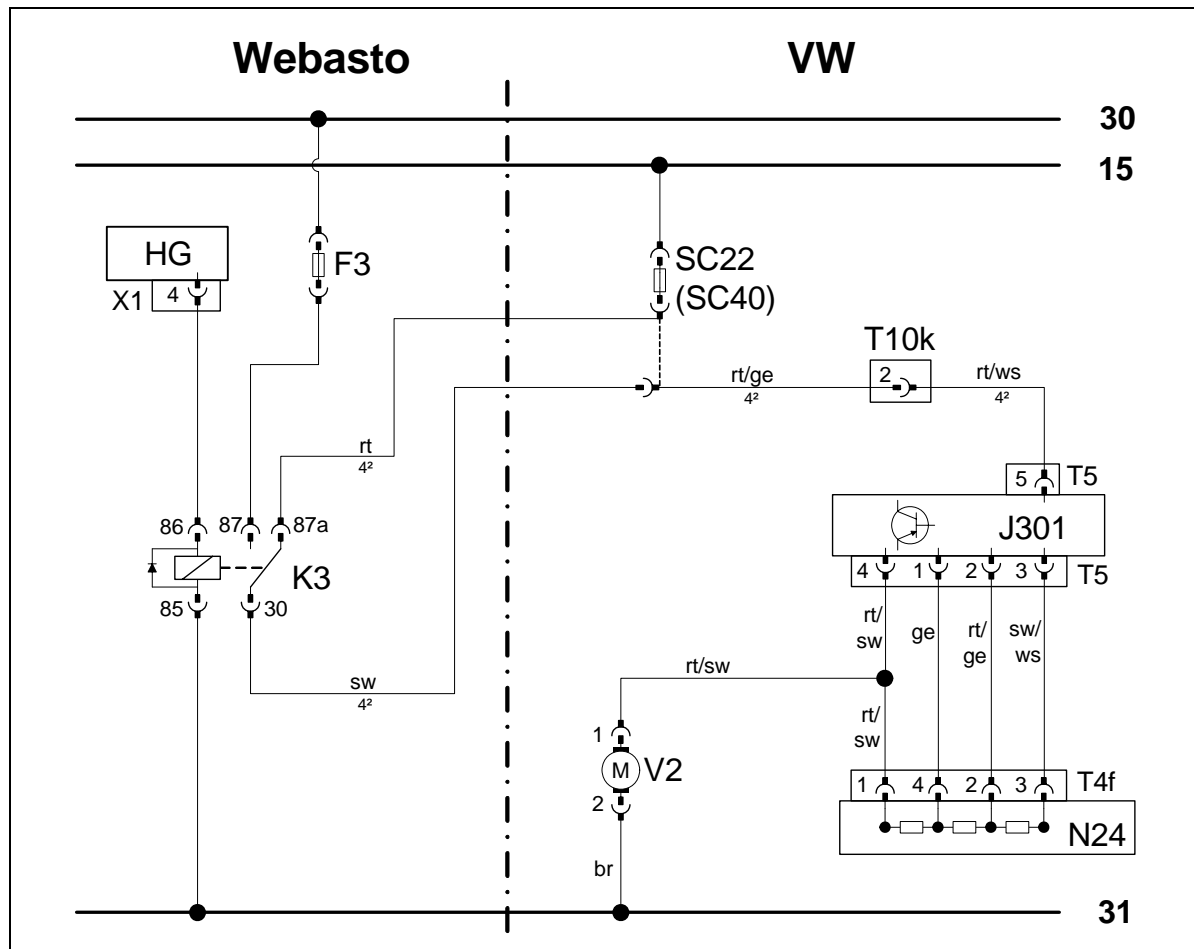
- 1** Fuse/relay carrier
- 2** Original main vehicle fuse
- 3** Red (rt) positive wire



Connecting positive and ground wire



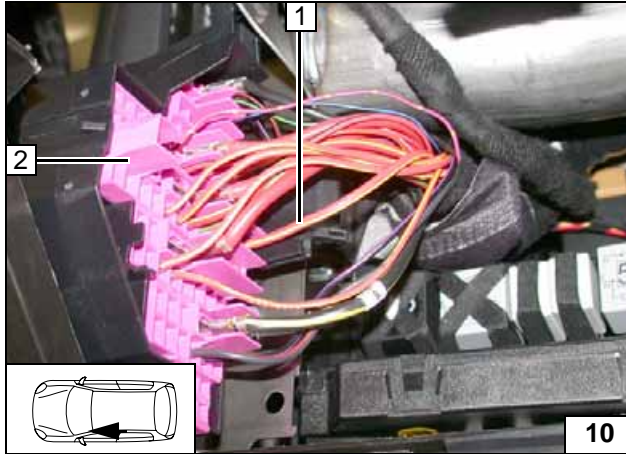
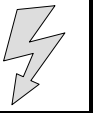
Climatic fan controller



Climatic wiring diagram

Webasto components		Vehicle components		Colors and symbols	
HG	Heater unit TT-C/E	GM	Fan motor	rt	red
X1	6-pin heater unit connector	SC22 (SC 40)	40 A fan fuse (depending on respective fuse assignment)	ge	yellow
F3	25 A fuse			sw	black
K3	Fan relay	J301	Control unit of air conditioning		
		T5	5-pin connector J301		
		N24	Resistor group		
		T4f	4-pin connector N24		
		T10k	Connector		
				X	Cutting point
					Wiring colors may vary.

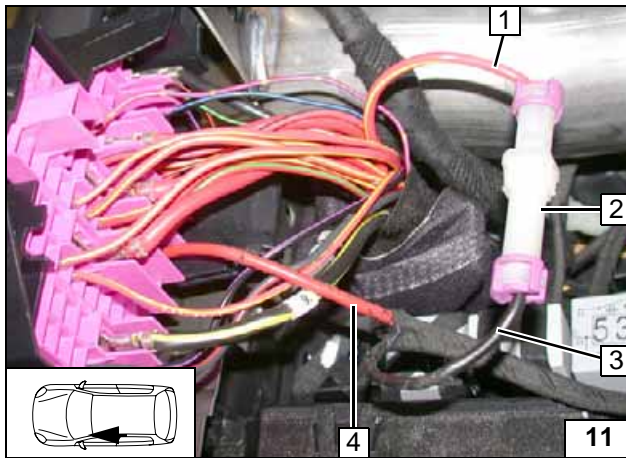
Legend



Connection on fuse carrier **2** (instrument panel at upper left). Remove red/yellow (rt/ge) 4² wire **1** on fuse output of fan SC 22 or SC40 (depending on respective vehicle equipment).



**Connec-
tion to fuse
carrier**



Red (rt) wire from K3/87a **4** with crimped-on standard power timer engaged in fuse output SC 22 or SC40. Produce connections as shown in wiring diagram.

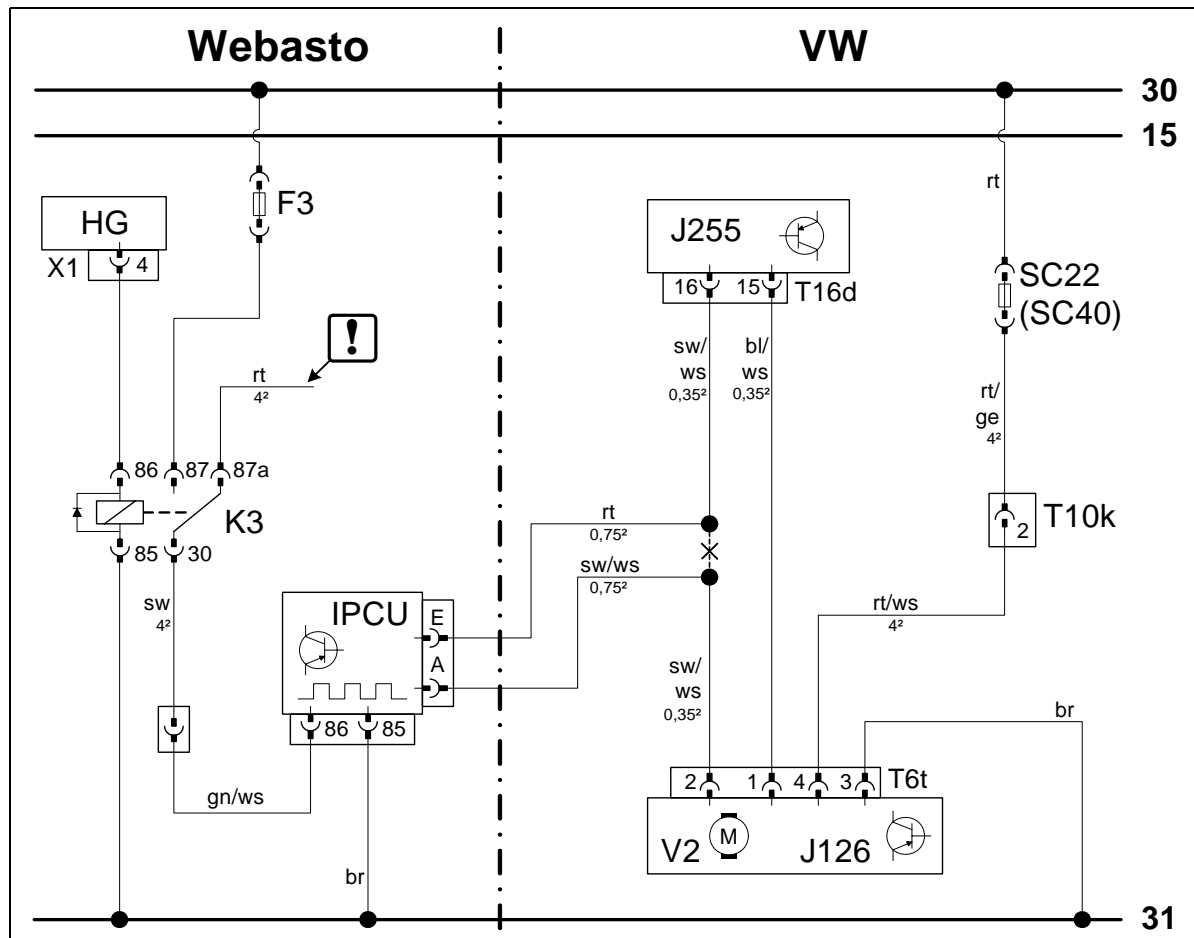


**Connect-
ing wires**

- 1** Red/yellow (rt/ge) wire of fuse SC22 or SC40
- 2** AMP housing
- 3** Black (sw) wire to K3/30



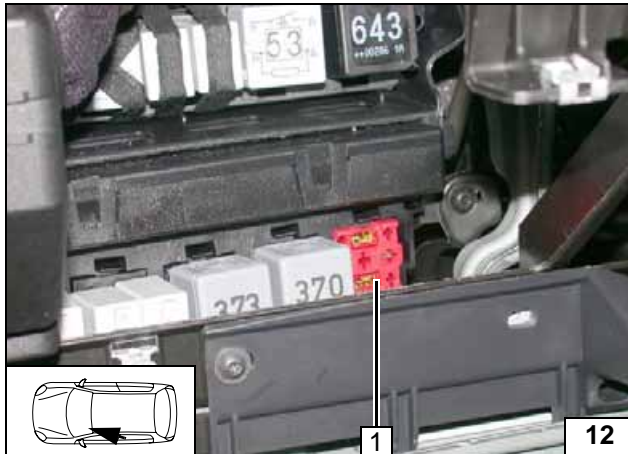
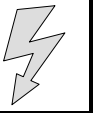
Climatronic fan controller



Climatronic wiring diagram

Webasto components		Vehicle components		Colors and symbols	
HG	Heater unit TT-C/E	SC22 (SC 40)	40 A fan fuse (depending on respective fuse assignment)	rt	red
X1	6-pin heater unit connector	T10k	Plug connections	ws	white
K3	Fan relay	J255	Climatronic control unit	sw	black
F3	Replace 25 A fuse with 3 A fuse	T16d	16-pin connector J255	br	brown
IPCU	Pulse width modulator	J126	Fan controller	gn	green
IPCU adjustment values		V2	Fan motor	ge	yellow
Voltage: 8 V		T6t	6-pin connector J126	bl	blue
Frequency: 400 Hz				!	Insulate wire end and tie back
Duty cycle: 30 %				X	Cutting point
Function: High-side					

Legend

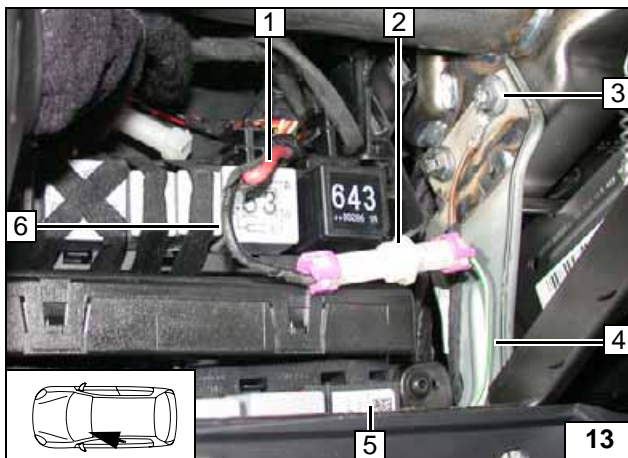


Produce connections as shown in wiring diagram.
Position of free sockets dependent on vehicle equipment.

1 IPCU socket



Installing IPCU socket

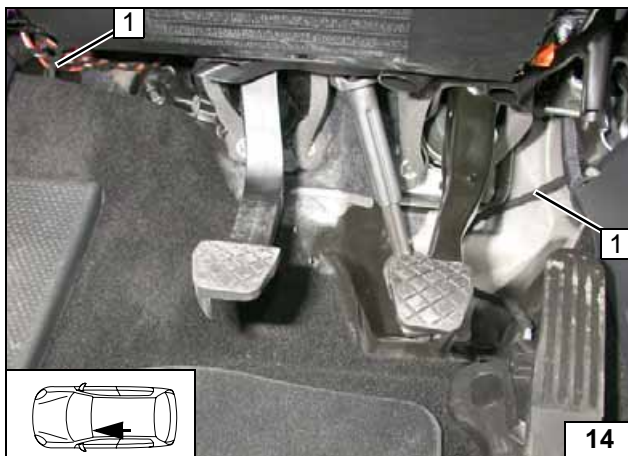


Insulate red (rt) wire K3/87a 1 and tie back.
Produce connections as shown in wiring diagram.

- 2 AMP connector
- 3 Brown (br) wire of IPCU/85, original vehicle ground support point
- 4 Green/white (gn/ws) wire of IPCU/86
- 5 Connect IPCU
- 6 Black (sw) wire from K3/30



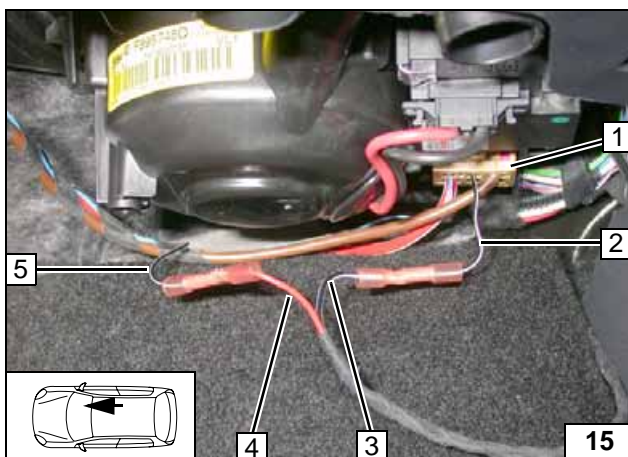
Connecting IPCU



Route wiring harness of IPCU 1 to center console.



Routing wiring harness from IPCU

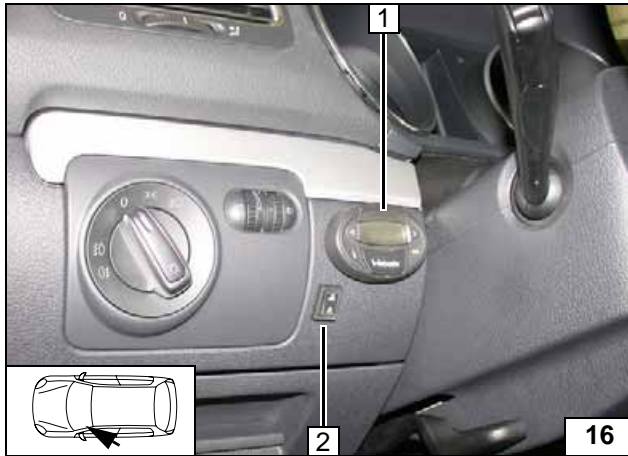
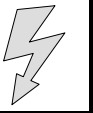


Route wiring harness of IPCU 1 to fan unit.
Connection on connector of fan unit 1.

- 2 Black/white (sw/ws) wire of connector T6t/2
- 3 Black/white (sw/ws) wire of IPCU/A
- 4 Red (rt) wire of IPCU/E
- 5 Black/white (sw/ws) wire of A/C control panel



Connection to fan unit

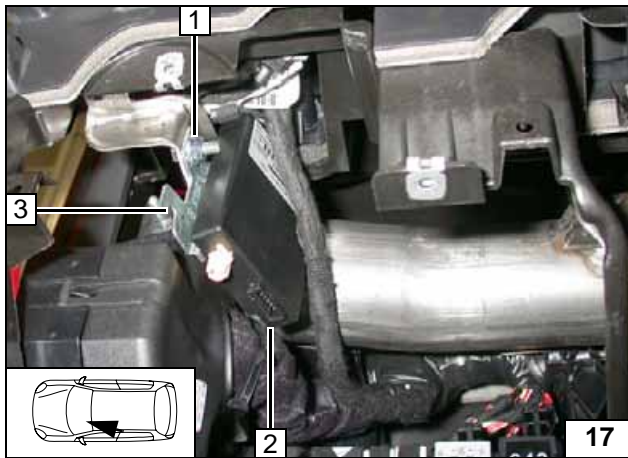


Digital timer, summer/winter switch option

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



Digital timer



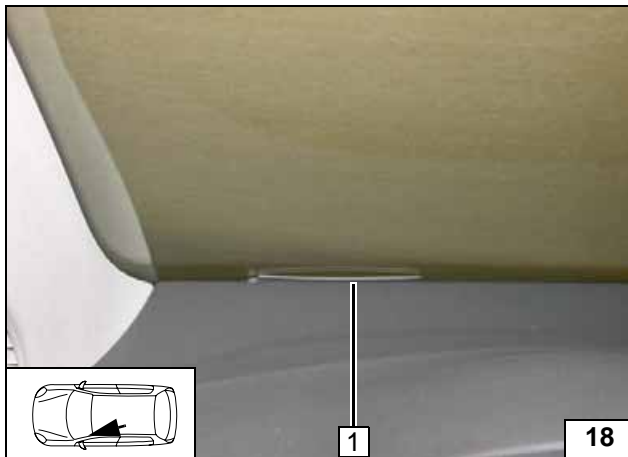
Remote option (Telestart)

Drill out bracket 3 to 6.5 mm dia. at position 1.

- 1 Existing hole, M6x20 bolt, flanged nut
- 2 Receiver



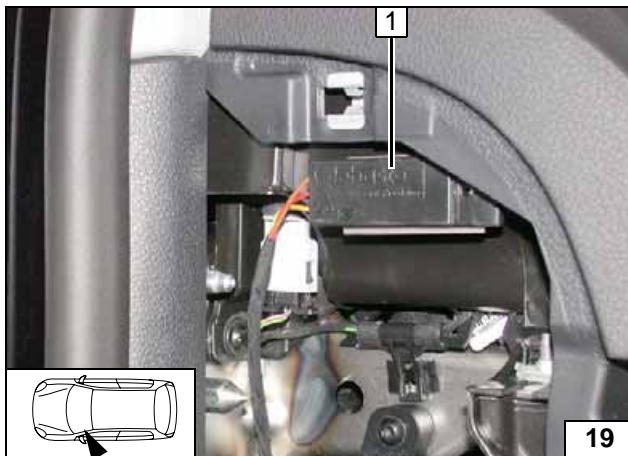
Installing receiver



- 1 Antenna



Installing antenna

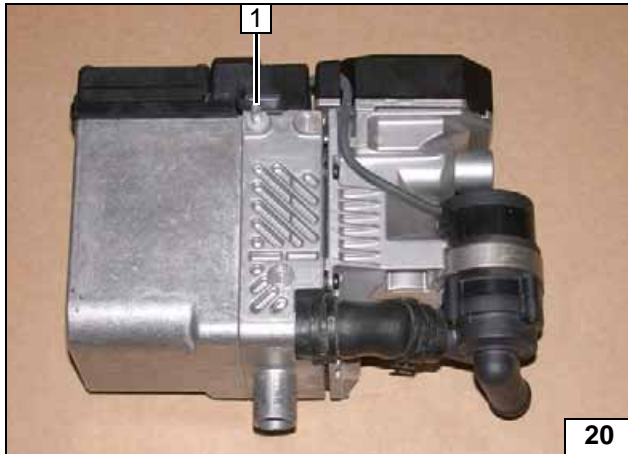
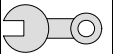


Temperature sensor HTM 100

Fasten temperature sensor 1 with double-sided adhesive tape.



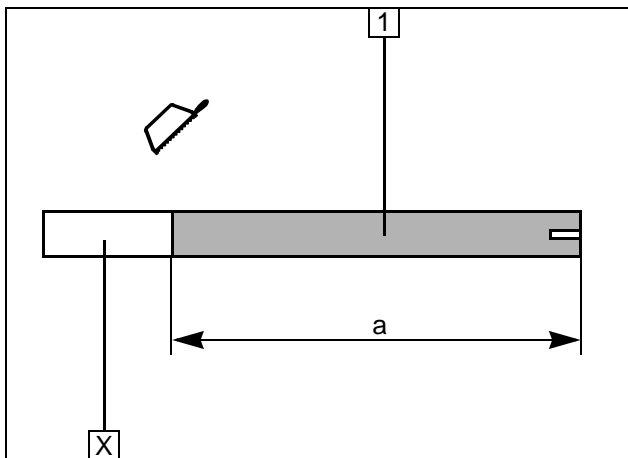
Installing temperature sensor



Premount heater unit

- 1 Ejet stud

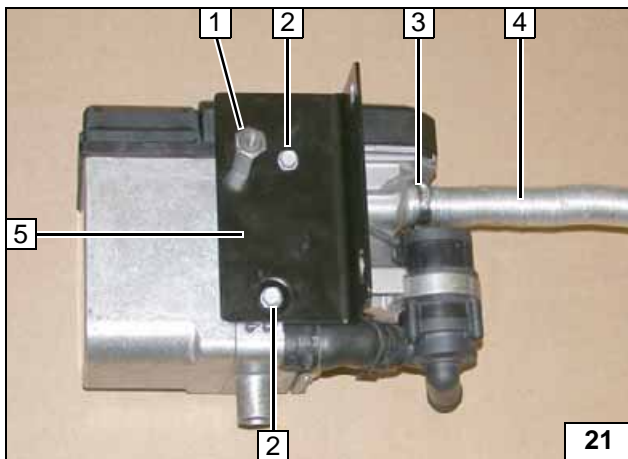
Premounting heater unit



- 1 Combustion air pipe
a = 250

Discard section X

Cutting combustion air pipe to length

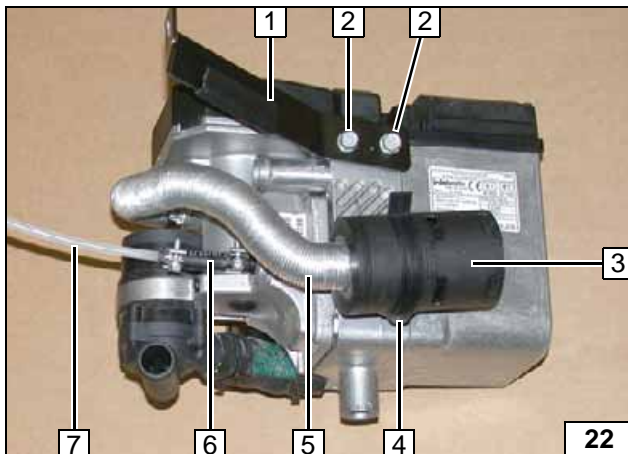


Insert one washer each between heater unit and bracket at positions 2.

- 1 M6x30 spacer nut
- 2 Ejet screw, washer [2x each]
- 3 27 mm dia. hose clamp
- 4 Combustion air pipe
- 5 Bracket

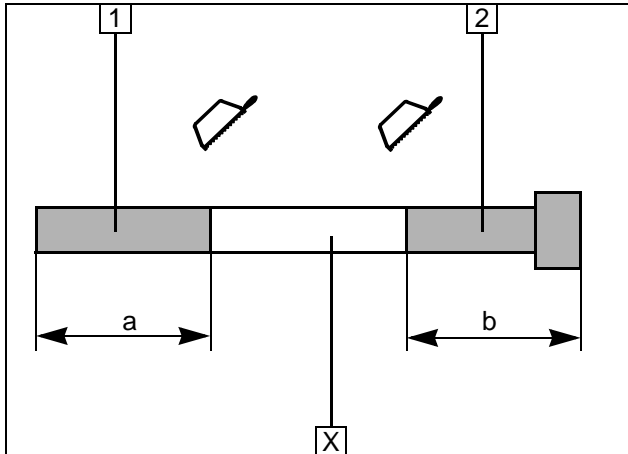
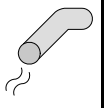


Premounting heater unit



- 1 Strut
- 2 Ejet screw [2x]
- 3 Muffler
- 4 Retaining clip in hole
- 5 Combustion air pipe
- 6 Hose section, 10 mm dia. hose clamp [2x]
- 7 Fuel line

Premounting heater unit



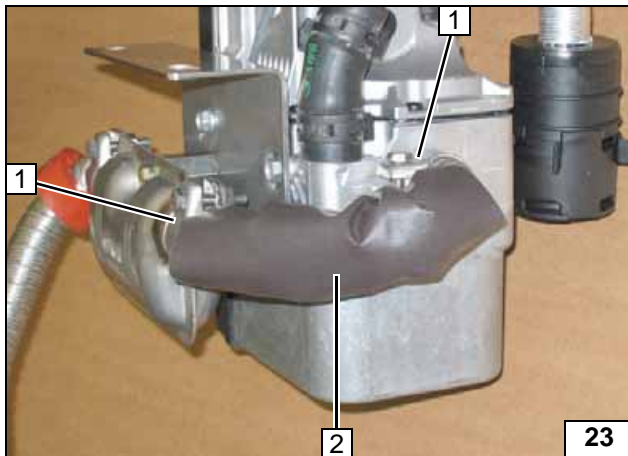
Preparing exhaust system

- 1 Exhaust pipe
a = 190
- 2 Exhaust end section
b = 240

Discard section X



**Cutting ex-
haust pipe
to length**

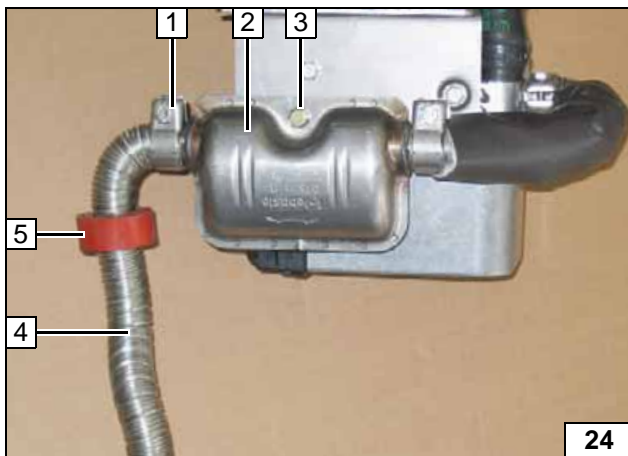


Slide insulation 2 onto exhaust pipe.

- 1 Hose clamp [2x]



**Preassem-
bling ex-
haust pipe**



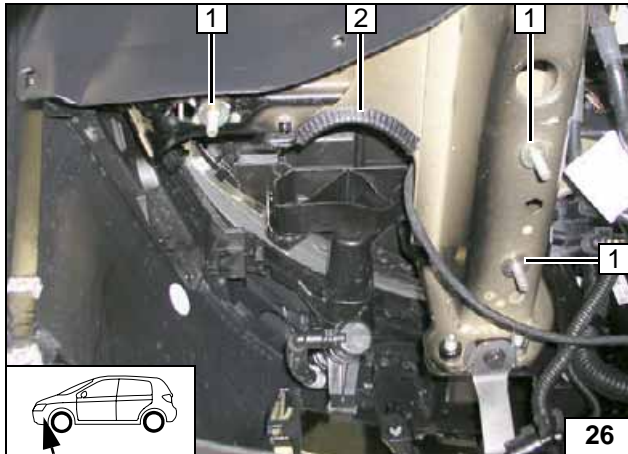
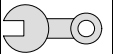
- 1 Hose clamp
- 2 Muffler
- 3 M6x16 bolt, spring lockwasher on spacer nut
- 4 Exhaust end section
- 5 Red (rt) rubber isolator

**Premount-
ing muffler
and ex-
haust
end
section**



- 1 Exhaust end section

**Aligning
exhaust
end sec-
tion**



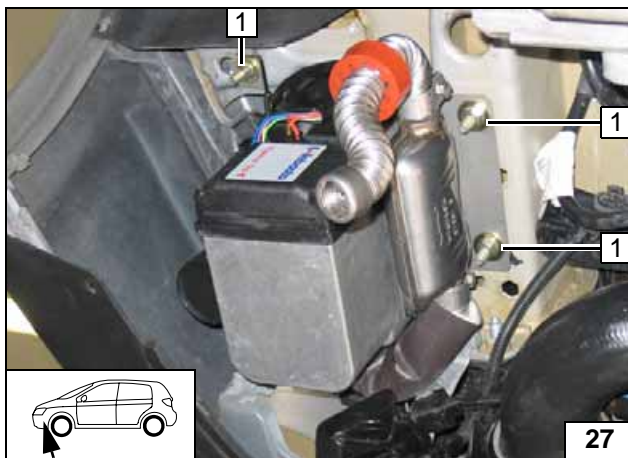
Preparing installation location

Secure large diameter washer against falling with putty etc.

- 1 Large diameter washer on original vehicle stud bolt [3x]
- 2 100 mm edge protection



Preparing installation location

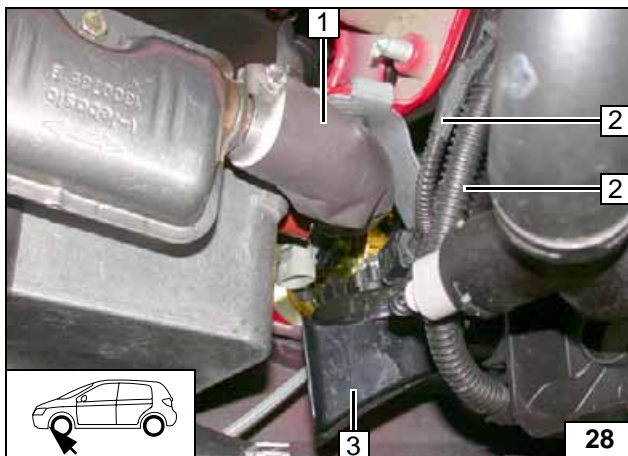


Installing heater unit

- 1 Large diameter washer, flanged nut M8 [3x]



Installing heater unit

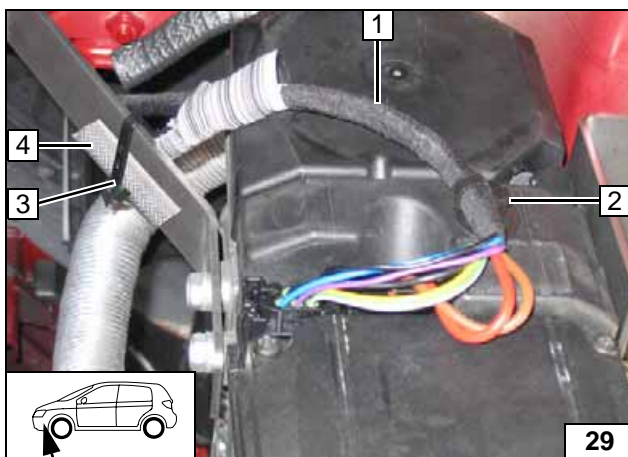


Ensure freedom of movement of exhaust system relative to original vehicle component and lines.

- 1 Exhaust pipe
- 2 Original vehicle wiring harnesses (secured with cable ties)
- 3 Horn



Aligning exhaust system



Punch through perforation of heater unit lid at position 2. Mount clip cable tie 2 and fasten wiring harness of heater unit 1.

- 3 Cable tie
- 4 50 mm edge protection



Connecting wiring harness



Fuel Connection

CAUTION!

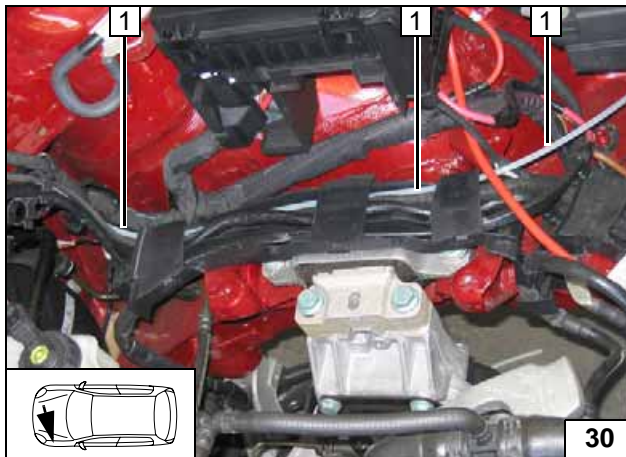
Open the vehicle's fuel tank cap, ventilate the tank and then re-close the tank lock.

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.

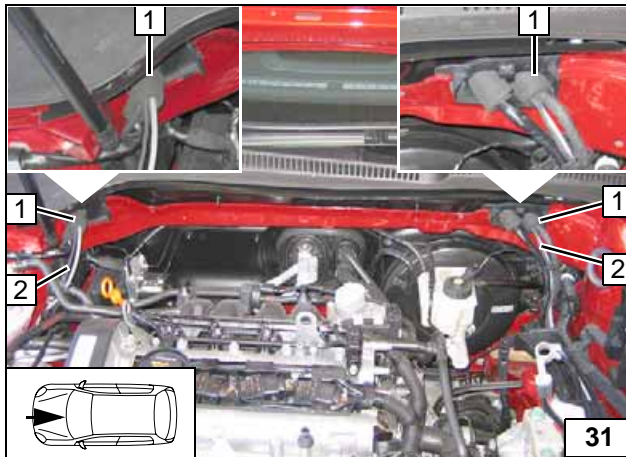
WARNING!

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



1 Fuel line

Installing fuel line

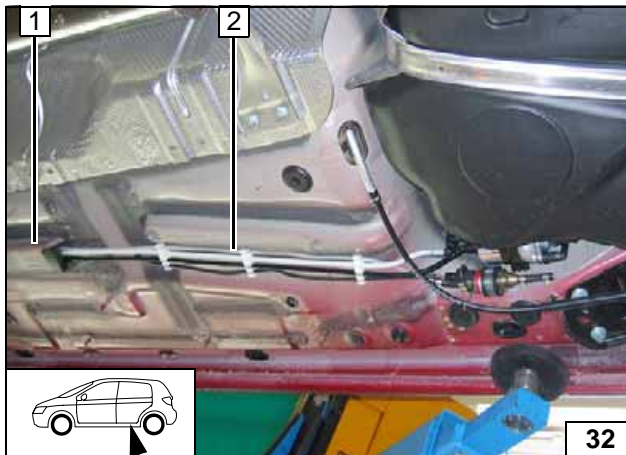


Route fuel line and wiring harness of metering pump **2** in coolant reservoir to right and fasten on original vehicle lines with cable ties. Pay particular attention to freedom of movement of wiper linkage. Route fuel line and wiring harness of metering pump to underbody in line duct.

2 Existing pass through [2x]



Installing lines

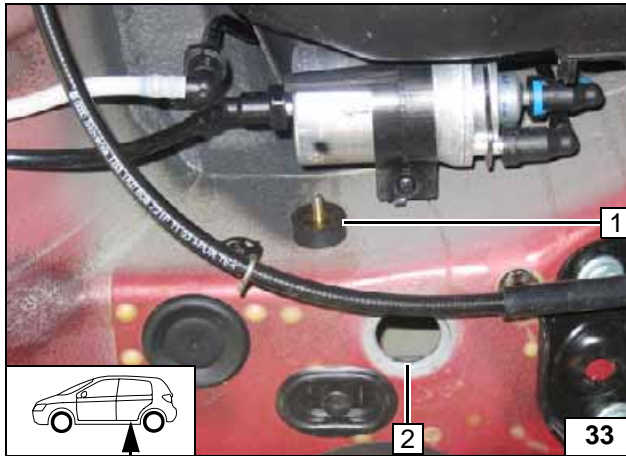


Route fuel line and wiring harness of metering pump along original vehicle fuel lines **2** to fuel tank.

1 Line duct

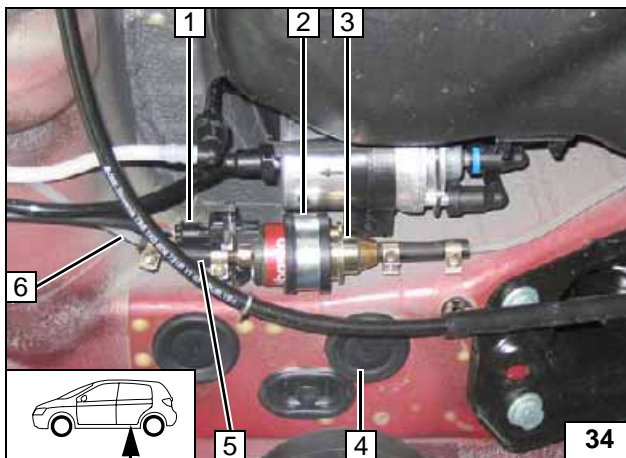


Installing lines



- 1 Silent block, large diameter washer, M6 flanged nut
- 2 Remove sealing plug

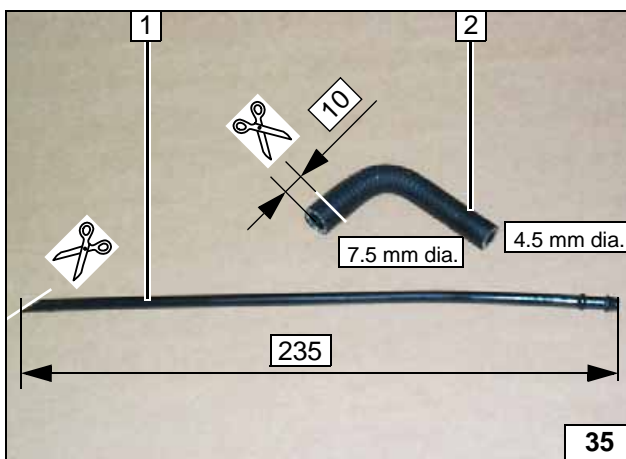
Installing silent block



- 1 Wiring harness of metering pump, connector mounted
- 2 Secure rubber-coated p-clamp on silent block with flanged nut
- 3 Metering pump
- 4 Plug reinserted
- 5 Hose section, 10 mm dia. hose clamp [2x]
- 6 Fuel line

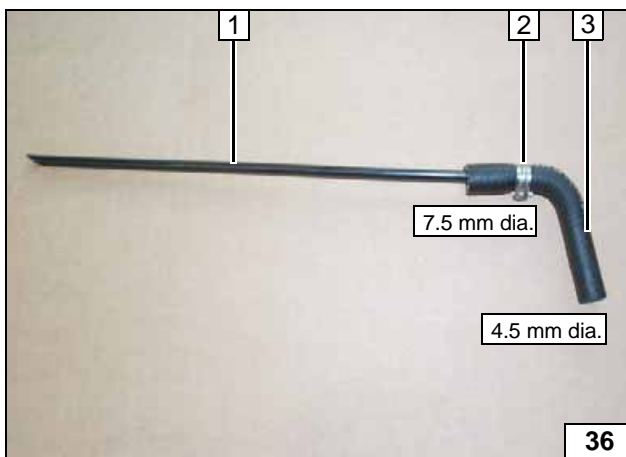


Installing metering pump



- 1 Standpipe
- 2 Molded hose

Cutting standpipe and molded hose to length

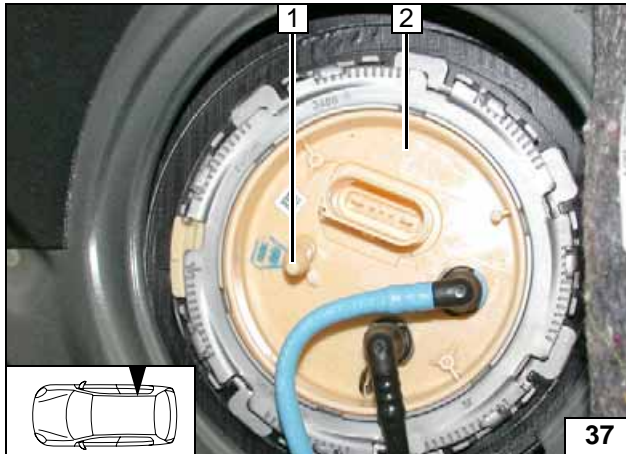


10 mm dia. Caillau clamp 2 in center between beads on end of standpipe.

- 1 Standpipe
- 3 Molded hose



Premounting standpipe and molded hose

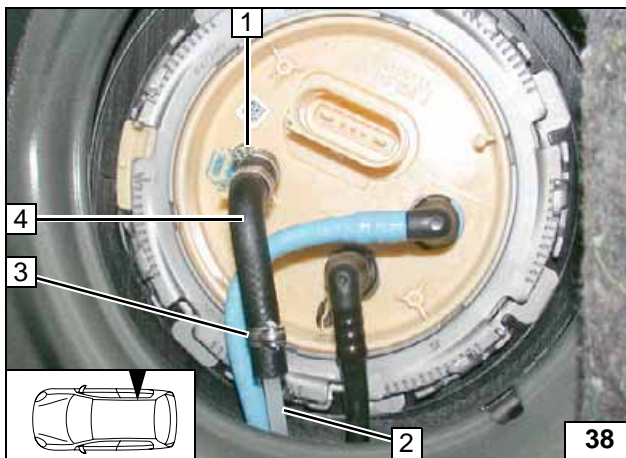


Cut 3 mm off blind plug 1.

2 Fuel-tank sending unit



Cutting off blind plug



Ensure sufficient distance to adjacent components, especially to fuel gauge!

1 13.5 mm dia. Caillau clamp

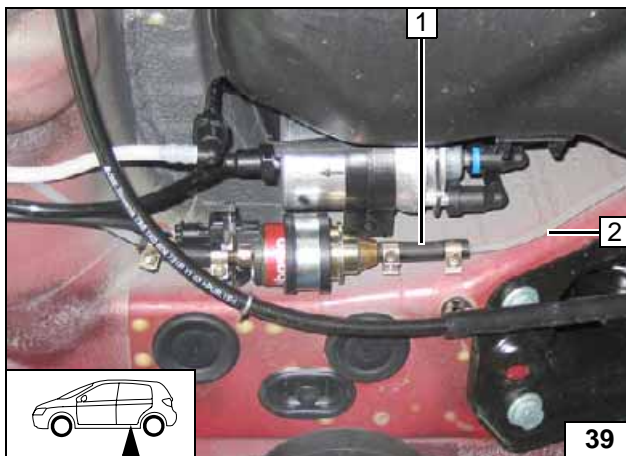
2 Fuel line

3 10 mm dia. Caillau clamp

4 Molded hose with standpipe



Connection to fuel-tank sending unit

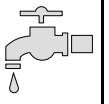


1 Hose section, 10 mm dia. hose clamp [2x]

2 Fuel line



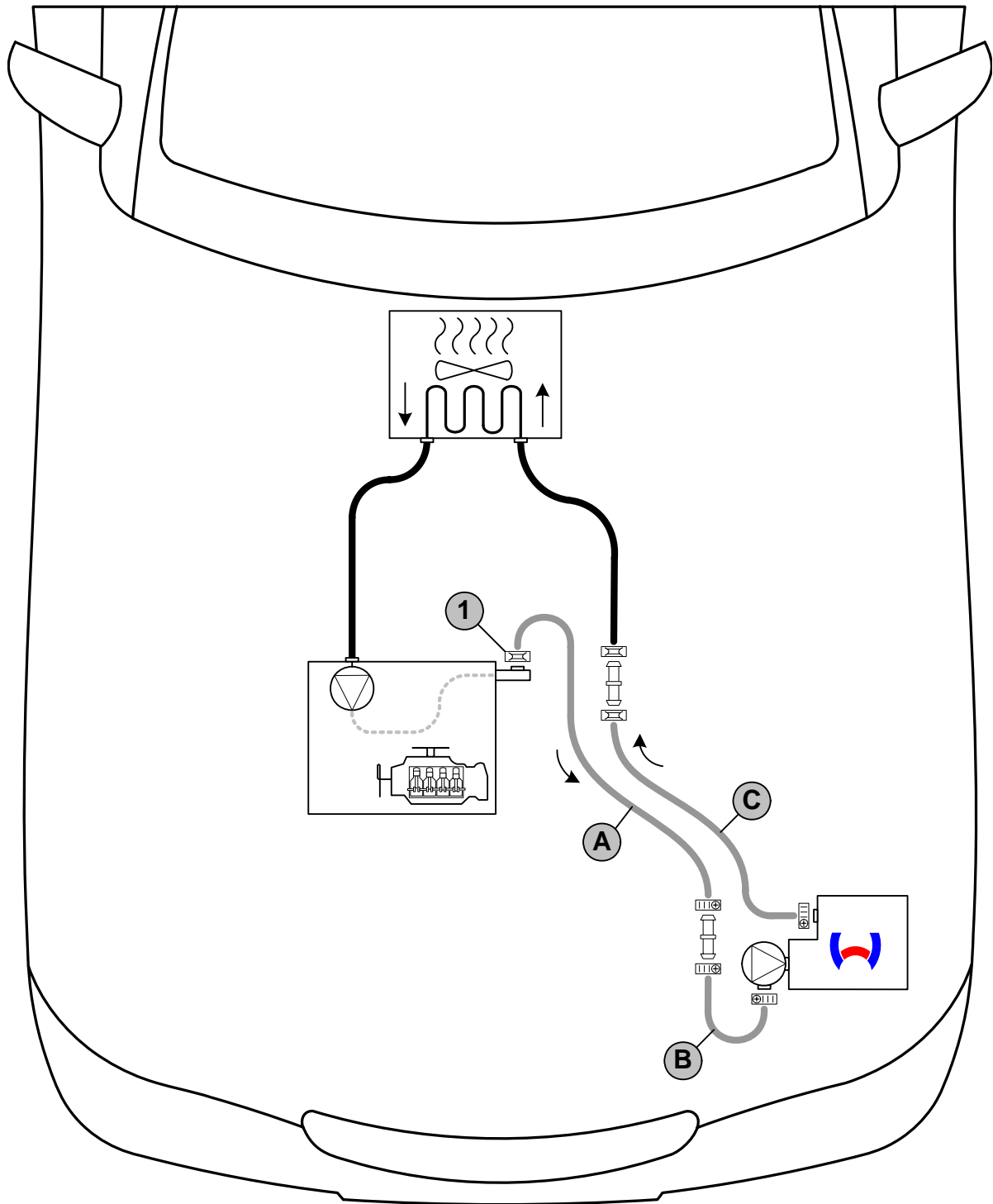
Connecting metering pump







Coolant

WARNING!

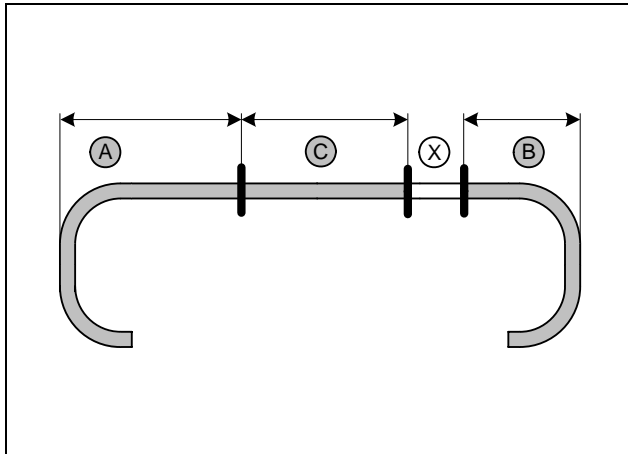
Any coolant running off should be collected using an appropriate container. Install coolant hoses kink-free. Unless specified otherwise, always fasten using cable ties. Position clamps so that no other hose can be damaged! When installing the coolant hose, the heater unit must be filled with coolant.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



Coolant routing diagram

All spring clips without a specific designation  = 27 mm dia. 1 = Original vehicle spring clip  . All hose clamps  = 20-27 mm dia. All connecting pipes  = 20x20 mm dia.

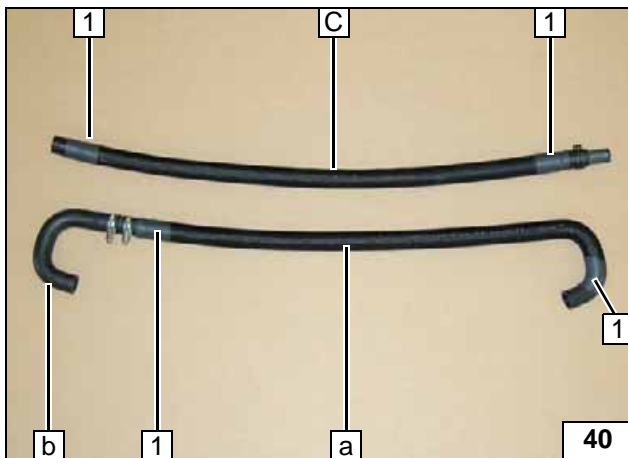




a = 670
b = 120
c = 770

Discard section X

Cutting coolant hoses to length

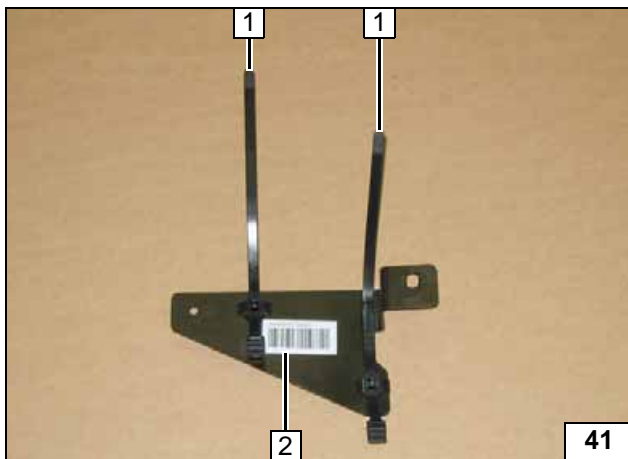


Push braided protection hoses onto hose A and C, cut to length and shrink.

1 Heat shrink plastic tubing [4x]



Preassembling coolant hoses



1 Clip-type cable tie [2x]
2 Bracket for coolant hoses

Preparing bracket for coolant hoses

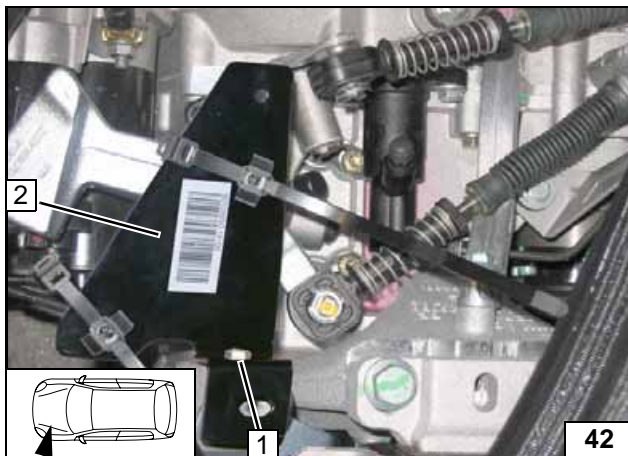
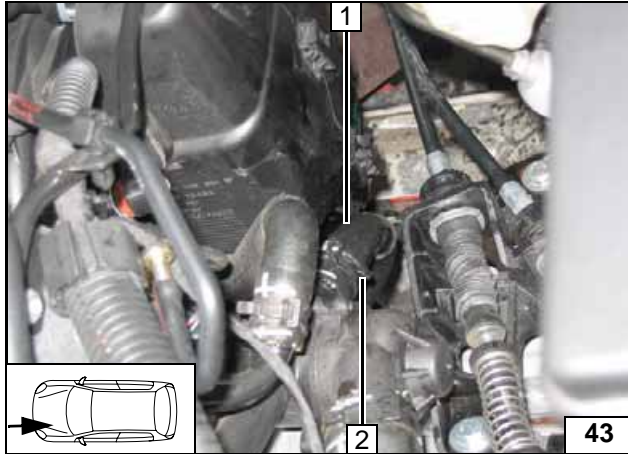
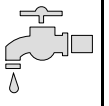


Figure shows vehicle with manual transmission

1 M6x20 bolt, original vehicle hole, flanged nut
2 Bracket for coolant hoses

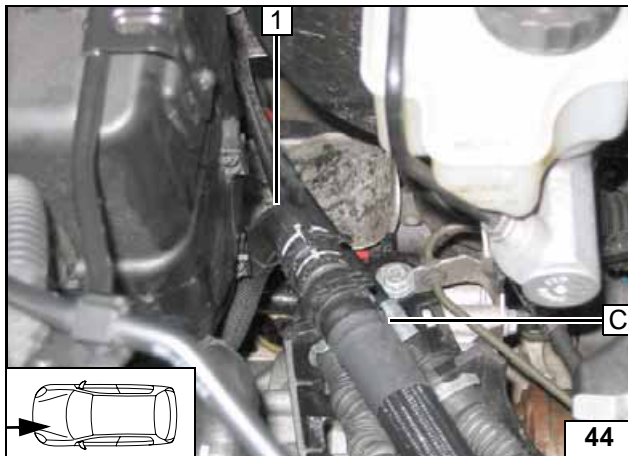
Installing bracket for coolant hoses



Pull off hose on engine outlet/heat exchanger inlet **1** on connection piece of engine outlet. Spring clip **2** will be reused.

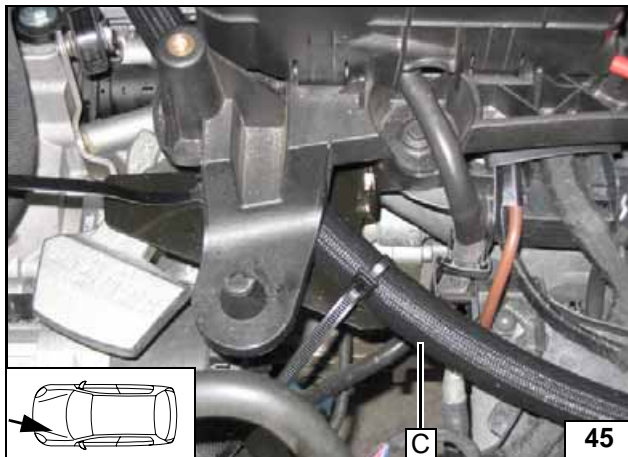


Cutting point

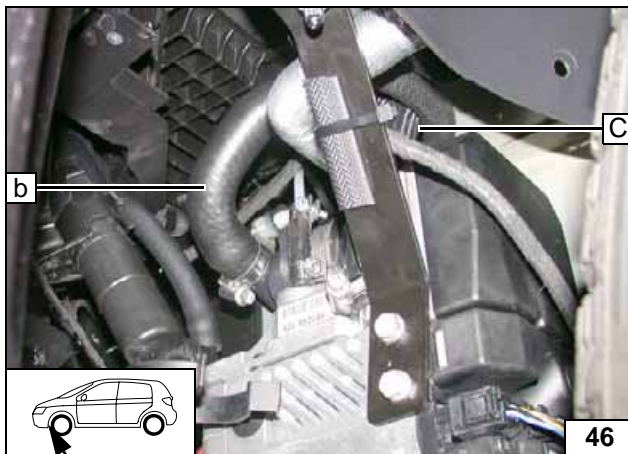


1 Hose on heat exchanger inlet

**Connect-
ing heat
exchanger
inlet**



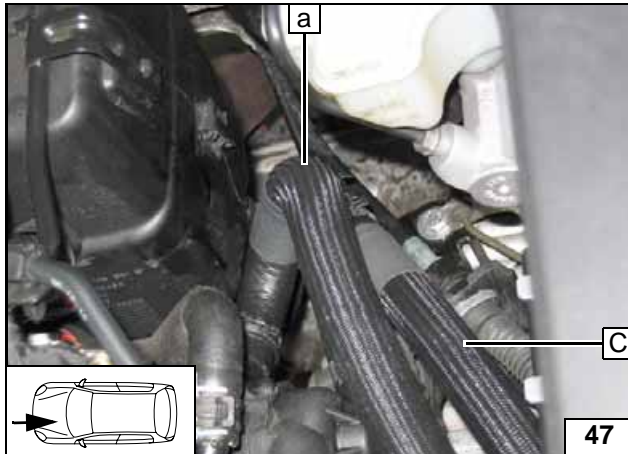
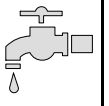
**Routing in
engine
compart-
ment**



Combustion air muffler tied back for demon-
stration purposes.



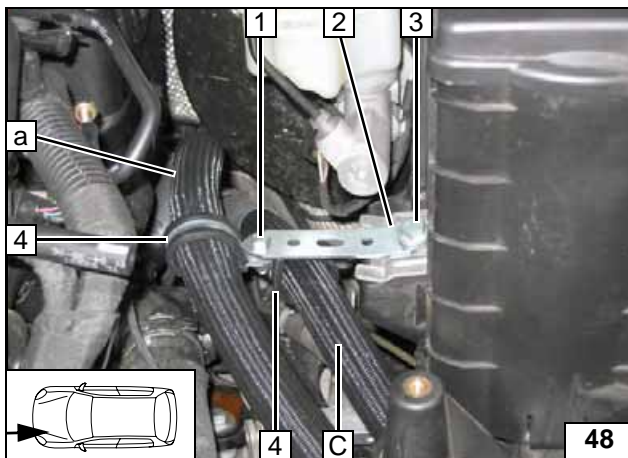
**Connect-
ing heater
unit**



Install hose **A** with 180° elbow on connection piece of engine outlet.



**Connect-
ing engine
outlet**

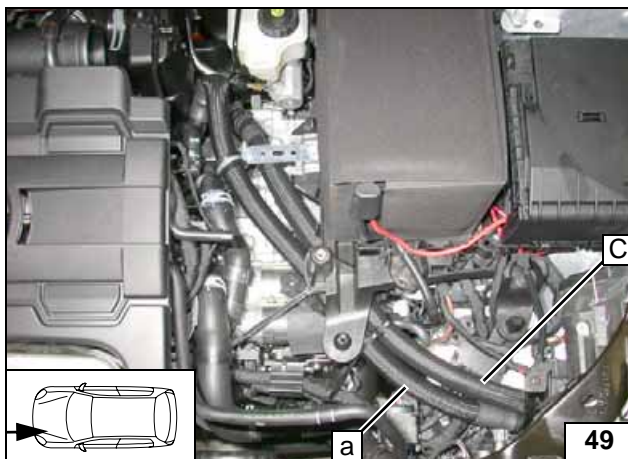


Drill out perforated bracket **2** to 8.5 mm dia. at position **3**.

- 1** M6x20 bolt, flanged nut
- 3** Original vehicle bolt
- 4** 29 mm dia. rubber-coated p-clamp [2x]



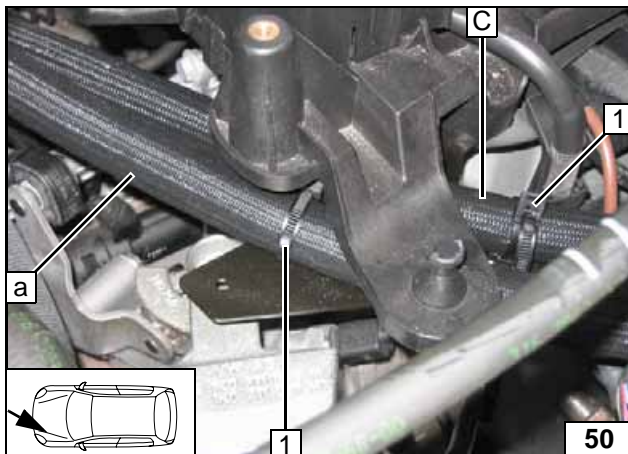
**Fastening
hoses**



Ensure sufficient distance to neighboring components.



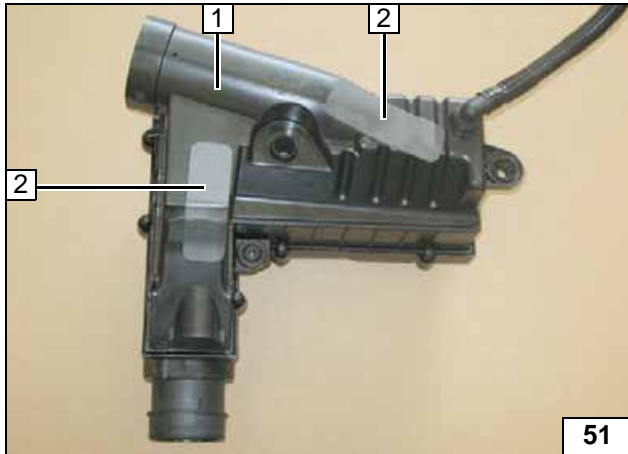
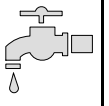
**Aligning
hoses**



Fix hose **A** and **C** in place with clip-type cable ties **1** [2x].



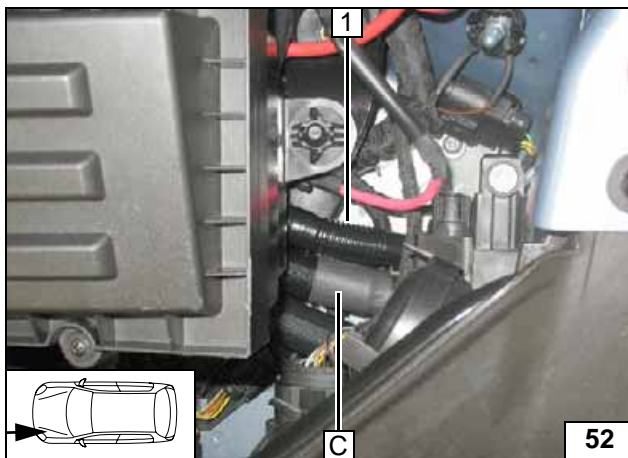
**Fastening
hoses**



Position of drain pipe may vary!
Glue rub protection 2 [2x] onto air filter box 1 as shown.



**Preparing
air filter
box**

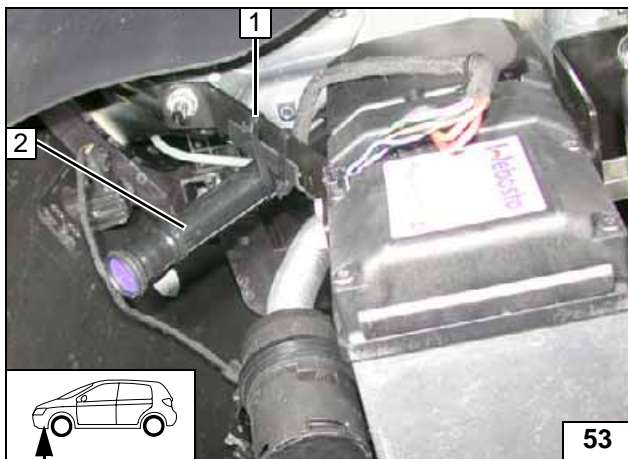


Version 1:

If drain pipe 1 present as shown, then route parallel to water hose C.



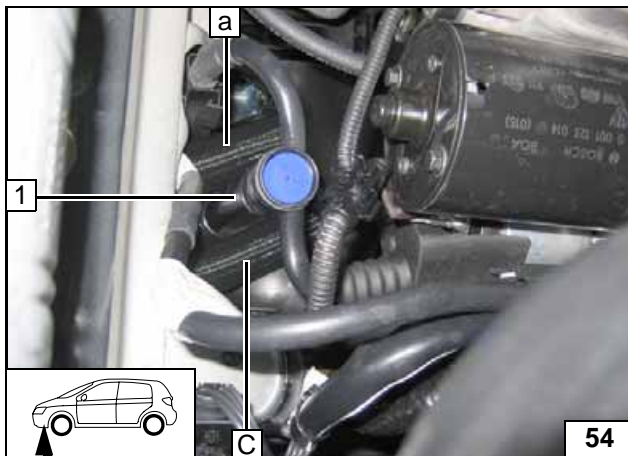
**Installing
air cleaner
housing**



If drain pipe 2 is present as shown, then fasten on strut with cable tie 1.



**Fastening
drain pipe
on air filter
box**

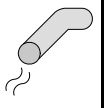


Version 2:

If drain pipe 1 is present as shown, then route between coolant hoses A and C.



**Installing
air cleaner
housing**



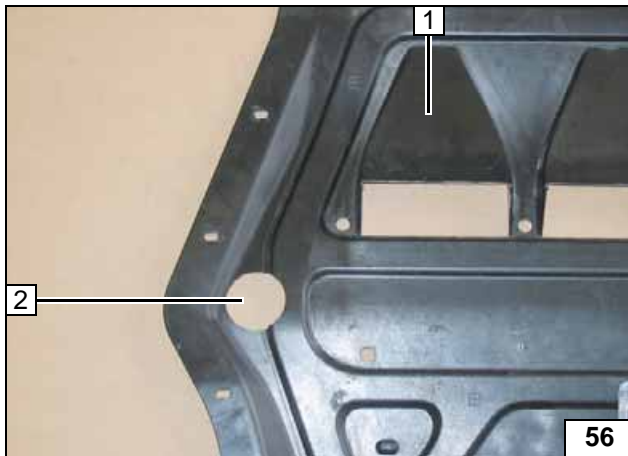
Exhaust gas

Ensure sufficient spacing of exhaust end section to transmission and to wheel well trim. (Picture shows vehicle with direct shift transmission)

- 1 Wheel well trim



Aligning exhaust end section

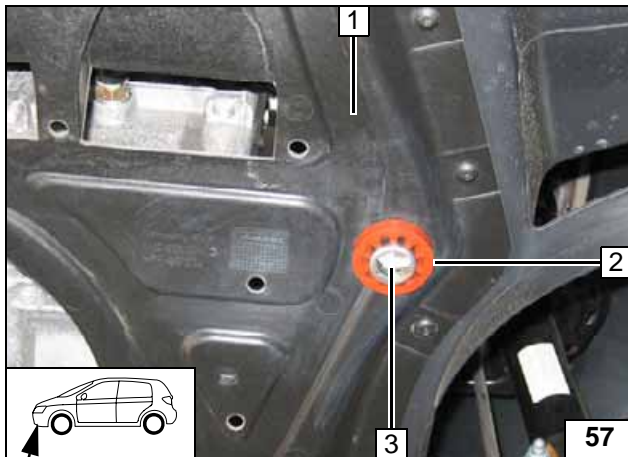


Remove insulation at position **2** if present.

- 1 Underride protection
- 2 42 mm dia. hole



Hole in underride protection

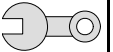


Align exhaust end section **3** flush on red rubber isolator **2**.

- 1 Underride protection



Mounting rubber isolator



Final Work

WARNING!

Reassemble the disassembled components in reverse order.

Check all hoses, spring and Caillau clamps, as well as all electrical connections for firm seating.

Secure all loose cables using cable ties.

Spray heater unit components with anti-corrosion wax (Tectyl 100K, Order No. 111 329).

- Connect the battery.
- Fill and bleed the coolant circuit according to the vehicle manufacturer's specifications.
- Set the digital timer.
- Adjust vehicle heater in accordance with "Operating Instructions for End Customer".
- Check the proper operation of the additional heater, see the operating instructions/installation instructions.
- File included vehicle-specific "Operating Instructions for End Customer" in vehicle logbook.
- 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.



Note:

We recommend matching the heating time to the driving time.

Heating time = driving time

Example:

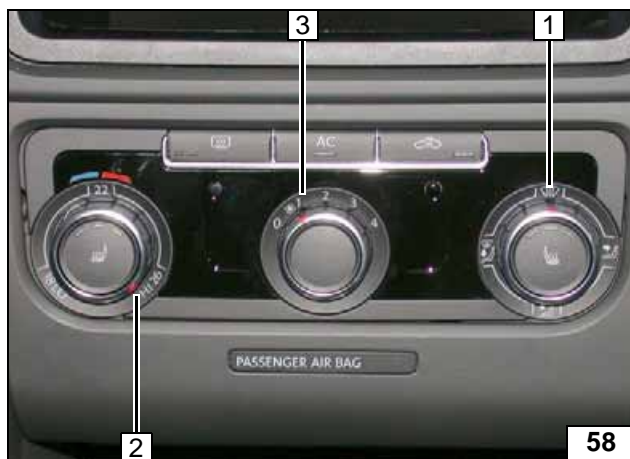
For a driving time of approx. 20 min. (in one direction), we recommend not exceeding a switch-on time of 20 min.

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 .

WARNING:

The passenger compartment monitoring must be deactivated for the duration of the heater operation!

Before parking the vehicle, make the following settings:



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



- 1 Air outlet to windshield
- 2 Set temperature on both sides to "HI".

Climatic

Climatronic