

# Water Heater



**Thermo Top E Parking Heater**

e1  
00 0003

**Thermo Top C Parking Heater**

e1  
00 0002

## Installation documentation

### VW Tiguan

Petrol and Diesel  
from Model Year 2008  
Left-hand drive vehicle  
Climatronic



#### **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, specialised tools and equipment are required to install and repair Webasto heating and cooling systems. Only original Webasto parts must be used. For this, also see the catalog of air and water heater accessories from Webasto.

**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.

**The initial startup is to be executed with the Webasto Thermo Test Diagnosis.**

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	Tiguan	5N	e1 * 2001/116 * 0450

Engine type	Engine model	Output in kW	Displacement in cm <sup>3</sup>
BWK	Petrol	110	1390
CAWA	Petrol	125	1984
CAWB	Petrol	147	1984
CBAB	Diesel	103	1986
CAHB	Diesel	125	1986

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

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

## VW Tiguan

### Heater/Installation Kit

Quantity	Description	Order No.:
1	Retail accessories <i>Thermo Top E / C</i>	See price list
1	Installation kit for VW Tiguan Petrol and Diesel	1313473C
1	Heater control	See Price list

#### Other required parts

Quantity	Description	VW Order No.:
1	Plate washer	191 411 331

#### Also required with Climatronic:

Quantity	Description	Order No.:
1	Kit for Climatronic VW Tiguan	1313474A

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

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

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



### Foreword

This installation documentation applies to the vehicles VW Tiguan Petrol and Diesel - 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 this installation documentation.

However, the stipulations in the "installation documentation", the "operating instructions" and the "installation instructions" for the *Thermo Top C/E* must always be observed.

The corresponding rules of technology and any information from the vehicle manufacturer should be observed during the installation work.

### General Instructions

Installation should be carried out according to the general, standard rules of technology. Unless specified otherwise, fasten hoses, lines and wiring harnesses to original vehicle lines and wiring harnesses using cable ties.

Sharp edges should be fitted with rub protection (split-open plastic hose).

Spray unfinished body areas, e.g. drilled holes, with anti-corrosion wax (Tectyl 100K, Order No. 111329).

When installing an IPCU, check or adjust the corresponding settings before installation.

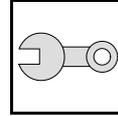
### Special Tools

- Torque wrench for 2.0 - 10 Nm
- Hose clamping pliers

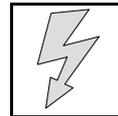
**Explanatory Notes on Document**

You will find an identification mark on the outside top right corner of the page in question to provide you with a quick overview of the individual working steps.

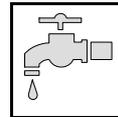
**Mechanical system**



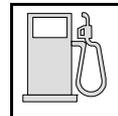
**Electrical system**



**Coolant circuit**



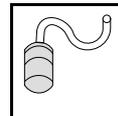
**Fuel**



**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!**

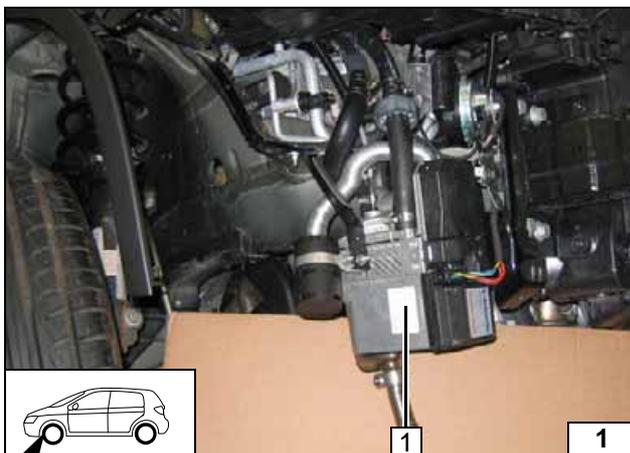
**Tightening torque of Ejet screws, Ejet studs = 10 Nm!**

## Preliminary Work

### WARNING!

- Open the fuel tank cap, ventilate the tank.
- Close the fuel tank cap again.
- Depressurise 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.
- Remove battery.
- Remove the battery carrier.
- Remove the engine cover.
- Remove the air filter (only on 2.0 TSI).
- Remove the right-hand charge-air tube.
- Remove the charge-air tube completely (only on 2.0 TSI).
- Remove the front right wheel well trim and detach on the left.
- Remove the bumper.
- Remove the underride protection
- Remove the right-hand underbody trim.
- Remove right rear single seat
- Open the right-hand tank-fitting service lid.
- Remove the footwell trim on the driver's side
- Remove the lower instrument panel trim on the driver's side
- Remove the footwell trim on the front passenger side

Remove page 31 "Operating Instructions for End Customer" and add to the vehicle operating instructions.



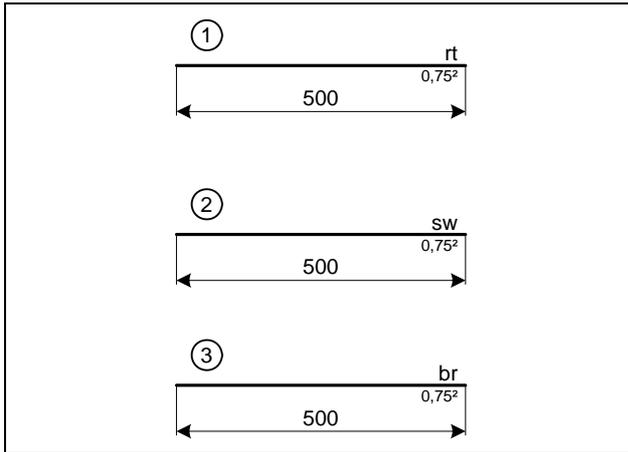
### Heater installation location

1 Heater

Installation location

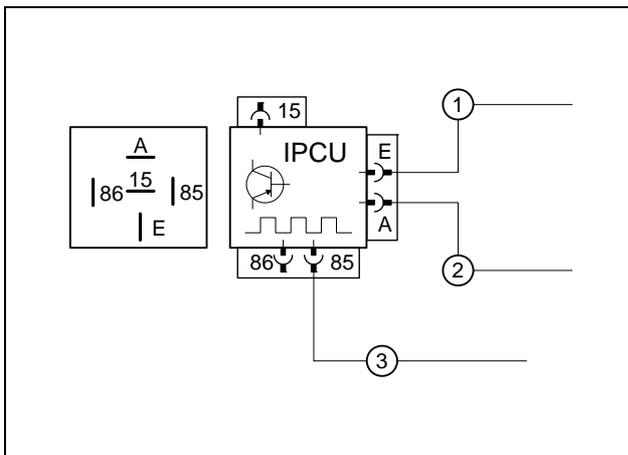


Preparing electrical system



Lines for IPCU

Install lines according to wiring diagram.



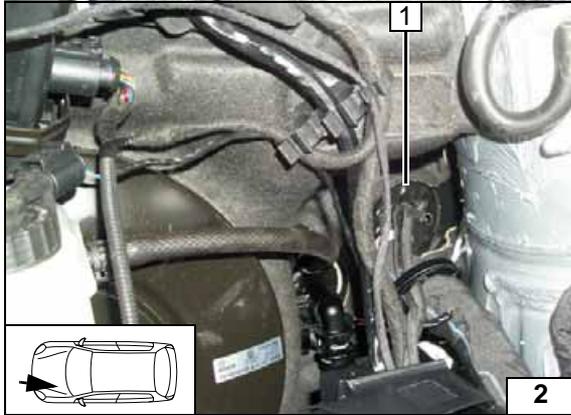
Preparing IPCU



**Electrical system**

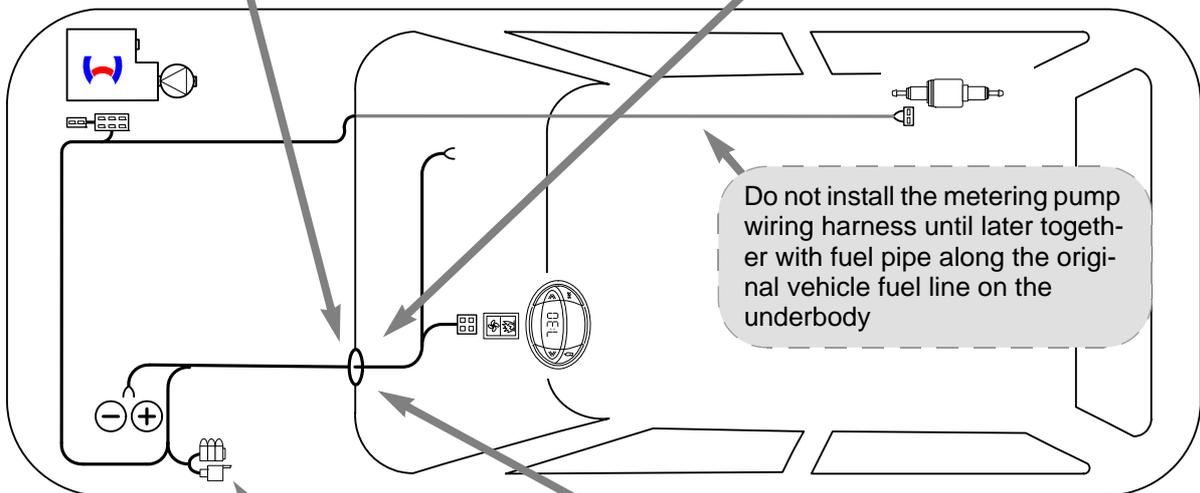
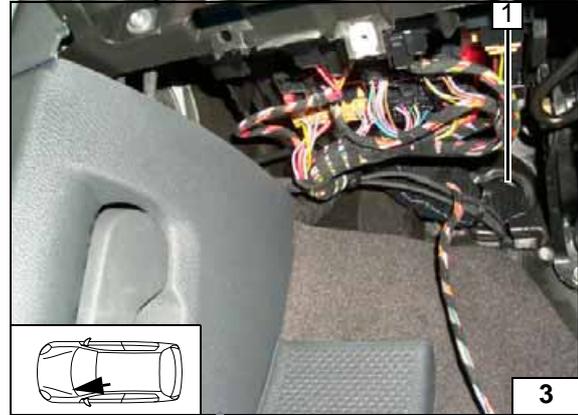
**Wiring harness pass through**

1 Original vehicle wiring harness pass through

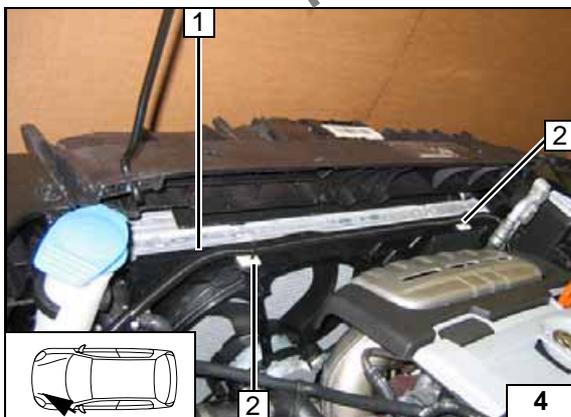


**Wiring harness pass through**

1 Original vehicle wiring harness pass through

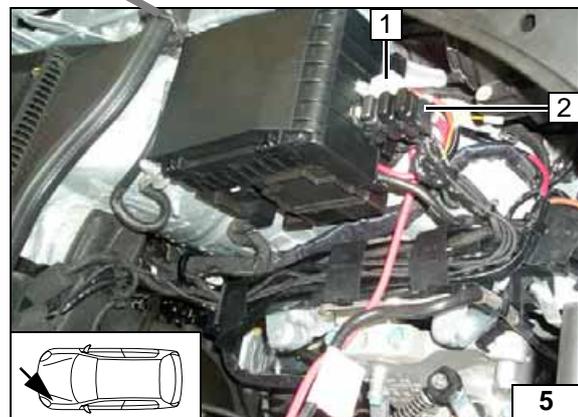


**Wiring harness routing diagram**



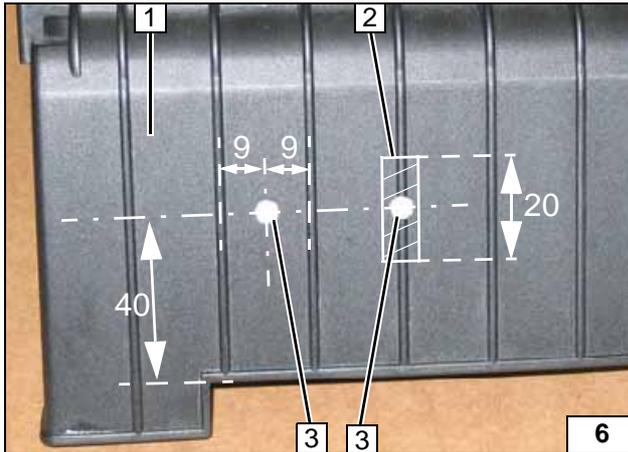
**Routing wiring harness**

1 Wiring harness of heater and wiring harness of metering pump in corrugated tube  
2 Adhesive base [2x]



**Fuse holder, K3 relay**

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



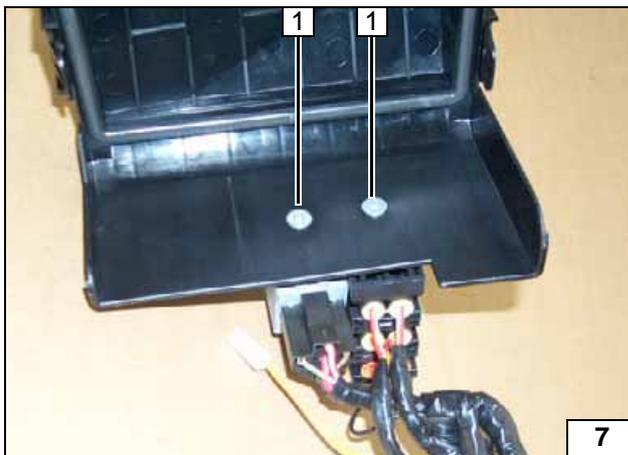
### Fuse holder and K3 relay

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** 5.0 mm dia. hole [2x]

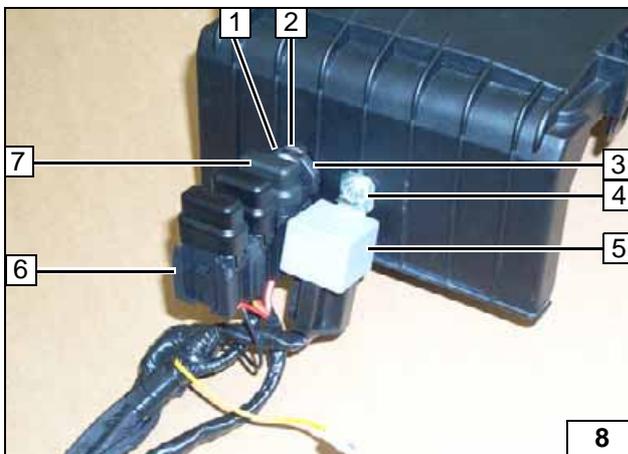


**Holes in cover**



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

**Installing fuse holder and relay K3**

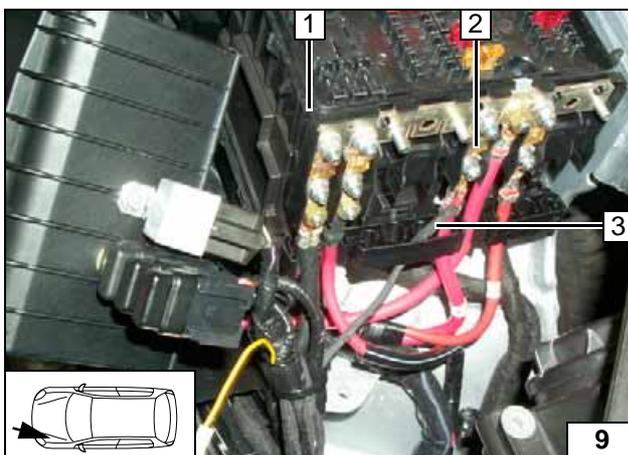


On vehicles with Climatronic, replace 25 A fuse F3 **7** with 3 A fuse provided.

- 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 relay K3**



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

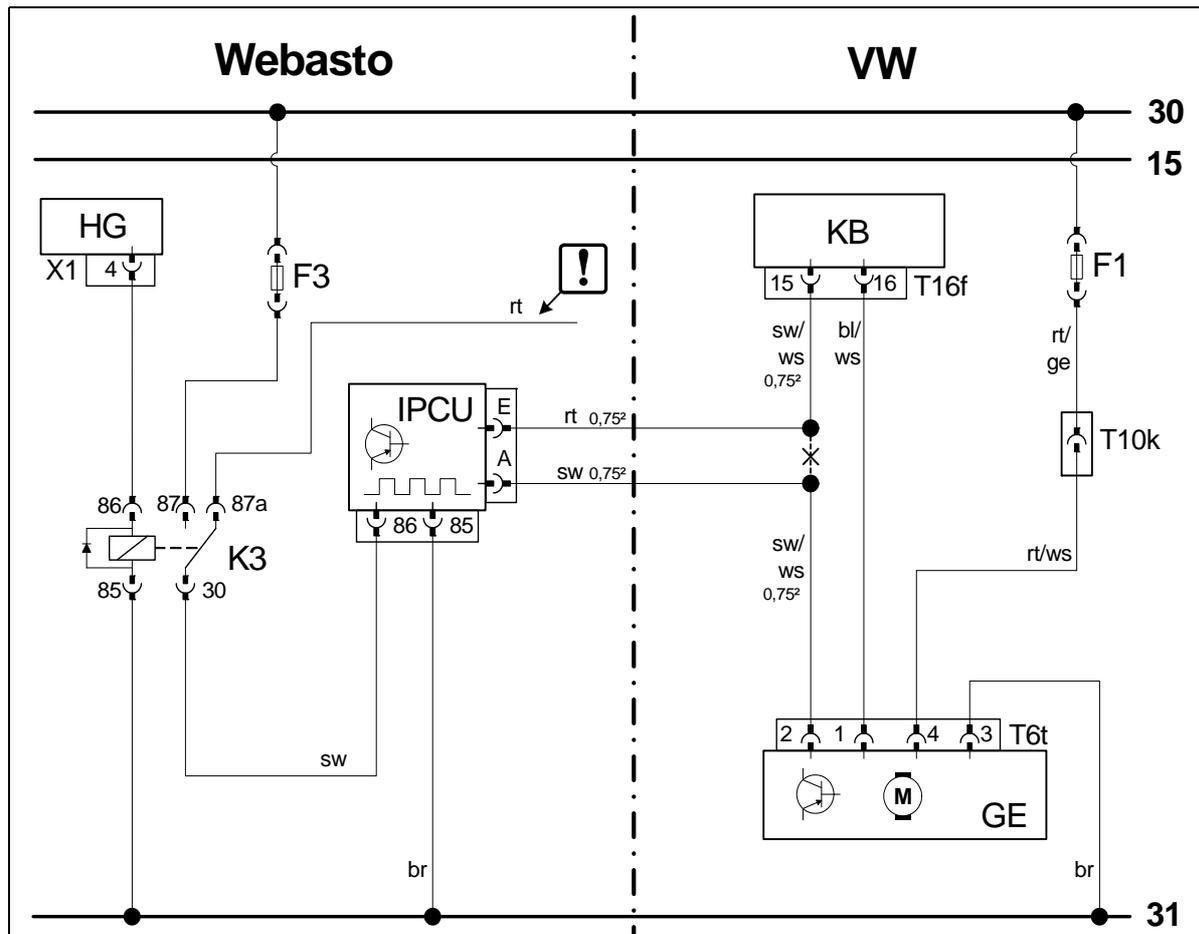
- 1** Fuse/relay carrier
- 2** Original main vehicle fuse
- 3** Red (rt) positive wire



**Connecting positive and earth wire**



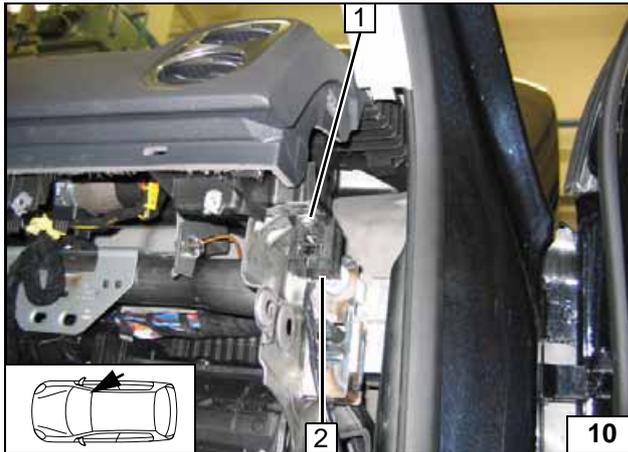
Fan control



Wiring diagram

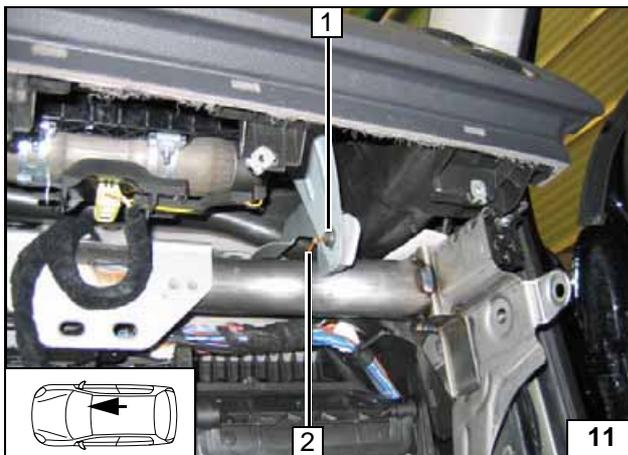
Webasto components		Vehicle components		Colours and symbols	
HG	Heater TT-C/E	F1	Fuse SC22 or SC56 with 40 A	rt	red
X1	6-pin heater connector	KB	Climatronic control unit J255	ws	white
K3	Fan relay	T10k	Plug connections	sw	black
F3	Fuse (25 A replaced with 3 A)	GE	Fan control unit J126 and fan motor V2	br	brown
IPCU	Pulse width modulator			gn	green
<b>IPCU adjustment values</b>				ge	yellow
Voltage: 8 V				bl	blue
Frequency: 400 Hz				!	Insulate wire ends and tie back
Duty cycle: 30%					
Function: High side				X	Cutting point

Legend



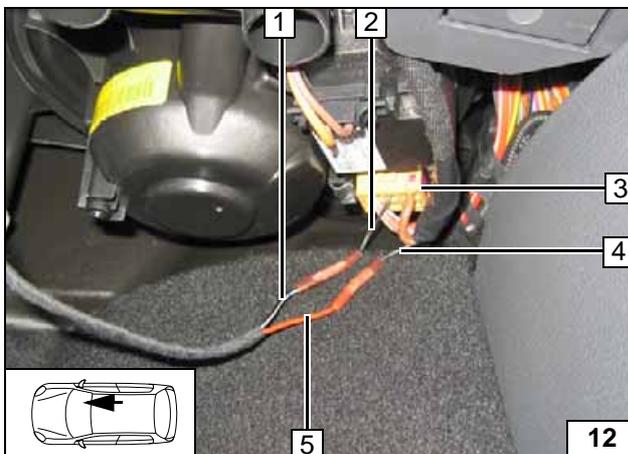
- 1 Original vehicle bolt
- 2 IPCU socket

**Installing IPCU**



- 1 Original vehicle bolt
- 2 Brown (br) wire of IPCU/85

**Connec-  
tion to  
IPCU earth**



- 1 Black (sw) wire of IPCU/A
- 2 Black/white (sw/ws) wire of connector T6t/2
- 3 Connector T6t
- 4 Black/white (sw/ws) wire of Climatronic connector T16f/15
- 5 Red (rt) wire of IPCU/E

**Connect-  
ing wires**

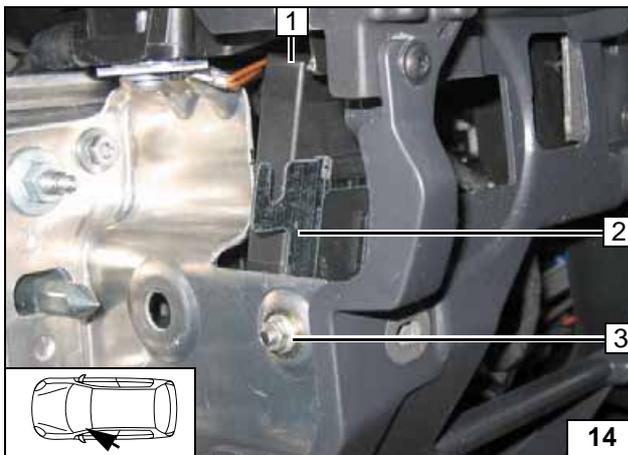


**Digital timer**

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



**Installing digital timer**



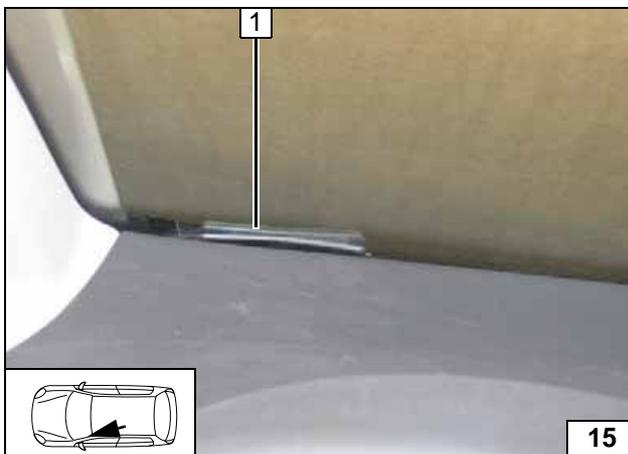
**Remote option (Telestart)**

Bend down lower tab of bracket by 90° and drill out hole to 6.5 mm dia. as shown.

- 1 Receiver
- 2 Bracket
- 3 M6 bolt, large diameter washer (between bracket instrument carrier), large diameter washer (from outside), flanged nut



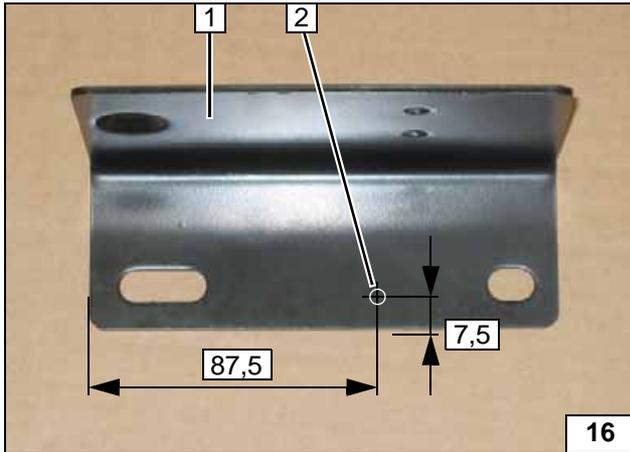
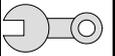
**Installing receiver**



- 1 Antenna



**Installing antenna**

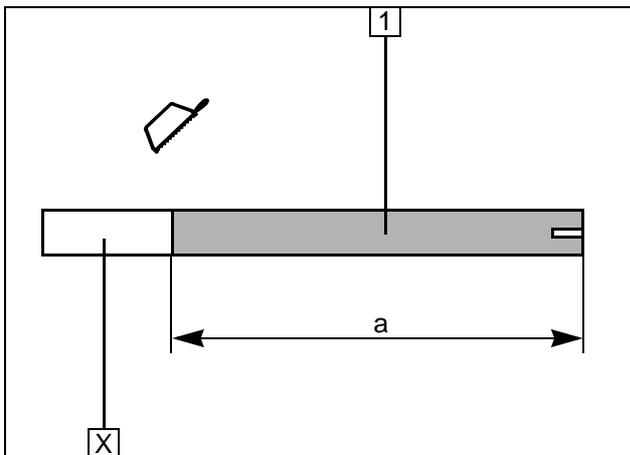


**Preparing bracket**

16mm dia. hole at Position 2 in bracket 1.



**Drilling hole in bracket**

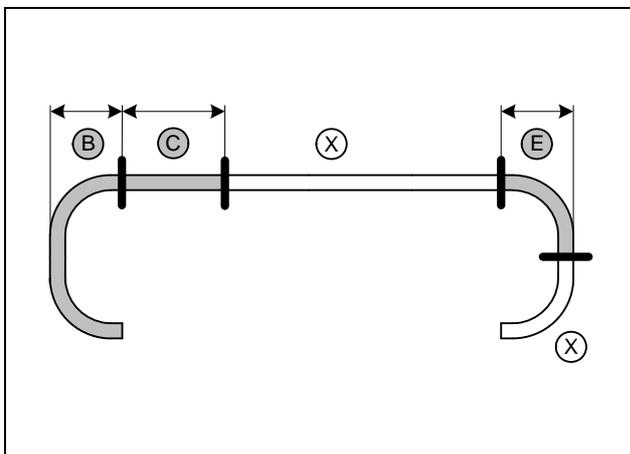


**Premounting heater**

1 Combustion air pipe  
a = 270

Discard section X

**Cutting combustion air pipe to length**

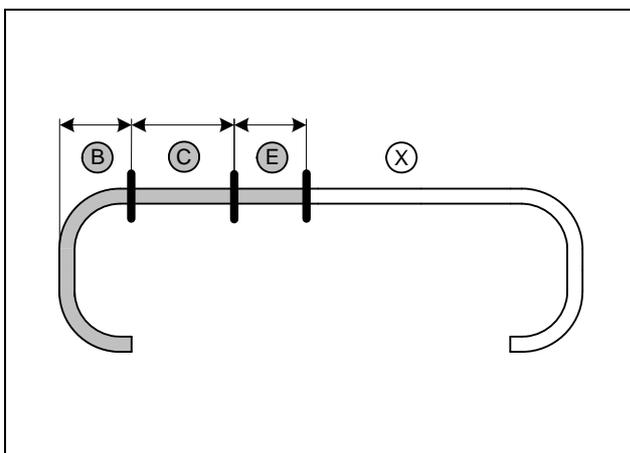


**1.4 and 2.0 TSI**

b = 70  
c = 160  
e = 70

Discard section X

**Cutting 20 mm dia. hose to length**



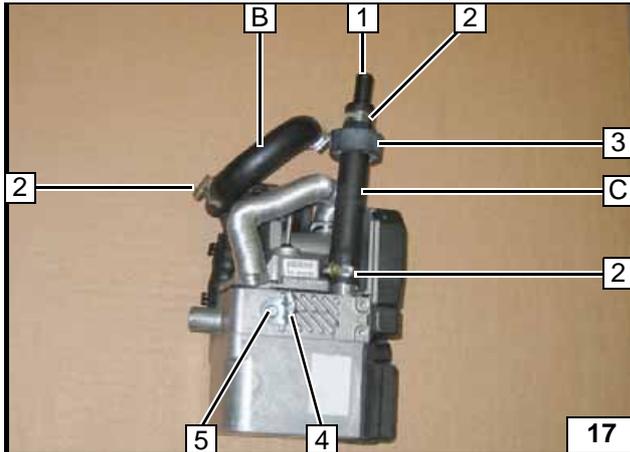
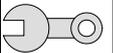
**2.0 TDI**

b = 70  
c = 160  
e = 70

Discard section X



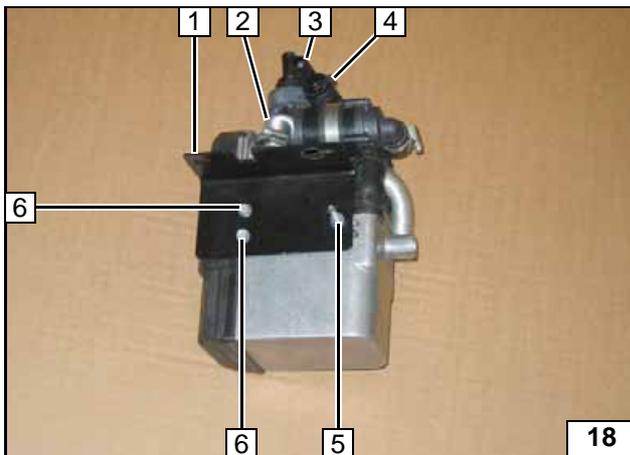
**Cutting 20 mm dia. hose to length**



**All vehicles**

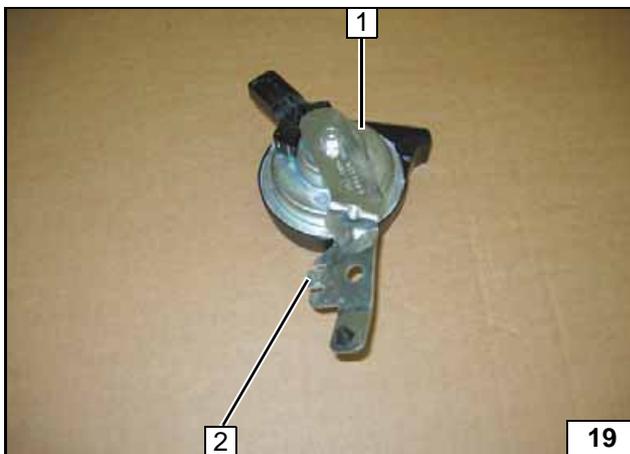
- 1 15x20 connecting pipe
- 2 Hose clamp [3x]
- 3 Black (sw) rubber isolator
- 4 Angle bracket
- 5 Ejoyt screw

**Premounting heater**



- 1 Bracket
- 2 Combustion air pipe, 10 mm dia. hose clamp
- 3 15x20 connecting pipe
- 4 10 mm dia. hose clamp
- 5 Ejoyt stud, flanged nut
- 6 Ejoyt screw [2x]

**Premounting heater**

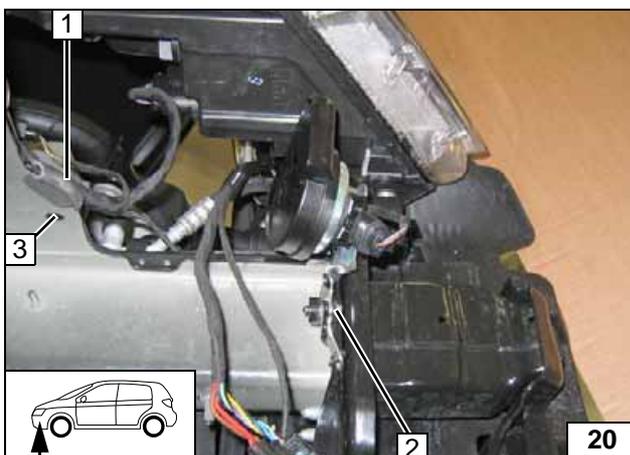


**Preparing installation location**

Remove horn 1 and bend lug 2 by 180°

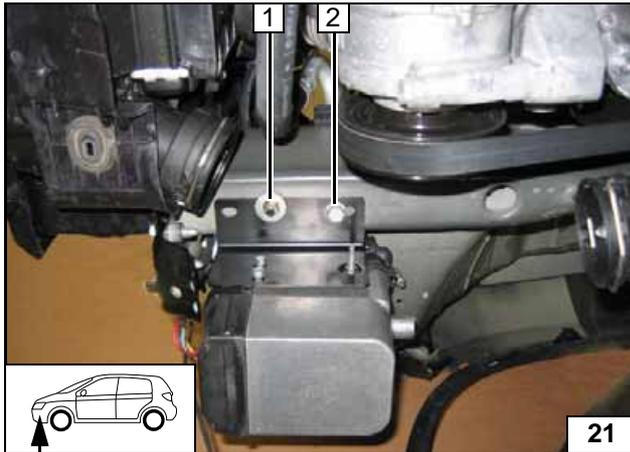
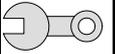


**Preparing installation location**



- 1 Glue on sponge rubber as rub protection
- 2 Original vehicle bolt
- 3 Remove clip from hole

**Installing horn**



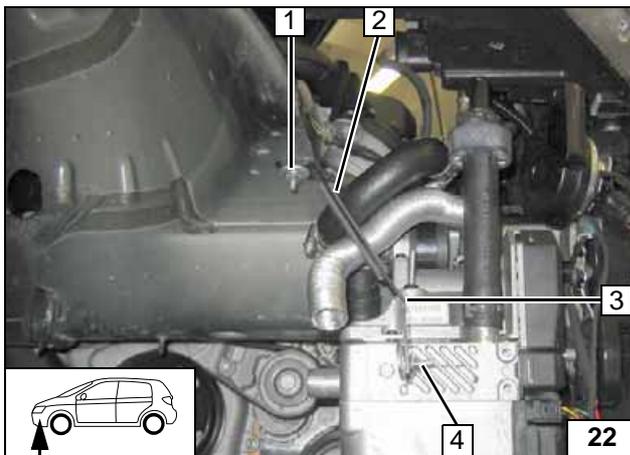
### Installing heater

Connect wiring harness of heater prior to installation. Insert plate washer (VW Order No. 191 411 331) at position 1.

- 1 Original vehicle stud bolt, plate washer, M8 nut
- 2 M10x30 bolt with locking pawl in existing thread



### Installing heater

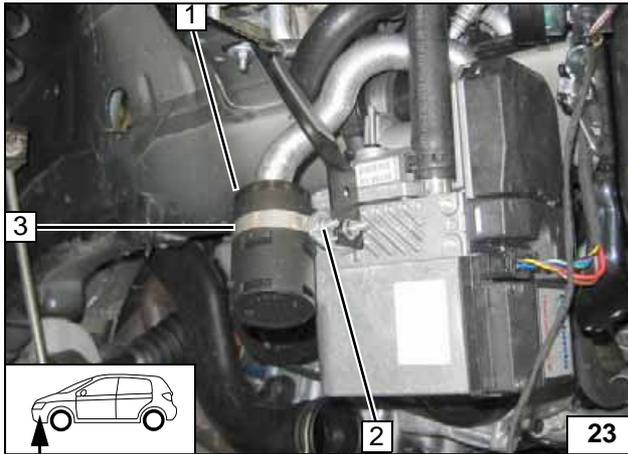


Before installation, glue sponge rubber 2 onto strut 3.

- 1 M6x20 bolt, large diameter washer [2x], M6 flanged nut
- 4 M6x20 bolt, M6 flanged nut



### Installing strut



- 1 Intake silencer
- 2 M5x16 bolt, large diameter washer, M5 flanged nut
- 3 51 mm dia. p-clamp

**Installing  
intake si-  
lencer**

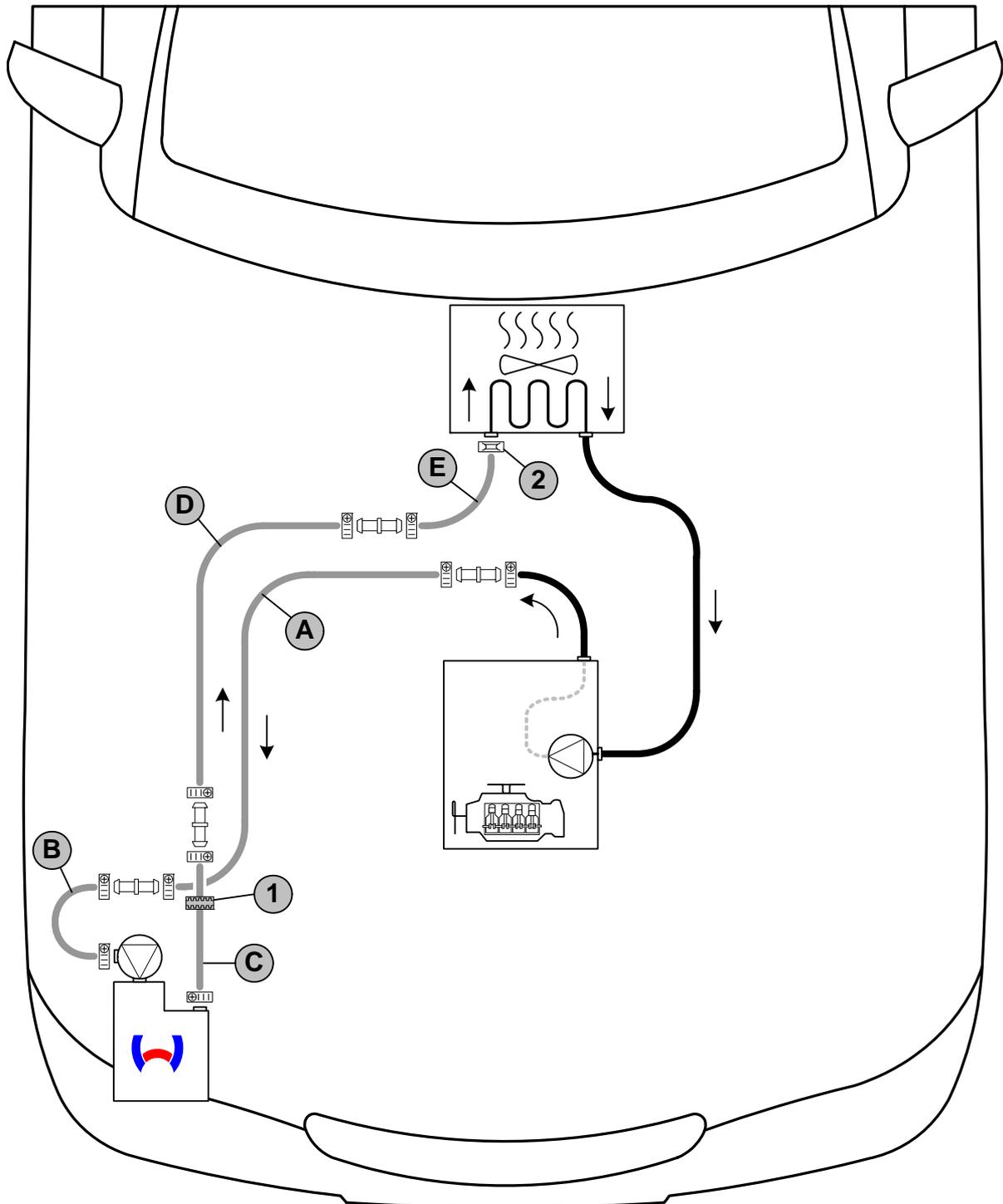


1.4 and 2.0 TSI coolant circuit



**WARNING!**

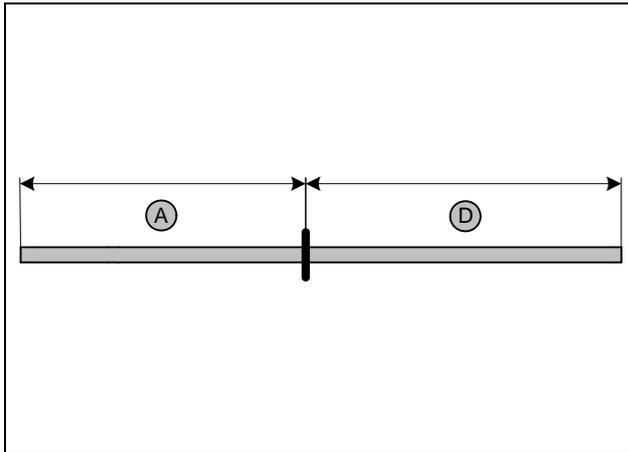
Any coolant running off should be collected in an appropriate container. Install hoses so that they are kink-free. Unless specified otherwise, always fasten using cable ties. Position clamps so that other hoses cannot be damaged. The heater must be filled with coolant when installing the hoses. The connection should be "inline" based on the following diagram:



Hose installation diagram

All hose clamps  = 20-27 mm dia. **1** = black (sw) protective rubber profile . **2** = Original vehicle spring clip . All connecting pipes without a specific designation  = dia. 15x20.

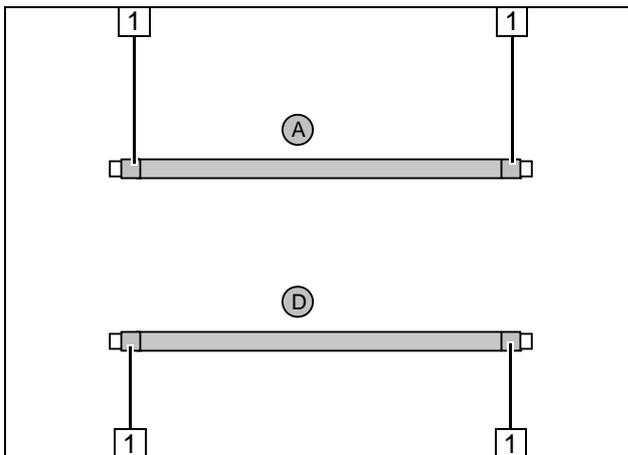




a = 1200  
d = 1200

Discard section X

Cutting 15 mm dia. hose to length

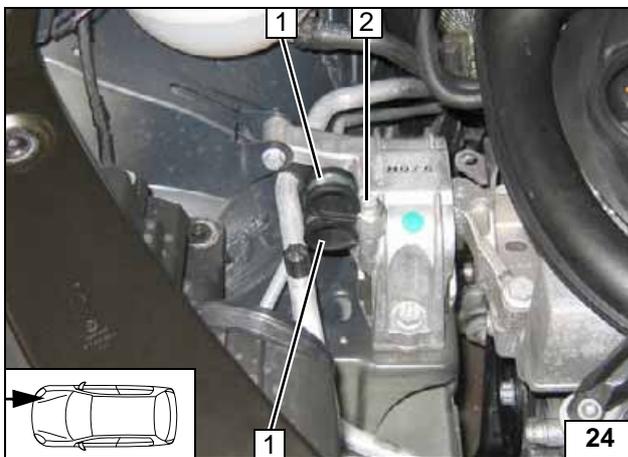


Push braided protection hoses onto hose A and D, cut to length and shrink.

1 Heat shrink plastic tubing [4x]

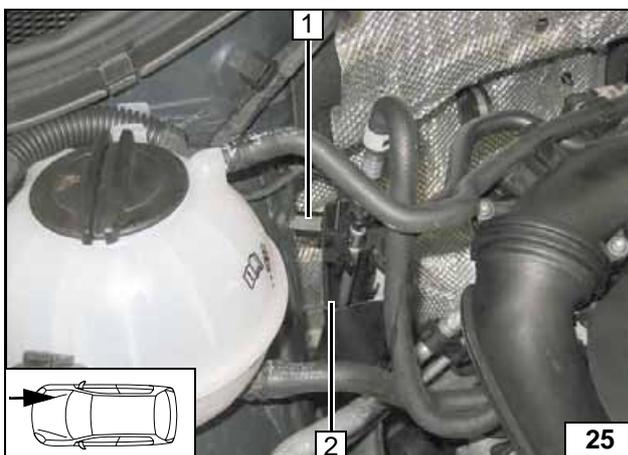


Premounting hoses



- 1 25 mm dia. rubber-coated p-clamp [2x]
- 2 M6x40 bolt, spring lockwasher, 20 mm shim, existing threaded hole

Preparing routing of hoses

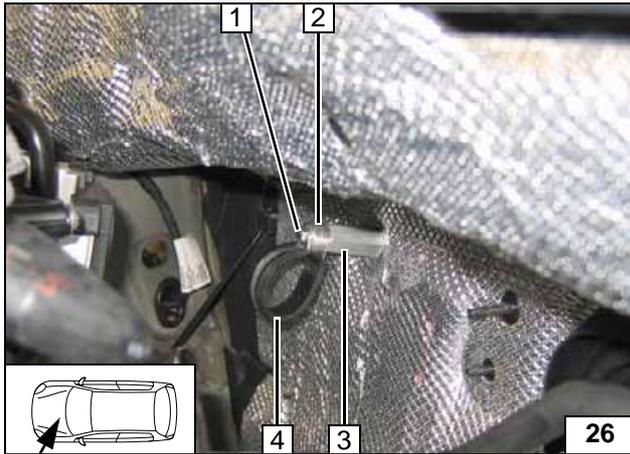


Detach plastic duct 2 and discard original vehicle nut.

- 1 M6x20 spacer nut, M6x12 bolt, spring lockwasher, large diameter washer



Preparing routing of hoses

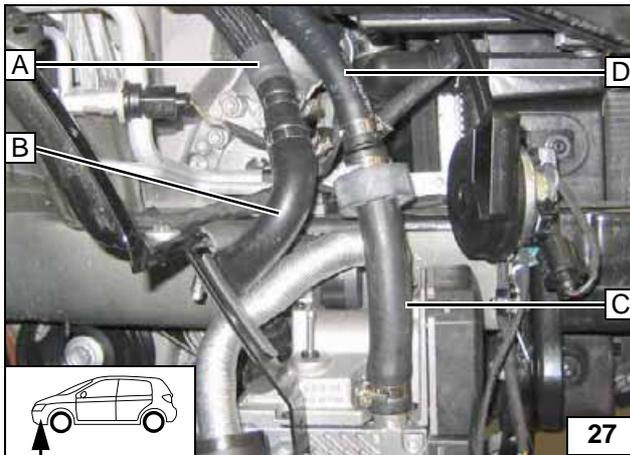


Position 10mm shim **2** between 34mm dia. rubber-coated p-clamp **4**.

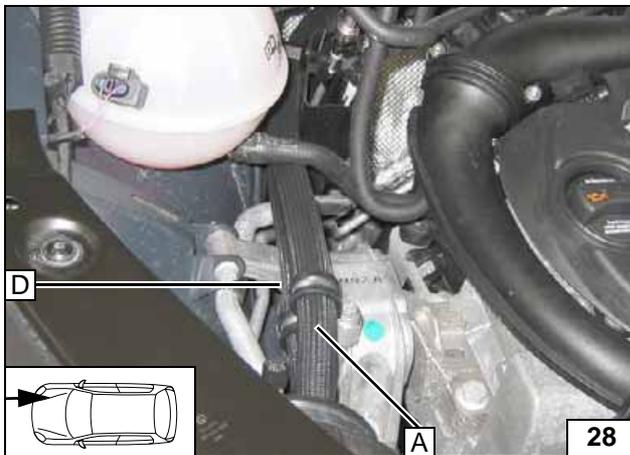
- 1** M6x20 bolt, spring lockwasher
- 3** M6x40 spacer nut on existing thread



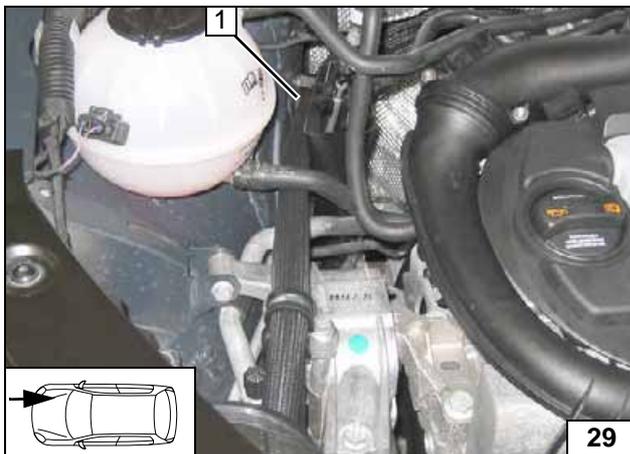
**Preparing routing of hoses**



**Connecting heater**



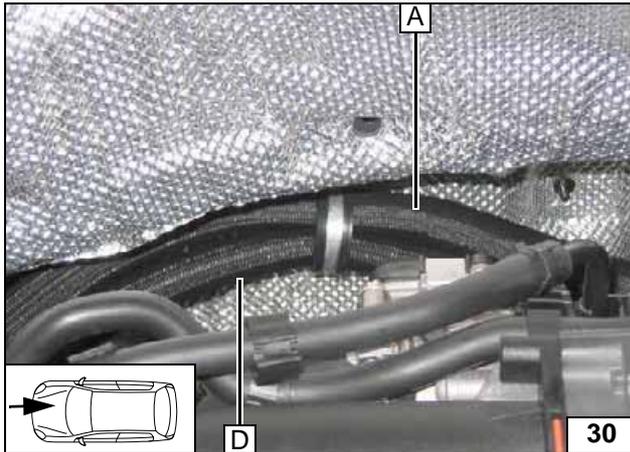
**Routing in engine compartment**



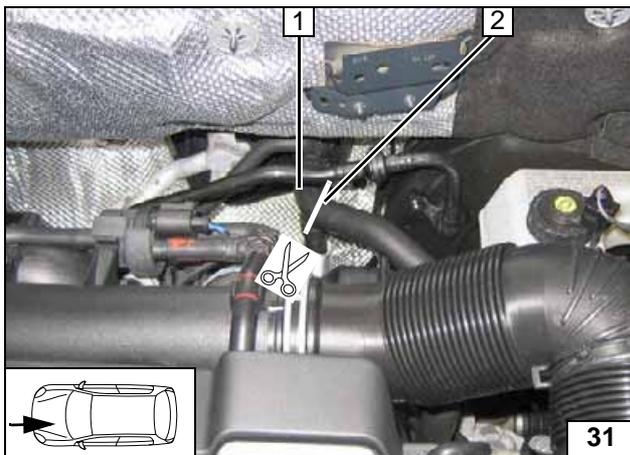
Insert hoses **A** and **D** between body and plastic duct at position **1**.



**Routing in engine compartment**



Routing in engine compartment



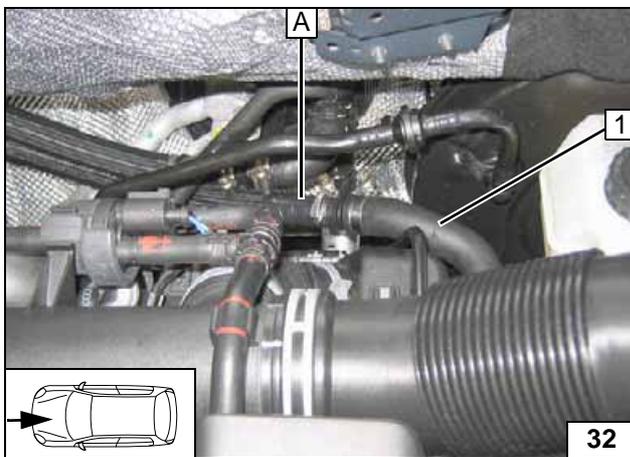
**1.4 TSI**

Discard hose section 1.  
Original vehicle clamp will be reused.

2 Cutting point



Cutting point

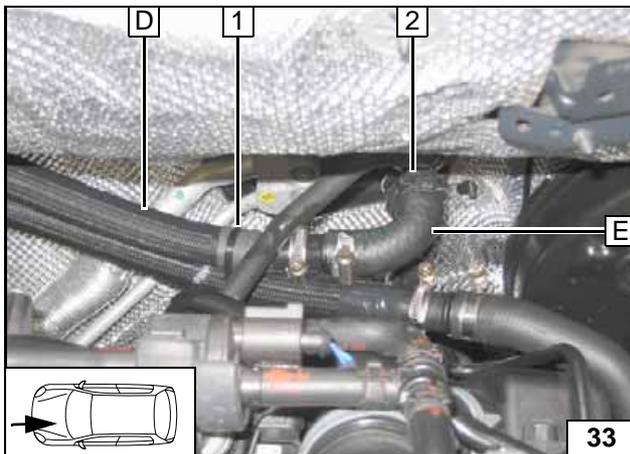


Ensure sufficient distance from neighbouring components.

1 Hose of engine outlet

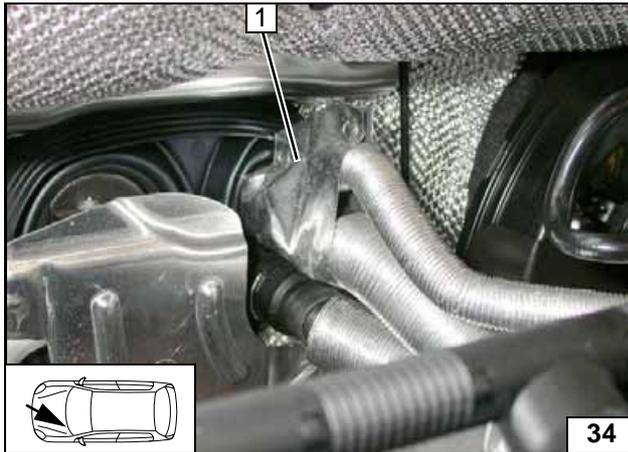


Connecting engine outlet



1 Cable tie  
2 Original vehicle spring clip

Connecting heat exchanger inlet

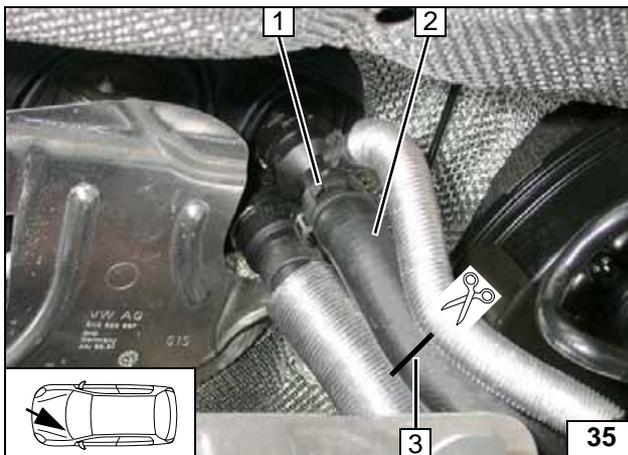


**2.0 TSI**

Remove trim of heat exchanger input / output **1** and discard.



**Cutting point**

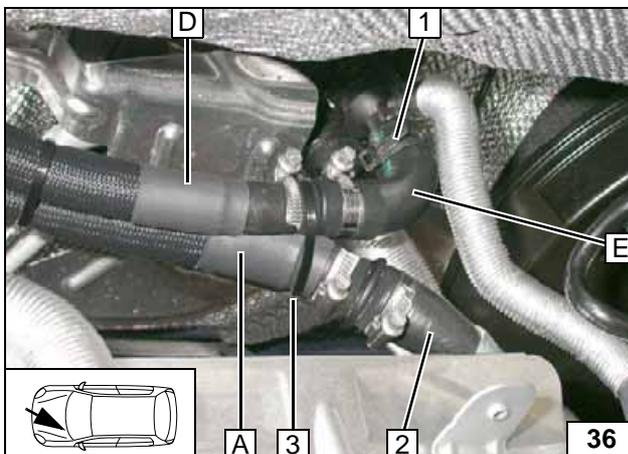


Slide back heat shield on hose on heat exchanger inlet/engine outlet.  
Discard hose section **2**.  
Original vehicle clamp **1** will be reused.



**Cutting point**

**3** Cutting point



Slide heat shield on hose on engine outlet **2** forward again. Ensure sufficient distance from neighbouring components.



**Connect-  
ing engine  
outlet and  
heat ex-  
changer in-  
let**

- 1** Original vehicle spring clip
- 3** Cable tie

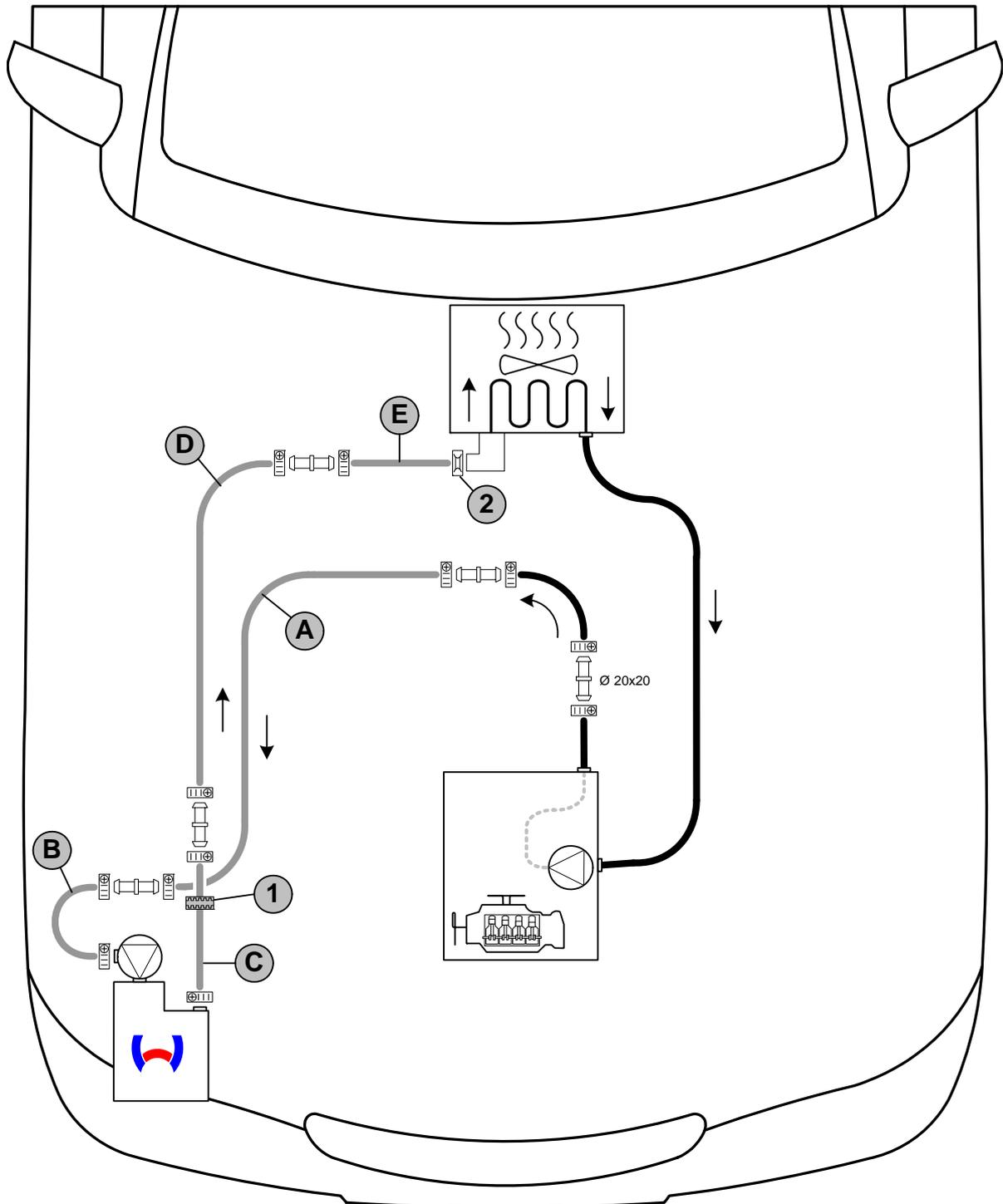


Coolant circuit 2.0 TDI



**WARNING!**

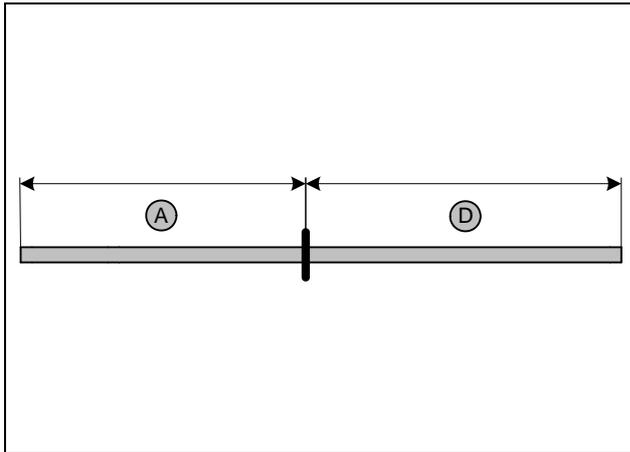
Any coolant running off should be collected in an appropriate container. Install hoses so that they are kink-free. Unless specified otherwise, always fasten using cable ties. Position clamps so that other hoses cannot be damaged. The heater must be filled with coolant when installing the hoses. The connection should be "inline" based on the following diagram:



Hose installation diagram

All hose clamps = 20-27 mm dia. **1** = black (sw) protective rubber profile . **2** = Original vehicle spring clip . All connecting pipes without a specific designation = dia. 15x20.

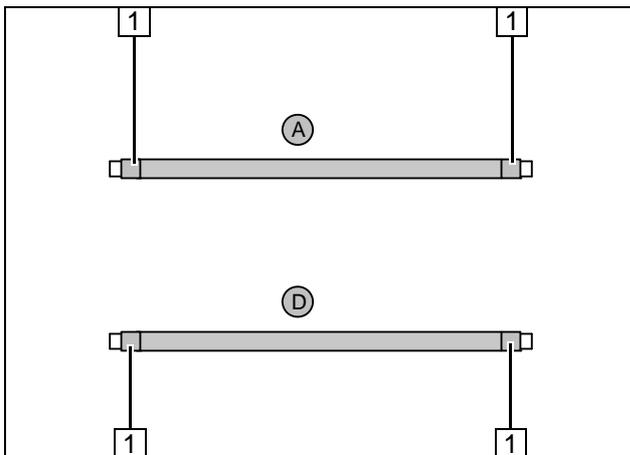




a = 1050  
d = 1200

Discard section X

**Cutting 15 mm dia. hose to length**

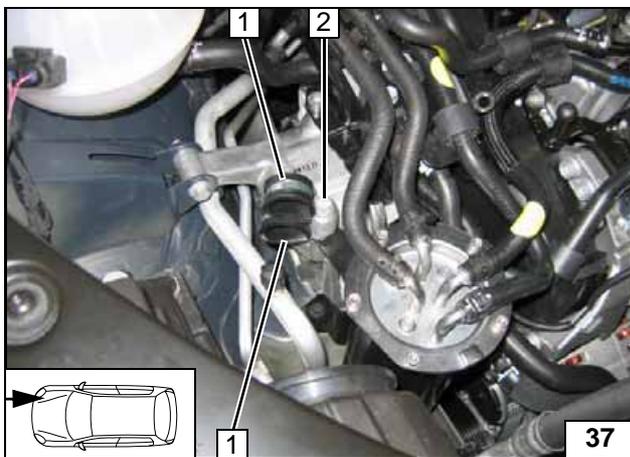


Push braided protection hoses onto hose A and D, cut to length and shrink.

1 Heat shrink plastic tubing [4x]



**Premounting hoses**

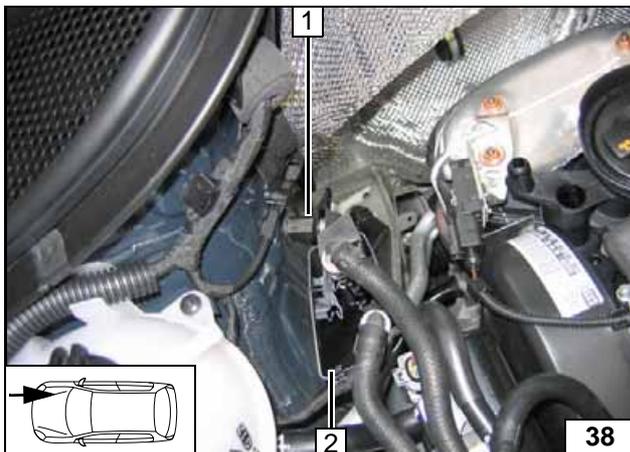


Remove original vehicle bolt at position 2 and discard.

- 1 25 mm dia. rubber-coated p-clamp [2x]
- 2 M6x40 bolt, spring lockwasher, 20 mm shim



**Preparing routing of hoses**

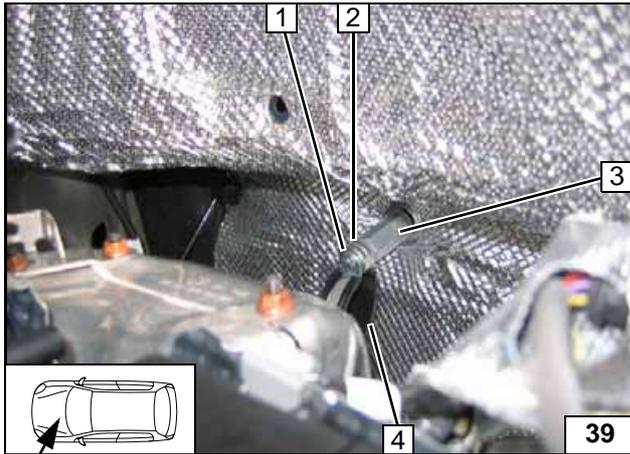


Detach plastic duct 2 and discard original vehicle nut.

- 1 M6x20 spacer nut, M6x12 bolt, spring lockwasher, large diameter washer



**Preparing routing of hoses**

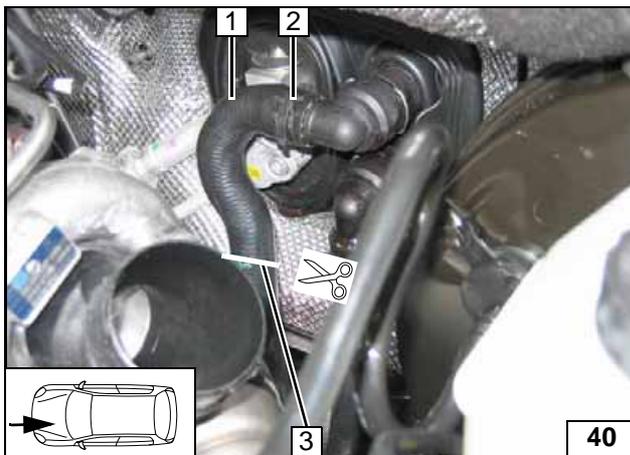


Position 10mm shim **2** between 34mm dia. rubber-coated p-clamp **4**.

- 1** M6x20 bolt, spring lockwasher
- 3** M6x40 spacer nut on existing thread



**Preparing routing of hoses**

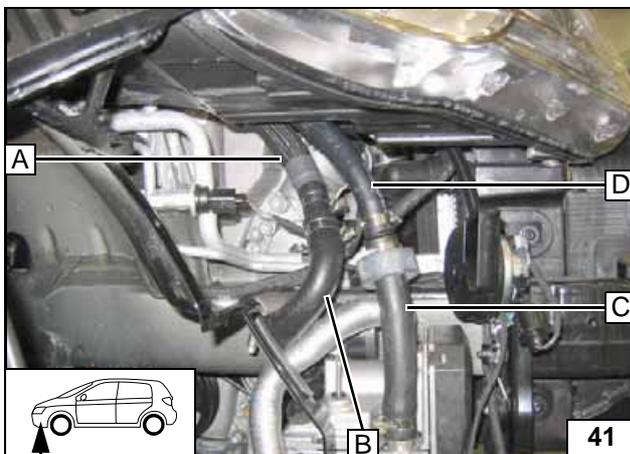


Hose section **1** and original vehicle clamp **2** will be reused.

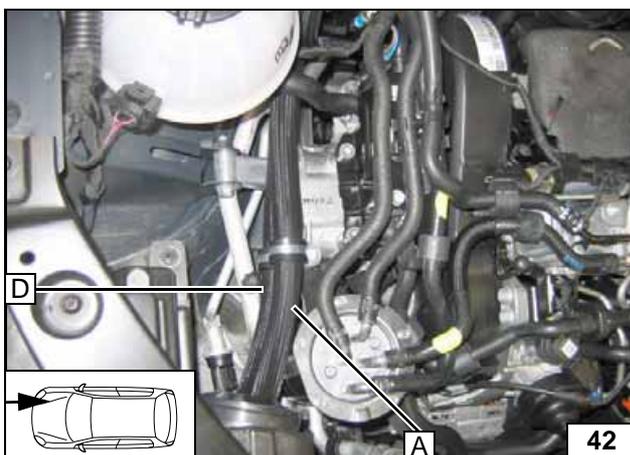
- 2** Cutting point



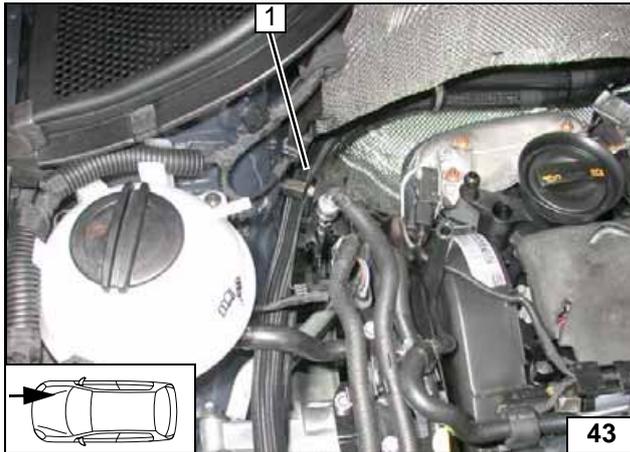
**Cutting point**



**Connecting heater**



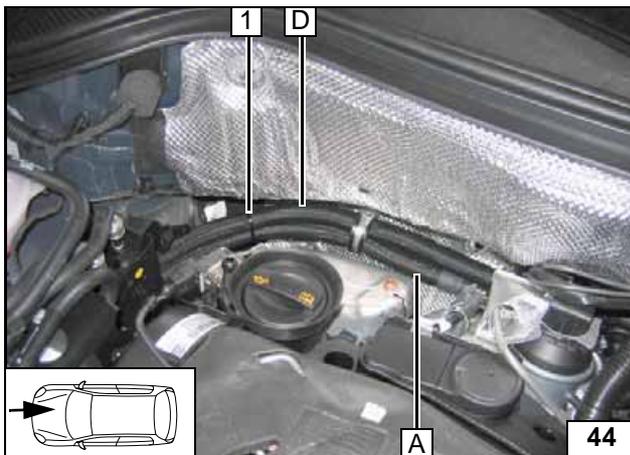
**Routing in engine compartment**



Insert hoses **A** and **D** between body and plastic duct at position **1**.

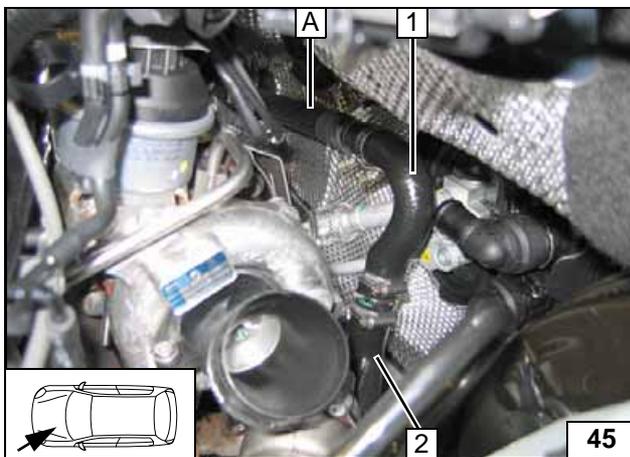


Routing in engine compartment



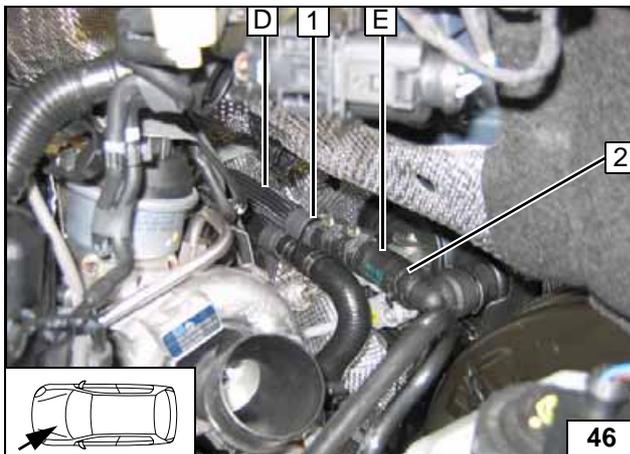
1 Cable tie

Routing in engine compartment



1 Hose section turned by 180°  
2 Engine outlet hose section

Connecting engine outlet

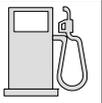


Ensure sufficient distance from neighbouring components.

1 Cable tie  
2 Original vehicle spring clip



Connecting heat exchanger inlet



**Fuel Connection**

**CAUTION!**

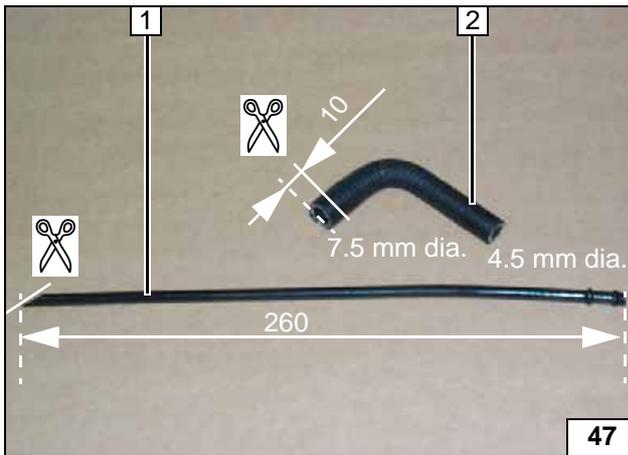
Open the vehicle's fuel tank cap, ventilate the tank and then re-close the tank lock.

Catch any fuel running off in 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 as shown in the wiring harness routing diagram.



- 1 Standpipe
- 2 Moulded hose

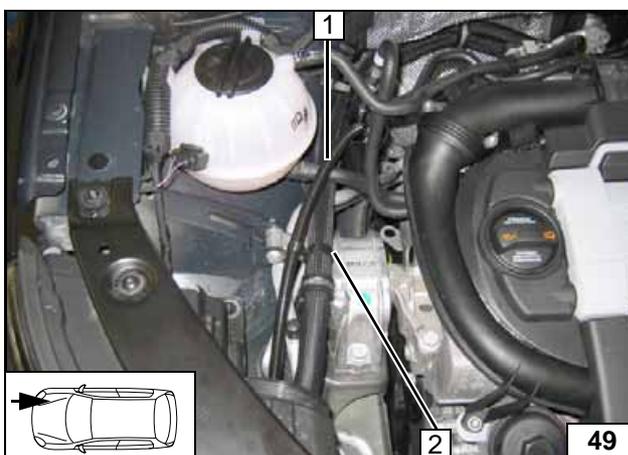
**Cutting standpipe and moulded hose to size**



Caillau clamp 2 in centre between beads on end of standpipe.

- 1 Standpipe
- 2 10 mm dia. Caillau clamp
- 3 Moulded hose

**Pre-mounting standpipe and moulded hose**



Cut corrugated tube 1 to 650 mm, pull in fuel line and wiring harness of metering pump and route along original vehicle lines to installation location of metering pump.

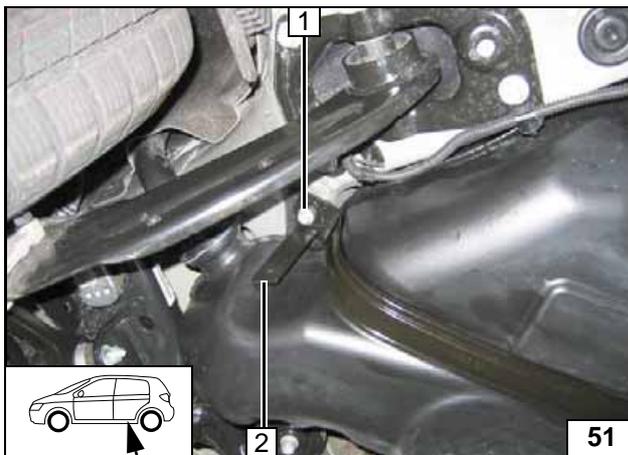
- 2 Line holder

**Routing fuel line and wiring harness of metering pump**



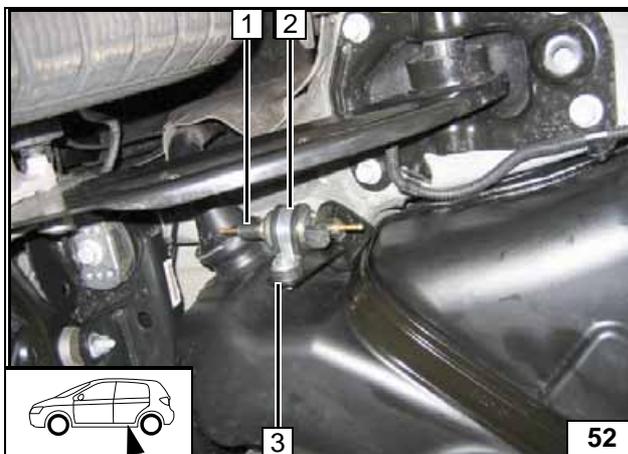
1 Fuel line and wiring harness of metering pump in corrugated tube

Routing fuel line and wiring harness of metering pump



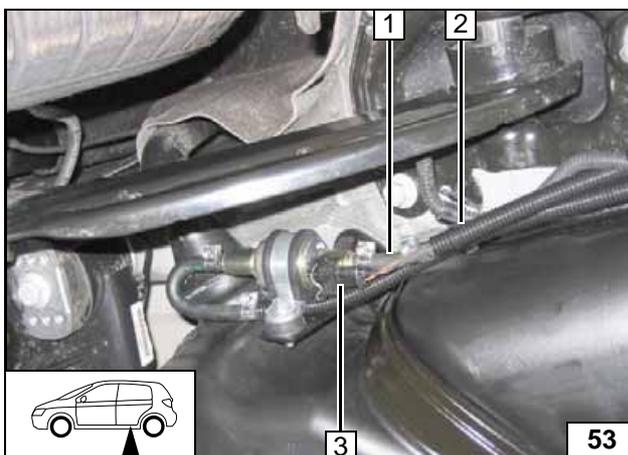
1 Original vehicle bolt  
2 Bracket of metering pump

Installing metering pump



1 Metering pump  
2 Rubber-coated p-clamp  
3 Silent block, flanged nut M6 [2x]

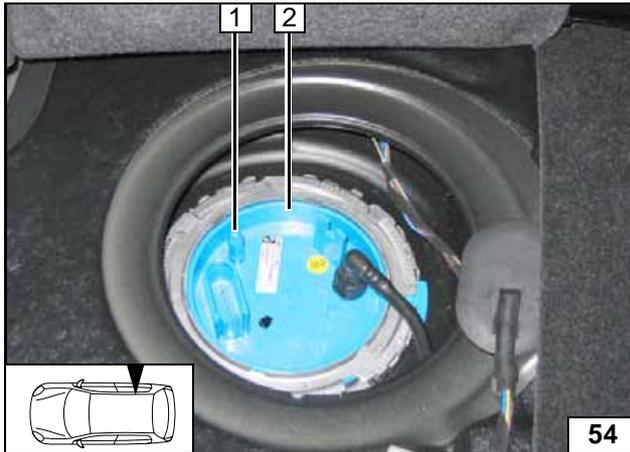
Installing metering pump



1 Hose section, 10 mm dia. hose clamp [2x]  
2 Fuel line and wiring harness of metering pump in corrugated tube  
3 Wiring harness of metering pump, connector mounted



Installing metering pump and connecting pressure side

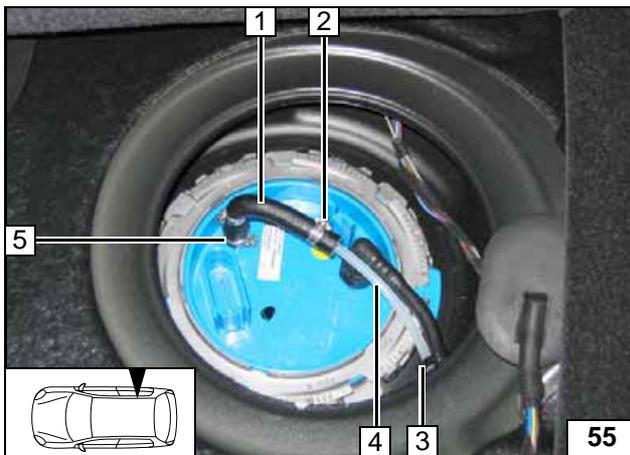


**1.4 litre TSI only**

- 1 Remove 3 mm blind plug
- 2 Fuel-tank sending unit



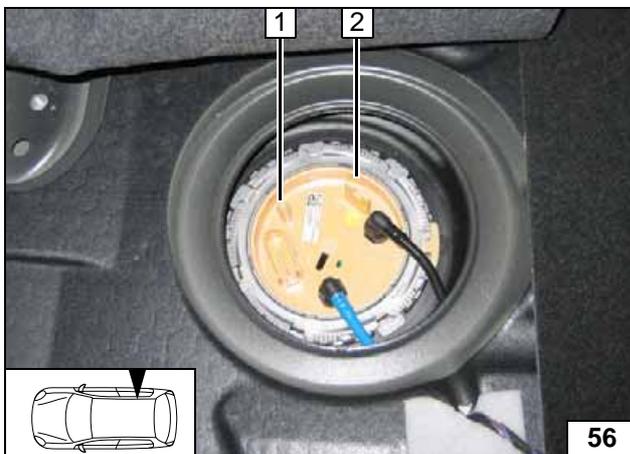
**Cutting off blind plug**



- 1 Premounted moulded hose with standpipe
- 2 10 mm dia. Caillau clamp
- 3 Cable tie
- 4 Fuel line
- 5 13.5mm dia. Caillau clamp



**Connec-tion to fuel-tank send-ing unit**

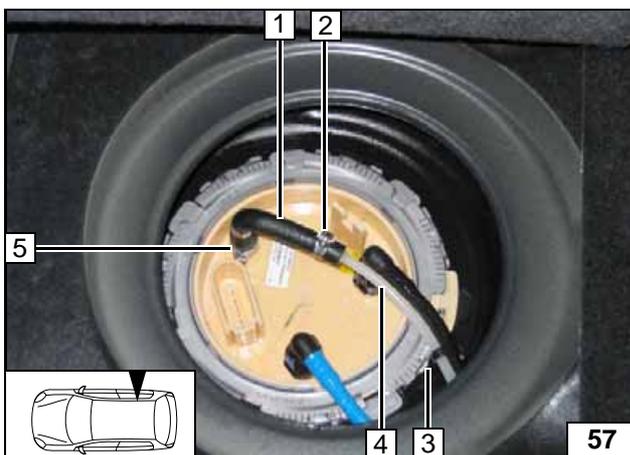


**2.0 litre TDI only**

- 1 Remove 3 mm blind plug
- 2 Fuel-tank sending unit



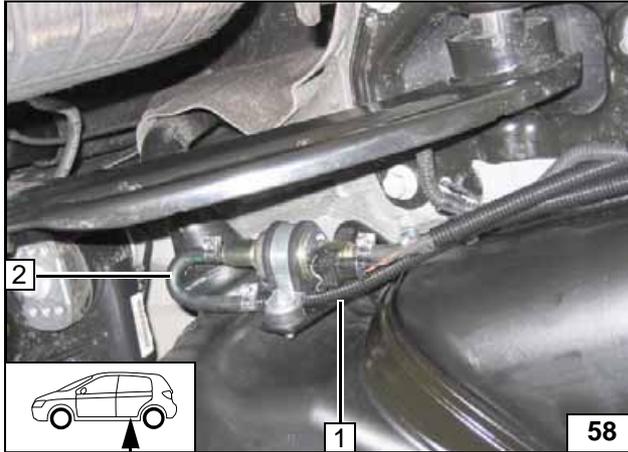
**Cutting off blind plug**



- 1 Premounted moulded hose with standpipe
- 2 10 mm dia. Caillau clamp
- 3 Cable tie
- 4 Fuel line
- 5 13.5mm dia. Caillau clamp



**Connec-tion to fuel-tank send-ing unit**



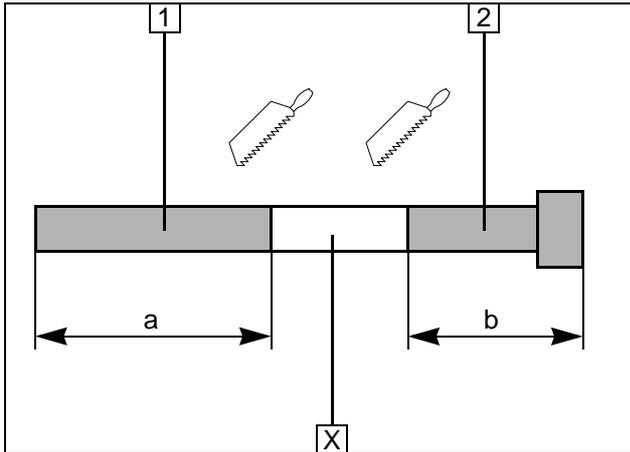
**All vehicles**

Before installation, pull fuel line into remaining section of corrugated tube **1**.

**2** Moulded hose, 10 mm dia. hose clamp [2x]



**Connect-  
ing intake  
side of me-  
tering  
pump**

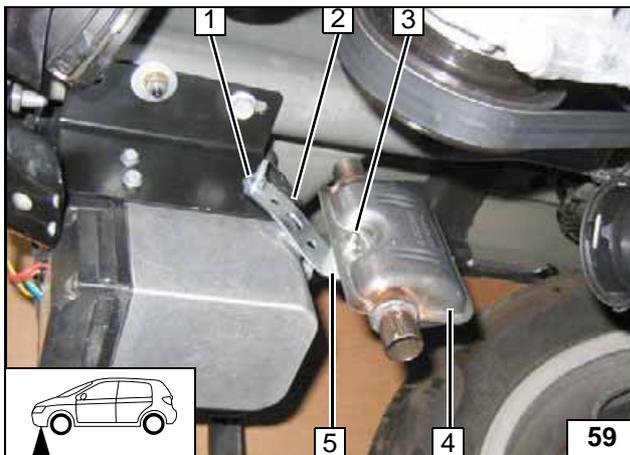


**Exhaust gas**

- 1 Exhaust pipe  
a = 150
- 2 Exhaust end section  
b = 90

Discard section X

**Preparing exhaust pipe**

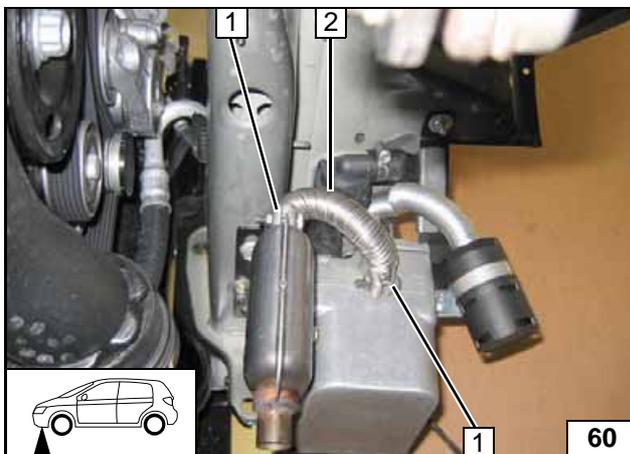


Align exhaust silencer 4 following installation as shown.

- 1 M6 flanged nut
- 2 Perforated bracket
- 3 M6x35 bolt, M6 flanged nut
- 5 20mm shim

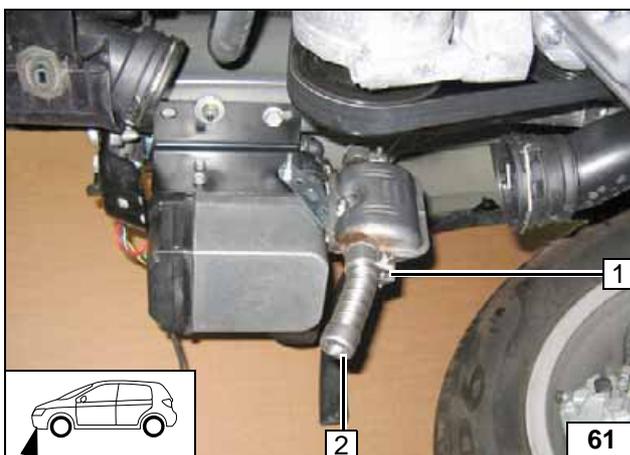


**Installing silencer**



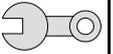
- 1 Hose clamp [2x]
- 2 Exhaust pipe

**Installing exhaust pipe**



- 1 Hose clamp
- 2 Exhaust end section

**Installing exhaust end section**

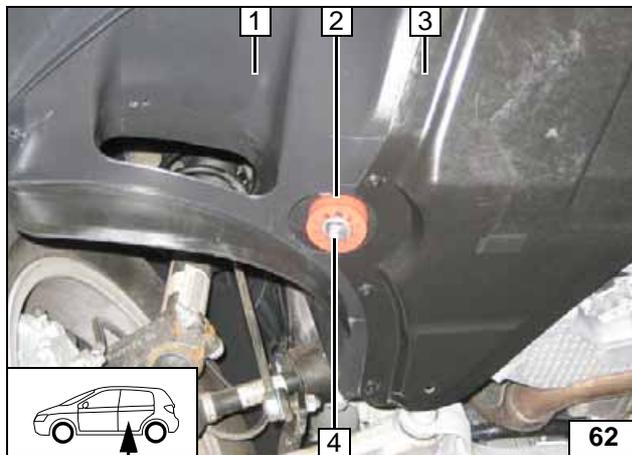


**Final Work**

**WARNING!**

Mount removed parts 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 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 digital timer, teach telestart transmitter**
- **Make settings on A/C control panel according to the "Operating Instructions for End Customer".**
- **Place the "Switch off parking heater before refuelling" sticker near the filler neck.**
- **See installation instructions for initial start-up and function test**



Align exhaust end section 4 flush on red rubber isolator 2.

- 3 Wheel well trim
- 3 Underride protection

**Inserting rubber isolator**



Webasto AG  
 Postfach 80  
 D-82132 Stockdorf / Germany  
 National Hotline: 01805 93 22 78  
 (14 Cent aus dem deutschen Festnetz)

## 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 will then heat in the position Winter  and in the position Summer  it will only switch on the vehicle fan to ventilate the vehicle interior.

Before parking the vehicle, make the following settings:



- 1 Set temperature to "HI" [2x]
- 2 Air outlet faces upward

Climatron-  
ic