Water Heater

***Thermo Top E* Parking Heater** e1 00 0003

***Thermo Top C* Parking Heater** e1 00 0002

Installation documentation

VW Golf VI

1.6 MPI
from model year 2008
Left-hand drive vehicle

WARNING!

Hazard warning:

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

Specialist company training, technical documentation, 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.

Ident. No.: 1314425B_EN Fee Euro 10.00

Table of Contents

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 cm³
BSE	Petrol/MPI	75	1595

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.

Heater/Installation Kit

Quantity	Description	Order No.:
1	Retail accessories with desired heater control	See price list
1	Installation kit for VW Golf VI 1.6 MPI	1314424A

Also required with Climatronic

Quantity	Description	Order No.:
1	IPCU Kit for Climatronic	9013645A

Heater recommended for the respective vehicle class:

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

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 VW Golf VI 1.6 MPI 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 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

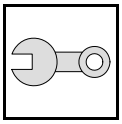
Installation should be carried out according to the general, standard rules of technology. Unless specified otherwise, fasten hoses, lines and wiring harnesses to original vehicle lines and wiring harnesses using cable ties.
Sharp edges should be fitted with rub protection (split-open fuel hose).
Spray unfinished body areas, e.g. drilled holes, with anti-corrosion wax (Tectyl 100K, Order No. 111329).

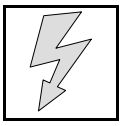
Special Tools

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

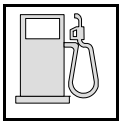
Explanatory Notes on Document

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.

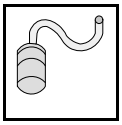
Mechanical system 

Electrical system 

Coolant circuit 

Fuel 

Exhaust gas 

Combustion air 

Special features are highlighted using the following symbols:

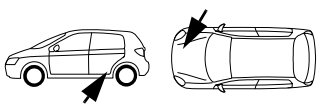
Specific risk of injury or fatal accidents.

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.

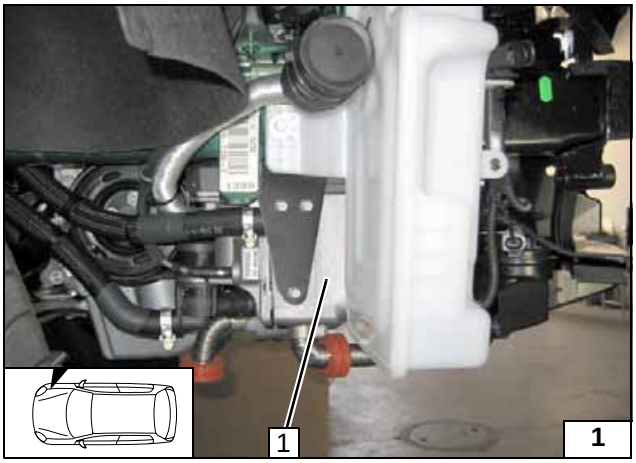
All dimensions are in mm!
Tightening torque of hose clamps = 2.0 + 0.5 Nm!
Tightening torque of Ejot screws, Ejot studs = 10 Nm!

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 connection.
- Completely remove the battery with the battery carrier.
- Remove the engine cover.
- Detach the coolant reservoir cap.
- Remove the right front wheel.
- Remove the front section of the right front wheel well trim.
- Remove the underride protection.
- Remove the bumper.
- Remove the washer reservoir.
- Remove the rear bench 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.
- 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 installation location

1 Heater

Installation location

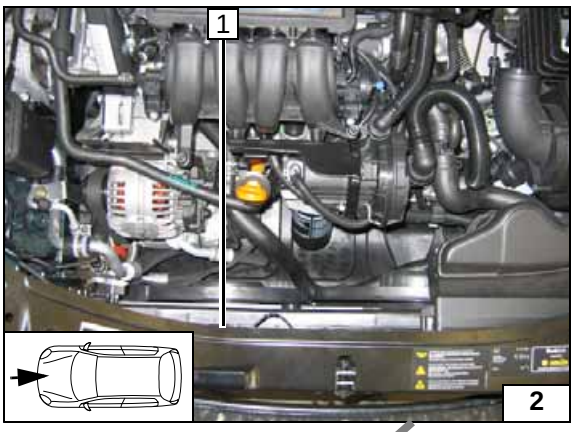
Electrical system

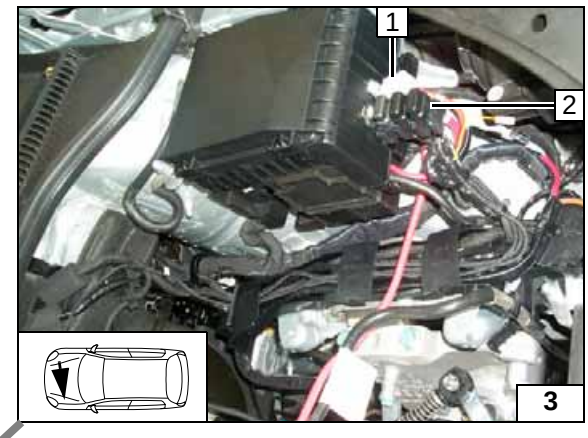
Wiring harness of heater

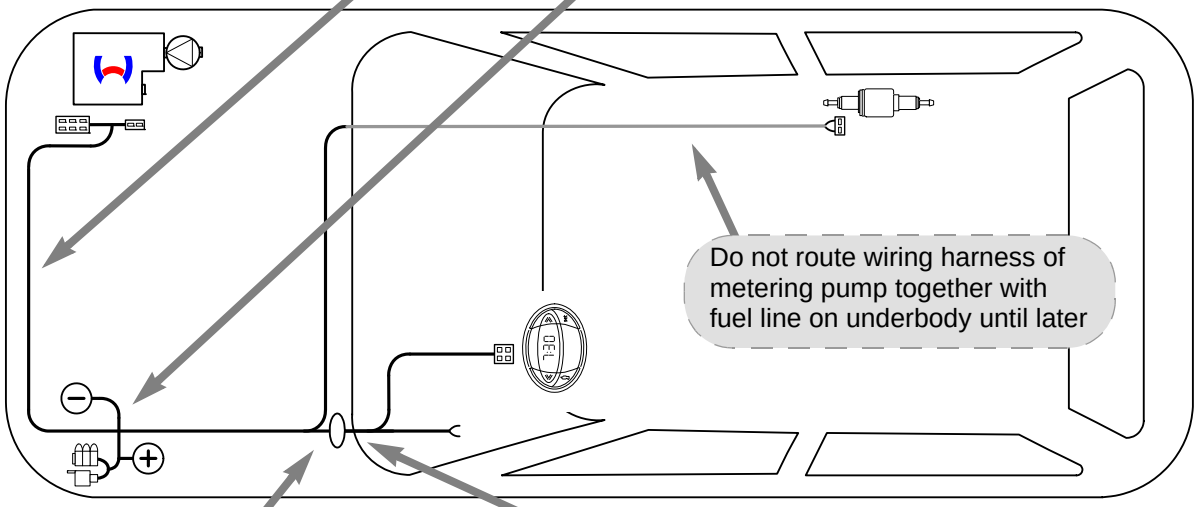
Route wiring harness of heater **1** along existing wiring harness toward right. Then fasten with cable ties after installing heater.

Fuse holder, K3 relay

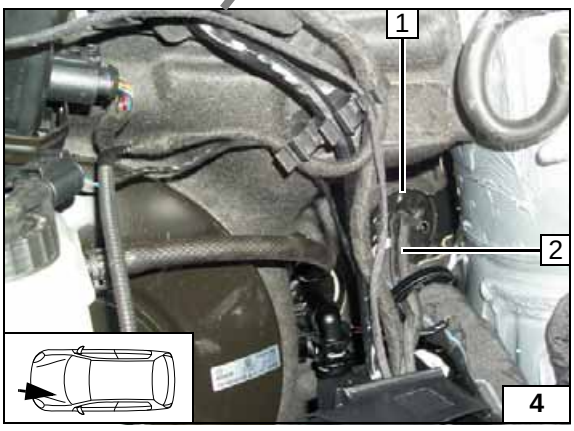
Description of mounting K3 relay **1** and fuse carrier **2** on Page 7





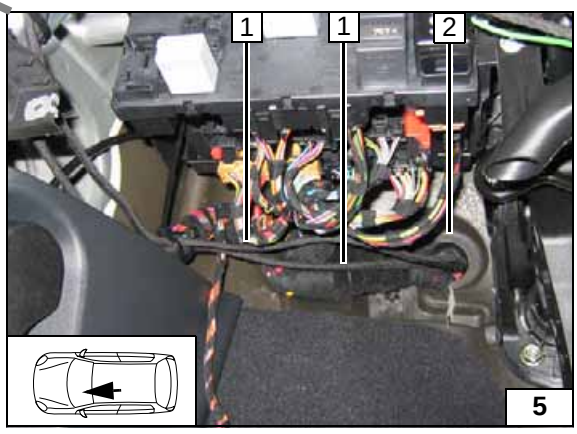


Wiring harness routing diagram



Wiring harness pass through

1 Original vehicle wiring harness pass through
2 Wiring harnesses of fan control, heater control



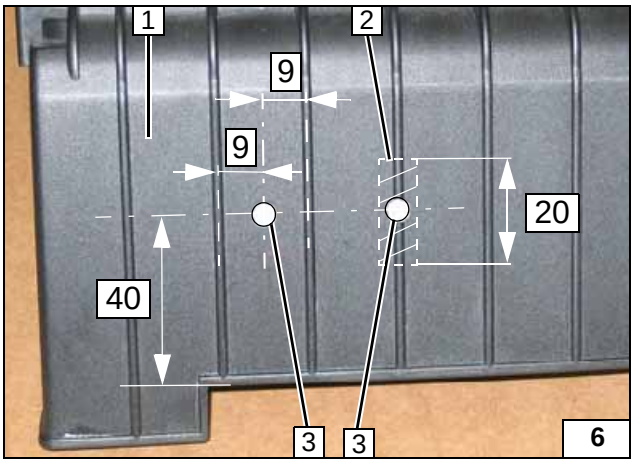
Wiring harness pass through

1 Wiring harnesses for fan control and heater control
2 Original vehicle wiring harness pass through

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 mm dia. hole [2x]



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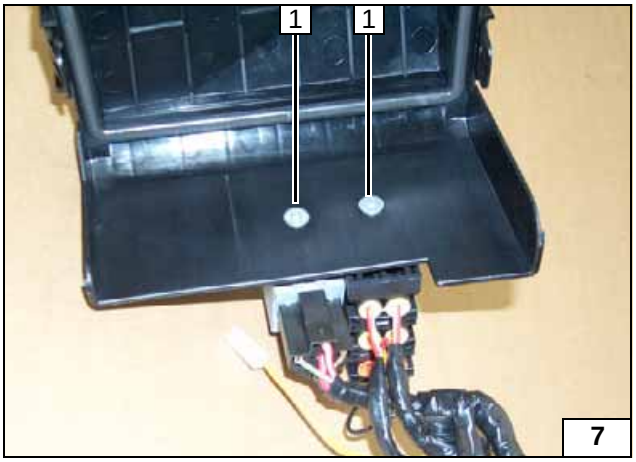
Holes in cover

1 M5x12 countersunk head screw [2x]



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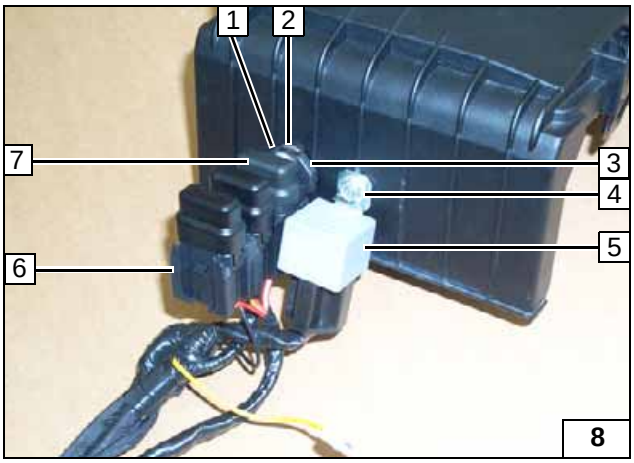
Mounting fuse holder and K3 relay

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

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



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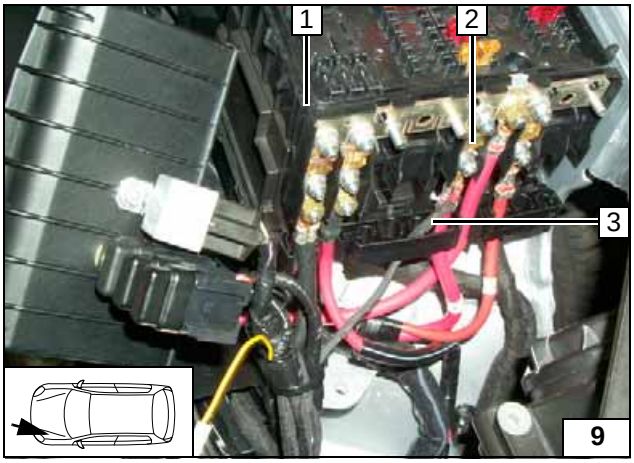
Mounting fuse holder and K3 relay

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



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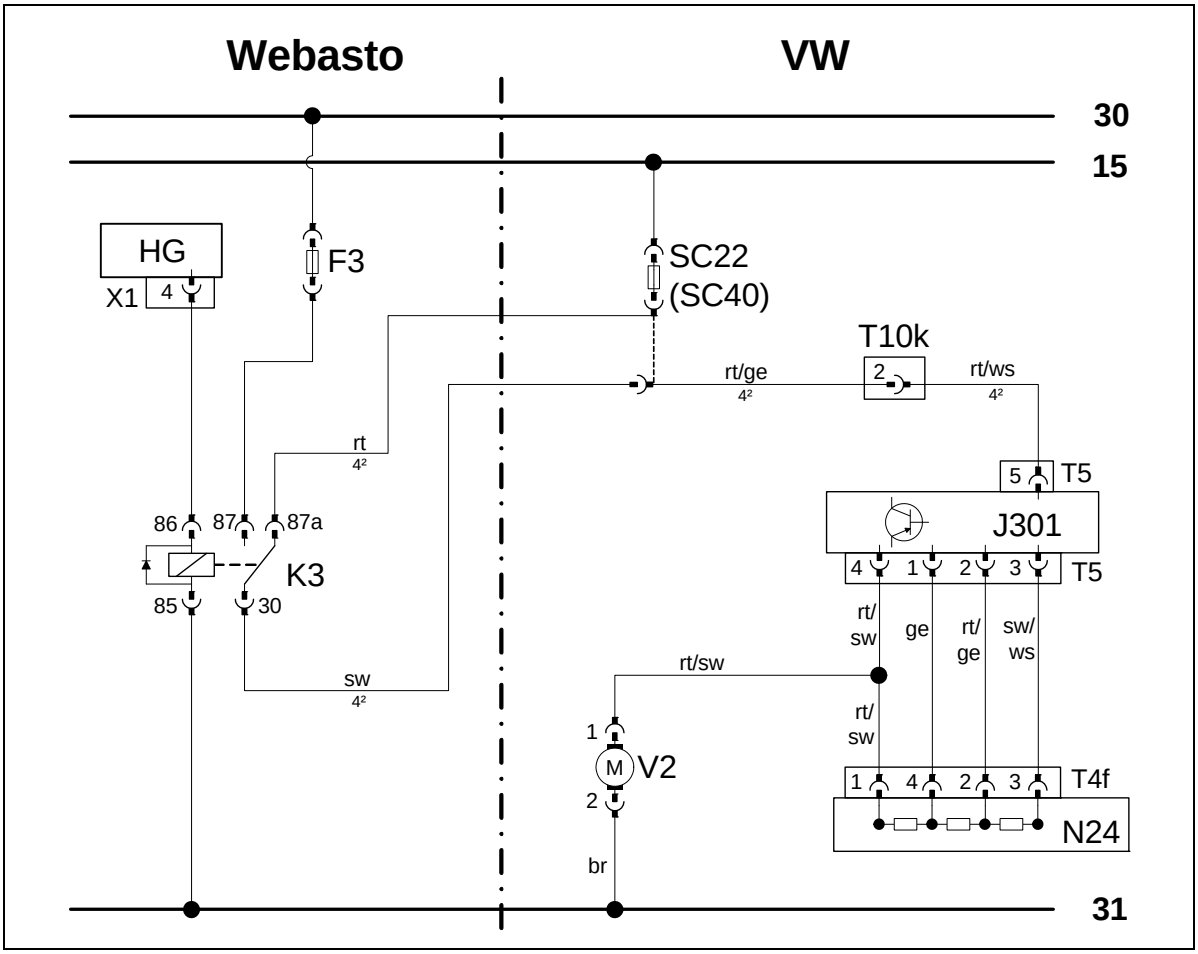
Connecting positive and earth wire

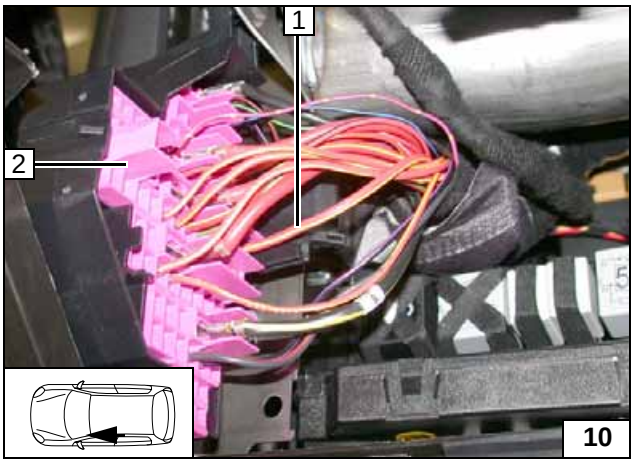
Climatic fan control

Climatic wiring diagram



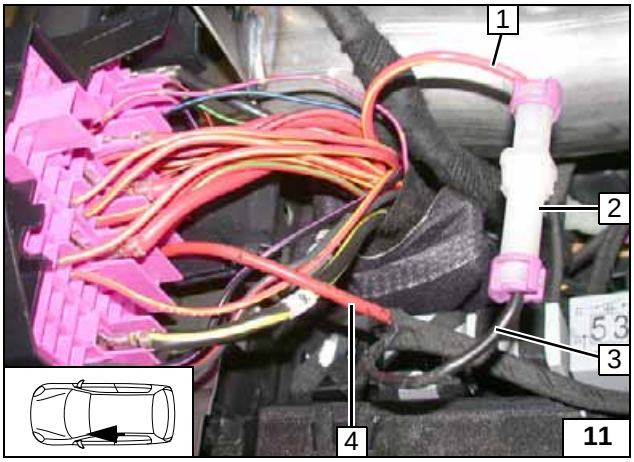
Webasto components		Vehicle components		Colours and symbols	
HG	Heater TT-C/E	GM	Fan motor	rt	red
X1	6-pin heater connector	SC22 (SC 40)	40 A fan fuse (depending on respective fuse assignment)	ge	yellow
F3	25 A fuse			sw	black
K3	Fan relay				
		J301	Control unit of air conditioning		
		T5	5-pin connector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

Connection to fuse carrier

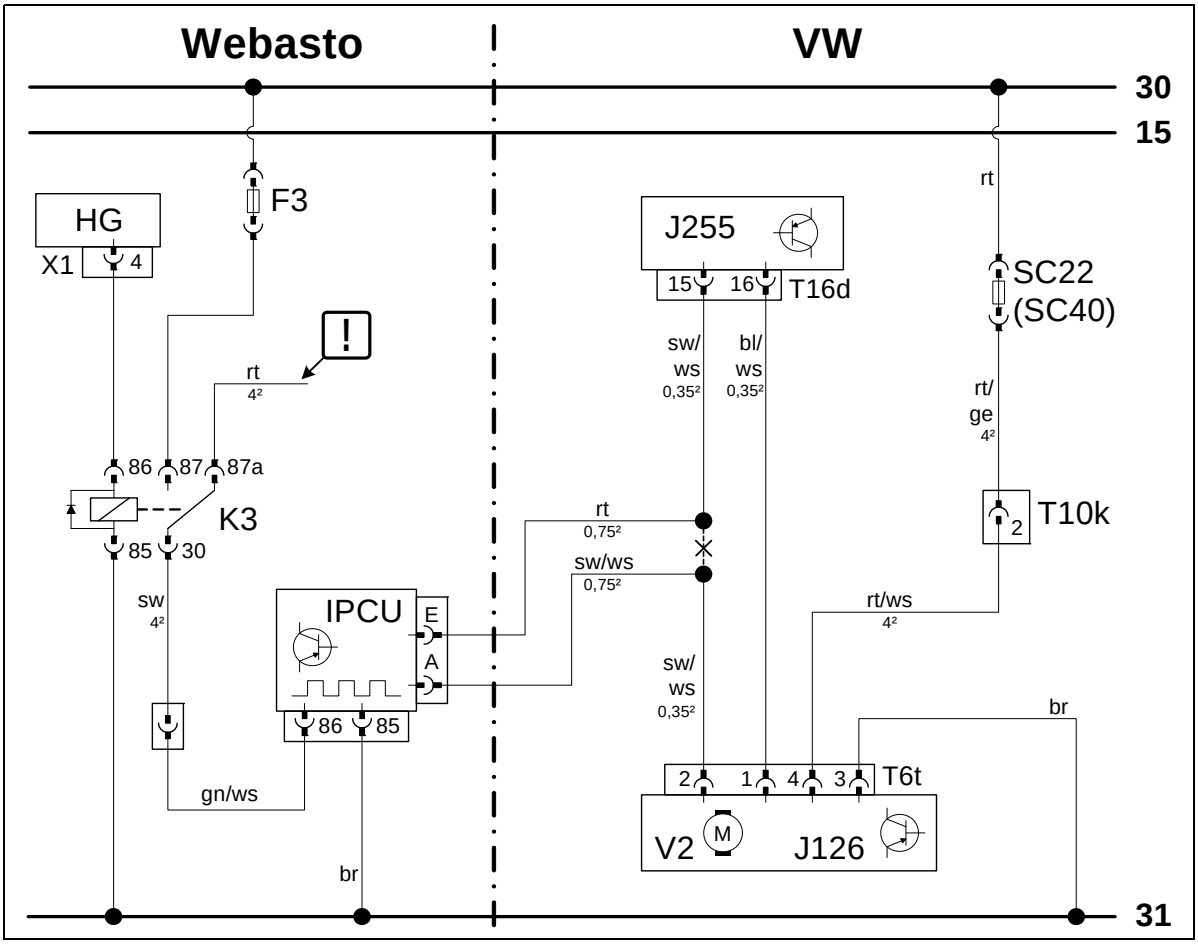


Red (rt) wire from K3/87a **4** with crimped-on standard power timer engaged in fuse output SC 22 or SC40.
Produce connections as shown in wiring diagram.

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

Connecting wires

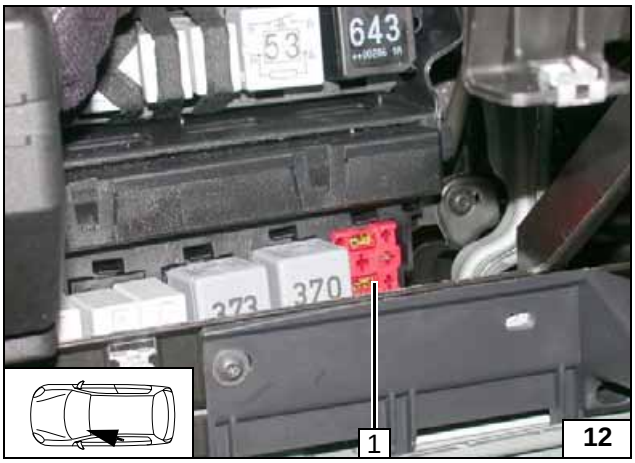
Climatronic fan control



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

Climatronic wiring diagram

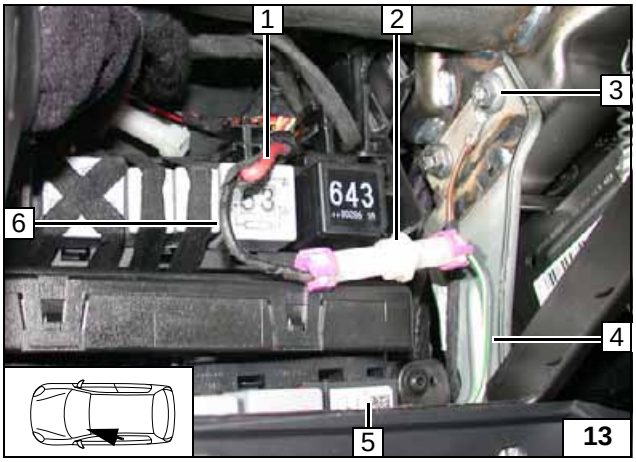
Legend



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

1 IPCU socket

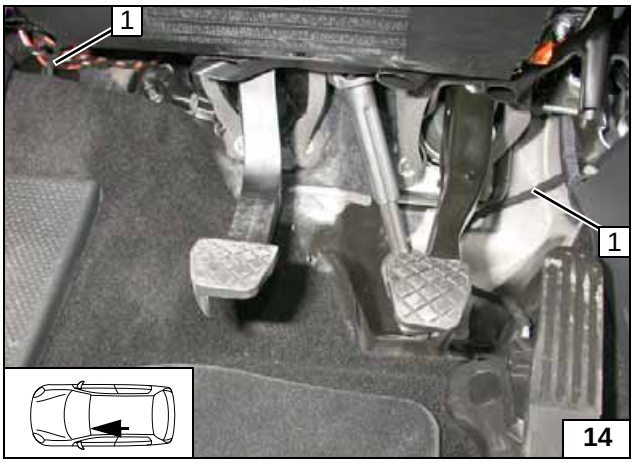
Mounting IPCU socket



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

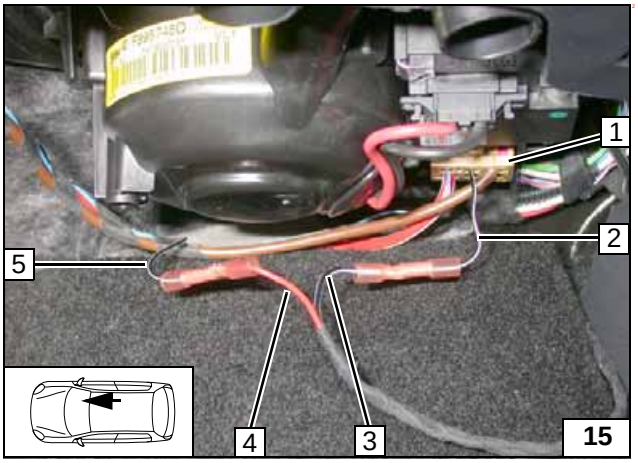
2 AMP connector
3 Brown (br) wire of IPCU/85, original vehicle earth support point
4 Green/white (gn/ws) wire of IPCU/86
5 IPCU mounted
6 Black (sw) wire from K3/30

Connecting IPCU



Route wiring harness of IPCU **1** to centre console.

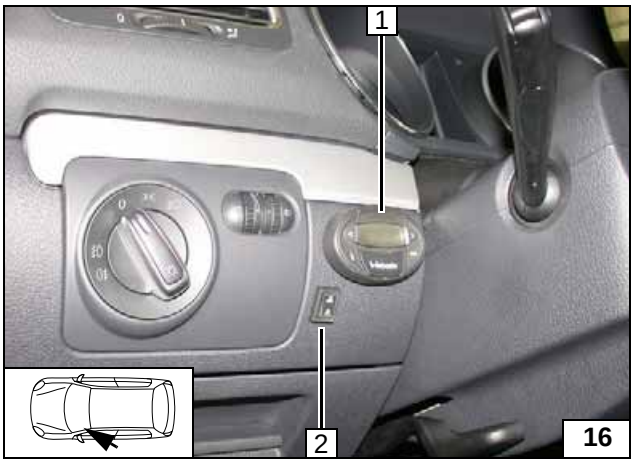
Routing wiring harness from IPCU



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

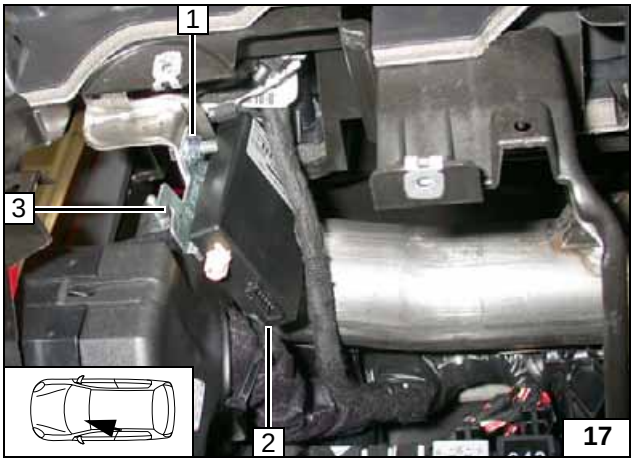
Connecting fan unit



Digital timer, summer/winter switch option

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

Digital timer

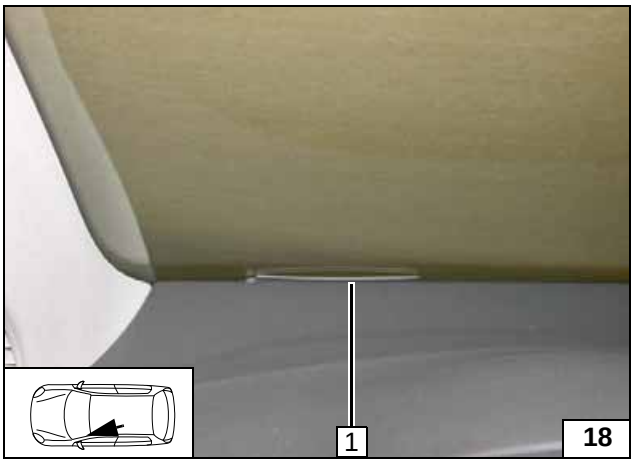


Remote option (Telestart)

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

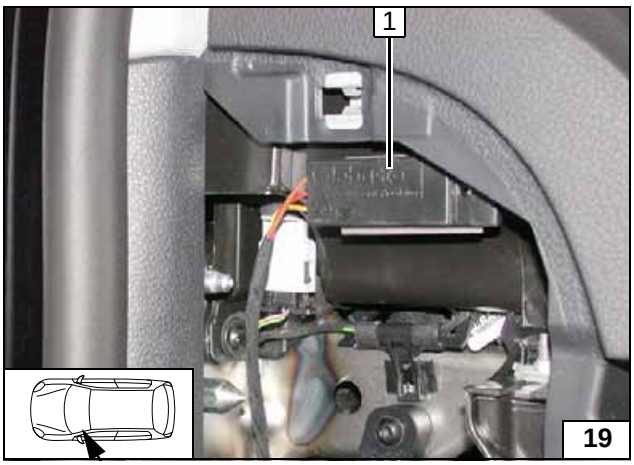
1 Existing hole, M6x20 bolt, flanged nut
2 Receiver

Mounting receiver



1 Antenna

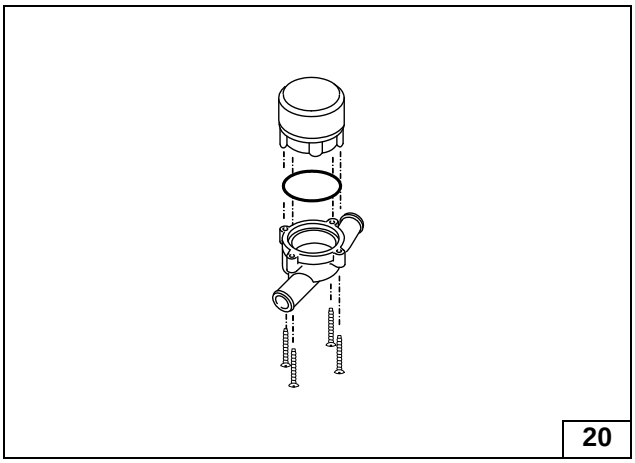
Mounting antenna



Temperature sensor T100 HTM

Fasten temperature sensor **1** with double-sided adhesive tape.

Mounting temperature sensor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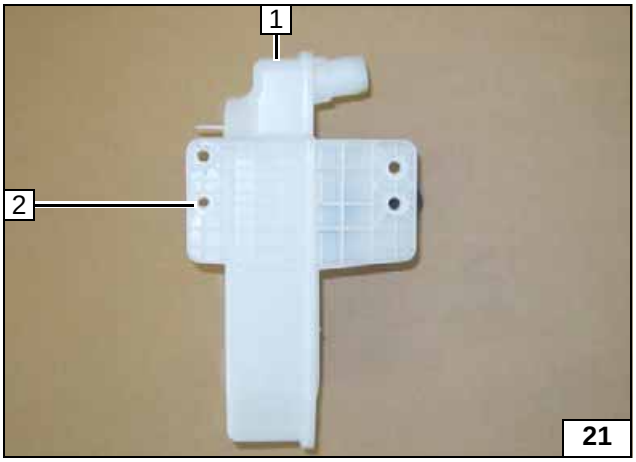
Premounting heater

Replace circulating pump cover with cover with straight entrance.

Preparing heater



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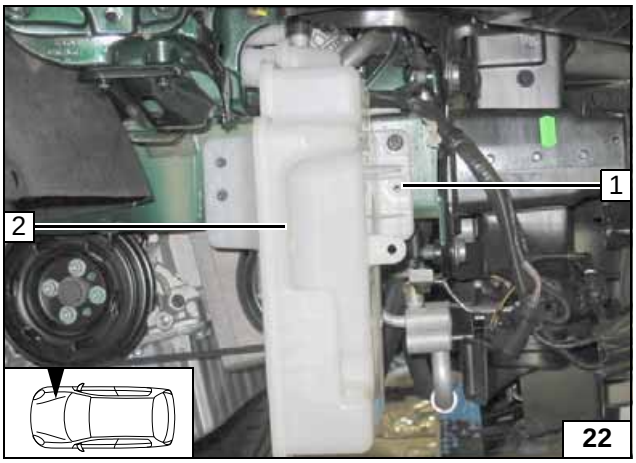
Preparing installation location

1 Washer reservoir
2 6.5 mm dia. hole

Preparing washer reservoir



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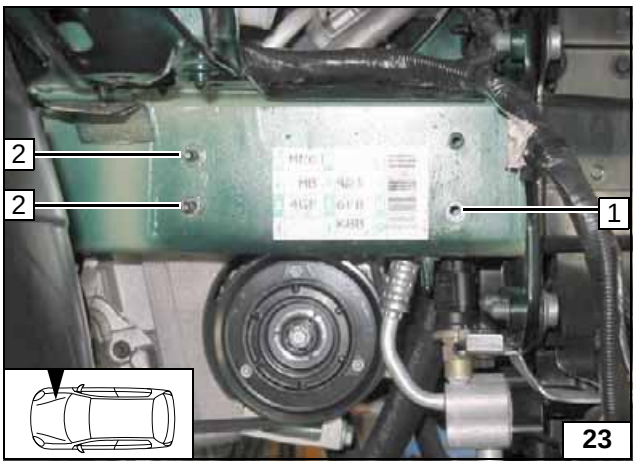
Mount washer reservoir **2** and copy hole pattern at position **1**.

1 Hole pattern, 9.1 mm dia. hole

Copying hole pattern



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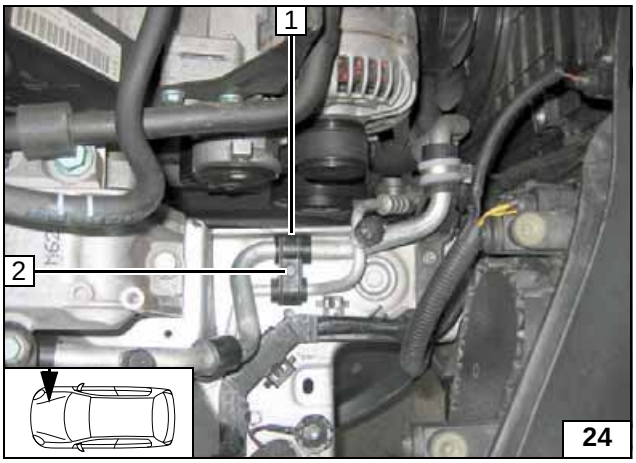
Shorten original vehicle stud bolt **2** [2x] by 5 mm.

1 9.1 mm dia. hole; M6 rivet nut

Installing rivet nut



Remove plastic clamp **1**and drill out hole at position **2** to 6.5 mm dia.

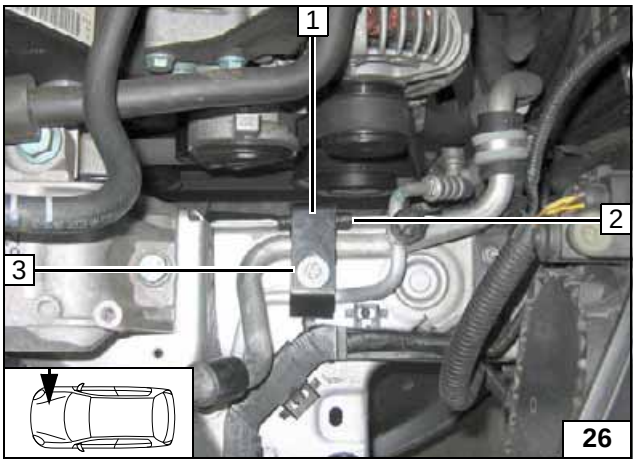
2 Discard bolt

Removing clamp

Remove plastic dowel at position **1** and drill out hole to 9.1 mm dia.

1 Rivet nut

Installing rivet nut

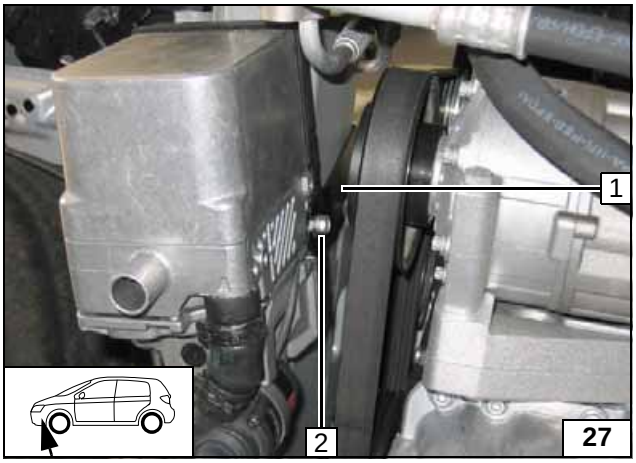


Reposition plastic clamp and loosely mount strut **1**.

2 Edge protection
3 M6x35 bolt, spring lockwasher, large diameter washer

Mounting strut

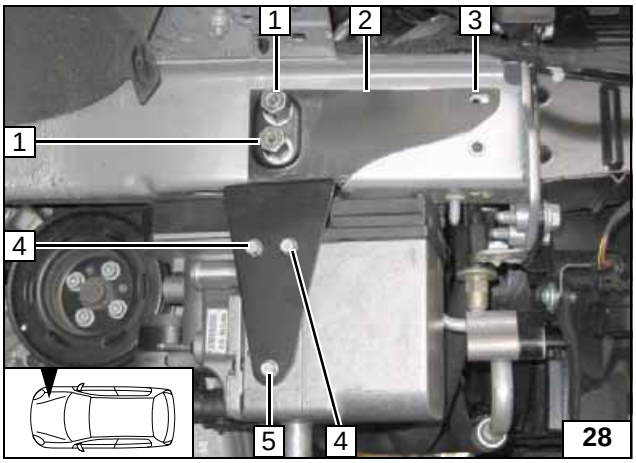
Installing heater



Connect wiring harness of heater unit before mounting heater.

1 Strut
2 Ejot screw

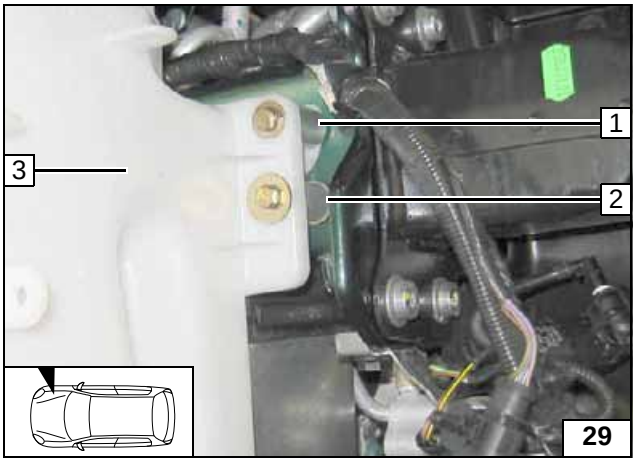
Mounting heater



Position bracket **2** when installing so that oblong hole and thread are vertically aligned at position **3**. Insert two washers between bracket **2** and heater at position **5**.

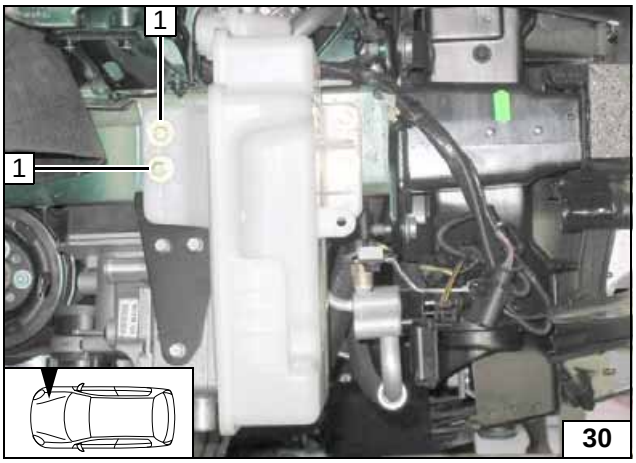
1 5 mm shim, 20 mm spacer nut, large diameter washer on existing stud bolt [2x each]
4 Ejot screw [2x]
5 Ejot screw, washer [2x]

Mounting heater



1 M6x60 bolt, spring lockwasher, large diameter washer, 30 mm shim, existing threaded hole
2 M6x60 bolt, spring lockwasher, large diameter washer, 30 mm shim, large diameter washer, rivet nut
3 Washer reservoir

Mounting washer reservoir



Tighten all screw connections.

1 M6x20 bolt, spring lockwasher, large diameter washer [2x each]

Mounting washer reservoir

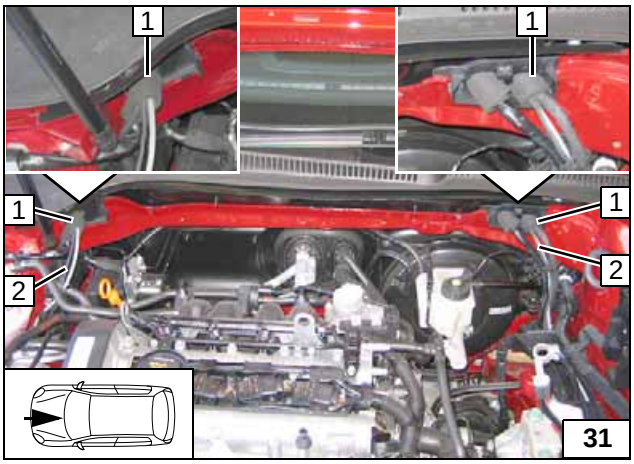
Fuel

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.

Route 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.

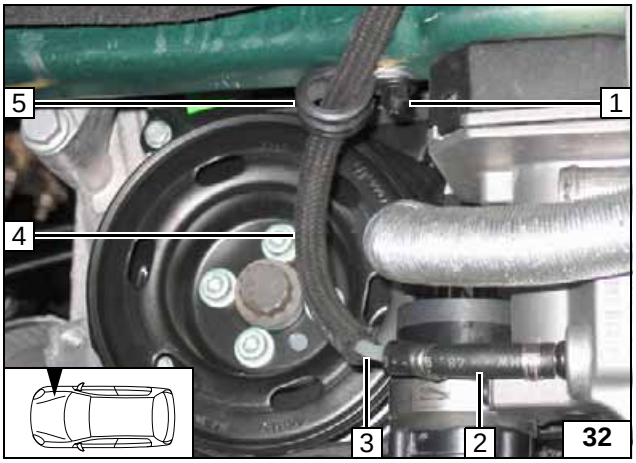
WARNING!
The fuel line and wiring harness are routed to the metering pump as shown in the wiring harness routing diagram.



Route 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.

1 Existing pass through [2x]

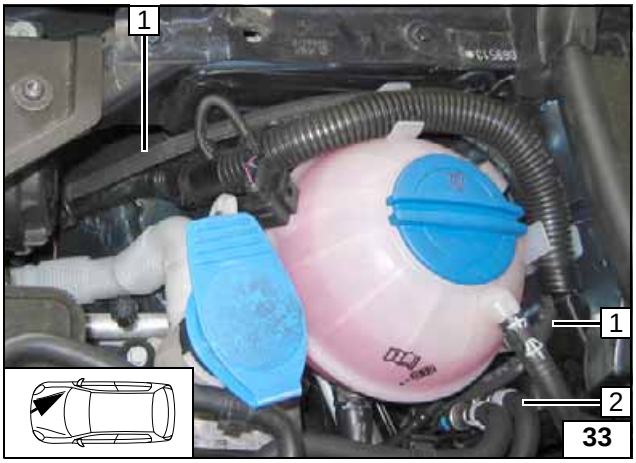
Routing wiring harness of metering pump



Cut fabric protective hose **4** to length of 1100 mm and push onto fuel line **3**.

1 Plastic nut, original vehicle stud bolt
2 Hose section, 10 mm dia. hose clamps [2x]
5 15 mm dia. rubber-coated p-clamp

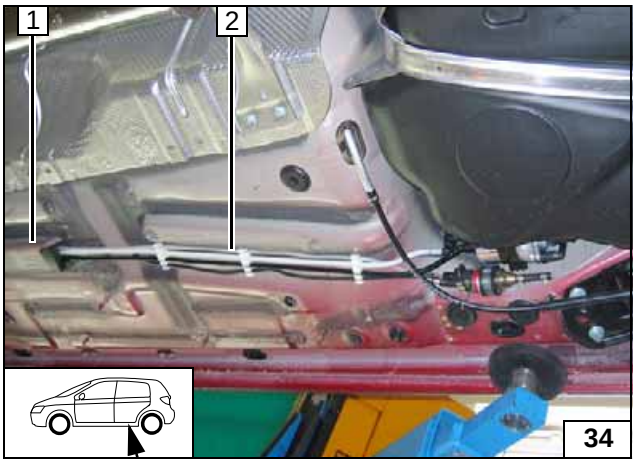
Routing fuel line



Guide fuel line **1** and wiring harness of metering pump into original vehicle line duct **2** and route to underbody.

1 Fuel line in fabric protective hose

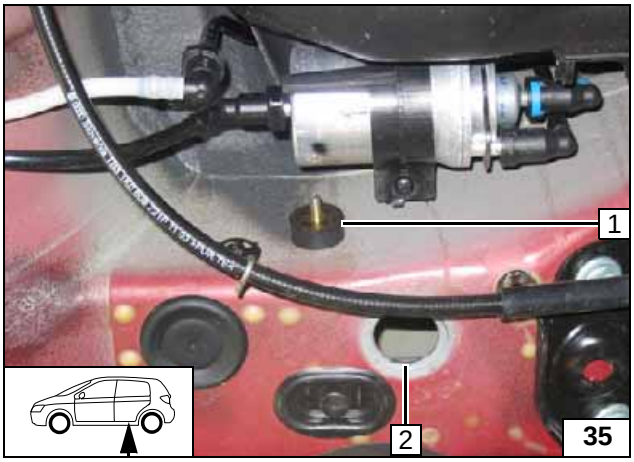
Routing lines



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

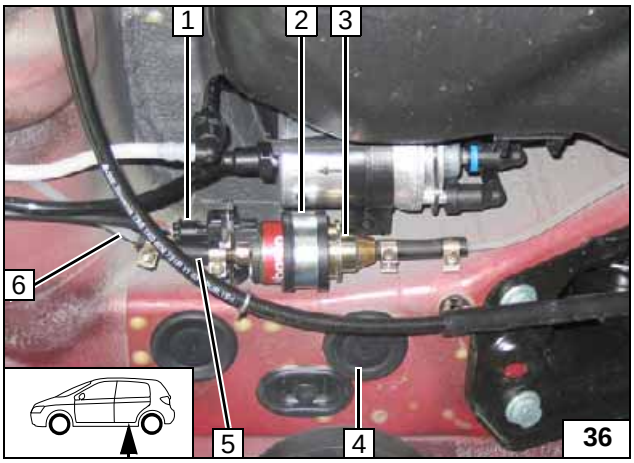
1 Line duct

Routing lines



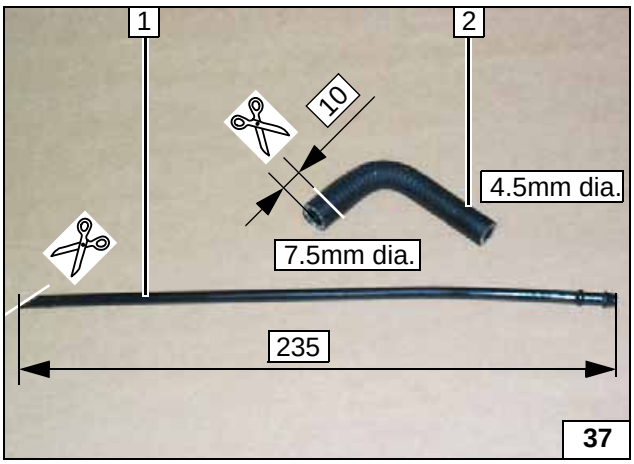
1 Silent block, large diameter washer, M6 flanged nut
2 Sealing plug removed

Mounting silent block



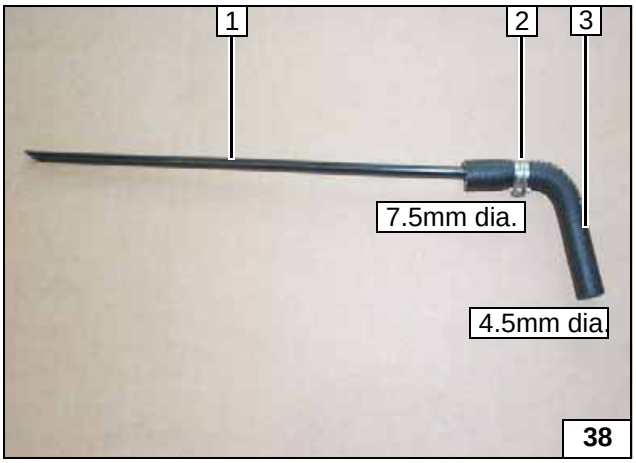
1 Wiring harness of metering pump, connector mounted
2 Secure rubber-coated p-clamp on silent block with flanged nut
3 Metering pump
4 Plug remounted
5 Hose section, 10 mm dia. hose clamp [2x]
6 Fuel line

Mounting metering pump



1 Standpipe
2 Moulded hose

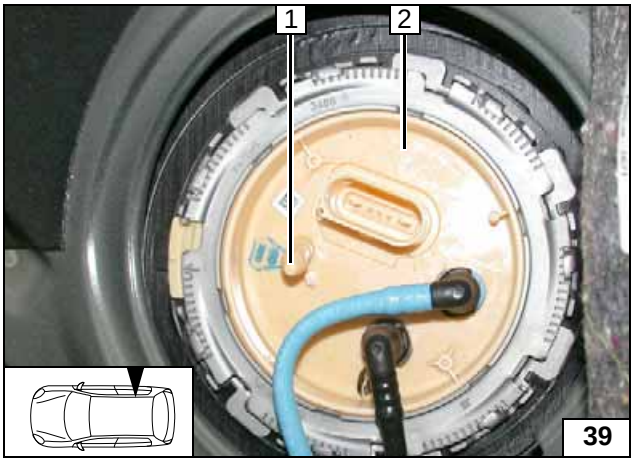
Cutting standpipe and moulded hose to length



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

1 Standpipe
3 Moulded hose

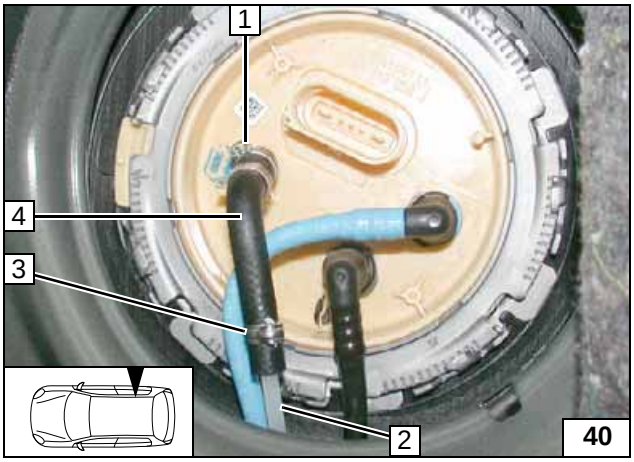
Premounting standpipe and moulded hose



Cut 3 mm off blind plug **1**.

2 Fuel-tank sending unit

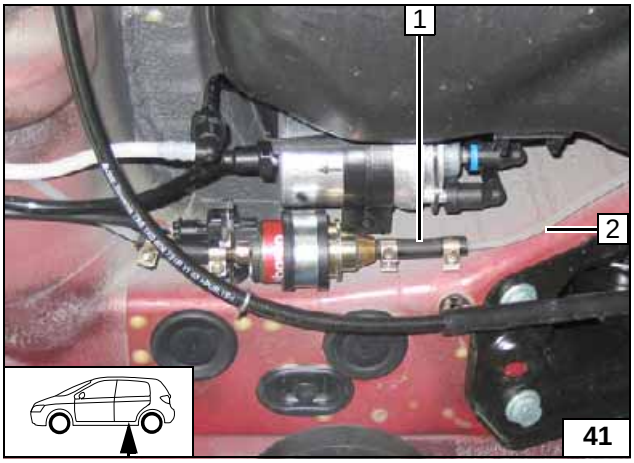
Cutting off blind plug



Ensure sufficient distance from adjacent components, especially from fuel gauge.

1 13.5mm dia. Caillau clamp
2 Fuel line
3 10 mm dia. Caillau clamp
4 Moulded hose with standpipe

Connecting fuel-tank sending unit



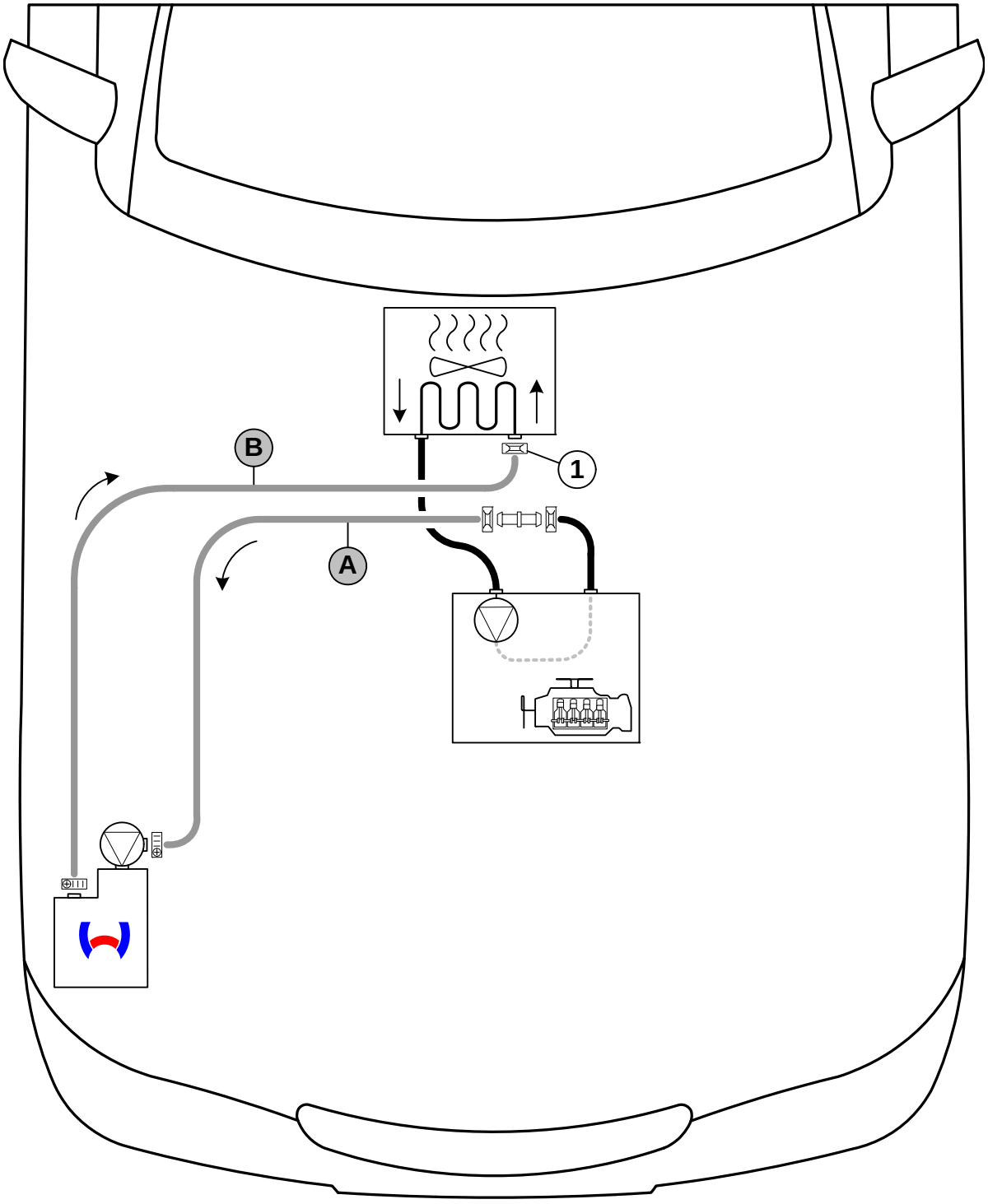
1 Hose section, 10mm dia. hose clamp [2x]
2 Fuel line

Connecting metering pump

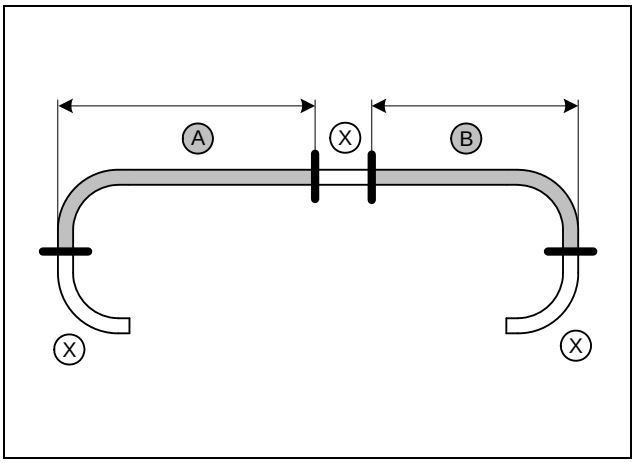
Coolant circuit

WARNING!
Any coolant running off should be collected in an appropriate container. Route coolant 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 coolant hose.
The connection should be "inline" based on the following diagram:

Hose installation diagram



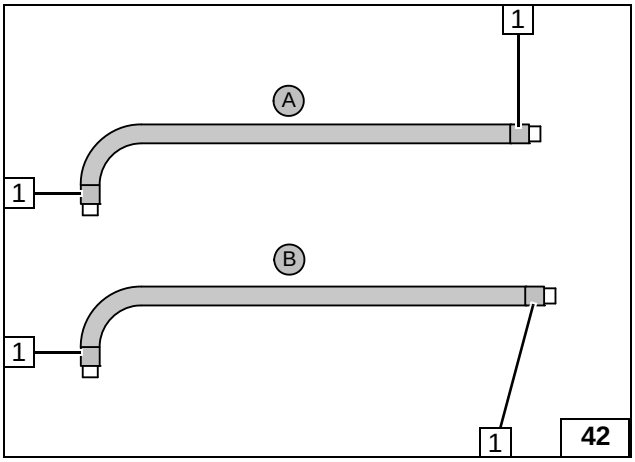
All spring clips = 27 mm dia.. **1** = Original vehicle spring clip .
All hose clamps = 20-27 mm dia. Connecting pipe = 20x20 dia.



Discard section **X**.

A = 970
B = 1020

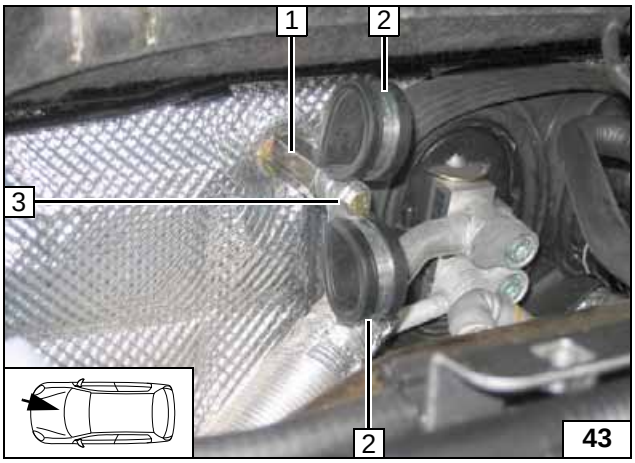
Cutting hoses to length



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

1 Heat shrink plastic tubing [4x]

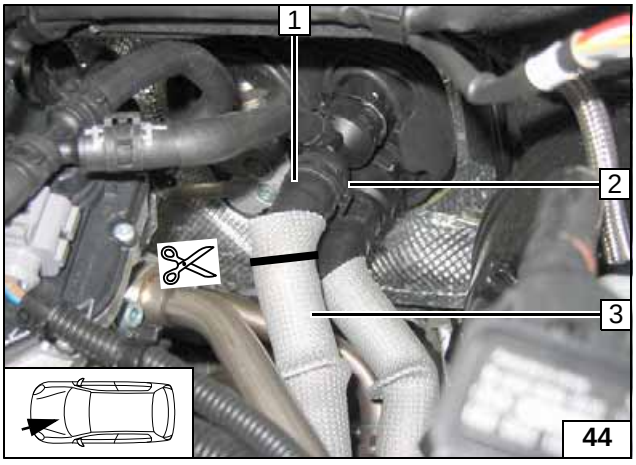
Preparing hoses



Mount bolt **3** loosely.

1 Large diameter washer, 40 mm spacer nut, original vehicle stud bolt
2 29 mm dia. rubber-coated p-clamp [2x]
3 M6x20 bolt, spring lockwasher

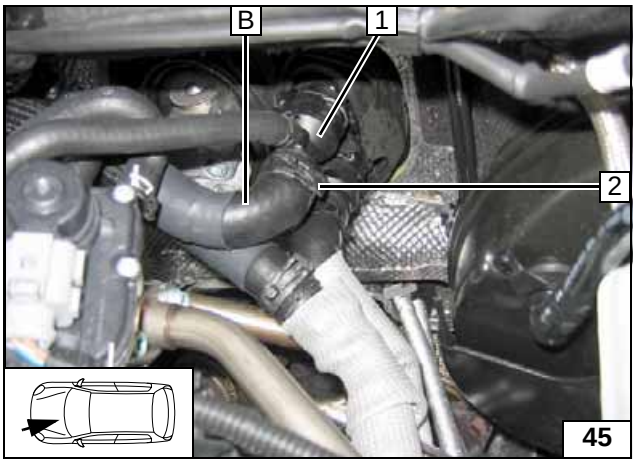
Premounting p-clamp



Push back protective hose in area of cutting point. Pull hose section off heat exchanger inlet **1** and discard. Spring clip **2** will be reused.

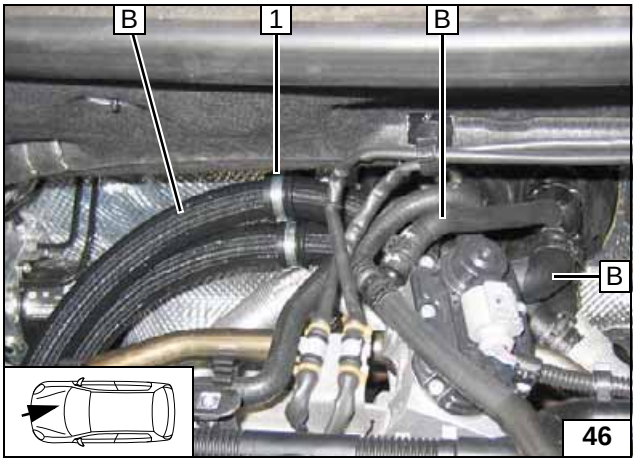
3 Engine outlet hose section

Cutting point



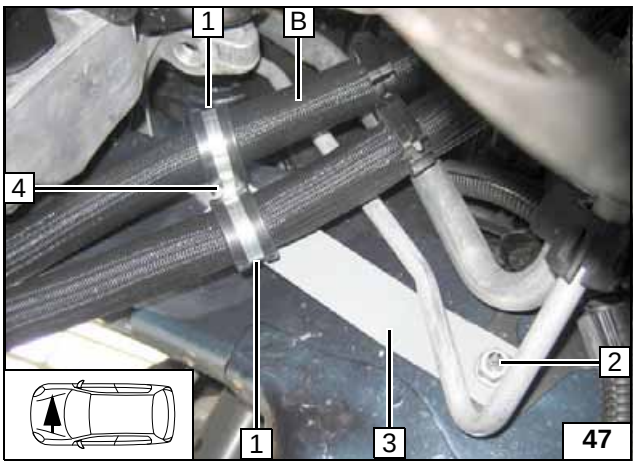
1 Heat exchanger inlet
2 Original vehicle spring clip

Connecting heat exchanger inlet



Route hose **B** through upper p-clamp **1**.

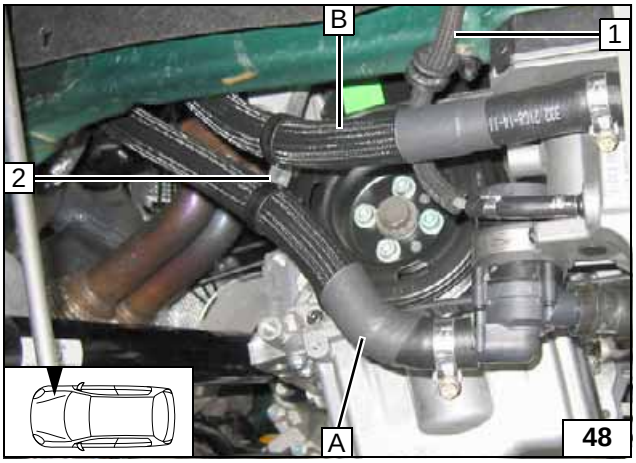
Hose routing



Ensure proper spacing between strut **3** and A/C line. Only loosely mount bolt **4.** Route hose **B** through upper p-clamp.

1 29 mm dia. rubber-coated p-clamp [2x]
2 Original vehicle M8 nut
3 Strut
4 M6x20 bolt, flanged nut

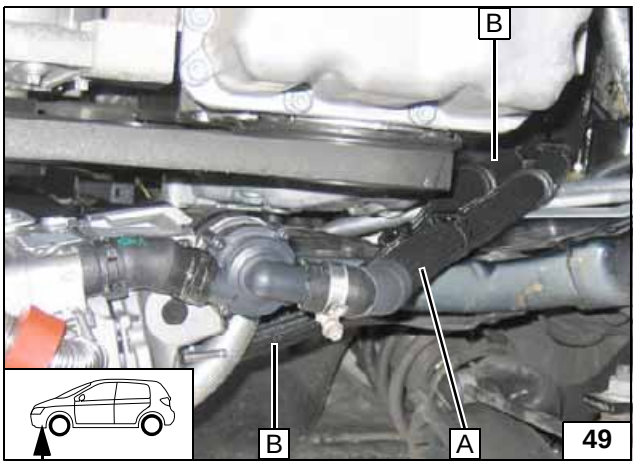
Hose routing



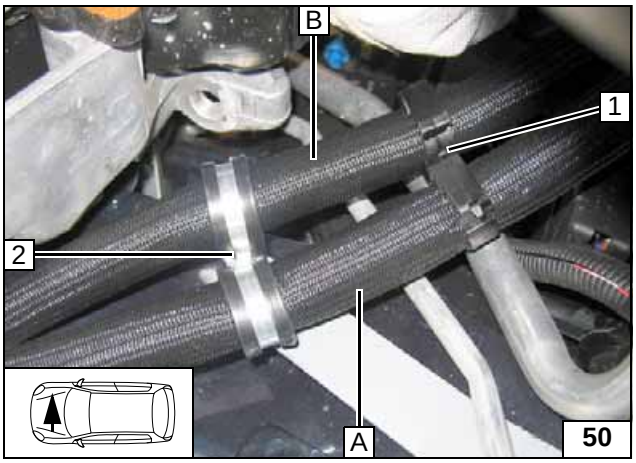
Fasten fuel line **1** on hose **B** with cable tie.

2 27x27 double clip, lockable

Connecting heater



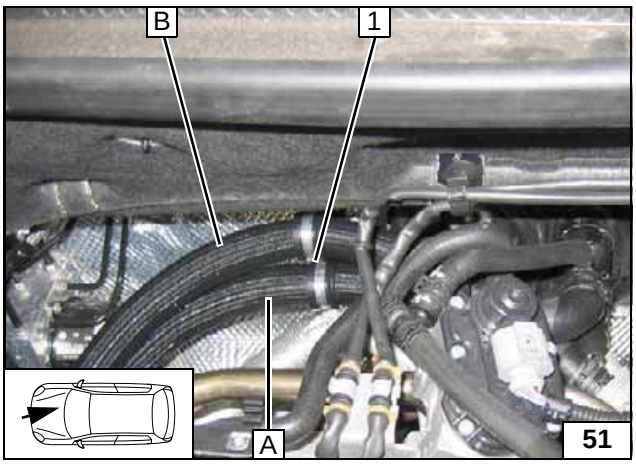
Hose routing



Route hose **A** through lower p-clamp. Tighten M6x20 bolt and flanged nut at position **2**.

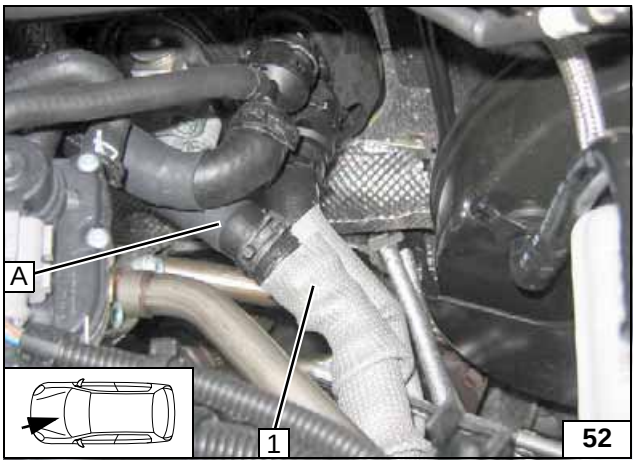
1 27x27 double clip, lockable

Hose routing



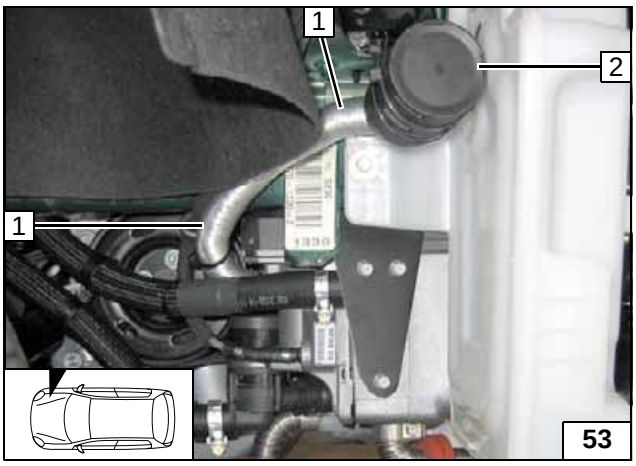
Route hose **A** through the lower p-clamp. Tighten M6x20 bolt at position **1**.

Hose routing



Push back protective hose on hose on engine outlet. Ensure sufficient distance from adjacent components and correct if necessary.

Connecting engine outlet

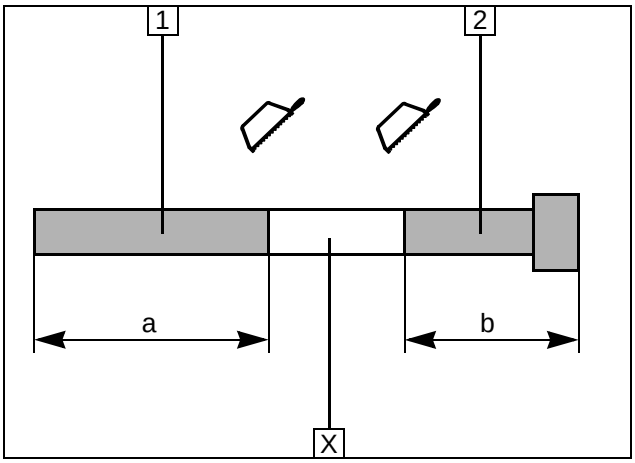


Combustion air

Fasten combustion air pipe **1** on heater with 27 mm dia. hose clamp. Fasten silencer **2** to body with cable tie.

Exhaust system

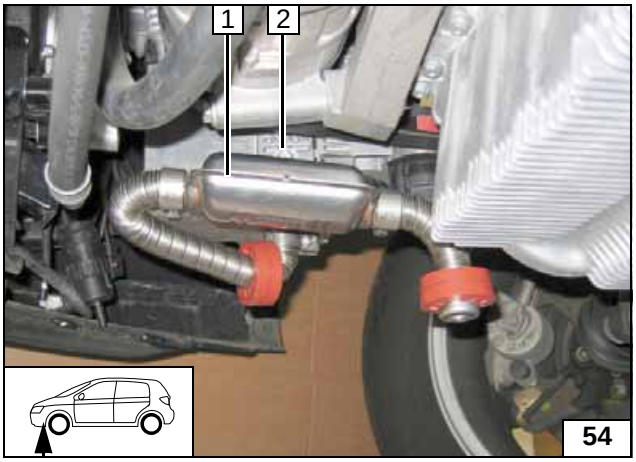
Preparing exhaust pipe



Discard section **X**

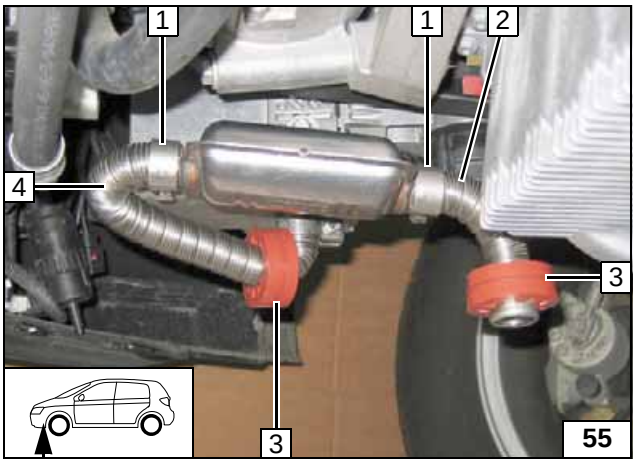
1 Exhaust pipe
a = 220
2 Exhaust end section
b = 115

Mounting silencer



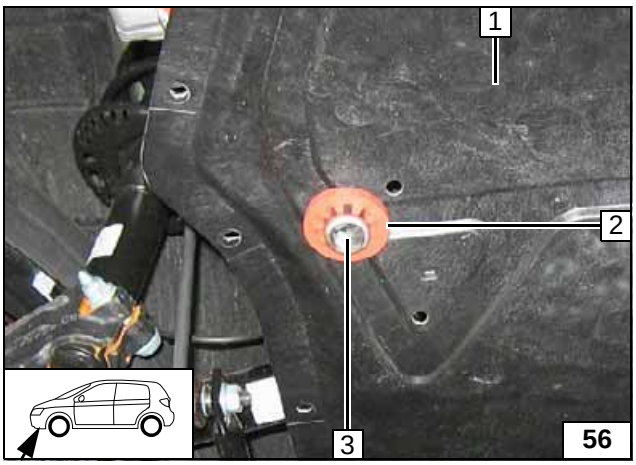
1 Exhaust silencer, M6x20 bolt, flanged nut on angle bracket
2 Ejot screw, large diameter washer, angle bracket on heater

Premounting exhaust pipe and end section



1 Hose clamp [2x]
2 Exhaust end section
3 Red (rt) rubber isolator with groove
4 Exhaust pipe

Inserting rubber isolator



Drill 42 mm dia. hole at position **3** in underride protection **1**. Align exhaust end section **3** flush on red rubber isolator **2**.

Final Work

WARNING!
Mount removed parts in reverse order. Check all hoses, clamps and all electrical connections for firm seating. Insulate and tie back all loose lines.
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" signboard near the filler neck.**
- **See installation instructions for initial start-up and function test**

Reduce sensitivity of passenger compartment monitoring

WARNING!
Observe the applicable repair manual of the respective vehicle.

- Connect the VAS tester 5051/52
- Call up the position "Adjustment - 10" in the central electrical box (BCM).
- Select channel 15
- Input the new value "100" (the value 100 corresponds to 50%)
- Save these settings

Webasto
Feel the drive

Webasto AG
Postfach 80
D-82132 Stockdorf / Germany
National Hotline: 01805 93 22 78
(14 Cent aus dem deutschen Festnetz)
Hotfax: 0395 5592 353
Hotmail: technikcenter@webasto.com
http://www.webasto.com

Operating Instructions for End Customer

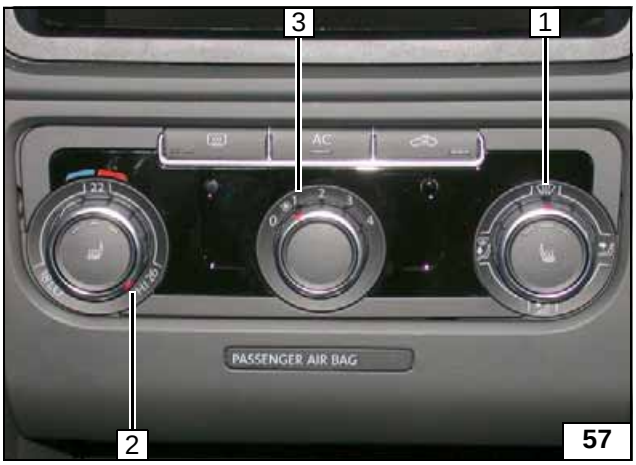
Please remove page and add to the vehicle operating instructions.

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

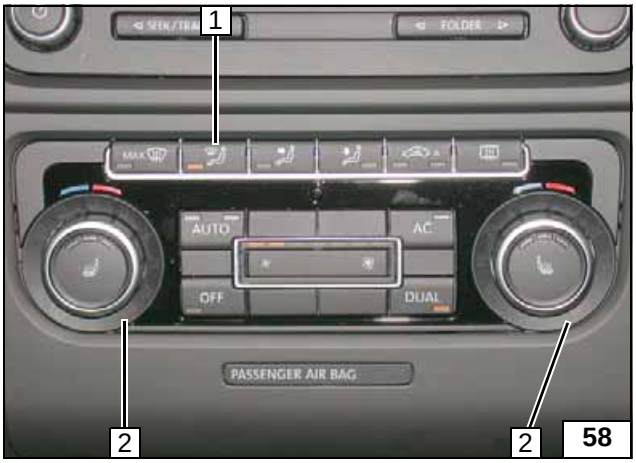
Before parking the vehicle, make the following settings:

Climatic



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

Climatronic



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