Water Heater

***Thermo Top E* Parking Heater** E1 00 0003

***Thermo Top C* Parking Heater** E1 00 0002

Installation Documentation

Citroen Jumpy / Fiat Scudo / Peugeot Expert

From Model Year 2007

Toyota Proace

From model year 2013

Diesel

Left-hand drive vehicle

Manual and automatic transmission

Manual air-conditioning and automatic air-conditioningManual air-conditioning and automatic air-conditioning

WARNING!

Hazard warning:

The improper installation or repair of Webasto heating and cooling systems can cause fire or the leakage of deadly carbon monoxide, leading to serious injury or death.

To install and repair Webasto heating and cooling systems you need to have completed a special company training course and have the appropriate technical documentation, special tools and special equipment.

Only use genuine Webasto parts. See the Webasto air and water heaters accessories catalogue for this purpose.

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.

Table of Contents

Validity

Manufacturer	Model	Type	EG-BE No. / ABE
Citroen	Jumpy	G9	e2 * 2001 / 116 * 0348 * ...
Citroen	Jumpy	G9	e2 * 2001 / 116 * 0350 * ...
Citroen	Jumpy	G9	e2 * 2007 / 46 * 0045 * ...
Fiat	Scudo	270	e2 * 2001 / 116 * 0351 * ...
Peugeot	Expert	G9	e2 * 2001 / 116 * 0349 * ...
Peugeot	Expert	G9	e2 * 2007 / 46 * 0046 * ...
Toyota	Proace	X	e2 * 2007 / 46 * 0388 * ...

Engine type	Engine model	Output in kW	Displacement in cm³
9HU	Diesel	66	1560
RHK	Diesel	88	1997
RH02	Diesel	94	1997
AHZ	Diesel	94	1997
4WZ-FTV	Diesel	94	1997
4WZ-FHV	Diesel	120	1997
RHH	Diesel	120	1997

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 the digital timer should be confirmed with the end customer before installation.

Heater / Installation Kit

Quantity	Description	Order No.:
1	Basic delivery scope of *Thermo Top E/C*	see price list
1	Heater control	see price list

Also required:

1	Installation kit for Citroen Jumpy / Fiat Scudo / Peugeot Expert / Toyota Proace Diesel manual air-conditioning	1313563C

or:

1	Installation kit for Citroen Jumpy / Fiat Scudo / Peugeot Expert Diesel automatic air-conditioning	1313585E

Foreword

This installation documentation applies to Citroen Jumpy / Fiat Scudo / Peugeot Expert diesel vehicles from model year 2007 and later as well as Toyota Proace from model year 2013 and later - for validity, see page 2 -, 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 regulations in this "installation documentation", the "operating instructions" and "installation instructions" for the *Thermo Top E/C* 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. Insulate loose wire ends and tie back. Connectors on electronic components have to audibly click into place during installation.

Sharp edges should be fitted with rub protection. Spray unfinished body areas, e.g. drilled holes, with anti-corrosion wax (Tectyl 100K, Order No. 111329).

When installing an IPCU, the relevant settings must be checked or adjusted before the installation.

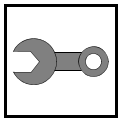
Special Tools

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

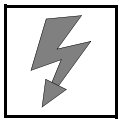
Explanatory Notes on Document

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

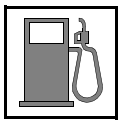


Electrical System

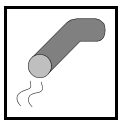


Coolant Circuit

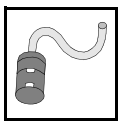
Fuel



Exhaust gas



Combustion Air



Software

Special features are highlighted using the following symbols:

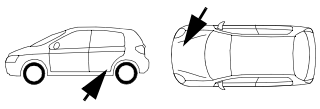
Specific risk of injury or fatal accidents.

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.

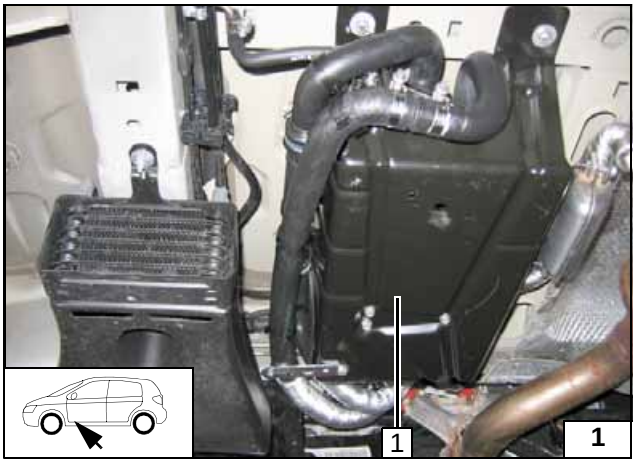
All dimensions are in mm!
Tightening torque of hose clamps = 2.0 + 0.5 Nm!
Tightening torque of Ejot screws, Ejot studs = 10 Nm!

Preliminary Work

WARNING!

- Open the fuel tank cap, ventilate the fuel tank.
- Close the fuel tank cap again.
- Disconnect the battery.
- 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.
- Remove the air filter together with the intake hose.
- Remove the fresh-air supply line above the engine.
- Open the fuse box in the engine compartment.
- Remove the cover above the glove compartment.
- Remove the footwell trim on the driver's side.
- Remove the lower instrument panel trim on the driver's side.

Please remove page 29 "Operating Instructions for End Customer" and add to the operating instructions.



Heater Installation Location

1 Heater

Installation location

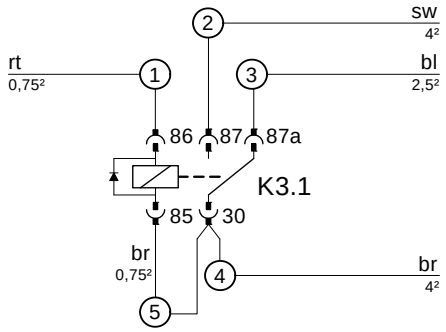
Preparing Electrical System

Wire sections retain their numbering throughout the entire document.

Preparing additional relay K3.1

Manual air-conditioning

Produce connections as shown in wiring diagram.

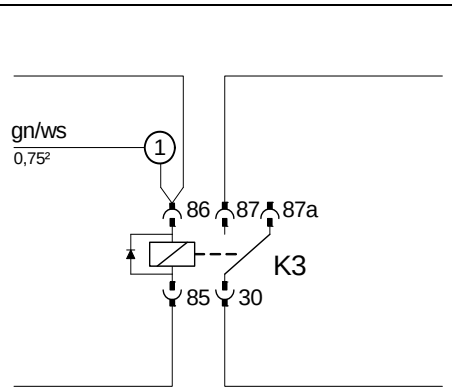


2

Preparing K3 relay

Automatic air-conditioning

Produce connections as shown in wiring diagram.
Remove red (rt) wire from K3/87a and discard. Pull wire ① into provided protective sleeving.



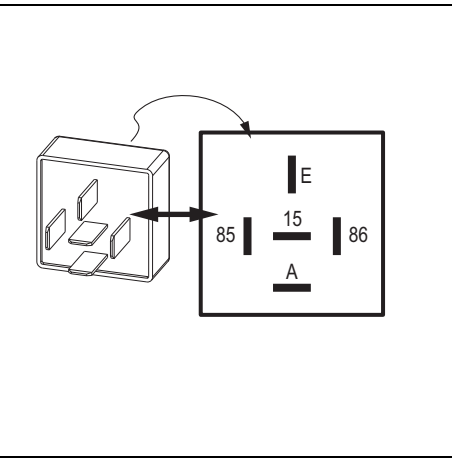
3

Preparing IPCU

Check the IPCU settings when starting up the heater and adjust if necessary.

Settings:

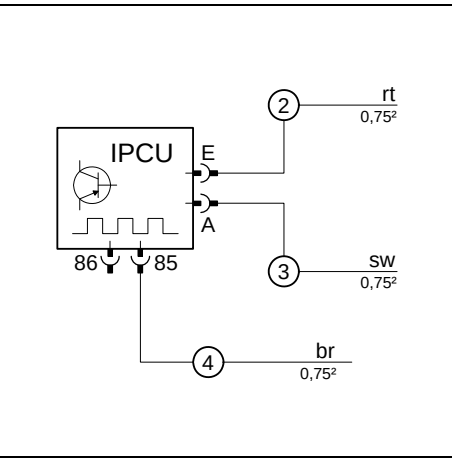
Duty cycle: 42%
Frequency: 1200Hz
Voltage: 4.6V
Function: High side



4

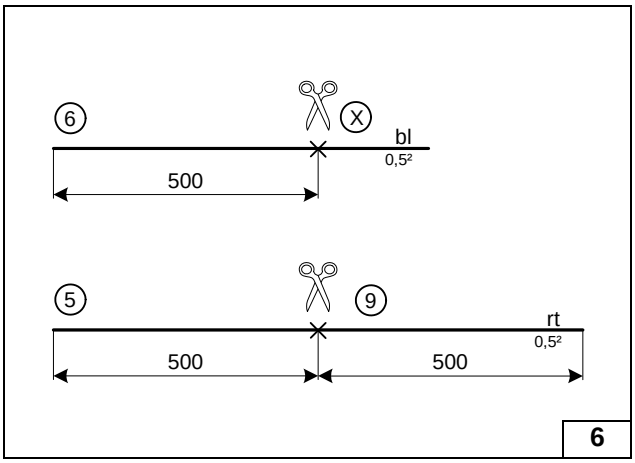
Preparing IPCU

Connect lines to IPCU socket.



5

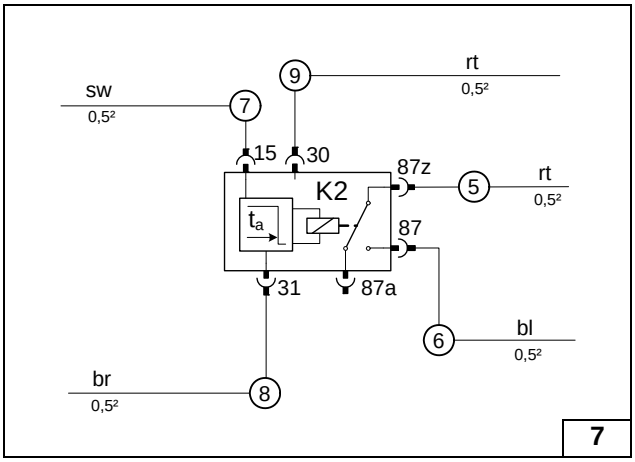
Cutting wires to length



6

Preparing K2-relay

Produce connections as shown in wiring diagram. Pull wires ⑦, ⑧ and ⑨ into protective sleeving.

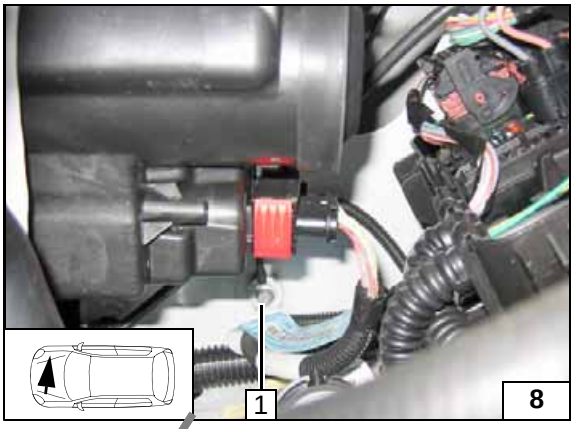


7

Electrical System

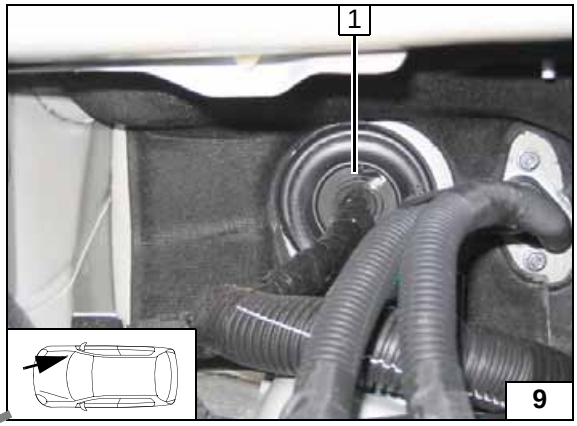
Earth wire

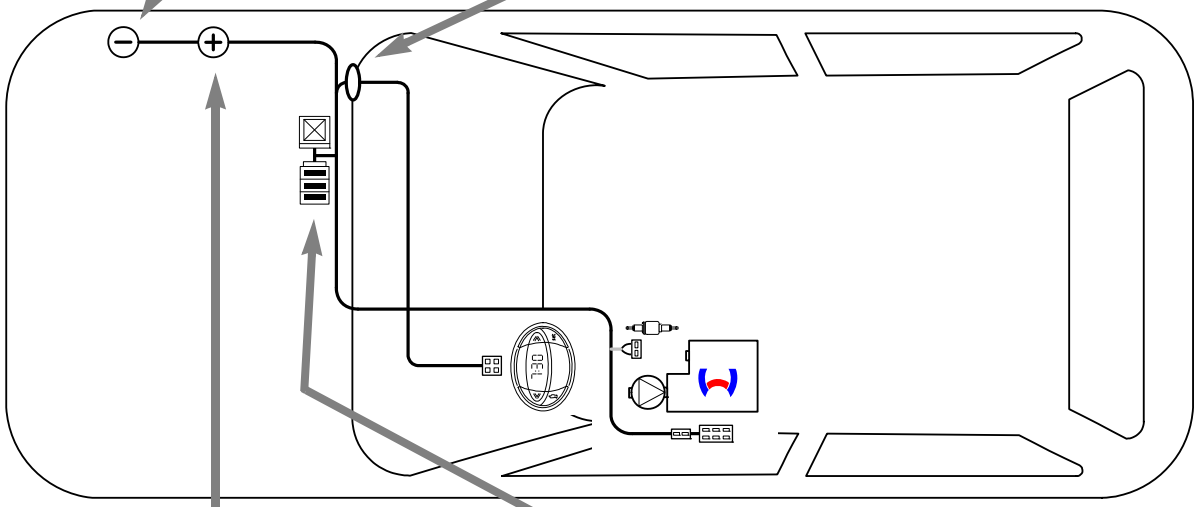
1 Original vehicle earth support point



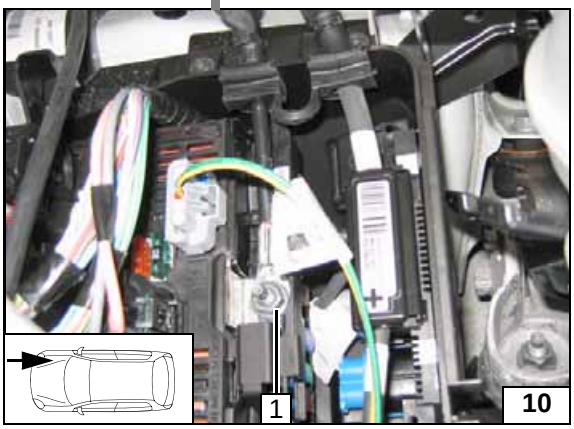
Wiring harness pass through

1 Protective rubber plug



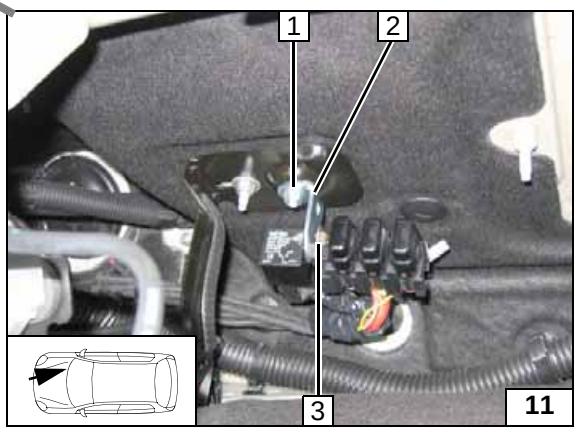


Wiring harness routing diagram



Positive wire

1 Original vehicle positive support point

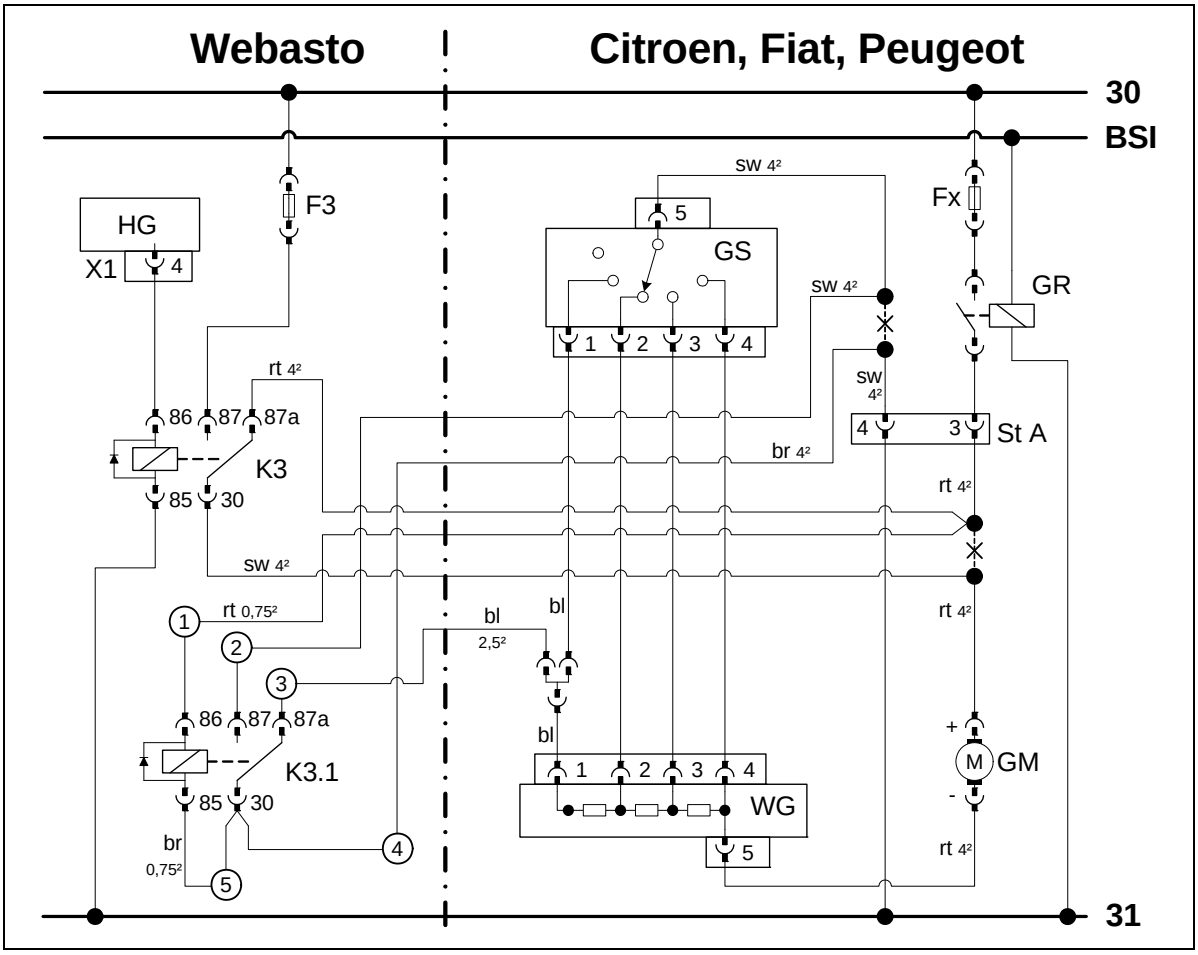


Fuse holder, K3 relay

1 Original vehicle stud bolt, flanged nut
2 Angle bracket
3 M5x16 bolt, washer, retaining plate of fuse holder, K3 relay, flanged nut on angle bracket

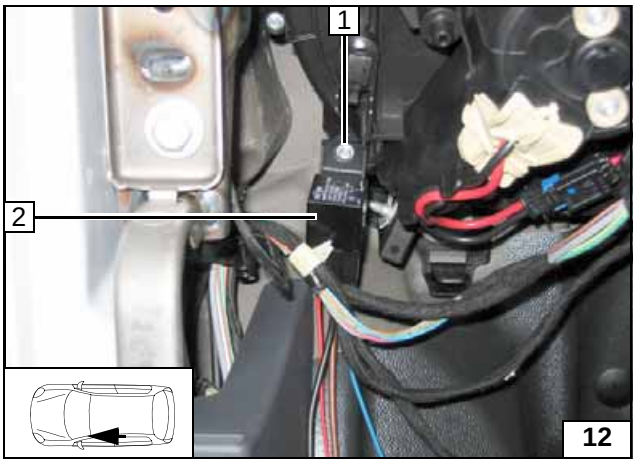
Fan Controller for Manual Air-Conditioning

Wiring diagram



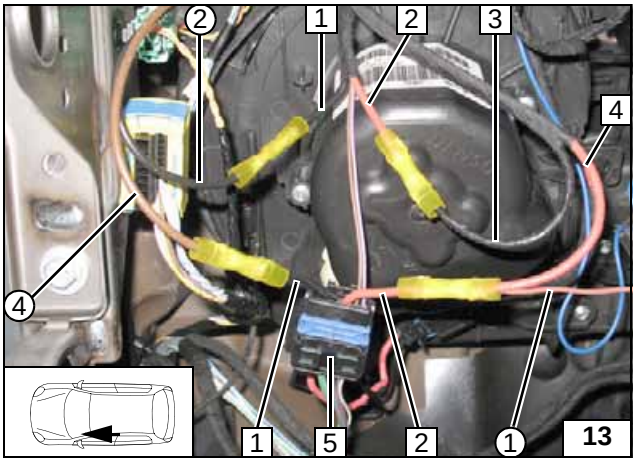
Legend

Webasto components		Vehicle components		Colours and symbols	
HG	Heater TT-C/E	Fx	Fuse	rt	red
X1	6-pin heater connector	GS	Fan switch	ws	white
F3	25A fuse	GR	Fan relay	sw	black
K3	Fan relay	St A	6-pin connector	br	brown
K3.1	Additional relay	GM	Fan motor	bl	blue
		WG	Resistor group		
				X	Cutting point
				Wiring colours may vary.	



1 Original vehicle bolt
2 K3.1 relay

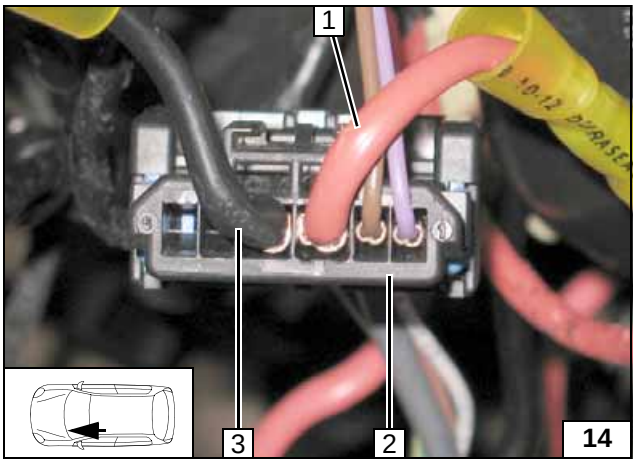
Installing K3.1 relay



Connection to 6-pin connector **5** before the fan motor. Produce connections as shown in wiring diagram.

1 Black (sw) wire of connector, pin 4, separated
2 Red (rt) wire of connector, pin 3, separated
3 Black (sw) wire from K3/30
4 Red (rt) wire from K3/87a
① Red (rt) wire from K3.1/86
② Black (sw) wire from K3.1/87
④ Brown (br) wire from K3.1/30

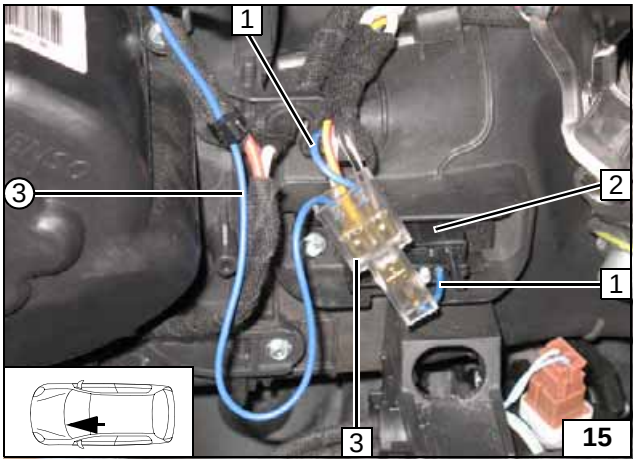
Connecting fan motor



Wire-side view of connection on 6-pin connector **2**.

1 Red (rt) wire of connector, pin 3
3 Black (sw) wire of connector, pin 4

View of 6-pin connector



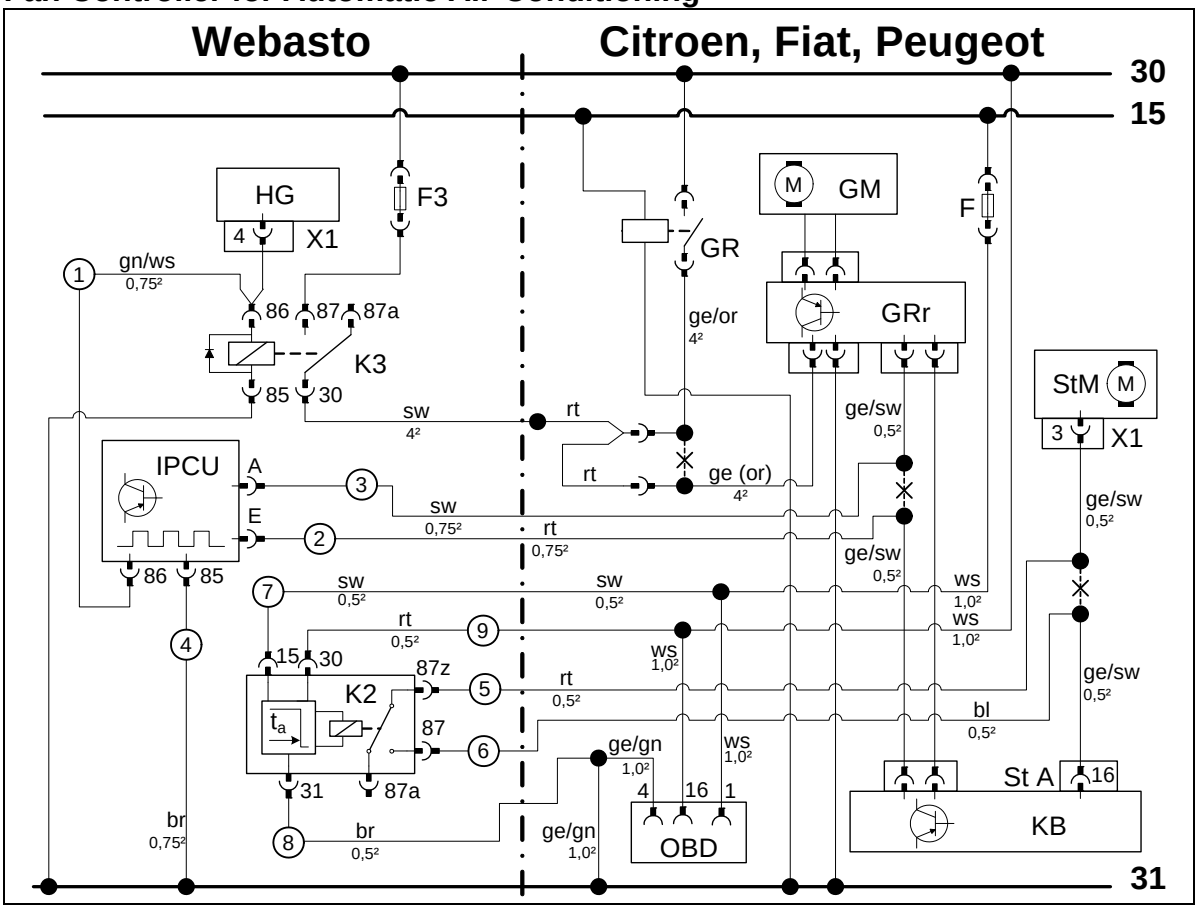
Connection to 5-pin connector **2** from resistor group. Produce connections as shown in wiring diagram.

1 Blue (bl) wire of connector, pin 1, disconnected
3 3x connector
③ Blue (bl) wire from K3.1/87a

Connecting resistor group

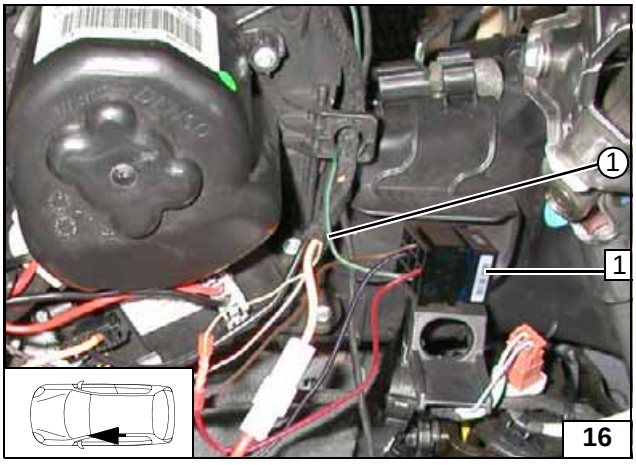
Fan Controller for Automatic Air-Conditioning

Wiring diagram



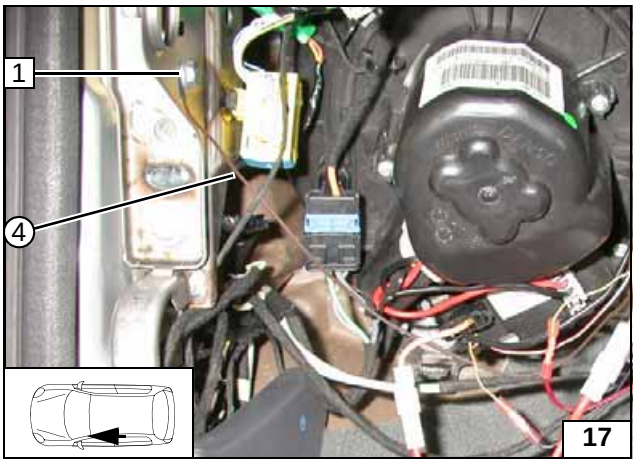
Webasto components		Vehicle components		Colours and symbols	
HG	Heater TT-C/E	GRr	Fan controller	rt	red
X1	6-pin heater connector	GR	Fan relay	ws	white
F3	25A fuse	GM	Fan motor	sw	black
K3	Fan relay	KB	A/C control panel	br	brown
K2	Additional relay delayed by 20 sec.	St A	Connector KB	ge	yellow
		OBD	Diagnosis connector OBD	gn	green
IPCU	Pulse width modulator	F	Fuse	or	orange
IPCU settings:		StM	Positioning motor of air distribution		
Duty cycle:	42%	X1	6-pin connector of StM		
Frequency:	1200Hz				
Voltage:	4.6V				
Function:	High side			Wiring colours may vary.	

Legend



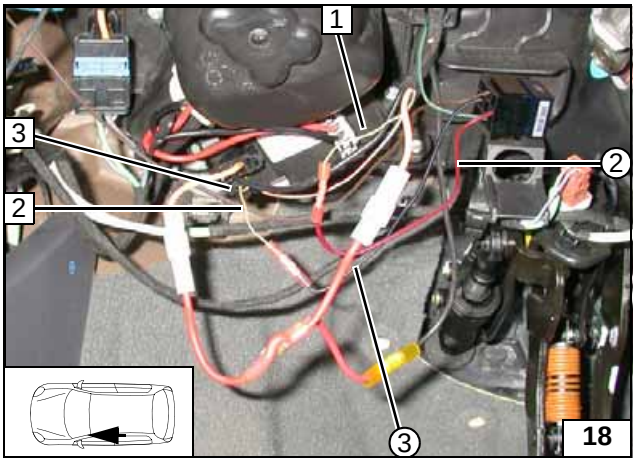
Secure IPCU socket **1** with double-sided adhesive tape. Connect green/white (gn/ws) wire ① from K3/86 to IPCU/86.

Installing IPCU



1 M6x16 bolt, flanged nut on existing hole
④ Cable lug, brown (br) wire from IPCU/85

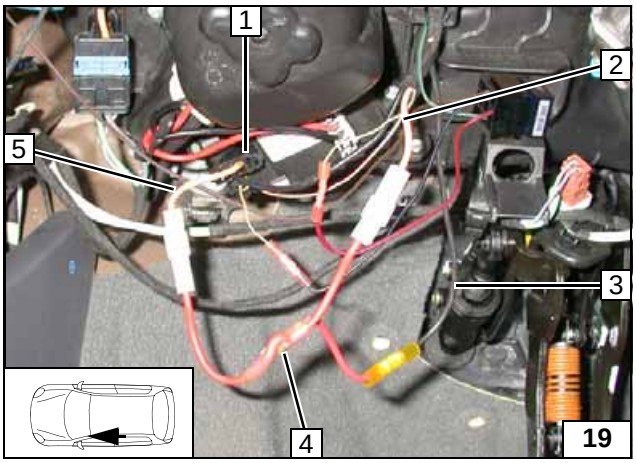
Connecting earth wire of IPCU



Connection on 2-pin connector **3** from fan controller. Produce connections as shown in wiring diagram.

1 Yellow/black (ge/sw) wire of A/C control panel
2 Yellow/black (ge/sw) wire of connector fan controller
② Red (rt) wire from IPCU/E
③ Black (sw) wire from IPCU/A

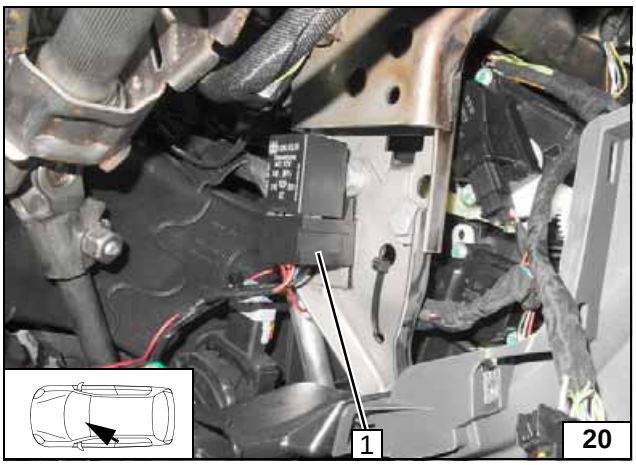
Connecting IPCU



Connection on 2-pin connector **1** from fan controller. Produce connections as shown in wiring diagram.

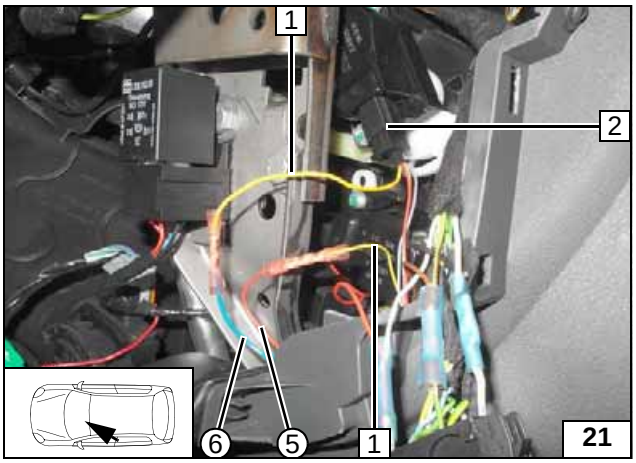
2 Yellow or orange (ge/or) wire of fan relay
3 Black (sw) wire from K3/30
4 Y-adapter
5 Yellow (ge) wire of connector fan controller

Connecting fan controller



Fasten K2 relay socket **1** with double-sided adhesive tape.

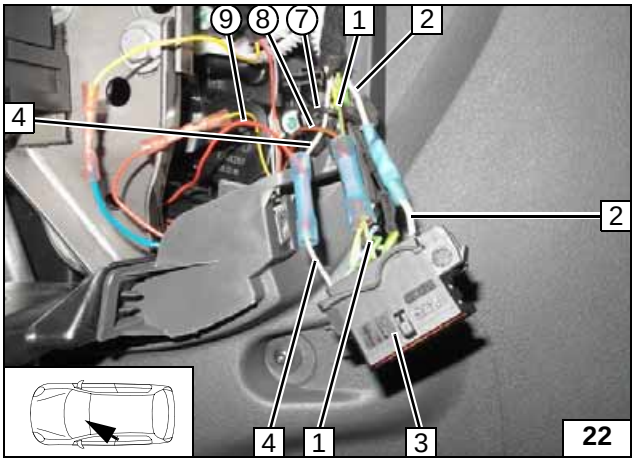
Installing K2 relay



Connection to 6-pin connector X1 **2** pin 3 from air distribution positioning motor.

1 Yellow/black (ge/sw) wire of X1/3 separated
⑤ Red (rt) wire from K2/87z
⑥ Blue (bl) wire from K2/87

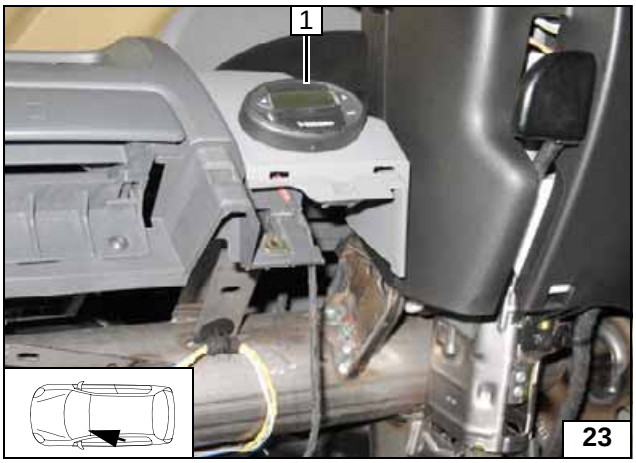
Connection to positioning motor



Connection to OBD socket outlet **3**. Produce connections as shown in wiring diagram.

1 Green/yellow (gn/ge) wire of 4-pin, disconnected
2 White (ws) wire, Pin 1, disconnected
4 White (ws) wire, Pin 16, disconnected
⑦ Black (sw) wire from K2/15
⑧ Brown (br) wire from K2/31
⑨ Red (rt) wire from K2/30

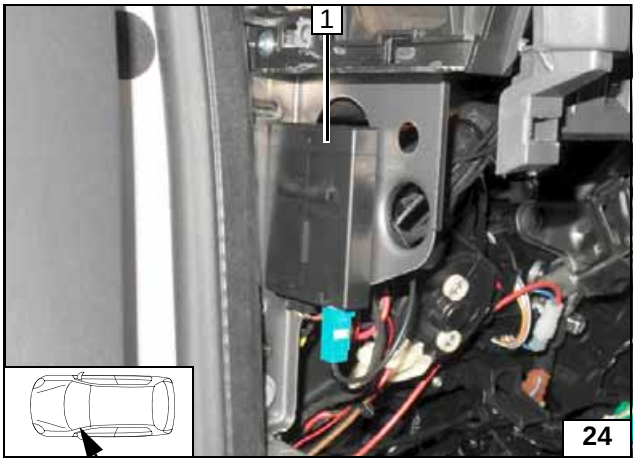
Connection to OBD socket outlet



Digital Timer

1 Digital timer

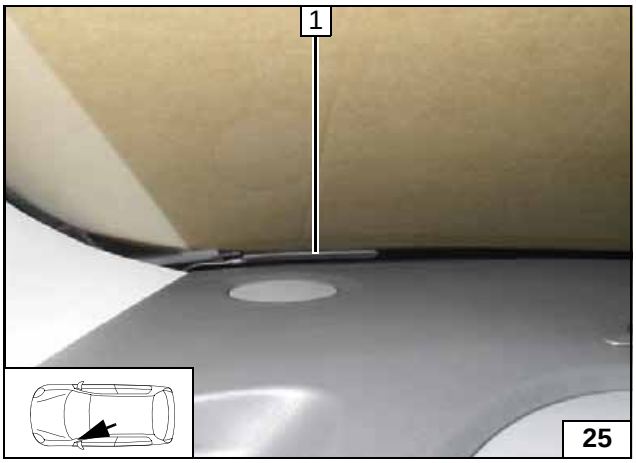
Installing digital timer



Remote Option (Telestart)

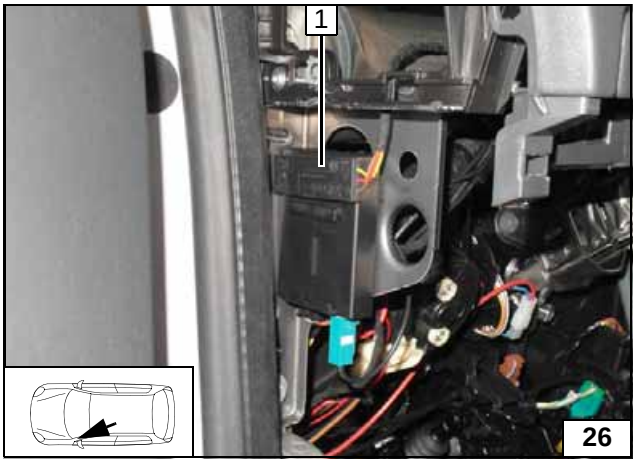
Fasten receiver **1** with adhesive tape.

Installing receiver



1 Antenna

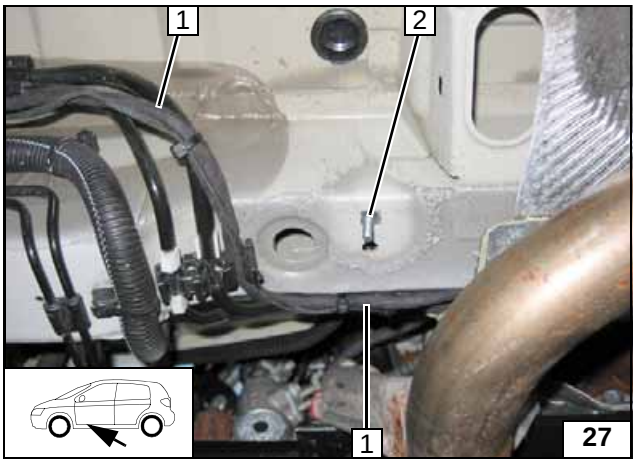
Installing antenna



Temperature sensor T100 HTM

Fasten temperature sensor **1** with adhesive tape.

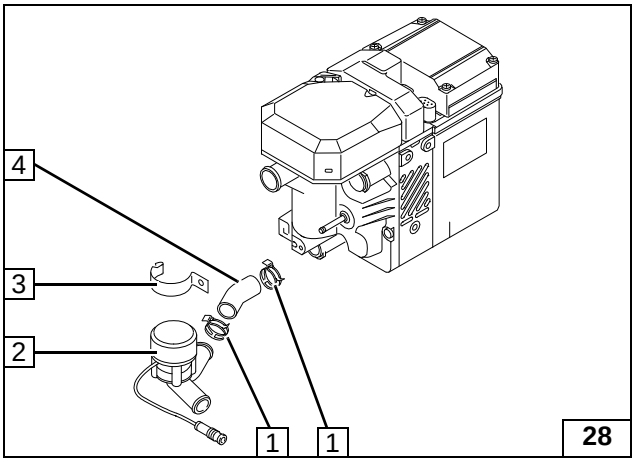
Installing temperature sensor



Preparing Installation Location

Route wiring harnesses of heater and metering pump **1** to installation location of heater. Insert M6x20 bolt **2** with large diameter washer in original vehicle hole from above.

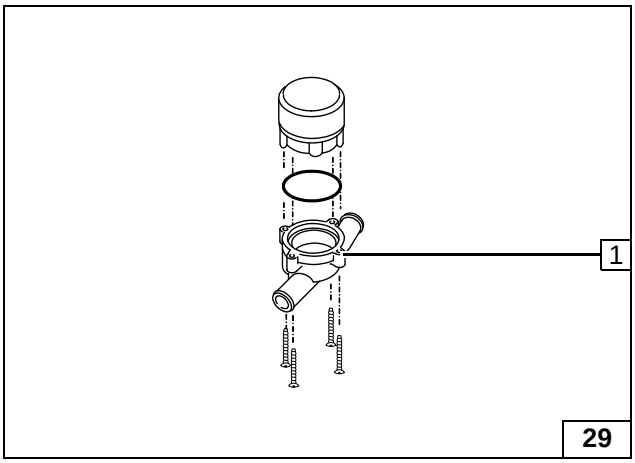
Mounting bolt



Preparing Heater

1 Spring clip [2x]
2 Circulating pump
3 Clamp
4 Hose of heater inlet

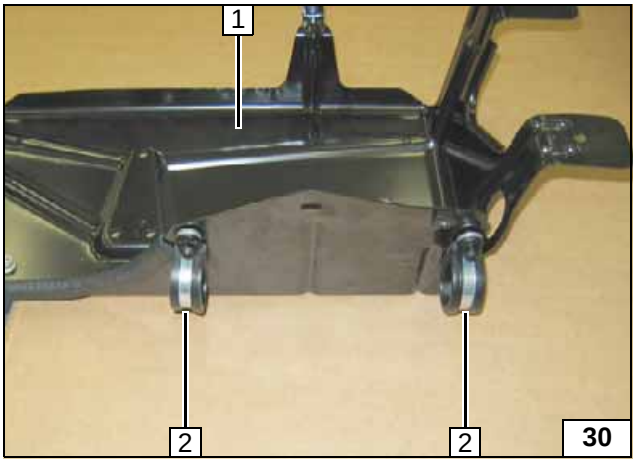
Dismantling circulating pump



Reinstall circulating pump after replacing.

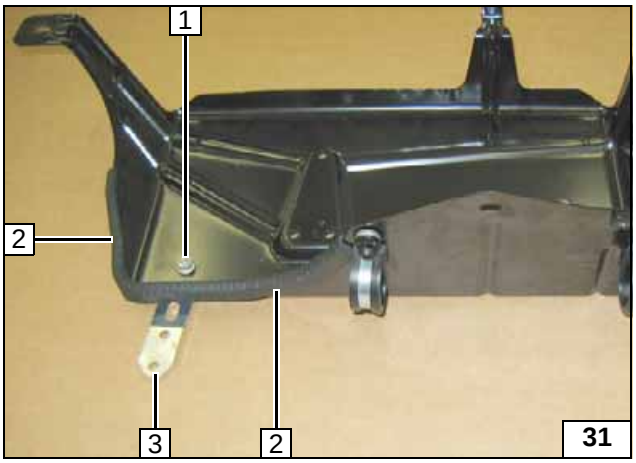
1 193° pump cover

Replacing circulating pump cover



1 Bracket
2 29 mm dia. rubber-coated p-clamp, plastic nut [2x each] on existing stud bolt

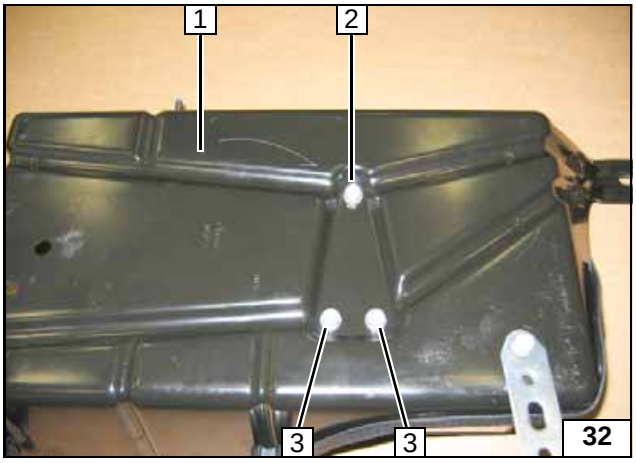
Preparing bracket



Cut 280 mm off edge protection.

1 M6x20 bolt, flanged nut
2 280 mm edge protection
3 Perforated bracket

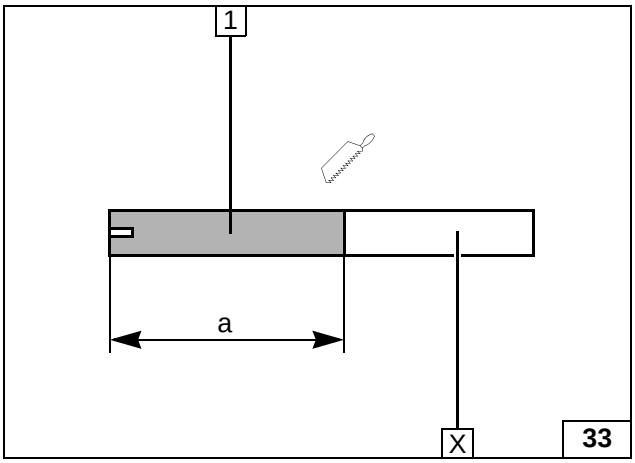
Preparing bracket



Insert two washers between heater and bracket **1** at position **2**.

2 Ejot screw, washer [2x]
3 Ejot screw [2x]

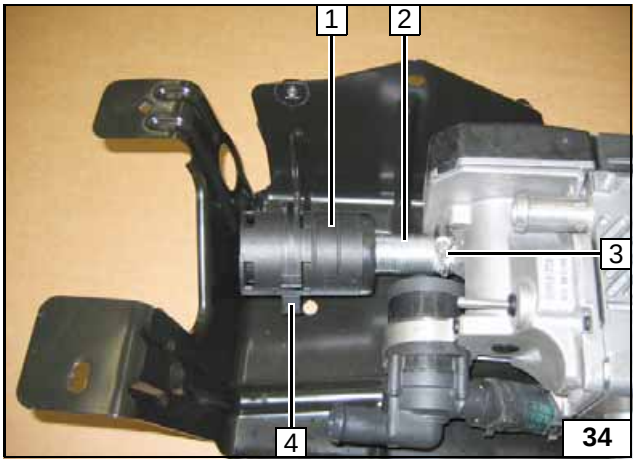
Premounting heater



1 Combustion air pipe
a = 50

Discard section **X**

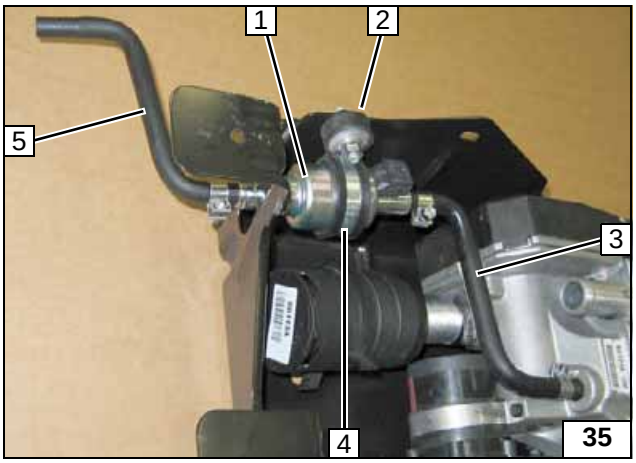
Cutting combustion air pipe to length



1 Silencer
2 Combustion air pipe
3 27mm dia. clamp
4 Retaining clip in hole

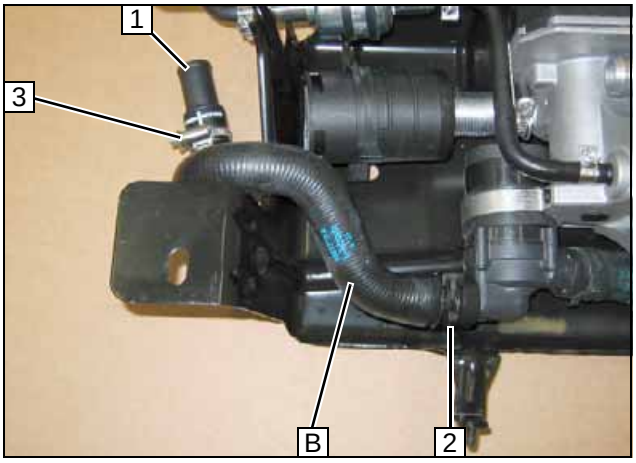
Premounting silencer

Premounting metering pump



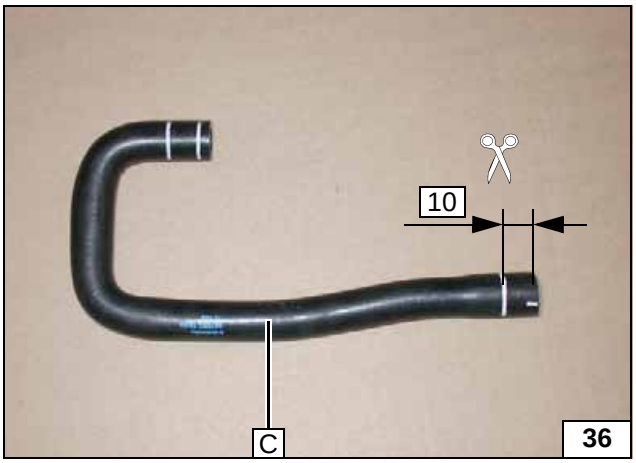
1 Metering pump
2 Silent block on existing threaded hole
3 Moulded hose, 10 mm dia. clamp [2x]
4 Rubber-coated p-clamp, flanged nut on silent block
5 Moulded hose, 10 mm dia. clamp

Premounting hose B



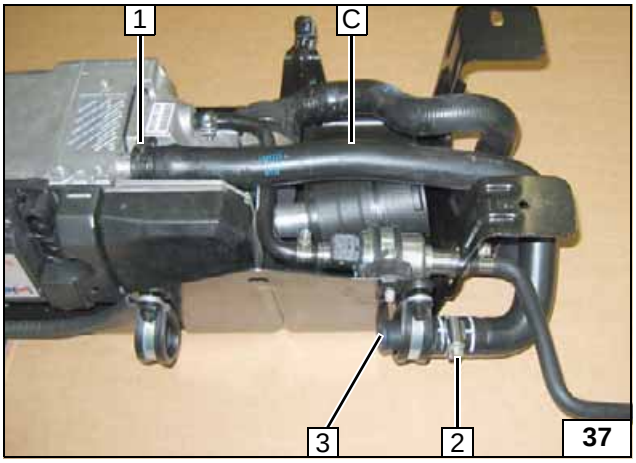
1 18x20 connecting pipe
2 27mm dia. spring clip
3 27mm dia. clamp

Cutting hose C to length

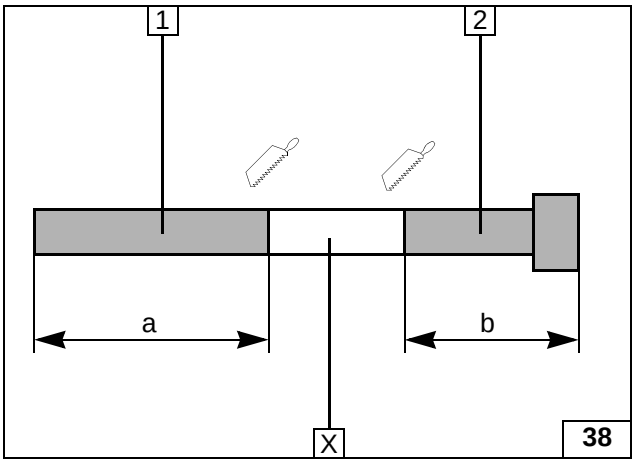


Shorten hose **C** by 10mm

Premounting hose C



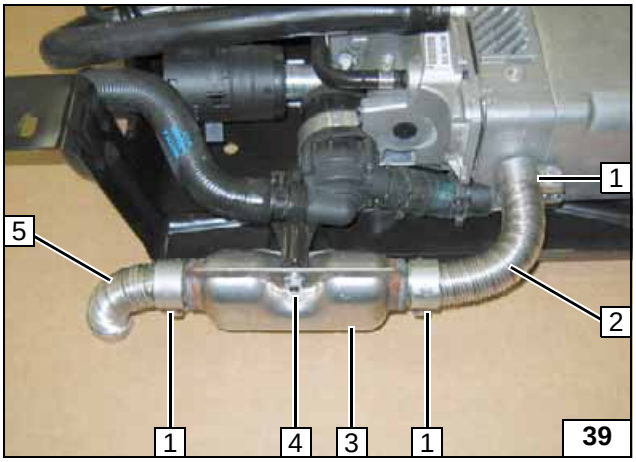
1 27mm dia. spring clip
2 27mm dia. clamp
3 18x20 connecting pipe



1 Exhaust pipe
a = 130
2 Exhaust end section
b = 90

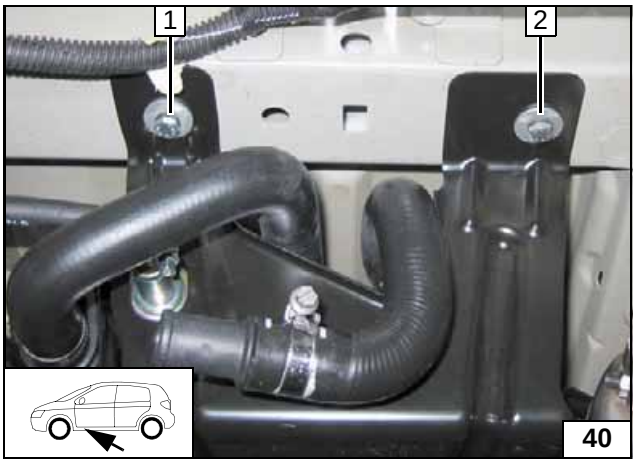
Discard section **X**

Preparing exhaust pipe



1 Hose clamp [3x]
2 Exhaust pipe
3 Exhaust silencer
4 Flanged nut on existing stud bolt
5 Exhaust-pipe end section

Premounting exhaust system

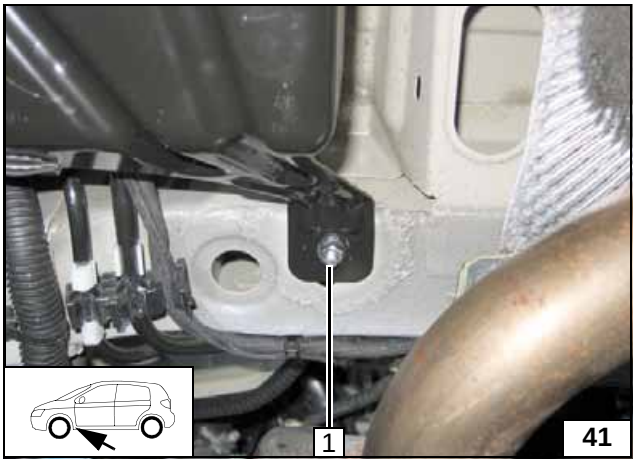


Installing Heater

Attach wiring harnesses of heater and metering pump to heater prior to assembly.

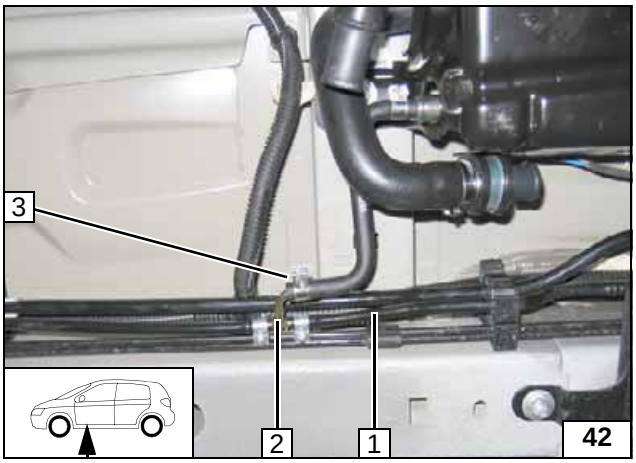
1 M6x20 bolt, spring lockwasher, large diameter washer
2 Original vehicle bolt, if available, otherwise M6x20 bolt, spring lockwasher, large diameter washer

Installing heater



1 Flanged nut

Installing heater



Fuel

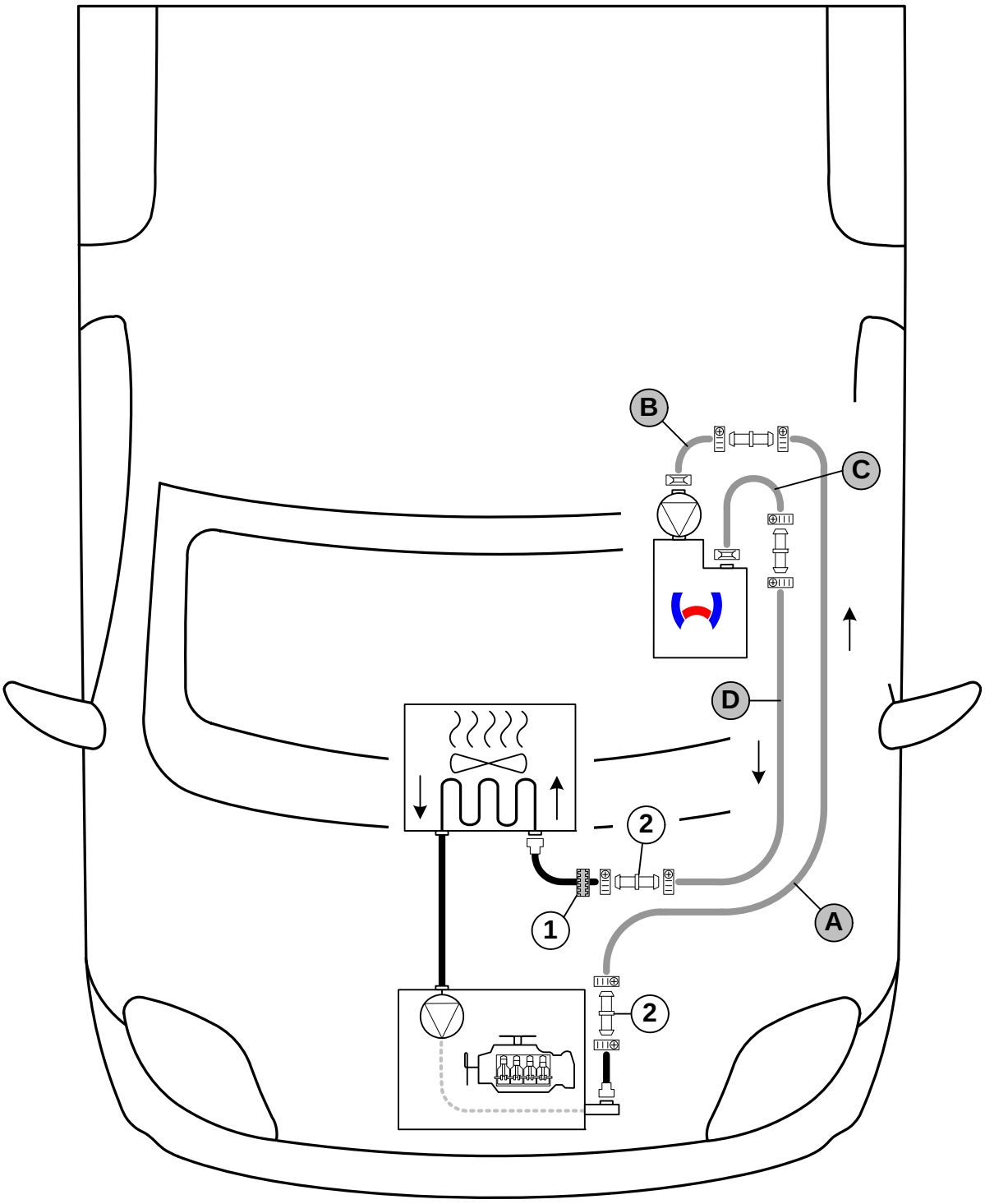
Cut off fuel return line **1** at position **2**. Mount fuel standpipe **2** in cutting point.

2 6x5x6 fuel standpipe, 8 mm dia. clamp [2x]
3 10mm dia. clamp

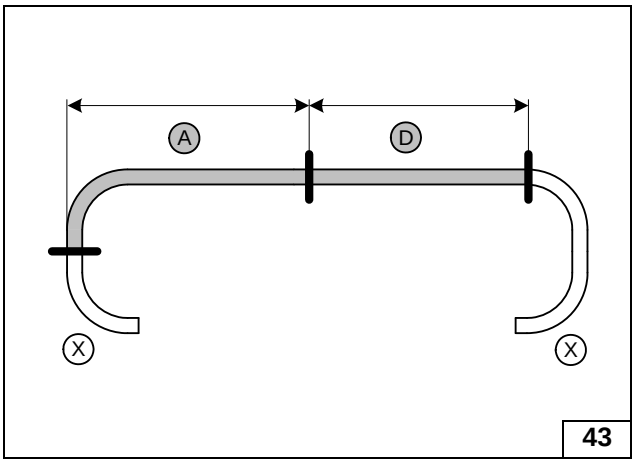
Coolant Circuit

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

Hose routing diagram



All spring clips = 27 mm dia. All hose clamps = 20-27 mm dia.
1 = Black (sw) rubber isolator inner dia. d_i = 20 mm 1.6 D. **1** = Black (sw) rubber isolator inner dia. d_i = 25 2.0 D.
2 = connecting pipe = 15x20 mm dia. 1.6 D **2** = Connecting pipe = dia. 18x20 2.0 D.

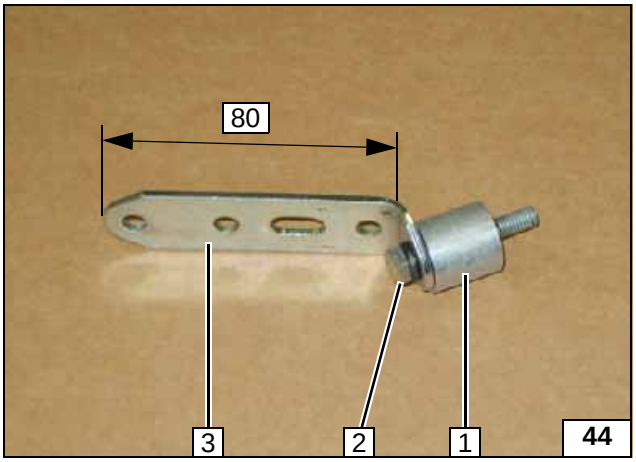


All vehicles

Discard section **X**

A = 1100
D = 1070

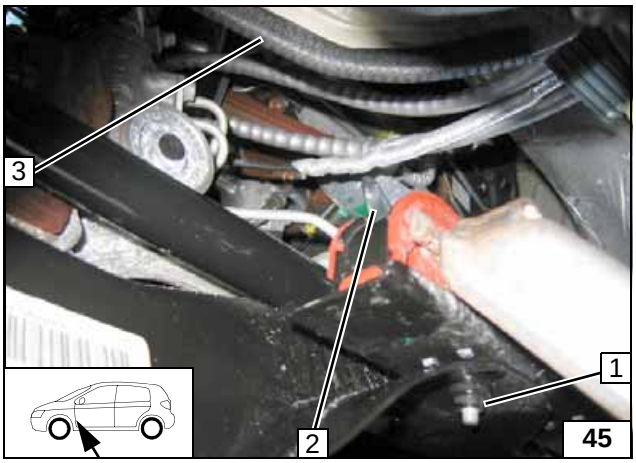
Cutting hoses to length



Angle down perforated bracket **3** by approx. 60°.

1 20 mm spacer sleeve
2 M6x40 bolt, spring lockwasher, pin lock

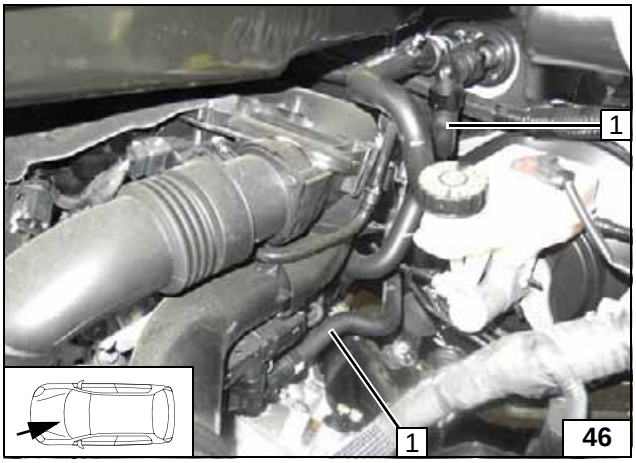
Preparing perforated bracket



Remove original vehicle bolt at position **1** .

1 M6x40 bolt on threaded hole
2 Perforated bracket
3 220 mm edge protection

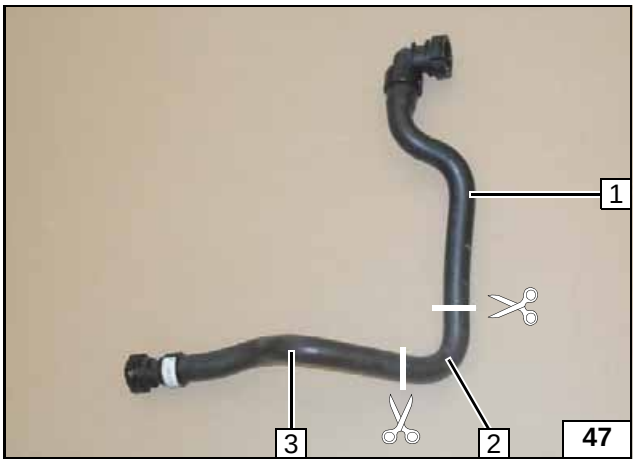
Installing perforated bracket



1.6 D 9HU

Remove hose **1** from engine outlet/heat exchanger inlet.

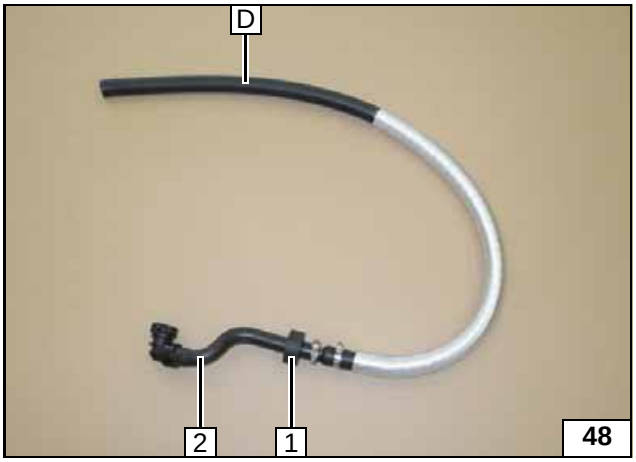
Cutting point



Cut off hose on engine outlet/heat exchanger inlet at markings.

1 Hose section of heat exchanger inlet
2 Discard section
3 Hose section of engine outlet

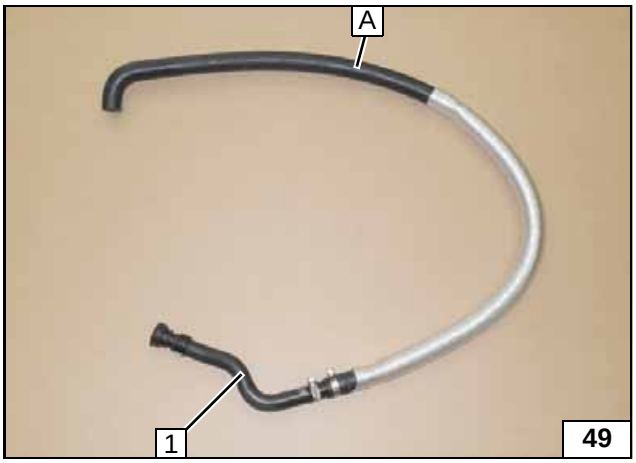
Cutting hose



Slide heat protection hose onto hose **D**.

1 Black (sw) rubber isolator inner dia. d_i = 20mm
2 Hose section of heat exchanger inlet

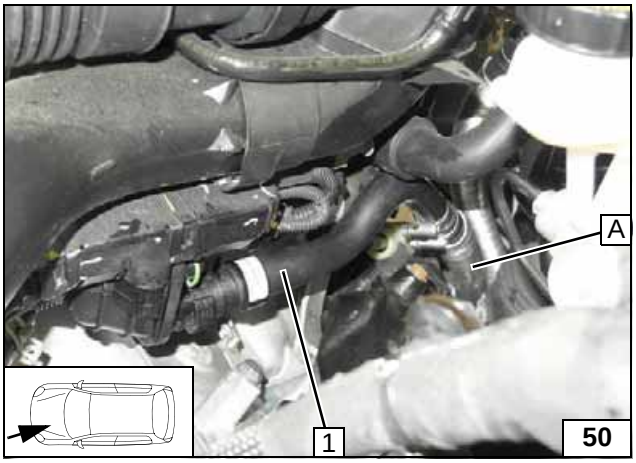
Preparing hose D



Slide heat protection hose onto hose **A**.

1 Hose section of engine outlet

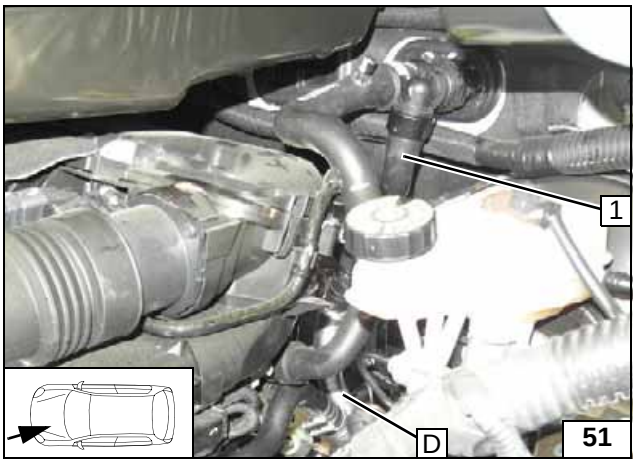
Preparing hose A



Route through hose **A** to underbody and connect to connection piece on engine outlet.

1 Hose section of engine outlet

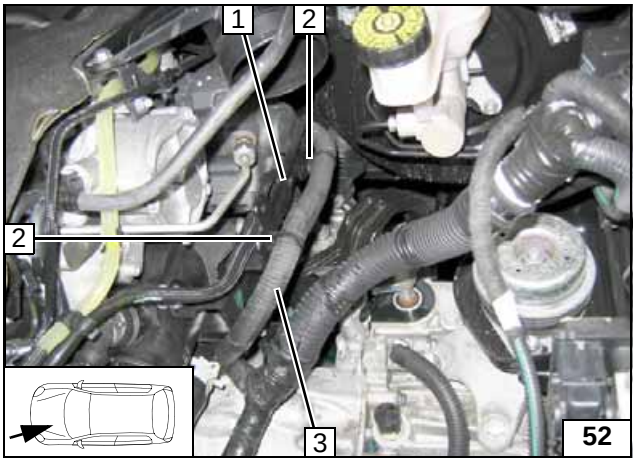
Connecting engine outlet



Route through hose **D** to underbody and connect to connection piece on heat exchanger inlet.

1 Hose section of heat exchanger inlet

Connecting heat exchanger inlet



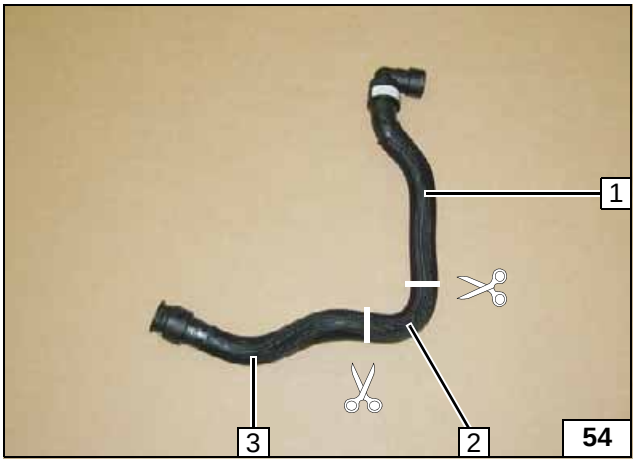
2.0 D RHK und RH02

Detach retaining clip **2** [2x] from original vehicle wiring harness **3** . Remove retaining plate **1**.

Removing retaining plate

Remove hose **1** from engine outlet/heat exchanger inlet.

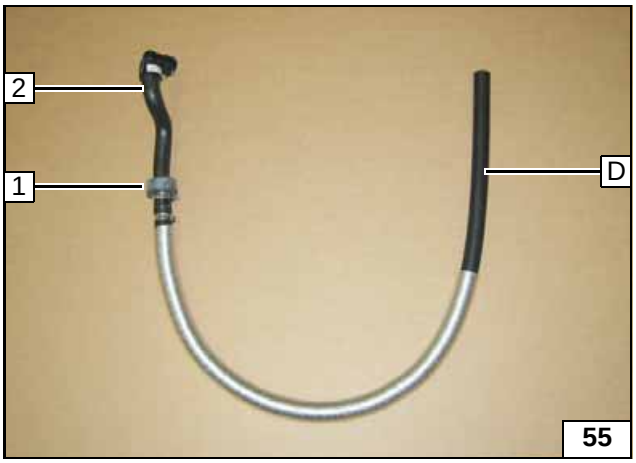
Cutting point



Remove protective hose. Cut off hose on engine outlet/heat exchanger inlet at markings.

1 Hose section of heat exchanger inlet
2 Discard section
3 Hose section of engine outlet

Cutting hose



Slide heat protection hose onto hose **D**.

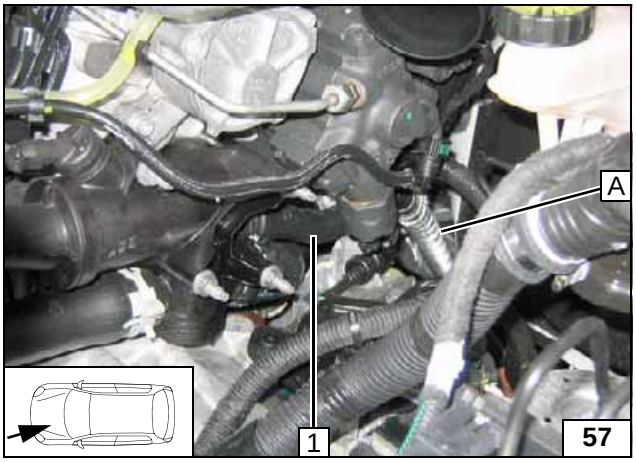
1 Black (sw) rubber isolator inner dia. d_i = 25 mm
2 Hose section of heat exchanger inlet

Preparing hose D

Slide heat protection hose onto hose **A**.

1 Hose section of engine outlet

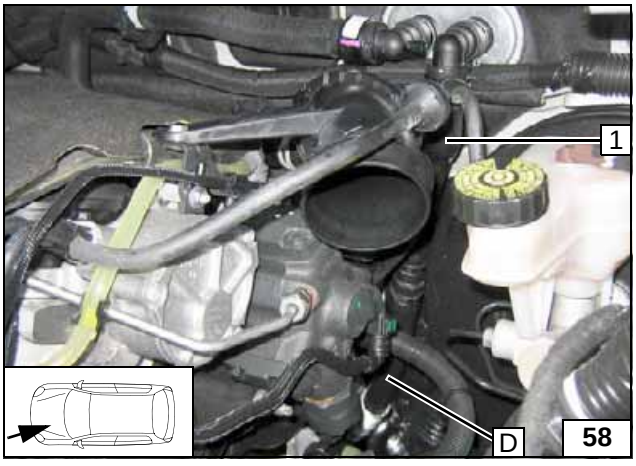
Preparing hose A



Route through hose **A** to underbody and connect to connection piece on engine outlet.

1 Hose section of engine outlet

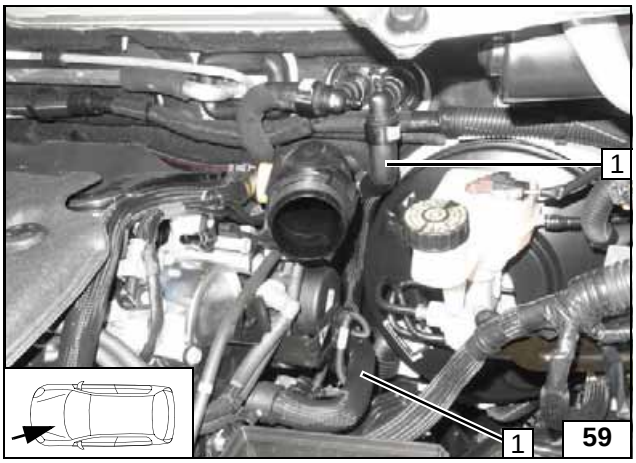
Connecting engine outlet



Route through hose **D** to underbody and connect to connection piece on heat exchanger inlet.

1 Hose section of heat exchanger inlet

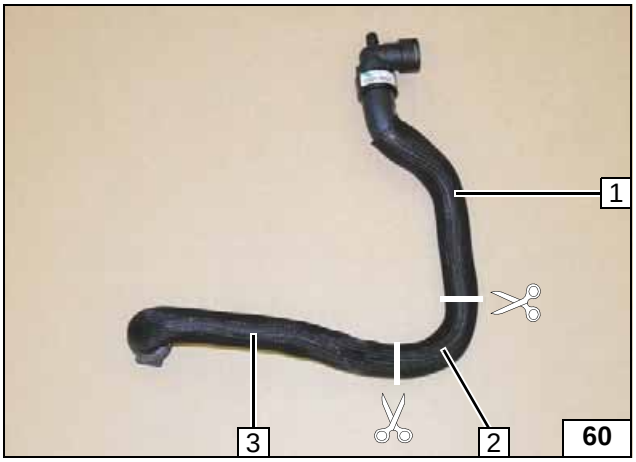
Connecting heat exchanger inlet



2.0 D AHZ, RHH, 4WZ-FTV und 4WAZ-FHV

Remove hose **1** from engine outlet/heat exchanger inlet.

Cutting point



Remove protective hose. Cut off hose on engine outlet/heat exchanger inlet at markings.

1 Hose section of heat exchanger inlet
2 Discard section
3 Hose section of engine outlet

Cutting hose

Slide heat protection hose onto hose **D**.

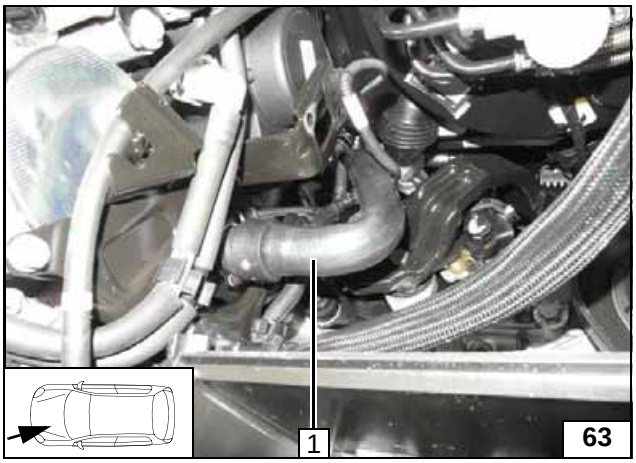
1 Black (sw) rubber isolator inner dia. d_i = 25 mm
2 Hose section of heat exchanger inlet

Preparing hose D

Slide heat protection hose onto hose **A**.

1 Hose section of engine outlet

Preparing hose A



Route through hose **A** to underbody and connect to connection piece on engine outlet.

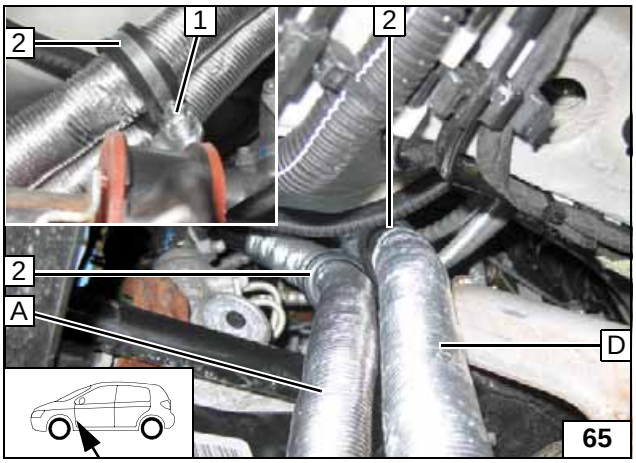
1 Hose section of engine outlet

Connecting engine outlet

Route through hose **D** to underbody and connect to connection piece on heat exchanger inlet.

1 Hose section of heat exchanger inlet

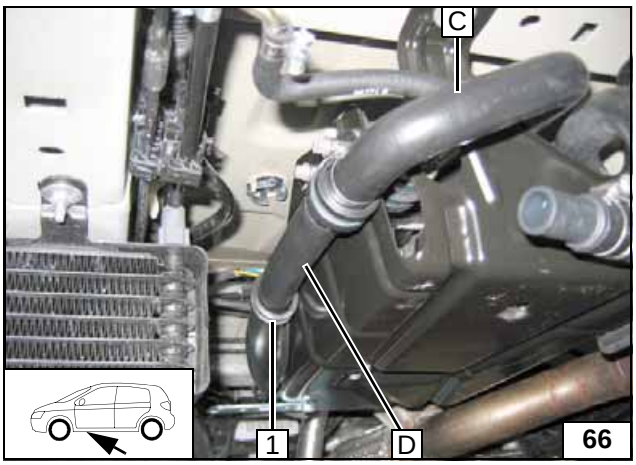
Connecting heat exchanger inlet



All vehicles

Fasten hose **A** and **D** on premounted perforated bracket with rubber-coated 34 mm dia. p-clamp **1** [2x], M6x20 bolt and flanged nut.

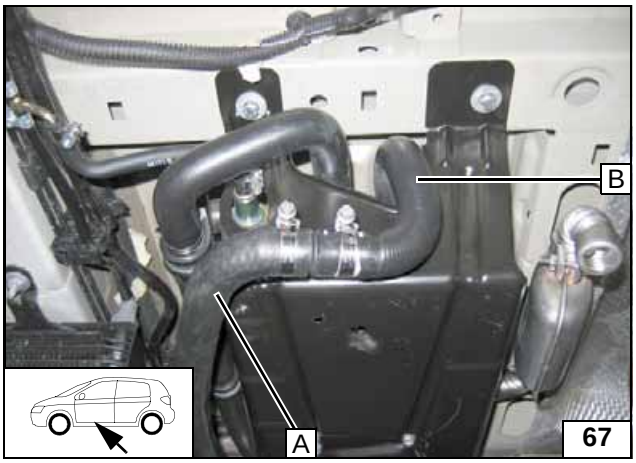
Routing on underbody



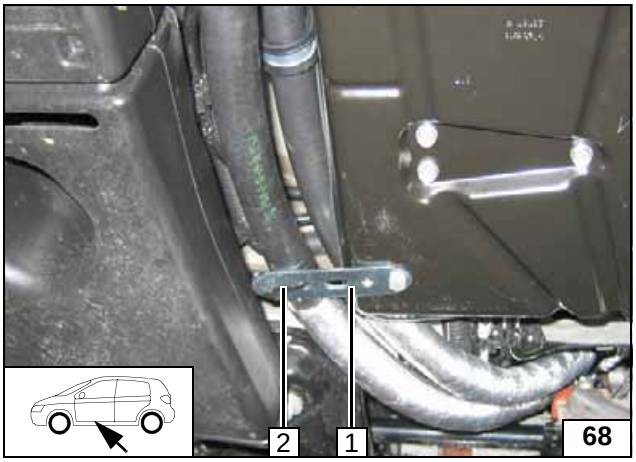
Route hose **D** through rubber-coated p-clamp **1**.

Connecting heater outlet

Connecting heater inlet

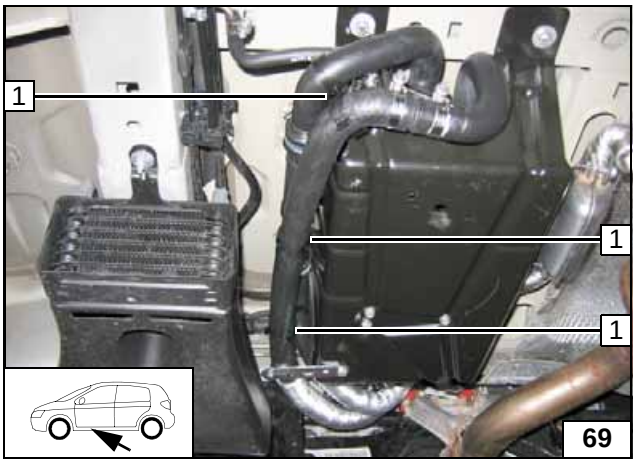


Fastening hose A



1 Perforated bracket
2 Cable tie

Installing spacer bracket



Align hoses. Ensure sufficient distance from neighbouring components.

1 Spacer bracket [3x]

Final Work

WARNING!
Mount removed parts in reverse order.
Check all hoses, clamps and all electrical connections for firm seating.
Secure all loose wires 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.**
- **Adjust 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" caution label in the area of the filler neck.**
- **For initial startup and function check, please see installation instructions.**

Webasto Thermo & Comfort SE
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82199 Gilching
Germany
Internet: www.webasto.com
Technical Extranet:
http://dealers.webasto.com

Operating Instructions for End Customer

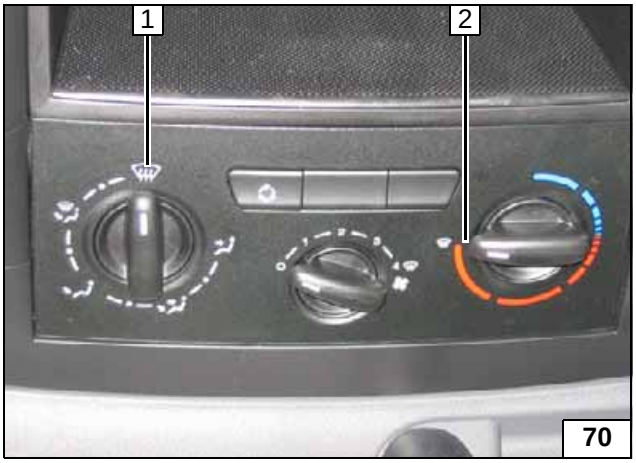
Please remove page and add to the vehicle operating instructions.

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 on the heater, 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:

Manual air-conditioning



1 Air outlet onto windscreen
2 Set temperature to "max."

Automatic air-conditioning

1 Set temperature on right and left to "HI"
2 Air outlet faces upward