## **Water Heater**



## Installation documentation

## Citroen C4 Picasso

Gasoline from Model Year 2006 Left-hand drive vehicle Electr. 6-gear transmission (EGS6)



#### **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.

Webasto does not accept any liability for defects and damage that are attributable to installation by untrained staff.

Ident. No.: 1313460C\_EN Fee Euro 10.00 © Webasto AG

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## **Validity**

Manufacturer	Model	Туре	EG-BE No./ABE
Citroen	C4 Picasso	U	e2 * 2001 / 116 * 0345 *

Engine type	Engine model	Output in kW	Displacement in cm <sup>3</sup>
6FY	Gasoline	92	1749

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

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

#### **Heater/Installation Kit**

Quantity	Description	Order No.:
1	Retail accessories Thermo Top E/C/P	See price list
1	Installation Kit for Citroen C4 Picasso 2006 Gasoline EGS6	1311819E
1	Heater control	See price list

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

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

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



#### **Foreword**

These installation instructions apply to the vehicles Citroen C4 Picasso Gasoline - for validity, see page 2 - from model year 2006 and later, assuming technical modifications to the vehicle do not affect installation, any liability claims excluded. Depending on the vehicle version and equipment, modifications may be necessary during installation with respect to these installation instructions.

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

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

#### **General Instructions**

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

Sharp edges must be provided with rub protection (cut-open fuel hose)!

Spray unfinished body areas, e.g. drilled holes, with anti-corrosion wax (Tectyl 100K, Order No. 111329). When using an IPCU, the settings specified in this document must be checked on the vehicle and adjusted if necessary, before installation.

#### Special Tools

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

#### **Explanatory Notes on Document**

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

## **Mechanical system**



**Electrical system** 



**Coolant 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!

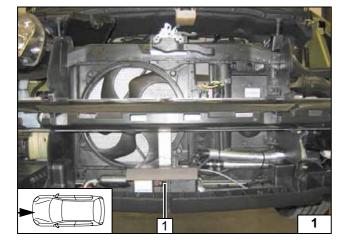
Tightening torque of Ejot screws, Ejot studs = 10 Nm!

#### **Preliminary Work**

#### **WARNING!**

- Disconnect the battery "earth" or "ground" connection.
- Depressurize the cooling system.
- Copy the factory number from the original type label to the duplicate type label.
- Remove years that do not apply from the duplicate label.
- Attach the duplicate label (type label) in the appropriate place.
- Open the fuel tank cap and vent the fuel tank.
- Close the tank cap again.
- Remove the engine cover (depending on the vehicle equipment, if installed)
- Remove the air cleaner box with the intake hose and resonator (depending on the vehicle equipment, if installed)
- Completely remove the battery and the battery carrier.
- Remove the exhaust system.
- Remove the fuel tank according to the manufacturer's specifications.
- Remove the bumper.
- Remove the underride protection
- Remove the lower instrument panel trim on the driver's and front passenger side
- Remove the glove compartment.

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

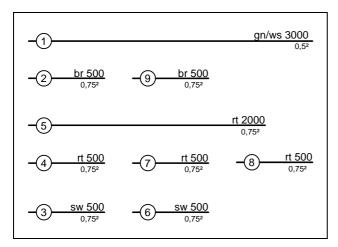


#### **Heater installation location**

1 Heater

Installation location





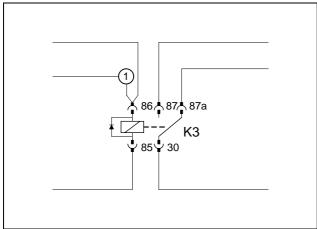
#### Preparing electrical system

ing

Wires 6 to 9 only with automatic air-condition-



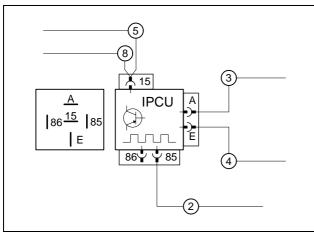
Cutting wires to length



Produce connections as shown in wiring diagram. Pull wire section 1 into protective sleeving provided and route together with wiring harness of digital timer and fan controller into passenger compartment.



**Preparing** K3 relay



Connect wires to IPCU (IPCU view on contact

Pull wire 5 into the protective sleeving provided and route to OBD socket outlet.

Wire 8 only with automatic air-conditioning The IPCU is pre-programmed with the following settings:

Duty cycle: 46% Frequency: 400 Hz 10 V Function: Low-side

The fan level corresponding to 2 - 3 on the vehicle and the current intake of the fan motor is to be checked in the function control; correct the settings if necessary

Preassembling IPCU

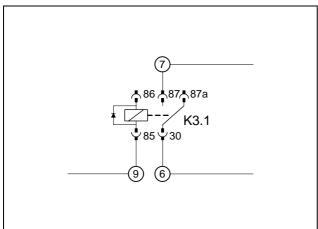
#### Automatic air-conditioning

Voltage:

Produce connections as shown in wiring diagram.



**Preparing** additional relay K3.1





#### **Electrical system**

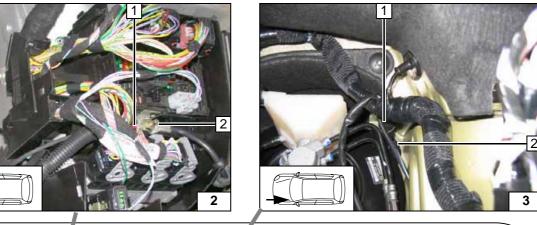
#### Positive wire

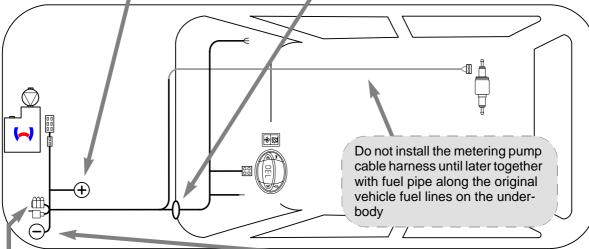
Before installing, crimp 8 mm dia. cable lug onto positive wire.

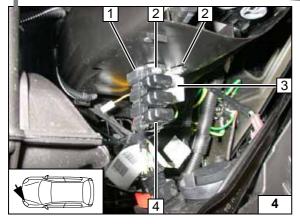
- 1 Red (rt) wire
- 2 Original vehicle positive support point

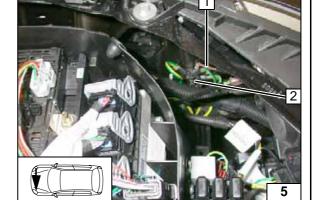
#### Wiring harness pass through

Route wiring harnesses (digital timer, fan controller and green/white (gn/ws wire in protective sleeving) on original vehicle wiring harness 1 to protective rubber plug 2 and route into passenger compartment.









#### Fuse holder, K3 relay

- 1 Retaining plate for fuse holder
- 2 4 mm dia. hole, 5.5x13 self-tapping screw; plastic nut [2x each]
- 3 K3 relay
- 4 Fuse holder

#### **Ground wire**

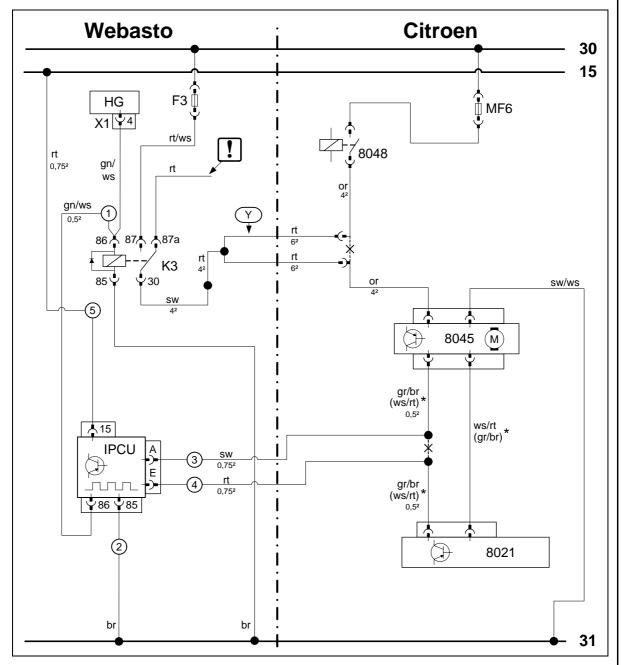
- 1 Brown (br) wire
- 2 Original vehicle ground support point



Wiring harness installation diagram



## Fan controller for manual air conditioning



Webasto components		Vehicle components		Colours and symbols	
HG	TT-C/E/P heater	8021	Air-conditioning control unit	rt	red
X1	6-pin heater connector	8045	Fan module	ws	white
F3	25 A fuse	8048	Fan relay	SW	black
K3	Fan relay	MF6	Fuse	br	brown
IPCU	Pulse width modulator			gn	green
Υ	Wiring adapter			bl	blue
				or	orange
				gr	gray
		*	The values specified in brackets are valid from		Press out wire end, insulate and tie back
		Model Year 2010!	Model Year 2010!	X	Cutting point
		Wiring colours may vary.		colours may vary.	

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Wiring diagram

Legends





Produce connections as shown in wiring diagram.

The control token place on connector 2 from

The control takes place on connector **2** from fan module - connector, depending on the vehicle

- 1 wire or connector of fan controller
- 3 Wire or fan relay
- 4 Y-adapter
- 5 Black (sw) wire from K3/30

Connection to fan module



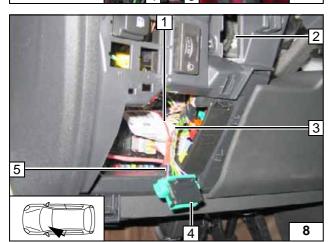
Before installing, connect green/white (gn/ws) wire **4** from K3/86 to base of IPCU **3** terminal 86.

1 IPCU

6

2 Double-sided adhesive tape





Control changeover of IPCU is carried out on 16-pin OBD socket outlet **4**.

Produce connections as shown in wiring diagram.

- 1 Red (rt) wire IPCU/15
- 2 Socket of OBD socket outlet
- 3 Pink (pk) wire (terminal 15)
- 5 Pink (pk) wire of OBD socket outlet, Pin 1

Power supply of IPCU



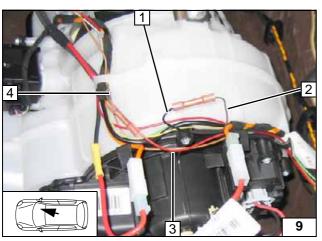
#### Model year up to 2009

Produce connections as shown in wiring diagram.

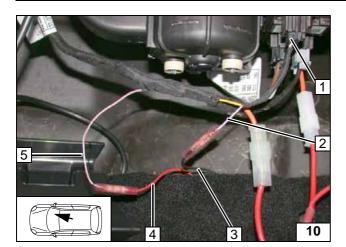
The control takes place before the fan controller connector.

- 1 Black (sw) wire of IPCU/A
- 2 Green/brown (gr/br)wire or connector of fan controller
- 3 Red (rt) wire of IPCU/E
- 4 Green/brown (gr/br)wire of connector of A/C control panel

Connecting fan controller







#### Model year from 2010

Produce connections as shown in wiring dia-

The control takes place at connector 1 from fan controller.

- 2 White-red (ws/rt) wire of fan motor connec-
- 3 Black (sw) wire of IPCU/A
- 4 Red (rt) wire of IPCU/E
- 5 White-red (ws/rt) wire of A/C control panel

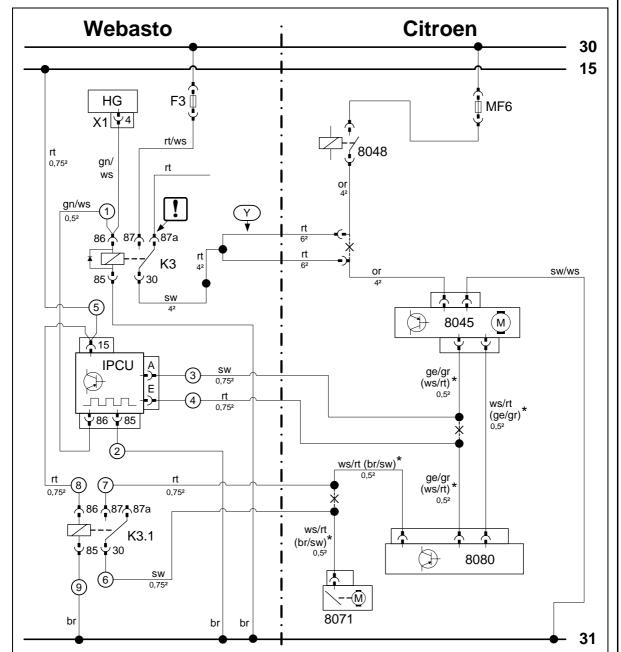


Connecting fan controller



# 7

## Automatic air-conditioning fan controller



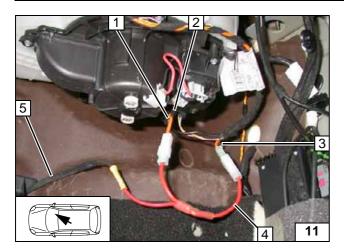
Webasto components		Vehicle components		Colours and symbols	
HG	TT-C/E/P heater	8080	Air-conditioning control unit	rt	red
X1	6-pin heater connector	8071	Air distribution	ws	white
F3	25 A fuse	8048	Fan relay	sw	black
K3	Fan relay	8045	Fan module	br	brown
IPCU	Pulse width modulator	MF6	Fuse	gn	green
Υ	Wiring adapter			bl	blue
K3.1	Additional relay			ge	yellow
				gr	gray
				or	orange
				-	Press out wire end, in-
		*	The values specified in	<u>.</u>	sulate and tie back
			brackets are valid from		
			Model Year 2010!	Х	Cutting point
				Wiring	colours may vary.

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Wiring diagram

Legends





#### Model year up to 2009

Produce connections as shown in wiring dia-

The control takes place at connector 2 from fan controller.

- 1 wire or connector of fan controller
- 3 Wire or fan relay
- 4 Y-adapter
- 5 Black (sw) wire from K3/30





#### Connection to fan controller



The fan motor is controlled on connector 1 from fan controller.

Produce connections as shown in wiring diagram.

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



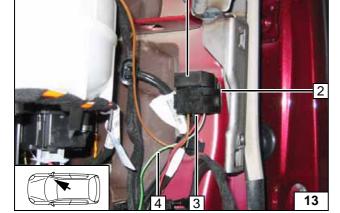


#### All vehicles

Before installing, connect green/white (gn/ws) wire 4 from K3/86 to base of IPCU 3 terminal 86.

- 1 IPCU
- 2 Double-sided adhesive tape

Installing base from **IPCU** 

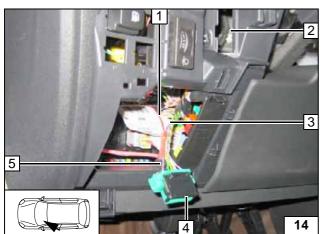


Control changeover of IPCU is carried out on 16-pin OBD socket outlet 4.

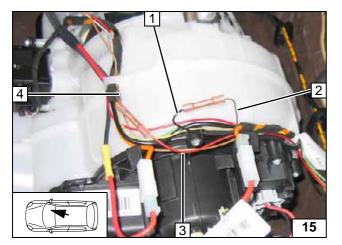
Produce connections as shown in wiring diagram.

- 1 Red (rt) wire IPCU/15
- 2 Socket of OBD socket outlet
- 3 Pink (pk) wire (terminal 15)
- 5 Pink (pk) wire of OBD socket outlet, Pin 1

Power supply of IPCU







#### Model year up to 2009

Produce connections as shown in wiring dia-

The control takes place before the fan controller connector.

- 1 Black (sw) wire of IPCU/A
- 2 Yellow/gray (ge/gr) wire on connector of fan controller
- 3 Red (rt) wire of IPCU/E
- 4 Yellow/gray (ge/gr) wire on connector of A/C control panel

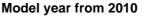


Connecting fan controller





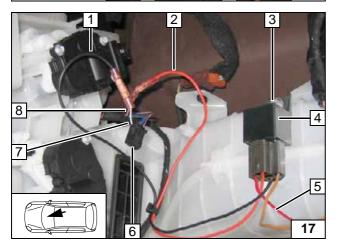
Connecting fan controller



The control takes place at connector 1 from fan controller.

Produce connections as shown in wiring diagram.

- 2 White-red (ws/rt) wire of fan motor connec-
- 3 Black (sw) wire of IPCU/A
- 4 Red (rt) wire of IPCU/E
- 5 White-red (ws/rt) wire of A/C control panel



#### Model year up to 2009

16

Connect red (rt) wire 5 of IPCU/15 to K3.1/86 according to wiring diagram.

Control changeover of air distribution is carried out at connector 6 from flap motor. Produce connections as shown in wiring diagram.

- 1 Black (sw) wire K3.1/30
- 2 Red (rt) wire to K3.1/87
- 3 Self-tapping screw on existing hole
- 4 K3.1 relay
- 7 White-red (ws/rt) wire of flap motor con-
- 8 White-red (ws/rt) wire of A/C control panel

Installing K3.1 relay, connecting air distribution







Installing K3.1 relay, connect-

ing air dis-

tribution



Connect red (rt) wire 5 of IPCU/15 to K3.1/86 according to wiring diagram. Control changeover of air distribution is carried out at connector 8 from flap motor. Produce connections as shown in wiring diagram.

- 1 Brown/black (br/sw) wire of A/C control panel connector
- 2 Red (rt) wire to K3.1/87
- 3 Self-tapping screw on existing hole
- 4 K3.1 relay

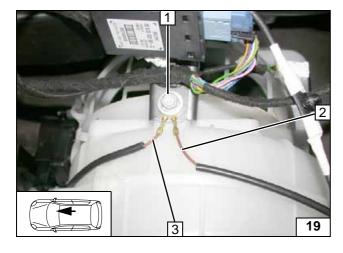
18

- 6 Black (sw) wire K3.1/30
- 7 Brown/black (br/sw) wire of A/C flap motor connector

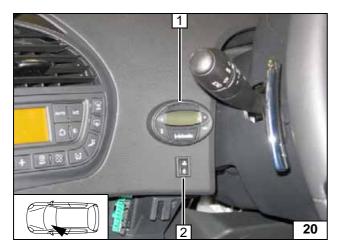


- 1 Original vehicle bolt
- 2 Brown (br) wire of IPCU/85, 6 mm dia cable lug
- 3 Brown (br) wire of K3.1/85, 6 mm dia cable

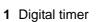
Ground connection K3.1 and IPCU







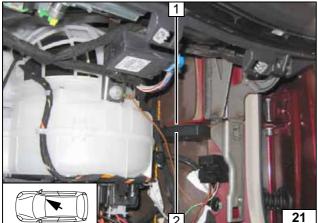
# Digital timer, optional Summer/winter switch option



2 12 mm dia. hole, summer/winter switch



Installing digital timer

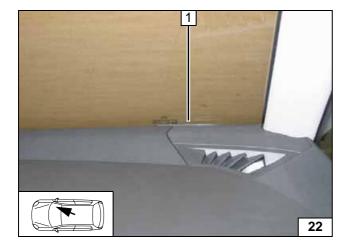


## **Remote option (Telestart)**

- 1 Double-sided adhesive tape
- 2 Receiver



Installing receiver



1 Antenna





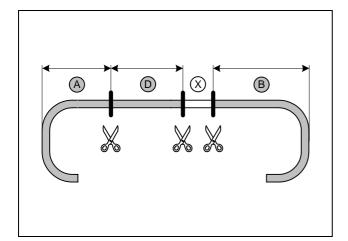
#### Temperature sensor only for T100 HTM

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



Installing temperature sensor



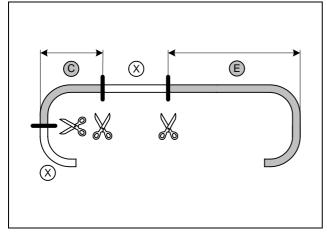


## **Preparing heater**

Discard section X

A = 330B = 630**D**= 350

Cutting hose 1 to length

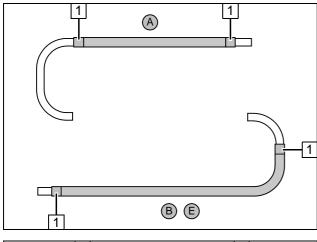


Discard section X

C = 240E = 930



length

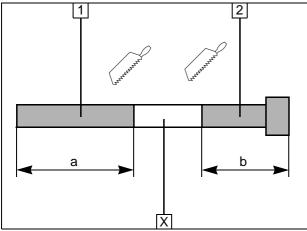


Push braided protection hoses onto hose A, **B** and **E** and cut to length.

Cut heat shrink plastic tubing to length and shrink on.

1 25 mm long heat shrink plastic tubing [6x]

**Preparing** hoses



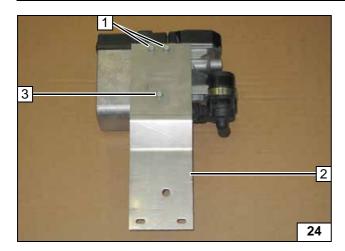
- 1 Exhaust pipe a = 120
- 2 Exhaust end section b = 110

Discard section X

**Preparing** exhaust pipe





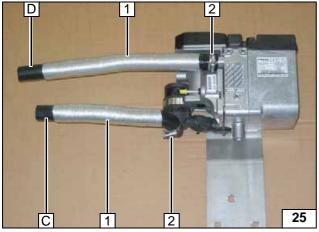


Insert two washers between bracket 2 and heater at position 3.

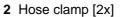
- 1 Ejot screw [2x]3 Ejot screw, washer [2x]



Installing bracket

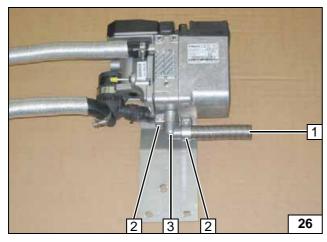


Slide heat protection hose 1 [2x] onto hose C and **D** and cut to length.



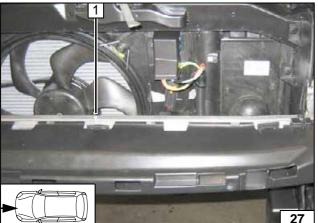


Premounting hoses



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

Preassembling exhaust pipe



## **Preparing installation location**

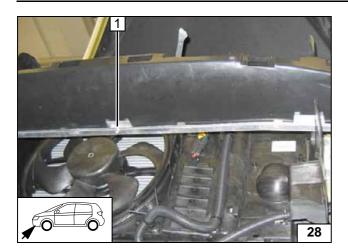
Hole at the centre of the bumper.

1 Drill 9.1 mm dia. hole; rivet nut



Mounting rivet nut



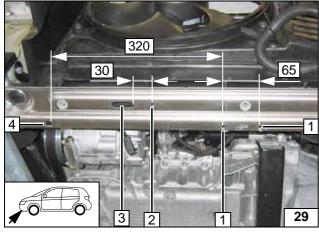


Hole at the centre of the bumper.

1 Drill 9.1 mm dia. hole; rivet nut



Mounting rivet nut

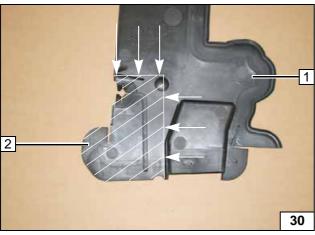


Rectangular recess at Position 4, recess for oblong hole at Position 3!



- 1 7 mm dia. hole [2x] (centered from bar)
- 2 7 mm dia. hole

Holes in the radiator cross member

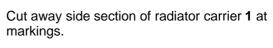


Cut away left partition wall 1 at markings.



2 Discard section

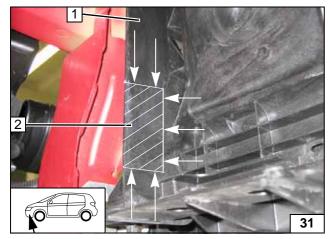




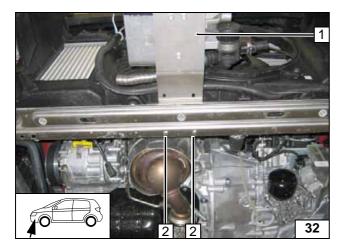


2 Discard section







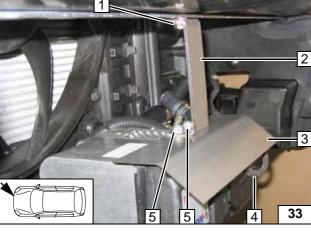


## **Installing heater**

Install one shim 10 each at position **2** between bracket and radiator cross member.

- 1 Preassembled heater
- 2 M6x25 bolt, 10mm shim, flanged nut [2x each]

## Installing heater

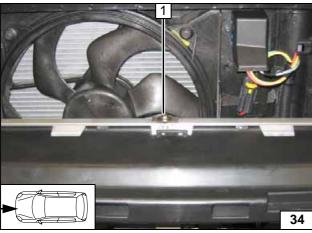


Before installing wind deflector plate **3**, mount wiring harness of heater **4**.



- 1 Loosely mount M6x20 bolt, spring lockwasher and large diameter washer
- 2 Strut
- 5 Loosely mount Ejot screw [2x]





Tighten all connections following installation.



1 M6x20 bolt, spring lockwasher, large diameter washer

Installing strut



#### **Coolant circuit**

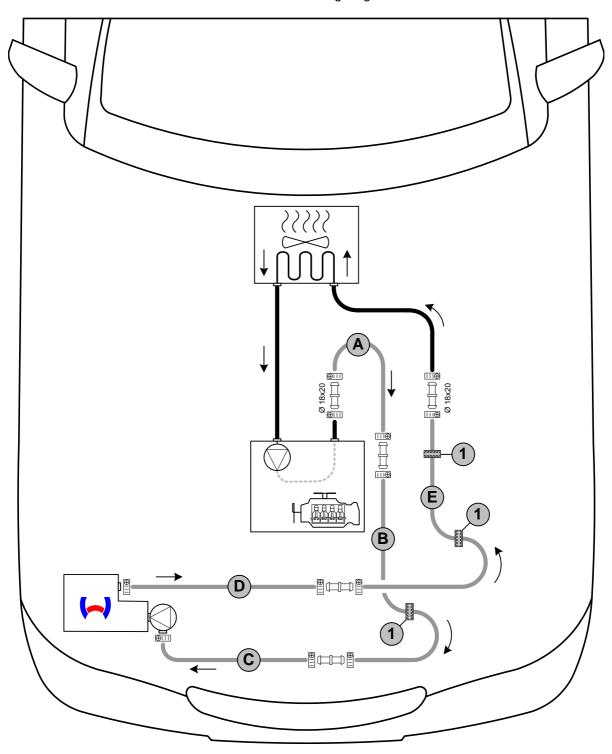
#### **WARNING!**

Any coolant running off should be collected using an appropriate container! Route coolant hoses kink-free! Unless specified otherwise, always fasten using cable ties. Position clamps so that no other hose can be damaged! When installing the hoses, the heater must be filled with coolant.

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



Hose routing diagram



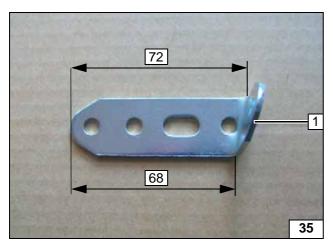
All hose clamps ⊕III = 20-27 mm dia.!

All connecting pipes without a specific designation  $\Box \Box = \text{dia. } 20\text{x}20.$ 



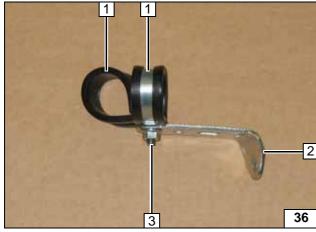
20





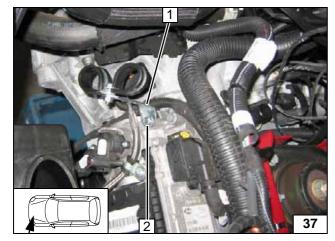
1 Angle down perforated bracket by approx. 80°.

Angling down per-forated bracket



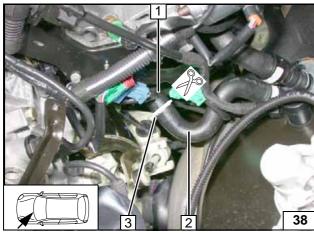
- 1 29 mm dia. rubber-coated p-clamp [2x]
- 2 Perforated bracket
- 3 M6x20 bolt, flanged nut

Installing pipe clamps



- 1 Perforated bracket on hole of transmission
- 2 M6x20 bolt, spring lockwasher

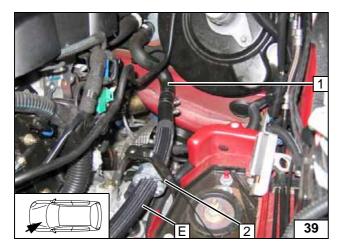
Installing perforated . bracket



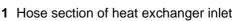
- 1 Engine-outlet hose section2 Hose section of heat exchanger inlet
- 3 Cutting point

**Cutting** point





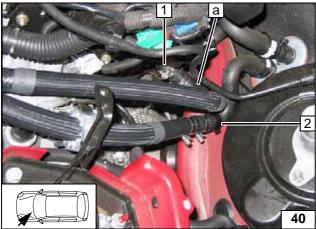
Before installation, push black (sw) rubber isolator **2** onto hose **E**.



2 Black (sw) rubber isolator with cable tie on bracket of battery carrier

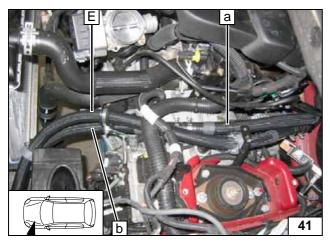


Connecting heat exchanger inlet



- 1 Hose of engine outlet
- 2 Spacer bracket

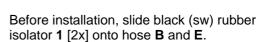
Connecting engine outlet



Route hose **B** and **E** through rubber-coated p-clamps. Only loosely preassemble hose **A** and **B** (hose clamps will be tightened later).

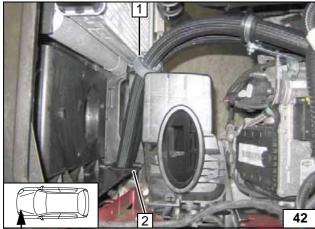


Routing in engine compart-ment

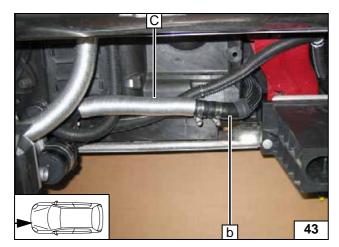


2 100 mm edge protection

Routing in engine compart-ment



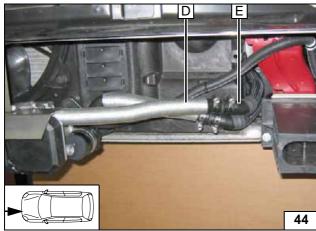




Align hoses and tighten hose clamps at connecting point of hose  ${\bf A}$  and  ${\bf B}$ .



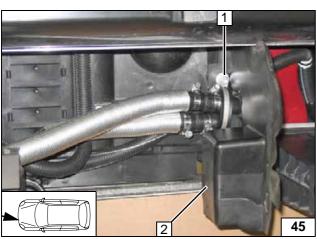
Connecting heater inlet



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



Connecting heater outlet



Fasten hose **B** and **E** with rubber-coated p-clamp together with partition wall **2**.



1 M6x40 bolt, 48 mm dia. rubber-coated pclamp, 20 mm shim, flanged nut on original vehicle hole for clip

Fastening hoses



#### Fuel

#### **CAUTION!**

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

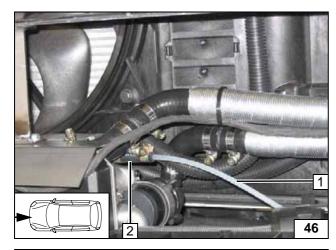
Catch any fuel running off with an appropriate container.

Install fuel line and metering-pump wiring harness so that they are protected against stone impact. Unless specified otherwise, always fasten using cable ties.

Mount the fuel line and wiring harness with rub protection on sharp edges.

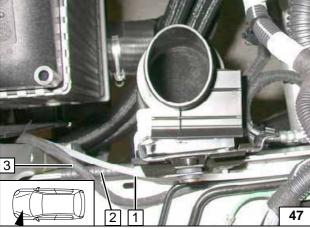
#### **WARNING!**

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



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

Connection on heater

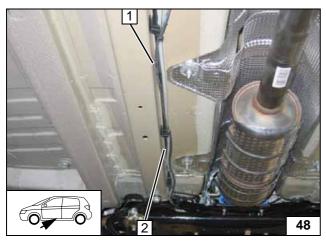


Route wiring harness of metering pump 3 and fuel line 1 on the side member to the firewall and further to the underbody.

2 70 mm edge protection



Installing lines

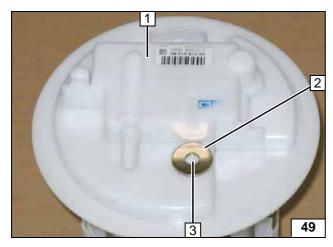


- 1 Metering pump wiring harness
- 2 Fuel line from heater

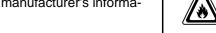
Installing lines







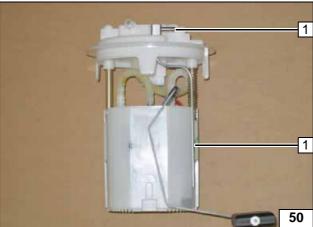
Remove fuel tank and fuel-tank sending unit 1 according to manufacturer's informa-



- 2 Large diameter washer
- 3 Copy hole pattern, 6 mm dia. hole



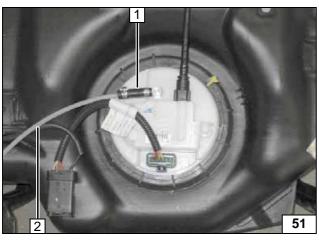
Removing fuel



Shape fuel standpipe 1 according to template, cut to length and install.



Installing fuel standpipe

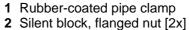


Install fuel-tank sending unit according to manufacturer's specifications. Install fuel tank in accordance with manufacturer's specifications.



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

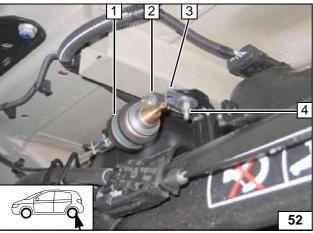
Connecting fuel line



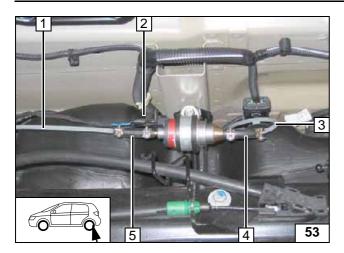
- 3 Angle bracket
- 4 Original vehicle nut, washer



Installing metering pump





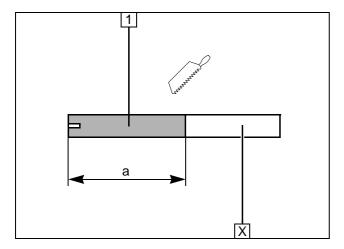


- 1 Fuel line from heater
- Wiring harness of metering pump, connector mounted
- 3 Fuel line from fuel standpipe
  4 Hose section, 10 mm dia. clamps [2x]
  5 Hose section, 10 mm dia. clamps [2x]



Connecting metering pump



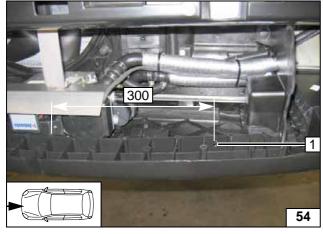


#### **Combustion air**

1 Combustion air pipe a = 250

Discard section X

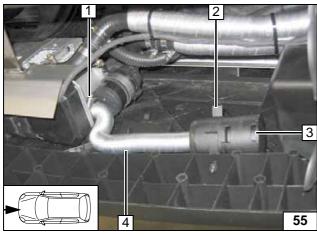
Cutting combustion air pipe to length



Drill 6.2 mm dia. hole 1 in centre of grid as shown in figure.



Hole for muffler



Ensure proper installation position of air intake muffler, see "Installation Instructions". Check the position of the components; adjust if necessary. Check that they have free clearance.



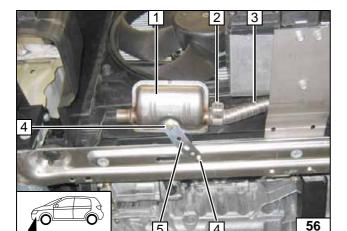
- 1 27 mm dia. hose clamp
- 2 Retaining clip in hole
- 3 Combustion-air intake muffler
- 4 Combustion-air intake pipe

Installing combus-

1313460C\_EN 27

tion air pipe



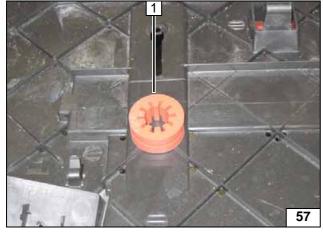


#### **Exhaust gas**

Following installation, align muffler upward approx. 30°.

- 1 Muffler
- 2 Hose clamp
- 3 Exhaust pipe
- 4 M6x20 bolt, flanged nut [2x each]
- 5 Perforated bracket

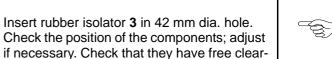




Lay on red (rt) rubber isolator at position 1, copy hole pattern and drill 106.68 cm dia. hole in underride protection.



Cutting out underride protection

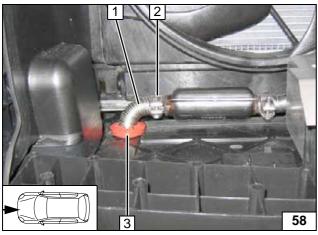




- 1 Exhaust end section
- 2 Hose clamp

ance.





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 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 the digital timer.
- Make settings on A/C control panel according to the "Operating Instructions for End Customer".
- Check the proper operation of the parking heater, see the operating instructions/installation instructions.
- Attach instruction label "Switch off parking heater before refueling" in the area of the filling neck



#### Note:

Check current intake of fan motor during first startup and adjust to approx. 4.5 A; correct if necessary (Change duty cycle)!





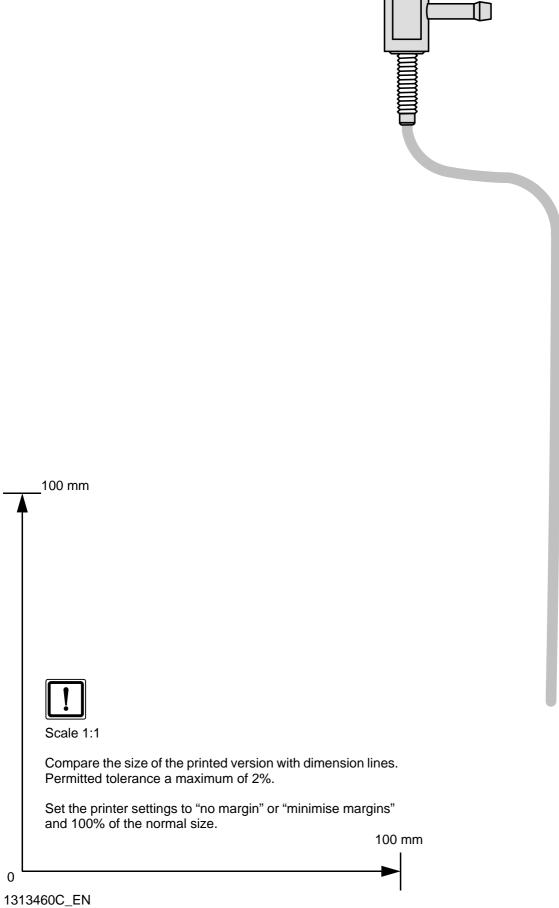
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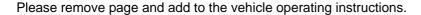


## **Template for Fuel Standpipe**



30

## **Operating Instructions for End Customer**





#### Note:

We recommend matching the heating time to the driving time.

Heating time = driving time

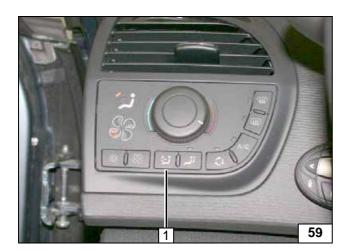
#### Example:

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



Before shutting off the engine, make the following settings:



1 Air outlet to windshield





1 Air outlet to windshield

Automatic air-conditioning