Water Heater



Thermo Top Parking Heater E

e1 00 0003

Thermo Top Parking Heater C

e1 00 0002

Thermo Top Parking Heater P

e1

Installation Instructions

VW Polo

Diesel from Model Year 2006 For left-hand drive vehicles only



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.: 9015699D_EN Fee Euro 10.00 © Webasto AG

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Validity

Manufacturer	Model	Туре	EG-BE No./ABE
VW	Polo	9N	e1 * 2001/116 * 0174 *

Engine type	Engine model	Output in kW	Displacement in cm ³
AMF	Diesel	55	1422
BNM	Diesel	51	1422
BNV	Diesel	59	1422

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 VW Polo Diesel	9015698A
1	Heater control	See Price list

Also required with Climatronic:

Quantity	Description	Order No.:
1	Climatronic kit	9013645A

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 VW Polo vehicles with a Diesel engine - 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 this installation documentation.

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

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

General Instructions

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

Sharp edges should be fitted with edge protectors (split-open plastic hose).

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

Special Tool

- Torque wrench
- Hose clamping pliers
- M8 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





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.



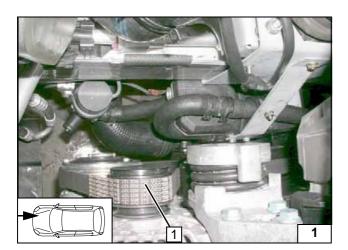
The arrow in the vehicle icon indicates the position on the vehicle and the viewing angle.

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.
- Remove the air filter together with the intake hose.
- Remove the wiper arms.
- Remove the coolant reservoir cap.
- Remove the coolant reservoir.
- Open the fuel tank cap, ventilate the tank.
- Close the tank cap again.
- Open the right-hand fuel sender service lid.
- Remove the fuel-tank sending unit in accordance with the manufacturers specifications.
- Remove the underride protection
- Remove the fuse box of the central electrical box.
- Take off the cover of the relay box for the central electrical box (only with Climatronic).
- Remove the A/C control panel according to the manufacturer's instructions (only with Climatronic).

Please remove page 33 of the "Operating instructions for the end customer" and add this to the vehicle operating instructions.



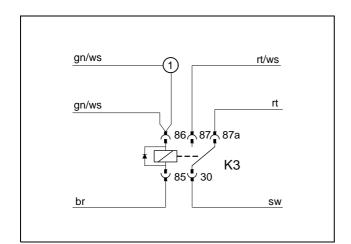
Heater installation location

1 Heater

Installation location







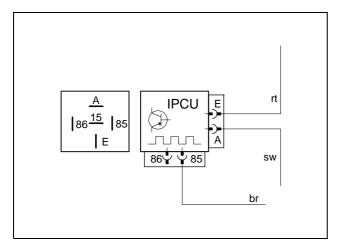
Preparing electrical system

Only with Climatronic

Produce connections as shown in wiring diagram. Fasten wire section **1** with insulating tape on the fan wiring harness.



Preparing exhaust pipe



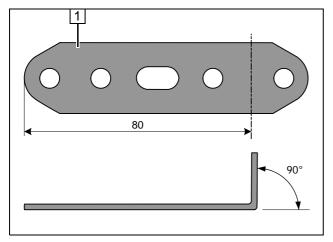
Connect the included lines to IPCU. Crimp 8mm dia. cable lug on brown (br) wire. The following IPCU adjustment values should be verified or adjusted before installation:

Duty cycle: 100% Frequency: 14 KHz Voltage: 3,3 - 3.7V Function: High side active

Preassembling IPCU

The voltage value (the rotation speed of the fan motor) should be verified or adjusted after the function check.

1 Perforated bracket



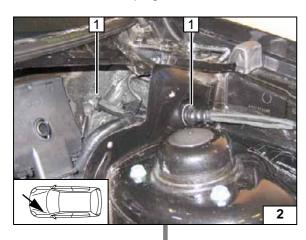
Angling down perforated bracket



Electrical system

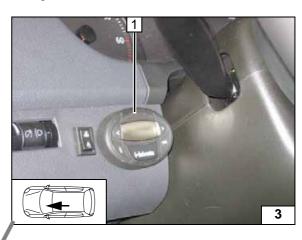
Wiring harness pass through

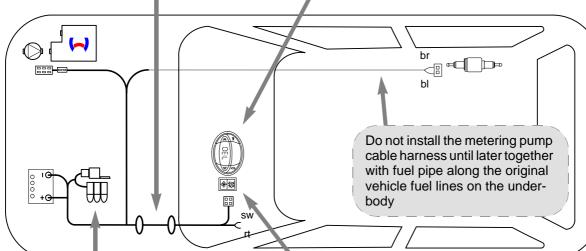
1 Protective rubber plug of Bowden cable



Digital timer

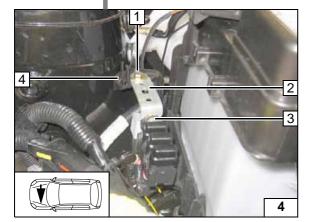
1 Digital timer





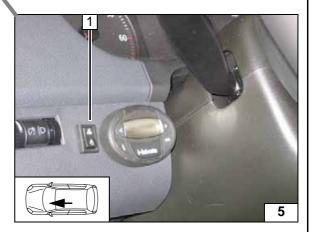


Wiring harness installation diagram



Fuse holder, K3 relay

- 1 M6x20 bolt, large diameter washer, M6 flanged nut
- 2 Perforated bracket
- **3** M5x12 bolt, washer, fuse holder, K3 relay, M5 flanged nut
- 4 Original vehicle bracket, drill out hole to 6 mm dia.

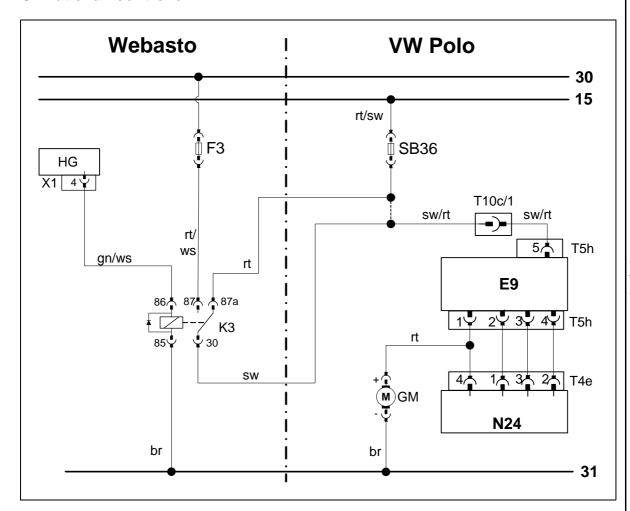


Summer/winter switch option

1 Summer/winter switch, drilled hole 12 mm dia.



Climatic fan controller

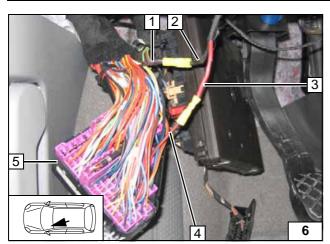




Climatic wiring diagram

Webasto components		Comp	onents of VW Polo	Colo	Colours and symbols	
HG	Heater	GM	GM Fan motor - V2		red	
X1	6-pin heater connector	SB36	25 A fuse	ws	white	
F3	25 A fuse	N24	Resistor group	sw	black	
K3	Fan relay	E9	Switch unit	br	brown	
		T	Connector	gn	green	
				bl	blue	
				Х	Cutting point	
				Wiring colours may vary.		

Legend



Connection on central electrical box 5 to fan module.

Produce connections as shown in wiring diagram.

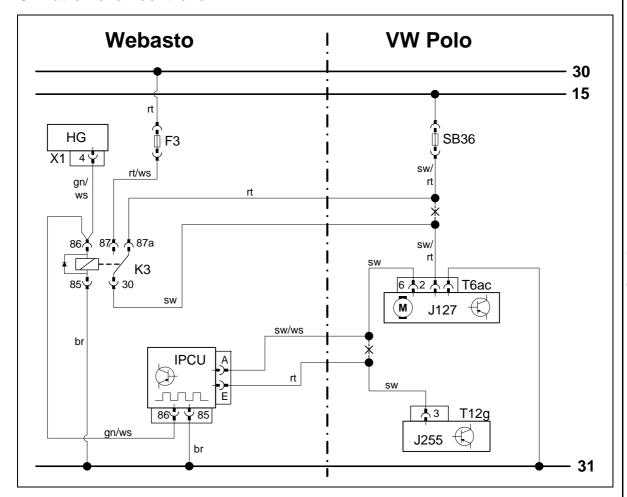
- 1 Black/red (sw/rt) wire from fuse SB36, 25 A
- 2 Black (sw) wire from K3/30
- 4 Black/red (sw/rt) wire to connector T6ac
- 3 Red (rt) wire K3/87a



Connection to central electrical box



Climatronic fan controller

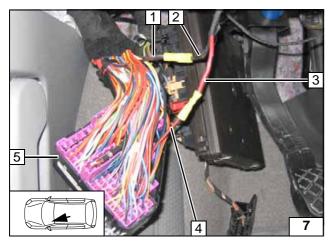




Climatronic wiring diagram

Webasto components		Comp	Components of VW Polo		urs and symbols
HG	Heater	J127	Fan unit	rt	red
X1	6-pin heater connector	J255	A/C control panel	ws	white
F3	25 A fuse	SB36	25 A fuse	sw	black
K3	Fan relay	T	Connector	br	brown
IPCU	Pulse width modulator			gn	green
IPCU adjustment values:					
Duty cycle	100%				
Frequency	14 kHz				
Function	High side active			Х	Cutting point
Voltage	3,3 - 3.7V			Wiring colours may vary.	

Legend



Connection on central electrical box 5 to fan module.

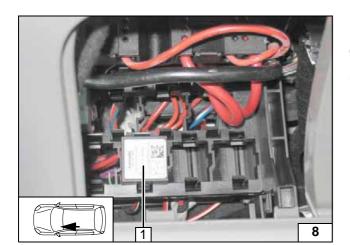
Produce connections as shown in wiring diagram.

- 1 Black/red (sw/rt) wire from fuse SB36, 25A
- 2 Black (sw) wire from K3/30
- 4 Black/red (sw/rt) wire to connector T6ac
- 3 Red (rt) wire K3/87a



Connection to central electrical box



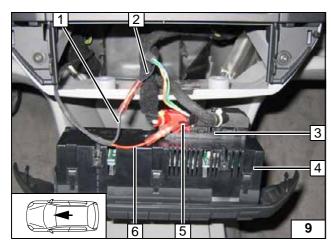


Insert IPCU base in free socket. Produce connections as shown in wiring diagram.

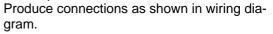


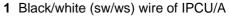
1 IPCU

Connection to relay carrier



Connection on connector T12g 3, Pin 3 of A/C control panel 4.



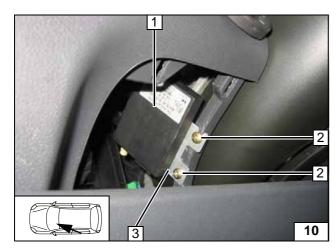


- 2 Black (sw) wire from fan unit
- 5 Black (sw) wire of connector T12g6 Red (rt) wire of IPCU/E



Connecting air-conditioning control element



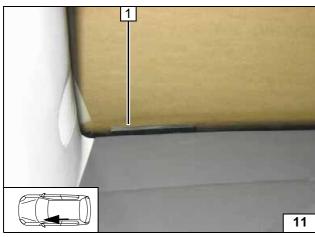


Remote option (Telestart)

- 1 Receiver
- 2 4 mm dia. hole [2x], 4.8x13 self-tapping screw [2x]
- 3 Bracket

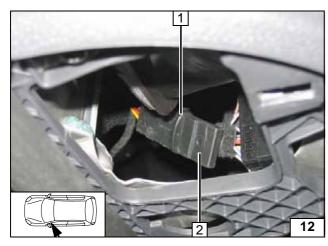


Installing receiver



1 Antenna

Installing antenna

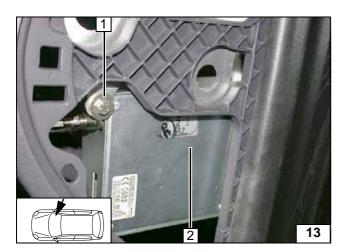


Temperature sensor for HTM100 only

- 1 Cable tie
- 2 Temperature sensor

Installing temperature sensor



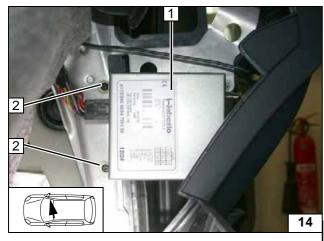


Remote option (Thermo Call)

Mount TC receiver on A-pillar as shown; mounting materials not included in delivery scope!

- 1 Receiver
- 2 M5x16 bolt, large diameter washer, M5 flanged nut

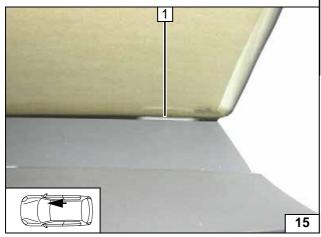
Installing receiver



Copy hole pattern **2** of TC receiver **1** to right-hand A-pillar as shown. Fasten receiver with self-tapping screws.



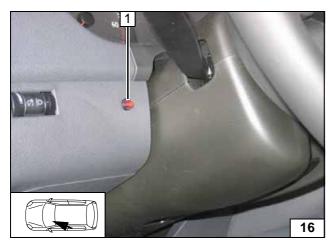
Installing receiver



1 Antenna



Installing antenna

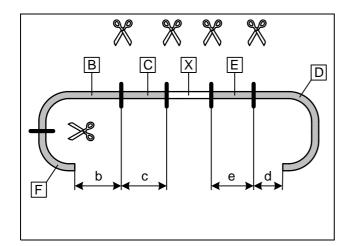


1 Push button



Installing push button





Preparing heater

Only on vehicles with engine code letters:

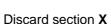
Discard section **X**Cut heat protection hose in half, compress and push onto hose **B** and **E**.

b = 1050mm

c = 210mm

e = 730mm

d = 40mm



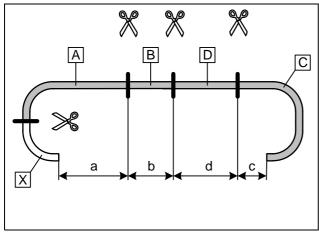
a = 210 mm



Cutting coolant hose to length







Vehicles BNV and BNM

Discard section **X**Compress heat protection hose and push onto hose **D**.

a = 930mm

b = 210 mm

d = 880 mm

c = 40 mm



Cutting coolant hose to length

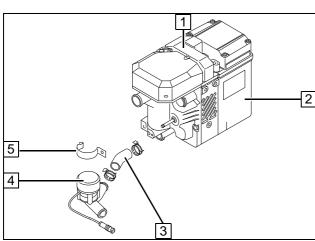


Remove heater cover **1** and replace cable of circulating pump with wiring harness extension. The spring clips will be reused.

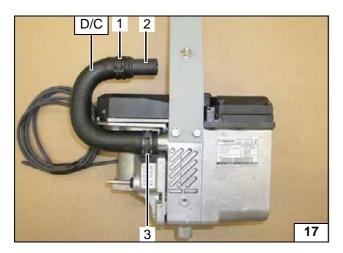
- 2 Heater
- 3 Discard hose section
- 4 Circulating pump
- 5 Discard clamp



Removing circulating pump





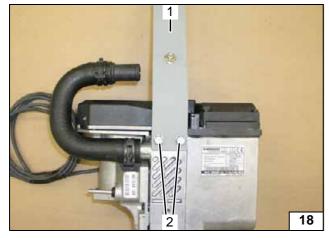


Hose **D** with engine code letters: AMF! Hose **C** with engine code letters: BNV and BNM!



- 1 27 mm dia. spring clip from water pump
- 2 20x20 connecting pipe
- 3 27 mm dia. spring clip from water pump

Installing coolant hose on heater



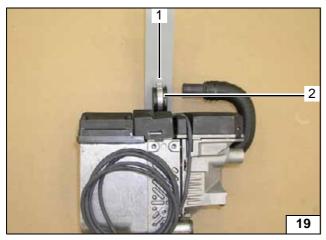
Ejot screw, tightening torque 10 Nm!



2 Loosely mount Ejot screw

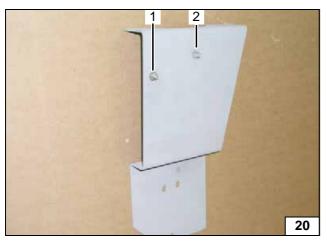


Installing strut on heater



- 1 M6x16 bolt, M6 flanged nut
- 2 29 mm dia. rubber-coated p-clamp

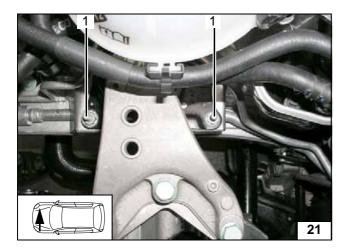
Installing p-clamp



- 1 M6x16 bolt, pin lock
- **2** M6x12 bolt, pin lock

Preparing bracket





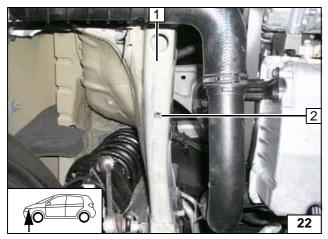
Preparing installation location



Discard original vehicle bolts from engine mount and replace with included double bolts. Observe tightening torque according to manufacturer.

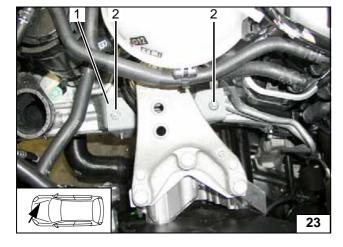
1 Double bolt [2x]

Preparing installation location



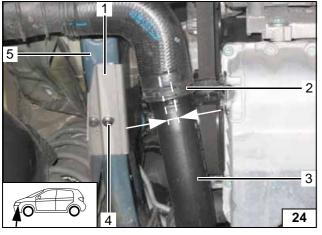
- 1 Right-hand frame side member.
- 2 M8 rivet nut

Installing rivet nut



- 1 Loosely mount bracket
- 2 M8 flanged nut [2x]

Installing bracket



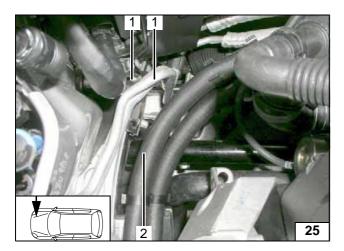
Loosen clamp at position **2** and twist hose from turbocharger **3** as shown. (Distance to heater)



- 1 Bracket
- 4 M8x30 Torx screw
- 5 Frame side member

Installing bracket





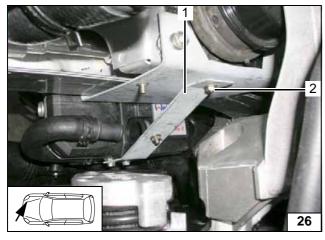
Installing heater



Before installing heater, tighten fastening bolts of bracket. Tighten Ejot screws to 10 Nm! Insert two 6 mm dia. washers between heater and bracket at position 2.

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

Installing heater



Tighten strut on heater following installation. Tighten Ejot screws to 10 Nm!



- 1 Strut
- 2 M6 flanged nut

Installing heater

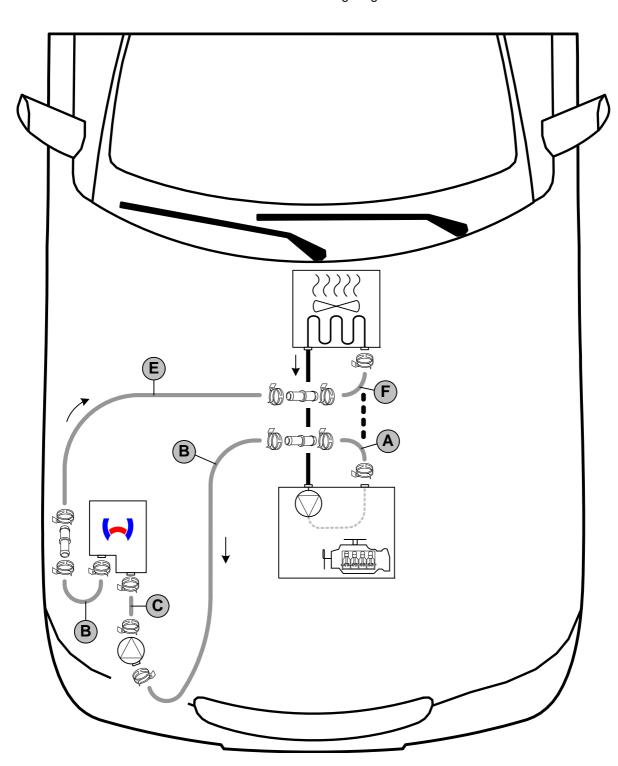


Coolant circuit with engine code letters: AMF

WARNING!

Any coolant running off should be collected using an appropriate container. Install hoses so that they are 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:



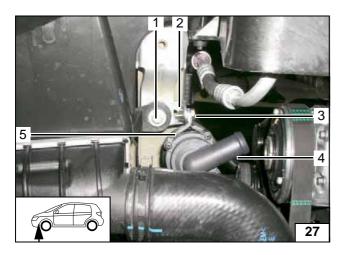


Hose installation diagram

All spring clips = 27 mm dia.! Al connecting pipes = 20x20 mm

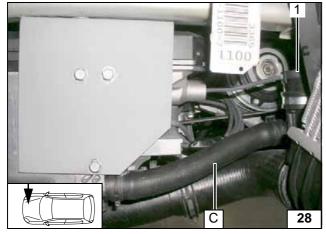






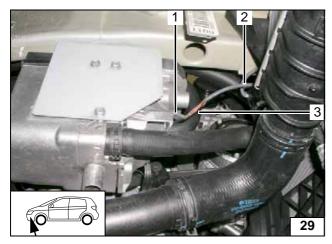
- 1 Original vehicle bolt
- 2 Angle bracket with long leg under bolt
- 3 M6x16 bolt, M6 flanged nut
- 4 Circulating pump
- 5 Rubber-coated pipe clamp, 48 mm dia.

Fastening circulating pump



1 Circulating pump

Connection to heater and circulating pump

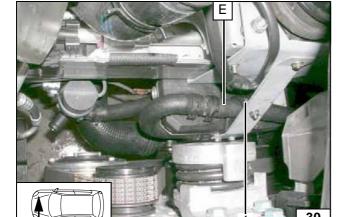


Before producing electrical connection, cut connector off cable of circulating pump and cut wiring harness extension to length.



- 1 Wiring harness extension
- 2 Cable of circulating pump
- 3 Connector [2x]

Electrical connection to circulating pump

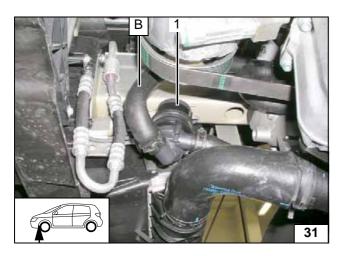


Before installing coolant hoses, connect wiring harness to heater. Guide coolant hose **E** through premounted rubber-coated p-clamp **1**.



Connection to heater outlet

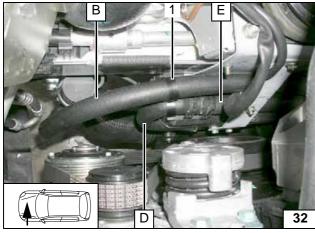




Install hose **B** with 90° elbow on circulating pump **1**.

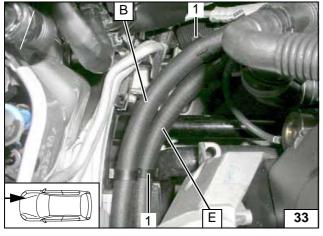


Connection to circulating pump



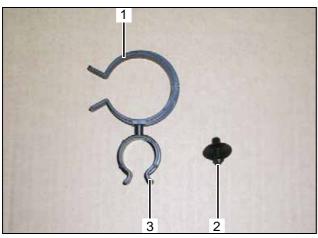
1 Spacer bracket





1 Spacer bracket [2x]

Routing in engine compart-ment

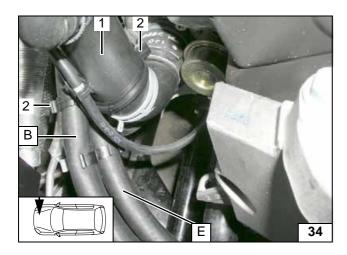


Install individual spacer bracket 3 with bracket for air intake silencer 1. Dispose of mounting clip 2.



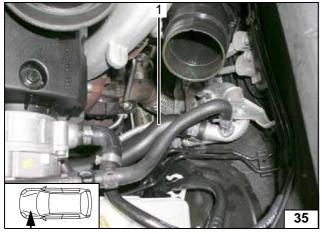
Premounting spacer bracket





- 1 Charge-air tube
- 2 Premounted spacer bracket

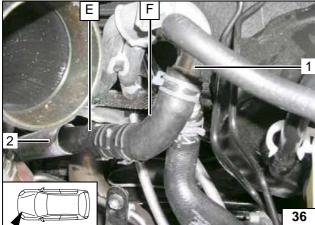
Routing in engine compart-ment



Remove and dispose of original vehicle coolant hose 1. The spring clips will be reused.

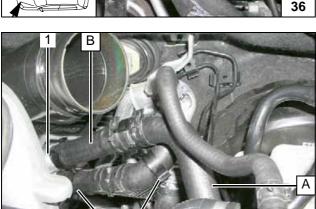


Removing coolant hose



- 1 Heat exchanger inlet
- 2 Heat protection hose

Connection to heat exchanger inlet



Fasten hose **A** on connection piece of engine outlet with original spring clip



- 1 Heat protection hose
- 2 Spacer bracket

Connection to engine outlet

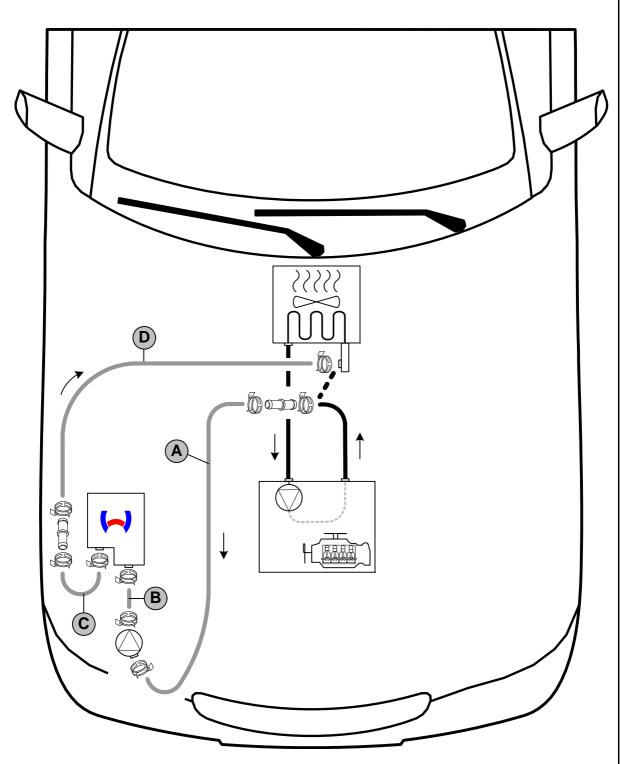


Coolant circuit with engine code letters: BNV and BNM

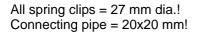
WARNING!

Any coolant running off should be collected using an appropriate container. Install hoses so that they are 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:



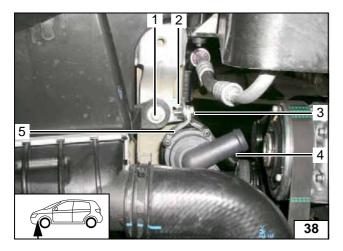


Hose installation diagram



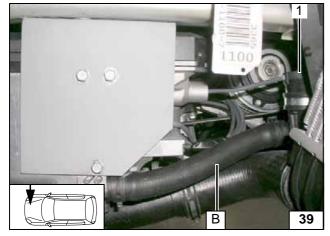






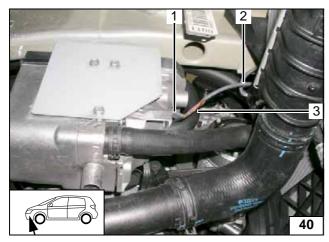
- 1 Original vehicle bolt
- 2 Angle bracket with long leg under bolt
- 3 M6x16 bolt, M6 flanged nut
- 4 Circulating pump
- 5 Rubber-coated pipe clamp, 48 mm dia.

Fastening circulating pump



1 Circulating pump

Connection to heater and circulating pump

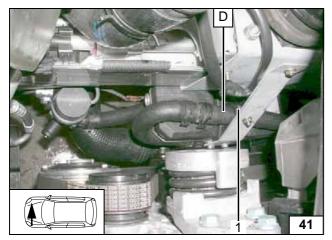


Before producing electrical connection, cut connector off cable of circulating pump and cut wiring harness extension to length.



- 1 Wiring harness extension
- 2 Cable of circulating pump
- 3 Connector [2x]

Electrical connection to circulating pump

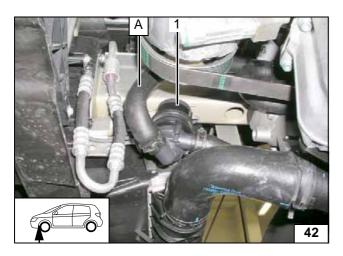


Before installing coolant hoses, connect wiring harness to heater. Guide coolant hose ${\bf D}$ through premounted rubber-coated p-clamp ${\bf 1}$.



Connection to heater outlet

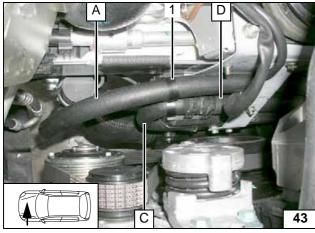




Install hose **A** with 90° elbow on circulating pump **1**.

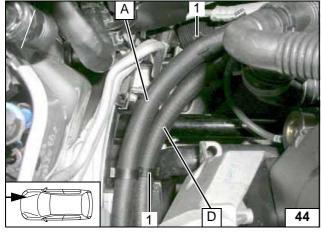


Connection to circulating pump



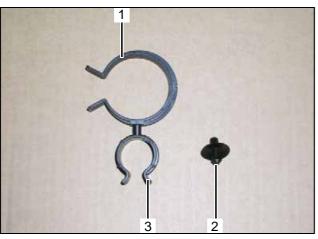
1 Spacer bracket

Routing in engine compart-ment



1 Spacer bracket [2x]

Routing in engine compart-ment

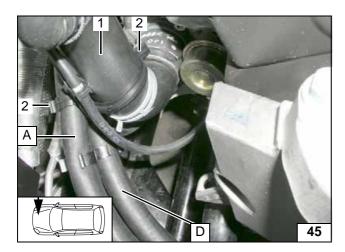


Install individual spacer bracket 3 with bracket for air intake silencer 1. Dispose of mounting clip 2.



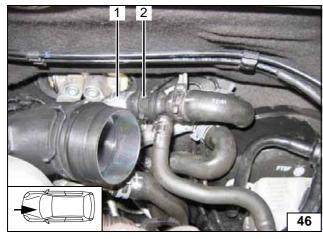
Premounting spacer bracket





- 1 Charge-air intake pipe
- 2 Premounted spacer bracket

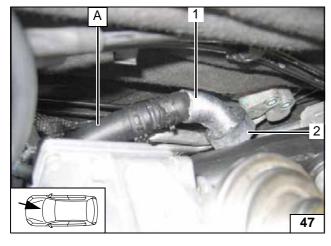
Routing in engine compart-ment



Pull original vehicle coolant hose **1** off connection piece and turn toward right-hand side of vehicle. Spring clip **2** will be reused.



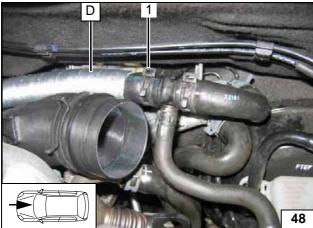
Preparing coolant



Before installing, push black (sw) rubber isolator **2** onto original vehicle coolant hose **1**.



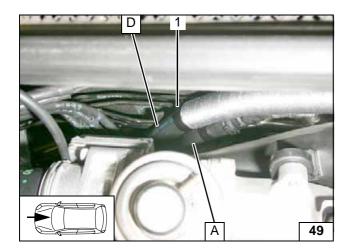
Connection to engine outlet



1 Original spring clip

Connection to heat exchanger inlet

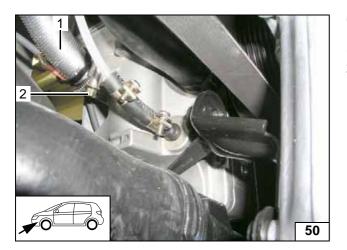




1 Spacer bracket

Installing spacer bracket



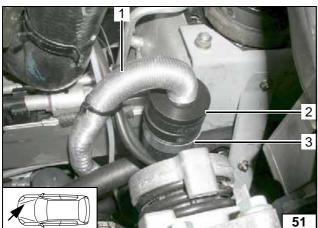


Combustion air

- 1 Flexible tube
- 2 20-27 mm dia. hose clamp



Installing intake pipe



- 1 Combustion-air intake pipe
- 2 Intake silencer3 48 mm dia. clamp, flanged nut on premounted M6x16 bolt

Installing silencer



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.

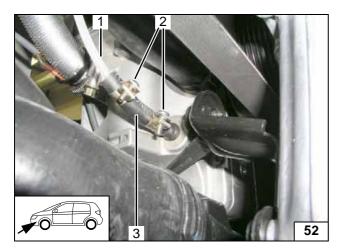
Install fuel line and metering-pump wiring harness so that they are protected against stone impact. Unless specified otherwise, always fasten using cable ties.

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

!

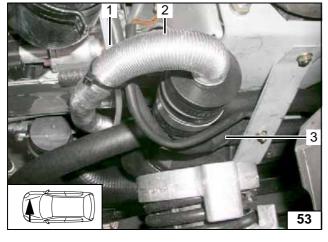
WARNING!

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 10 mm dia. hose clamp
- 3 Hose section

Connection on heater

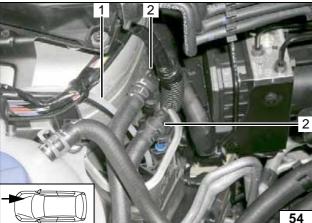


Route fuel line 1 along wiring harness of heater.



- 2 Flexible tube
- 3 Wiring harness of heater

Routing line



Route fuel line and wiring harness of metering pump along original vehicle fuel lines to installation location of metering pump.



- Wiring harness of metering pump and fuel line
- 2 Original vehicle fuel line [2x]

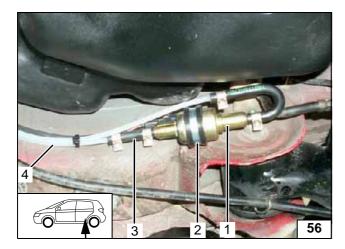
Routing line





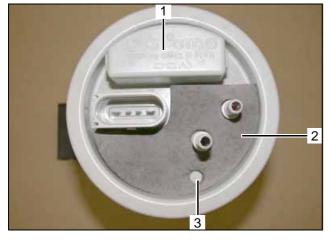


Installing metering pump



- 1 Metering pump
- 2 Rubber-coated p-clamp, M6 flanged nut on silent block
- 3 Hose section
- **4** Hose section from heater, 10 mm dia. hose clamp [2x]

Installing metering pump



- 1 Fuel sender
- 2 Template
- 3 Copy hole pattern, 6 mm dia. hole

Copying hole pattern



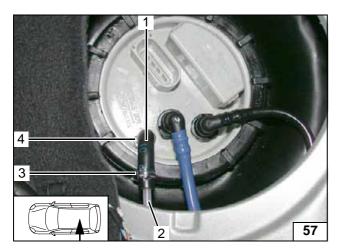
Cut fuel standpipe **3**, fuel hose **1** and standpipe **2** to length and install in accordance with template.

Watch for possible kinking!



Installing fuel standpipe



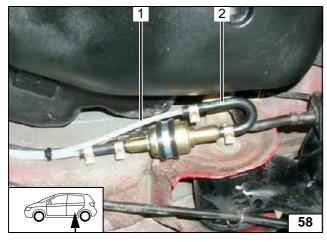


Install fuel-tank sending unit according to manufacturer's specifications. Shorten moulded hose by 10 mm on 3.5 mm dia. side and mount on fuel standpipe.

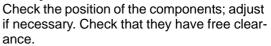


- 1 Moulded hose, 3.5 mm dia. 4.5 mm
- 2 Fuel line
- 3 10mm dia. Caillau clamp
- 4 8mm dia. Caillau clamp

Connecting fuel line



Connect fuel line from fuel standpipe 1 on intake side of metering pump [side without connector].

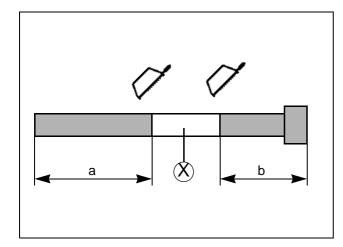


2 180° moulded hose, hose clamp 10mm dia. [2x]



Connection to metering pump



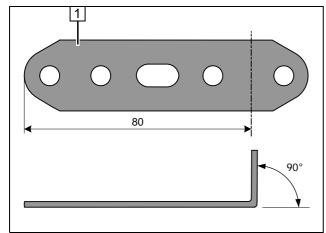


Exhaust gas

Exhaust pipe a = 380 mm Exhaust end section b = 320 mm

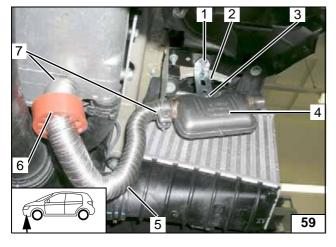
Discard section \otimes

Preparing exhaust pipe



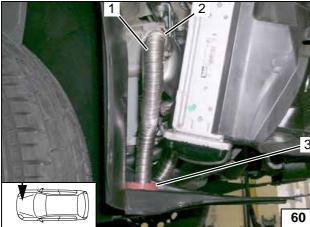
1 Perforated bracket

Angling down perforated bracket



- 1 Original vehicle nut
- 2 Angled-down perforated bracket
- 3 M6x12 bolt, flanged nut M6
- 4 Exhaust silencer
- 5 Exhaust pipe
- 6 Red rubber isolator
- 7 Exhaust p-clamp [2x]

Installing silencer and exhaust pipe



42 mm dia. hole in wheel well trim at position **3** (see the following figure).



- 1 Exhaust end section
- 2 Hose clamp
- 3 Red rubber isolator with groove

Installing end piece



Final Work

WARNING!

Reassemble the disassembled components in reverse order.

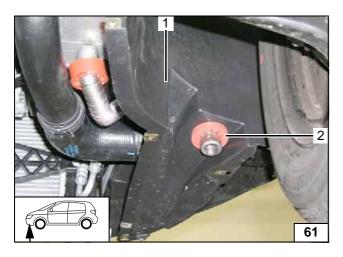
Check all hoses, hose, spring and Caillau clamps, as well as all electrical connections for firm seating. Secure all loose cables using cable ties.

Only use manufacturer-approved coolant.

Spray the heater components with anti-corrosion wax (Tectyl 100K, Order No. 111329).

- Connect the battery
- Bleed and fill the coolant circuit according to the vehicle manufacturer's specifications.
- Set the digital timer.
- Set the manual air conditioning or automatic air conditioning according to the "operating instructions for the end customer".
- Check the proper operation of the parking heater, see the operating instructions/installation instructions.
- Attach the "Switch off parking heater before refueling" sticker to the left-hand B-pillar.





- 1 Wheel well trim
- **2** 42 mm dia. hole, red rubber isolator with groove

Cutting out wheel well trim

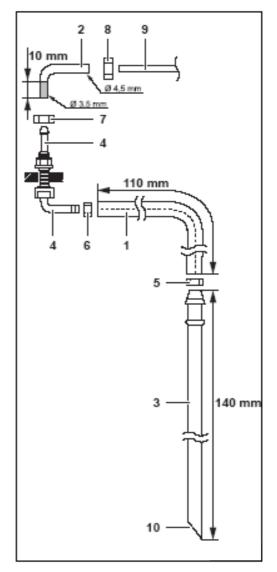


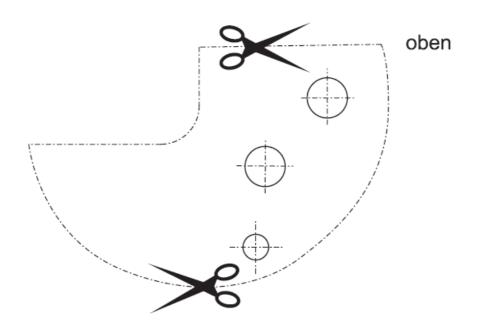
Webasto AG Postfach 80 D-82132 Stockdorf / Germany National Hotline: 01805 93 22 78 (14 Cent aus dem deutschen Festnetz) Hotfax: 0395 5592 353 Hotmail: hotline@webasto.de http://www.webasto.de



Template for Fuel Standpipe and Fuel-Tank Sending Unit

No.	Description
1	Fuel hose
2	90° moulded hose
3	Standpipe
4	Fuel standpipe
5	Single-lug clamp, 8.0mm dia.
6	Single-lug clamp, 6.6mm dia.
7	Caillau clamp, 9.0mm dia.
8	Caillau clamp, 10.0mm dia.
9	Fuel line
10	Cut to length slantwise







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.

For vehicles with passenger compartment monitoring, it must be deactivated additionally, besides making the vehicle settings for the heating operation.

Instructions on deactivation can be taken from the operating instructions of the vehicle.

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 wheat and in the position Summer.

Before parking the vehicle, make the following settings:



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

Climatic



- 1 Set defrost switch to "on"
- 2 Set temperature to "max."

Climatron-