Water Heater Unit



Thermo Top V Additional Heater 00 0018

Installation Instructions

Mercedes Benz C Class W204 / S204

Gasoline from Model Year 2007 Left-hand drive vehicle AMG 950 Sports Package Not on C 63 AMG



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, specialized tools and equipment are required to install and repair Webasto heating and cooling systems.

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.

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Validity

Manufacturer	Model	Туре	EG-BE No./ABE
Daimler AG	C Class	W-204	e1 * 2001/116 * 0431 *
Daimler AG	C Class	S-204	e1 * 2001/116 * 0431 *

Туре	Engine model	Output in kW	Displacement in cm ³
C 180 K	Gasoline	115	1796
C 200 K	Gasoline	135	1796
C230	Gasoline	150	2496
C280	Gasoline	170	2996
C 280 4Matic	Gasoline	170	2996
C350	Gasoline	200	3498
C 350 4Matic	Gasoline	200	3498

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.

Heater Unit/Installation Kit

Quantity	Description	Order No.:
1	LU TT-V Mercedes Benz W204 Gasoline with Telestart T91	1312851A

Optional heater control either:

Quantity	Description	Order No.:
1	Digital timer 1533	9005753C
	only in conjunction with mit Y-adapter	9001505A
1	Thermo Call Comfort/Connect/Locate	See price list

The installation location of the digital timer/push button should be confirmed with the end customer before installation.



Foreword

These installation instructions apply to Mercedes Benz C Class W204 / S204 Gasoline vehicles - for validity, see page 2 - from model year 2007 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, where this is the case the stipulations in the "installation instructions" and "operating and maintenance instructions" for the *Thermo Top V* should be observed.

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

The additional ventilation function is not possible!

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 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



Water



Fuel



Exhaust gas



Combustion air



Special features are highlighted using the following symbols:



Specific risk of injury or fatal accidents.



Specific risk of damage to components.



Specific risk of fire or explosion.



Reference to general installation instructions of Webasto components or to the manufacturer's vehicle-specific documents.



Reference to a special technical feature.



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

All dimensions are in mm!

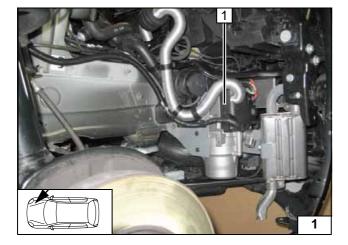
Tightening torque of hose clamps = 2.0 + 0.5 Nm!

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

Preliminary Work

WARNING!

- Open fuel tank cap, ventilate tank.
- Close the tank cap again.
- 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 windshield wipers.
- Remove the coolant reservoir cap.
- Remove the dome strut on the left.
- Remove entire windshield wiper linkage with engine.
- Remove the battery cover in the engine compartment on the right.
- Open the cover of the central electrical box on the left in the engine compartment.
- Detach the central electrical box.
- Detach the coolant expansion tank.
- Take off the cover off the positive distributor in the engine compartment.
- Remove the air intake pipe on the right (V6 only).
- Remove the lower engine cover.
- Remove the lower right vehicle trim.
- Remove the right-hand wheel.
- Remove the right-hand wheel well trim.
- Remove the seat bench of the rear bench seat.
- Open the right-hand fuel sender service lid.
- Detach the fuel-tank sending unit on the right as described in the manufacturer's instructions.
- Remove the A/C control panel.
- Lift the shift lever cover.
- Remove the ashtray or storage compartment with the socket outlet below the A/C control panel.
- Remove the accelerator pedal.
- Remove the A-pillar trim in the footwell on the left.
- Remove the front left door sill cover.
- Remove the lower left instrument panel trim.
- Remove the front left floor trim.



Heater unit installation location

1 Heater unit

Installation location

!



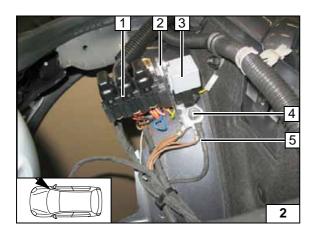
Electrical system

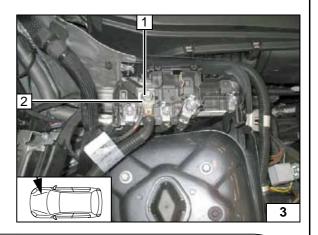
Fuse holder, relay K3

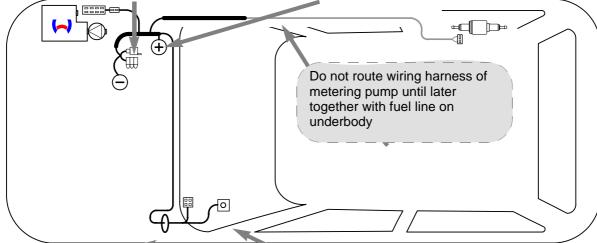
- 1 Fuse holder
- 2 Perforated bracket
- 3 K3 relay, M5x16 bolt, washer, M5 nut
- 4 Original vehicle nut, ground support point
- 5 Ground cable of heater unit, 6 mm dia. cable lug

Connection to positive support point

- 1 Positive support point (only use this!)
- 2 Positive cable of wiring harness for heater unit, crimp on 8 mm dia. cable lug

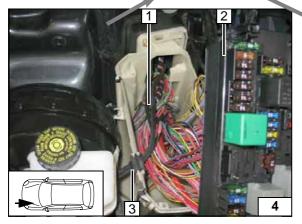








Wiring harness installation diagram



Wiring harness pass through

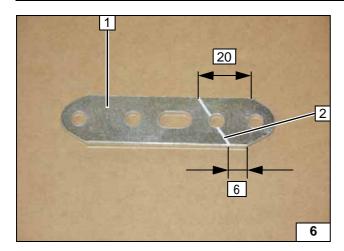
- 1 Wiring harness of heater control, wiring harness of fan controller relay K3
- 2 Central electrical box
- 3 Cable grommet



Push button

1 Push button, 16 mm dia. hole



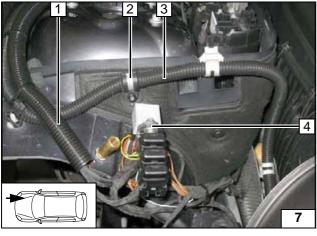


Preparing electrical system

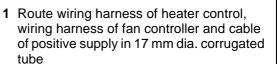
Bend perforated bracket 1 on bending edge 2 by 90°.



Bending perforated bracket



Fasten original vehicle wiring harness **3** with 15 mm dia. p-clamp **2** on stud bolt with plastic nut.



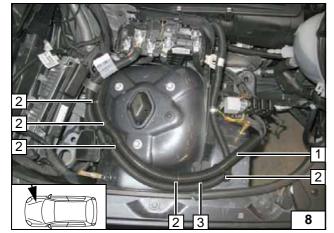
4 Perforated bracket



- 1 17 mm dia. corrugated tube
- 2 Cable tie [5x]
- 3 Original vehicle wiring harness



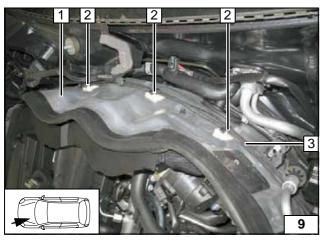
compartment



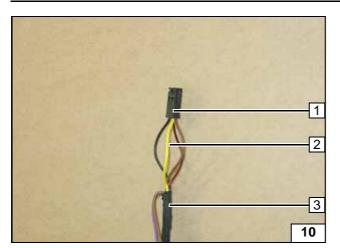
Glue adhesive base **2** [3x] to partition wall **1** and secure wiring harness of heater control and wiring harness of fan controller **3** with cable ties [3x]!



Cable routing in engine compartment



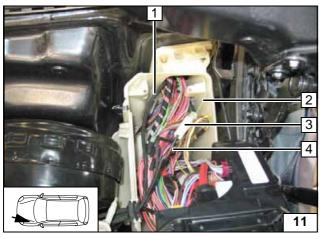




Mount yellow (ge) wire **2** in free socket of 4-pin connector **1** of heater-unit wiring harness **3**.



Preparing wiring harness of heater unit



Connect green/white (gn/ws) wire **2** with connectors **3** to black (sw) wire **4**, insulate red (rt) wire and tie back.



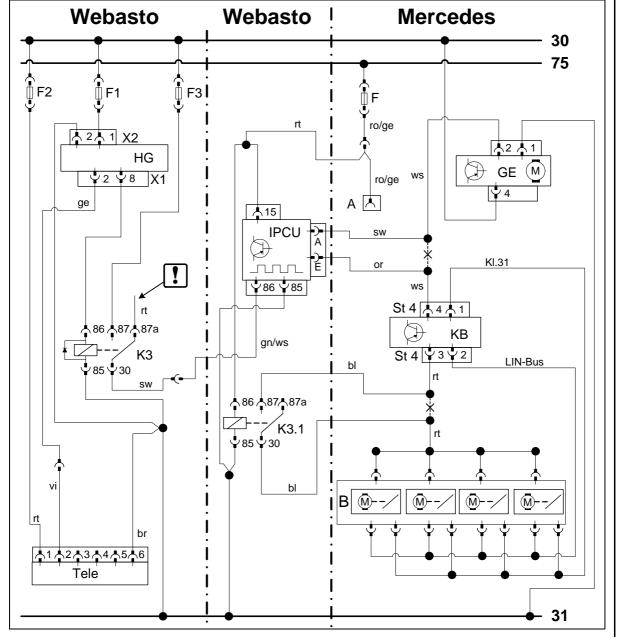
1 Wiring harness of heater control

Extending black (sw) wire



5

Automatic air-conditioning fan controller

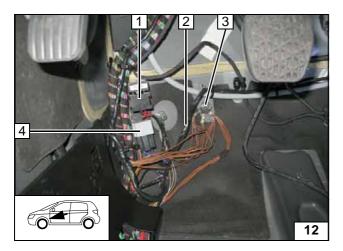


Webasto components		Vehicle components		Colors and symbols	
HG	TT-V heater unit	ge	Fan unit	rt	red
X1; X2	Connector HG	KB	Air-conditioning control panel	ws	white
F1	Fuse, 20 A	Α	Socket outlet/lighter	sw	black
F2	1 A fuse	В	Flap positioning module	bl	blue
F3	Fuse 5A	F	Fuse	ro	pink
K3	Relay	ST 4	Connector, 4-pin, KB	ge	yellow
K3.1	Relay			or	orange
IPCU	Pulse width modulator			vi	violet
Tele	Telestart				
IPCU a	IPCU adjustment values:				
Duty cycle: 31 %					Insulate wire ends and
Frequency: 300 Hz				Ŀ	tie back
Voltage: 7.4 V				X	Cutting point
Function: Low-side				Wiring	colors may vary.

Wiring diagram

Legend



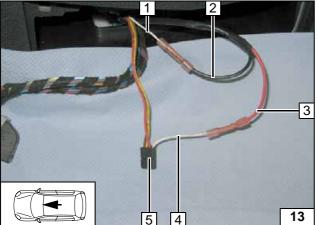


Route additional wiring harness of fan controller 2 to center console, connect according to wiring diagram and secure with cable ties.



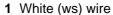
- 1 IPCU, adhesive tape
- **3** Ground point
- 4 Relay K3.1, adhesive tape

Connecting and routing wiring harness



Connection to 4-pin connector 5 from A/C control element.

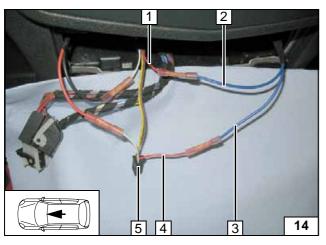
Produce connections as shown in wiring diagram.



- 2 Black (sw) wire of IPCU/A
- 3 Orange (or) wire of IPCU/E
- 4 White (ws) wire of connector



Connecting A/C control panel



Connection to 4-pin connector 5 from A/C control element.

Produce connections as shown in wiring diagram.

- 1 Red (rt) wire
- 2 Blue (bl) wire K3.1
- 3 Blue (bl) wire K3.1
- 4 Red (rt) wire of connector



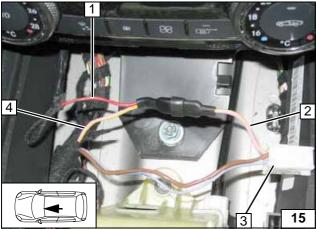
Connecting A/C control panel



diagram.

- 1 Red (rt) wire K3.1/86, IPCU/15
- 2 Pink/yellow (ro/ge) wire
- 4 Pink/yellow (ro/ge) wire

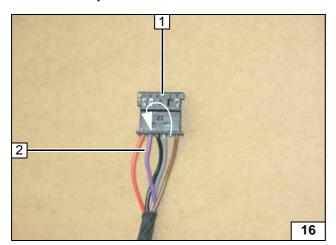
Connection to socket outlet/lighter





Heater controls

Telestart and push button combination



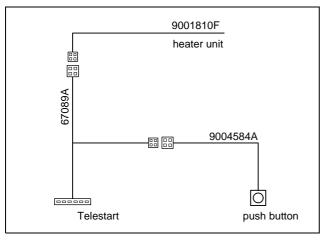
Move violet (vi) wire **2** from socket 5 to socket 2 in 6-pin connector of Telestart **1**.



Preparing Telestart connector

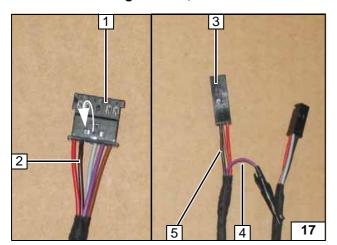


Diagram of standard heater controls





Combination of digital timer, Telestart and/or Thermo Call with push button



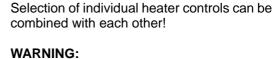
Move black (vi) wire **2** from socket 3 to socket 2 in 6-pin connector of Telestart **1**.

Remove violet (vi) wire **4** from socket 1 from 4-pin connector housing **3**, insulate and tie back

Remove black (sw) wire **5** from socket 2 and insert in socket 1.



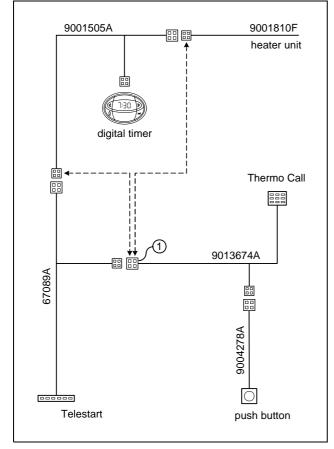
Preparing adapter wiring harness (67089A)



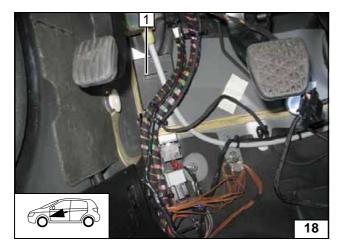
1 Insert yellow (ge) wire in free socket



Diagram of optional heater controls







Telestart

1 Receiver, adhesive tape



Installing receiver

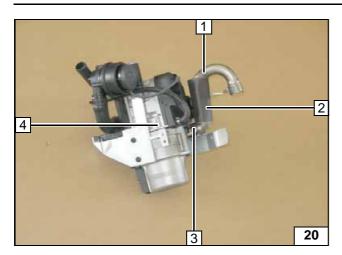


Glue antenna **1** onto windshield, if possible in black area.



Installing antenna



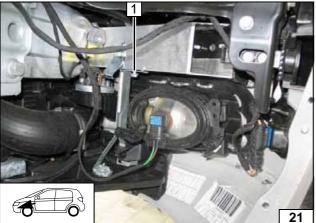


Preparing heater unit

- 1 Exhaust pipe
- 2 Pipe insulation, 80 mm
- 3 Hose clamp
- 4 Heater unit



Premounting exhaust pipe

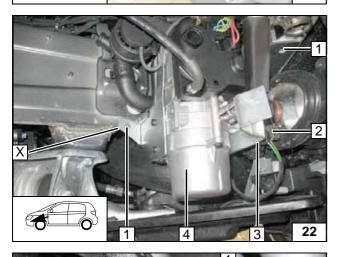


Preparing installation location

Loosen original vehicle bolt 1.



Copying hole pattern



Insert premounted heater unit 4 into previously loosened bolt, align and ensure proper spacing between connector of front fog light 2 and bracket 3 (at least 4 mm). If necessary, turn headlight washer system and fix in place with cable tie.

Remove joint sealer in area **X** on inside of

frame side member in area hole.

Copying hole pattern

1 Copy 7 mm dia. hole pattern [2x]



Ensure proper spacing between connector of front fog light 1 and bracket 2 (at least 4 mm).



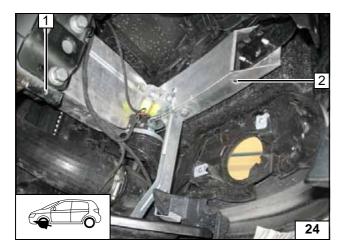


hole pattern

1312753B_EN 14

23





Remove front fog light for 7 mm dia. hole 2.

1 7 mm dia. hole



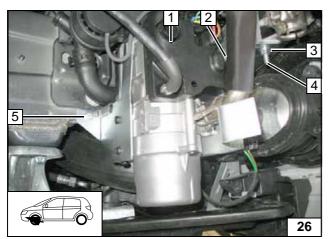
Hole pattern



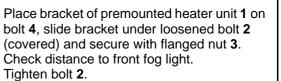
M6x20 bolt **1**, insert pin lock in hole. Remount front fog light.



Preparing installation location



Installing heater unit

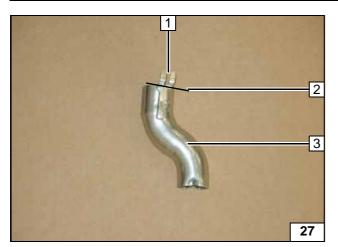


5 M6x20 bolt, flanged nut



Installing heater unit



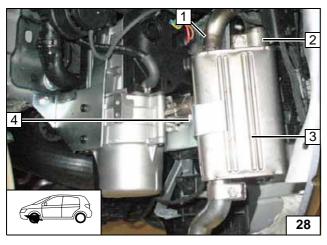


Exhaust gas

Cut tab 1 off exhaust end section 1.

2 Cutting point



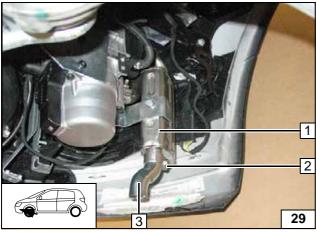


Mount exhaust muffler 3 on exhaust pipe 1 and align relative to hole 4.

- 2 Hose clamp
- 4 M6x12 bolt, spring lockwasher



Installing muffler



Do not slide exhaust end section **3** completely onto exhaust muffler **1** (5 mm distance to muffler **1**). Check distance from exhaust muffler to plastic parts of bumper.

2 Hose clamp



Installing exhaust pipe and end section



Fuel

CAUTION!

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

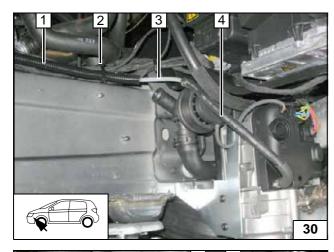
Catch any fuel running off with an appropriate container.

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.



All vehicles

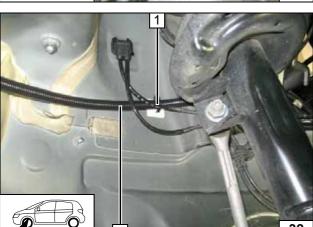
Pin out connector housing of metering-pump wiring harness before pulling into corrugated tube.

- 1 9 mm dia. corrugated tube, wiring harness of metering pump
- 2 Cable tie
- 3 Fuel line, 10 mm dia. clamp
- 4 Molded hose of heater unit



Degrease adhesive surface for adhesive base 1.

- 1 Adhesive base, cable tie
- 2 Corrugated tube



Degrease adhesive surface for adhesive base 1.

- 1 Adhesive base, cable tie
- 2 Corrugated tube

Installing lines







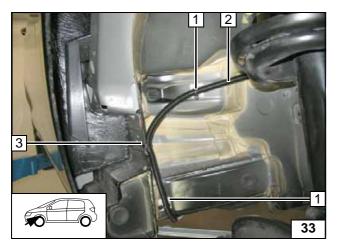










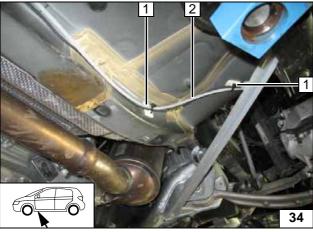


Degrease adhesive surface for adhesive base 1.

- 1 Adhesive base [2x], cable tie [2x]
- 2 Corrugated tube
- 3 Cable tie, existing hole



lines

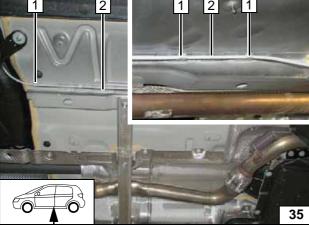


Degrease adhesive surface for adhesive base 1.



- 1 Adhesive base [2x], cable tie [2x]
- 2 Fuel line, wiring harness of metering pump

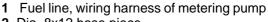
Installing lines



Distribute retaining clips 1 [10x] evenly along vehicle underbody and insert fuel line 2 and wiring harness of metering pump 2.

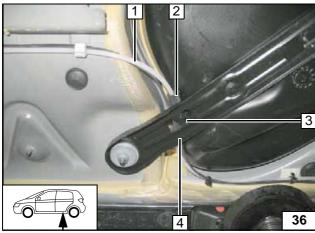


Installing lines

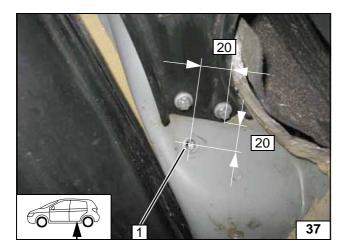


- 2 Dia. 8x12 hose piece
- 3 Cable tie
- 4 Original vehicle retaining strap

Installing lines



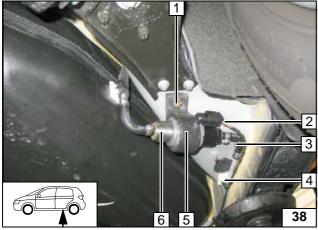




Drill 9.1 mm dia. hole 1, mount M6 rivet nut.



Rivet nut for metering pump



Mount connector housing of ing pump cable 2 on wiring harness again.

Degrease adhesive surface for adhesive base **4**.



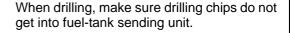
- 2 Metering pump connector
- **3** 90° molded hose, 10 mm dia. clamp [2x], fuel line
- 4 Adhesive base, cable tie
- **5** Mount
- 6 Metering pump



Installing metering pump



Remove fuel-tank sending unit 1 in accordance with manufacturer's specifications.



Lay on 17.6 mm dia. large diameter washer 2 and copy hole pattern for 6 mm dia. hole

3 6 mm dia. hole

Cut off standpipe 2 at an angle at position X.

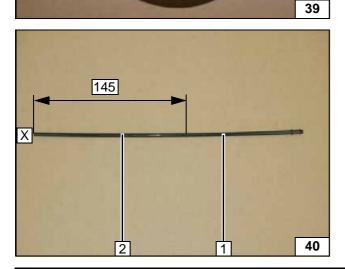
1 Section, discard



Removing fuel

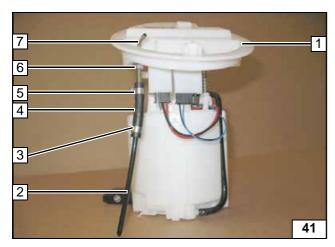


Cutting standpipe to size



3





Observe tightening torque 5 Nm of flanged nut 6 on fuel standpipe 7.

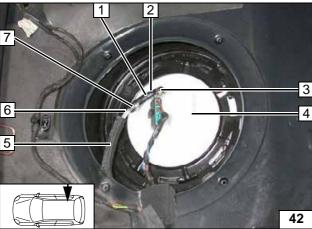
Mount 3 5 mm dia molded base 4 on fuel

Mount 3.5 mm dia. molded hose **4** on fuel standpipe **7**.

- 1 Fuel-tank sending unit
- 2 Standpipe
- 3 10 mm dia. clamp
- 5 8 mm dia. clamp



Installing fuel standpipe



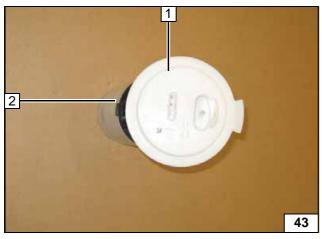
Install fuel-tank sending unit **4** in accordance with manufacturer's specifications.

Mount 3.5 mm dia. hose **1** on fuel standpipe **3**.



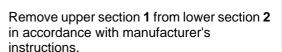
- 2 8 mm dia. clamp
- **5** 6x11 hose (rattle protection)
- 6 Fuel line
- 7 10 mm dia. clamp





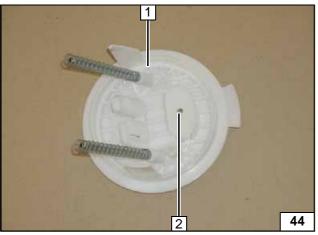
Version 2

Remove fuel-tank sending unit in accordance with manufacturer's instructions.





Removing fuel

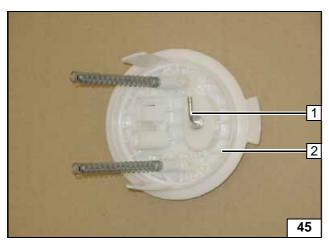


Cut off connection piece **2** flush on underside **1**. Drill 6 mm dia. hole in center.



Removing fuel

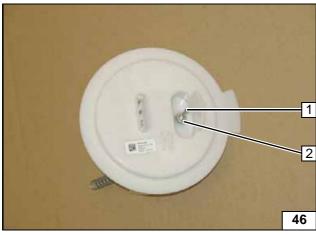




Insert fuel standpipe ${\bf 1}$ in upper section of fuel-tank sending unit ${\bf 2}$



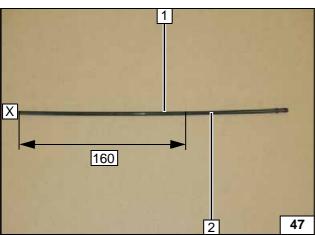
Removing fuel



Observe tightening torque 5 Nm of flanged nut **2** on fuel standpipe **1**.



Removing fuel

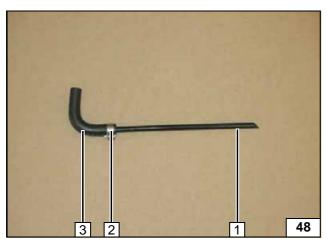


Cut off standpipe 1 at an angle at position X.

but on standpipe i at an angle at position A.



Cutting standpipe to size



Mount standpipe ${\bf 1}$ in 4.5 mm dia. molded hose ${\bf 3}$.

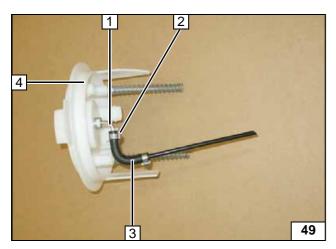
2 10 mm dia. clamp

2 Section, discard



Premounting standpipe



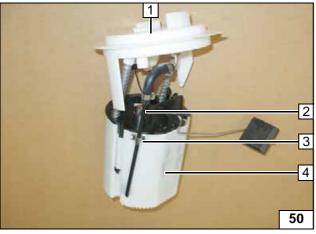


Premount standpipe **3** on fuel standpipe **1** and secure with 8 mm dia. clamp **2**.

1 =

4 Fuel-tank sending unit

Installing standpipe

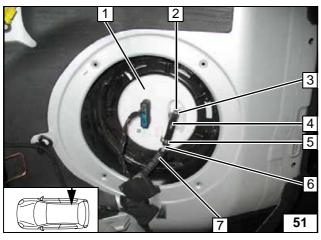


Install fuel-tank sending unit 1 in accordance with manufacturer's specifications.

Insert line holder 3 for guiding standpipe 2 in lower section of fuel-tank sending unit 4.



Installing standpipe



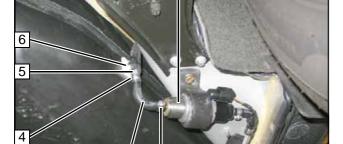
Install fuel-tank sending unit 1 in accordance with manufacturer's specifications.

Mount 3.5 mm dia. molded hose 4 on fuel standpipe 2.



- 3 8 mm dia. clamp
- 5 10 mm dia. clamp
- 6 Fuel line
- 7 6x11 hose (rattle protection)

Installing line



All vehicles

Degrease adhesive surface for adhesive base **6.**

- 1 Metering pump
- 2 10 mm dia. clamp
- 3 90° molded hose
- 4 10 mm dia. clamp
- 5 Fuel line
- 6 Cable tie, adhesive base

Connecting to metering pump

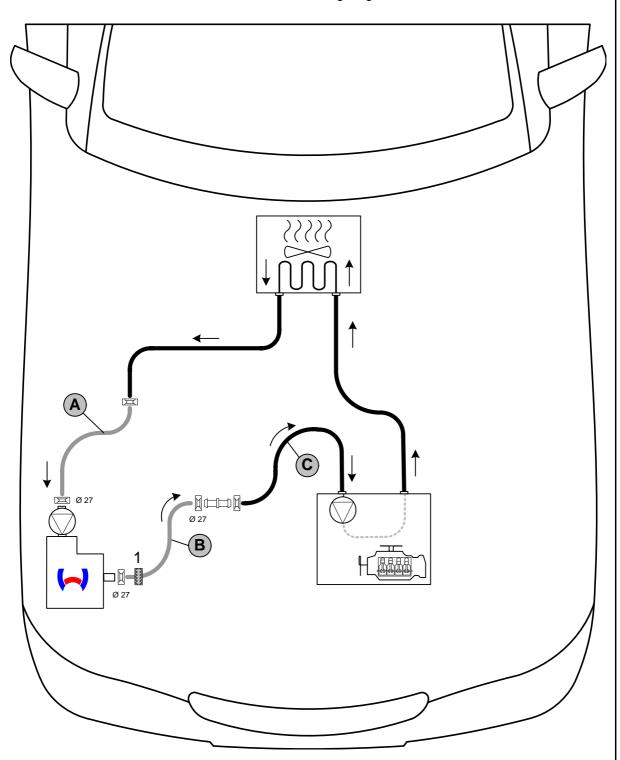


Coolant connection C 180 K / C 200 K without electr. circulating pump

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 coolant hose, the heater unit must be filled with coolant.

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

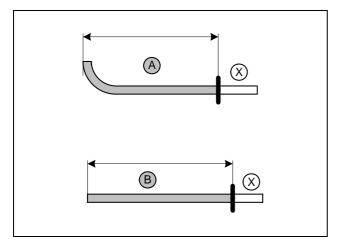


Coolant routing diagram

All spring clips without a specific designation = 25 mm dia. Connecting pipe = 18x20 dia. 1 = Black (sw) rubber isolator.



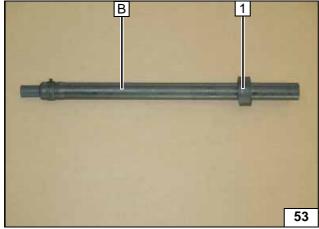




Discard section X.

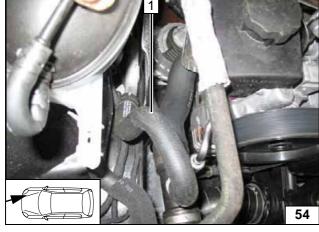
A = 18 mm dia., length = 210 B = 20 mm dia., length = 265

Cutting coolant hoses to length



1 Black (sw) rubber isolator

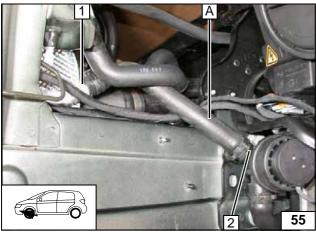
Preparing coolant hose



Remove original vehicle hose 1; hose will be reused.



Cutting point

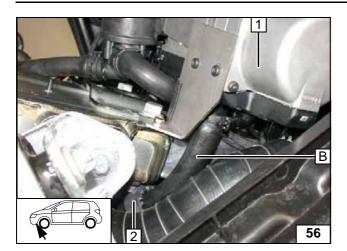


- 1 Connection to pipe socket on heat exchanger outlet
- 2 Connection to heater-unit circulating pump



Connection to heater unit





Align black (sw) rubber isolator 2.

1 Heater unit

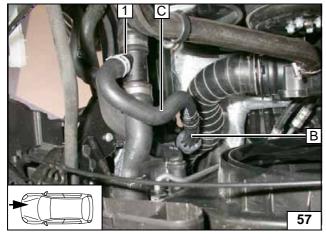


Connection to heater unit









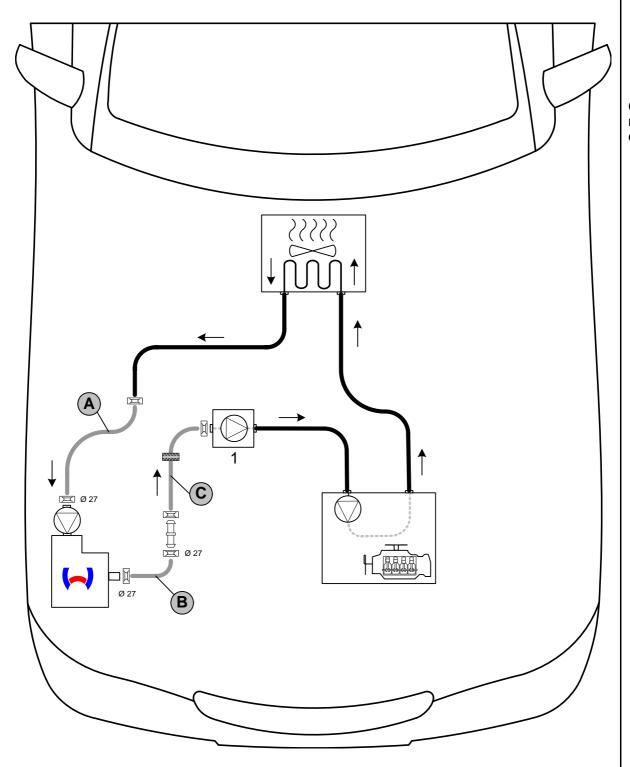


Coolant connection C 230 / C 280 / C 350 with electr. circulating pump

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 coolant hose, the heater unit must be filled with coolant.

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

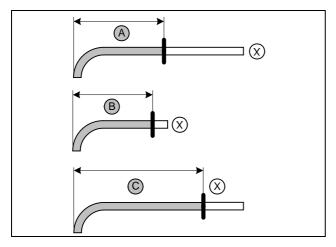


Coolant routing diagram

All spring clips without a specific designation = 25 mm dia. Connecting pipe = 18x20 dia. 1 = Original vehicle circulating pump. = black (sw) rubber isolator.



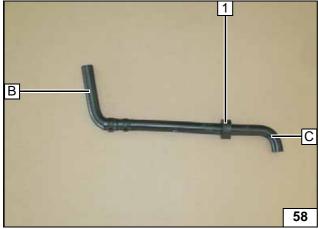




Discard section X.

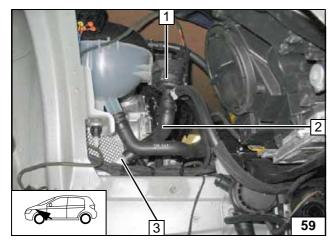
A = 18 mm dia., length = 210B = 20 mm dia., length = 150C = 18 mm dia., length = 355

> Cutting coolant hoses to length



1 Black (sw) rubber isolator

Preparing coolant hose

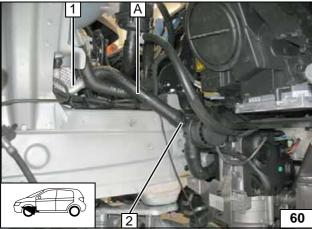


Remove original vehicle hose 2; hose will not be reused.



- 1 Original vehicle circulating pump3 Connection to pipe socket on heat exchanger outlet

Cutting point



- 1 Connection to pipe socket on heat exchanger outlet
- 2 Connection to heater-unit circulating pump



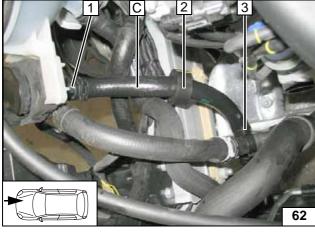
Connection to heater unit





1 Connection to heater unit outlet

Connection to heater unit



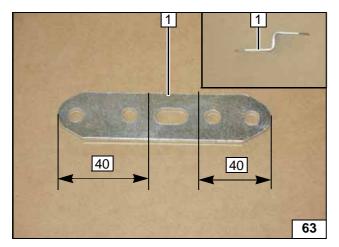
Align black (sw) rubber isolator 2.

- 1 Connection piece of original vehicle circulating pump
 3 Hose bracket



Connection to water pump



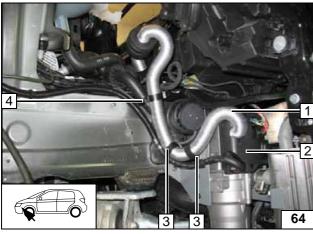


Combustion air

Bend perforated bracket 1 2x 90°.



Bending perforated bracket



Vehicle without electr. circulating pump

- 1 Combustion-air intake pipe
- 2 Heater unit
- 3 9x19 hose bracket [2x]
- 4 Hose bracket



Installing intake pipe



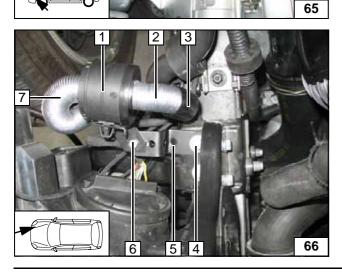
Vehicle with electr. circulating pump

Position 9x19 hose bracket 1 [2x] between combustion air pipe 2 and original vehicle hose 4.

3 Heater unit



Installing intake pipe



Mount perforated bracket **5** with original vehicle bolt **4**.

- Intake muffler
- 2 Intake pipe
- 3 Protective cap
- **6** Bracket of muffler, M5x16 bolt, washer, flanged nut
- 7 Intake pipe



Installing muffler



Final Work

WARNING!

Reassemble the disassembled components in reverse order.

Check all hoses, clamps and all electrical connections for firm seating.

Secure all loose cables using cable ties.

Only use manufacturer-approved coolant.

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

- Fill and bleed the coolant circuit according to the vehicle manufacturer's specifications.
- Check the proper operation of the additional heater, see the operating instructions/installation instructions.
- Attach the "Switch off additional heater before refueling" sticker to the left-hand B-pillar.
- Teach button function as described in operating instructions (remove fuse F2 [1A], install again and press button for 2 sec. within 5 sec.)

Note:

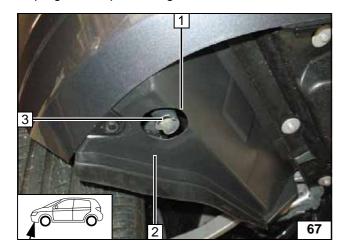
When switching on the heater unit with the digital timer and switching off with the Thermo Call, the Thermo Call must first be switched on and then off!

The additional ventilation function is not possible!

WARNING:

After conducting an operating test of the additional heater, carry out an "input short test" with the "Diagnosis assistance system" of the manufacturer on the vehicle.

Reprogram the positioning motors in the KLA air conditioner.



Drill 45 mm dia, hole 1 in trim 2.

The exhaust end section 3, must be centered relative to the hole 1 and aligned flush with the trim 2; realign exhaust end section 3 if necessary.



|i|

Exhaust outlet

1 Exhaust end section



Exhaust outlet





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