

Water Heater



Thermo Top E Parking Heater

e1
00 0003

Thermo Top C Parking Heater

e1
00 0002

Thermo Top P Parking Heater

e1
00 0104

Installation documentation

Fiat Bravo

Gasoline and Diesel
from Model Year 2007
Left-hand drive vehicle



WARNING!

Hazard warning:

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



Specialist company training, technical documentation, specialised tools and equipment are required to install and repair Webasto heating and cooling systems. Only original Webasto parts must be used. For this, also see the catalog of air and water heater accessories from Webasto.

NEVER attempt to install or repair Webasto heating or cooling systems if you have not successfully completed the company training and thereby acquired the required technical skills, or if you do not have access to the required technical documentation, tools and equipment needed to carry out correct installation and repairs.

ALWAYS follow all Webasto installation and repair instructions and observe all warnings.

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	Type	EG-BE No./ ABE
Fiat	Bravo	198	e3 * 2001/116 * 0248 * ...

Engine type	Engine model	Output in kW	Displacement in cm ³
192B2000	Gasoline	66	1368
192A8000	Diesel	88	1910
192A5000	Diesel	110	1910

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

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

Heater / installation kit

Quantity	Description	Order No.:
1	Retail accessories <i>Thermo Top E / C / P</i>	See price list
1	Installation kit for Fiat Bravo Gasoline and Diesel	1312956B
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

This installation documentation applies to the Fiat Bravo Gasoline and Diesel 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 this installation documentation.

However, the stipulations in the "installation documentation" 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).

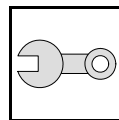
Special tool

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

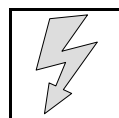
Explanatory notes on document

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.

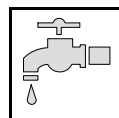
Mechanical system



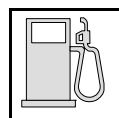
Electrical system



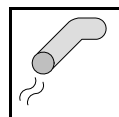
Coolant circuit



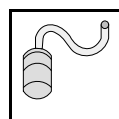
Fuel



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.



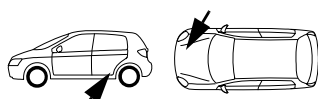
Specific risk of fire or explosion.



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 Ejet screws, Ejet studs = 10 Nm!

Preliminary work

WARNING!

- Open the fuel tank cap, ventilate the tank.
- Close the tank cap again.
- 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.
- Detach the central electrical box in the engine compartment on the left.
- Remove the engine design cover; only on JTD
- Remove the wheel well trim on the right and left.
- Remove the bumper.
- Remove the underride protection; only on JTD.
- Remove the cover of the fuel lines on the underbody.
- Remove the cover on the right next to the fuel tank.
- Fold up the seat surface of the rear bench seat.
- Open the tank-fitting service lid.
- Remove the fuel-tank sending unit in accordance with the manufacturers specifications.
- Remove the cover of the central electrical box on the driver's side.
- Remove the A/C control panel; only with automatic air-conditioning.

Remove page 28 "Operating Instructions for End Customer" and add to the vehicle operating instructions.



Heater installation location

1 Heater

Installation location

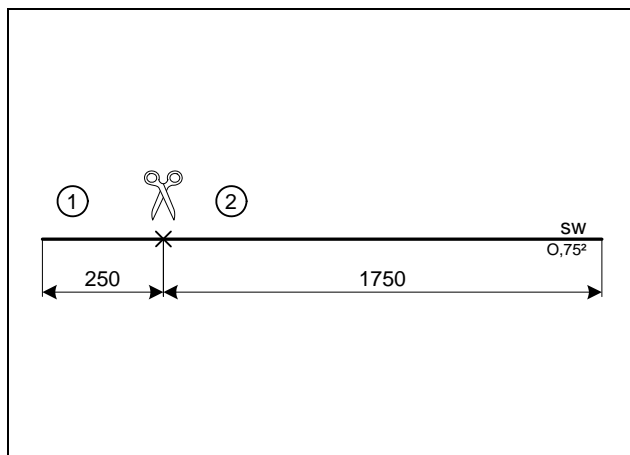


Preparing electrical system

Only with automatic air-conditioning



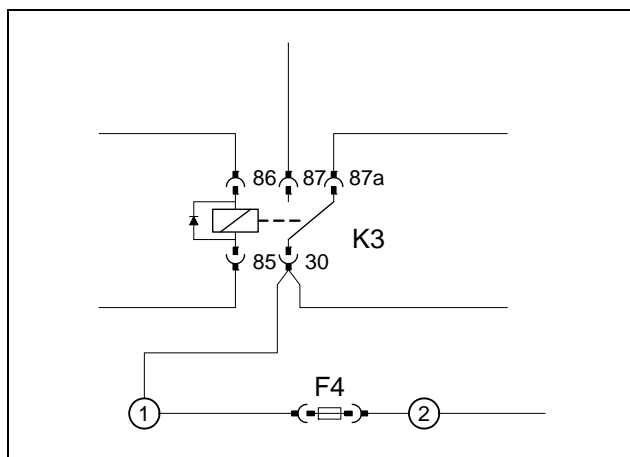
Cutting wires to length



Produce connections as shown in wiring diagram. Install wire section 2 in the protective sleeving provided.



Preparing fuse F4

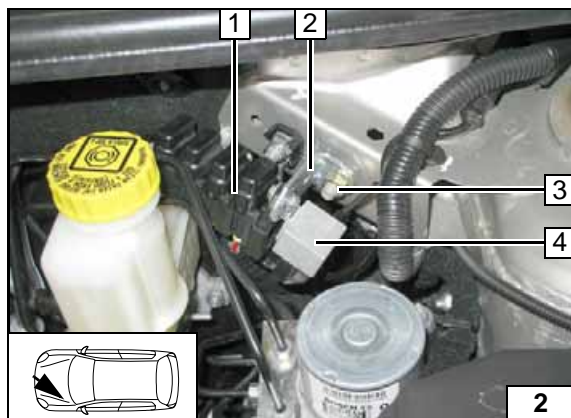




Electrical system

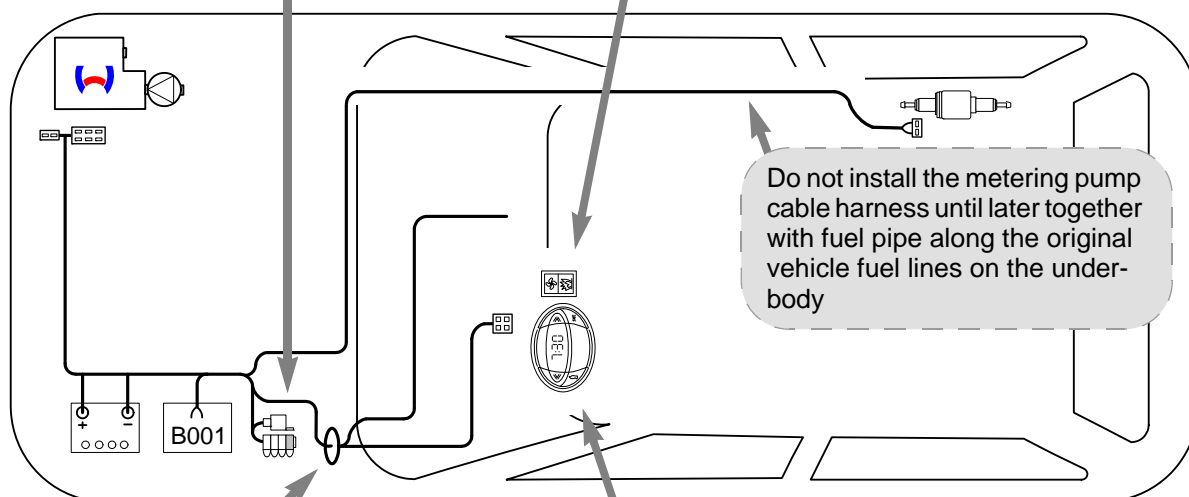
Fuse holder, relay K3

- 1 Fuse holder
- 2 Angle bracket, drilled out to 8 mm dia.
- 3 Original vehicle stud bolt, flanged nut
- 4 Relay K3, M5x16 bolt, washer, flanged nut

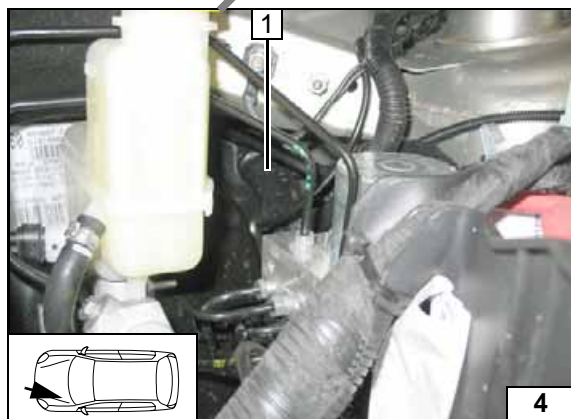


Summer / winter switch option

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



Wiring harness installation diagram



Wiring harness pass through

- 1 Protective rubber plug



Digital timer

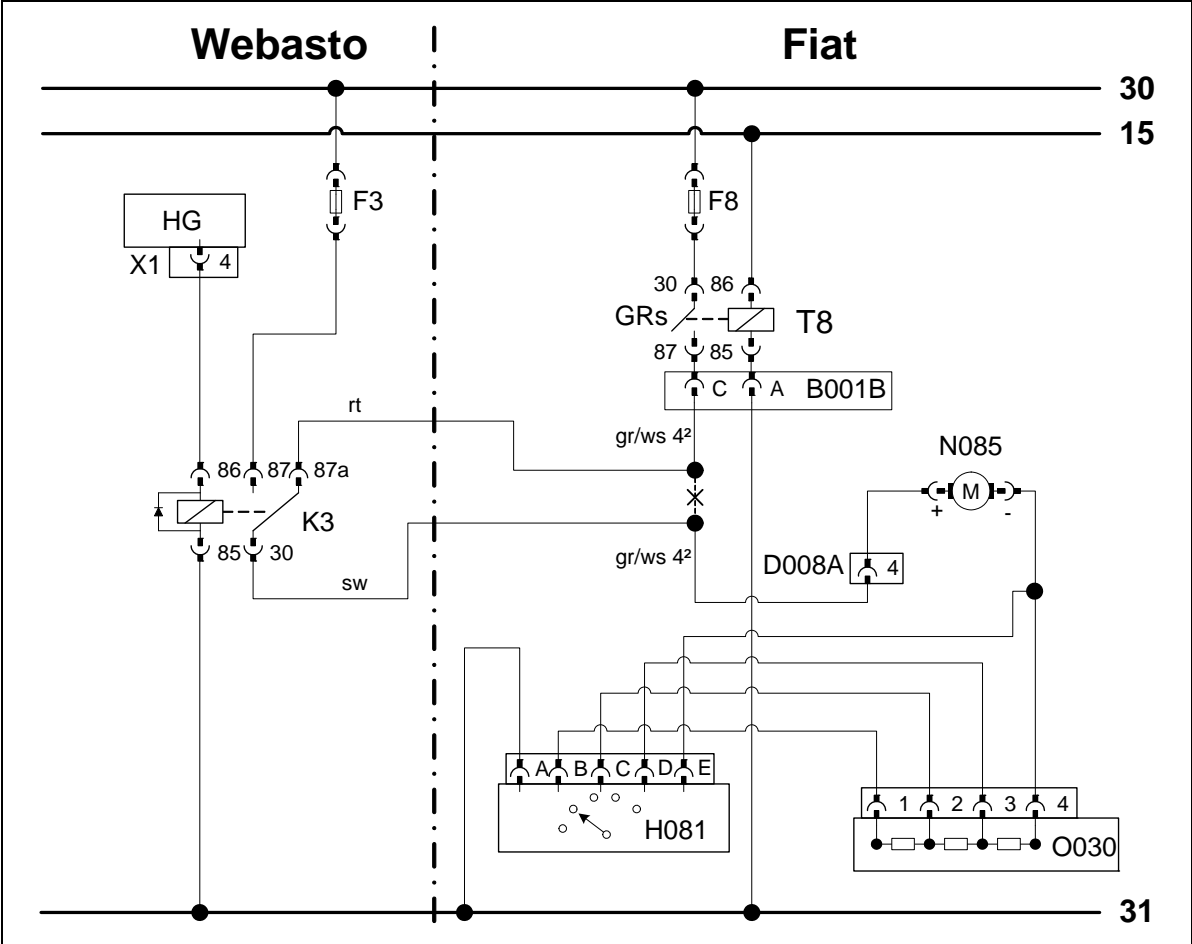
- 1 Digital timer



Fan controller for manual air conditioning

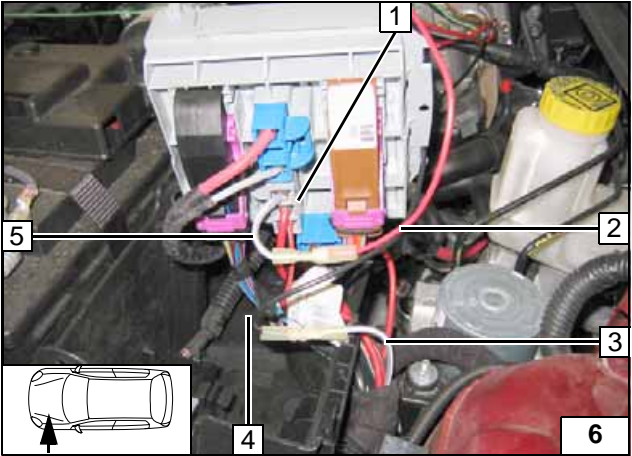


Wiring diagram



Webasto components		Vehicle components		Colours and symbols	
HG	Heater TT-E/C/P	N085	Fan motor	rt	red
X1	6-pin heater connector	GRs	Fan relay T8	ws	white
F3	Fuse	H081	Fan switch	sw	black
K3	Fan relay	O030	Resistor group	br	brown
		F8	Fuse	gn	green
		B001B	Connector central electrical box gray	gr	gray
				X	Cutting point
				Wiring colours may vary.	

Legends



Connection on gray (gr) 3-pin connector B001B 1 of central electrical box. Produce connections as shown in wiring diagram.

- 2 Red (rt) wire from K3/87a
- 3 Gray/white (gr/ws) wire of fan motor
- 4 Black (sw) wire from K3/30
- 5 Gray/white (gr/ws) wire of connector



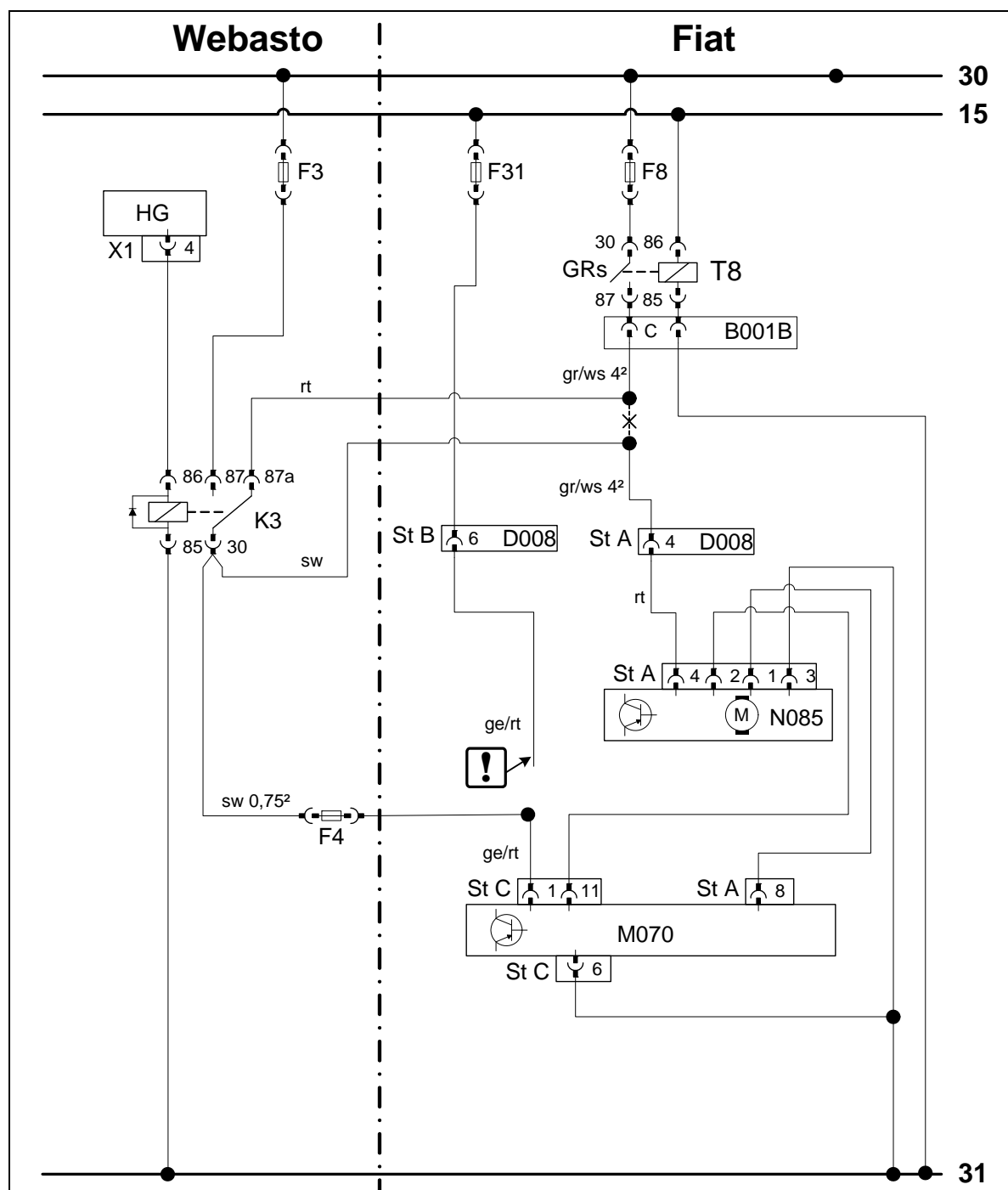
Connecting fan-motor



Automatic air-conditioning fan controller

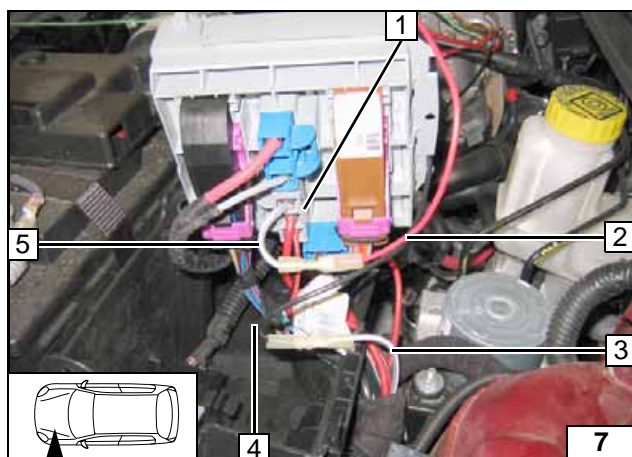


Wiring diagram



Webasto components		Vehicle components		Colours and symbols	
HG	Heater TT-E/C/P	N085	Fan unit	rt	red
X1	6-pin heater connector	GRs	Fan relay T8	ws	white
F3	Fuse	M070	Air-conditioning control panel	sw	black
K3	Fan relay	St C	Connector, blue, 12-pin	br	brown
F4	Fuse 5A	B001B	Connector central electrical box gray	gn	green
		F8	Fuse 30A	ge	yellow
		F31	Fuse 5A	gr	gray
		D008	Connector	!	Insulate wire ends and tie back
				X	Cutting point
				Wiring colours may vary.	

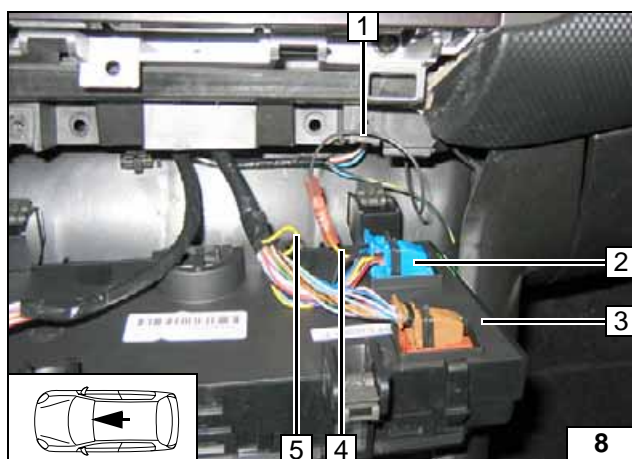
Legends



Connection on gray (gr) 3-pin connector B001B 1 of central electrical box.
Produce connections as shown in wiring diagram.

- 2 Red (rt) wire from K3/87a
- 3 Gray/white (gr/ws) wire of fan motor
- 4 Black (sw) wire from K3/30
- 5 Gray/white (gr/ws) wire of connector

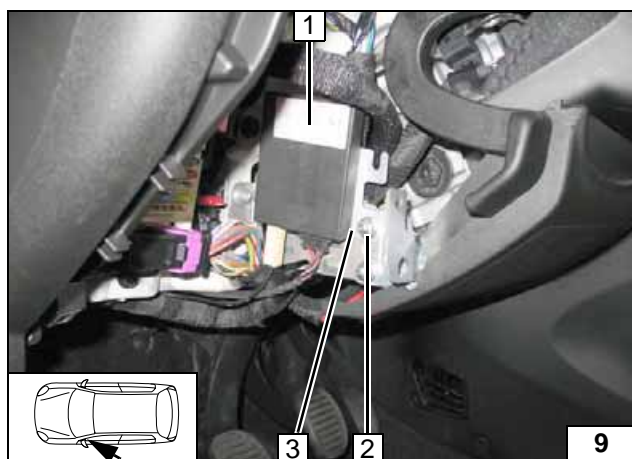
**Connect-
ing fan-mo-
tor**



Connection on 12-pin connector 2 from A/C control panel 3.
Produce connections as shown in wiring diagram.

- 1 Black (sw) wire of K3/30, fuse F4
- 4 Yellow/red (ge/rt) connector
- 5 Yellow/red (ge/rt) wire of fuse F31

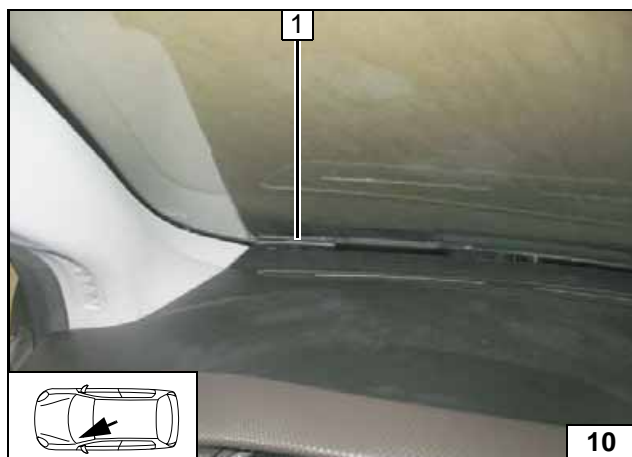
**Connect-
ing A/C
control
panel**



Telestart option

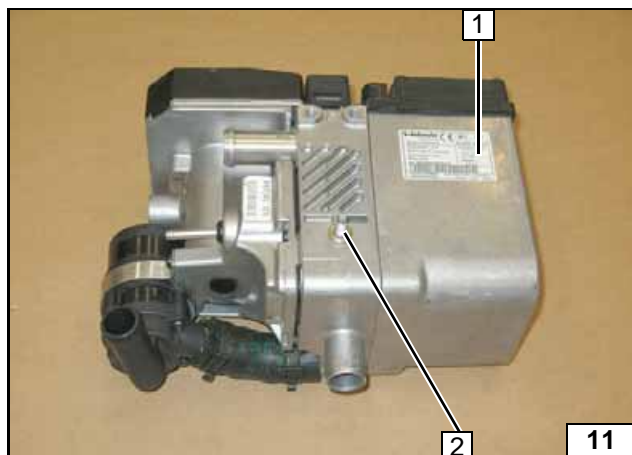
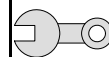
- 1 Receiver
- 2 Original vehicle stud bolt, original vehicle flanged nut
- 3 Bracket, hole drilled out to 6.5 mm dia.

**Installing
receiver**



- 1 Antenna

**Installing
antenna**

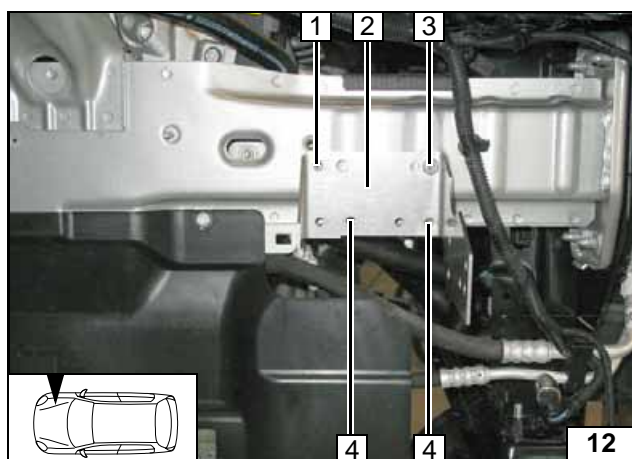


Preparing heater

Washer on Ejot stud 2!

1 Heater

Premounting heater

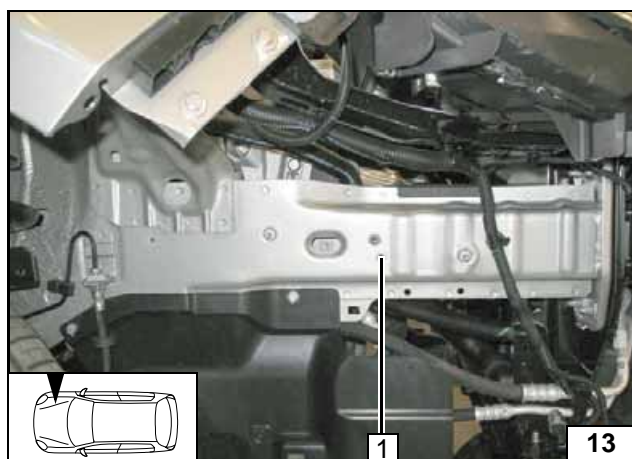


Preparing installation location

Mount bracket 2 on original vehicle stud bolt 3 with flanged nut, align and copy hole pattern.

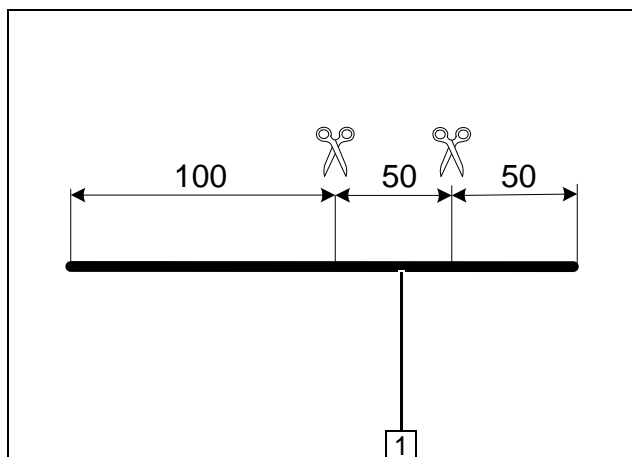
1 Hole pattern, 9.1 mm dia. hole
4 Hole pattern, 6.5 mm dia. hole [2x]

Copying hole pattern



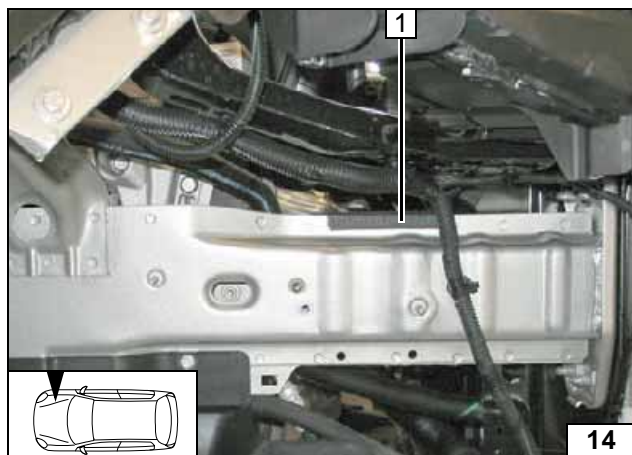
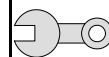
1 M6 rivet nut, 9.1 mm dia. hole

Installing rivet nut



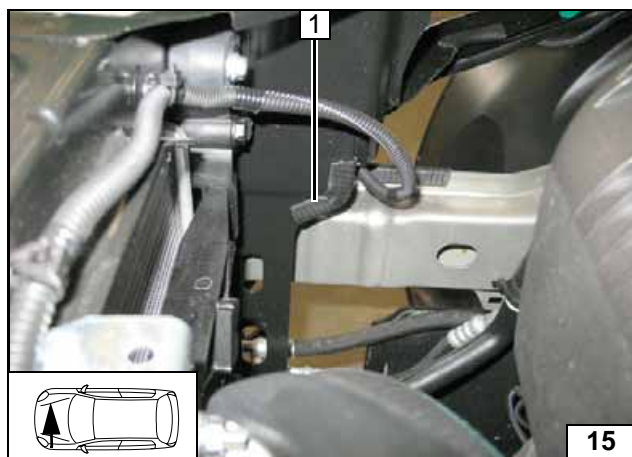
1 Edge protection section

Cutting edge protection section to length



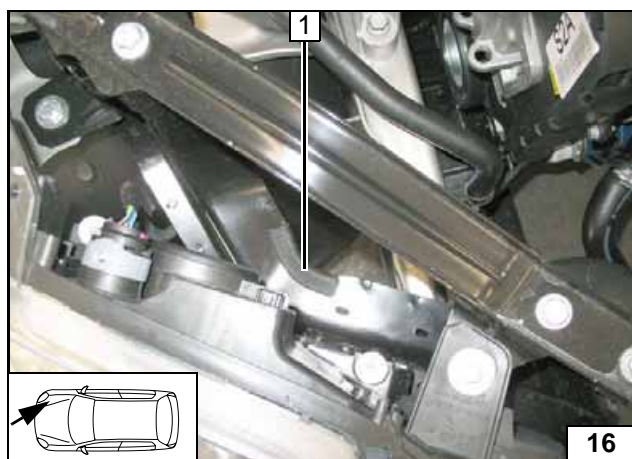
1 100mm edge protection section

Mounting
edge pro-
tection
section



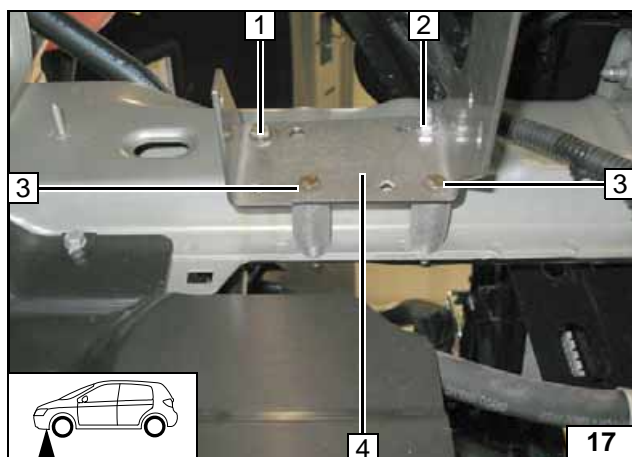
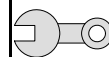
1 50 mm edge protection section

Mounting
edge pro-
tection
section



1 50 mm edge protection section

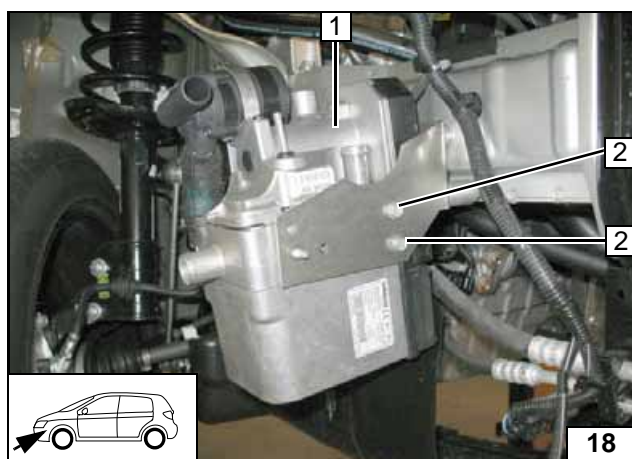
Mounting
edge pro-
tection
section



Installing bracket

- 1 M6x30 bolt, spring washer, 8 mm shim, M6 rivet nut
- 2 Original vehicle stud bolt, 5 mm shim, flanged nut
- 3 M6x50 bolt [2x], 30 mm spacer [2x], 8 mm shim [2x], flanged nut [2x]
- 4 Bracket

Installing bracket

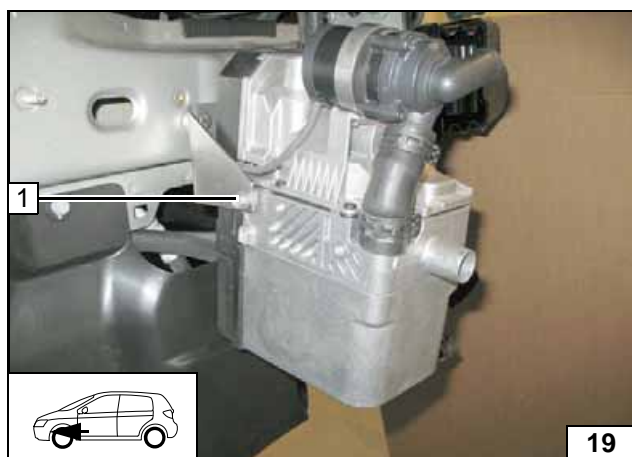


Installing heater

Connect wiring harness of heater before installing heater 1.

- 2 E-jot screw [2x]

Installing heater



- 1 E-jot screw

Installing heater



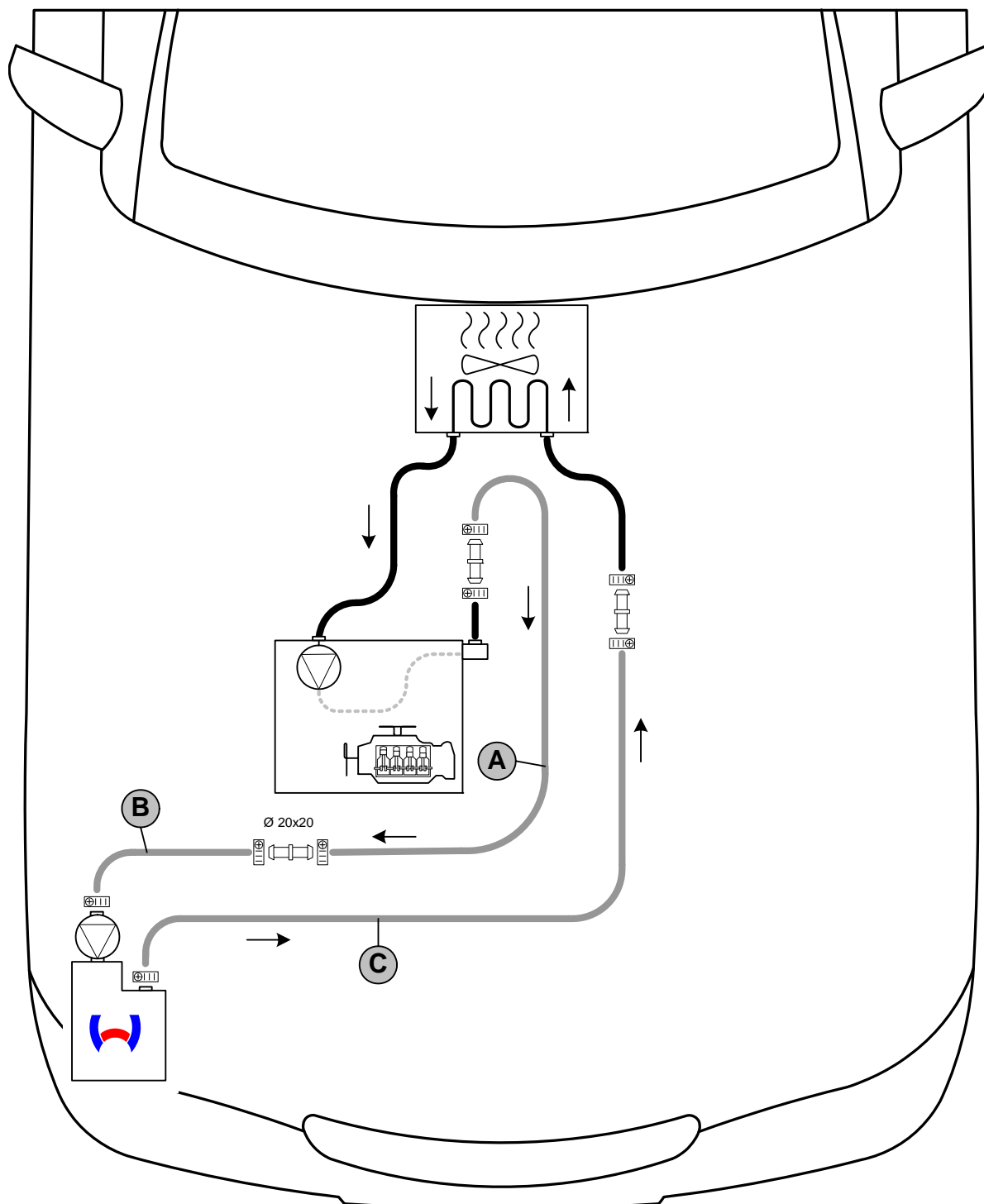
Coolant circulation



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:

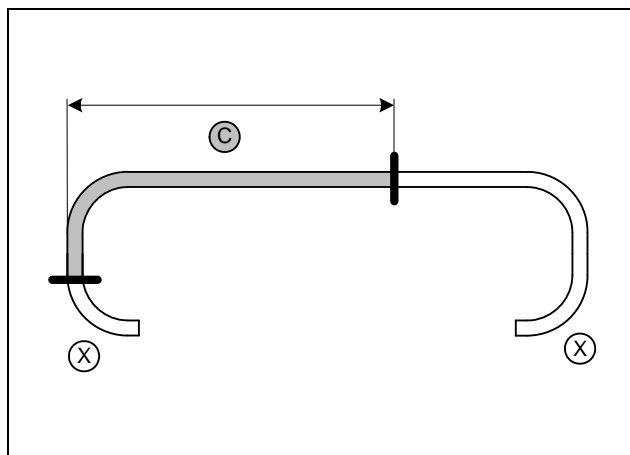
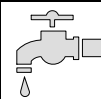


Hose in-
stalling di-
agram



All connecting pipes without a specific designation  = 18x20mm dia.
All hose clamps  = 20-27 mm dia.!





Gasoline

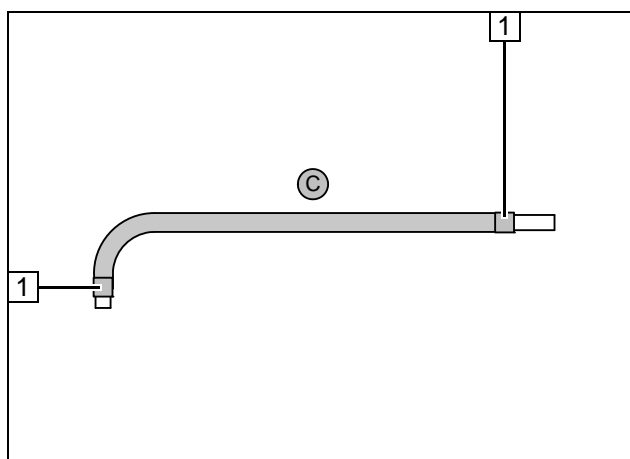
Discard section **X**.

C = 1280

Diesel

C = 1220

Cutting hose C to length

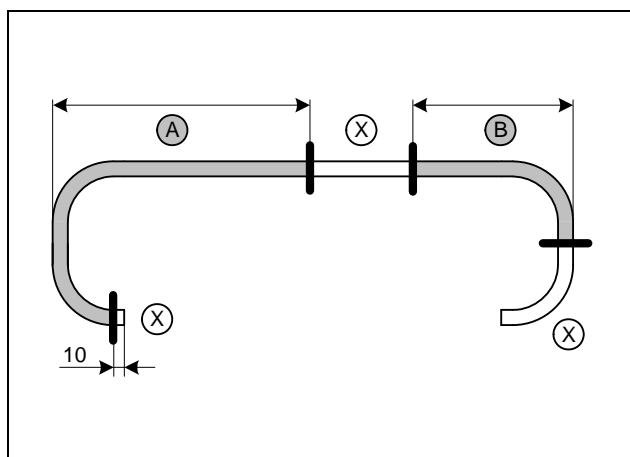


All vehicles

Slide braided protection hose onto hose **C** and cut to length.
Cut heat shrink plastic tubing to length.

1 25 mm long heat shrink plastic tubing [2x]

Braided protection hose C

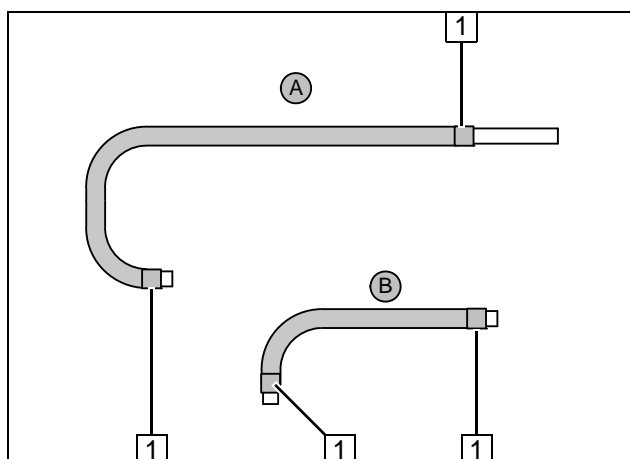


Discard section **X**.

A = 970

B = 410

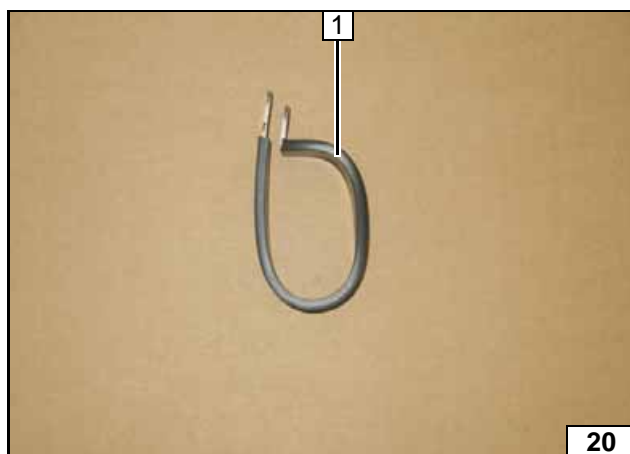
Hose Cutting A and B to length



Push braided protection hoses onto hose **A** and **B** and cut to length.
Cut heat shrink plastic tubing to length.

1 25 mm long heat shrink plastic tubing [4x]

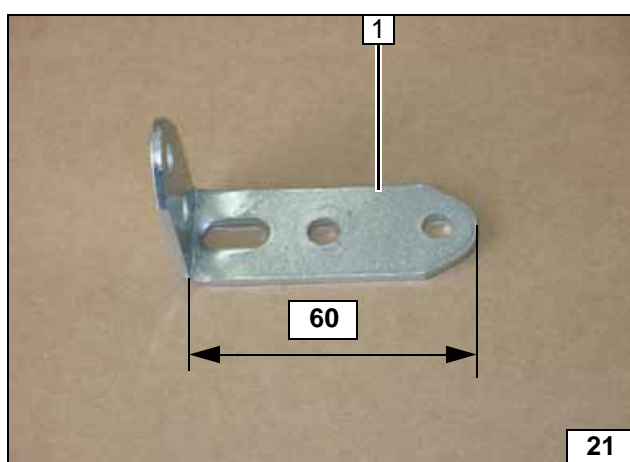
Braided protection hoses A and B



Bend 48 mm dia. rubber-coated p-clamp 1.



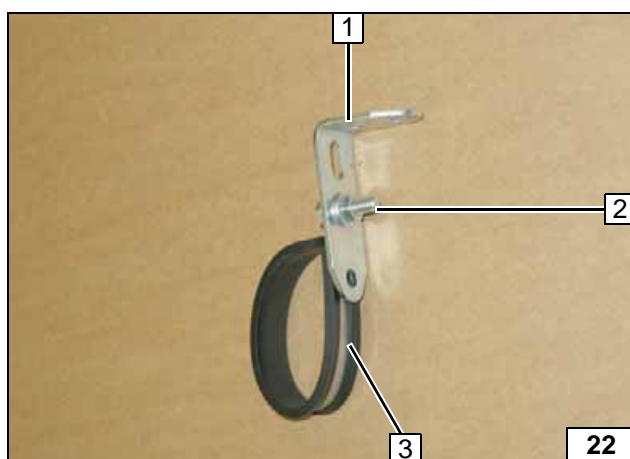
Preparing p-clamp



Bend perforated bracket 1 by 90°.

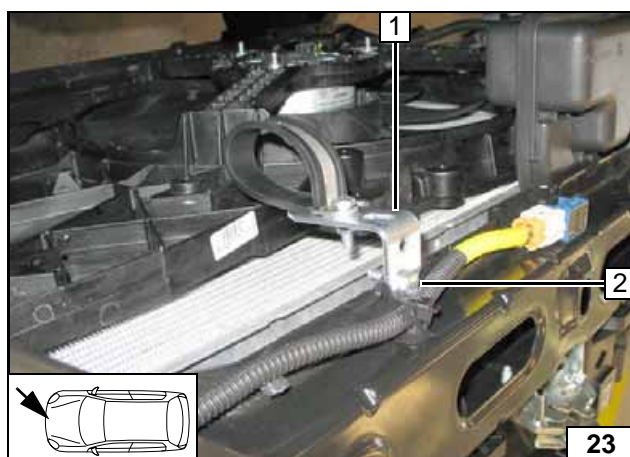


Preparing perforated bracket



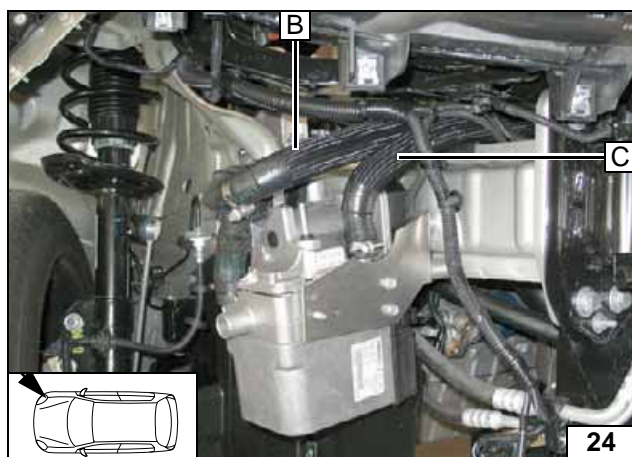
- 1 Perforated bracket, angled down
- 2 M6x20 bolt, flanged nut
- 3 48 mm dia. rubber-coated p-clamp

Premounting p-clamp

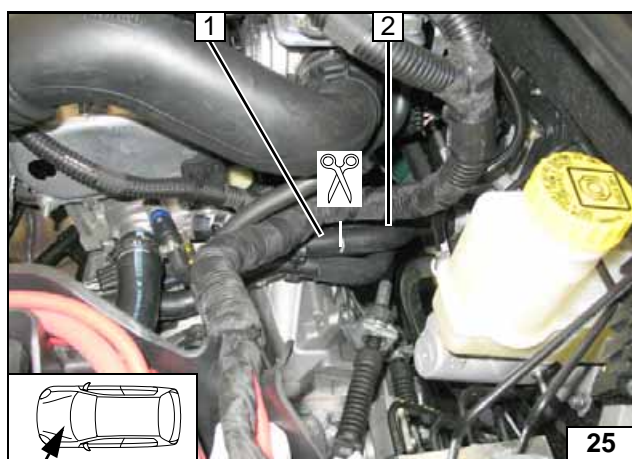


- 1 Perforated bracket
- 2 M6x20 bolt, original vehicle hole, flanged nut

Installing p-clamp



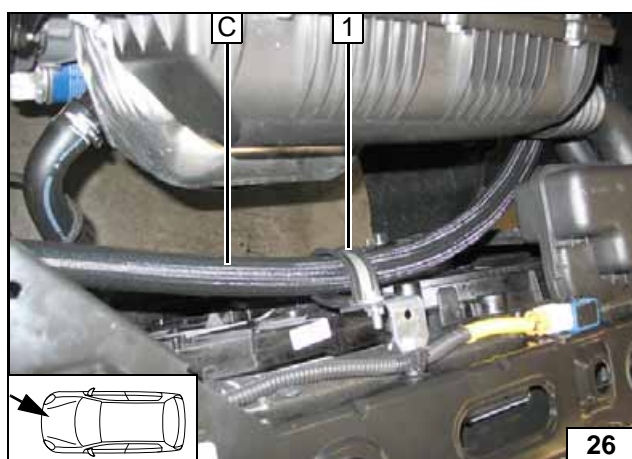
Conne-
ction to
heater



Gasoline

- 1 Engine-outlet hose section
- 2 Hose section of heat exchanger inlet

Cutting
point

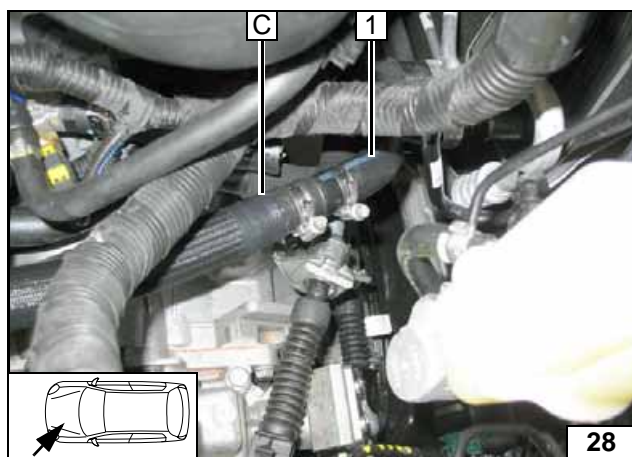
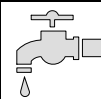


- 1 48 mm dia. rubber-coated p-clamp

Routing in
engine
compart-
ment



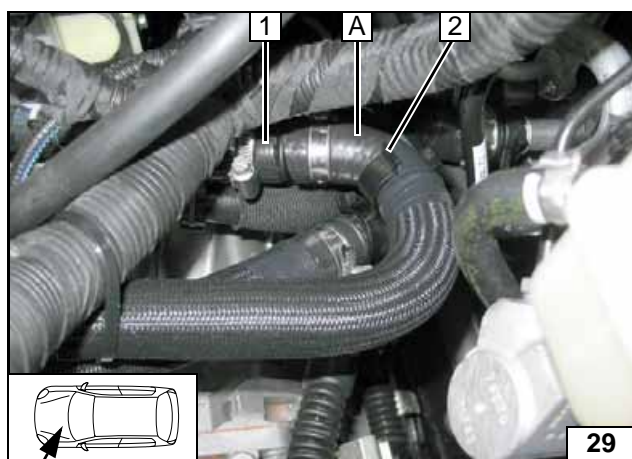
Routing in
engine
compart-
ment



Ensure sufficient distance to neighbouring components.

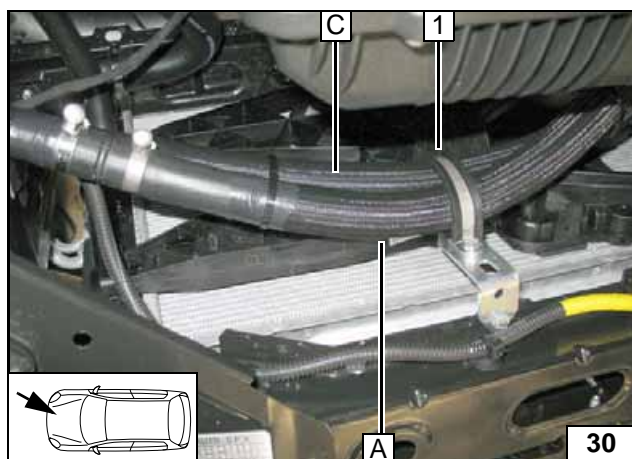
1 Hose on heat exchanger inlet

Connect-
ing heat
exchanger
inlet



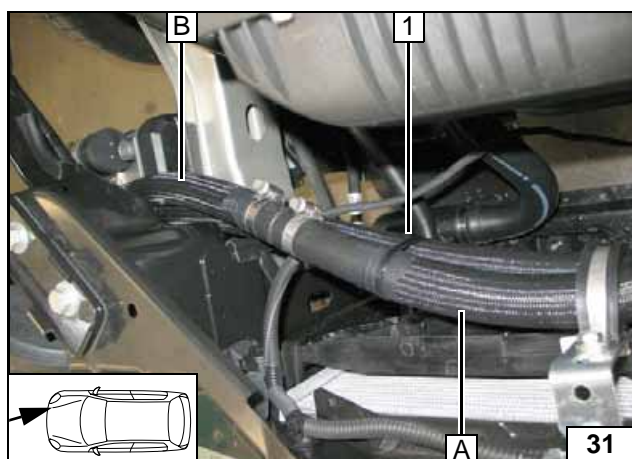
1 Hose on engine outlet
2 Spacer bracket

Connect-
ing engine
outlet



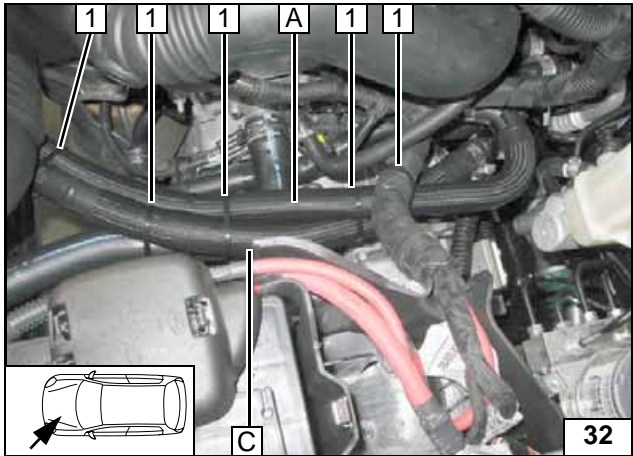
1 48 mm dia. rubber-coated p-clamp

Routing in
engine
compart-
ment



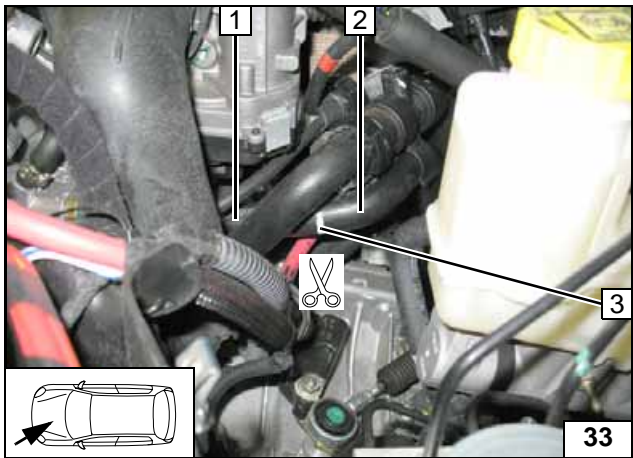
1 Cable tie

Connect-
ing hose A
and B



1 Cable tie [5x]

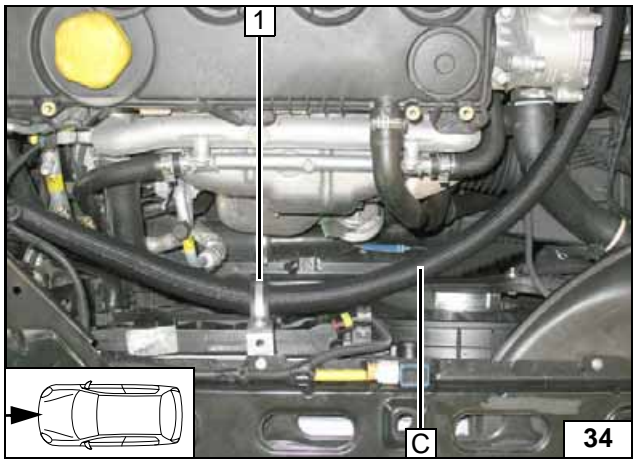
Routing in engine compartment



Diesel

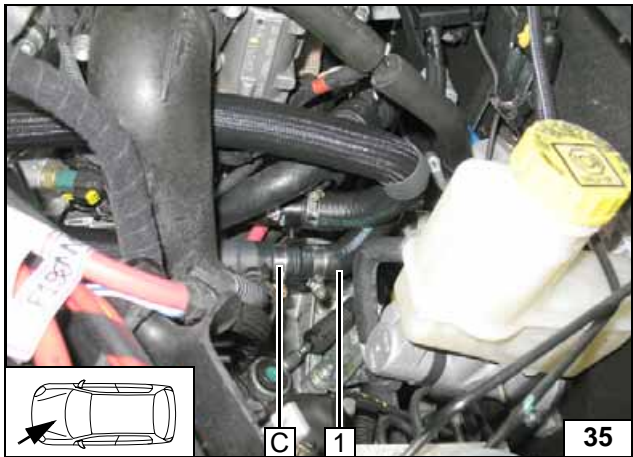
- 1 Engine-outlet hose section
- 2 Hose section of heat exchanger inlet
- 3 Cutting point

Cutting point



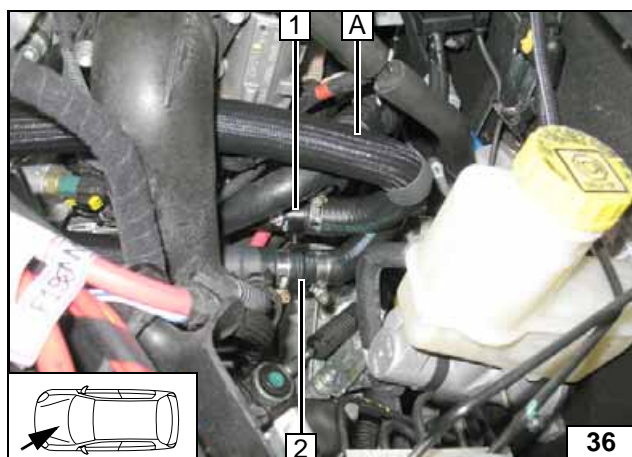
1 48 mm dia. rubber-coated p-clamp

Routing in engine compartment



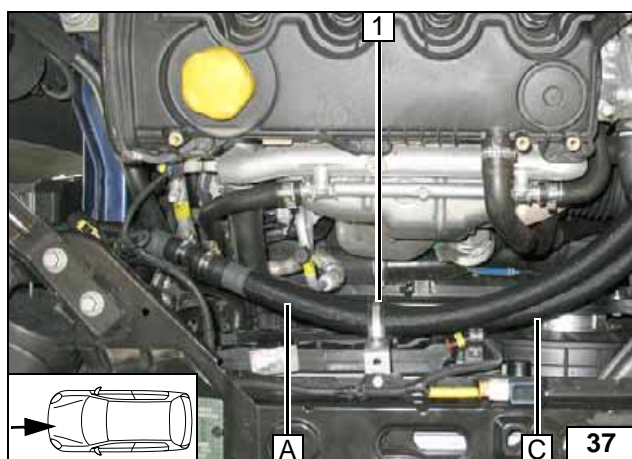
2 Hose section of heat exchanger inlet

Connecting heat exchanger inlet



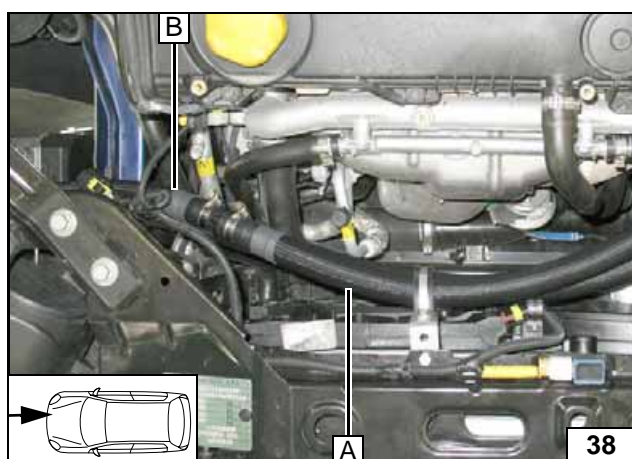
- 1 Engine-outlet hose section
- 2 Spacer bracket

Connect-
ing engine
outlet

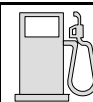


- 1 48 mm dia. rubber-coated p-clamp

Routing in
engine
compart-
ment



Connect-
ing hose A
and B



Fuel

CAUTION!

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

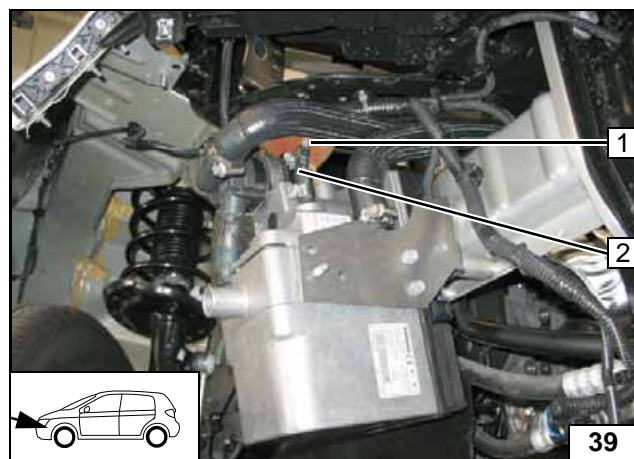
Catch any fuel running off with an appropriate container.

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.

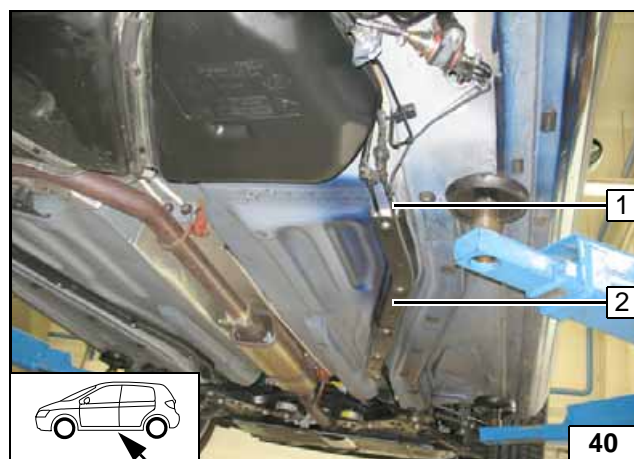
WARNING!

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



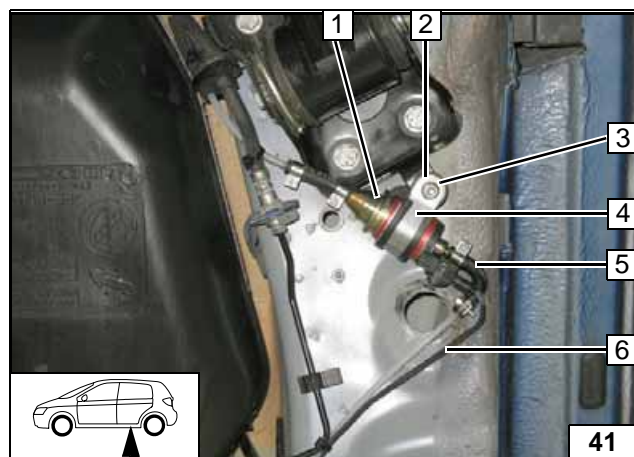
- 1 Fuel line
- 2 Hose section, 10 mm dia. clamp [2x]

Connect-
ing heater



Route fuel line and wiring harness of metering pump 1 in original vehicle cover of fuel line 2.

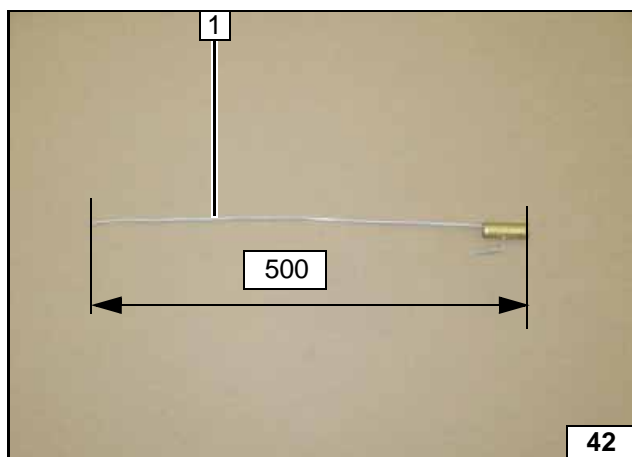
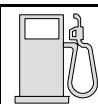
Installing
lines



- 1 Metering pump
- 2 Original vehicle hole
- 3 Silent block, flanged nut [2x]
- 4 Rubber-coated pipe clamp
- 5 90° moulded hose, 10 mm dia. clamp [2x], fuel line
- 6 Metering pump wiring harness



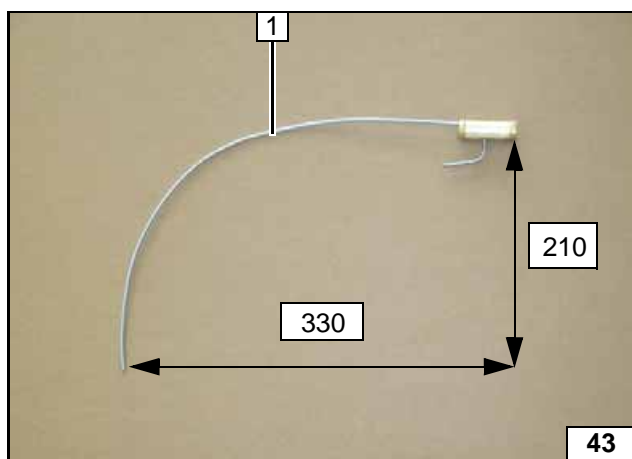
Installing
metering
pump



Cut fuel standpipe 1 to length.



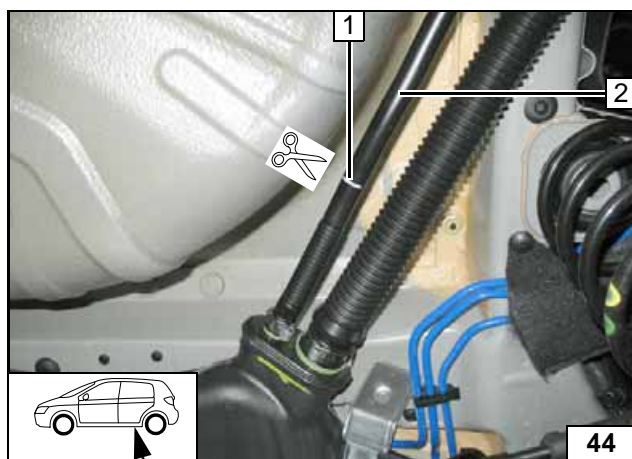
Cutting fuel standpipe to length



Shape fuel standpipe 1.



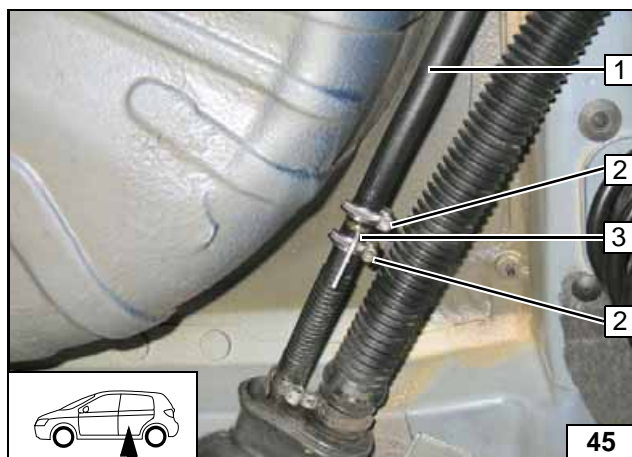
Shaping fuel standpipe



1 Cutting point
2 Fuel-tank vent line



Removing fuel

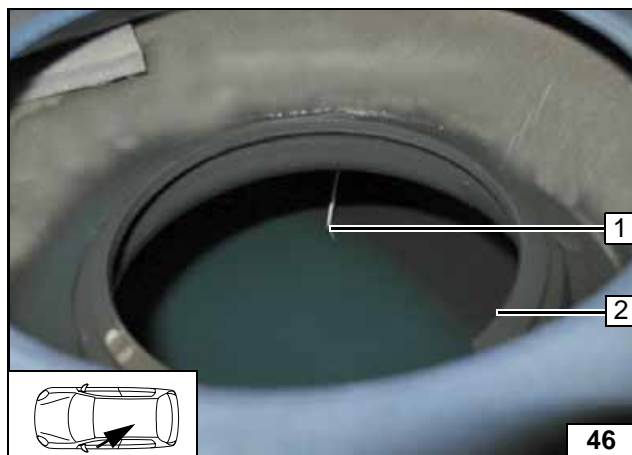


Mount fuel standpipe 3 in fuel- tank vent line 1. Align removal pipe of fuel standpipe to fuel tank bottom.

2 Hose section, 16-24 mm dia. clamp [2x]



Connecting to metering pump

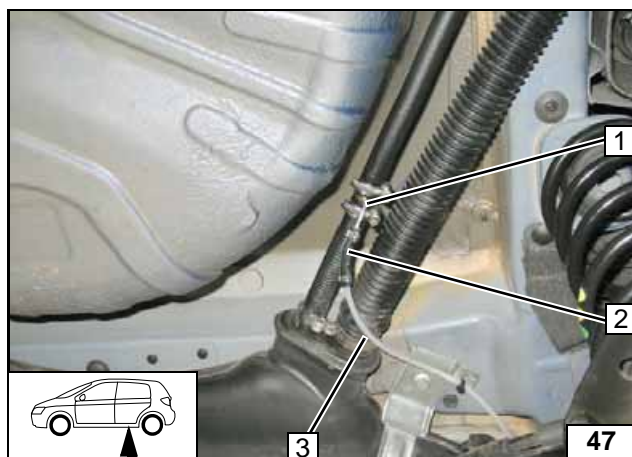


Align fuel standpipe 1 so that freedom of movement of fuel gauge is ensured after mounting fuel-tank sending unit.

2 Opening of fuel-tank sending unit



Removing fuel



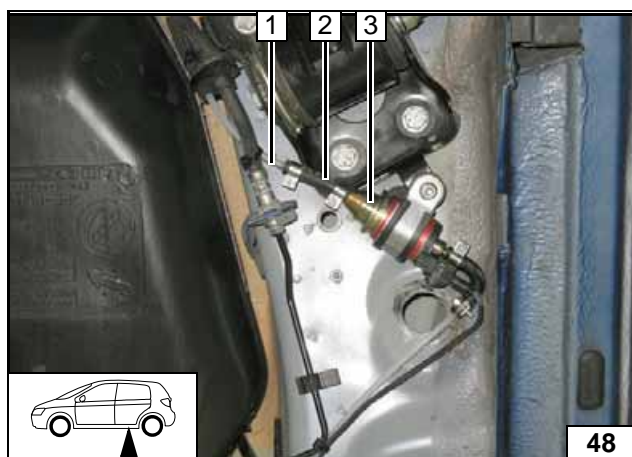
1 Fuel standpipe

2 Hose section, 10 mm dia. clamp [2x]

3 Fuel line



**Connect-
ing fuel
line**



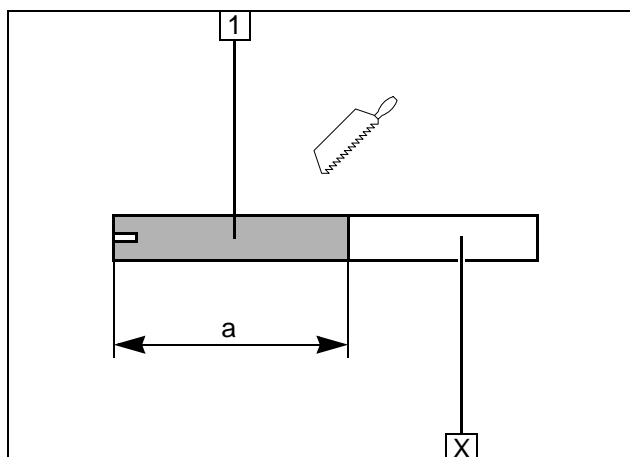
1 Fuel line

2 Hose section, 10 mm dia. clamp [2x]

3 Metering pump



**Installing
metering
pump**

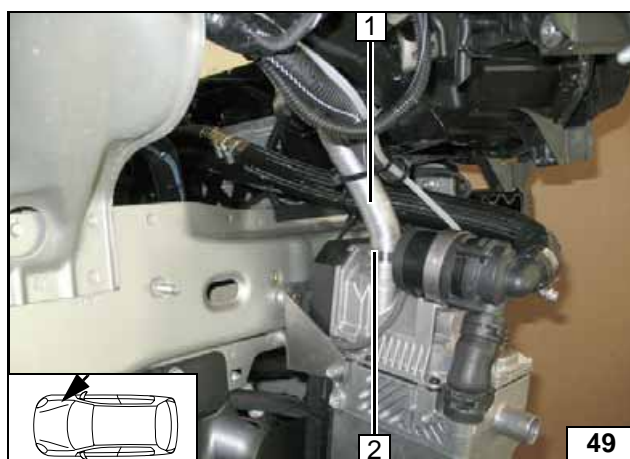


Combustion air

Discard section **X**.

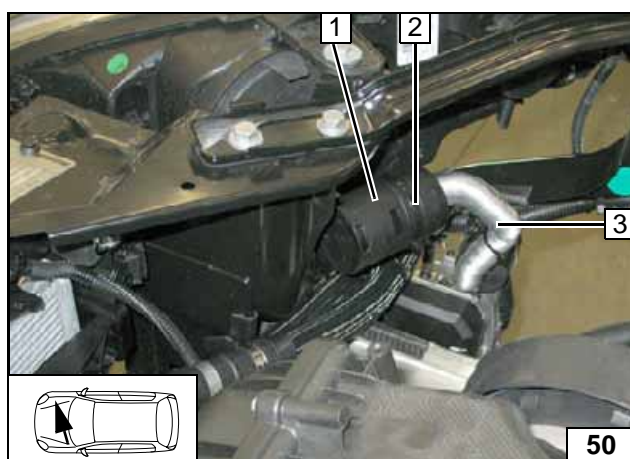
- 1 Combustion air pipe
a = 210

Cutting combustion air pipe to length



- 1 Combustion-air intake pipe
- 2 27 mm dia. clamp

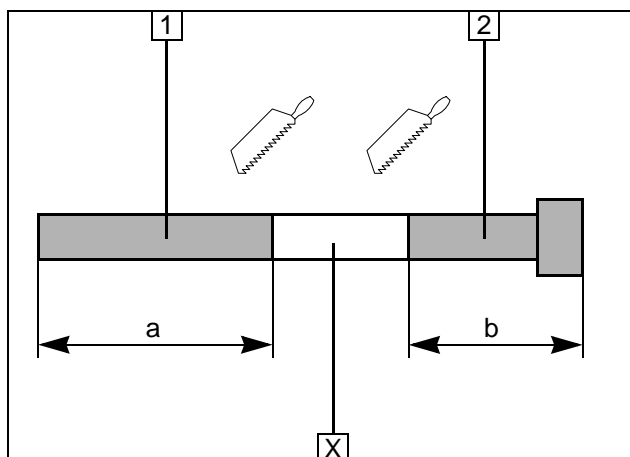
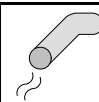
Installing intake pipe



- 1 Intake muffler
- 2 Cable tie, original vehicle hole
- 3 Combustion-air intake pipe



Installing muffler

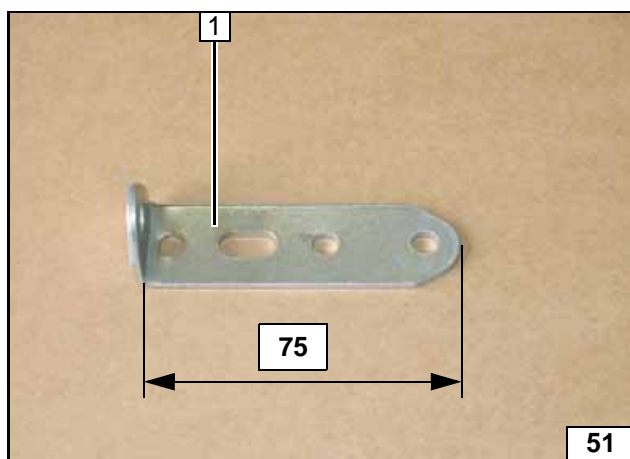


Exhaust gas

Discard section **X**.

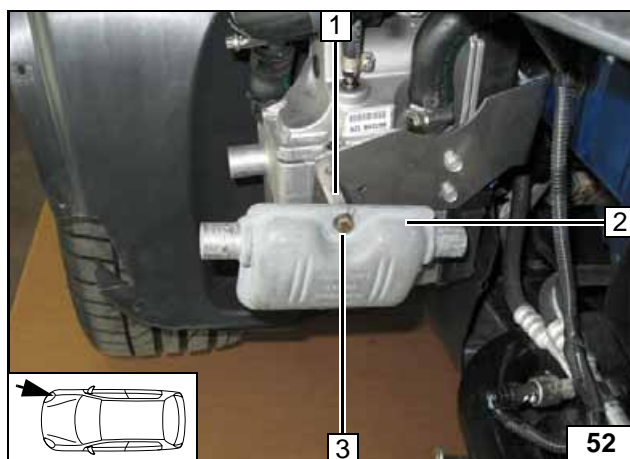
- 1 Exhaust pipe
a = 170
- 2 Exhaust end section
b = 230

**Preparing
exhaust
pipe**



Bend perforated bracket **1** by 90°.

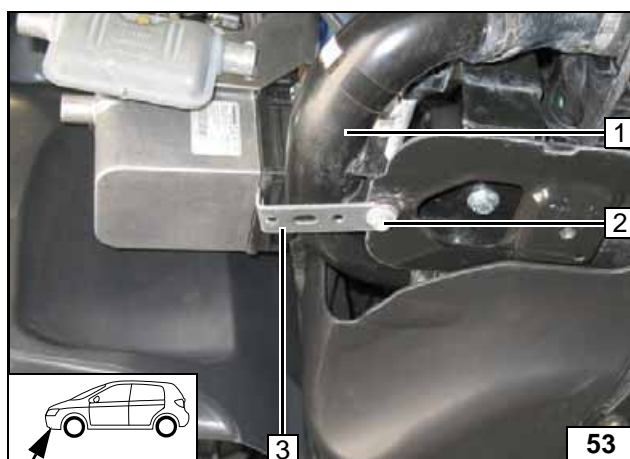
**Preparing
perforated
bracket**



All following photos show diesel vehicle.

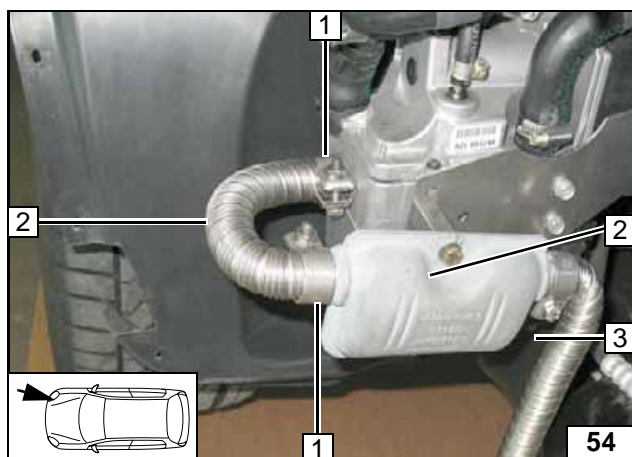
- 1 M6x30 spacer nut, Ejot stud
- 2 Exhaust muffler
- 3 M6x12 bolt, spring lockwasher

**Installing
exhaust
muffler**



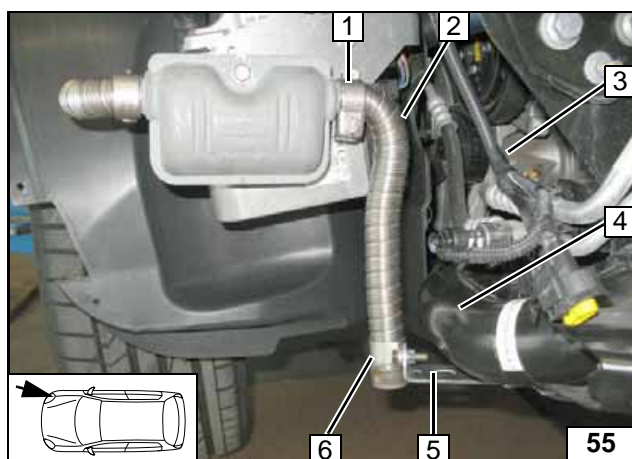
Install perforated bracket **3** with original vehicle bolt **2** of charge-air tube bracket **1**.

**Installing
perforated
bracket**



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

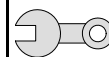
**Installing
exhaust
pipe**



Secure wiring harness of pressure switch **3** in bracket of A/C line.
Ensure sufficient spacing between exhaust end section **2** and charge-air tube **3**.

- 1 Hose clamp
- 5 Perforated bracket
- 6 Pipe clamp, M6x20 bolt, flanged nut

**Installing
exhaust
end sec-
tion**



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



- Connect the battery.
- Fill and bleed the coolant circuit according to the vehicle manufacturer's specifications.
- Adjust digital timer, try out telestart
- 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.
- Place the "Switch the parking heater off before refueling" signboard in the area of the filling branch



Operating Instructions for End Customer

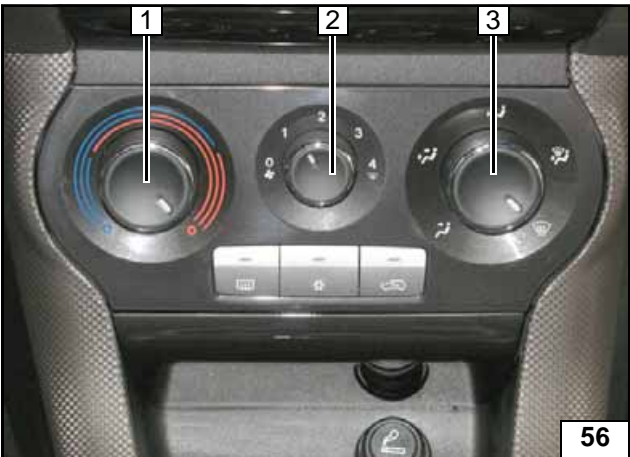
Please remove page and add to the vehicle operating instructions.

Note:
We recommend matching the heating time to the driving time.
Heating time = driving time
Example:
For a driving time of approx. 20 min. (in one direction), we recommend not exceeding a switch-on time of 20 min.

If the summer/winter switch option has been installed, this must be switched in accordance with the time of year. The heater will then only switch on the vehicle fan to ventilate the vehicle interior in the position Winter  heat and in the position Summer .

Before parking the vehicle, make the following settings:

Note:
On vehicles with a factory installed alarm system with passenger compartment monitoring, this must be deactivated before leaving the vehicle. Please see the owner's manual of the vehicle for additional information.



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



- 1 Air outlet to windshield
- 2 Set fan to level "1", or possibly "2"
- 3 Set temperature to "HI"

Manual air conditioning

Automatic air-conditioning