

Water Heater Unit



Thermo Top E Additional Heater e1 00 0003

Thermo Top C Additional Heater e1 00 0002

Thermo Top P Additional Heater e1 00 0104

Installation Instructions

Renault Laguna

(international)

Gasoline

from Model Year 2008

Left-hand drive vehicle

Automatic air-conditioning



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	Type	EG-BE No./ABE
Renault	Laguna	T	e2 * 2001/116 * 0363 * ...

Engine type	Engine model	Output in kW	Displacement in cm ³
M4R	Gasoline	103	1997

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

Heater Unit/Installation Kit

Quantity	Description	Order No.:
1	Retail accessories with desired heater control	See price list
1	Installation Kit for Renault Laguna Gasoline International	1313382A

Heater unit recommended for the respective vehicle class:

Vehicle	Heater unit
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 unit 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 Renault Laguna Gasoline vehicles - for validity, see page 2 - from model year 2008 and later, assuming technical modifications to the vehicle do not affect installation, any liability claims excluded. Depending on the vehicle version and equipment, modifications may be necessary during installation with respect to these installation instructions.

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

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

General Instructions

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

Sharp edges 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).

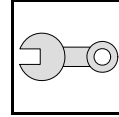
Special Tools

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

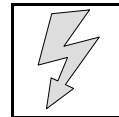
Explanatory Notes on Document

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.

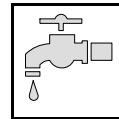
Mechanical system



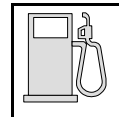
Electrical system



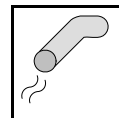
Water



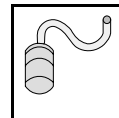
Fuel



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.



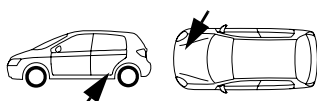
Specific risk of fire or explosion.



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!

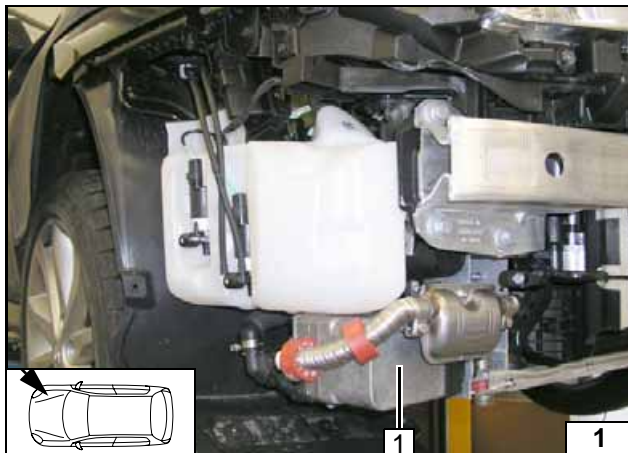
Tightening torque of Ejet screws, Ejet studs = 10 Nm!

Preliminary Work

WARNING!

- Open fuel tank cap, ventilate 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.
- Remove the engine cover.
- Detach and remove the right and left-hand wheel well trim.
- Remove the left front wheel.
- Remove the bumper.
- Remove the washer reservoir.
- Remove the underride protection
- Fold over the rear bench seat.
- Open the tank-fitting service lid.
- Remove the glove compartment.
- Remove the A-pillar trim in the driver's side footwell.
- Remove the lower instrument panel trim on the driver's side.
- Detach the fuse and relay carrier in the passenger compartment.

Remove page 27 "Operating Instructions for End Customer" and insert with vehicle operating instructions.



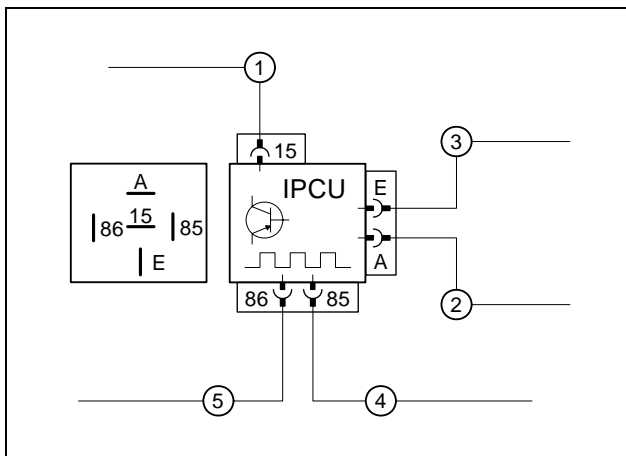
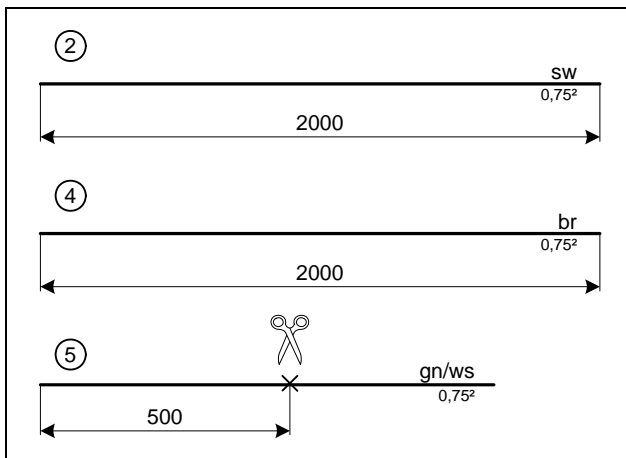
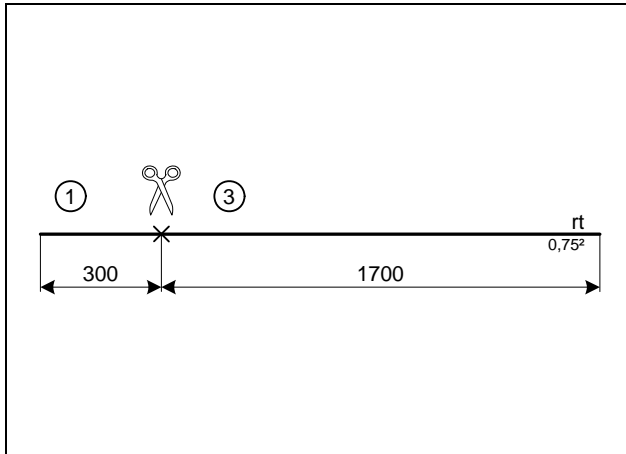
Heater unit installation location

1 Heater unit

Installation
location



Preparing electrical system



Cut black (sw) wire to length

Preparing lines

Connect wires to IPCU.
IPCU view on contact side!



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

Pull wire section 2, 3 and 4 into protective sleeving provided.

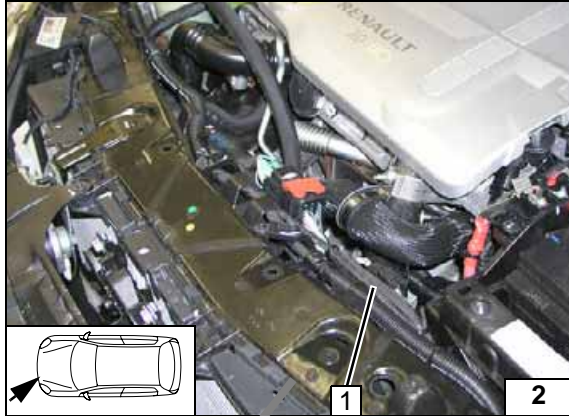
Preassembling IPCU



Electrical system

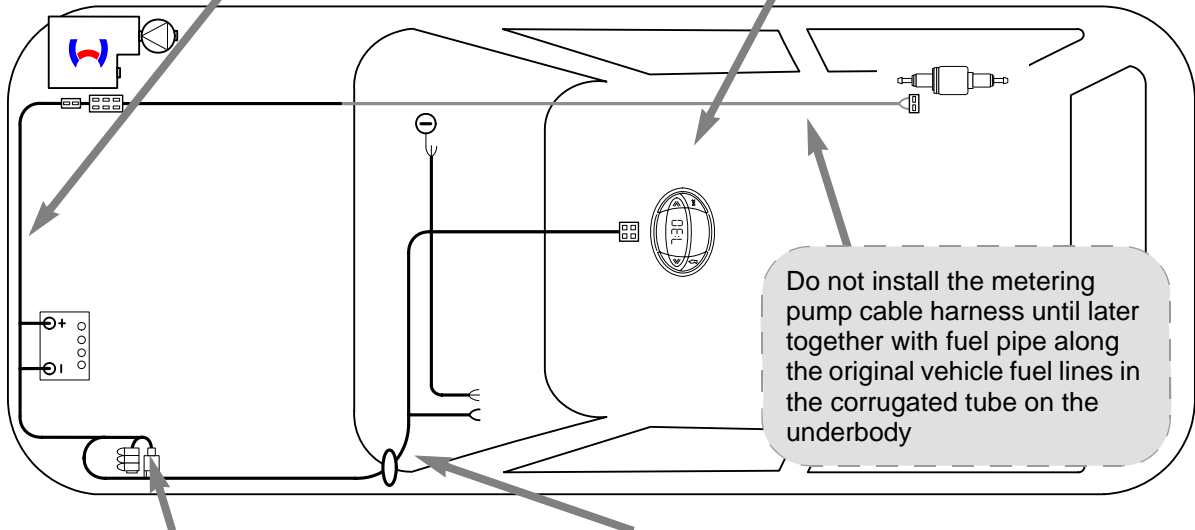
Wiring harness routing

- 1 Wiring harness of heater unit and metering pump

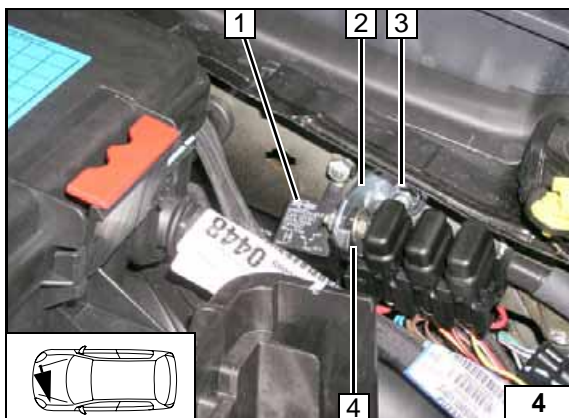


Digital timer

- 1 Digital timer

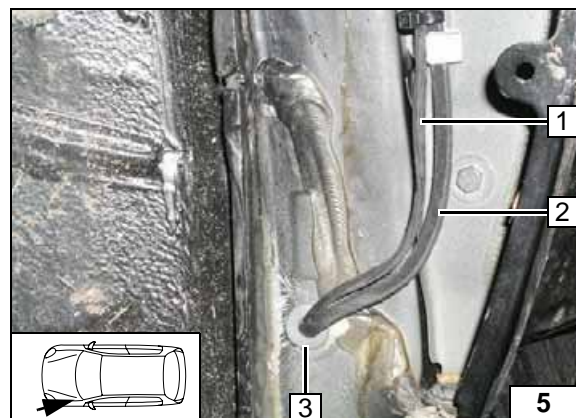


Wiring harness installation diagram



Fuse holder, relay K3

- 1 K3 relay
- 2 Angle bracket
- 3 Original vehicle stud bolt, flanged nut
- 4 M5x16 bolt, retaining plate for fuse holder, washers, flanged nut

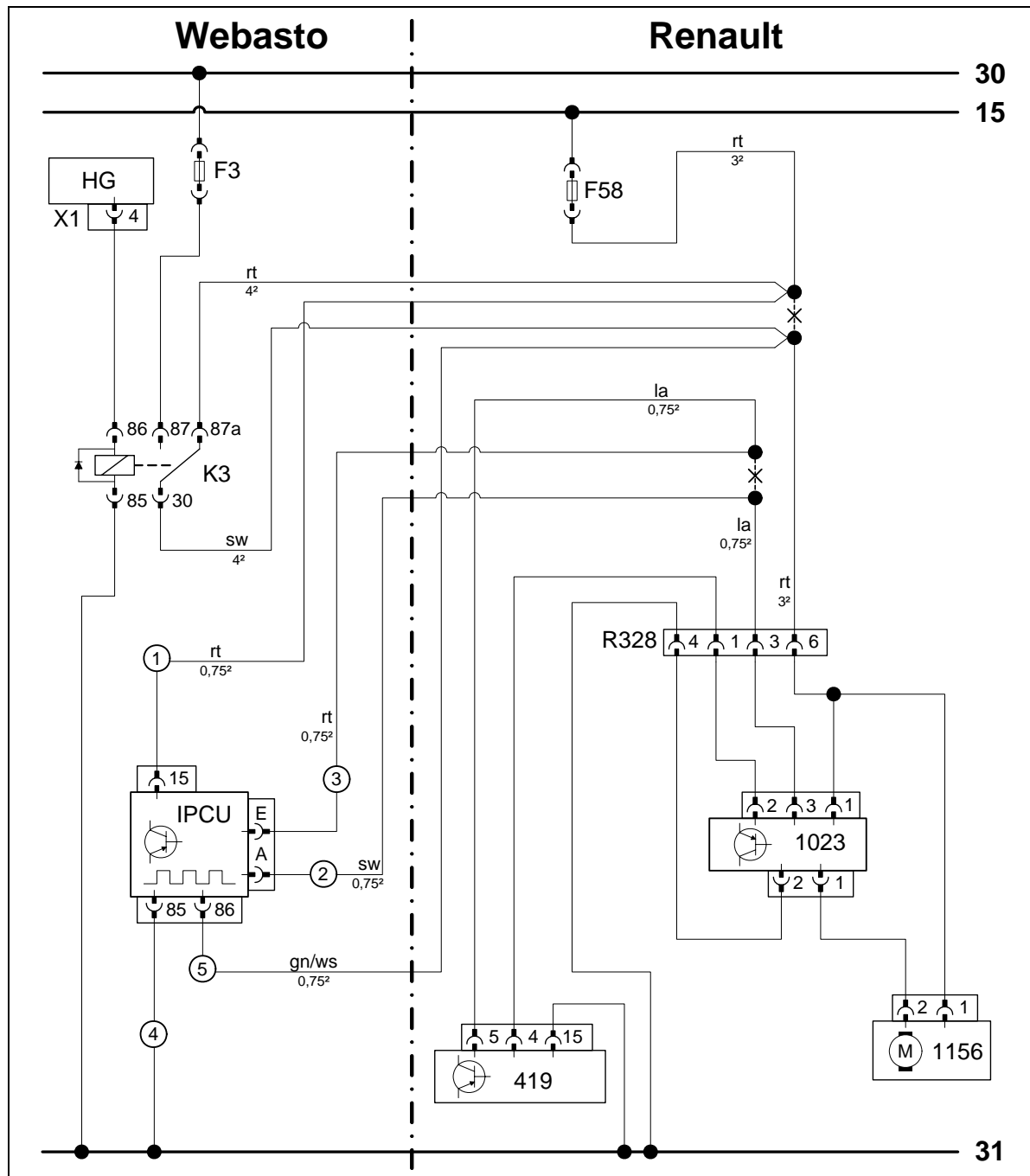


Wiring harness pass through

- 1 Wiring harness of digital timer
- 2 Wiring harness of fan controller
- 3 Protective rubber plug



Fan controller



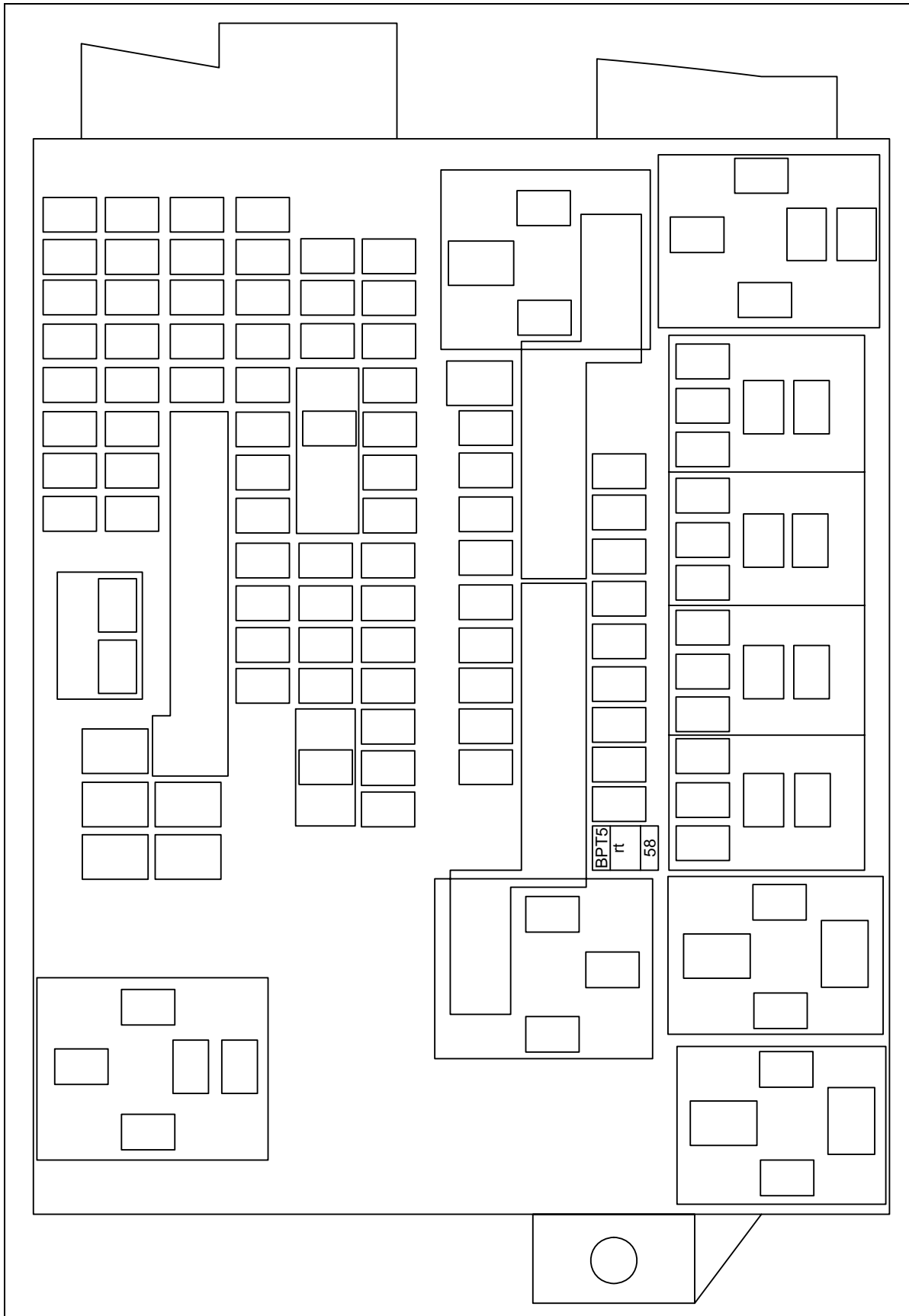
Wiring diagram

Webasto components		Vehicle components		Colors and symbols	
HG	Heater unit TT-C/E	1156	Fan motor	rt	red
X1	6-pin heater unit connector	R328	6-pin connector	ws	white
F3	25 A fuse	1023	Fan controller	sw	black
K3	Fan relay	419	Air-conditioning control unit	la	salmon
IPCU	Pulse width modulator	F58	Fuse 40A	gn	green
IPCU adjustment values:					
Duty cycle: 46 %					
Frequency: 400 Hz					
Voltage: 10 V					
Function: Low-side					
				X	Cutting point
Wiring colors may vary.					

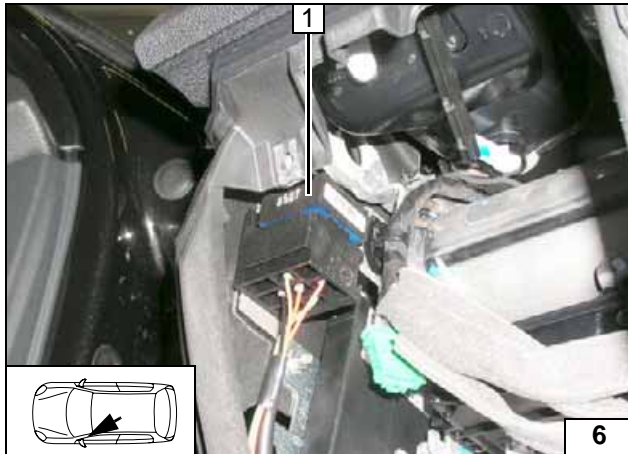
Legend



Central electrical box with fuse F58



Central electrical box

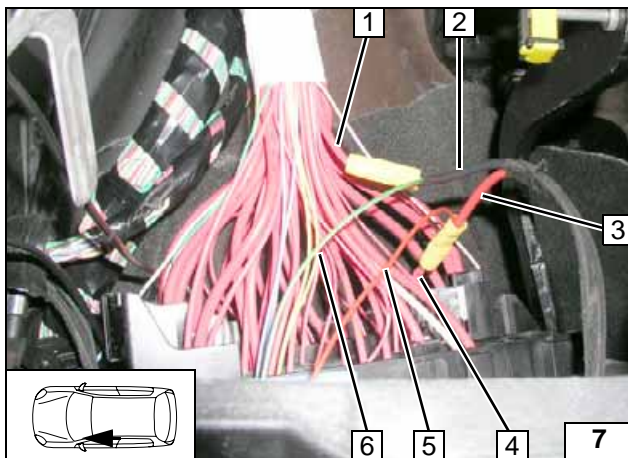


Install IPCU socket with double-sided adhesive tape.

1 IPCU



Installing IPCU

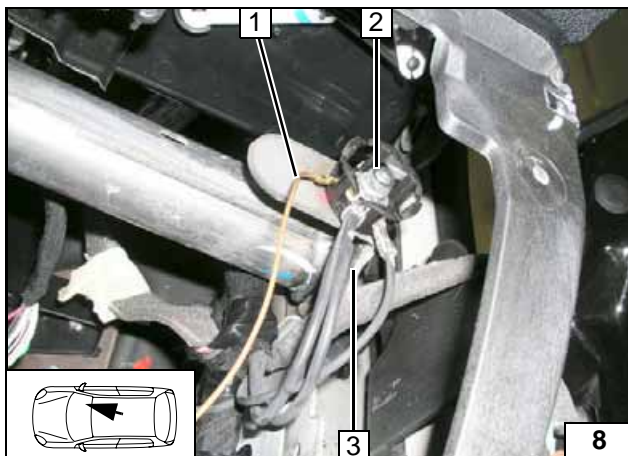


Connection to fuse F58 40 A.
Produce connections as shown in wiring diagram.
Route wiring harness of IPCU to right-hand side of vehicle.

- 1 Red (rt) wire of connector R328
- 2 Black (sw) wire from K3/30
- 3 Red (rt) wire from K3/87a
- 4 Red (rt) wire of fuse F58
- 5 Red (rt) wire IPCU/15
- 6 Green/white (gn/ws) IPCU/86

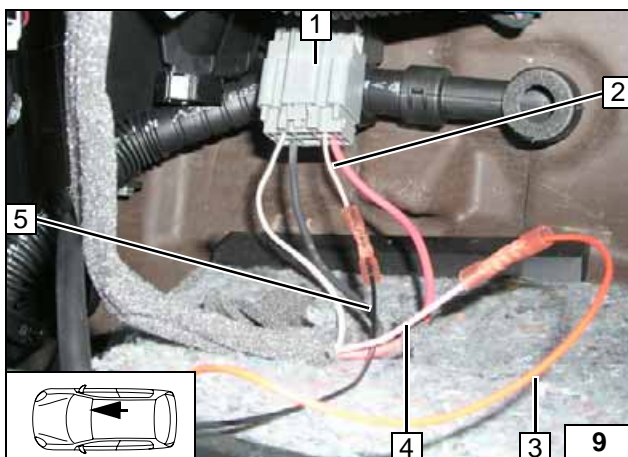


**Connect-
ing central
electrical
box**



- 1 Brown (br) wire of IPCU/85
- 2 Original vehicle ground point

**Ground
connection
of IPCU**

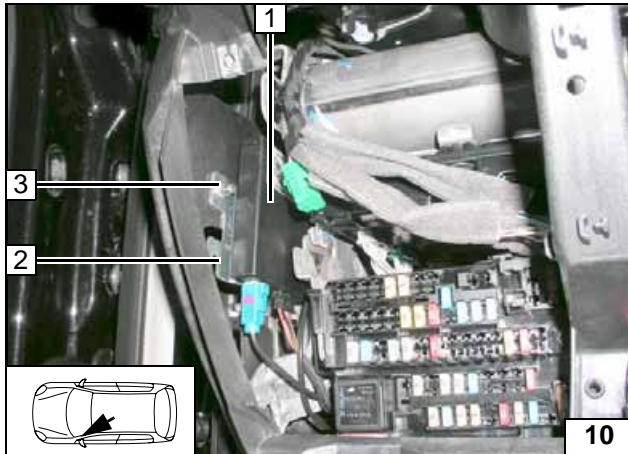


Connection to 6-pin connector R328 1 before fan controller.
Produce connections as shown in wiring diagram.

- 2 Salmon (la) wire of connector R328/Pin 3
- 3 Red (rt) wire of IPCU/E
- 4 Salmon (la) wire of A/C control panel, Pin 5
- 5 Wire of IPCU/A



**Connect-
ing IPCU**

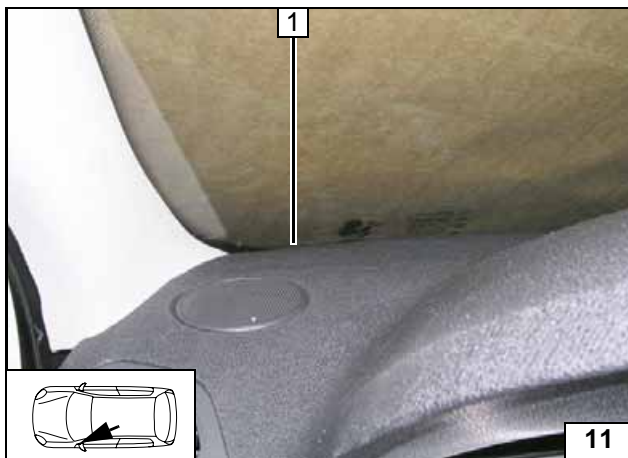


Remote option (Telestart)

- 1 Receiver
- 2 Bracket
- 3 6 mm dia. hole, M5x16 bolt, flanged nut



Installing receiver



- 1 Antenna

Installing antenna



Temperature sensor HTM100

- 1 Fasten temperature sensor with double-sided adhesive tape

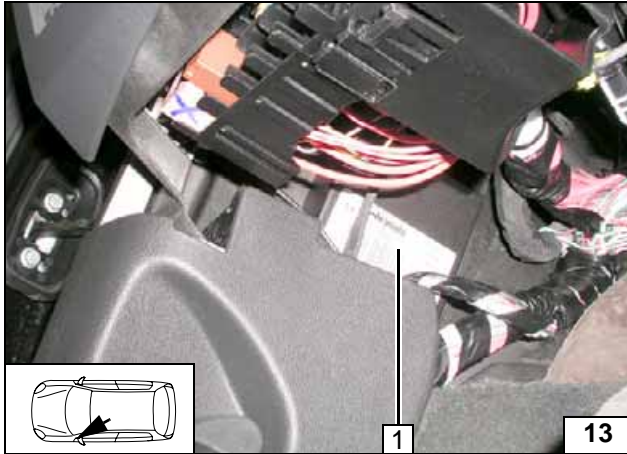


Installing temperature sensor

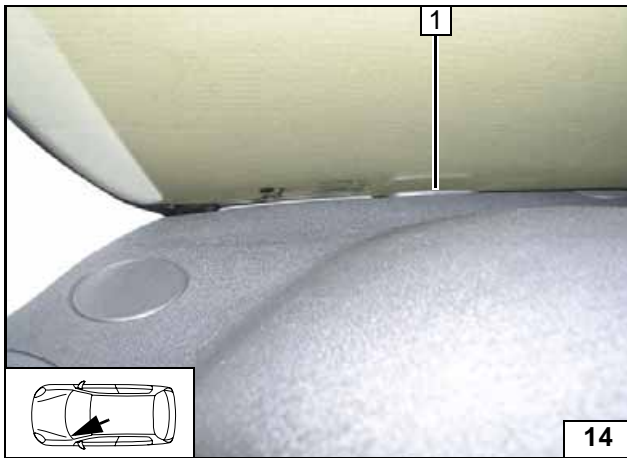


Remote option (Thermo Call)

Fasten receiver 1 with double-sided adhesive tape (A-pillar on driver's side)



Installing receiver



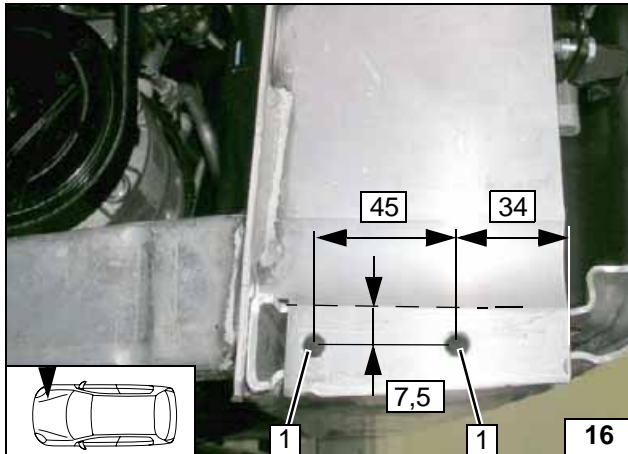
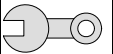
1 Antenna

Installing antenna



1 Pushbutton

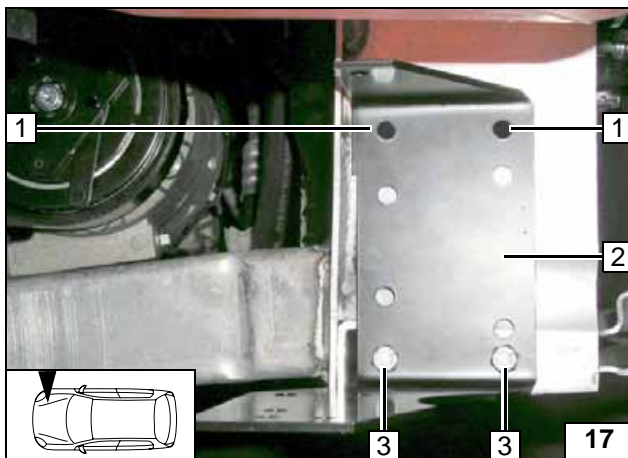
Installing push button



Preparing installation location

1 7 mm dia. hole [2x]

Drilling hole in cross member

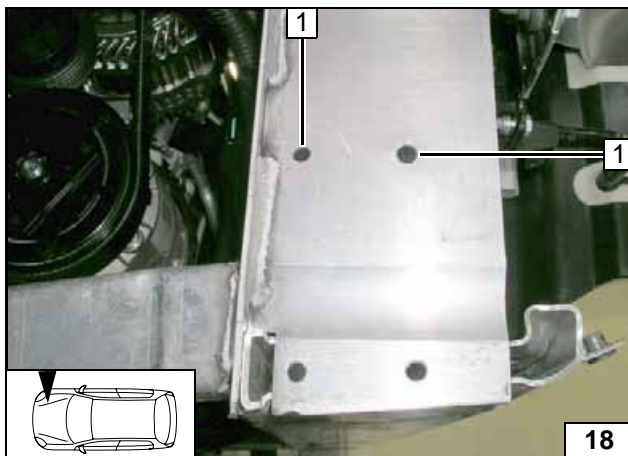


Mount two M6 bolt in position 3, align bracket 2.



1 Copy hole pattern [2x]

Copying hole pattern

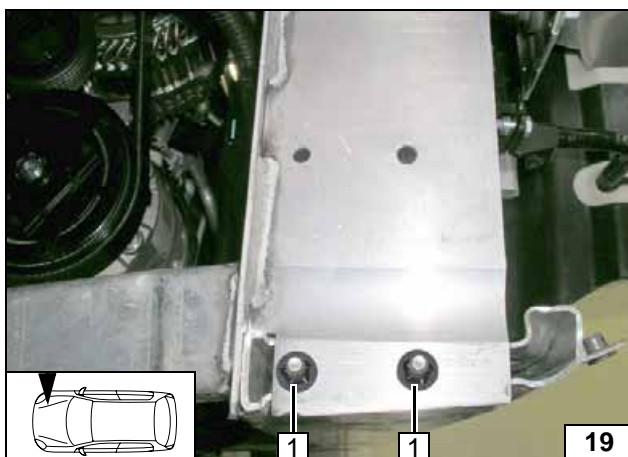


Take off bracket.



1 7 mm dia. hole [2x]

Holes in cross member

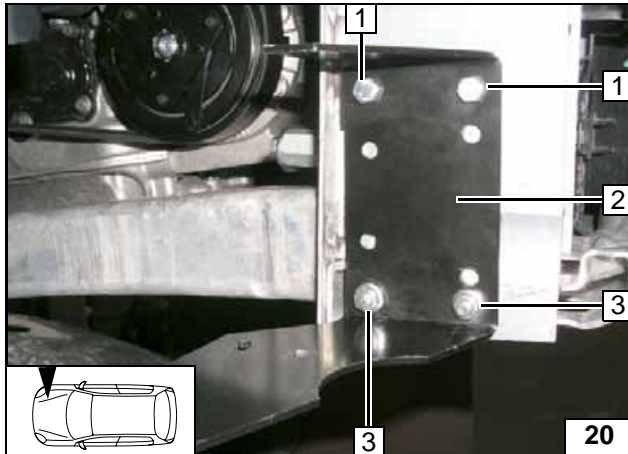
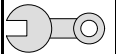


Mount bolts in position 1 in holes from behind.



1 M6x16 bolt, pin lock [2x]

Mounting bolts

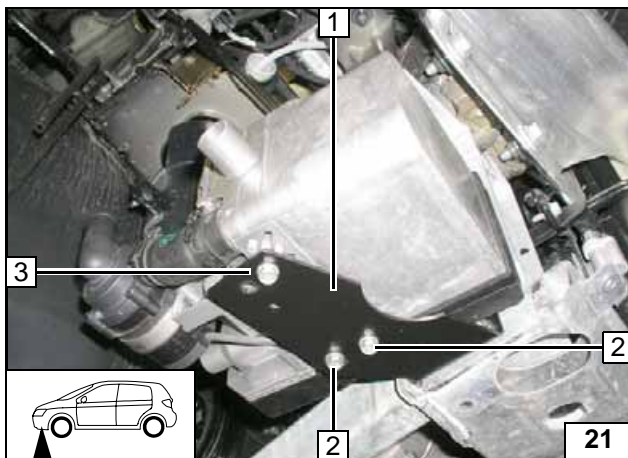


Mount bolts in position **3** from front.

- 1** M6x20 bolt, flanged nut [2x each]
- 2** Bracket
- 3** Flanged nut [2x each]



Installing bracket



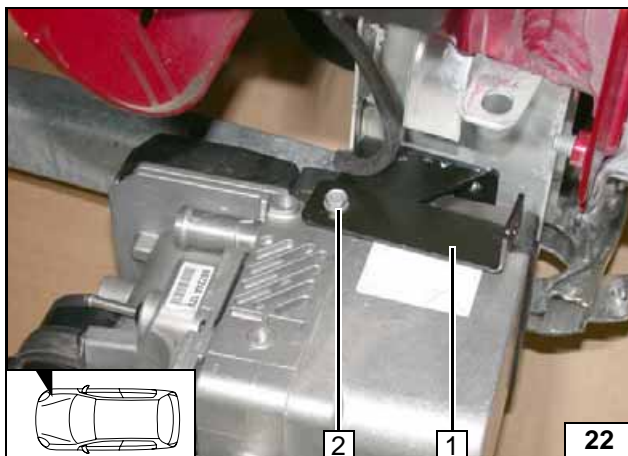
Installing heater unit

Connect wiring harness of heater unit before installation. Insert two washers between heater unit and bracket **1** at position **3**.

- 2** E-jot screw [2x]
- 3** E-jot screw, washer [2x]

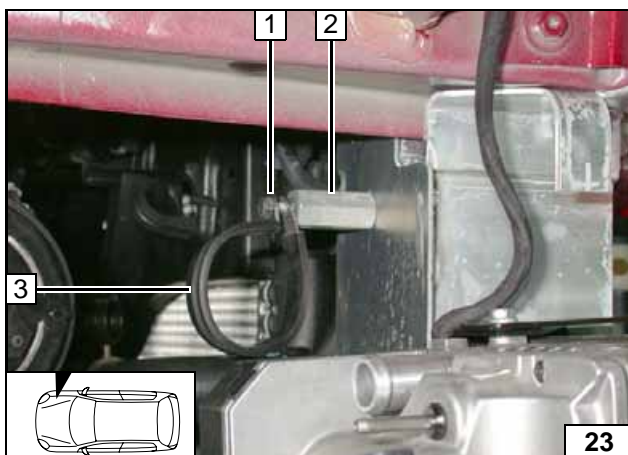


Installing heater unit



- 1** Strut for exhaust muffler
- 2** E-jot screw

Installing heater unit

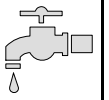


Fasten 40 mm spacer nut **2** with M6x20 bolt and spring lockwasher through original vehicle hole of cross member.

- 1** Loosely mount M6x20 bolt, spring lockwasher on large diameter washer
- 3** Rubber-coated pipe clamp



Premounting rubber-coated pipe clamp

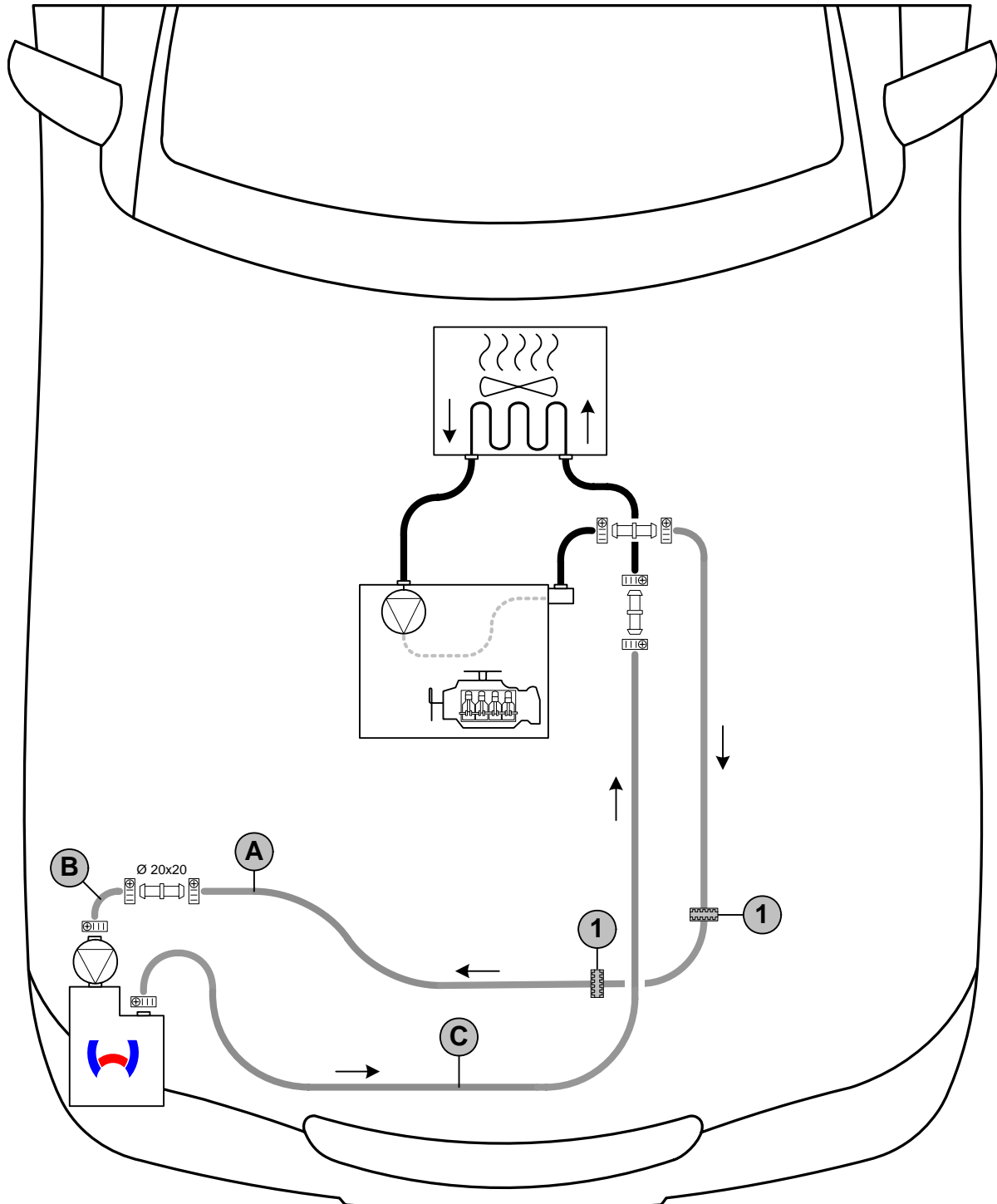


Coolant




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.

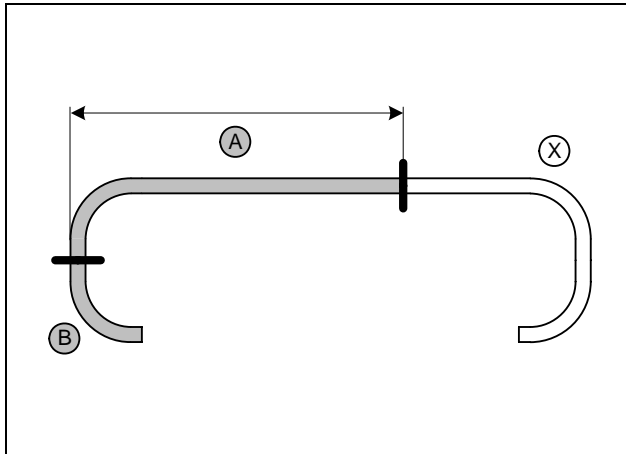
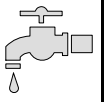
The connection should be "inline" based on the following diagram:



Coolant routing diagram

All connecting pipes without a specific designation  = dia. 18x20. All hose clamps  = 20-27 mm dia.!
 1 = Black (sw) rubber isolator  .



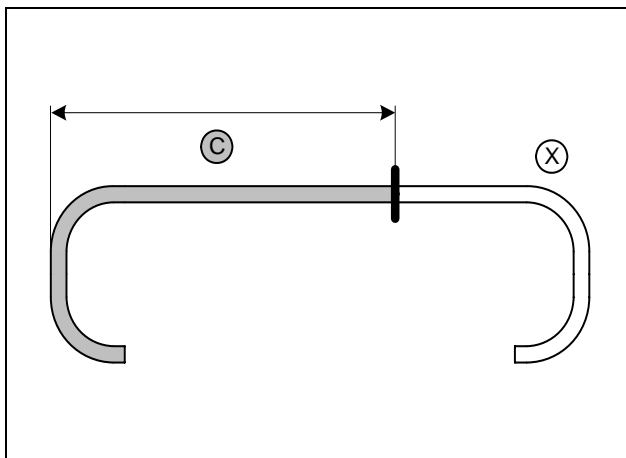


a = 1385

Discard section X.



Cutting coolant hoses to length

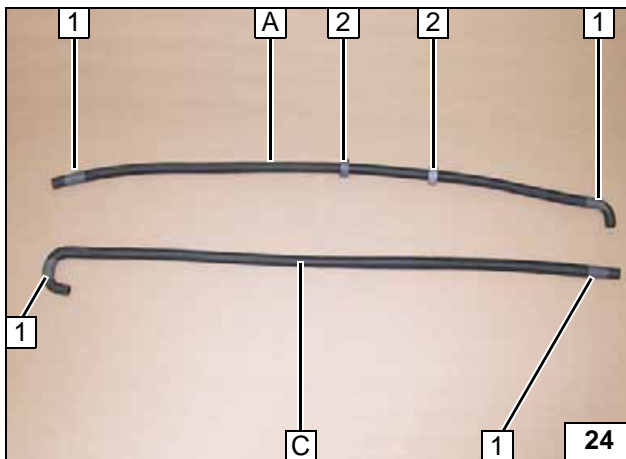


c = 1350

Discard section X.



Cutting coolant hoses to length

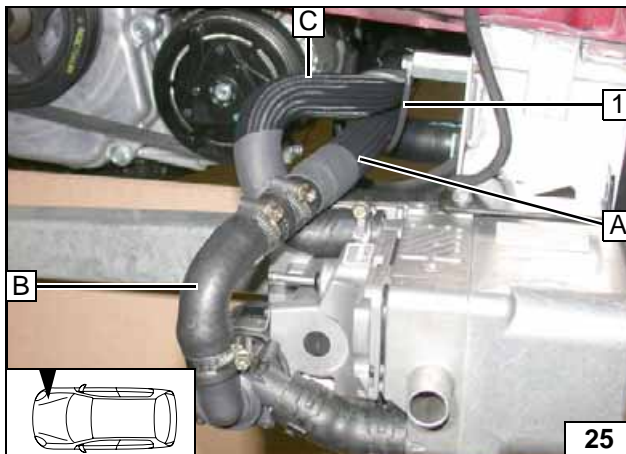


Push braided protection hoses onto hose **A** and **C** and cut to length.
Cut heat shrink plastic tubing to length.
Slide black (sw) rubber isolator **2** [2x] onto hose **A**.

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



Preparing coolant hoses

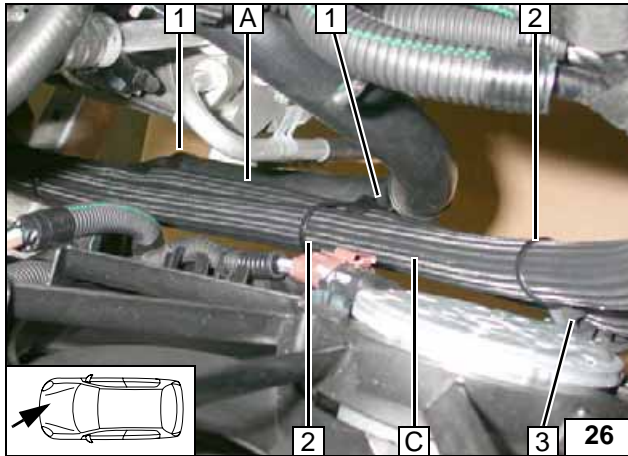


Connect hose **A** and **B** (align hose **A** with 90° elbow to connection piece on engine outlet when doing so).

Route hose **A** and **C** through rubber-coated p-clamp **1**. Tighten bolt.



Connecting heater unit



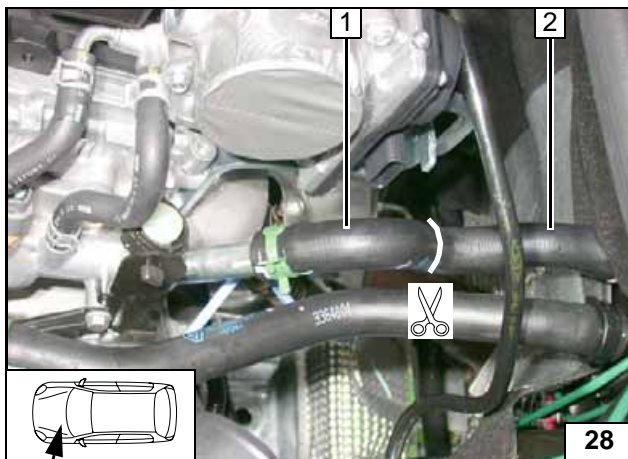
- 1 25x37 spacer bracket [2x]
- 2 Cable tie [2x]
- 3 Align black (sw) rubber isolator

Routing in engine compartment



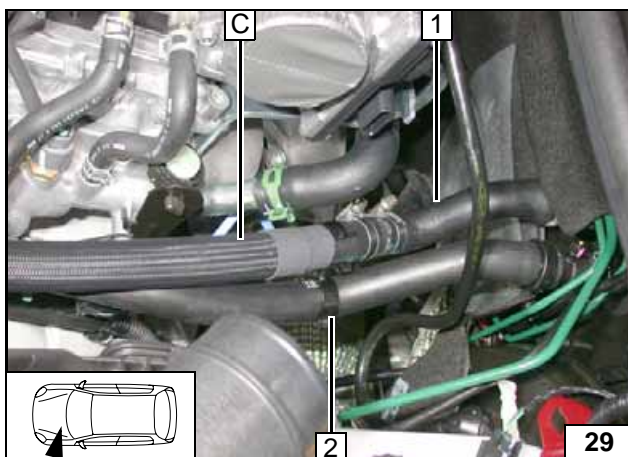
- 1 Align black (sw) rubber isolator

Routing in engine compartment



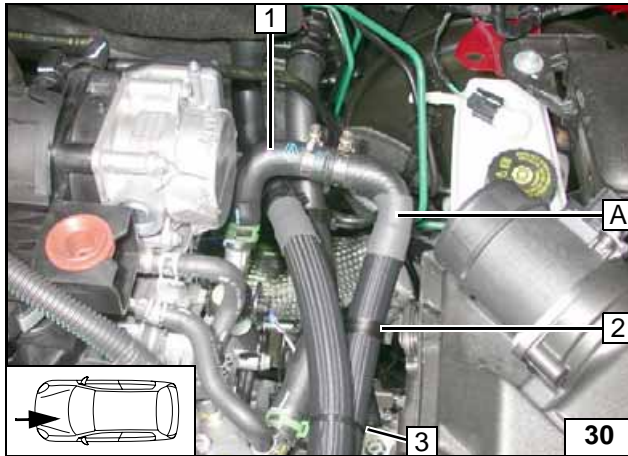
- 1 Engine-outlet hose section
- 2 Hose section of heat exchanger inlet

Cutting point



- 1 Hose on heat exchanger inlet
- 2 25x28 spacer bracket

Connecting heat exchanger inlet

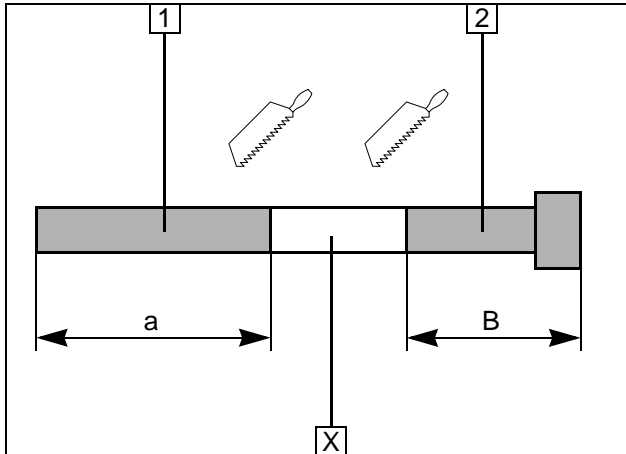
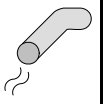


Align coolant hoses and correct coolant routing if necessary. Ensure sufficient distance to neighboring components.

- 1 Hose on engine outlet, turned
- 2 25x28 spacer bracket
- 3 Cable tie



**Connect-
ing engine
outlet**

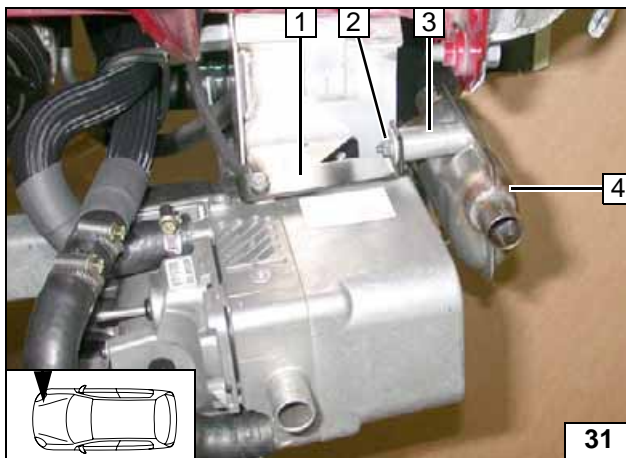


Exhaust gas

- 1 Exhaust pipe
a = 260
- 2 Exhaust end section
b = 200

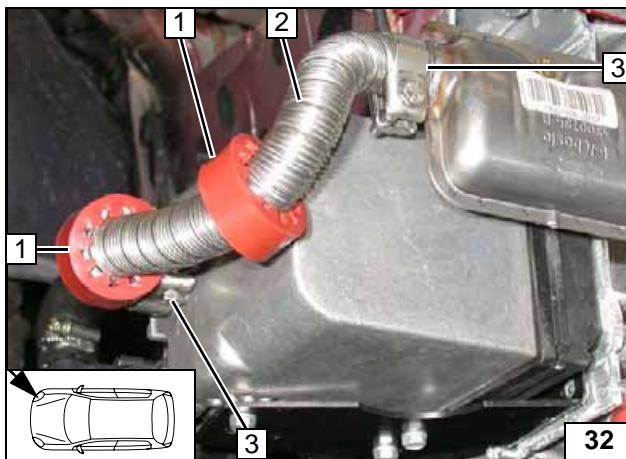
Discard section X

Preparing exhaust pipe



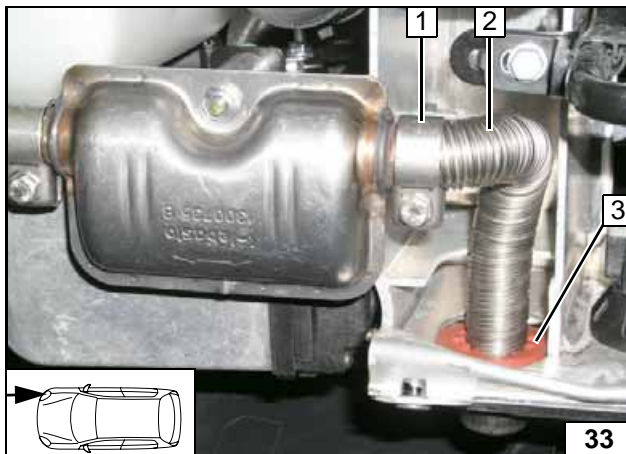
- 1 Strut
- 2 M6x55 bolt, large diameter washer, flanged nut
- 3 Shim 40
- 4 Muffler

Installing muffler



- 1 Red (rt) rubber profile [2x]
- 2 Exhaust pipe
- 3 Hose clamp [2x]

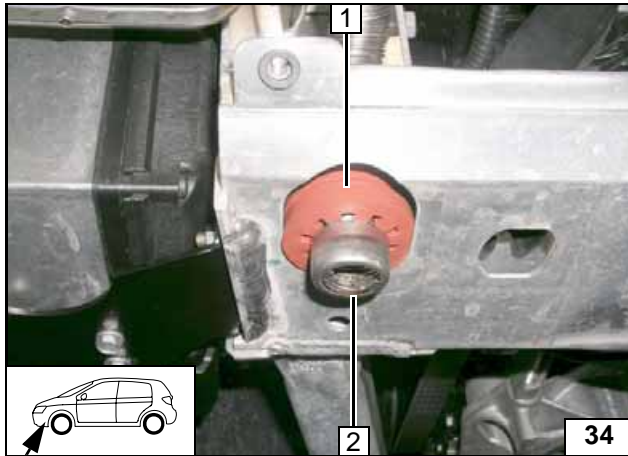
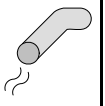
Installing exhaust pipe



Slide red (rt) rubber isolator with groove 3 onto exhaust end section 2 and insert in existing hole of bumper.

- 1 Hose clamp

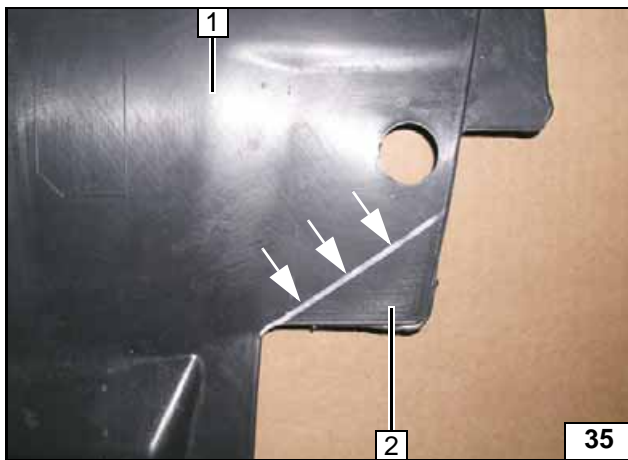
Installing end section



Ensure sufficient distance to neighboring components.
Align exhaust end section 1 flush on rubber isolator.

1 Position red (rt) rubber isolator with groove

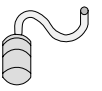

Positioning rubber isolator



Cut away under-ride protection 1 at marking.

2 Discard section


Cutting away under-ride protection



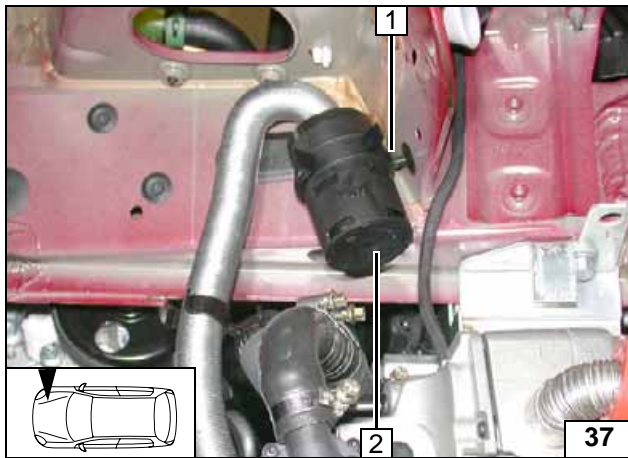
Combustion air

Fasten combustion air pipe 2 on heater unit with 27 mm dia. clamp.

- 1 25x28 spacer bracket



Installing combustion air pipe



Mount retaining clip 1 in existing hole and lock with pin lock from behind.

- 2 Muffler



Installing muffler



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!

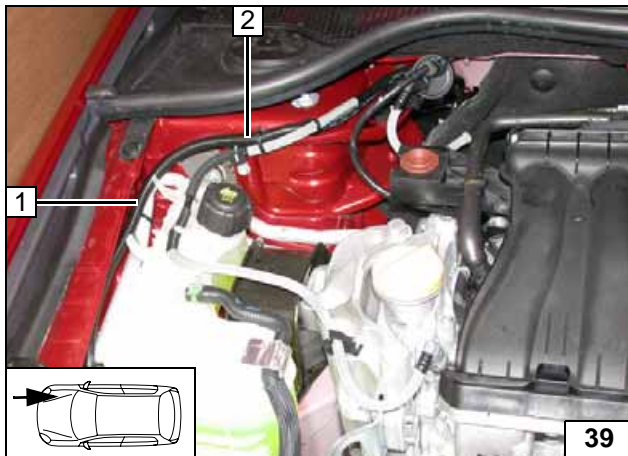
The fuel line and wiring harness are routed to the metering pump in as shown in the wiring harness routing diagram.



Slide corrugated tube **3** onto fuel line and secure with cable tie **2**.

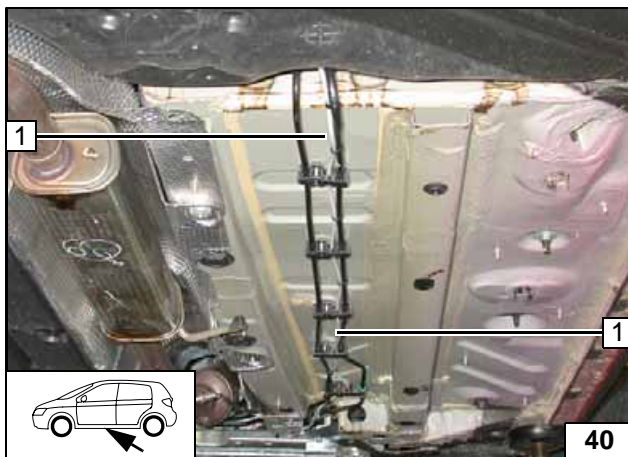
1 Hose section, 10 mm dia. clamp [2x]

Connect-
ing heater
unit



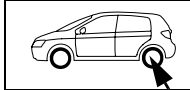
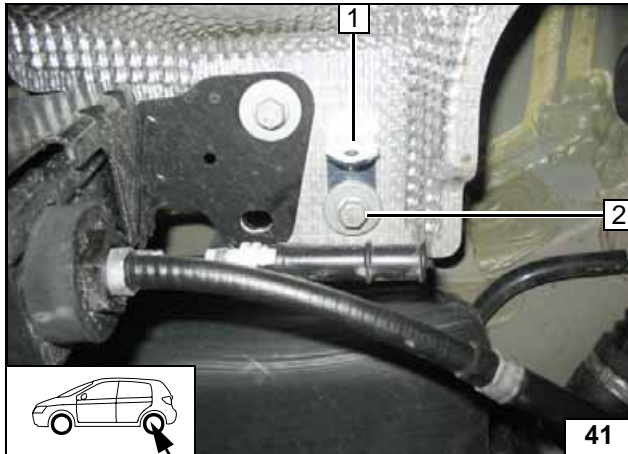
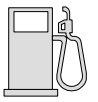
Route fuel line and wiring harness of metering pump to underbody in corrugated tube **1**.

Installing
lines



Route fuel line and wiring harness of metering pump **1** to installation location of metering pump.

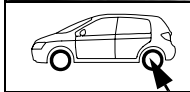
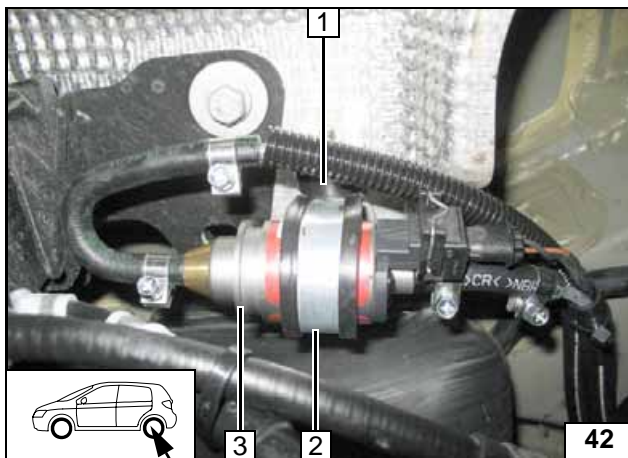
Installing
lines



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- 1 Angle bracket
- 2 Original vehicle bolt

Installing angle bracket

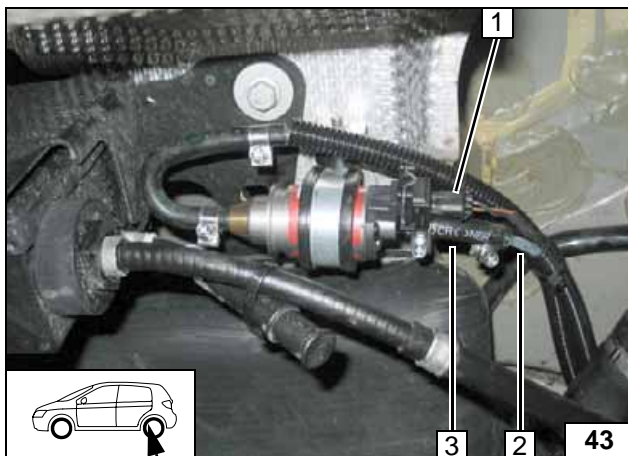


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- 1 Silent block, flanged nut [2x] on angle bracket
- 2 Rubber-coated pipe clamp
- 3 Metering pump



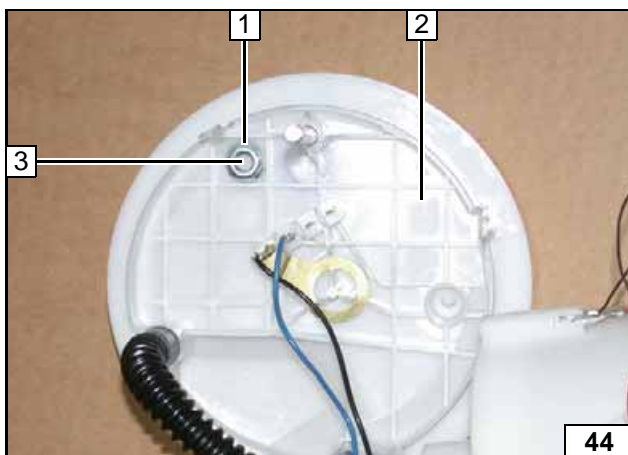
Installing metering pump



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- 1 Wiring harness of metering pump, connector mounted
- 2 Fuel line from heater unit
- 3 Hose section, 10 mm dia. clamp [2x]

Connecting metering pump



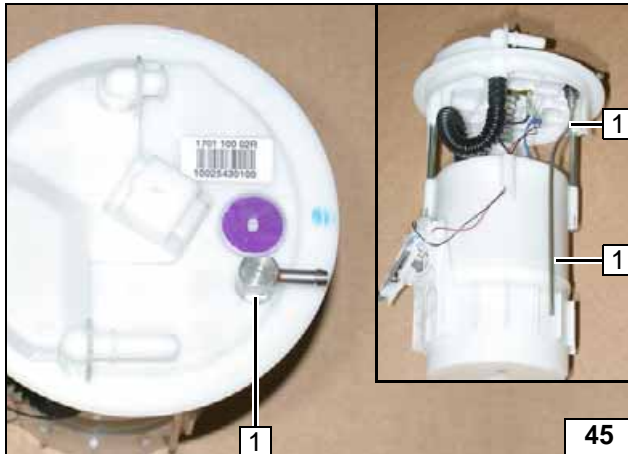
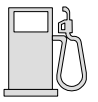
44

Remove and dismantle fuel-tank sending unit **2** according to manufacturer's instructions.

- 1 M6 flanged nut, centered between bars
- 3 Copy hole pattern, 6 mm dia. hole



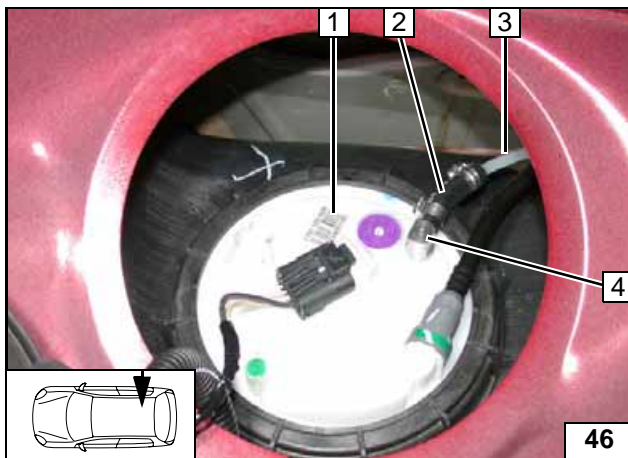
Removing fuel



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



Installing fuel standpipe

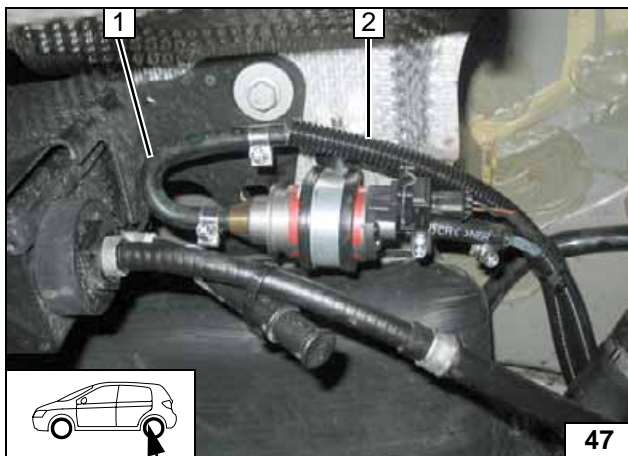


Install fuel-tank sending unit 1 in accordance with manufacturer's specifications.



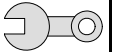
Connecting fuel line

- 2 Hose section, 10 mm dia. clamp [2x]
- 3 Fuel line
- 4 Fuel standpipe



- 1 180° molded hose, 10 mm dia. clamp [2x]
- 2 Fuel line from fuel standpipe in corrugated tube

Connecting metering pump



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.

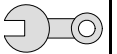
Only use manufacturer-approved coolant.

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

- Connect the battery
- Fill and bleed the coolant circuit according to the vehicle manufacturer's specifications.
- Set the digital timer.
- Make settings on A/C control panel according to the "Operating Instructions for End Customer".
- Check the proper operation of the additional heater, see the operating instructions/installation instructions.
- Attach the "Switch off additional heater before refueling" sticker to the left-hand B-pillar.



Webasto AG
Postfach 80 - 82132 Stockdorf
Hotline 01805 / 932278 - Hotfax 0395 / 5592-353
<http://www.webasto.de>



Template for Fuel Standpipe



100 mm



Scale 1:1

Compare the size of the printed version with dimension lines.

Permitted tolerance a maximum of 2%.

Set the printer settings to "no margin" or "minimize margins" and 100% of the normal size.

100 mm

0

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.

Before parking the vehicle, make the following settings:



- 1 Air outlet to windshield
- 2 Set temperature to "HI"

Automatic
air-condi-
tioning