

Water Heater Unit



Thermo Top E Additional Heater  00 0003

Thermo Top C Additional Heater  00 0002

Thermo Top P Additional Heater  00 0104

Installation Instructions

Renault Laguna

(international)

Diesel

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
M9R	Diesel	110	1995

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 Diesel International	1313384A

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 Diesel 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).

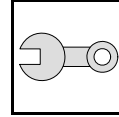
Special Tools

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

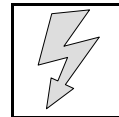
Explanatory Notes on Document

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.

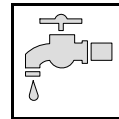
Mechanical system



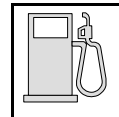
Electrical system



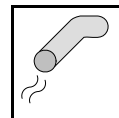
Water



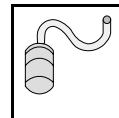
Fuel



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!

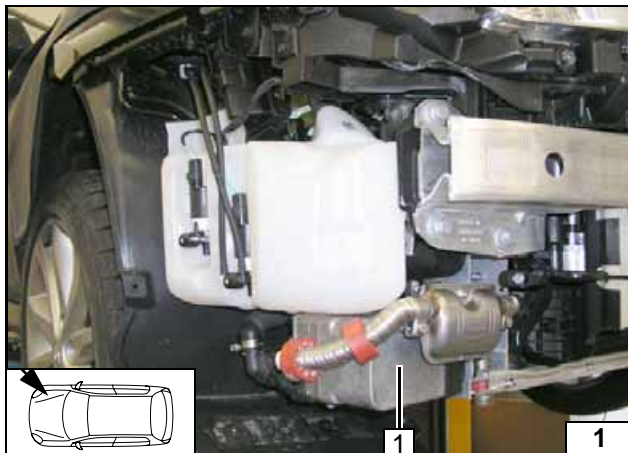
Tightening torque of Ejet screws, Ejet studs = 10 Nm!

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
- Open the right-hand fuel sender 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.



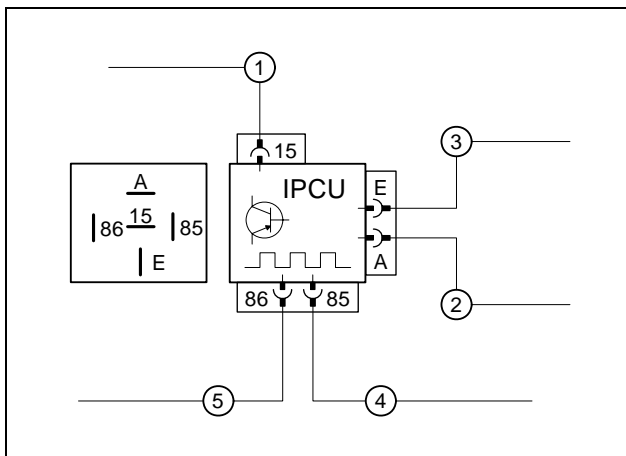
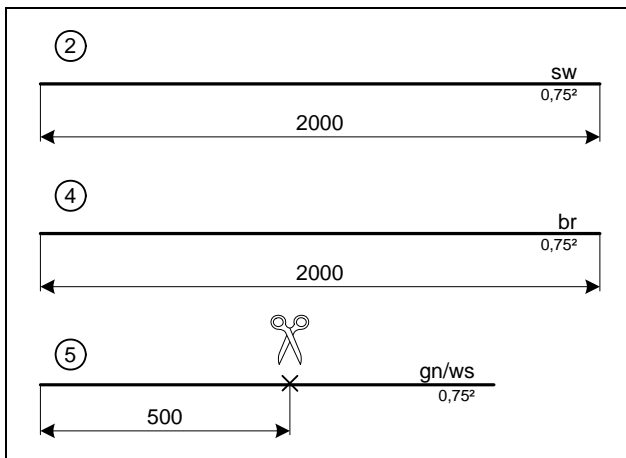
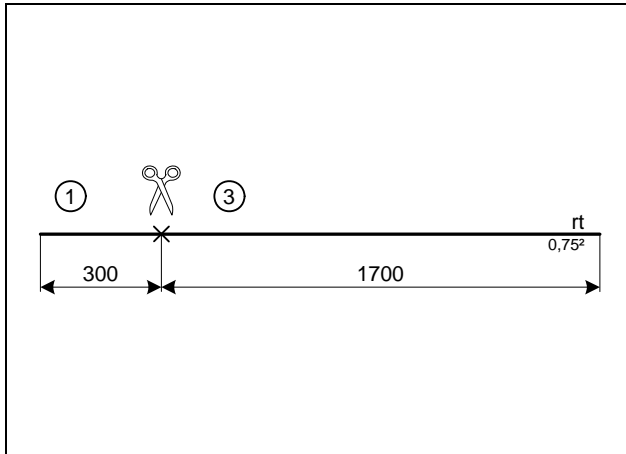
Heater unit installation location

- 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

Preassembling IPCU

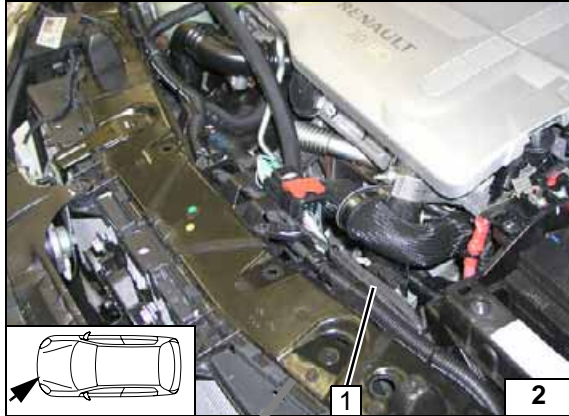
Pull wire section 2, 3 and 4 into protective sleeving provided.



Electrical system

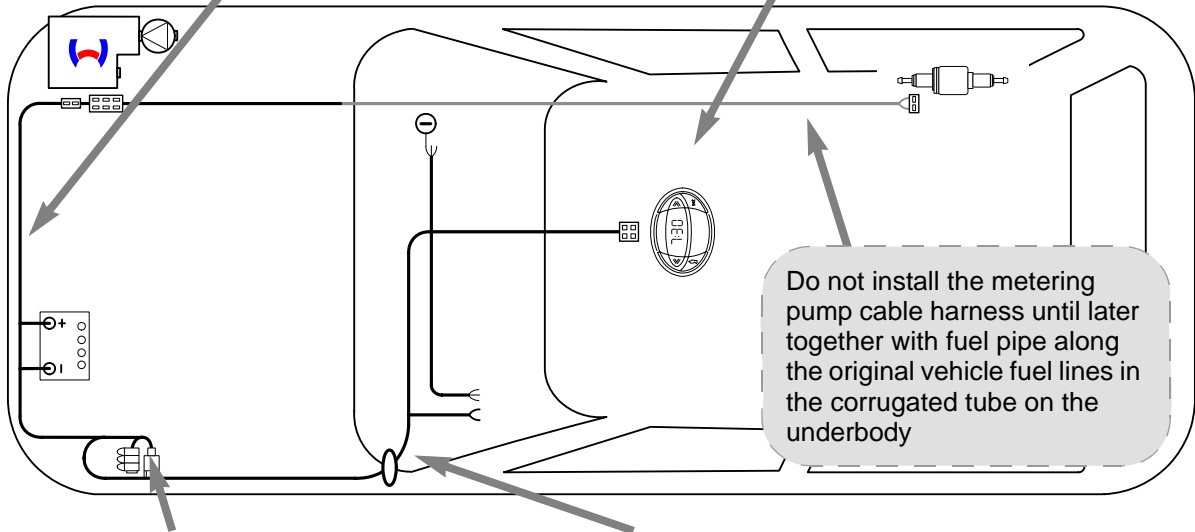
Wiring harness routing

- 1 Wiring harness of heater unit and metering pump

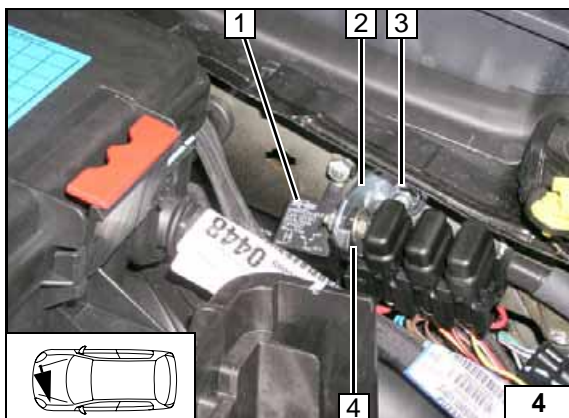


Digital timer

- 1 Digital timer

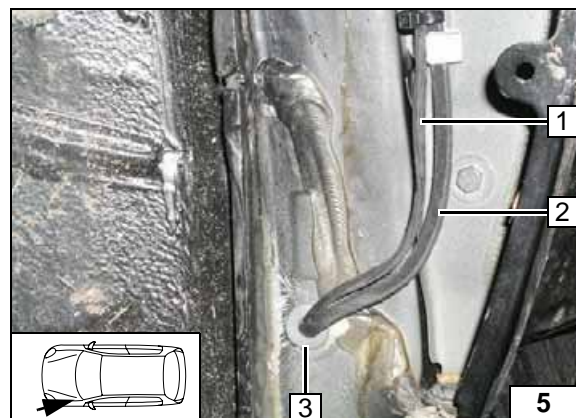


Wiring harness installation diagram



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

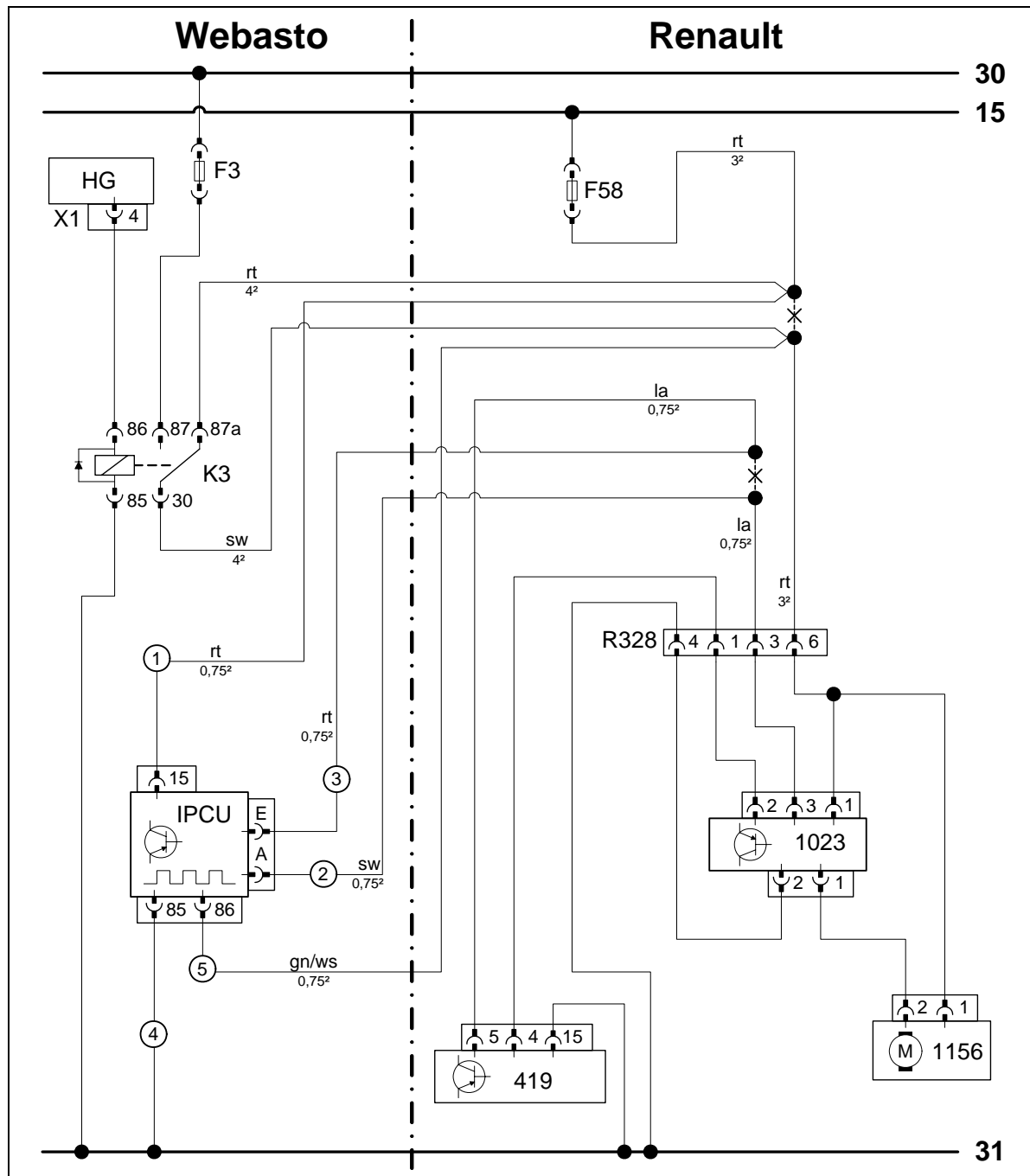


Wiring harness pass through

- 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
				ge	yellow
IPCU adjustment values:					
Duty cycle: 46 %					
Frequency: 400 Hz					
Voltage: 10 V				X	Cutting point
Function: Low-side				Wiring colors may vary.	

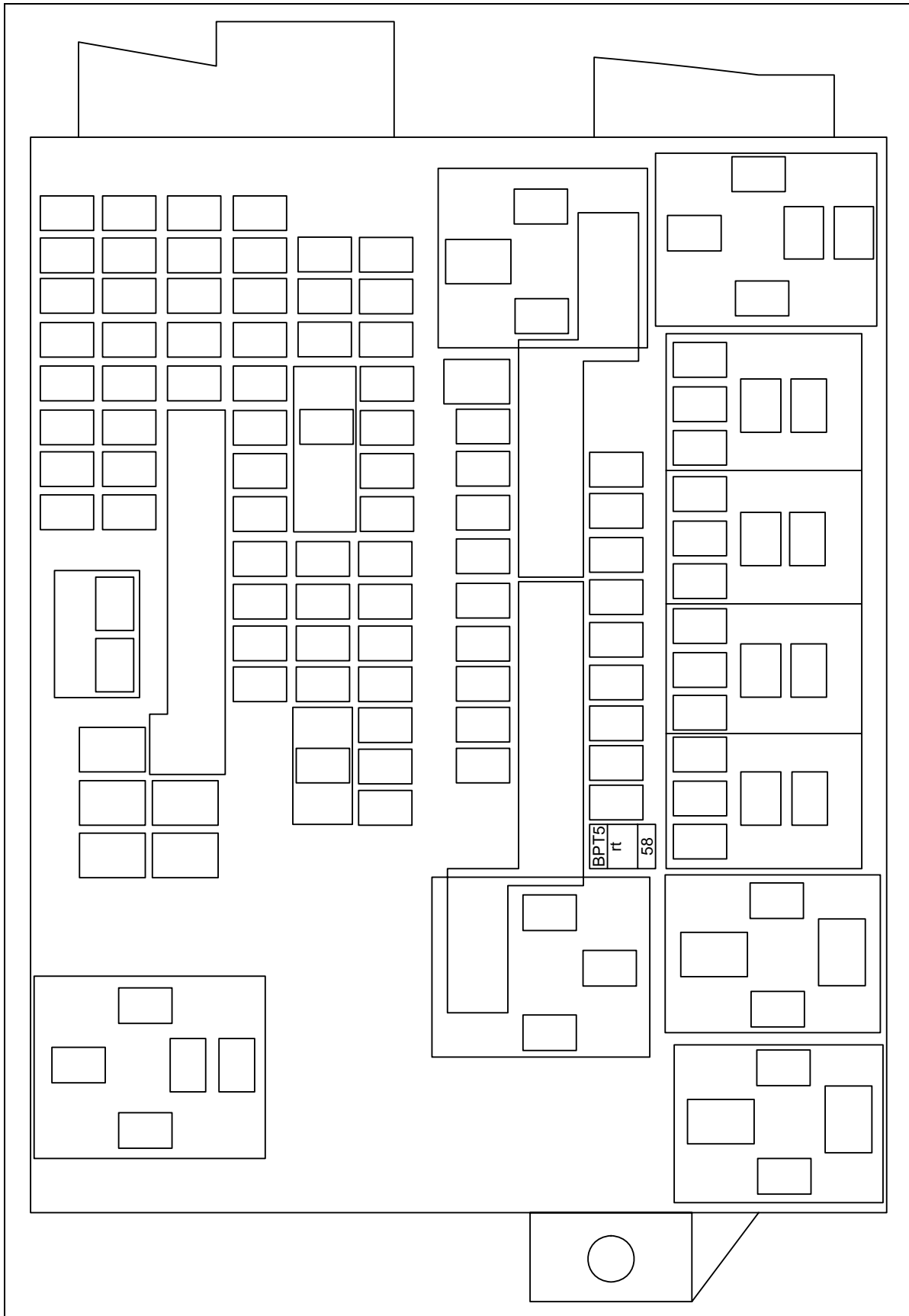
Legend

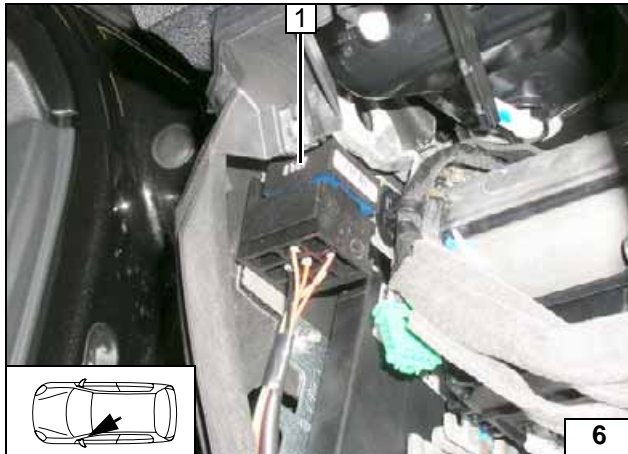
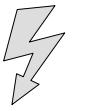


Central electrical box with fuse F58



Central electrical box



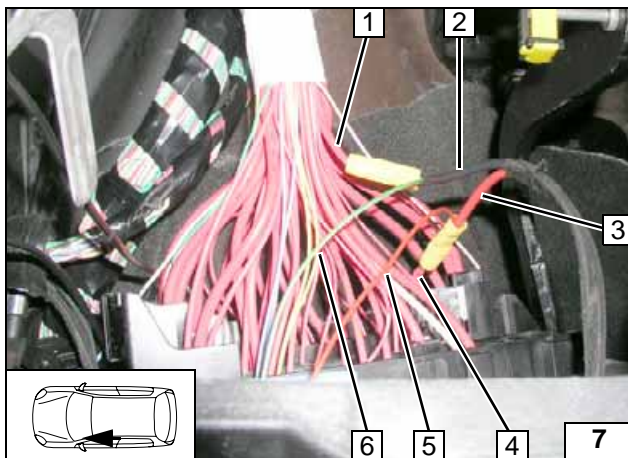


Install IPCU socket with double-sided adhesive tape.

1 IPCU



Installing IPCU

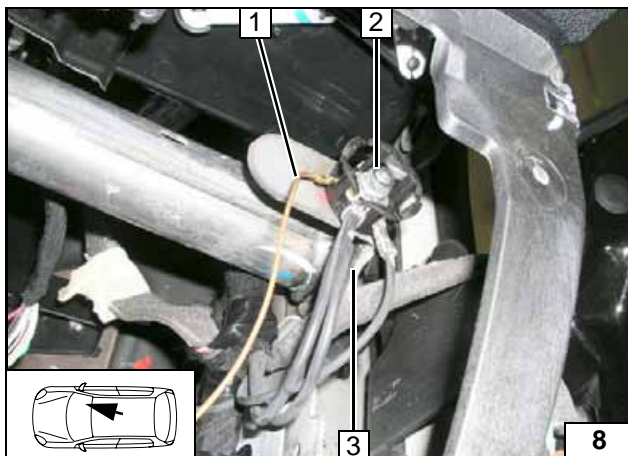


Connection to fuse F58 40 A.
Produce connections as shown in wiring diagram.
Route wiring harness of IPCU to right-hand side of vehicle.

- 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

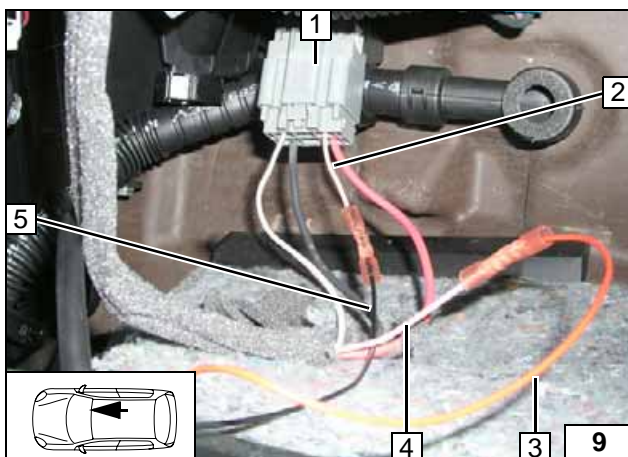


Connecting central electrical box



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

Ground connection of IPCU

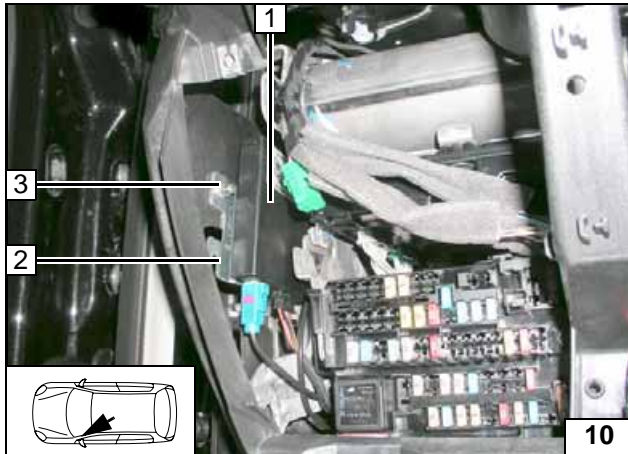


Connection to 6-pin connector R328 1 before fan controller.
Produce connections as shown in wiring diagram.

- 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



Connecting IPCU

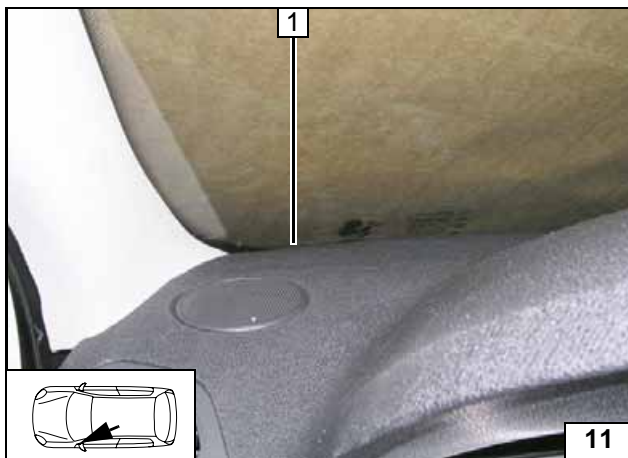


Remote option (Telestart)

- 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

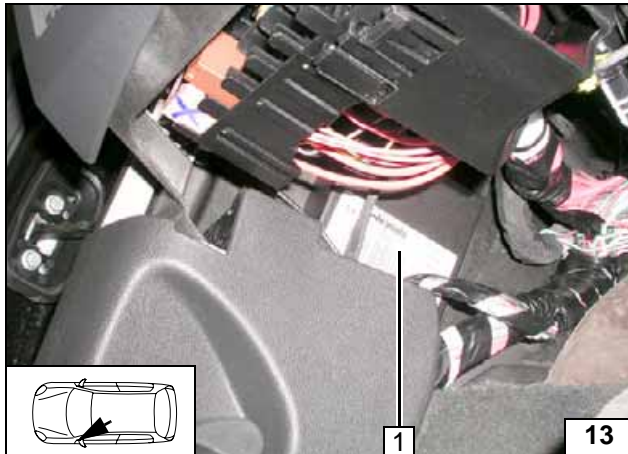


Installing temperature sensor

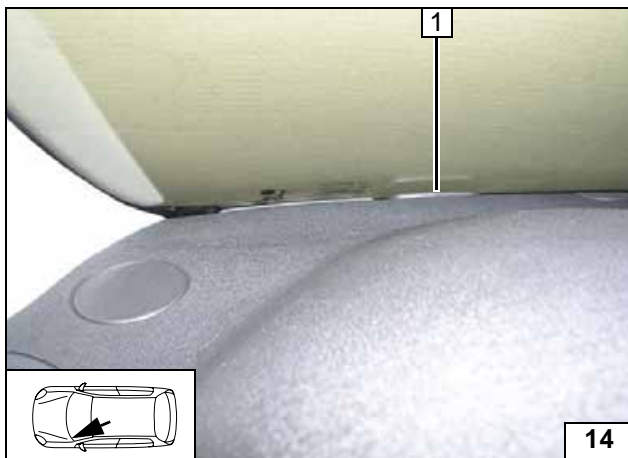


Remote option (Thermo Call)

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



Installing receiver



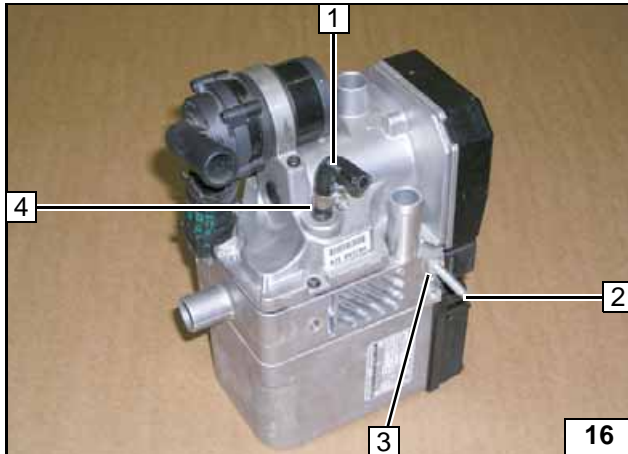
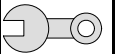
1 Antenna

Installing antenna



1 Pushbutton

Installing push button



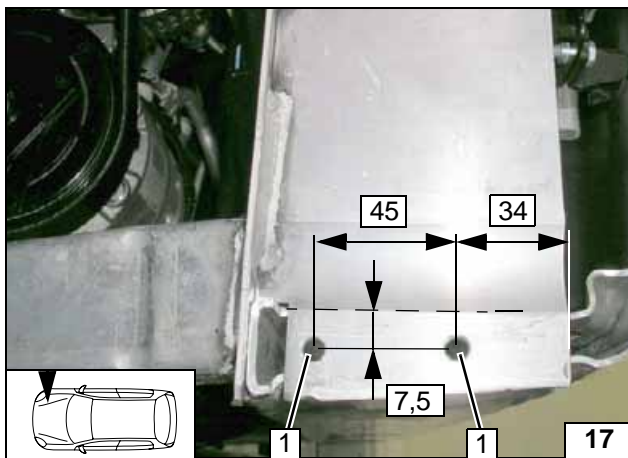
Preparing heater unit

Precut thread at position 3.

- 1 90° molded hose
- 2 Ejet stud bolt
- 4 10 mm dia. clamp



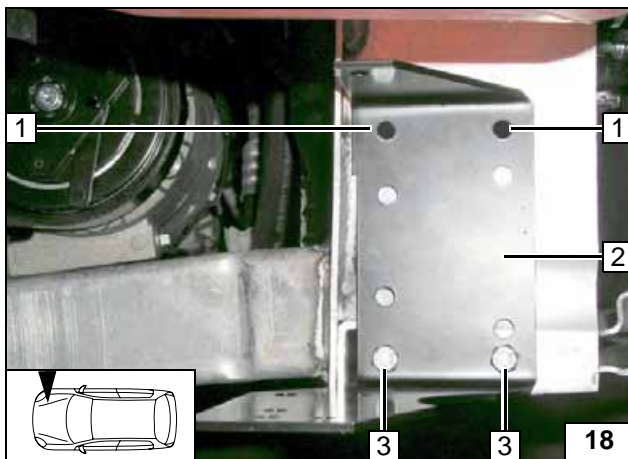
Preparing heater unit



Preparing installation location

- 1 7 mm dia. hole [2x]

Drilling hole in cross member

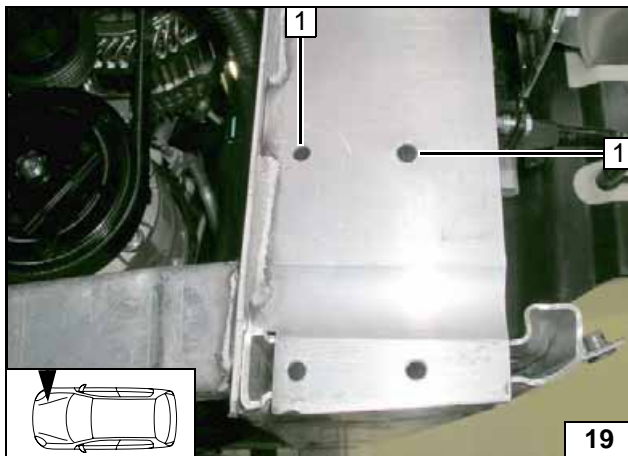


Mount two M6 bolt in position 3, align bracket 2.

- 1 Copy hole pattern [2x]



Copying hole pattern

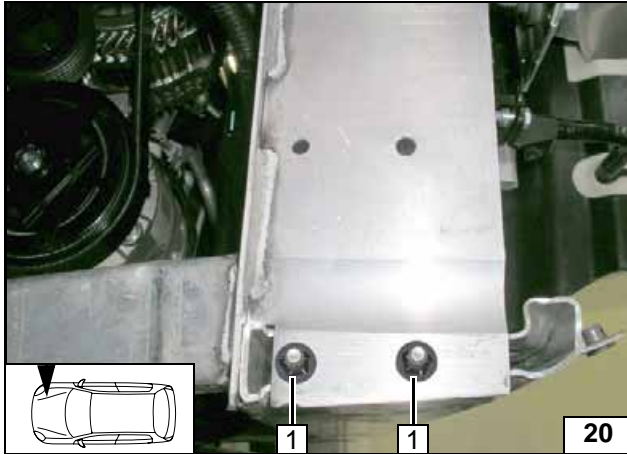
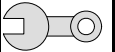


Take off bracket.

- 1 7 mm dia. hole [2x]



Holes in cross member

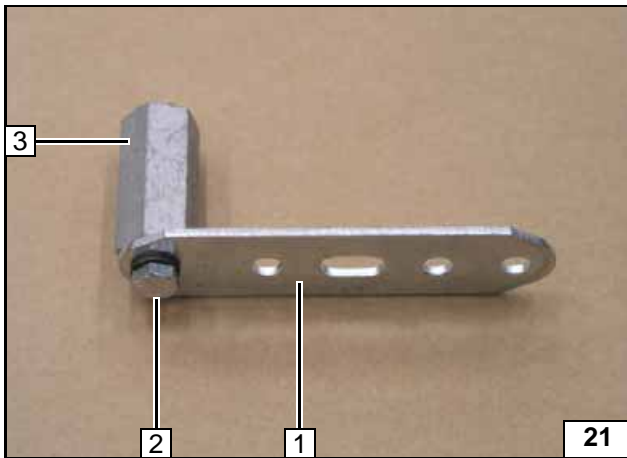


Mount bolts in position 1 in holes from behind.

- 1 M6x16 bolt, pin lock [2x]

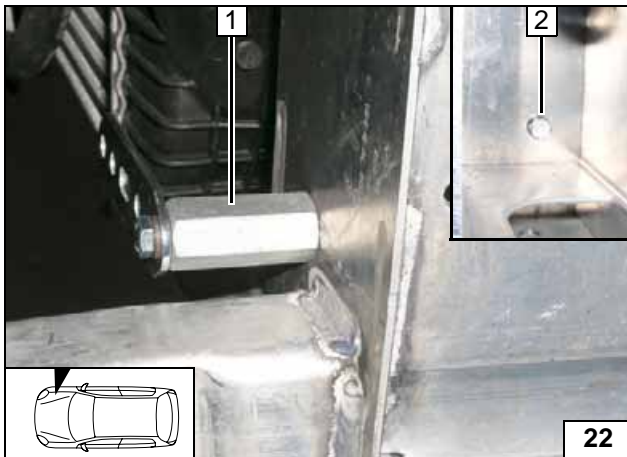


Mounting bolts



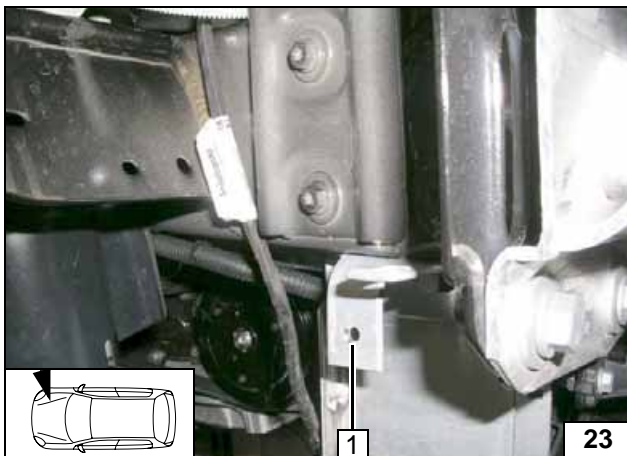
- 1 Perforated bracket
- 2 M6x20 bolt, spring lockwasher
- 3 40 mm dia. spacer nut

Premounting perforated bracket



- 1 Premounted perforated bracket
- 2 Mount M6x20 bolt, spring lockwasher through original vehicle hole on spacer nut

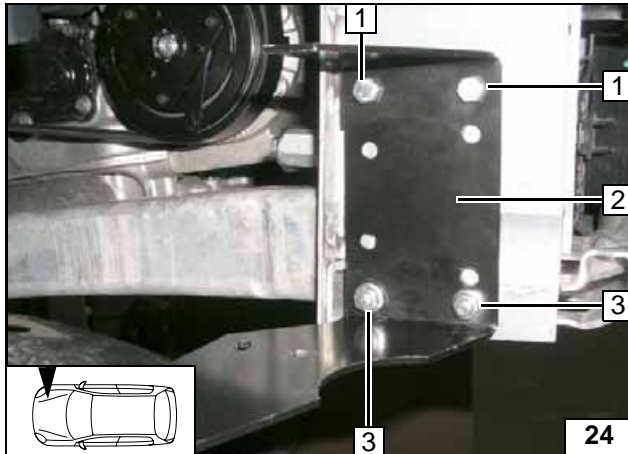
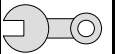
Installing perforated bracket



6 mm dia. hole 1 centered in lug.

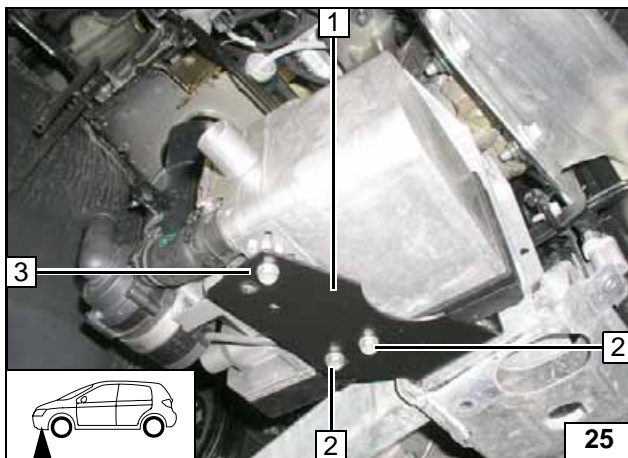


Hole in lug



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

Installing bracket



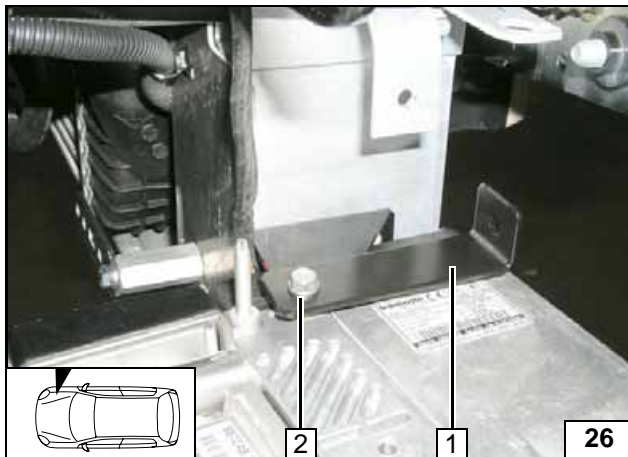
Installing heater unit

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]

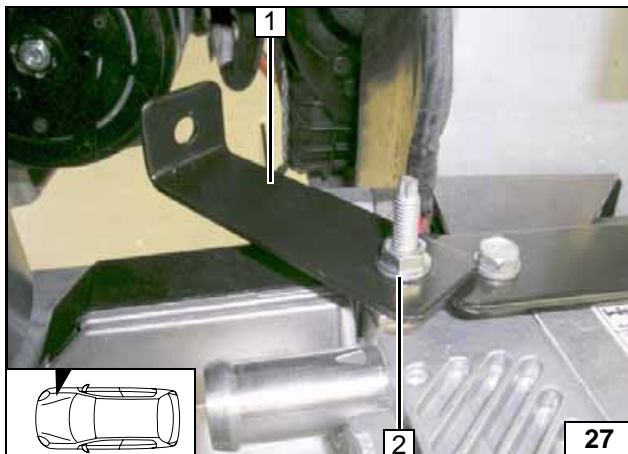


Installing heater unit



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

Installing heater unit

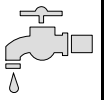


Insert 5 mm shim between heater unit and strut of coolant hose 1 at position 2.

- 2 M6 flanged nut



Installing heater unit



Coolant

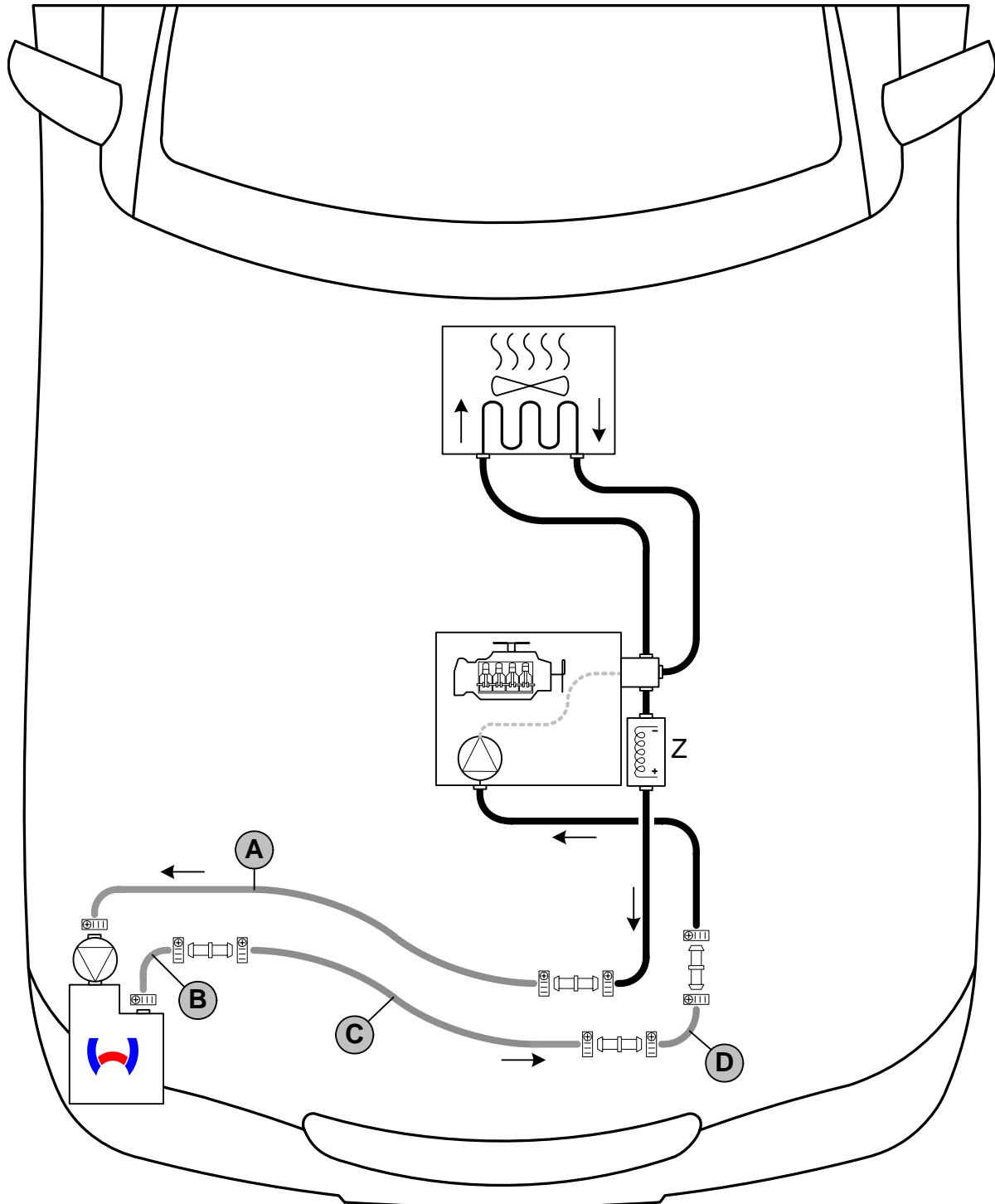
WARNING!



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:

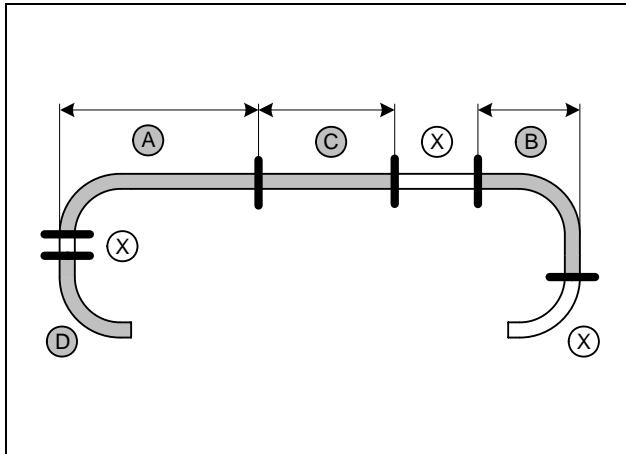
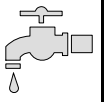


Coolant routing diagram



All connecting pipes  = 20x20 dia.. All hose clamps  = 20-27 mm dia.!
Z = Electric auxiliary heater



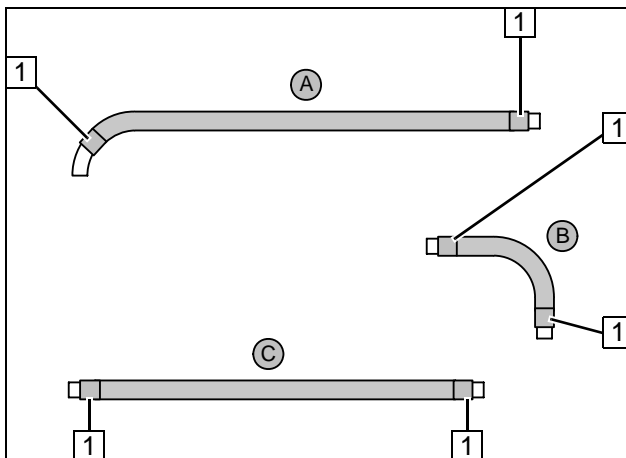


a = 890
b = 130
c = 620

Hose **A** with short 90° elbow.
Hose **B** with long 90° elbow.
Discard section **X**.



Cutting coolant hoses to length

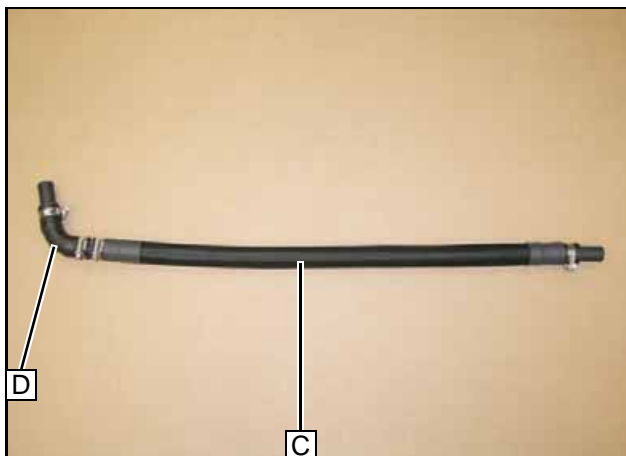


Push braided protection hoses onto hose **A**, **B** and **C** and cut to length.
Cut heat shrink plastic tubing to length.

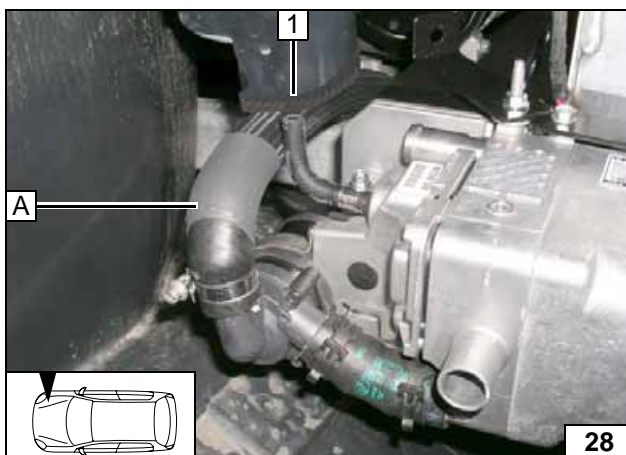
1 25 mm long heat shrink plastic tubing [6x]



Preparing coolant hoses

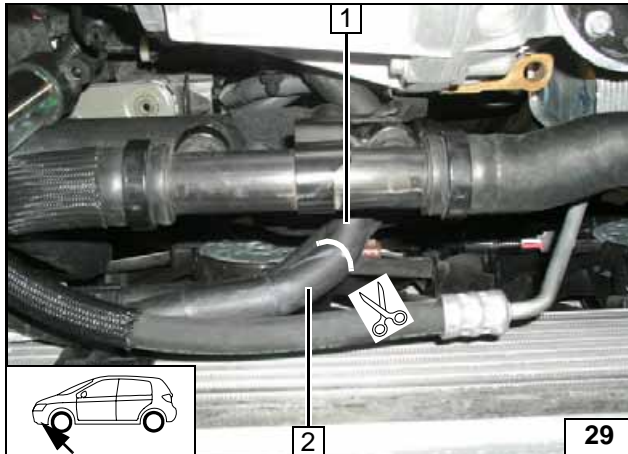


Premounting hose C and D



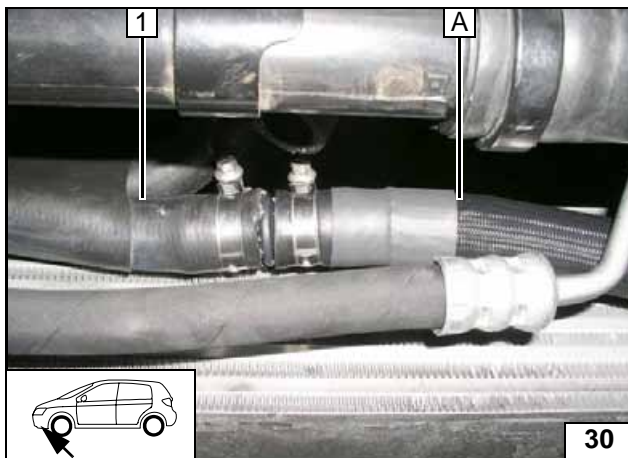
1 Mount edge protection

Connecting heater unit inlet



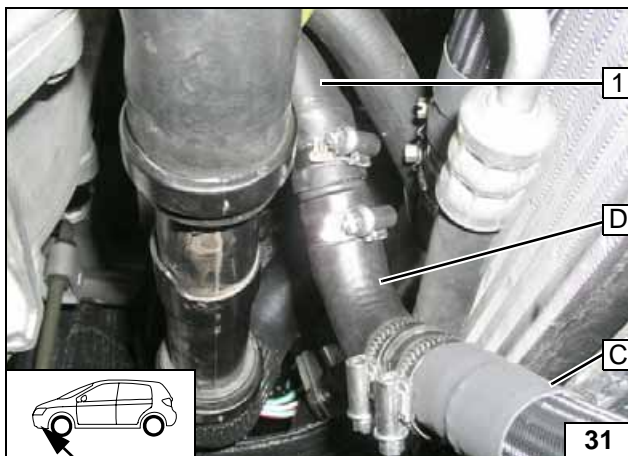
- 1 Hose section on engine inlet
- 2 Hose section on auxiliary heater outlet

Cutting point



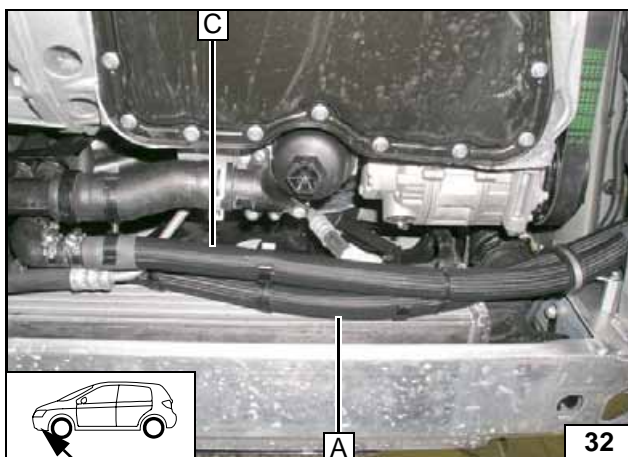
- 1 Hose on auxiliary heater outlet

Connecting engine outlet

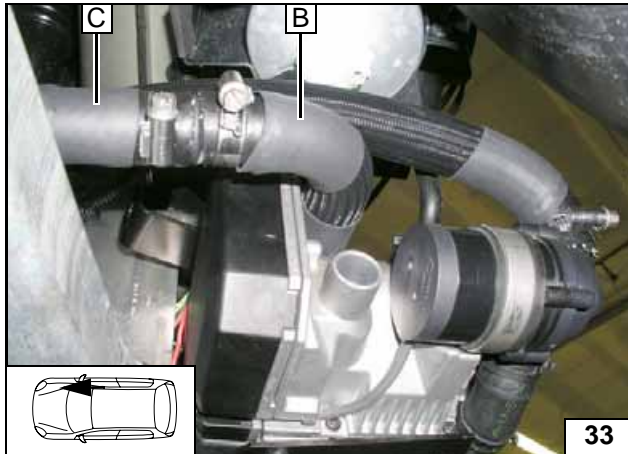
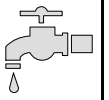


- 1 Hose on engine inlet

Connecting heat exchanger inlet



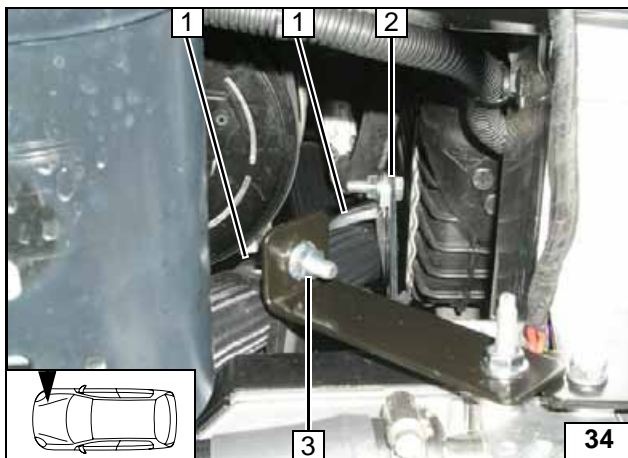
Routing in engine compartment



Fasten hose **B** with long leg on heater unit outlet with hose clamp.

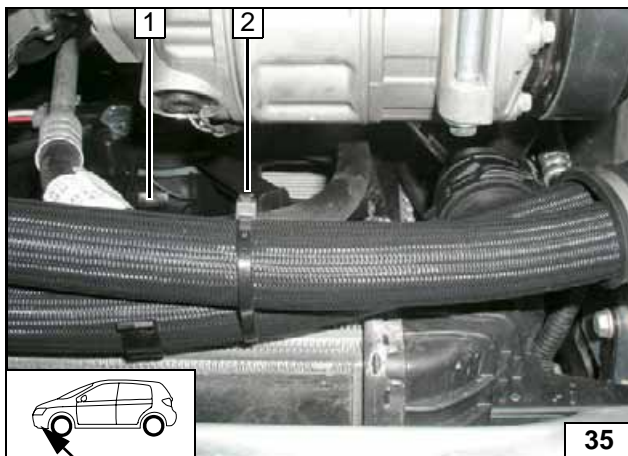


**Connect-
ing heater
unit outlet**



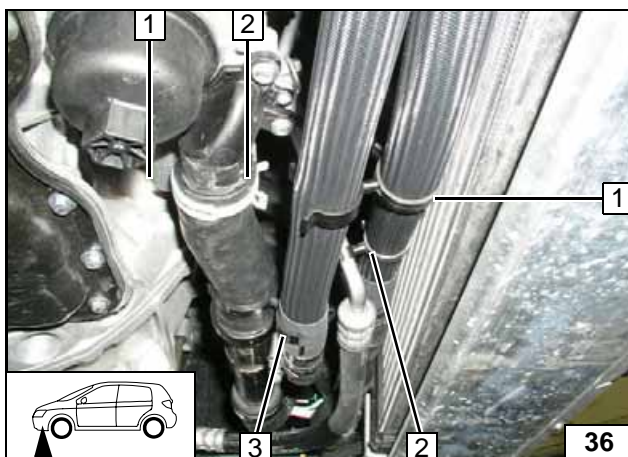
- 1 48 mm dia. rubber-coated p-clamp [2x]
- 2 M6x20 bolt, flanged nut on perforated bracket
- 3 M6x20 bolt, flanged nut on strut

**Fastening
hoses**



- 1 25x28 spacer bracket
- 2 Cable tie

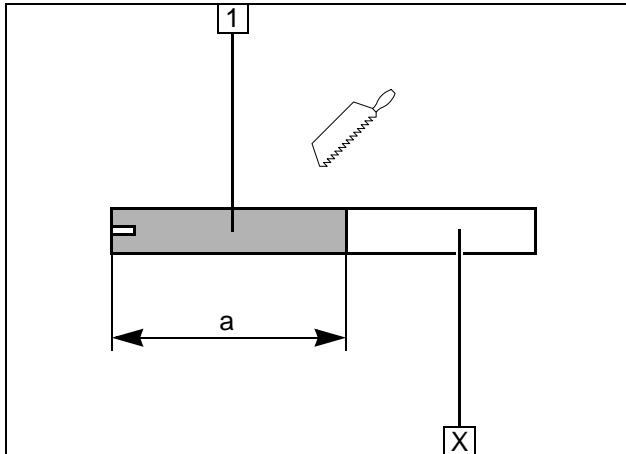
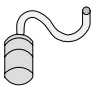
**Fastening
hoses**



Align coolant hose. Ensure sufficient distance to neighboring components.



**Fastening
hoses**

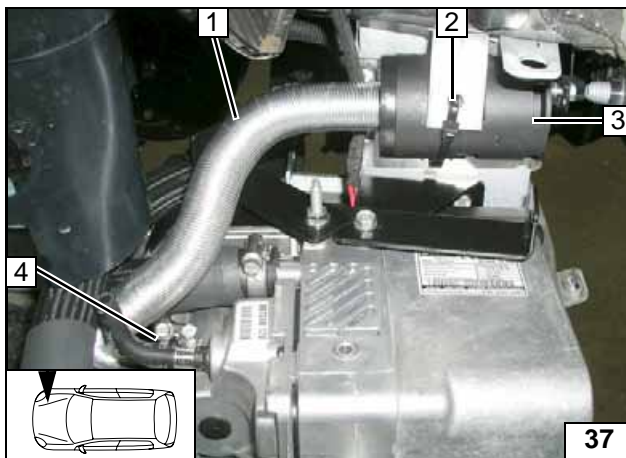


Combustion air

- 1 Combustion air pipe
a = 330

Discard section X

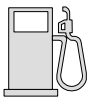
Cutting combustion air pipe to length



- 1 Combustion air pipe
- 2 Cable tie in hole of lug
- 3 Muffler
- 4 27 mm dia. clamp



Installing combustion air pipe and muffler



Fuel

CAUTION!

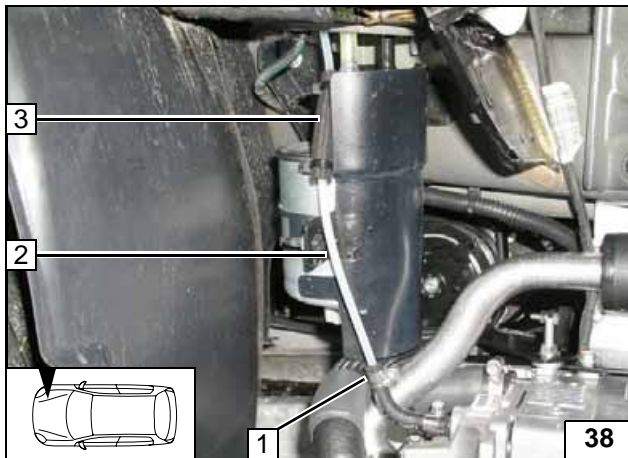
Open the vehicle's fuel tank cap, ventilate the tank and then re-close the tank lock.

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!

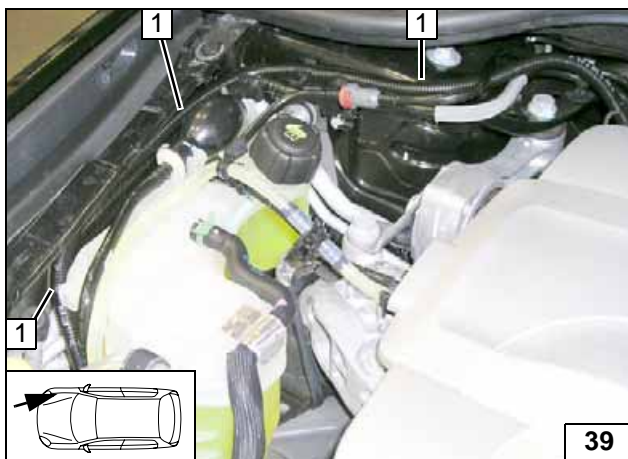
The fuel line and wiring harness are routed to the metering pump in as shown in the wiring harness routing diagram.



Slide protective hose 3 onto fuel line 2 and secure with cable tie.

1 10 mm dia. clamp

**Connect-
ing heater
unit**



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



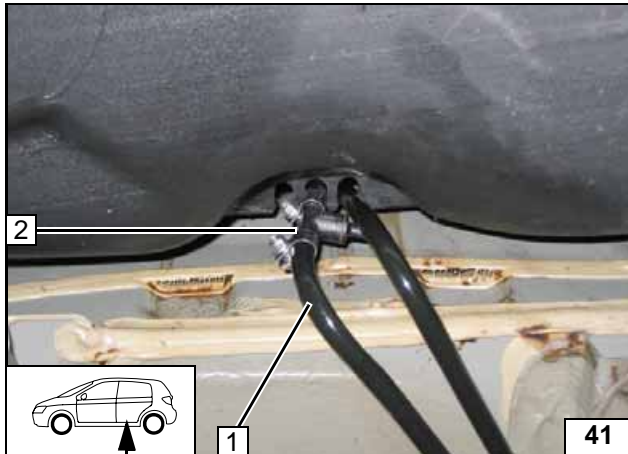
**Installing
lines**



Route fuel line and wiring harness of metering pump in corrugated tube 1 to installation location of metering pump.



**Installing
lines**

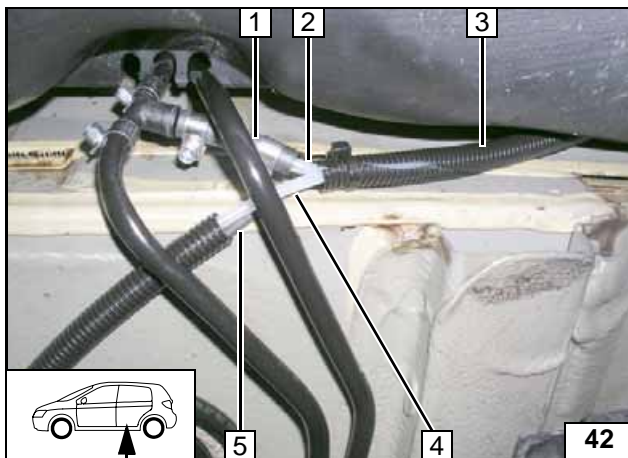


Cut off fuel return line 1 at Position 2.

- 2 8x5x8 fuel standpipe, 10 mm dia. clamp [2x]



Removing fuel

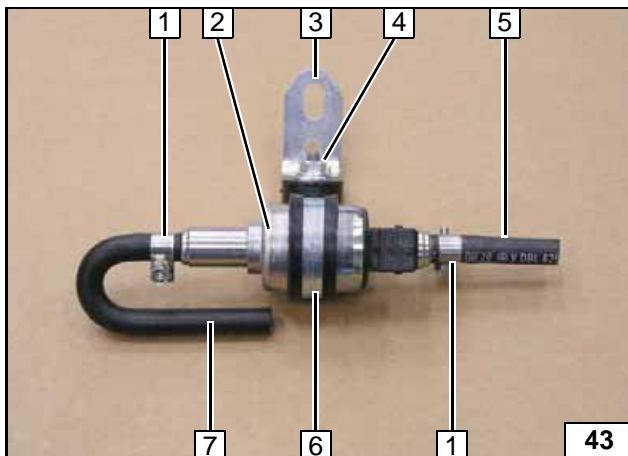


Route fuel line from heater unit 4, wiring harness of metering pump 5 and additional fuel line 2 to installation location of metering pump in cut-open corrugated tube 3.

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

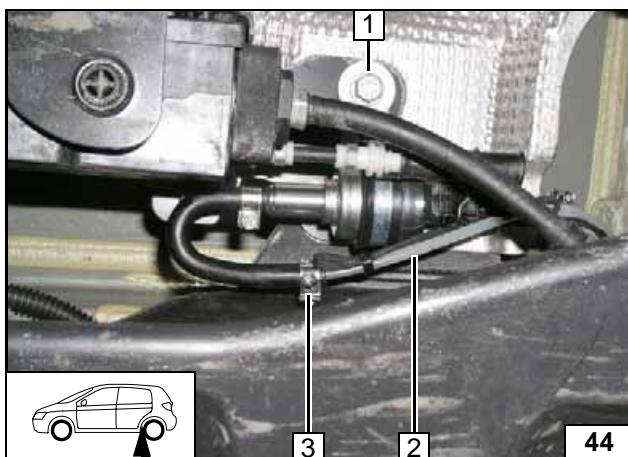


Connecting fuel line



- 1 10 mm dia. clamp [2x]
- 2 Metering pump
- 3 Angle bracket
- 4 Silent block, flanged nut [2x]
- 5 Hose section
- 6 Rubber-coated pipe clamp
- 7 180° molded hose

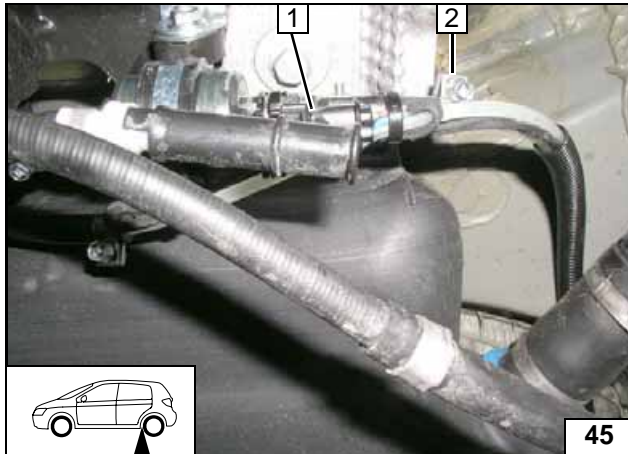
Premounting metering pump



- 1 Original vehicle bolt
- 3 Fuel line from fuel standpipe
- 4 10 mm dia. clamp



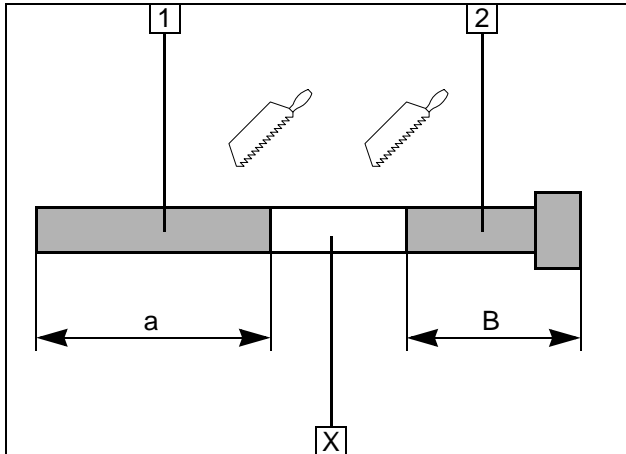
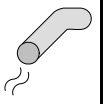
Installing metering pump



- 1 Wiring harness of metering pump, connector mounted
- 2 10 mm dia. clamp, fuel line from heater unit



Installing metering pump

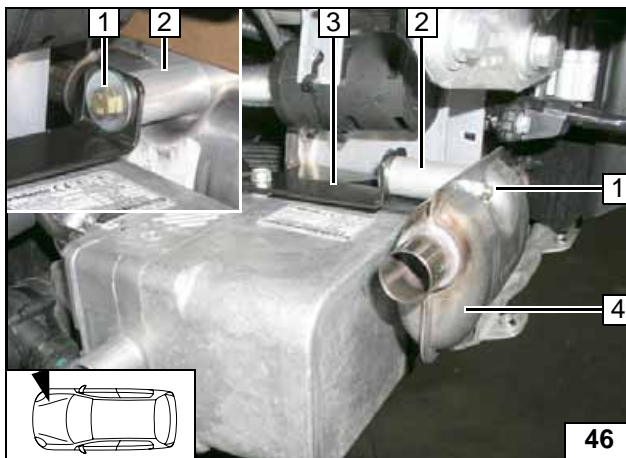


Exhaust gas

- 1 Exhaust pipe
a = 240
- 2 Exhaust end section
b = 190

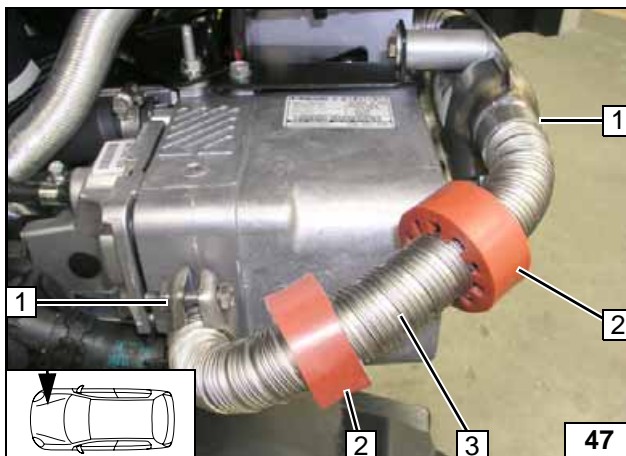
Discard section X

Preparing exhaust pipe



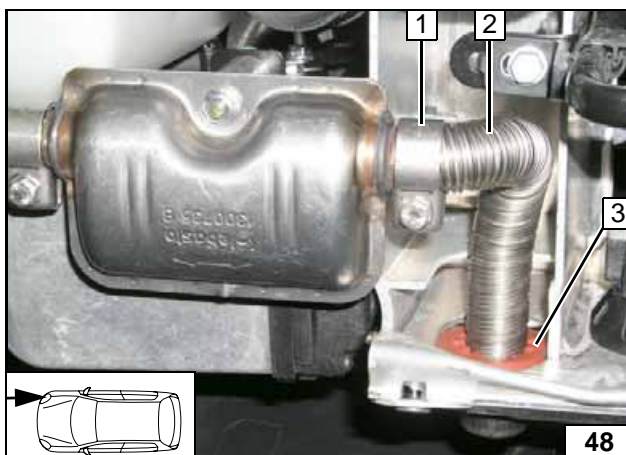
- 1 M6x55 bolt, large diameter washer, flanged nut
- 2 40 mm shim
- 3 Strut
- 4 Muffler

Installing muffler



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

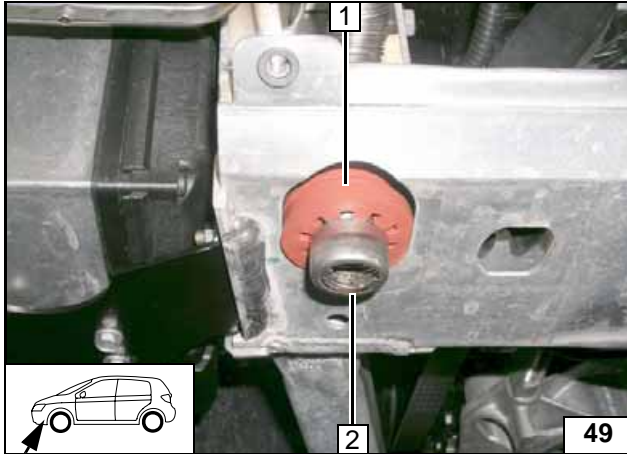
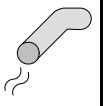
Installing exhaust pipe



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

- 1 Hose clamp

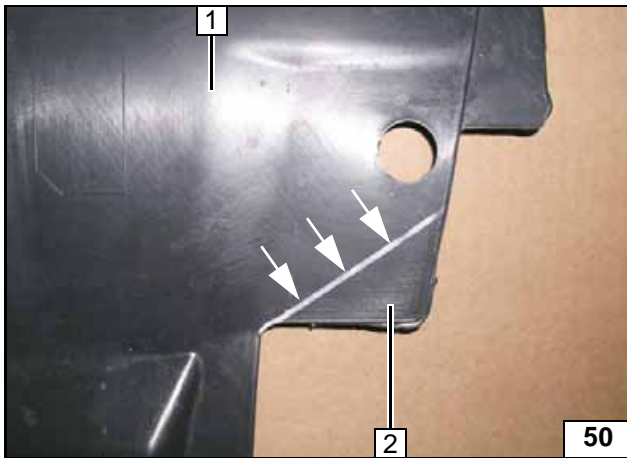
Installing end section



Ensure sufficient distance to neighboring components.
Align exhaust end section **2** flush on rubber isolator.

1 Position red (rt) rubber isolator with groove

Positioning rubber isolator

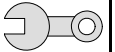


Cut away under-ride protection **1** at marking.

2 Discard section

Cutting away under-ride protection





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.



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<http://www.webasto.de>

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**