

Water Heater



Thermo Top C Parking Heater



Installation documentation

Jeep Grand Cherokee

Diesel

Model 2005 - 2010

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.

The initial startup is to be executed with the Webasto Thermo Test Diagnosis.

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
Daimler Chrysler (USA)	Grand Cherokee	WH	e4 * 2001 / 116 * 0095 * ...

Engine type	Engine model	Output in kW	Displacement in cm ³
M 642.980	Diesel	155	2987
M 642.980	Diesel	160	2987

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 of <i>Thermo Top C</i>	See Price list
1	Installation kit of Jeep Grand Cherokee 3.0 D	9013630D
1	Heater control	See Price list

Foreword

This installation documentation applies to the Chrysler Grand Cherokee vehicles with diesel engine - for validity, see page 2 - from model year 2005 to 2010, 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 specifications of this "Installation documentation" the "Operating Instructions" and the "Installation instructions" of *Thermo Top C* must be observed without fail.

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 rub protection (split-open plastic hose).

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

Special Tools

- Torque wrench for 2.0 - 10 Nm
- Hose clamping pliers
- Metric thread-setter kit
- Angle drill
- Chrysler/Jeep Special Tool 9340

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



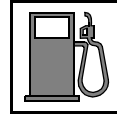
Electrical system



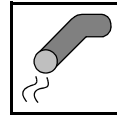
Coolant circuit



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.



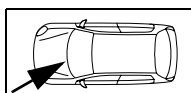
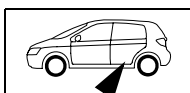
Specific risk of fire or explosion.



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



Reference to a special technical feature.

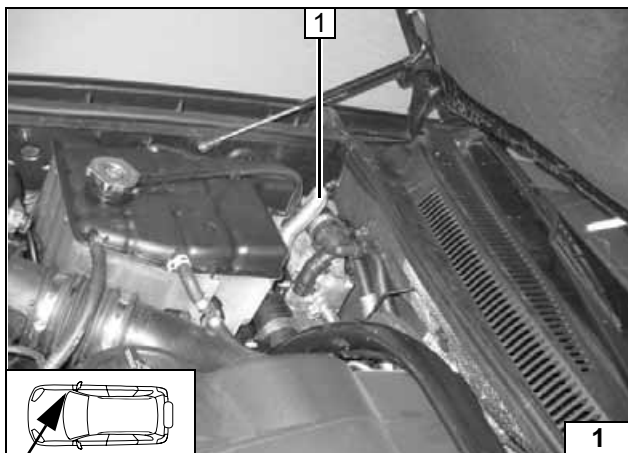


The arrow in the vehicle icon indicates the position on the vehicle and the viewing angle.

Preliminary work

WARNING!

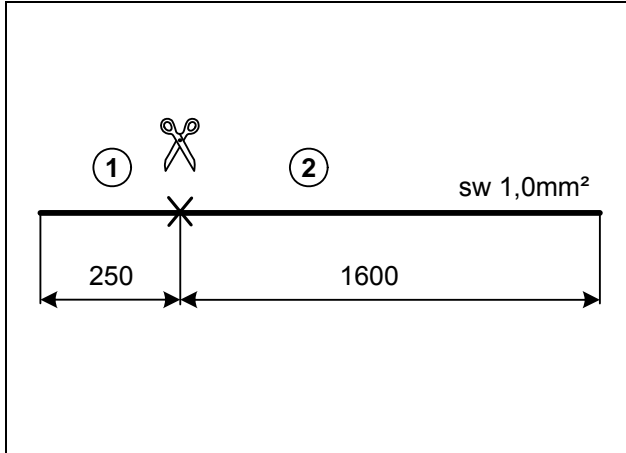
- Remove the battery.
- Depressurise the cooling system.
- Copy the factory number from the original type label to the duplicate type label.
- Remove years that do not apply from the duplicate label.
- Attach the duplicate label (type label) in the appropriate place.
- Open fuel tank cap, ventilate tank.
- Close the fuel tank cap again.
- Remove tank according to manufacturer's instructions
- Detach wheel well trim of the right front wheel in the rear part
- Remove rubber sealing on the coolant reservoir.
- Remove right side trim between instrument panel and A-pillar.
- Remove glove compartment (suspend hinges and unclip damper)
- Open the lower footwell trim on the driver's side
- Only for automatic air-conditioning:
 - Remove middle air nozzle trim on the instrument panel
 - Fold operating console forward and pull out white 22-pin connector from A/C control panel.



Heater installation location

1 Heater

Installation location

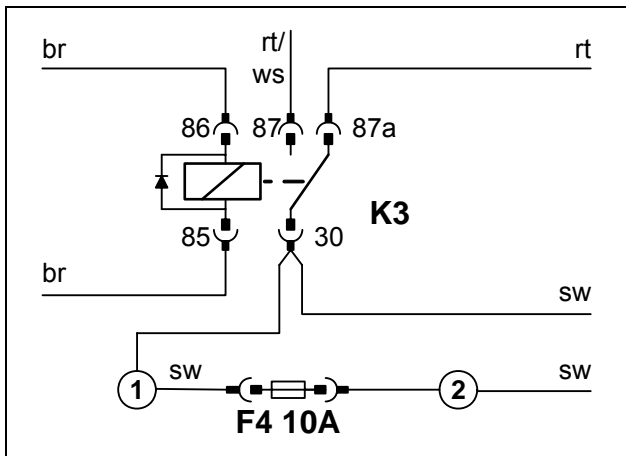


Preparing electrical system

Only for automatic air-conditioning



Cutting wires to length



Establish connections according to wiring diagram with included tab receptacle. Fasten wire section 2 with insulating tape to wiring harness of fan control. Install later in passenger compartment in the included protective sleeving.



Preparing Fuse F4

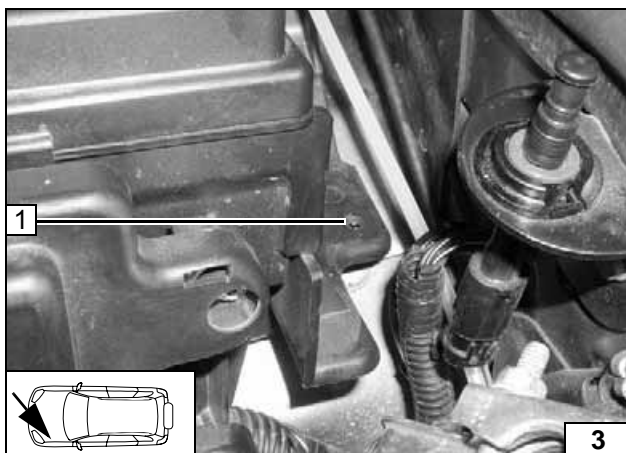


All vehicles

Angle down perforated bracket



Preparing fuse holder



Drill hole in the lug of the electric box

1 6.5 mm dia. hole



Drill mounting hole

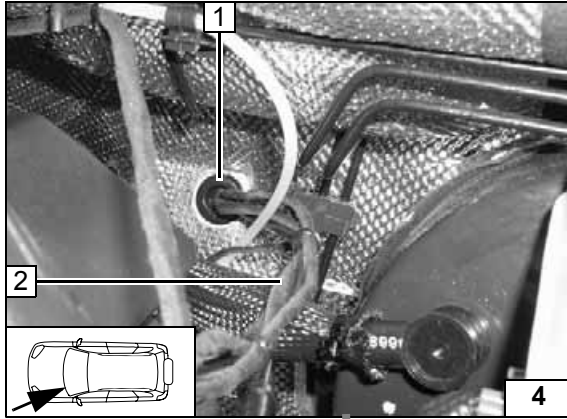


Electrical system



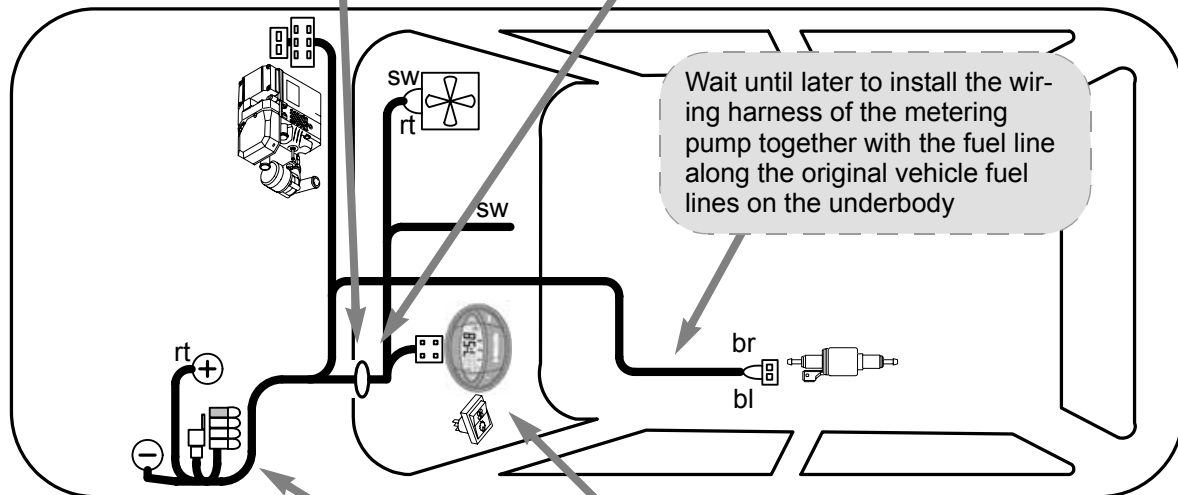
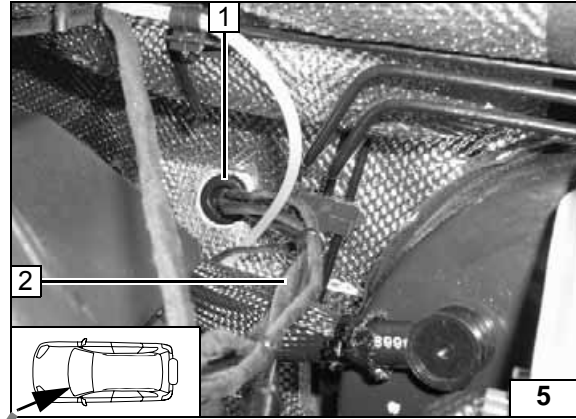
Wiring harness pass through version A (If grommet exists at Position 1)

- 1 Remove grommet, punch 8mm dia. opening and reinsert grommet)
- 2 Wiring harness

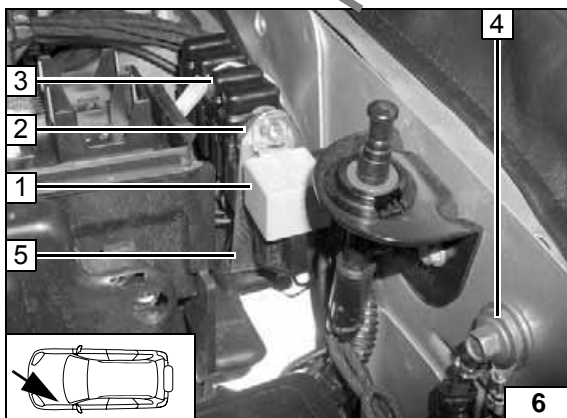


Wiring harness pass through Version B (If grommet does not exist at Position 1)

Drill 18mm dia. hole in firewall at Position 1. Insert wiring harness 2 with included grommet 8mm dia. opening punched). When drilling, watch the components behind.

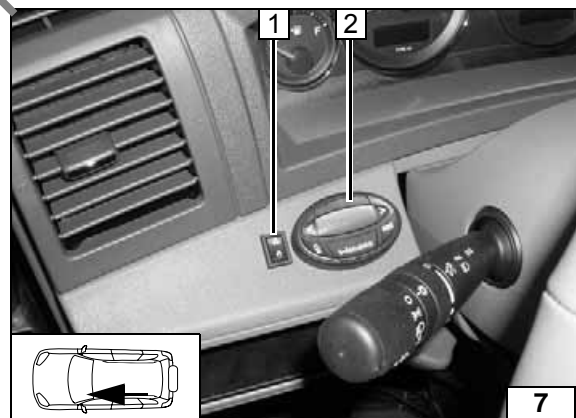


Wiring harness routing diagram



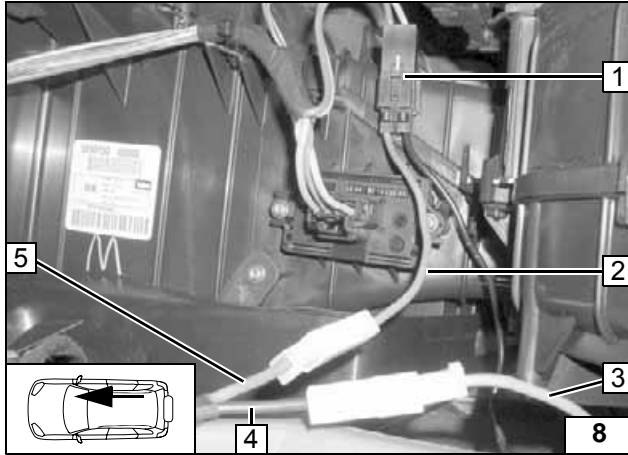
Fuse holder, K3 relay

- 1 K3 relay, M5x16 bolt, washer, flanged nut
- 2 Retaining plate of fuse holder
- 3 Fuse holder
- 4 Original vehicle earth point with earth wire
- 5 Perforated bracket, M6x16 bolt, flanged nut



Digital timer and Summer/Winter switch option

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



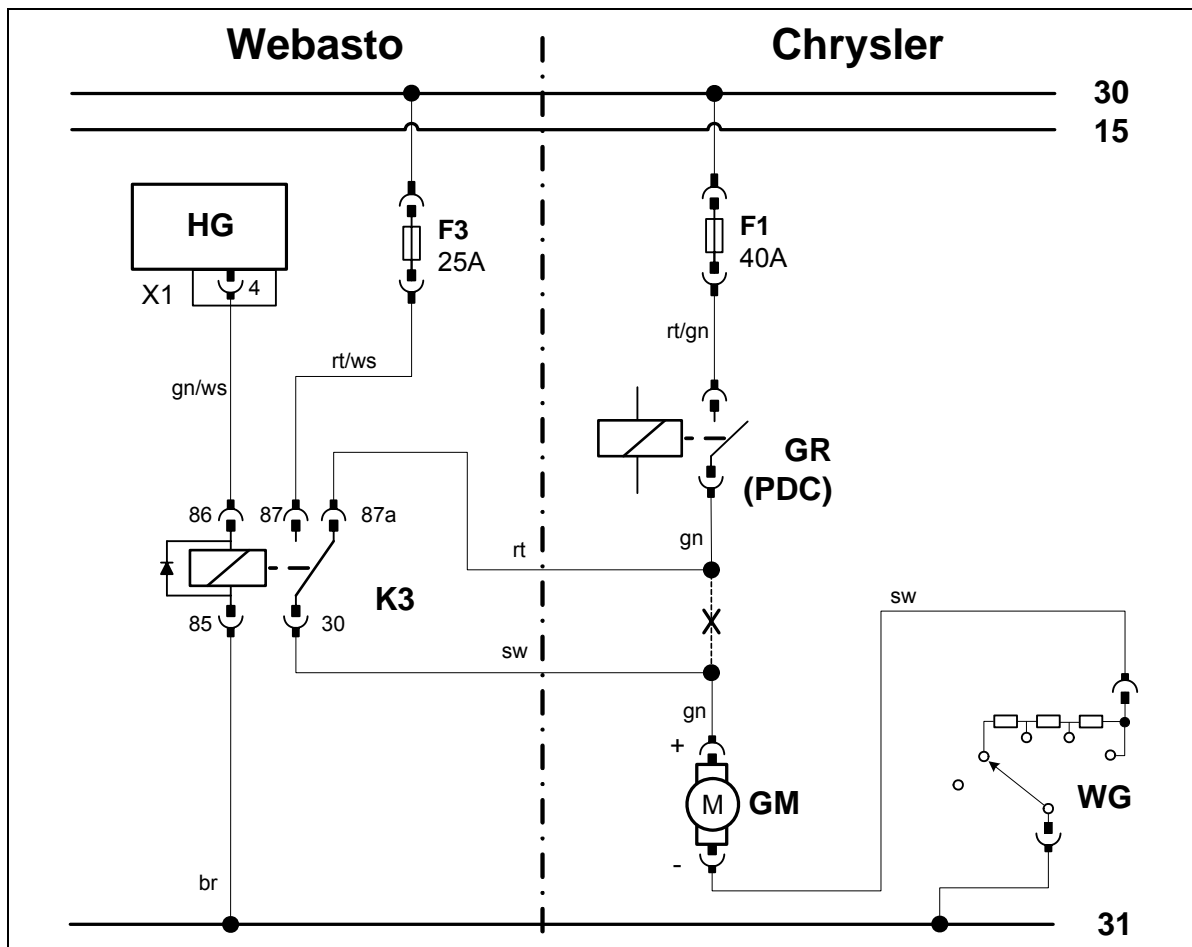
Fan control for manual air conditioning

Connection to 2-pin connector 1 from the fan unit. Produce connections as shown in wiring diagram.

- 2 Green (gn) wire of 2-pin connector
- 3 Green (gn) wire of fan motor
- 4 Black (sw) wire from K3/30
- 5 Red (rt) wire from K3/87a



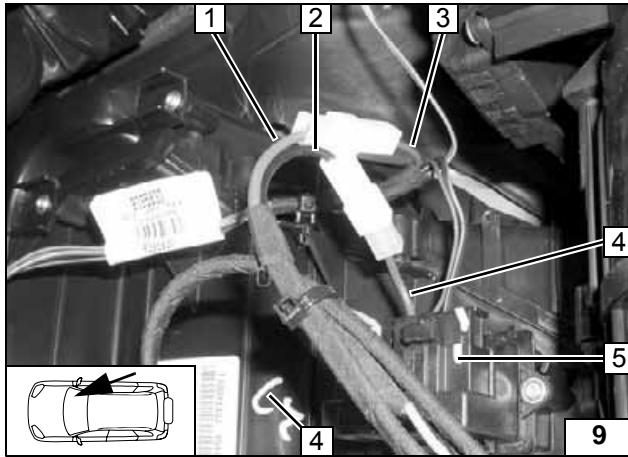
Connecting fan unit



Wiring diagram of manual air conditioning

Webasto components		Chrysler components		Colours and symbols	
HG	Heater TT-C	GM	Fan motor	rt	red
X1	6-pin heater connector	GR	Fan relay	sw	black
F3	25 A fuse	F1	40A fuse	br	brown
K3	Fan relay	WG	Resistor group	ws	white
				gn	green
				X	Cutting point

Legend



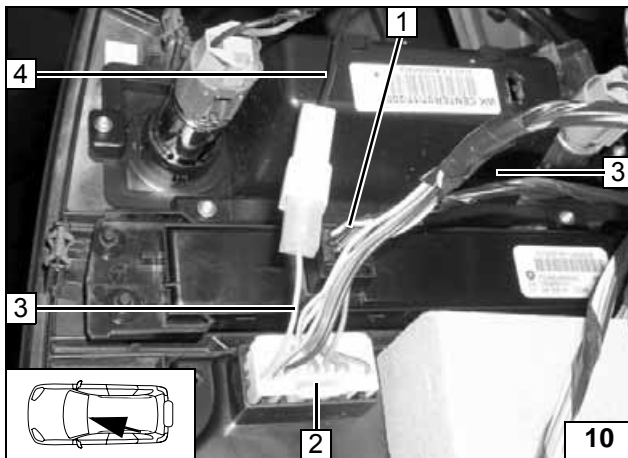
Fan control of automatic air-conditioning system

Connection to connector of fan unit **5**
 4- pin Version A (see Figure) or
 6- pin Version B.
 Produce connections as shown in wiring
 diagram.

- 1 Black (sw) wire from K3/87a
- 2 Black (sw) wire from K3/30
- 3 Blue (bl) wire of fan relay
- 4 Blue (bl) wire of fan unit connector



Connect-
ing fan unit

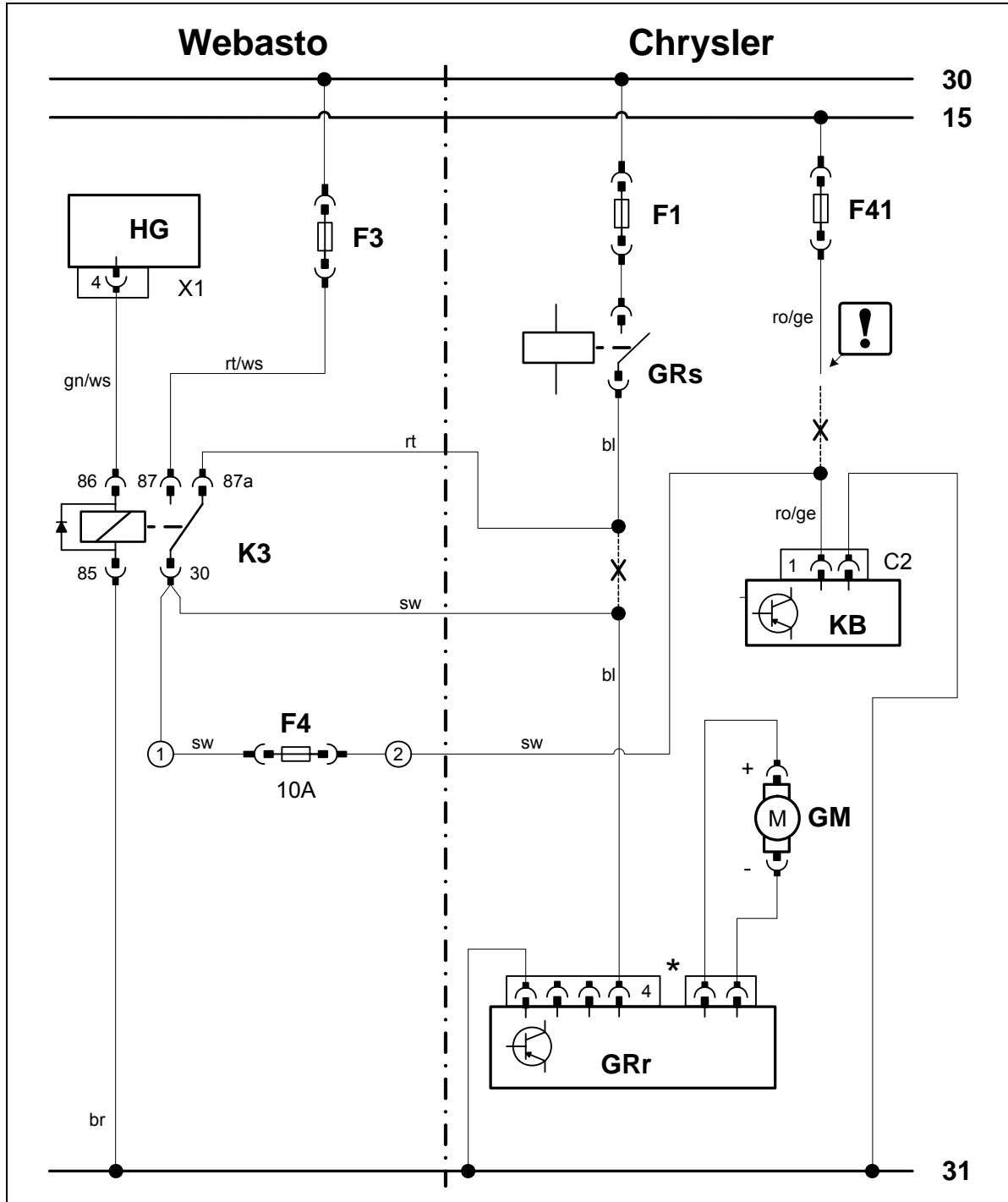


Connection to 22-pin connector of A/C control
 panel **2**. Insulate and tie back pink/yellow
 (ro/ge) wire **1** of fuse F41.
 Produce connections as shown in wiring
 diagram.

- 3 Pink/yellow (ro/ge) wire of A/C control pan-
 el connector Pin 1
- 4 Black (sw) wire from Fuse F4



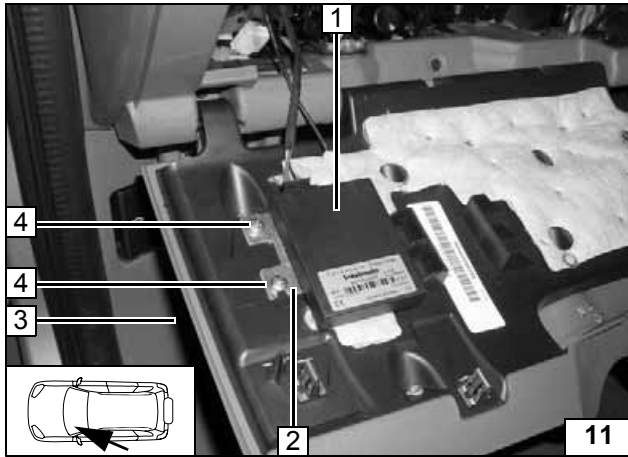
Connect-
ing A/C
control
panel



Wiring diagram of automatic air-conditioning

Webasto components		Chrysler components		Colours and symbols	
HG	Heater TT-C	GM	Fan motor	rt	red
X1	6-pin heater connector	GRs	Fan relay	ws	white
F3	25 A fuse	KB	A/C control panel	sw	black
K3	Fan relay	F1	40A fuse	br	brown
F4	10A fuse	F41	10A fuse	gn	green
		C2	Connector of A/C control panel	bl	blue
		GRr	Fan controller	ge	yellow
				ro	pink
		*	Version A: 4-pin connector	!	Insulate and tie back wire ends
			Version B: 6-pin connector		
				X	Cutting point

Legend

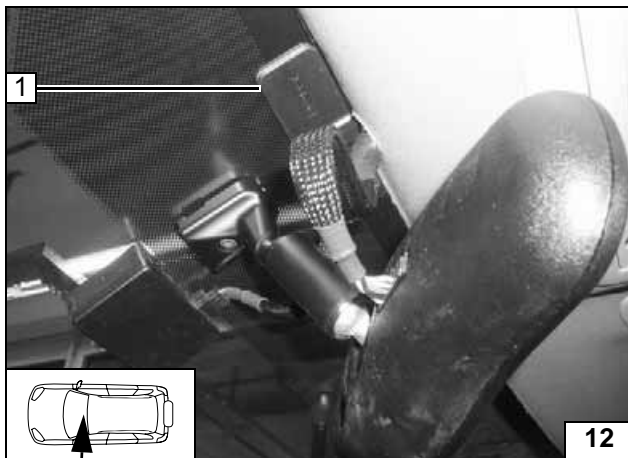


Remote option (Telestart)

- 3 Lower footwell cover on driver's side
- 1 Receiver
- 2 Bracket
- 4 Self-tapping screw [2x]



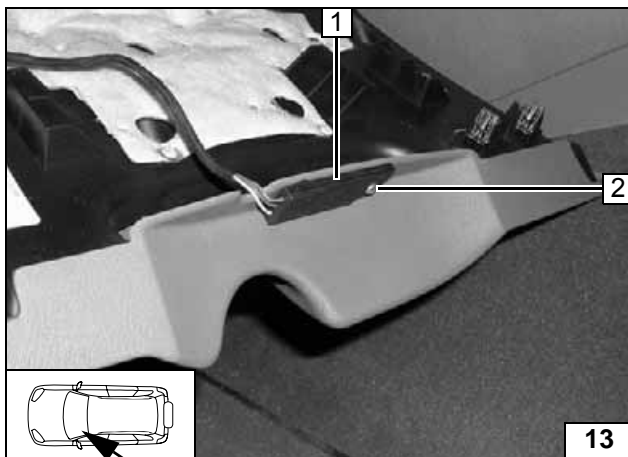
Installing receiver



- 1 Antenna



Installing antenna



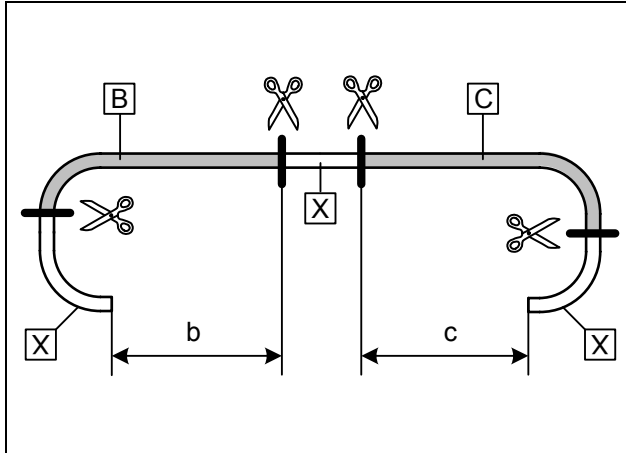
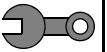
Only for Telestart T100 HTM

Mount temperature sensor with self-tapping screw on lower footwell cover on driver's side.

- 1 Temperature sensor T100 HTM
- 2 Self-tapping screw



Installing temperature sensors



Preparing heater

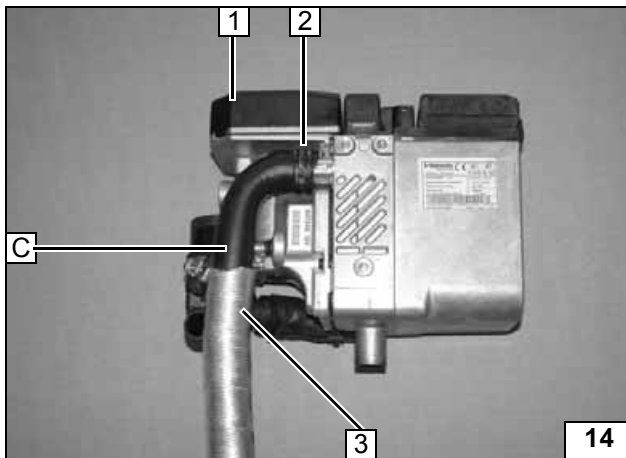
Cut away hose **B** just behind the elbow.

b = 720mm
c = 800mm

Discard section **X**
Slide on included heat exchanger hoses on coolant hoses **B** and **C**.



Cutting coolant hoses to length

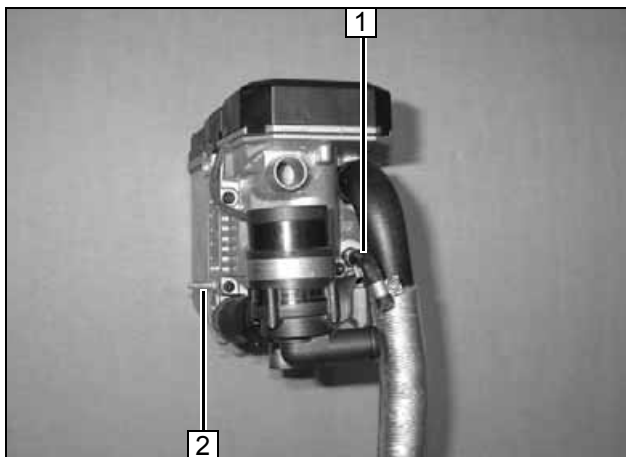


Install coolant hose **C** with 90° elbow on heater outlet.

- 1 Heater
- 2 27mm dia. spring clip
- 3 Heat protection hose

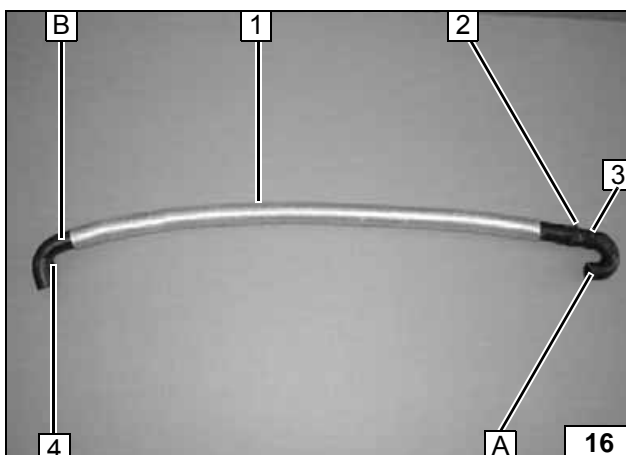


Premounting heater



- 1 90° fuel hose, hose clamp 10mm dia. [2x]
- 2 E-jot stud bolt

Premounting fuel hose

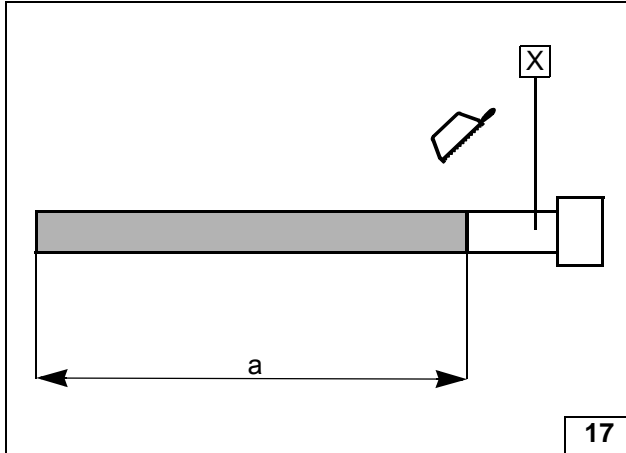
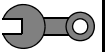


Install included moulded hose **A** with the help of 18x20 connecting pipe and spring clips as shown with coolant hose **B** montieren.

- 1 Heat protection hose
- 2 27mm dia. spring clip
- 3 25mm dia. spring clip
- 4 Premounted 27mm dia. spring clip



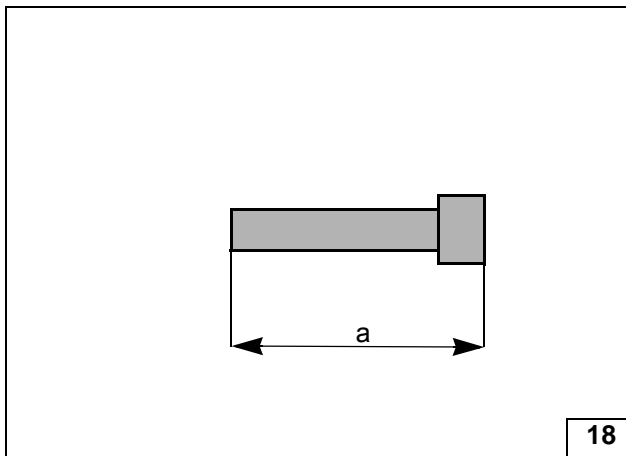
Premounting coolant hose



$a = 970 \text{ mm}$

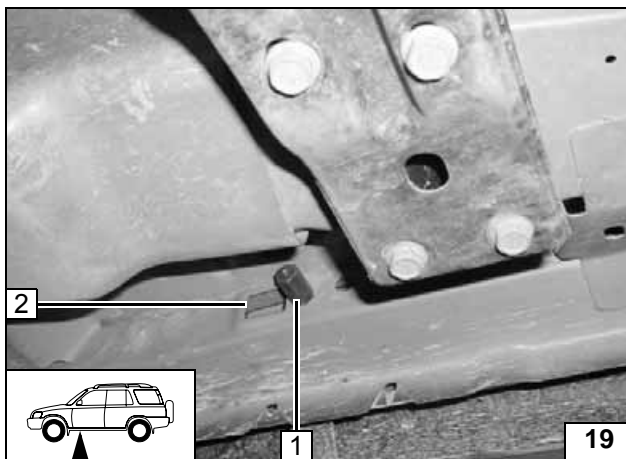
Discard section X

**Cut ex-
haust pipe
to length**



Included exhaust pipe (Ident No. 19975A)
Use $a = 150\text{mm}$ as end section.

**Cutting
end sec-
tion to size**

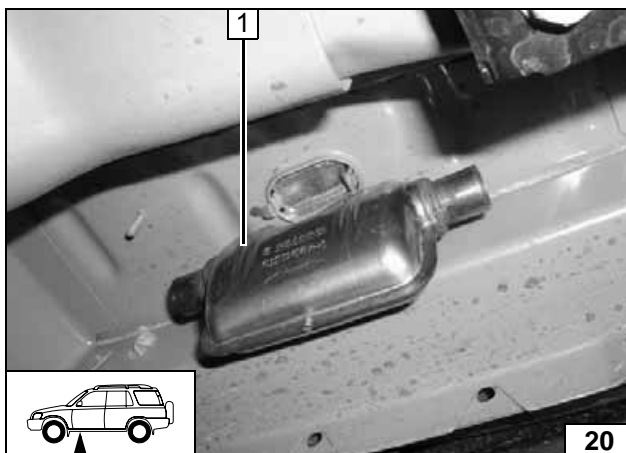


Insert M 6x16 detent edged bolt with M6 large diameter washer through door sill opening from rear into the existing hole and screw together with spacer nut.



- 2 Panel opening
- 1 30mm spacer nut

**Bracket of
exhaust si-
lencer**

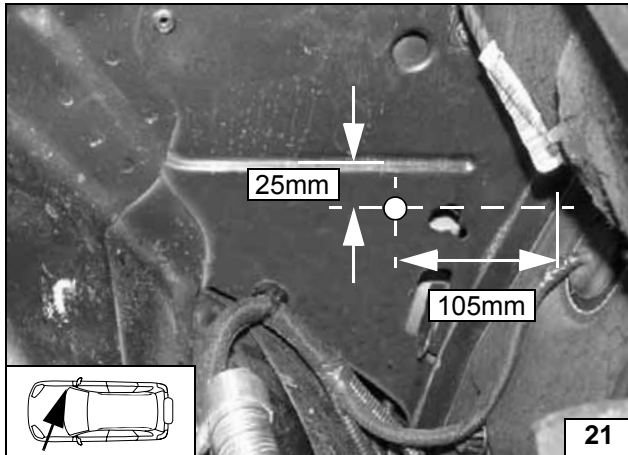
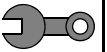


Mount exhaust silencer with M6x16 bolt on spacer nut.



- 1 Exhaust silencer

**Installa-
tion of ex-
haust
silencer**

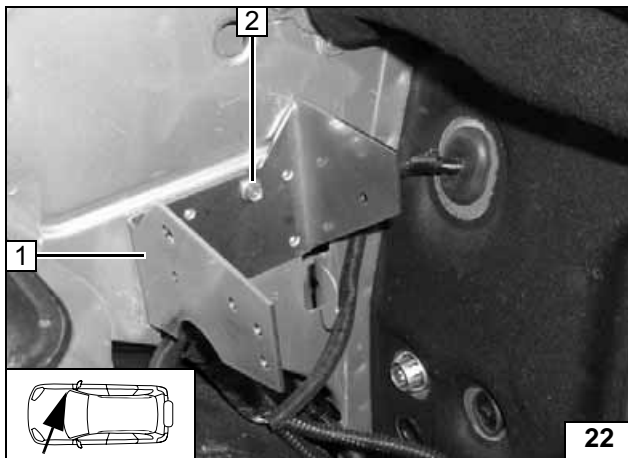


Preparing installation location

Transfer hole pattern as shown, drill 9.1mm dia. hole and install rivet nut.



Copying hole pattern

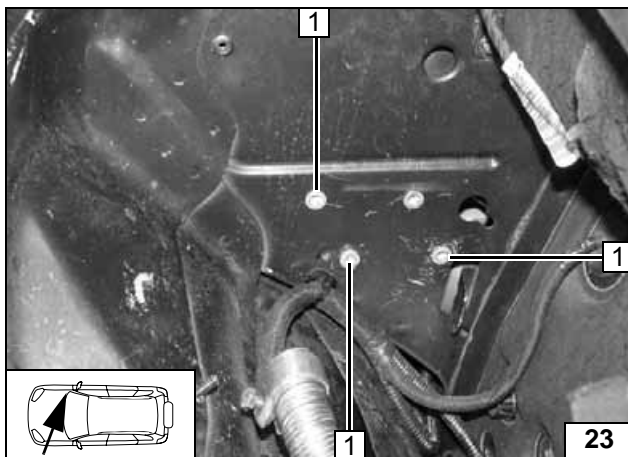


Installing bracket and transferring hole patterns.

- 1 Bracket
- 2 M6x16 bolt with internal tooth lock in M6 rivet nut



Copying hole pattern

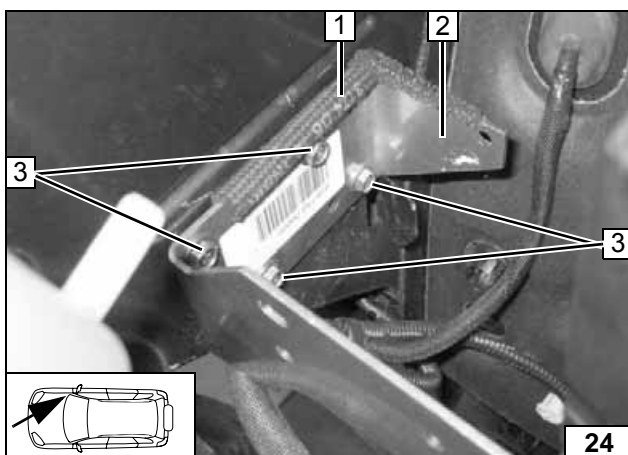


Drill 9.1mm dia. holes and install rivet nuts.

- 1 9.1 mm dia. hole, rivet nut [3x]



Installing rivet nut

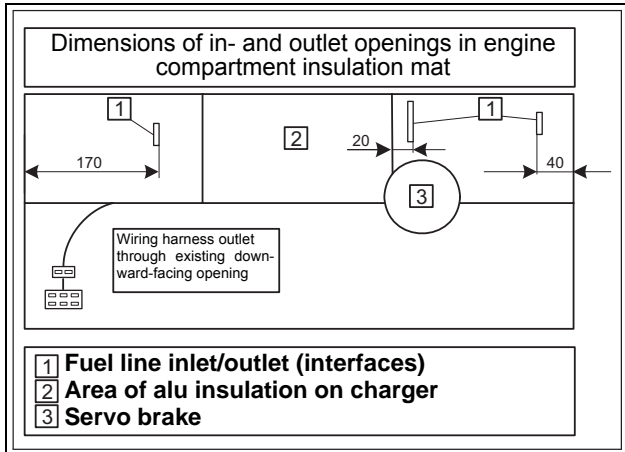
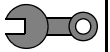


Cut included fuel hose 1 longitudinally and install as rub protection.

- 2 Bracket
- 3 M6x16 bolt with internal tooth lock [4x]



Installing bracket

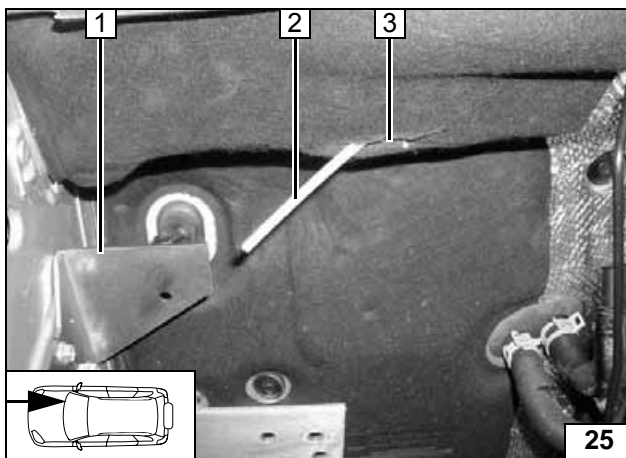


Preparing installation location

Provide engine compartment insulation mat as shown with 3 pass through openings (cuts) for wiring harness and fuel line.



Cutting out insulation mats

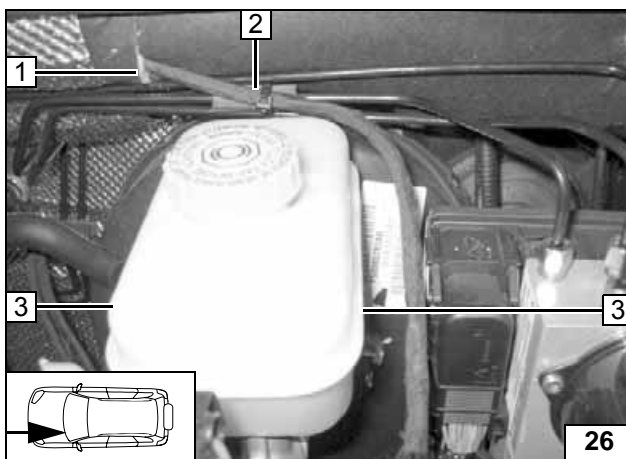


Insert Mecanyl fuel line through the incised slot and route behind firewall cover on right vehicle side. Route through incised slot to the installation location.



- 1 Bracket
- 2 Fuel line
- 3 Cover of firewall (cut)

Routing fuel lines

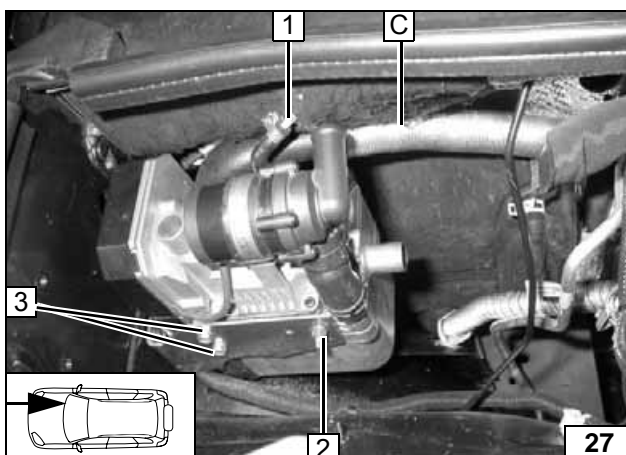


Route wiring harness with connectors between brake fluid tank and ABS unit to the incised slot and route behind the area of the alu insulation on right vehicle side. Guide through existing, downward-facing opening to the installation location.



- 1 Incision
- 2 Wiring harness of heater
- 3 Brake fluid tank

Routing wiring harness of heater



Installing heater

Turn flanged nut on stud bolt and mount 3rd E-jot screw on the firewall side. Route pre-installed coolant hose **C** along firewall. Mounting wiring harness on heater. Install heater and connect the Mecanyl fuel line to the heater.

E-jot screw tightening torque = 10 Nm

- 1 Mecanyl fuel line
- 2 M6 flanged nut on E-jot stud bolt
- 3 E-jot screw [3x], (3rd E-jot screw covered by heater)



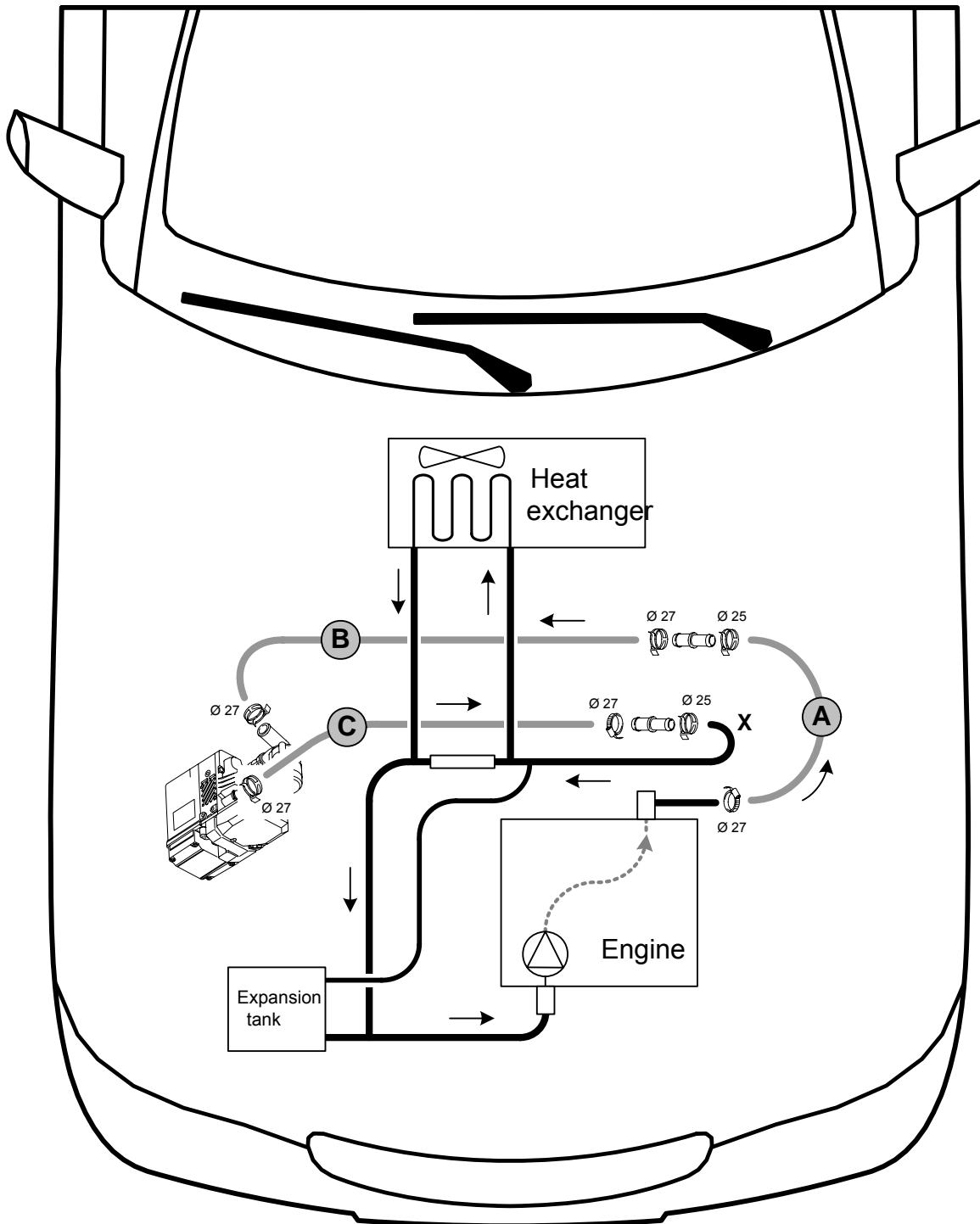
Installing heater



Coolant circuit

WARNING!

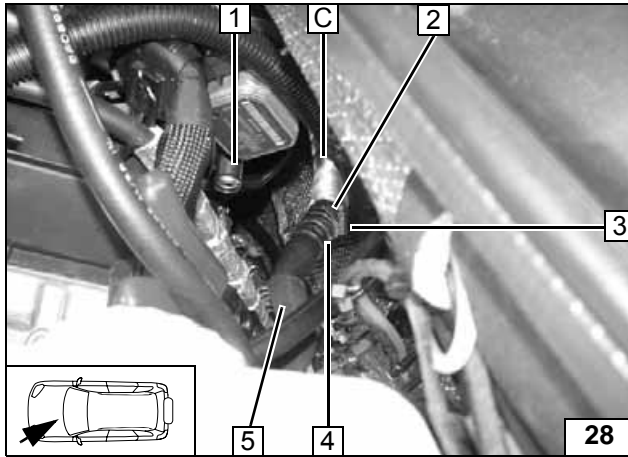
Any coolant running off should be collected using an appropriate container. Install hoses so that they are kink-free. Unless specified otherwise, always fasten using cable ties. Position clamps so that no other hose can be damaged. When installing the hose, the heater must be filled with coolant. The connection should be "inline" based on the following diagram:



Coolant routing diagram

X = original vehicle hose elbow
All connecting pipes are 18x20 dia..



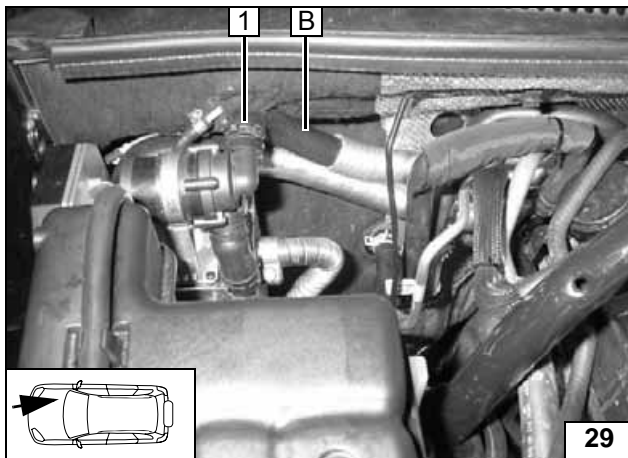


Detach original vehicle coolant hose **5** from engine outlet **1** and connect with Hose **C**. Discard hose clamp

- 2** 27 mm dia. hose clamp
- 3** 18x20 connecting pipe
- 4** 25 mm dia. hose clamp



Cutting point

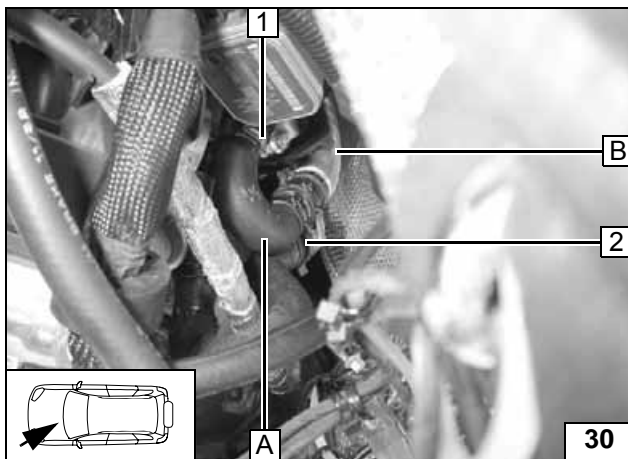


Route pre-installed hose **B** along the firewall to the cutting point. Fasten hose **B** on heater inlet.

- 1** Preinstalled 27mm dia. spring clip



**Connect-
ing heater**

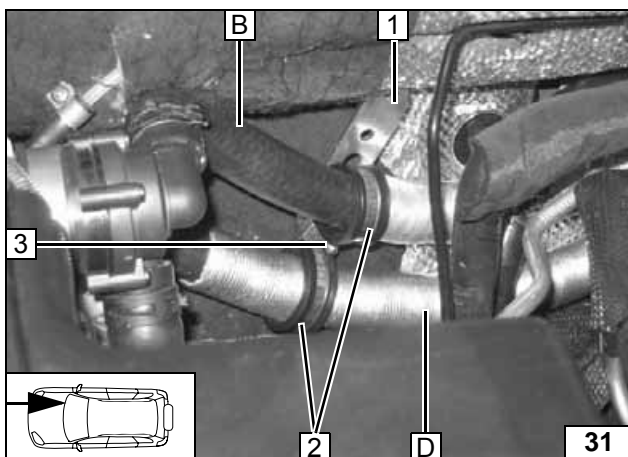


Fasten preinstalled Hose **A** on engine outlet.

- 1** 27 mm dia. hose clamp
- 2** Spacer bracket



**Connect-
ing engine
outlet**

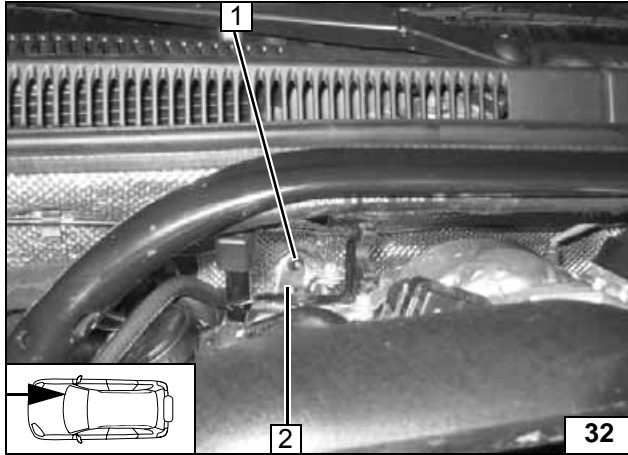


Install perforated bracket **1** as shown and slide onto the hoses at the centre of the fire-wall.

- 2** Rubber-coated pipe clamp [2x]
- 3** M6x25 bolt, M6 flanged nut



**Fasten
Hoses**

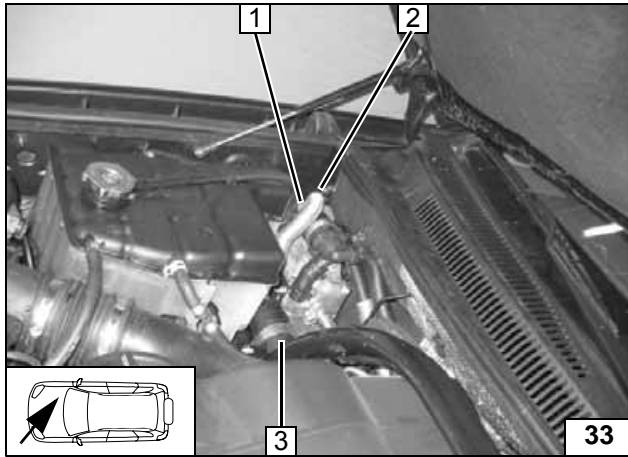
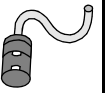


Dismantling and discarding original vehicle plastic nut.

- 1 Plastic nut
- 2 Preinstalled perforated bracket



Fastening hoses



Combustion air

Fasten air filter with M6x16 bolt and flanged nut on hole of strut brace flange. Mount combustion air hose on air filter, route to heater and fasten it on the combustion air connection piece with 25mm dia. spring clips. Watch the installation position combustion-air intake silencer, see "Installation instructions".

- 3 Silencer
- 2 Combustion air pipe
- 1 25mm dia. spring clip



**Installing
combustion air
pipe**



Fuel connection

CAUTION!

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

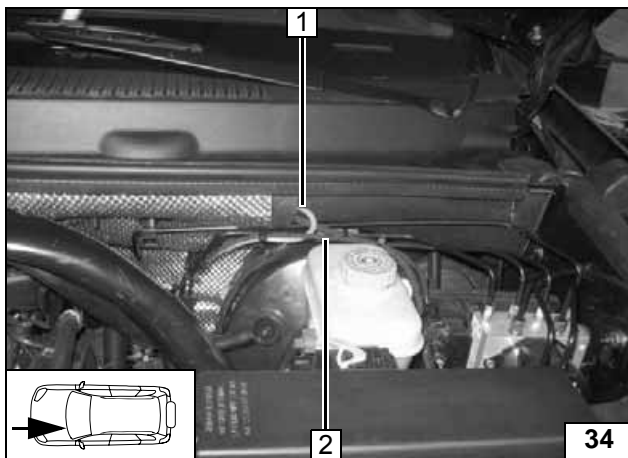
The fuel tank must be emptied before removal. Catch any fuel running off with an appropriate container.

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.

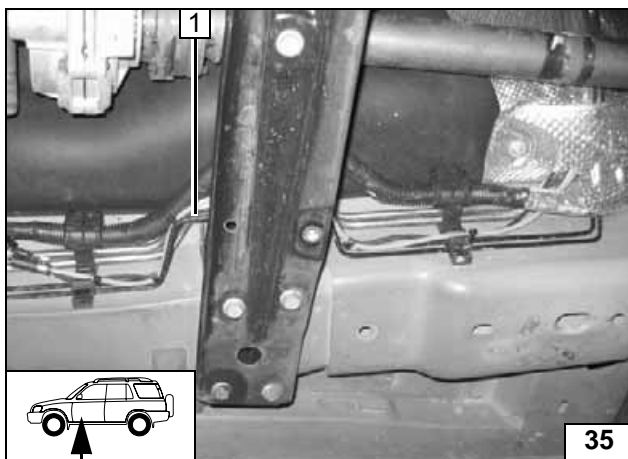
WARNING!

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



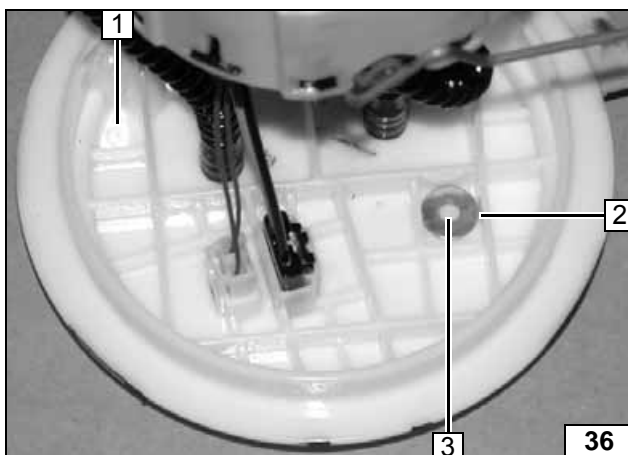
Route Mecanyl fuel line **1** together with wiring harness of metering pump **2** to the installation location of the metering pump along the original vehicle lines.

Wiring routing



1 Original vehicle lines

Wiring routing

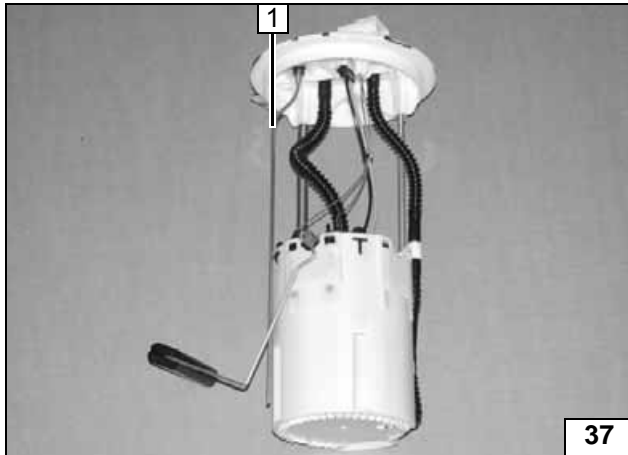


Remove fuel-tank sending unit according to manufacturer's instructions. Position large diameter washer 5mm dia. as template.

- 1** Fuel-tank sending unit
- 2** 5mm dia. large diameter washer
- 3** Drill 6 mm dia. hole



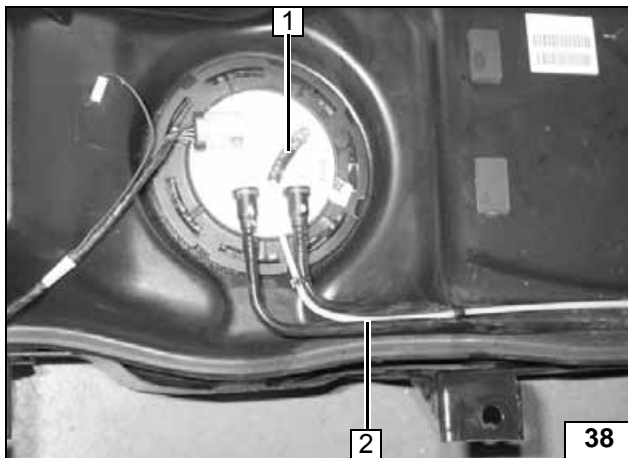
Installing fuel stand-pipe



Mould fuel standpipe 1 according to template, cut to length and install in the fuel-tank sending unit.

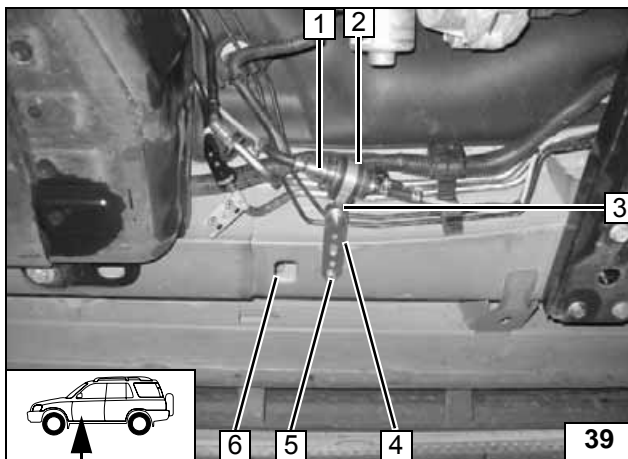


Installing fuel standpipe



- 1 Hose section, hose clamp [2x]
- 2 Mecanyl fuel line

Installing fuel standpipe



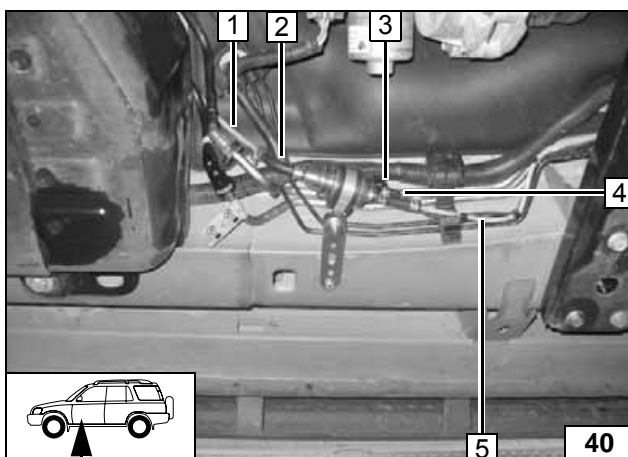
Watch the installation position of metering pump, see "Installation instructions". Installation location at the left before the vehicle fuel tank.

Guide M6 flanged nut and large diameter washer through the existing opening 6 to the bolting point.

- 4 Perforated bracket
- 5 Existing hole, M6x20 bolt
- 1 Metering pump
- 2 Rubber-coated pipe clamp
- 3 Silent block, M6 flanged nut [2x] on perforated bracket



Installation location of metering pump



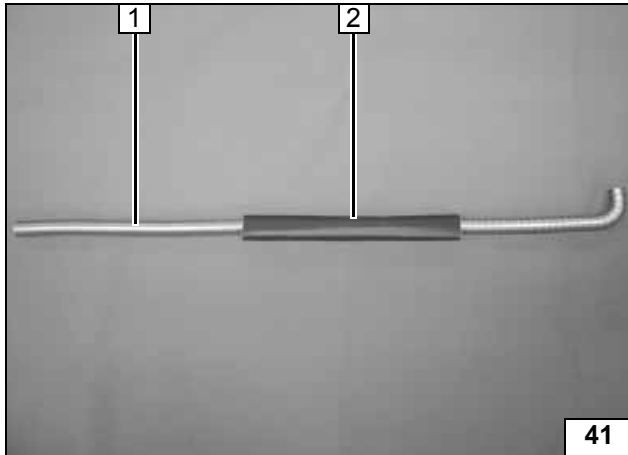
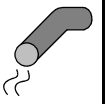
Fuel line of heater on pressure side of metering pump [side with connector].

Fuel line of fuel standpipe on intake side of metering pump [side without connector]. Check the position of the components; adjust if necessary. Check that they have freedom of movement.

- 1 Mecanyl fuel line of fuel standpipe
- 2 90° moulded hose, hose clamp [2x]
- 3 Wiring harness of metering pump, single wire seal, tab connector, connector housing
- 4 Hose section, hose clamp [2x]
- 5 Mecanyl fuel line of heater



Connecting metering pump



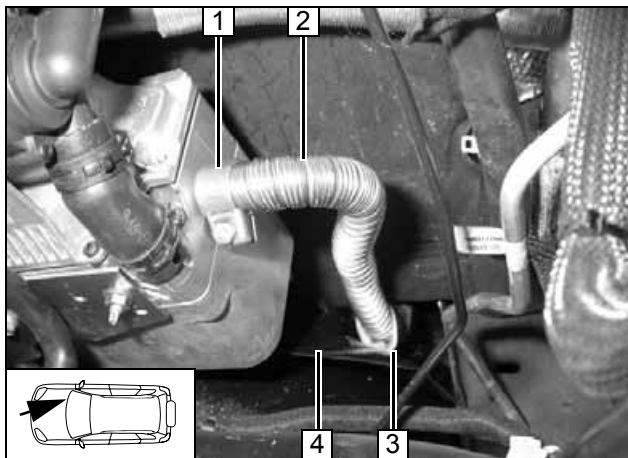
Exhaust connection

Angle down shortened exhaust pipe at end by 90° and mount protective sleeving on it.

- 1 Prepared exhaust pipe a = 970mm
- 2 Protective sleeving



Preparing exhaust pipe

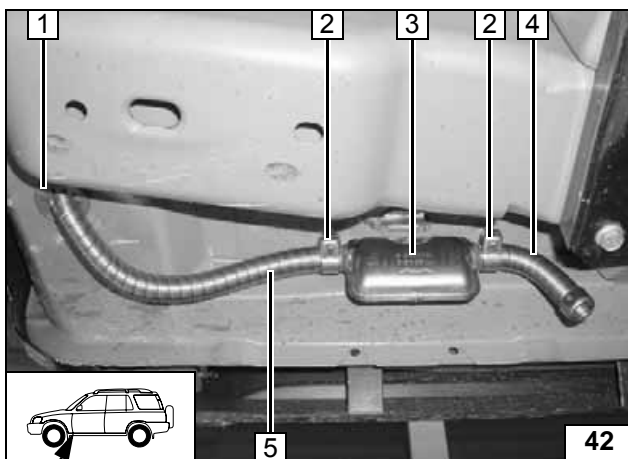


Introduce exhaust pipe behind wheel-well inner panel into A pillar and take it out through body opening on underbody. Position protective sleeving in the area of the wheel-well inner panel.

- 2 Exhaust pipe
- 1 Hose clamp
- 3 Protective sleeving
- 4 Wheel-well inner panel



Installing exhaust pipe on heater

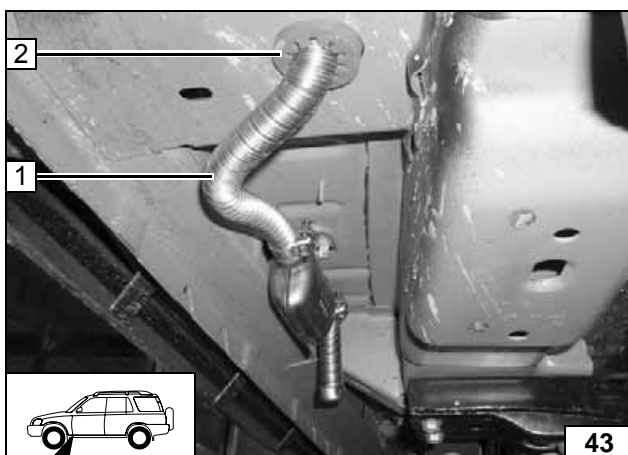


Slide on rubber isolator with groove from bottom and insert in body opening. Fasten exhaust pipe with hose clamp on silencer. Exhaust end section with hose clamp on silencer.

- 1 Red (rt) rubber isolator with groove
- 5 Exhaust pipe
- 3 Exhaust silencer
- 4 Exhaust end section
- 2 Hose clamp [2x]



Installing exhaust pipe and end section

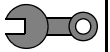


Aligning exhaust pipe and securing it against rattling. Fixing rubber isolator with groove in the body opening.

- 1 Exhaust pipe
- 2 Red (rt) rubber isolator with groove



Aligning exhaust pipe



Final Work

WARNING!

Reassemble the disassembled components in reverse order. Check all hoses, clamps and all electrical connections for firm seating. Insulate all loose lines and tie back.

Only use manufacturer-approved coolant. Spray the heater components with anti-corrosion wax (Tectyl 100K, Order No. 111329).

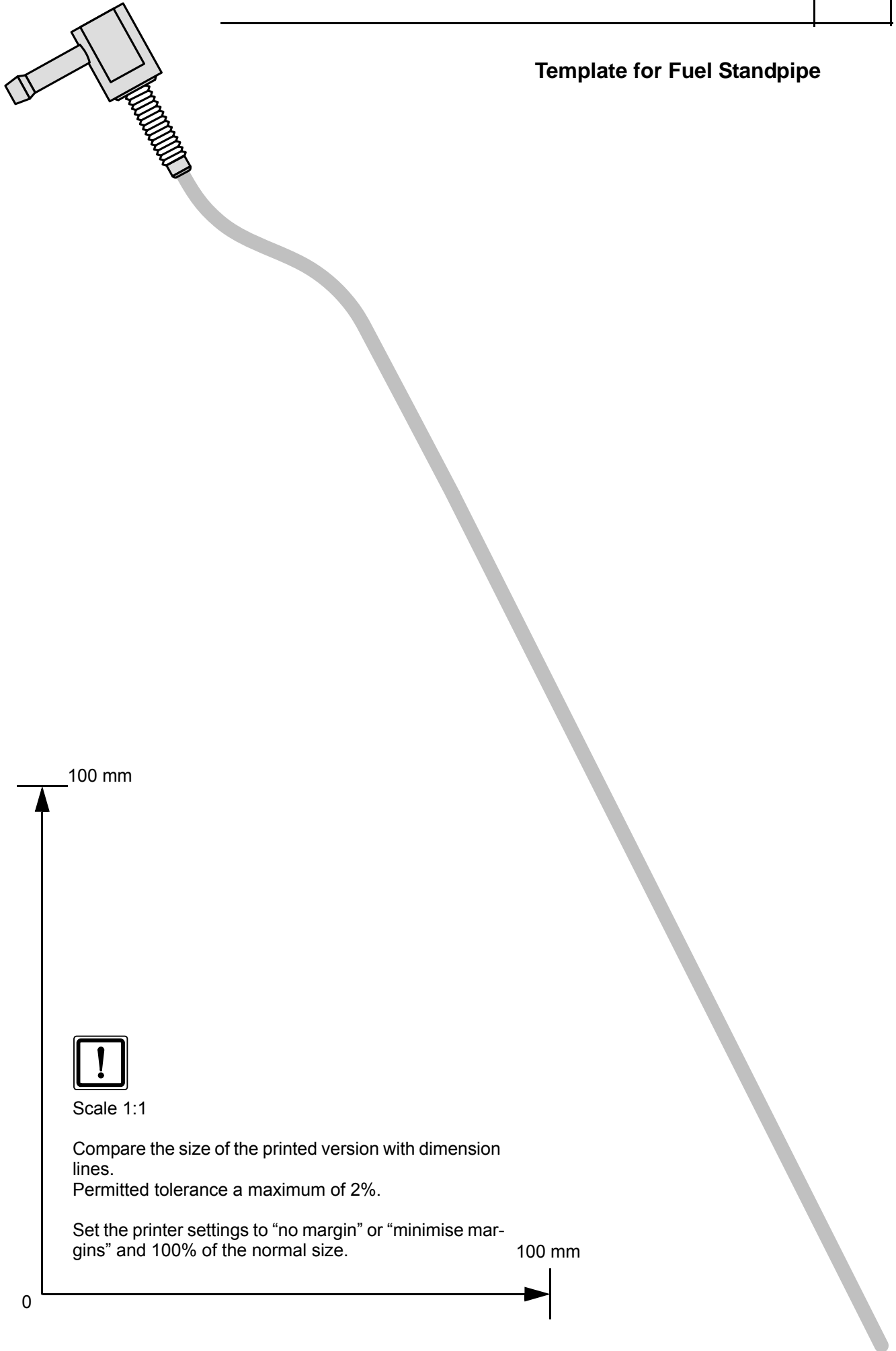
- **Connect the battery**
- **Fill and bleed the coolant circuit according to the vehicle manufacturer's specifications.**
- **Set digital timer, teach telestart transmitter**
- **Make settings on A/C control panel according to the "Operating Instructions for End Customer".**
- **Place sticker "Switch off parking heater before refilling" in the area of the filler neck**
- **For initial startup and function check, please see Installation Instructions**



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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 "minimise margins" and 100% of the normal size.

0

100 mm

Operating Instructions for End Customer

Please remove page and add to the vehicle operating instructions.

Note:



We recommend matching the heating time to the driving time.
Heating time = driving time

Example:

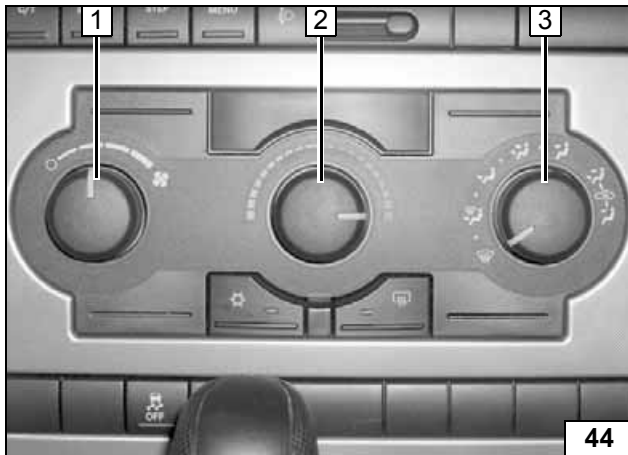
For a driving time of approx. 20 min. (in one direction), we recommend not exceeding a switch-on time of 20 min.

For vehicles with passenger compartment monitoring it must be deactivated in addition to making vehicle adjustments for the heating operation.

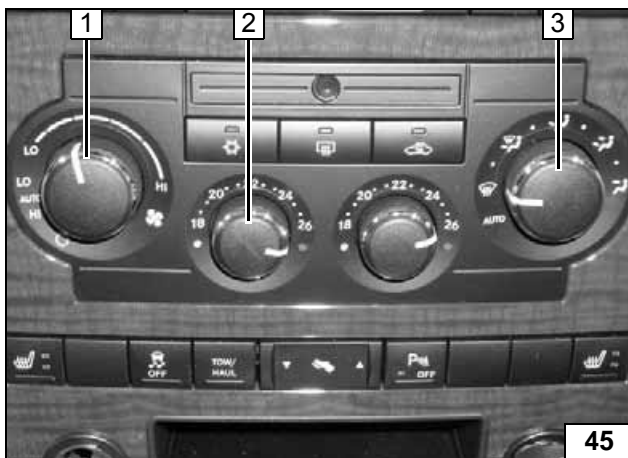
Instructions for deactivation are given in the Operating Manual of the vehicle!

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

Before parking the vehicle, make the following settings:



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



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



Manual air conditioning

Automatic air-conditioning