

Water heater



Thermo Top C Parking heater  00 0002

Thermo Top E Parking heater  00 0003

Installation documentation

Hyundai Tucson

2.7 Petrol

from Model Year 2005

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

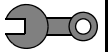
Manufacturer	Model	Type	EG-BE No./ABE
Hyundai	Tucson	JM	e4*2001 / 116*0087*00

Engine type	Engine model	Output in kW	Displacement in cm
G6BA	Petrol	129	2656

Vehicle types, engine types and equipment variants not listed in these installation instructions have not been tested.

However, installation according to these installation instructions may be possible.

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



Heater/Installation Kit

Quantity	Description	Order No.:
1	Retail accessories <i>Thermo Top E / C</i>	See price list
1	Installation kit Hyundai Tucson 2005 2.7 Petrol	1303234A
1	Heater control	See price list

Heater recommended for the respective vehicle class:

Vehicle	Heater
Compact car	Thermo Top E
Mid-size car, station wagon	Thermo Top C

The selection of the heater is based on the passenger compartment size of the vehicle and the level of comfort required by the customer.



Foreword

This installation documentation applies to Hyundai Tucson 2.7 Petrol vehicles - for validity, see page 2 - from model year 2005 and later, assuming technical modifications to the vehicle do not affect installation, any liability claims excluded. Depending on the vehicle version and equipment, modifications may be necessary during installation with respect to this installation documentation.

However, where this is the case the stipulations in the "installation documentation", the "operating instructions" and the "installation instructions for the *Thermo Top E / C* should 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. Insulate loose wire ends and tie back. 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
- Riveting 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



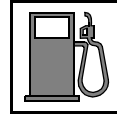
Electrical system



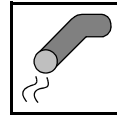
Coolant circuit



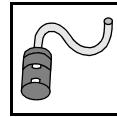
Fuel



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.



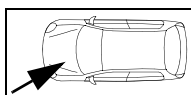
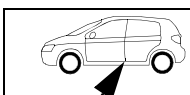
Specific risk of fire or explosion.



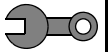
Reference to general installation instructions of Webasto components or to the manufacturer's vehicle-specific documents.



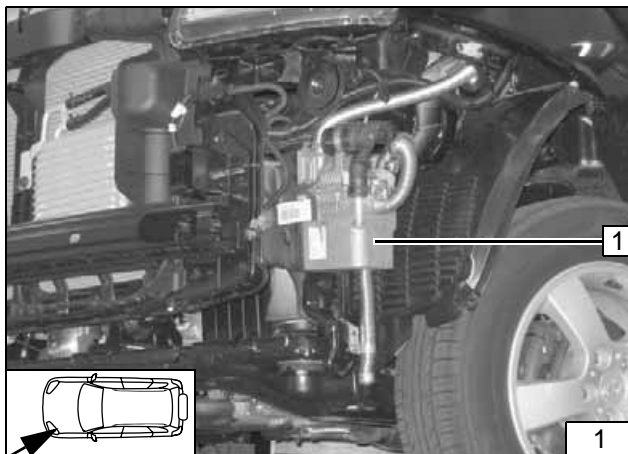
Reference to a special technical feature.



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

**Warning!**

- Disconnect the battery "earth" or "ground" connection.
- 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.
- Remove the battery.
- Remove the entire air filter
- Open the fuel tank cap, ventilate the tank.
- Close the fuel tank cap again.
- Remove the bumper
- Remove the underride protection
- Detach rear left seat
- Open the left tank-fitting service lid.
- Remove trim and centre console
- Only with automatic air-conditioning:Release A/C control panel

**Heater installation location**

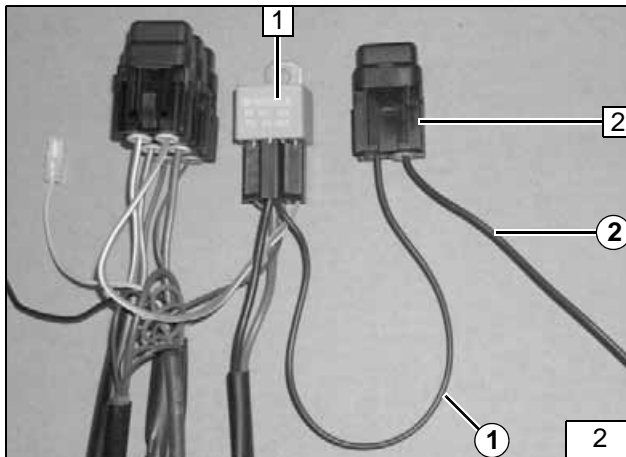
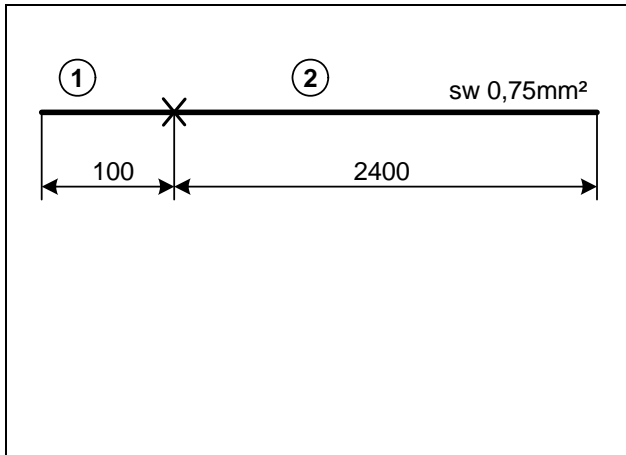
(1) Heater

Installation location



Preparing electrical system

Only with automatic air-conditioning



Establish connections according to wiring diagram of automatic air-conditioning with attached flat spring contacts, single-wire sealings and tab receptacle.

- (1) Relay K3, connection 30
- (2) Fuse holder F4 with fuse 3A

Cut provided 2500 mm long protective sleeving to length and slide on to wire (2).

Cutting wires to length

Connecting fuse F4

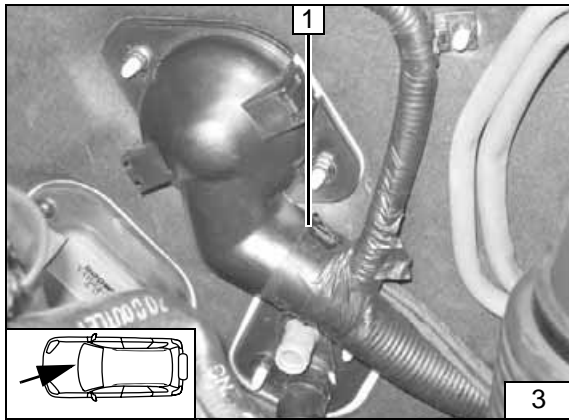


Electrical system



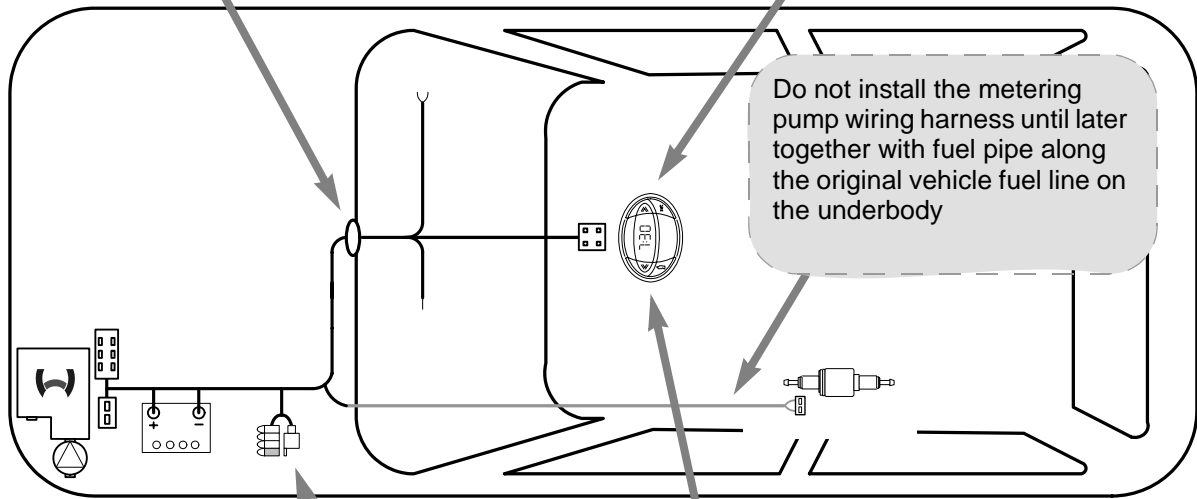
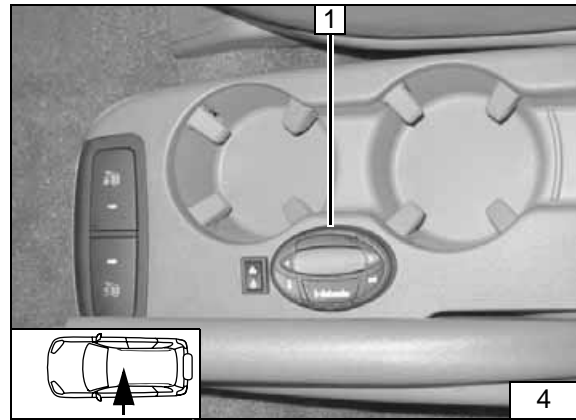
Wiring harness pass through

- (1) Protective rubber plug

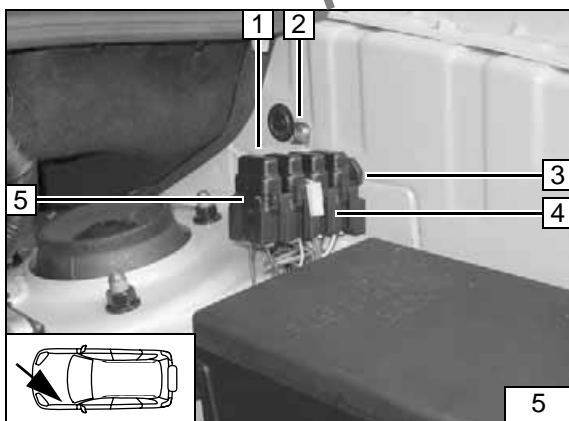


Digital timer

- (1) Digital timer

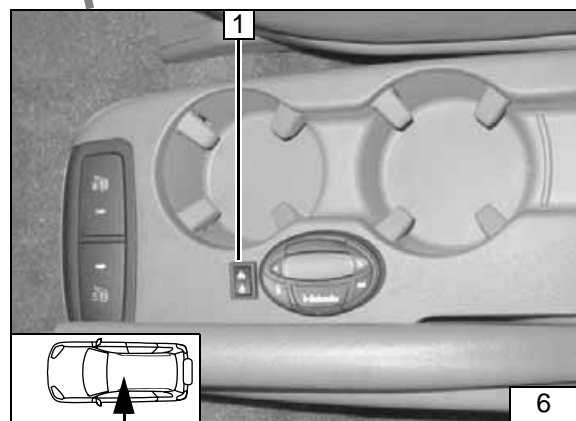


Electrical diagram



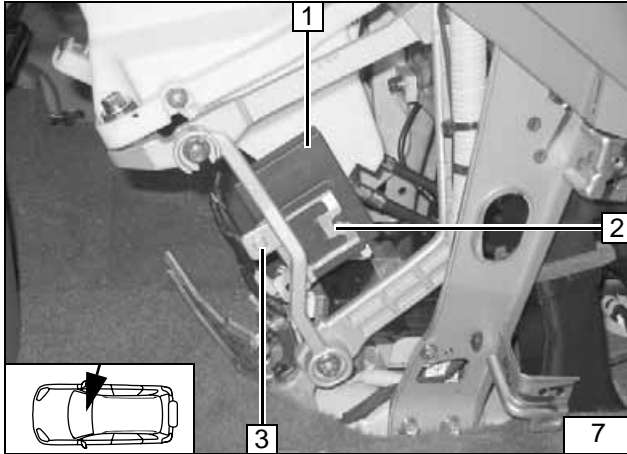
Fuse holder, K3 relay

- (1) K3 relay
- (2) 4 mm dia. hole, 5.5x9.5 self-tapping screw
- (3) Retaining plate, 4 mm dia. hole, 5.5x9.5 self-tapping screw
- (4) Fuse holder plugged in
- (5) Fuse F4 (only with automatic air-conditioning)



Summer/winter switch option

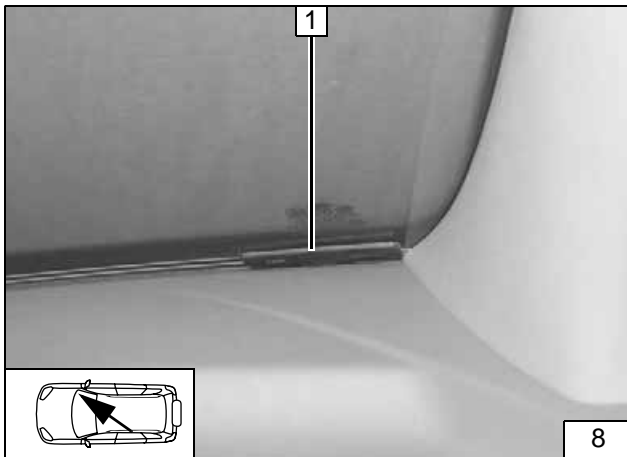
- (1) Summer/winter switch, 12 mm dia hole.



Remote option (Telestart)

- (1) Receiver
- (2) Bracket
- (3) M5 bolt, nut

Installing receiver

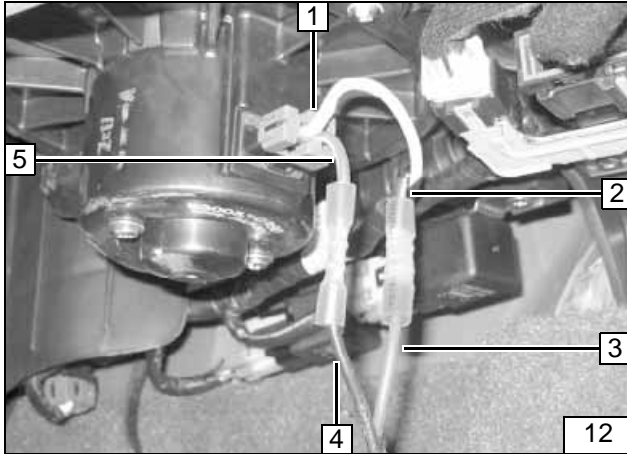


- (1) Antenna

Installing antenna

Establish all connections according to provided general EBA and fasten wires with cable ties





Fan controller for manual air conditioning

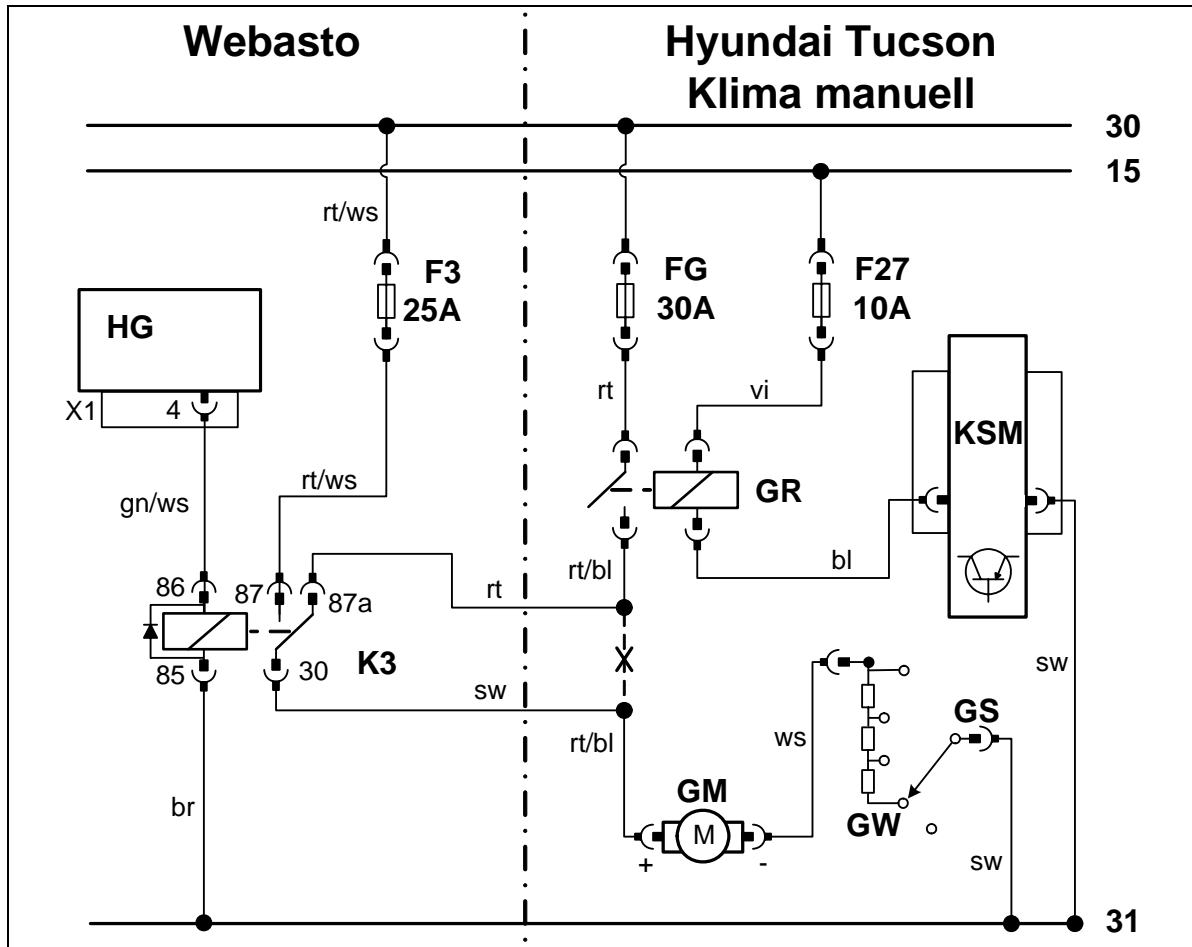
Connection to 2-pin connector (1) from the fan motor.

Make connections as shown in wiring diagram with the yellow connectors provided.

- (1) Connector
- (2) Red/blue (rt/bl) wire from original vehicle fan relay
- (3) Red (rt) wire from K3/87a
- (4) Black (sw) wire from K3/30
- (5) Red/blue (rt/bl) wire of fan motor



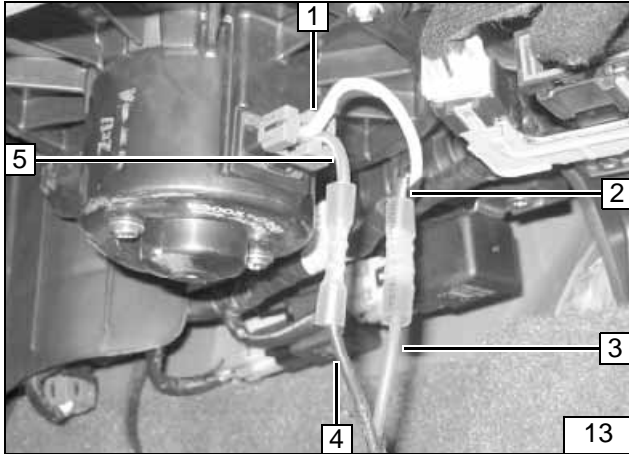
Fan controller



Manual air-conditioning wiring diagram

Webasto components		Hyundai components		Colours and symbols	
HG	Heater TT-C/E	GM	Fan motor	rt	red
X1	6-pin heater connector	GR	Fan relay	ws	white
F3	Fuse	KSM	Air-conditioning control module	sw	black
K3	Fan relay	GW	Fan resistor	br	brown
		GS	Fan switch	gn	green
		FG	Fan fuse	bl	blue
		F27	Fuse 27	vi	violet
				X	Cutting point
				Wiring colours may vary.	

Legend

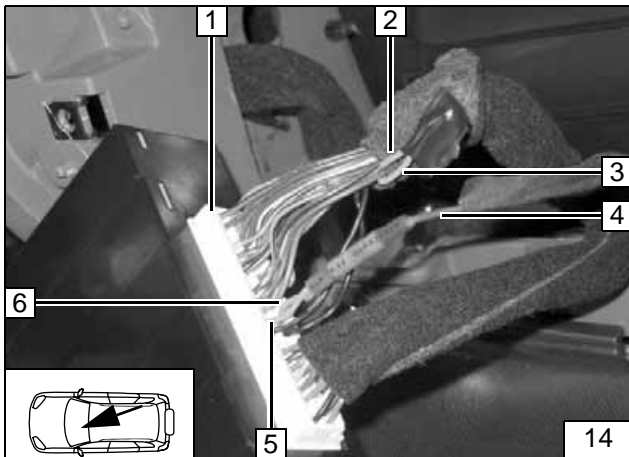


Automatic air-conditioning fan controller

Connection of fan motor on 2-pin connector (1). Make connections as shown in wiring diagram with the yellow connectors provided.

- (1) Connector
- (2) Red/white (rt/ws) wire from original vehicle fan relay
- (3) Red (rt) wire from K3/87a
- (4) Black (sw) wire from K3/30
- (5) Red/white (rt/ws) wire of fan motor

Fan controller



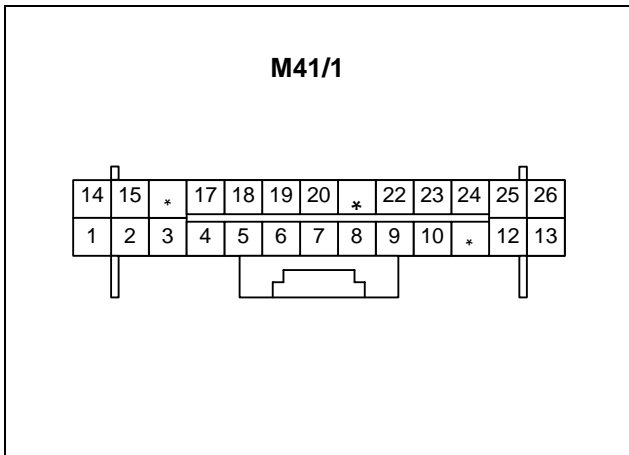
Connection of air conditioning control module on 26-pin connector M41/1 (1). Make connections according to wiring diagram with provided red shrink connector (crimp and shrink).

- (1) Connector M41/1
- (2) Violet (vi) wire from F27
- (3) Violet (vi) wire from F27
- (4) Black (sw) wire from F4
- (5) Violet (vi) wire to connector M41/1 Pin 25
- (6) Violet (vi) wire to connector M41/1 Pin 12

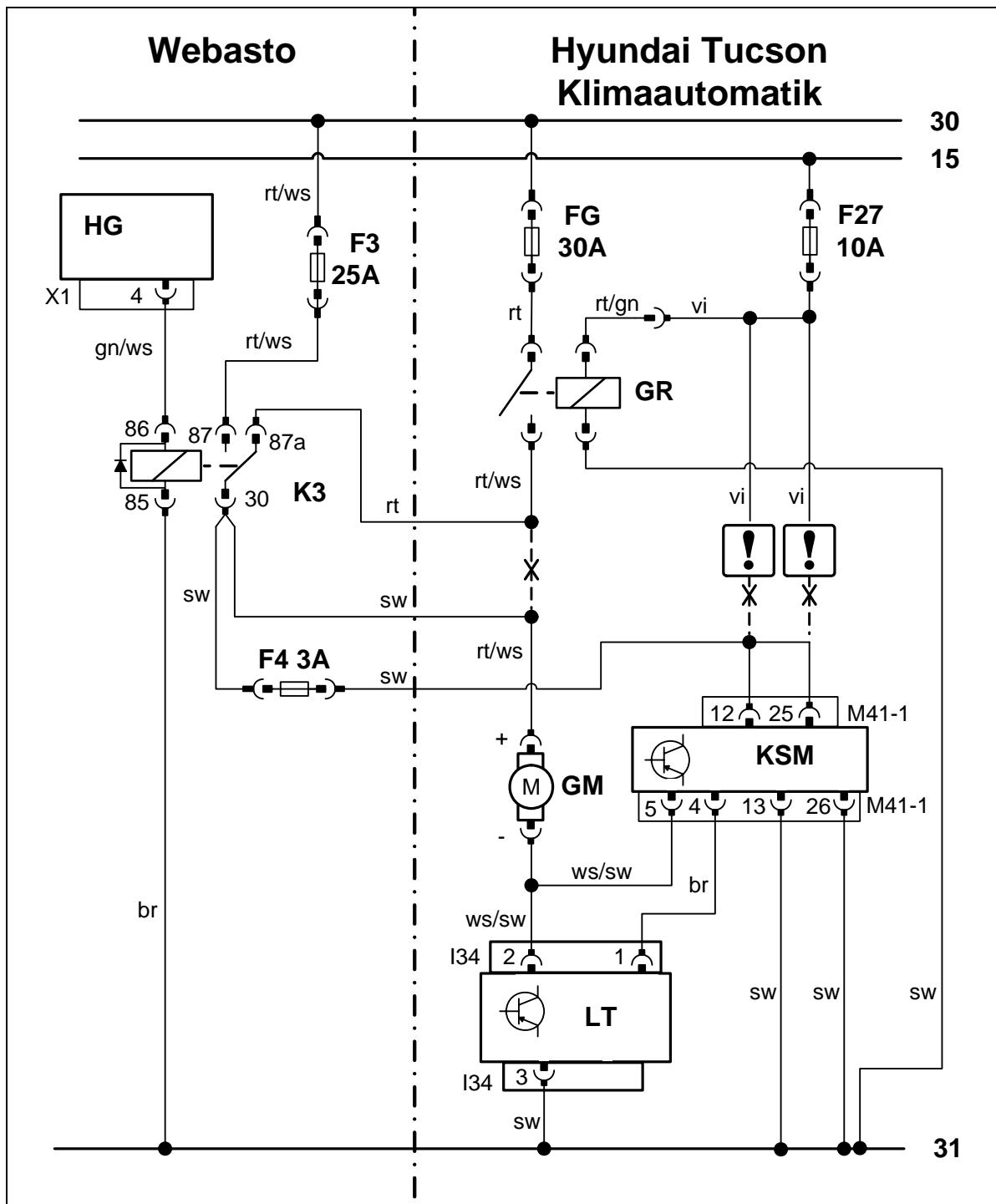
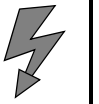
Fan controller



Contact side perspective



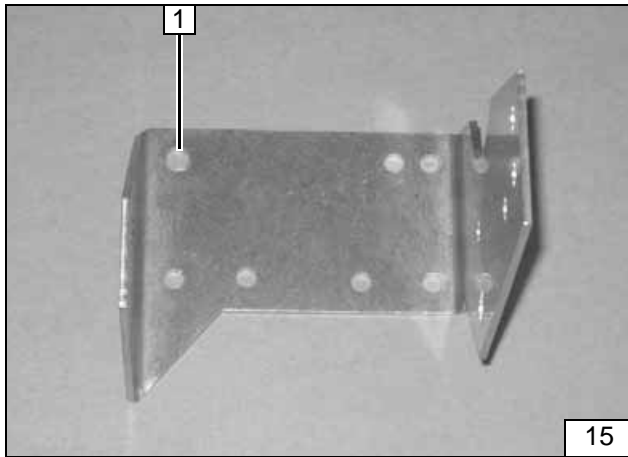
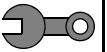
Connector view



Automatic air-conditioning wiring diagram

Webasto components		Hyundai components		Colours and symbols	
HG	Heater TT-C/E	GM	Fan motor	rt	red
X1	6-pin heater connector	GR	Fan relay	ws	white
F3	Fuse	KSM	A/C control module	sw	black
K3	Fan relay	LT	Power transistor	br	brown
		FG	Fan fuse	gn	green
		F27	Fuse 27	vi	violet
		M41-1	25-pin connector		
		I34	3-pin connector		
					Insulate wire end and tie back
				X	Cutting point
				Wiring colours may vary.	

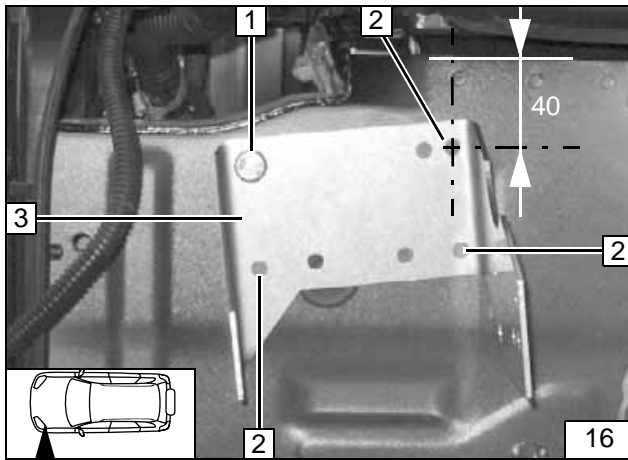
Legend



Preparing installation location

(1) 8.5mm dia. hole drilled

Preparing bracket

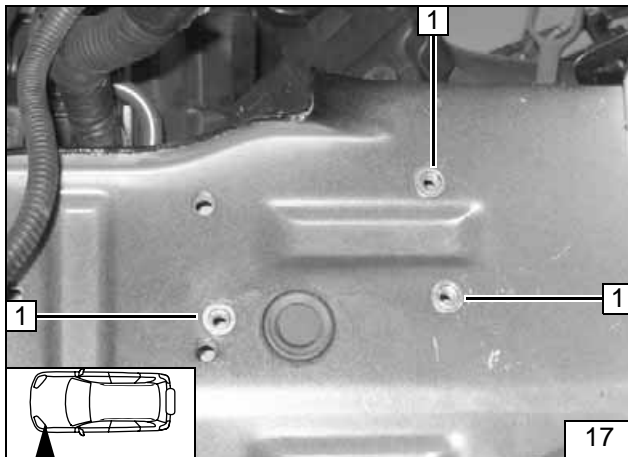


(3) Bracket

(1) M8x20 bolt (available thread)

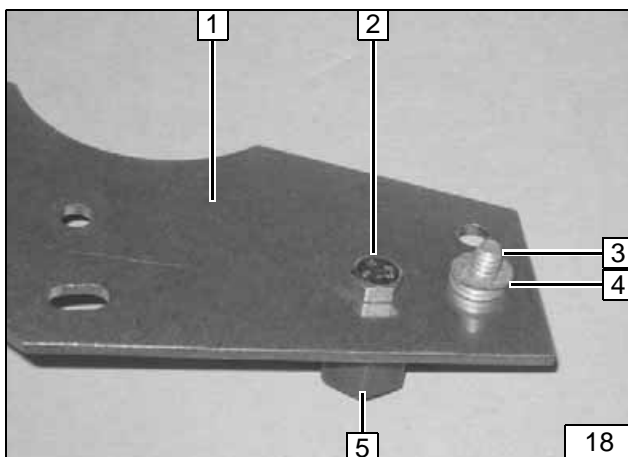
(2) Copy hole pattern [3x]

Copying hole pattern



(1) 9.1 mm dia. hole; mount rivet nuts [3x]

Installing rivet nuts



(1) Bracket

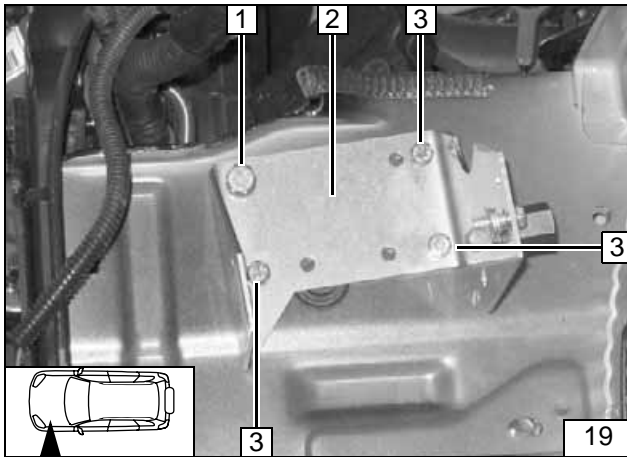
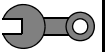
(5) M6x20 spacer nut

(2) M6x12 bolt

(3) Ejet screw (from below)

(4) 2 washers, pin lock (from top)

Premount bracket

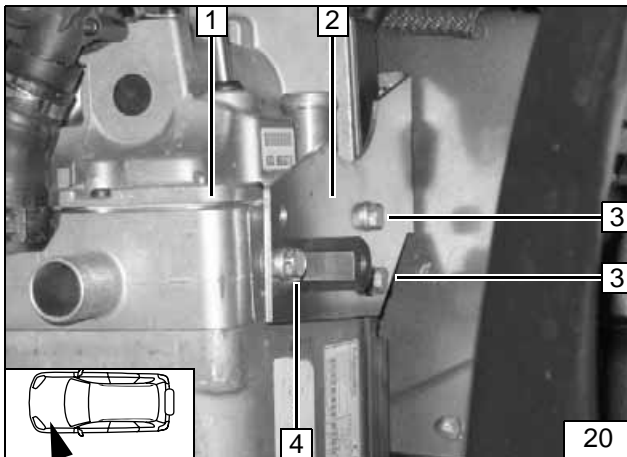


At Position **(1)** place a washer between bracket **(2)** and body!

- (2)** Bracket
- (1)** M8x20 bolt, spring lockwasher, washer (between bracket and body)
- (3)** M6x20 bolt, spring lockwasher [3x]



Installing bracket



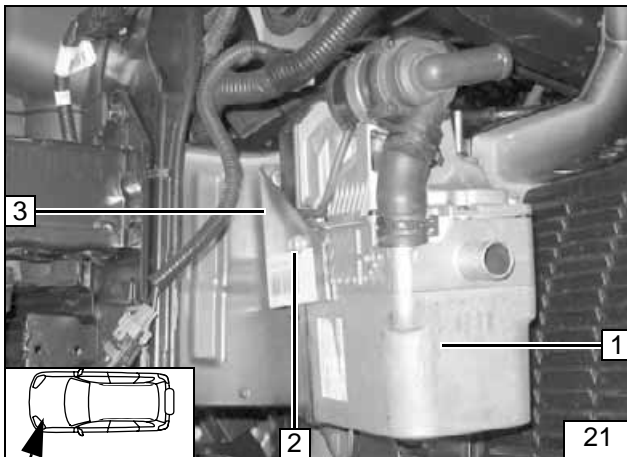
Installing heater

Ejot screws, 10 Nm tightening torque
Plug in wiring harness before installing the heater

- (1)** Heater
- (2)** Bracket
- (3)** E-jot screw [2x]
- (4)** E-jot screw [premounted]



Installing heater



Ejot screw, 10 Nm tightening torque

- (1)** Heater
- (3)** Bracket
- (2)** E-jot screw



Installing heater



Fuel

CAUTION!

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

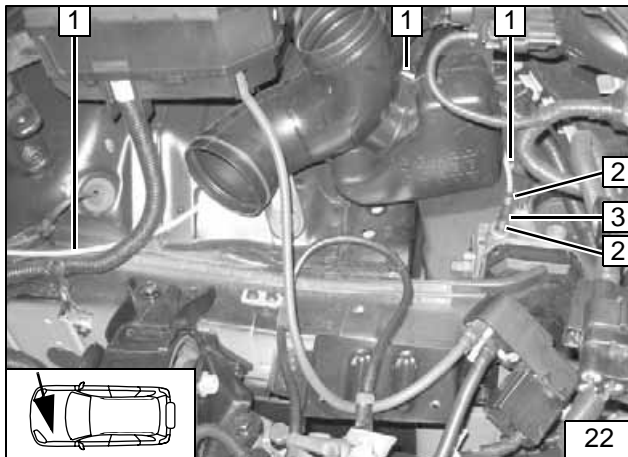
Catch any fuel running off in a suitable container.

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!

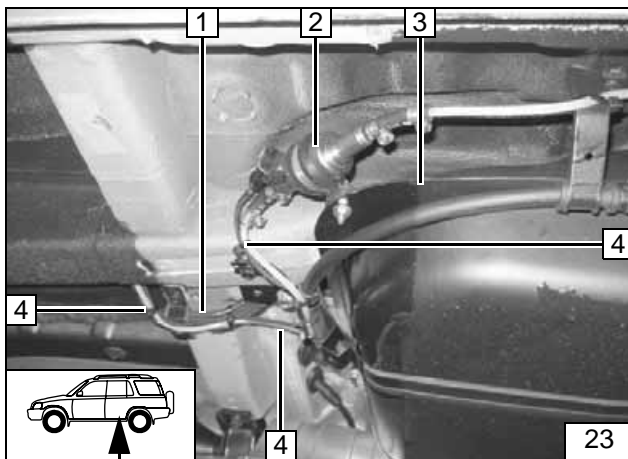
The fuel line and wiring harness are routed to the metering pump as shown in the wiring harness routing diagram.



- (1) Mecanyl fuel line
- (2) 10 mm dia. hose clamp [2x]
- (3) Hose section



Conne-
ction to
heater

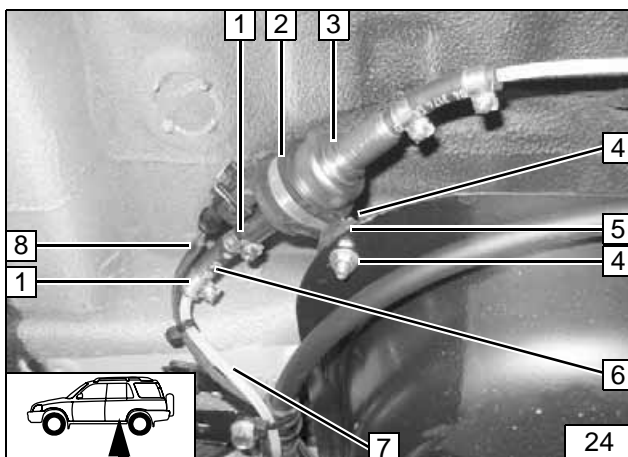


Installation location of metering pump (2) is on left in front of vehicle fuel tank.

- (1) Original vehicle fuel lines
- (2) Metering pump
- (3) Vehicle fuel lines
- (4) Wiring harness of metering pump and Mecanyl fuel line



Routing
wires

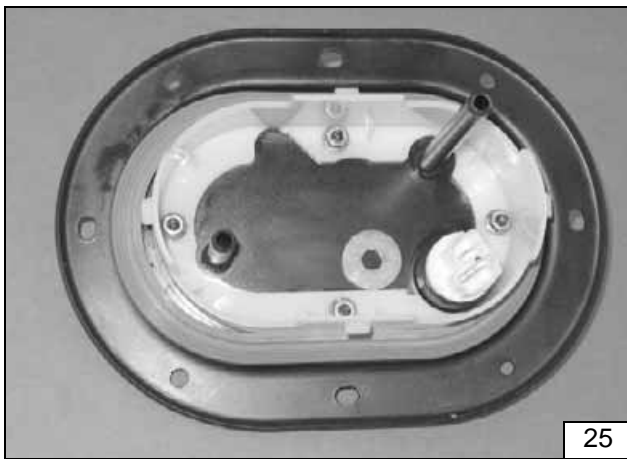


Ensure proper installation position of metering pump, see "Installation Instructions" Fuel line from heater on pressure side of metering pump (side with connector).

- (3) Metering pump
- (2) Rubber-coated pipe clamp
- (5) Silent block
- (4) M6 Flanged nut [2x]
- (8) Wiring harness, plug-in contacts, single-wire seals, connector housing
- (7) Fuel line from heater
- (1) 10 mm dia. hose clamp [2x]
- (6) Hose section



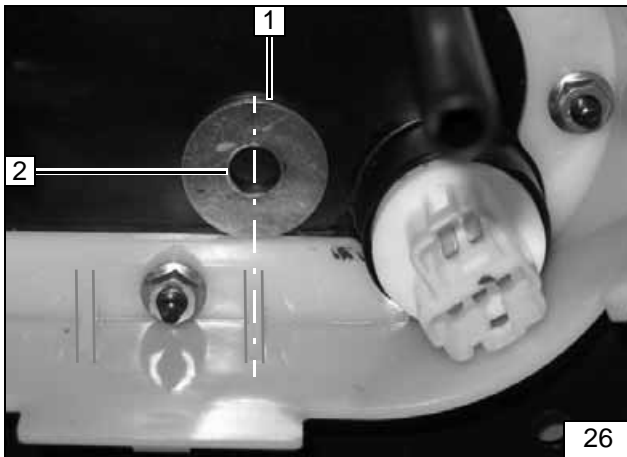
Installing
metering
pump



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



Removing and dismantling fuel tank sending unit

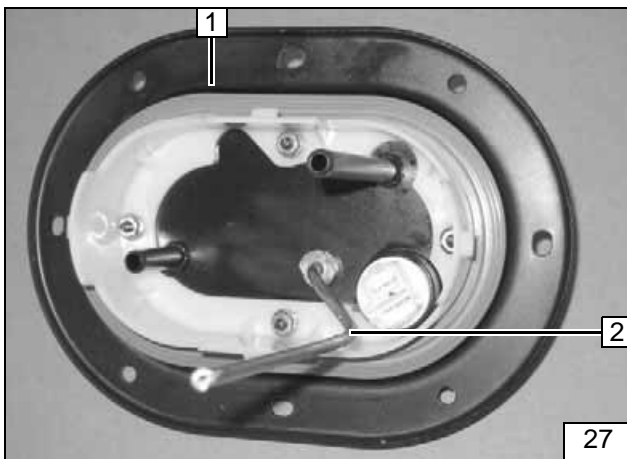


Place 22 mm dia. large diameter washer (1) as shown on fuel tank sending unit.

- (1) 22mm dia. large diameter washer
- (2) Copy hole pattern, 6.0mm dia. hole



Drilling hole in fuel-tank sending unit

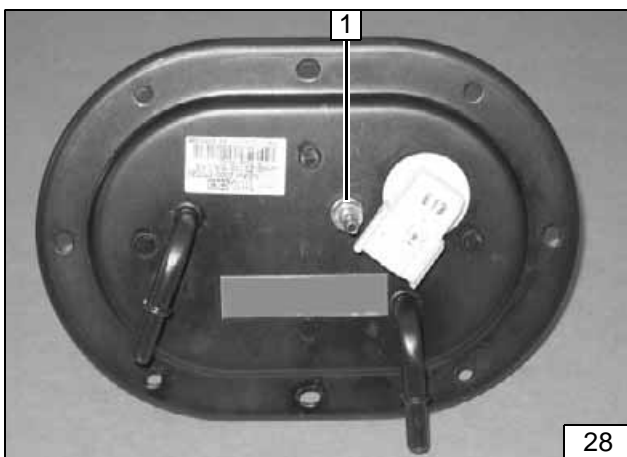


Shape fuel standpipe (2) according to template, cut to length and install, see "installation instructions".

- (1) Fuel tank sending unit
- (2) Fuel standpipe



Inserting fuel standpipe

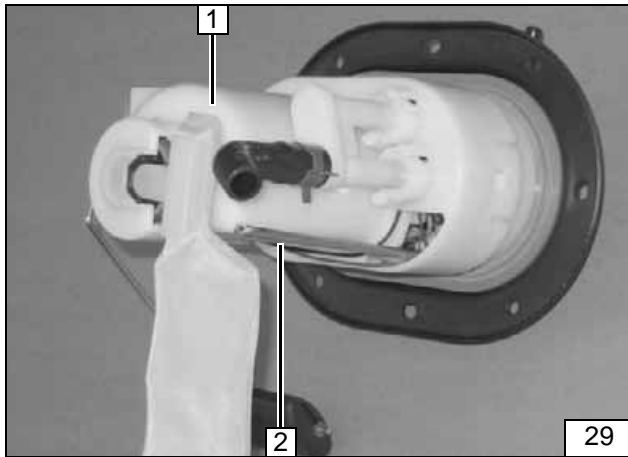


Mount fuel standpipe (1), see "Installation Instructions"

- (1) Fuel standpipe



Mounting fuel standpipe

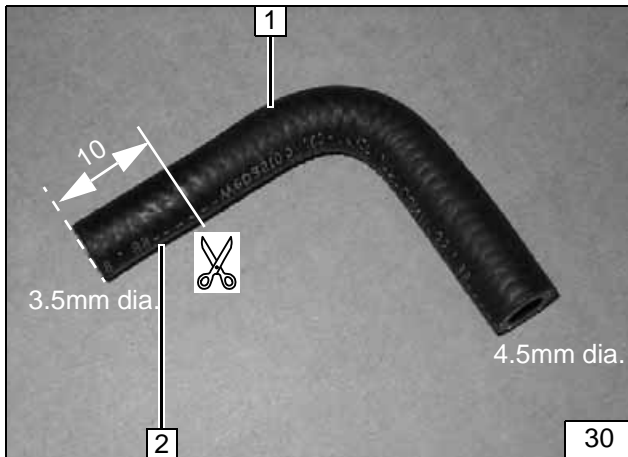


Complete fuel tank sending unit **(1)** in accordance with manufacturer's instructions. Ensure that the fuel standpipe **(2)** can move freely. Correct position if necessary

- (1) Fuel tank sending unit
- (2) Fuel standpipe

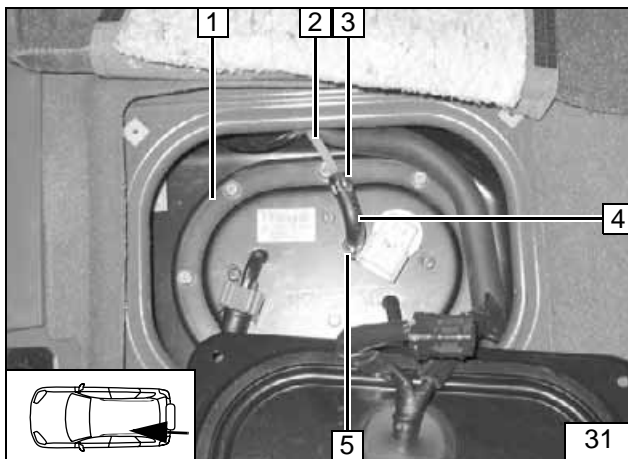


Completing fuel tank sending unit



- (1) Moulded hose 3.5mm dia. x 4.5mm dia
- (2) Discard cut-off section

Shorten moulded hose

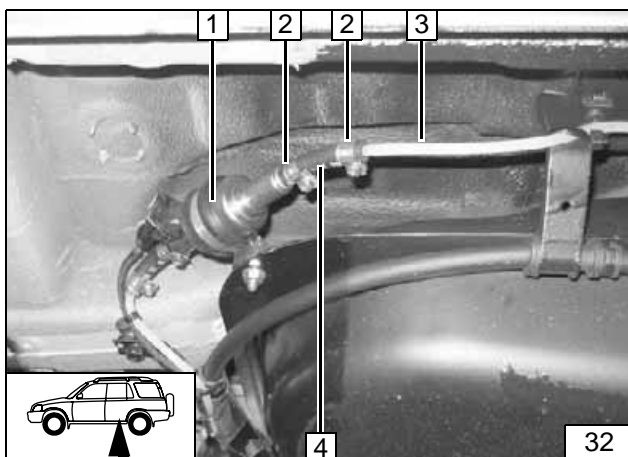


Install fuel-tank sending unit **(1)** in accordance with manufacturer's instructions. Fasten moulded hose **(4)** with shortened side on fuel standpipe

- (1) Fuel tank sending unit
- (2) Remaining section of fuel line
- (3) 10 mm dia. Caillau clamp
- (4) Moulded hose
- (5) 9mm dia. Caillau clamp



Installing fuel-tank sending unit



Fuel line from fuel standpipe on intake side of metering pump (side without connector).

- (1) Metering pump
- (3) Fuel line
- (4) Hose section
- (2) 10 mm dia. hose clamp [2x]



Connection to metering pump

Align Mecanyl lines and wiring harness of metering pump along entire length and fasten with cable ties



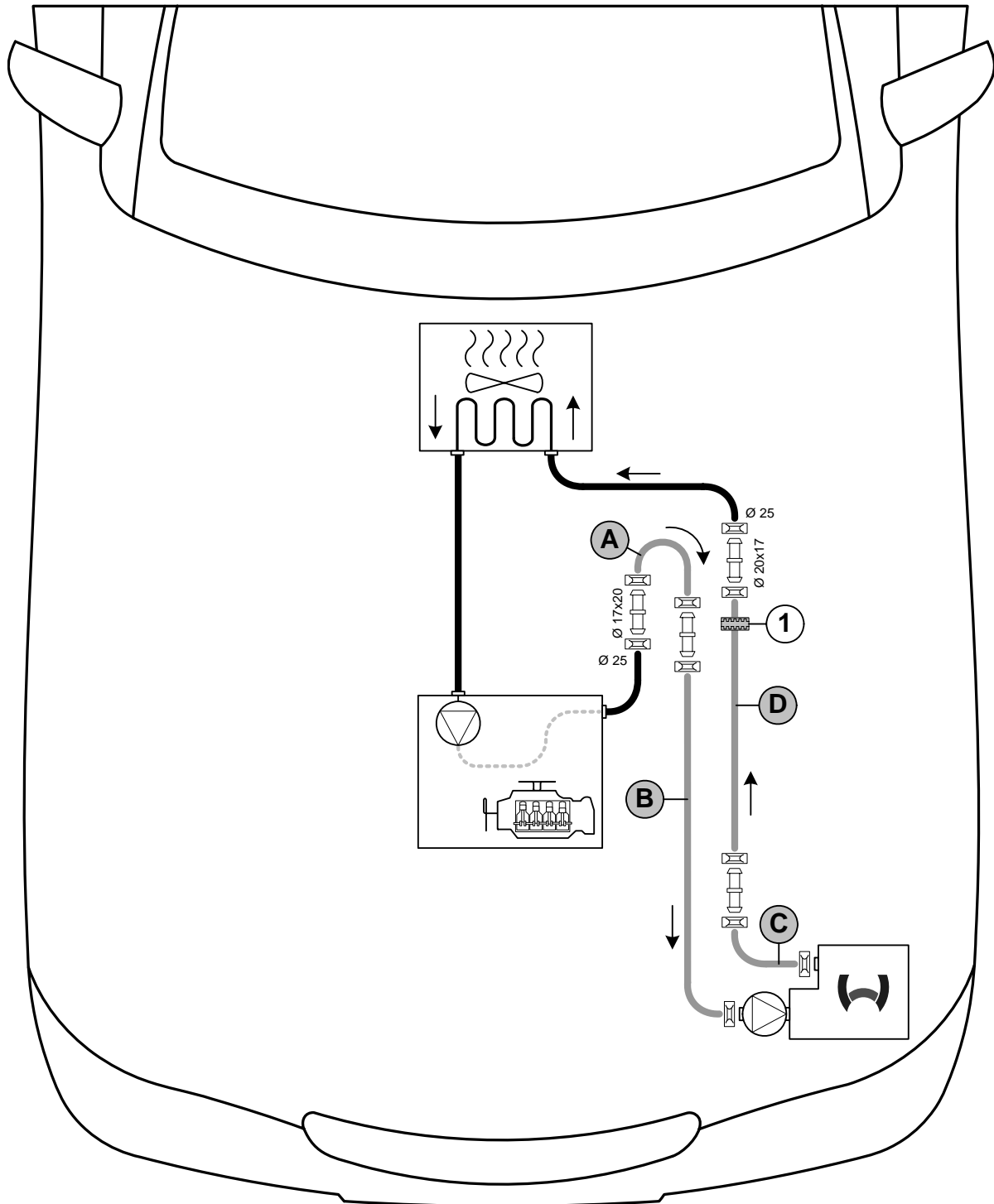


Coolant circuit





WARNING!

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

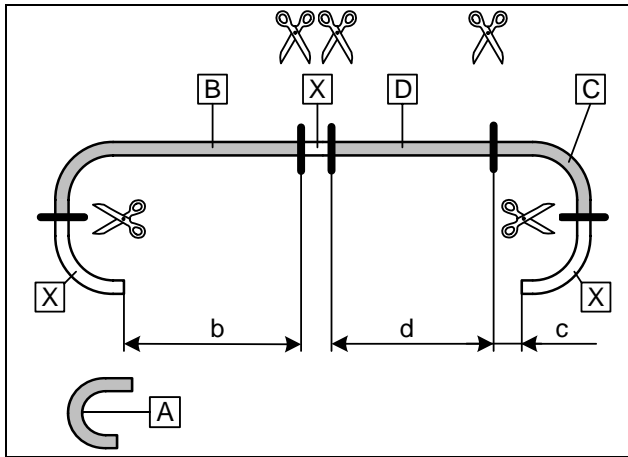


Hose installation diagram

All spring clips without a specific designation  = 27 mm dia.

All connecting pipes without a specific designation  = dia. 20x20 mm. 1 = Black (sw) rubber isolator 



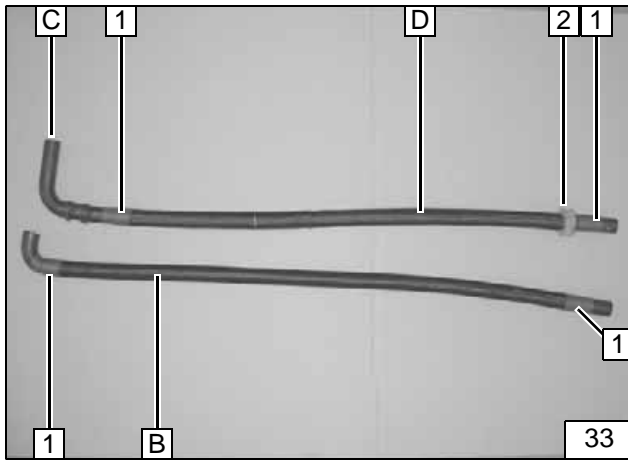


Hose **A** = provided 180° moulded hose
Discard sections **X**

b = 930
c = 60
d = 920



Cutting hoses to length

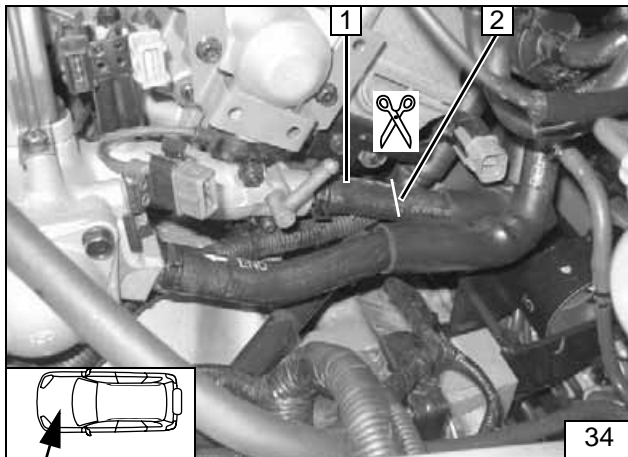


Push braided protection hoses onto hose **B** and **D**.
Connect hose **C** and **D**.

- (1) Cut heat shrink plastic tubing at the centre, slide on, and shrink [4x]
- (2) Black rubber profile

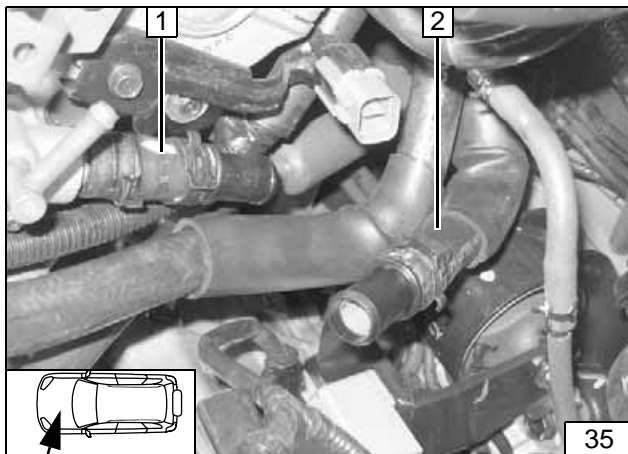


Preparing hoses



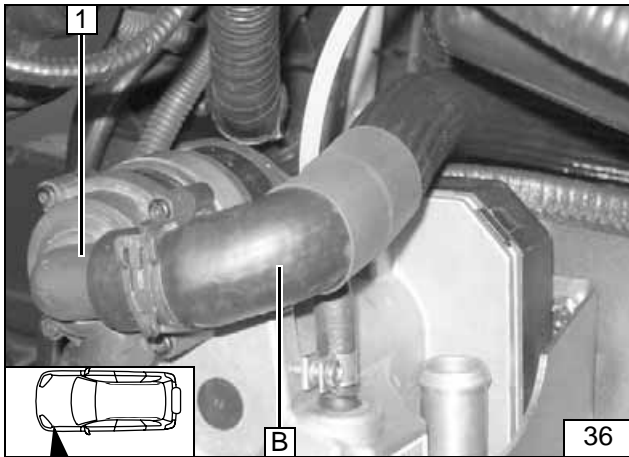
- (1) Hose of engine outlet
- (2) Cutting point

Cutting point



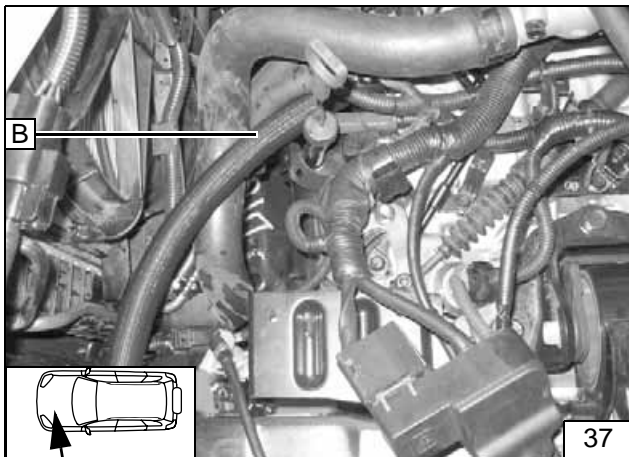
- (1) Engine-outlet hose section
- (2) Hose section of heat exchanger inlet

Inserting connecting pipes

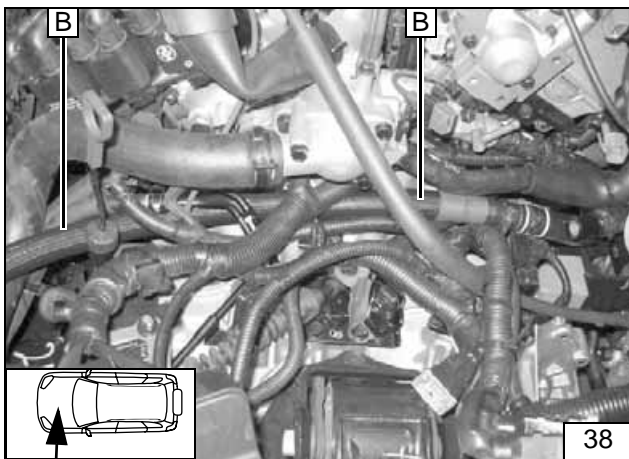


(1) Heater inlet

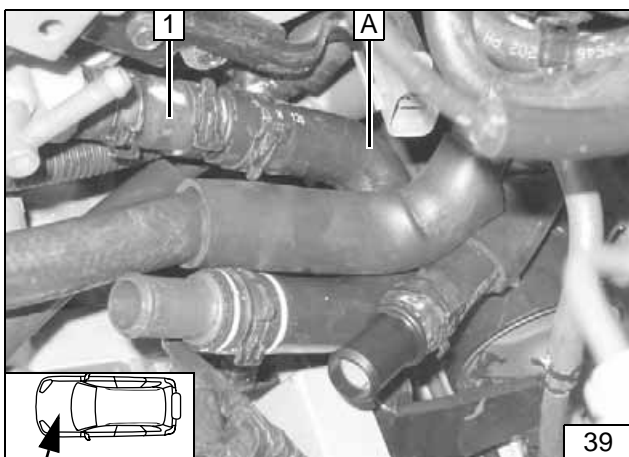
Conne-
ction at
heater in-
let



Routing
Hose B

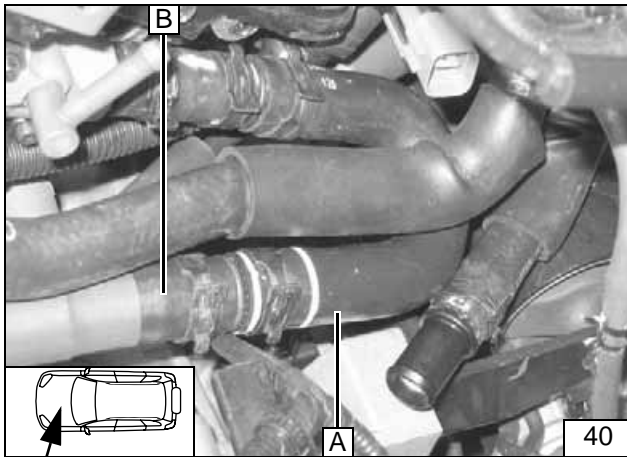
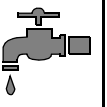


Routing
Hose B



(1) Engine-outlet hose section

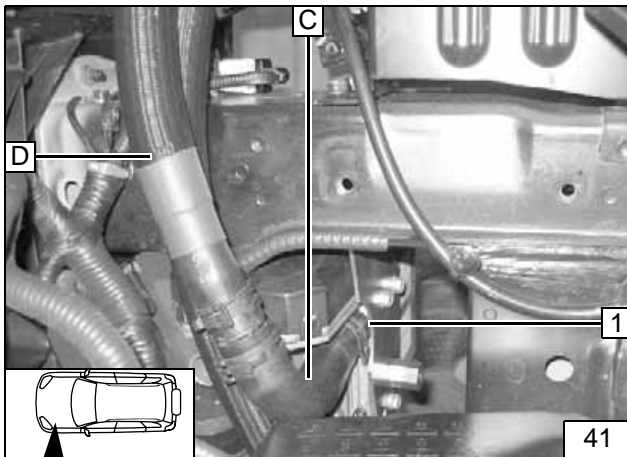
Installing
Hose A



Before connecting, fill the coolant hoses with coolant.

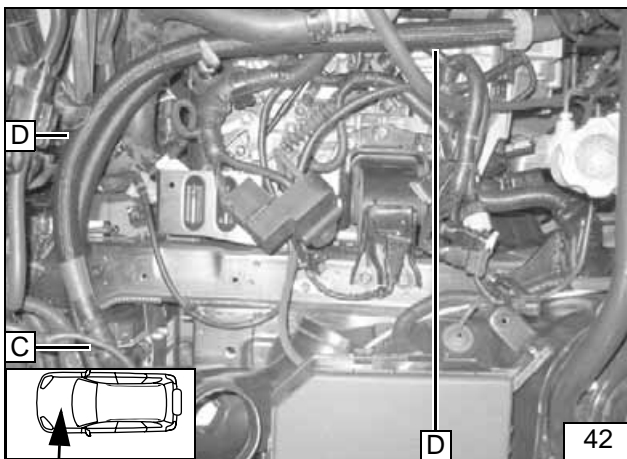


Connect Hose B to Hose A

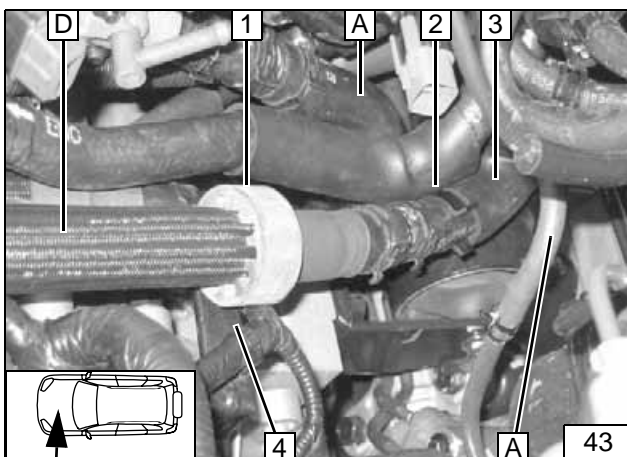


(1) Heater outlet

Connection at heater outlet



Routing Hose D

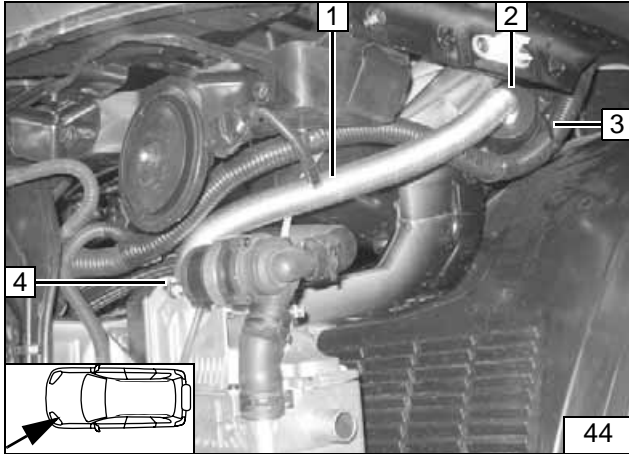
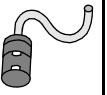


Before connecting, fill the coolant hoses with coolant. Align hoses **A, B, C, D** along entire length and fasten with cable ties



- (3) Hose section of heat exchanger inlet
- (2) Spacer bracket on hose A and hose section on heat exchanger inlet
- (1) Black rubber isolator
- (4) Cross member

Connecting heat exchanger inlet



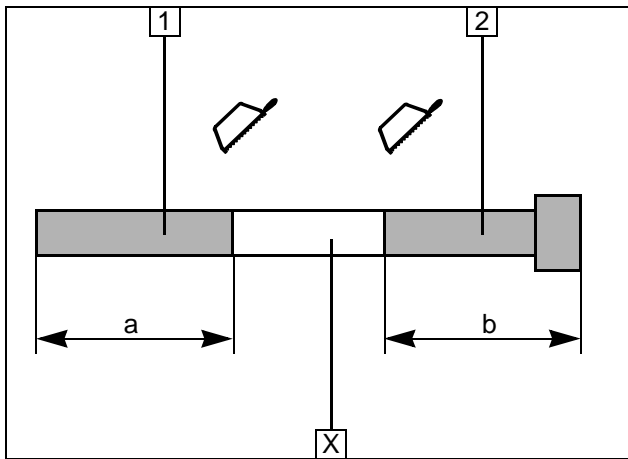
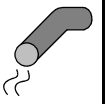
Combustion air

Ensure proper installation position of combustion-air intake silencer, see "Installation Instructions"

- (1) Combustion air pipe
- (4) 27 mm dia. hose clamp
- (2) Silencer
- (3) Cable tie



Installing silencer

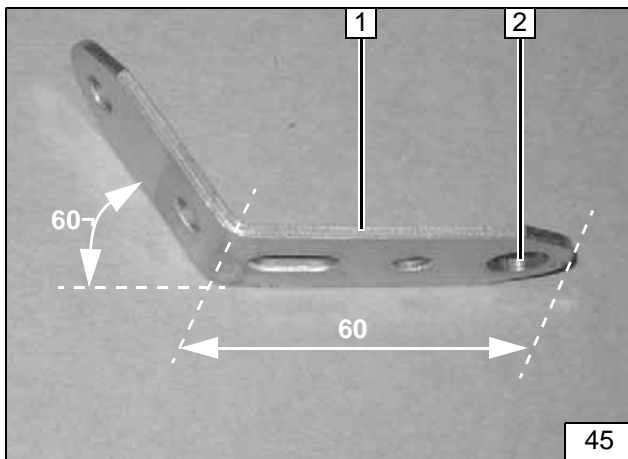


Exhaust gas

- (1) Exhaust pipe
a = 240
- (2) Exhaust end section
b = 250

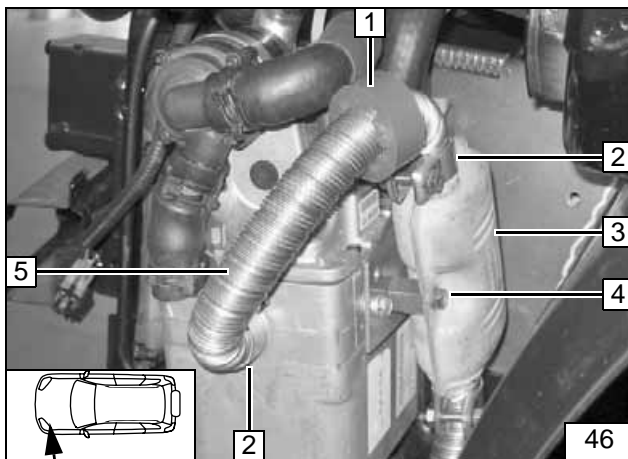
Discard section X

**Cutting
exhaust
pipe to
length**



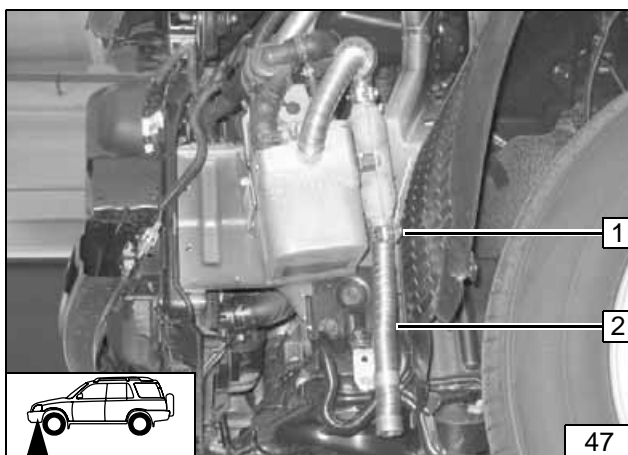
- (1) Perforated bracket
- (2) Hole drilled to 10.5mm dia.

**Preparing
perforat-
ed bracket**



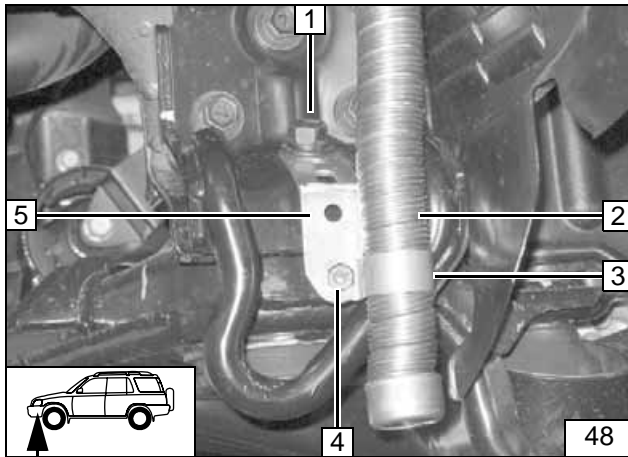
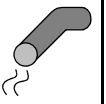
- (5) Exhaust pipe
- (2) Hose clamp [2x]
- (1) Red (rt) rubber isolator
- (3) Exhaust silencer
- (4) M6x12 bolt, spring lockwasher

**Installing
exhaust
pipe and
silencer**



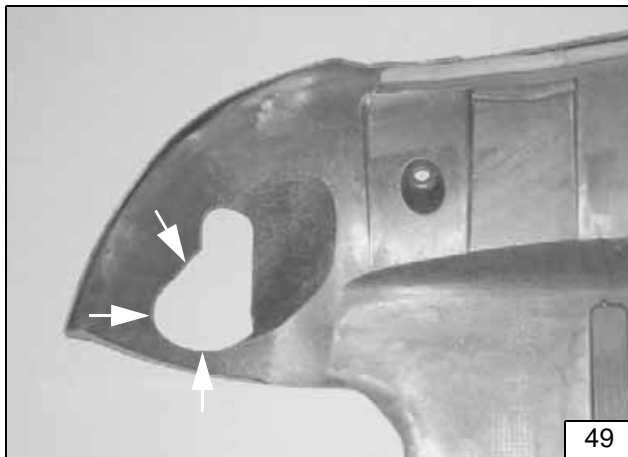
- (1) Hose clamp
- (2) Exhaust end section

**Installing
exhaust
end sec-
tion**



- (1) Original vehicle bolt
- (5) Perforated bracket
- (2) Exhaust end section
- (3) P-clamp
- (4) M6x20 bolt, flanged nut

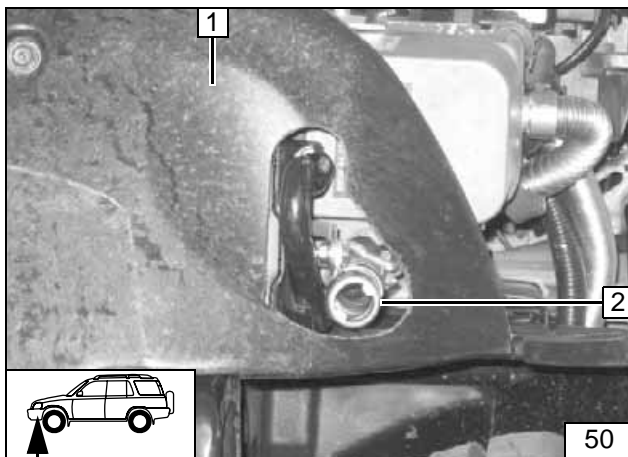
Installing exhaust end section



Cut out under-ride protection as shown



Cutting out under-ride protection

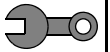


Check the position of the components; adjust if necessary. Ensure a minimum clearance of 20mm between exhaust outlet and under-ride protection.

- (1) Under-ride protection
- (2) Exhaust outlet



Installing under-ride protection



Final Work

WARNING!

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

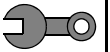
Only use manufacturer-approved coolant. Spray the heater components with anti-corrosion wax (Tectyl 100K, Order No. 111329).

- **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 the "Switch off parking heater before refueling" signboard near the filler neck**
- **See installation instructions for initial start-up and function check**

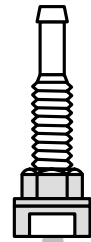


Webasto
Feel the drive

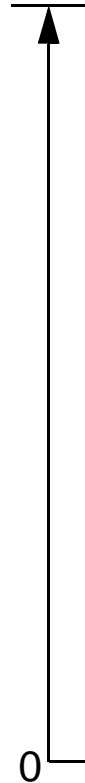
Webasto AG
Postfach 80
D-82132 Stockdorf / Germany
National Hotline: 01805 93 22 78
(14 Cent aus dem deutschen Festnetz)
Hotfax: 0395 5592 353
Hotmail: technikcenter@webasto.com
<http://www.webasto.com>



Template for Fuel Standpipe



100mm



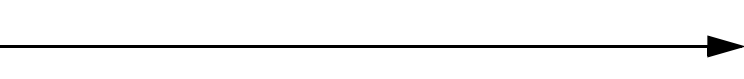
Scale 1:1

Compare size of the printed version with dimension lines.
Allowed tolerance 2%.

Correct pressure settings appropriately in case of major deviations or request original printout.

100mm

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.

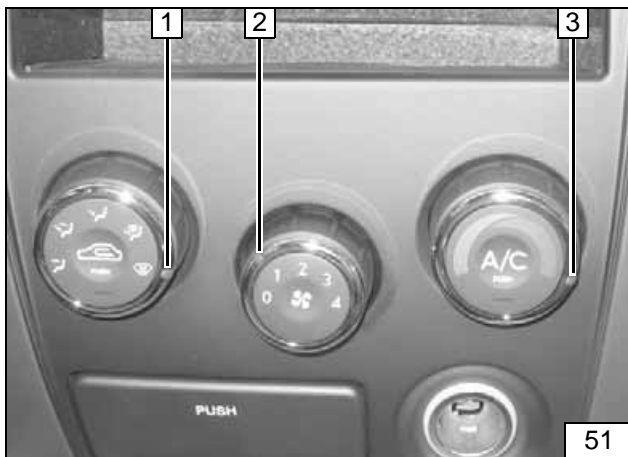
Heating time = driving time

Example:

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

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



For vehicles without automatic air-conditioning



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



For vehicles with automatic air-conditioning