

Water Heater

Thermo Top E Parking Heater



Thermo Top C Parking Heater



Installation documentation

Toyota Verso

Petrol
from model year 2009
Left-hand drive vehicle
6-gear manual transmission
Multidrive S transmission
Automatic air-conditioning



WARNING!

Hazard warning:

The improper installation or repair of Webasto heating and cooling systems can cause fire or the leakage of deadly carbon monoxide, leading to serious injury or death.



To install and repair Webasto heating and cooling systems you need to have completed a special company training course and have the appropriate technical documentation, special tools and special equipment.

Only use genuine Webasto parts. See the Webasto air and water heaters accessories catalogue for this purpose.

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.

Table of Contents

Validity	2	Preparing Heater	11
Heater/Installation Kit	3	Installing Heater	12
Foreword	3	Fuel	13
General Instructions	3	Exhaust Gas	16
Special Tools	3	Coolant Circuit	18
Explanatory Notes on Document	4	Combustion Air	21
Preliminary Work	5	Final Work	22
Heater Installation Location	5	Operating Instructions for End Customer	23
Preparing Electrical System	6		
Electrical System	7		
Fan Control	9		
Remote Option (Telestart)	10		

Validity

Manufacturer	Model	Type	EG-BE No. / ABE
Toyota	Verso	AR2	e11 * 2001/116 * 0350 * ...

Engine type	Engine model	Output in kW	Displacement in cm ³
1ZR	Petrol	97	1598
2ZR	Petrol	108	1798

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

Heater/Installation Kit

Quantity	Designation	Order No.:
1	Basic delivery scope <i>Thermo Top E / C</i>	See price list
1	Installation kit for Toyota Verso 2009 Petrol	1315142B
1	Heater control	See price list

Foreword

This installation documentation applies to Toyota Verso Petrol vehicles - for validity, see page 2 - from model year 2009 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.

In any case, please follow the specifications of this installation documentation and the installation instructions of the *Thermo Top E / C*.

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 and tie back loose wires.

Sharp edges should be fitted with rub protection (split-open fuel hose).

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

When installing an IPCU, the corresponding settings must be checked or adjusted before installation.

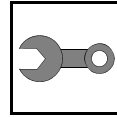
Special Tools

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

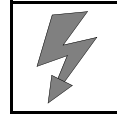
Explanatory Notes on Document

To provide you with a quick overview of the individual working steps, you will find an identification mark on the outside top right corner of the page in question.

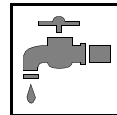
Mechanical system



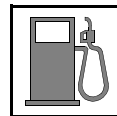
Electrical system



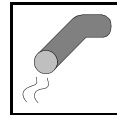
Coolant circuit



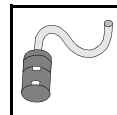
Fuel



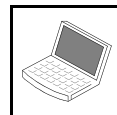
Exhaust gas



Combustion air



Software



Special features are highlighted using the following symbols:



Specific risk of injury or fatal accidents.



Specific risk of damage to components.



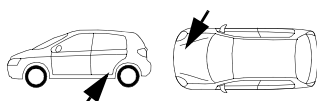
Specific risk of fire or explosion.



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 5x13 heater bolts = 8Nm!

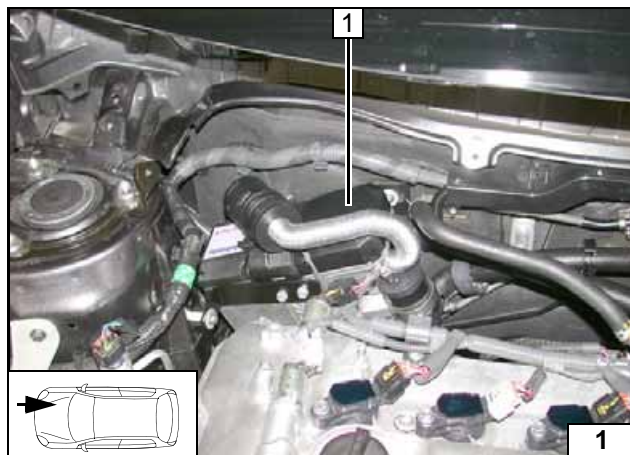
Tightening torque of 5x15 bolt of water connection piece retaining plate = 7Nm!

Preliminary Work

WARNING!

- Remove the engine design cover.
- Remove the windscreen wipers.
- Remove the coolant reservoir cap.
- Remove the coolant reservoir trim and windscreen wiper linkage.
- Remove the vacuum line of the brake booster.
- Open the fuel tank cap, ventilate the tank.
- Close the fuel tank cap again.
- Disconnect the battery "earth" or "ground" connection.
- Remove the battery cover.
- 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) visibly in the appropriate place.
- Remove the rear bench seat.
- Open the tank-fitting service lid.
- Remove the fuel-tank sending unit in accordance with the manufacturer's instructions.
- Remove the footwell trim on the driver's side.
- Remove the side trim of the centre console in the driver's side footwell.
- Remove the AC booster.
- Remove the loudspeaker cover at the upper left on the instrument panel (only with Telestart).

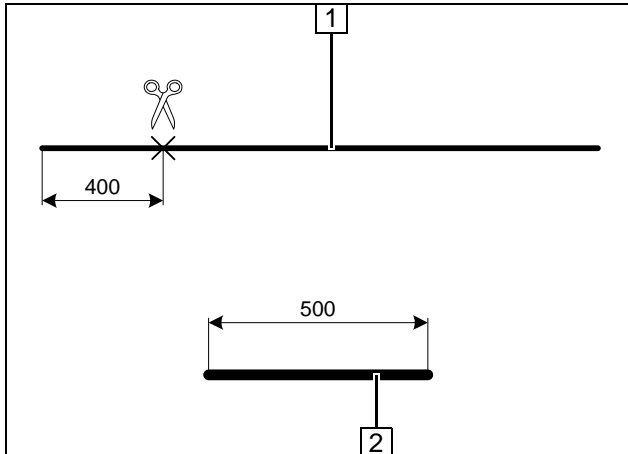
Remove page 23 "Operating Instructions for End Customer" and add to the vehicle operating instructions.



Heater Installation Location

1 Heater

Installation location

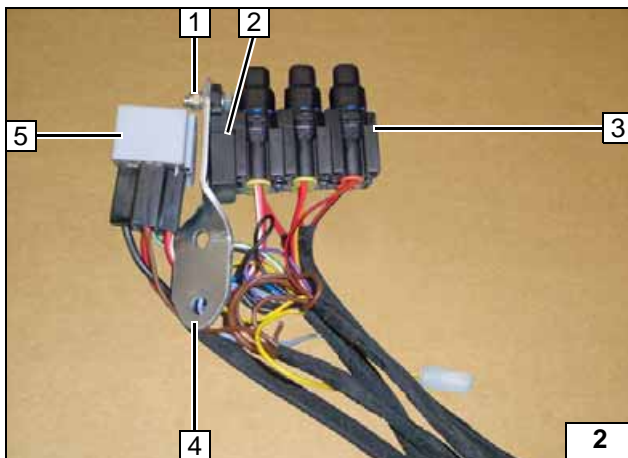


Preparing Electrical System

All vehicles

Cut 10mm dia. corrugated tube to length. Cut 17mm dia. corrugated tube lengthways.

- 1 10 mm dia. corrugated tube, 1130 mm long
- 2 17 mm dia. corrugated tube, 500 mm long



Replace 25 A fuse F3 with 10 A fuse. Pull wiring harnesses of heater, digital timer, fan controller and metering pump into 17mm dia. corrugated tube. Pull positive and earth wire into 10mm dia., 400mm long, corrugated tube.

- 1 M5x20 bolt, washer, flanged nut
- 2 Retaining plate for fuse holder
- 3 Fuses pushed on
- 4 Perforated bracket turned (approx. 80°)
- 5 K3 relay



Preparing corrugated tube



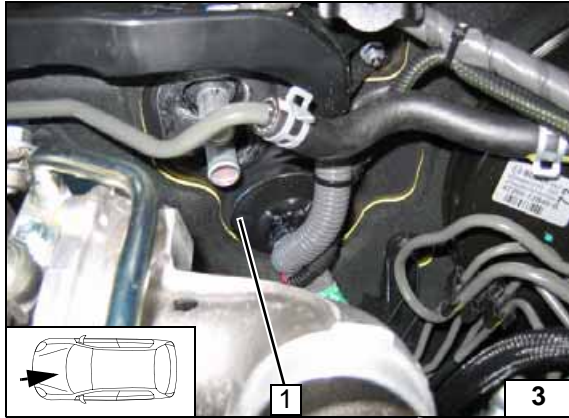
Preparing wiring harnesses



Electrical System

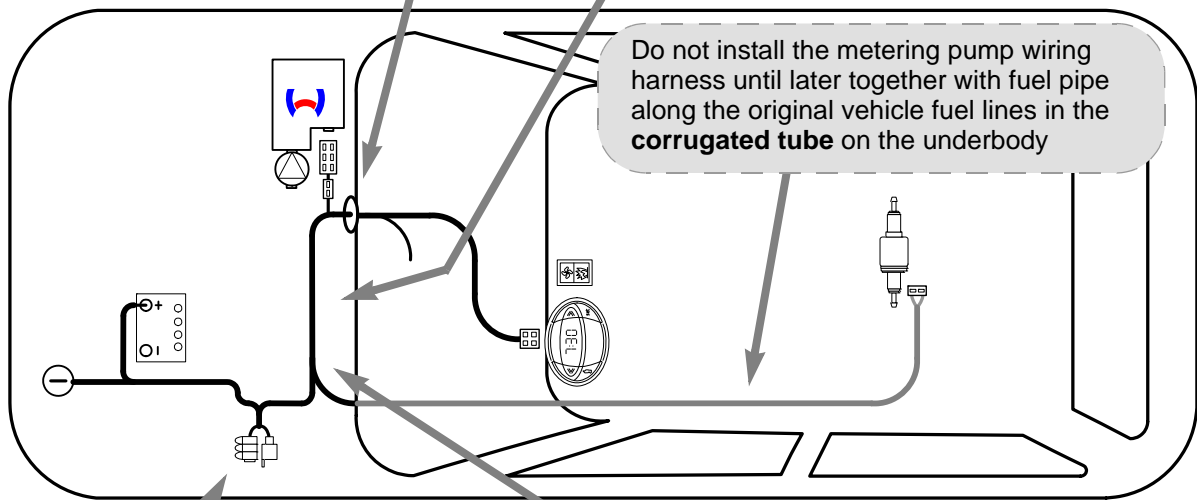
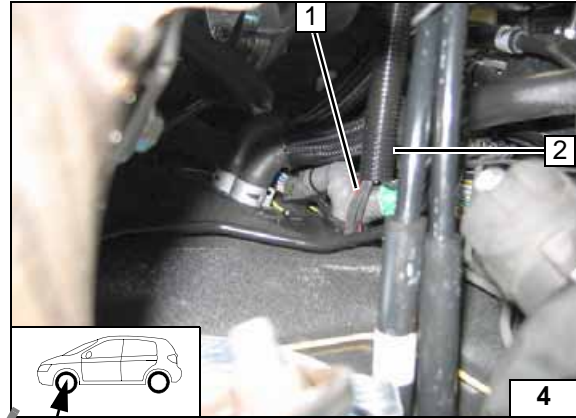
Wiring harness pass through

- 1 Protective rubber plug

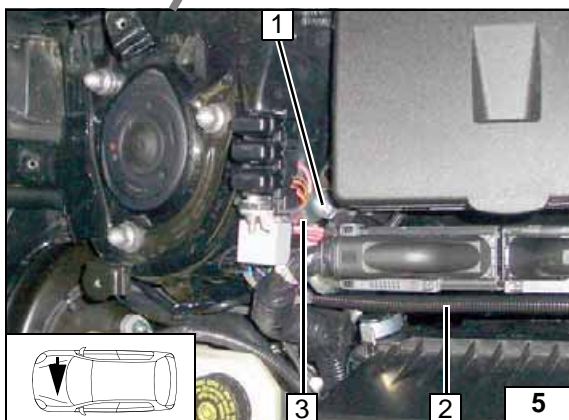


Wiring harness routing

- 1 Wiring harnesses of digital timer and fan controller
- 2 Corrugated tube

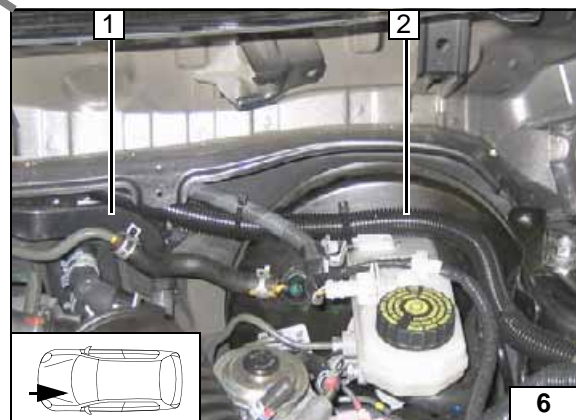


Wiring harness routing diagram



Fuse holder, K3 relay

- 1 Original vehicle bolt
- 2 Route positive and earth wires in corrugated tube to the connection points
- 3 Perforated bracket



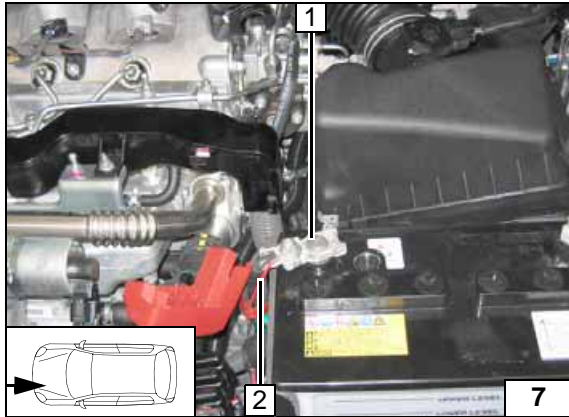
Wiring harness routing

- 1 Original vehicle cable duct
- 2 Route wiring harnesses of heater, digital timer, fan controller and metering pump in corrugated tube to original vehicle cable duct



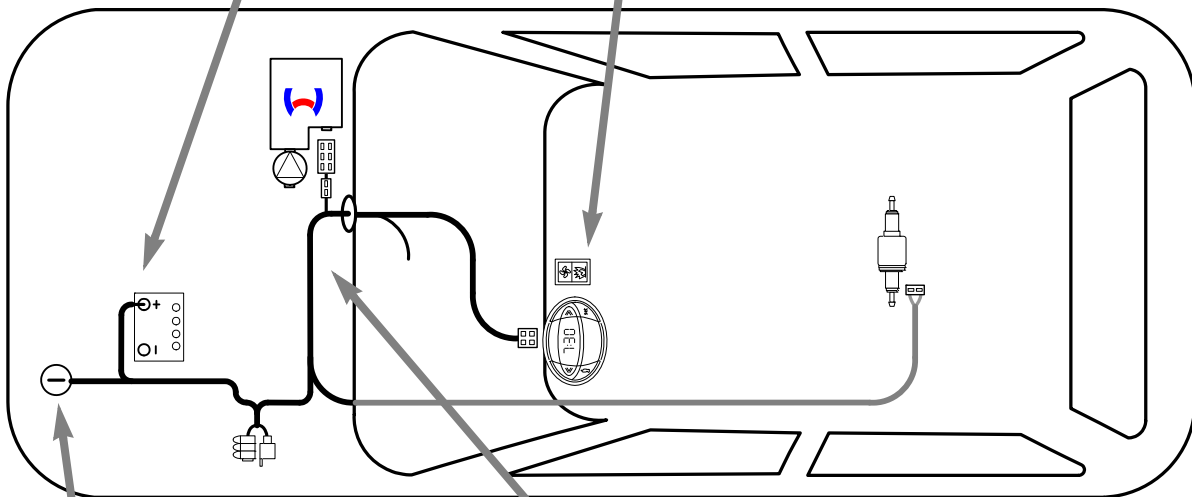
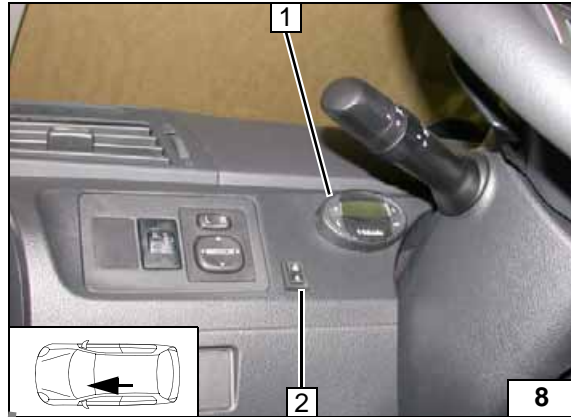
Positive wire

- 1 Positive battery terminal
- 2 Cut positive wire to length, 8 mm dia. cable lug

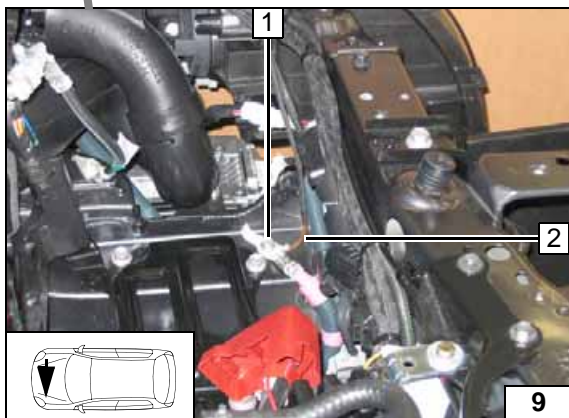


Digital timer and summer/winter switch option

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

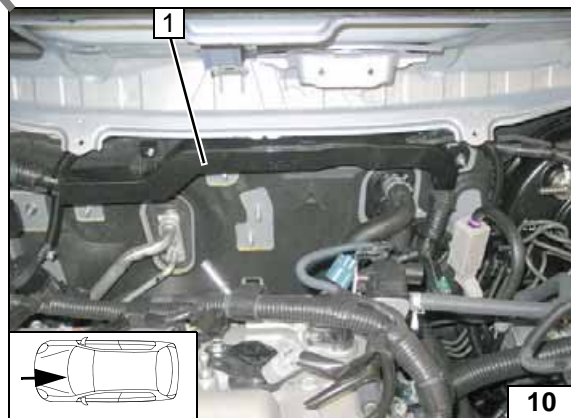


Wiring harness routing diagram



Earth wire

- 1 Original M6 bolt of vehicle
- 2 Earth wire, 6 mm dia. cable lug

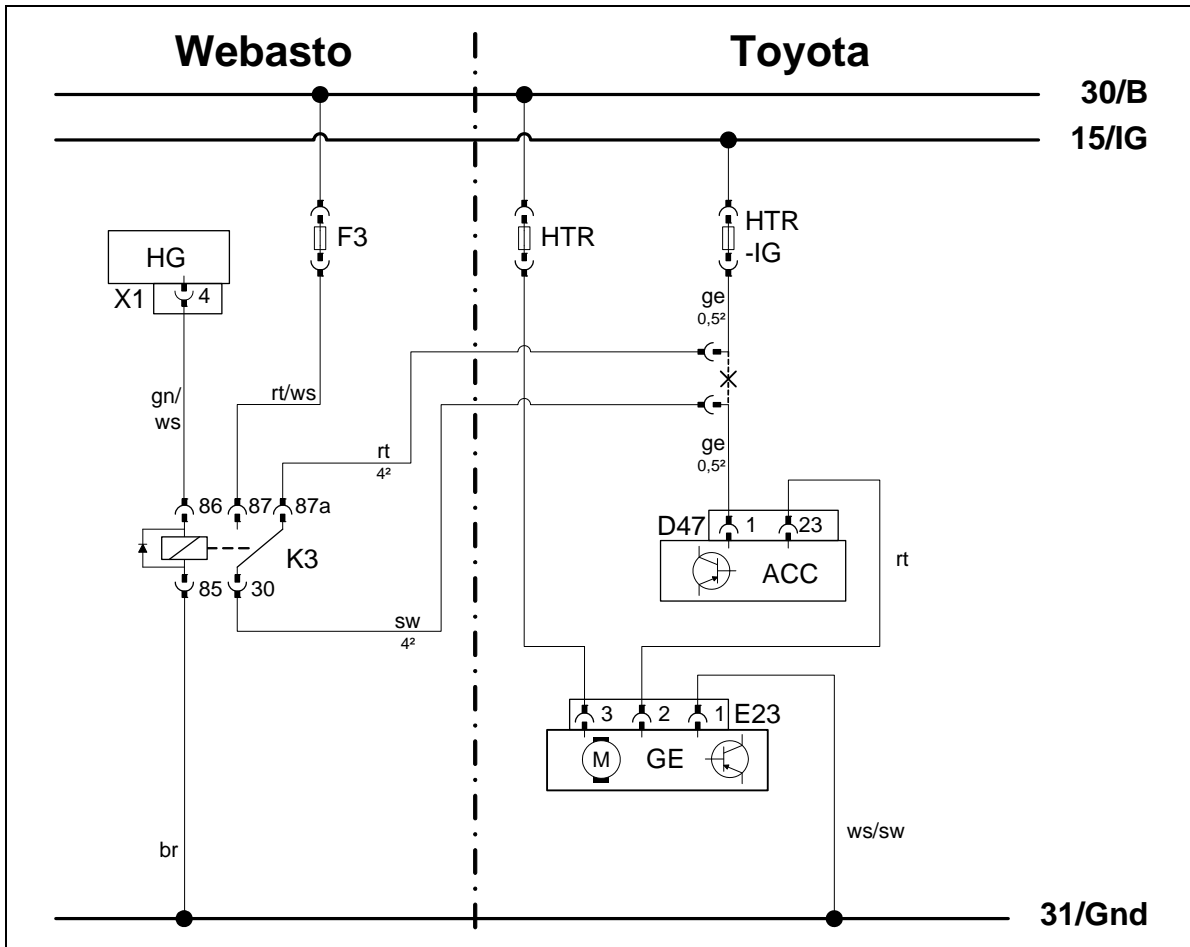


Wiring harness routing

Route wiring harness of heater through cable duct 1 to the left side of the vehicle.



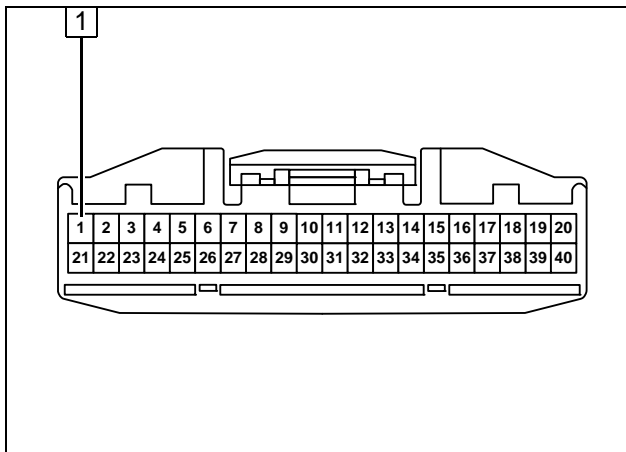
Fan Control



Wiring diagram

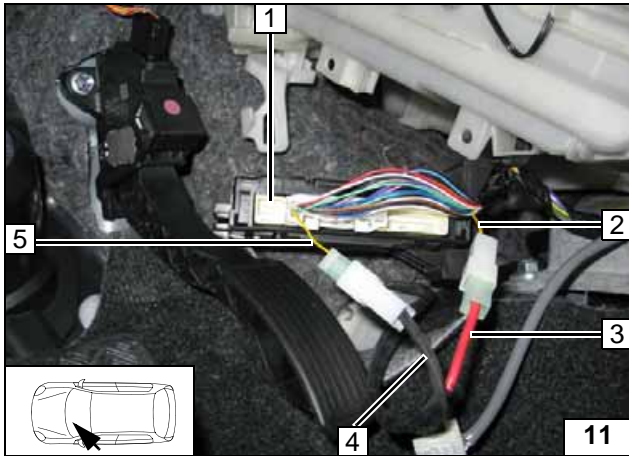
Webasto components		Vehicle components		Colours and symbols	
HG	Heater TT-C/E	GE	Fan unit	rt	red
X1	6-pin connector	E23	GE connector	ws	white
F3	Replace 25 A with 10 A fuse.	ACC	AC control	sw	black
K3	Fan relay	D47	40-pin ACC connector	br	brown
		HTR	30A fuse	gn	green
		HTR-IG	10 A fuse	ge	yellow
				X	Cutting point
				Wiring colours may vary.	

Legend



1 Connector D47 on contact side (PIN 1)

Connector D47

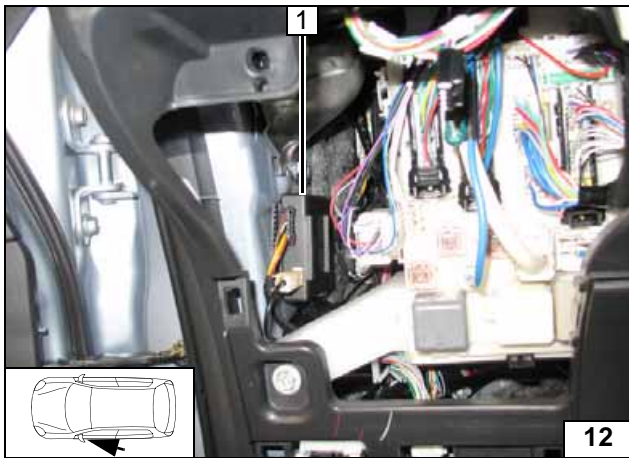


Connection to 40-pin connector 1 from ACC
Produce connections as shown in wiring diagram.

- 2 Yellow (ge) wire HTR/IG
- 3 Red (rt) wire of K3/87a
- 4 Black (sw) wire of K3/30
- 5 Yellow (ge) wire of connector D47/1



**Connec-
tion to ACC**

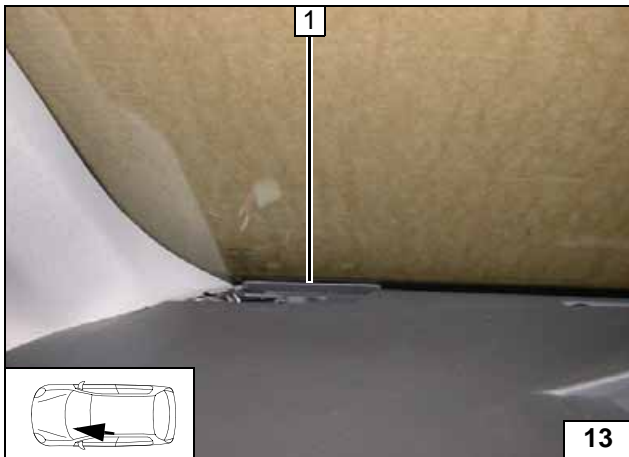


Remote Option (Telestart)

Fasten receiver 1 with adhesive tape.



**Mounting
receiver**

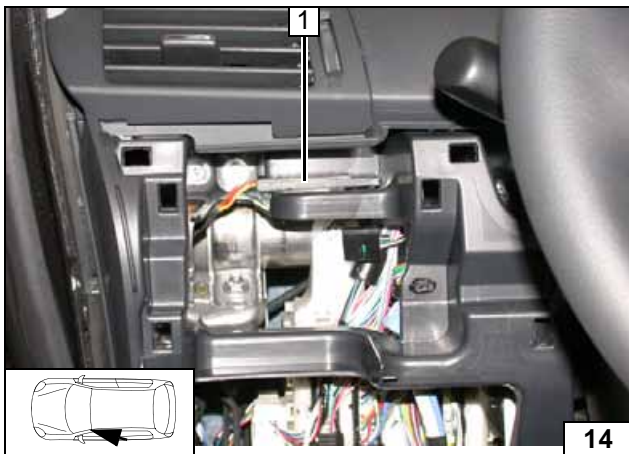


Loudspeaker cover removed.

- 1 Antenna



**Mounting
antenna**

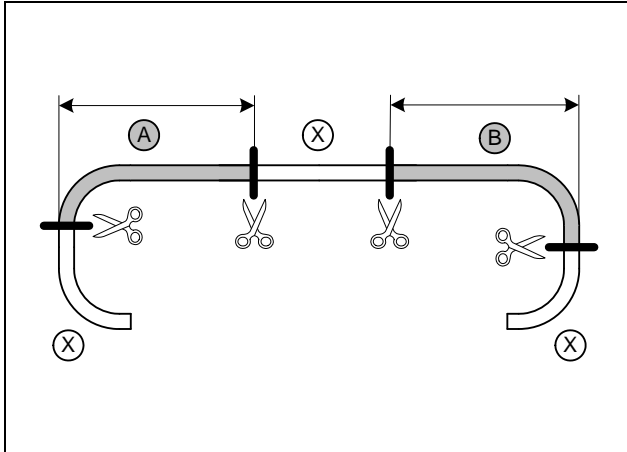
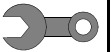


Temperature sensor T100 HTM

Fasten receiver 1 with adhesive tape.



**Mounting
tempera-
ture sensor**

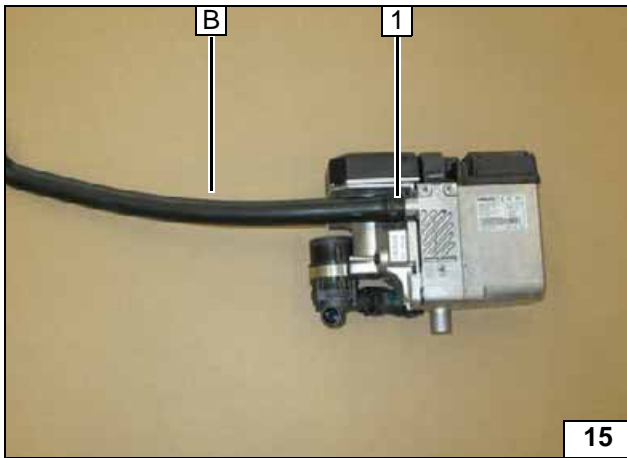


Preparing Heater

a = 400
b = 480

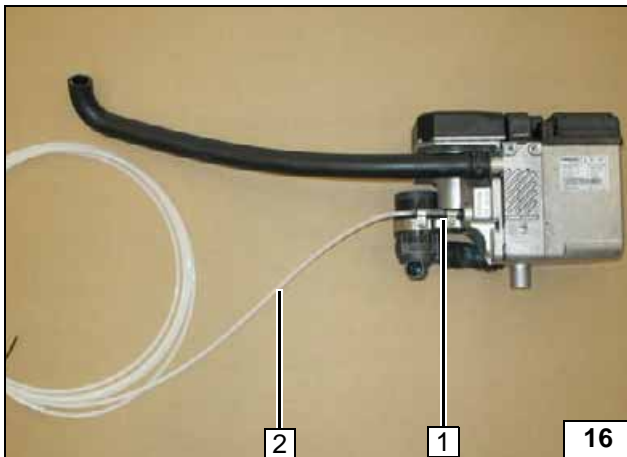
Discard section X

Cutting hoses to length



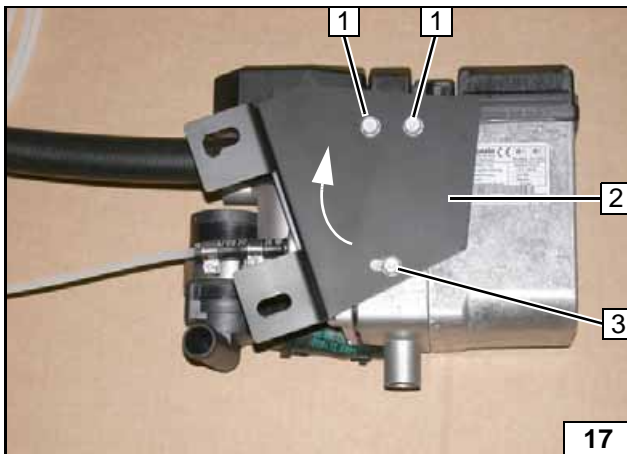
1 27 mm dia. spring clip

Premounting hose B



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

Premounting fuel line

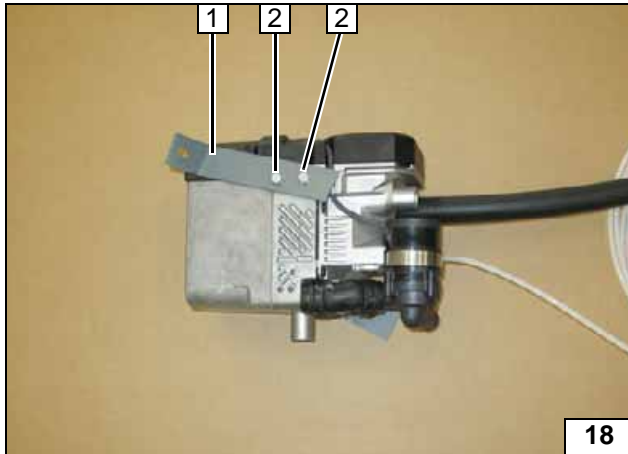
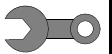


Align bracket 2 in direction of arrow. Insert two washers between heater and bracket 2 at position 3.

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

Premounting bracket





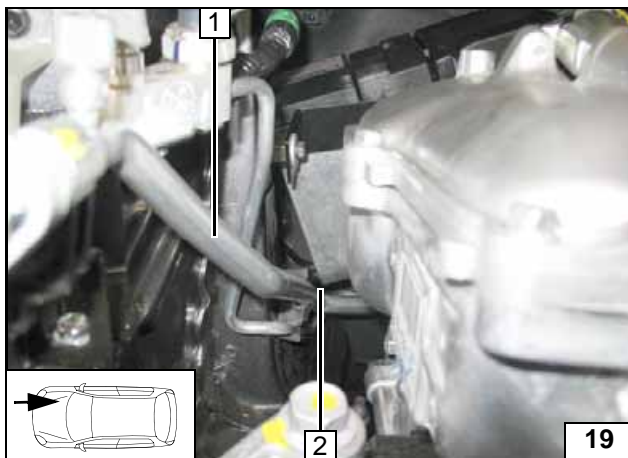
18

Loosely mount strut 1.

2 E-jot screw [2x]



Premounting strut



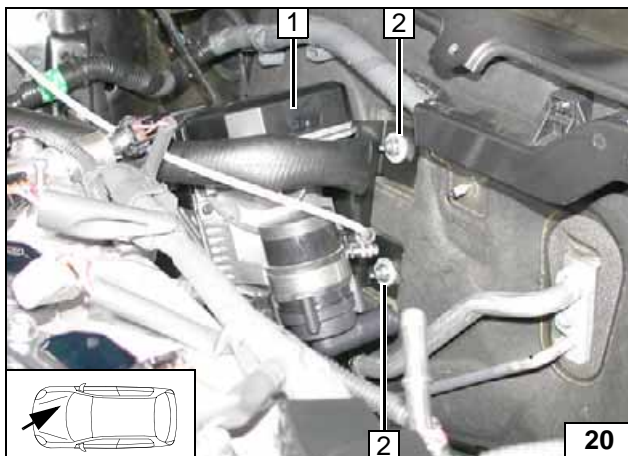
19

Installing Heater

Ensure sufficient clearance at between heater and A/C line 1 at position 2.



Mounting heater



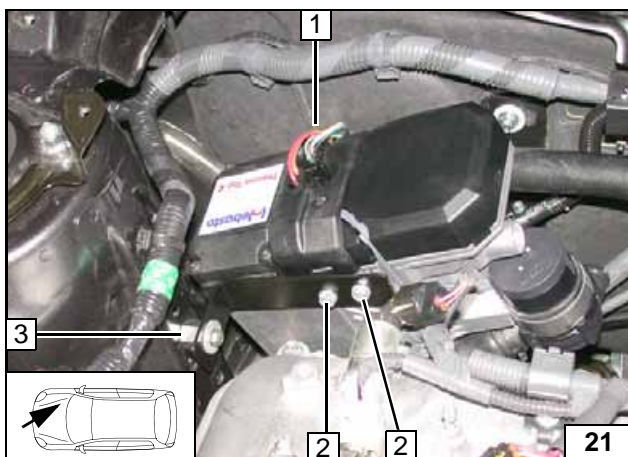
20

Align bracket. Ensure sufficient distance from neighbouring components.

- 1 Premounted heater
- 2 M6 flanged nut, large diameter washer [2x each], original vehicle stud bolt



Mounting heater



21

Align heater and tighten E-jot screws at position 2 [2x]. Connect wiring harness 1 on heater.

- 3 Original vehicle threaded hole, M6x40 bolt, spring lockwasher, large diameter washer, 15 mm spacer nut



Mounting 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 with an appropriate container.

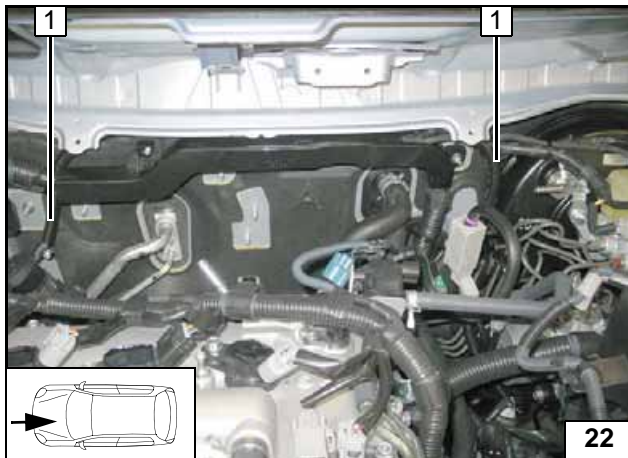
Route fuel line and metering pump wiring harness so that they are protected against stone impact. Unless specified otherwise, always fasten using cable ties. Mount the fuel line and wiring harness with rub protection on sharp edges.

WARNING!

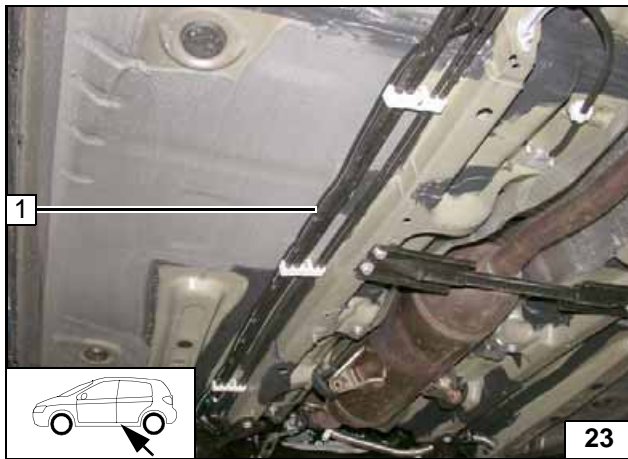
The fuel line and wiring harness are routed to the metering pump as shown in the wiring harness routing diagram.



Installing fuel line



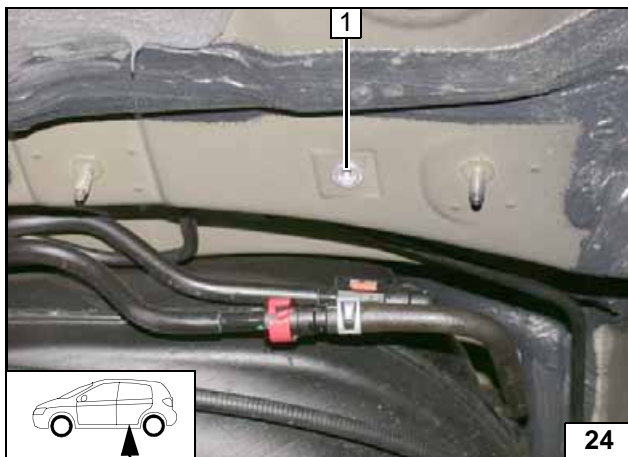
Slide 10mm dia., 730mm long corrugated tube 1 onto fuel line from heater and route in line duct to left-hand side of vehicle.



Route fuel line and wiring harness of metering pump in 10mm dia., 2100mm long corrugated tube 1 along original vehicle lines and secure with cable ties.



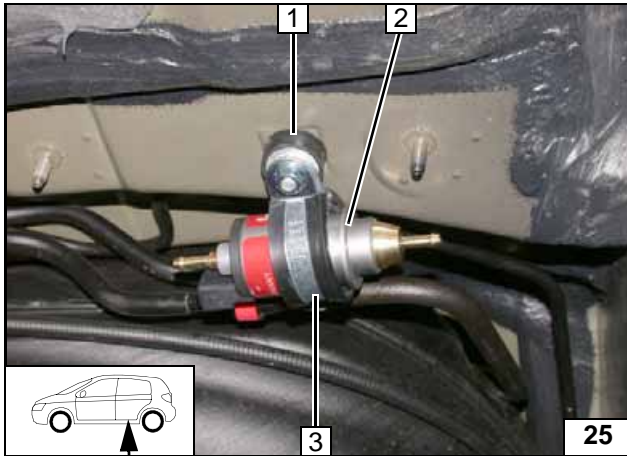
Routing lines



Remove rubber plugs and mount rivet nut at position 1.



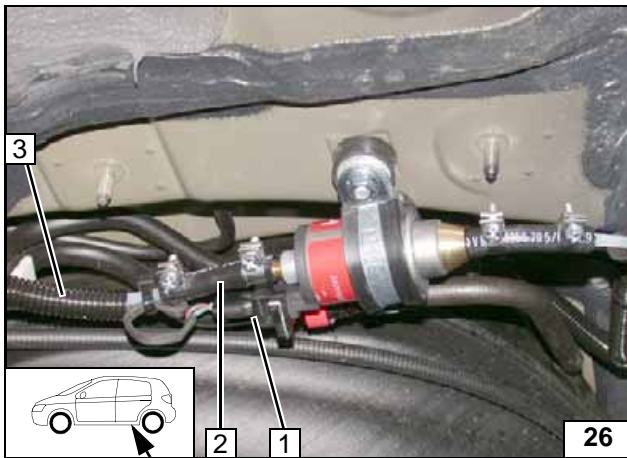
Installing rivet nut



- 1 Silent block, flanged nut
- 2 Metering pump
- 3 Rubber-coated p-clamp



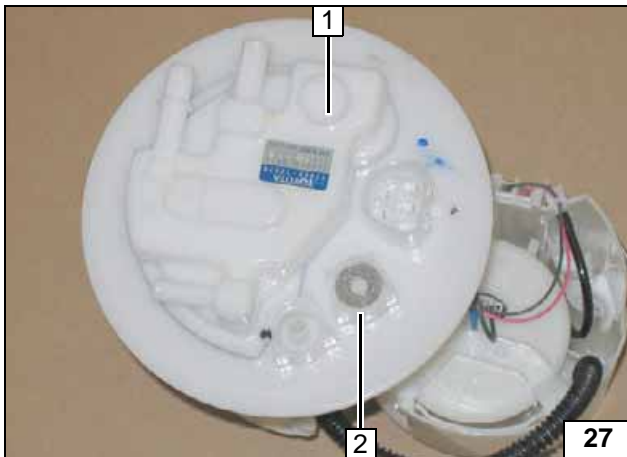
Mounting metering pump



- 1 Wiring harness of metering pump, connector mounted
- 2 Fuel line, hose section, 10 mm dia. clamp [2x]
- 3 Fuel line and wiring harness of metering pump in 10mm dia. corrugated tube



Mounting metering pump

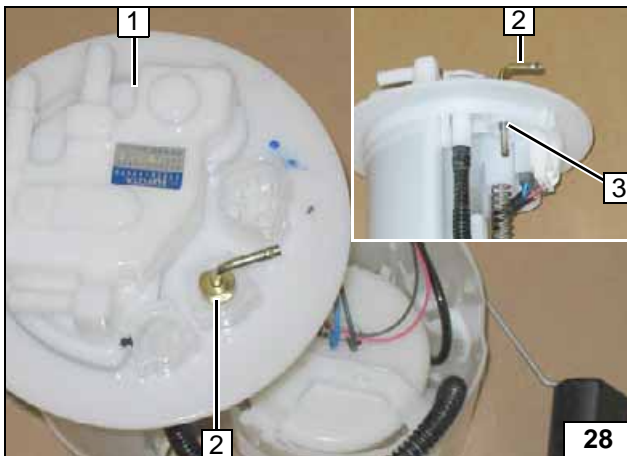


Remove fuel-tank sending unit 1 in accordance with manufacturer's instructions.

- 2 Washer, outside dia. = 17.6 mm; copy hole pattern, 6 mm dia. hole



Fuel extraction

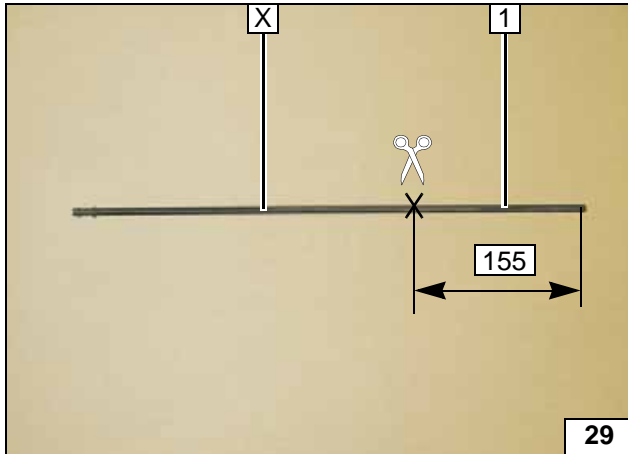


Tightening torque 5 Nm.

- 1 Fuel-tank sending unit
- 2 Fuel standpipe
- 3 M6 nut, self-locking



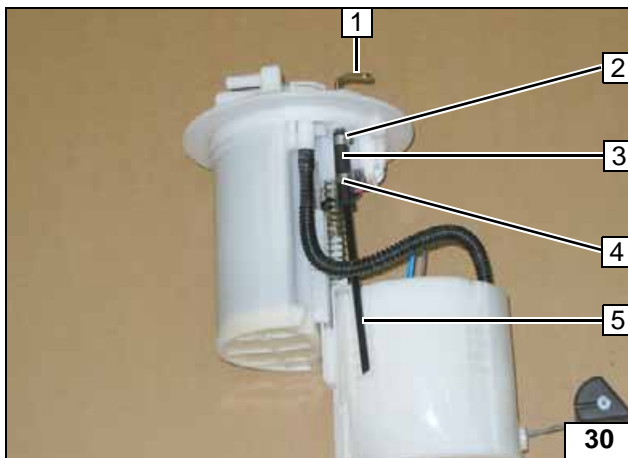
Installing fuel standpipe



Cut standpipe 1 to length as shown and discard section X.



Cutting standpipe to length

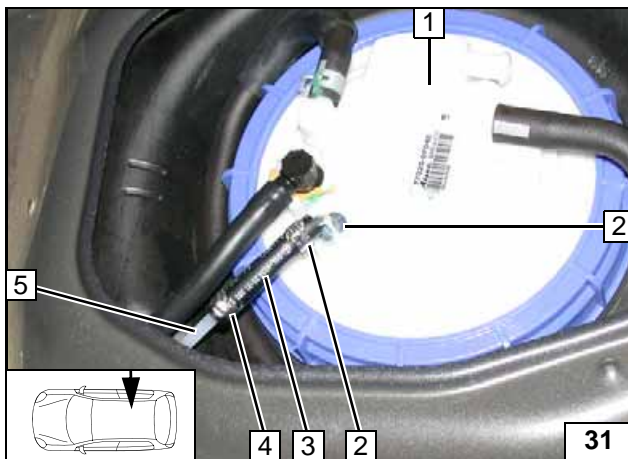


Moulded hose 3 with 3.5 mm dia. on fuel standpipe 1.

- 2 8 mm dia. Caillau clamp
- 4 10 mm dia. Caillau clamp
- 5 Standpipe



Installing standpipe

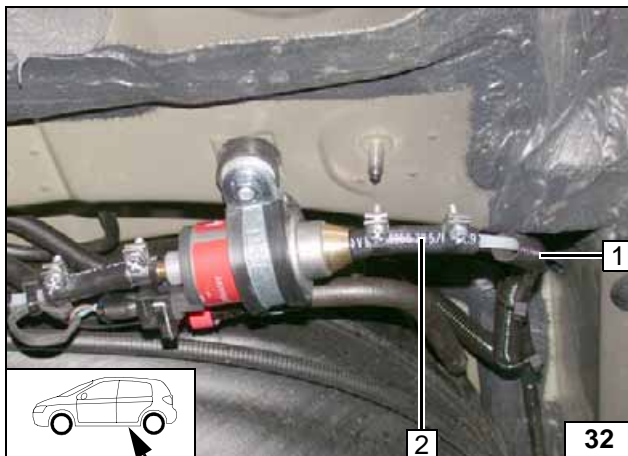


Install fuel-tank sending unit 1 in accordance with manufacturer's instructions. Hose section 3 with 3.5mm dia. on fuel standpipe 2. Slide 10mm dia., 430mm long corrugated tube onto fuel line 5.

- 2 8 mm dia. Caillau clamp
- 4 10 mm dia. Caillau clamp



Fuel extraction

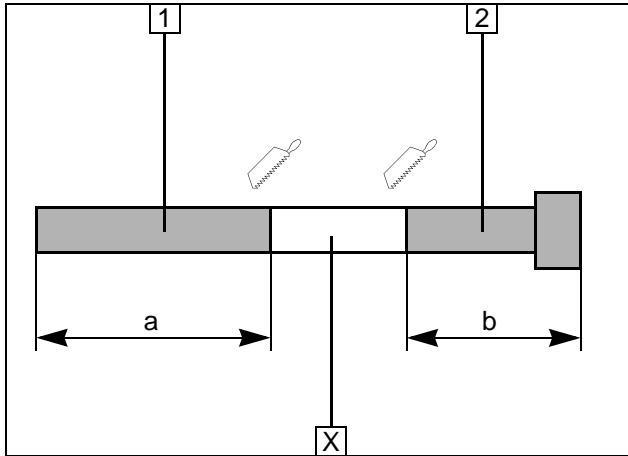
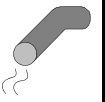


Check the position of the components; adjust if necessary. Check that they have freedom of movement.

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



Connecting metering pump

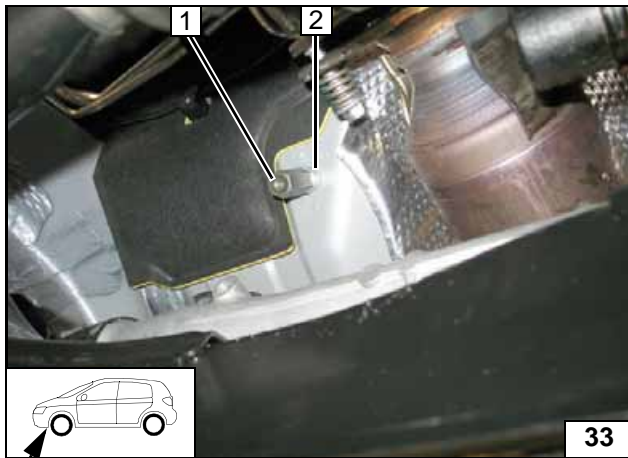


Exhaust Gas

- 1 Exhaust pipe
a = 210
- 2 Exhaust end section
b = 485

Discard section X

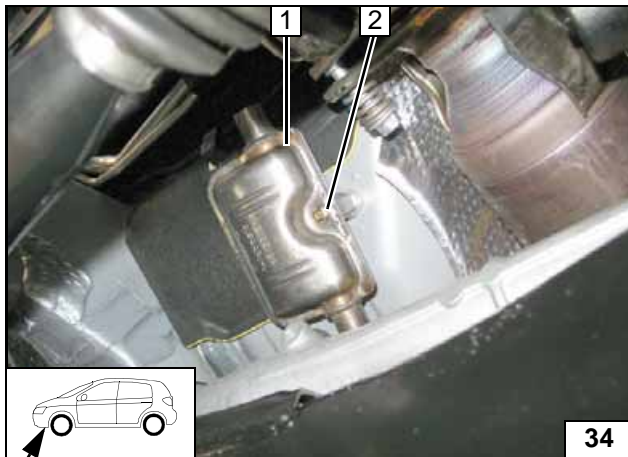
Preparing exhaust pipe



Install 10 mm shim 2 and M6x40 1 spacer nut on original vehicle stud bolt.

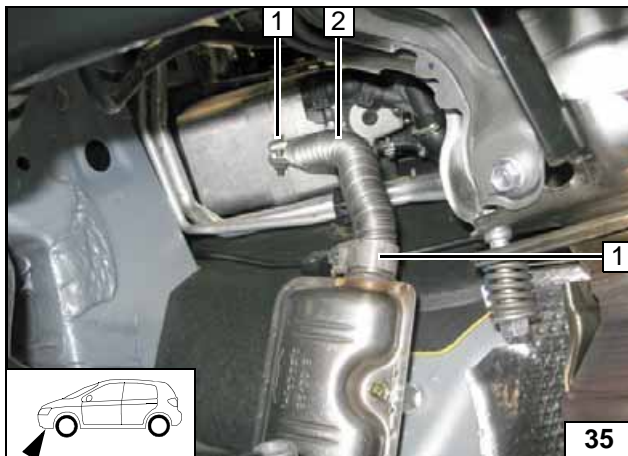


Preparing silencer installation



- 1 Exhaust silencer
- 2 Spring lockwasher, M6x20 bolt

Mounting silencer

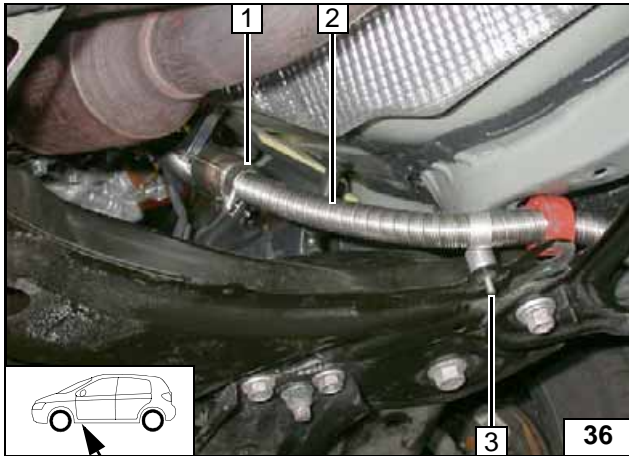
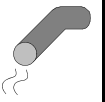


Check position of all components and adjust if necessary. Check that they have freedom of movement.

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

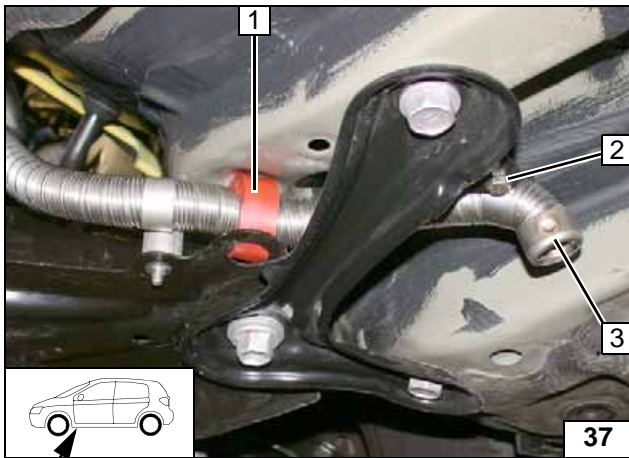
Mounting exhaust pipe





- 1 Hose clamp
- 2 Exhaust-pipe end section
- 3 M6x40 bolt, p-clamp, 20 mm shim, original vehicle hole, pin lock

Installing exhaust-pipe end section

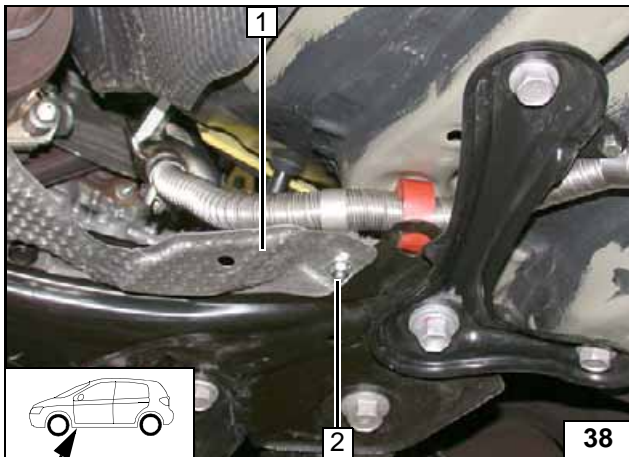


Check position of all components and adjust if necessary. Check that they have freedom of movement. Align red (rt) rubber isolator 1 and exhaust end section 3.



- 2 M6x20 bolt, p-clamp, flanged nut, existing hole

Installing exhaust-pipe end section



- 1 Heat guard plate
- 2 M6 flanged nut

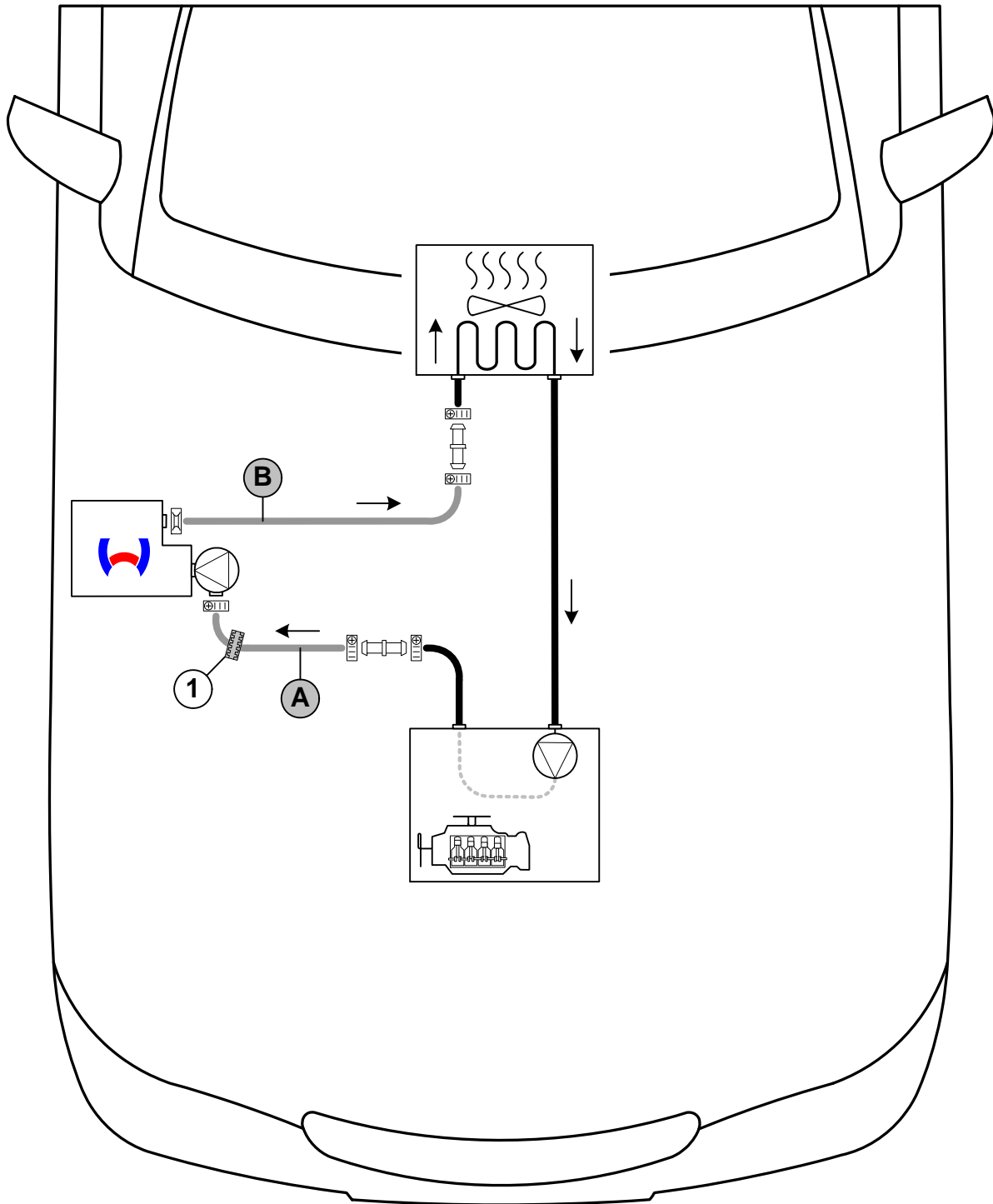
Mounting heat guard plate







Coolant Circuit

WARNING!

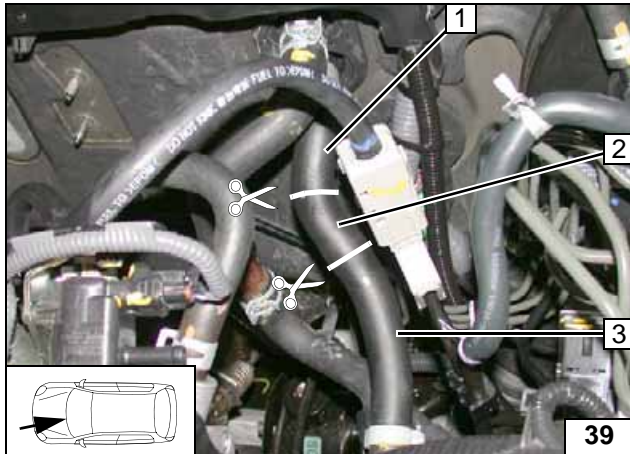
Any coolant running off should be collected using an appropriate container. Install hoses so that they are kink-free. Unless specified otherwise, always fasten using cable ties. Position clamps so that other hoses cannot be damaged. The heater must be filled with coolant when installing the hoses. The connection should be "inline" based on the following diagram:



Hose routing diagram

Spring clip  = 27 mm dia. All hose clamps  = 20-27 mm dia.
All connecting pipes  = 17x20 dia. 1 = Black (sw) rubber isolator 





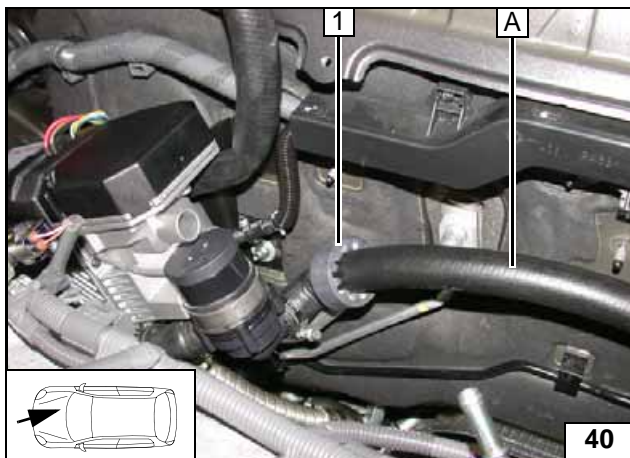
Coolant circuit shown on 1.8 liter engine with CVT transmission!

Discard **section 2**.

- 1 Hose on heat exchanger inlet
- 3 Hose of engine outlet



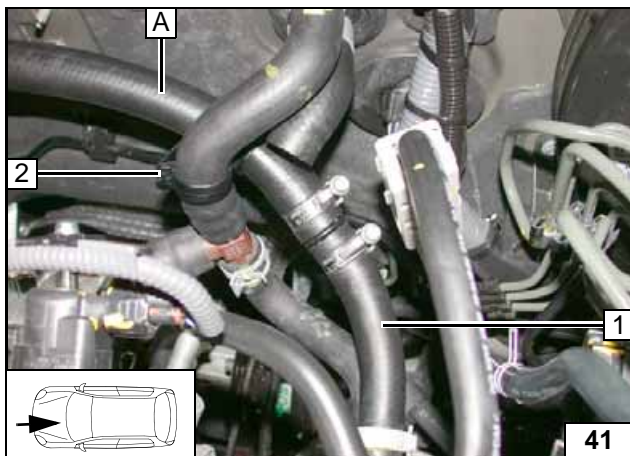
Cutting point



Slide on black (sw) rubber isolator **1** and align.



**Connect-
ing heater**



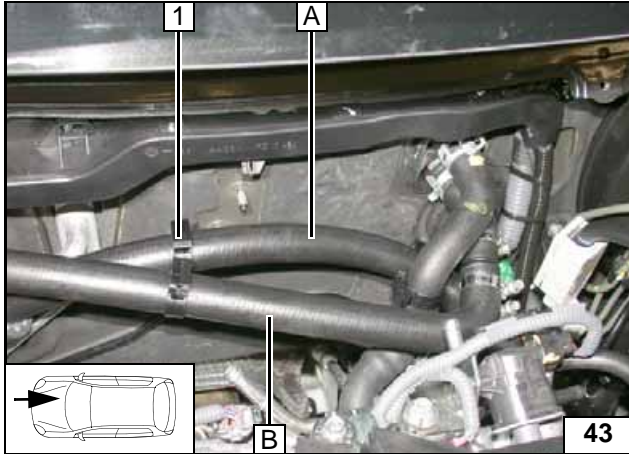
- 1 Engine outlet hose section
- 2 Spacer bracket

**Connect-
ing engine
outlet**



- 1 Hose on heat exchanger inlet

**Connect-
ing heat
exchanger
inlet**

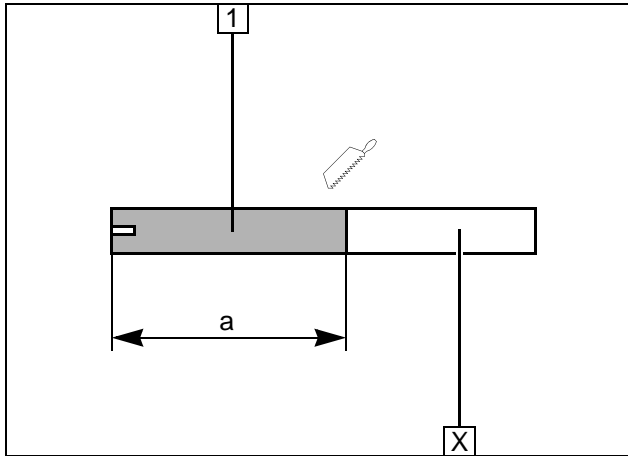
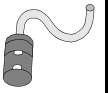


Align hoses. Ensure sufficient distance from neighbouring components.

1 Spacer bracket



**Installing
spacer
bracket**

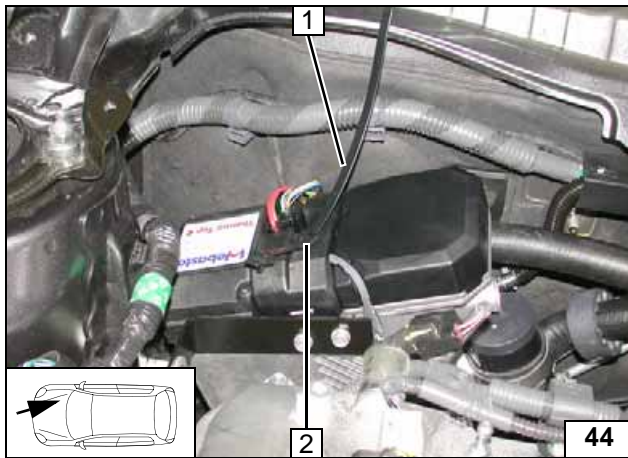


Combustion Air

- 1 Combustion air pipe
a = 250

Discard section X

Cutting combustion air pipe to length

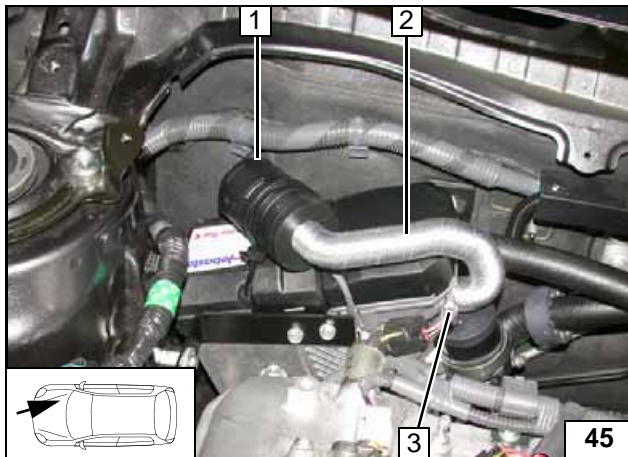


Punch through perforation in heater lid at position 2.

- 1 Clip-type cable tie



Preparing installation

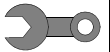


Silencer 1 installed on clip-type cable tie.

- 2 Combustion air pipe
- 3 27 mm dia. hose clamp



Mounting silencer



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 wires.

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".**
- **Mount "Switch off parking heater before refueling" signboard in area of filler neck.**
- **For initial startup and function check, see installation instructions.**



Webasto Thermo & Comfort SE
Postfach 1410
82199 Gilching
Germany
Internet: www.webasto.com
Technical Extranet:
<http://dealers.webasto.com>

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

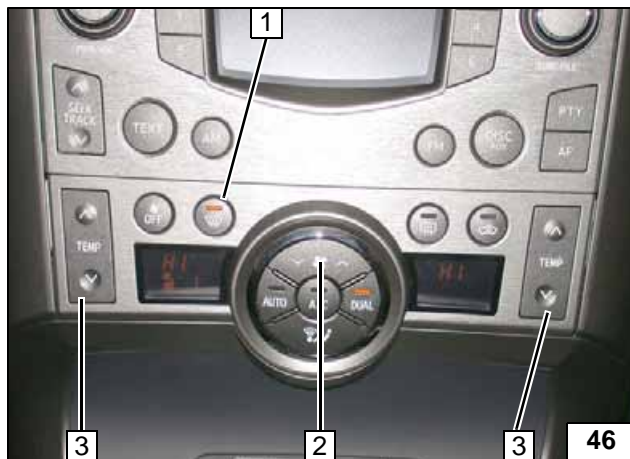
Example:

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

Passenger compartment monitoring, if installed, must be deactivated in addition to vehicle settings for the heating operation.

Please refer to the operating manual of the vehicle for instructions regarding deactivation.

Before parking the vehicle, make the following settings:



No display appears in A/C control panel during heating!

Order of setting:

1. Air outlet at windscreen
2. Set fan to level "2"
3. Set temperature on both sides to "HI"

A/C control panel