Water Heater Unit

***Thermo Top E* Additional Heater** e1 00 0003

***Thermo Top C* Additional Heater** e1 00 0002

***Thermo Top P* Additional Heater** e1 00 0104

Installation Instructions

Mitsubishi L200

Diesel
from Model Year 2006
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, specialized tools and equipment are required to install and repair Webasto heating and cooling systems.

NEVER attempt to install or repair Webasto heating or cooling systems if you have not successfully completed the company training and thereby acquired the required technical skills, or if you do not have access to the required technical documentation, tools and equipment needed to carry out correct installation and repairs.

ALWAYS follow all Webasto installation and repair instructions and observe all warnings.

Webasto does not accept any liability for defects and damage that are attributable to installation by untrained staff.

Ident. No.:1311018C_EN Fee Euro 10.00

Table of Contents

Validity

Manufacturer	Model	Type	EG-BE No./ABE
Mitsubishi	L200	KA0T	L716

Engine type	Engine model	Output in kW	Displacement in cm³
4D56	Diesel	100	2477
4D56	Diesel	131	2477

Vehicle and engine types, equipment variants and national specifications not listed in these installation instructions have not been tested. However, installation according to these installation instructions may be possible.

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

Heater Unit/Installation Kit

Quantity	Description	Order No.:
1	Retail accessories with desired heater control	See Mitsubishi price list
1	Installation kit for Mitsubishi L200 Diesel	1311015C

Heater unit recommended for the respective vehicle class:

Vehicle	Heater Unit
Compact car	Thermo Top E
Mid-size car, station wagon	Thermo Top C
Full-size car, van, offroader	Thermo Top P

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

Foreword

These installation instructions apply to Mitsubishi L200 Diesel vehicles - for validity, see page 2 - from model year 2006 and later, assuming technical modifications to the vehicle do not affect installation, any liability claims excluded. Depending on the vehicle version and equipment, modifications may be necessary during installation with respect to these installation instructions.

However, the stipulations in the "installation instructions" and "operating and maintenance instructions" for the *Thermo Top C/P/E* must always be observed.
The corresponding rules of technology and any information from the vehicle manufacturer should be observed during the installation work.

General Instructions

Installation should be carried out according to the general, standard rules of technology. Unless specified otherwise, fasten hoses, lines and wiring harnesses to original vehicle lines and wiring harnesses using cable ties.
Sharp edges must be provided with rub protection (cut-open fuel hose)!
Spray unfinished body areas, e.g. drilled holes, with anti-corrosion wax (Tectyl 100K, Order No. 111329).

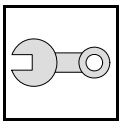
Special Tools

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

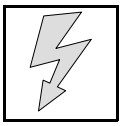
Explanatory Notes on Document

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

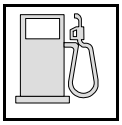


Electrical system

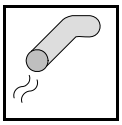


Coolant

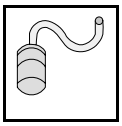
Fuel



Exhaust gas



Combustion air



Software

Special features are highlighted using the following symbols:

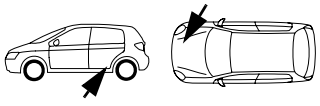
Specific risk of injury or fatal accidents.

Specific risk of damage to components.

Specific risk of fire or explosion.

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

Reference to a special technical feature.



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

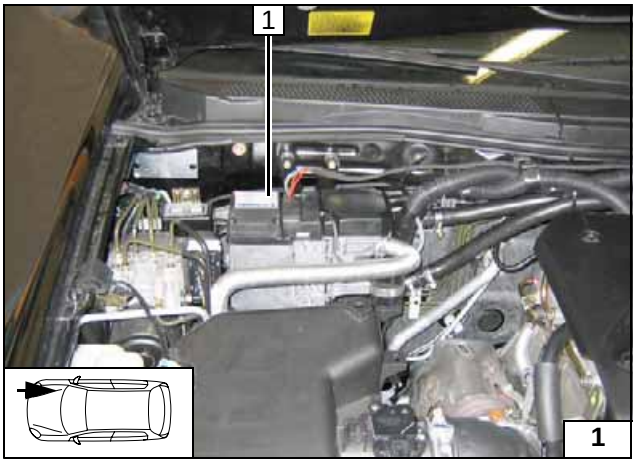
All dimensions are in mm!
Tightening torque of hose clamps = 2.0 + 0.5 Nm!
Tightening torque of Ejot screws, Ejot studs = 10 Nm!

Preliminary Work

WARNING!

- Open the fuel tank cap and vent the fuel tank.
- Close the tank cap again.
- Depressurize the cooling system!
- Copy the factory number from the original type label to the duplicate type label.
- Remove years that do not apply from duplicate label.
- Attach the duplicate label (type label) in the appropriate place.
- Disconnect and completely remove the battery.
- Remove the A/C control panel (only with automatic air-conditioning).
- Remove the footwell trim on the driver's and front passenger side.

Remove page 28 "Operating Instructions for End Customer" and add to the vehicle operating instructions.



Heater unit installation location

1 Heater unit

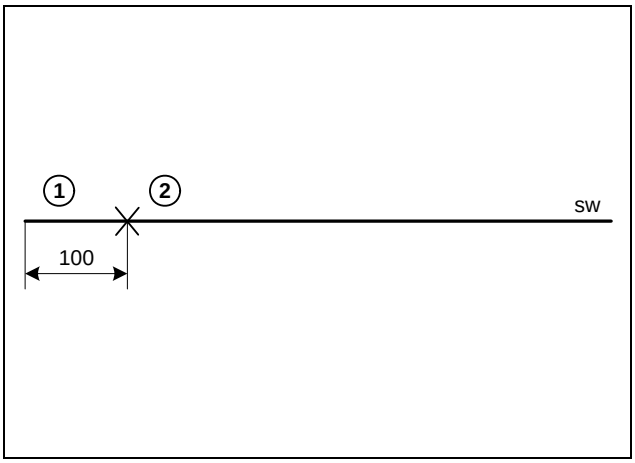
Installation location

Preparing electrical system

Only with automatic air-conditioning

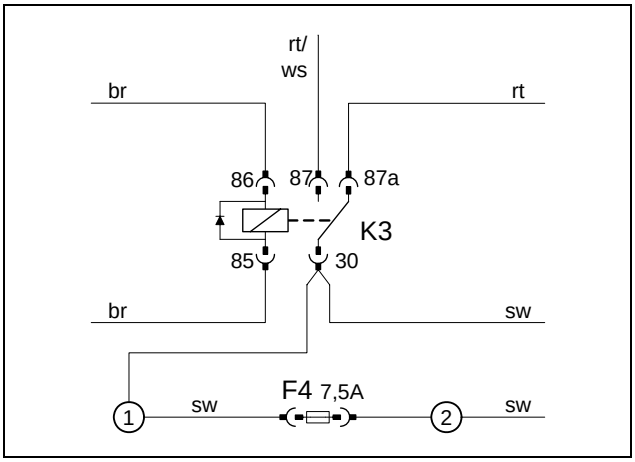
Cutting wires to length

Install wire section **2** in protective sleeving provided.



Preparing fuse F4

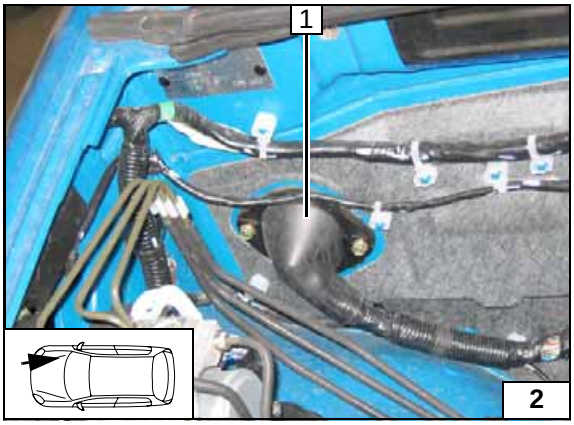
Produce connections as shown in wiring diagram. Install wire section **2** in protective sleeving provided.



Electrical system

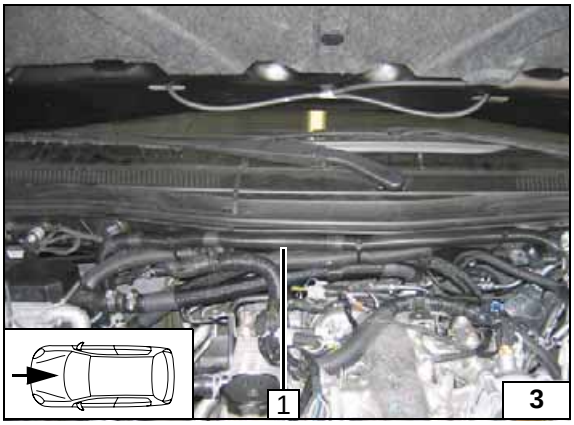
Wiring harness pass through

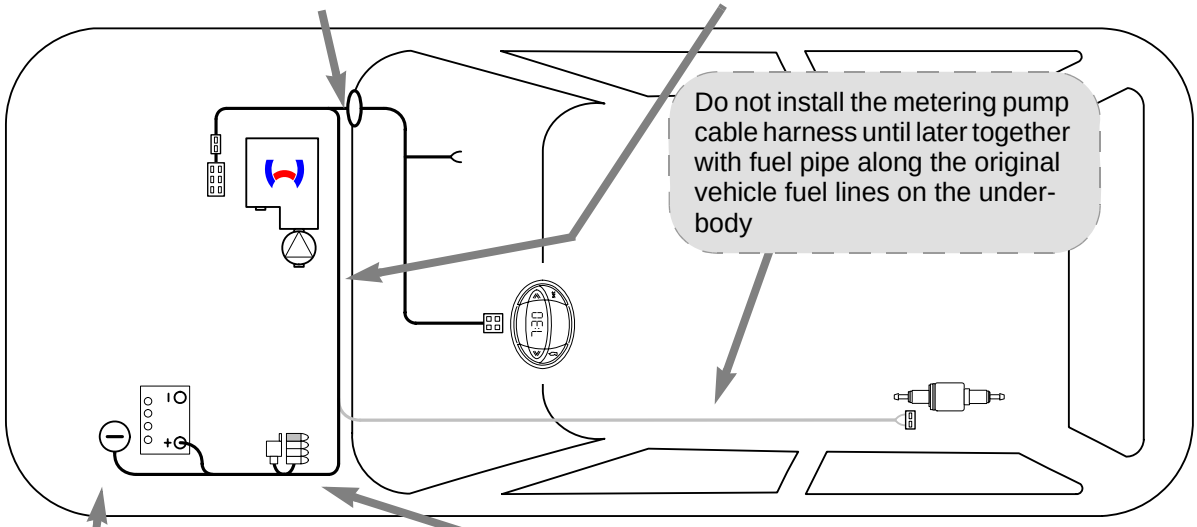
1 Protective rubber plug



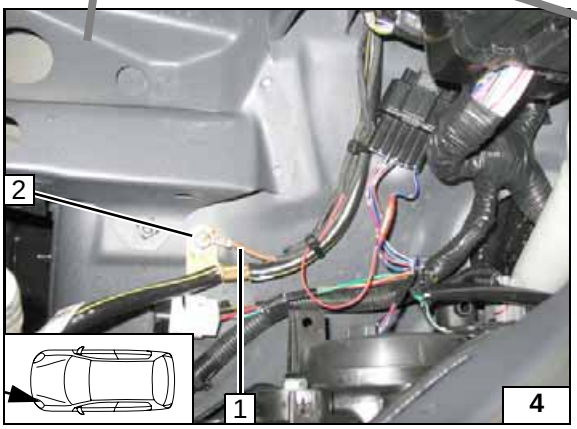
Routing wiring harness

1 Pull wiring harness of heater unit, fan controller and heater control into corrugated tube **1** and route to right-hand side of vehicle.



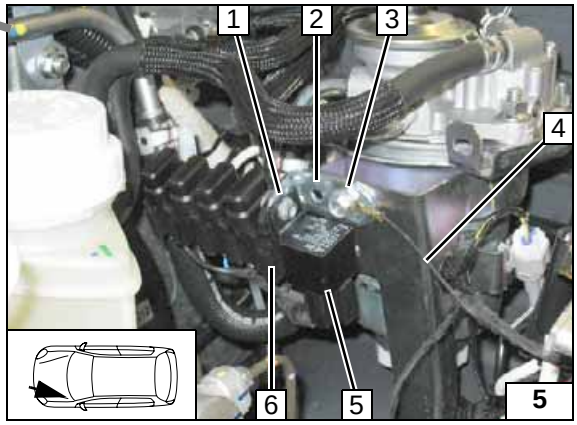


Wiring harness installation diagram



Ground wire

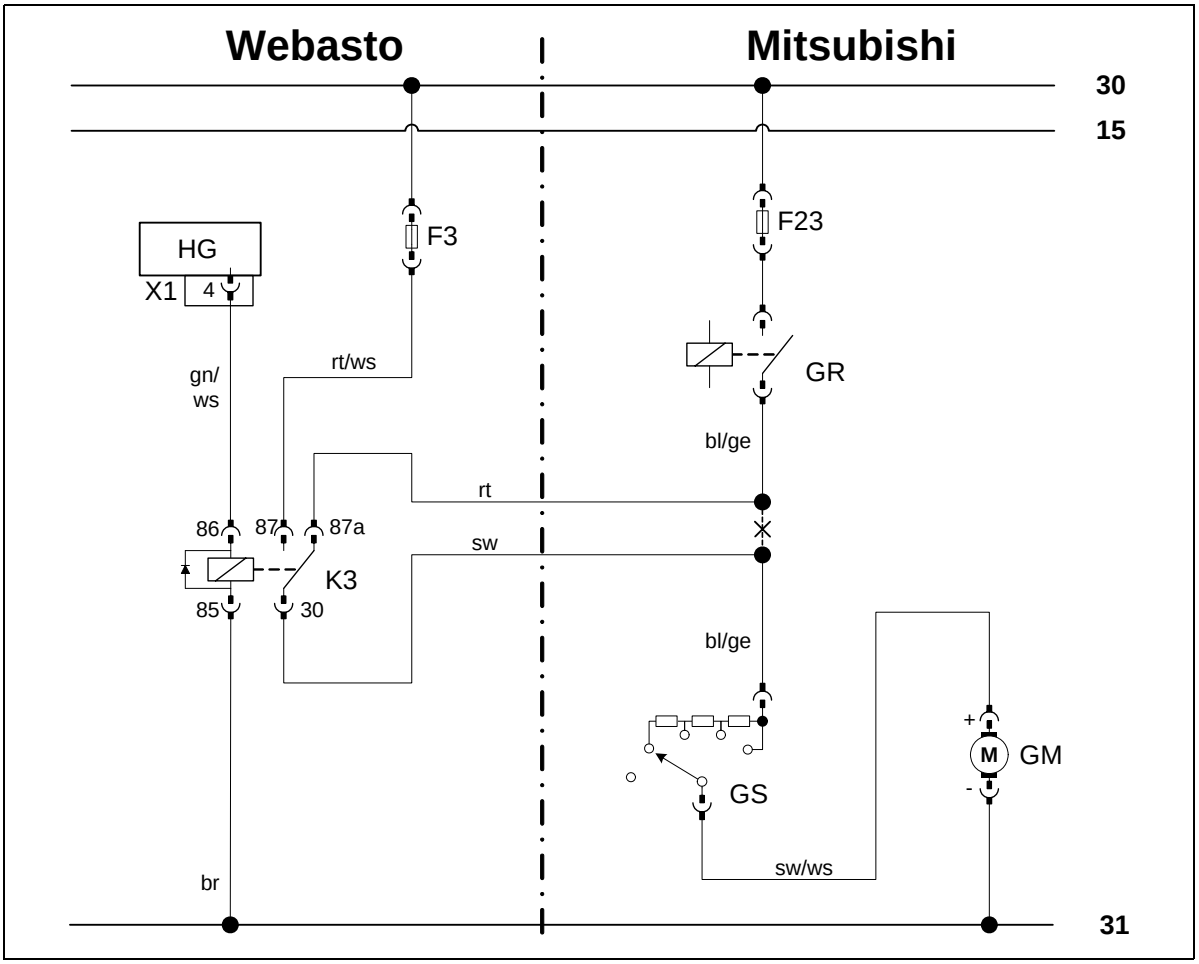
1 Ground wire
2 Original vehicle ground support point



Fuse holder, K3 relay

1 M5x16 bolt, washers, nut
2 Angle bracket
3 Original vehicle bolt
4 Black (sw) wire of time-delay relay/85 (cold starting kit)
5 K3 relay
6 Retaining plate for fuse holder

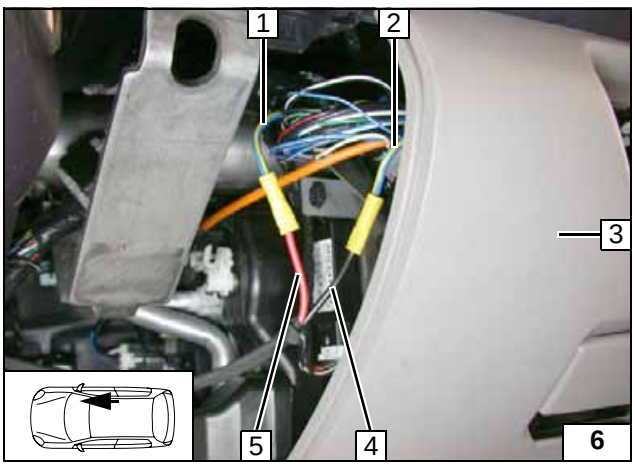
Fan controller for manual air conditioning



Wiring diagram

Webasto components		Vehicle components		Colors and symbols	
HG	Heater unit TT-C/E	GM	Fan motor	rt	red
X1	6-pin heater unit connector	gr	Fan relay	ws	white
F3	Fuse	GS	Fan switch	sw	black
K3	Fan relay	F23	Fuse	br	brown
				gn	green
				bl	blue
				ge	yellow
				X	Cutting point
				Wiring colors may vary.	

Legend



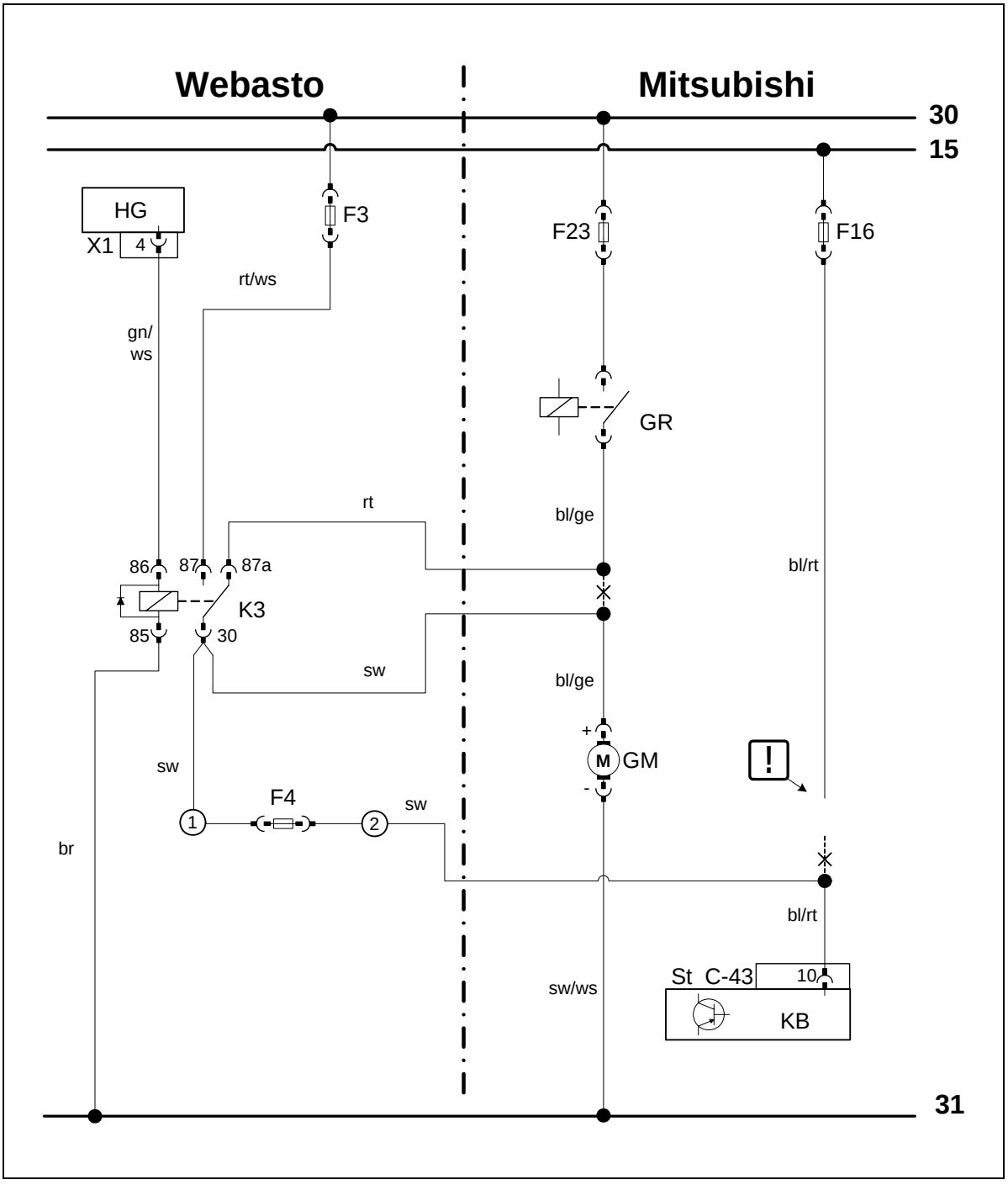
Connection on wiring harness between fan relay and fan switch (behind steering column trim).
Produce connections as shown in wiring diagram.

1 Blue/yellow (bl/ge) wire of fan relay
2 Blue/yellow (bl/ge) wire of fan switch
3 Center console trim
4 Black (sw) wire of K3/30
5 Red (rt) wire from K3/87a

Connecting fan-motor

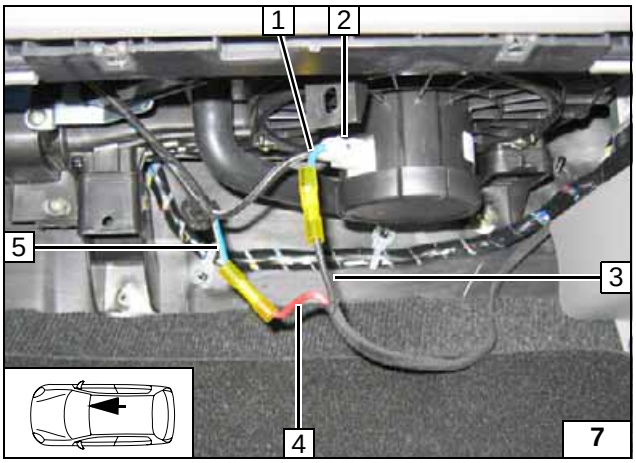
Automatic air-conditioning fan controller

Wiring diagram



Legend

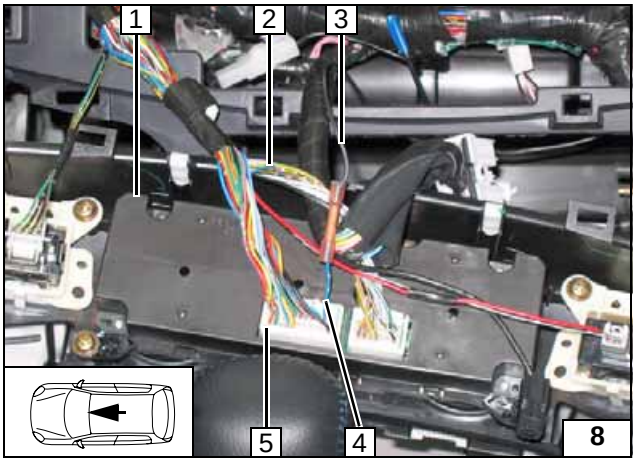
Webasto components		Vehicle components		Colors and symbols	
HG	Heater unit TT-C/E	GM	Fan motor	rt	red
X1	6-pin heater unit connector	gr	Fan relay	ws	white
F3	25 A fuse	KB	A/C control panel	sw	black
K3	Fan relay	F16	Fuse, 7.5 A	br	brown
F4	Fuse, 7.5 A	F23	Fuse 30A	gn	green
		St C- 43	22-pin connector KB	bl	blue
				ge	yellow
				!	Insulate wire end and tie back
				X	Cutting point
				Wiring colors may vary.	



Connection to 2-pin connector **2** from the blower motor.
Produce connections as shown in wiring diagram.

1 Blue/yellow (bl/ge) wire of fan motor
3 Black (sw) wire from K3/30
4 Red (rt) wire from K3/87a
5 Blue/yellow (bl/ge) wire of fan relay

Connecting fan-motor

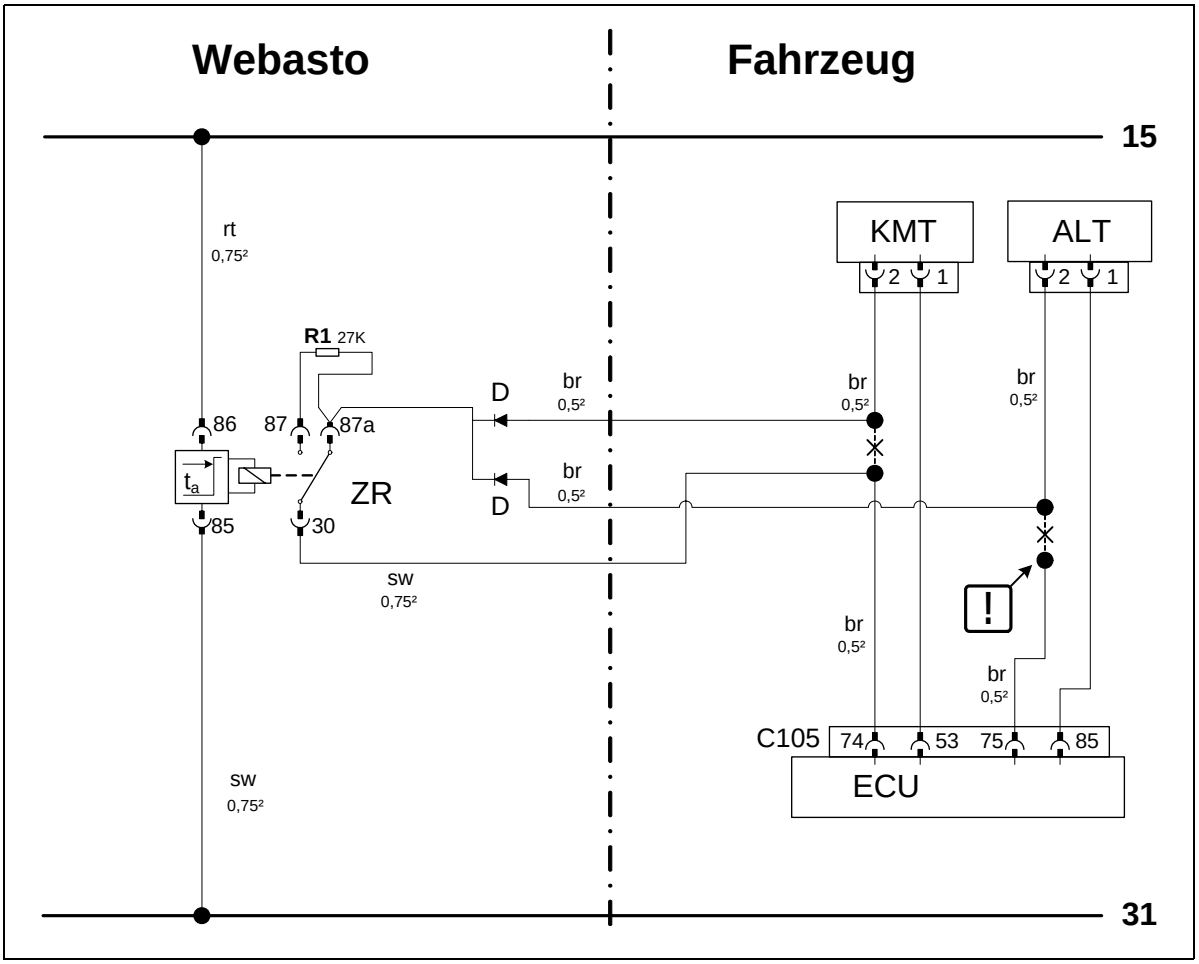


Connection on 22-pin connector C-43, Pin 10 **5** from A/C control panel **1**. Insulate blue/red (bl/rt) wire **2** from fuse F16 and tie back. Produce connections as shown in wiring diagram.

3 Black (sw) wire from K3/30
4 Blue/red (bl/rt) to A/C control panel

Connecting A/C control panel

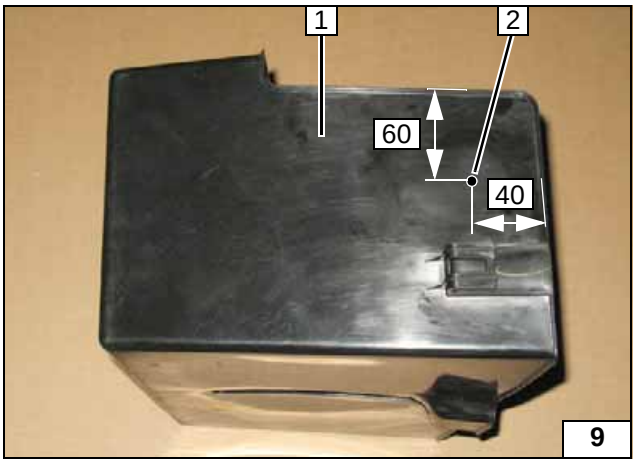
Wiring harness of cold starting function (option)



Wiring diagram for cold starting

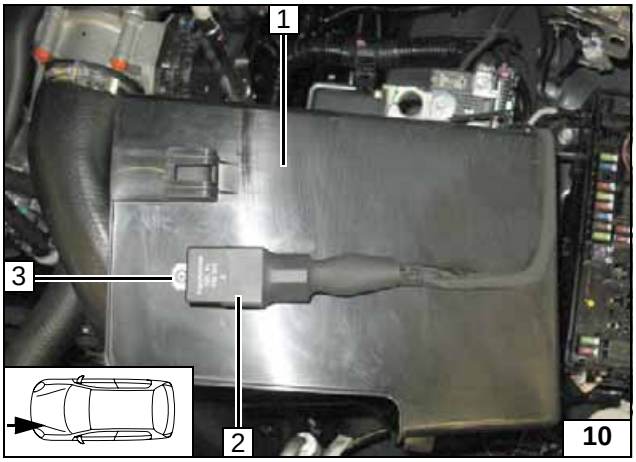
Webasto components		Vehicle components		Colors and symbols	
ZR	Time-delay relay	ECU	Engine control unit	rt	red
D / R1	Diode D and resistor R1 are part of wiring harness	KMT	Coolant temperature sensor	gn	green
				sw	black
		ALT	Intake-air temperature sensor	br	brown
				ge	yellow
				bl	blue
				X	Cutting point
				Wiring colors may vary.	

Legend



1 Battery box
2 4.0 mm dia. hole

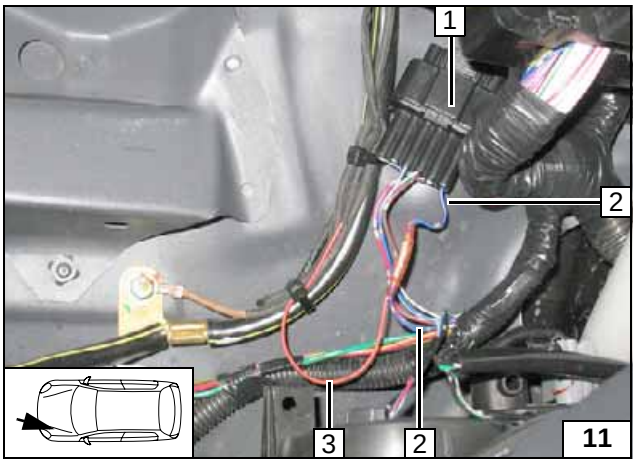
Holes in battery box



Install battery box **1**.

2 Time-delay relay
3 Blind rivet

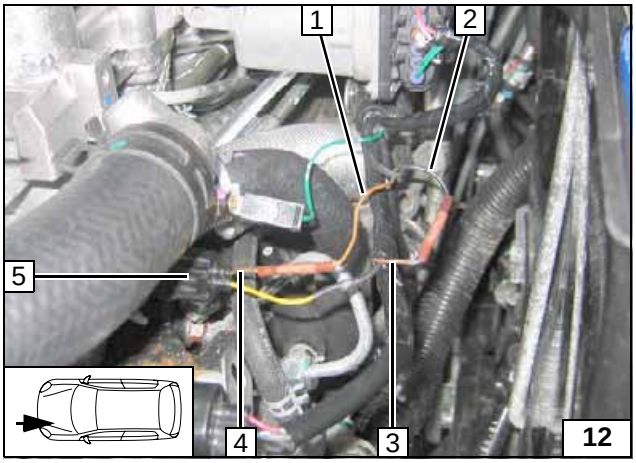
Installing temperature switch and time-delay relay



Connection on 12-pin connector **1**.
Produce connections as shown in wiring diagram.

2 Blue/red (bl/rt) wire of 12-pin connector (Terminal 15)
3 Red (rt) time-delay relay/86

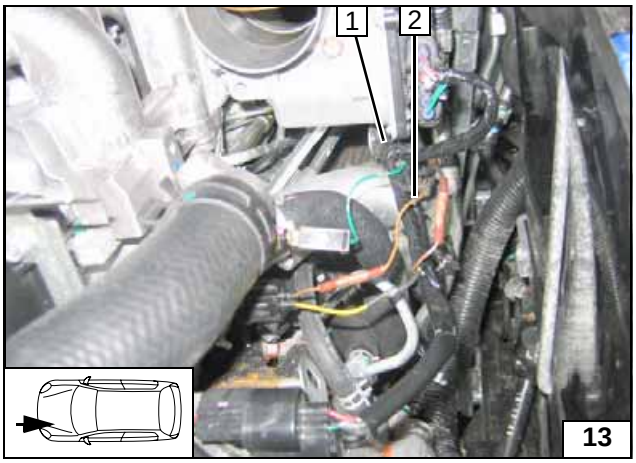
Connection of time-delay relay



Connection on 2-pin connector **5**, Pin 2 from coolant temperature sensor.
Produce connections as shown in wiring diagram.

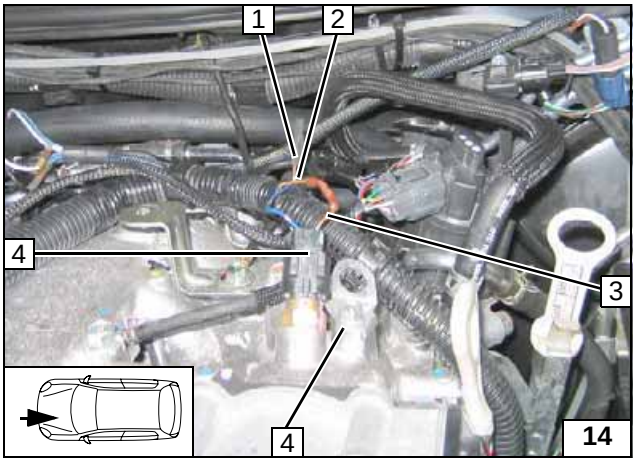
1 Brown (br) wire from diode
2 Black (sw) wire of time-delay relay/30
3 Brown (br) wire of engine control unit/74
4 Brown (br) wire of connector coolant temperature sensor/2

Connection of coolant temperature sensor



Route brown (br) wire **2** from diode of time-delay relay in corrugated tube **1** to intake-air temperature sensor.

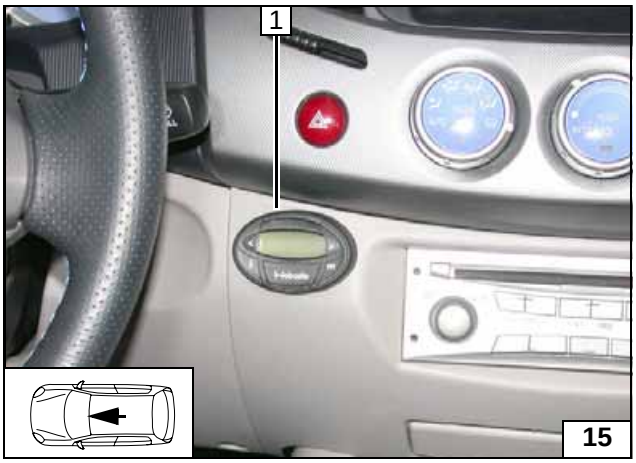
Routing wiring harness



Connection on 2-pin connector, Pin 2 from intake-air temperature sensor **4**.
Produce connections as shown in wiring diagram.

1 Insulate brown (br) wire of engine control unit/75 and tie back
2 Brown (br) wire from diode
3 Brown (br) wire of connector for intake-air temperature sensor/2

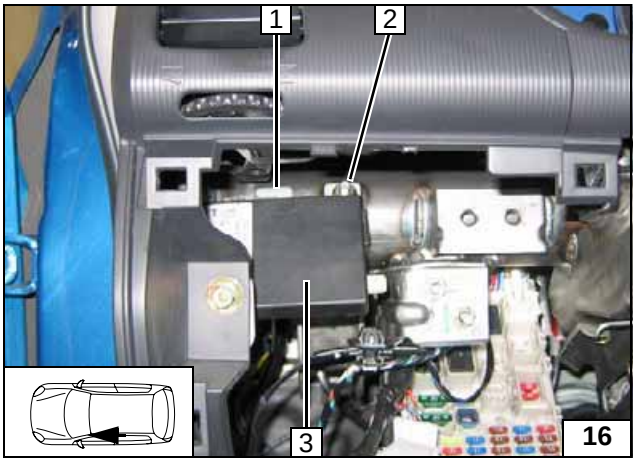
Connection of intake-air temperature sensor



Digital timer option

1 Digital timer

Installing receiver

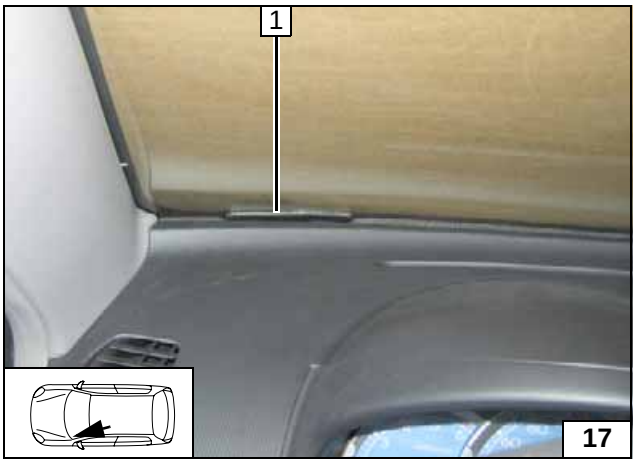


Remote option (Telestart)

Drill out bracket **1** to 6 mm dia. at position **2**.

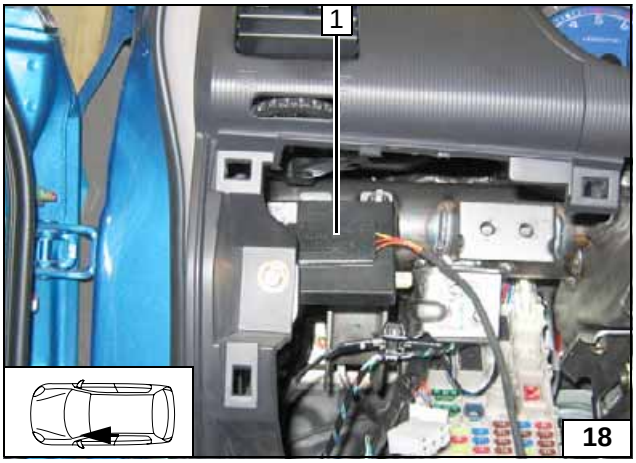
3 Receiver

Installing receiver



1 Antenna

Installing antenna

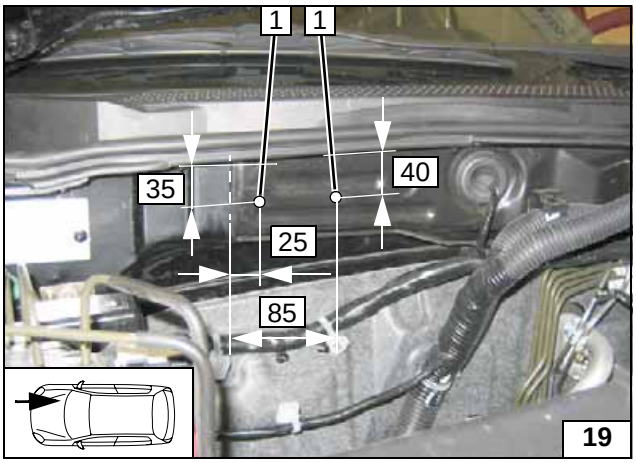


Temperature sensor HTM100

Fasten temperature sensor **1** with adhesive tape.

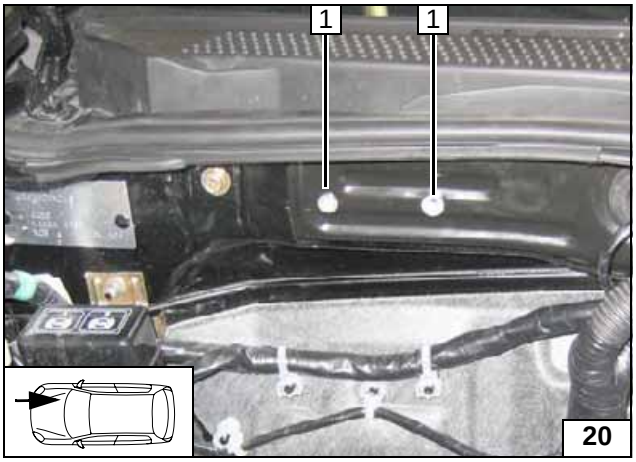
Installing temperature sensor

Preparing installation location



1 Copy hole pattern [2x]

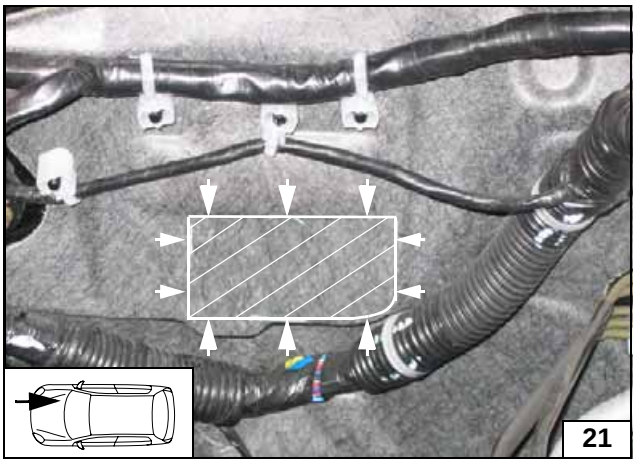
Copying hole pattern



When drilling, watch components located behind!

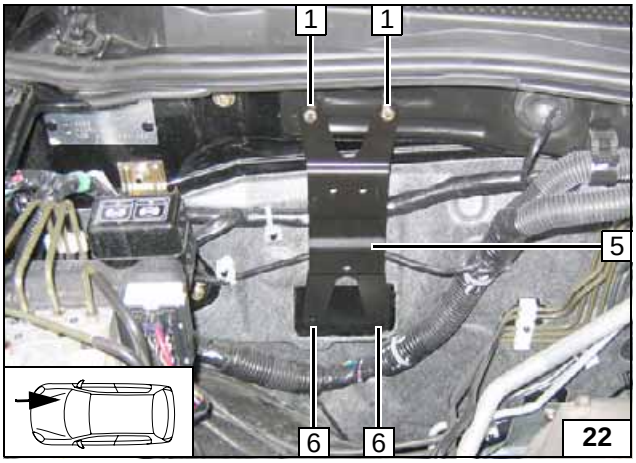
1 9.1 mm dia. hole; mount rivet nut [2x]

Installing rivet nut



Cut out insulation at marking.

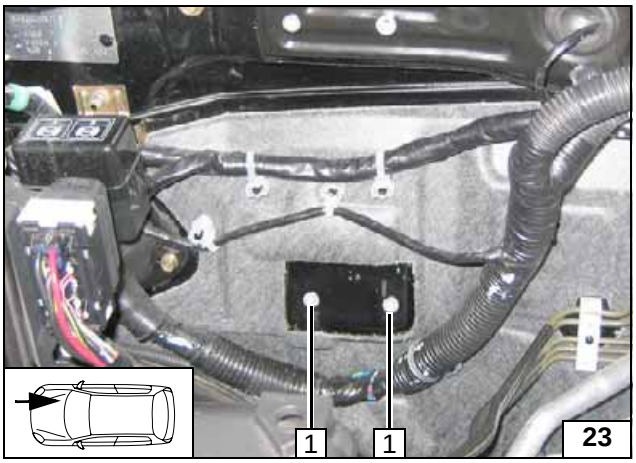
Cutting out insulation



Loosely mount bracket **2**.

1 M6x20 bolt [2x] on rivet nut
2 Copy hole pattern [2x]

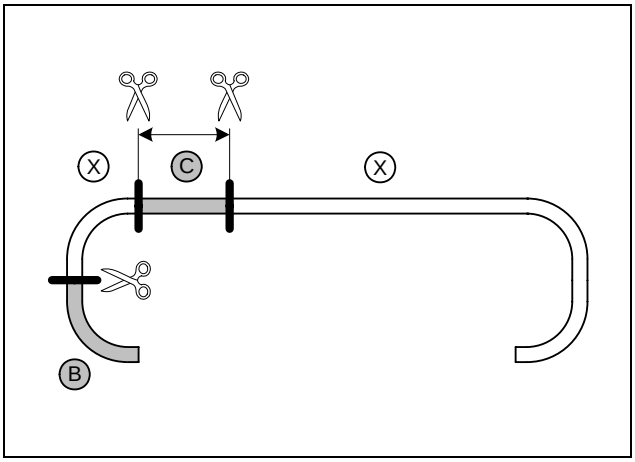
Copying hole pattern



Remove bracket. When drilling, watch components located behind!

1 9.1 mm dia. hole; mount rivet nut [2x each]

Installing rivet nut

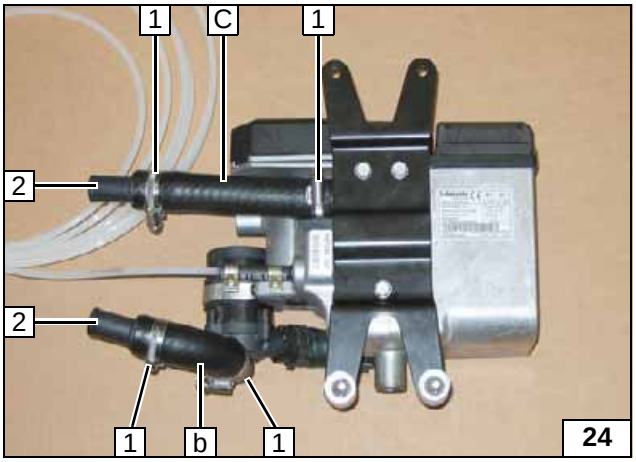


Preparing heater unit

Discard sections **X**.

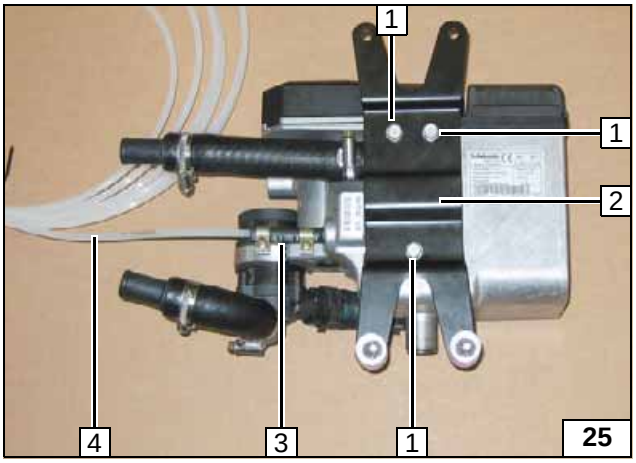
B = 90° elbow
c = 140

Cutting 20 mm dia. coolant hose to length



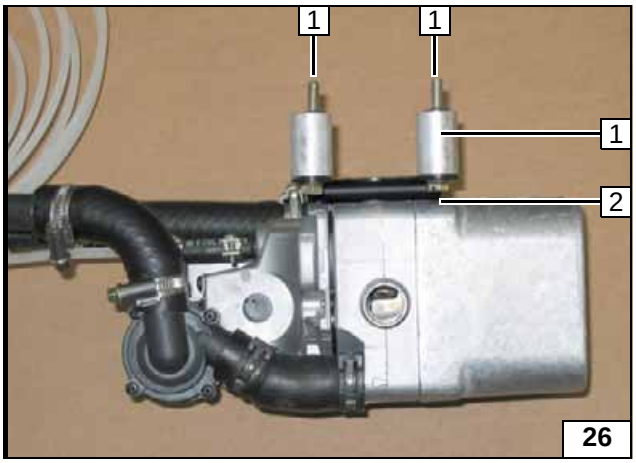
1 27 mm dia. clamp [4x]
2 18x20 connecting pipe [2x]

Premounting hoses B and C



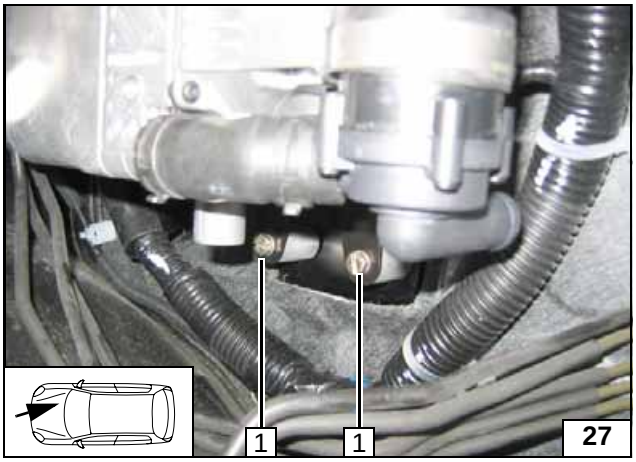
1 Ejot screw [3x]
2 Bracket
3 Hose section, 10 mm dia. clamp [2x]
4 Fuel line

Preassembling heater unit



1 M6x50 bolt, spring lockwasher, 30 mm spacer, pin lock [2x each]

Preassembling heater unit



Installing heater unit

Loosely mount M6x50 bolts [2x] **1**.

Installing heater unit

Align heater unit and tighten all screw connections.

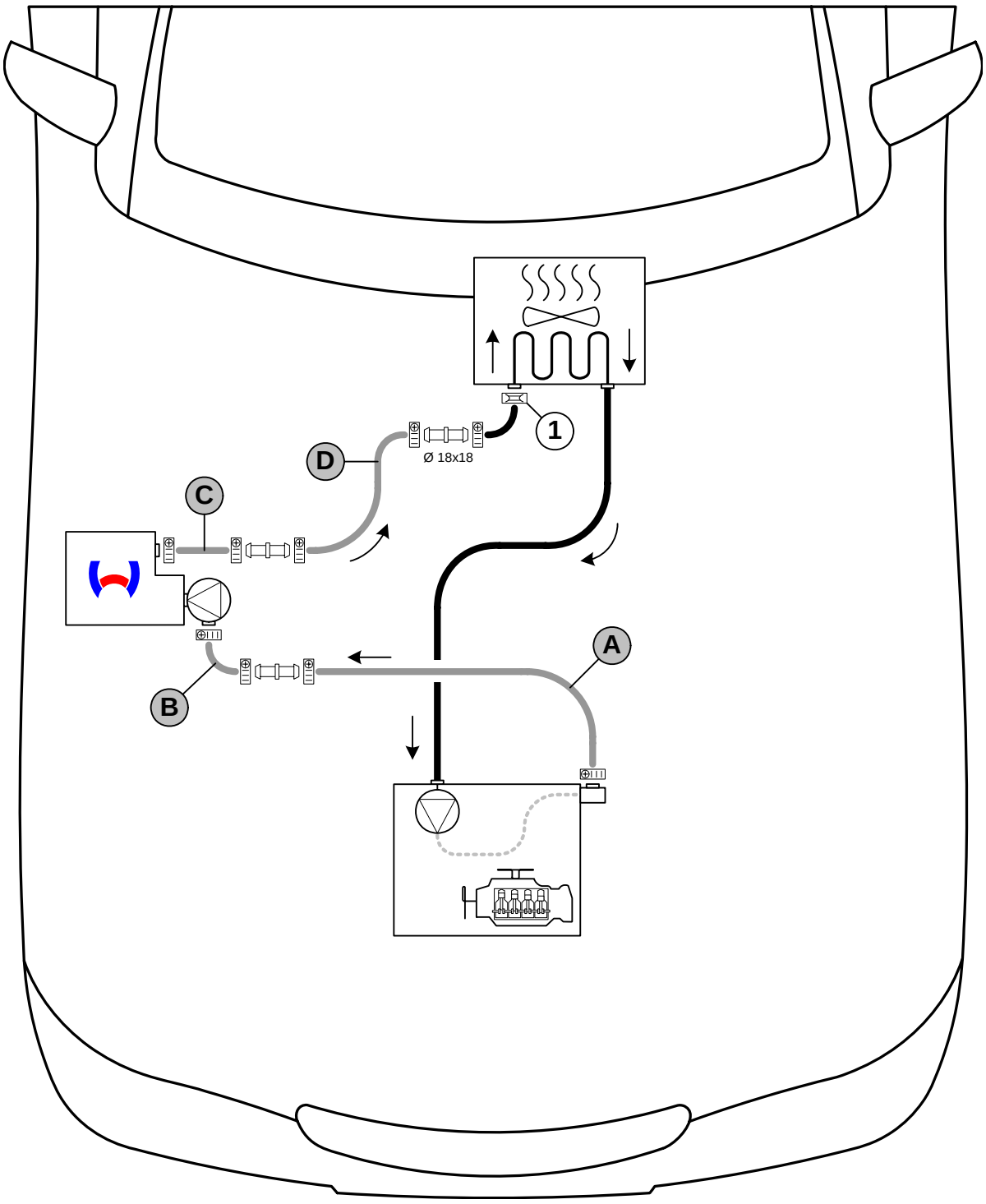
1 M6x35 bolt, spring lockwasher, 20 mm shim [2x each]

Installing heater unit

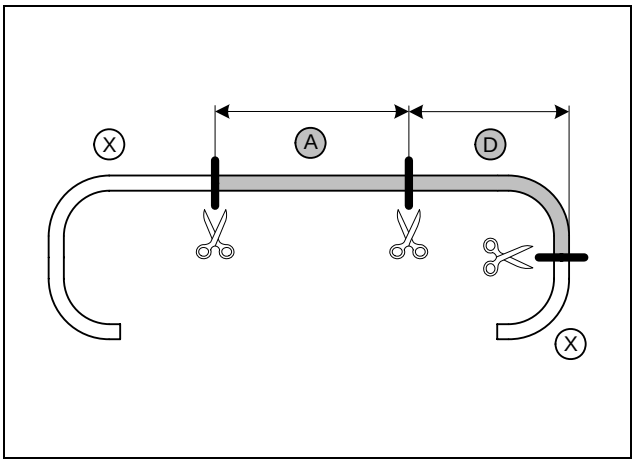
Coolant

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

Coolant routing diagram



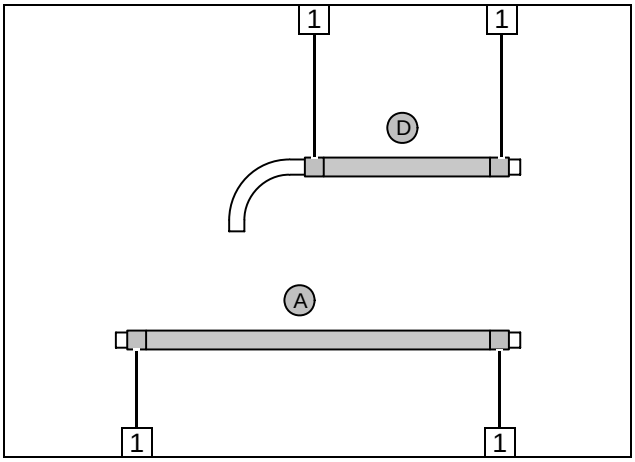
All connecting pipes without a specific designation = dia. 18x20.
All hose clamps = 20-27 mm dia.
1 = Original vehicle spring clip .



Discard sections **X.**

a = 820
d = 440

Cutting 18 mm dia. coolant hose to length



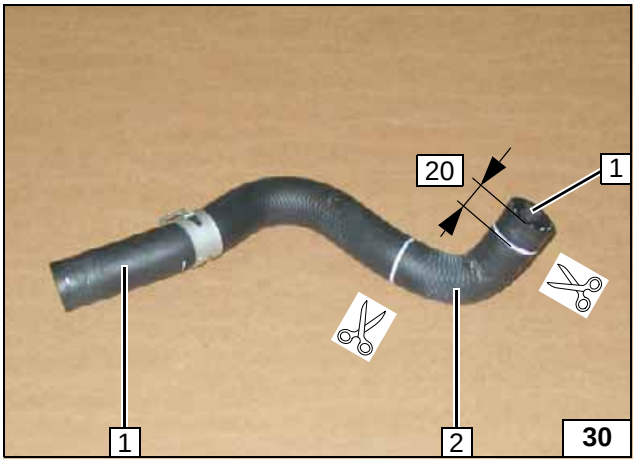
Push braided protection hoses onto hose **A** and **C** and cut to length.
Cut heat shrink plastic tubing to length.

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

Preparing coolant hoses

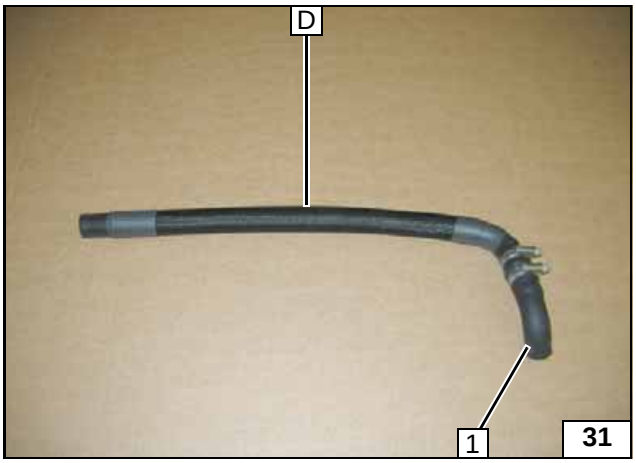
Remove original vehicle hose from engine outlet to heat exchanger inlet **1**. Spring clip of heat exchanger inlet will be reused!

Cutting point



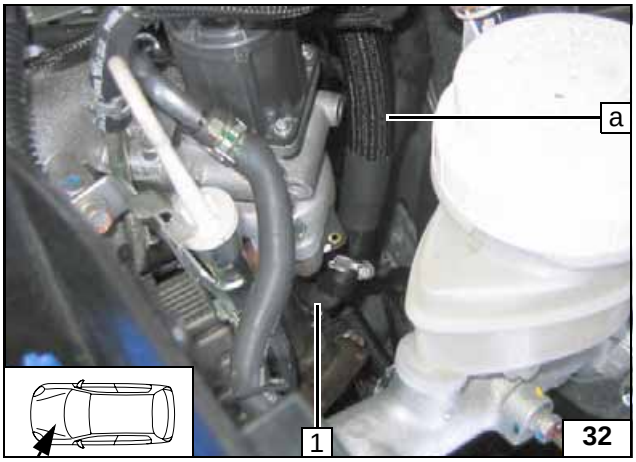
1 Discard cut-off sections
2 Hose section of heat exchanger inlet

Preparing original vehicle hose



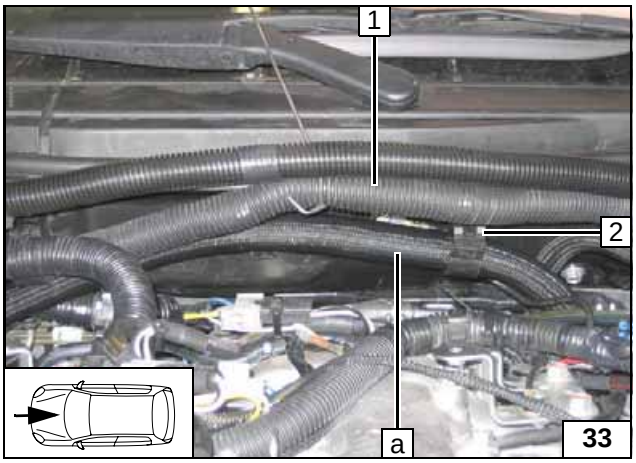
1 Hose section of heat exchanger inlet

Preparing hose D



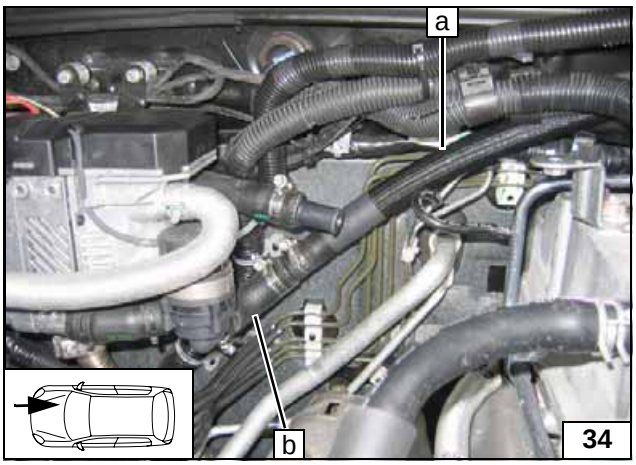
1 Connection piece for engine outlet

Connecting engine outlet

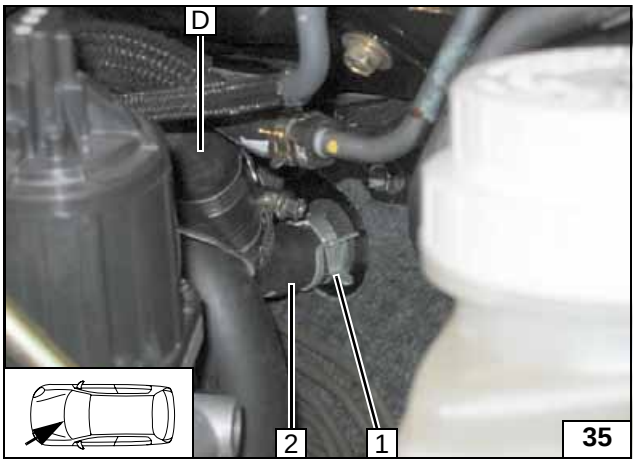


Remove original vehicle wiring harness **1** from bracket **2**. Bracket will be used for hose **A**. Ensure sufficient spacing to engine.

Routing in engine compartment



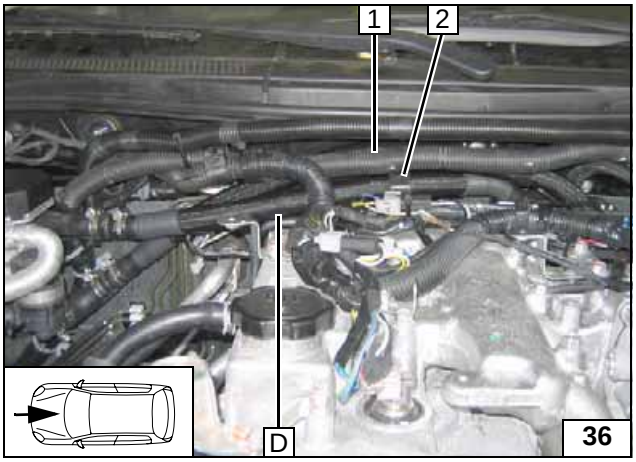
Connecting heater unit



Ensure sufficient distance to neighboring components.

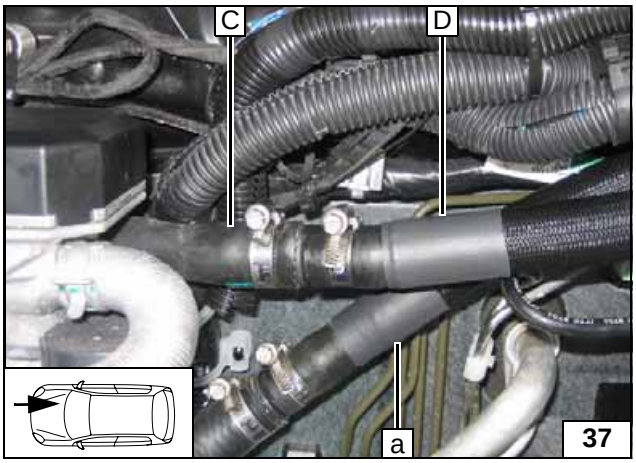
1 Original vehicle spring clip
2 Hose on heat exchanger inlet

Connecting heat exchanger inlet

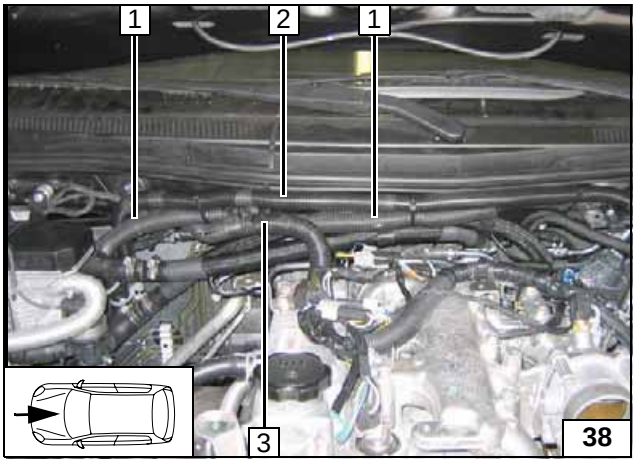


Remove original vehicle wiring harness **1** from bracket **2**. Bracket will be used for hose **A**. Ensure sufficient spacing to engine.

Routing in engine compartment

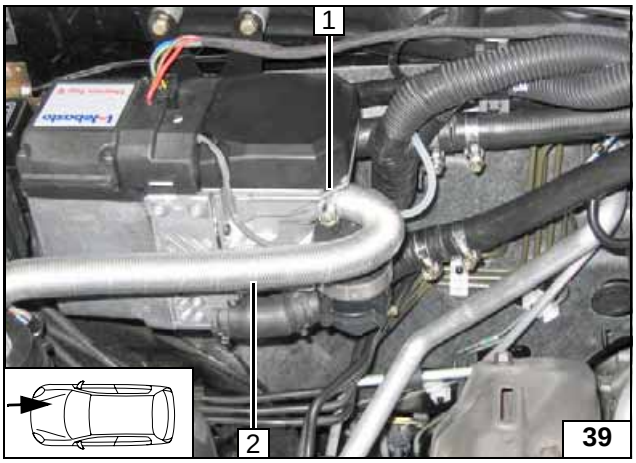


Connecting heater unit



Route original vehicle wiring harnesses **1** and **3** as well as corrugated tube **2** and fasten as shown. Ensure sufficient spacing to engine.

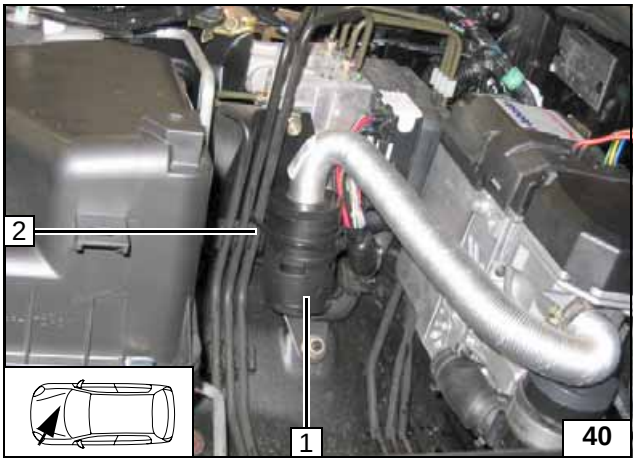
Fastening wiring harness



Combustion air

1 27 mm dia. clamp
2 Combustion air pipe

Installing combustion air pipe



1 Muffler
2 Cable tie

Installing muffler

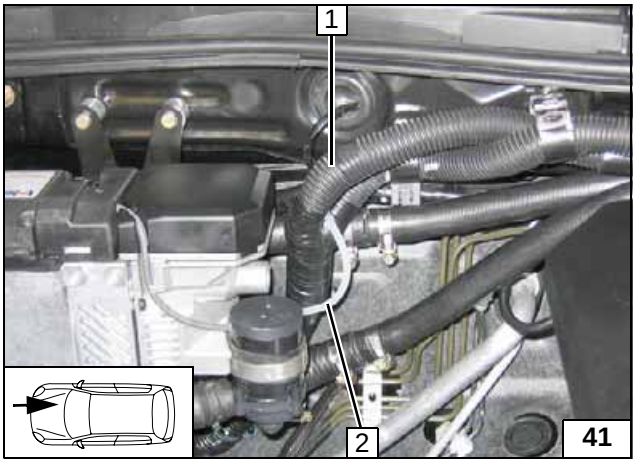
Fuel

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

Catch any fuel running off with an appropriate container.

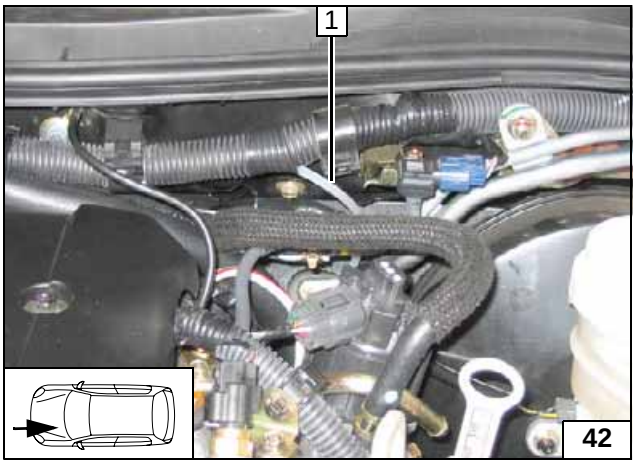
Install fuel line and metering-pump wiring harness so that they are protected against stone impact. Unless specified otherwise, always fasten using cable ties.
Mount the fuel line and wiring harness with rub protection on sharp edges.

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



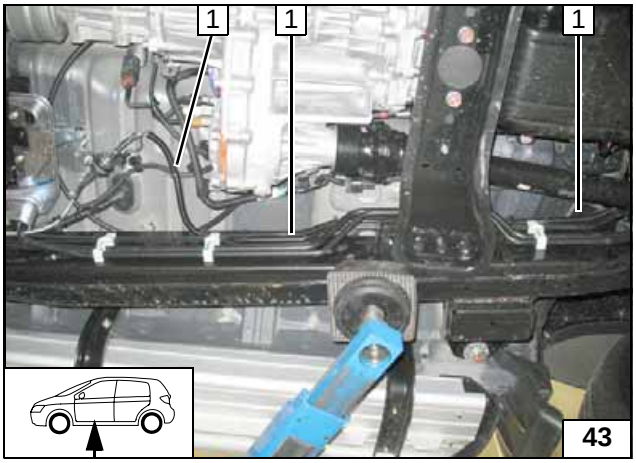
Route fuel line **2** in corrugated tube **1** to right-hand side of vehicle.

Installing lines



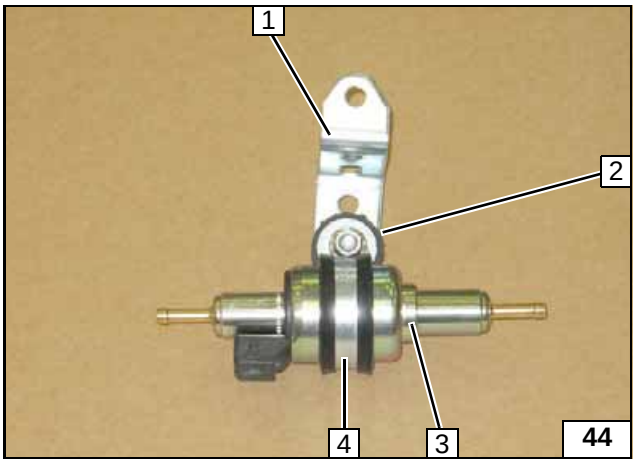
Route fuel line **1** together with wiring harness of metering pump in corrugated tube along original vehicle fuel lines to underbody.

Installing lines



Route fuel line and wiring harness of metering pump in corrugated tube **1** along original vehicle fuel lines to installation location of metering pump.

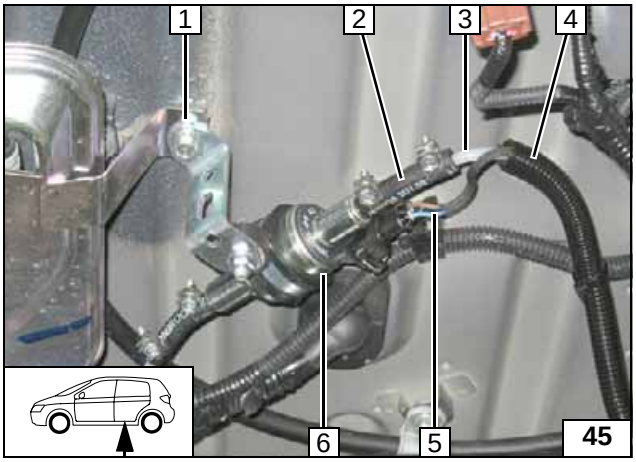
Installing lines



Bend perforated bracket **1** according to template.

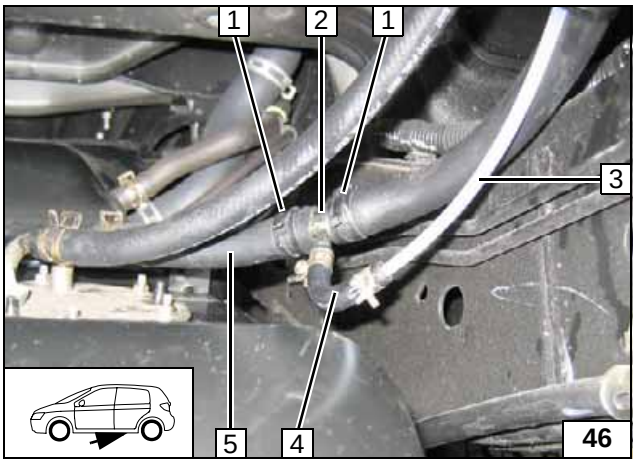
2 Silent block, flanged nut [2x]
3 Metering pump
4 Rubber-coated pipe clamp

Premounting metering pump



1 Original vehicle bolt
2 Hose section, 10 mm dia. clamp [2x]
3 Fuel line
4 Corrugated tube
5 Wiring harness of metering pump, connector mounted
6 Premounted metering pump

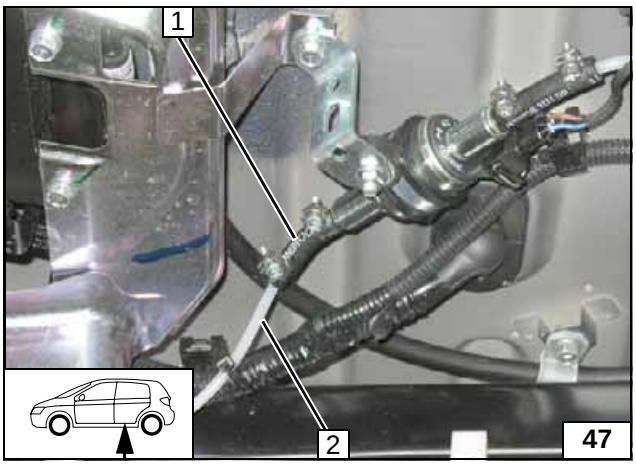
Installing metering pump



Detach fuel tank and lower at front.
Separate fuel return line **5** approx. 150 mm before coupling.

1 22 mm dia. spring clip [2x]
2 12x5x12 fuel standpipe
3 Fuel line
4 90° molded hose, 10 mm dia. clamp [2x]

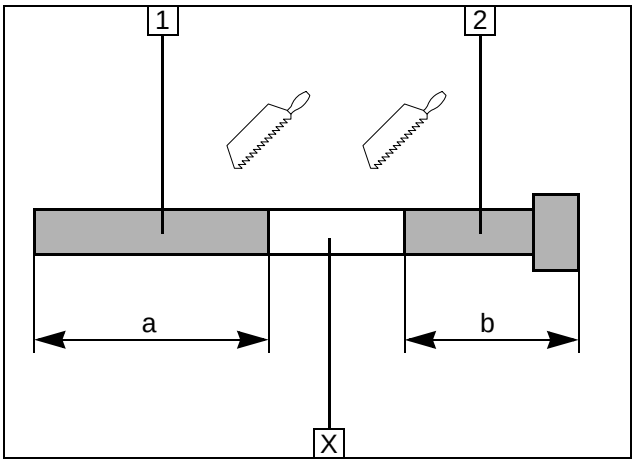
Removing fuel



Check position of components; adjust if necessary. Check that they have free clearance.

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

Connecting metering pump

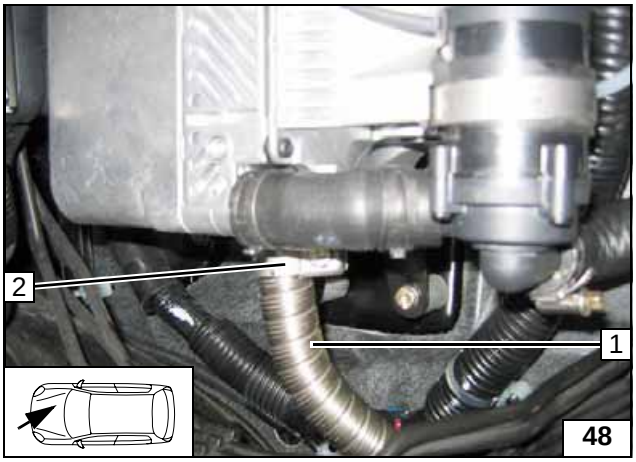


Exhaust gas

Discard section **X**.

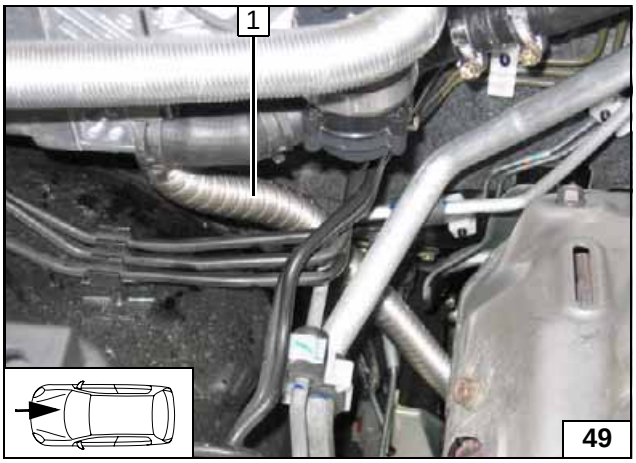
1 Exhaust pipe
a = 580
2 Exhaust end section
b = 130

Preparing exhaust pipe



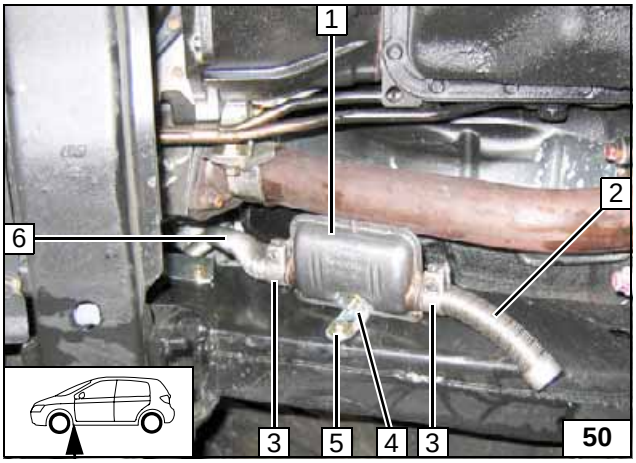
1 Exhaust pipe
2 Hose clamp

Installing exhaust pipe



1 Exhaust pipe

Routing exhaust pipe



Ensure sufficient distance to neighboring components.

1 Muffler
2 Exhaust end section
3 Hose clamp [2x]
4 M6x20 bolt, angle bracket, flanged nut
5 Existing hole, rivet nut, M6x20 bolt, spring lockwasher, large diameter washer
6 Exhaust pipe

Installing muffler and end section

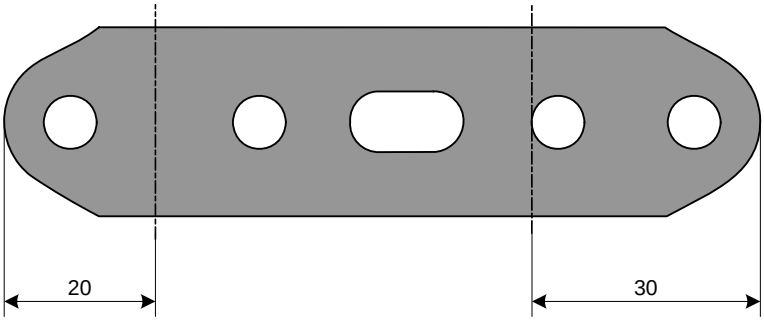
Final Work

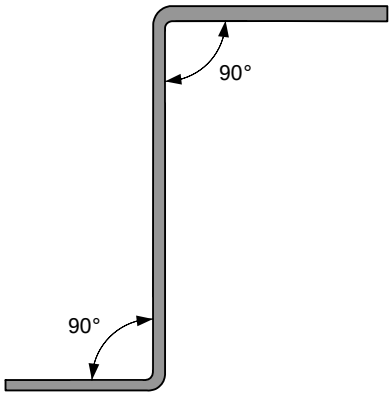
WARNING!
Mount removed parts in reverse order.
Check all hoses, clamps and all electrical connections for firm seating.
Secure all loose cables using cable ties.
Only use manufacturer-approved coolant.
Spray heater unit components with anti-corrosion wax (Tectyl 100K, Order No. 111329).

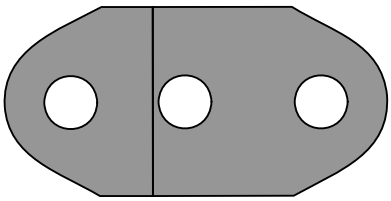
- Connect the battery.
- Fill and bleed the coolant circuit according to the vehicle manufacturer’s specifications.
- Set the digital timer.
- Make settings on A/C control panel according to the "Operating Instructions for End Customer".
- Check the proper operation of the additional heater, see the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

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

Template for Perforated Bracket







100 mm

Scale 1:1

Compare the size of the printed version with dimension lines.
Permitted tolerance a maximum of 2%.

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

100 mm

0

Operating Instructions for End Customer

Please remove page and add to the vehicle operating instructions.

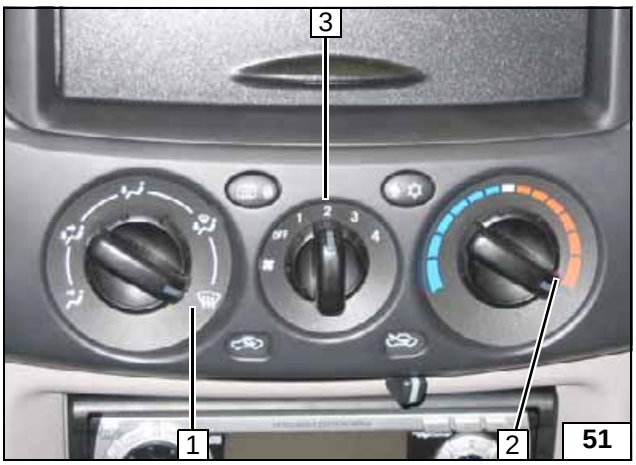
Note:
We recommend matching the heating time to the driving time.
Heating time = driving time
Example:
For a driving time of approx. 20 min. (in one direction), we recommend not exceeding a switch-on time of 20 min.

On vehicles with passenger compartment monitoring, this must be deactivated during heating!

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

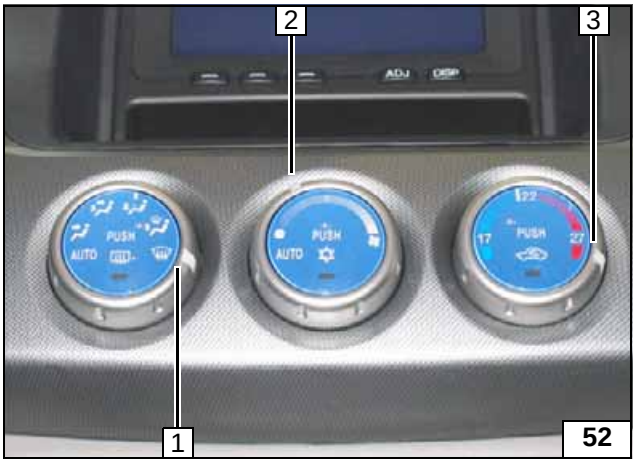
Before parking the vehicle, make the following settings:

Manual air conditioning



1 Air outlet to windshield
2 Set temperature to "max."
3 Set fan to level "1“ or max. "2"

Automatic air-conditioning



1 Air outlet to windshield
2 Fan at "1/3" of max. speed
3 Set temperature to "max."