Water Heater

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

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

Installation documentation

Mitsubishi L200

Diesel
from model year 2006
Left-hand drive vehicle
Vehicles with Chip-Tuning have not been tested.

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.

Ident. No.: 1311018E_EN Fee Euro 10.00

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Validity

Manufacturer	Model	Type	EG-BE No./ABE
Mitsubishi	L200	KA0T	L716
Mitsubishi	L200	KA0T	e1 * 2007 / 46 * 0453 * ...

Engine type	Engine model	Output in kW	Displacement in cm³
4D56	Diesel	94	2477
4D56	Diesel	100	2477
4D56	Diesel	131	2477

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	Retail accessories *Thermo Top E / C*	See price list
1	Installation kit for Mitsubishi L200 Diesel	1311015D
1	Heater control	See price list

Optional with vehicles up to model year 2010 (Euro 4):

Quantity	Designation	Order No.:
1	Cold starting kit	1314872A

Heater recommended for the respective vehicle class:

Vehicle	Heater
Compact car	Thermo Top E
Mid-size car, estate car	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 the 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 this installation documentation.

However, the stipulations in this "installation documentation", the "operating instructions" and the "installation instructions" for the *Thermo Top C/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).
While installing an IPCU, the corresponding settings must be checked or adjusted before the installation.

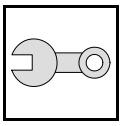
Special Tools

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

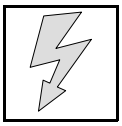
Explanatory Notes on Document

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

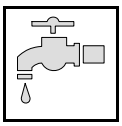
Mechanical system



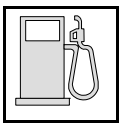
Electrical system



Coolant circuit

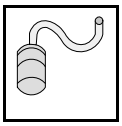


Fuel



Exhaust gas

Combustion air



Software

Special features are highlighted using the following symbols:

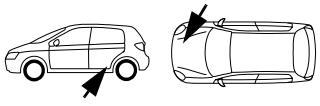
Specific risk of injury or fatal accidents.

Specific risk of damage to components.

Specific risk of fire or explosion.

Reference to general installation instructions of 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.

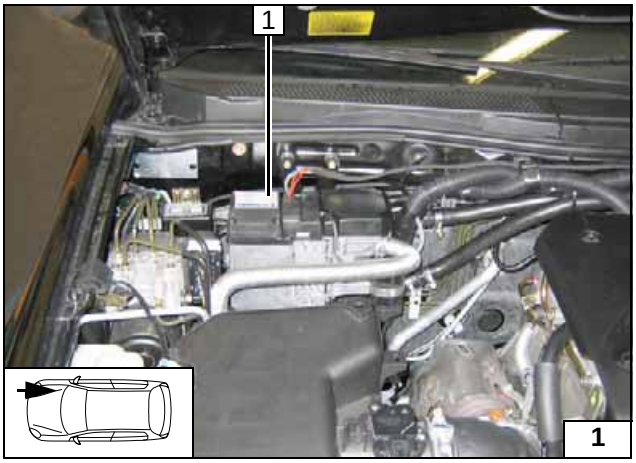
All dimensions are in mm!
Tightening torque of hose clamps = 2.0 + 0.5 Nm!
Tightening torque of Ejot screws, Ejot studs = 10 Nm!

Preliminary Work

WARNING!

- Open the fuel tank cap, ventilate the tank.
- Close the fuel tank cap again.
- 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.
- 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.

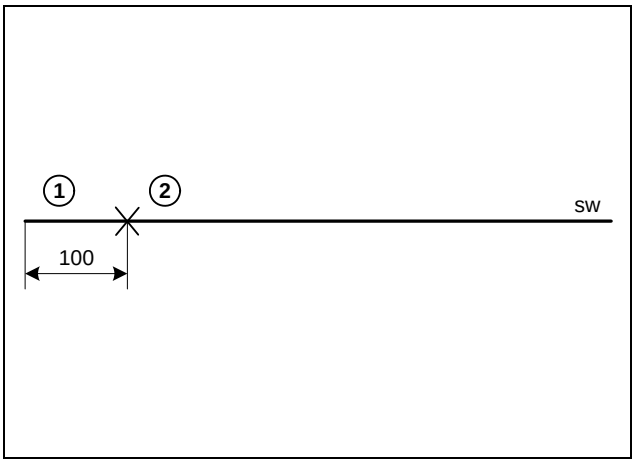
Remove page 30 "Operating Instructions for End Customer" and add to the vehicle operating instructions.



Heater installation location

1 Heater

Installation location

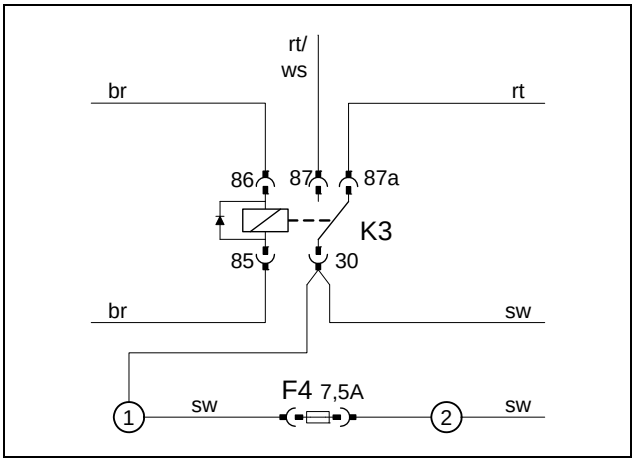


Preparing electrical system

Only with automatic air-conditioning

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

Cutting wires to length



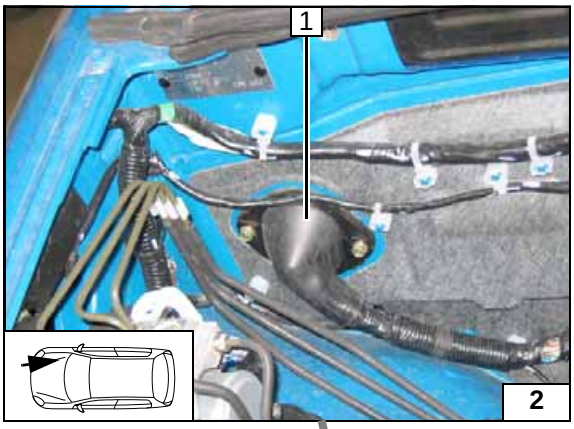
Produce connections as shown in wiring diagram.

Preparing fuse F4

Electrical system

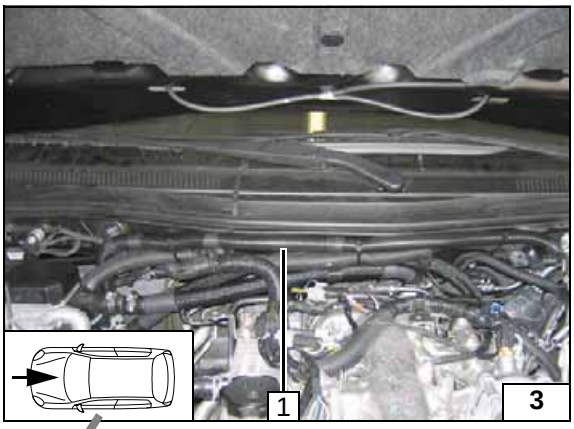
Wiring harness pass through

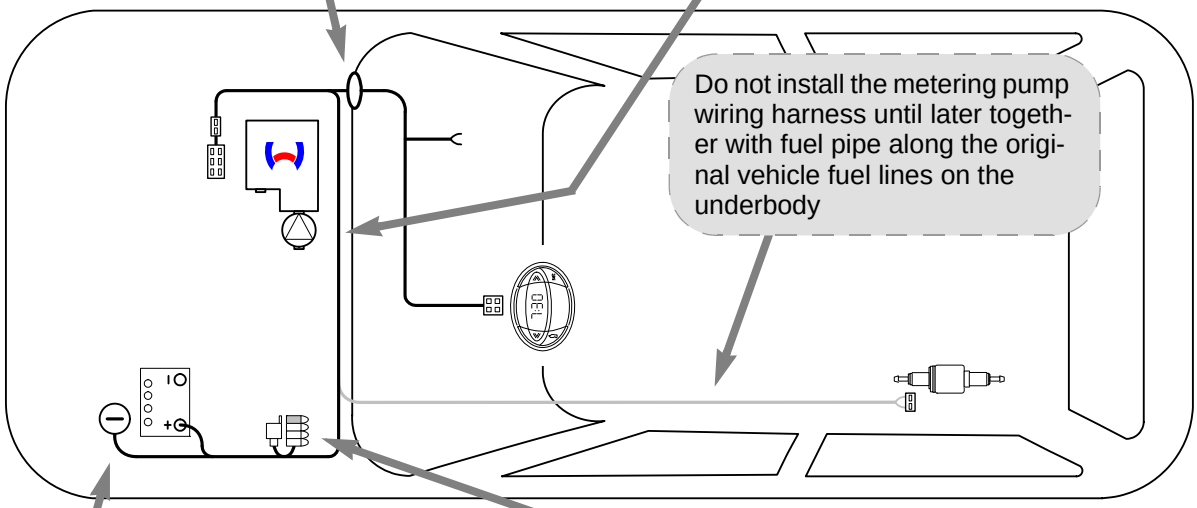
1 Protective rubber plug



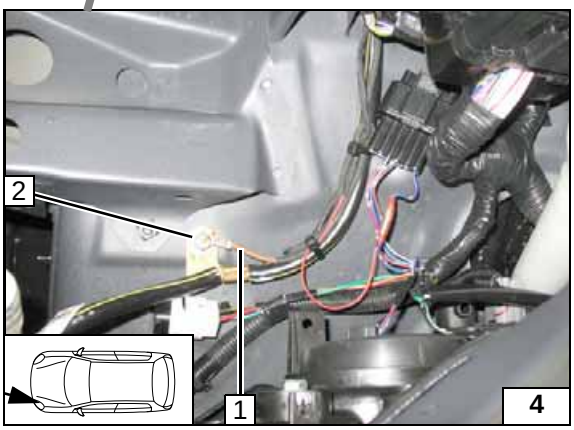
Routing wiring harness

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



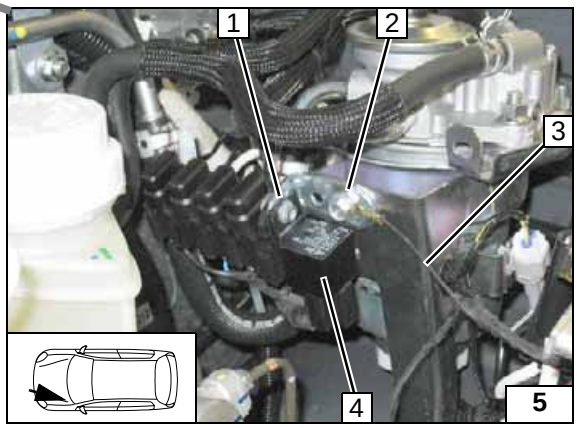


Wiring harness routing diagram



Earth wire

1 Earth wire
2 Original vehicle earth support point

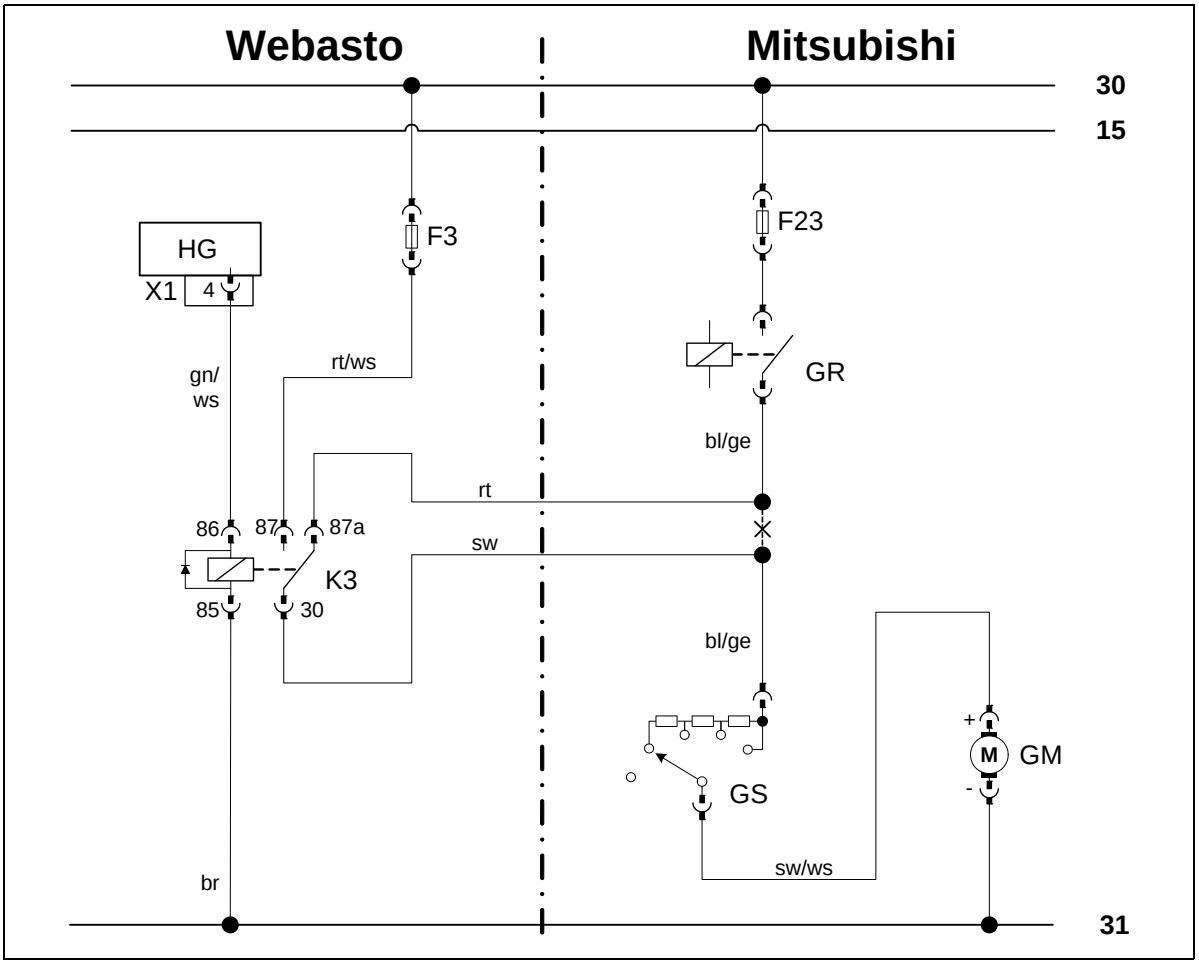


Fuse holder, K3 relay

Original vehicle bolt at position **2** or M6x20 bolt, spring lockwasher, large diameter washer.

1 M5x16 bolt, washers, angle bracket, retaining plate of fuse holder, nut
3 Black (sw) wire of time-delay relay/85 (cold starting kit)
4 K3 relay

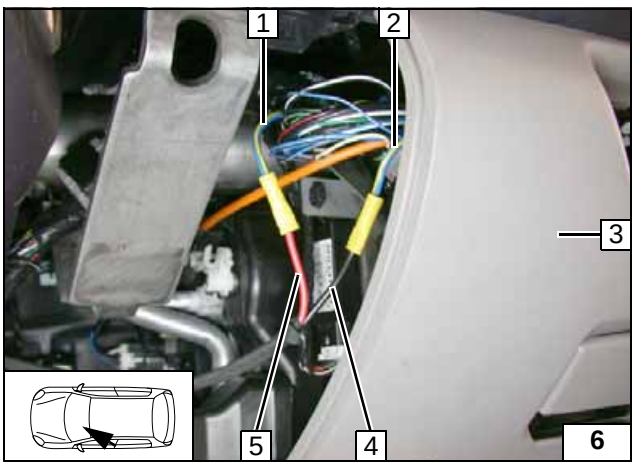
Fan control for manual air conditioning



Wiring diagram

Webasto components		Vehicle components		Colours and symbols	
HG	TT-C/E Heater	GM	Fan motor	rt	red
X1	6-pin heater 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 colours may vary.	

Legend



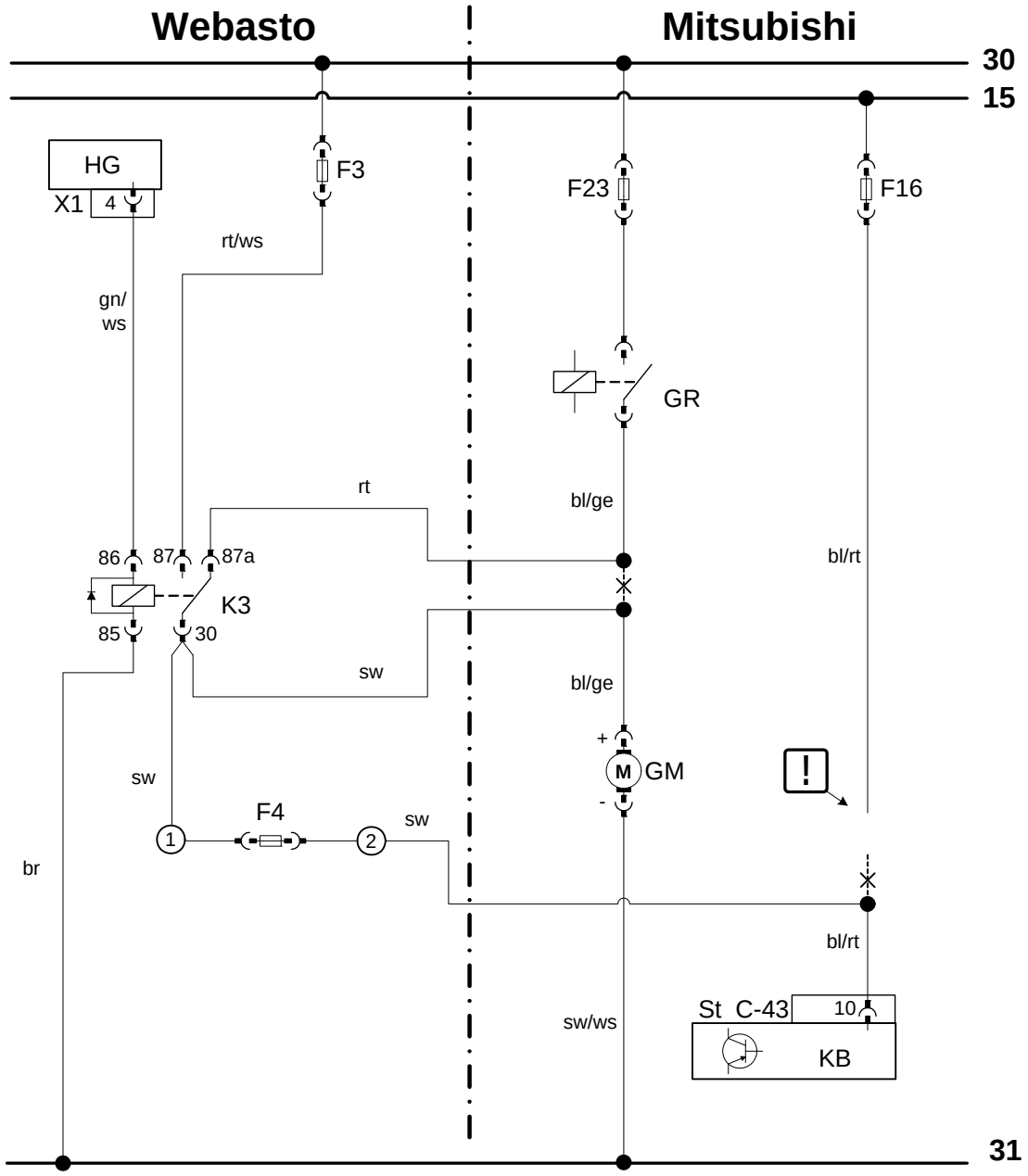
Connection on wiring harness between fan relay and fan switch (behind steering column trim).
Produce connections as shown in wiring diagram.

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

Connecting fan motor

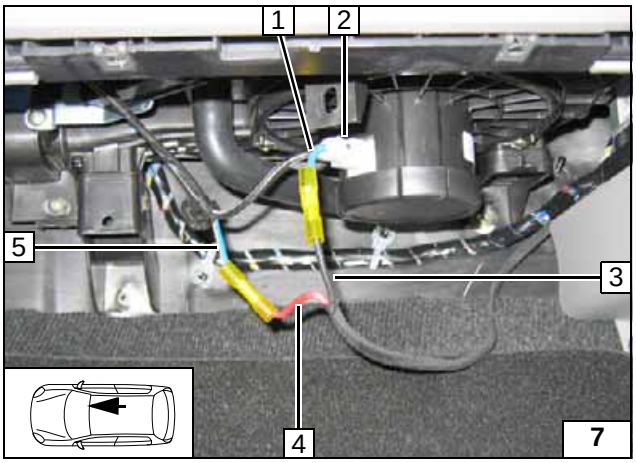
Automatic air-conditioning fan control

Wiring diagram



Legend

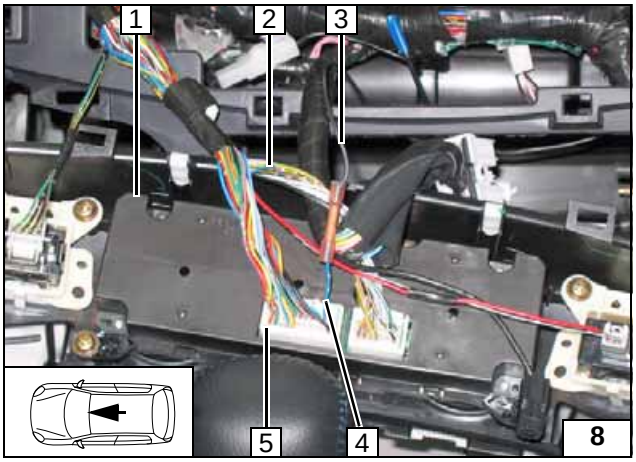
Webasto components		Vehicle components		Colours and symbols	
HG	TT-C/E Heater	GM	Fan motor	rt	red
X1	6-pin heater connector	GR	Fan relay	ws	white
F3	25 A fuse	KB	A/C control panel	sw	black
K3	Fan relay	F16	7.5A fuse	br	brown
F4	7.5A fuse	F23	30A fuse	gn	green
		St C- 43	22-pin connector KB	bl	blue
	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



Connection to 2-pin connector **2** from the fan 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

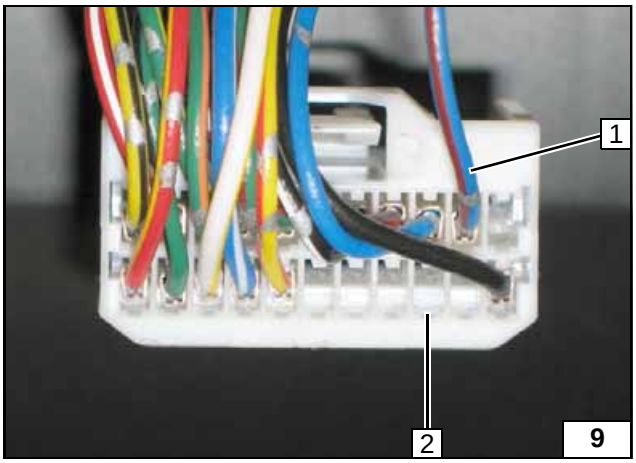
Connecting fan motor



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

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

Connecting A/C control panel



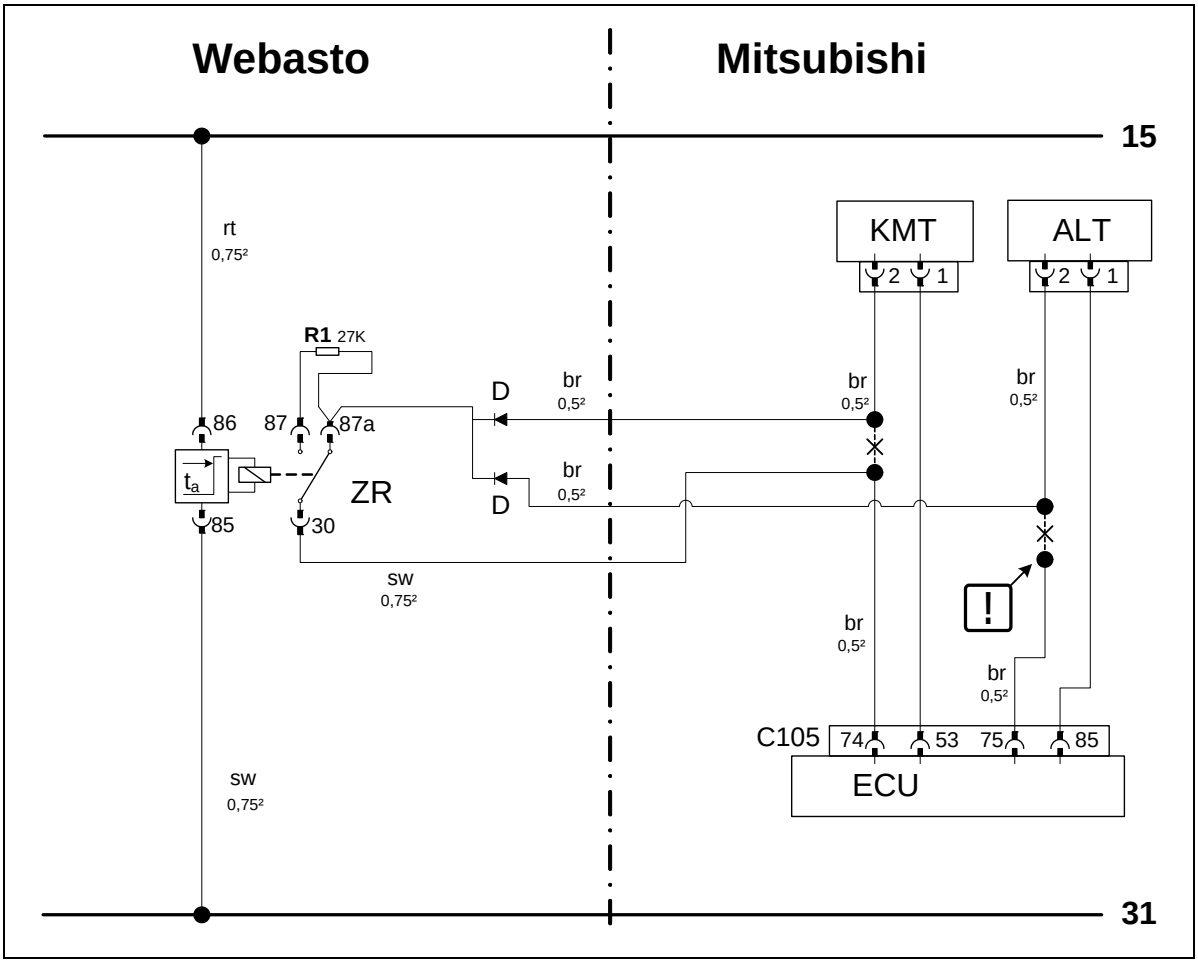
1 Blue/red (bl/rt) wire to Pin 10
2 22-pin connector C-43

View of connector

Wiring harness of cold start function (option)

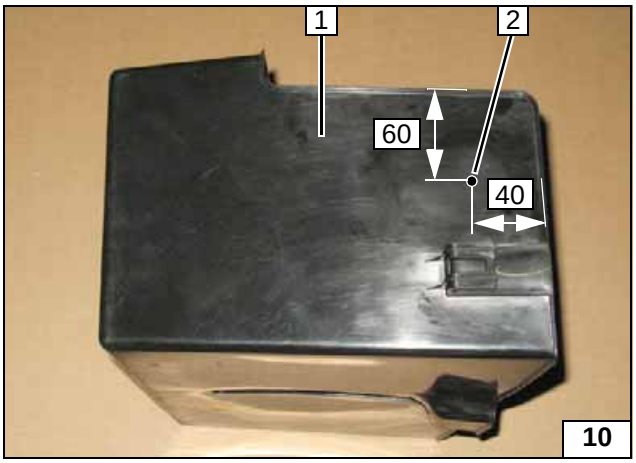
No longer required for vehicles with Euro5.
Distinguishing characteristic:
The intake-air temperature sensor is no longer located at position **4** Figure 15

Wiring diagram for colding start



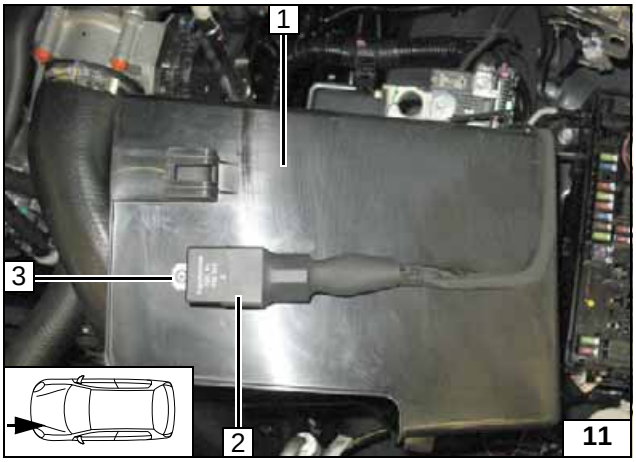
Webasto components		Vehicle components		Colours and symbols	
ZR	Time-delay relay	ECU	Engine control unit	rt	red
D / R1	Diode D and resistor R1 are part of wiring harness	KMT	Coolant temperature sensor	gn	green
				sw	black
		ALT	Intake-air temperature sensor	br	brown
				ge	yellow
				bl	blue
				!	Insulate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

Legend



1 Battery box
2 4.0 mm dia. hole

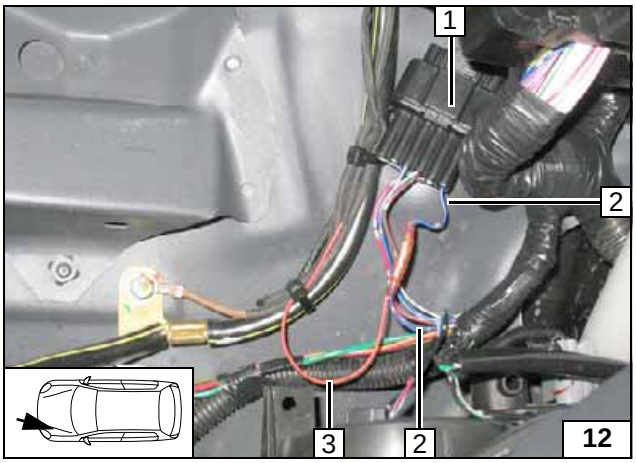
Holes in battery box



Install battery box **1**.

2 Time-delay relay
3 Blind rivet

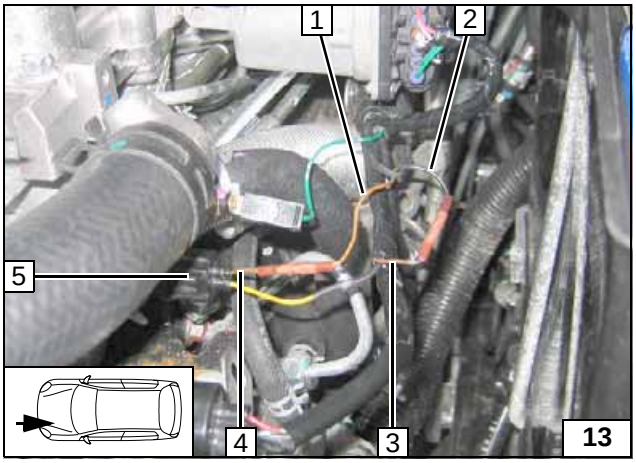
Mounting temperature switch and time-delay relay



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

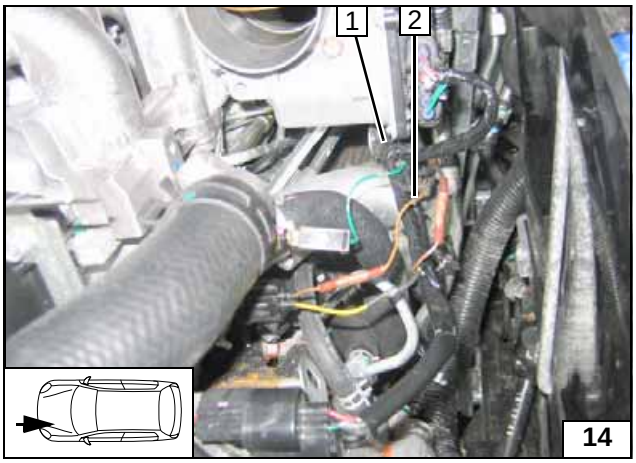
Connection of time-delay relay



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

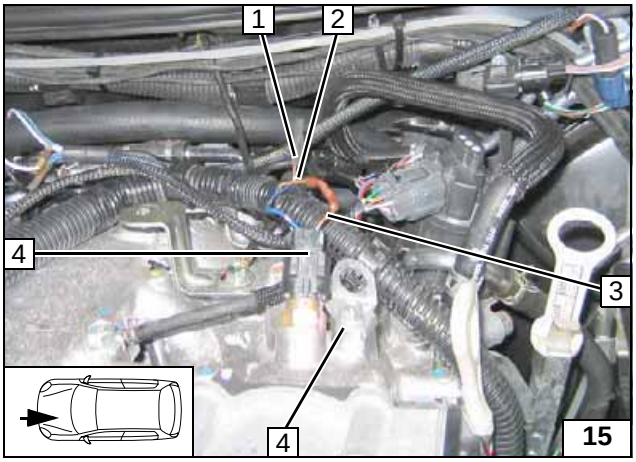
1 Brown (br) wire from diode
2 Black (sw) wire of time-delay relay/30
3 Brown (br) wire of engine control unit/74
4 Brown (br) wire of connector coolant temperature sensor/2

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.

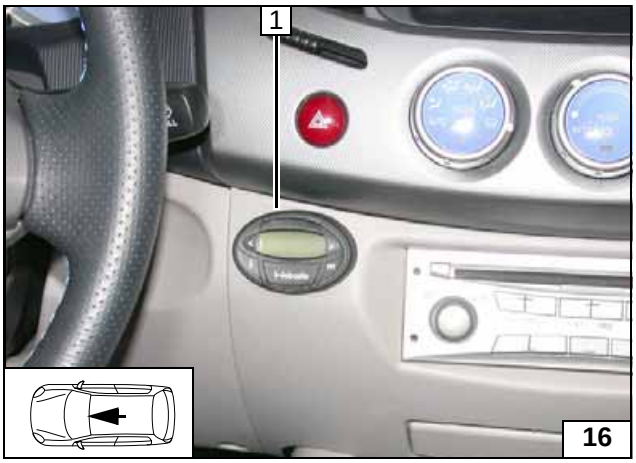
Routing wiring harness



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

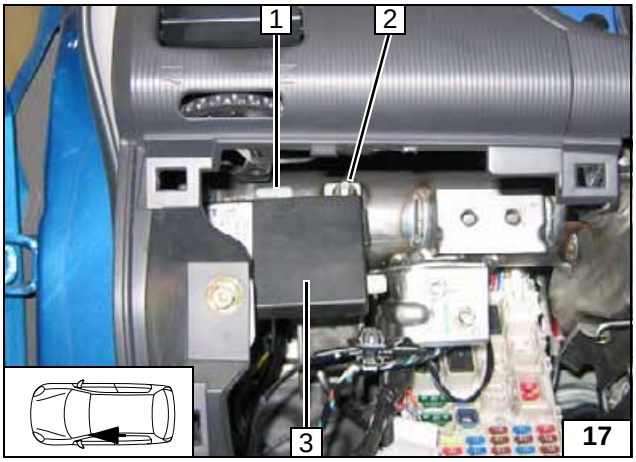
Connection of intake-air temperature sensor



Digital timer option

1 Digital timer

Mounting receiver

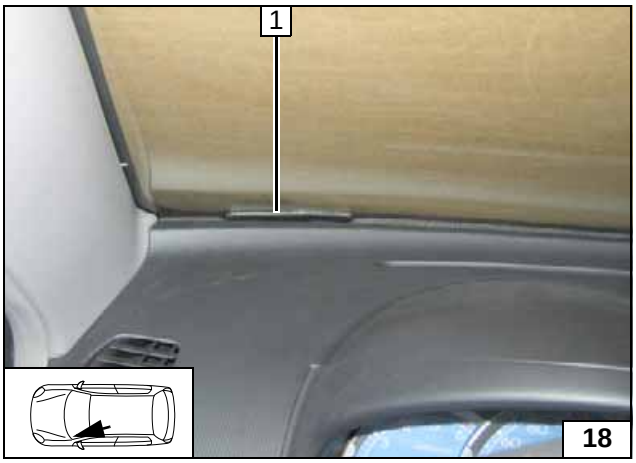


Remote option (Telestart)

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

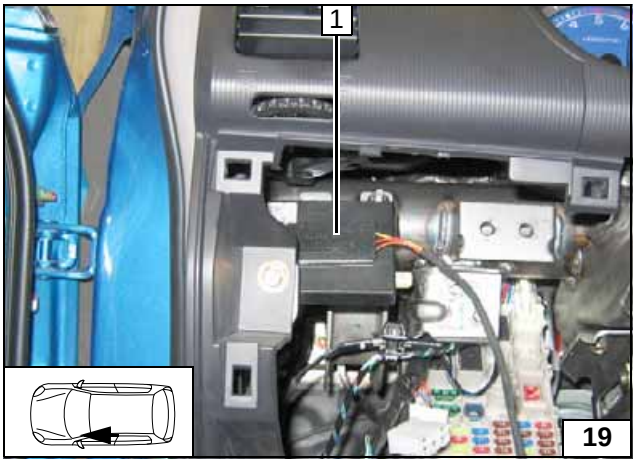
3 Receiver

Mounting receiver



1 Antenna

Mounting antenna



Temperature sensor T100 HTM

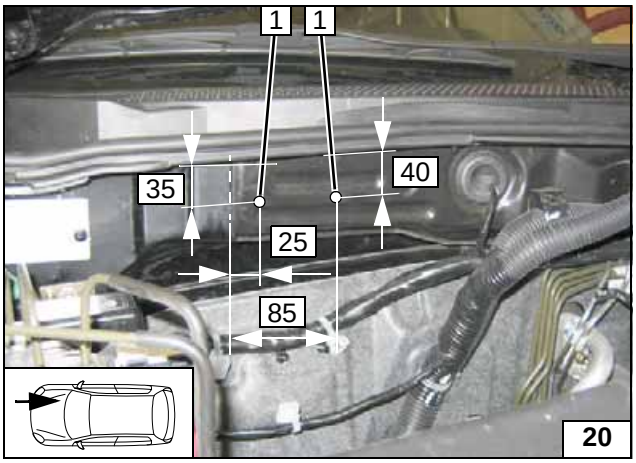
Fasten temperature sensor **1** with adhesive tape.

Mounting temperature sensor

Preparing installation location

1 Copy hole pattern [2x]

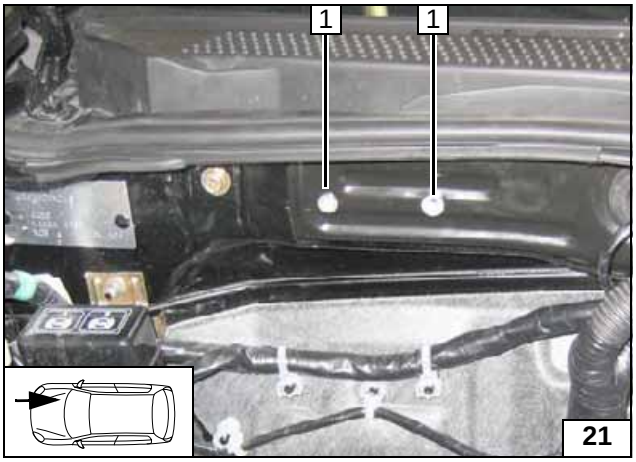
Copying hole pattern



When drilling, watch components located behind.

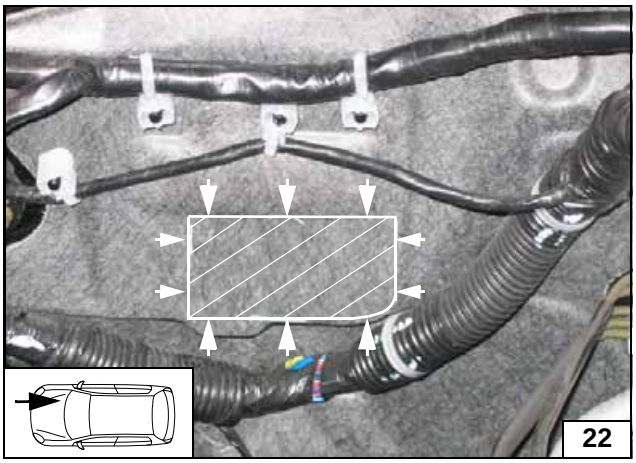
1 9.1 mm dia. hole; mount rivet nut [2x]

Installing rivet nut



Cut out insulation at marking.

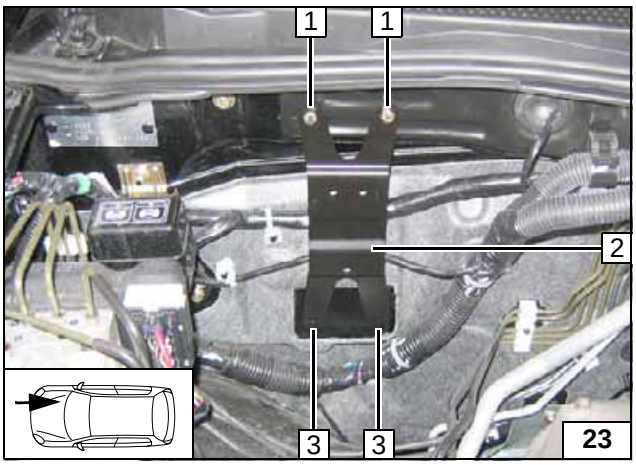
Cutting out insulation

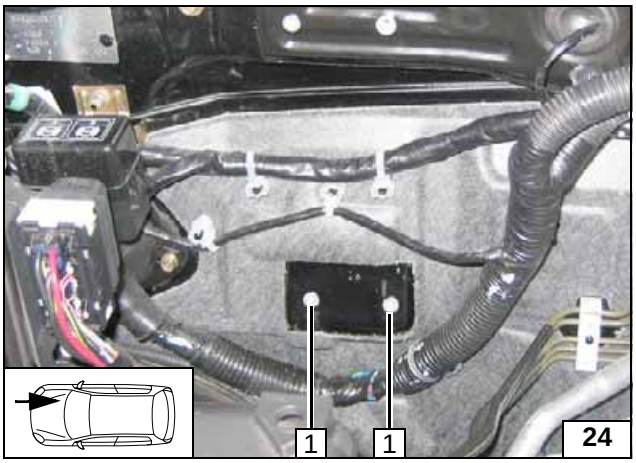


Loosely mount bracket **2**.

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

Copying hole pattern

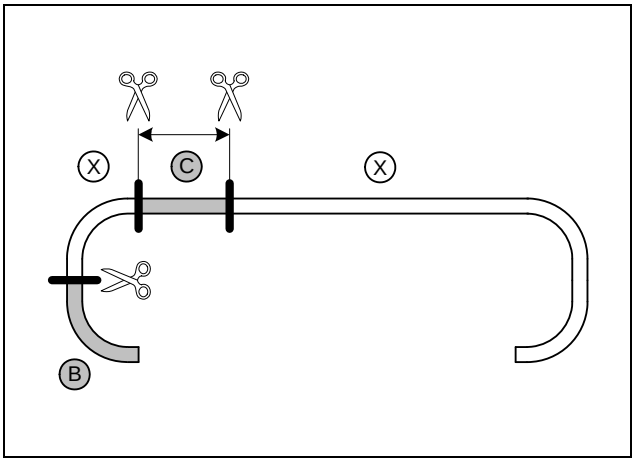




Remove bracket. When drilling, watch components located behind.

1 9.1 mm dia. hole, install rivet nut [2x each]

Installing rivet nut

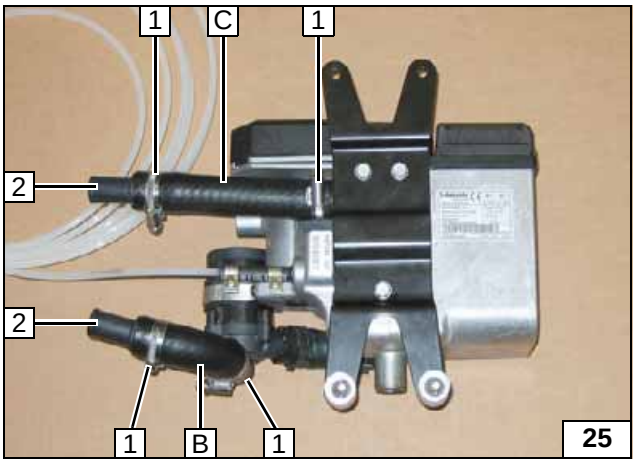


Preparing heater

Hose **B** / **C** = 20 mm dia.
Discard sections **X**.

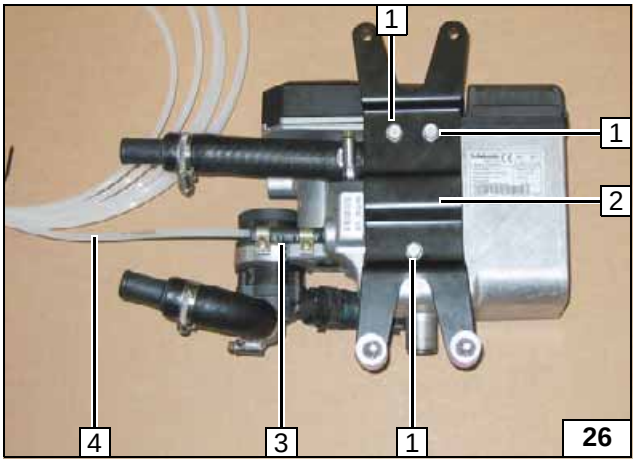
B = 90° elbow
C = 140

Cutting 20 mm dia. hose to length



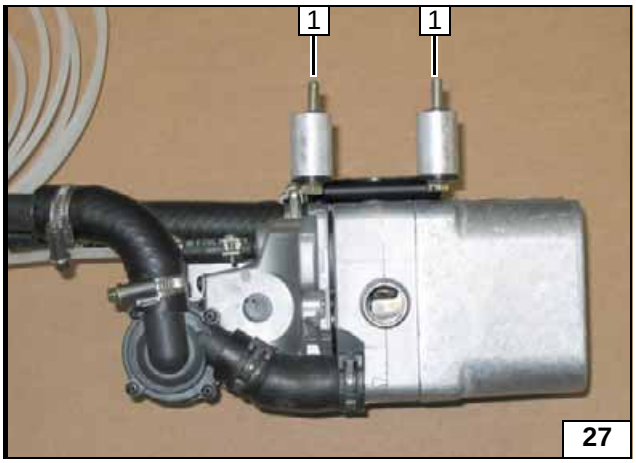
1 27 mm dia. clamp [4x]
2 18x20 connecting pipe [2x]

Premounting hoses B and C



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

Premounting heater



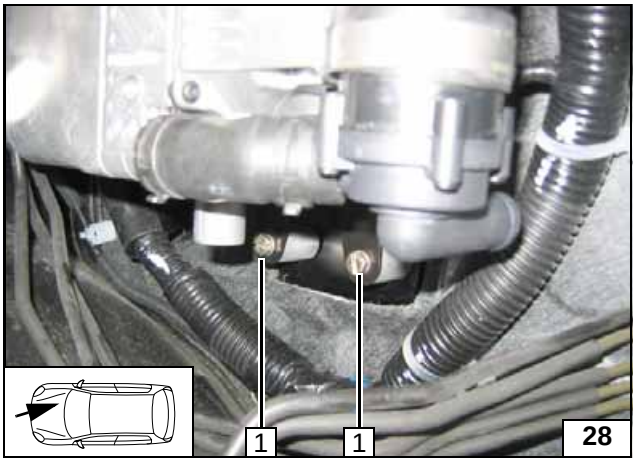
1 M6x60 bolt, spring lockwasher, 40 mm shim, pin lock [2x each]

Premounting heater

Installing heater

Loosely mount M6x60 bolts [2x] **1**.

Mounting heater



Align heater and tighten all screw connections.

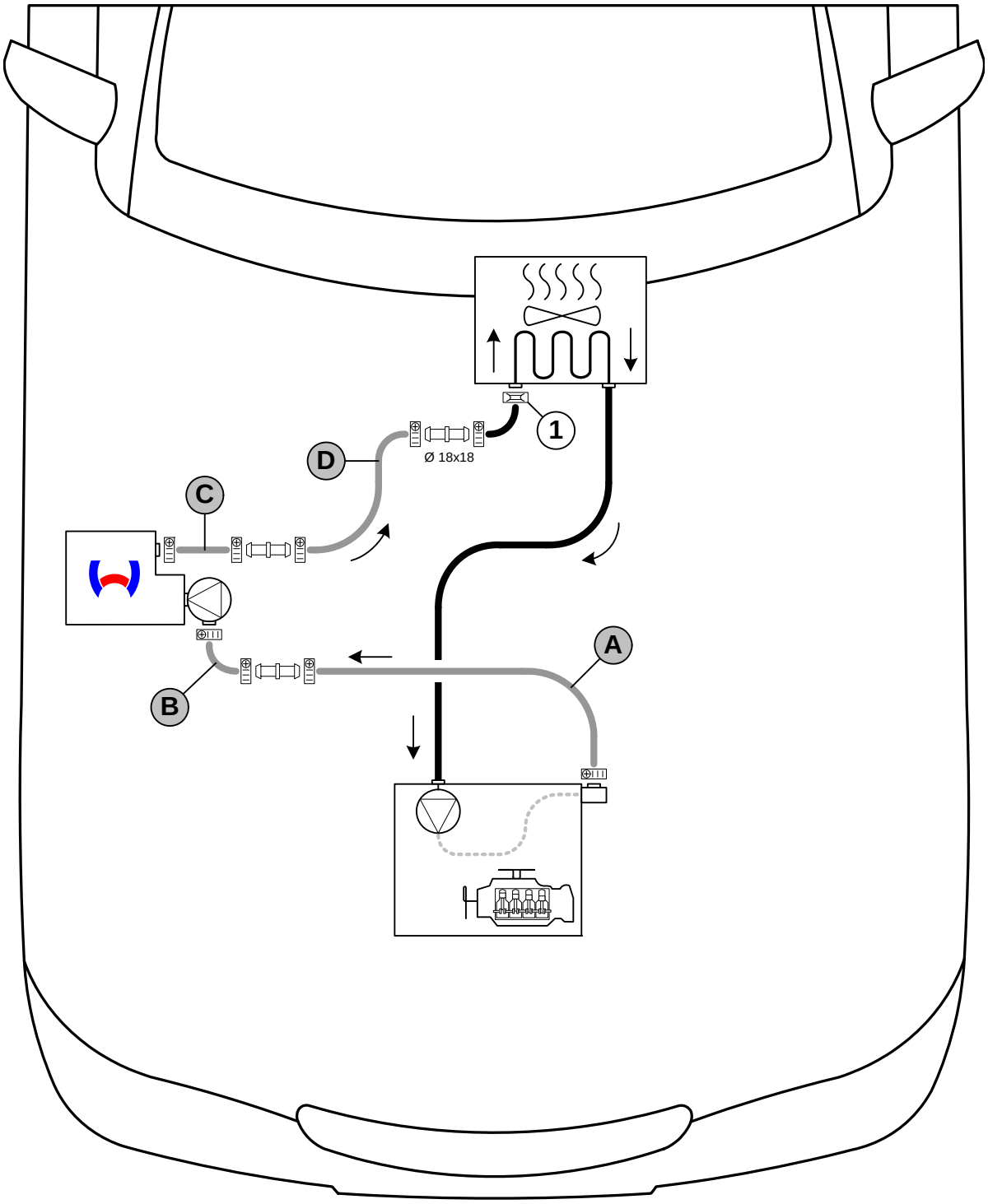
1 M6x50 bolt, spring lockwasher, 30 mm shim [2x each]

Mounting heater

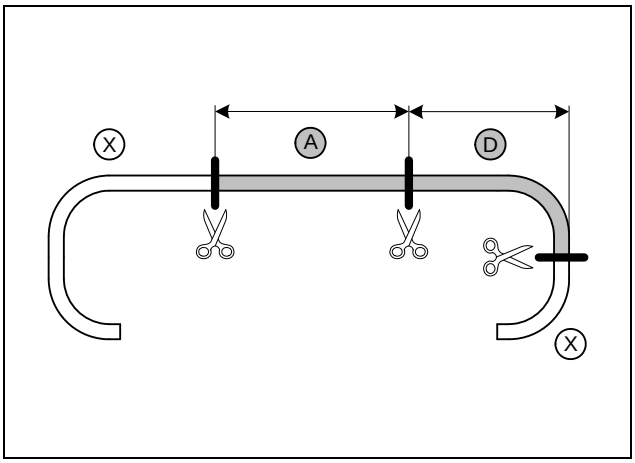
Coolant circuit

WARNING!
Any coolant running off should be collected using an appropriate container. Route 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



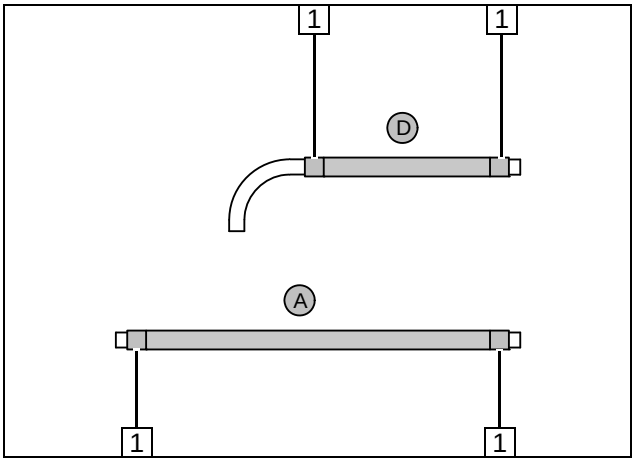
All connecting pipes without a specific designation = dia. 18x20.
All hose clamps = 20-27 mm dia.
1 = Original vehicle spring clip



Hose **A** / **D** = 18 mm dia.
Discard sections **X.**

A = 820
D = 440

Cutting 18 mm dia. hose to length



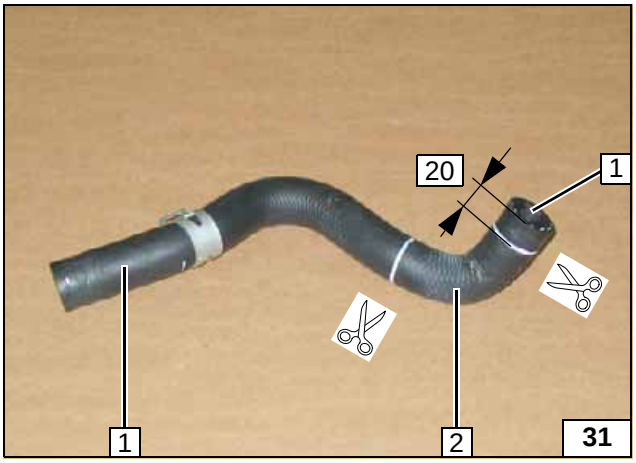
Push braided protection hoses onto hose **A** and **D** and cut to length.
Cut heat shrink plastic tubing to length.

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

Preparing hoses

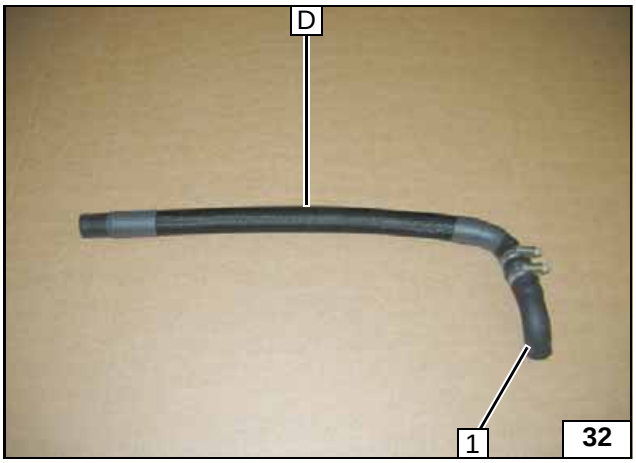
Remove original vehicle hose from engine outlet to heat exchanger inlet **1**. Spring clip of heat exchanger inlet will be reused.

Cutting point



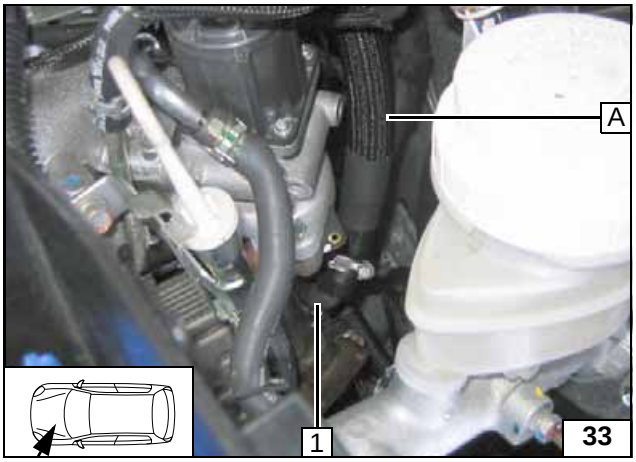
1 Discard cut-off sections
2 Hose section of heat exchanger inlet

Preparing original vehicle hose



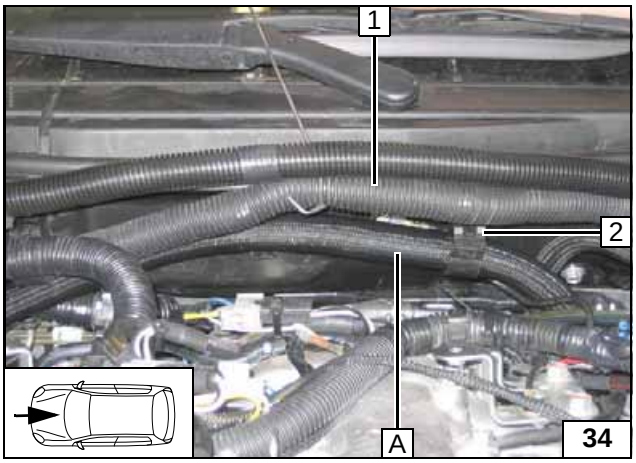
1 Hose section of heat exchanger inlet

Preparing hose D



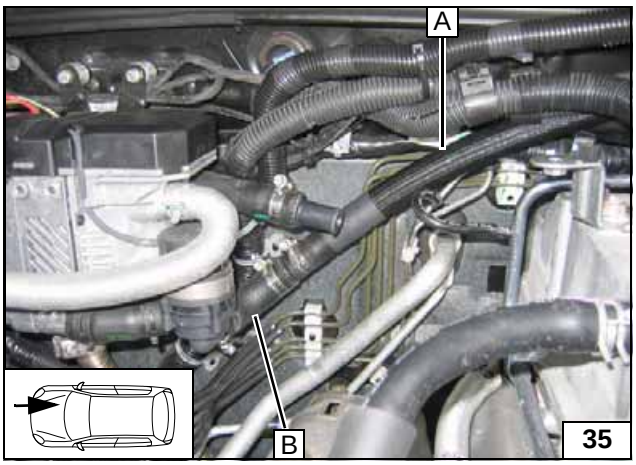
1 Connection piece for engine outlet

Connecting engine outlet

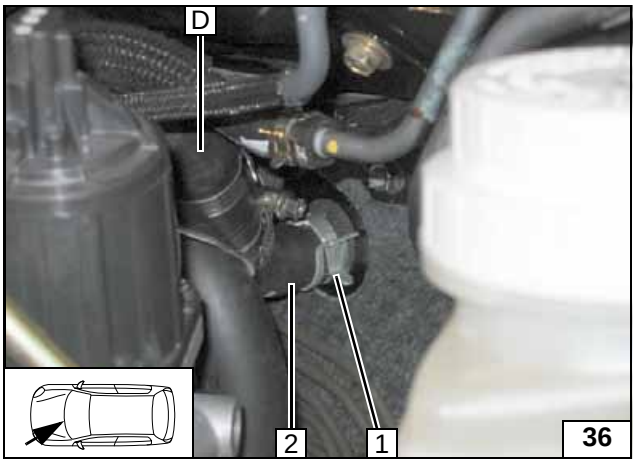


Remove original vehicle wiring harness **1** from bracket **2**. Bracket will be used for hose **A**. Ensure sufficient spacing to engine.

Routing in engine compartment



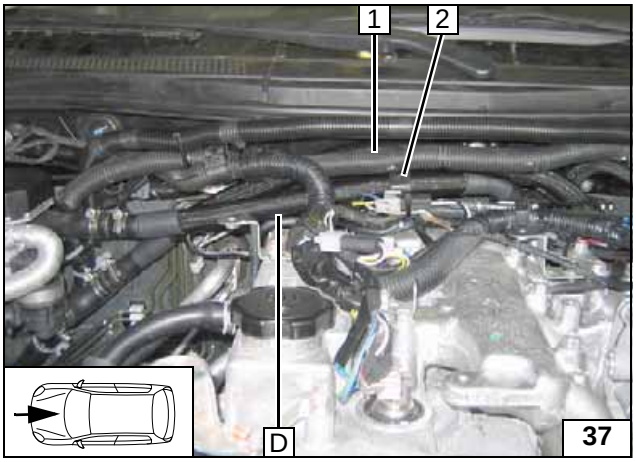
Connecting heater



Ensure sufficient distance from neighbouring components.

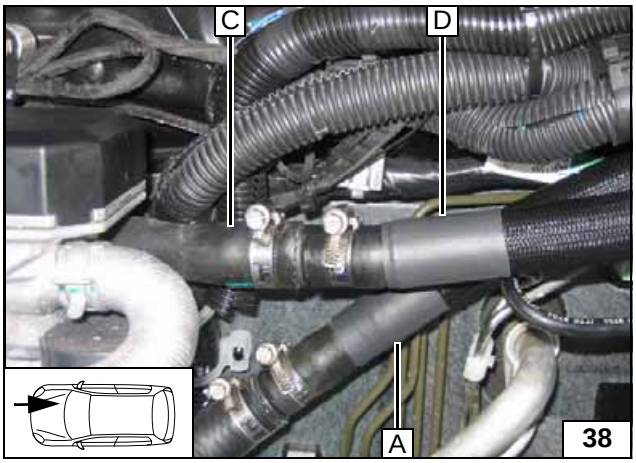
1 Original vehicle spring clip
2 Hose on heat exchanger inlet

Connecting heat exchanger inlet

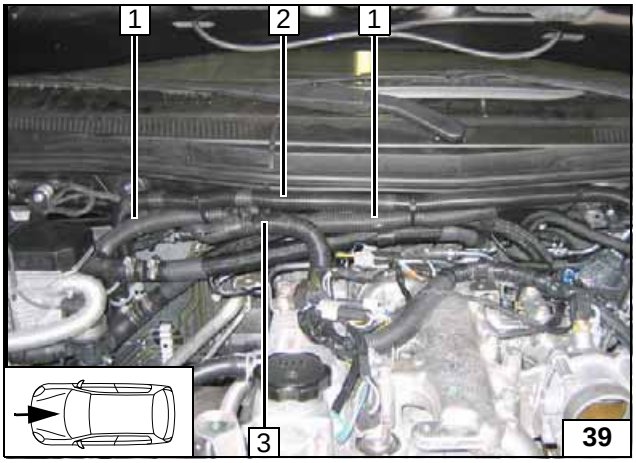


Remove original vehicle wiring harness **1** from bracket **2**. Bracket will be used for hose **D**. Ensure sufficient spacing to engine.

Routing in engine compartment

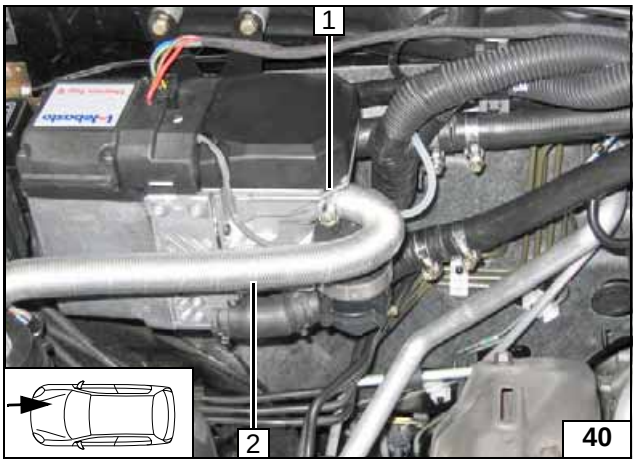


Connecting heater



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

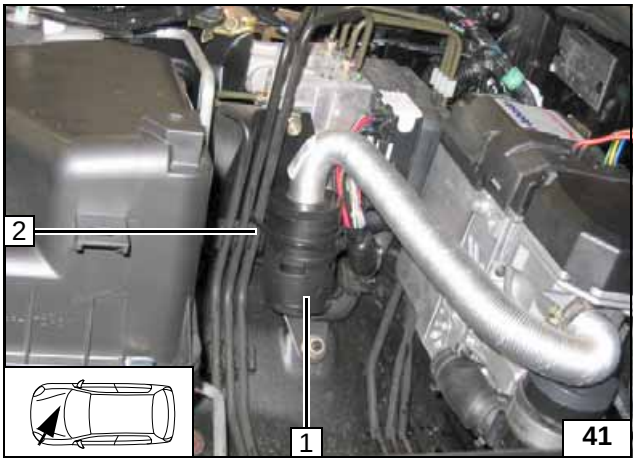
Fastening wiring harness



Combustion air

1 27 mm dia. clamp
2 Combustion air pipe

Mounting combustion air pipe



1 Silencer
2 Cable tie

Mounting silencer

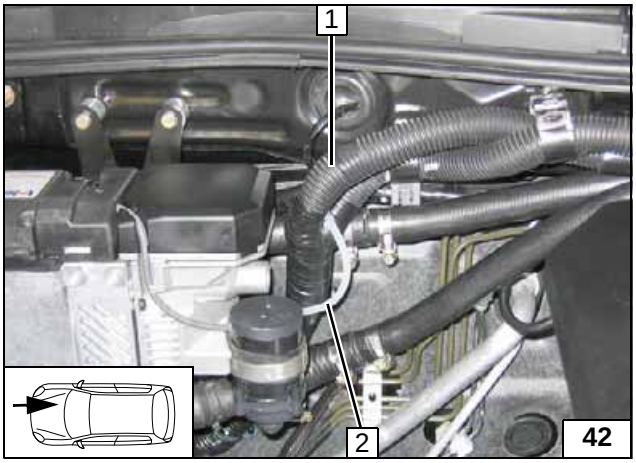
Fuel

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.

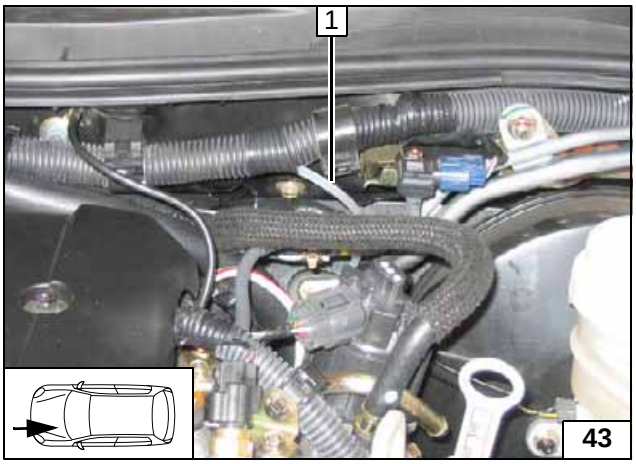
Install fuel line and metering pump wiring harness so that they are protected against stone impact. Unless specified otherwise, always fasten using cable ties.
Mount the fuel line and wiring harness with rub protection on sharp edges.

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



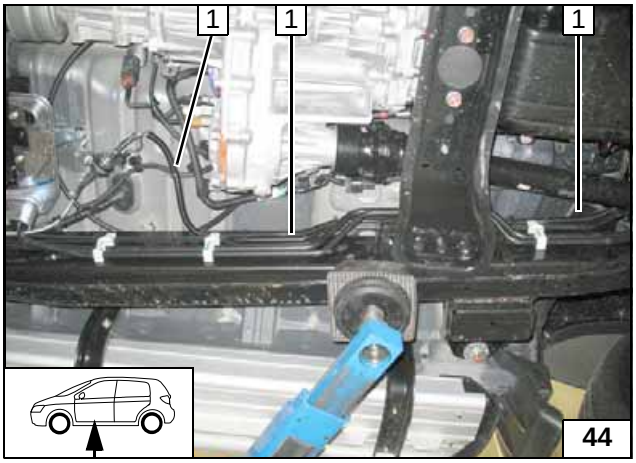
Route fuel line **2** in corrugated tube **1** to right-hand side of vehicle.

Routing lines



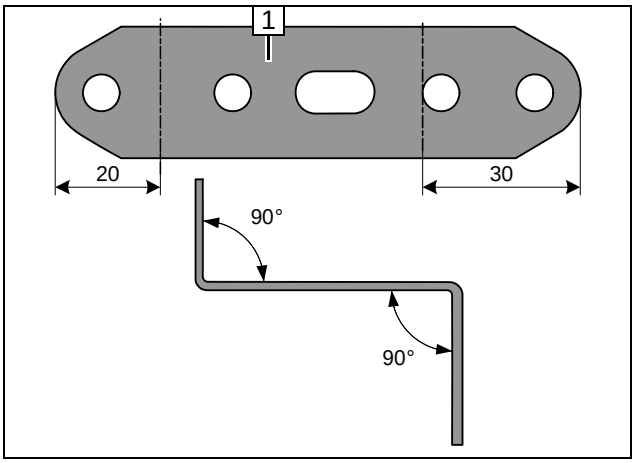
Route fuel line **1** together with wiring harness of metering pump in corrugated tube along original vehicle fuel lines to underbody.

Routing lines



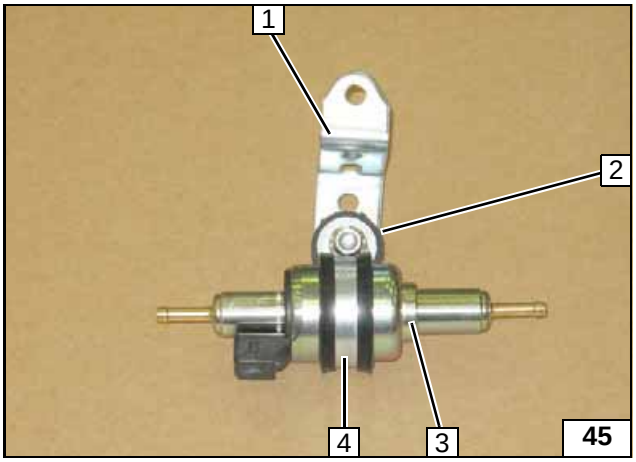
Route fuel line and wiring harness of metering pump in corrugated tube **1** along original vehicle fuel lines to installation location of metering pump.

Routing lines



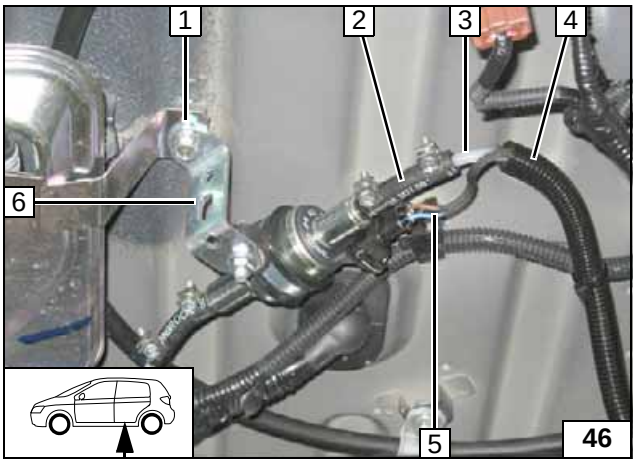
1 Perforated bracket

Preparing perforated bracket



1 Perforated bracket
2 Silent block, flanged nut [2x]
3 Metering pump
4 Rubber-coated p-clamp

Premounting metering pump

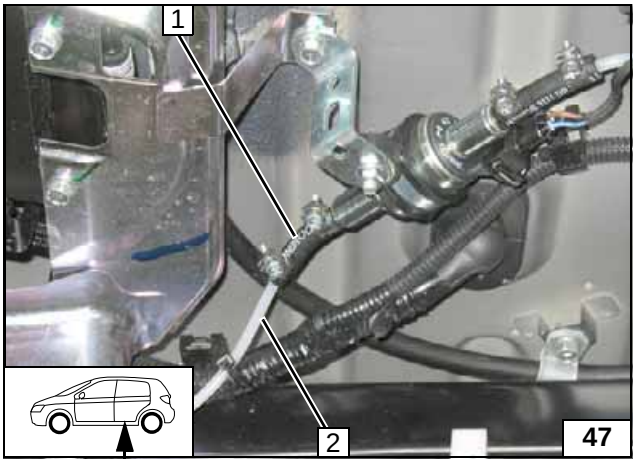


The installation of the metering pump depends on the relevant vehicle equipment, and is differentiated according to two variants.

Variant A

Mounting metering pump

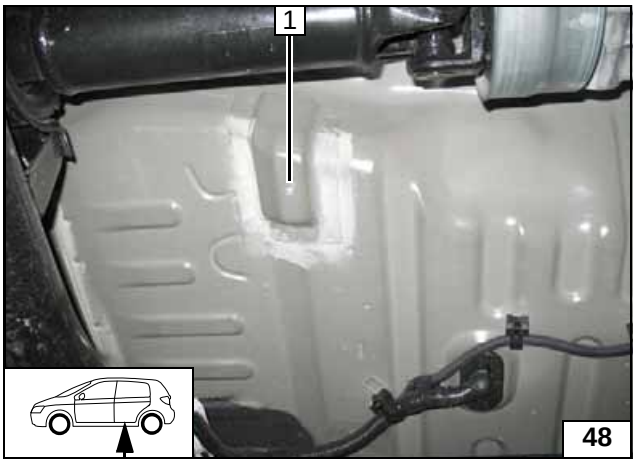
1 Original vehicle bolt
2 Hose section, 10 mm dia. clamp [2x]
3 Fuel line of heater
4 Corrugated tube
5 Wiring harness of metering pump, connector mounted
6 Perforated bracket



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

Connecting metering pump

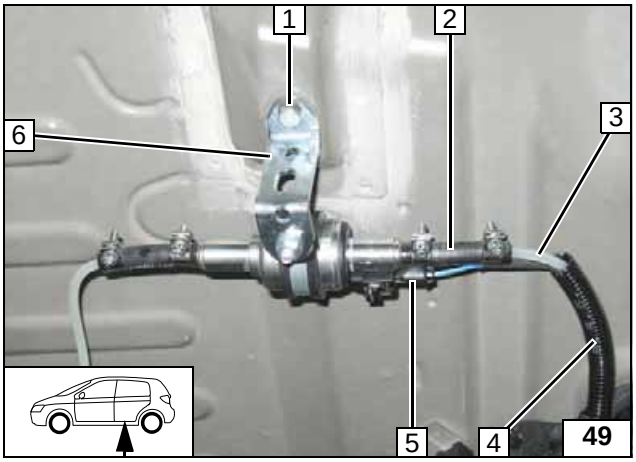
1 Hose section, 10 mm dia. clamp [2x]
2 Fuel line of fuel standpipe



Variant B

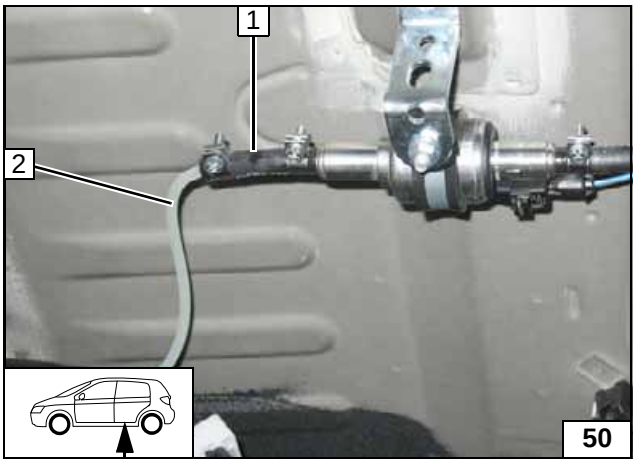
1 Drill out 9.1 mm dia. hole, rivet nut

Installing rivet nut



1 M6x20 bolt, spring lockwasher
2 Hose section, 10 mm dia. clamp [2x]
3 Fuel line of heater
4 Corrugated tube
5 Wiring harness of metering pump, connector mounted
6 Perforated bracket

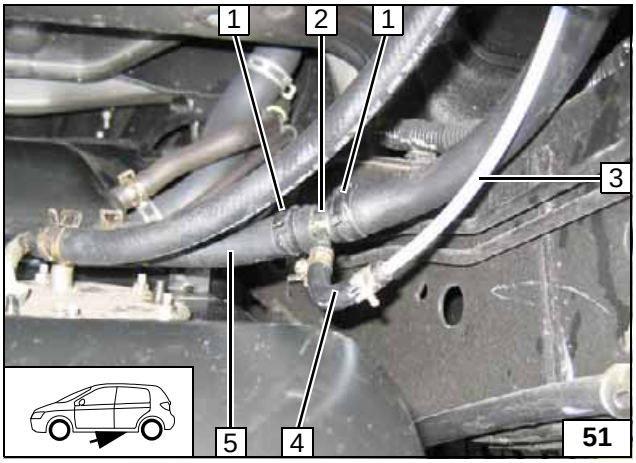
Mounting metering pump



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

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

Connecting metering pump

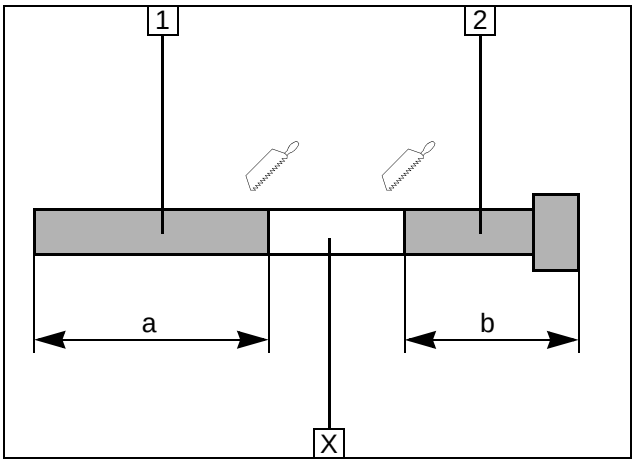


All vehicles

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

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

Fuel extraction



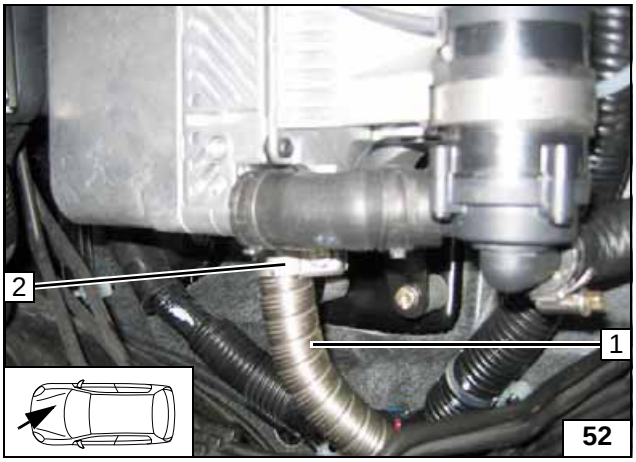
Exhaust gas

The installation of the exhaust system depends on the relevant vehicle equipment, and is differentiated according to two variants.

Variant A - Vehicle with Euro 4
Discard section **X**.

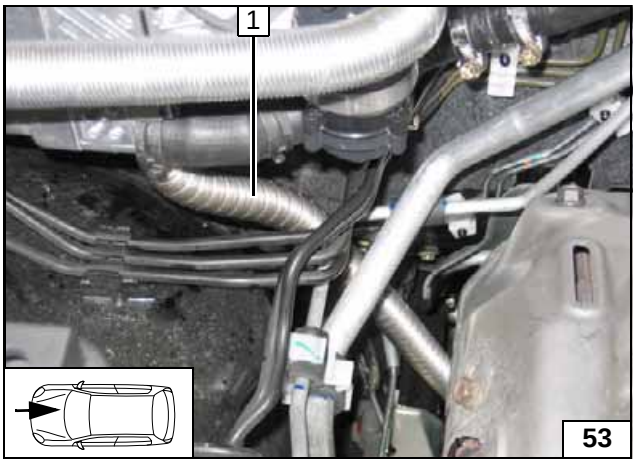
1 Exhaust pipe
a = 580
2 Exhaust end section
b = 130

Preparing exhaust pipe



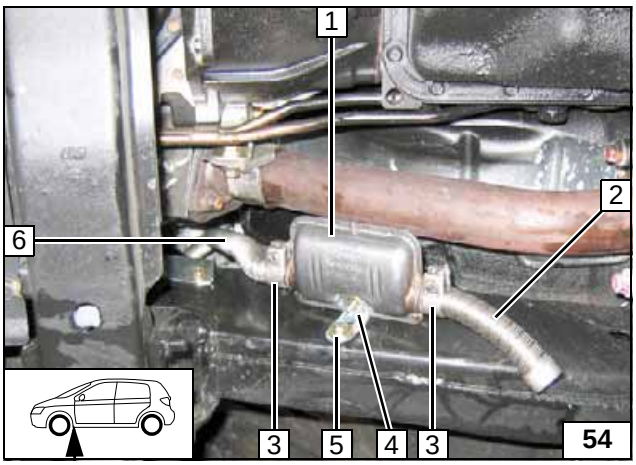
1 Exhaust pipe
2 Hose clamp

Mounting exhaust pipe



1 Exhaust pipe

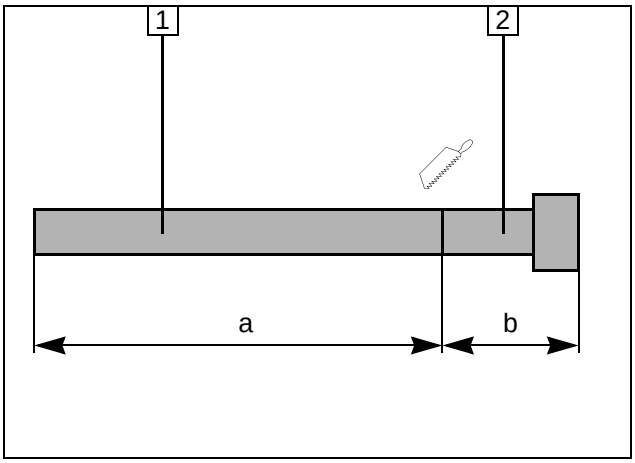
Routing exhaust pipe



Ensure sufficient distance from neighbouring components.

1 Silencer
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

Mounting silencer and end section

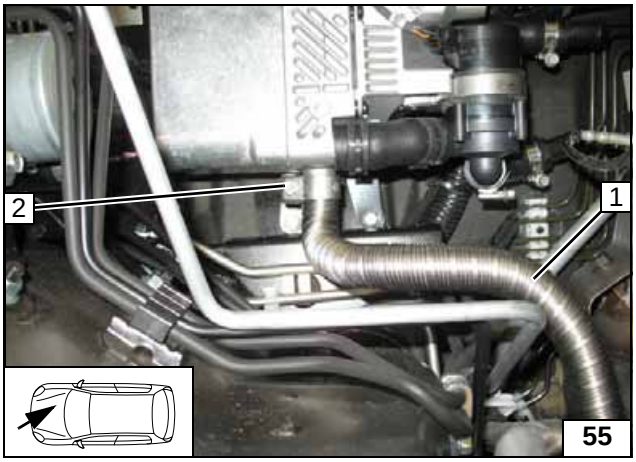


Variant B - Vehicle with Euro 5

Discard section **X**.

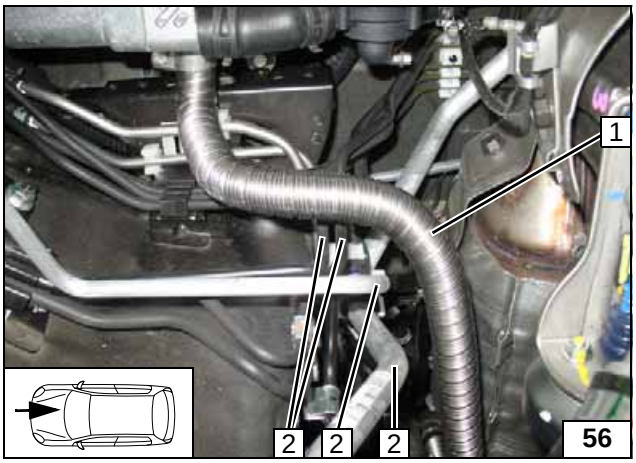
1 Exhaust pipe
a = 800
2 Exhaust end section
b = 200

Preparing exhaust pipe



1 Exhaust pipe
2 Hose clamp

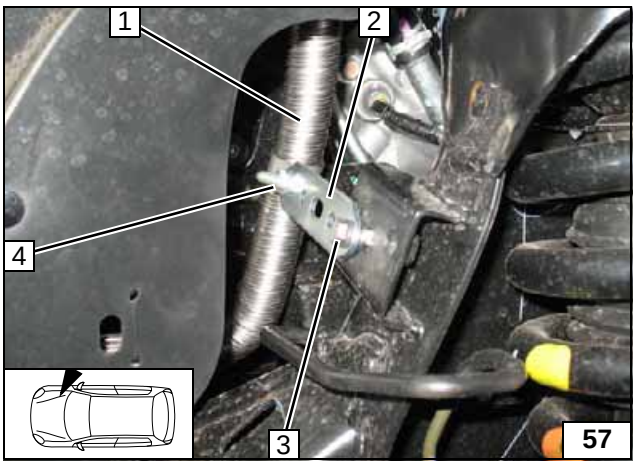
Mounting exhaust pipe



Ensure sufficient distance from neighbouring components, especially from the original vehicle wires at position **2**.

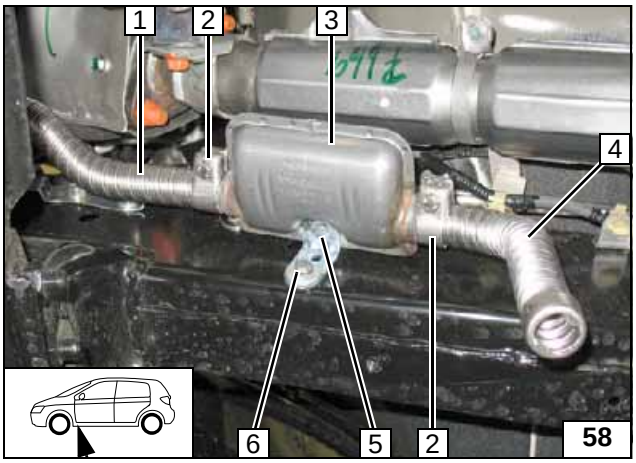
1 Exhaust pipe
2 Original vehicle lines

Routing exhaust pipe



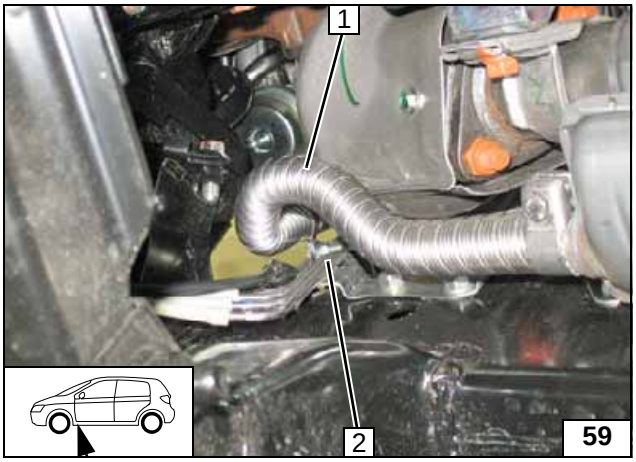
1 Exhaust pipe
2 Perforated bracket
3 M6x20 bolt, flanged nut, existing hole
4 M6x20 bolt, p-clamp, flanged nut

Fastening exhaust pipe



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

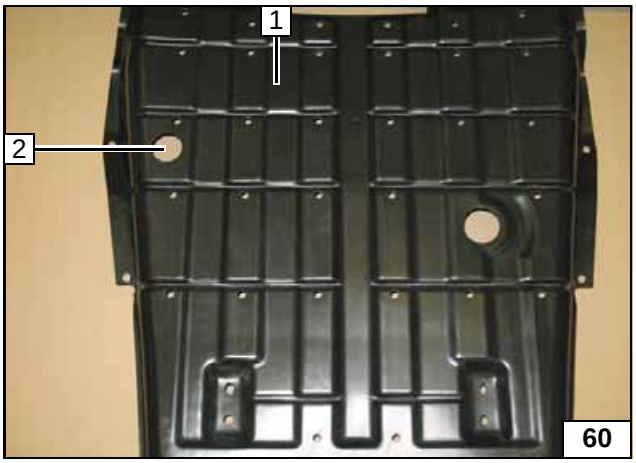
Mounting silencer and end section



Ensure sufficient distance from neighbouring components, especially from the low pressure wires at position **2**.

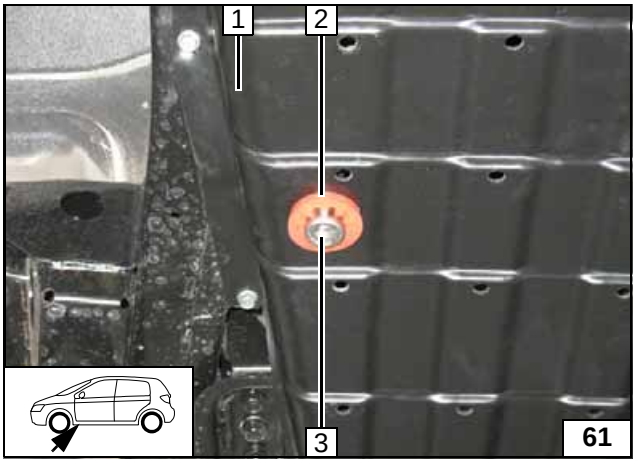
1 Exhaust pipe

Aligning exhaust pipe



1 Underride protection
2 42 mm dia. hole

Cutting out underride protection



Align exhaust end section **3** flush on red (rt) rubber isolator with groove **2**.

1 Underride protection mounted

Aligning exhaust 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 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.**
- **Adjust the 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 refuelling" signboard near the filler neck.**
- **For initial start up and function check, see Installation Instructions**

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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 during heating.

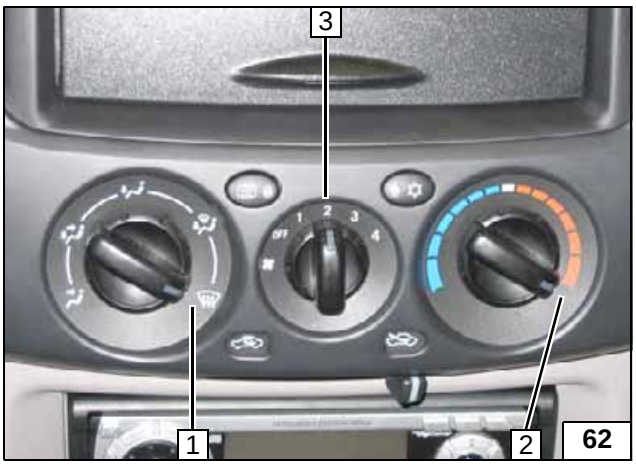
If the summer/winter switch option has been installed, it must be switched in accordance with the time of year. The heater will then heat in the position Winter and in the position Summer it will only switch on the vehicle fan to ventilate the vehicle interior.

Note on engine start:

Allow a waiting period of approx. 9 seconds (annealing time) after parking heater operation between "Activation of ignition" and "Start of engine".

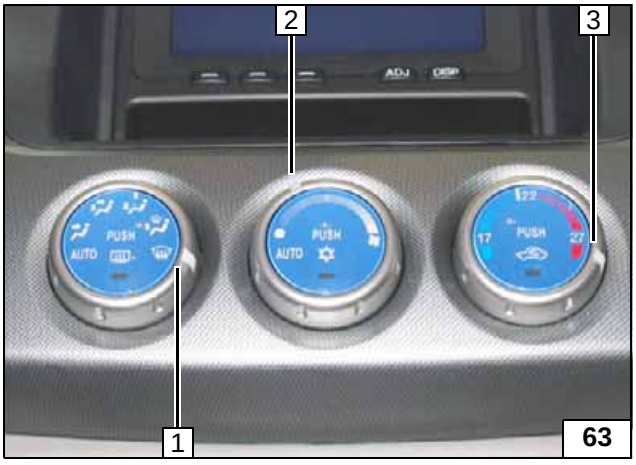
Before parking the vehicle, make the following settings:

Manual air conditioning



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

Automatic air-conditioning



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