Water Heater

Webasto
Feel the Drive

***Thermo Top Evo* Parking Heater**

E1
00 0258

Installation Documentation
Alfa Romeo Giulietta

Validity

Manufacturer	Model	Type	EG-BE No./ ABE
Alfa Romeo	Giulietta	940	e3 * 2007 / 46 * 0027 * ...

Motorisation	Fuel	Transmission type	Output in kW	Displacement in cm³	Engine code
1.4 TB 16V	Petrol	SG	88	1368	198A4000
2.0 JTDM 16V	Diesel	SG	125	1956	940A4000

SG = manual transmission

From model year 2010
Left-hand drive vehicle

Verified equipment variants:	Manual / automatic air-conditioning system Front fog light Front fog lightBI-Xenon / headlight washer system
Not verified:	Passenger compartment monitoring
Exclusion:	TCT 6-speed dual clutch transmission
Total installation time:	approx. 7 hours

Alfa Romeo Giulietta

Table of Contents

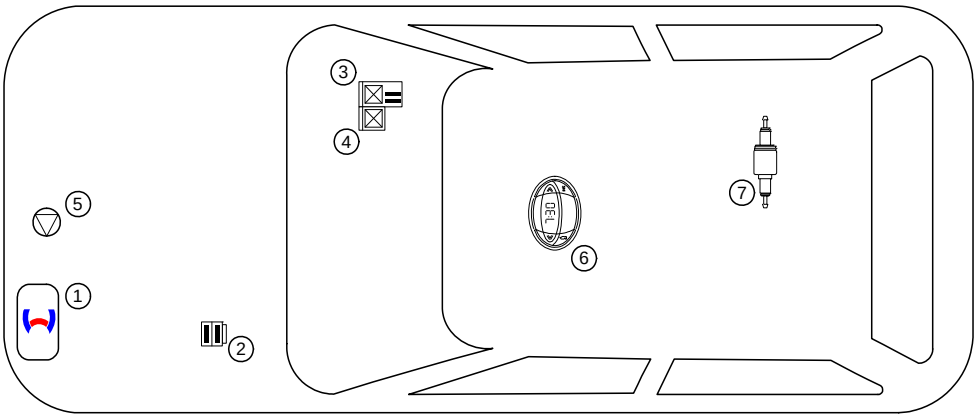
Necessary Components

- Basic delivery scope of *Thermo Top Evo* based on price list
- Installation kit for Alfa Romeo Giulietta 2010 petrol: **1316615A**
- Installation kit for Alfa Romeo Giulietta 2010 diesel: **1316642A**
- Heater control in accordance with price list and upon consultation with end customer
- In case of Telestart, indicator lamp in accordance with price list and in consultation with end customer

Installation Overview

Legend:

1. Heater
2. Fuse holder of engine compartment
3. Relay and fuse holder of passenger compartment
4. IPCU
5. Circulating pump
6. Digital timer
7. Metering pump



Notes on Total Installation Time

The total installation time includes the time needed for mounting and demounting of the vehicle-specific components, the heater specific installation time and all other times required for the system integration and initial start-up of the heater.
The total installation time may vary for vehicle equipment other than provided.

Information on Operating and Installation Instructions

1 Important Information (not complete)

1.1 Installation and Repair

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.

Installation and repair may ONLY be carried out by persons trained and certified in a Webasto training course. NEVER try to install or repair Webasto heating or cooling systems if you have not completed a Webasto training course, you do not have the necessary technical skills and you do not have the technical documentation, tools and equipment available to ensure that you can complete the installation and repair work properly.

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

1.2 Operation

To ensure safe operation, we recommend having the heater checked every two years by an authorised Webasto dealer, especially when used over a long period and/or under extreme environmental conditions.

Do not operate the heater in closed rooms due to the danger of poisoning and suffocation.

Always switch off the heater before refuelling.

The heater may only be used with the prescribed fuel Diesel (DIN EN 590) or petrol (DIN EN 227).

The heater may not be cleaned with a high-pressure cleaner.

1.3 Please note

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

To become familiar with and understand all functions and properties of the heater, the operating instructions must be read carefully and observed at all times.

For proper, safe installation and repair work, the installation instructions with all warnings and safety information must be carefully read and observed at all times. Please always contact a workshop authorised by Webasto for all installation and repair work.

Important

Webasto shall assume no liability for defects, damage and injuries resulting from a failure to observe the installation, repair and operating instructions of the information contained in them.

This liability exclusion particularly applies to improper installations and repairs, installations and repairs by untrained persons or in the case of a failure to use genuine spare parts.

The liability due to culpable disregard to life, limb or health and due to damage or injuries caused by a wilful or reckless breach of duty remain unaffected, as does the obligatory product liability.

Installation should be carried out according to the general, standard rules of technology. Unless specified otherwise, fasten hoses, lines and wiring harnesses to original vehicle lines and wiring harnesses using cable ties. Insulate loose wire ends and tie back. Connectors on electronic components have to audibly click into place during installation.

Sharp edges should be fitted with rub protection. Spray unfinished body areas, e.g. drilled holes, with anti-corrosion wax (Tectyl 100K, Order No. 111329).

Observe the instructions and guidelines of the respective vehicle manufacturer for demounting and mounting vehicle specific components!

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

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

2 Statutory regulations governing installation

Guidelines	Thermo Top Evo
Heating Directive ECE R122	E1 00 0258
EMC Directive ECE R10	E1 03 5627

Note

The regulations of these guidelines are binding in the scope of the Directive 70/156/EEC and/or 2007/46/EC (for new vehicle models from 29/04/2009) and should also be observed in countries in which there are no special regulations.

Important

Failure to follow the installation instructions will result in the invalidation of the type approval for the heater and therefore invalidation of the general **homologation of the vehicle**.

Note

For vehicles with an EU permit, no entry in accordance with § 19 Sub-Section 4 of Annex VIII b to the Road Traffic Act is required.

2.1 Excerpt from the directive 2001/56/EC Appendix VII for theinstallation of the heater

Beginning of excerpt.

ANNEX VII

REQUIREMENTS FOR COMBUSTION HEATERS AND THEIR INSTALLATION

1. GENERAL REQUIREMENTS

1.7.1. A clearly visible tell-tale in the operator's field of view shall inform when the combustion heater is switched on or off.

2. VEHICLE INSTALLATION REQUIREMENTS

2.1. Scope

2.1.1. Subject to paragraph 2.1.2. combustion heaters shall be installed according to the requirements of this Annex.

2.1.2. Vehicles of category O having liquid fuel heaters are deemed to comply with the requirements of this Annex.

2.2. Positioning of heater

2.2.1. Body sections and any other components in the vicinity of the heater must be protected from excessive heat and the possibility of fuel or oil contamination.

2.2.2. The combustion heater shall not constitute a risk of fire, even in the case of overheating. This requirement shall be deemed to be fulfilled if the installation ensures an adequate distance to all parts and suitable ventilation, by the use of fire resistant materials or by the use of heat shields.

2.2.3. In the case of M2 and M3 vehicles, the heater must not be positioned in the passenger compartment. However, an installation in an effectively sealed envelope which also complies with the conditions in paragraph 2.2.2 may be used.

2.2.4. The label referred to in paragraph 1.4 or a duplicate, must be positioned so that it can be easily read when the heater is installed in the vehicle.

2.2.5. Every reasonable precaution should be taken in positioning the heater to minimise the risk of injury and damage to personal property.

2.3. Fuel supply

2.3.1. The fuel filler must not be situated in the passenger compartment and must be provided with an effective cap to prevent fuel spillage

2.3.2. In the case of liquid fuel heaters, where a supply separate to that of the vehicle is provided, the type of fuel and its filler point must be clearly labelled

2.3.3. A notice, indicating that the heater must be shut down before refuelling, must be affixed to the fuelling point. In addition a suitable instruction must be included in the manufacturer's operating manual.

2.4. Exhaust system

2.4.1. The exhaust outlet must be located so as to prevent emissions from entering the vehicle through ventilators, heated air inlets or opening windows.

2.5. Combustion air inlet

2.5.1. The air for the combustion chamber of the heater must not be drawn from the passenger compartment of the vehicle.

2.5.2. The air inlet must be so positioned or guarded that blocking by rubbish or luggage is unlikely.

2.6. Heating air inlet

2.6.1. The heating air supply may be fresh or recirculated air and must be drawn from a clean area not likely to be contaminated by exhaust fumes emitted either by the propulsion engine, the combustion heater or any other vehicle source.

2.6.2. The inlet duct must be protected by mesh or other suitable means.

2.7. Heating air outlet

2.7.1. Any ducting used to route the hot air through the vehicle must be so positioned or protected that no injury or damage could be caused if it were to be touched.

2.7.2. The air outlet must be so positioned or guarded that blocking by rubbish or luggage is unlikely.

End of excerpt.

In multilingual versions the German language is binding.

Alfa Romeo Giulietta

Notes on Validity

This installation documentation applies to Alfa Romeo Giulietta Petrol and diesel vehicles - for validity, see page 1 - from model year 2010 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.

Vehicle and engine types, equipment variants and other specifications not listed in this installation documentation have not been tested. However, installation according to this installation documentation may be possible.

Technical Instructions

Special tools
- Hose clamp pliers for self-clamping hose clamps
- Hose clamp pliers for Clic hose clamps of type W
- Automatic wire stripper 0.2 - 6mm²
- Crimping pliers for cable lug / tab connector 0.5 - 6mm²
- Torque wrench for 2.0 - 10 Nm
- Hose clamping pliers
- Metric thread-setter kit
- Webasto Thermo Test Diagnosis with current software

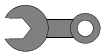
Dimensions
- All dimensions are in mm

Tightening torque values
- Tightening torque values of 5x13 heater bolts and 5x11 heater stud bolts = 8Nm.
- Tightening torque values of 5x15 retaining plate of water connection piece bolts = 7Nm.
- Tighten other bolt connections in accordance with manufacturer's instructions or in accordance with state-of-the-art-technology.

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

Combustion air

Fuel

Exhaust gas

Software

Special features are highlighted using the following symbols:

Specific risk of injury or fatal accidents.

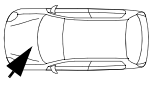
Specific risk of damage to components.

Specific risk of fire or explosion.

Reference to general installation instructions of the 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



Alfa Romeo Giulietta

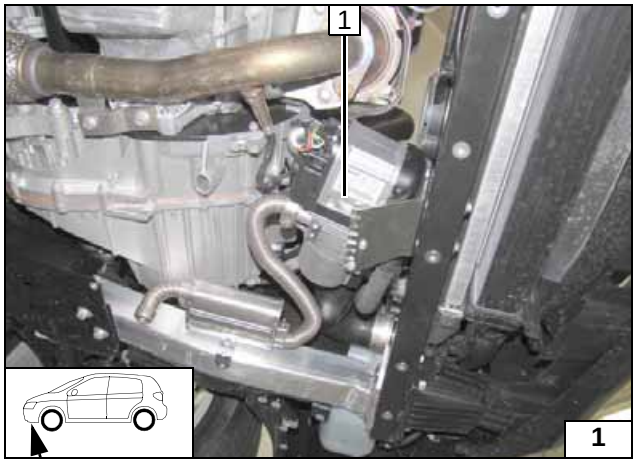
Preliminary Work

Vehicle

- Open the fuel tank cap.
- Ventilate the fuel tank.
- Close the fuel tank cap again.
- Depressurise the cooling system.
- Remove the engine design cover.
- Completely remove the battery.
- Remove the battery carrier.
- Remove the intake air pipe at the engine according to the manufacturer's instructions (1.4 TB only).
- Remove the lower engine cover.
- Remove the lower cover of the bumper.
- Remove the cover of fuel lines on the right-hand side of the underbody.
- Drain the engine coolant according to the manufacturer's instructions.
- Remove the rear bench seat surface (screw fitting 2x at the front underneath the felt cover).
- Open the tank-fitting service lid.
- Remove the fuel-tank sending unit in accordance with the manufacturer's instructions.
- Remove the lower trim in the footwell on the front passenger's side.
- Remove the lateral trim of the centre console in the footwell.
- Remove the glove compartment.
- Remove the trim of the shift lever (for digital timer only).

Heater

- Remove years that do not apply from the type and duplicate label.
- Attach the duplicate label (type label) in the appropriate place in the engine compartment.



Heater Installation Location

Figure shows 1.4 TB 16V

1 Heater

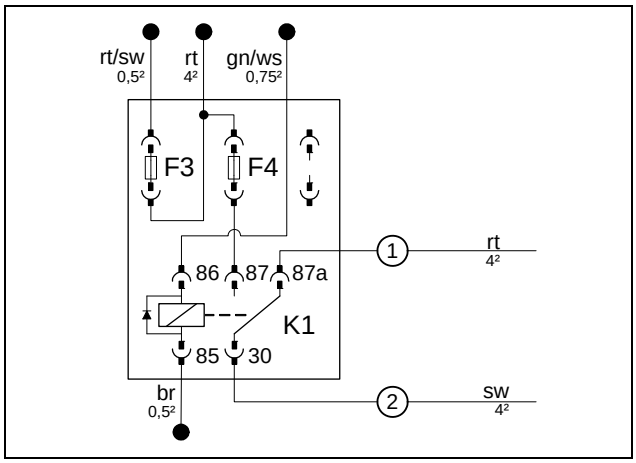
Installation location

Preparing Electrical System

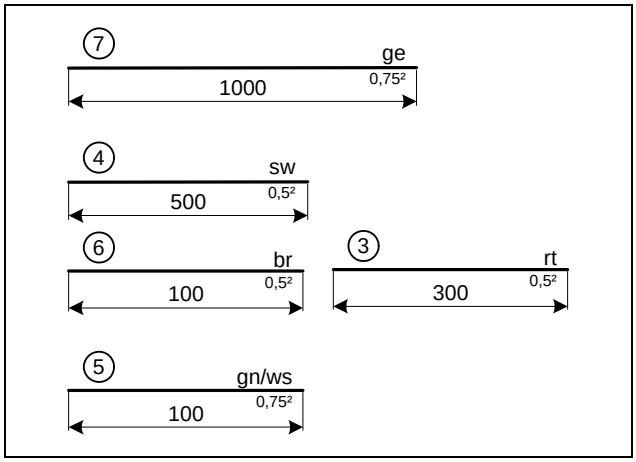
Wire sections retain their numbering in the entire document.

Inserting F4, preparing K1 relay

Connect wires to K1 relay socket. Insert 25A fuse F4. K1 relay will only be inserted after installation of the passenger compartment relay and fuse holder.



Preparing wires

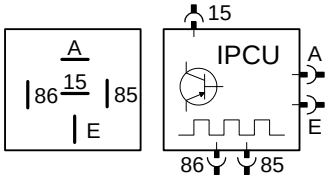


Checking IPCU

IPCU view on contact side.
Check IPCU settings before start-up of heater and adjust if necessary.

IPCU settings:

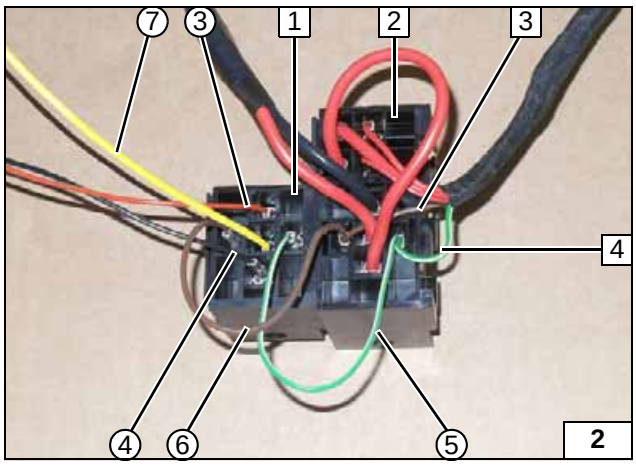
Duty cycle: 65%
Frequency: 400Hz
Voltage: 9V
Function: Low-side



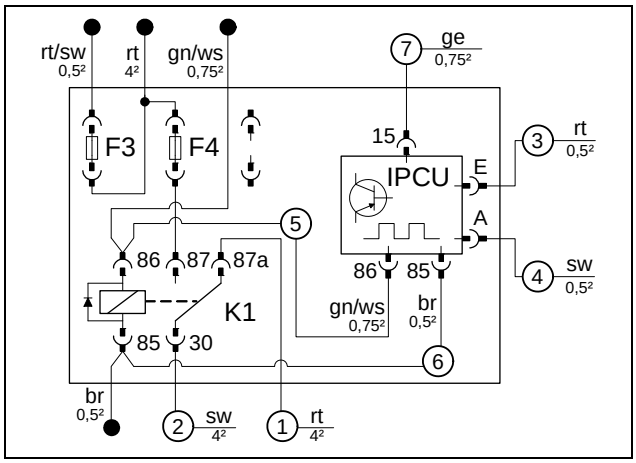
Premounting passenger compartment relay and fuse holder/IPCU socket

Attach IPCU socket **1** and passenger compartment relay and fuse holder **2** together. Detach/remove K1/85 and K1/86 contacts. Mount provided contacts on wires according to wiring diagram.

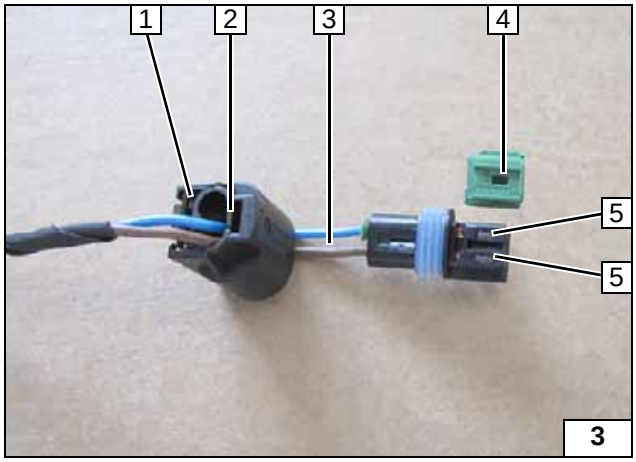
- **3** Brown (br) wire of K1/85
- **4** Green/white (gn/ws) wire of K1/86
- ③ Red (rt) wire of IPCU/E
- ④ Black (sw) wire of IPCU/A
- ⑤ Green/white (gn/ws) wire of K1/86 and IPCU/86
- ⑥ Brown (br) wire of K1/85 and IPCU/85
- ⑦ Yellow (ge) wire of IPCU/15



Premounting passenger compartment relay and fuse holder/IPCU socket



Dismantling connector



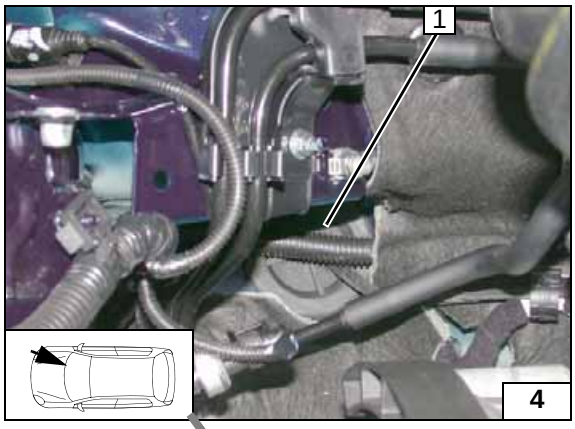
Reassemble connector of metering pump after routing. Pin assignment is not relevant.

1 Connector housing
2 Lock
3 Blue/brown (bl / br) wires
4 Coding
5 Timer lock

Electrical System

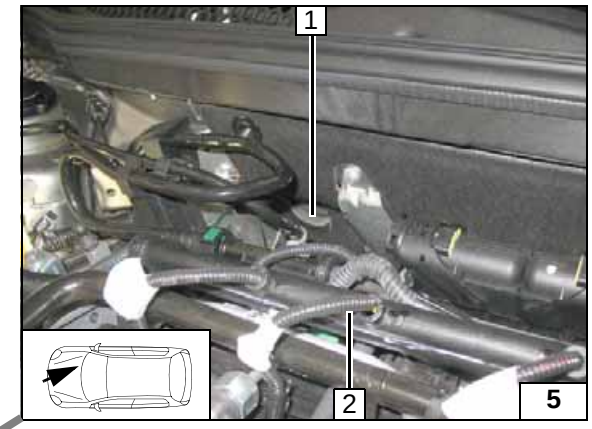
Wiring harness pass through 1.4 TB

1 Protective rubber plug

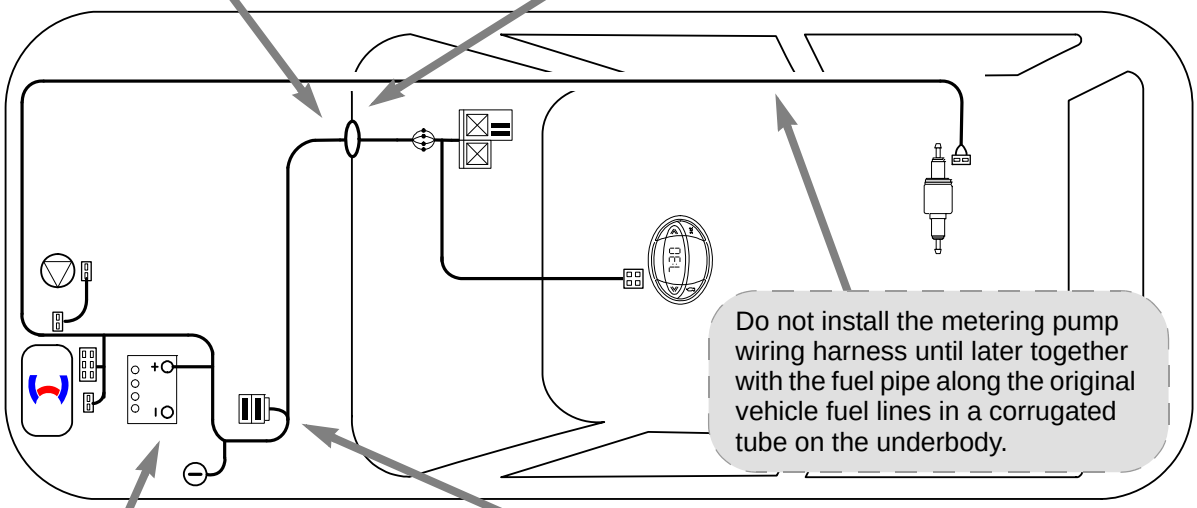


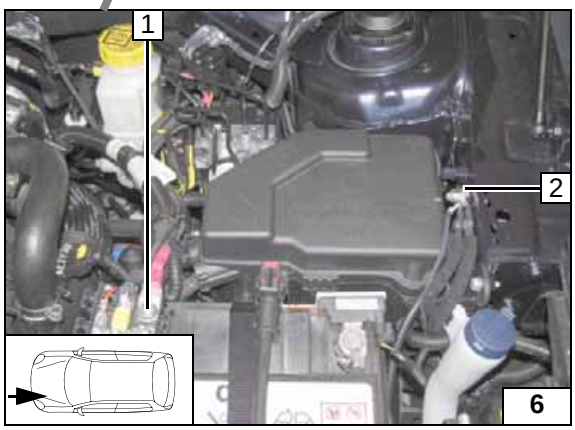
Wiring harness pass through 2.0 JTDM

1 Protective rubber plug



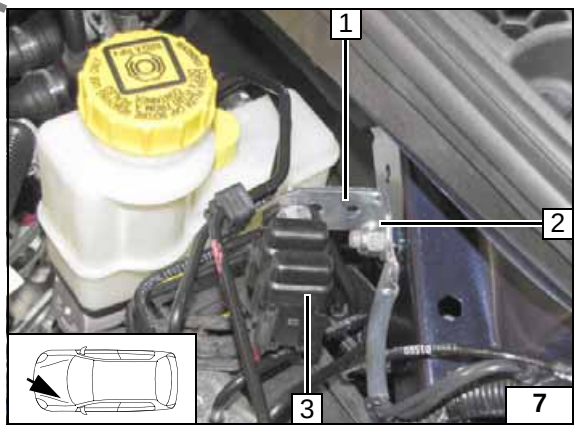
Wiring harness routing diagram





Positive and earth wire

1 Positive wire on positive battery terminal
2 8mm dia. cable lug, earth wire on original vehicle earth support point

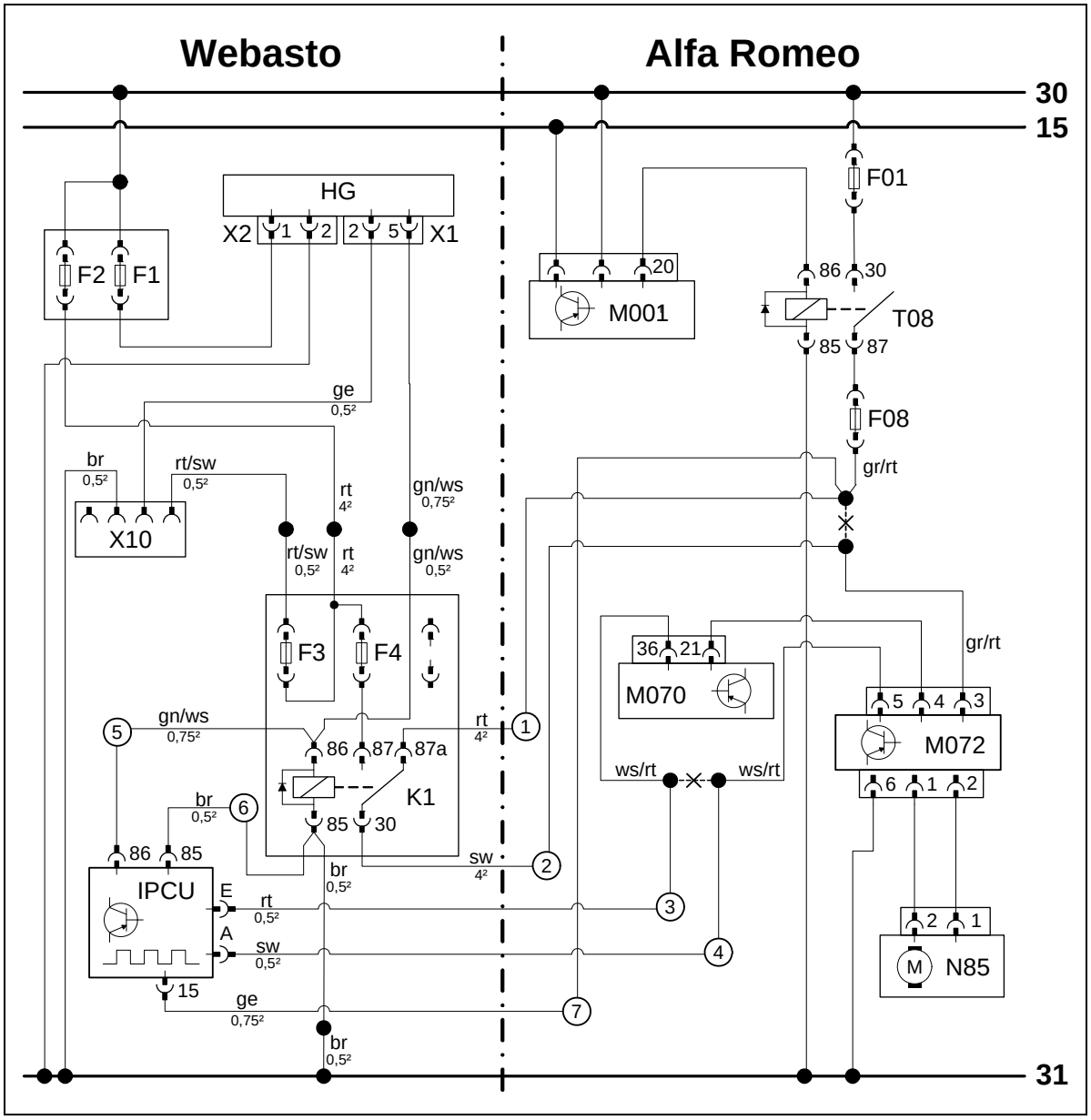


Fuse holder of engine compartment

1 Angle bracket, drill out hole in short leg to 8.5mm dia
2 Original vehicle stud bolt
3 Fuse holder, M5x16 bolt, washer [2x], nut

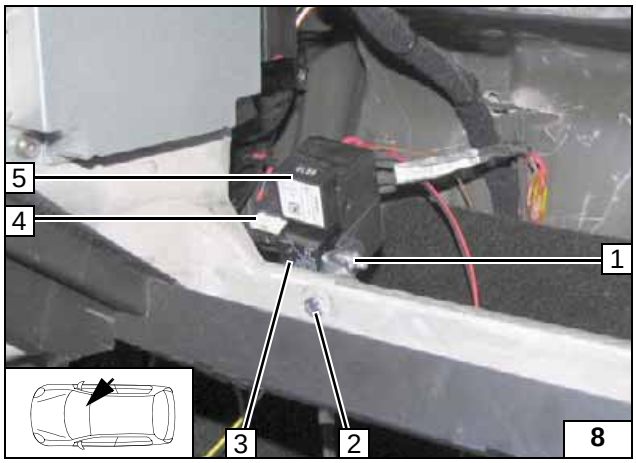
Fan Controller of All Vehicles

Wiring diagram



Webasto components		Vehicle components		Colours and symbols	
HG	Heater TT-Evo	F01	Fuse	rt	red
X1	6-pin heater connector	M001	Body computer	sw	black
X2	2-pin heater connector	T08	Relay	ge	yellow
X10	4-pin connector of heater control	F08	Fuse	gn	green
		M070	A/C control panel	gr	grey
K1	Fan relay	M072	Fan controller	ws	white
F1	20A fuse	N85	Fan unit	br	brown
F2	30A fuse				
F3	1A fuse				
F4	25A fuse				
IPCU	Pulse width modulator				
IPCU settings:					
Duty cycle:	65%				
Frequency:	400Hz				
Voltage:	9V			**X**	Cutting point
Function:	Low-side			Wiring colours may vary.	

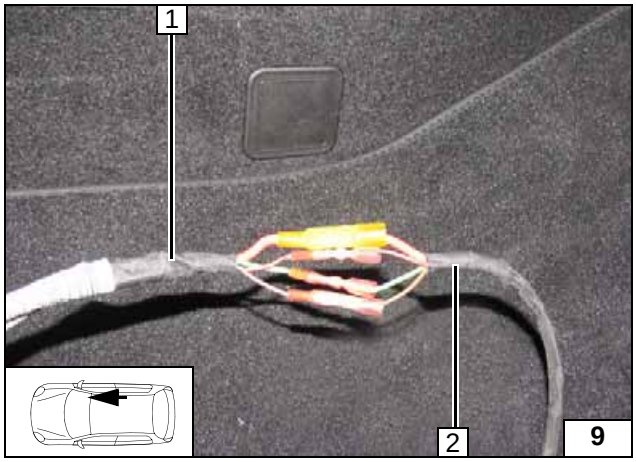
Legend



Mount K1 relay **3** and IPCU **5** first after installing angle bracket on relay and fuse holder.

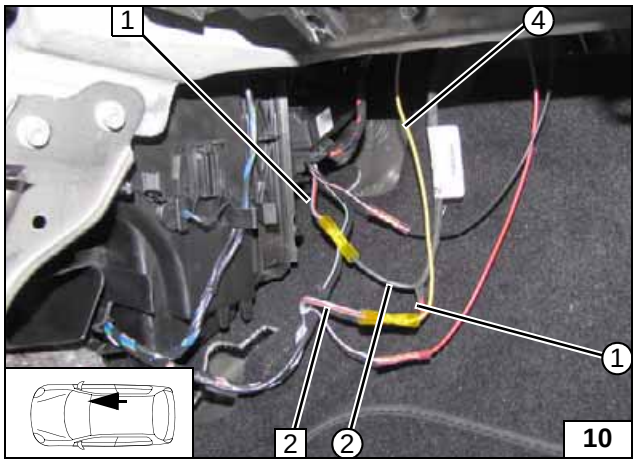
1 Angle bracket, washer [2x], M5x16 bolt, nut
2 Original vehicle hole, M6x35 bolt, 20mm shim, flanged nut

Mounting relay and fuse holder of passenger compartment



Connect wiring harness of passenger compartment relay and fuse holder **1** with wiring harness of heater **2** in accordance with wiring diagram in such a way that same colour wires are connected to each other.

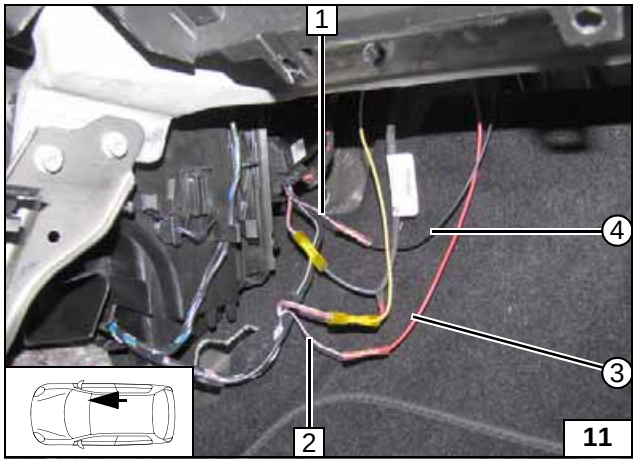
Connecting wiring harness



Produce connections as shown in wiring diagram.

1 Green/red (gr/rt) wire of fan controller
2 Green/red (gr/rt) wire of fuse F08
① Red (rt) wire of K1/87a
② Black (sw) wire of K1/30
④ Yellow (ge) wire of IPCU/15

Connecting fan controller

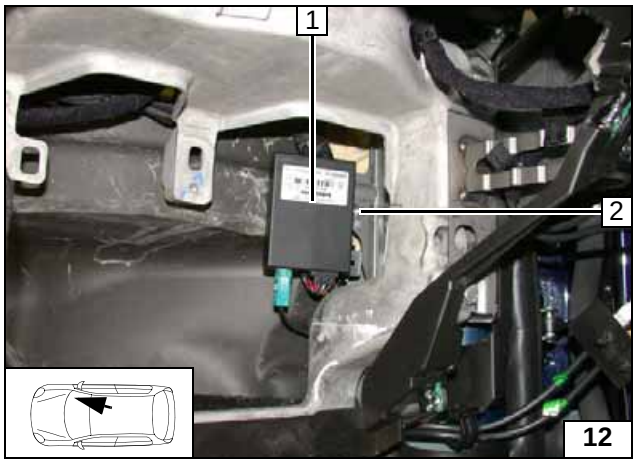


Produce connections as shown in wiring diagram.

1 White/red (ws/rt) wire of fan controller
2 White/red (ws/rt) wire of A/C control panel
③ Red (rt) wire of IPCU/E
④ Black (sw) wire of IPCU/A

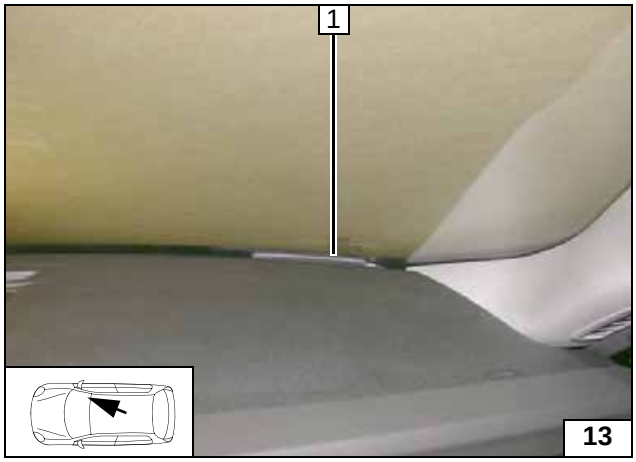
Connecting fan controller

Optional Heater Control



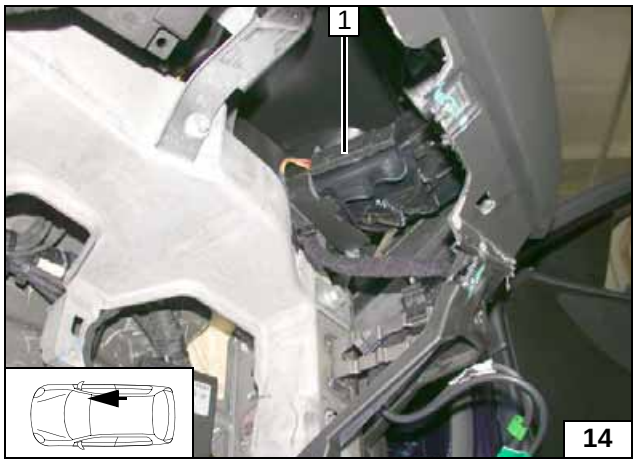
1 Receiver
2 Original vehicle hole, M5x16 bolt, flanged nut

Installing receiver



1 Antenna

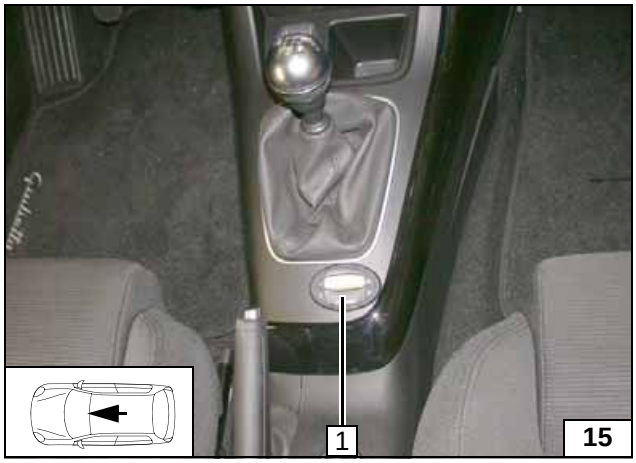
Installing antenna



Temperature sensor T100 HTM

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

Installing temperature sensor

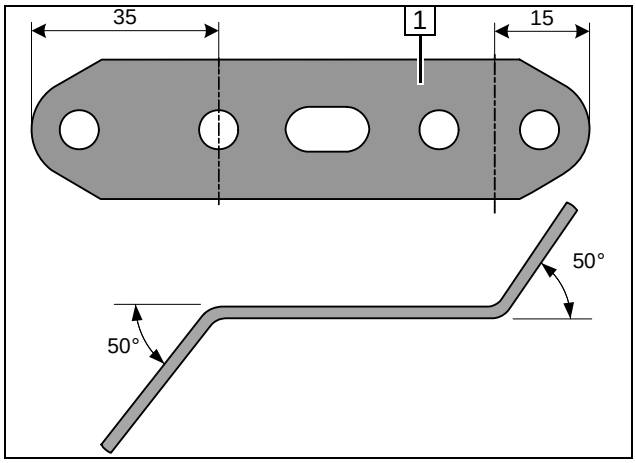


Digital timer

1 Digital timer

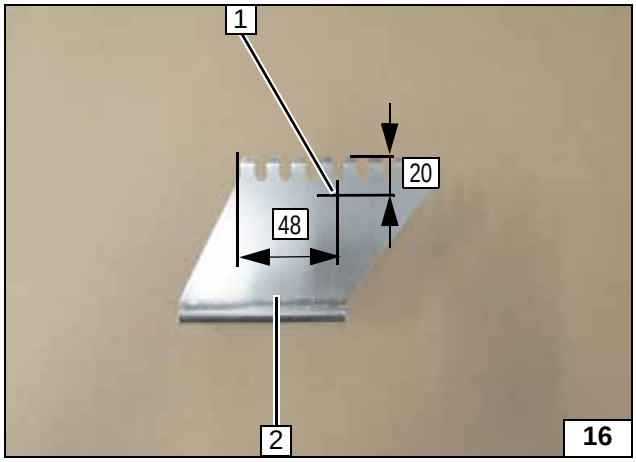
Installing digital timer

Preparing Bracket



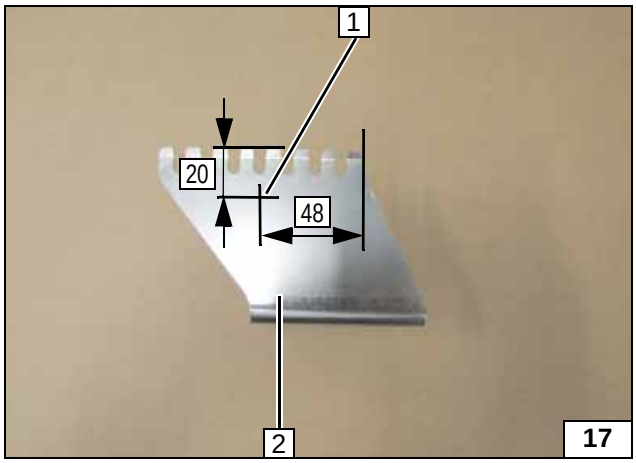
1 Perforated bracket

Bending perforated bracket at an angle



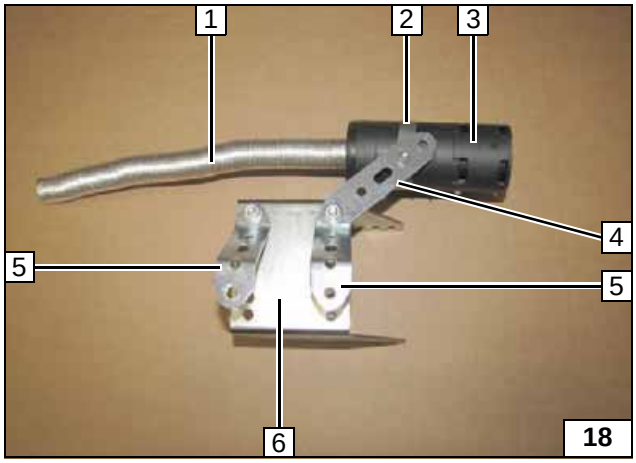
Drill 5.5mm dia. hole **1** into bracket **2** as shown.

Preparing bracket



Drill 5.5mm dia. hole **1** into bracket **2** as shown.

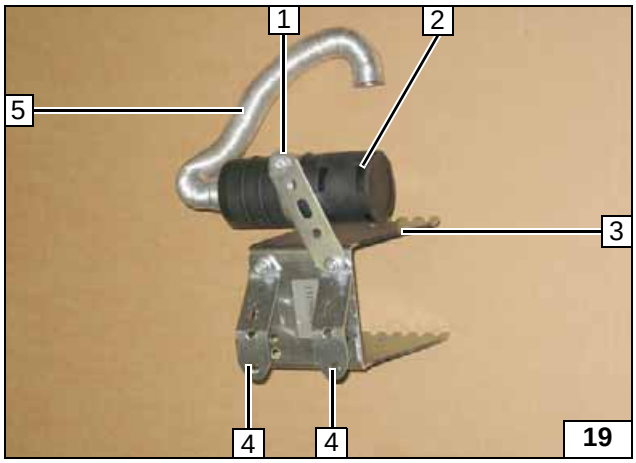
Preparing bracket



Combustion air pipe **1** shortened to 280mm.

2 51mm dia. clamp, M5x16 bolt, flanged nut
3 Intake silencer
4 Perforated bracket
5 Perforated bracket, M6x16 bolt, flanged nut

Premounting 1.4 TB bracket

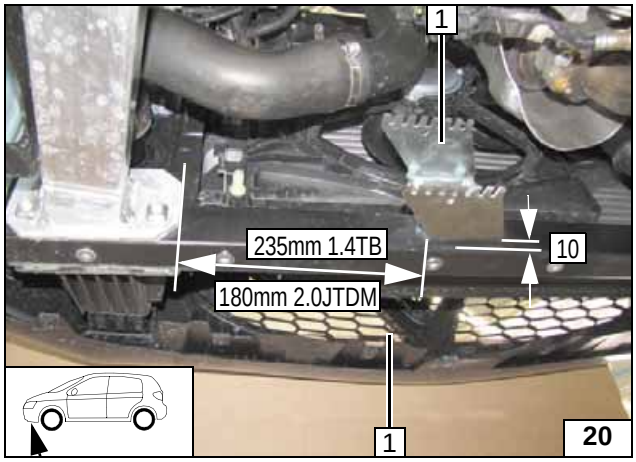


Shorten combustion air pipe **5** to 300mm and mould as shown.

1 51mm dia. clamp, M5x16 bolt, flanged nut, perforated bracket
2 Intake silencer
3 Bracket
4 Perforated bracket, M6x16 bolt, flanged nut

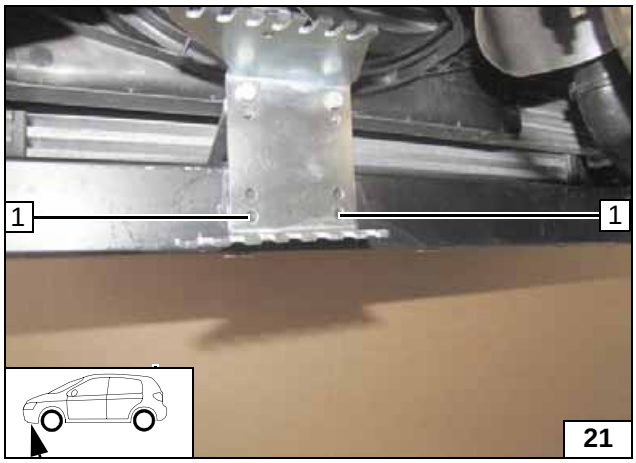
Premounting bracket 2.0 JTDM

Preparing Installation Location



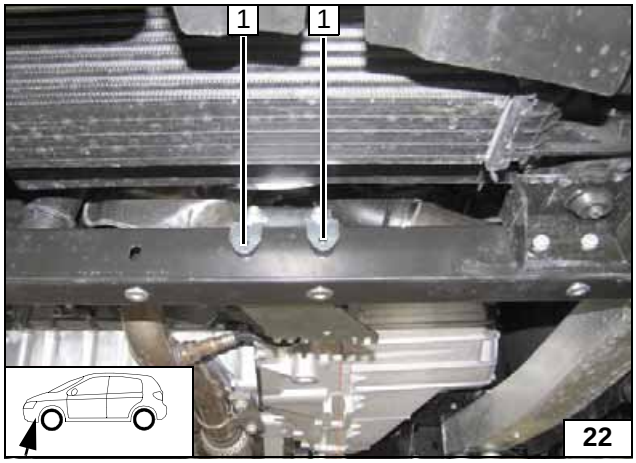
Align bracket **1**, note dimensioning**.**

Aligning bracket



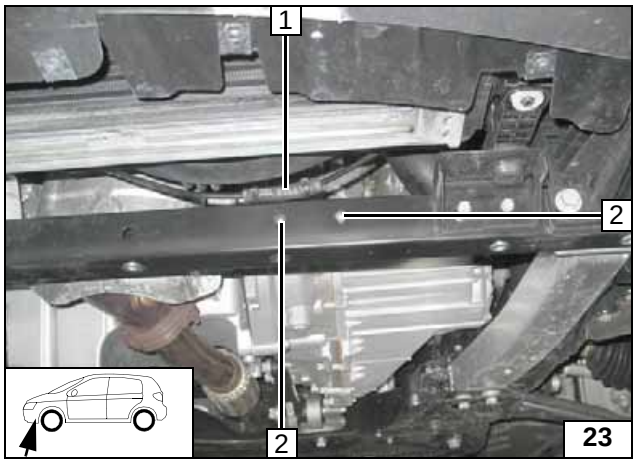
Copy hole pattern **1** [2x] for 9.1mm dia. hole.

Copying hole pattern



Copy hole pattern **1** [2x] for 9.1mm dia. hole.

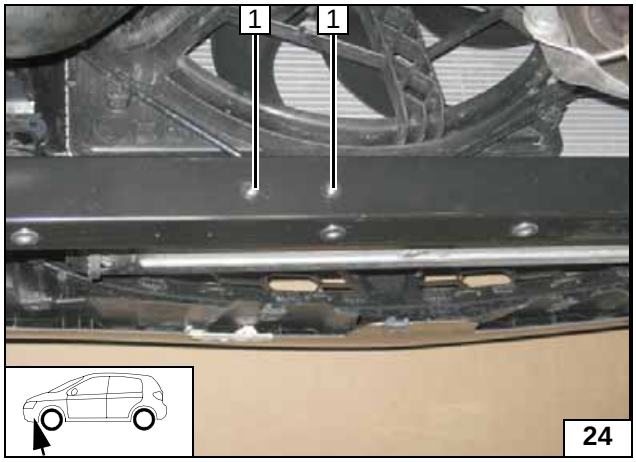
Copying hole pattern



Slit 8x12 hose **1** longitudinally and slide on to vacuum line, secure with cable ties (2.0 JTDM only).

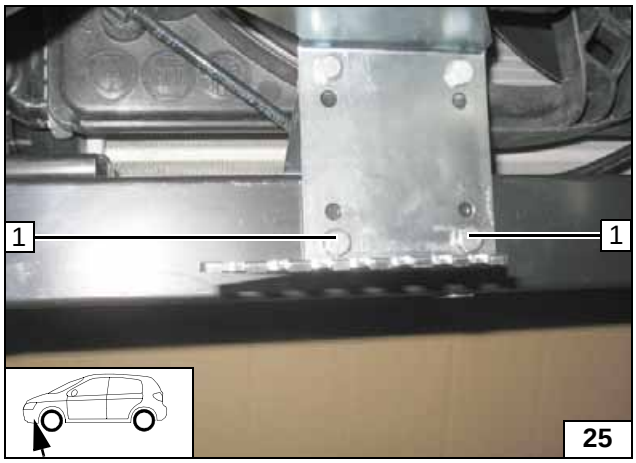
2 Rivet nut [2x]

Installing rivet nuts



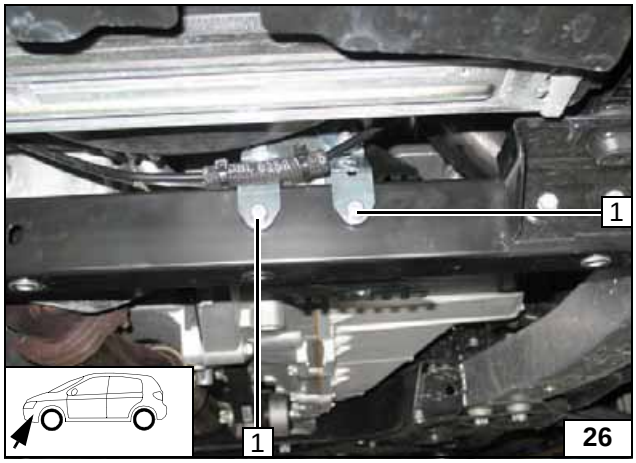
1 Rivet nut [2x]

Installing rivet nuts



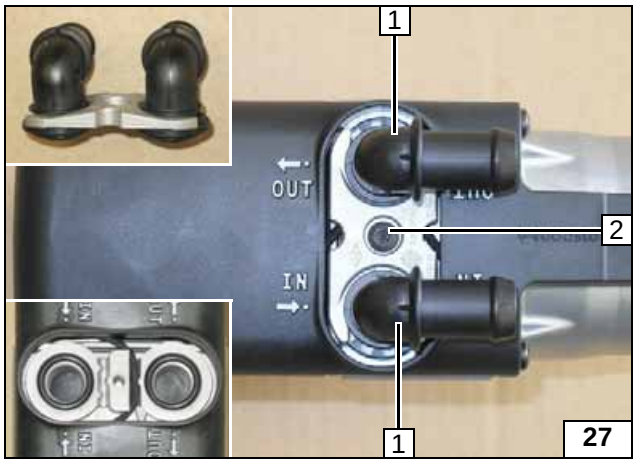
1 M6x20 bolt, spring lockwasher [2x]

Installing bracket



1 M6x20 bolt, spring lockwasher [2x]

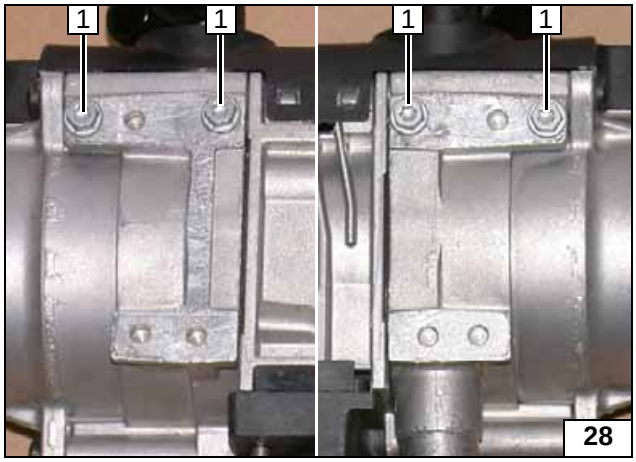
Installing bracket



Preparing Heater

1 Water connection piece, sealing ring [2x each]
2 5x15 self-tapping bolt, retaining plate of water connection pieces

Mounting water connection piece



Screw 5x13 self-tapping bolts **1** [4x] in existing holes by a max. of 3 thread turns.

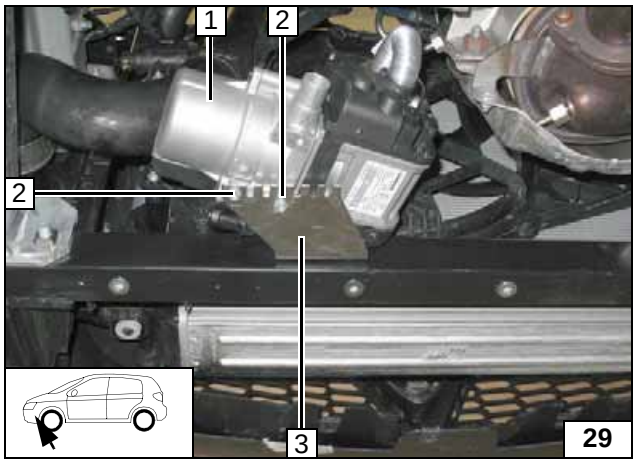
Premounting bolts loosely

Installing Heater

Insert heater **1** in bracket **3** and align.

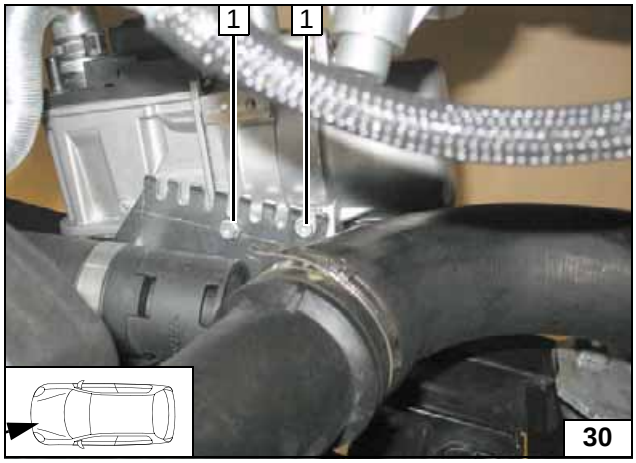
2 5x15 Self-tapping bolt [2x]

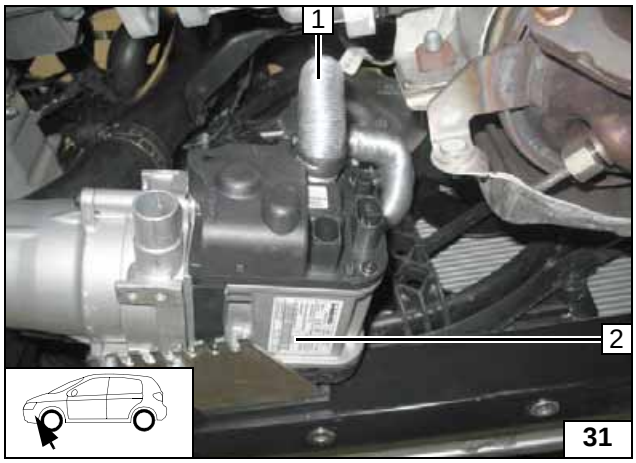
Installing heater



1 5x15 Self-tapping bolt [2x]

Installing heater



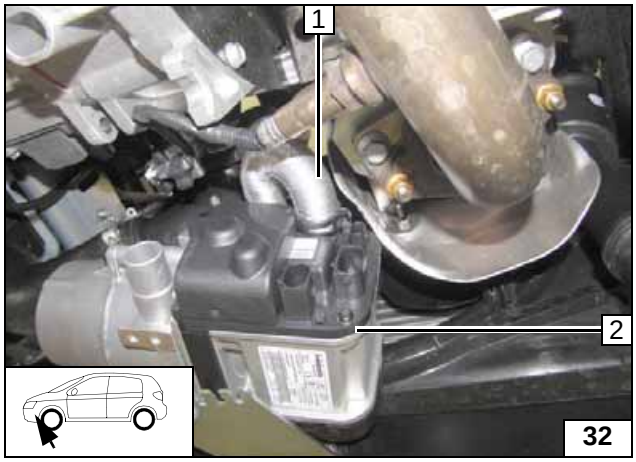


Combustion Air

Ensure sufficient distance from neighbouring components.

1 Intake hose
2 Heater

Installing 2.0 JTDM combustion air pipe



Ensure sufficient distance from neighbouring components.

1 Intake hose
2 Heater

Installing 1.4 TB combustion air pipe

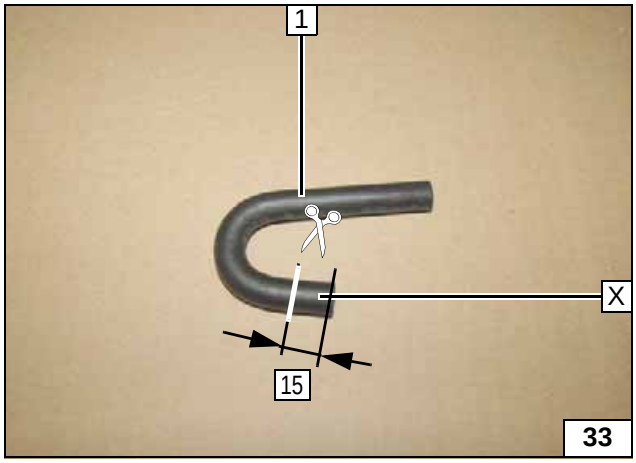
Fuel

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.



Discard section X.

1 180° moulded hose

Preparing heater connection

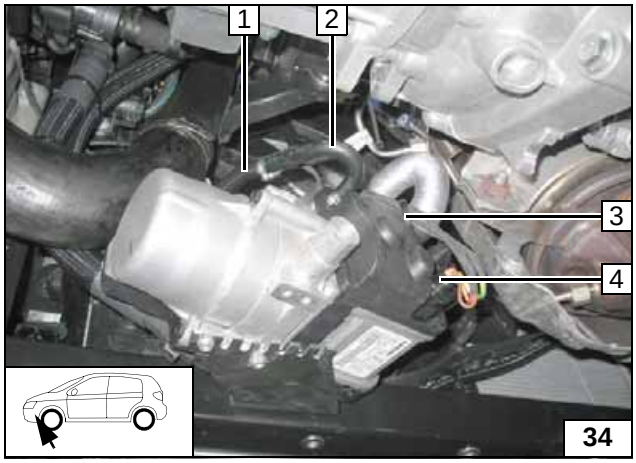
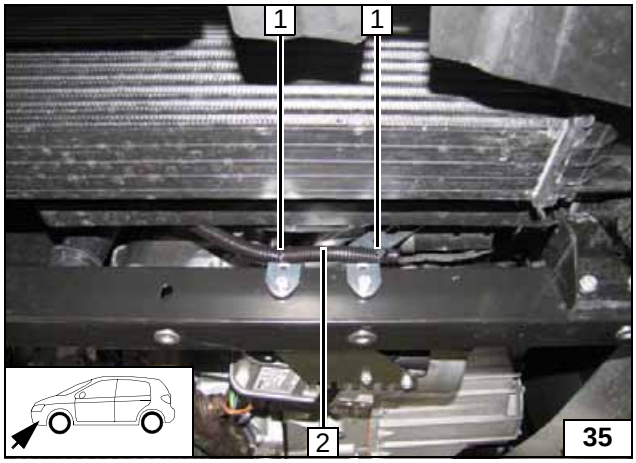


Image shows 2.0 JTDM
Attach connector of heater wiring harness **4** [2x] to the heater and secure/fasten it using cable ties **3**. Ensure sufficient distance from neighbouring components.

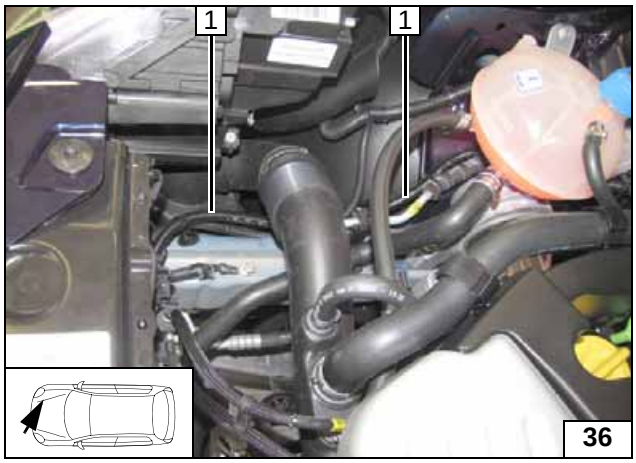
1 Fuel line, metering pump cable, 10mm dia. corrugated tube
2 Moulded hose, 10 mm dia. clamp [2x]

Connecting heater



Route fuel line and wiring harness of metering pump in 10mm dia. corrugated tube **2** to the right side of the vehicle and secure it with cable ties **1** [2x].

Routing on underbody

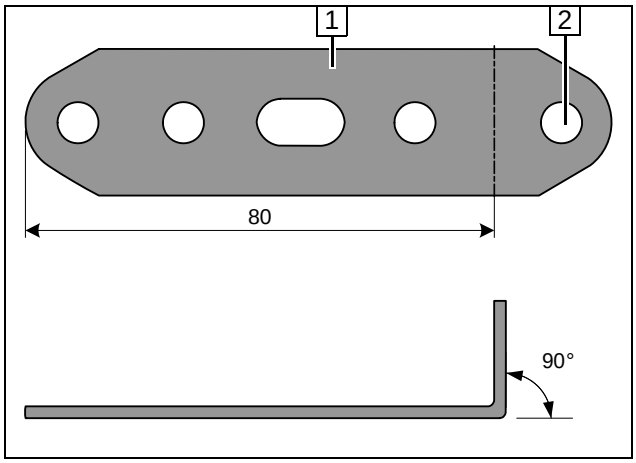


Route fuel line and wiring harness of metering pump in 10mm dia. corrugated tube **1** to underbody and secure with cable ties.

Routing in engine compartment

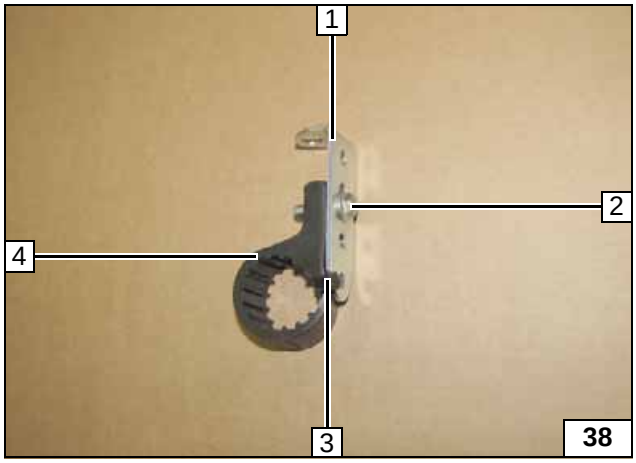
Route fuel line and wiring harness of metering pump in 10mm dia. corrugated tube **1** on underbody and secure using cable ties.

Routing on underbody



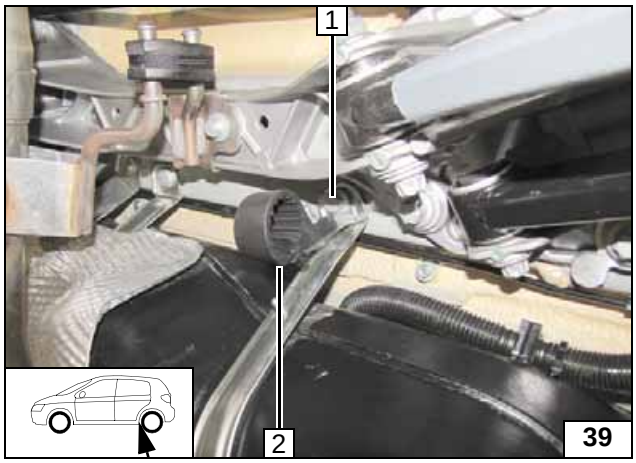
1 Perforated bracket
2 Drill hole to 8.5mm dia.

Preparing perforated bracket



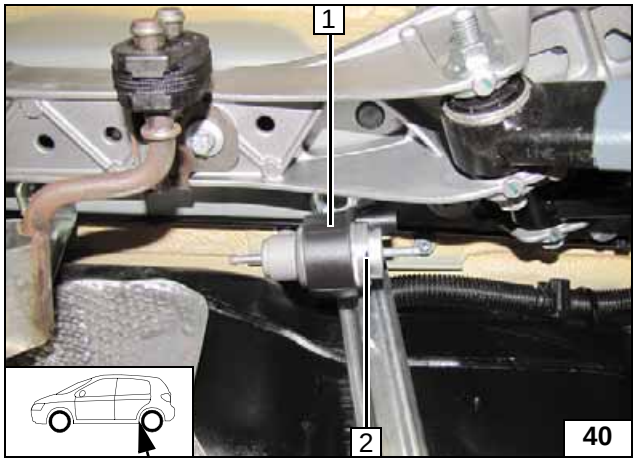
1 Perforated bracket
2 M6x25 bolt, flanged nut
3 Cable tie
4 Mounting of metering pump

Preinstalling metering pump mounting



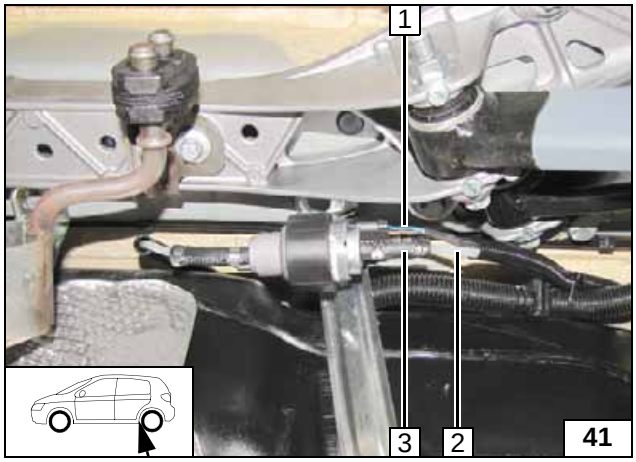
1 Original vehicle bolt
2 Mounting of metering pump

Installation of metering pump mounting



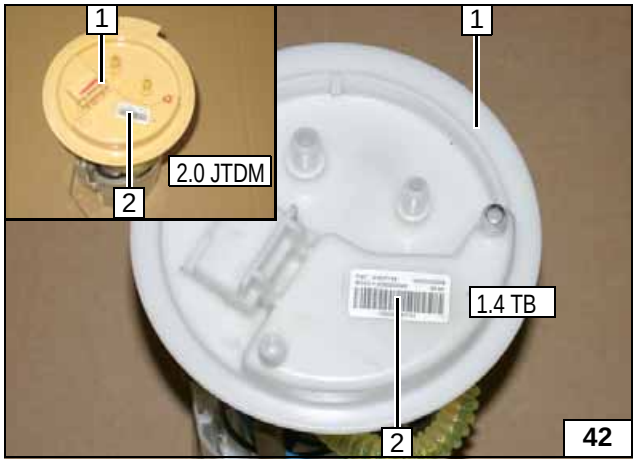
Insert metering pump **2** into mounting **1**.

Metering pump installation



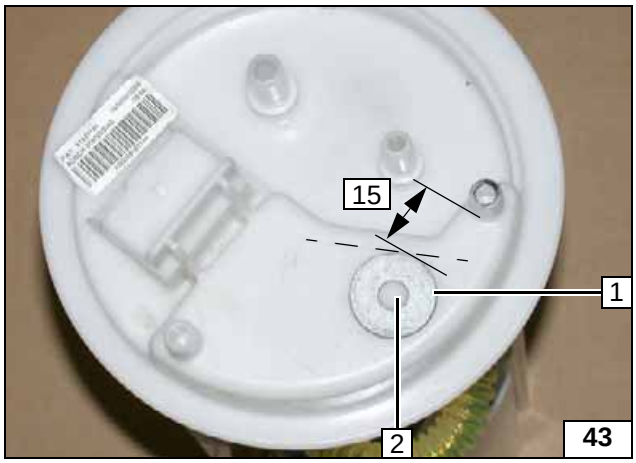
1 Wiring harness of metering pump, connector mounted
2 Fuel line
3 Hose section, 10 mm dia. clamp [2x]

Connecting metering pump



The design of the fuel standpipe is identical for the shown fuel tank sending units. Remove fuel-tank sending unit **1** in accordance with manufacturer's instructions. Remove sticker **2**!

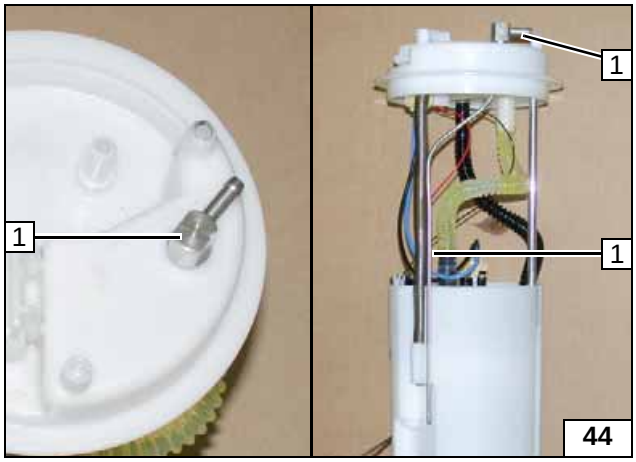
Fuel extraction



Place large diameter washer **1** against the reference edge (dotted marking).

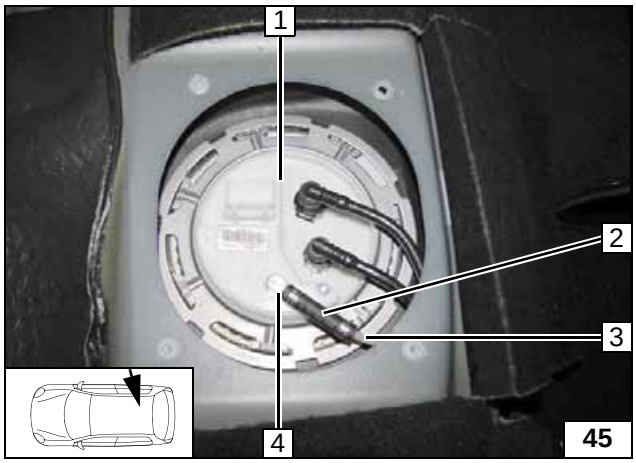
2 Copy hole pattern, 6 mm dia. hole

Hole in fuel-tank sending unit



Shape fuel standpipe **1** according to template and cut to length.

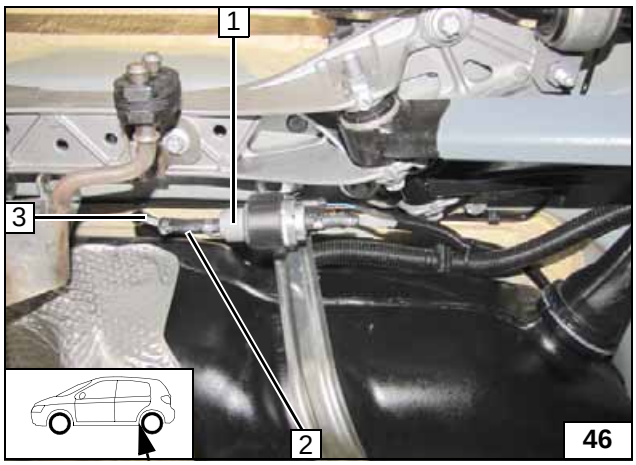
Installing fuel stand-pipe



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

2 Hose section, 10 mm dia. clamp [2x]
3 Fuel line
4 Fuel standpipe

Connect-ing fuel line

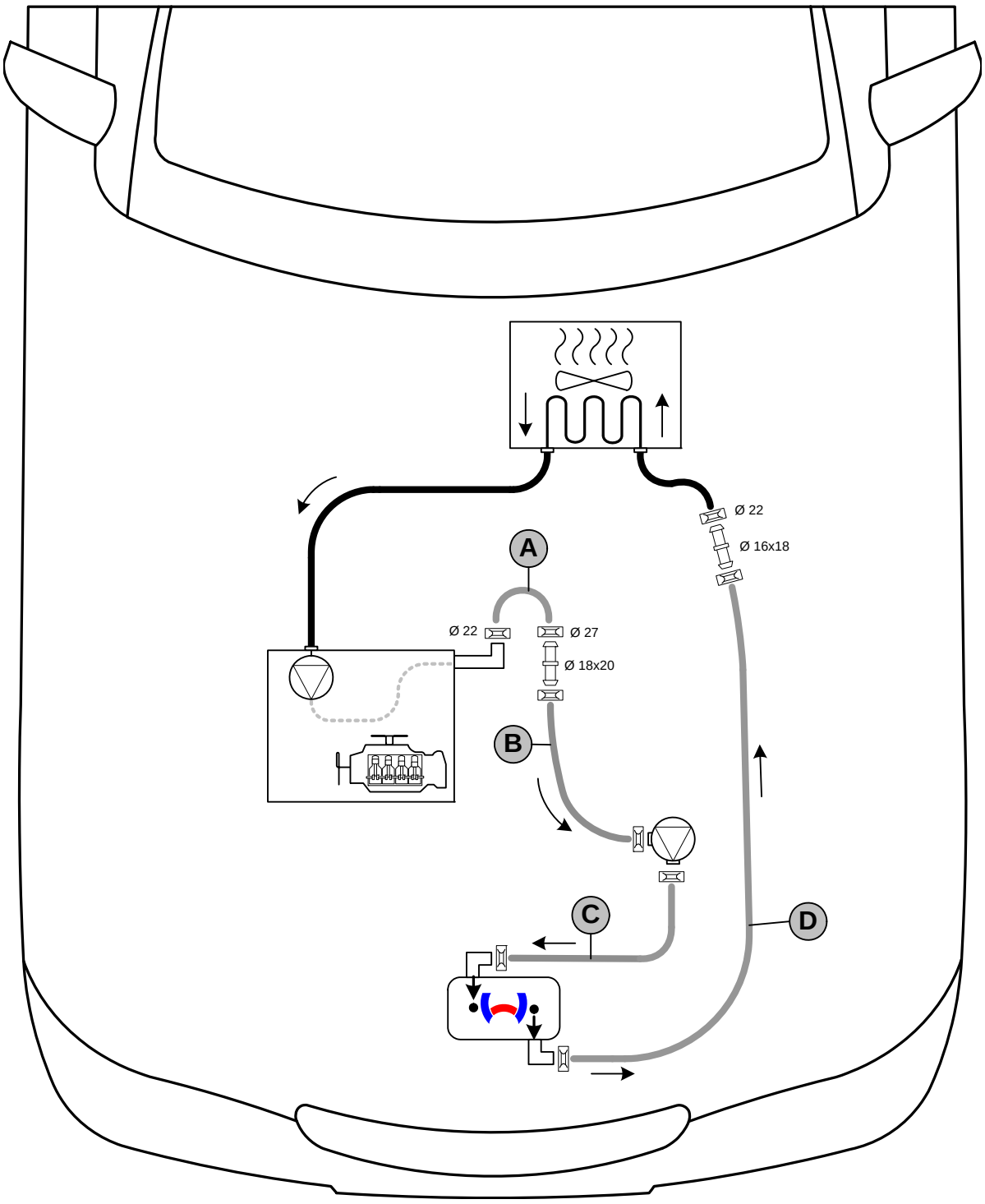


1 Metering pump
2 Hose section, 10 mm dia. clamp [2x]
3 Fuel line, corrugated tube

Connect-ing meter-ing pump

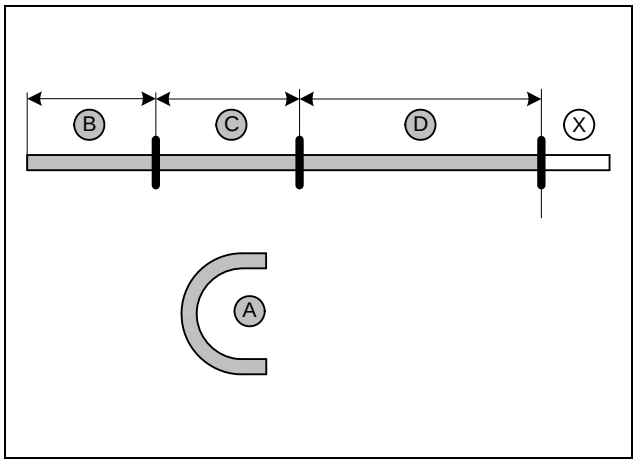
Coolant Circuit for Petrol Vehicles

WARNING!
Any coolant running off should be collected in 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

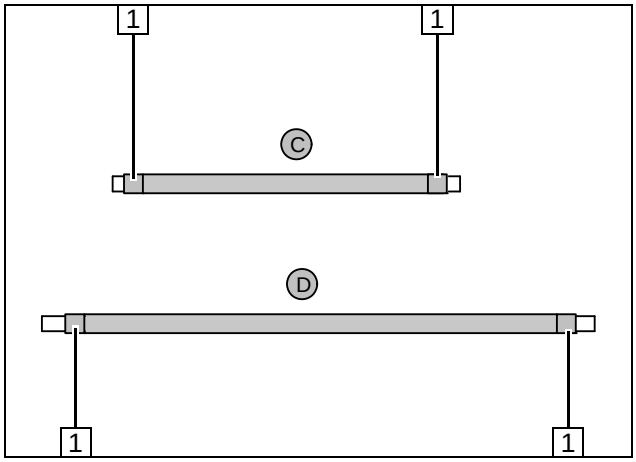
All spring clips without a specific designation = 25 mm dia.



Discard section **X**.
Hose **A** = 180° moulded hose

B = 380
C = 390
D = 630

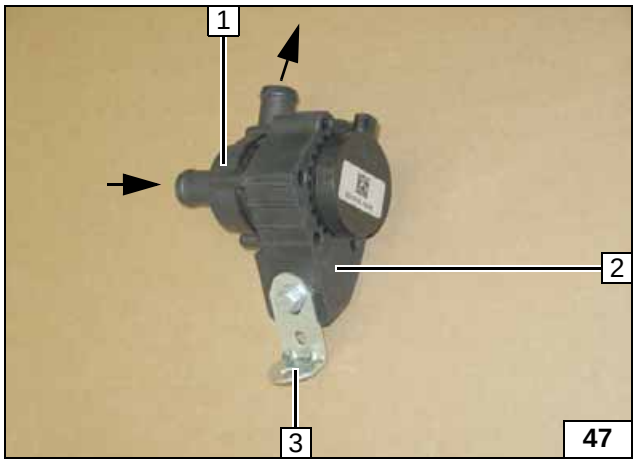
Cutting hoses to length



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

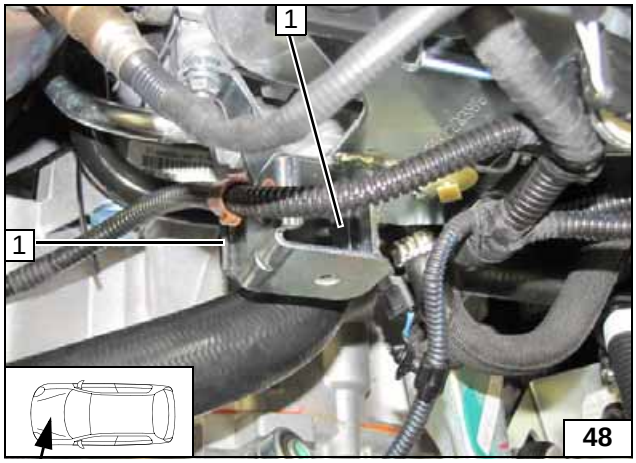
1 50 mm long heat shrink plastic tubing [4x]

Preparing hoses



1 Circulating pump
2 Mounting of circulating pump
3 Angle bracket, M6x25 bolt, flanged nut

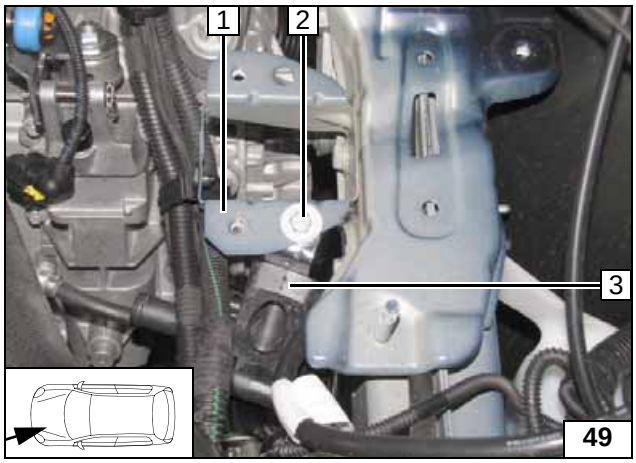
Premounting circulating pump



Cut provided 50 mm edge protection in the middle.

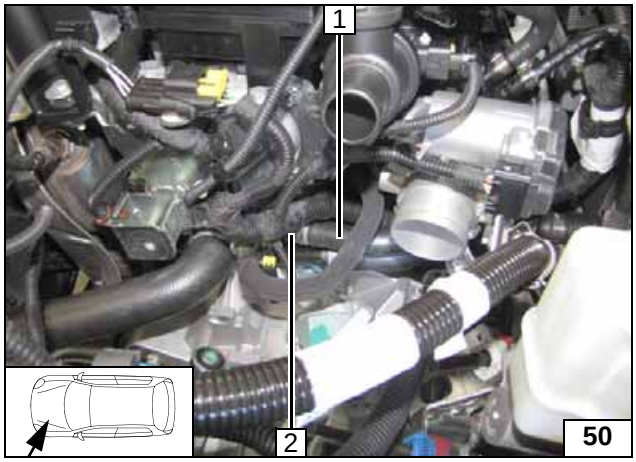
1 25mm edge protection [2x]

Inserting edge protection



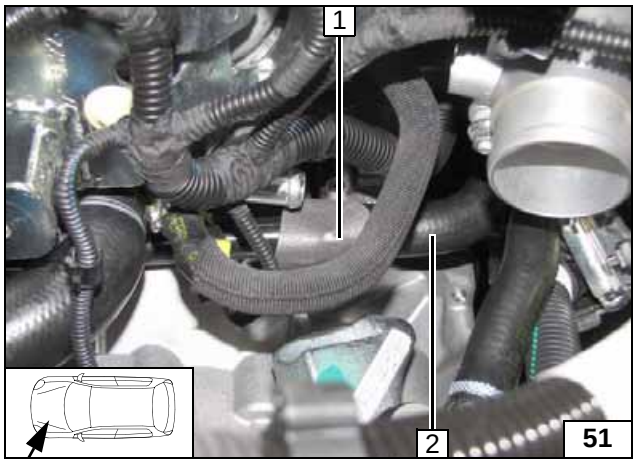
1 Battery carrier console
2 Original vehicle hole, M6x20 bolt, large diameter washer, flanged nut
3 Circulating pump premounted

Circulating pump installation



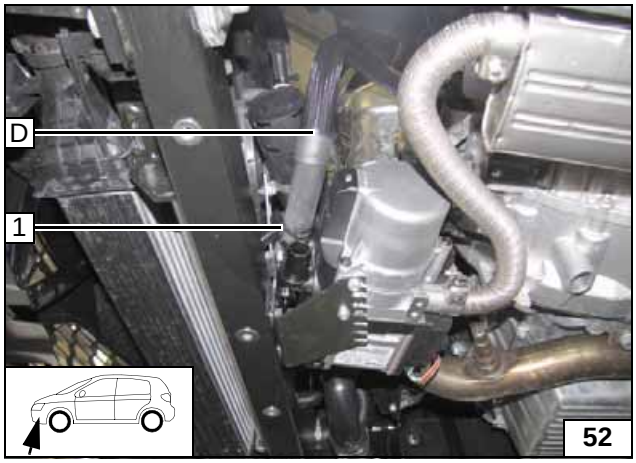
Pull hose **1** of engine outlet off connection piece **2** discard original vehicle hose clamp.

Cutting point



Separate provided rub protection **1** in the middle and paste on hose clamp of hose **2** on heat exchanger outlet.

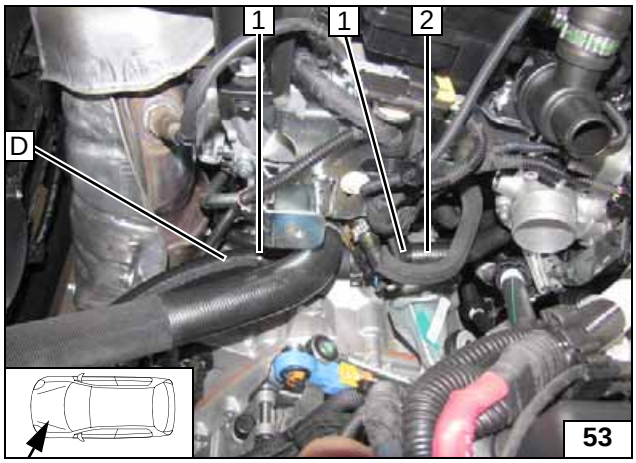
Placing rub protection



Route hose **D** in the engine compartment**.**

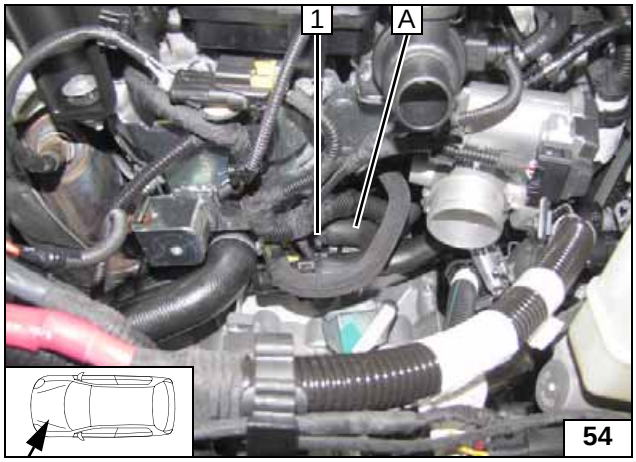
1 Connection piece of heater outlet

Connecting heater



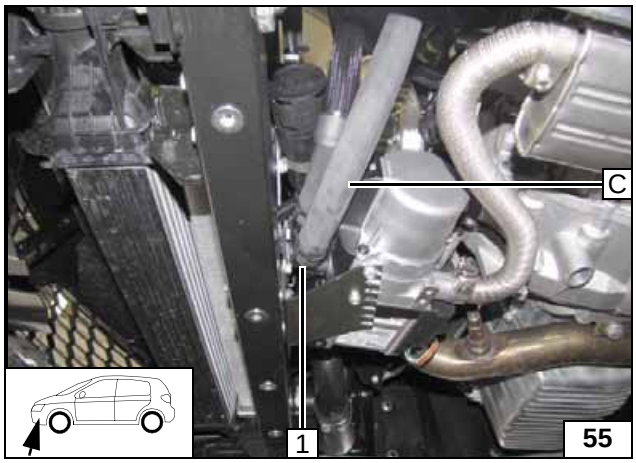
1 Cable tie [2x]
2 Hose section of heat exchanger inlet

Connection of heat exchanger inlet



1 Connection piece on engine outlet

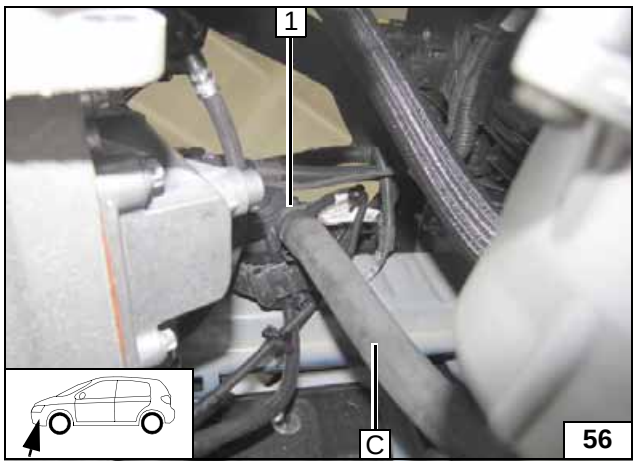
Connecting engine outlet



Route hose **C** to the circulating pump in the engine compartment**.**

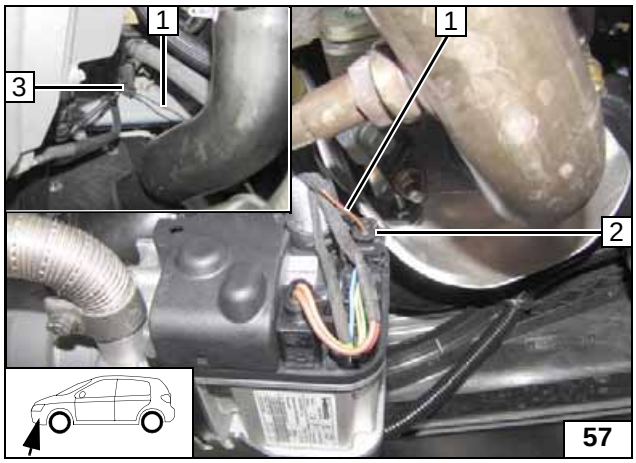
1 Connection piece of heater outlet

Connecting heater



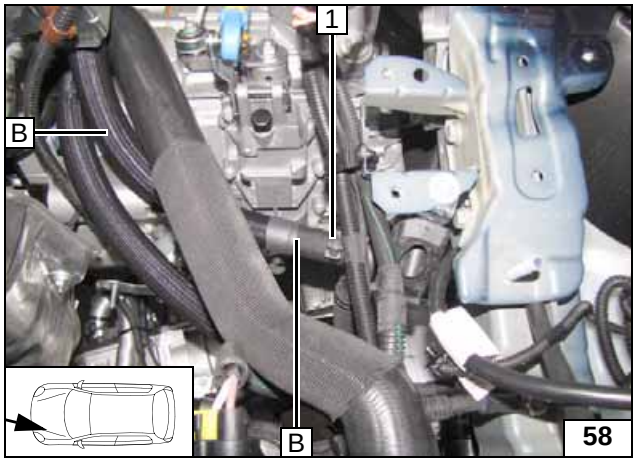
1 Connection piece of circulating pump

Connecting circulating pump



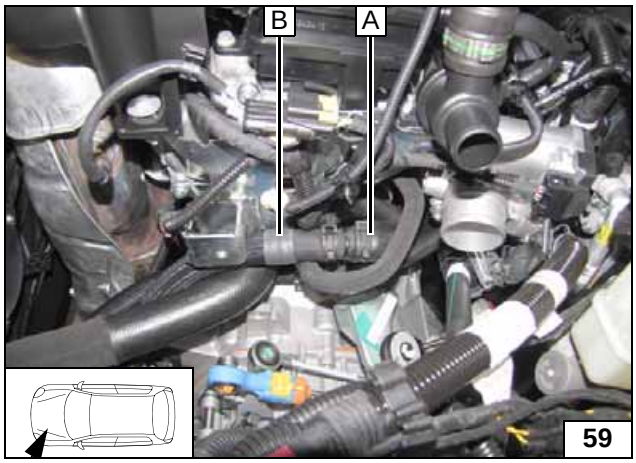
Attach wiring harness of circulating pump **1** to heater **2** and circulating pump **3** and secure with cable ties.

Attaching wiring harnesses

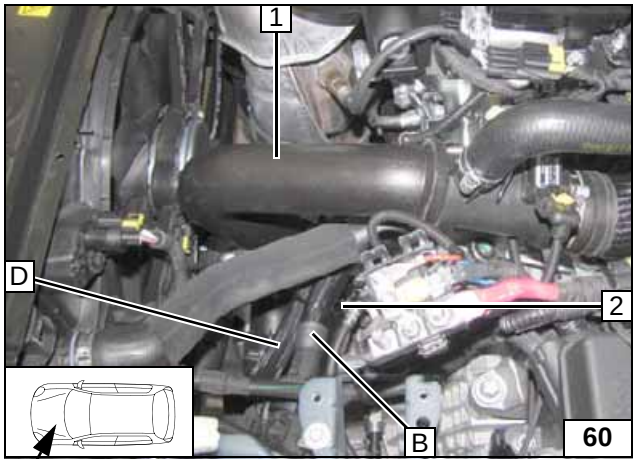


1 Connection piece of circulating pump

Connection of heat exchanger inlet



Connecting hose B and hose A



After installing the air intake pipe **1** check the position of hoses **B** and **D**.
Align hoses. Ensure sufficient distance from adjacent components; correct if necessary.

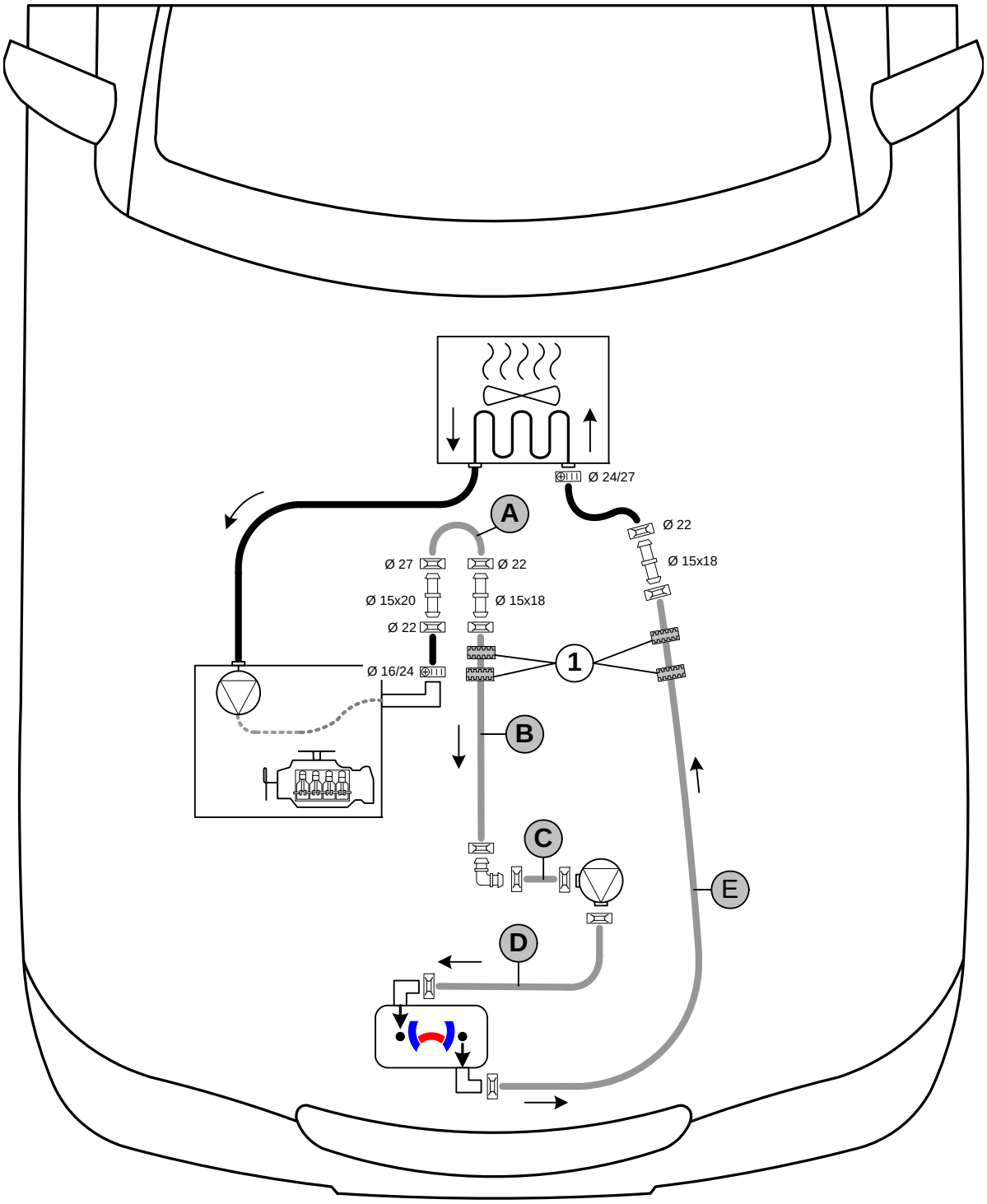
2 Cable tie

Routing in engine compartment

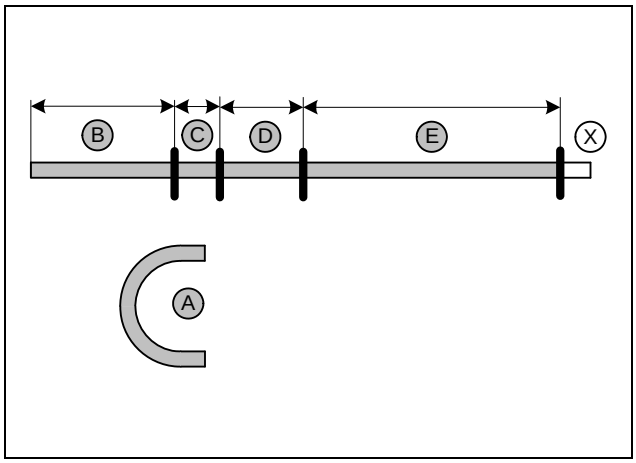
Coolant Circuit for Diesel Vehicles

WARNING!
Any coolant running off should be collected in 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



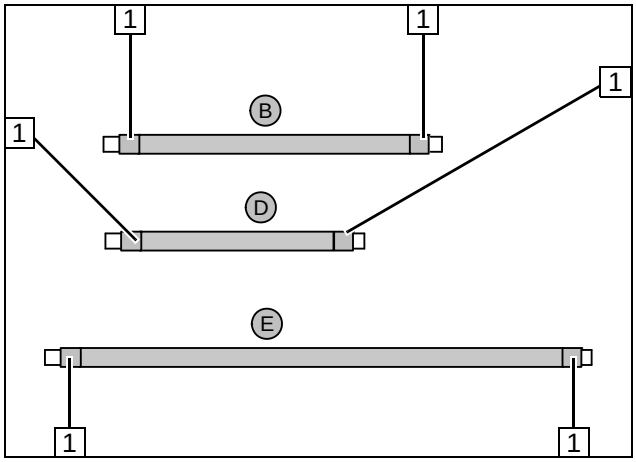
All spring clips without a specific designation = 25 mm dia. **1** = Black (sw) rubber isolator [4x].
All connecting pipes = 18x18 mm dia.



Discard section **X**.
Hose **A** = 180° moulded hose

B = 650
C = 65
D = 350
E = 950

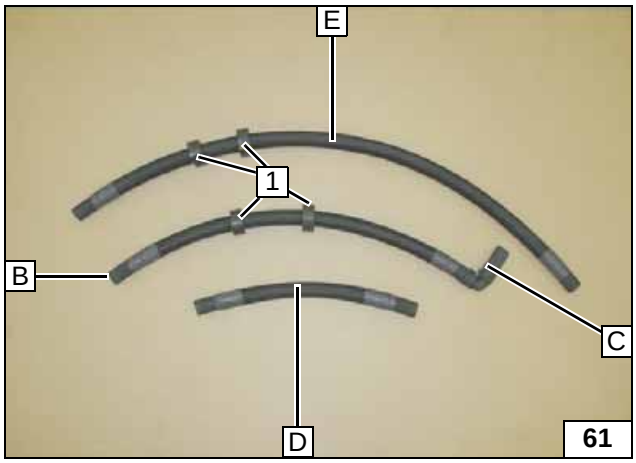
Cutting hoses to length



Push braided protection hose onto hose **B, D** and **E** and cut to length.
Cut heat shrink plastic tubing to length.

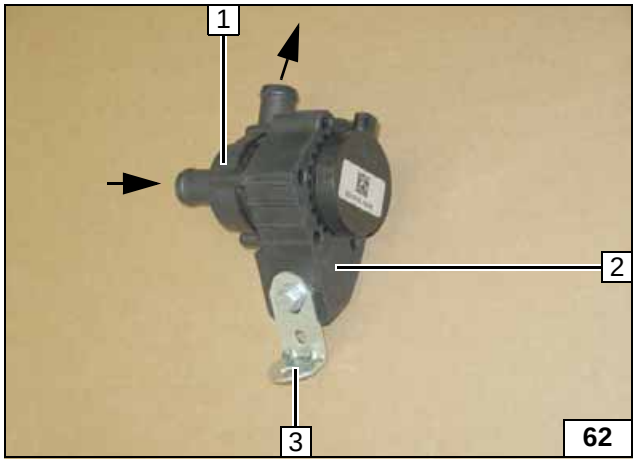
1 50 mm long heat shrink plastic tubing [6x]

Preparing hoses



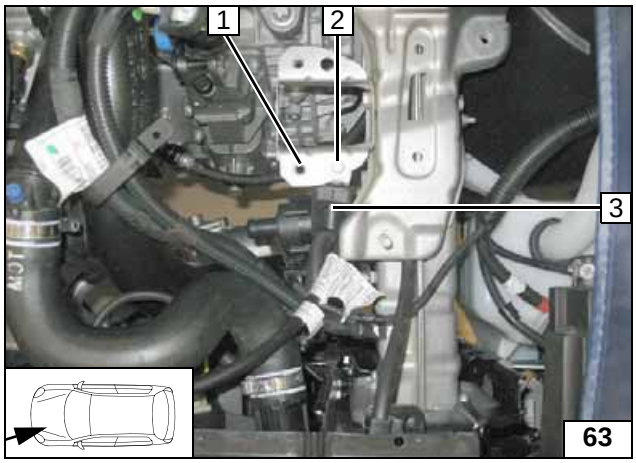
1 Black (sw) rubber isolator 2x on hoses **B** and **E**

Preparing hoses



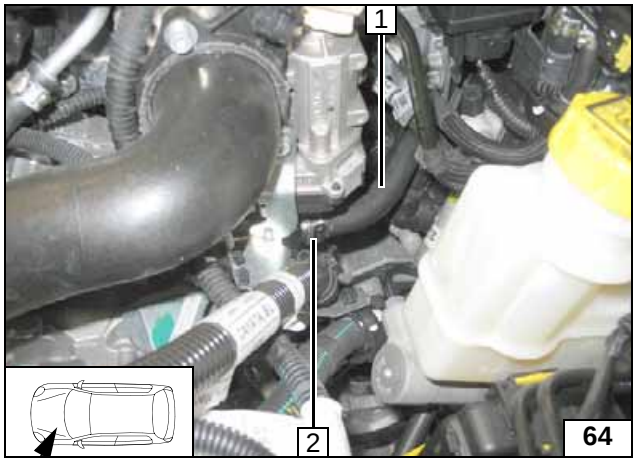
1 Circulating pump
2 Mounting of circulating pump
3 Angle bracket, M6x25 bolt, flanged nut

Premounting circulating pump



1 Battery carrier console
2 Original vehicle hole, M6x20 bolt, large diameter washer, flanged nut
3 Circulating pump premounted

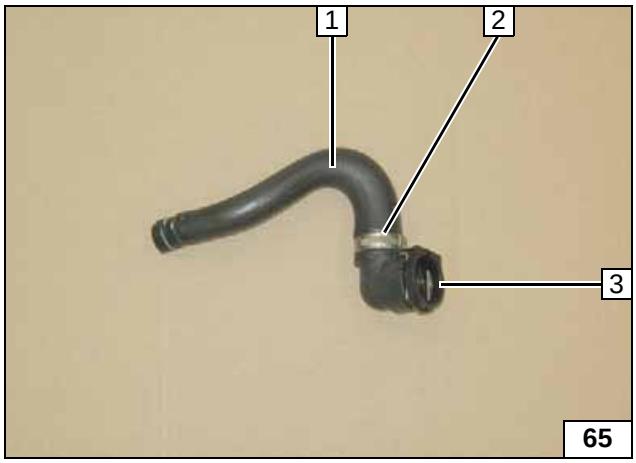
Circulating pump installation



Remove hose section **1** of engine outlet.

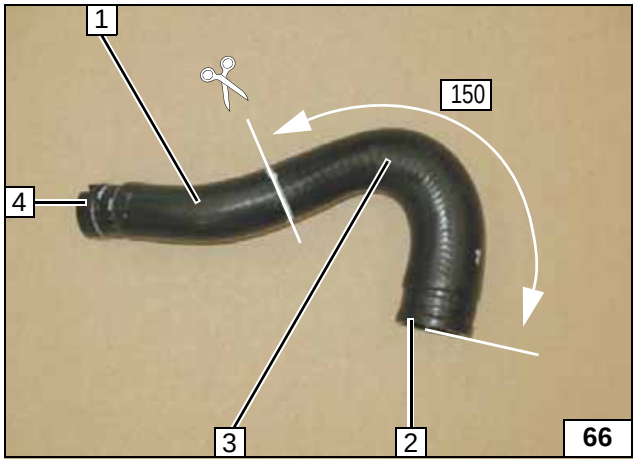
2 Discard hose clamp

Cutting point



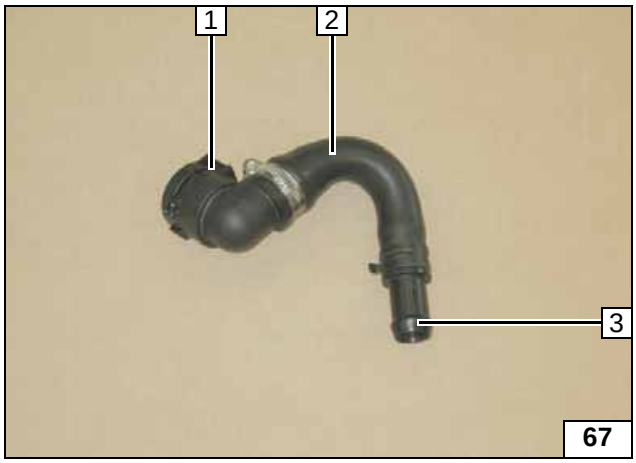
Remove quick-release coupling **3** from hose **1** discard clamp **2**.

Preparing hose



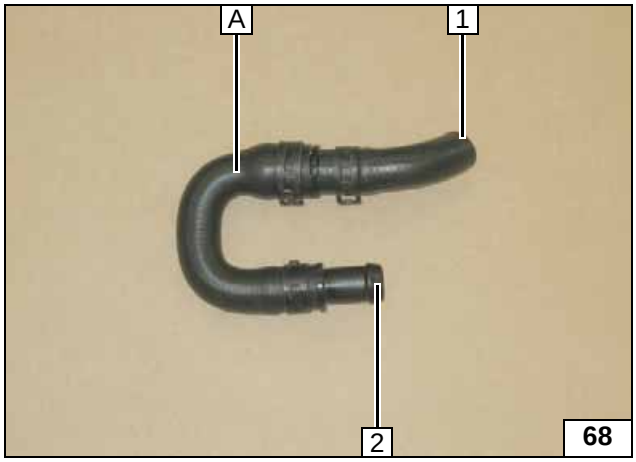
1 Engine outlet hose section
2 Connection quick-release coupling
3 Hose section of heat exchanger inlet
4 Connection of engine outlet

Preparing hose



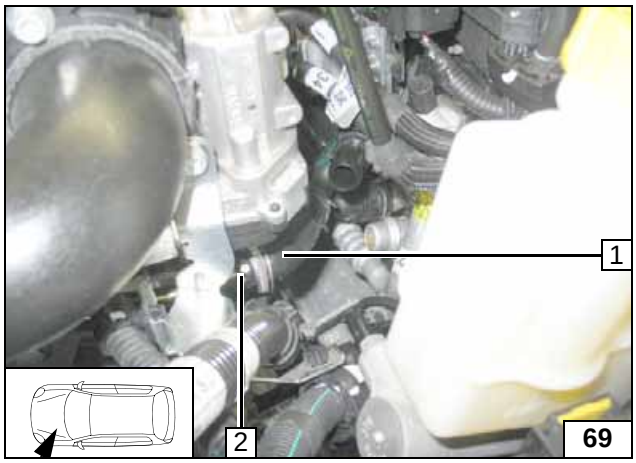
1 Quick-release coupling
2 Hose section of heat exchanger inlet
3 Connection for hose **E**

Preparing hose of heat exchanger inlet



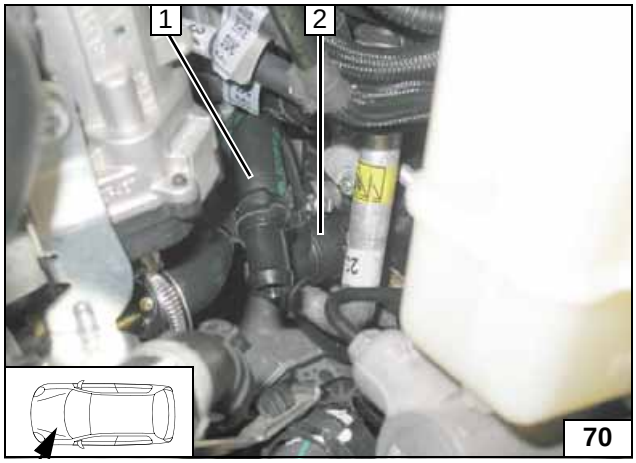
1 Connection of engine outlet connection piece
2 Connection for hose **B**

Preparing hose of engine outlet



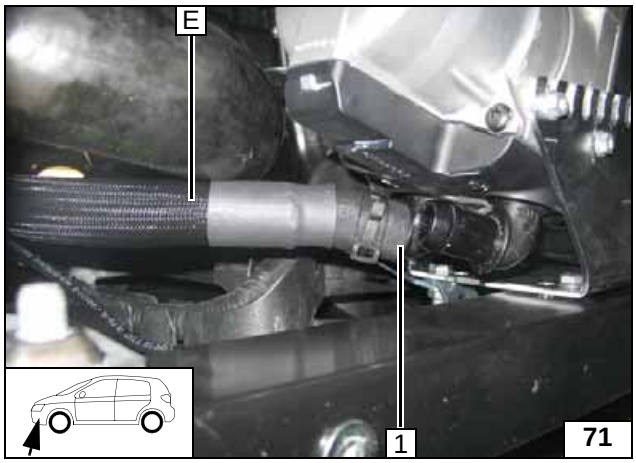
1 Hose group of engine outlet
2 Connection piece on engine outlet

Connecting engine outlet



1 Hose group of heat exchanger inlet
2 Connection of heat exchanger inlet

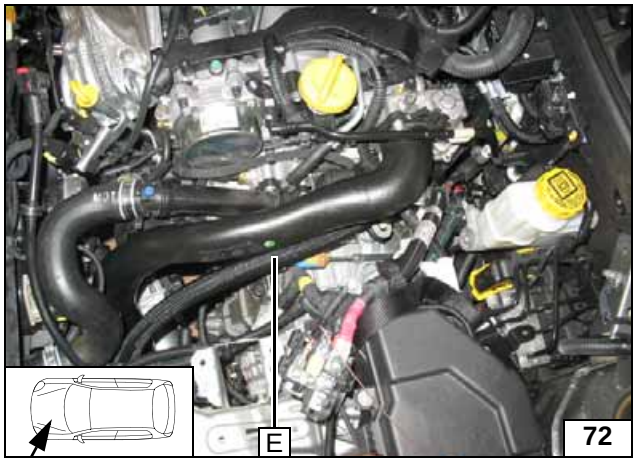
Connection of heat exchanger inlet



Route hose **E** in the engine compartment**.**

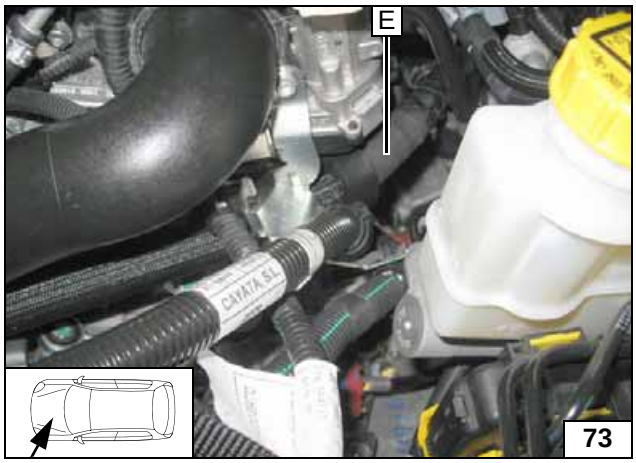
1 Connection piece of heater outlet

Connecting heater



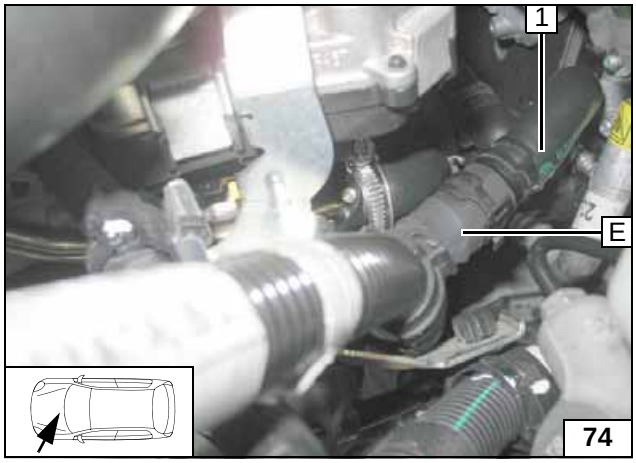
Route hose **E** to heat exchanger connection.

Routing



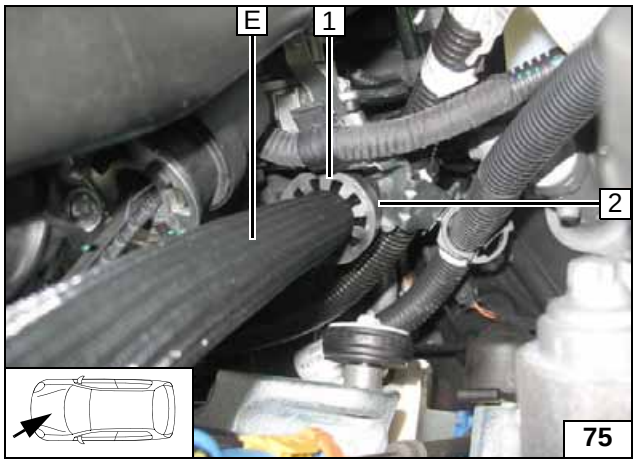
Route hose **E** to heat exchanger connection.

Routing in engine compartment



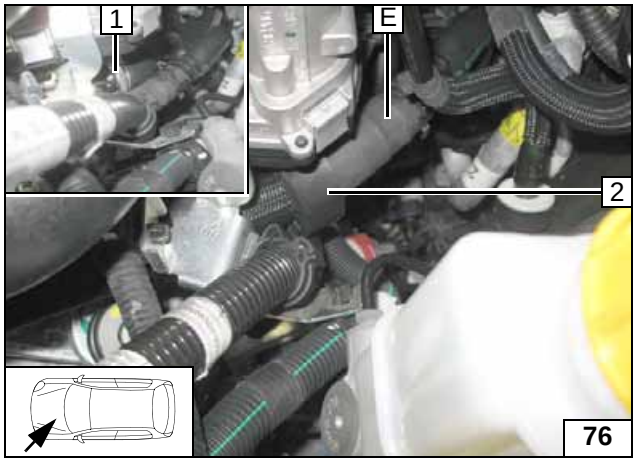
1 Hose group of heat exchanger inlet

Connection of heat exchanger inlet



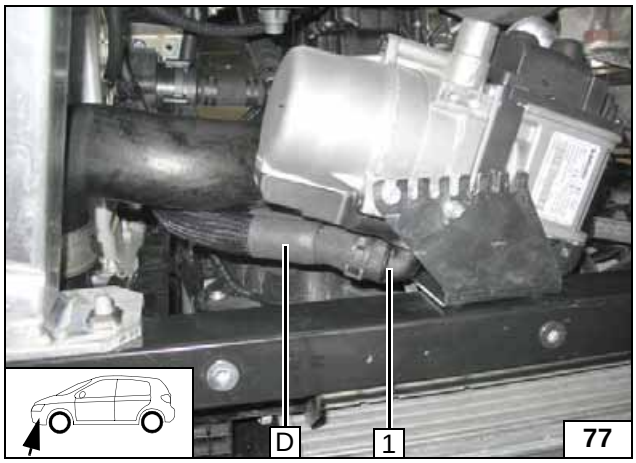
Align black (sw) rubber isolator **1** to cable bracket **2**.

Aligning rubber isolator



Align black (sw) rubber isolator **2** to clamp **1** on engine outlet.

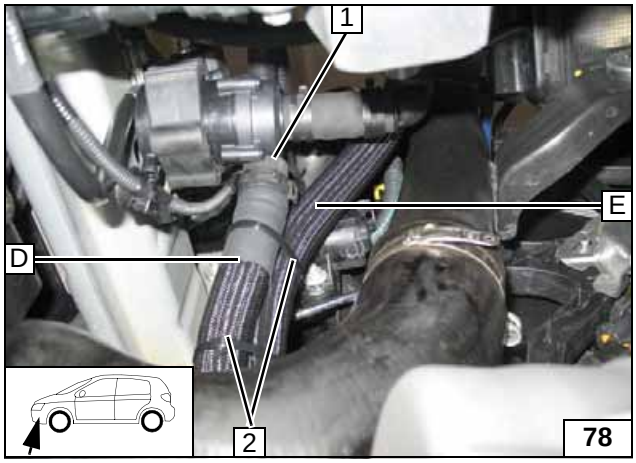
Aligning rubber isolator



Route hose **D** to the circulating pump**.**

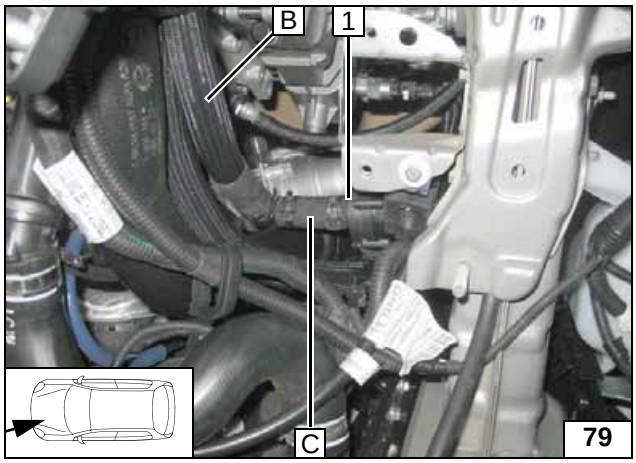
1 Connection piece of heater inlet

Connecting heater



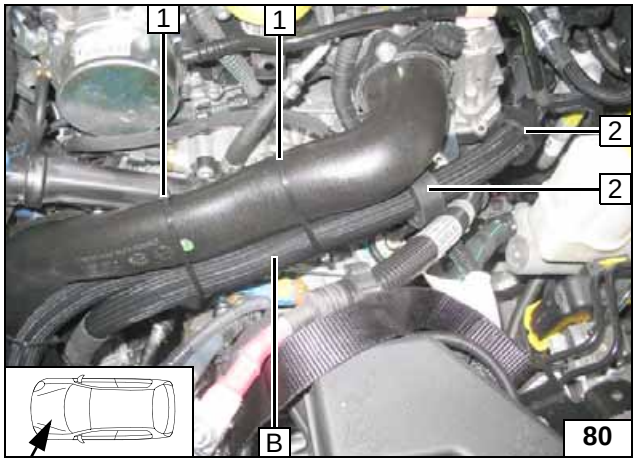
1 Connection piece of circulating pump
2 Cable tie [2x]

Connecting circulating pump



1 Connection piece of circulating pump

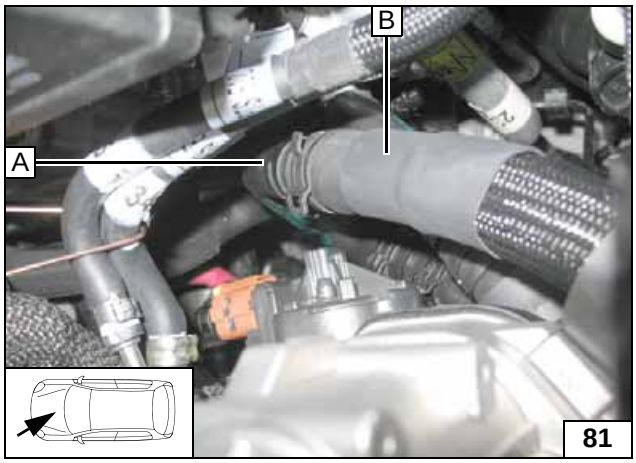
Connecting circulating pump



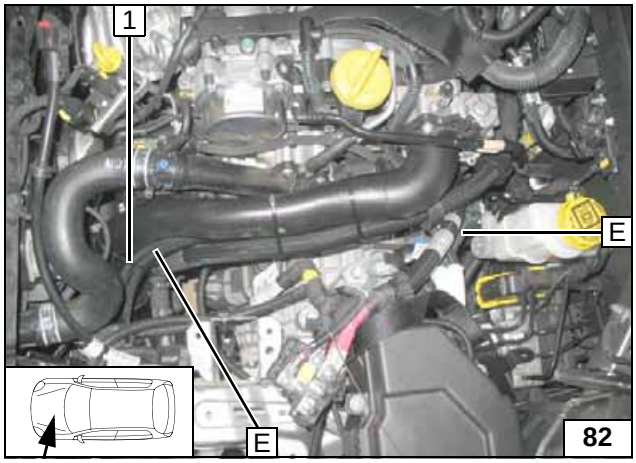
Route hose **B** to engine outlet connection.

1 Cable tie [2x]
2 Align rubber isolator [2x]

Routing



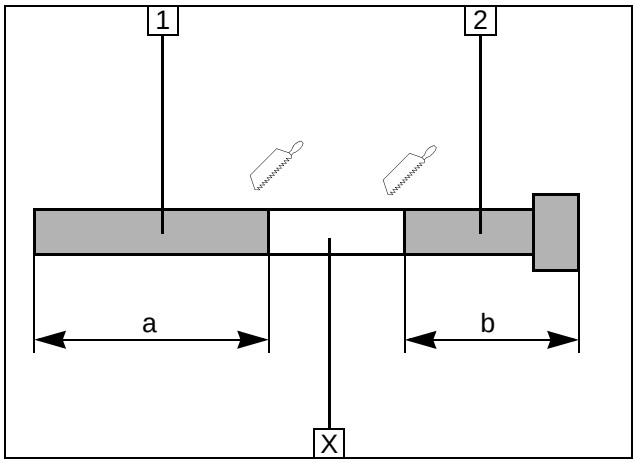
Connecting engine outlet



Align hoses. Ensure sufficient distance from adjacent components; correct if necessary.

1 Cable tie

Routing in engine compartment

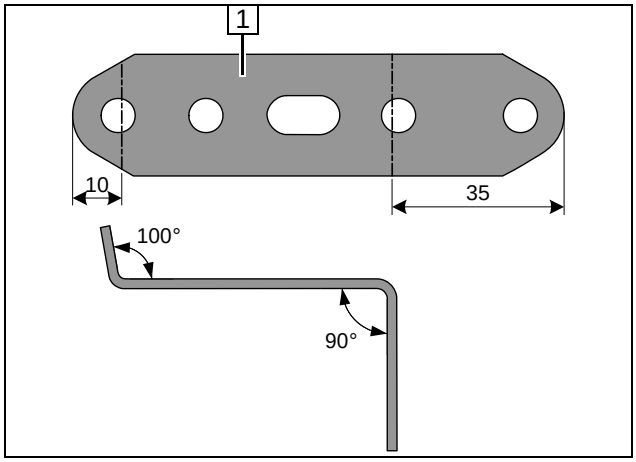


Exhaust Gas

Discard section **X**.

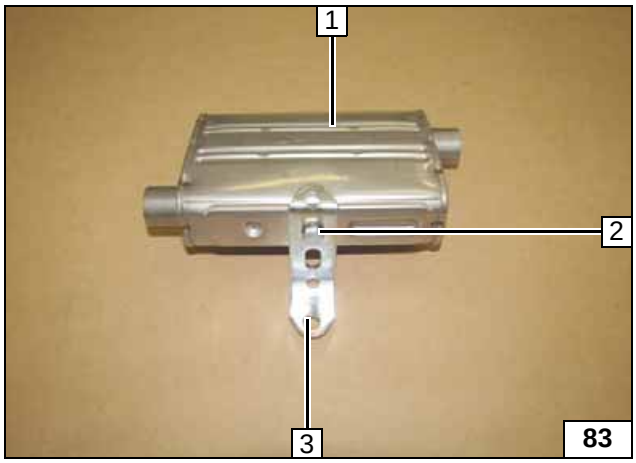
1 Exhaust pipe
a = 350
2 Exhaust end section
b = 100

Preparing exhaust pipe



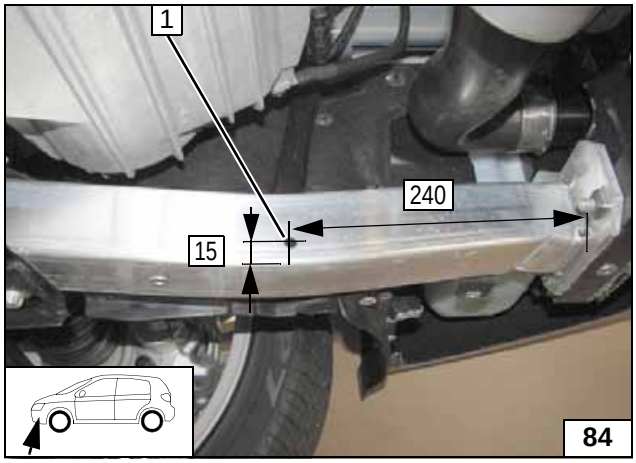
1 Perforated bracket

Bending perforated bracket at an angle



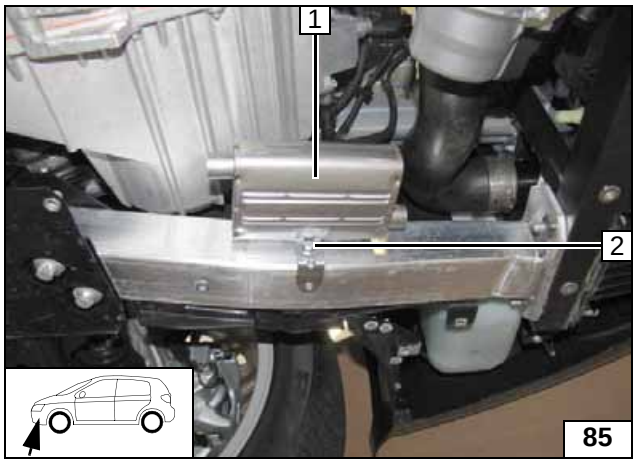
1 Silencer
2 M6x16 bolt, spring lockwasher
3 Perforated bracket

Premounting silencer



1 9.1mm dia. hole ; Rivet nut

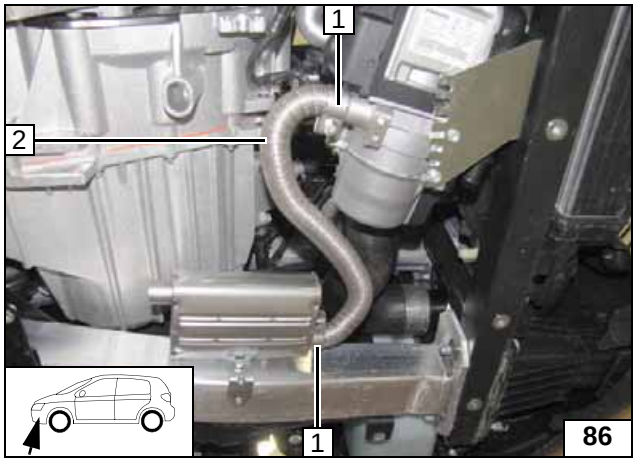
Installing rivet nut



Insert 5mm shim between perforated bracket and cross member.

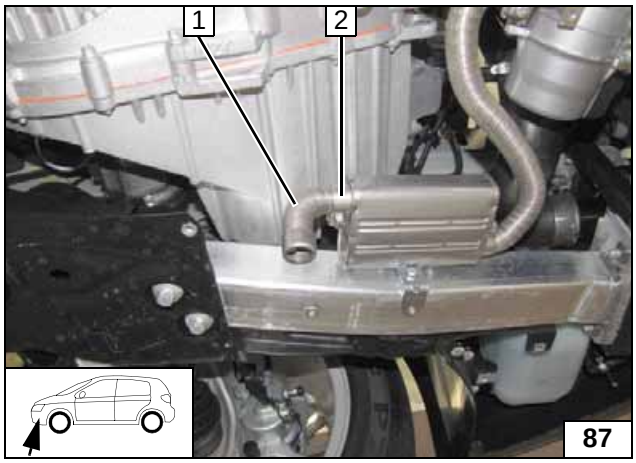
1 Silencer premounted with perforated bracket
2 M6x25 bolt, spring lockwasher, 5mm shim

Installing silencer



1 Hose clamp [2x]
2 Exhaust pipe

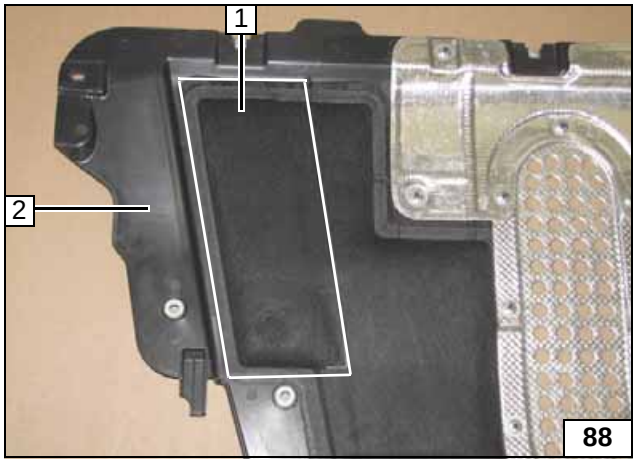
Installing exhaust pipe



Ensure sufficient distance from neighbouring components.

1 Exhaust end section
2 Hose clamp

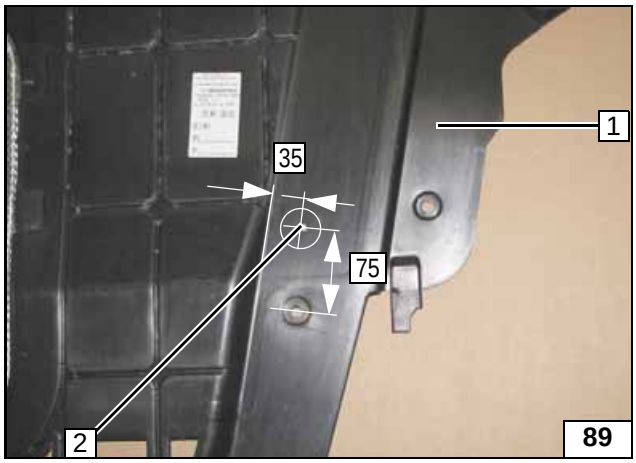
Installing exhaust end section



Cut out sound insulation **1** and discard.

2 Lower engine cover

Processing lower engine cover



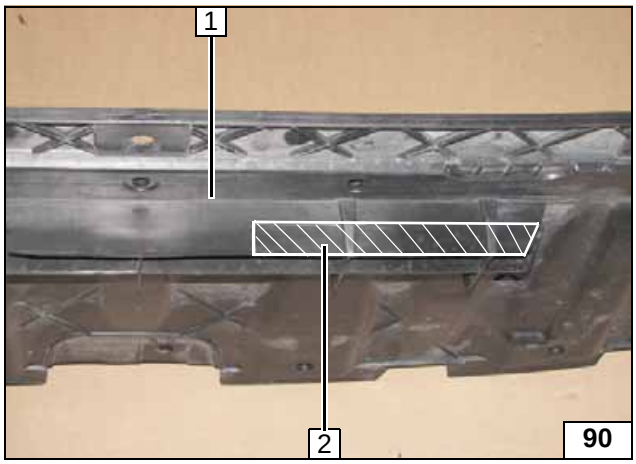
1 Lower engine cover
2 60mm dia. hole

Hole in lower engine cover

Final Work

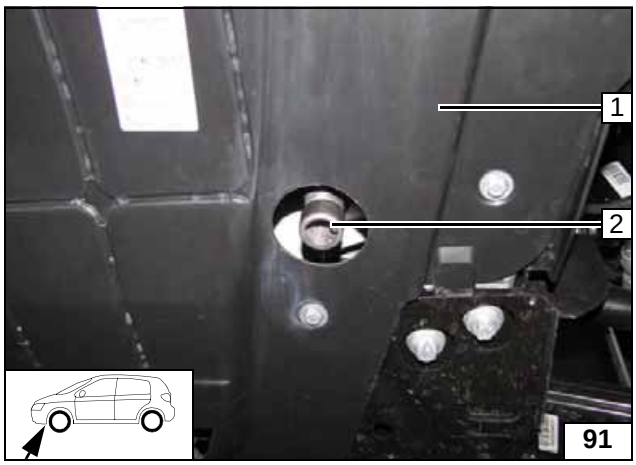
WARNING!
Mount removed parts in reverse order. Check all hoses, clamps and all electrical connections for firm seating. Insulate and tie back all loose wires.
Only use manufacturer-approved coolant. Spray heater components with anti-corrosion wax (Tectyl 100K, Order No. 111329).

- **Connect the battery.**
- **Fill and bleed the coolant circuit according to the vehicle manufacturer's specifications.**
- **Adjust digital timer, teach Telestart transmitter**
- **Make settings on A/C control panel according to the "Operating Instructions for End Customer".**
- **Affix "Switch off parking heater before refueling" caution label in area of filler neck.**
- **See installation instructions for notes on initial operation and functional test**



Cut out marked layer **2** in cover **1**.

Processing lower cover of bumper



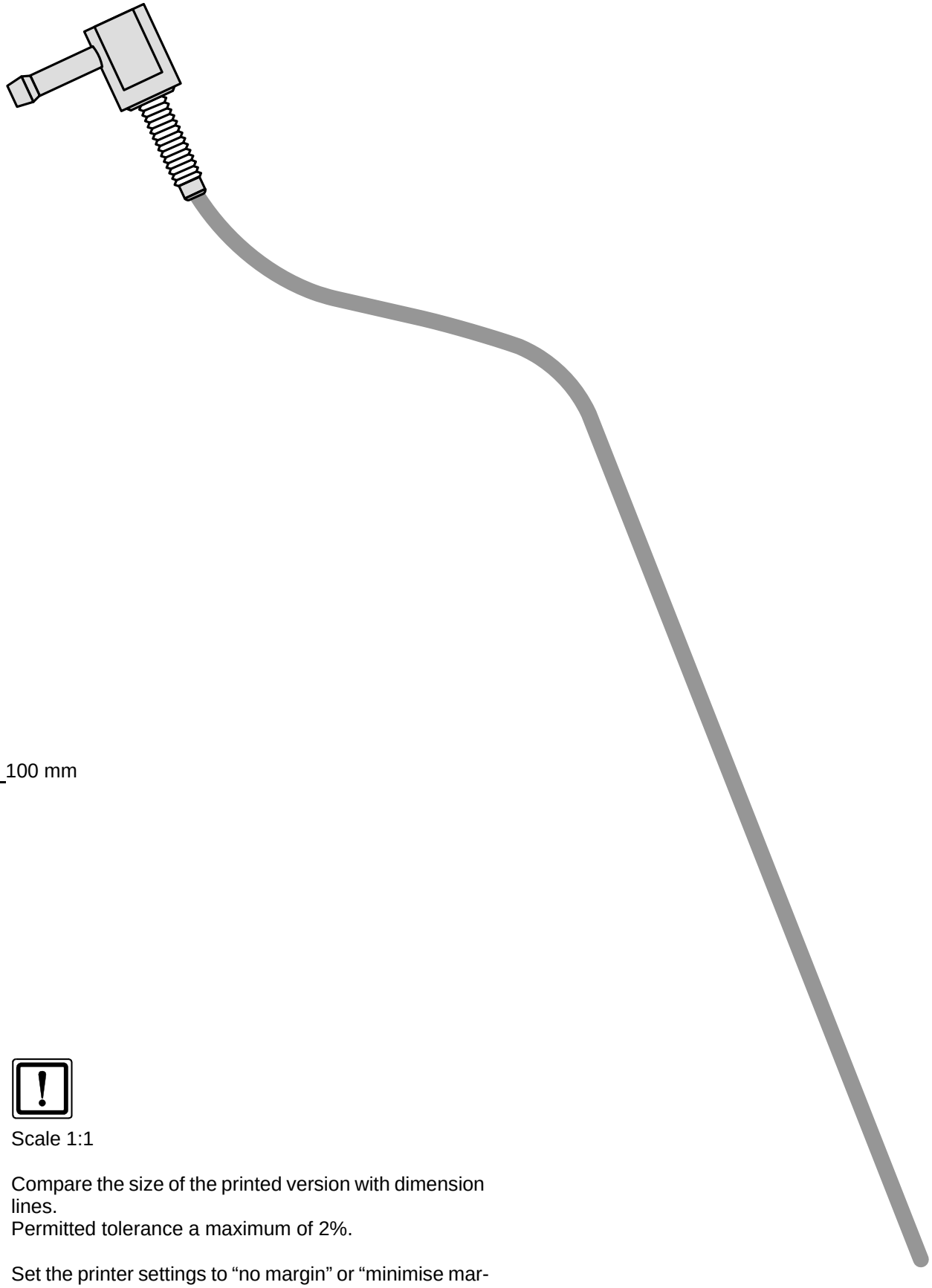
Align exhaust end section **1** to the centre.

3 Lower engine cover

Aligning exhaust end section

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

Fuel standpipe template



100 mm

Scale 1:1

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

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

100 mm

0

Operating Instructions for Manual Air-Conditioning

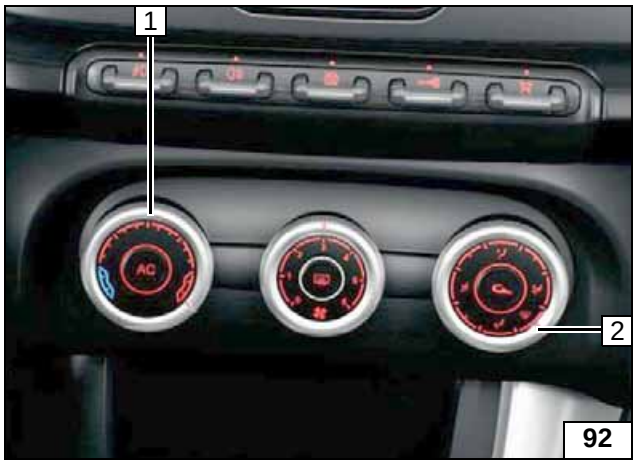
Please remove page and add to the vehicle operating instructions.

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 the vehicle settings for the heating operation.
For instructions on deactivation, please refer to the operating instructions of the vehicle.

Before parking the vehicle, make the following settings:

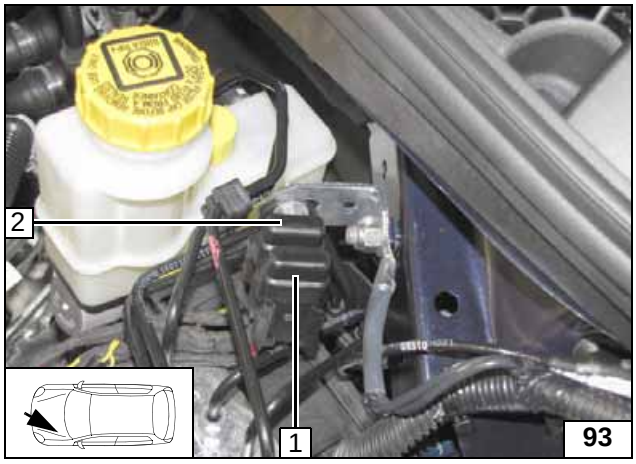
A/C control panel



Note:
No need to pre-select the fan speed.

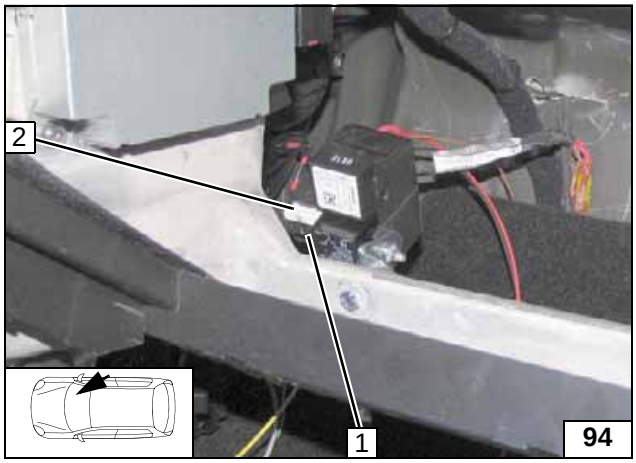
1 Set temperature to "HI"
2 Air outlet to windscreen

Engine compartment fuses



1 20A heater fuse F1
2 30A main fuse F2 of passenger compartment

Passenger compartment fuses



1 1A fuse F3 of heater control
2 25A fan fuse F4

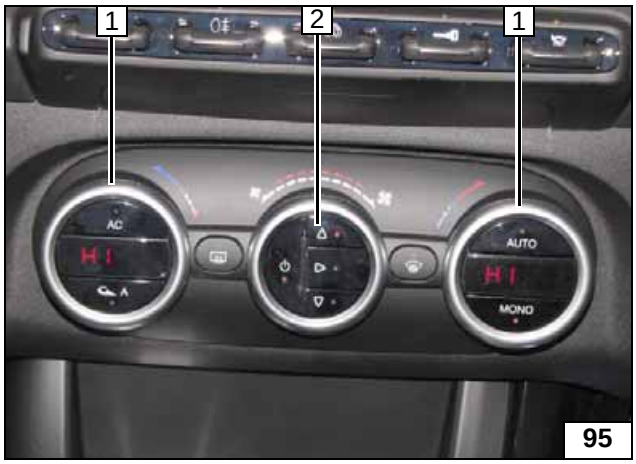
Operating Instructions for Automatic Air-Conditioning

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 the vehicle settings for the heating operation.
For instructions on deactivation, please refer to the operating instructions of the vehicle.

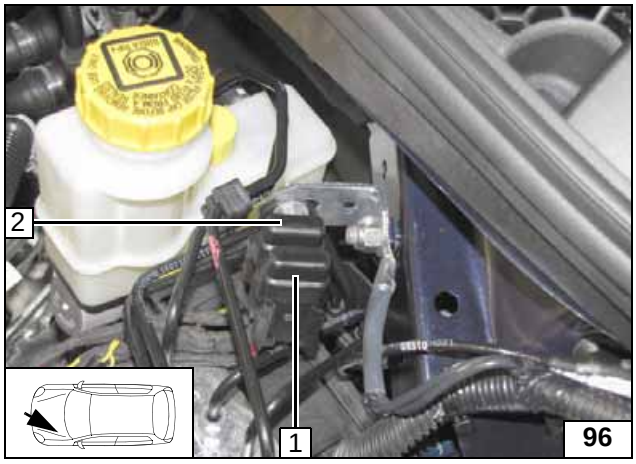
Before parking the vehicle, make the following settings:



Note:
No need to pre-select the fan speed.

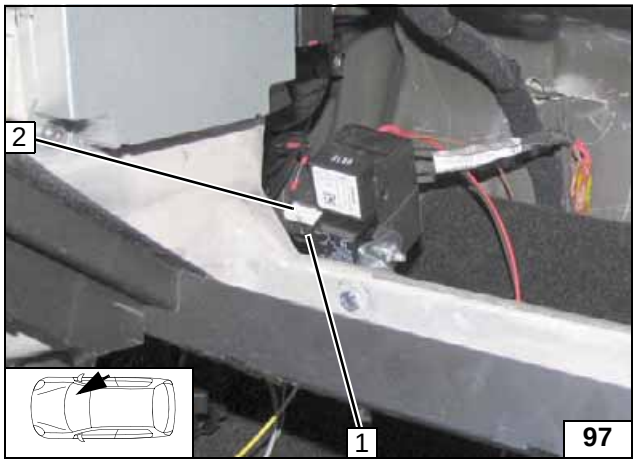
1 Set temperature to "HI"
2 Air outlet to windscreen

A/C control panel



1 20A heater fuse F1
2 30A main fuse F2 of passenger compartment

Engine compartment fuses



1 1A fuse F3 of heater control
2 25A fan fuse F4

Passenger compartment fuses