# Water Heater

## Thermo Top Evo Parking Heater
**'Island based circuit'**

E1
00 0258

**With FuelFix**

# Installation Documentation
# Mercedes Benz V-Class / Vito / Mixto BR 447

## Validity

| Manufacturer | Model | Type | EG BE No. / ABE |
|---|---|---|---|
| Mercedes Benz | V-Class | 447 | e1 * 2007 / 46 * 0457 * ... |

| Motorisation | Fuel | Transmission type | Output in kW | Displacement in cm³ | Engine code |
|---|---|---|---|---|---|
| V 220 d | Diesel | AG | 120 | 2143 | OM 651 |

| Manufacturer | Model | Type | EG BE No. / ABE |
|---|---|---|---|
| Mercedes Benz | Vito / Mixto | 447 | e1 * 2007 / 46 * 0458 * ... |

| Motorisation | Fuel | Transmission type | Output in kW | Displacement in cm³ | Engine code |
|---|---|---|---|---|---|
| 111 CDI | Diesel | 6-speed SG | 84 | 1598 | OM 622 |
| 116 CDI | Diesel | AG | 120 | 2143 | OM 651 |
| 116 CDI | Diesel | 7G-Tronic | 120 | 2143 | OM 651 |
| 119 CDI | Diesel | 7G-Tronic Plus | 140 | 2143 | OM 651 |

SG = manual transmission
AG = automatic transmission
7G-Tronic = 7-speed automatic transmission

**From model year 2014**
**Left-hand drive vehicle**

**Verified equipment variants:** V-Class: Tempmatic
Vito/Mixto: Tempmatic, Thermotronic
Eco Start-Stop
2WD / 4WD
Euro 5+
Euro 6 (111 CDI only)

**Not verified:** Passenger compartment monitoring
Headlight washer system

**Exclusion** Tempmatic automatic air-conditioning in the rear
Big heated windscreen washer reservoir

**Total installation time:** approx. 11.5 hours

## Table of Contents



## Necessary Components

- Basic delivery scope of Thermo Top Evo according to price list
- Installation kit with FuelFix for Mercedes Benz V-Class / Vito / Mixto BR 447 from MY: 2014 Diesel: **1323660B**
- In case of Vito/Mixto only possible with additional kit ‘Webasto Standard’ A/C control for Mercedes Benz Vito / Mixto: **1324530**_
  or
  In case of V-Class only possible with additional kit ‘Webasto Comfort’ A/C control for Mercedes Benz V-Class: **1324395**_
- 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

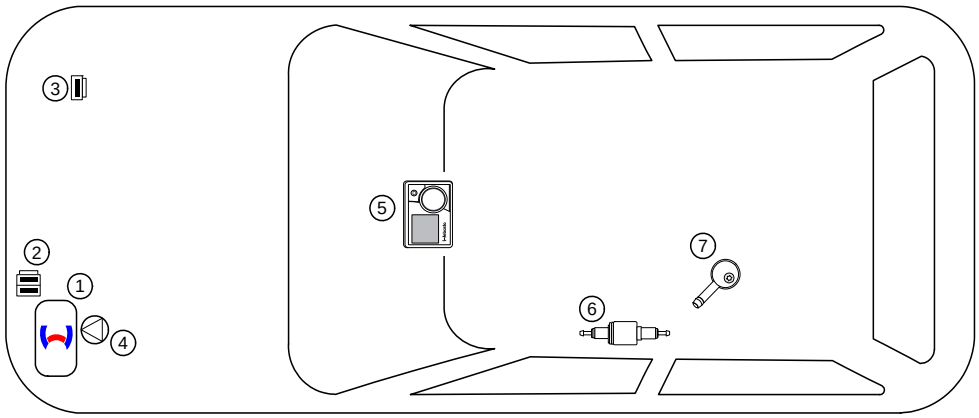
**Installation instructions:**

- The heater will be integrated into the ‘island’ coolant circuit and is used to heat up the passenger compartment. The engine is **not** pre-heated.
- Arrange for the vehicle to be delivered with the tank only about ¼ full.
- The installation location of the push button in case of Telestart or ThermoCall should be confirmed with the end customer.
- Depending on the space required and the vehicle manufacturer's instructions, we recommend the use of a vehicle battery with a higher electrical capacity.

## Installation Overview

**Legend:**

**1**. Heater
**2**. Engine compartment fuse holder F1/F2
**3**. Additional fuse F0
**4**. Circulating pump
**5**. MultiControl CAR
**6**. Metering pump
**7**. FuelFix




## Information on Total Installation Time

The total installation time includes the time needed for mounting and demounting 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 228).

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 must audibly snap into place during assembly.**

**Sharp edges should be fitted with rub protection. Spray unfinished body areas, e.g. drilled holes, with anti-corrosion wax (Tectyl 100K).**

**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 a programmable control module (e.g. a PWM Gateway), the corresponding settings must be checked or adjusted.**

## 2 Statutory regulations governing installation

| Guidelines | Thermo Top Evo |
|---|---|
| Heating Directive ECE R122 | E1 00 0258 |
| EMC Directive ECE R10 | E1 04 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**

The heater is licensed in accordance with paragraph 19, section 3, No. 2b of the StVZO (German Road Traffic Licensing Authority).

### 2.1 Excerpt from ECE regulation 122 (heating system) paragraph 5 for the installation 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.

## Information on Validity

This installation documentation applies to Mercedes Benz V-Class / Vito / Mixto BR 447 Diesel vehicles - for validity, see page 1 - from model year 2014 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 Information

**Special Tools**
- Hose clamp pliers for auto-tightening hose clamps
- Hose clamp pliers for Clic hose clamps of type W
- 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
- Deep-hole marker
- Webasto Thermo Test Diagnosis with current software

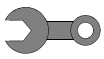
**Dimensions**
- All dimensions are in mm.

**Tightening torque values**
- Tightening torque values of 5x13 heater bolts and 5x11 heater stud bolts = 8Nm.
- Tightening torque value of 5x15 water connection piece retaining plate bolt = 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 damage to components.**

**Specific risk due to electrical voltage.**

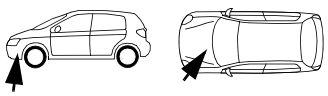
**Specific risk of injury or fatal accidents.**

**Specific risk of fire or explosion.**

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

**Reference to a special technical feature.**

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



**Tightening torque according to the manufacturer's vehicle-specific documents.**

## Preliminary Work

### Vehicle

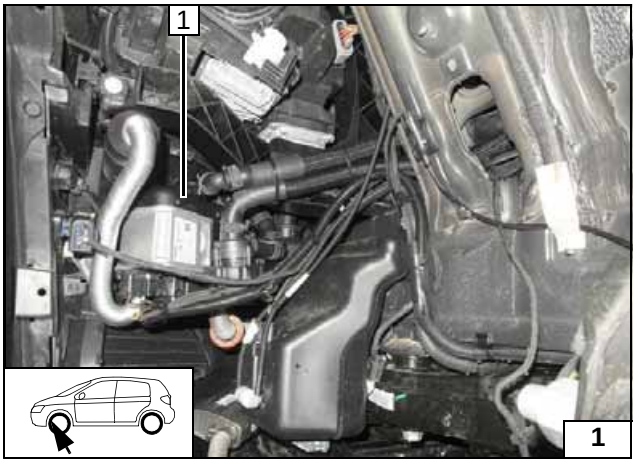
- Open the fuel tank cap.
- Ventilate the fuel tank.
- Close the fuel tank cap again.
- Depressurise the cooling system.
- Disconnect the battery.
- Remove the air filter completely, together with the intake hose.
- Remove the cover of the engine compartment fuse and relay box.
- Drain off the coolant and collect it (it will be returned later).
- Detach the coolant expansion tank and put it aside.
- Remove the underbody trim on the left side of the vehicle.
- Remove the left front wheel.
- Remove the left wheel well trim.
- Remove the engine underride protection.

The following work should only be performed during the corresponding installation sequence:

- Remove the fuel tank according to the manufacturer's instructions.

### Heater

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




## Heater Installation Location

**1** Heater

**Installation location**

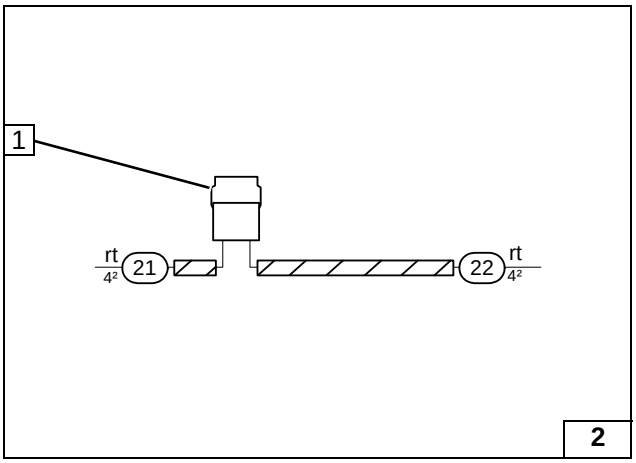
  

## Preparing Electrical System

Wire sections retain their numbering in the entire document.

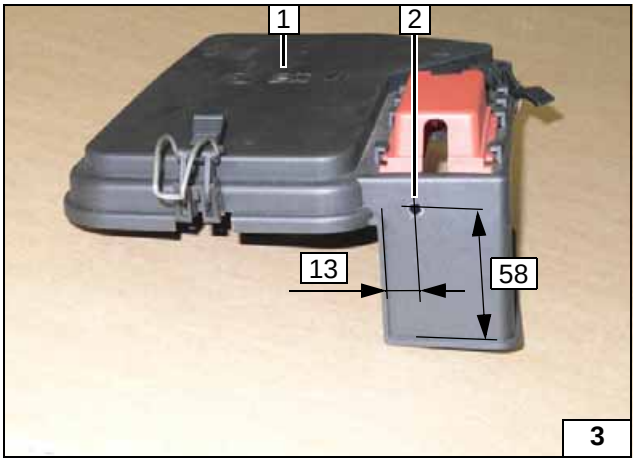
**Assigning wires of positive extension cable**

Produce all following electrical connections as shown in the wiring diagram.




2

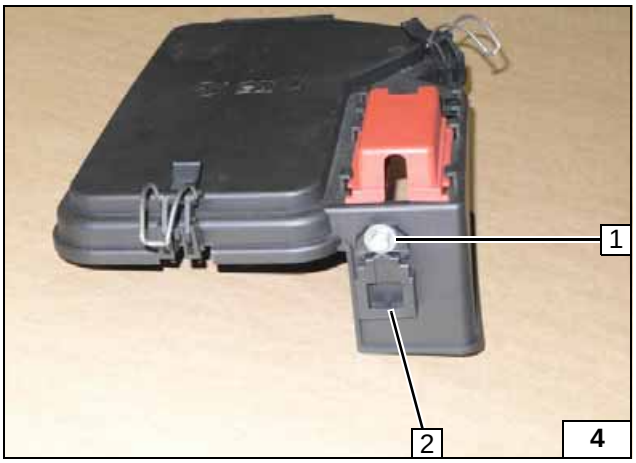
**1** 30A fuse F0




3

**1** Engine compartment fuse and relay box cover
**2** 5.5 mm hole

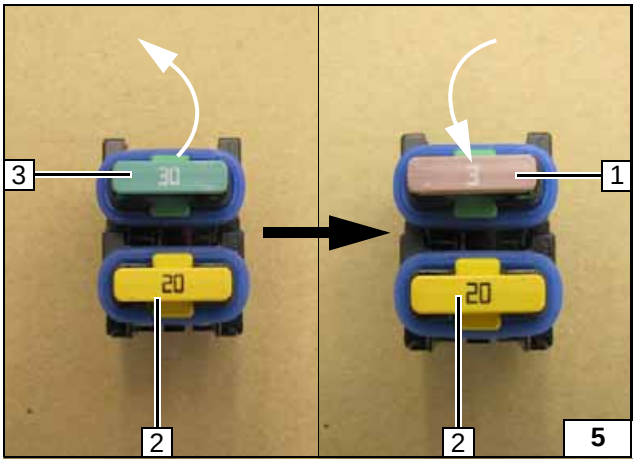
**Hole for fuse F0 in cover**




4

**1** M5x16 bolt, large diameter washer [2x], nut
**2** Retaining plate of fuse F0

**Premounting retaining plate for fuse F0**

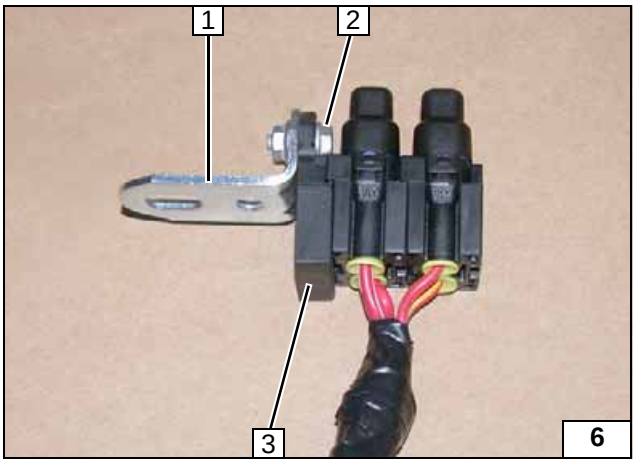



5

Replace 30A passenger compartment main fuse F2 **3** with 3A fuse **1**.

**2** 20A heater fuse F1

**Preparing engine compartment fuses**




**1** Angle bracket
**2** M5x16 bolt, large diameter washer [2x], nut
**3** Fuse holder retaining plate

**Premounting engine compartment fuse holder**

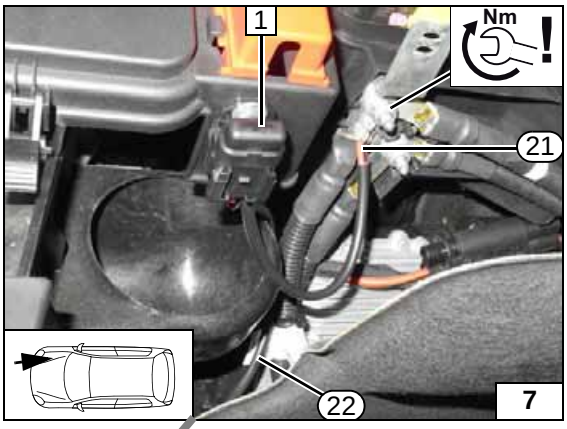
  

## Electrical System

### Positive wire, fuse F0

Wiring routing, see next page.

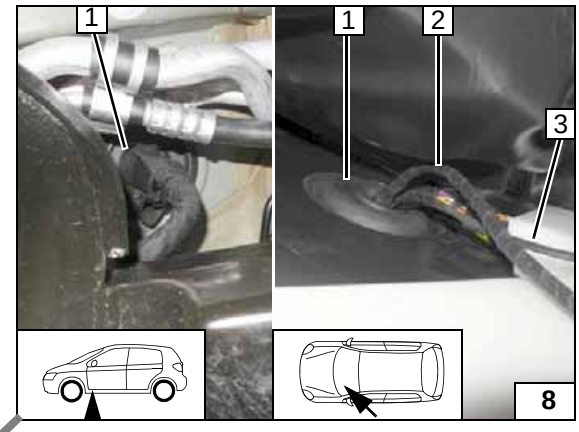
**1** 30A fuse F0
(21) Red (rt) wire of positive extension cable wiring harness on positive distributor
(22) Route red (rt) wire of positive extension cable wiring harness to engine compartment fuse holder



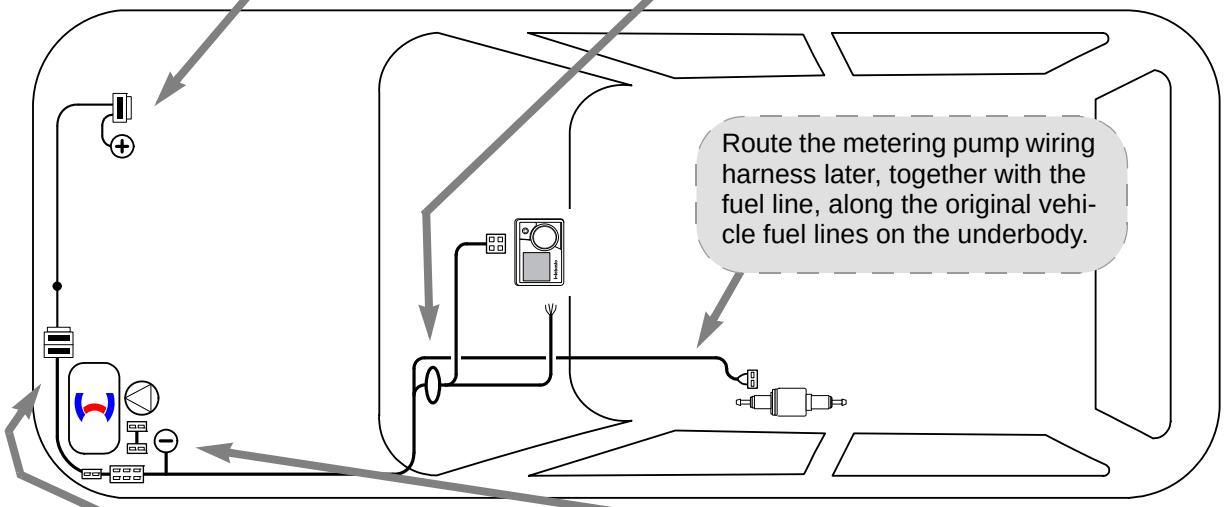

### Wiring harness pass through

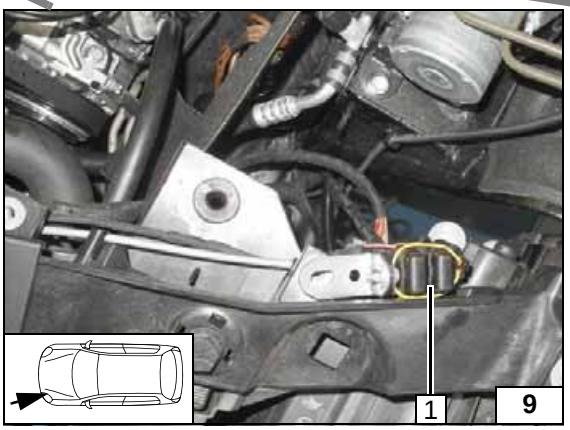
Wiring harness routing, see section ‘Fuel’ Fold back the passenger compartment floor covering on the driver’s side.

**1** Protective rubber plug
**2** Heater wiring harness
**3** Heater control wiring harness



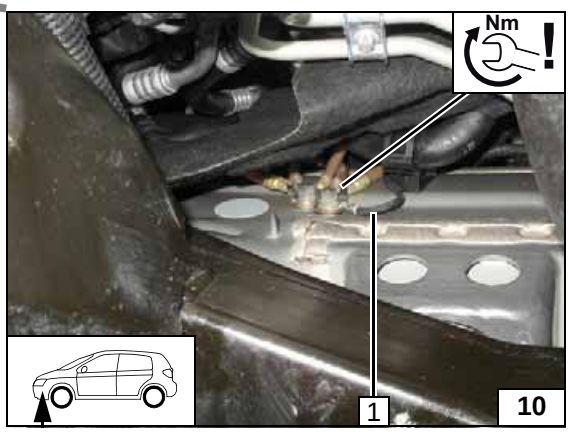

**Wiring harness routing diagram**




### Engine compartment fuse holder

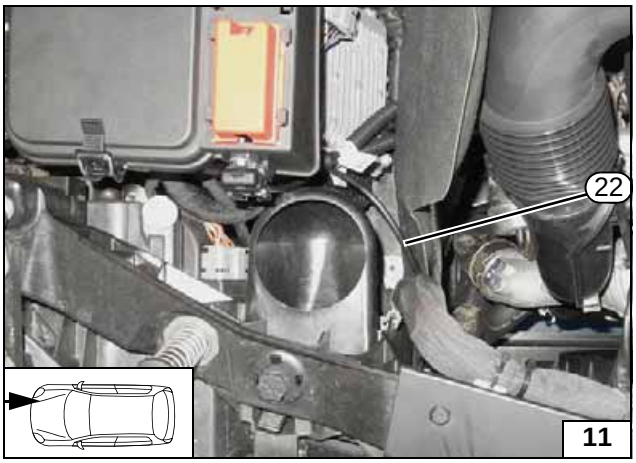
Position engine compartment fuse holder **1** at the installation location, will be installed later during the ‘Final Work’ phase.




### Earth wire

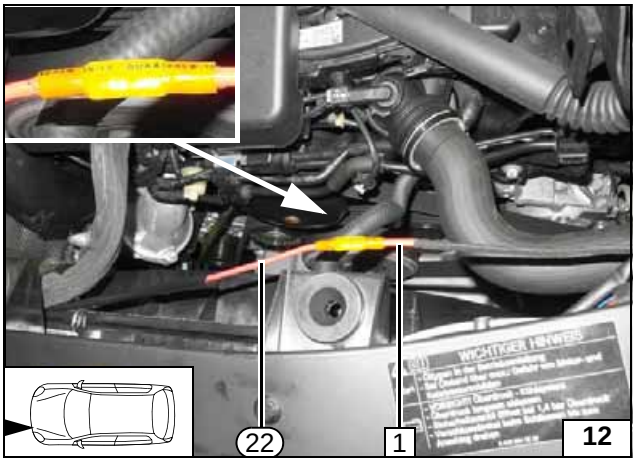
**1** Earth wire on original vehicle earth support point




Route red (rt) wire (22) of positive extension cable wiring harness to engine compartment fuse holder.

**Routing line**




Connect positive wire of heater wiring harness **1** and red (rt) wire from positive extension wiring harness (22) of fuse F0 to butt connector and shrink.

**Connecting wires**

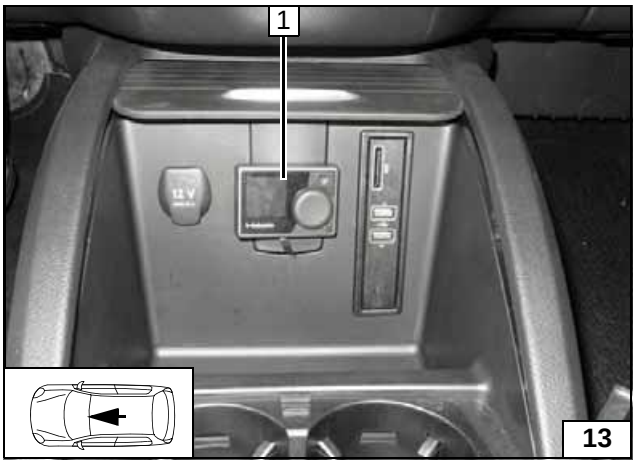
## Air-Conditioning Control

! Connect the A/C control in accordance with the separate installation documentation:

Installation documentation **'Webasto Standard'** A/C control for Mercedes Benz Vito / Mixto

or

Installation documentation **'Webasto Comfort'** A/C control for Mercedes Benz V-Class

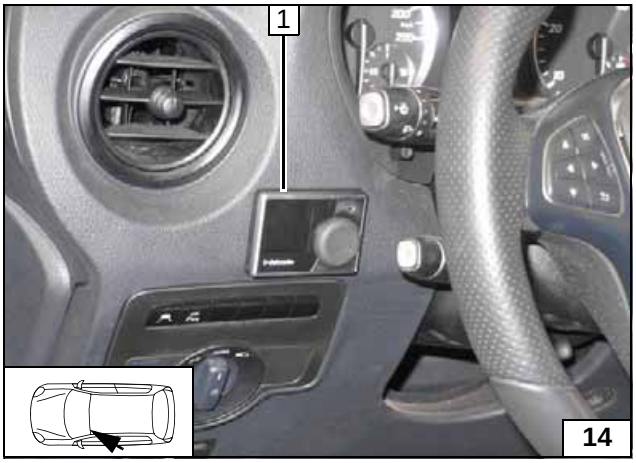



### MultiControl CAR Option

**V-Class**

**1** MultiControl CAR

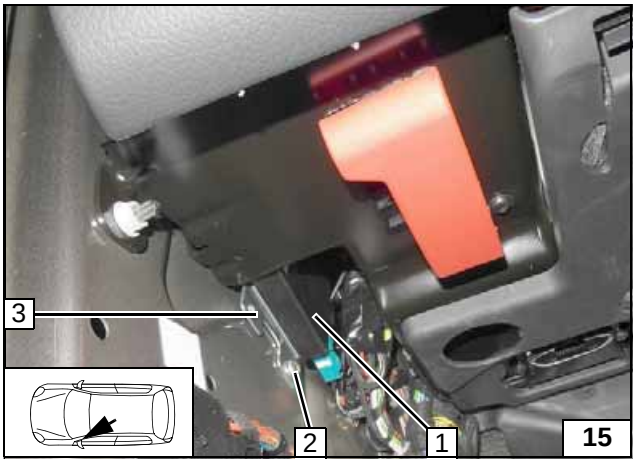
**Installing MultiControl CAR**




**Vito / Mixto**

**1** MultiControl CAR

**Installing MultiControl CAR**

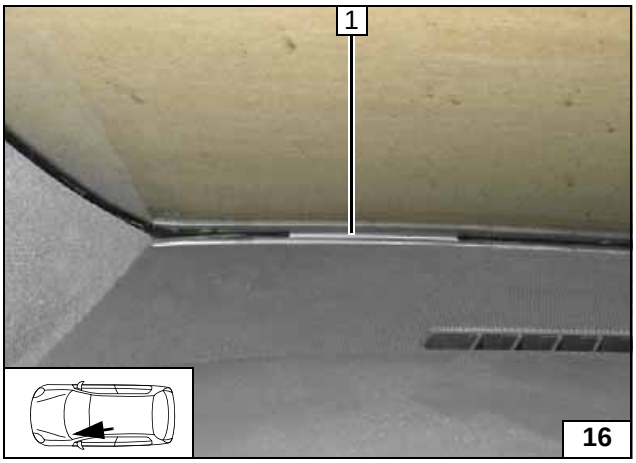



### Remote Option (Telestart)

**1** Receiver
**2** M5x13 self-tapping screw, existing hole
**3** Receiver bracket

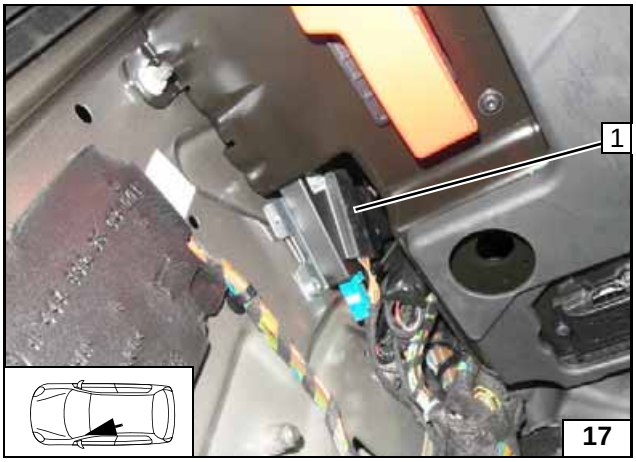
**Installing receiver**




**1** Aerial

**Installing aerial**

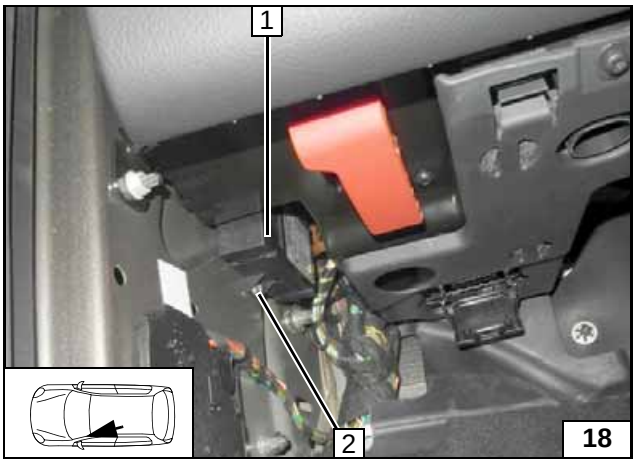



**Temperature sensor T100 HTM**

Fasten temperature sensor **1** with double-sided adhesive tape.

**Installing temperature sensor**

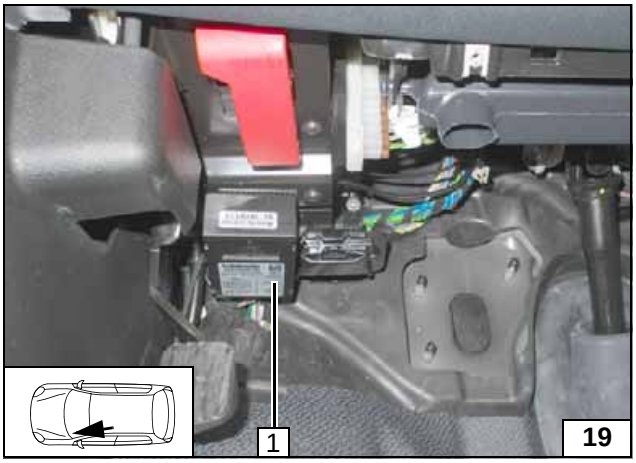
## ThermoCall Option




**Version 1**

**1** Receiver
**2** 5x13 self-tapping screw, existing hole

**Installing receiver**

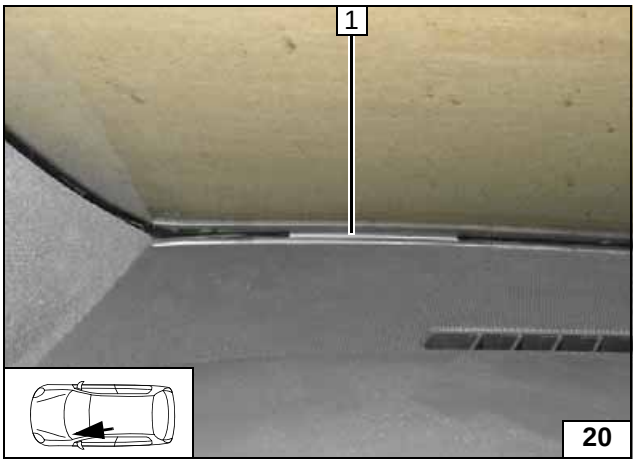



**Version 2**

Fasten receiver **1** with double-sided adhesive tape.

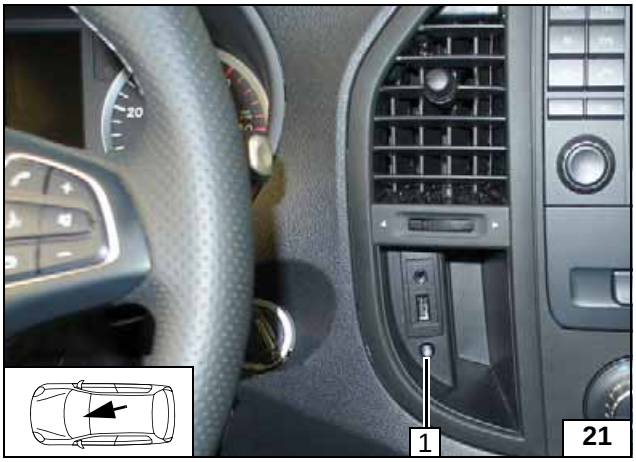
**Installing receiver**




**1** Aerial (optional)

## Installing aerial

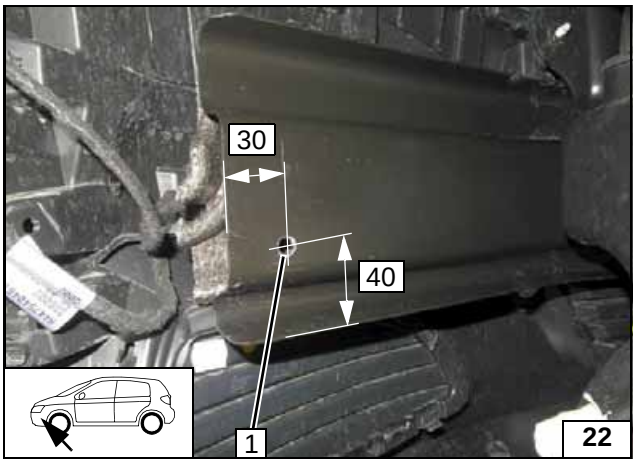



**1** Installation location suggestion for the push button

## Push button installation location

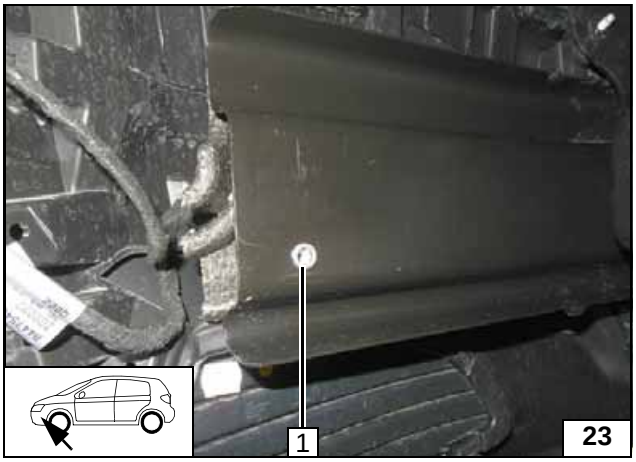
  

## Preparing Installation Location



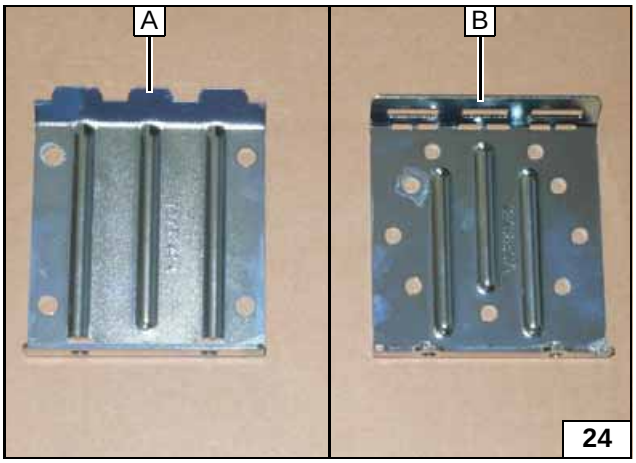

**1** 9.1 mm dia. hole

**Hole for heater bracket**

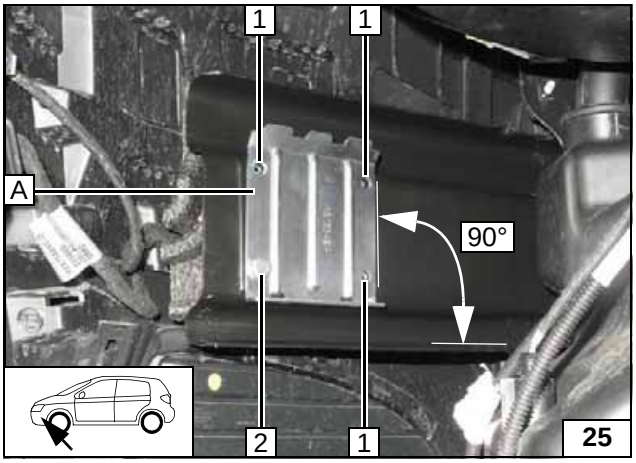



**1** Rivet nut

**Installing rivet nut**



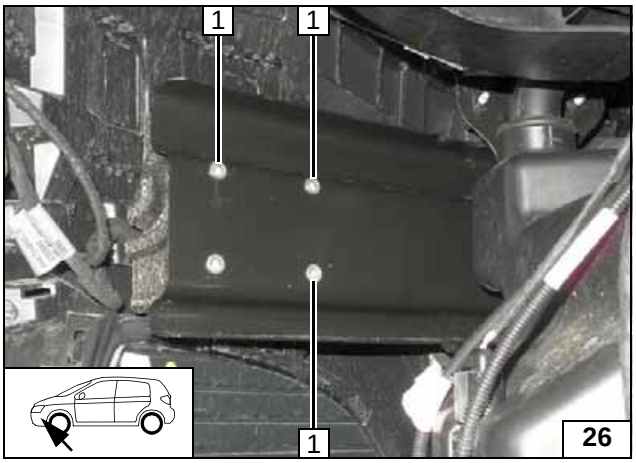

**View of / assignment of two-part bracket**




**1** Copy hole pattern [3x]
**2** M6x20 bolt

**Installing bracket A loosely, copying hole pattern**

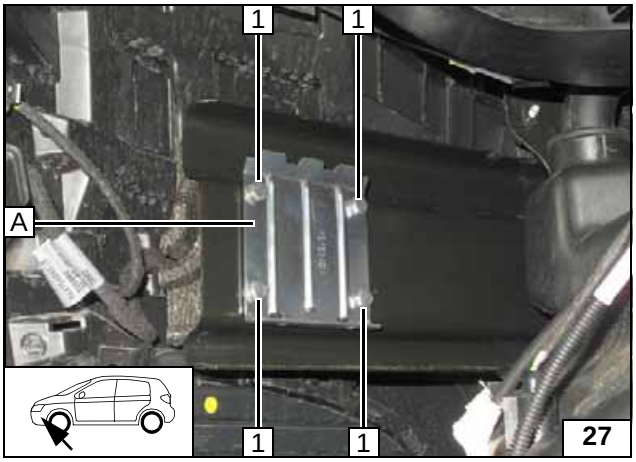
  




Remove bracket **A**.

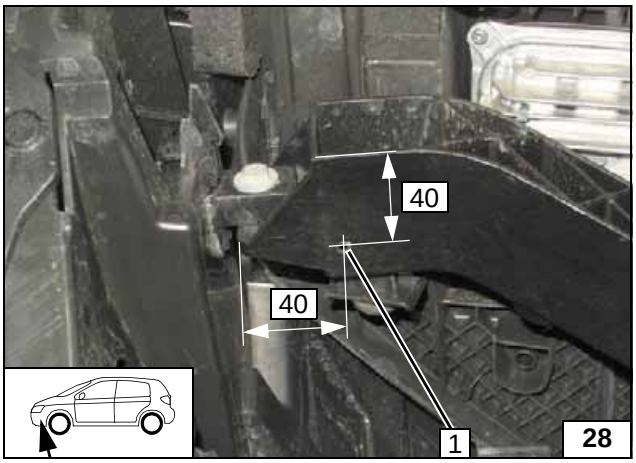
**1** 9.1 mm dia. hole, rivet nut [3x]

**Installing rivet nuts**



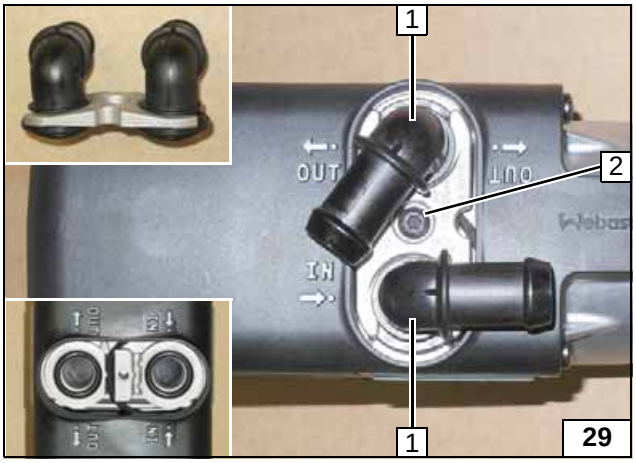

**1** M6x20 bolt, spring lockwasher [4x each]

**Installing bracket A**




**1** 5.5 mm dia. hole

**Hole for combustion air silencer**

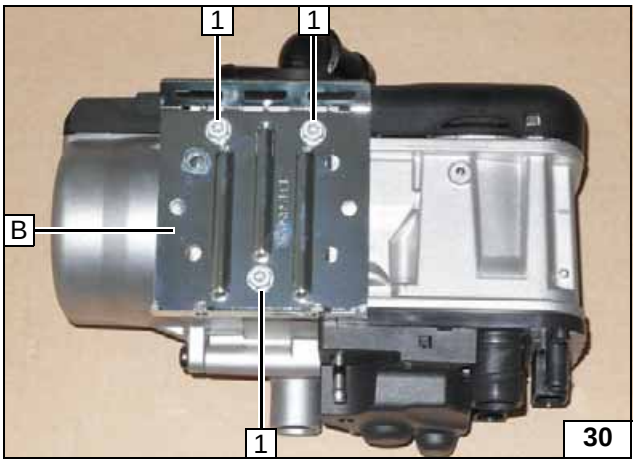



## Preparing Heater

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

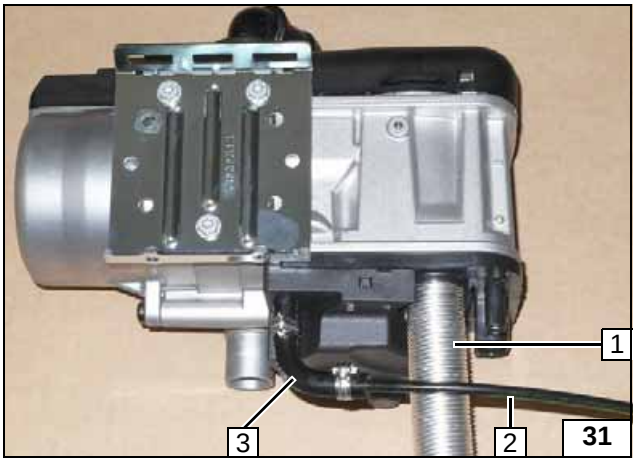
**Installing water connection piece**



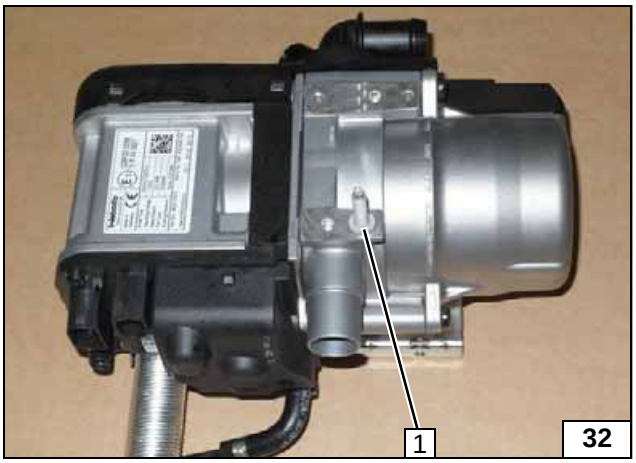

**1** 5x13 self-tapping bolt [3x]

**Installing bracket B**



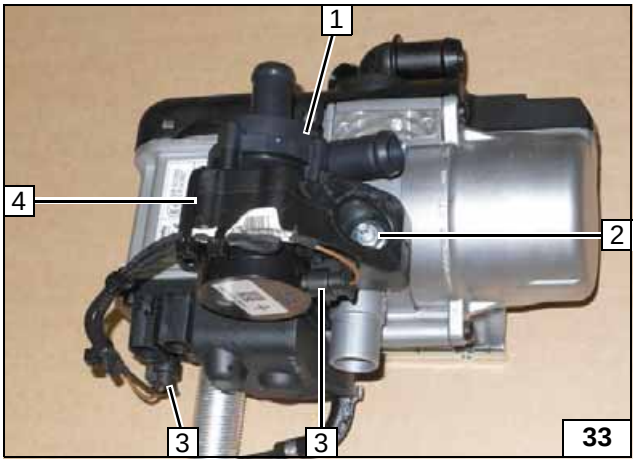

**1** Combustion air pipe
**2** Fuel line
**3** 90° moulded hose, 10mm dia. clamp [2x]

**Premounting heater**



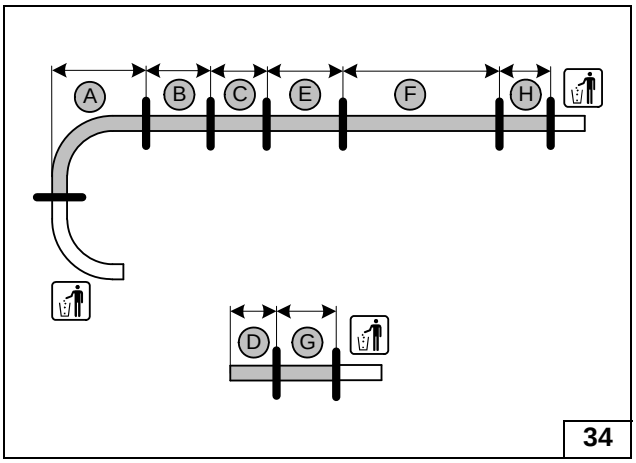

**1** M5/M6x25 self-tapping stud bolt

**Installing stud bolt**



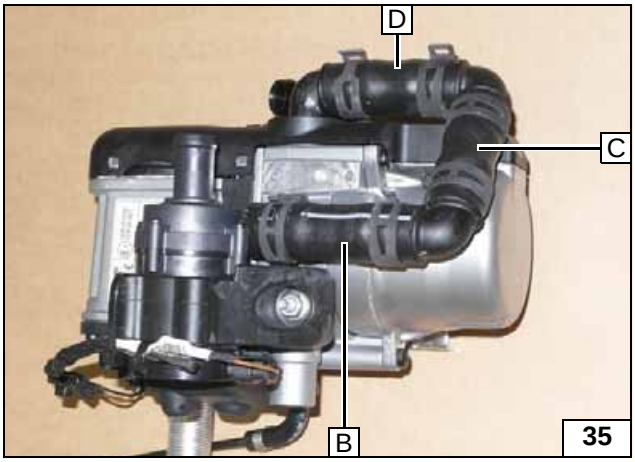

**1** Circulating pump
**2** Stud bolt, M6 flanged nut
**3** Circulating pump connector [2x]
**4** Circulating pump mount

**Installing circulating pump**



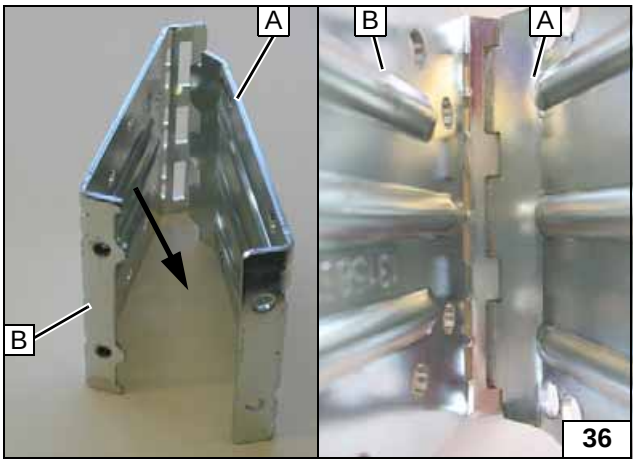

| | V-Class | Vito / Mixto | |
|---|---|---|---|
| | V220 | 111 CDI | 116/119 CDI |
| A | 290 | 370 | 290 |
| B | 80 | 80 | 80 |
| C | 60 | 60 | 60 |
| D | 65 | 65 | 65 |
| E | 120 | 120 | 120 |
| F | 400 | 530 | 530 |
| G | 60 | --- | 100 |
| H | 90 | --- | --- |

**Cutting hoses to length**




All spring clips = 25 mm dia.
All 90° connecting pipes = 18x18 mm dia.

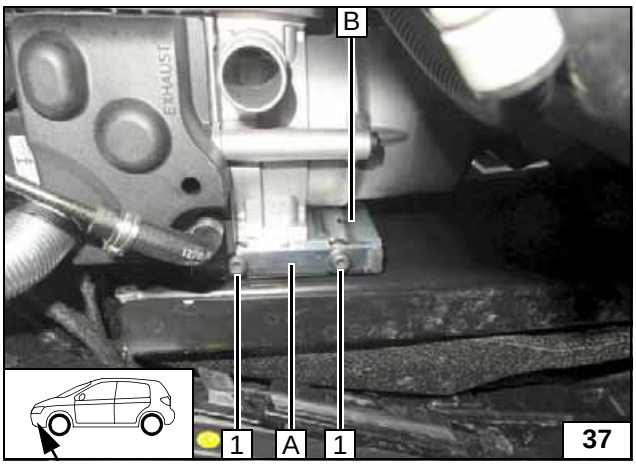
**Installing hoses**




The recesses of bracket **B** must be guided over the tabs of bracket **A**.

**A** Bracket (installed on vehicle)
**B** Bracket (installed on heater)

**Bracket A and B assembly**



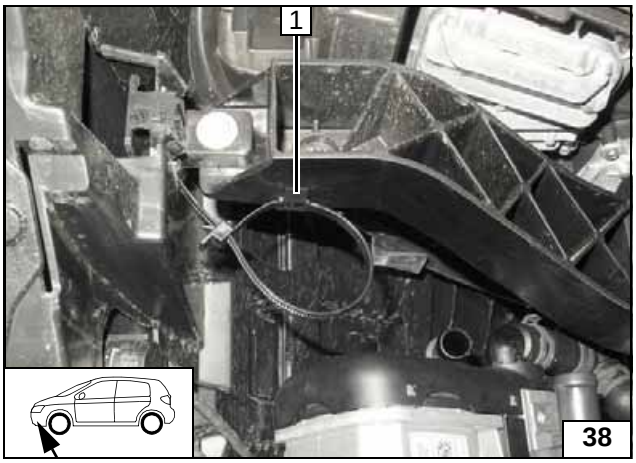

## Installing Heater

Check the assembly of bracket **B** and bracket **A**, then screw them together.

**1** M5x12 torx screw [2x]

**Installing heater**

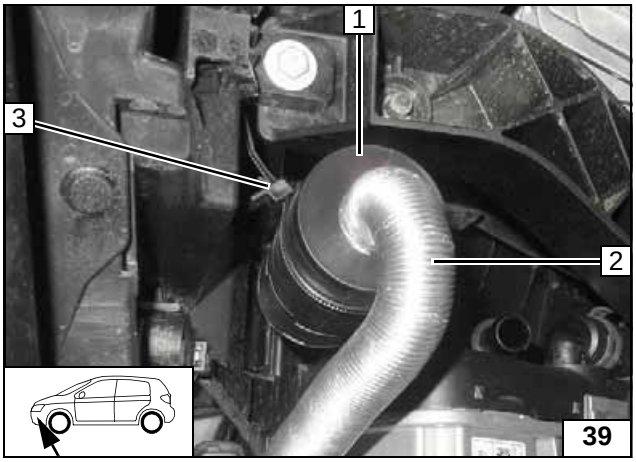
  




## Combustion Air

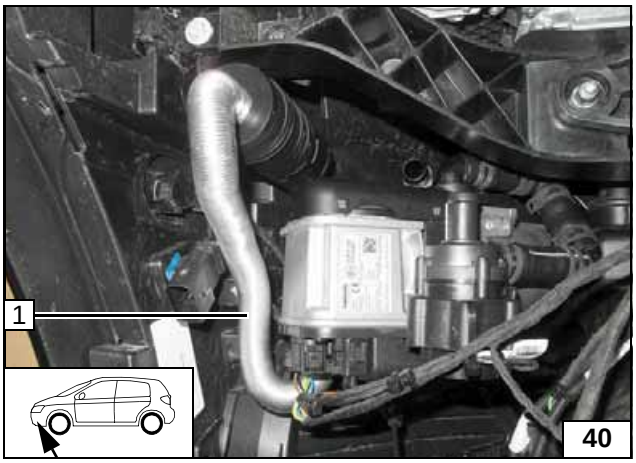
Insert clip-type cable tie in prepared hole, ensure correct seating.

**Installing clip-type cable tie**



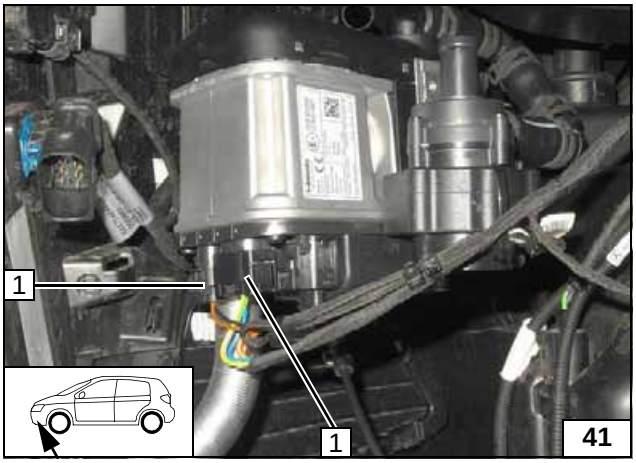

**1** Silencer
**2** Combustion air pipe
**3** Close clip-type cable tie

**Installing silencer**




**1** Combustion air pipe

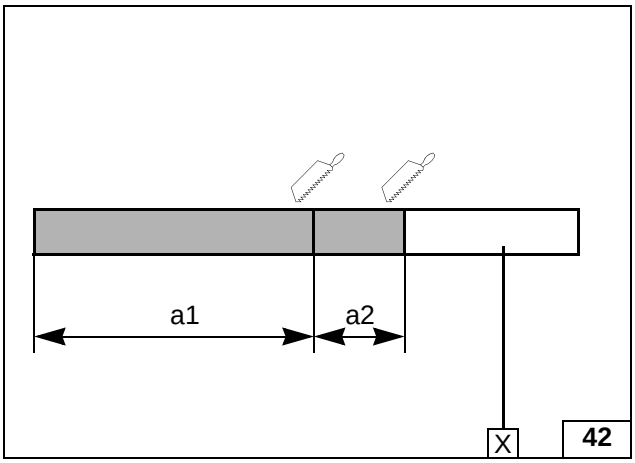
**Aligning combustion air pipe**




**1** Heater wiring harness connector [2x]

**Installing heater wiring harness**

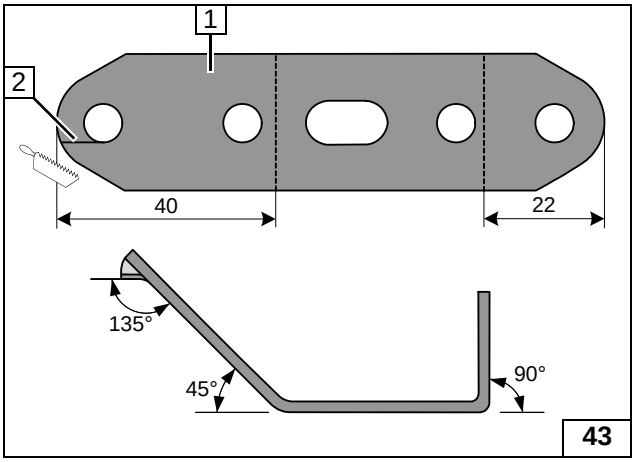



## Exhaust Gas

**a1** = 390
**a2** = 130

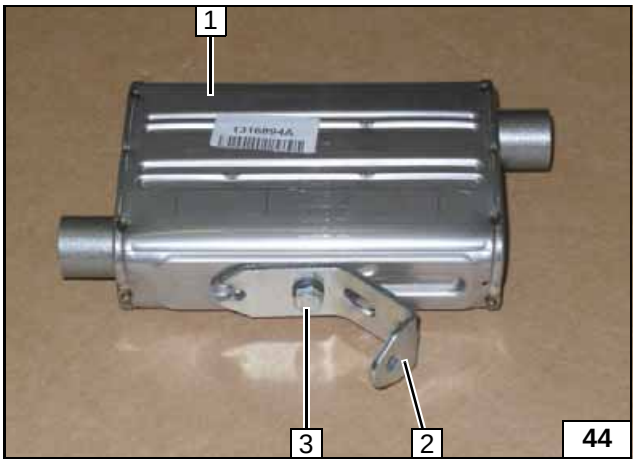
**X** =

**Preparing exhaust pipe**



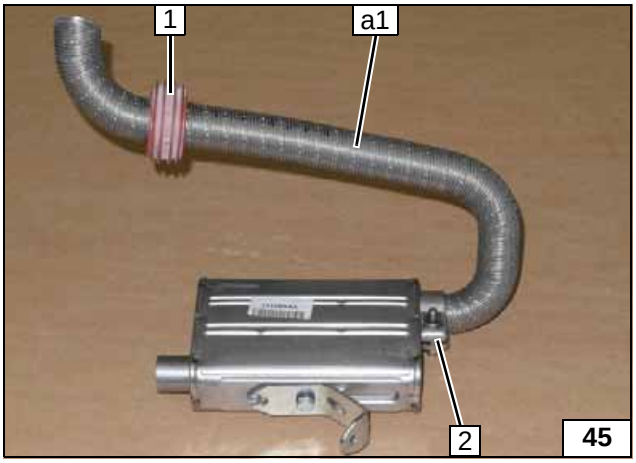

Saw perforated bracket **1** at position **2** up to the hole and angle down by 45° to create a twist protection.

**Preparing perforated bracket**




**1** Silencer
**2** Perforated bracket
**3** M6x16 bolt, spring lockwasher

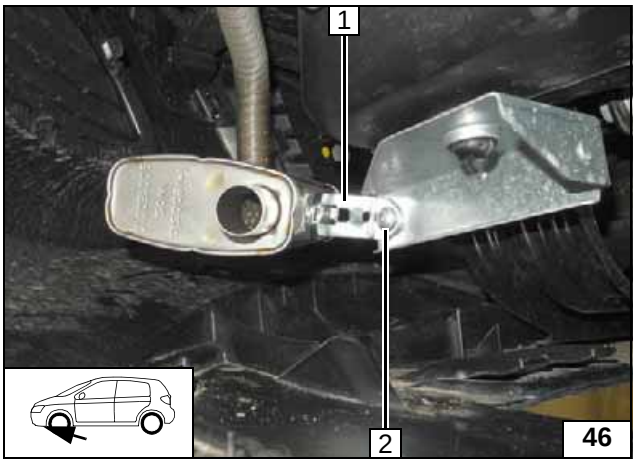
**Premounting silencer**




**1** Slide on spacer bracket
**2** Hose clamp

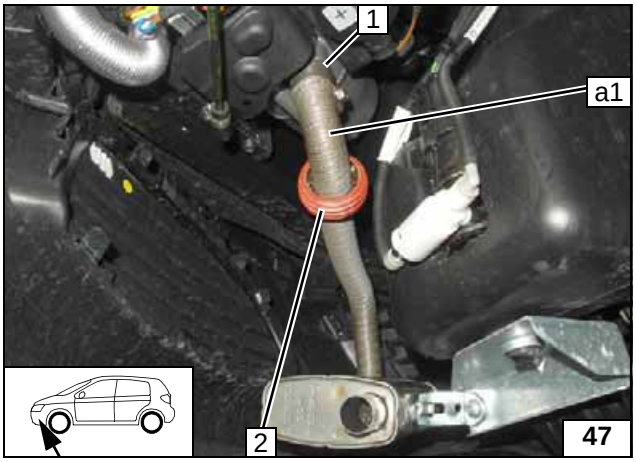
**Premounting exhaust pipe a1**



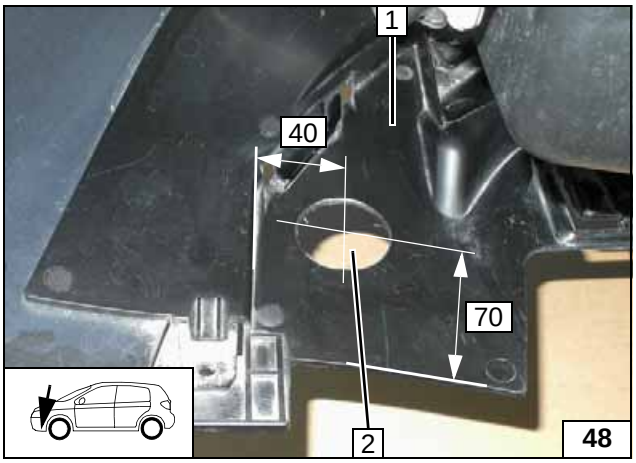

**1** Perforated bracket
**2** Original vehicle bolt

**Installing silencer**



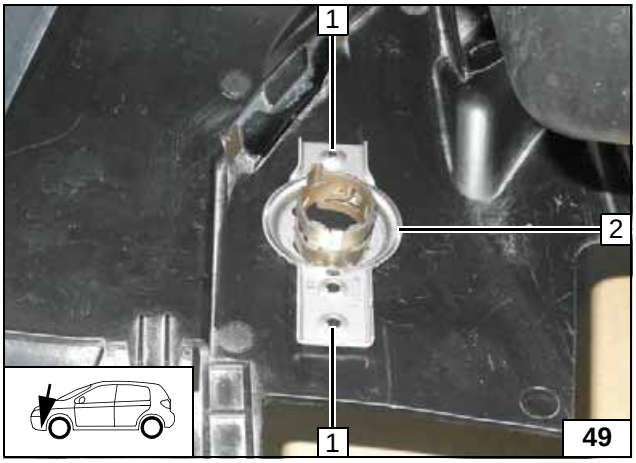

**1** Hose clamp
**2** Align spacer bracket with original vehicle wiring harness

**Installing exhaust pipe a1**




**1** Underride protection
**2** Hole (as per work step 1 of the installation instructions)

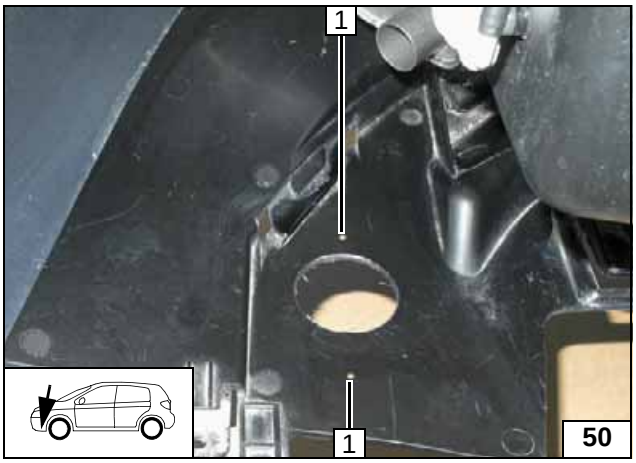
**Installing exhaust end fastener**




Position exhaust end fastener **2** as per work step 3 of the installation instructions and copy hole pattern **1** [2x].

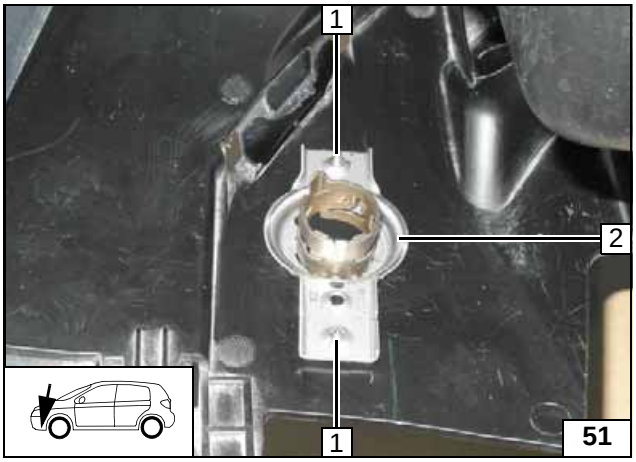
**Copying hole pattern**



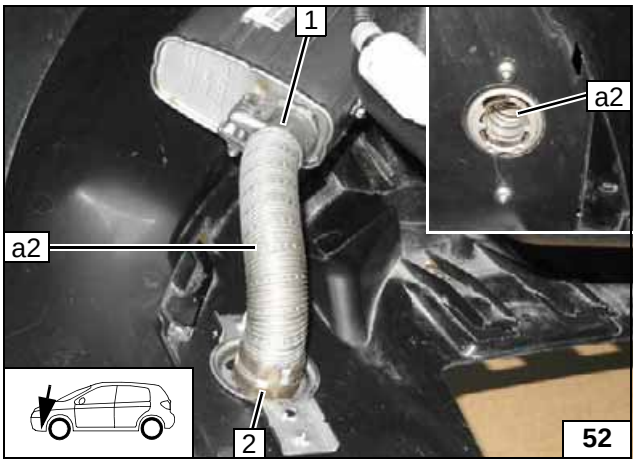

Hole **1** [2x] as per work step 4 of the installation instructions.

**Holes in underride protection**




**1** 5x13 self-tapping screw [2x] as per work step 5 of the installation instructions
**2** Exhaust end fastener

**Installing exhaust end fastener**




Install exhaust pipe **a2** as per work steps 6 - 8 of the installation instructions.

**1** Hose clamp
**2** Exhaust end fastener

**Installing exhaust pipe a2**

## Fuel

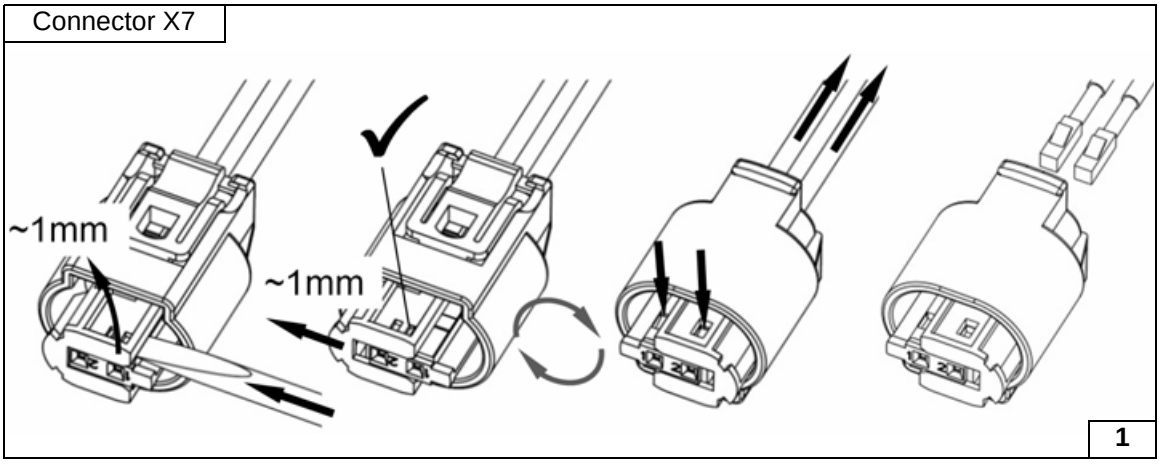
Open the vehicle's fuel tank cap, ventilate the tank and then re-close the tank lock.

Catch any fuel running off in an appropriate container.

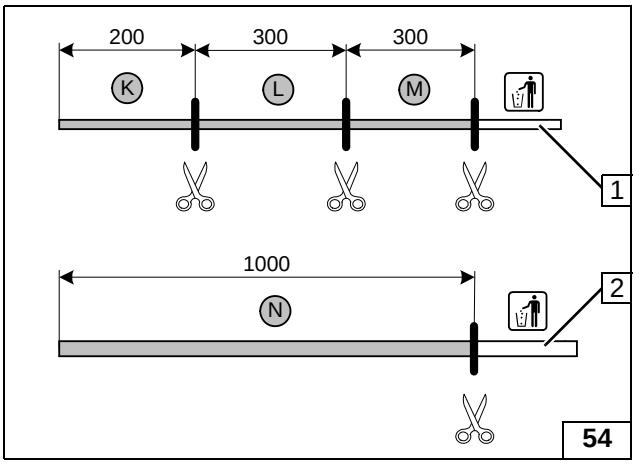
Route fuel line and metering pump wiring harness so that they are protected against stone impact.
Unless specified otherwise, always fasten using cable ties.
Provide rub protection for fuel line and wiring harness in areas where there are sharp edges.

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

**Dismantling metering pump connector**

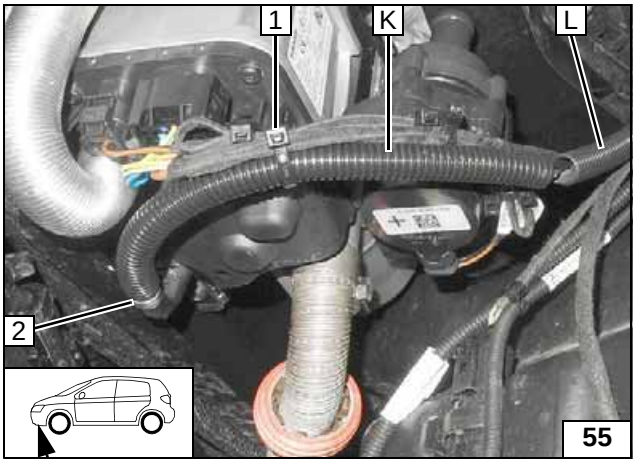



**Cutting to length / assigning corrugated tubes**



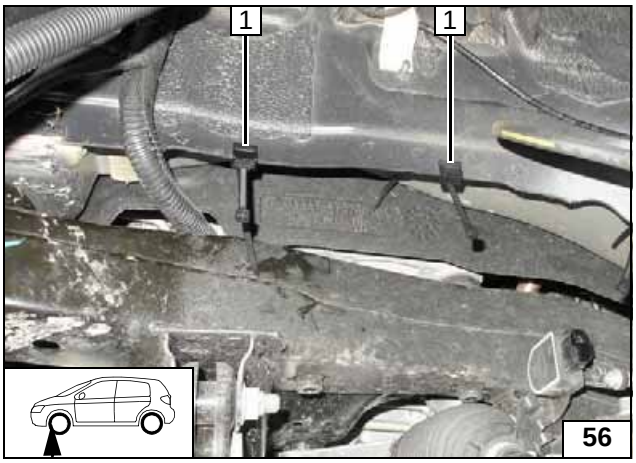

**1** 10 mm dia. corrugated tube
**2** 13 mm dia. corrugated tube, cut open

**Connecting heater**



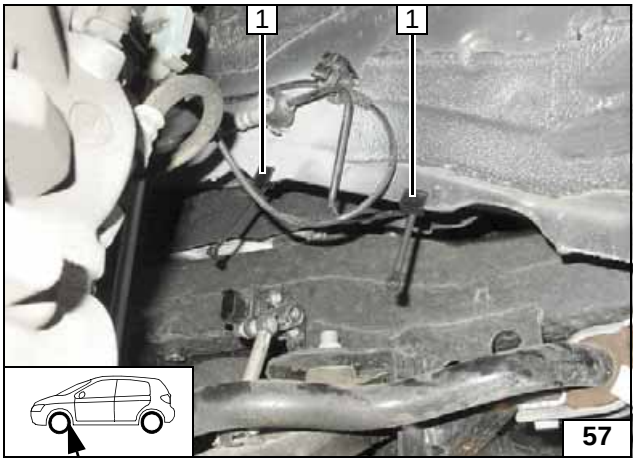

Route fuel line in corrugated tube **K**.
Route fuel line and wiring harness of metering pump in corrugated tube **L** .

**1** Cable tie
**2** Fuel line



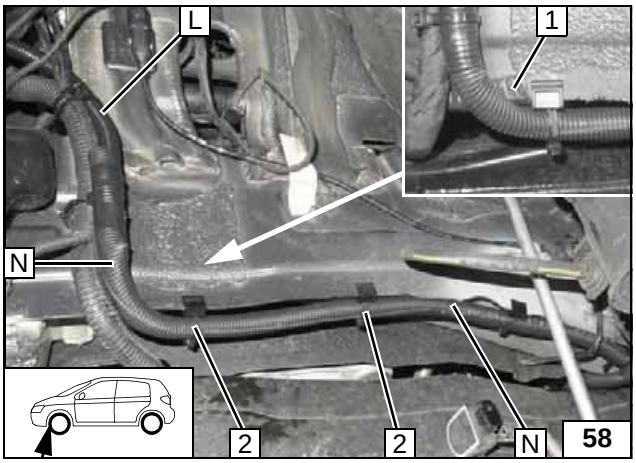

**1** Clip-type cable tie [2x] on body edge

**Installing clip-type cable tie**




**1** Clip-type cable tie [2x] on body edge

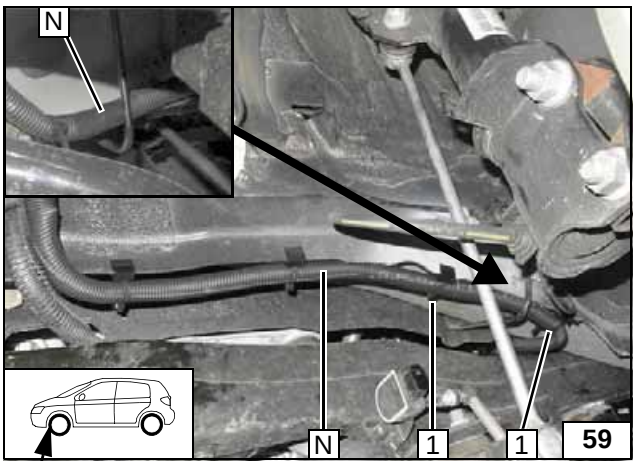
**Installing clip-type cable tie**




Apply edge protection **1**.
Secure wiring harnesses of heater, heater control and metering pump as well as fuel line in 13mm dia. corrugated tube **N** using clip-type cable tie **2**.

**2** Close clip-type cable tie [2x]

**Routing lines**

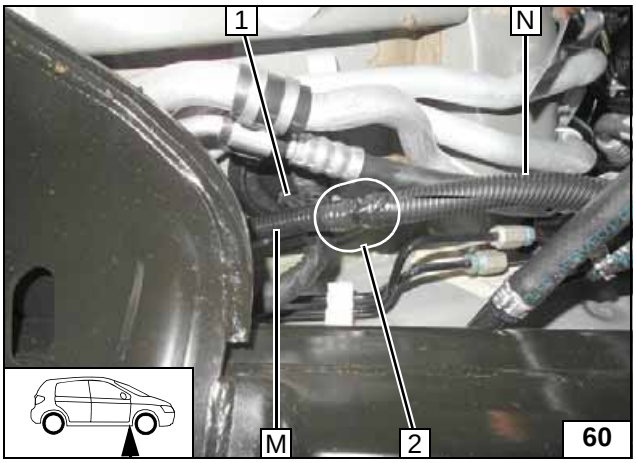



Route wiring harnesses of heater, heater control and metering pump as well as fuel line in 13mm dia. corrugated tube **N** above the brake line through clip-type cable ties **1**.

**1** Close clip-type cable tie [2x]

**Routing lines**

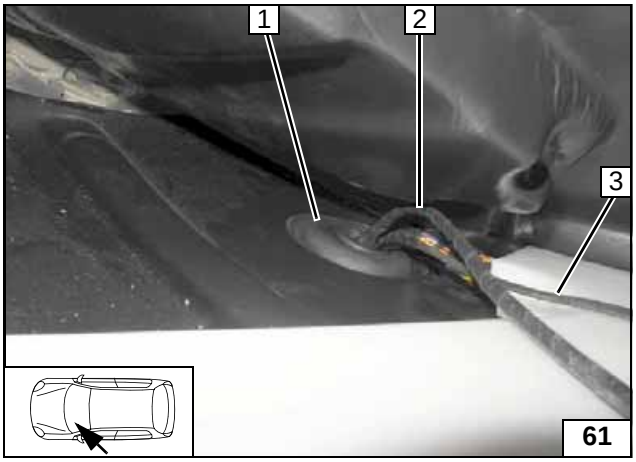
  




Guide wiring harness of heater and wiring harness of heater control out of 13mm dia. corrugated tube **N** and route through the protective rubber plug at position **1** in the passenger compartment. Route fuel line and wiring harness of metering pump in corrugated tube **M** to the installation location of the metering pump.

**2** Insulating tape around corrugated tube **N** and **M**

**Routing lines**

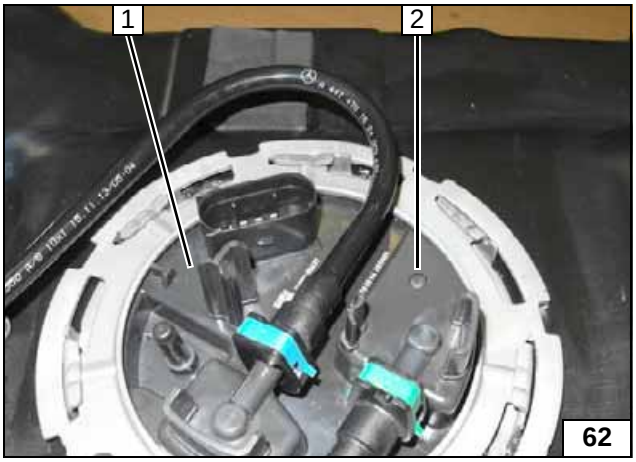



Folded back passenger compartment floor covering on the driver's side.

**1** Passenger compartment protective rubber plug
**2** Heater wiring harness
**3** Heater control wiring harness

**Routing lines**

## Installing FuelFix

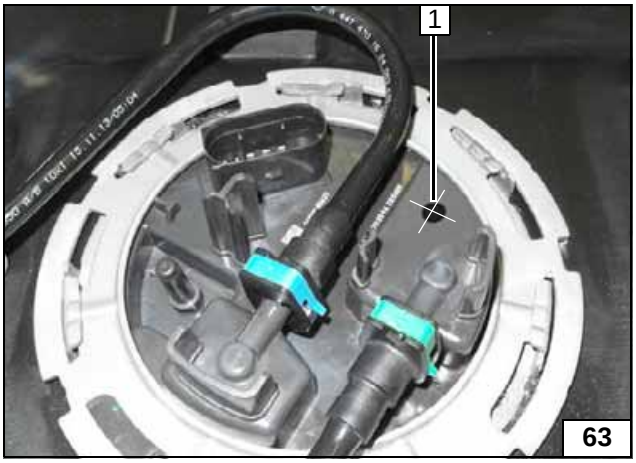



Remove the fuel tank according to the manufacturer's instructions.

Work steps F1 and F2.

**1** Fuel tank sending unit
**2** Existing embossing is used for hole pattern

**Copying hole pattern**

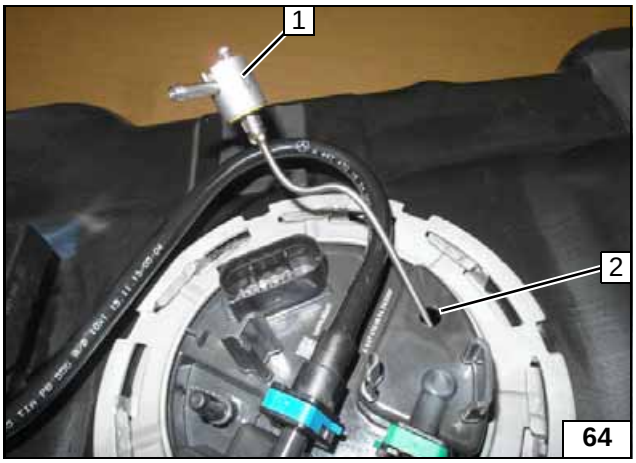



Work step F3.

**1** Hole made with provided drill

**Hole for FuelFix**

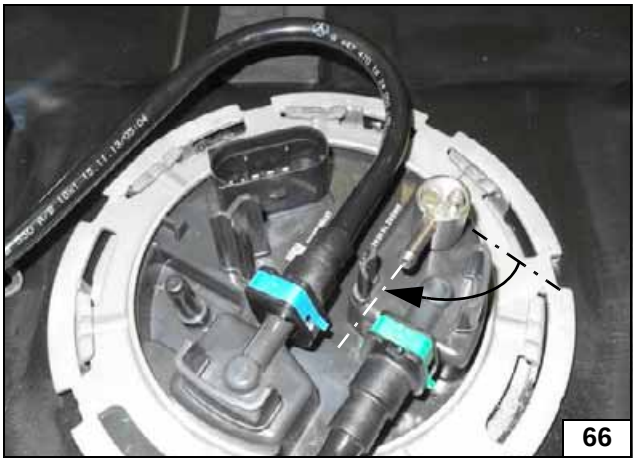



Work steps F4 and F5.

Bend FuelFix **1** according to template and cut to length.
Insert into hole **2**.

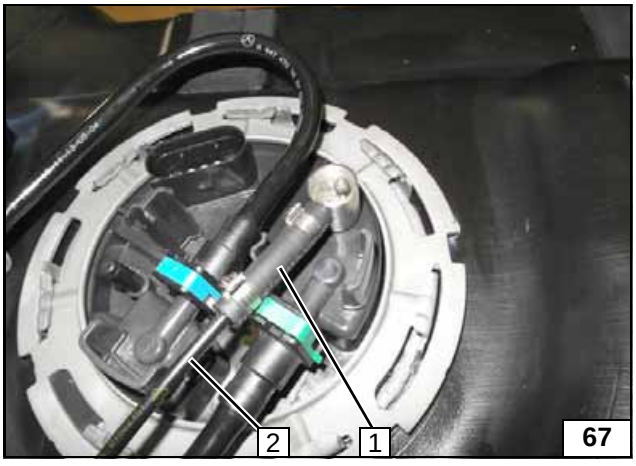
**Inserting FuelFix**


**Inserting FuelFix**




Work steps F5.3 and F5.4.

**Aligning FuelFix**

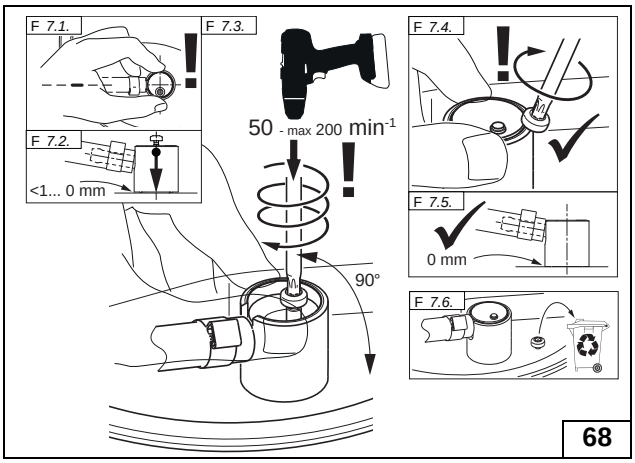



Work step F6.

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

**Connecting fuel line**

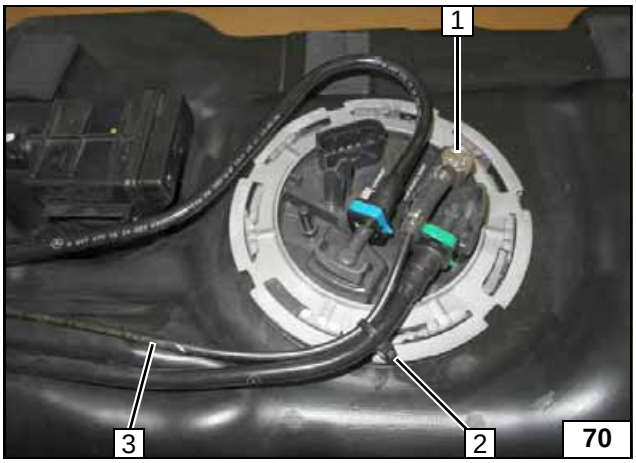



Work step F7.

**Installing FuelFix**

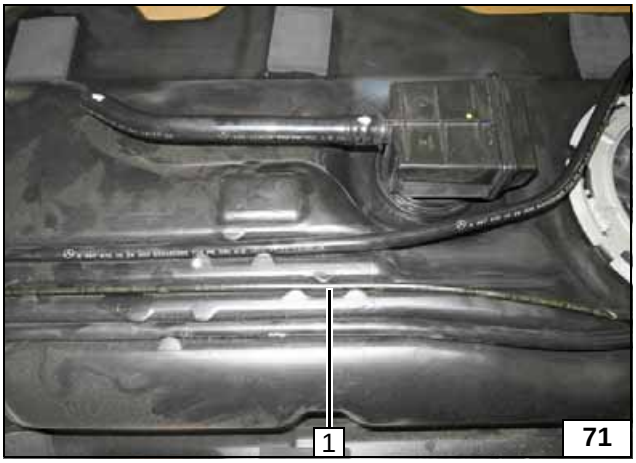

Work step F8.

**Checking firm seating of FuelFix**




**1** FuelFix installed
**2** Cable tie as tension relief
**3** Fuel line of FuelFix

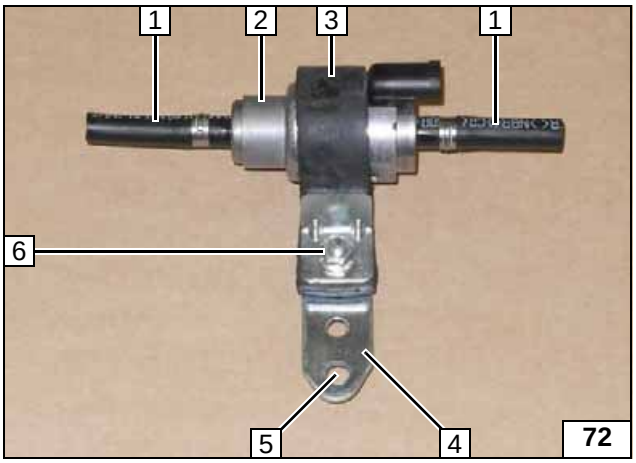
**Securing fuel line**




Snap fuel line of FuelFix into place between the tabs at position **1**.
Install fuel tank in accordance with manufacturer's instructions.

**Routing fuel line**

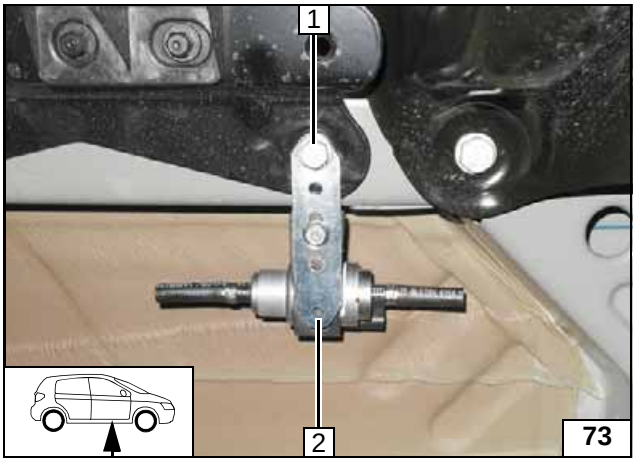



**Vehicle without AD Blue Tank**

Drill out perforated bracket **4** at position **5** to 8.5mm dia.

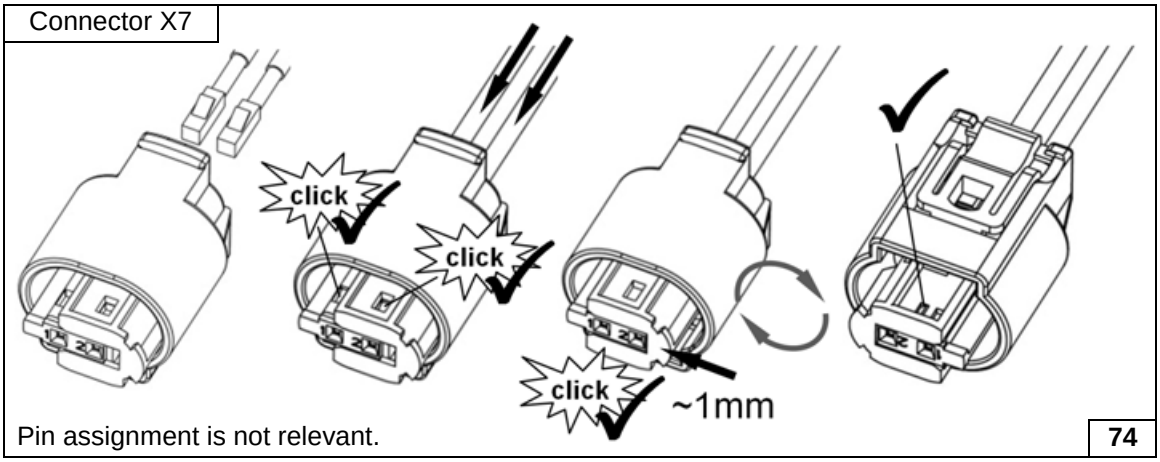
**1** Hose section, 10 mm dia. clamp [2x each]
**2** Metering pump
**3** Metering pump mount
**6** M6x25 bolt, support angle bracket, flanged nut

**Premounting metering pump**

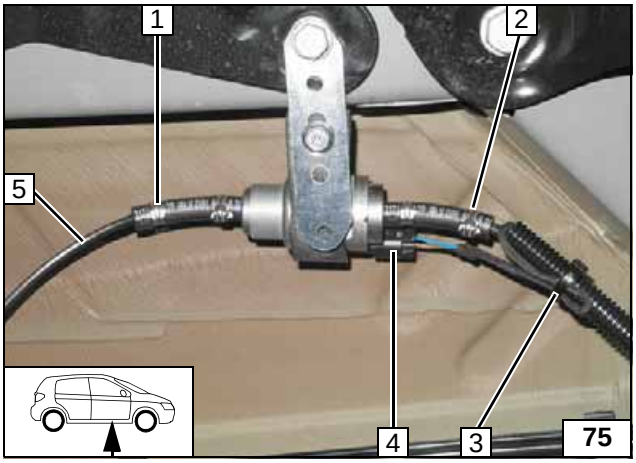



**1** Original vehicle bolt
**2** Perforated bracket

**Installing metering pump**



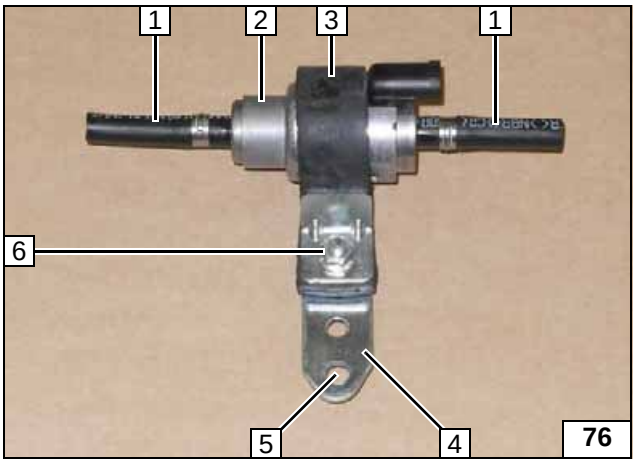

**Completing metering pump connector**




Ensure sufficient distance from neighbouring components, correct if necessary.

**1** 10 mm dia. clamp
**2** Fuel line of heater, 10mm dia. clamp
**3** Cable tie
**4** Metering pump wiring harness, connector X7 mounted
**5** Fuel line of FuelFix

**Connecting metering pump**

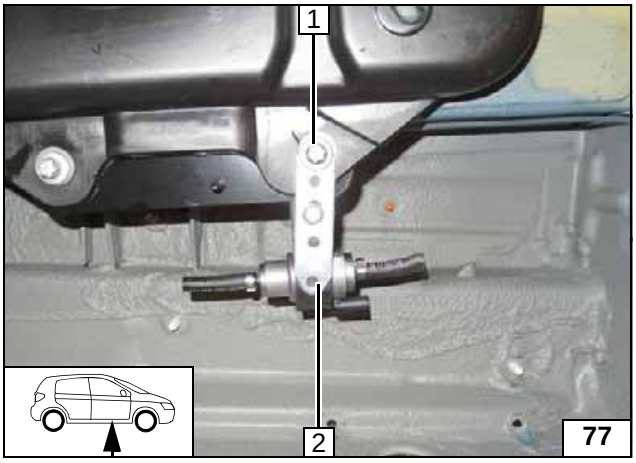



**Vehicle with AD Blue Tank**

Drill out perforated bracket **4** at position **5** to 10mm dia.

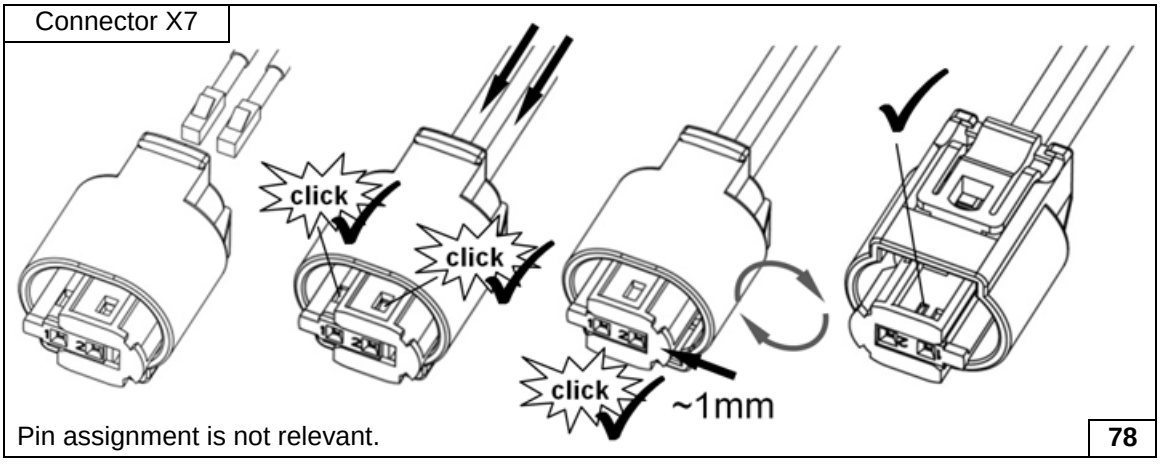
**Premounting metering pump**

**1** Hose section, 10 mm dia. clamp [2x each]
**2** Metering pump
**3** Metering pump mount
**6** M6x25 bolt, support angle bracket, flanged nut

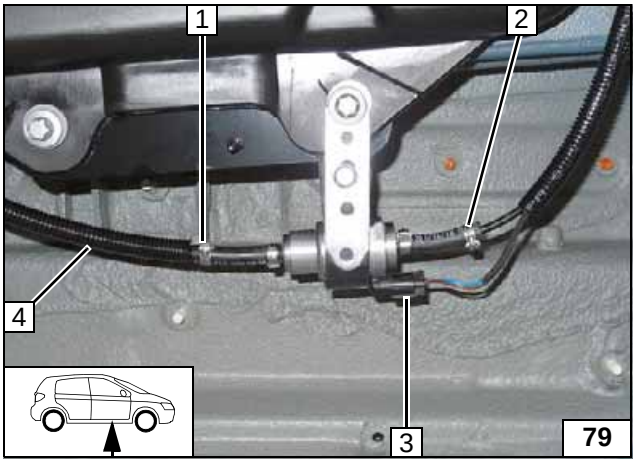



**1** Original vehicle bolt
**2** Perforated bracket

**Installing metering pump**




**Completing metering pump connector**




Ensure sufficient distance from neighbouring components, correct if necessary.

**Connecting metering pump**

**1** 10 mm dia. clamp
**2** Fuel line of heater, 10mm dia. clamp
**3** Metering pump wiring harness, connector X7 mounted
**4** Corrugated tube, fuel line of FuelFix

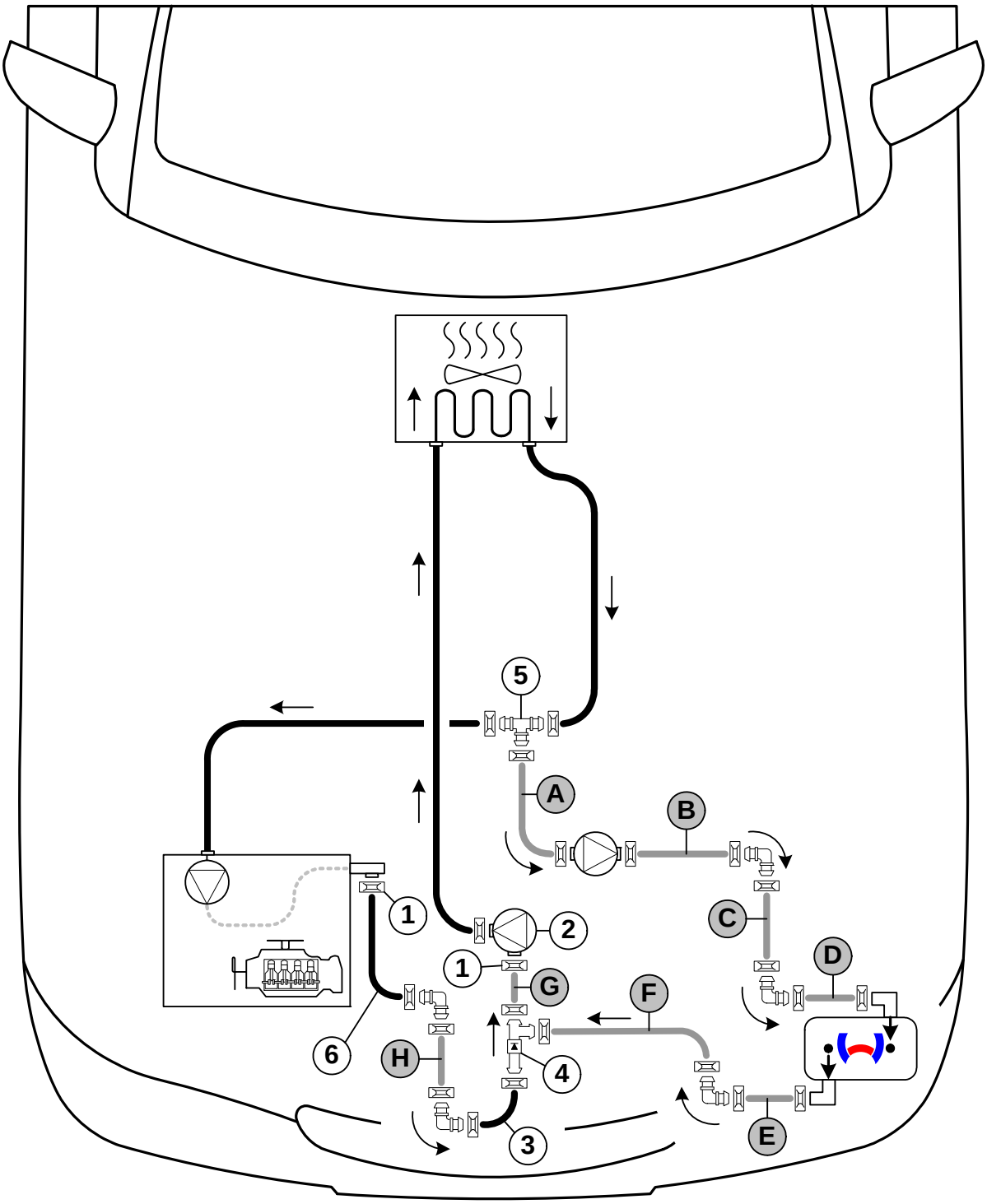
  

## V-Class Coolant Circuit with Residual Heat Pump

Any coolant running off should be collected in an appropriate container. Route hoses 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.

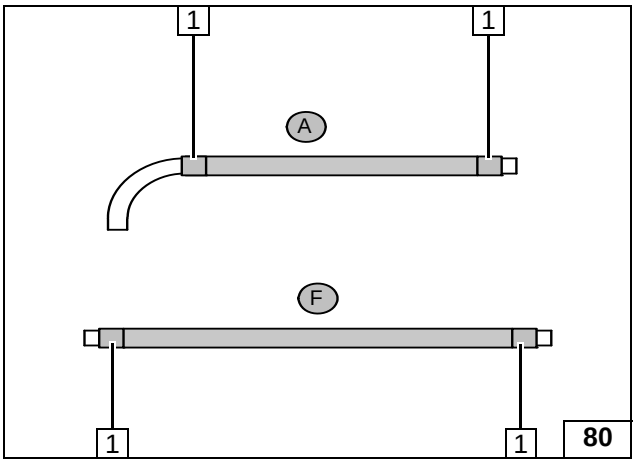
The connection should be modelled on an 'island' circuit and based on the following diagram:

**Hose routing diagram**




All spring clips without a specific designation = 25 mm dia. All connecting pipes = 18x18 mm dia.
**1** = Original vehicle spring clips ! **2** = Original vehicle circulating pump.
**3** = Original vehicle hose section. **4** = Check valve . **5** = T-piece **6** = Original vehicle engine outlet hose section.

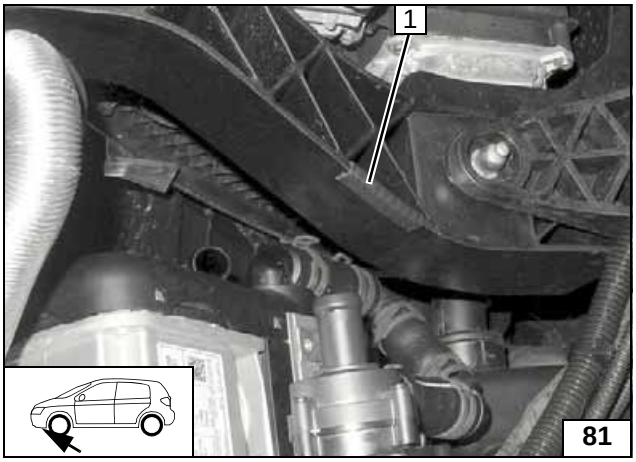
  




Push braided protection hoses onto hoses **A** and **F** and cut to length. Cut heat shrink plastic tubing to size.

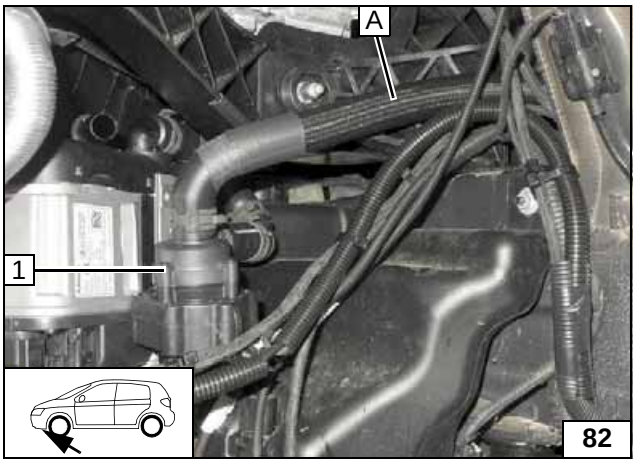
**1** 50 mm long heat shrink plastic tubing [4x]

**Preparing hoses**



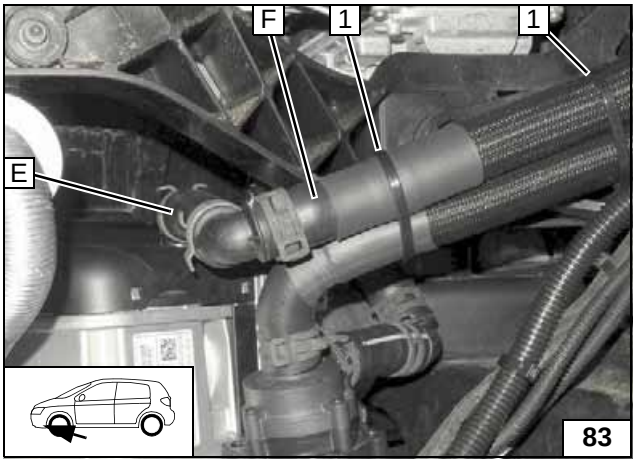

**1** 50 mm edge protection

**Installing edge protection**




**1** Circulating pump

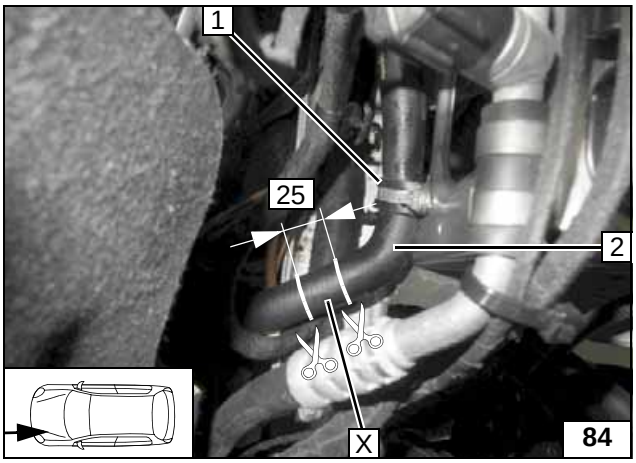
**Connecting heater inlet**




**1** Cable tie [2x]

**Connecting heater outlet**

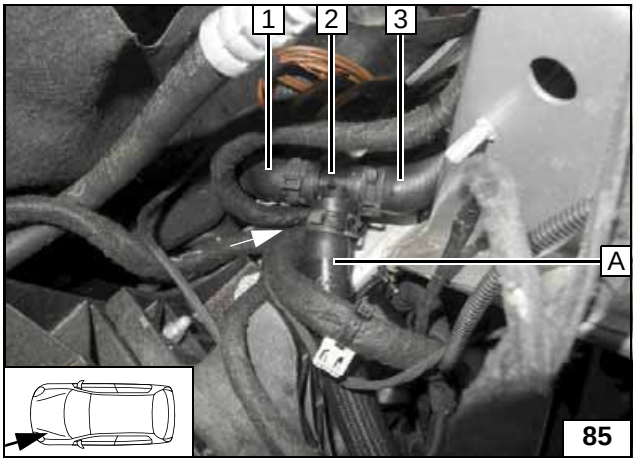



Cut hose of heat exchanger outlet **2** at the markings.

**1** Original vehicle clamp

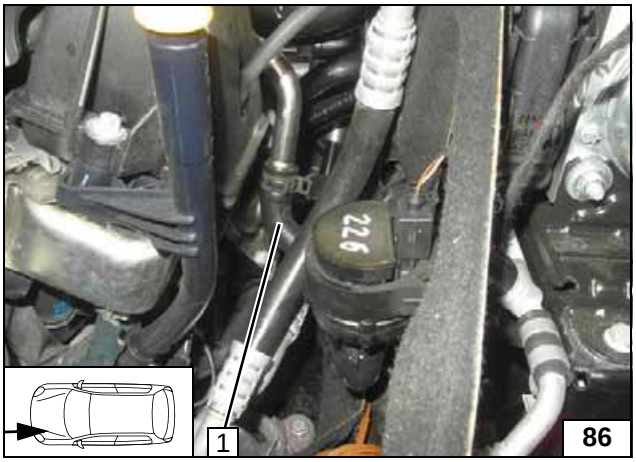
**X** =

**Cutting point**



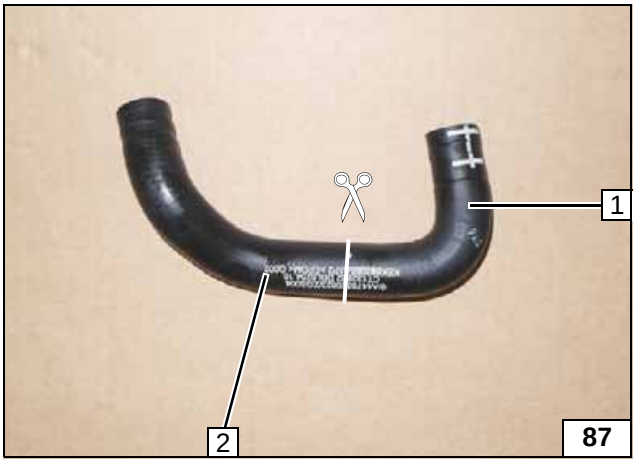

**1** Hose of engine inlet
**2** T-piece
**3** Hose of heat exchanger outlet

**Installing and connecting T-piece**




Remove hose of engine outlet / original vehicle circulating pump **1**. Spring clips will be reused.

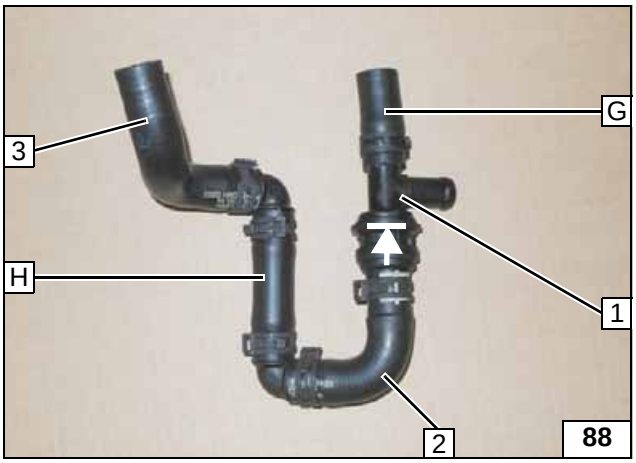
**Cutting point**




**1** Hose section of original vehicle circulating pump
**2** Engine outlet hose section

**Cutting point**

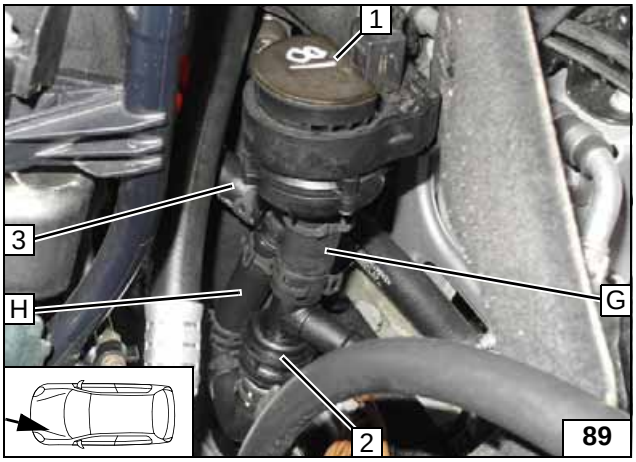
  




Check the direction of flow of check valve **1**.

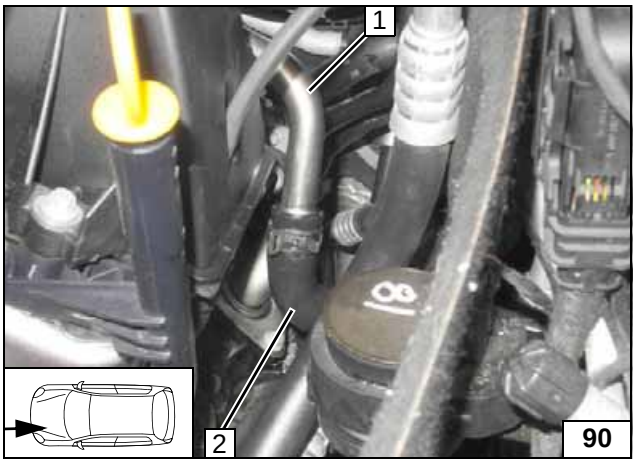
**2** Hose section of original vehicle circulating pump
**3** Engine outlet hose section

**Premounting check valve**




**1** Original vehicle circulating pump
**2** Check valve
**3** Engine outlet hose section

**Installing check valve**




**1** Engine outlet pipe
**2** Engine outlet hose section

**Connecting engine outlet**


Align hoses. Ensure sufficient distance from neighbouring components, correct if necessary.

**1** Check valve

**Connecting check valve**

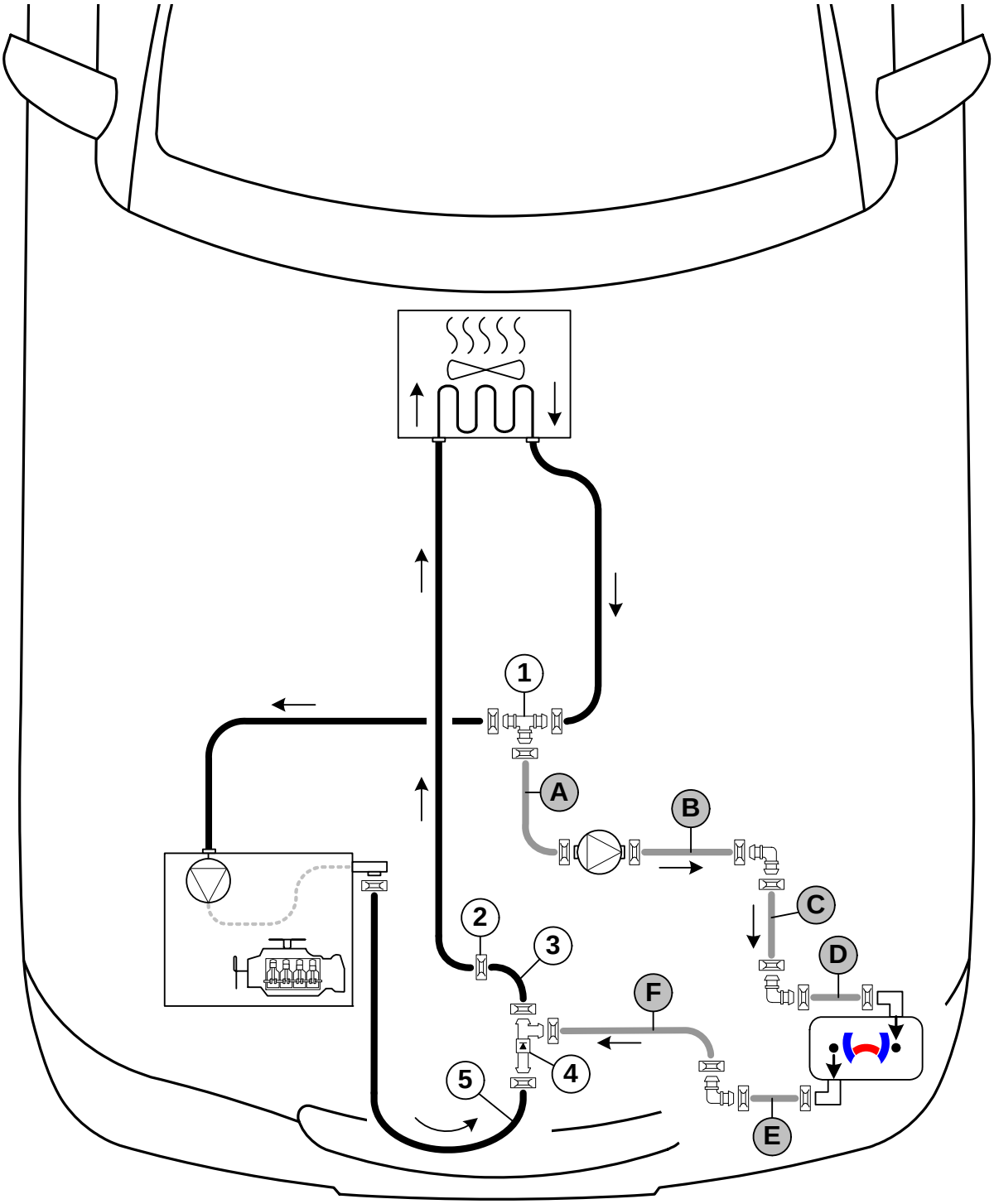
  

## Vito/ Mixto 111 CDI Coolant Circuit

Any coolant running off should be collected in an appropriate container. Route hoses 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 modelled on an 'island' circuit and based on the following diagram:

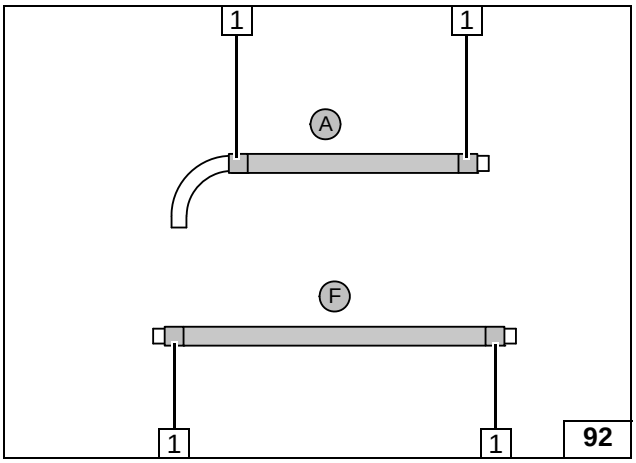
**Hose routing diagram**




**1** = T-piece **2** = Original vehicle spring clips ! **3** = Original vehicle hose section of heat exchanger inlet. **4** = Check valve . **5** = Original vehicle engine outlet hose section.

All spring clips without a specific designation = 25 mm dia. All connecting pipes = 18x18 mm dia.

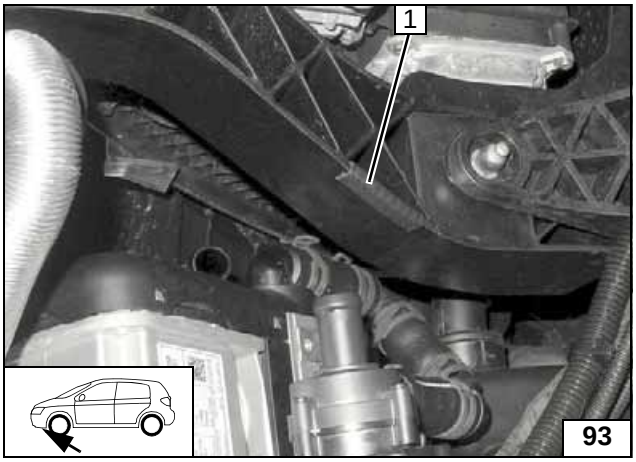
  




Push braided protection hoses onto hoses **A** and **F** and cut to length. Cut heat shrink plastic tubing to size.

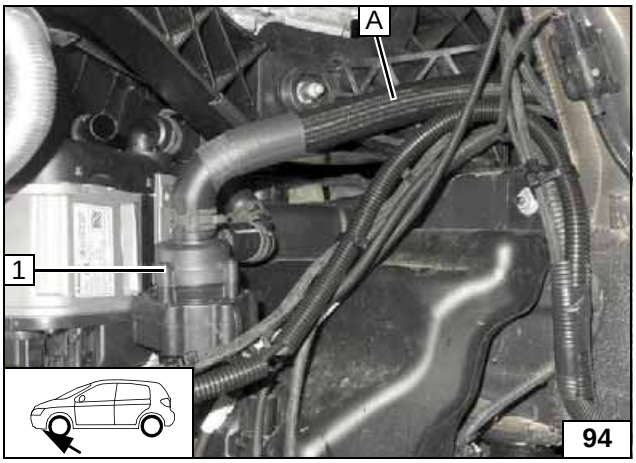
**1** 50 mm long heat shrink plastic tubing [4x]

**Preparing hoses**



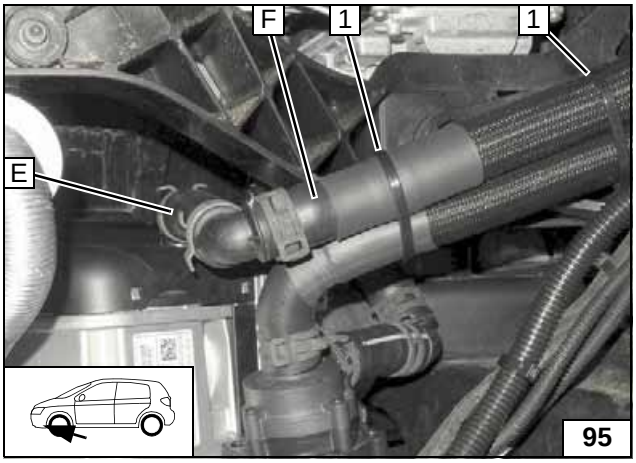

**1** 50 mm edge protection

**Installing edge protection**




**1** Circulating pump

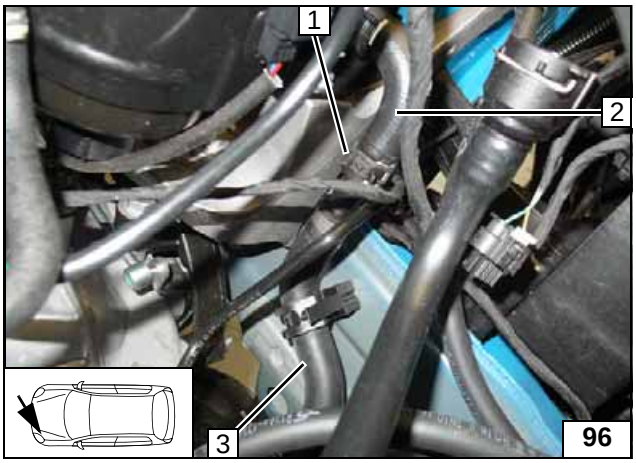
**Connecting heater inlet**




**1** Cable tie [2x]

**Connecting heater outlet**

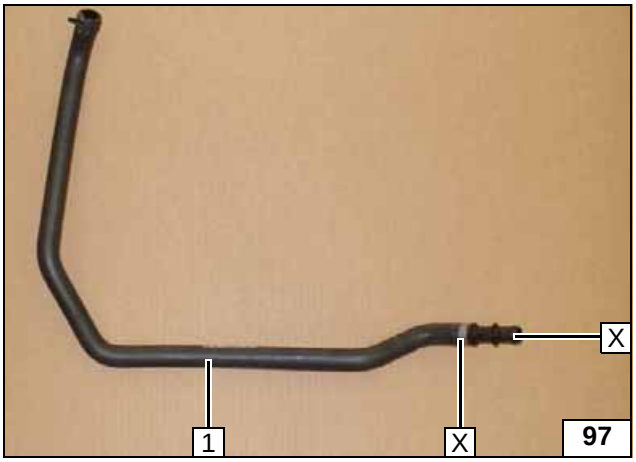
  




Remove engine inlet hose **3**.

**1** Original vehicle clamp
**2** Hose of heat exchanger outlet

**Cutting point**



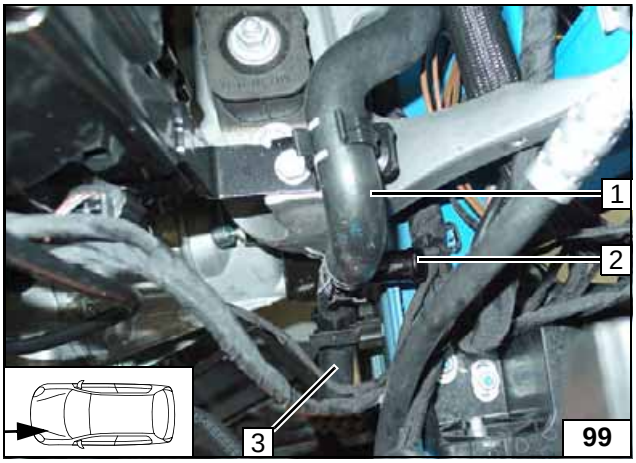

**1** Hose of engine inlet

**X** = 

**Preparing original vehicle hose**


**1** T-piece

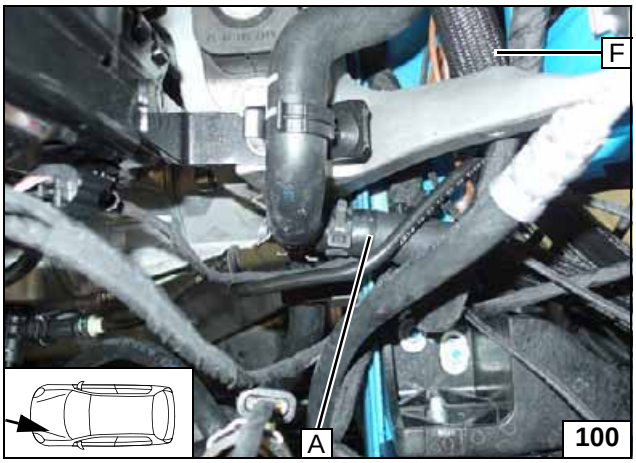
**Premounting original vehicle hose**




**1** Hose of heat exchanger outlet
**2** T-piece
**3** Hose of engine inlet

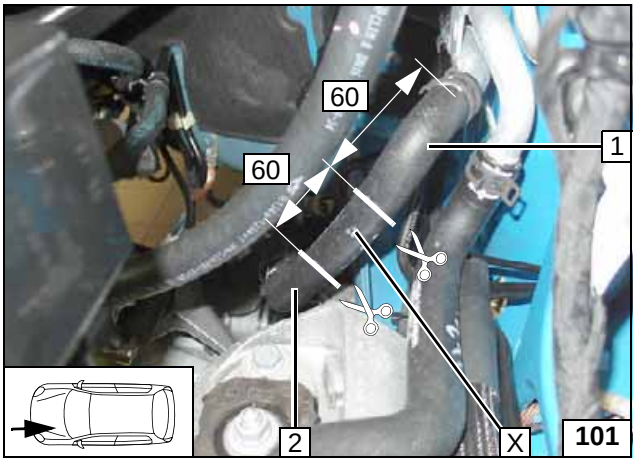
**Mounting original vehicle hose**




Align hoses. Ensure sufficient distance from neighbouring components, correct if necessary.

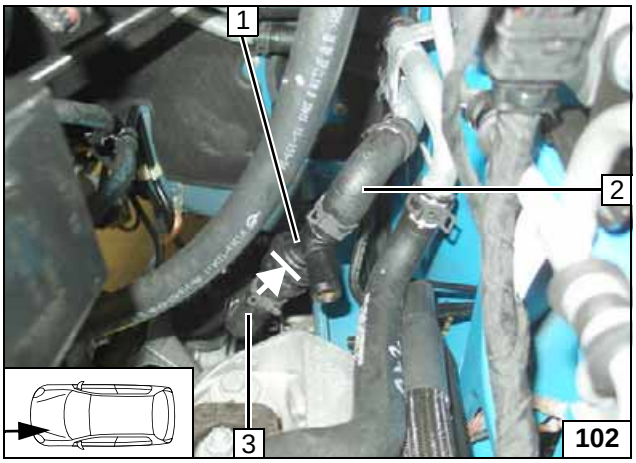
**Connection of hose A**




**1** Heat exchanger inlet hose section
**2** Engine outlet hose section

**X** =

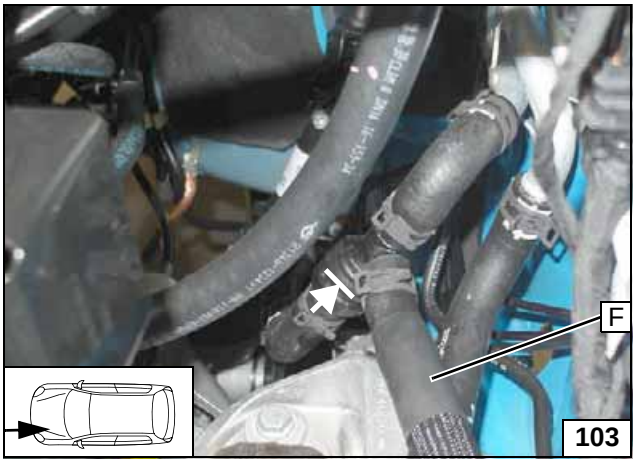
**Cutting point**




Check the direction of flow of check valve **1**.

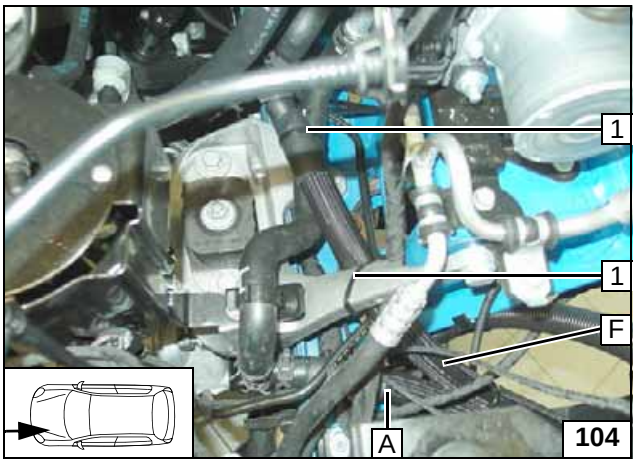
**2** Heat exchanger inlet hose section
**3** Engine outlet hose section

**Installing check valve**




**Connection of hose F**



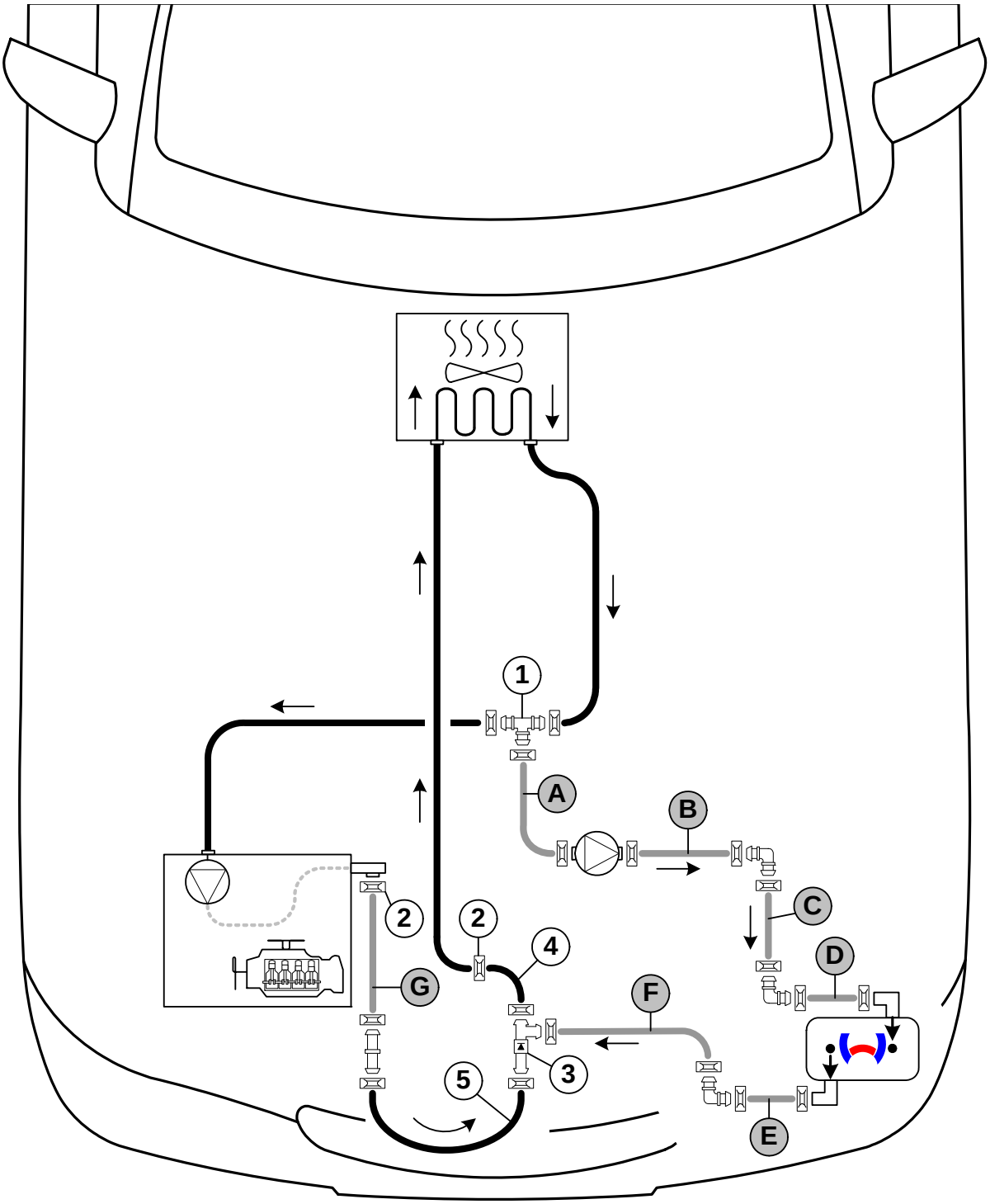

**Routing in engine compartment**

## Vito/ Mixto 116/119 CDI and V220d Coolant Circuit

Any coolant running off should be collected in an appropriate container. Route hoses 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 modelled on an 'island' circuit and based on the following diagram:

**Hose routing diagram**

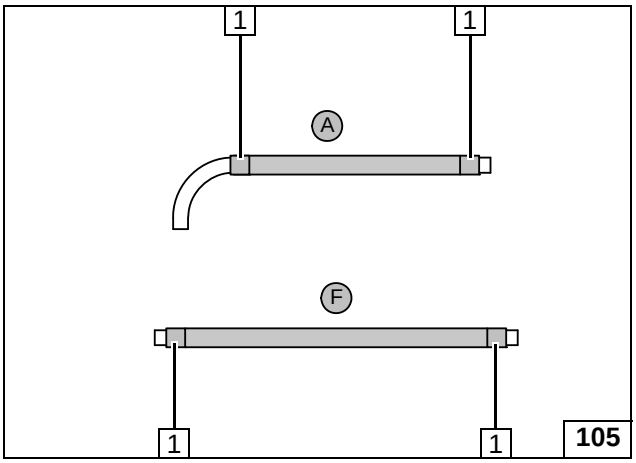



**1** = T-piece **2** = Original vehicle spring clips ! **3** = Check valve .

**4** = Original vehicle heat exchanger inlet hose section. **5** = Original vehicle engine outlet hose section.

All spring clips without a specific designation = 25 mm dia. All connecting pipes = 18x18 mm dia.

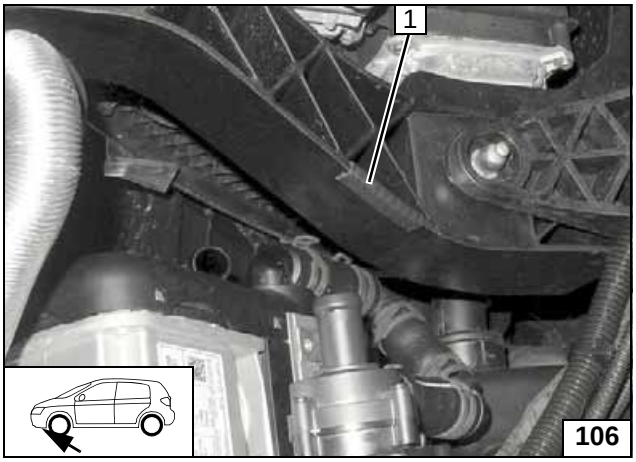
  




Push braided protection hoses onto hoses **A** and **F** and cut to length. Cut heat shrink plastic tubing to size.

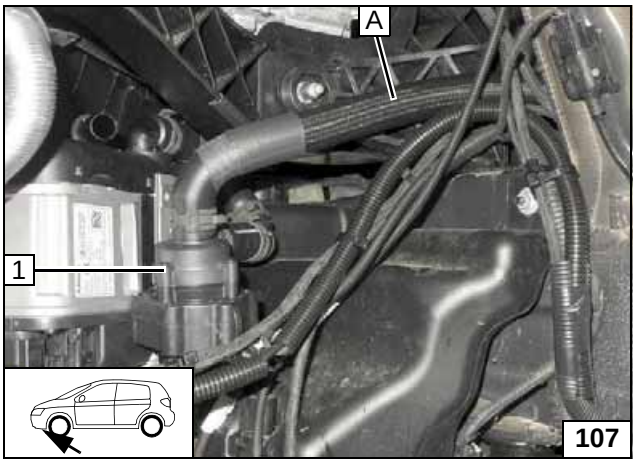
**1** 50 mm long heat shrink plastic tubing [4x]

**Preparing hoses**



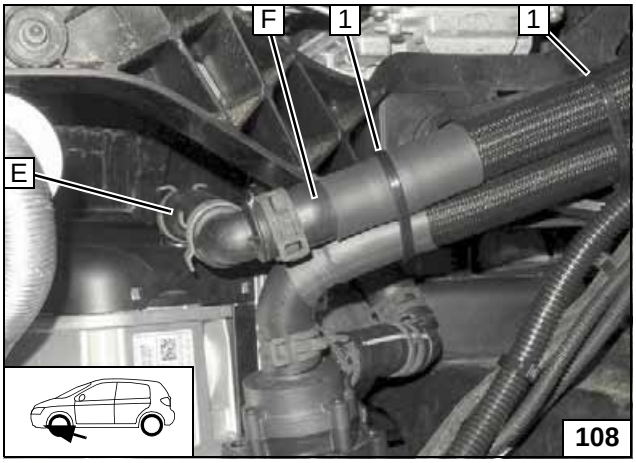

**1** 50 mm edge protection

**Installing edge protection**




**1** Circulating pump

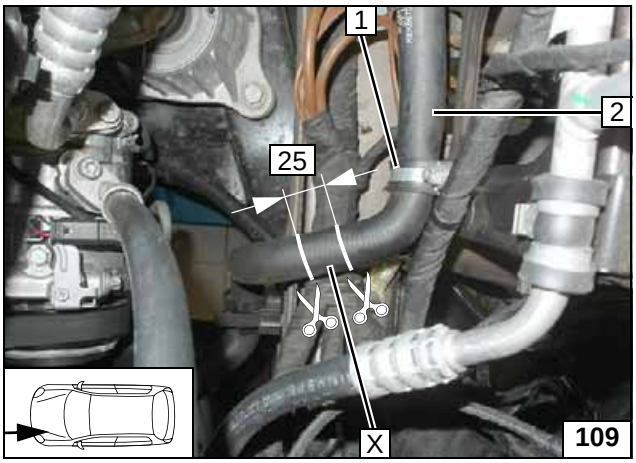
**Connecting heater inlet**




**1** Cable tie [2x]

**Connecting heater outlet**

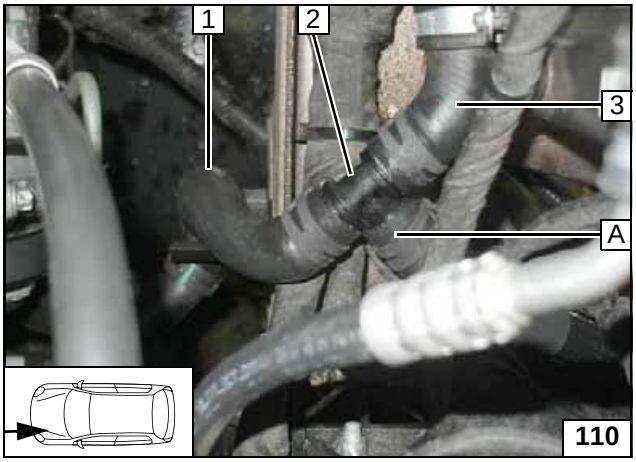



Cut hose of heat exchanger outlet **2** at the markings.

**1** Original vehicle clamp

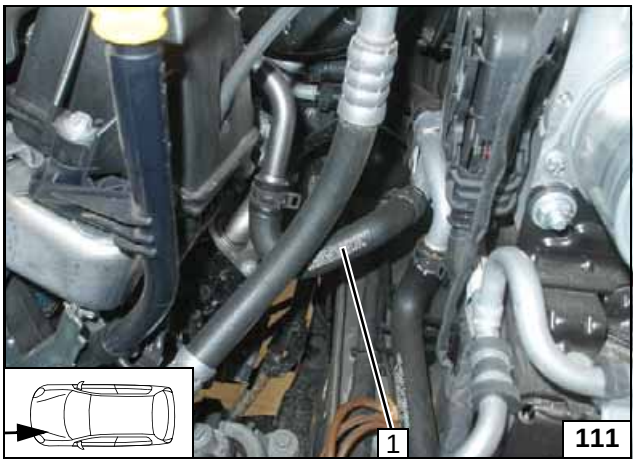
**X** =

**Cutting point**



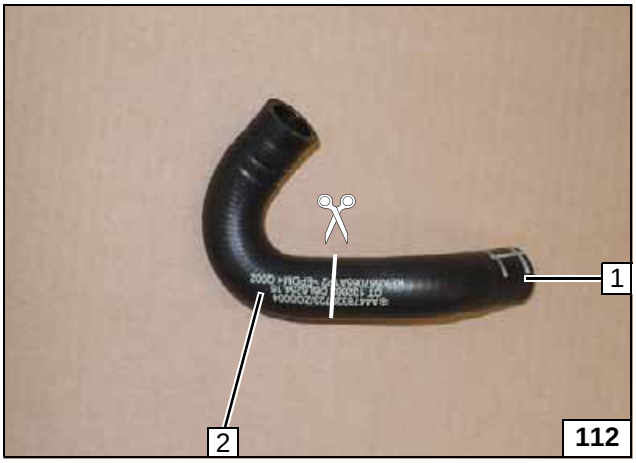

**1** Hose of engine inlet
**2** T-piece
**3** Hose of heat exchanger outlet

**Installing and connecting T-piece**




Remove engine outlet / heat exchanger inlet hose **1**. Spring clips will be reused.

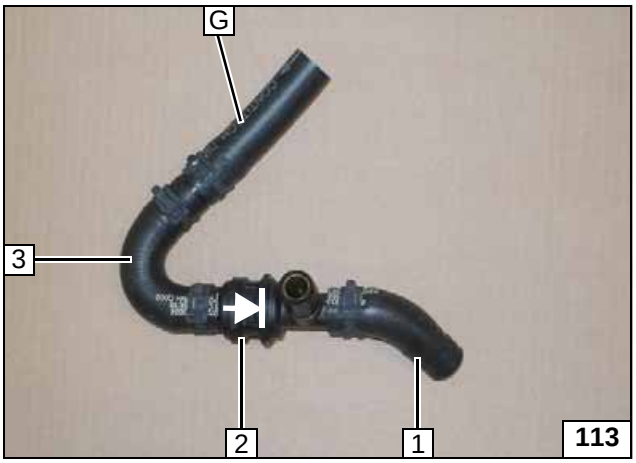
**Cutting point**




**1** Heat exchanger inlet hose section
**2** Engine outlet hose section

**Cutting point**

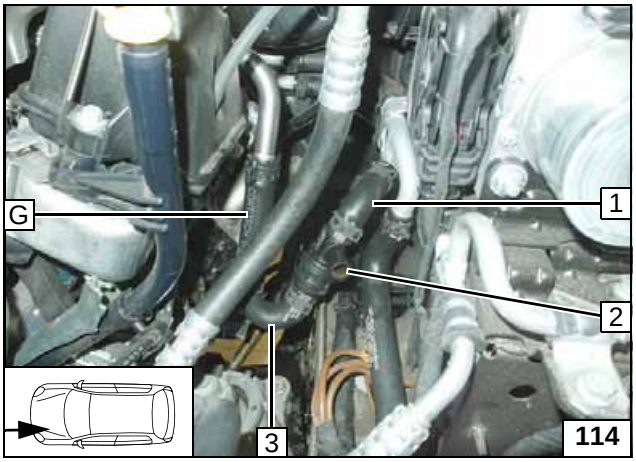
  




Check the direction of flow of check valve **2**.

**1** Heat exchanger inlet hose section
**3** Engine outlet hose section

**Premounting check valve**




**1** Heat exchanger inlet hose section
**2** Check valve
**3** Engine outlet hose section

**Installing check valve**


Align hoses. Ensure sufficient distance from neighbouring components, correct if necessary.

**1** Check valve

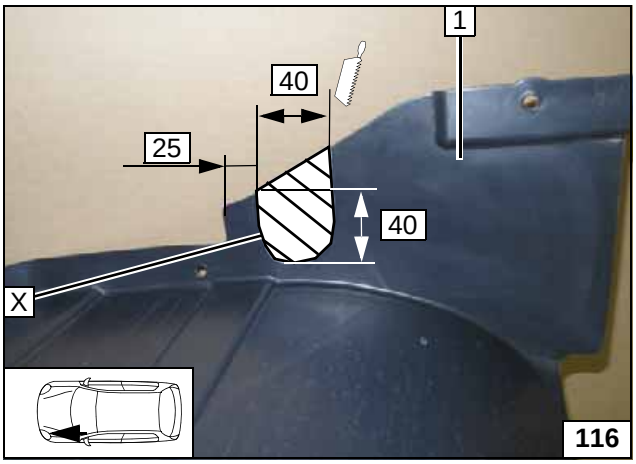
**Connecting check valve**

## Final Work

Reassemble the components in reverse order. Check all hoses, clamps and all electrical connections for firm seating. Insulate and tie back loose lines.
Only use manufacturer-approved coolant. Spray the heater components with anti-corrosion wax (Tectyl 100K).

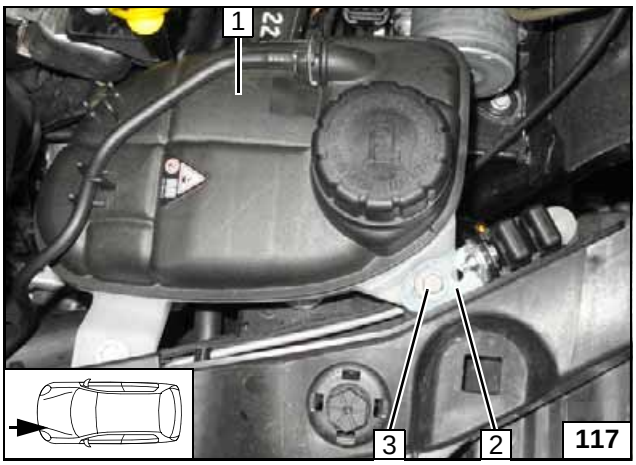
- **Connect the battery.**
- **Fill and bleed the coolant circuit according to the vehicle manufacturer's instructions.**
- **Program MultiControl CAR, teach Telestart transmitter.**
- **Place the 'Switch off parking heater before refuelling' caution label near the filler neck.**
- **For initial startup and function check, please see installation instructions.**




Cut out the marked area of wheel-well inner panel **1**.

**X** =

**Preparing / installing left wheel-well inner panel**



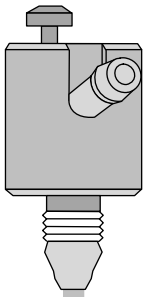

**1** Install coolant expansion tank
**2** Angle bracket
**3** Original vehicle bolt

**Installing fuse holder of engine compartment**

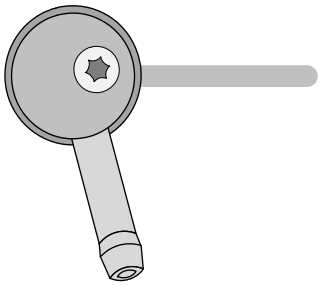
Webasto Thermo & Comfort SE
Postfach 1410
82199 Gilching
Germany
Internet: www.webasto.com
Technical Extranet:
http://dealers.webasto.com

## FuelFix Template



**Top view**



100mm

Scale 1:1

Compare size of printout with dimension lines.
Allowed tolerance a maximum of 2%.

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

100mm

0