# Water Heater

Webasto
Feel the Drive

## *Thermo Top Evo* Parking Heater

e1
00 0258

# Installation documentation
# VW Amarok

### Validity

| Manufacturer | Model | Type | EG BE No. / ABE |
|---|---|---|---|
| VW | Amarok | | e1 * 2007 / 46 * 0356 * ... |

| Motorisation | Fuel | Transmission type | Output in kW | Displacement in cm³ | Engine code |
|---|---|---|---|---|---|
| 2.0 TDI | Diesel | SG | 90 | 1968 | CDBA |
| 2.0 TDI | Diesel | SG | 120 | 1968 | CDCA |

SG = manual transmission

**From Model Year 2010**
**Left-hand drive vehicle**

**Verified equipment variants:**
Automatic air-conditioning

Front fog light
Headlight washer system
Anti-theft alarm system
4 Motion

**Not verified:**
Automatic transmission
Manual air-conditioning
Passenger compartment monitoring

**Total installation time:**
approx. 7.5 hours

## VW Amarok

## Table of Contents



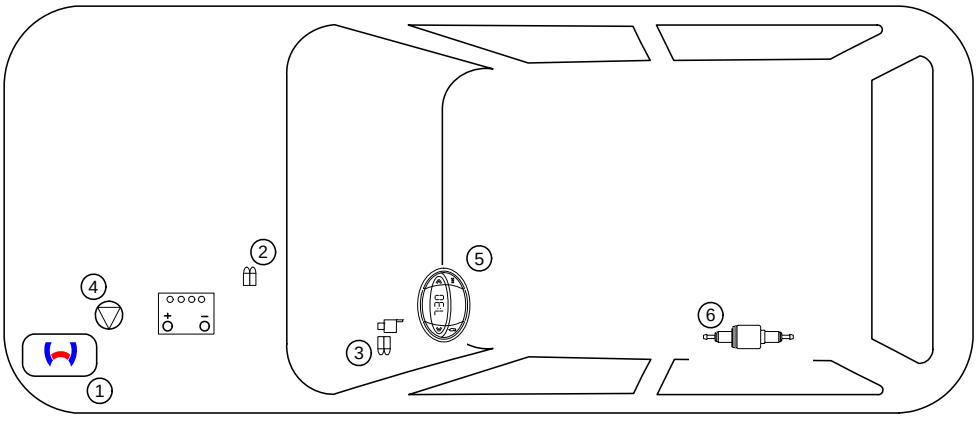
## Necessary Components

- Basic delivery scope of *Thermo Top Evo* in accordance with price list
- Installation kit for VW Amarok 2010 Diesel: **1316873A**
- Additional kit in case of Climatronic: **1317393D**
- 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**. Engine compartment fuse holder
**3**. Passenger compartment fuse holder
**4**. Circulating pump
**5**. Digital timer
**6**. Metering pump




## Information 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 diesel (DIN EN 590) and petrol (DIN EN 227) fuel.

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.**

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

**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 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 VW Amarok Diesel vehicles - for validity, see page 2 - 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 Information

**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
- Webasto Thermo Test Diagnosis with current software

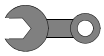
**Dimensions**
- All dimensions are in mm

**Tightening torque values**
- Tightening torque values of 5x13 heater 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**

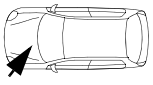
**Specific risk of damage to components**

**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**



## VW Amarok

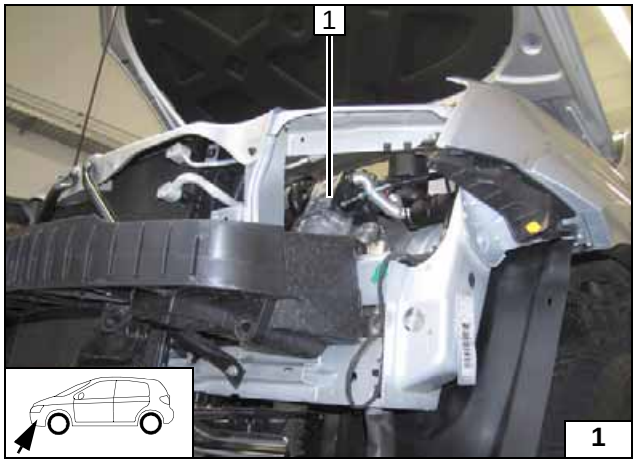
## Preliminary Work

### Vehicle

- Open the fuel tank cap.
- Ventilate the fuel tank.
- Close the fuel tank cap again.
- Depressurise the cooling system.
- Remove the battery.
- Remove the left wheel well trim.
- Remove the bumper.
- Remove the left-hand headlight.
- Remove the fuel tank according to manufacturer's instructions.
- Remove the fuel-tank sending unit in accordance with the manufacturer's instructions.
- Remove the cover of the instrument panel trim on the left.
- Remove the lighting switch console.
- Remove the A/C control panel in accordance with the manufacturer's instructions.

### Heater

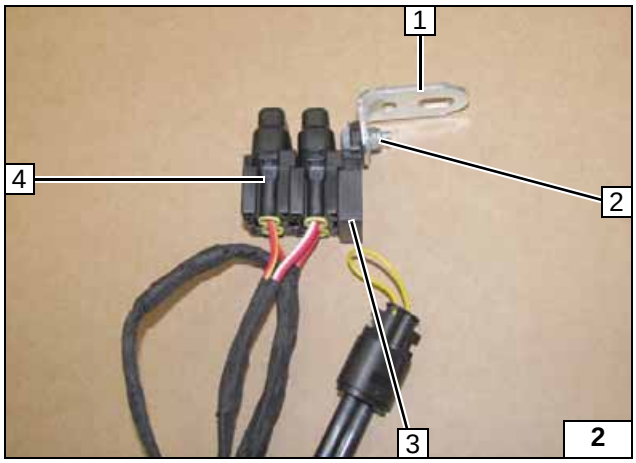
- Remove years that do not apply from the type and duplicate label.
- Attach the duplicate label (type label) in the appropriate place in the engine compartment.




## Heater Installation Location

**1** Heater

**Installation location**

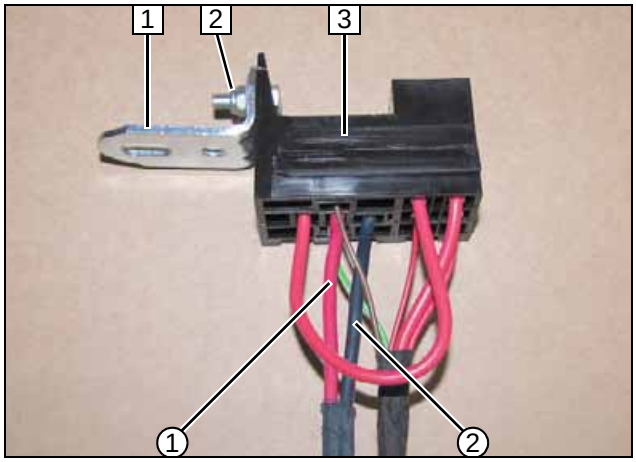



## Preparing Electrical System

Line sections retain their numbering in the entire document.

**1** Angle bracket
**2** M5x16 bolt, large diameter washer [2x], nut
**3** Fuse holder retaining plate
**4** Fuses F1-2

**Preparing the fuse holder for the engine compartment**

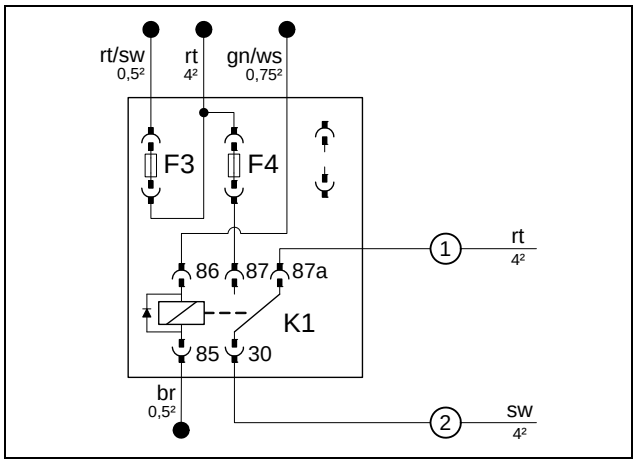



## Climatic

Produce connections as shown in wiring diagram.

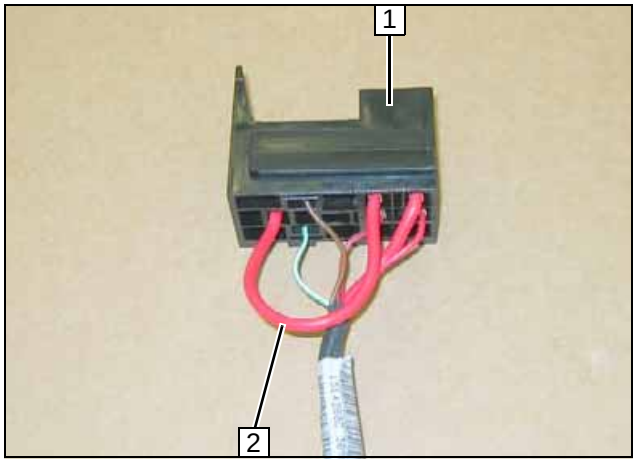
**1** Angle bracket
**2** M5x16 bolt, large diameter washer [2x], nut
**3** Fuse holder, passenger compartment
① Red (rt) wire K1/87a
② Black (sw) wire K1/30

**Preparing passenger compartment fuse holder**




Install F4 25A fuse and K1 relay.

**Preparing passenger compartment fuse holder**

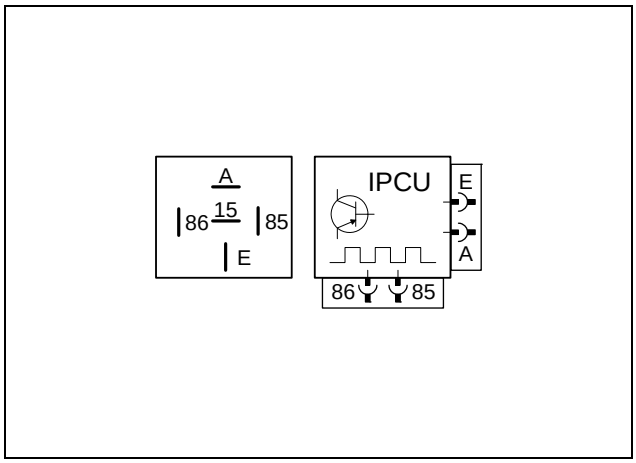



## Climatronic

Detach red (rt) 4² wire **2** and discard.

**1** Fuse holder, passenger compartment

**Preparing passenger compartment fuse holder**

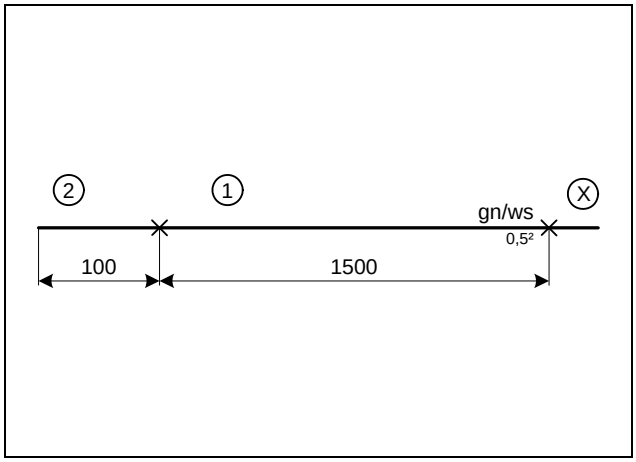



IPCU view on contact side.
The IPCU provided in the kit is pre-programmed with the following settings.

Duty cycle: 40%
Frequency: 100Hz
Voltage: 9V
Function: High side

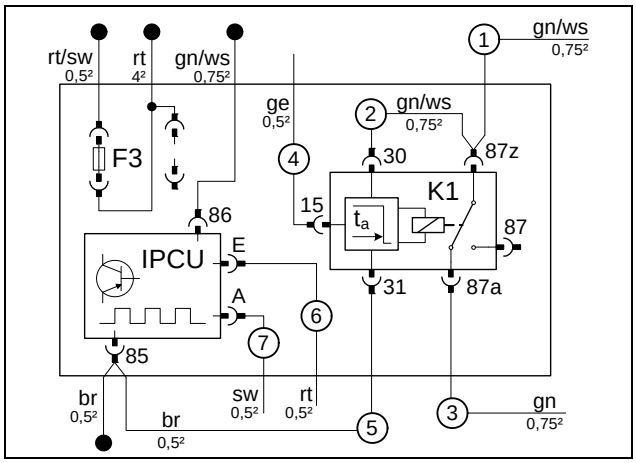
These settings must be checked during the start up of the heater and adjusted, if necessary.

**Preparing IPCU**




Section **X** is not required.

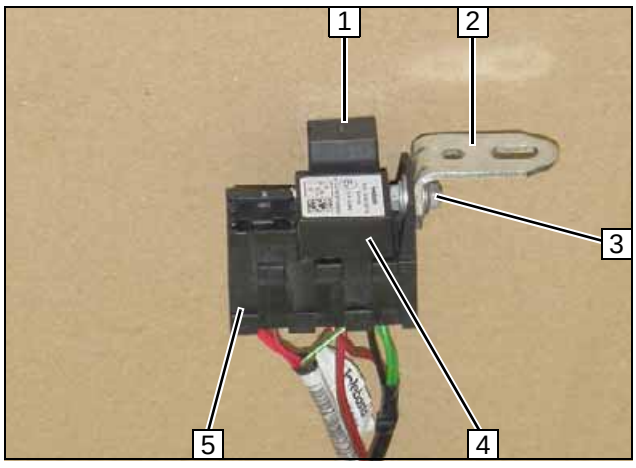
**Cutting wire to length**




Connect wires to IPCU socket and K1 relay according to wiring diagram.

① Green/white (gn/ws) wire 0.75²1500mm
② Green/white (gn/ws) wire 0.75²100mm
③ Green (gn) wire 0.75²1500mm
④ Yellow (ge) wire 0.5²500mm
⑤ Brown (br) wire 0.5²100mm
⑥ Red (rt) wire 0.5² 1500mm
⑦ Black (sw) wire 0.51500mm

**Preparing passenger compartment fuse holder**




Engage K1 relay socket with fuse holder of passenger compartment **5**.

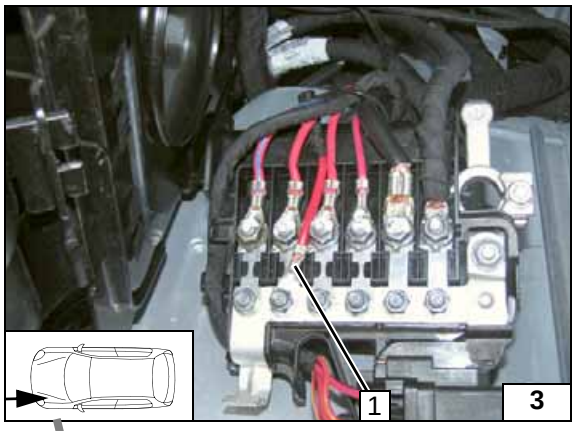
**1** K1 relay mounted
**2** Angle bracket
**3** M5x16 bolt, large diameter washer [2x], nut
**4** IPCU mounted

**Preparing passenger compartment fuse holder**

## Electrical System

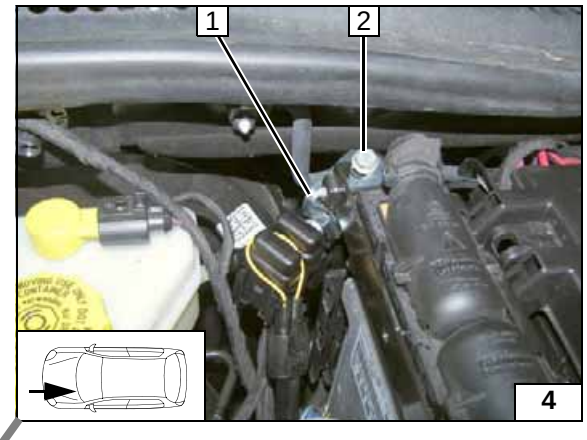
### Positive wire

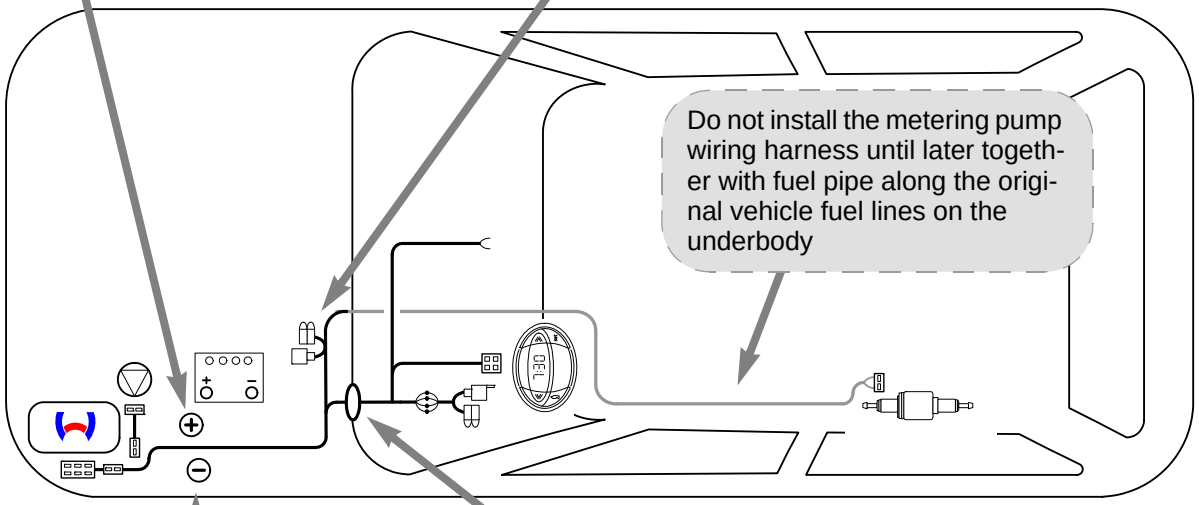
**1** Positive wire on original vehicle positive support point



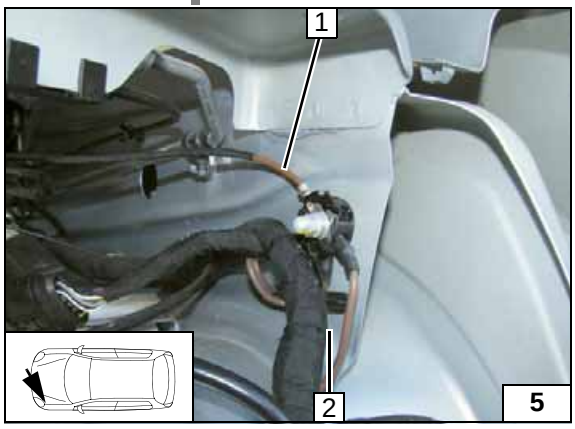

### Fuse holder of engine compartment

**1** Angle bracket
**2** Original vehicle bolt



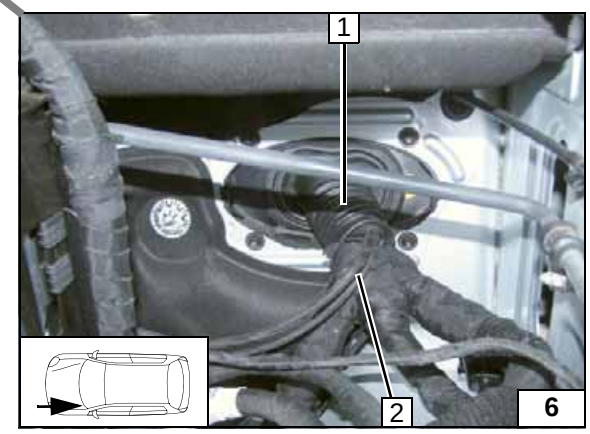




**Wiring harness routing diagram**




### Earth wire

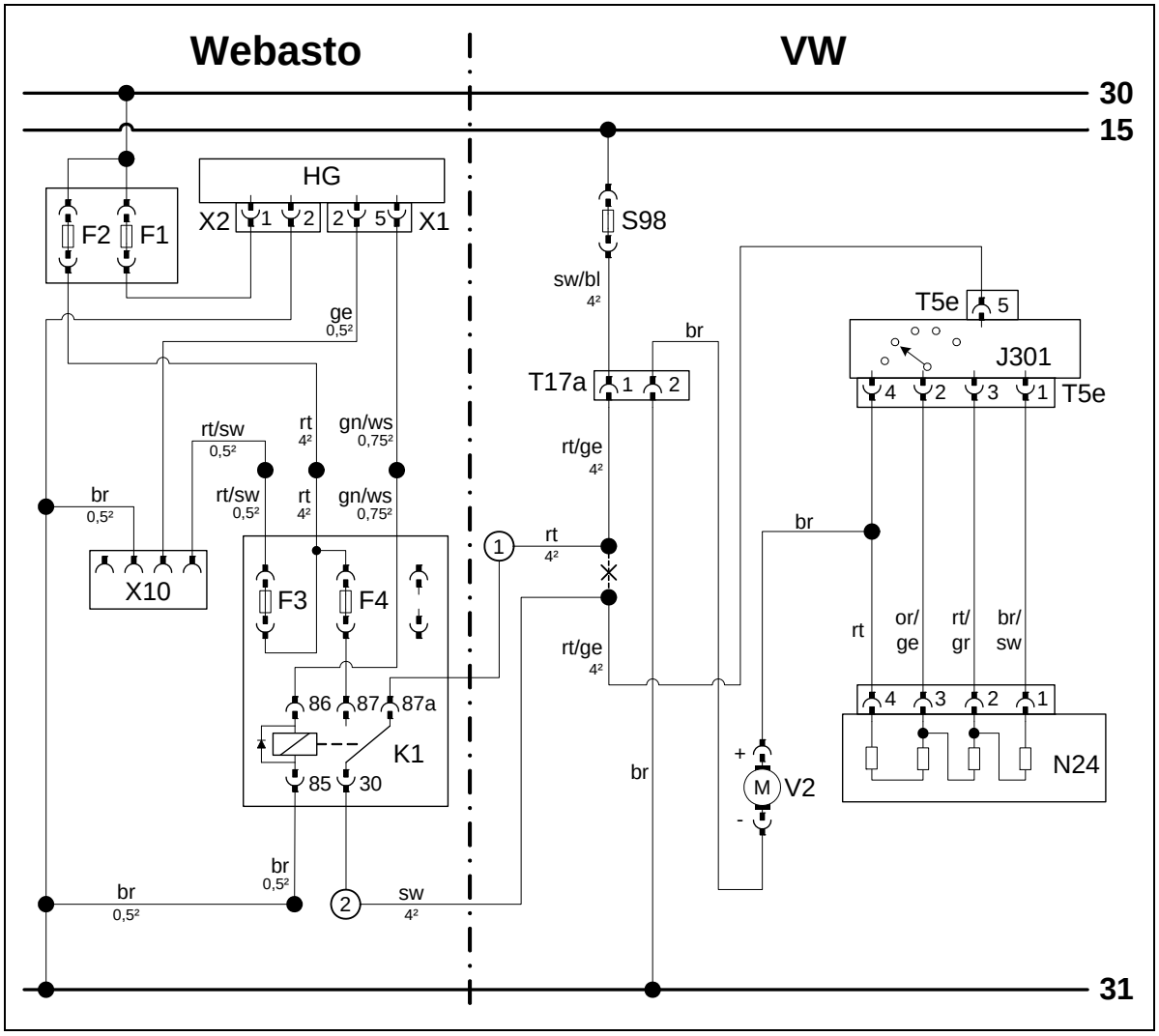
**1** Earth wire on original vehicle earth support point




### Wiring harness pass through

**1** Protective rubber plug
**2** Wiring harnesses of heater, heater control

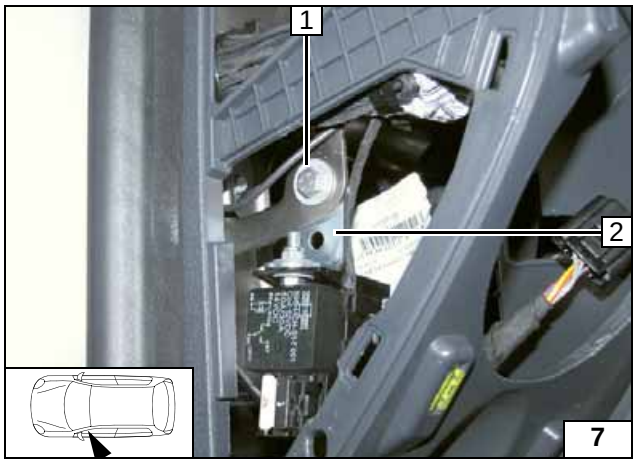
## Climatic Fan Controller




**Wiring diagram**

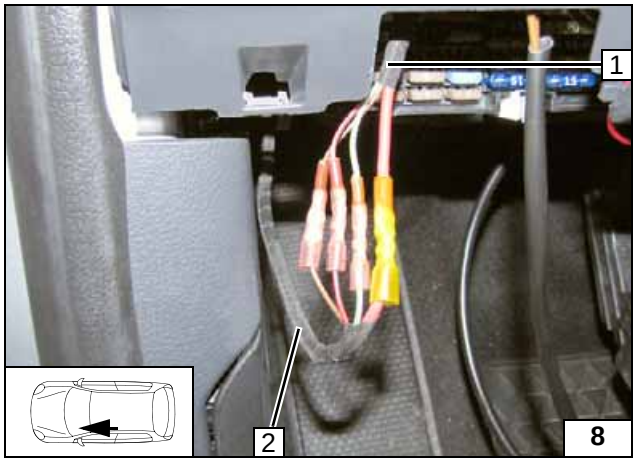
| Webasto components | | Vehicle components | | Colours and symbols | |
|---|---|---|---|---|---|
| HG | TT-Evo heater | V2 | Fan motor | rt | red |
| X1 | 6-pin heater connector | J301 | A/C control unit | ge | yellow |
| X2 | 2-pin heater connector | T5e | 5-pin connector J301 | sw | black |
| X10 | 4-pin connector Heater control | N24 | Resistor group | bl | blue |
| | | S98 | 40A fuse | br | brown |
| K1 | Fan relay | T17a | 17-pin connector | or | orange |
| F1 | 20A fuse | | | gr | grey |
| F2 | 30A fuse | | | ws | white |
| F3 | 1A fuse | | | **X** | Cutting point |
| F4 | 25 A fuse | | | Wiring colours may vary. | |

**Legend**



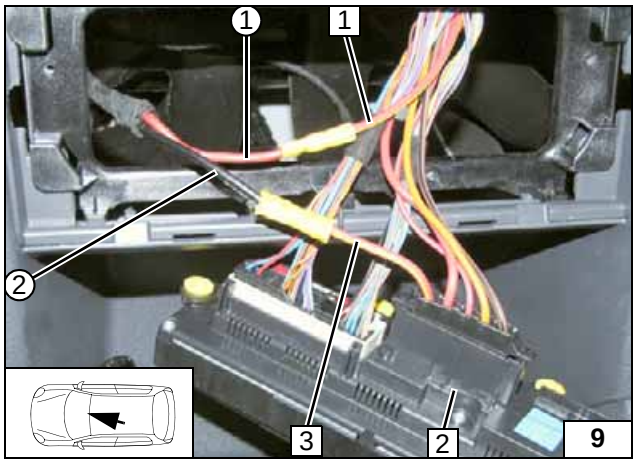

**1** M6x20 bolt, large diameter washer, flanged nut
**2** Angle bracket

**Mounting fuse holder in passenger compartment**




Connect the wiring harness of the fuse holder in passenger compartment **1** to the wiring harness of heater **2** according to the wiring diagram, with same colour wires connected to each other.

**Connecting wiring harnesses**



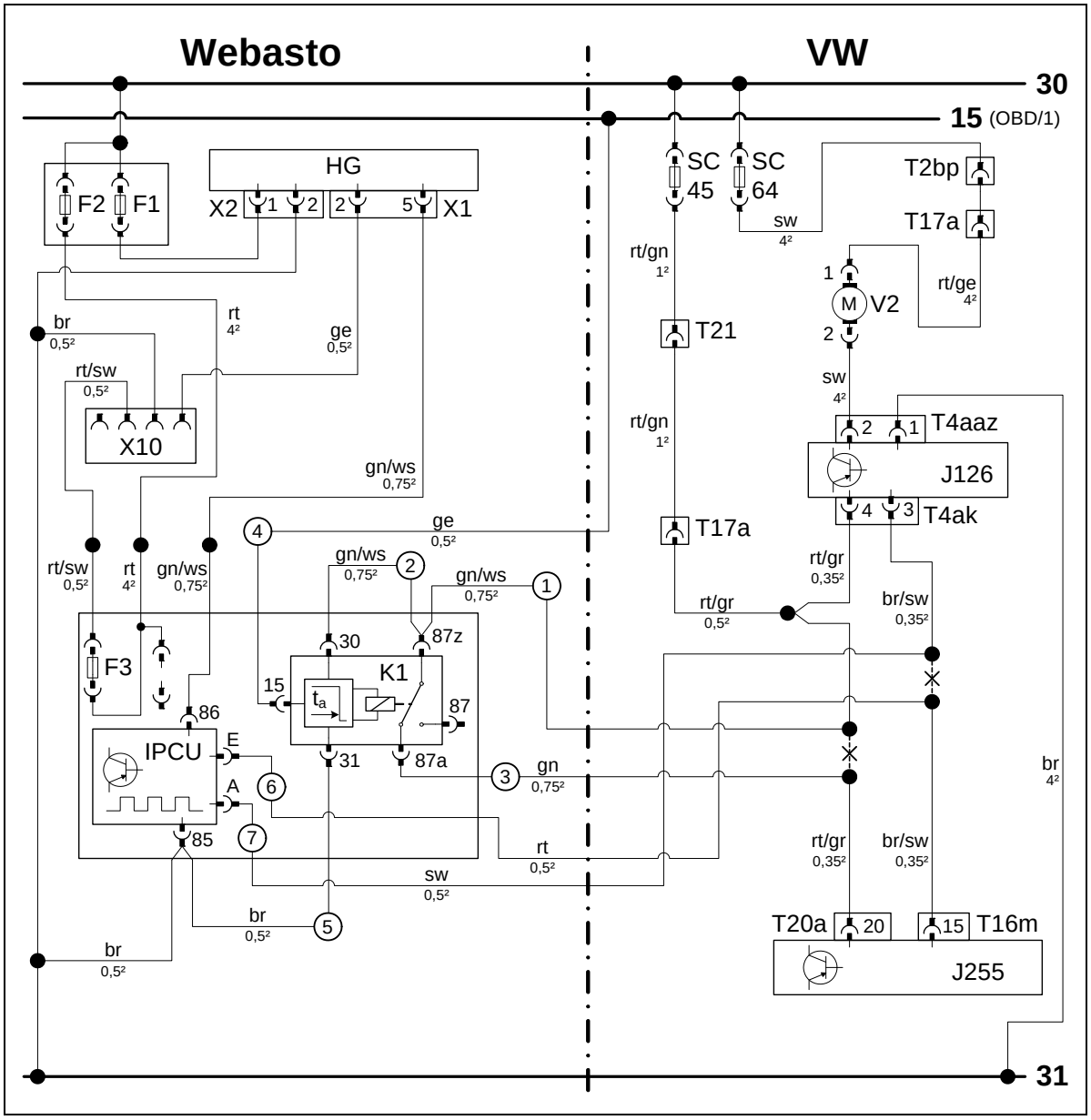

Connection of the 5-pin connector T5e **2** of the A/C control panel.
Produce connections as shown in wiring diagram.

**1** Red/yellow (rt/ge) wire from fuse S98
**3** Red/yellow (rt/ge) wire of 5-pin connector T5e Pin 5
① Red (rt) wire of K1/87a
② Black (sw) wire of K1/30

**Connecting A/C control panel**

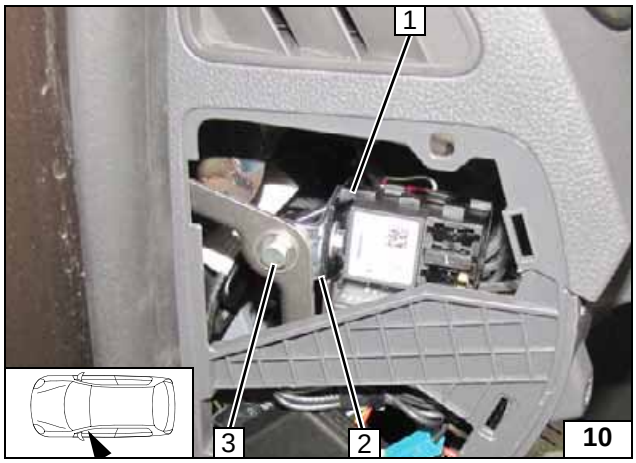
## Climatronic Fan Controller

Wiring diagram



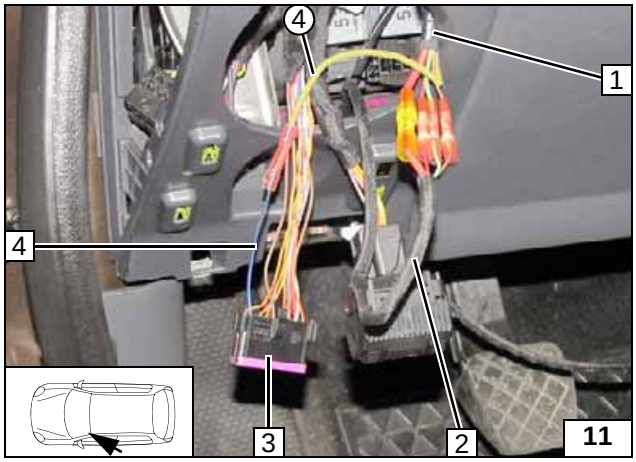

| Webasto components | | Vehicle components | | Colours and symbols | |
|---|---|---|---|---|---|
| HG | TT-Evo heater | J126 | Fan controller | rt | red |
| X1 | 6-pin heater connector | T4aaz | 4-pin connector J126 | sw | black |
| X2 | 2-pin heater connector | T4ak | 4-pin connector J126 | ge | yellow |
| X10 | 4-pin connector Heater control | SC64 | 30A fuse | gn | green |
| | | SC45 | 15A fuse | or | orange |
| K1 | Pulse relay | J255 | A/C control unit | ws | white |
| F1 | 20A fuse | T16m | 16-pin connector J255 | br | brown |
| F2 | 30A fuse | T20a | 20-pin connector J255 | gr | grey |
| F3 | 1A fuse | V2 | Fan motor | | |
| IPCU | Pulse width modulator | T2bp | 2-pin connector | | |
| | | T17a | 17-pin connector | | |
| **IPCU adjustment values:** | | T21 | 21-pin connector | | |
| Duty cycle: | 40% | | | | |
| Frequency: | 100Hz | | | | |
| Voltage: | 9V | | | **X** | Cutting point |
| Function: | High side | | | Wiring colours may vary. | |

Legend




**1** Fuse holder, passenger compartment
**2** Angle bracket
**3** M6x20 bolt, large diameter washer [2x], flanged nut, existing hole

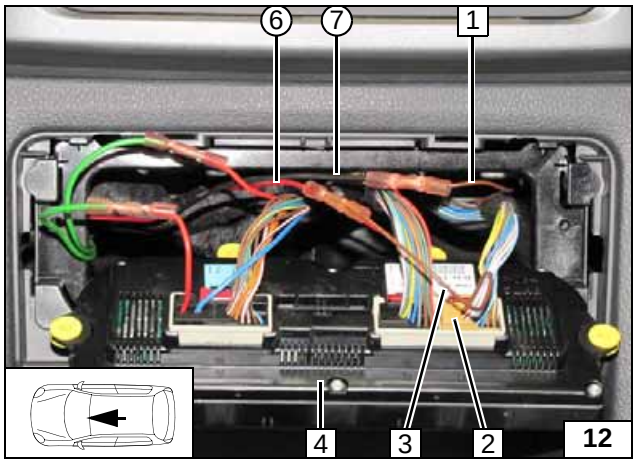
**Mounting fuse holder in passenger compartment**




Connect the wiring harness of the fuse holder in passenger compartment **1** to the wiring harness of heater **2** according to the wiring diagram, with same colour wires connected to each other. Connection to OBD connector **3** terminal 15.
Produce connections as shown in wiring diagram.

**4** Blue/black(bl/sw) wire from OBD connector Pin 1
④ Yellow (ge) wire of K1/15

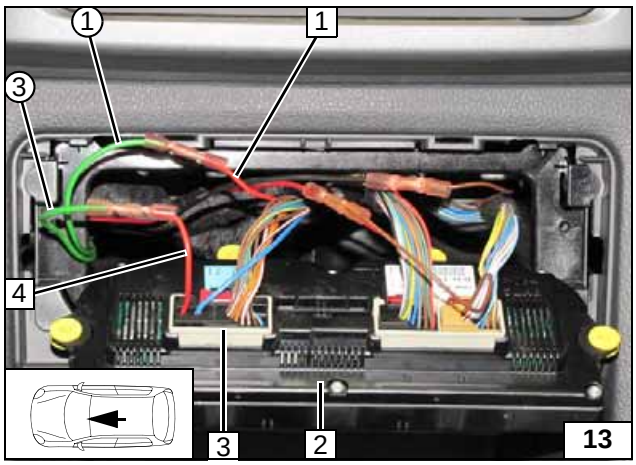
**Connecting wiring harnesses and wires**




Connection to 16-pin T16m connector **2** Pin 15 from A/C control unit **4**. Produce connections as shown in wiring diagram.

**1** Brown/black(br/sw) wire from J126 connector T4ak Pin 3
**3** Brown/black (br/sw) wire of 16-pin connector T16m Pin 15
⑥ Red (rt) wire of IPCU/E
⑦ Black (sw) wire of IPCU/A

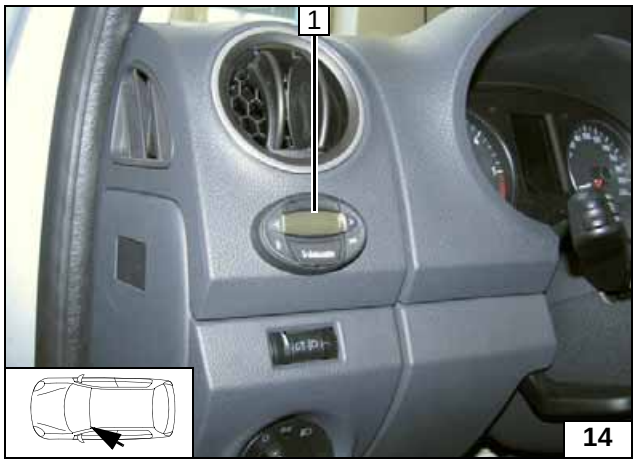
**Connecting A/C control unit**




Connection to 20-pin T20a connector **3** Pin 20 from A/C control unit **2**. Produce connections as shown in wiring diagram.

**1** Red/grey (rt/gr) wire from fuse SC45
**4** Red/grey (rt/gr) wire from 20-pin connector T20a Pin 20
① Green (gn/ws) wire of K1/87z
③ Green (gn) wire of K1/87a

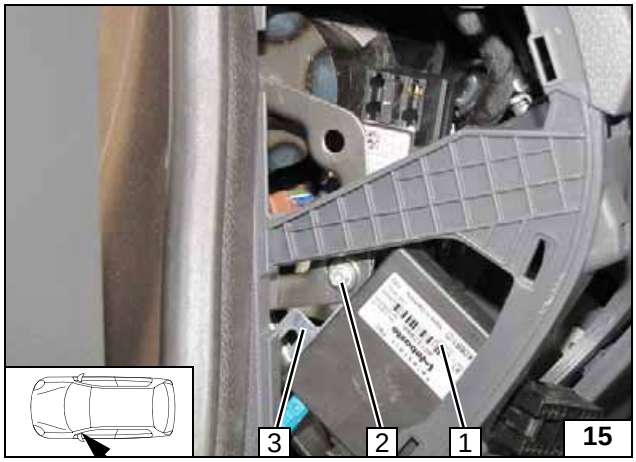
**Connecting A/C control unit**




## Digital Timer

**1** Digital timer

**Mounting digital timer**

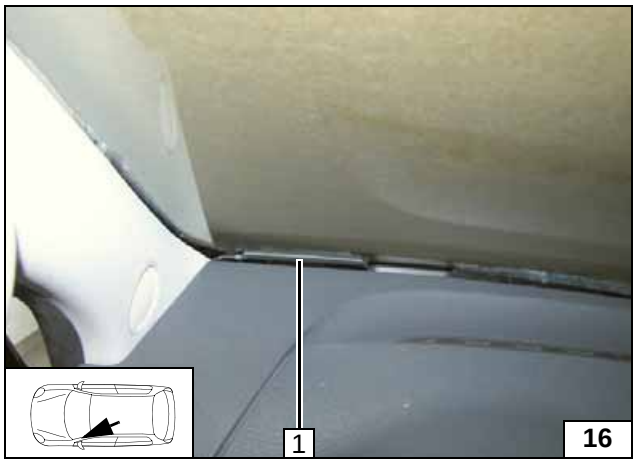



## Remote Option (Telestart)

Fasten bracket **3** on M5x16 bolt **2**.

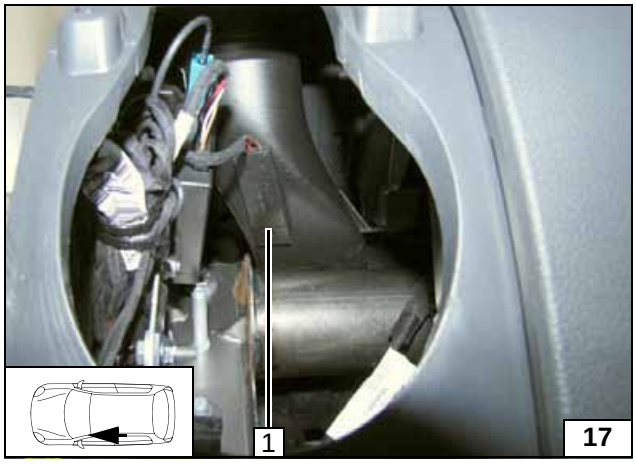
**1** Receiver

**Mounting receiver**




**1** Antenna

**Mounting antenna**




**Temperature sensor T100 HTM**

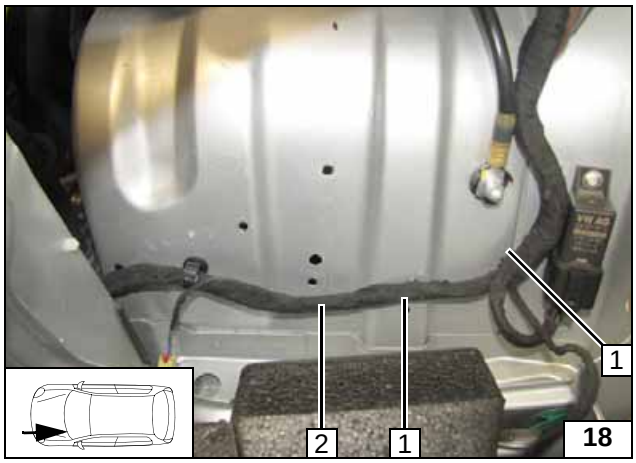
Fasten temperature sensor **1** with adhesive tape.

**Mounting temperature sensor**

## Preparing Installation Location

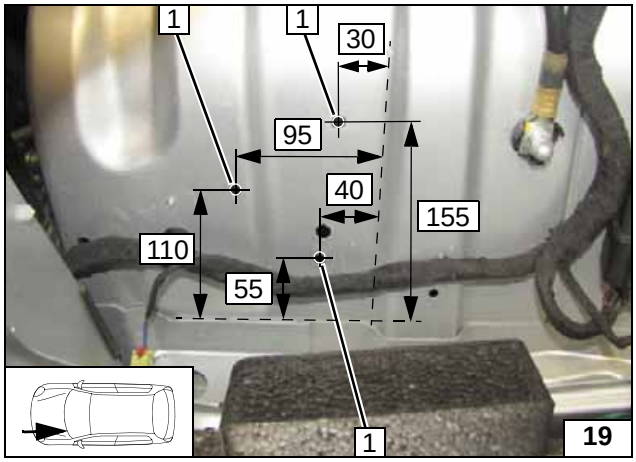
Loosen original vehicle wiring harness **2** on position **1** [2x] and retaining clip and discard.

**Loosening wiring harness**




**1** 7.0 mm dia. hole [3x]

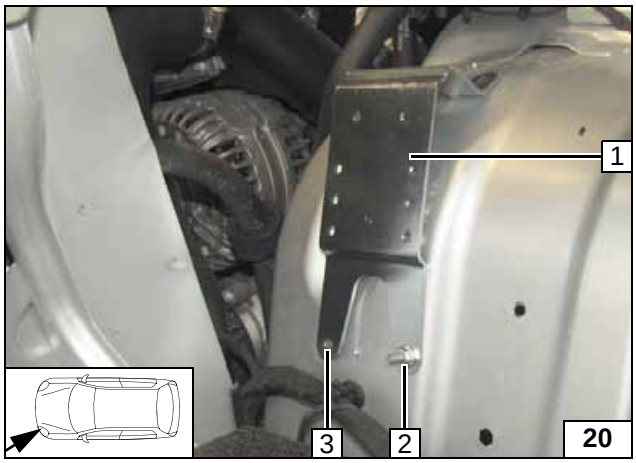
**Holes in wheel well**




Bend bracket **1** according to the template, loosely install and align vertically.

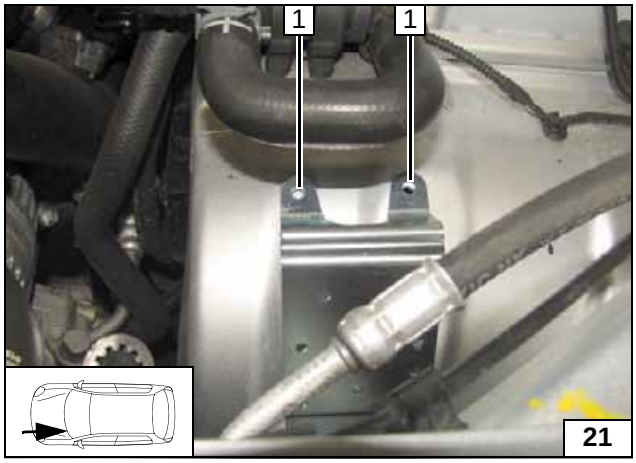
**2** M6x20 bolt, flanged nut
**3** Copy hole pattern, 7 mm dia. hole

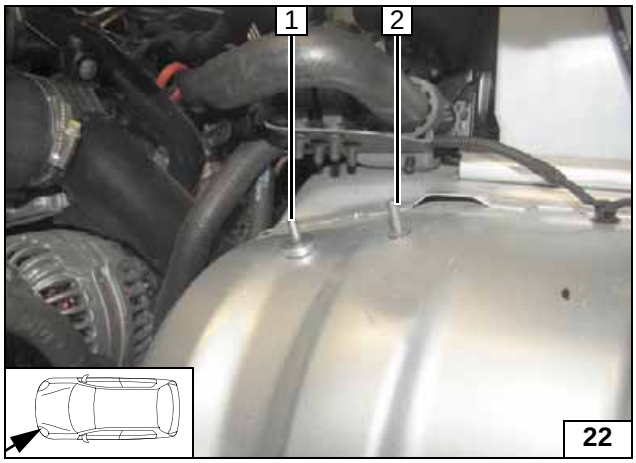
**Copying hole pattern**




**1** Copy hole pattern, 7 mm dia. hole [2x]

**Preparing installation location**

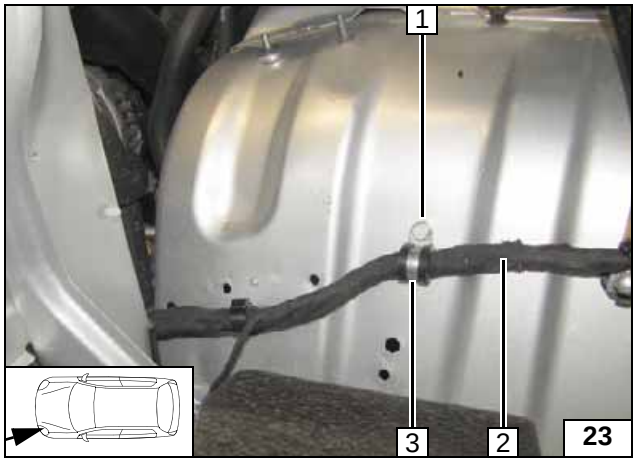





Remove bracket.

**1** M6x20 bolt, 5 mm shim, pin lock
**2** M6x20 bolt, pin lock

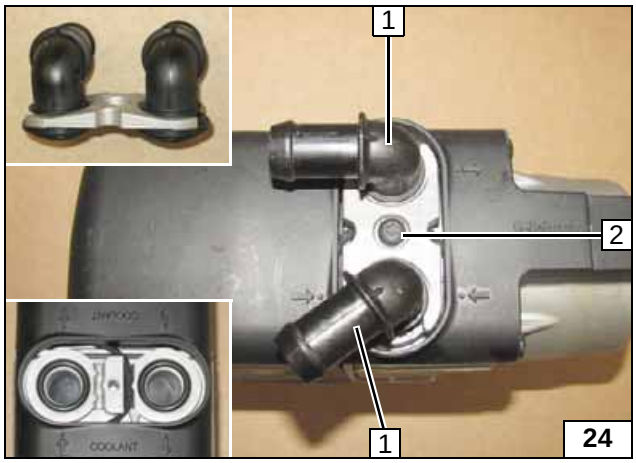
**Inserting bolts in wheel well**




**1** M6x20 bolt, flanged nut
**2** Original vehicle wiring harness
**3** 18 mm dia. rubber-coated p-clamp

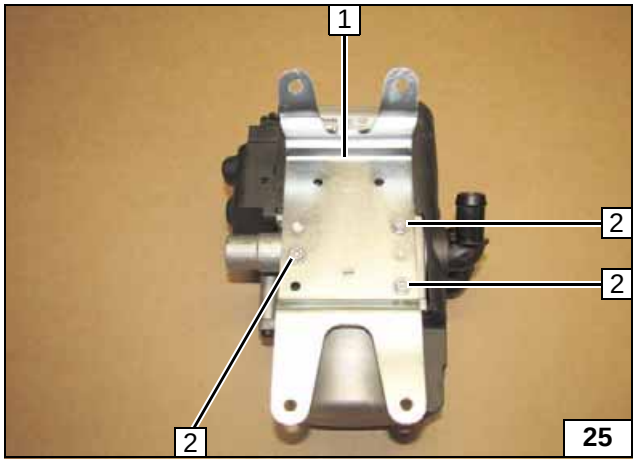
**Fastening original vehicle wiring harness**

## Preparing Heater




**1** Water connection piece, sealing ring [2x each]
**2** 5x15mm self-tapping bolt, retaining plate of water connection piece

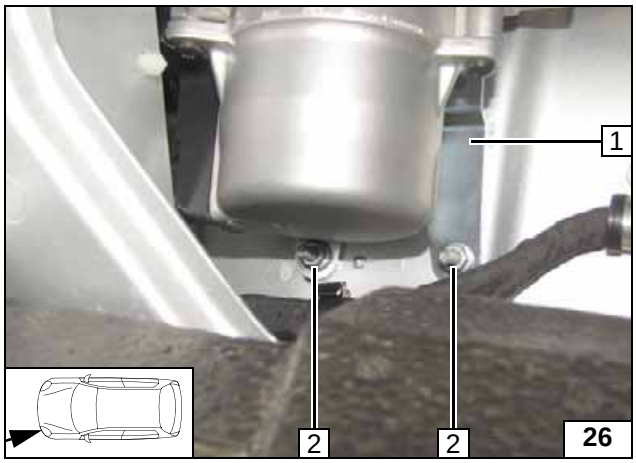
**Mounting water connection pieces**




**1** Bracket
**2** 5x13 self-tapping bolt [3x]

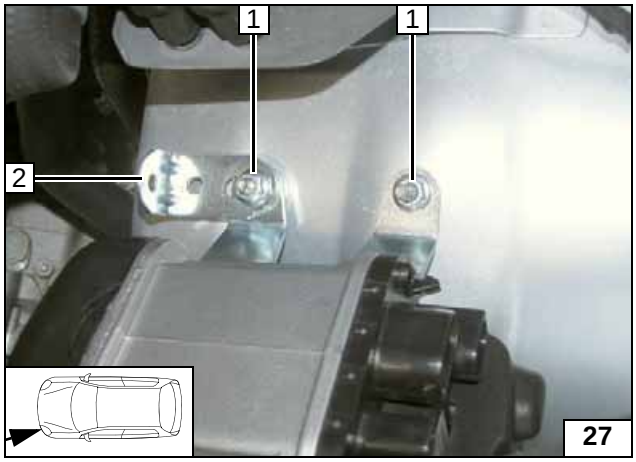
**Installing bracket**

## Installing Heater



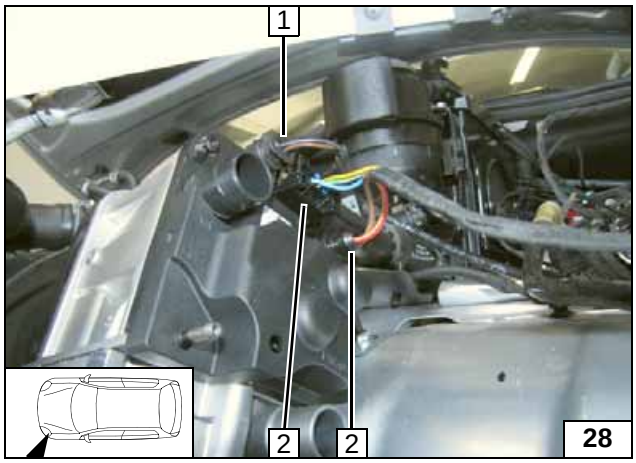

**1** Bracket
**2** M6x20 bolt, flanged nut [2x each]

**Mounting heater**




**1** M6 flanged nut [2x]
**2** Angle bracket

**Mounting heater**



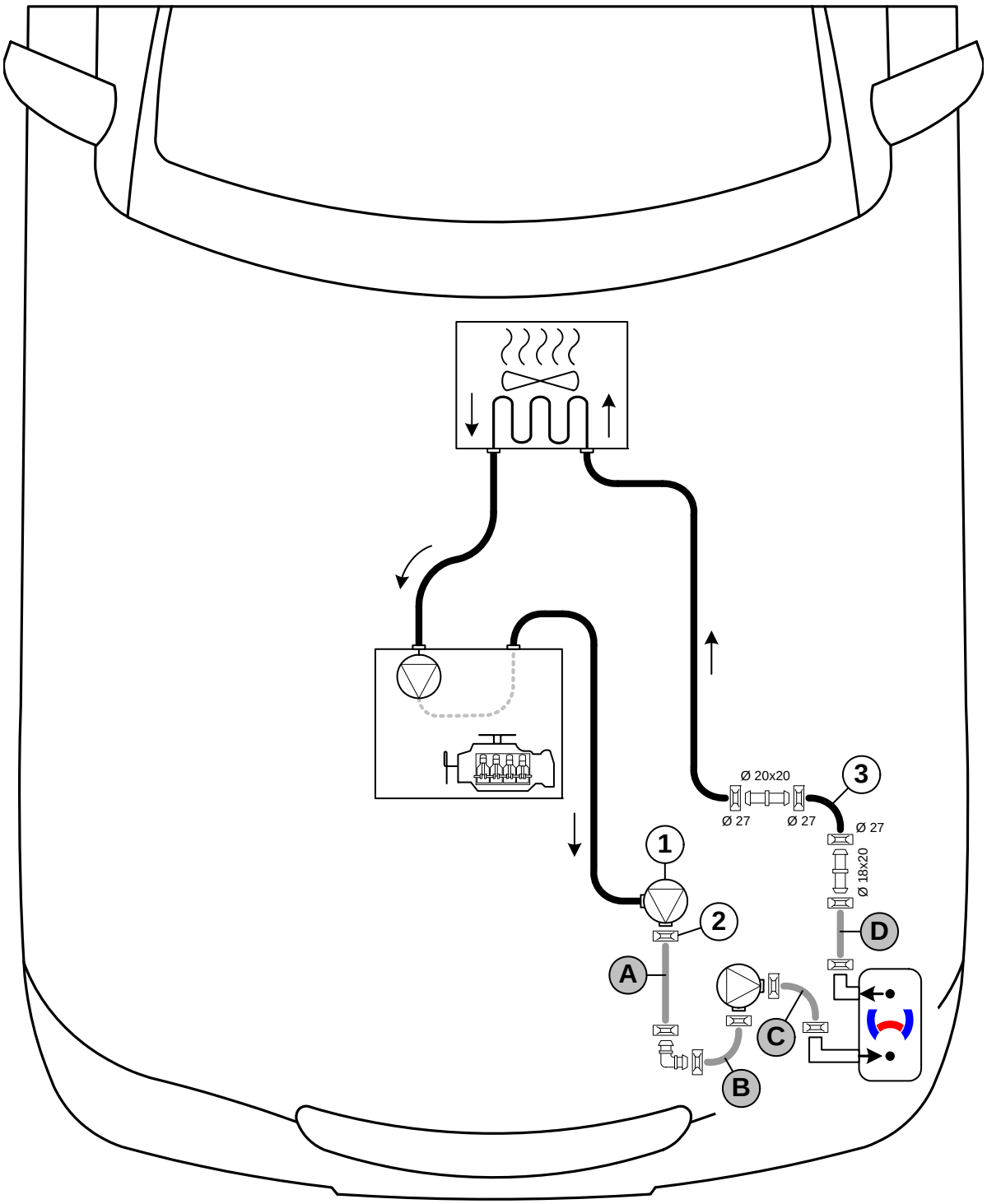

**1** Wiring harness of circulating pump
**2** Wiring harness of heater [2x]

**Connecting wiring harnesses**

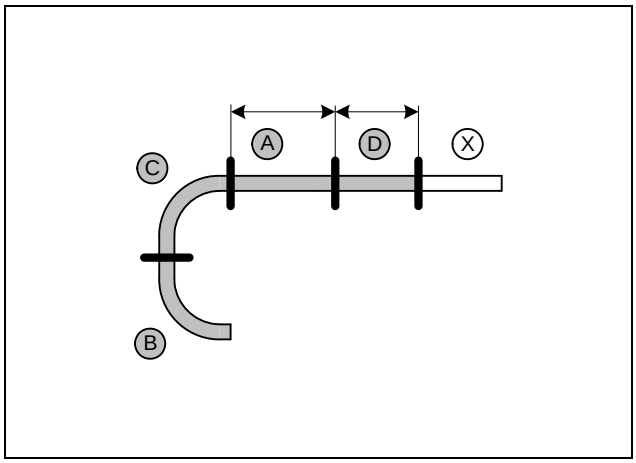
## Coolant Circuit

**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 installation diagram**



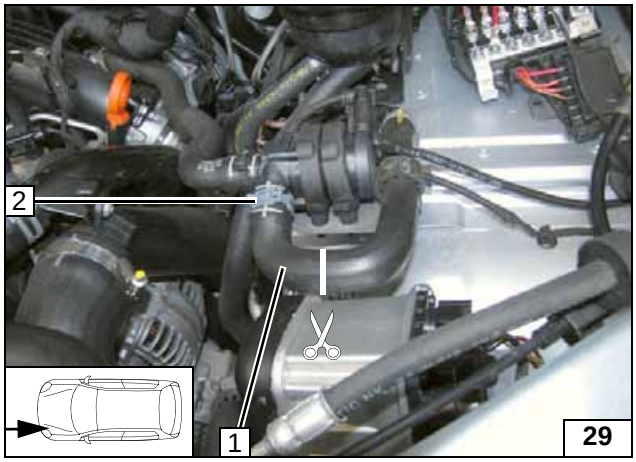

All spring clips without a specific designation = 25mm dia. **1** = Original vehicle circulating pump. **2** = Original vehicle spring clip . **3** = Original vehicle hose.
All connecting pipes = 18x18 mm dia.




Discard section **X**.

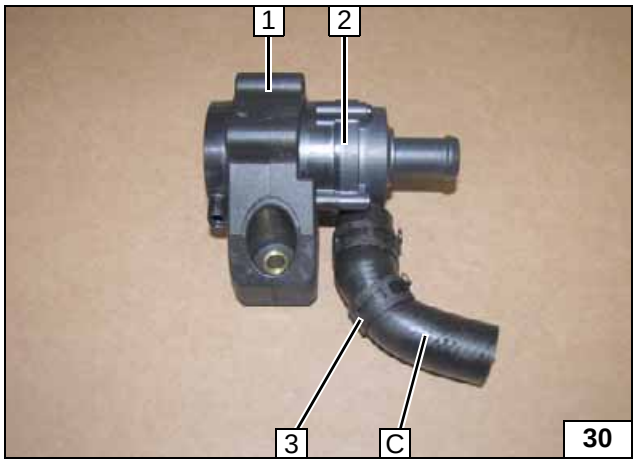
**A** = 130
**D** = 70

**Cutting hoses to length**



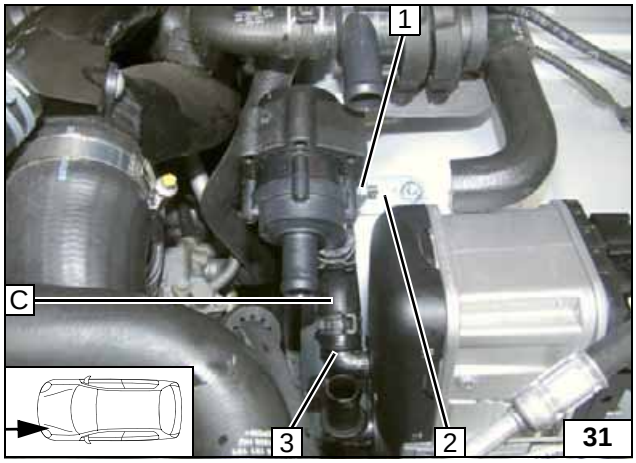

Remove hose section **1** of original vehicle circulating pump / heat exchanger inlet. Hose section **1** and original vehicle spring clip **2** will be re-used.

**Cutting point**



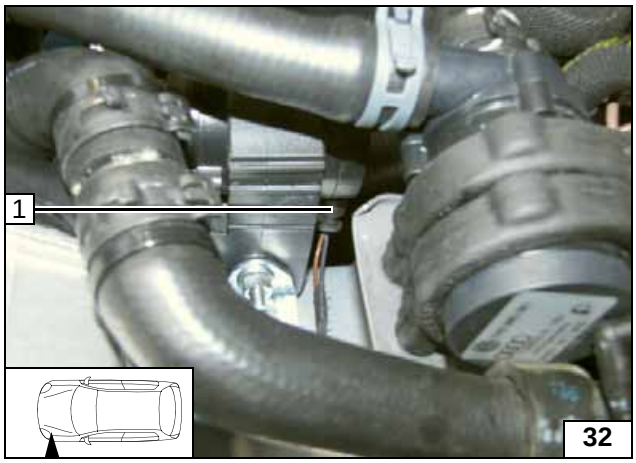

**1** Mounting of circulating pump
**2** Circulating pump
**3** Slide on 25 mm dia. spring clip

**Premounting circulating pump**



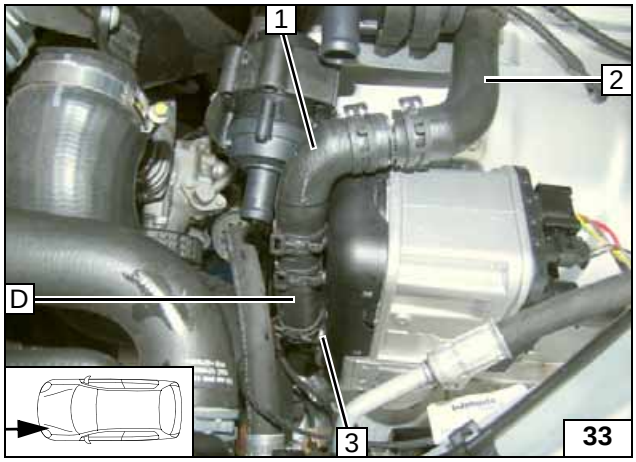

**1** M6x25 bolt, flanged nut
**2** Angle bracket
**3** Connection piece of heater inlet

**Installing circulating pump**



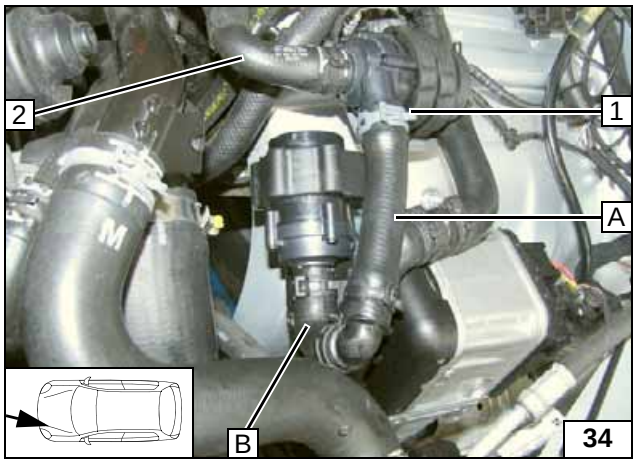

**1** Connected wiring harness of circulating pump

**Connecting the circulating pump**




**1** Original vehicle hose twisted
**2** Hose on heat exchanger inlet
**3** Connection piece of heater outlet

**Connecting heater outlet**




Ensure sufficient distance from neighbouring components.

**1** Original vehicle spring clip
**2** Hose of engine outlet / original vehicle circulating pump

**Connecting engine outlet**

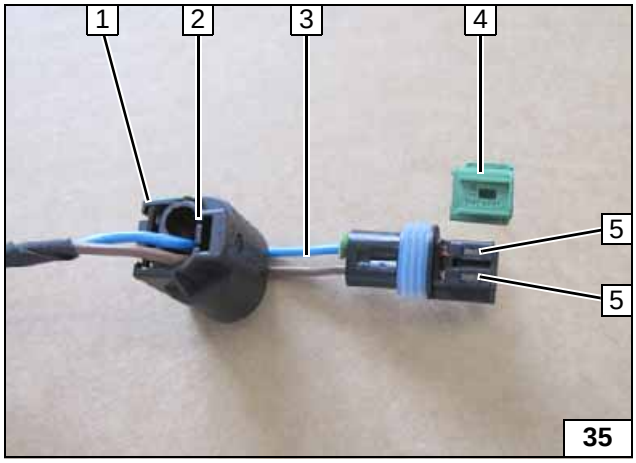
## Fuel

**CAUTION!**
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.
Mount the fuel line and wiring harness with rub protection on sharp edges.

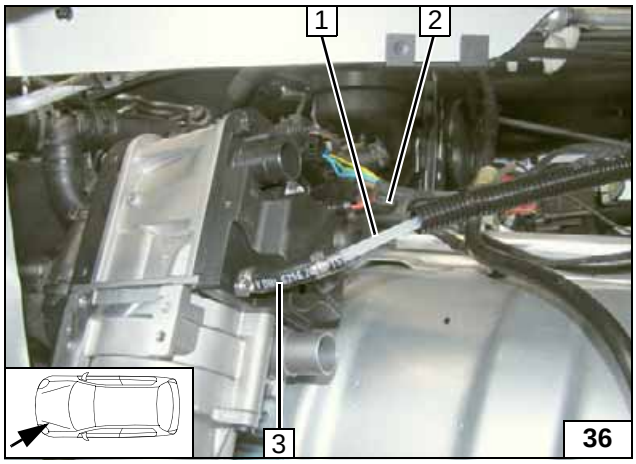
**WARNING!**
The fuel line and wiring harness are routed to the metering pump as shown in the wiring harness routing diagram.




**Dismantling connector**

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

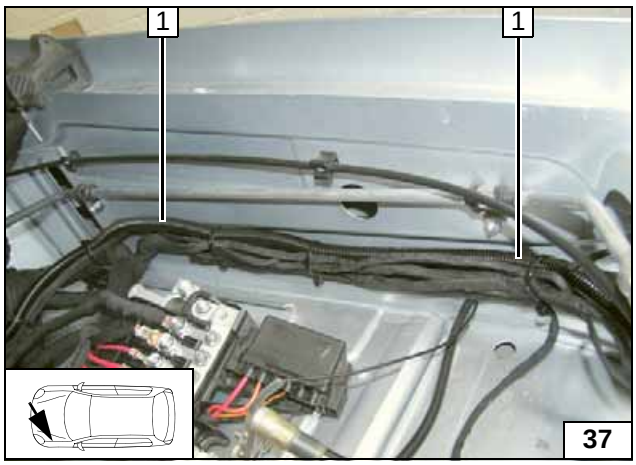
**1** Connector housing
**2** Lock
**3** Blue / brown (bl / br) wires
**4** Coding
**5** Timer lock




**Connecting heater**

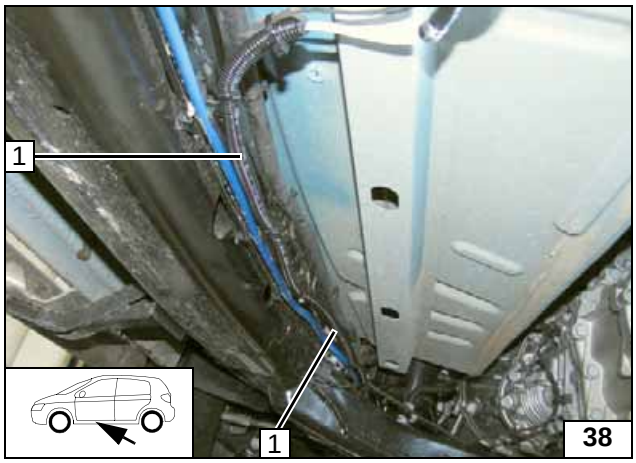
Insert fuel line **1** and wiring harness of metering pump **2** in corrugated tube 2100 and install in the engine compartment.

**3** Hose section, 10 mm dia. clamp [2x]



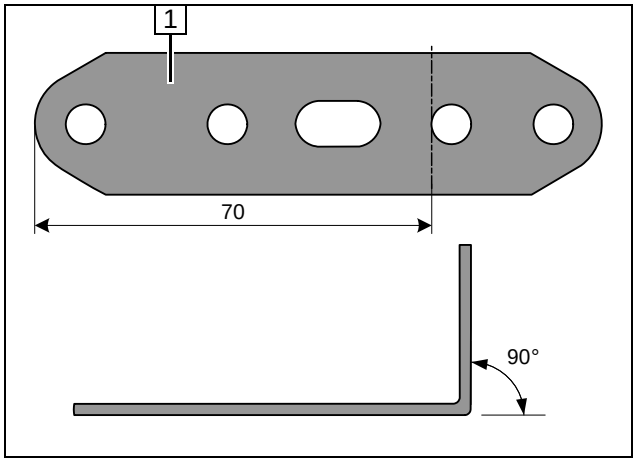

**Routing lines**

Route fuel line and wiring harness of metering pump in corrugated tube **1** to the firewall and further to the original vehicle lines of the underbody. Attach corrugated tube **1** with wiring harness of heater and earth wire on original vehicle wiring harness with cable ties.



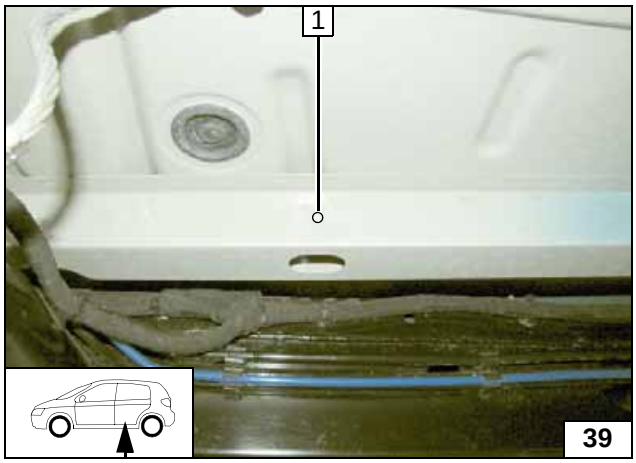

Route fuel line and wiring harness of metering pump in corrugated tube **1** to original vehicle lines at the installation location of the metering pump.

**Routing lines**



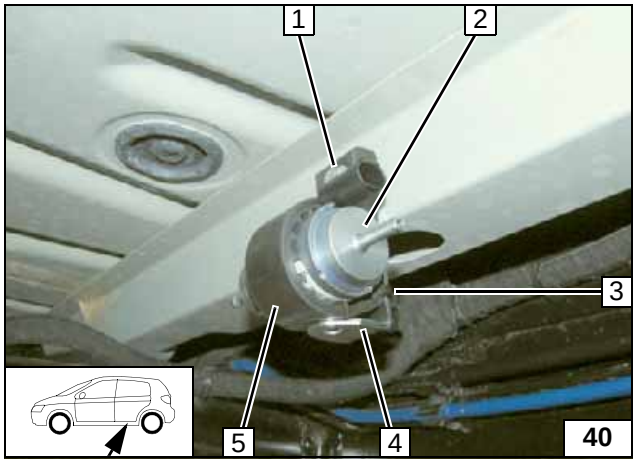

**1** Perforated bracket

**Angling down perforated bracket**



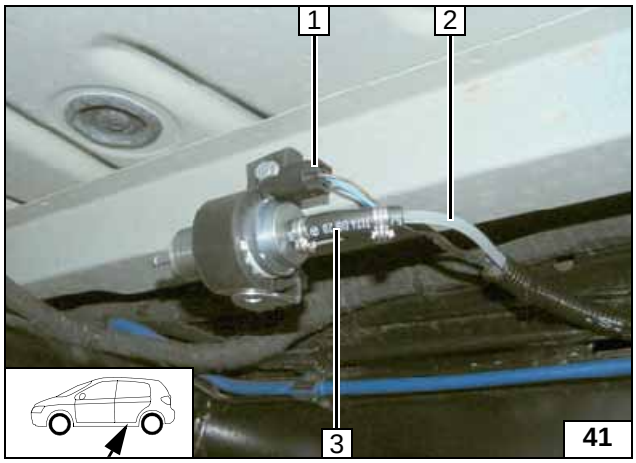

**1** 7 mm dia. hole

**Hole in frame side member**



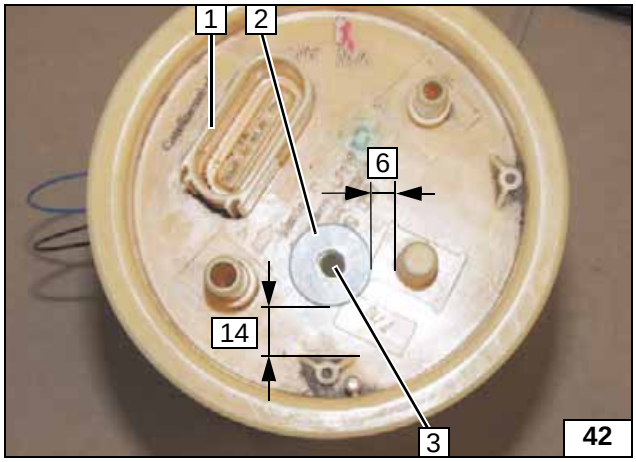

**1** M6x25 bolt, flanged nut
**2** Metering pump
**3** Cable tie
**4** Perforated bracket
**5** Mounting of metering pump

**Mounting metering pump**




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

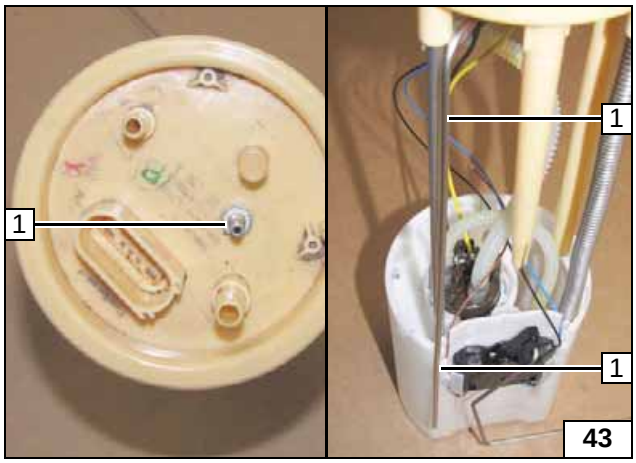
**Connecting metering pump**




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

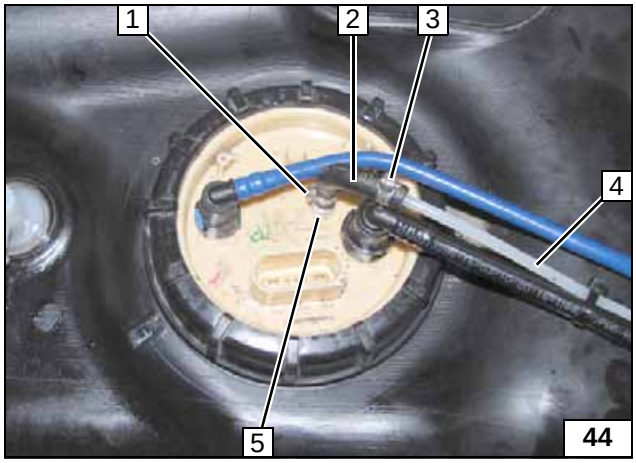
**2** Washer outer dia = 21.6mm
**3** Copy hole pattern, 6 mm dia. hole

**Fuel extraction**




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

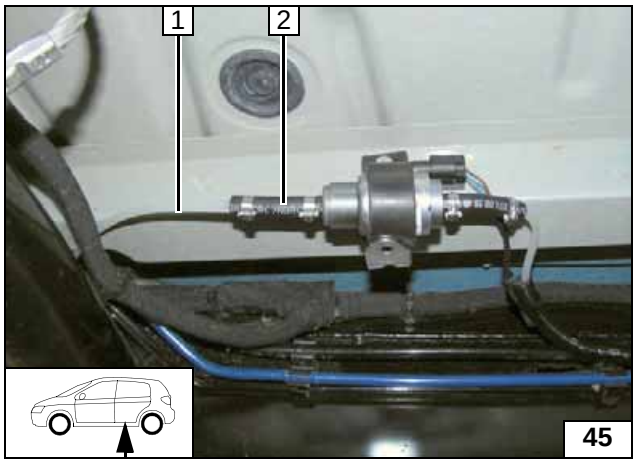
**Installing fuel standpipe**




Install fuel-tank sending unit according to manufacturer's specifications.

**1** 9 mm dia. clamp
**2** 90° moulded hose
**3** 10 mm dia. clamp
**4** Fuel line
**5** Fuel standpipe

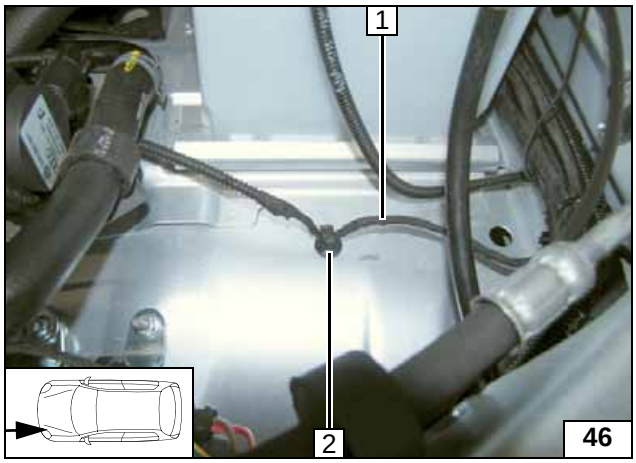
**Connecting fuel line**




Install tank according to manufacturer's specifications. Check the position of the components; adjust if necessary. Check that they have freedom of movement.

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

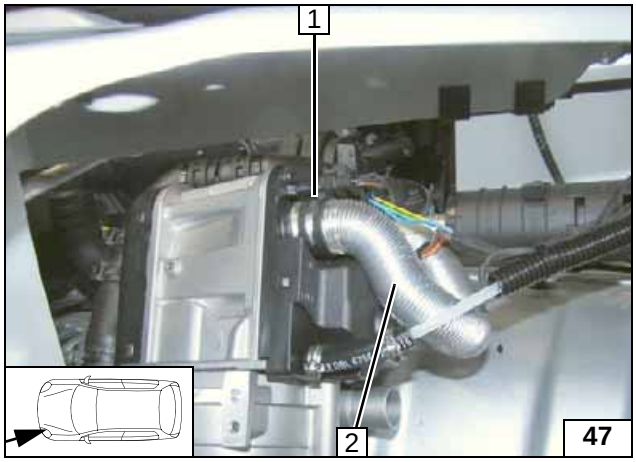
**Connecting metering pump**




## Combustion Air

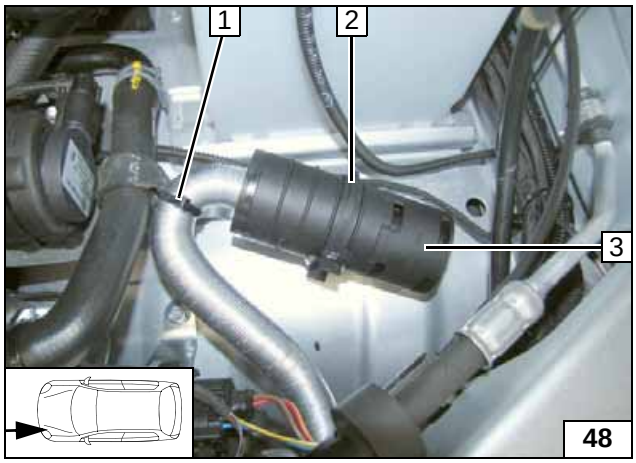
Loosen original vehicle wiring harness **1** on position **2** and retaining clip **2** and discard.

**Mounting combustion air pipe**



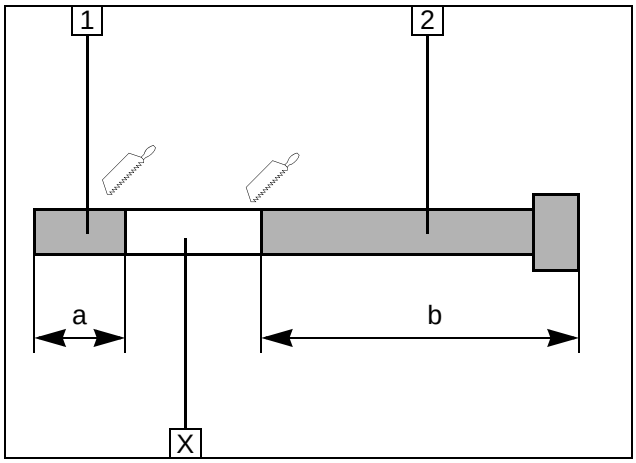

**1** 25 mm dia. clamp
**2** Combustion air pipe

**Mounting combustion air pipe**




**1** Cable tie
**2** Retaining clip in hole
**3** Silencer

**Installing silencer**

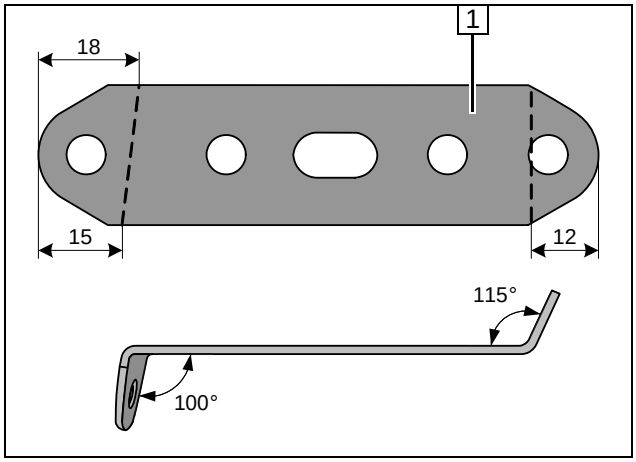



## Exhaust Gas

Discard section **X**.

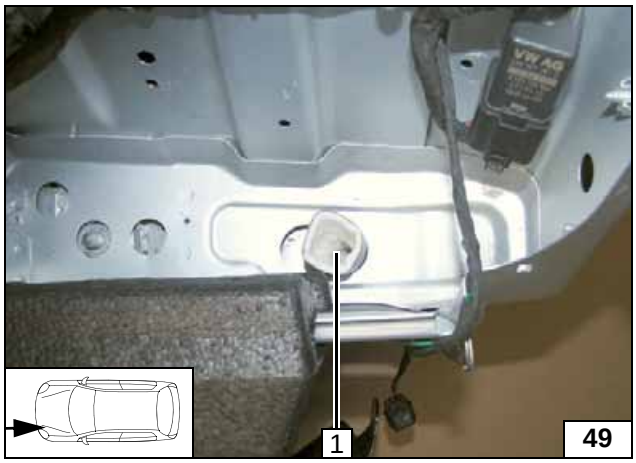
**1** Exhaust pipe
a = 70
**2** Exhaust end section
b = 360

**Preparing exhaust pipe**



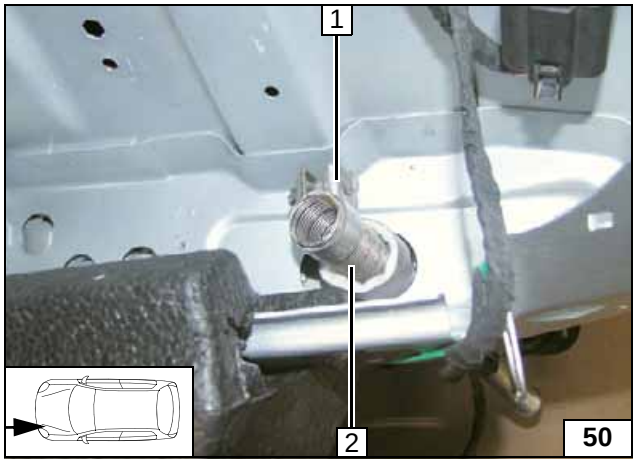

**1** Perforated bracket

**Angling down perforated bracket**



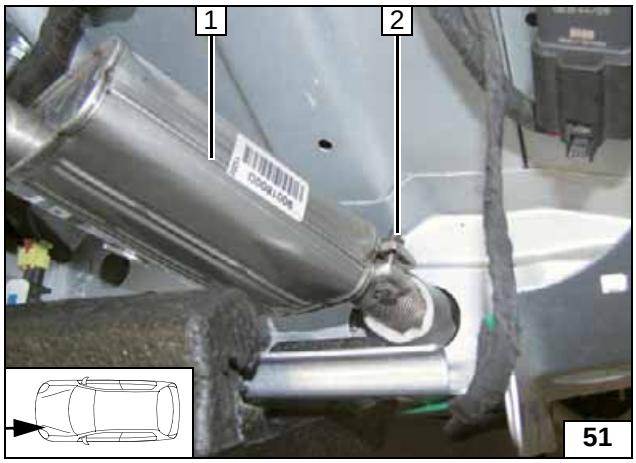

**1** Exhaust-gas insulation in existing hole

**Installing exhaust-gas insulation**



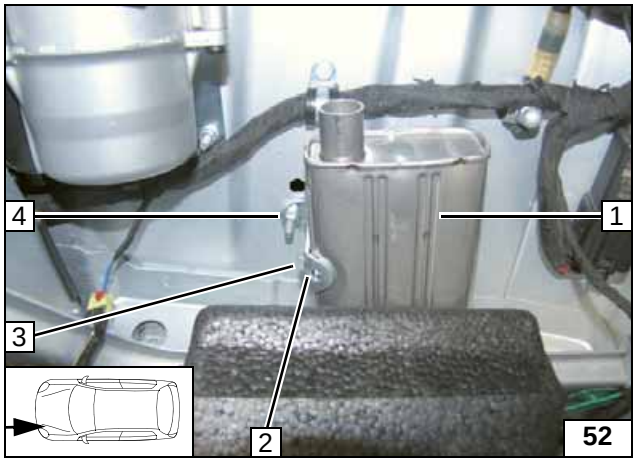

**1** Hose clamp loosely attached
**2** Exhaust end section in exhaust-gas insulation

**Inserting exhaust end section**



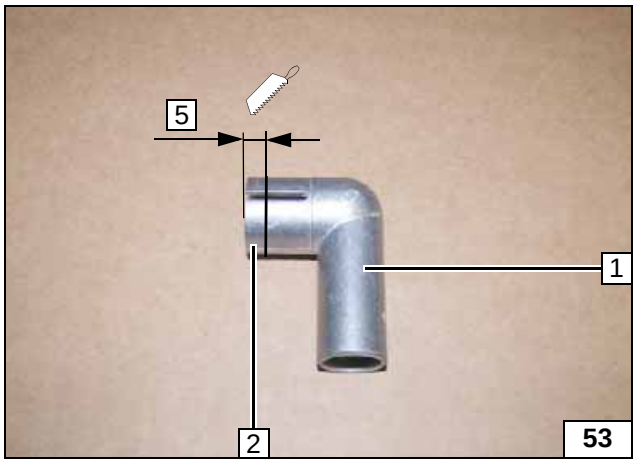

**1** Silencer
**2** Tighten hose clamp

**Installing silencer**



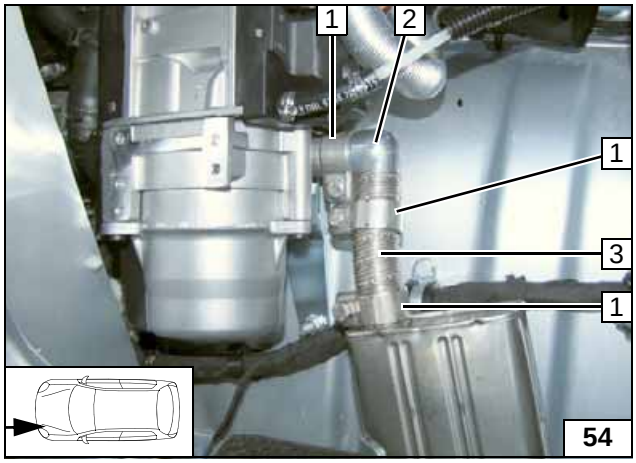

**1** Silencer
**2** Perforated bracket
**3** M6x16 bolt, spring lockwasher
**4** M6x20 bolt, flanged nut, existing hole

**Installing silencer**




**1** Exhaust manifold
**2** Discard section

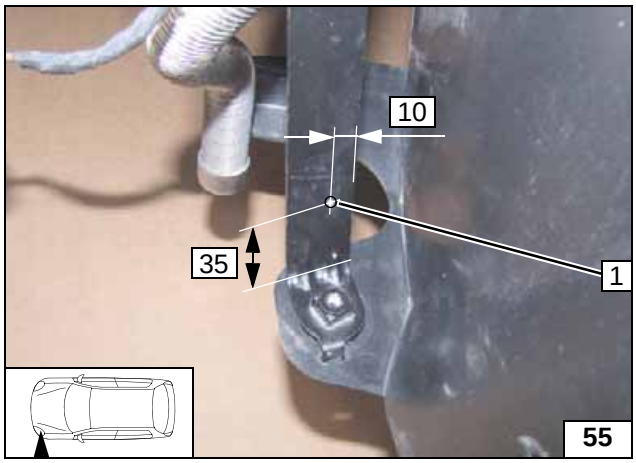
**Cutting exhaust manifold to length**




Ensure sufficient distance to wiring harness.

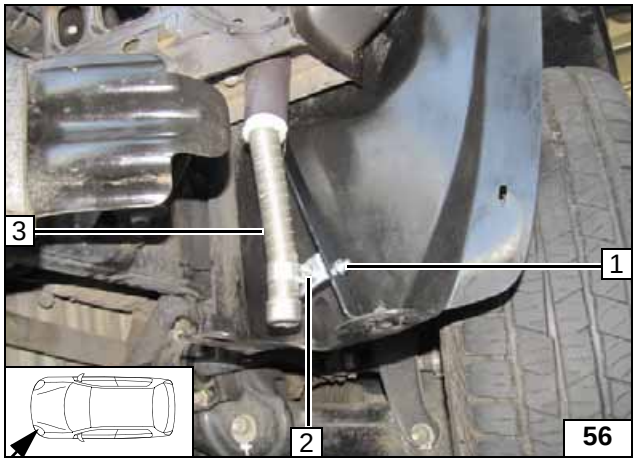
**1** Hose clamp [3x]
**2** Exhaust manifold
**3** Exhaust pipe

**Mounting exhaust pipe**



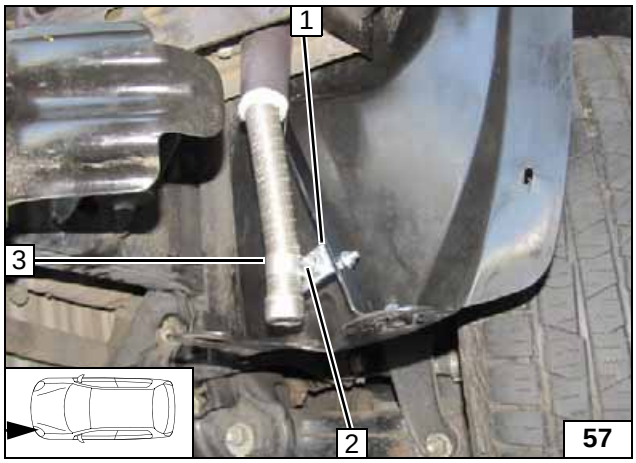

**1** 7 mm dia. hole

**Hole in strut**




**1** M6x12 bolt, flanged nut
**2** Angle bracket
**3** Exhaust end section

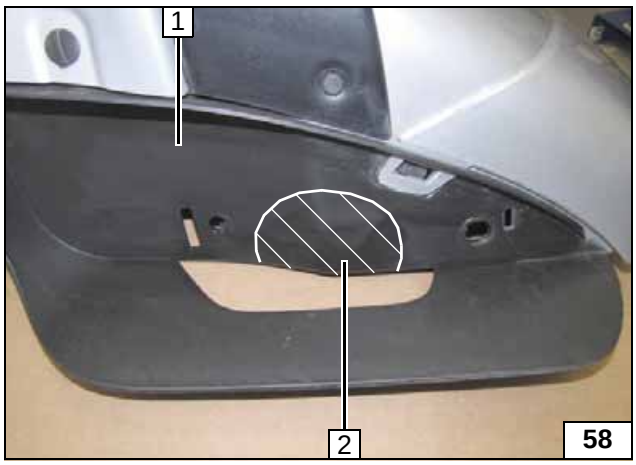
**Fastening exhaust end section**




Ensure sufficient distance from neighbouring components.

**1** Angle bracket
**2** M6x20 bolt, flanged nut
**3** P-clamp

**Fastening exhaust end section**



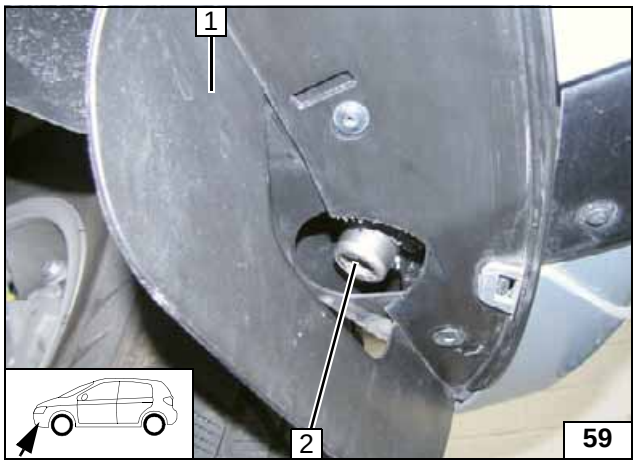

**1** Bumper
**2** Discard section

**Cutting out bumper**

## 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 lines.
Only use manufacturer-approved coolant. Spray the heater components with anti-corrosion wax (Tectyl 100K, Order No. 111329).

- **Connect the battery.**
- **Fill and bleed the coolant circuit according to the vehicle manufacturer's specifications.**
- **Set digital timer, teach Telestart transmitter.**
- **Make settings on A/C control panel according to the "Operating Instructions for End Customer".**
- **Place the "Switch off parking heater before refuelling" signboard near the filler neck.**
- **See installation instructions for initial start-up and function test.**

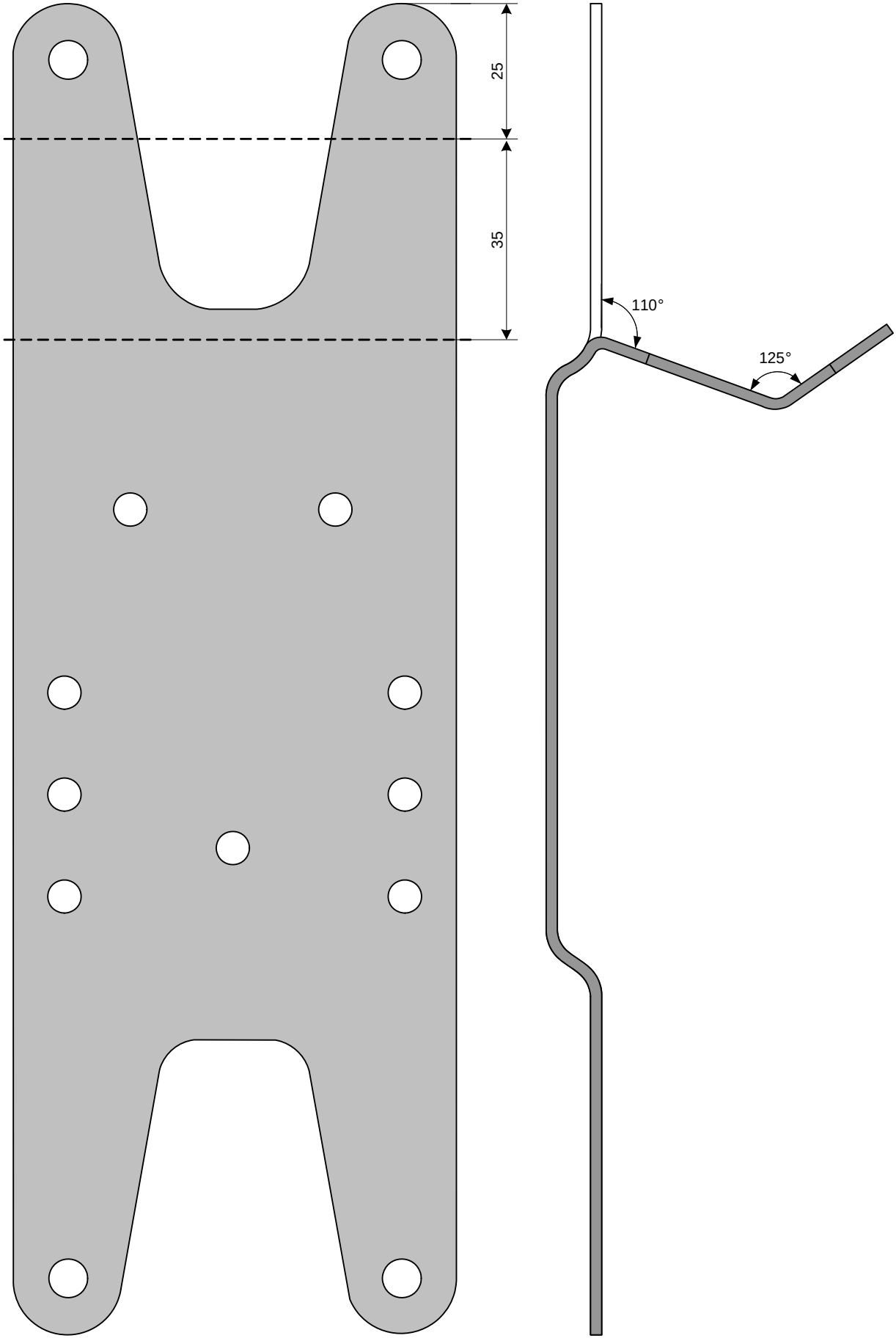



Install bumper **1**. Align exhaust end section **2** to the back and flush on the bumper **1**. Ensure sufficient distance from neighbouring components, especially from the exhaust system to the bumper, correct if necessary.

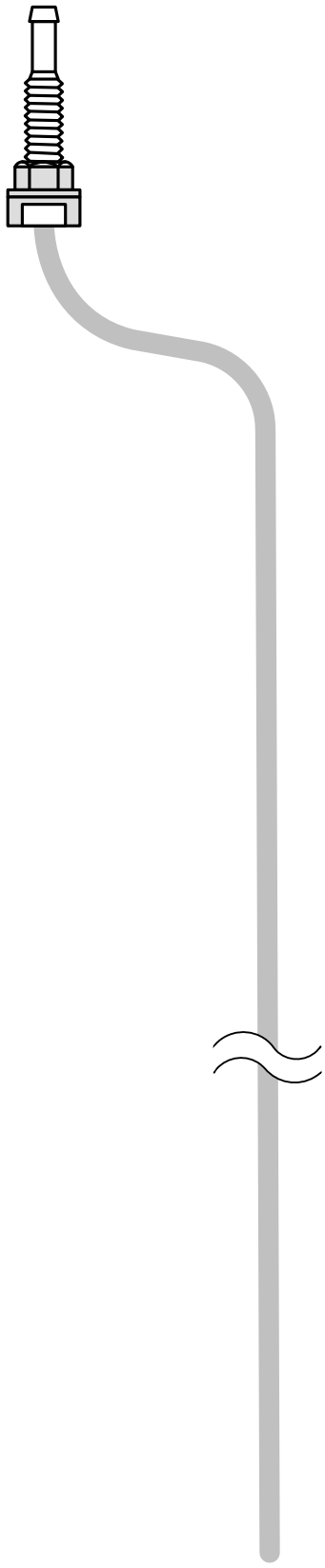
**Aligning exhaust end section**

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

## Template for Bracket



## Template for Fuel Standpipe



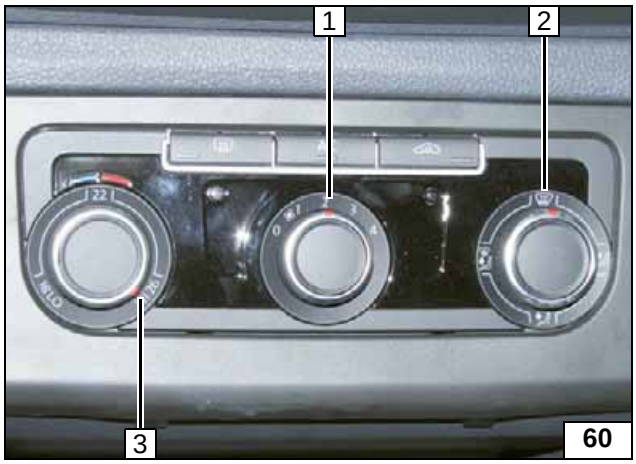
## Operating Instructions for Manual Air-Conditioning

Please remove this page in case of manual air-conditioning and add it 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.

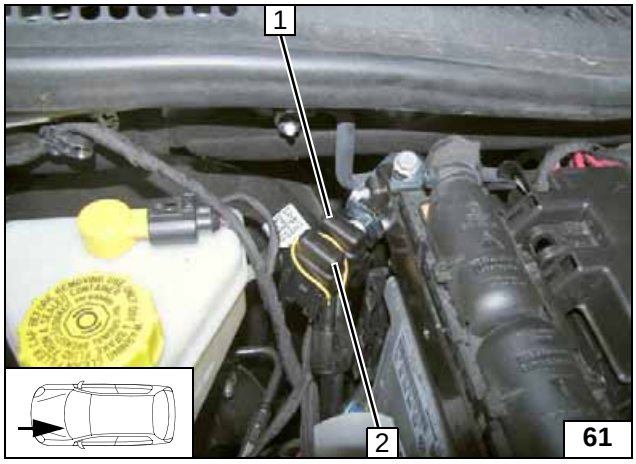
Passenger compartment monitoring, if installed, must be deactivated in addition to the vehicle settings for the heating operation.
For instructions on deactivation, please refer to the operating instructions of the vehicle.

Before parking the vehicle, make the following settings:



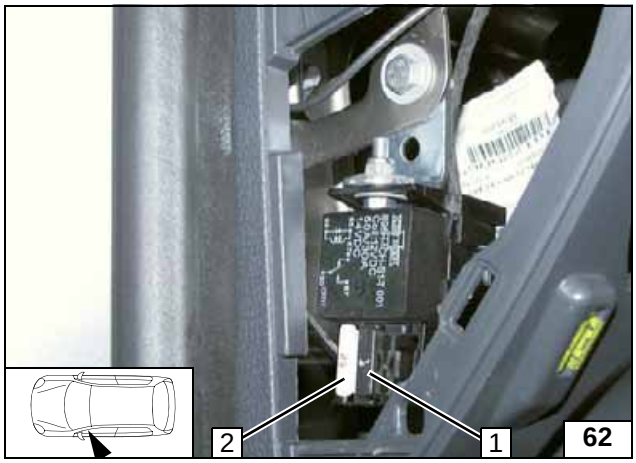

**1** Set fan to level "1", or max. "2"
**2** Air outlet to windscreen
**3** Set temperature to "HI"

**A/C control panel**




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

**Fuses of engine compartment**




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

**Fuses of passenger compartment**

## Operating Instructions for Automatic Air-Conditioning

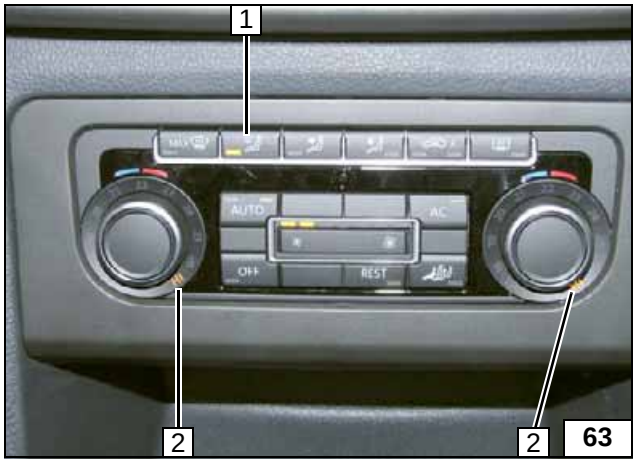
Please remove this page in case of automatic air-conditioning and add it to the vehicle operating instructions.

**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.

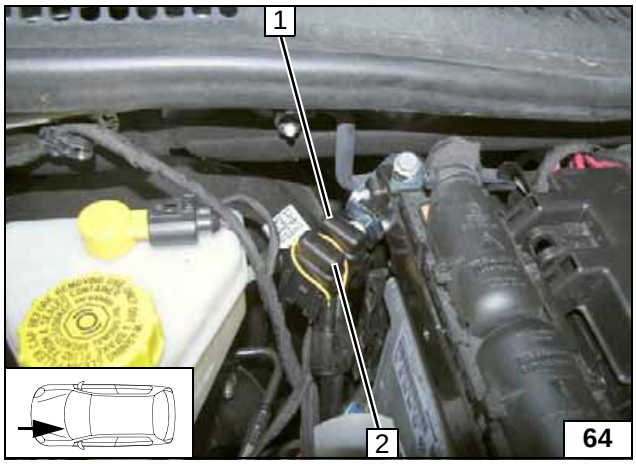
**Heater control starts with "22°C" and in "automatic mode" each time the ignition is turned on.**
Individual settings have to be adjusted manually.

Before parking the vehicle, make the following settings:



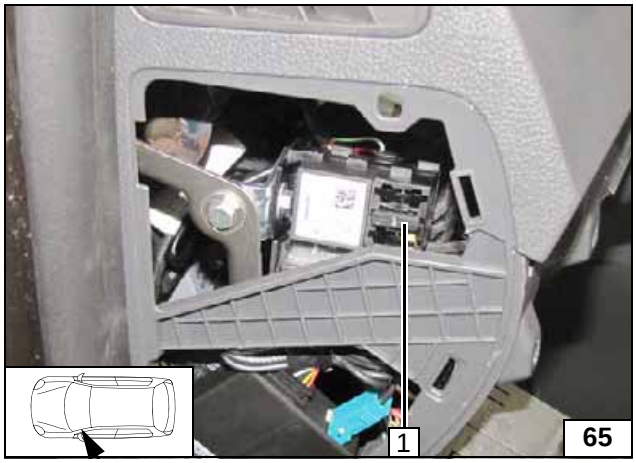

**1** Air outlet to windscreen
**2** Set temperature on both sides to "HI"

**A/C control panel**




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

**Fuses of engine compartment**




**1** 1A fuse F3 of heater control

**Fuses of passenger compartment**