

# K Upgrade documentation

## for water heater Thermo Top C

VW T5 / VW Amarok

Left-hand drive vehicle

Manufacturer	Model	Type	Model year	EG-BE-No. / ABE
VW	T5	7H...	from 2004	e1* 2001/116* 0218*...
VW	T5	7H...	from 2004	e1* 2001/116* 0220*...
VW	T5	7JO	from 2004	e1* 2007/46* 0130*...

Manufacturer	Model	Type	Model year	EG-BE-No. / ABE
VW	Amarok	2H	from 2010	e1* 2007/46* 0356*...
VW	Amarok	2HS2	from 2010	e1* 2007/46* 0750*...

Validity	Equipment variants	Model	
		T5	Amarok
Verified equipment variants	Climatronic	x	x
	Vehicles with Webasto TT-C auxiliary heater installed ex-works	x	x

Total installation time	Note
approx. 4 h	

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# 1 List of abbreviations

HG	Heater
MC	MultiControl
OE	Original equipment
UP	Coolant pump
Veh.	Vehicle

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## 2 Installation notes

### 2.1 Information on Validity

This installation documentation applies to vehicles listed on page 1, 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.

### 2.2 Components used

Designation	Order number
Upgrade kit for VW T5 / Amarok diesel Climatronic	9012104E
In case of Telestart, control element, as well as indicator lamp in consultation with end customer	In accordance with price list
When using Telestart T99 only: indicator lamp (push button)	1319906_
In case of MultiControl CAR installation: MultiControl installation frame	9030077_

### 2.3 Notes on installation, in coordination with the end customer

- ▶ Arrange for the vehicle to be delivered with the fuel level **above** reserve.
- ▶ The installation location of the following elements should be chosen in coordination with the end customer:
  - Push button for the Telestart option
  - the MultiControl CAR option

### 2.4 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.

## 3 About this document

### 3.1 Purpose of the document

This installation documentation is part of the product and contains all the information required to ensure professional vehicle specific upgrade of the:

Thermo Top C Heater

### 3.2 Warranty and liability

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 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.

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 start-up 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.

#### 3.2.1 Statutory regulations governing installation

The Thermo Top Evo heater has been type-tested and approved in accordance with ECE-R 10 (EMC) and ECE-R 122 (heater). 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.

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

## 3.3 Safety

### Qualifications of installation personnel

The installation personnel must have the following qualifications:

- Successful completion of Webasto training
- Corresponding qualification for working on technical systems

### 3.3.1 Safety information on installation

#### Danger posed by live parts

- ▶ Prior to installation, disconnect the vehicle from the voltage supply.
- ▶ Make sure the electrical system is earthed correctly.
- ▶ Always comply with legal requirements.
- ▶ Observe data on type label.

#### Danger of fire and leaking toxic gases due to improper installation

- ▶ Vehicle parts in the vicinity of the heater must be protected against excessive heating by the following measures:
  - ⇒ Maintain minimum safety distances.
  - ⇒ Ensure adequate ventilation.
  - ⇒ Use fire-resistant materials or heat shields.

#### Danger due to sharp edges

- Lacerations
- Short circuit due to electrical wire damage
- ▶ Fit protectors on sharp edges.

### 3.4 Using this document

Before upgrading and operating the heater, read this installation documentation, the operating instructions and supplementary sheets provided.

#### 3.4.1 Explanatory Notes on the Document

There is an identification mark near the respective work step to allow you to quickly allocate the other applicable documents to the Webasto components to be installed:

Generally valid Webasto documentation	
Vehicle-specific installation documentation	
Vehicle-specific installation documentation of the cold start kit	
Webasto Comfort A/C control	
Webasto Standard A/C control	
Tank extracting device (e.g. FuelFix)	
Exhaust end fastener (EFIX)	
Combustion air intake silencer	
Spacer bracket (ASH)	

#### 3.4.2 Use of symbols



#### DANGER

Type and source of the risk

Consequences: Failure to follow the instructions can result in death.

► Actions to protect yourself against risks.



#### WARNING

Type and source of the risk

Consequences: Failure to follow the instructions can lead to serious or even fatal injuries.

► Actions to protect yourself against risks.



#### CAUTION

Type and source of the risk

Consequences: Failure to follow the instructions can lead to minor injuries.

► Actions to protect yourself against risks.



Type and source of the risk

Consequences: Failure to follow the instructions can lead to material damage.

► Actions to protect yourself against risks.



Reference to the vehicle manufacturer's specific documents.



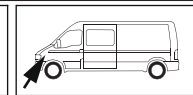
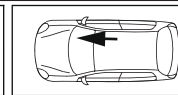
Note on a special technical feature

#### 3.4.3 Work step identification marks

The ongoing work step is indicated on the outside top corner of the page:

Mechanical system	Electrical system	High-voltage	Coolant
Combustion air	Fuel	Exhaust	Software

#### 3.4.4 Orientation aid



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

#### 3.4.5 Use of highlighting

Highlight	Explanation
✓	Action
►	Necessary action
⇒	Result of an action
<b>1</b> / <b>12</b> / <b>a1</b>	Position numbers for the image descriptions
<b>①</b> / <b>⑫</b> / <b>Ⓐ</b>	Position numbers for the image descriptions for electrical wires and components as well as coolant hose sections

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## 4 Technical Information

### Dimension specifications

- All dimensions specified in mm
- Perforated brackets and angles brackets are shown to scale

### Tightening torque specifications

- Tighten bolt connections in accordance with manufacturer's instructions or in accordance with state-of-the-art-technology

### Necessary special tools




- Hose clamping pliers
- Automatic wire stripper 0.2 - 6 mm<sup>2</sup>
- Crimping pliers for cable lugs 0.5 – 10 mm<sup>2</sup>
- Crimping pliers for male connector 0.14 – 6 mm<sup>2</sup>
- Crimping pliers for connector 0.25 – 6 mm<sup>2</sup>
- Torque wrench for 2.0 - 10 Nm
- Release tool for radio-navigation device
- Release tool for radio
- Hooks

## 5 Preparations

### 5.1 Vehicle preparation



Further information can be found in the vehicle manufacturer's technical documentation.

Vehicle area	Components to be removed	Other applicable documents
Engine compartment and body	<ul style="list-style-type: none"> <li>▶ Battery cover, if present</li> <li>▶ Engine design cover, when present</li> <li>▶ Disconnect the battery</li> </ul>  <ul style="list-style-type: none"> <li>▶ Partition wall trim behind the battery</li> </ul>	
Passenger compartment	<ul style="list-style-type: none"> <li>▶ Side instrument panel trim on the driver's side</li> <li>▶ Lower instrument panel trim on the driver's side</li> <li>▶ Detach the speaker cover, top left on the instrument panel (only in case of Telestart)</li> <li>▶ Trim at door on driver's side</li> <li>▶ Uncover the heater and pull off the connector</li> </ul>	







## Legend to wiring diagram



The vehicle connector and component designations are freely chosen by Webasto.  
Wiring colours may vary.

Vehicle components			
Abbreviation	Component	Abbreviation	Component
HG	Heater TT-Z/C (OE)		
X1	6-pin heater connector (OE)		

Webasto components		Wire colours	
Abbreviation	Component	Abbreviation	Colour
A	4-pin male plug for adapter wiring harness (ESVT)	rt	red
F1	Fuse 1A	br	brown
MC/TA	4-pin female plug for MultiControl or push button (ESVT)	ge	yellow
St1	4-pin connector of control element		
St2	6-pin connector (will not be used)		
TC	4-pin female plug for ThermoConnect adapter wiring harness (ESVT)		
T99	6-pin connector for Telestart T99 receiver (ESVT)		



## 7 Electrical system - VW T5

### 7.1 Installation overview - VW T5

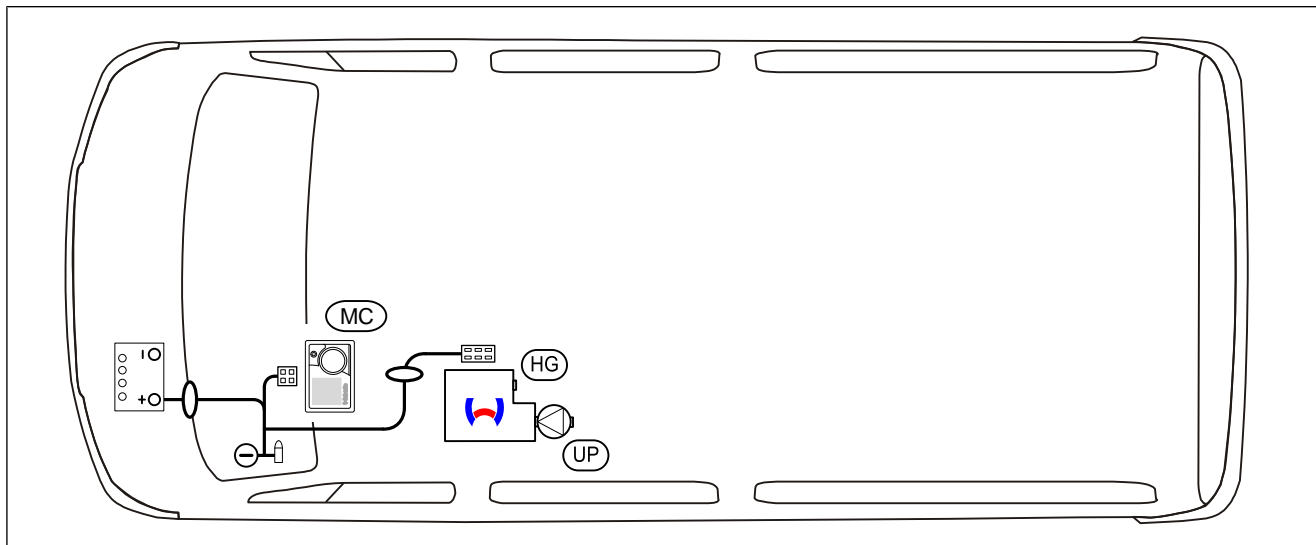
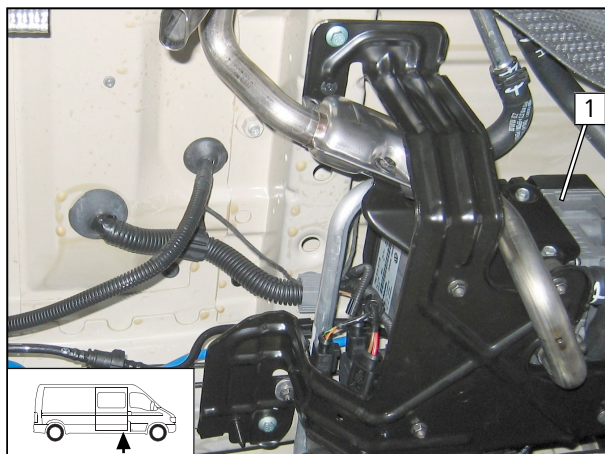


Fig. 2

#### Legend to installation overview

Abbreviation	Component
HG	Heater (OE)
MC	MultiControl control element option
UP	Coolant pump

#### Heater installation location



The appearance may vary depending on the equipment.

**1** Heater

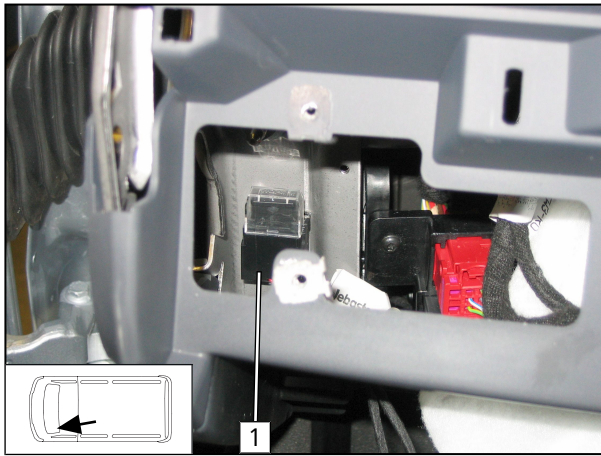
Fig. 3



## 7.2 Electrical system of passenger compartment - VW T5

### 7.2.1 Preliminary Work

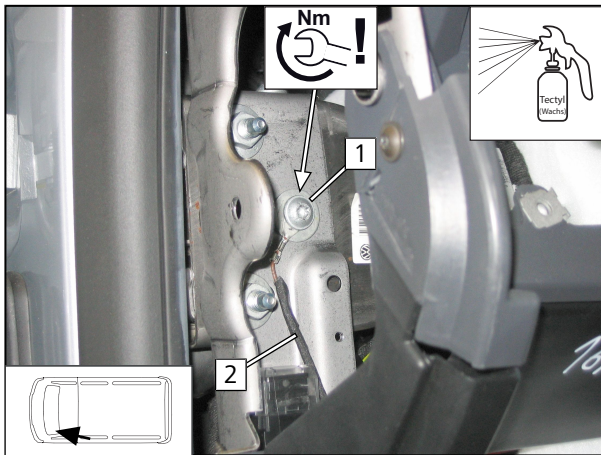
#### Mounting fuse holder



► Fasten fuse holder **1** with adhesive tape.

Fig. 4

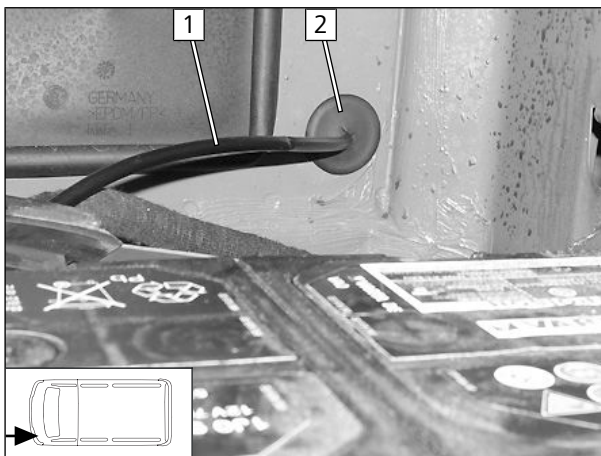
#### Mounting earth wire



- 1** Original vehicle bolt, large diameter washer
- 2** Earth wire

Fig. 5

#### Wiring harness pass through in the engine compartment



► Route positive wire **1** from passenger compartment through protective rubber plug **2** into the engine compartment.

Fig. 6



## Mounting positive wire

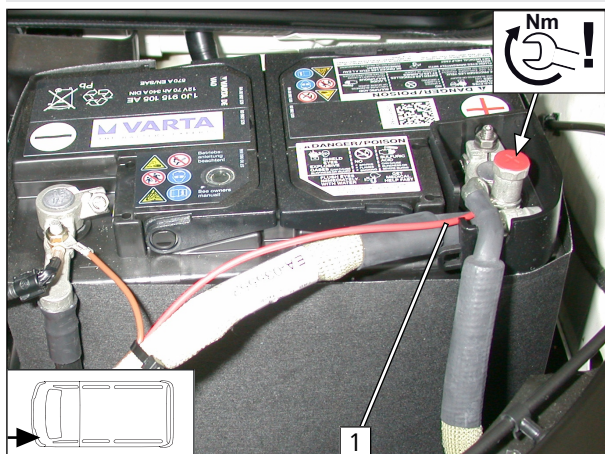


Fig. 7



### DANGER

Observe tightening torque



The Fig. shows already the installation situation. The connection to the battery is carried out according to the 'Final work' chapter.

- 1 Positive wire at positive battery terminal



## 7.2.2 Fan controller



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

### Routing line

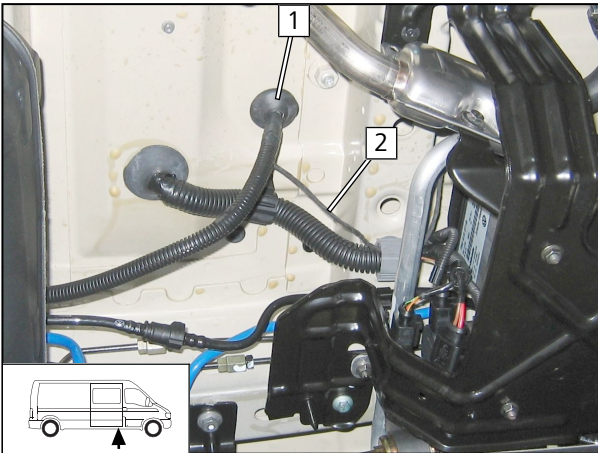


Fig. 8

- ▶ Route yellow (ge) wire **2** of heater control through protective rubber plug **1** to heater.

### Locating, detaching and preparing heater connector

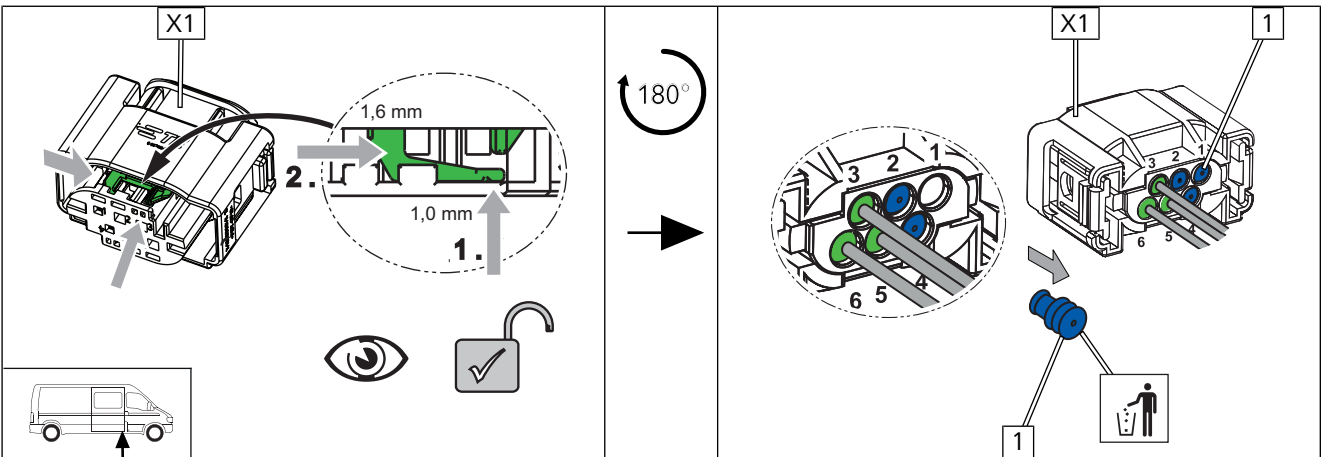


Fig. 9

- ▶ Release the locking mechanism as shown.

- ▶ Remove blue (bl) sealing plug **1** from slot 1.

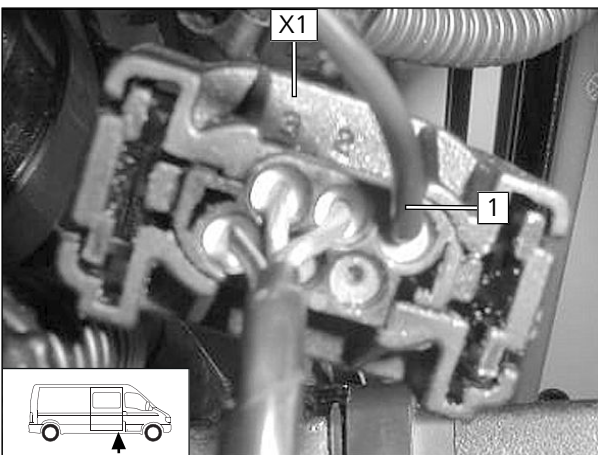


Fig. 10

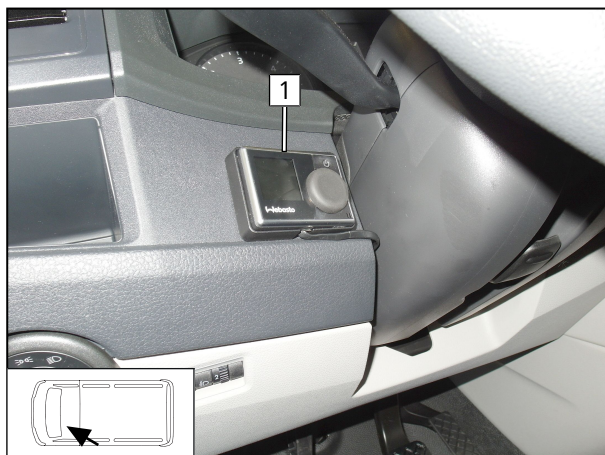
- ▶ Engage yellow (ge) wire **1** into pin 1 slot of connector **X1**. Lock connector again.
- ▶ Mount connector **X1** onto heater.



## 7.3 Electrical system of control elements - VW T5

### 7.3.1 MultiControl CAR option

#### Installing MultiControl CAR



1 MultiControl CAR with installation frame

Fig. 11

#### MultiControl connection

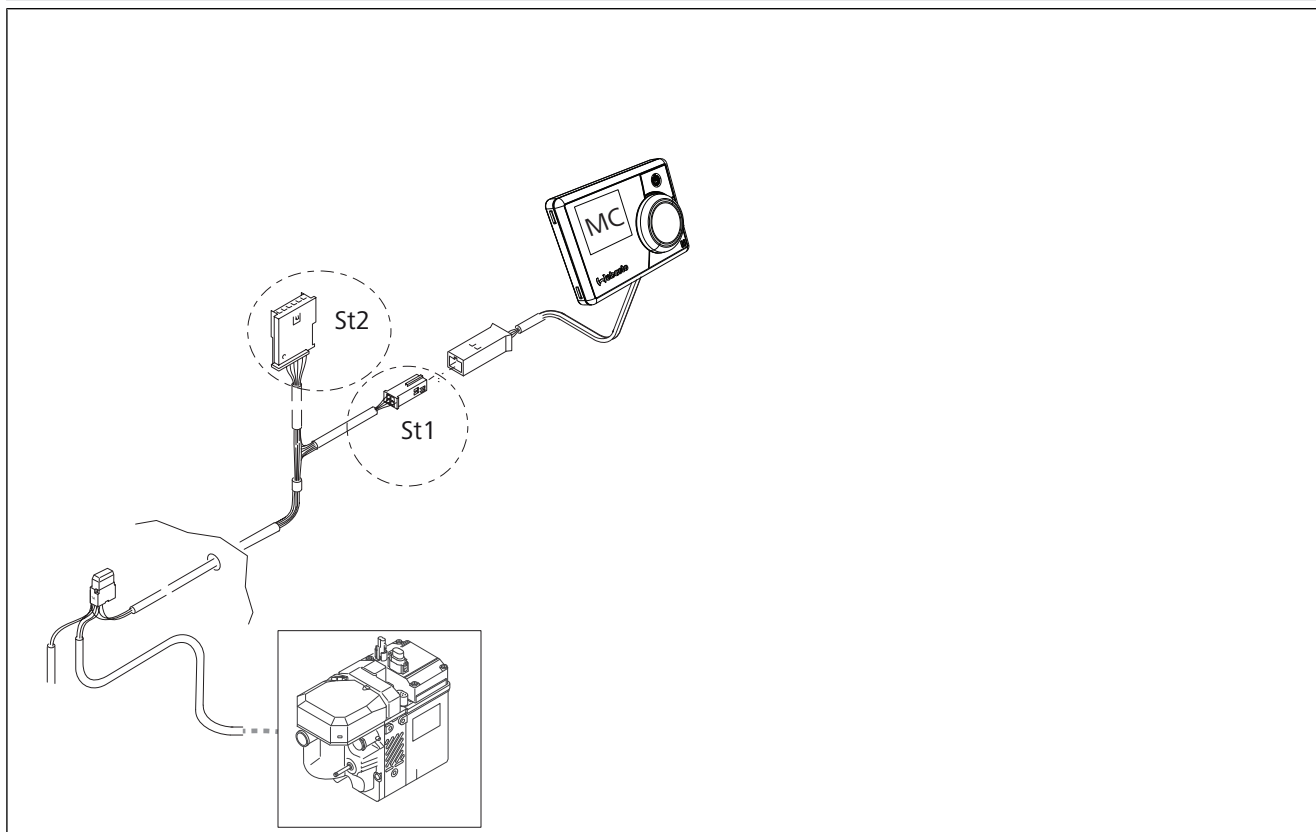


Fig. 12



## 7.3.2 Remote option (Telestart)

### Mounting receiver

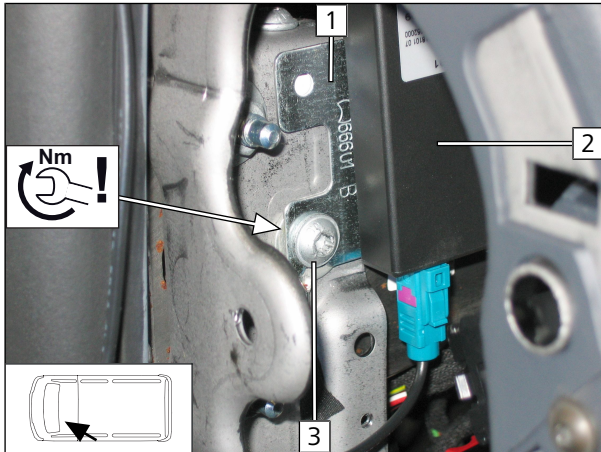


Fig. 13



Observe the Telestart installation documentation.

► Enlarge hole of bracket **1** at position **3** to  $\text{\O}6.5$ .

**2** Receiver

**3** Original vehicle bolt, earth wire, large diameter washer, Telestart bracket, original vehicle thread

### Mounting aerial

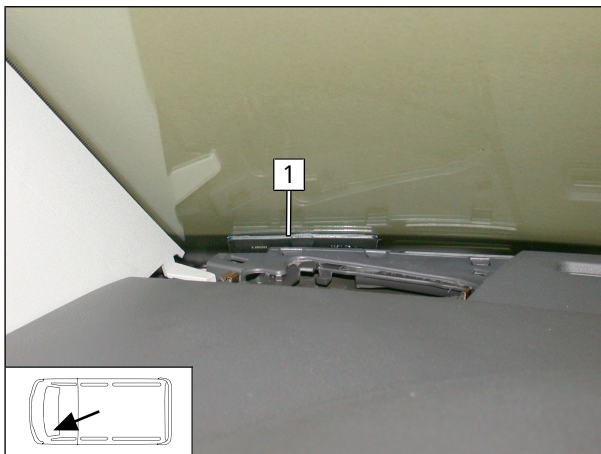


Fig. 14

**1** Aerial





# Telestart T99 and push button connection

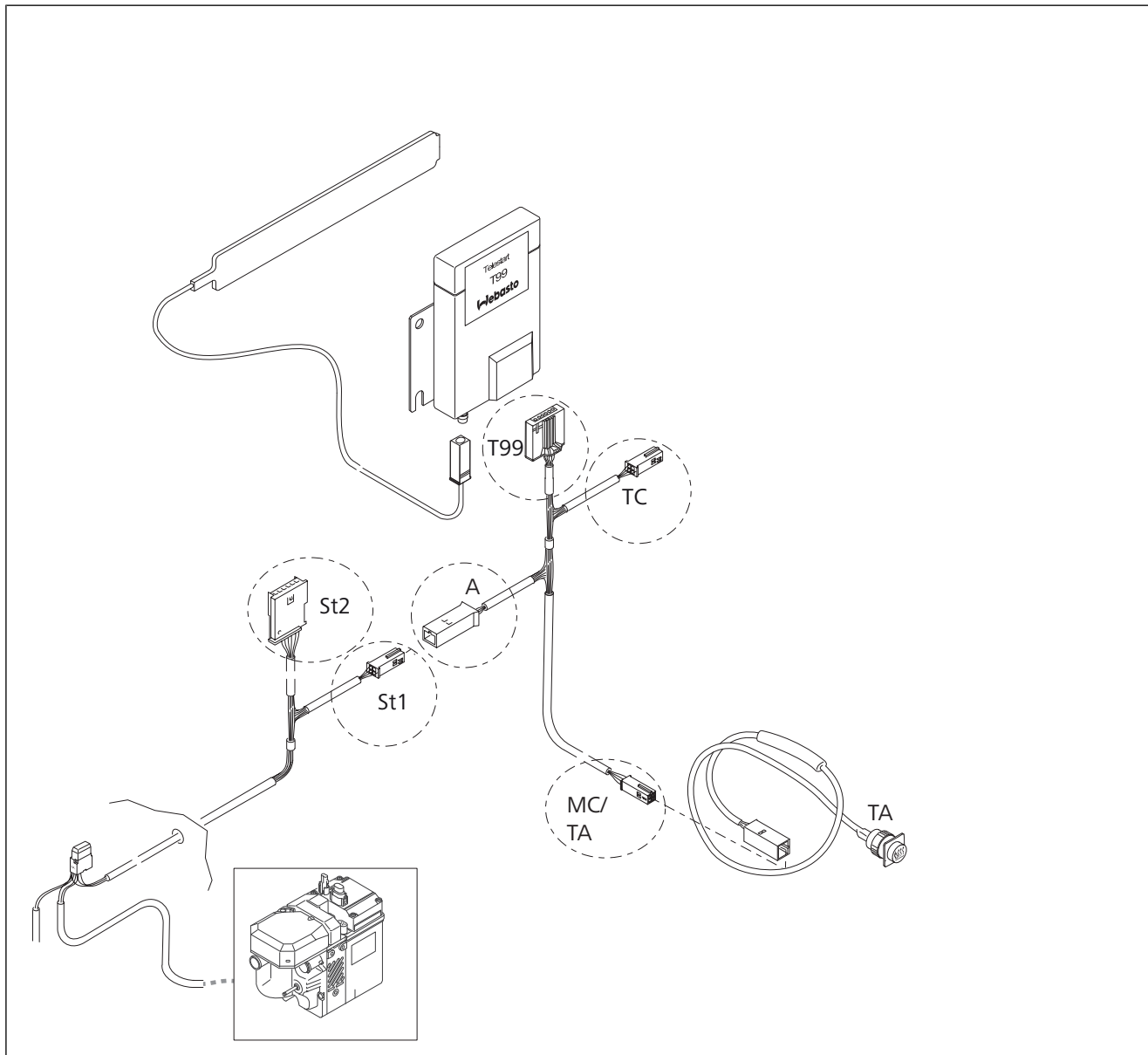


Fig. 15



## Telestart T99 and MultiControl connection

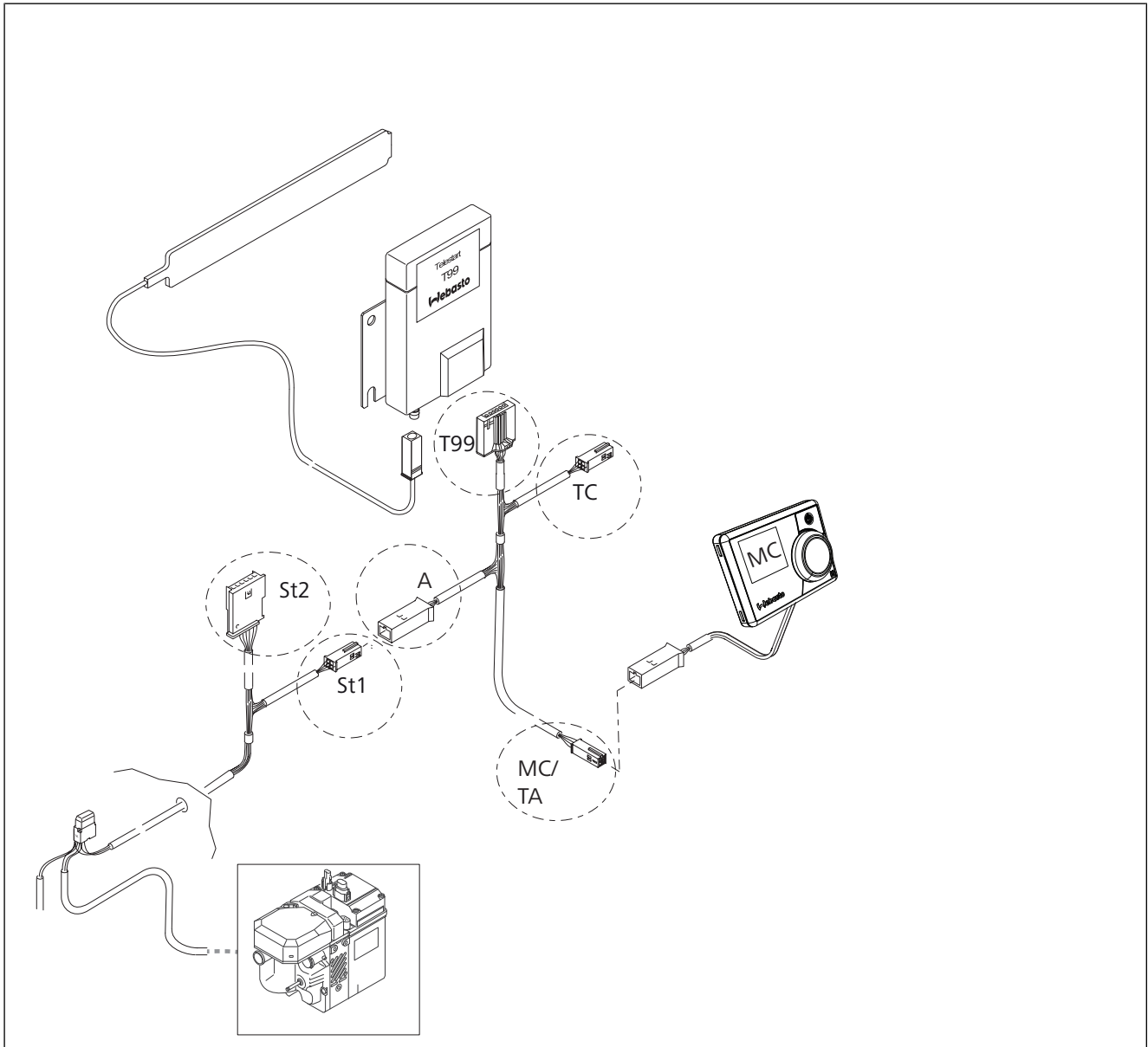


Fig. 16



## Telestart T100 connection

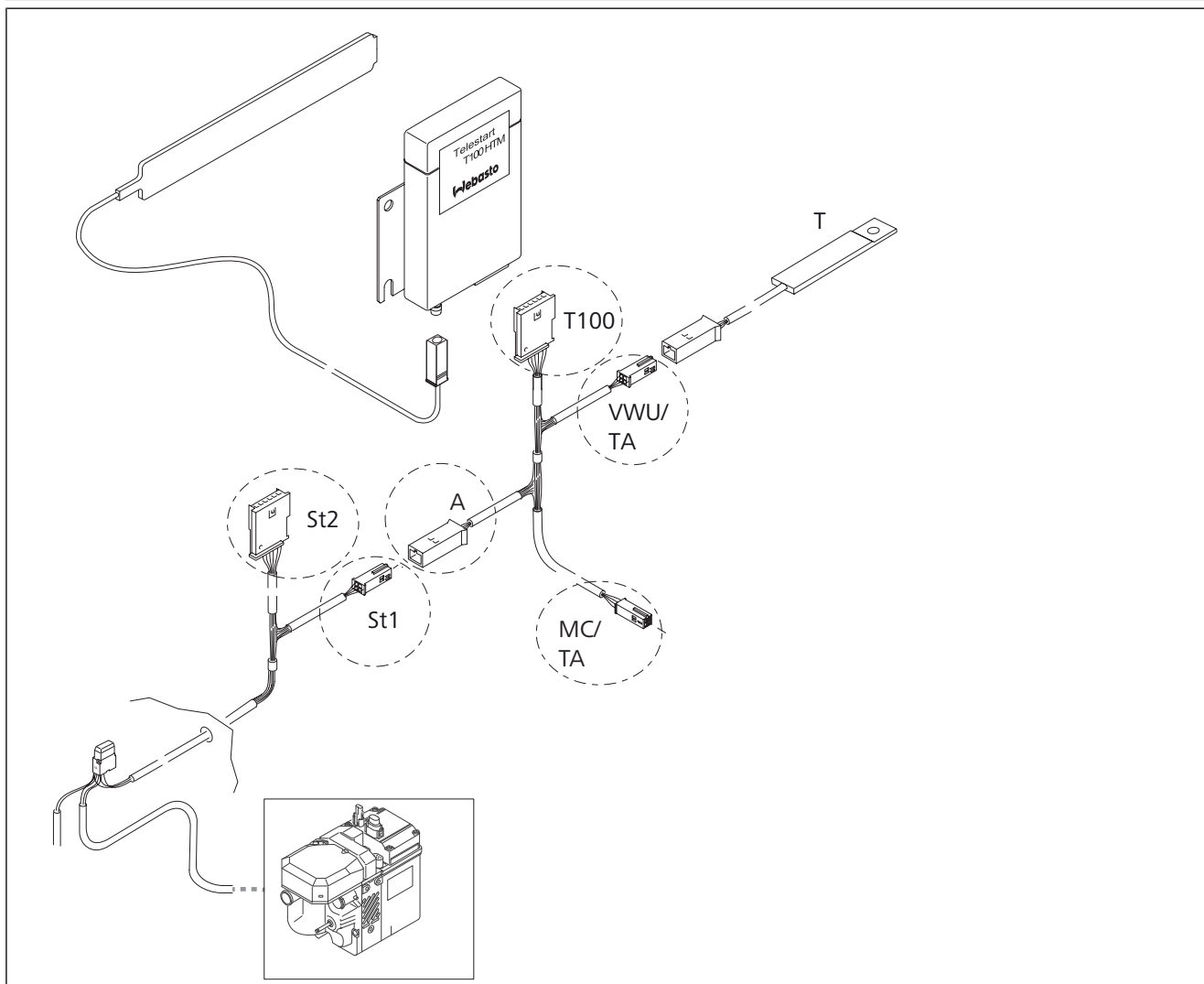
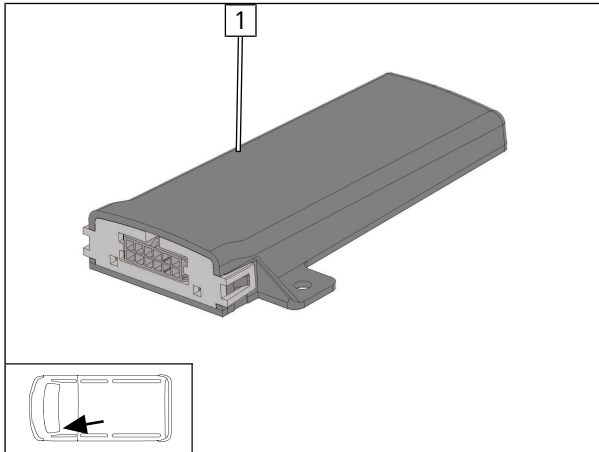


Fig. 17



### 7.3.3 ThermoConnect option

#### Mounting receiver



Observe the ThermoConnect installation documentation.

- Mount receiver **1** in accordance with general the ThermoConnect installation documentation.

Fig. 18

#### ThermoConnect connection

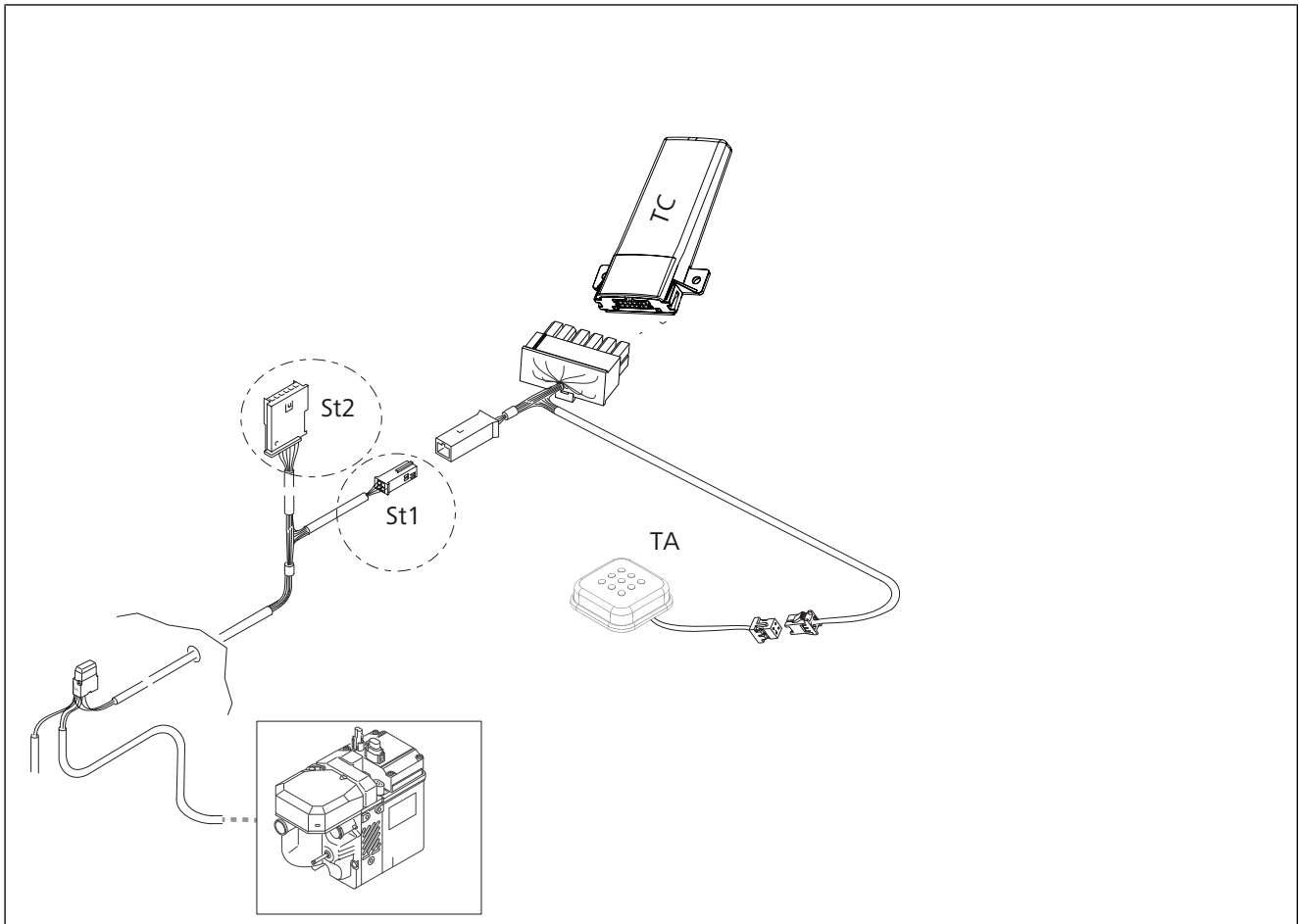


Fig. 19



# Telestart T99 and ThermoConnect connection

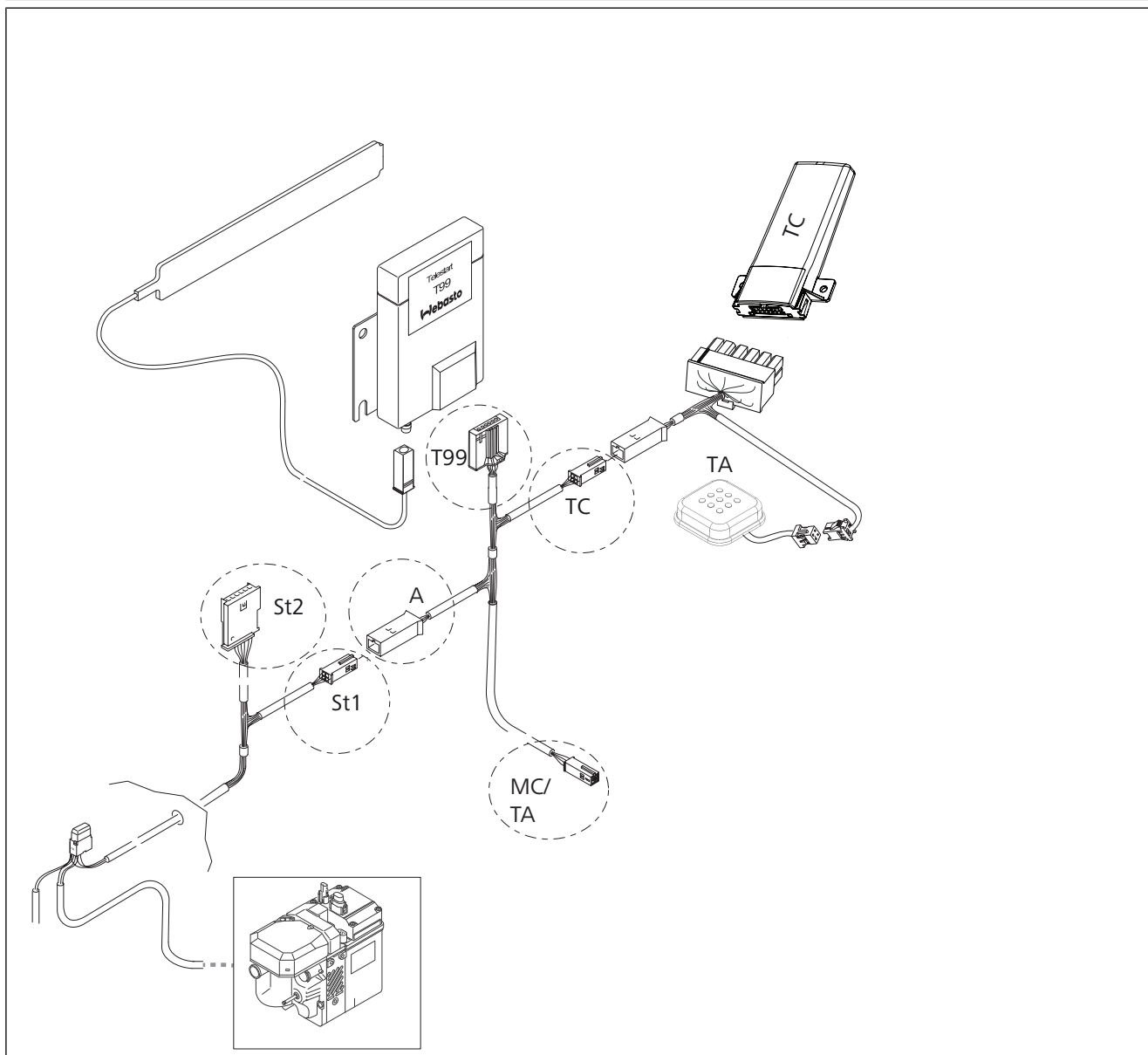


Fig. 20



## 8 Electrical system - VW Amarok

### 8.1 Installation overview - VW Amarok

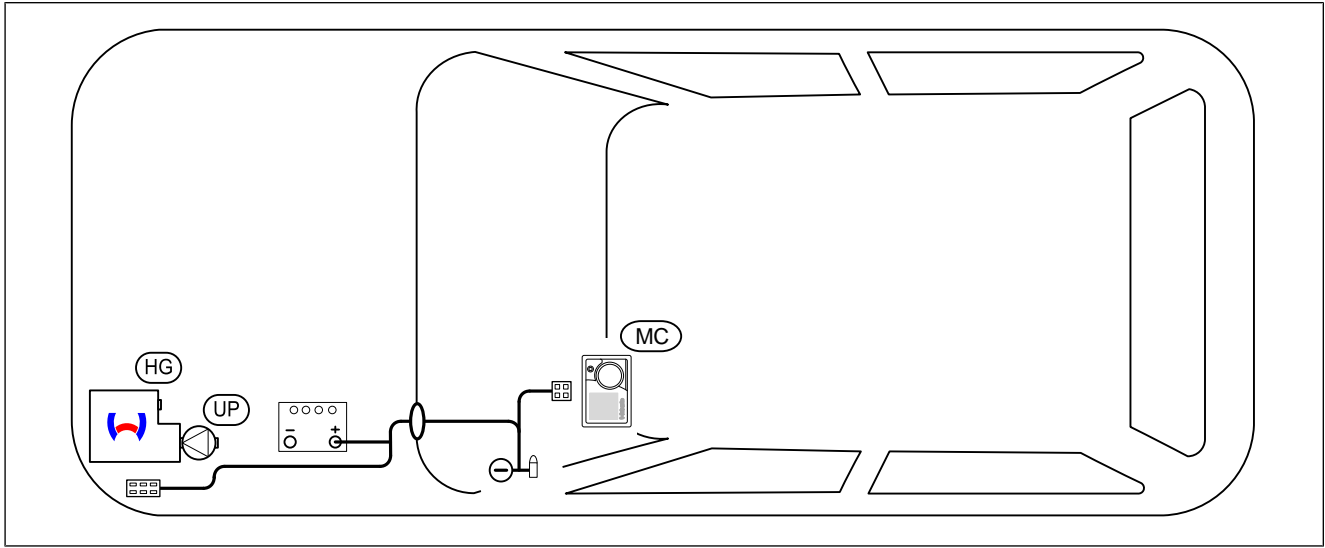


Fig. 21

#### Legend to installation overview

Abbreviation	Component
HG	Heater (OE)
MC	MultiControl control element option
UP	Coolant pump

#### Heater installation location



The appearance may vary depending on the equipment.

**1** Heater

Fig. 22



## 8.2 Electrical system of passenger compartment - VW Amarok

### 8.2.1 Preliminary Work

#### Wiring harness pass through

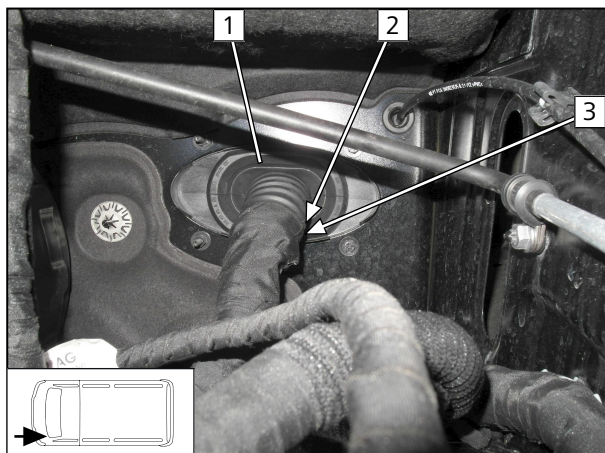


Fig. 23

- ▶ Route positive wire **2** and yellow (ge) wire **3** from upgrade wiring harness through protective rubber plug **1** into the engine compartment.

#### Mounting positive wire

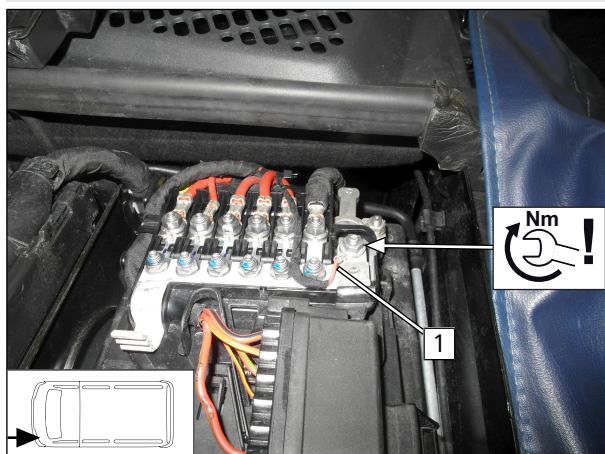


Fig. 24



#### DANGER

Observe tightening torque



The Fig. shows already the installation situation. The connection to the battery is carried out according to the 'Final work' chapter.

- 1** Positive wire to original vehicle positive battery distributor

#### Mounting fuse holder and earth wire

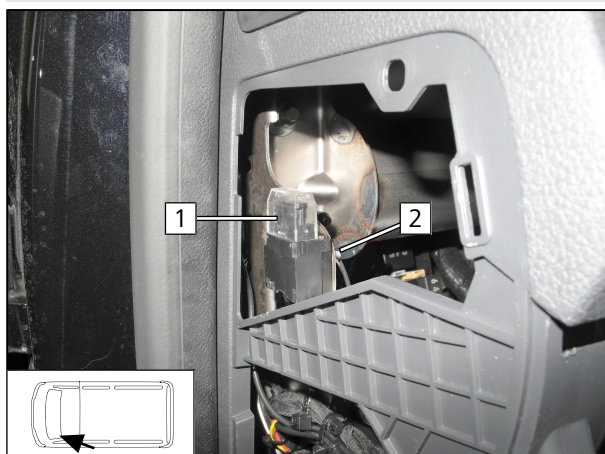
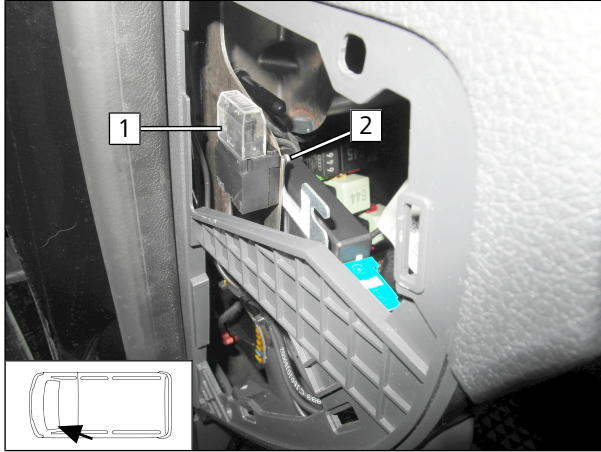


Fig. 25

- 1** Fuse holder
- 2** M4x16 countersunk head screw, original vehicle hole, large diameter washer, earth wire cable lug, spring lock washer, nut



## Mounting fuse holder and earth wire for Telestart option



- 1 Fuse holder
- 2 M4x16 countersunk head screw, original vehicle hole, Telestart bracket, earth wire cable lug, large diameter washer, spring lock washer, nut

Fig. 26





## 8.2.2 Fan controller



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

### Routing line

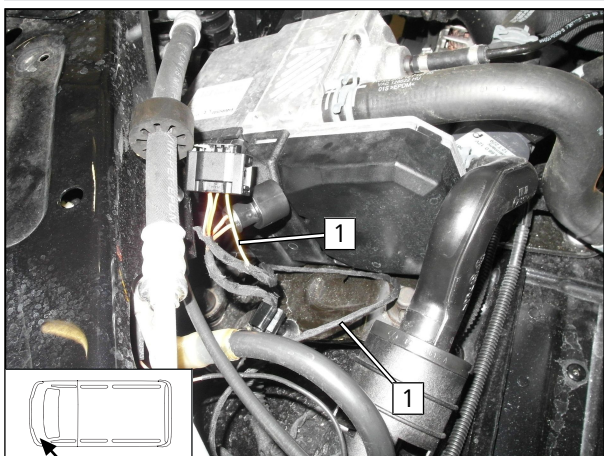


Fig. 27

► Route yellow (ge) wire **1** to heater.

### Locating, detaching and preparing heater connector

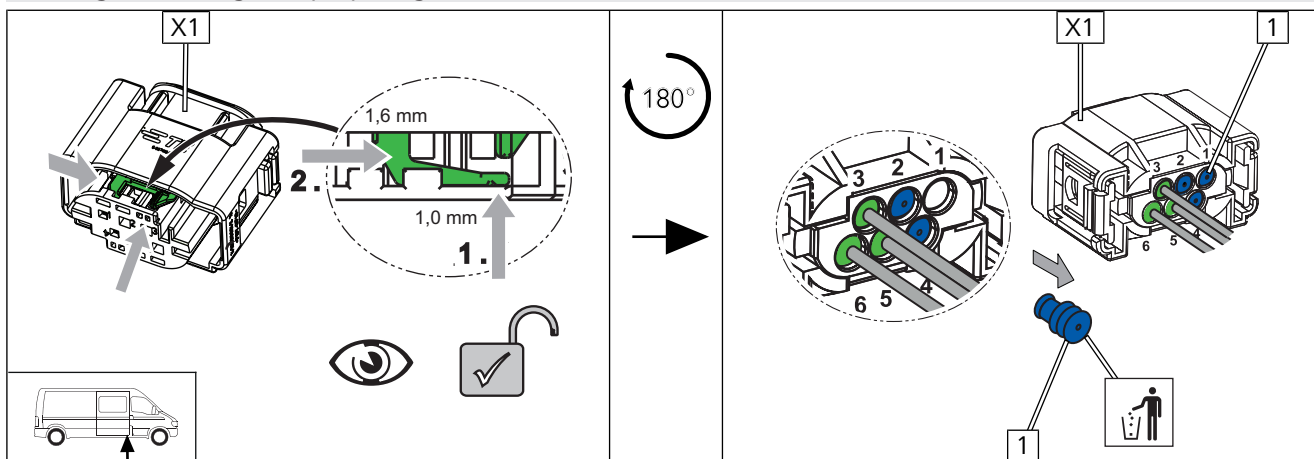


Fig. 28

► Release the locking mechanism as shown.

► Remove blue (bl) sealing plug **1** from slot 1.

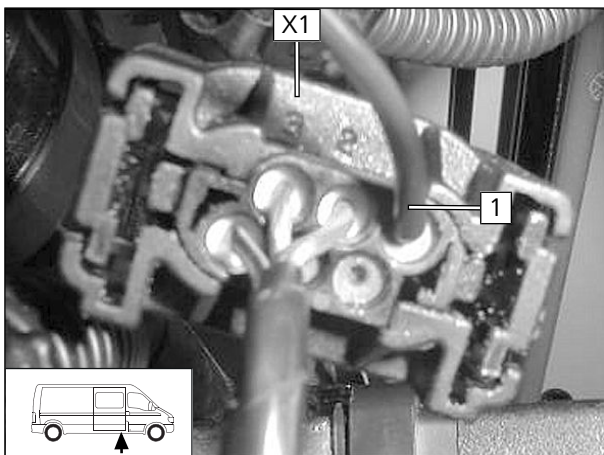


Fig. 29

► Engage yellow (ge) wire **1** into pin 1 slot of connector **X1**. Lock connector again.

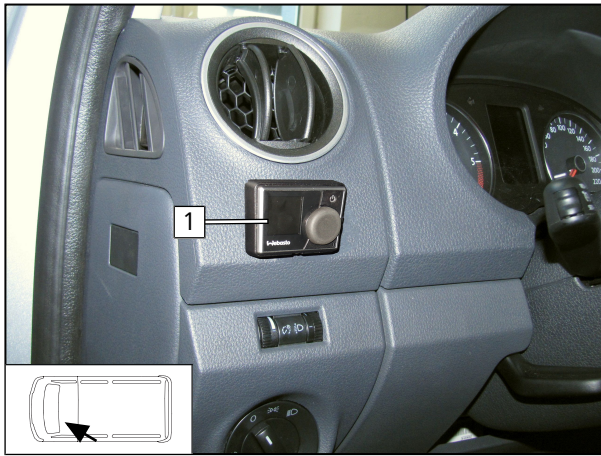
► Mount connector **X1** onto heater.



## 8.3 Electrical system of control elements - VW Amarok

### 8.3.1 MultiControl CAR option

#### Installing MultiControl CAR



1 MultiControl CAR with installation frame

Fig. 30

#### MultiControl connection

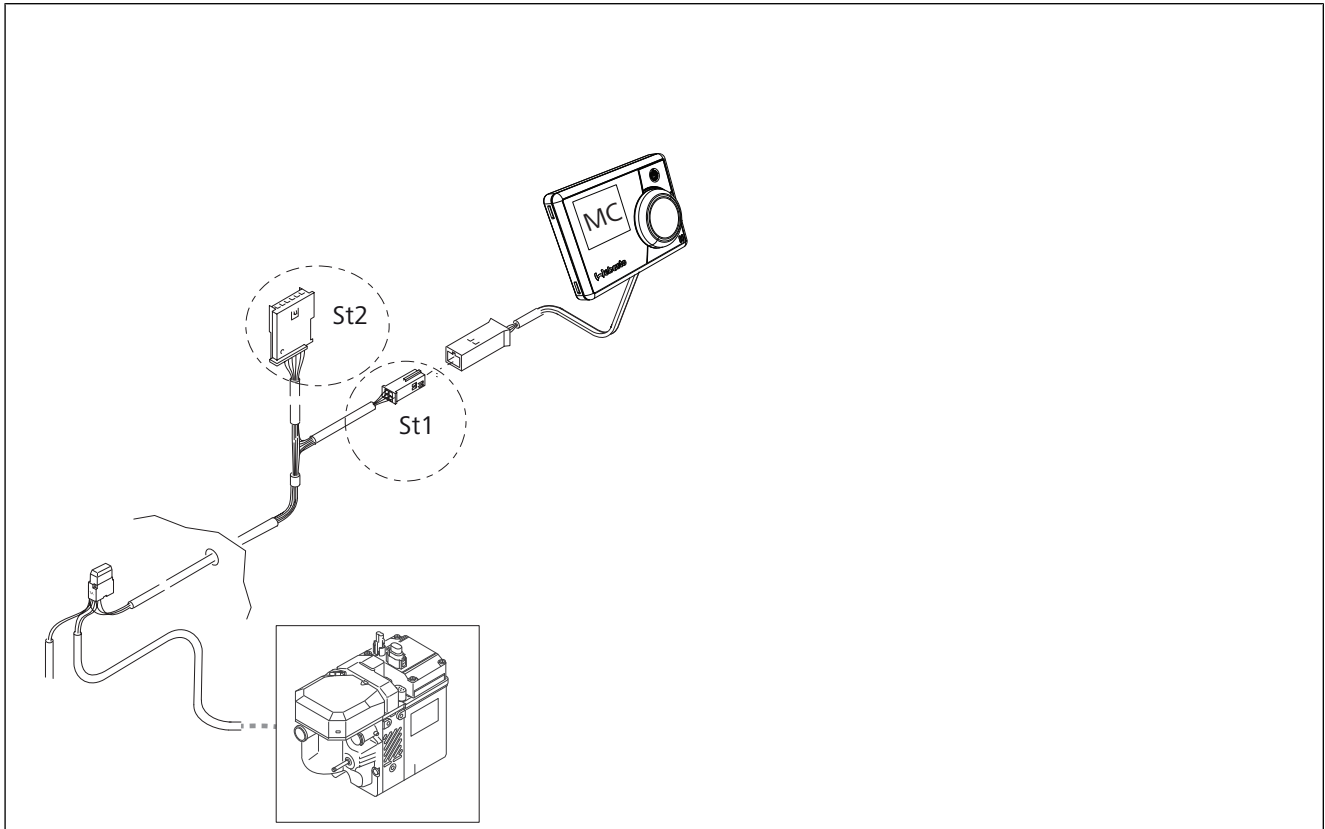


Fig. 31



## 8.3.2 Remote option (Telestart)

### Mounting receiver

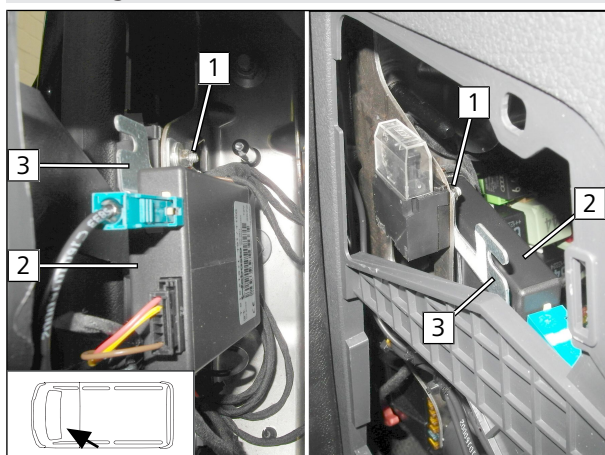


Fig. 32



Observe the Telestart installation documentation.

► Fasten bracket **3** on M4x16 bolt **1**.

**2** Receiver

### Mounting aerial

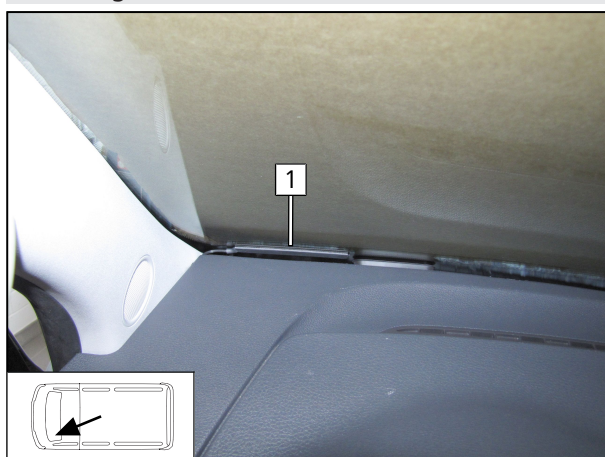


Fig. 33

**1** Aerial



## Telestart T99 and push button connection

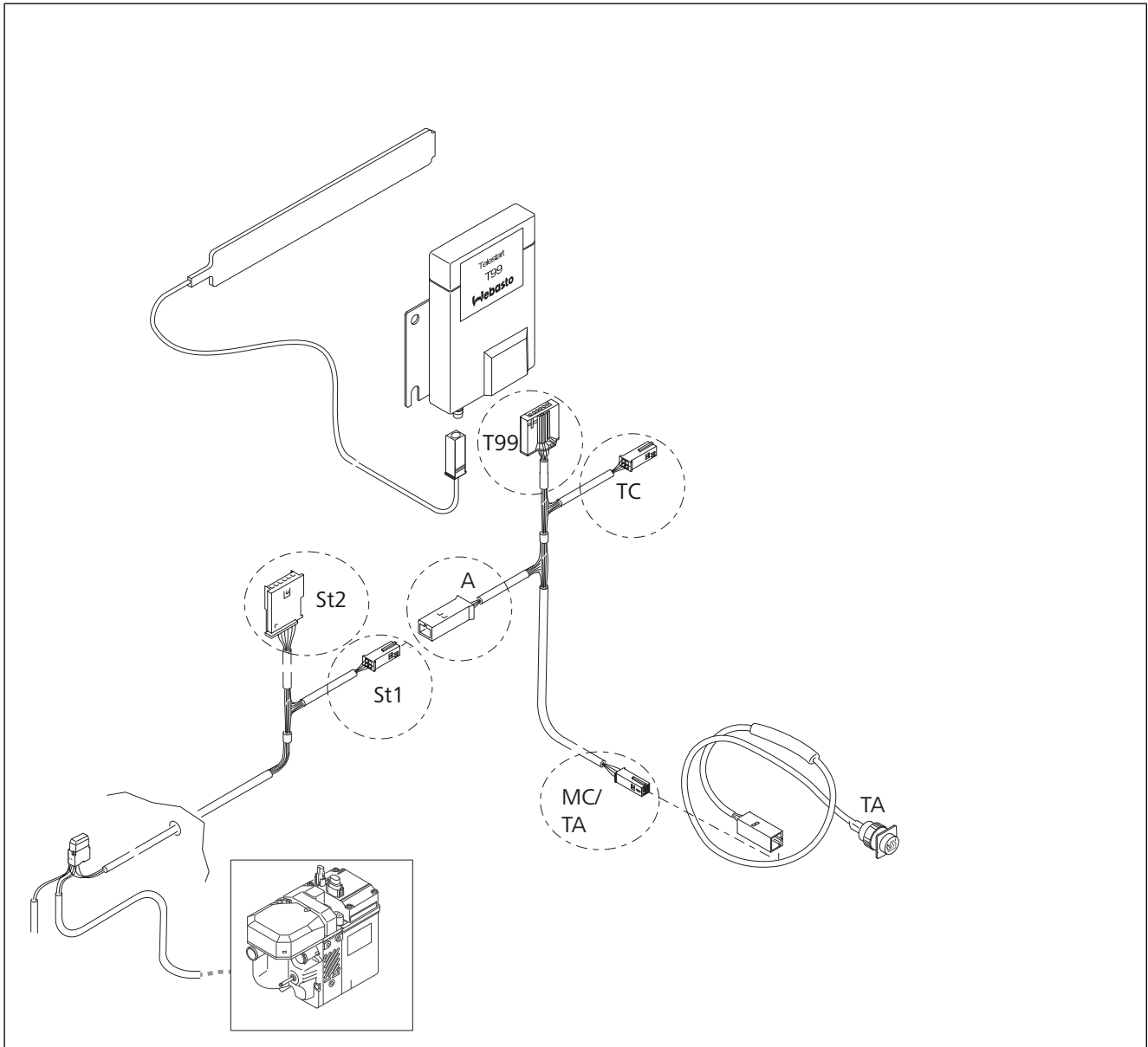


Fig. 34



### Telestart T99 and MultiControl connection

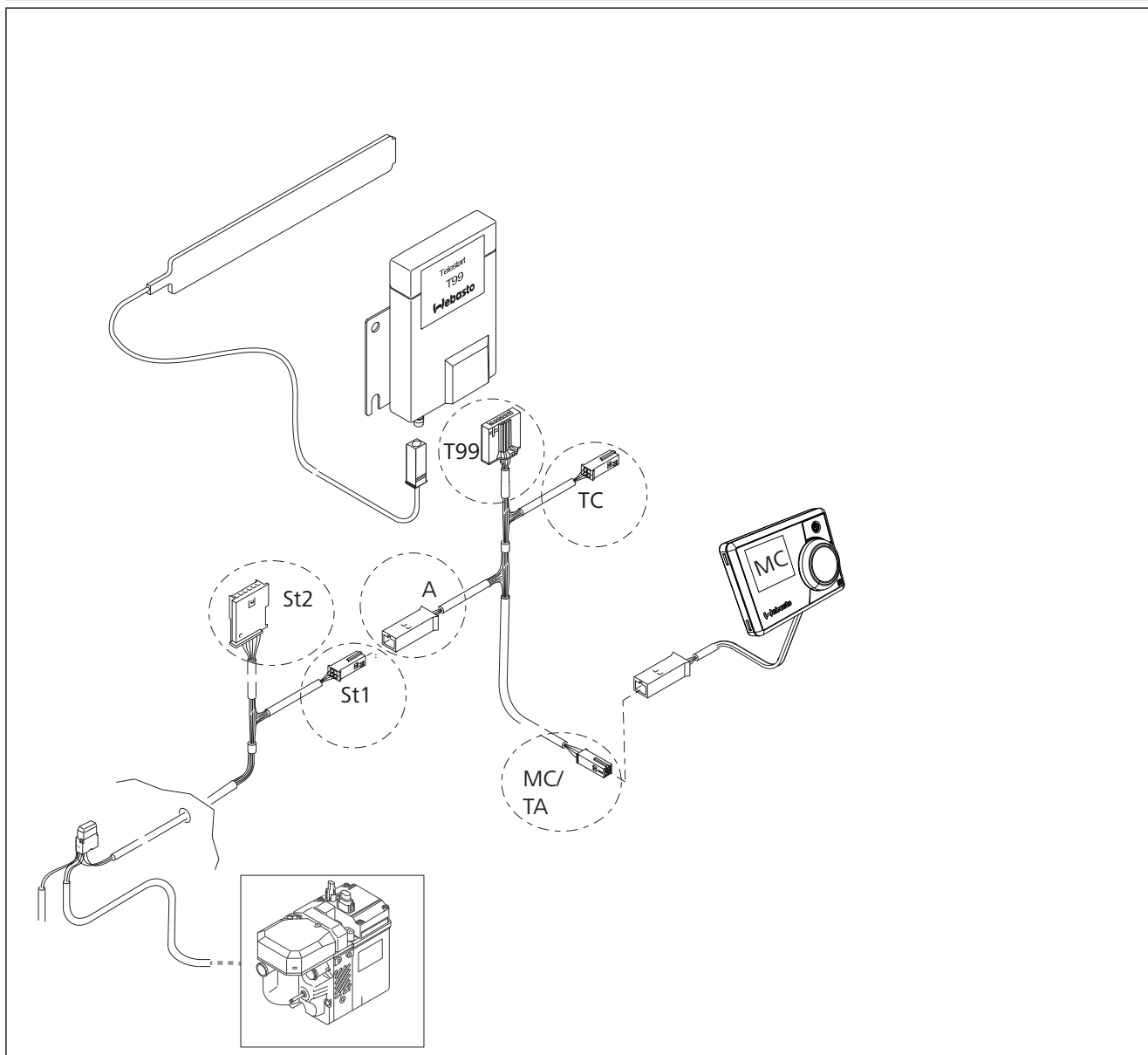


Fig. 35



## Telestart T100 connection

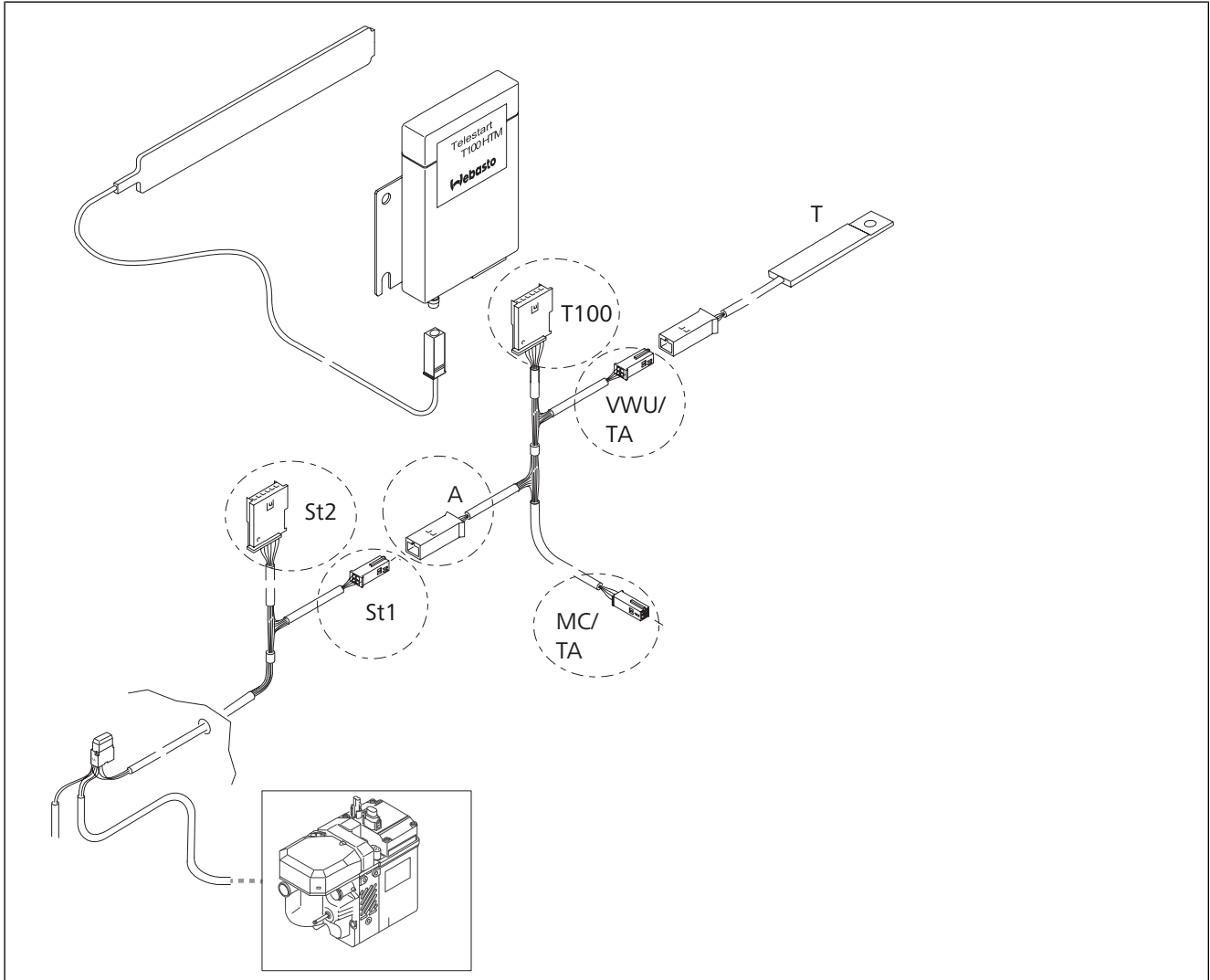
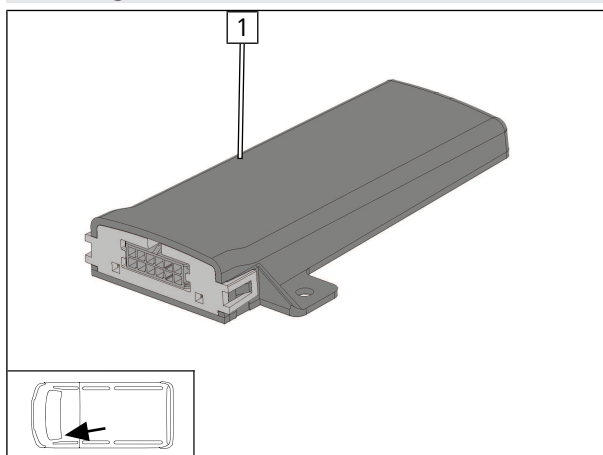


Fig. 36



### 8.3.3 ThermoConnect option

#### Mounting receiver



Observe the ThermoConnect installation documentation.

- Mount receiver **1** in accordance with general the ThermoConnect installation documentation.

Fig. 37

#### ThermoConnect connection

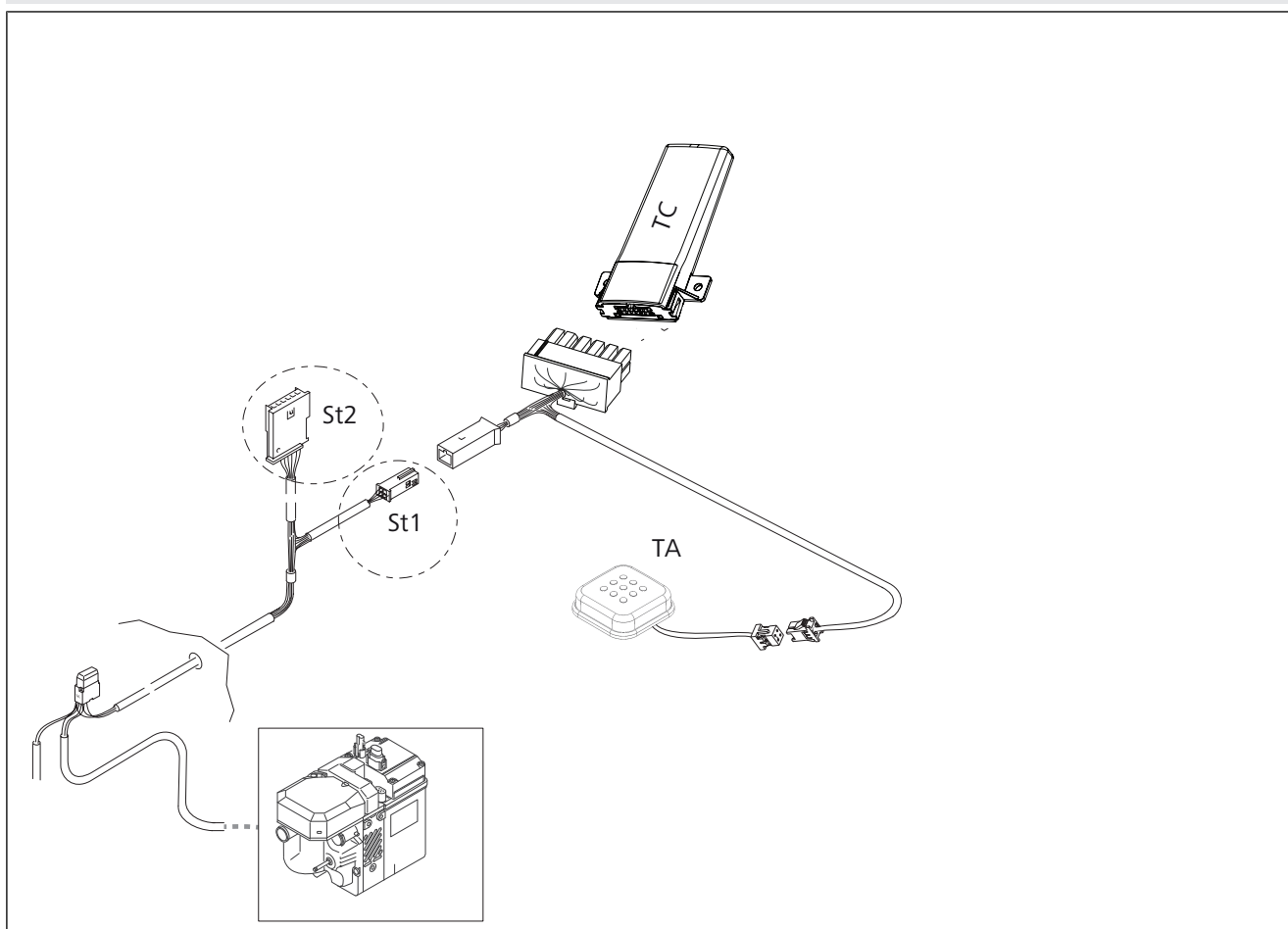


Fig. 38



## Telestart T99 and ThermoConnect connection

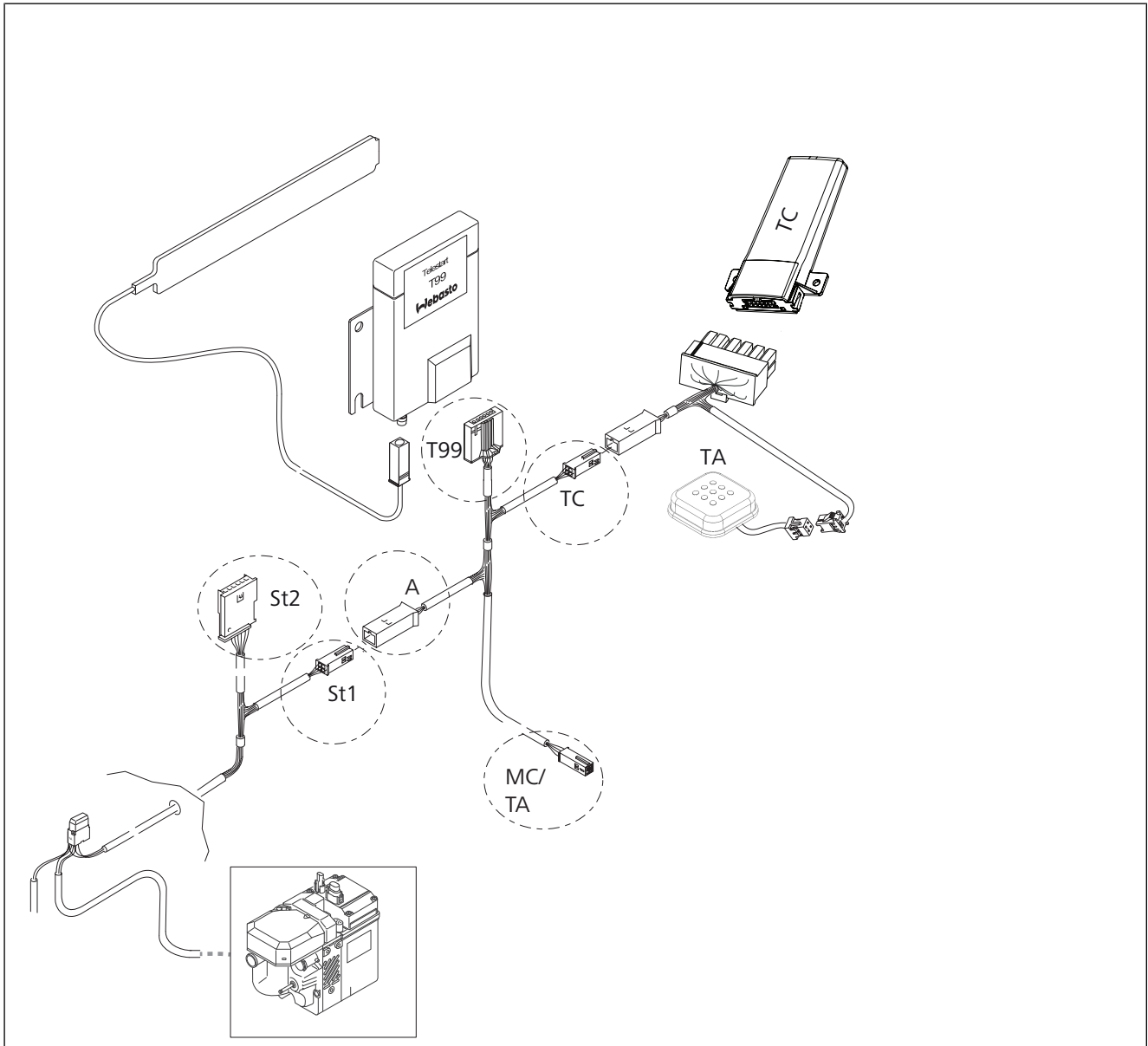


Fig. 39





## 9 Final Work

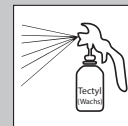


Further information can be found in the vehicle manufacturer's technical documentation.

- ▶ Reassemble the components in reverse order.



- ▶ Check all electrical connections for firm seating
- ▶ Insulate and tie back loose lines
- ▶ Spray electrical components with anti-corrosion wax (Tectyl 100K)
- ▶ Connect the battery



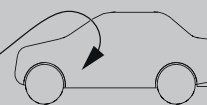
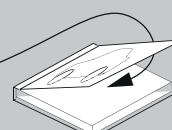
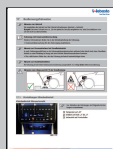
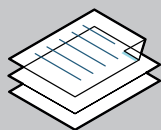
Further information can be found in the general installation and operating instructions of the Webasto components.

- ▶ Program MultiControl CAR, pair Telearstart transmitter
- ▶ Make settings on A/C control panel according to the 'Operating Instructions'
- ▶ Affix 'Switch off parking heater before refueling' caution label in area of filler neck



### Vehicle event log after parking heating mode

- ✓ Components of the original vehicle air conditioning system are activated during parking heating mode. Other vehicle components remain inactive, which in some circumstances may be interpreted as an error and can be filed as such in the event log. An increased power consumption (quiescent current) may also be registered for some vehicles.
- ▶ If an incorrect installation can be excluded, these entries are exclusively related to the parking heating mode situation and have no effect on the vehicle functions in driving mode.



This is a translation from the original German installation instructions.  
To request this Installation Documentation in another language, please locate and contact your local Webasto dealer.  
You can find your nearest dealer at: <https://dealerlocator.webasto.com/en-int>.

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## 10 Climatronic operating instructions



### Vehicles with passenger compartment monitoring

Further information can be found in the vehicle operating instructions.

- ▶ Deactivate passenger compartment monitoring for the heating operation.



### Information regarding the heating time

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.



### Note for current consumption in case of parking heating mode

Depending on the vehicle model, there may be an increased quiescent current consumption message in the vehicle information system during or directly after operation in parking heating mode.

- ▶ This is not an error that can affect the vehicle on a technical level.



### Note for parking heater function


Your vehicle is equipped with a passenger compartment and engine preheating unit.



### Notes about the parking fan

The 'Parking fan' function is not supported.

## 10.1 A/C control panel settings

 There are no setting to configure before parking the vehicle.

## 10.2 Installation location of fuses

Fuses in engine compartment - VW T5

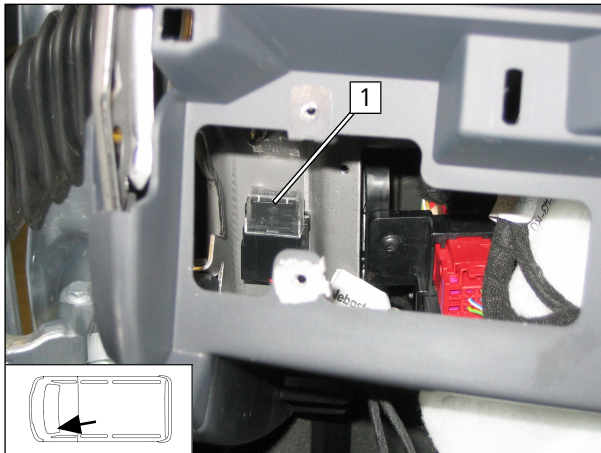


Fig. 40

**1** 1A control element fuse F1

Fuses in engine compartment - VW Amarok

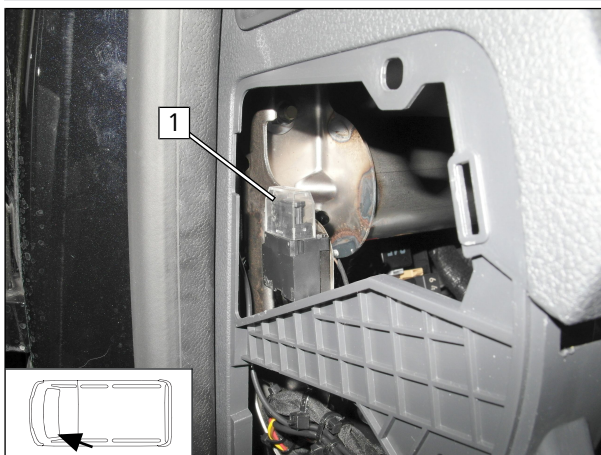


Fig. 41

**1** 1A control element fuse F1