

# Water heater

Thermo Top Evo parking heater

E1 00 0258

# Installation documentation Mercedes-Benz GLC BR253

## Validity

Manufacturer Model		Туре	Model year	EG BE No. / AB	E	
Mercedes-Benz	-Benz GLC		X253	from 2019	e1 * 2001 / 116 *	* 0480 *
Mercedes-Benz		GLC Coupé	C253	from 2019	e1 * 2001 / 116 * 0480 *	
Motorisation	Fuel	Emission	Transmission	Output in kW	Displacement in	Engine code
		standard	type		cm <sup>3</sup>	
GLC 300	Petro	Euro 6d-Temp	AG	190	1991	M264

AG = automatic transmission

## Left-hand drive vehicle

Verified equipment variants:	<ul> <li>THERMATIC with 2-zone automatic air-conditioning (code 580)</li> <li>THERMOTRONIC with 3-zone automatic air-conditioning (Code 581)</li> <li>LED main headlights</li> <li>4MATIC</li> <li>Headlight washer system</li> <li>Air-conditioning system with R1234yf refrigerant (alternative refrigerant code 2U8)</li> <li>48 V additional battery</li> <li>66 I tank (code 916)</li> <li>AMG Line Exterior (code P31)</li> <li>AMG Styling (code 772)</li> <li>Wheel arch extensions (code 776)</li> <li>Heated window washer system (code 875)</li> <li>Keyless Go (code 889 / code P17)</li> </ul>
Not verified:	Alarm system Passenger compartment monitoring
Total installation time:	approx. 10.0 hours

## Mercedes-Benz GLC BR253

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## **Necessary components**

Description	Order No.:
Basic delivery scope of Thermo Top Evo	In accordance with price list
Installation kit for Mercedes-Benz GLC BR253 2019 Petrol	1324966D
Additional 'Webasto Comfort' A/C control kit for Mercedes-Benz C-Class / GLC	1324395_
In case of Telestart, control element, as well as indicator lamp in consultation with end customer	In accordance with price list

## Installation instructions

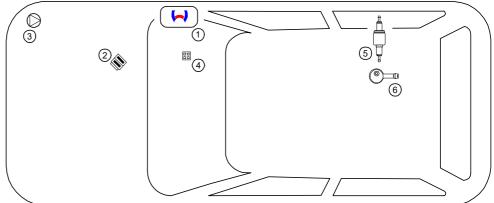
Arrange for the vehicle to be delivered with the tank only about 1/4 full.

The installation location of the push button in case of Telestart or ThermoCall should be confirmed with the end customer. The installation location of the MultiControl CAR option should be confirmed with the end customer.

## Installation overview

#### Legend:

- 1. Heater
- 2. Engine compartment fuse holder
- 3. Coolant pump
- 4. Female plug of control element X10
- 5. Fuel pump
- 6. 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 or 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 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.

#### 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 StV-ZO (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.

#### VEHICLE INSTALLATION REQUIREMENTS

#### 2.1. Scope

2.

- 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.

## Mercedes-Benz GLC BR253

## Information on validity

This installation documentation applies to Mercedes-Benz GLC BR253 Petrol vehicles - for validity, see page 1 - from model year 2019 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
- Automatic wire stripper, 0.2 6mm<sup>2</sup>
- Crimping pliers for male connector, 0.14 6mm<sup>2</sup>
- Crimping pliers for cable lug, 0.5 10mm<sup>2</sup>
- Crimping pliers for connector, 0.25 6mm<sup>2</sup>
- Torque wrench for 2.0 10 Nm
- · Hose clamping pliers
- · Deep-hole marker
- · Metric thread-setter kit
- · Webasto Thermo Test Diagnosis with current software

#### Dimensions

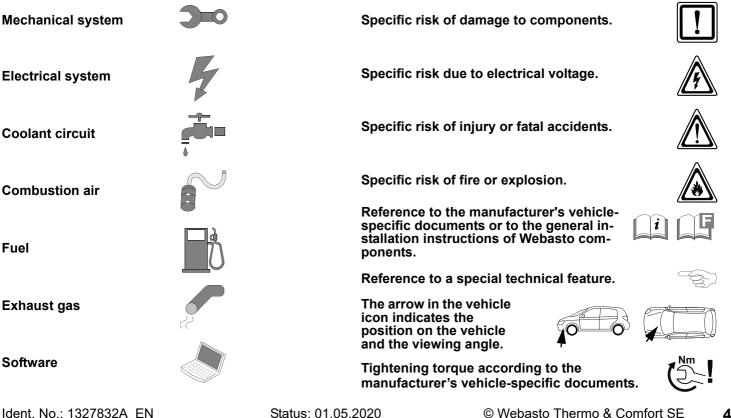
· All dimensions are in mm.

#### **Tightening torque values**

- Tightening torque values of 5x13 heater bolts and 5x11 heater stud bolts = 8Nm.
- Tightening torque 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-arttechnology.

## Explanatory notes on document

You will find an identification mark on the outside top Special features are highlighted using the following symbols: right corner of the page in question to provide you with a quick overview of the individual working steps.



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Status: 01.05.2020

## **Preliminary work**

## Vehicle

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- Open the fuel tank cap.
- Ventilate the fuel tank.
- Close the fuel tank cap again.
- Depressurise the cooling system.
- Remove the right front wheel.
- Remove the wheel well trim on the right.
- Remove the lower engine cover.
- Remove the underbody trim on the right.
- Disconnect and remove the battery (not the 48 V additional battery).
- Drain off the engine coolant and set aside.
- Remove the expansion tank.
- Remove the seating area of the rear bench seat.
- Open the right-hand tank fitting service lid.

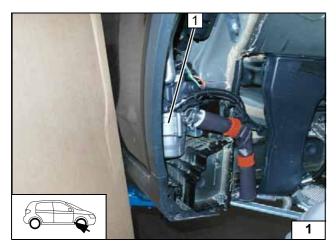
## Heater

- 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.



*i* ]

O



## Heater installation location

1 Heater

Installation location



## **Electrical system**

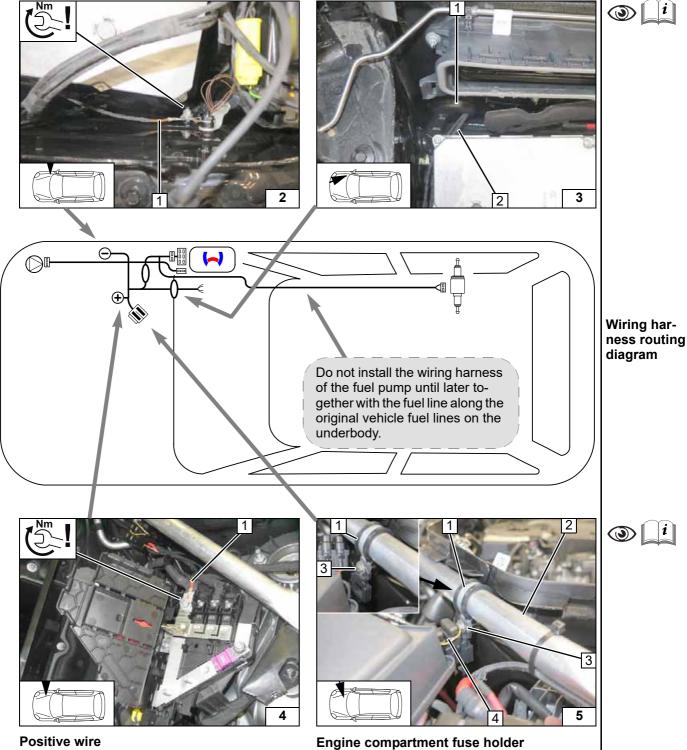


## Earth wire

1 Ø8 cable lug, earth wire on original vehicle earth support point

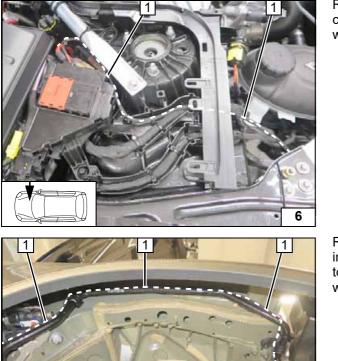
## Wiring harness pass through

- 1 Protective rubber plug, use lower perforation
- 2 Wiring harnesses of heater, control element



- 1 Ø8 cable lug, positive wire on original vehicle positive support point
- - 1 Ø29 rubber-coated p-clamp
  - 2 Right engine compartment stiffening brace
  - 3 M5x16 bolt, large diameter washer [2x], retaining plate of fuse holder, nut
  - 4 Insert F1-2 fuses





Route heater wiring harness **1** in engine compartment as shown and further to the wheel well.



Routing heater wiring harness

Route heater wiring harness **1** along original vehicle pipe in wheel well and further to the heater installation location. Fasten with cable ties.



Routing heater wiring harness

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## **Air-conditioning control**

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

'Webasto Comfort' A/C control installation documentation for Mercedes-Benz GLC BR253

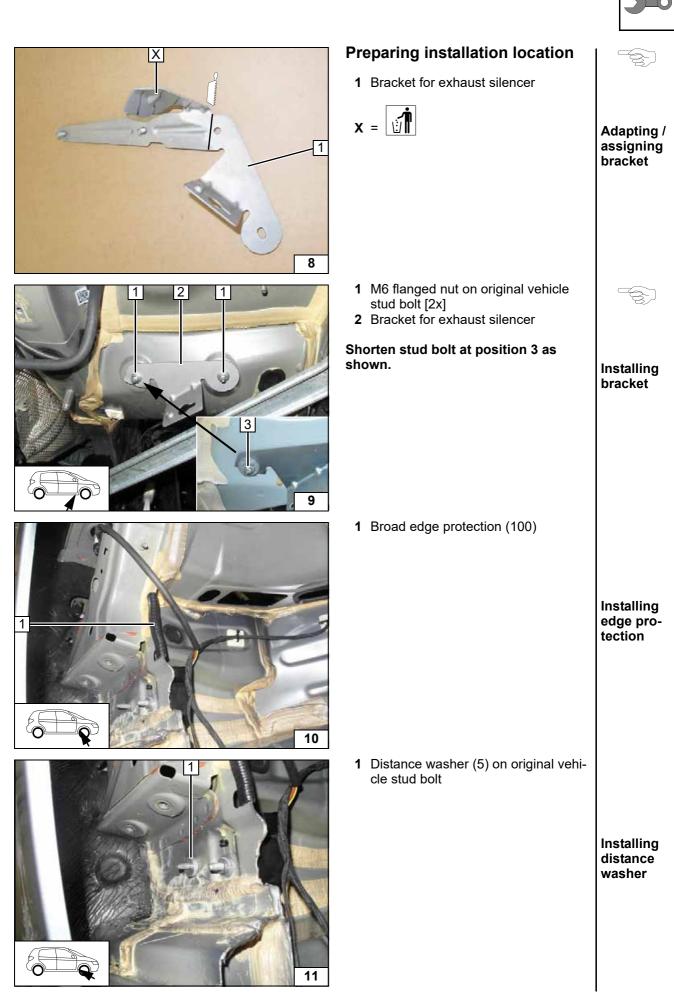
## **Control element installation**

Install the control element in each case as explained in the provided general installation documentation.

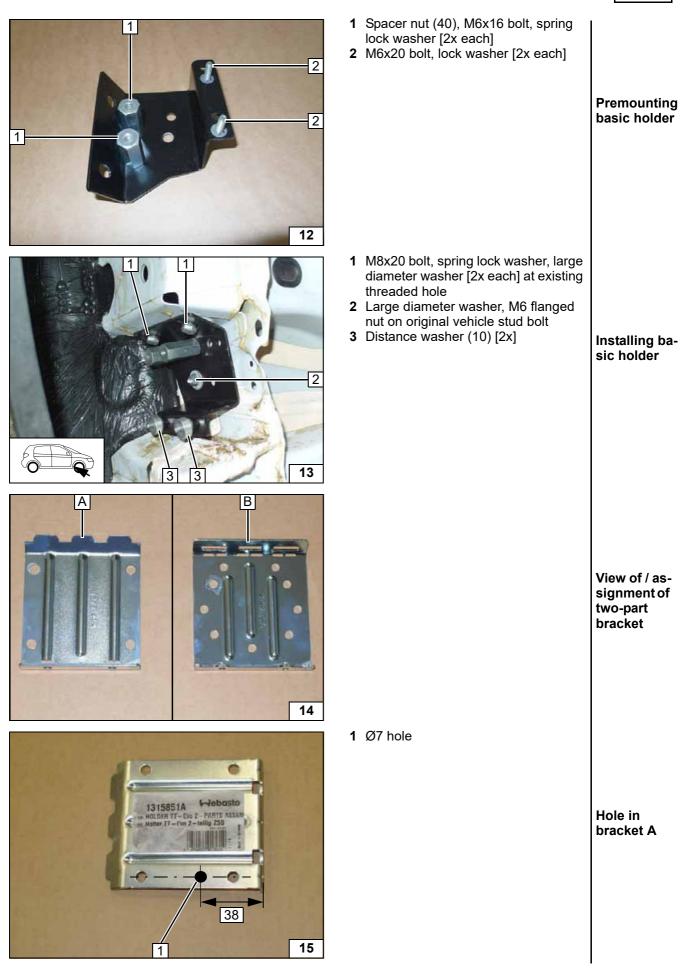
The installation location of the optional control element MultiControl or the push button of the Telestart or ThermoCall/ThermoConnect options should be confirmed with the end customer and should comply with the installation conditions.



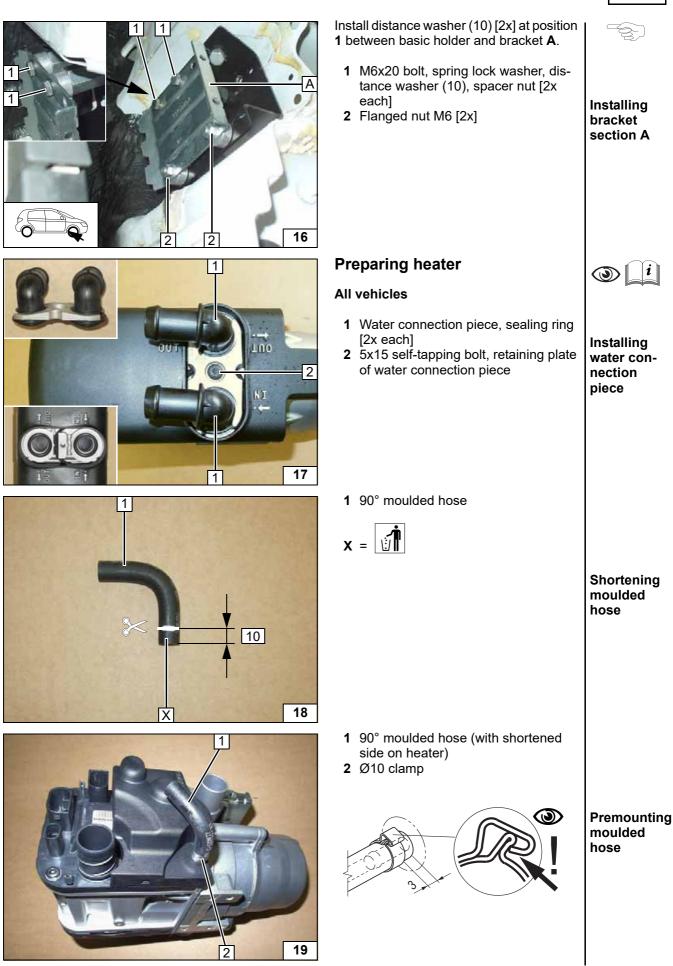
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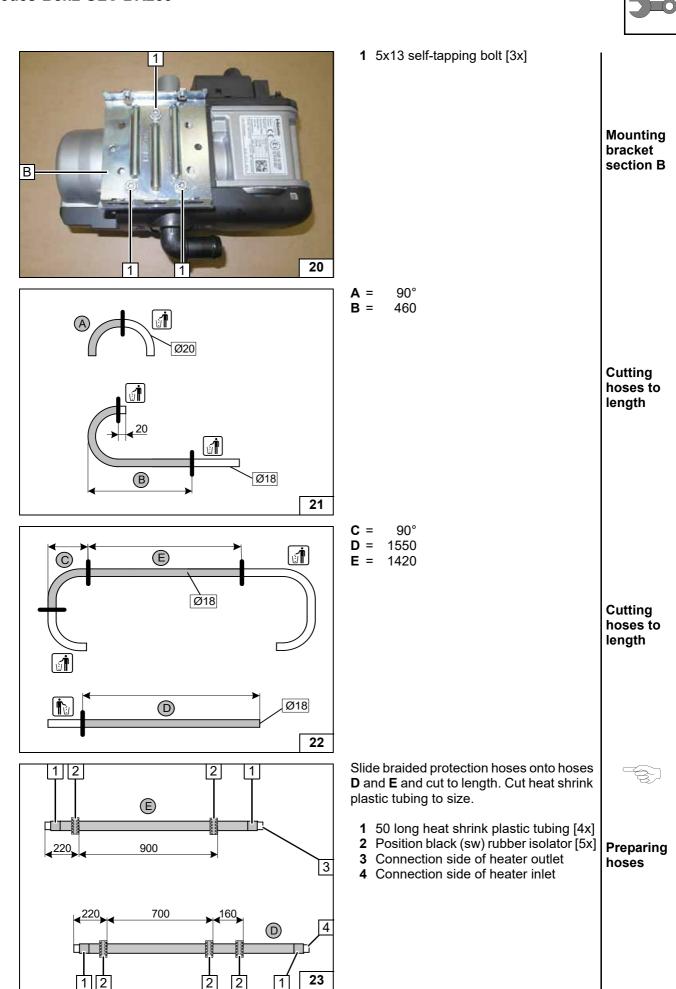








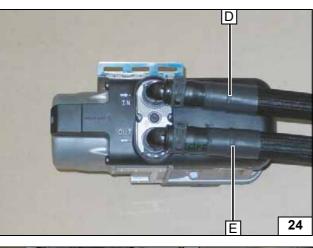




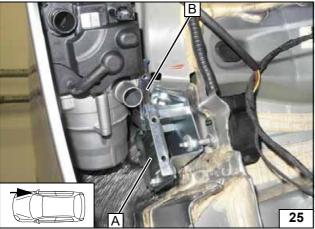


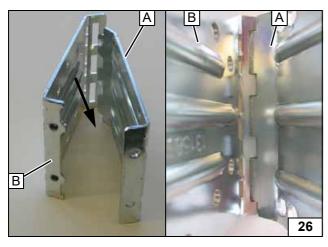
Installing hoses

Installing heater









over the tabs of bracket **A**.

The recesses of bracket B must be guided

Install heater in installation location from

A Bracket (installed on basic holder)B Bracket (installed on heater)

All spring clips = Ø25

Installing heater

the front (see next figure).



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

1 M5x12 torx screw [2x]

Installing heater

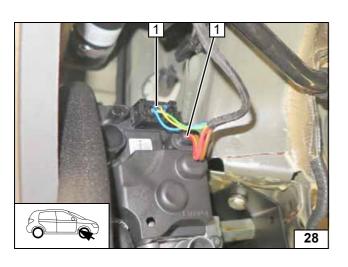
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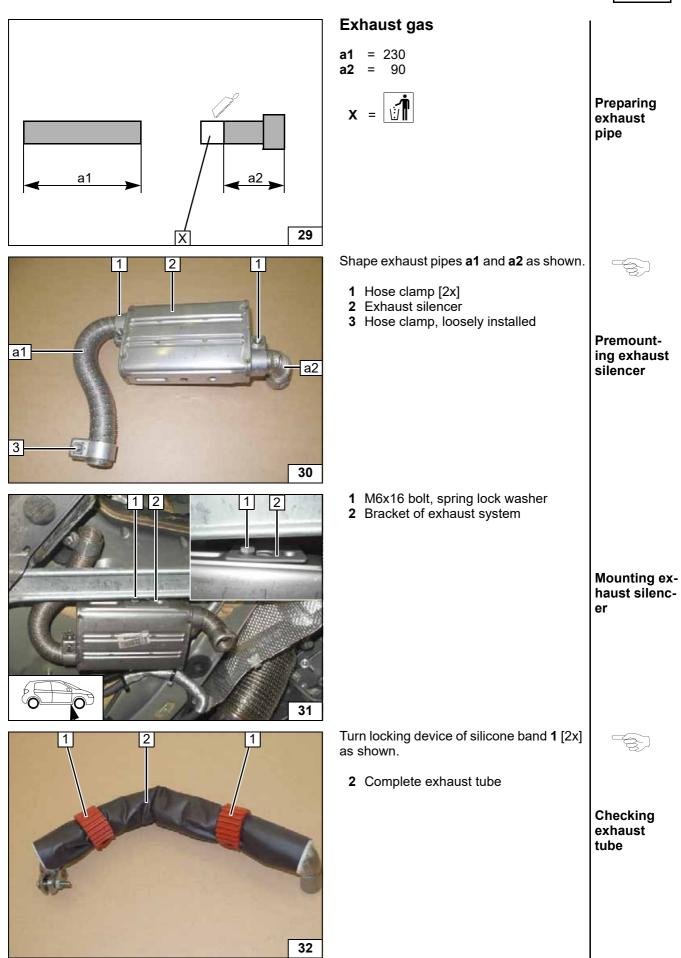


1 Heater wiring harness connector [2x]

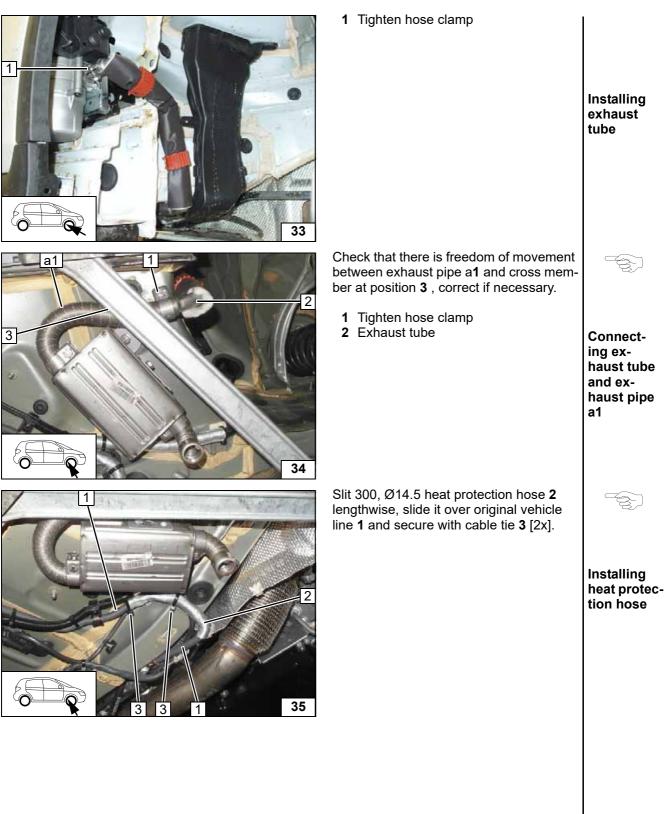
Installing heater











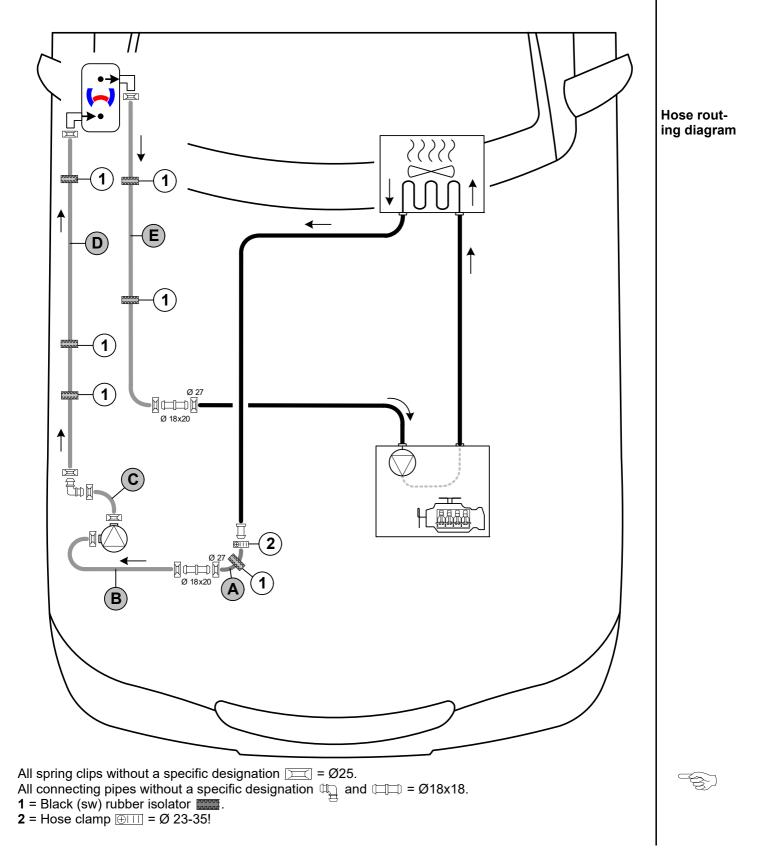


## **Coolant circuit**

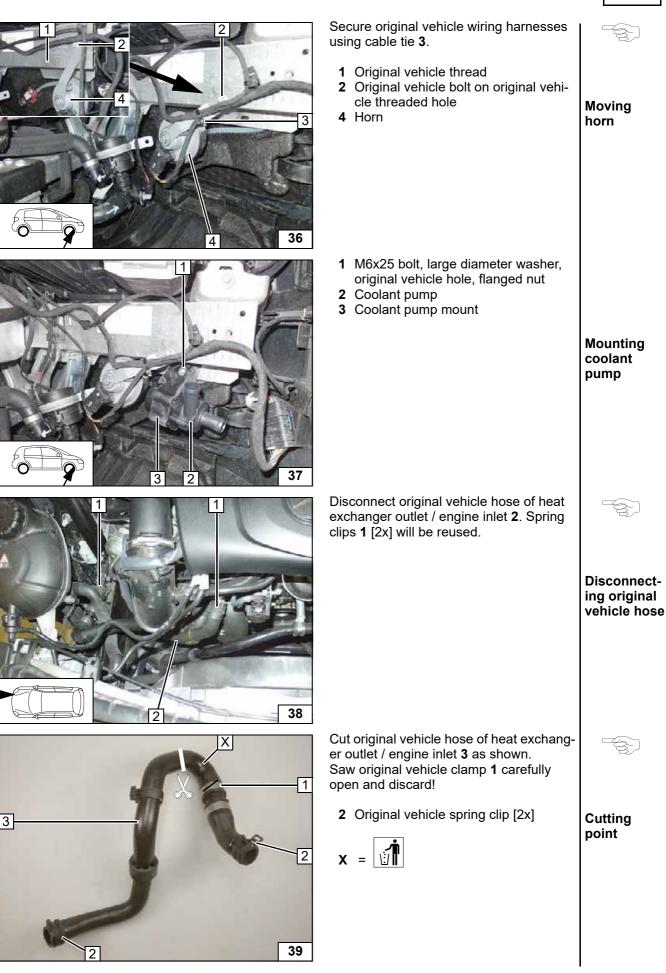


Any coolant running off should be collected in an appropriate container. Route hoses kink-free. Unless specified otherwise, always fasten using cable ties. Position clamps so that other hoses cannot be damaged. The heater must be filled with coolant when installing the hoses.

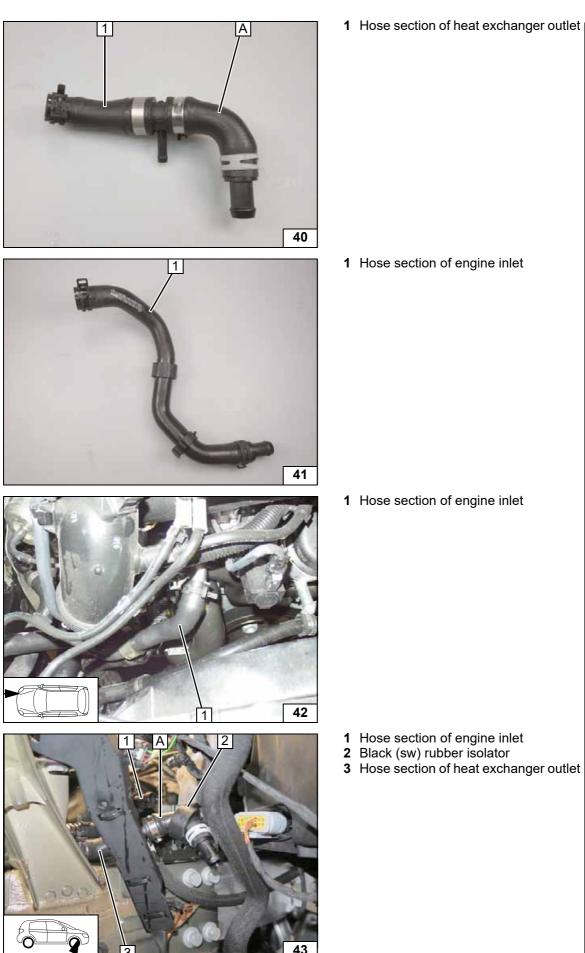
The connection should be modelled on an 'inline' circuit and based on the following diagram:











Premounting hose section of heat exchanger outlet

Premounting hose section of engine inlet

1 Hose section of engine inlet

Mounting hose section of engine inlet

- **1** Hose section of engine inlet
- 3 Hose section of heat exchanger outlet

Mounting hose section of heat exchanger outlet



Routing hoses D and E in wheel well

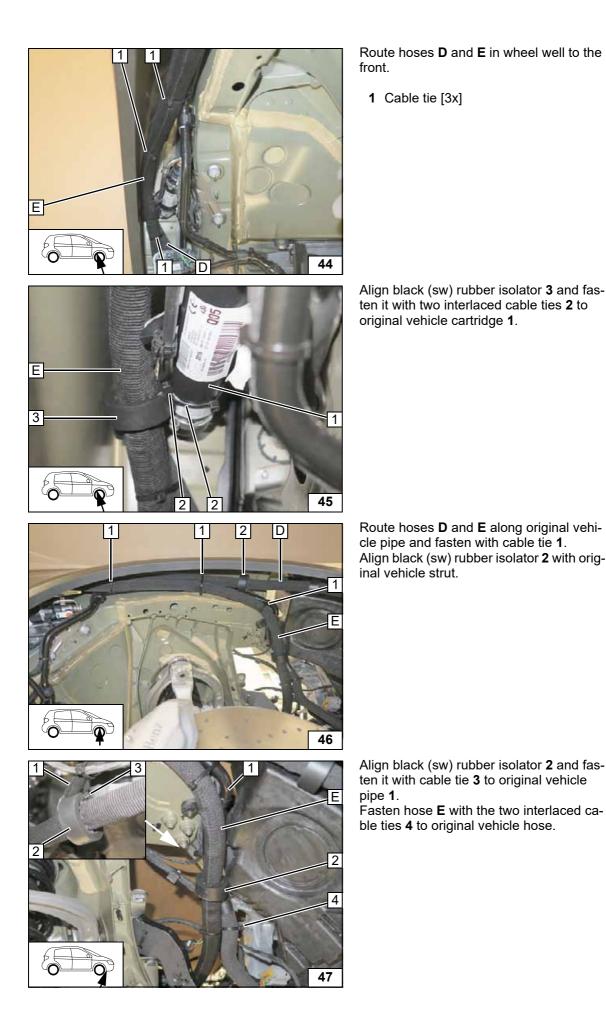
Routing hoses D

and E in wheel well

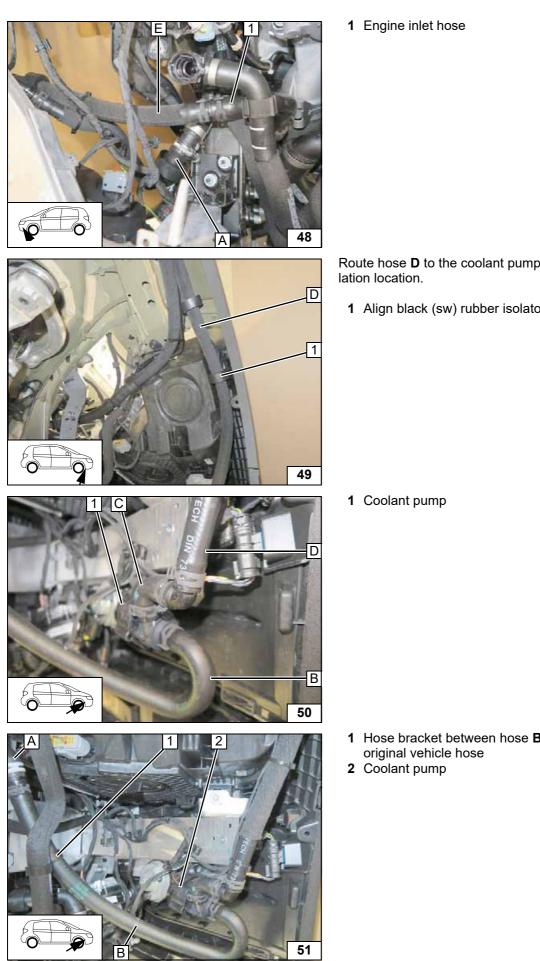
Routing hoses D and E in wheel well

Routing of hose E in

wheel well







Connection on engine inlet

Route hose **D** to the coolant pump instal-

1 Align black (sw) rubber isolator

Routing hose D

Coolant pump connection

1 Hose bracket between hose **B** and

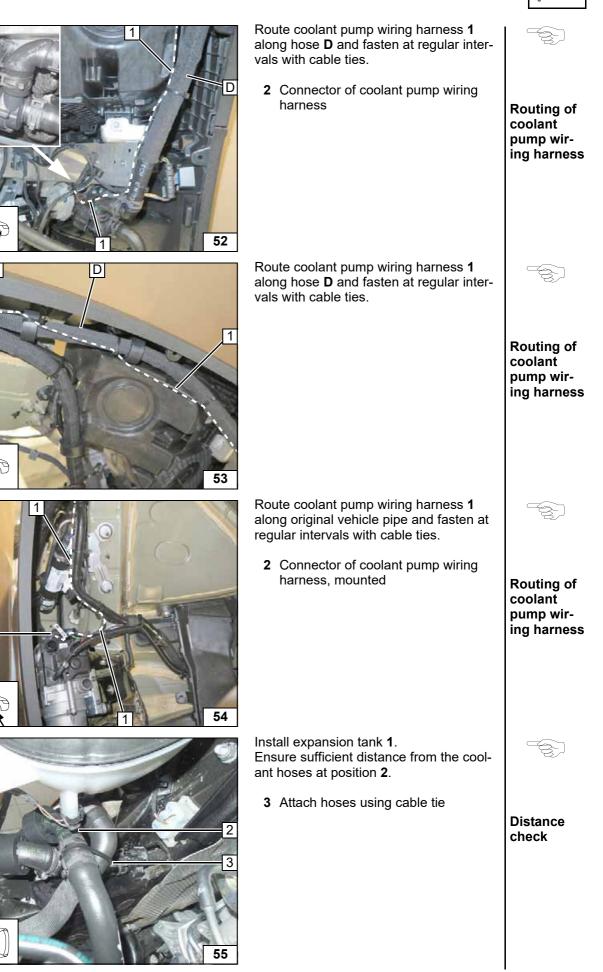
Connecting hose B

1

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2





## Mercedes-Benz GLC BR253

Connector X7



## Fuel



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

Catch a

Catch any fuel running off in an appropriate container.

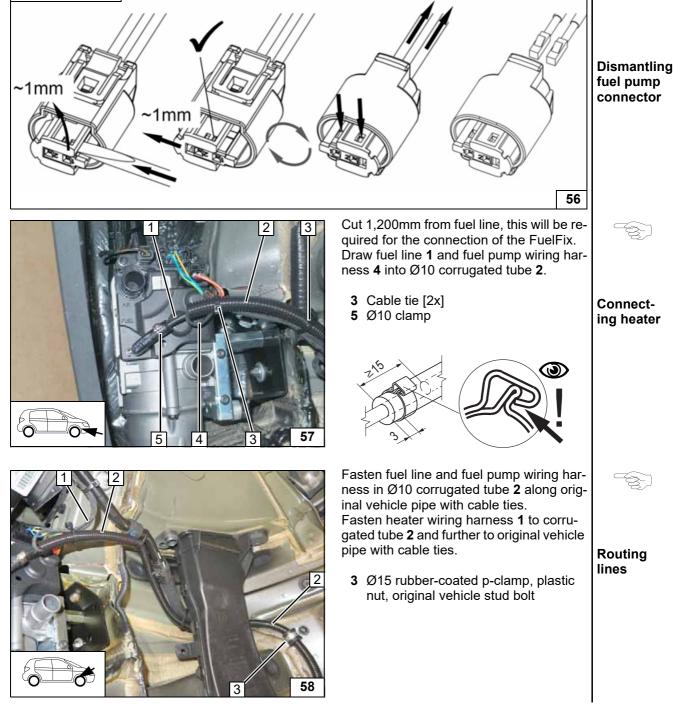


Route fuel line and fuel pump wiring harness so that they are protected against stone impact. Unless specified otherwise, always fasten using cable ties.

Provide rub protection for fuel line and wiring harness in areas where there are sharp edges.

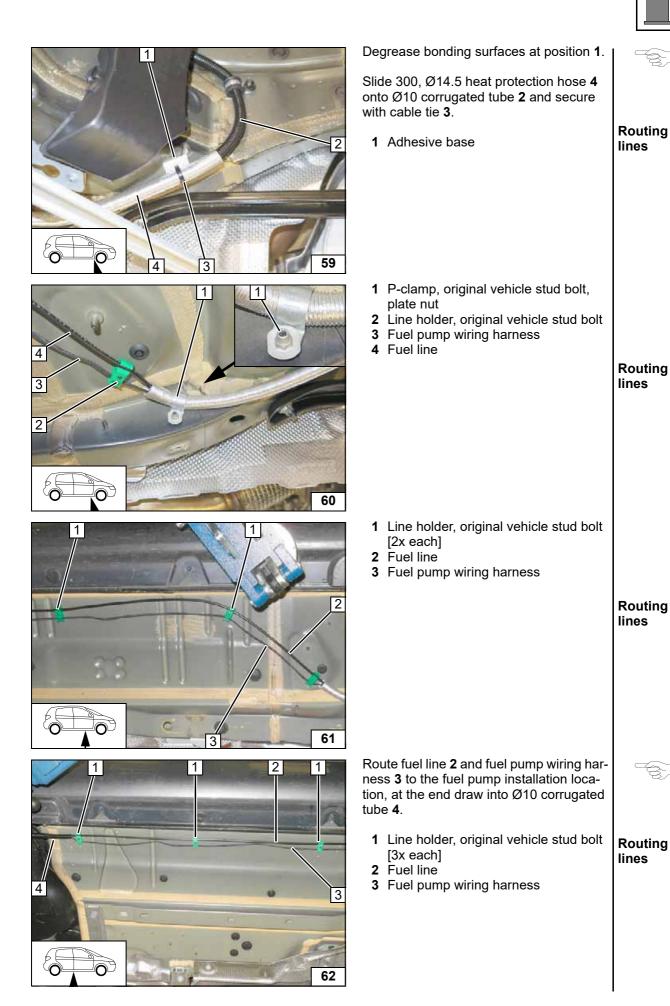
The fuel line and wiring harness are routed to the fuel pump as shown in the wiring harness routing diagram.



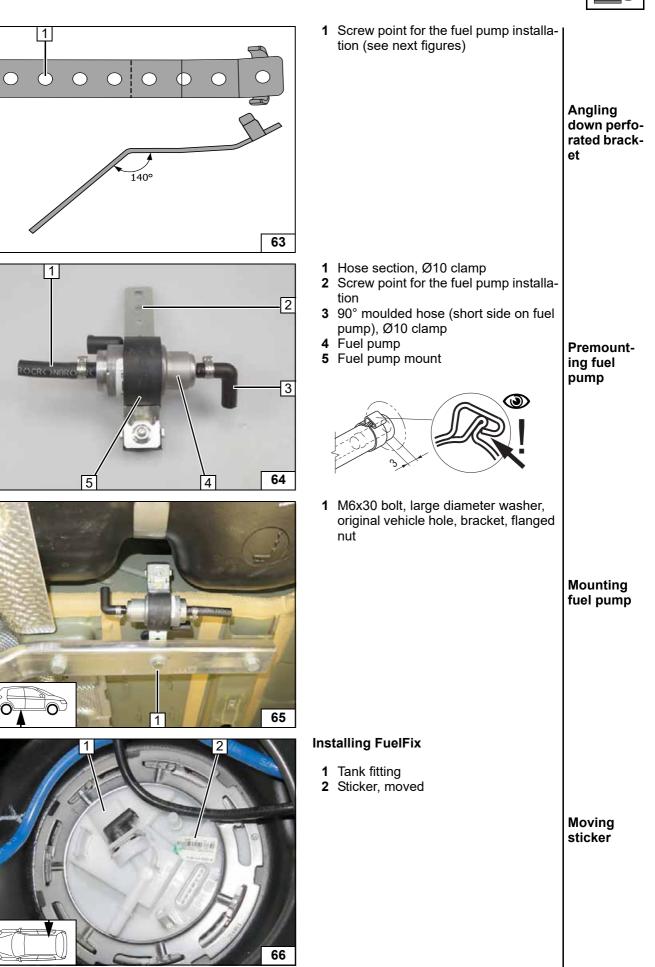


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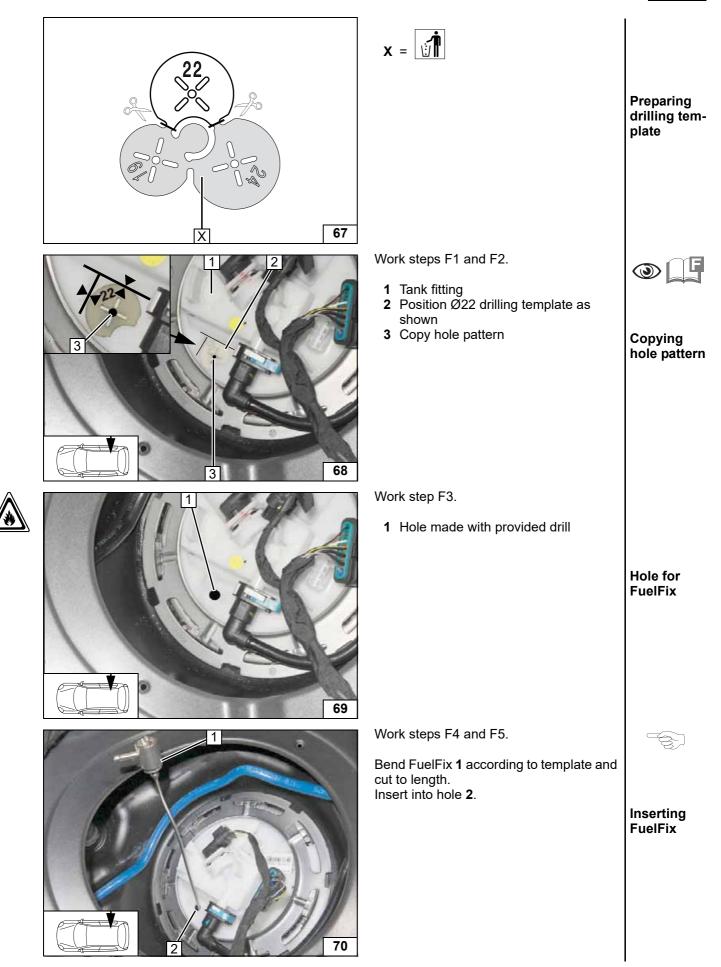




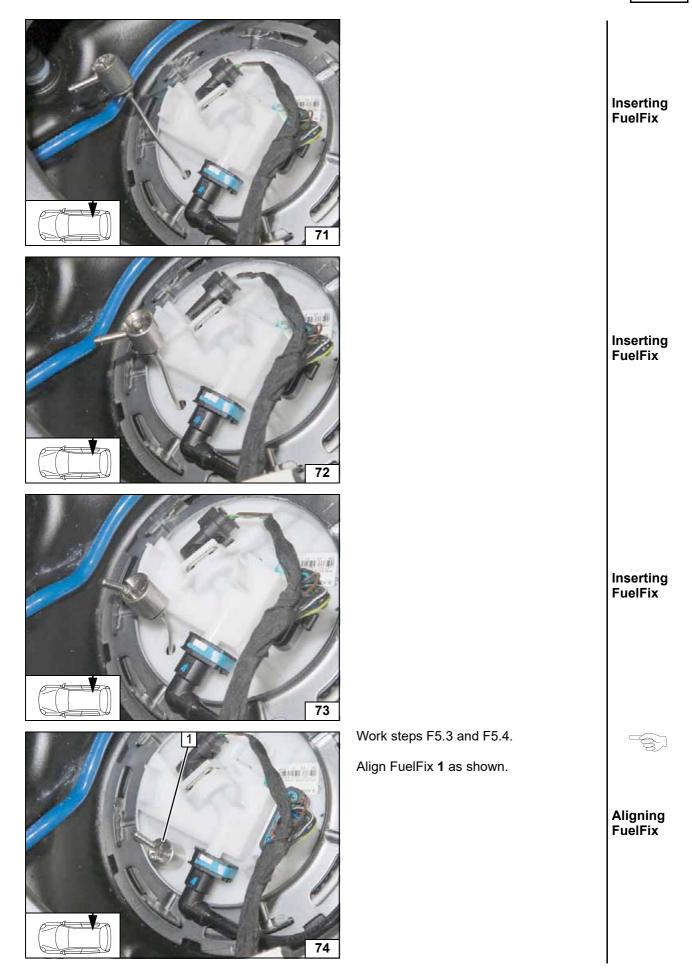




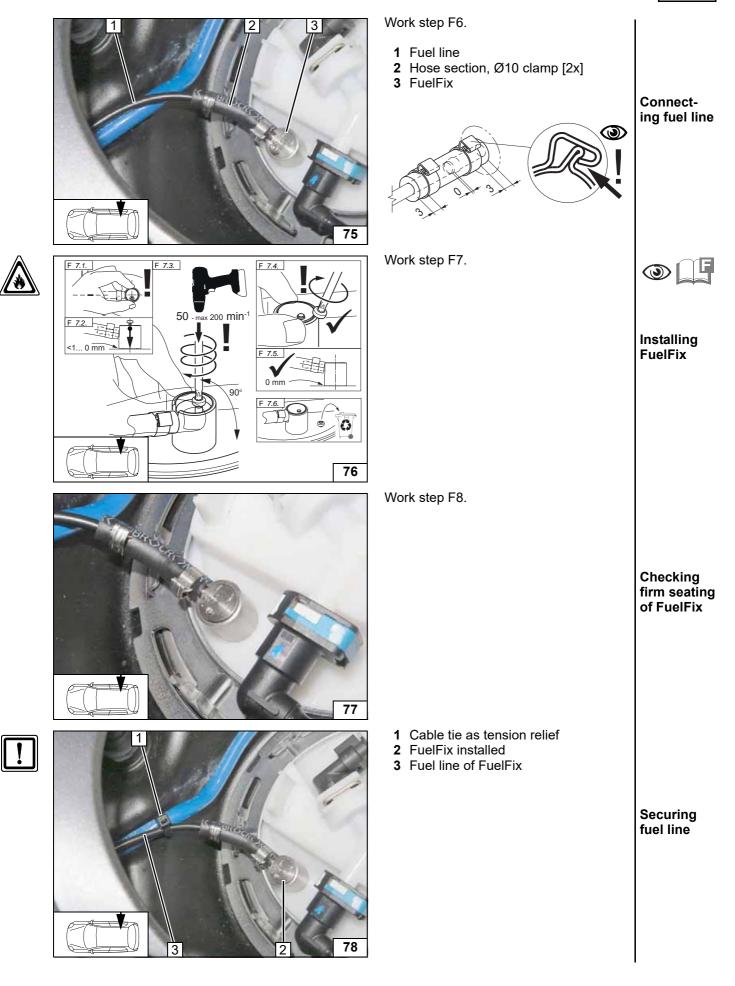




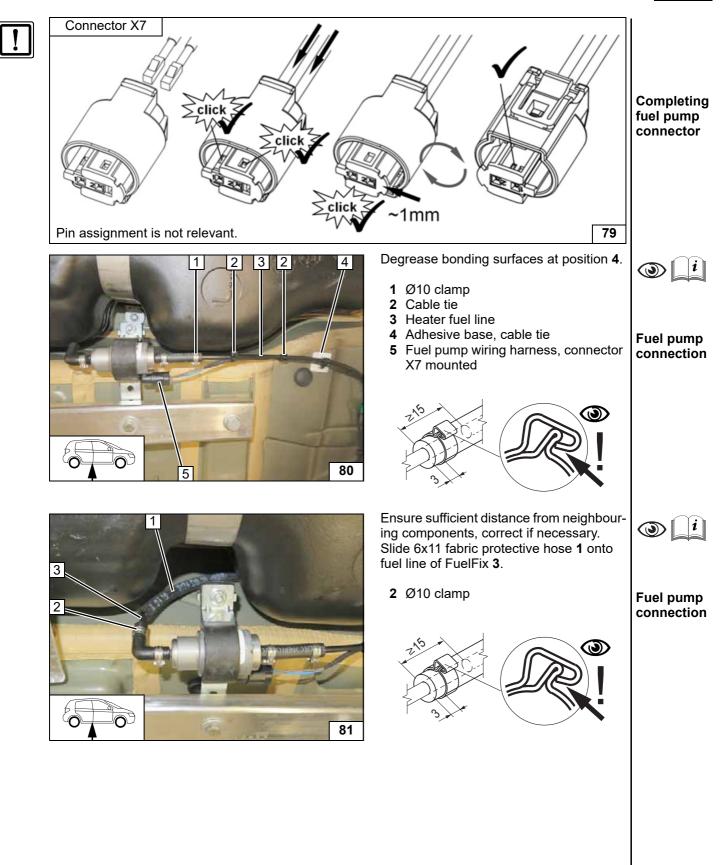




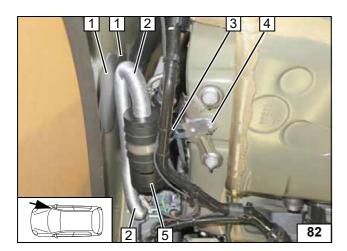












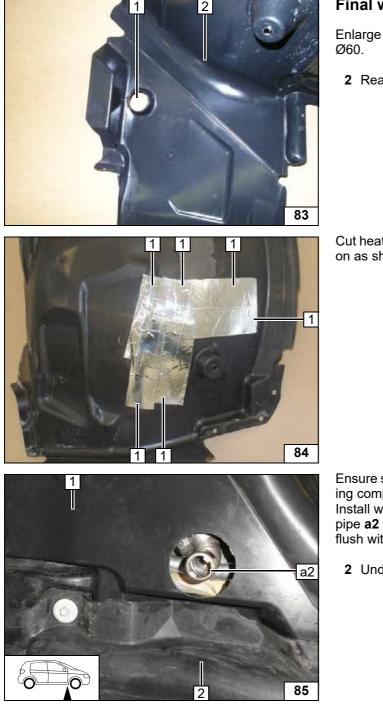
## **Combustion air**

Ensure sufficient distance between combustion air intake silencer and original vehicle pipe, correct if necessary.

- **1** Glue insulation protection strips [2x]
- 2 Combustion air pipe
- 3 M5x16 bolt, perforated bracket, Ø51 clamp, flanged nut
  4 Original vehicle stud bolt, perforated bracket, M6 flanged nut
- **5** Combustion air intake silencer

Mounting combustion air intake silencer and combustion air pipe





# **Final work** Enlarge existing opening at position 1 to 2 Rear section of the wheel well trim Hole for exhaust pipe a2 Cut heat protection strip 1 in half and stick on as shown. Sticking on heat protection strip Ensure sufficient distance from neighbouring components, correct if necessary. Install wheel well trim **1**. Align exhaust pipe **a2** with the centre of the hole and flush with wheel well trim 1. Installing underride 2 Underride protection protection

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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.
- Teach Telestart transmitter
- For initial start-up and function check, please see installation instructions.
- For the settings of the A/C control panel see the installation documentation in the additional 'Webasto Comfort' A/C control kit section 'Final Work'
- Place the 'Switch off parking heater before refuelling' caution label near the filler point.



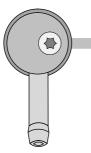
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Webasto Thermo & Comfort SE Postfach 1410 82199 Gilching Germany Internet: www.webasto.com Technical Extranet: http://dealers.webasto.com

## **FuelFix template**







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100mm

Scale 1:1

Compare size of printout with dimension lines. Maximum permitted tolerance 2%.

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

100mm

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