



# Water Heater

## Thermo Top Evo Parking Heater



With FuelFix

# Installation Documentation Opel Insignia

### Validity

Manufacturer	Model	Type	EG-BE-No. / ABE
Opel	Insignia	OG-A	e1 * 2007 / 46 * 0374 * ...

Motorisation	Fuel	Transmission type	Output in kW	Displacement in cm <sup>3</sup>	Engine code
2.0 D	Diesel	6-level SG	96	1956	A20DT (LBR)
2.0 D	Diesel	6-speed AG	96	1956	A20DT (LBR)
2.0 D	Diesel	6-level SG	103	1956	A20DTE (LHV)
2.0 D	Diesel	6-speed AG	120	1956	A20DTH (LBS)
2.0 D	Diesel	6-level SG	121	1956	A20DTH (LBS)
2.0 D	Diesel	6-speed AG	121	1956	A20DTH (LBS)

SG = manual transmission  
AG = automatic transmission

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

**Verified equipment variants:** 1 and 2 zone automatic air-conditioning  
Front fog lights  
Bi-Xenon and headlight washer system  
Headlight washer system without Xenon  
2 WD / 4 WD  
Start / Stop  
Daytime running lights with / without LED  
Euro 5  
Keyless lock / unlock (keyless open)  
Passenger compartment monitoring  
Solar Protect windscreen

**Total installation time:** approx. 7 hours

# Opel Insignia

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## Necessary Components

- Basic delivery scope Thermo Top Evo based on price list
- Installation kit with FuelFix for Opel Insignia 2014 Diesel: **1322334B**
- Heater control in accordance with price list and upon consultation with end customer
- In case of Telestart, indicator lamp in accordance with price list and in consultation with end customer

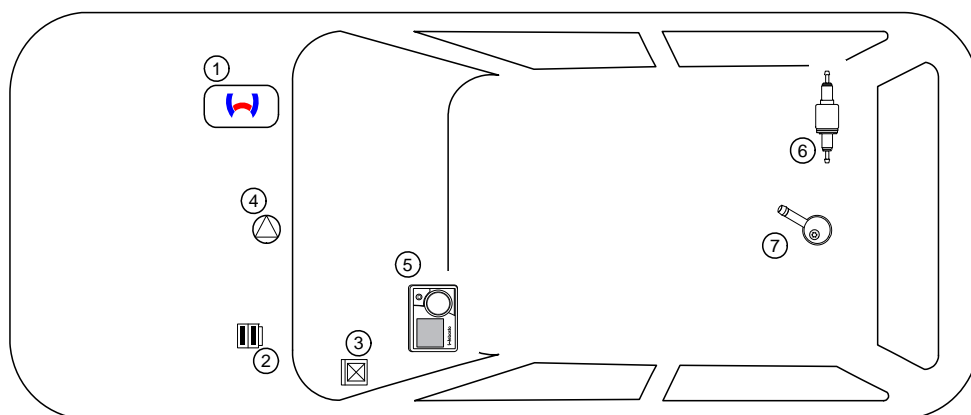
## Installation instructions:

- Arrange for the vehicle to be delivered with the tank only about  $\frac{1}{4}$  full.
- The installation location of the push button in case of Telestart or Thermo Call should be confirmed with the end customer.
- Depending on the available space and manufacturer's instructions, we recommend the use of a vehicle battery with more electrical capacity.

## Installation Overview

### Legend:

1. Heater
2. Engine compartment fuse holder
3. CAN module
4. Circulating pump
5. MultiControl CAR
6. Metering pump
7. FuelFix



## Information on Total Installation Time

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

## Information on Operating and Installation Instructions

### 1 Important information (not complete)

#### 1.1 Installation and repair



The improper installation or repair of Webasto heating and cooling systems can cause fire or the leakage of deadly carbon monoxide, leading to serious injury or death.



To install and repair Webasto heating and cooling systems you need to have completed a special company training course and have the appropriate technical documentation, special tools and special equipment.



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

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

#### 1.2 Operation

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

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

Always switch off the heater before refuelling.

The heater may only be used with the prescribed fuel diesel (DIN EN 590) or petrol (DIN EN 228).

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

#### 1.3 Please note

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

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

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

#### Important

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

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

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

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

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

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

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

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

### 2 Statutory regulations governing installation

Guidelines	Thermo Top Evo
Heating Directive ECE R122	E1 00 0258
EMC Directive ECE R10	E1 04 5627

#### Note

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

#### Important

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

#### Note

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

### 2.1 Excerpt from the directive 122 (heater) section 5 for the installation of the heater.

Beginning of excerpt.

#### ANNEX VII

#### REQUIREMENTS FOR COMBUSTION HEATERS AND THEIR INSTALLATION

##### 1. GENERAL REQUIREMENTS

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

##### 2. VEHICLE INSTALLATION REQUIREMENTS

###### 2.1. Scope

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

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

###### 2.2. Positioning of heater

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

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

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

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

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

###### 2.3. Fuel supply

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

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

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

###### 2.4. Exhaust system

2.4.1. The exhaust gas 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.

# Opel Insignia

## Information on Validity

These installation instructions apply to Opel Insignia Diesel vehicles - for validity, see page 1 - from model year 2014 and later, assuming technical modifications to the vehicle do not affect installation, any liability claims excluded. Depending on the vehicle version and equipment, modifications may be necessary during installation with respect to this installation documentation.

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

## Technical Instructions

### Special Tools

- Hose clamp pliers for self-clamping hose clamps
- Hose clamp pliers for Clic hose clamps of type W
- Automatic wire stripper 0.2 - 6mm<sup>2</sup>
- Crimping pliers for cable lug / tab connector 0.5 - 6mm<sup>2</sup>
- Torque wrench for 2.0 - 10 Nm
- Hose clamping pliers
- Metric thread-setter kit
- Deep-hole marker
- Webasto Thermo Test Diagnosis with current software

### Dimensions

- All dimensions are in mm.

### Tightening torque values

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

## Explanatory Notes on Document

You will find an identification mark on the outside top right corner of the page in question to provide you with a quick overview of the individual working steps.

Special features are highlighted using the following symbols:

**Mechanical System**



**Electrical System**



**Coolant Circuit**



**Combustion Air**



**Fuel**



**Exhaust Gas**



**Software**



**Specific risk of damage to components.**



**Specific risk due to electrical voltage.**



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



**Specific risk of fire or explosion.**



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



**Reference to a special technical feature.**



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



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



# Opel Insignia

## Preliminary Work

### Vehicle



- Check the automatic air-conditioning (ECC) software version and update to the respective latest available version.
- Open the fuel tank cap.
- Ventilate the fuel tank.
- Close the fuel tank cap again.
- Depressurise the cooling system.
- Disconnect the battery.



- **Warning:** Do not reconnect the battery until all the operations required to integrate the heater and its components, especially the CAN module, are completed. Failure to do so may result in malfunctions of the CAN module.
- Remove the air filter box.
- Remove the engine cover.
- Detach the coolant tank.
- Remove the windscreen wiper.
- Remove the cowl panel.
- Remove the right wheel.
- Remove the wheel well trim on the right.
- Remove the underride protection.
- Remove the instrument panel trim on the driver's side.
- Remove the cover of the light switch.
- Remove the lateral instrument panel trim on the left.

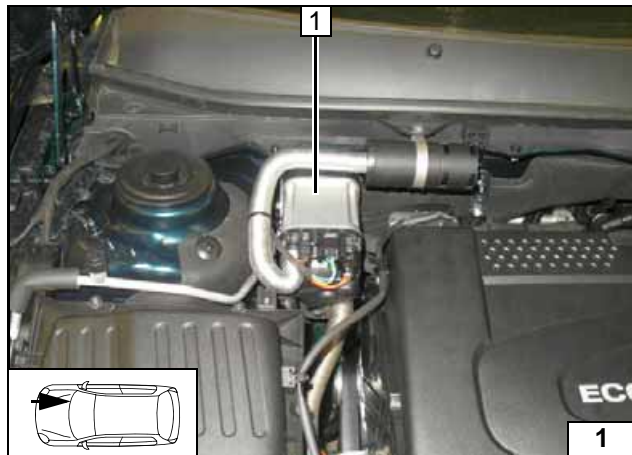
Carry out the following work only during the corresponding installation sequence:



- Remove the fuel tank 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) visibly in the appropriate place in the engine compartment.

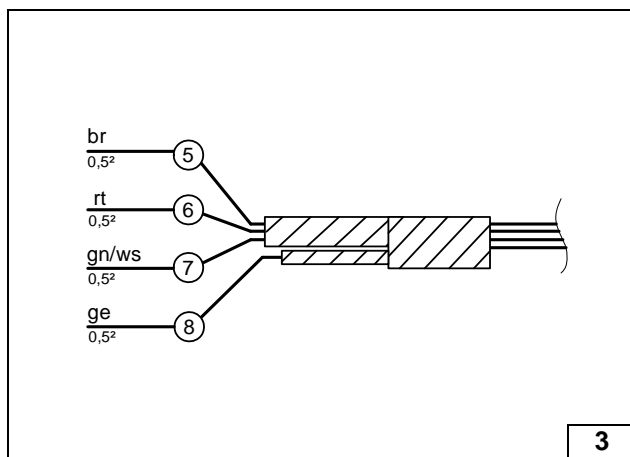
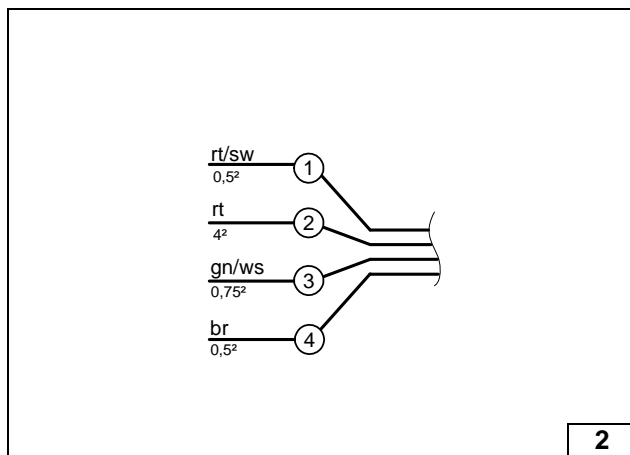


### Heater Installation Location

- 1 Heater



Installation location



## Preparing Electrical System

Wire sections retain their numbering in the entire document.

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

- ① Red/black (rt/sw) wire of heater wiring harness/ X10
- ② Red (rt) wire of heater wiring harness/ F2
- ③ Green/white (gn/ws) wire of heater wiring harness/ X1/5
- ④ Brown (br) wire of heater wiring harness/ earth 31
- ⑤ Brown (br) wire from CAN wiring harness/ 31
- ⑥ Red (rt) wire from CAN wiring harness/ 30
- ⑦ Green/white (gn/ws) wire of CAN wiring harness/ 15
- ⑧ Yellow (ge) wire of CAN wiring harness/DO+



**Assigning heater wiring harness**



**Assigning CAN wiring harness**



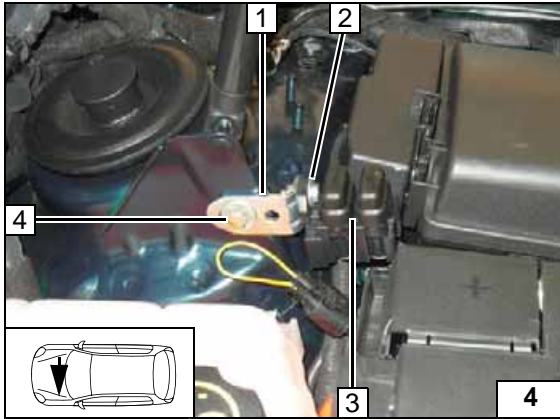
**Electrical System**



**Engine compartment fuse holder**

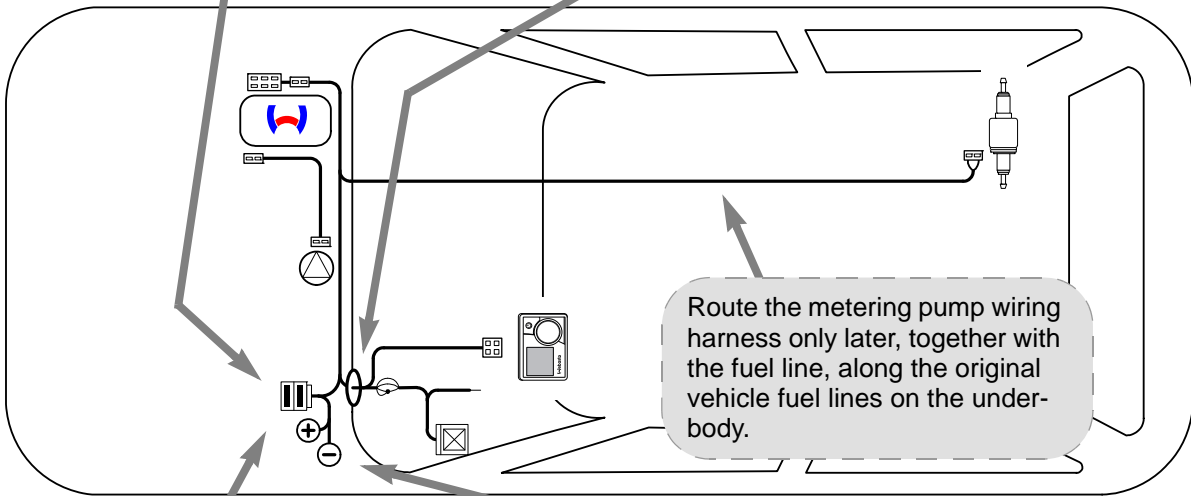
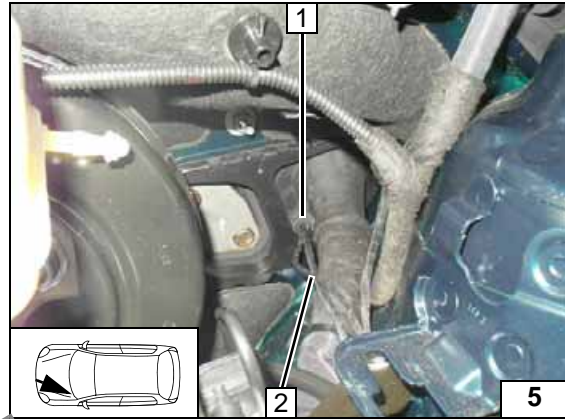
Replace 30A fuse F2 with 1A fuse!

- 1 Angle bracket
- 2 M5x16 bolt, large diameter washer [2x], fuse holder retaining plate, nut
- 3 Fuses F1-2
- 4 M6x20 bolt, large diameter washer, flanged nut, existing hole

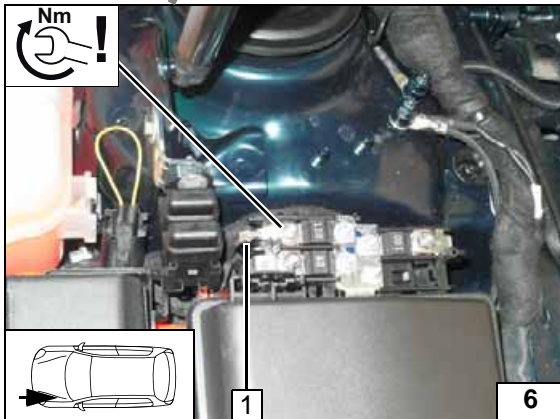


**Wiring harness pass through**

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

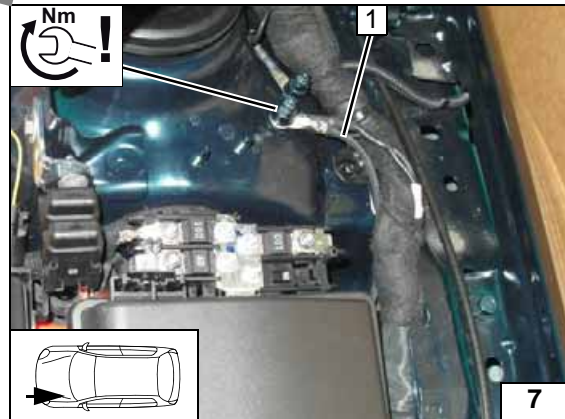


**Wiring harness routing diagram**



**Positive wire**

- 1 Positive wire on original vehicle positive distributor (if assigned, straight to positive battery terminal)



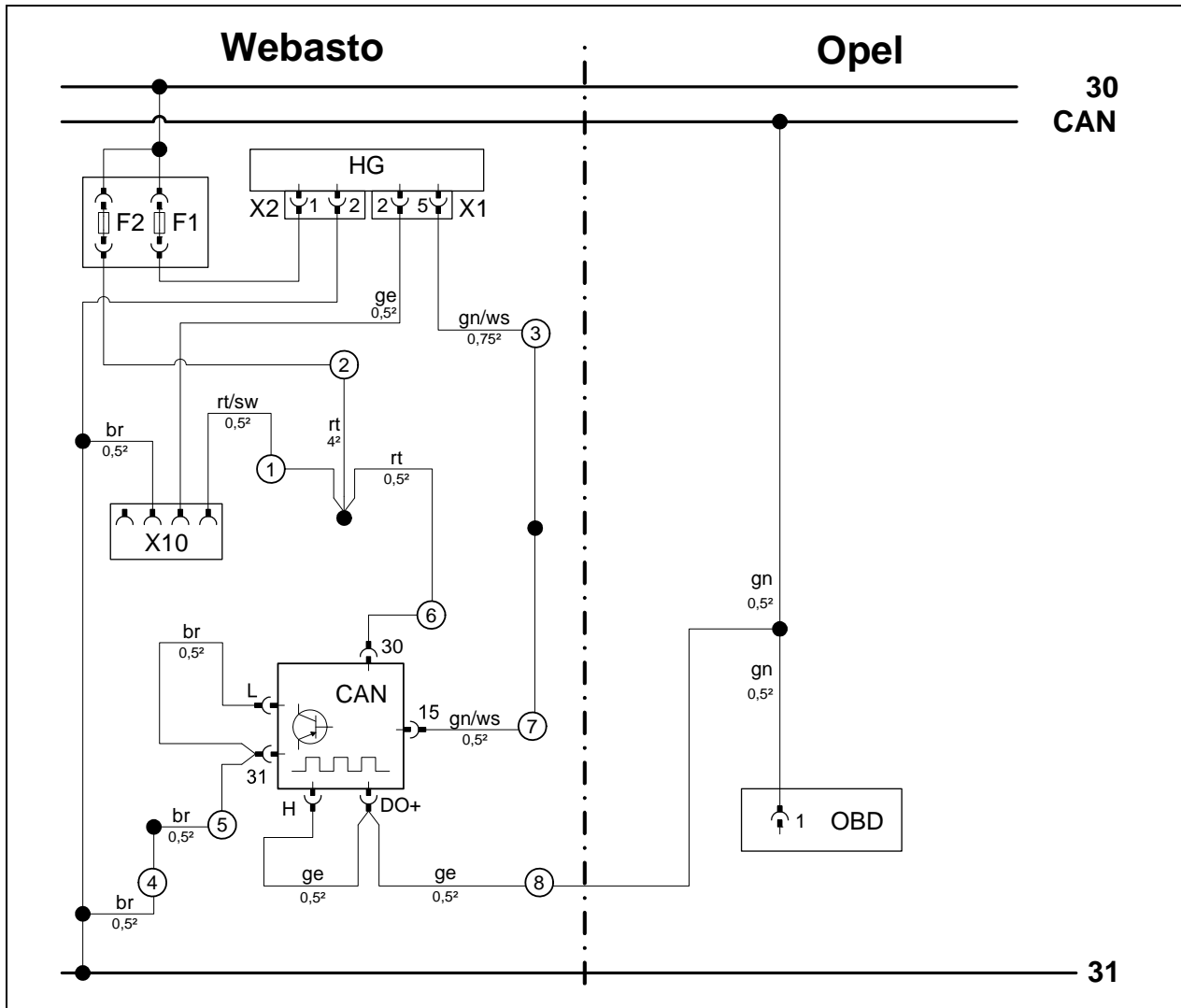
**Earth wire**

- 1 Earth wire on original vehicle earth support point





Fan Controller



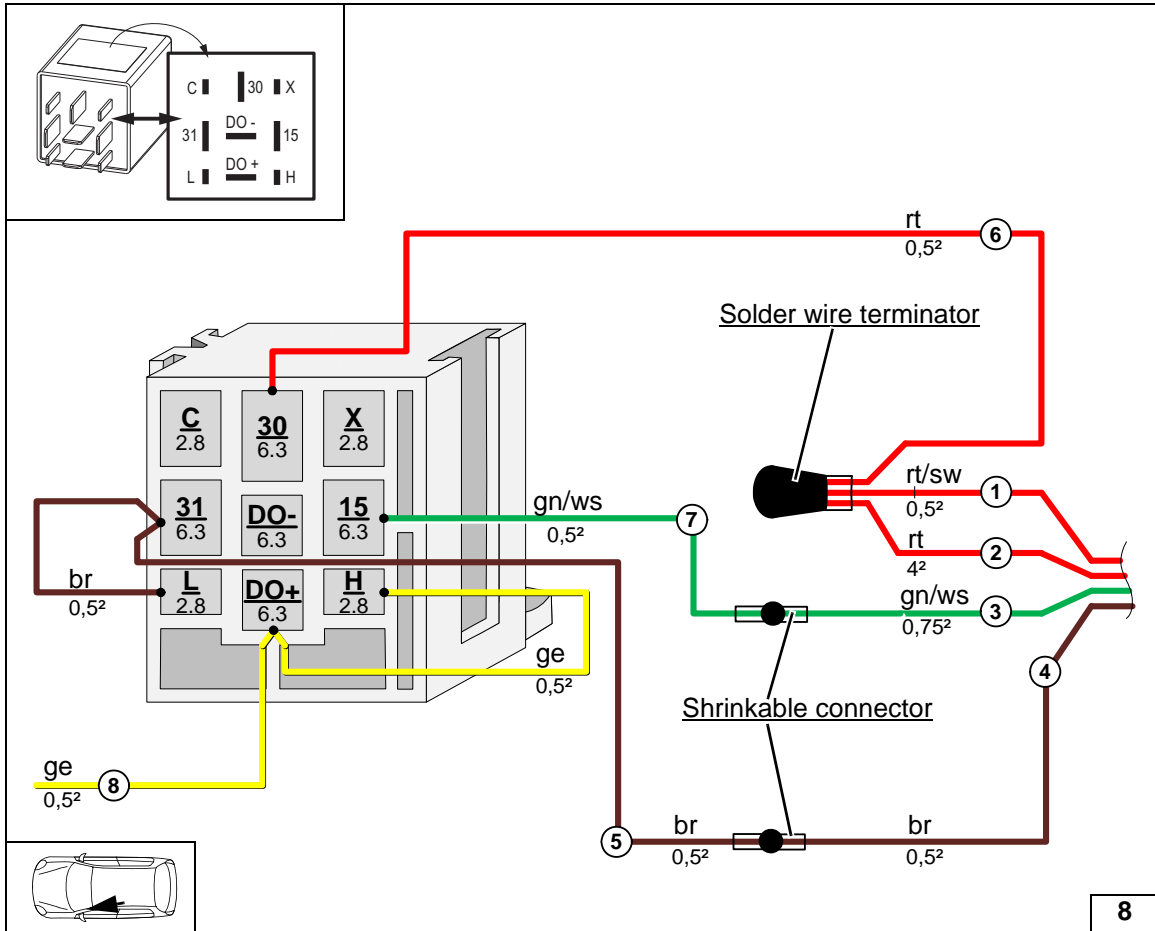
Wiring diagram



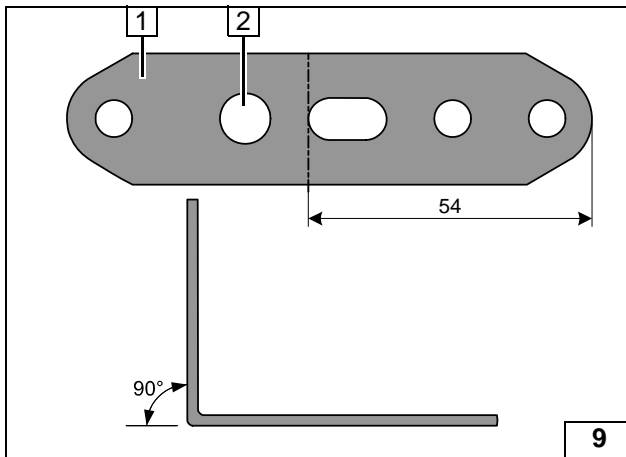
Webasto components		Vehicle components		Colours and symbols	
HG	TT-Evo heater	OBD	16-pin OBD connector	rt	red
X1	6-pin heater connector			sw	black
X2	2-pin heater connector			ge	yellow
F1	Fuse 20A			gn	green
F2	Replace 30A with 1A fuse			br	brown
				ws	white
X10	4-pin connector of heater control				
CAN	CAN module				
					Wiring colours may vary.

Legend



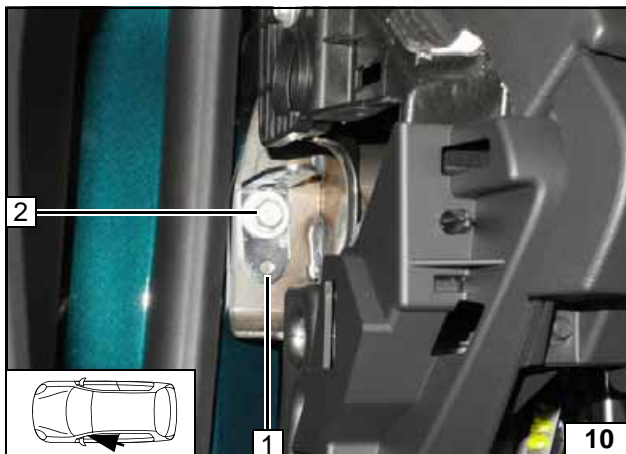


Connecting wires from heater wiring harness and CAN-module wiring harness in passenger compartment



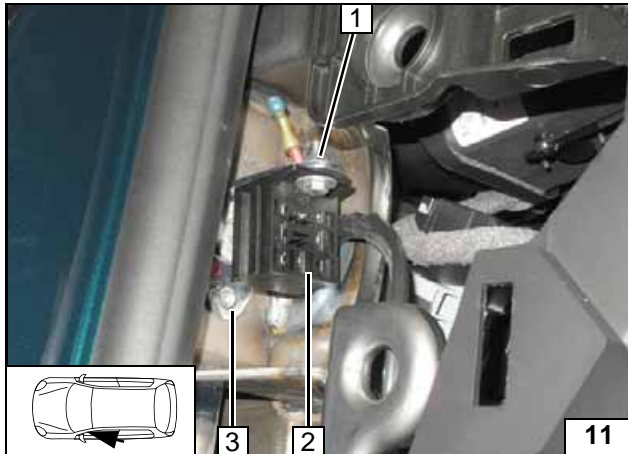
- 1 Perforated bracket
- 2 Drill out hole to 8.5 mm dia.

Preparing perforated bracket



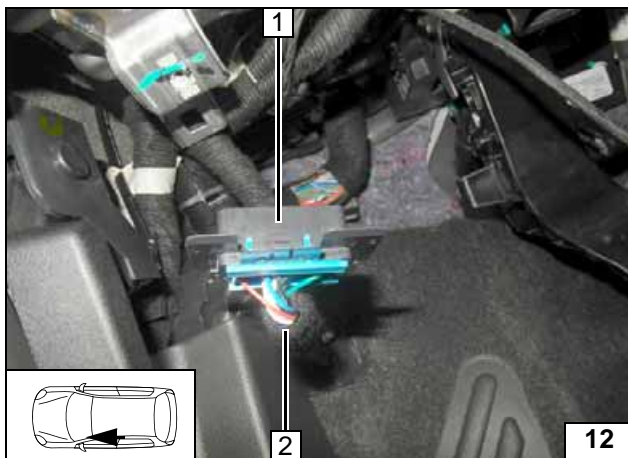
- 1 Perforated bracket
- 2 Original vehicle bolt

Installing perforated bracket



- 1 M5x16 bolt, large diameter washer [2x], nut
- 2 CAN module socket
- 3 Perforated bracket

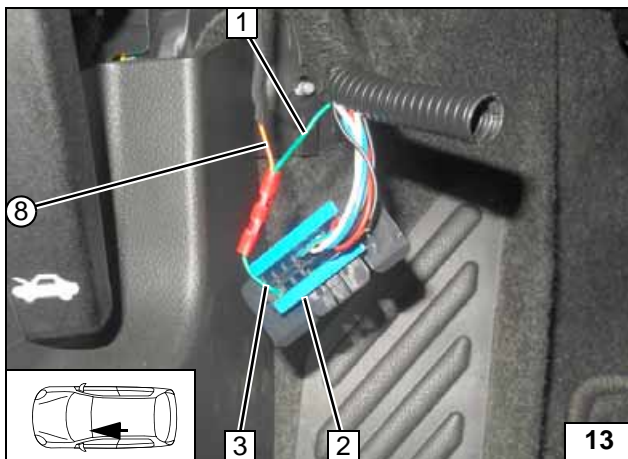
**Installing CAN module socket**



Remove insulation 2 from OBD connector 1.



**Disconnecting OBD connector**



Produce connections by crimping and shrinking.

- 1 Green (gn) wire of CAN bus
- 2 16 pin OBD connector
- 3 Green (gn) wire of OBD/1
- ⑧ Yellow (ge) wire of CAN module/DO+



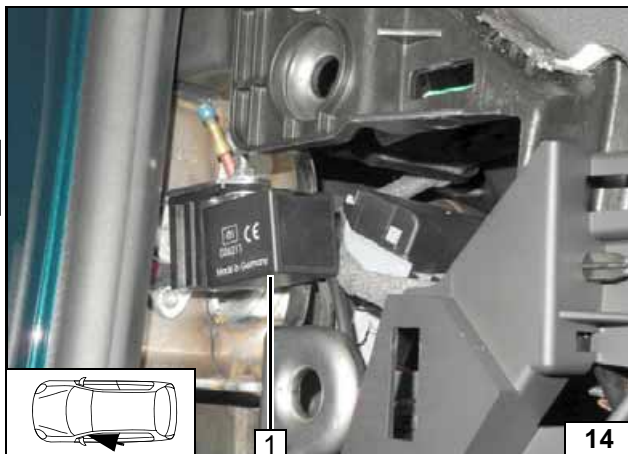
**Connecting OBD connector**

Before installation see info on battery in section "Preliminary Work"!



- 1 CAN module

**Mounting CAN module**



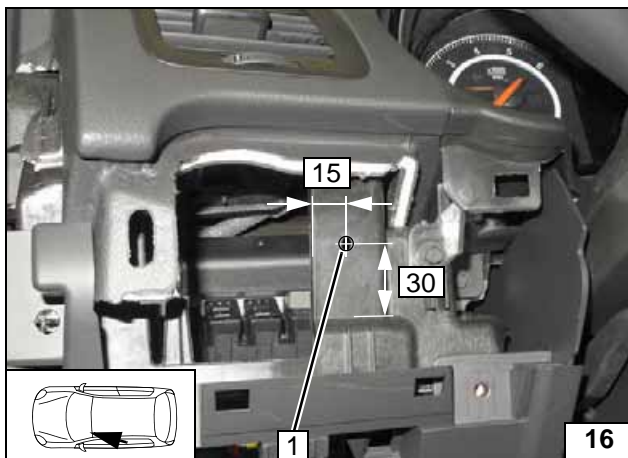


**MultiControl CAR Option**

- 1 MultiControl CAR



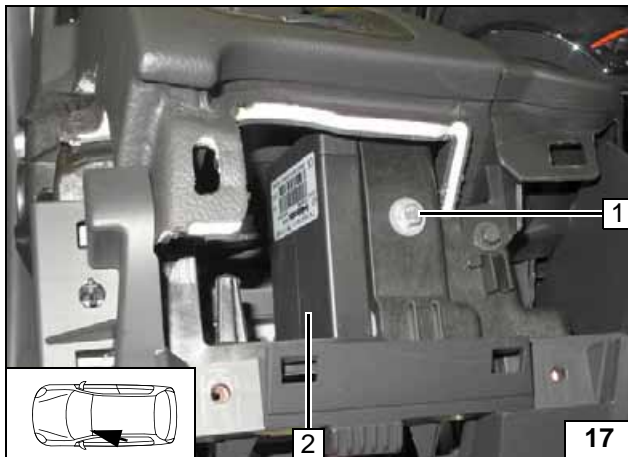
**Installing MultiControl CAR**



**Remote Option (Telestart)**

- 1 5.5 mm dia. hole for receiver bracket

**Installing receiver**

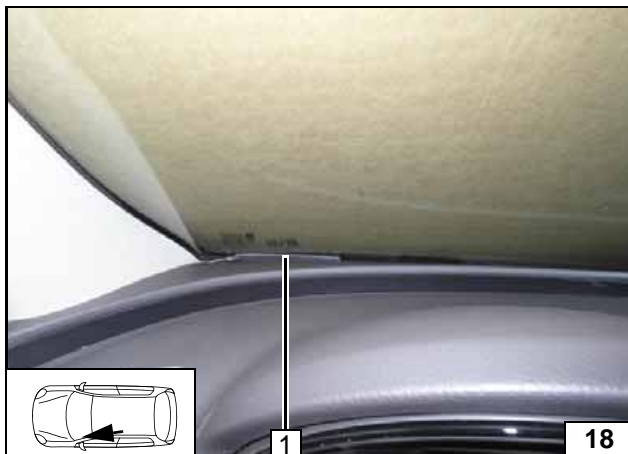


Angle down receiver bracket by 90°.

- 1 M5x16 bolt, large diameter washer, receiver bracket, flanged nut
- 2 Receiver mounted onto bracket



**Installing receiver**

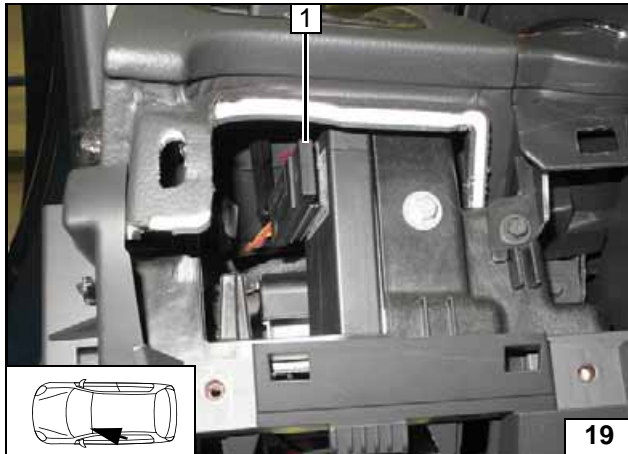
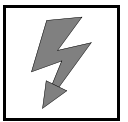


In case of tinted or heated windscreen, only use installation location foreseen by the manufacturer.

- 1 Aerial



**Installing aerial**

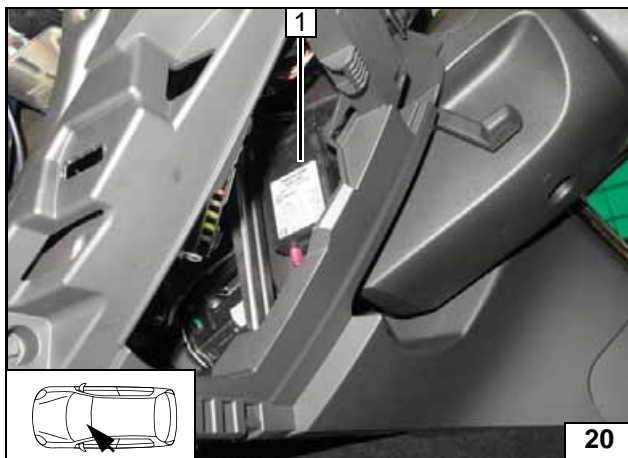


**Installing T100 HTM temperature sensor**

Fasten temperature sensor 1 with adhesive tape.



**Installing temperature sensor**

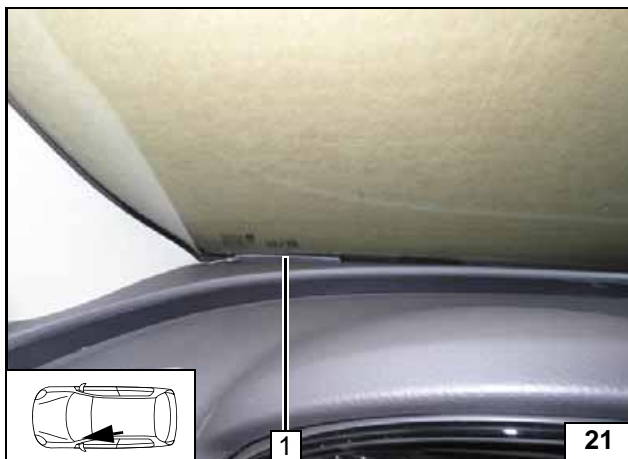


**Remote Option (Thermo Call)**

Fasten receiver 1 with adhesive tape.



**Installing receiver**

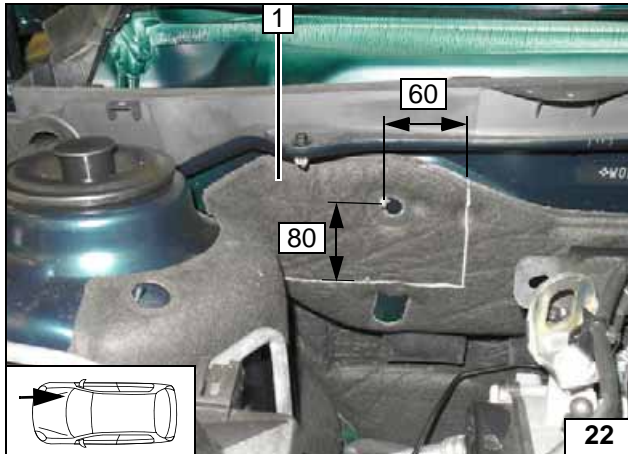
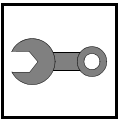


In case of tinted or heated windscreen, only use installation location foreseen by the manufacturer.

1 Aerial



**Installing aerial**



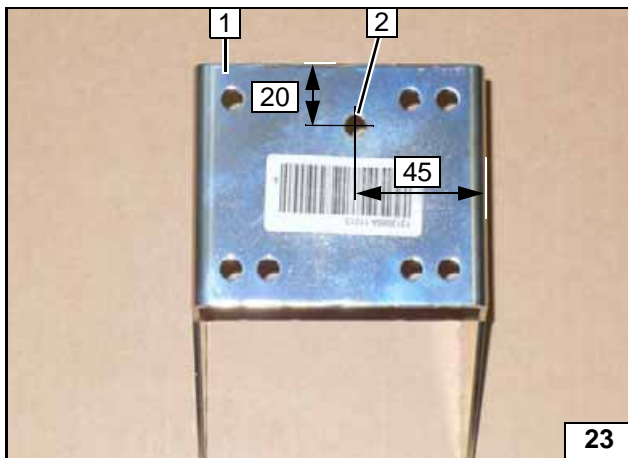
### Preparing Installation Location

Cut out insulation mat at markings

- 1 Discard section

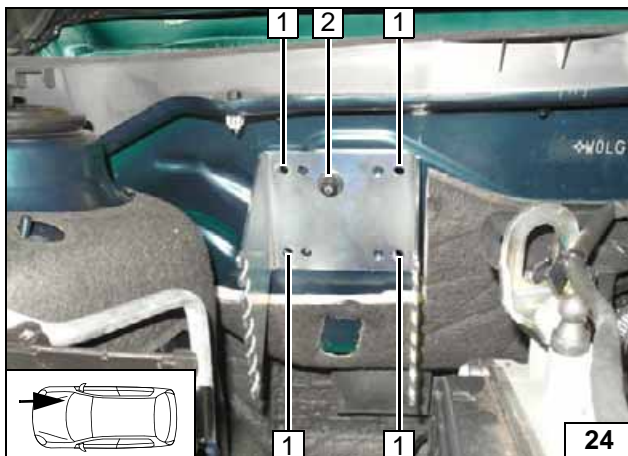


**Cutting out insulation mat**



- 1 Bracket
- 2 7 mm dia. hole

**Hole in bracket**

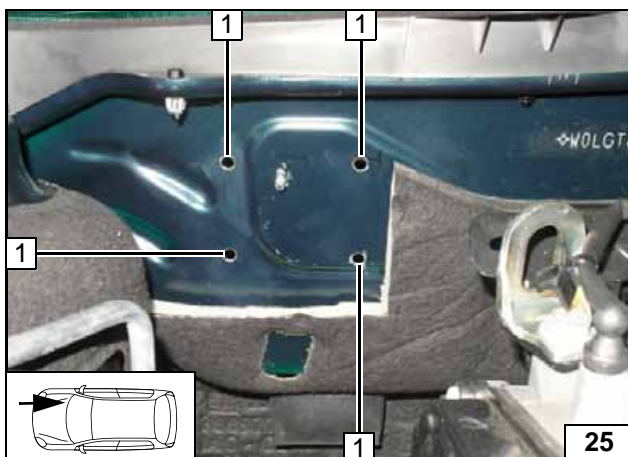


Mount bracket on original vehicle stud bolt 2 using original vehicle plastic nut and align horizontally.

- 1 Copy hole pattern [4x]



**Copying hole pattern**

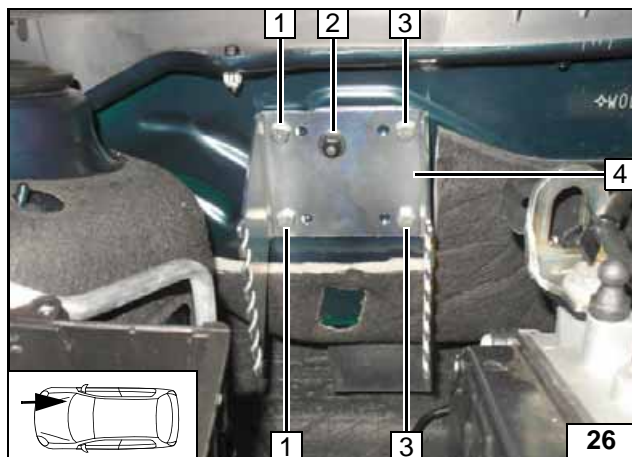
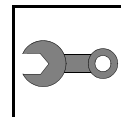


Take off bracket. When drilling, watch components located behind.

- 1 7 mm dia. holes [4x]



**Holes in fire-wall**



Insert one large diameter washer each with outer dia.  $d_a = 21.6\text{mm}$  between the firewall and bracket 4 at position 1.

- 1 M6x20 bolt, large diameter washer, flanged nut [2x each]
- 2 Plastic nut on original vehicle stud bolt
- 3 M6x20 bolt, flanged nut [2x each]



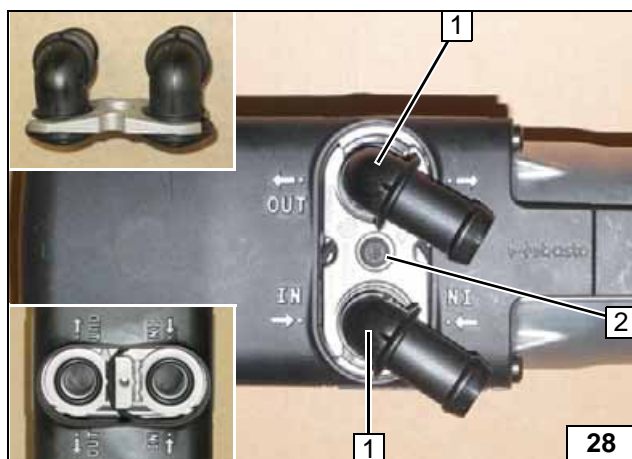
**Installing bracket**



Route heater wiring harness 1 behind the insulation mat on the firewall to the installation location of the heater.



**Routing wiring harness**

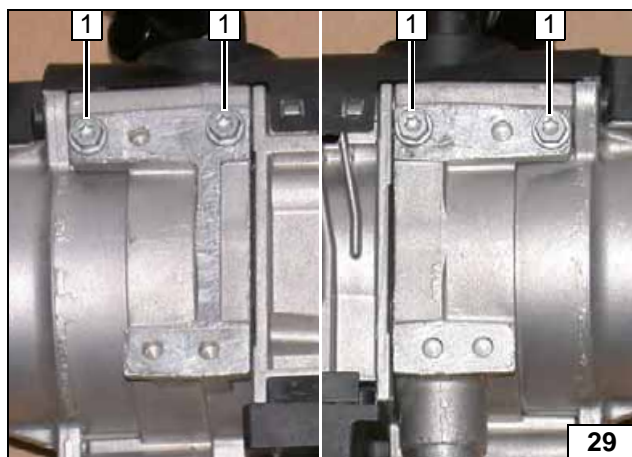


**Preparing Heater**

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



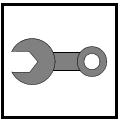
**Installing water connection piece**



Screw 5x13 self tapping bolts 1 [4x] into existing holes by a maximum of 3 thread turns.

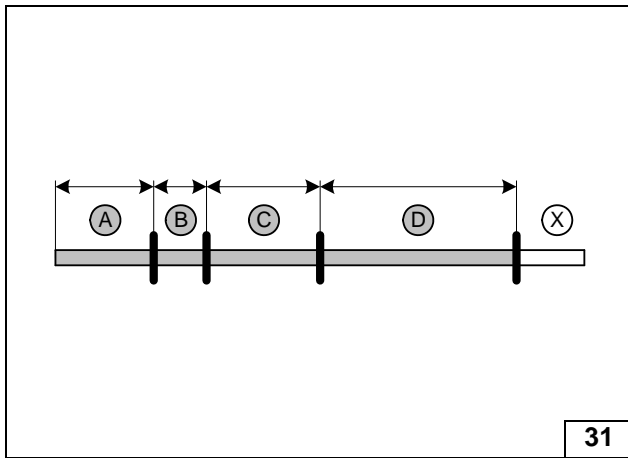


**Premounting bolts**



1 90° moulded hose, 10 mm dia. clamp

Premounting moulded hose

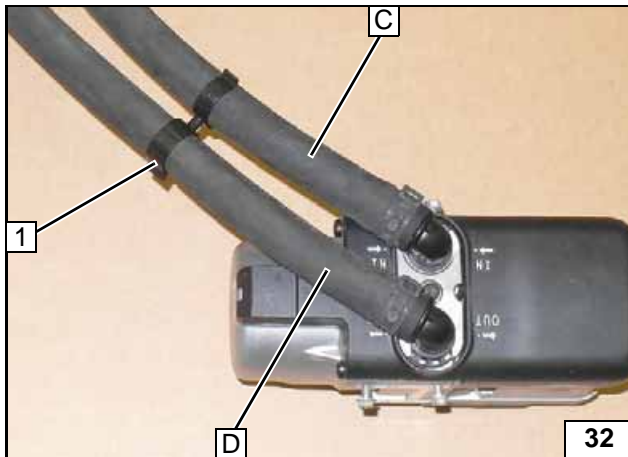


Discard section X.

- A = 200
- B = 80
- C = 380
- D = 560



Cutting hoses to length

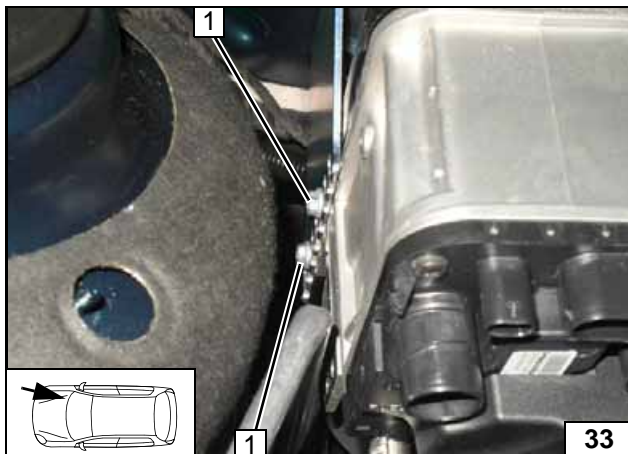


All spring clips = 25mm dia.

1 Install hose bracket



Premounting hoses



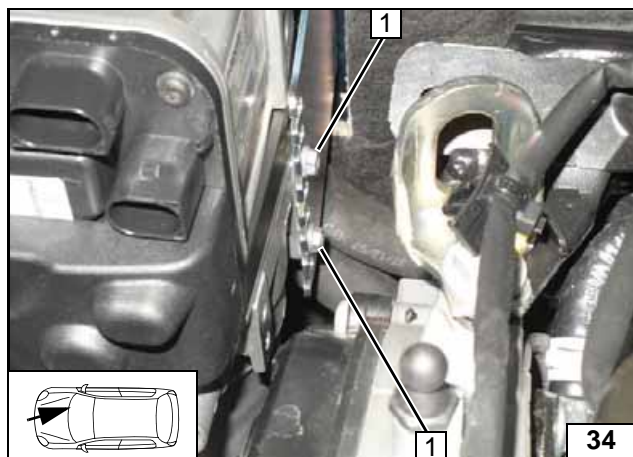
### Installing Heater

Install the lower heater bolts in the second slot from below

1 Tighten 5x13 self-tapping bolts [2x]

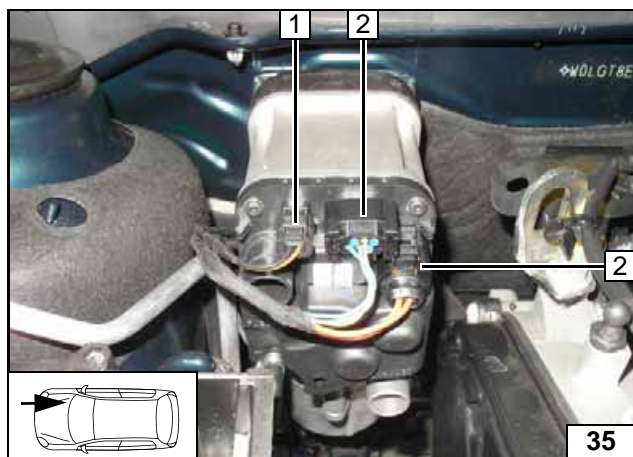


Installing Heater



- 1 Tighten 5x13 self-tapping bolts [2x]

**Installing heater**



Check the distance from the heater to the A/C line (at least 5mm) and to the engine (at least 20mm), correct bracket / heater if necessary



- 1 Connector of circulating pump wiring harness
- 2 Connector of heater wiring harness [2x]

**Installing wiring harnesses**





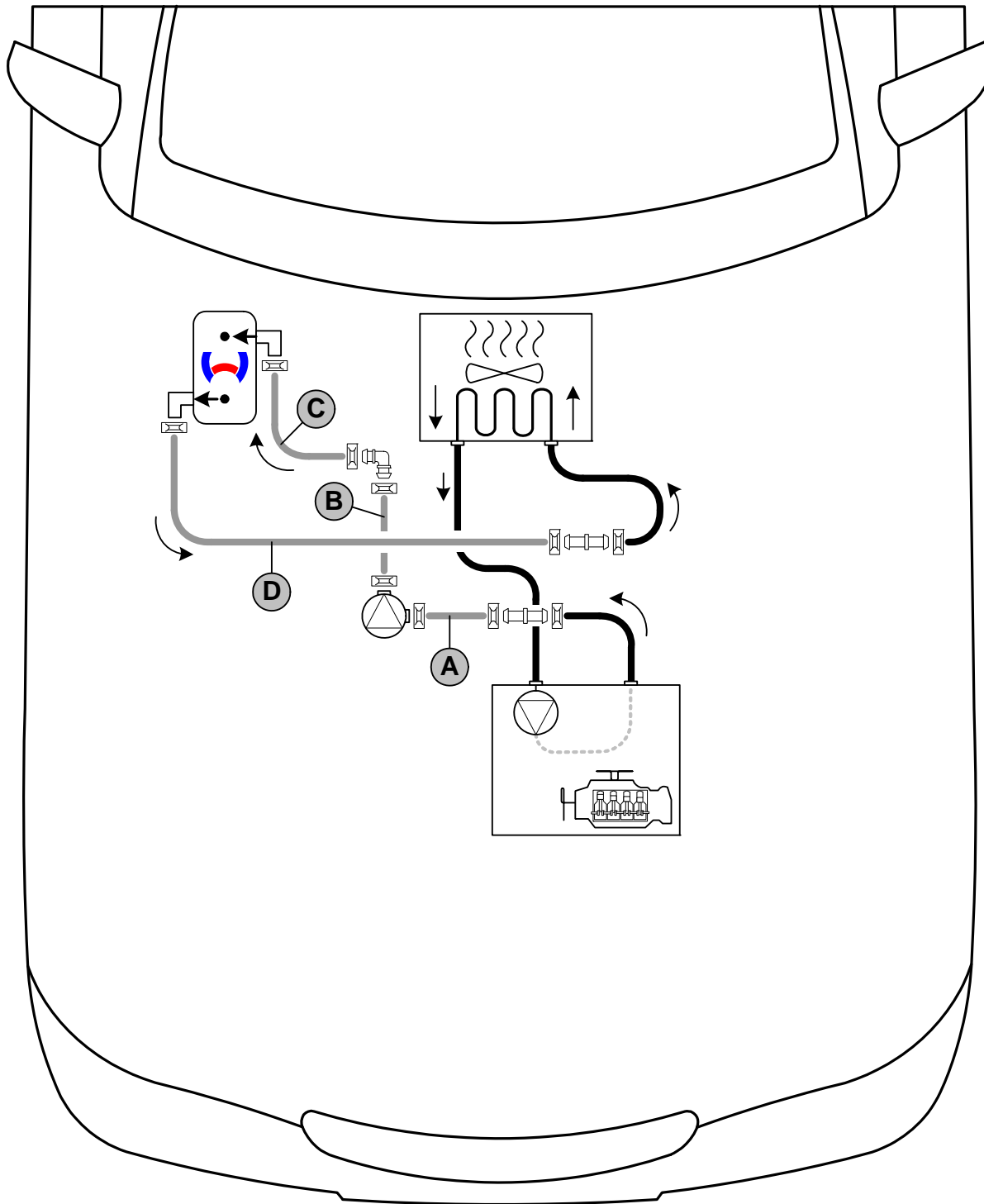
**Coolant Circuit**






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



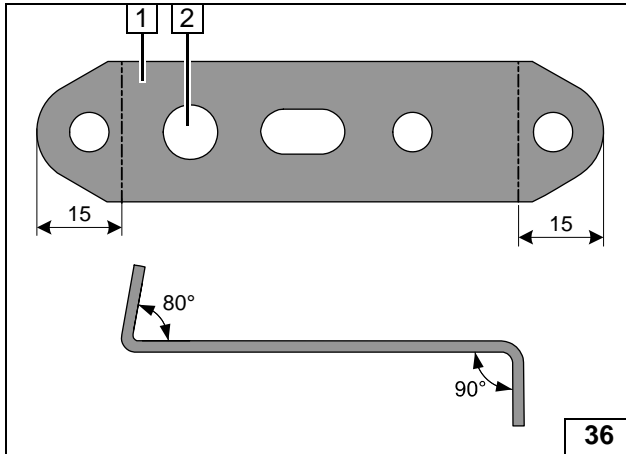
The connection should be modelled on an "inline" circuit and based on the following diagram:



Hose routing diagram

All spring clips without a specific designation  = 25 mm dia.  
All connecting pipes  and  = 18x18mm dia.

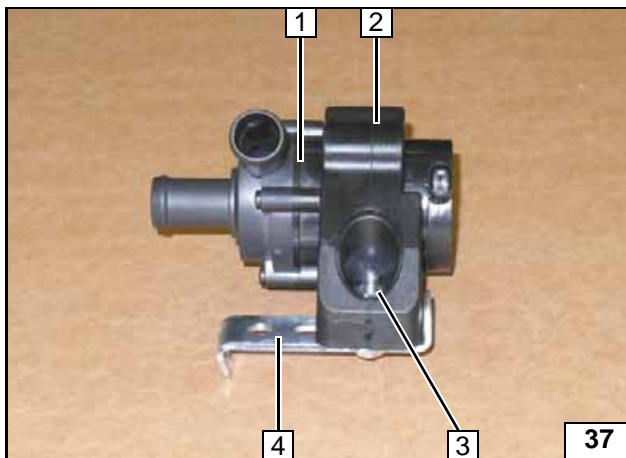




- 1 Perforated bracket
- 2 Drill out hole to 8.5 mm dia.

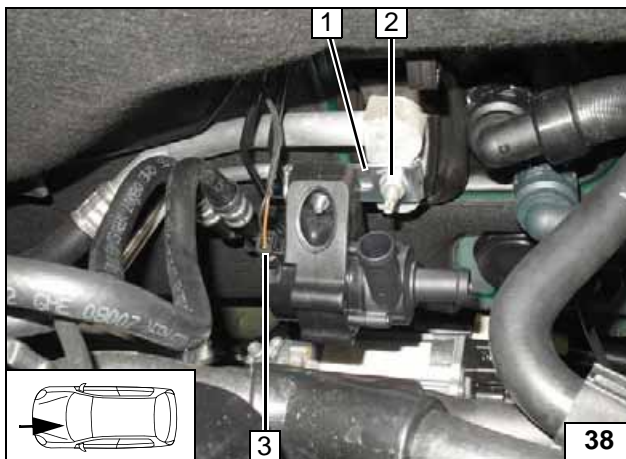


**Preparing perforated bracket**



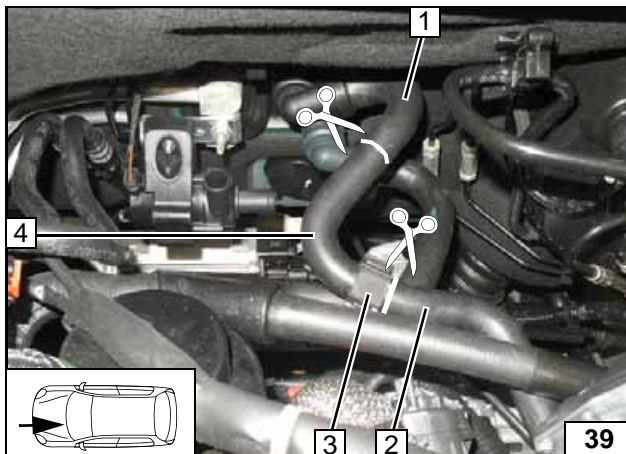
- 1 Circulating pump
- 2 Mounting of circulating pump
- 3 M6x25 bolt, flanged nut
- 4 Perforated bracket

**Premounting circulating pump**



- 1 Perforated bracket
- 2 M8 flanged nut on original vehicle stud bolt for A/C lines bracket
- 3 Connector of circulating pump wiring harness

**Installing circulating pump**

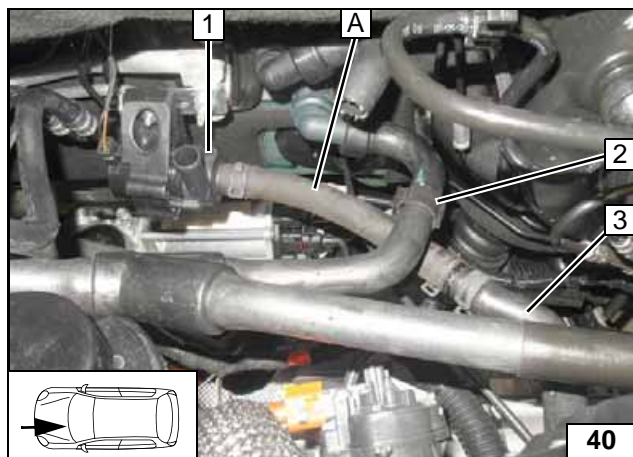


Cut the engine outlet hose / heat exchanger inlet at the markings. Remove original vehicle hose bracket 3; will be reused.

- 1 Hose section of heat exchanger inlet
- 2 Engine outlet hose section
- 4 Discard section

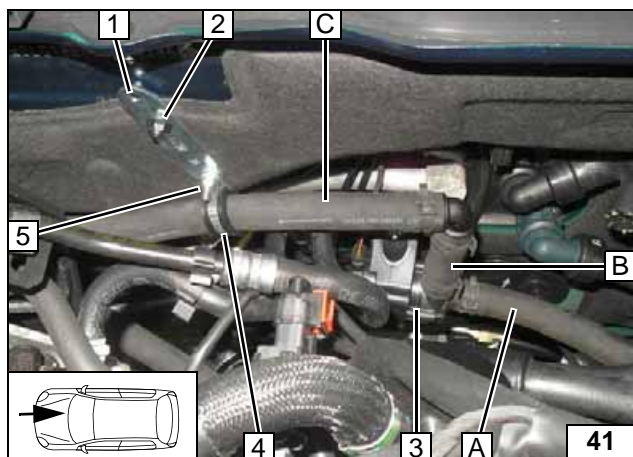


**Cutting point**



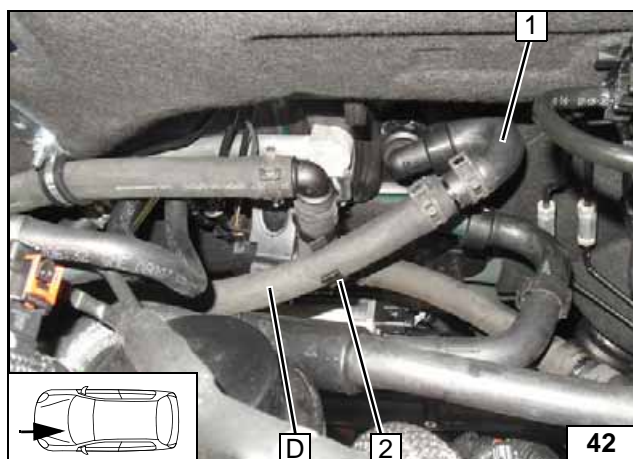
- 1 Circulating pump
- 2 Original vehicle hose bracket between hose A and hose of heat exchanger outlet
- 3 Hose of engine outlet

**Connect-  
ing engine  
outlet and  
circulating  
pump**



- 1 Perforated bracket
- 2 Plastic nut on original vehicle stud bolt
- 3 Circulating pump
- 4 25 mm dia. rubber-coated p-clamp
- 5 M6x20 bolt, flanged nut

**Connect-  
ing heater  
inlet**

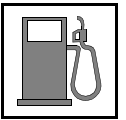


Align hoses. Ensure sufficient distance from adjacent components and freedom of movement; correct if necessary.

- 1 Hose of heat exchanger inlet
- 2 Install hose bracket



**Connect-  
ing heat ex-  
changer  
inlet**



Fuel



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

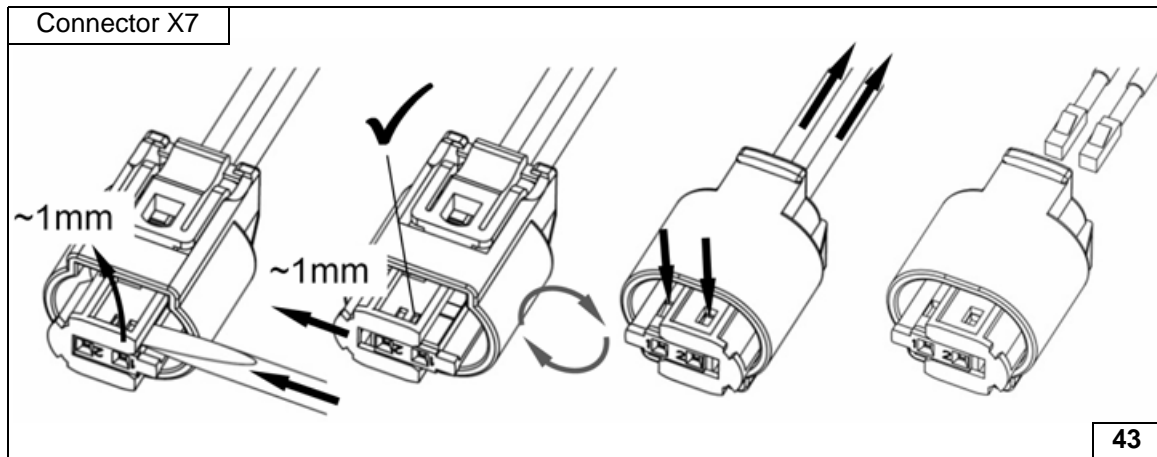
Catch any fuel running off with an appropriate container.

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

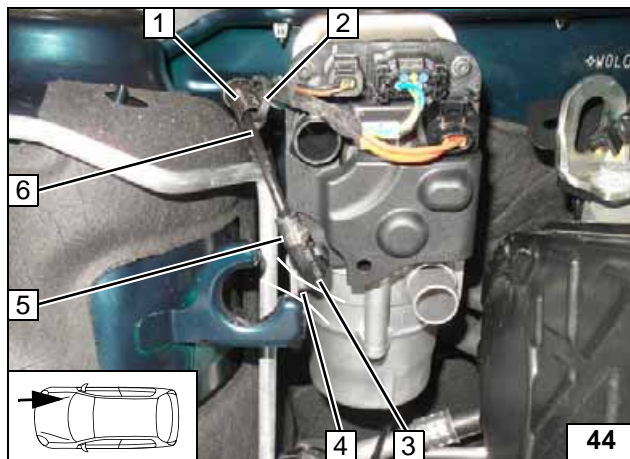


Provide rub protection for fuel line and wiring harness in areas where there are sharp edges.

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



Dismantling metering pump connector



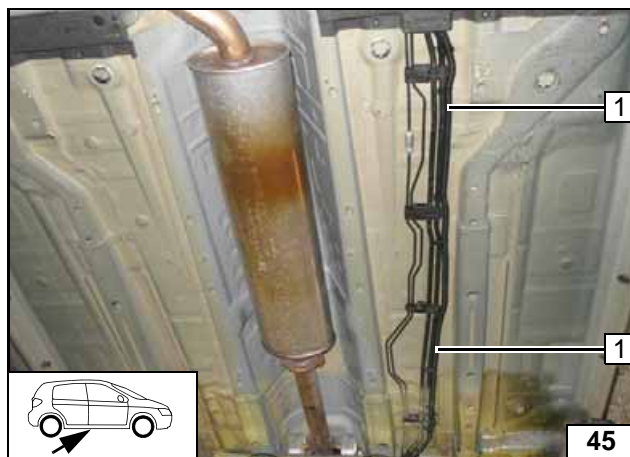
Pull fuel line 6 and wiring harness of metering pump 2 into 10mm dia. corrugated tube 1 and route behind the insulation mat to the fuel lines and further to the underbody.

Check distance between 90° moulded hose 3 and bracket of air filter box at position 4 (at least 15mm), correct 90° moulded hose 3 if necessary.

5 10 mm dia. clamp



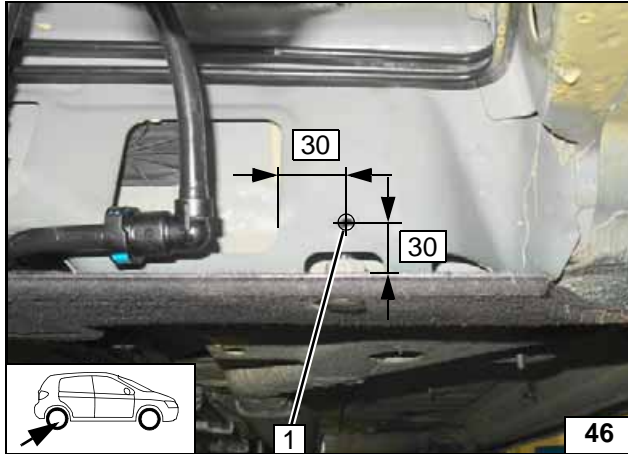
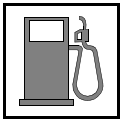
Connecting heater



Route fuel line and wiring harness of metering pump in 10mm dia. corrugated tube 1 along original vehicle lines to installation location of metering pump. Cut 1,000 mm from fuel line, this will be required later for connecting the fuel standpipe.



Routing lines



1 7 mm dia. hole

Hole for metering pump fastening

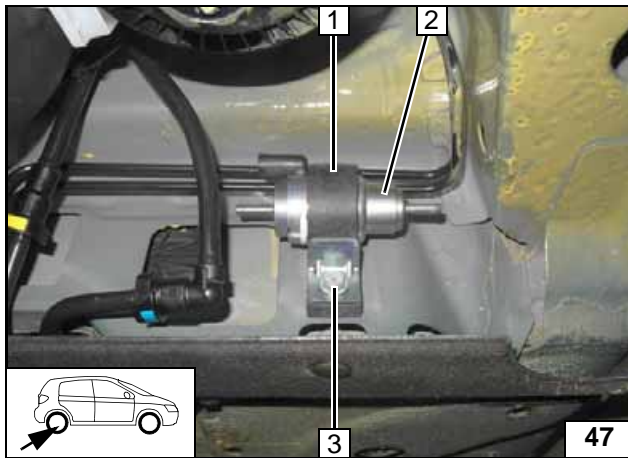
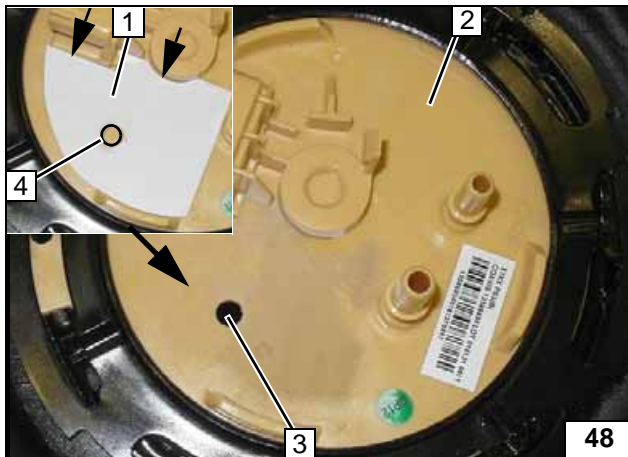


Figure shows 2 WD!

- 1 Mounting of metering pump
- 2 Metering pump
- 3 M6x25 bolt, support angle bracket, flanged nut



Installing metering pump



### Installing FuelFix

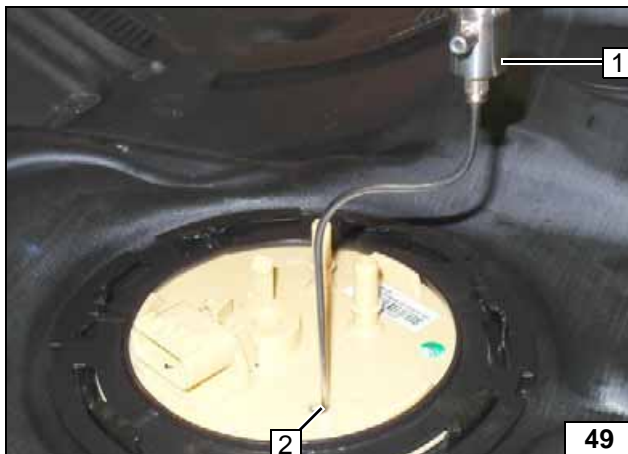
Remove the fuel tank according to the manufacturer's instructions.

Work steps F1, F2 and F3.

- 1 Template
- 2 Fuel tank sending unit
- 3 Hole made with provided drill
- 4 Hole pattern



Copying hole pattern/ drilling hole



2 WD

Work steps F4 and F5.

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

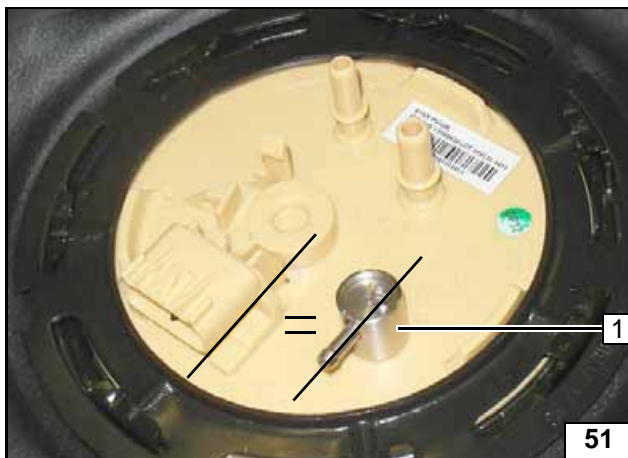


Inserting FuelFix



Work step F5.

Inserting FuelFix

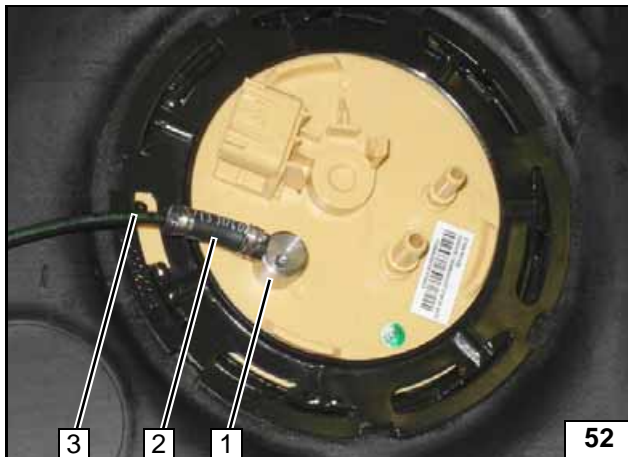


Work steps F5.3 and F5.4.

Align FuelFix 1 as shown.



Aligning FuelFix

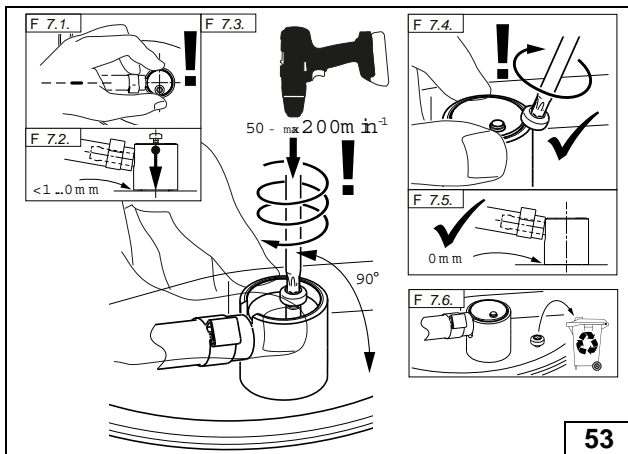


Work step F6.

- 1 FuelFix
- 2 Hose section, 10 mm dia. clamp [2x]
- 3 Fuel line



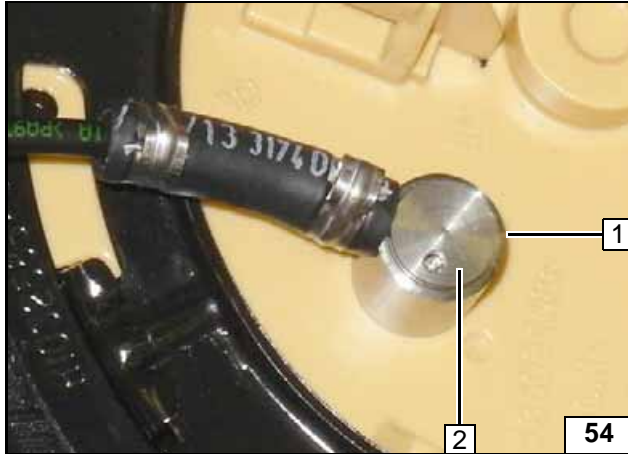
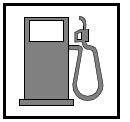
Connecting fuel line



Work step F7.



Installing FuelFix

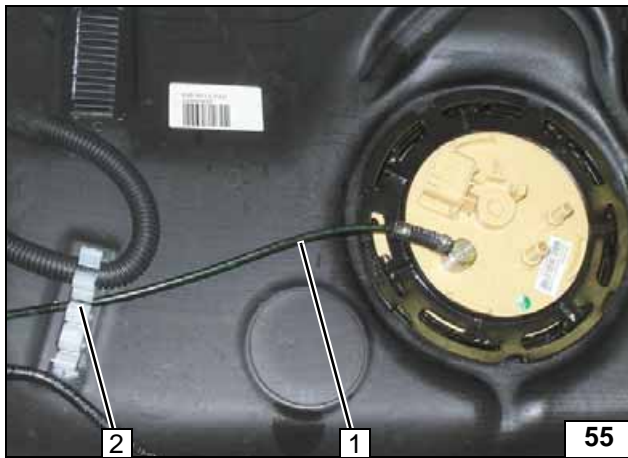


Work step F8.

Ensure firm seating of FuelFix and positioning of clamping piece 2 with respect to upper edge 1 of the housing.



**Checking final position**



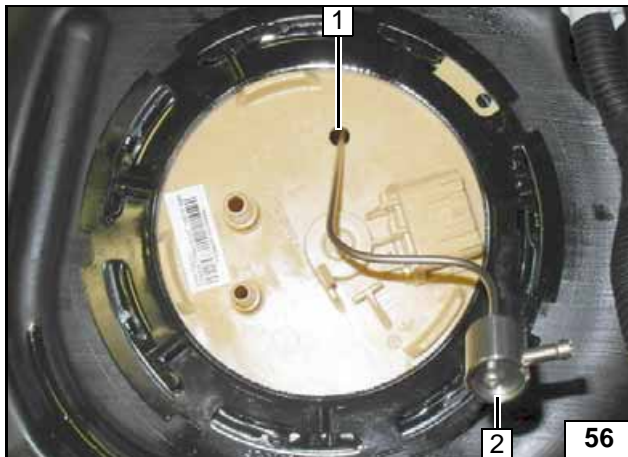
Work step F8.

- 1 Fuel line of FuelFix
- 2 Original vehicle bracket for strain relief



**Securing fuel line**

Install fuel tank in accordance with manufacturer's instructions.



**4 WD**

Work steps F4 and F5.  
Bend FuelFix 2 according to template and cut to length. Insert in hole 1.



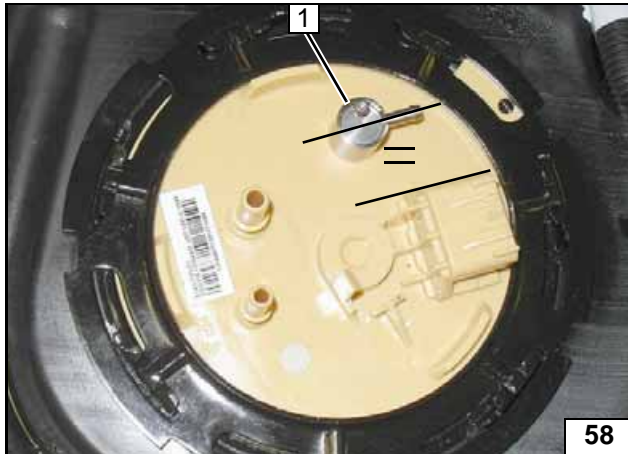
**Inserting FuelFix**



Work step F5.



**Inserting FuelFix**

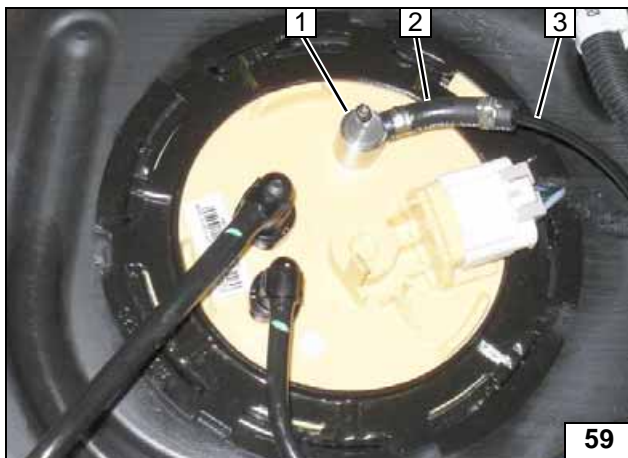


Work steps F5.3 and F5.4.

Align FuelFix 1 as shown.



**Aligning FuelFix**

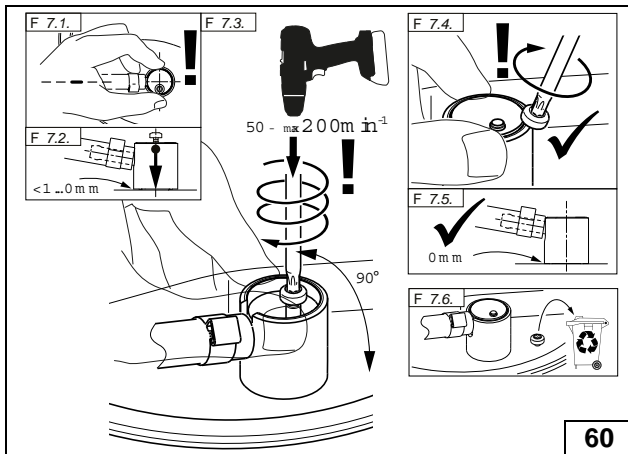


Work step F6.

- 1 FuelFix
- 2 Hose section, 10 mm dia. clamp [2x]
- 3 Fuel line



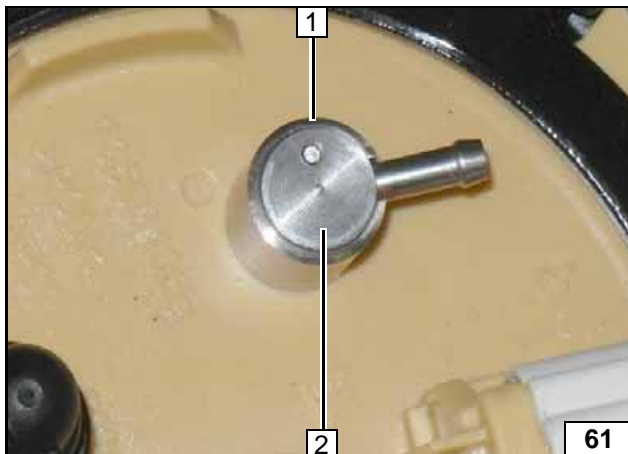
**Connecting fuel line**



Work step F7.



**Installing FuelFix**



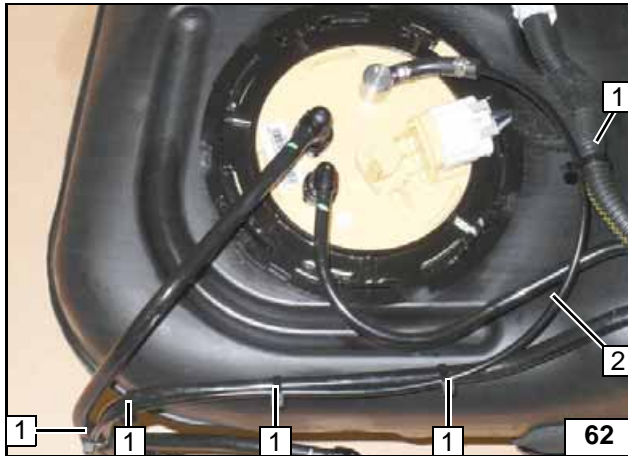
Work step F8.

Ensure firm seating of FuelFix and positioning of clamping piece 2 with respect to upper edge 1 of the housing.



**Checking final position**





Work step F8.

- 1 Cable tie for strain relief
- 2 Fuel line of FuelFix

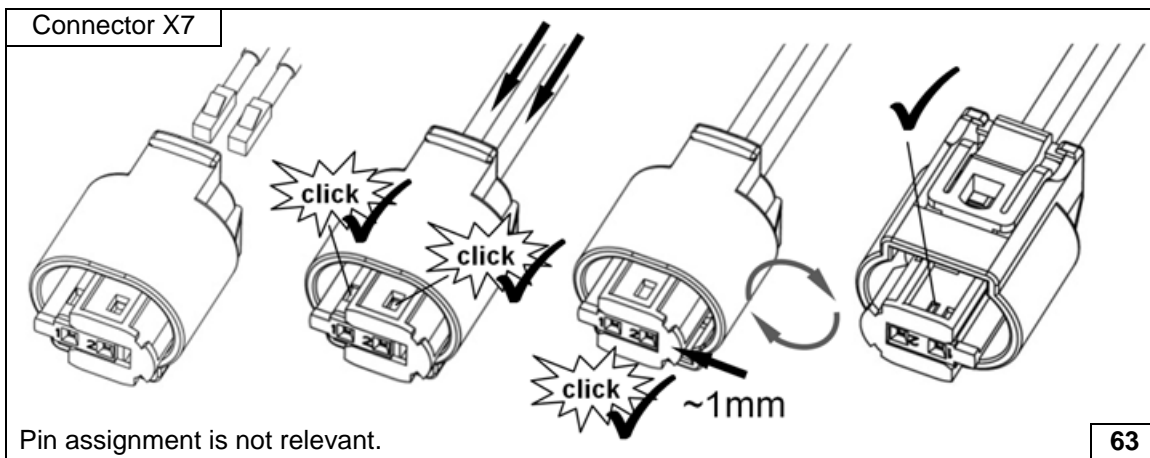
Install fuel tank in accordance with manufacturer's instructions.



**Installing fuel line**



All vehicles



Pin assignment is not relevant.

63

**Completing metering pump connector**

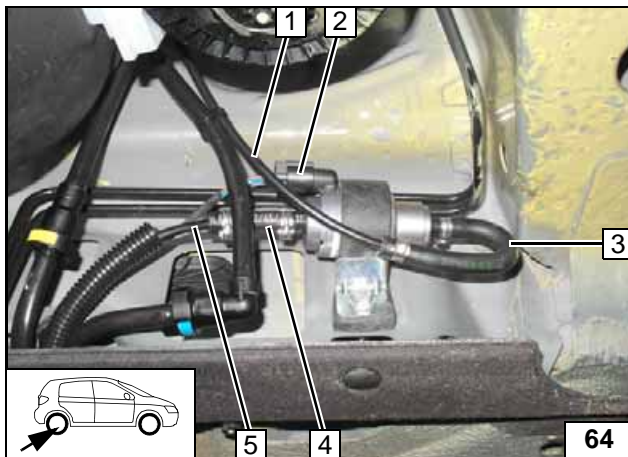
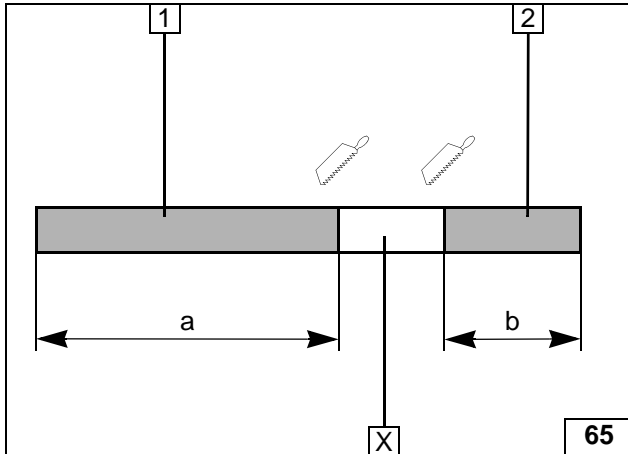
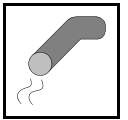


Figure shows 2 WD!  
Ensure sufficient distance from adjacent components and freedom of movement; correct if necessary.

- 1 Fuel line of FuelFix
- 2 Wiring harness of metering pump, connector X7 mounted
- 3 180° moulded hose, 10 mm dia. clamp [2x]
- 4 Hose section, 10 mm dia. clamp [2x]
- 5 Fuel line of heater



**Connecting metering pump**

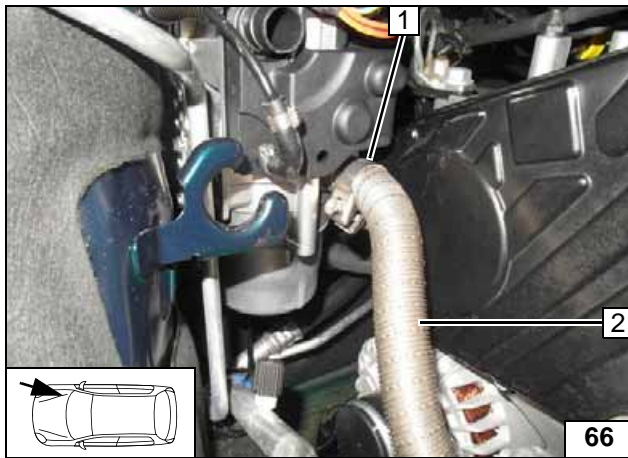


### Exhaust Gas

Discard section X.

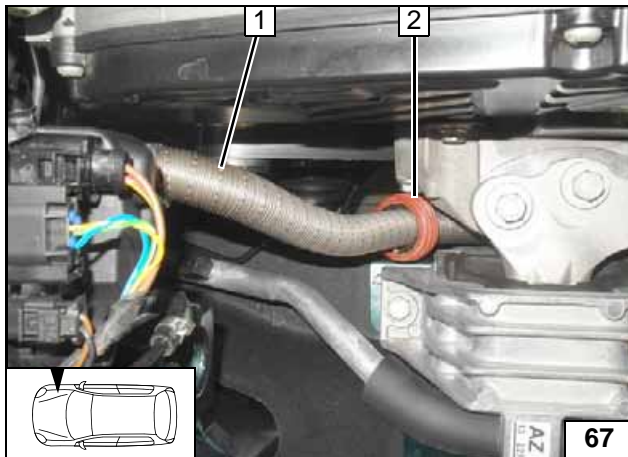
- 1 Exhaust pipe  
a = 560
- 2 Exhaust end section  
b = 250

Preparing exhaust pipe



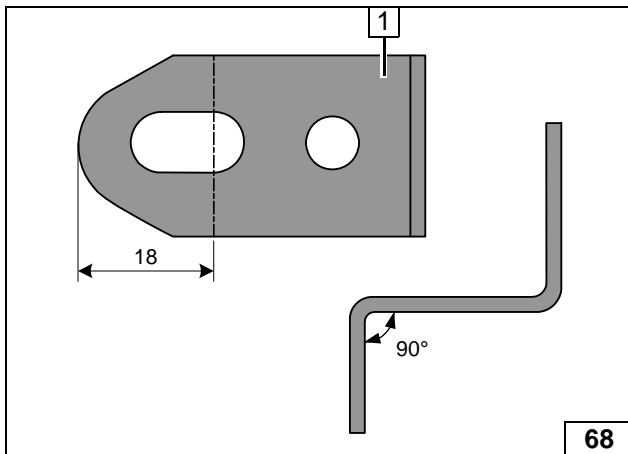
- 1 Hose clamp
- 2 Exhaust pipe

Mounting exhaust pipe



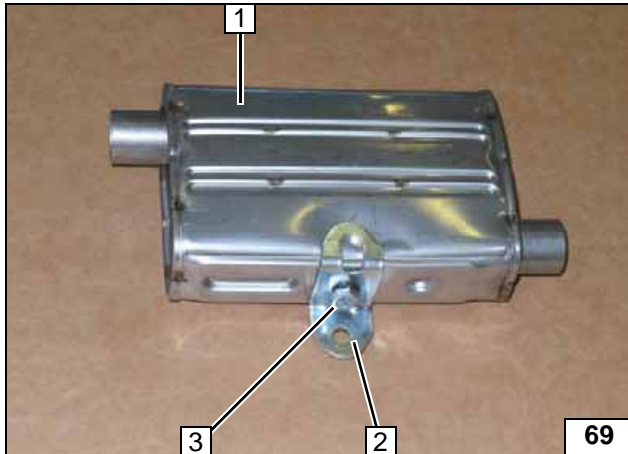
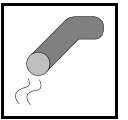
- 1 Exhaust pipe
- 2 Slide on spacer bracket

Routing exhaust pipe



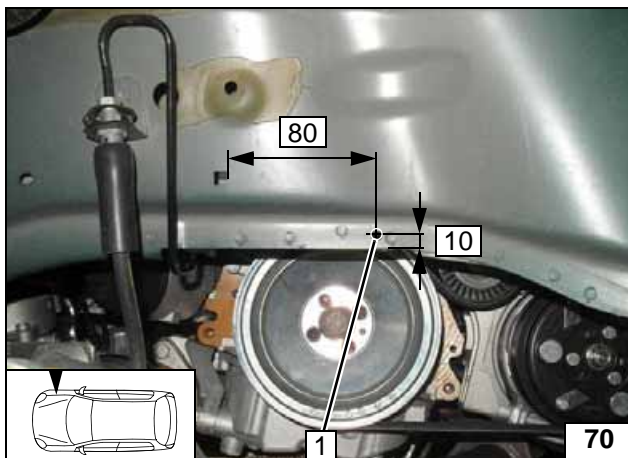
- 1 Angle bracket

Preparing angle bracket



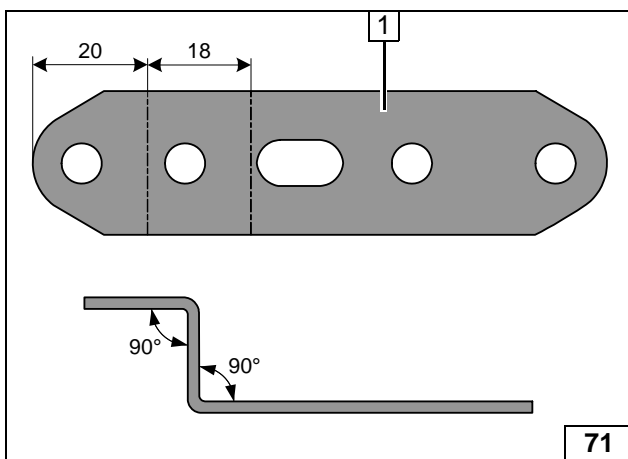
- 1 Silencer
- 2 Angle bracket
- 3 M6x16 bolt, spring lockwasher

**Premounting silencer**



- 1 7 mm dia. hole

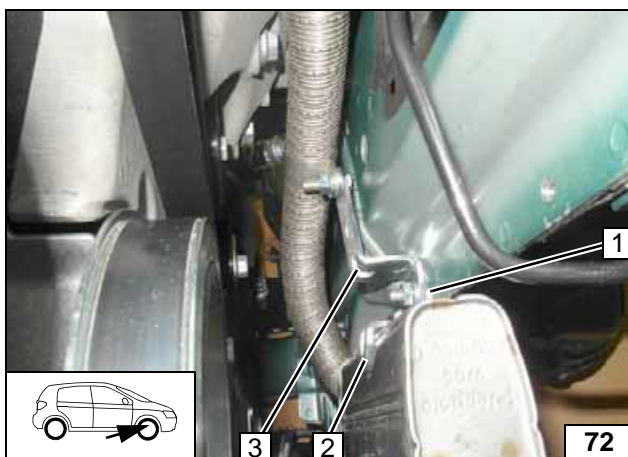
**Hole for silencer mounting**



- 1 Perforated bracket

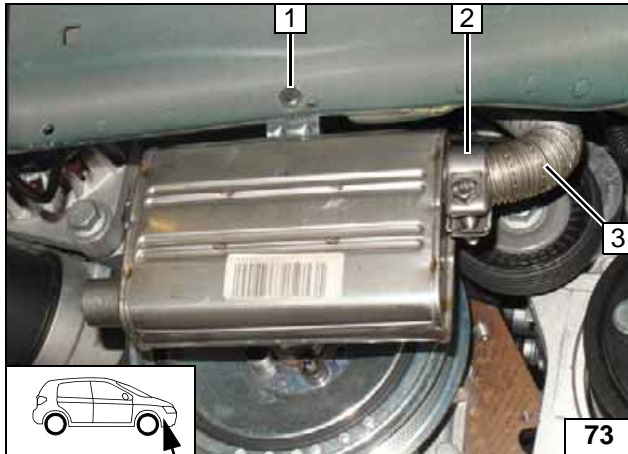
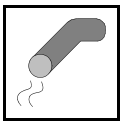


**Preparing perforated bracket**



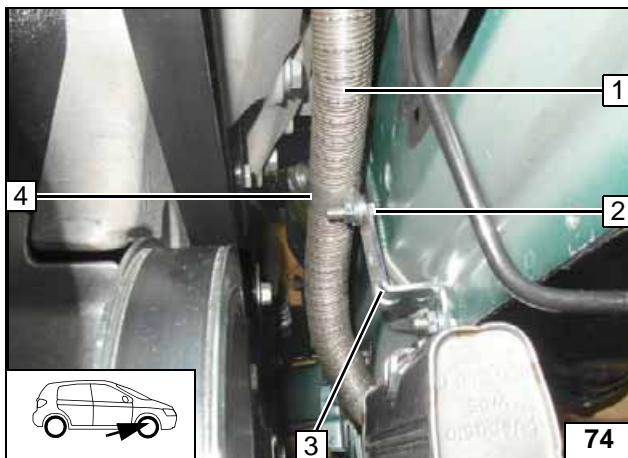
- 1 M6x20 bolt, flanged nut (see next figure)
- 2 Angle bracket
- 3 Perforated bracket

**Installing silencer**



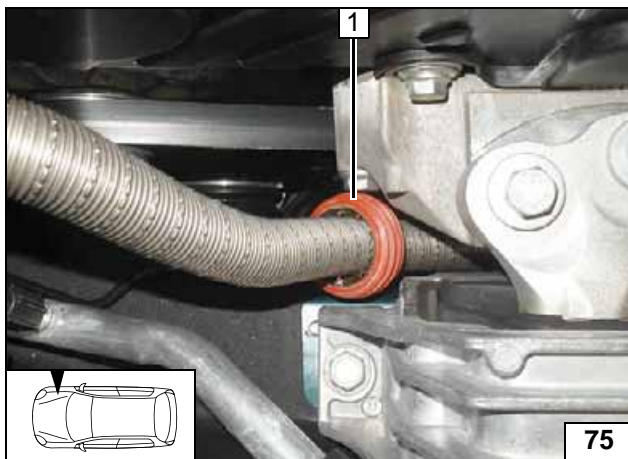
- 1 M6x20 bolt, flanged nut
- 2 Hose clamp
- 3 Exhaust pipe

**Mounting exhaust pipe**



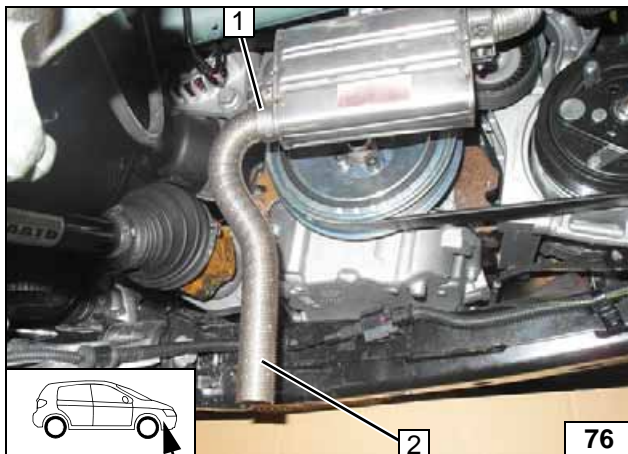
- 1 Exhaust pipe
- 2 M6x20 bolt, flanged nut
- 3 Perforated bracket
- 4 P-clamp

**Fastening exhaust pipe**



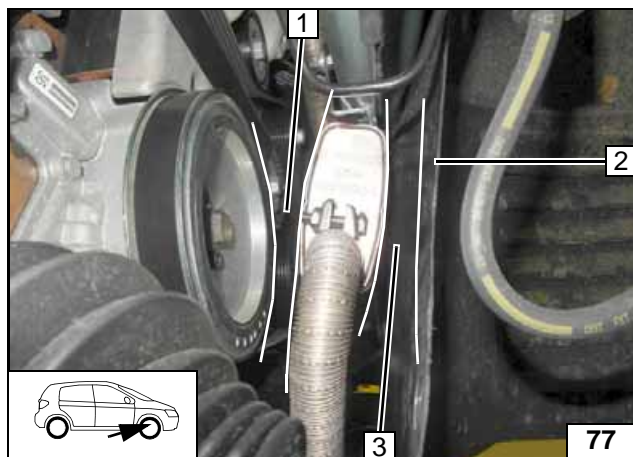
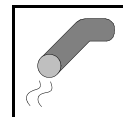
- 1 Position spacer bracket between engine mount and frame side member

**Aligning spacer bracket**



- 1 Hose clamp
- 2 Exhaust end section

**Installing exhaust end section**

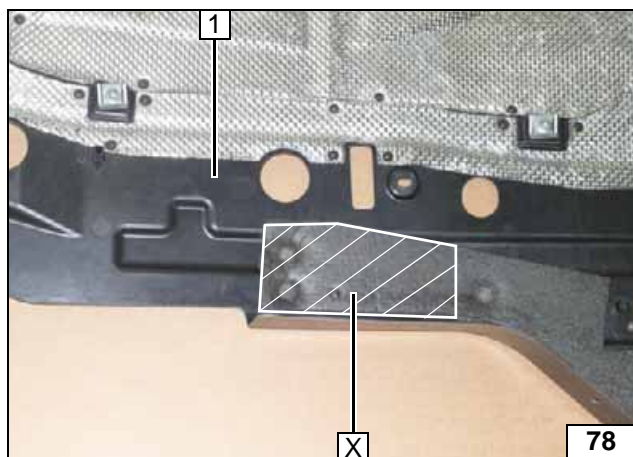


Ensure sufficient distance from exhaust system to pulley at position **1** (at least 20mm) and to wheel well trim at position **3** (at least 20mm), align silencer if necessary.

**2** Wheel well trim installed



**Aligning silencer**

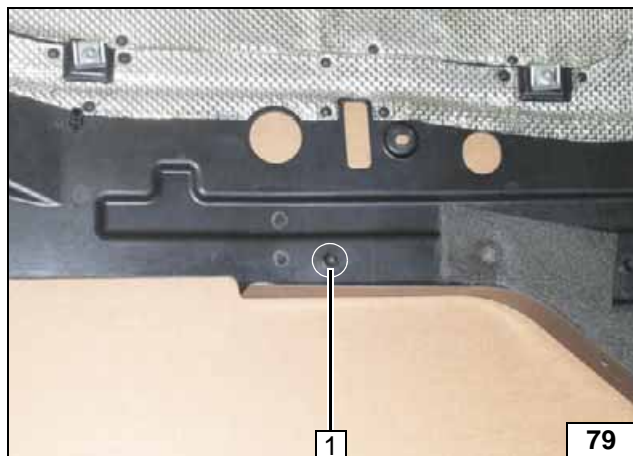


Cut out insulation in the marked area. Discard section **X**.

**1** Underdrive protection



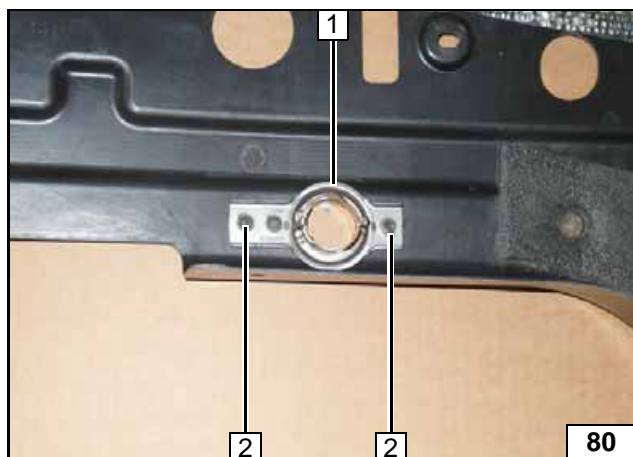
**Cutting out insulation**



Hole in centre of perforation **1** as per work step 1 of the installation instructions.



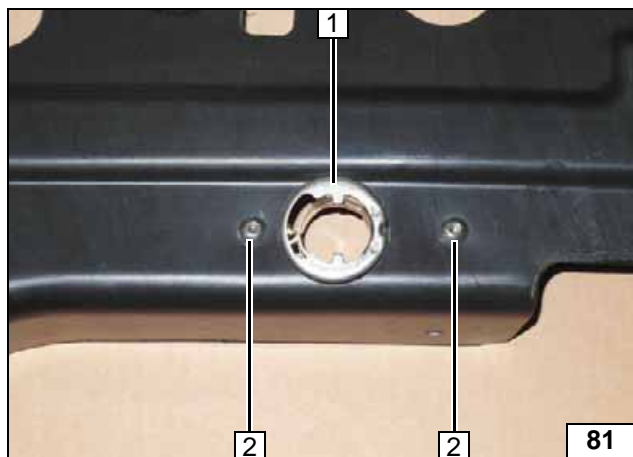
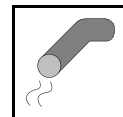
**Hole in underdrive protection**



Position exhaust end fastener **1** as per work steps 3 and 4, copy hole pattern **2** [2x] and drill holes.



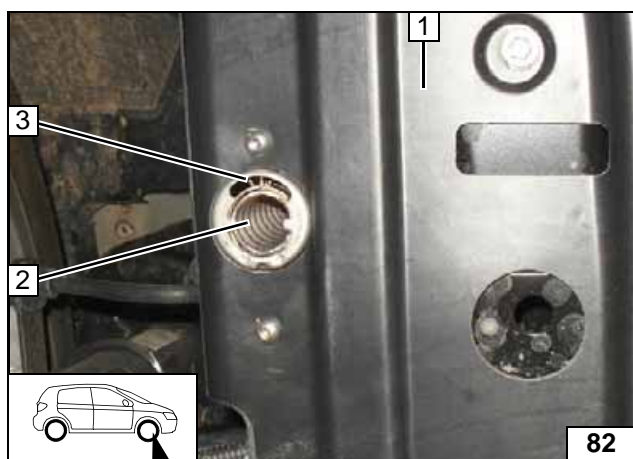
**Copying hole pattern**



Secure exhaust end fastener 1 as per work step 5 of the installation instructions using provided bolts 2 [2x].



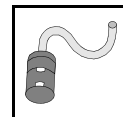
**Installing ex-  
haust end  
fastener**



Install underdrive protection 1. Install ex-  
haust end section 2 in exhaust end fastener 3 as per work steps 6 to 8 of the  
installation instructions.



**Installing  
exhaust  
end section**

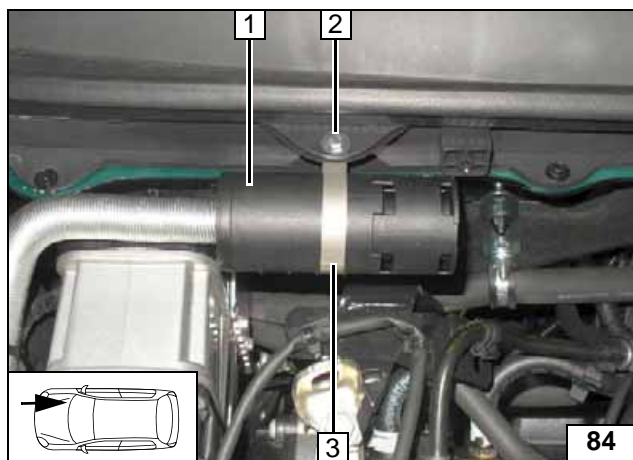


### Combustion Air

- 1 Combustion air pipe
- 2 Cable tie



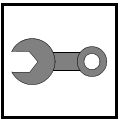
### Installing combustion air pipe



- 1 Silencer
- 2 M5x16 bolt, large diameter washer, flanged nut, existing hole
- 3 51 mm dia. clamp



### Installing silencer

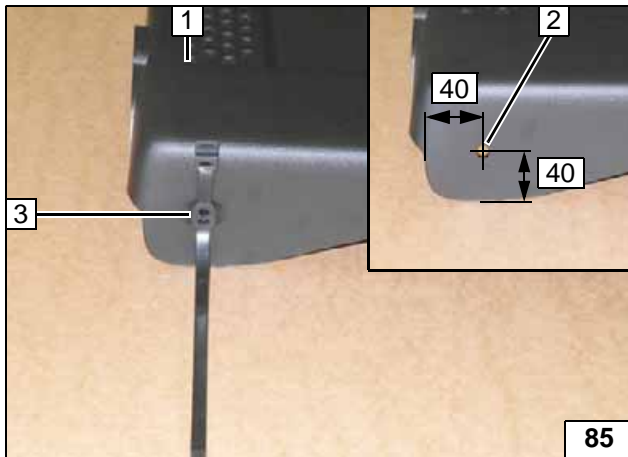


**Final Work**



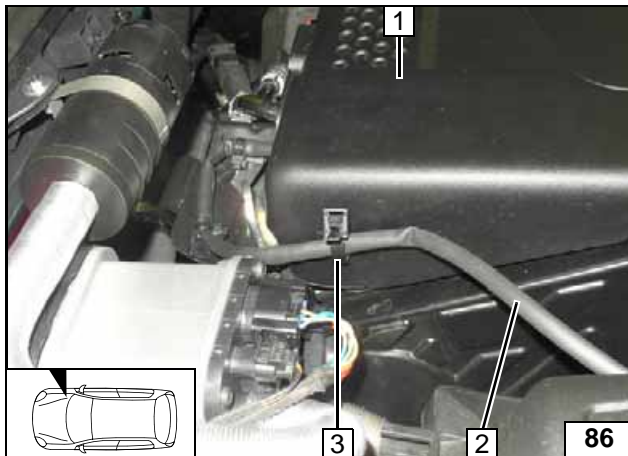
Reassemble the components in reverse order. Check all hoses, clamps and all electrical connections for firm seating. Insulate and tie back all loose wires. Only use manufacturer-approved coolant. Spray the heater components with anti-corrosion wax (Tectyl 100K, Order No. 111329).

- **Connect the battery.**
- **Fill and bleed the coolant circuit according to the vehicle manufacturer's instructions.**
- **Program MultiControl CAR, teach Telearstart transmitter.**
- **Make settings on A/C control panel according to the "Operating Instructions for End Customer".**
- **Place the "Switch off parking heater before refuelling" caution label near the filler neck.**
- **For initial startup and function check, please see installation instructions.**



- 1 Engine cover
- 2 6 mm dia. hole
- 3 Clip-type cable tie in hole

**Inserting clip-type cable tie**



- 1 Engine cover installed
- 2 Original vehicle wiring harness
- 3 Close clip-type cable tie

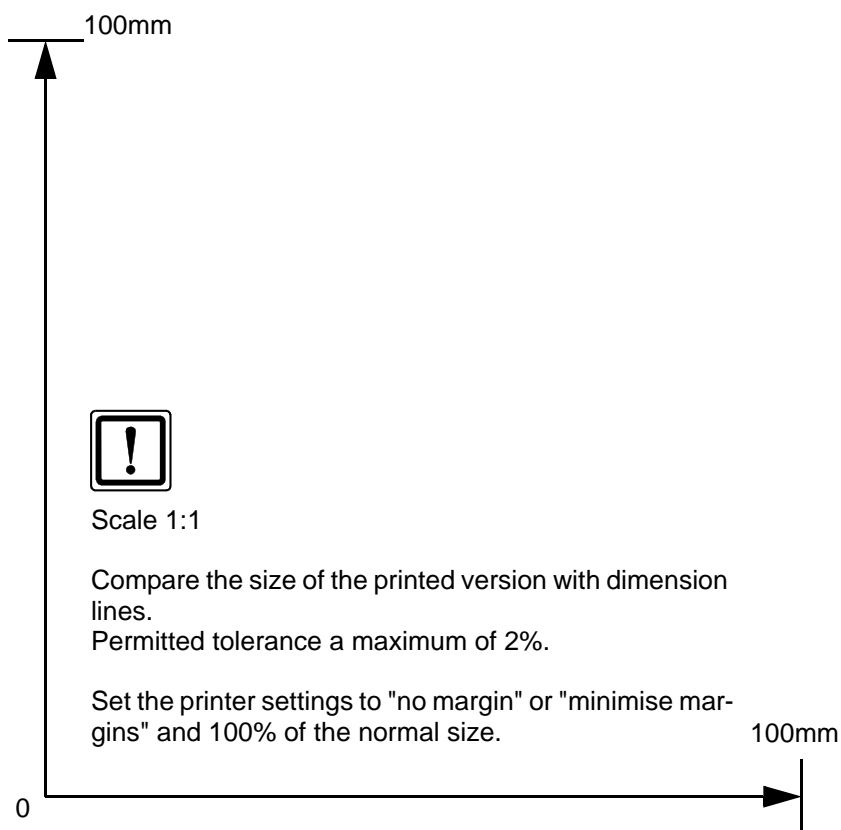
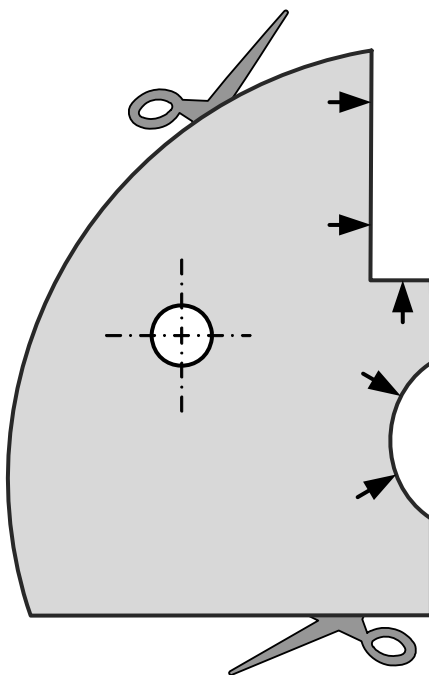
**Fastening wiring harness**

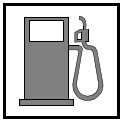
Webasto Thermo & Comfort SE  
 Postfach 1410  
 82199 Gilching  
 Germany  
 Internet: [www.webasto.com](http://www.webasto.com)  
 Technical Extranet:  
<http://dealers.webasto.com>





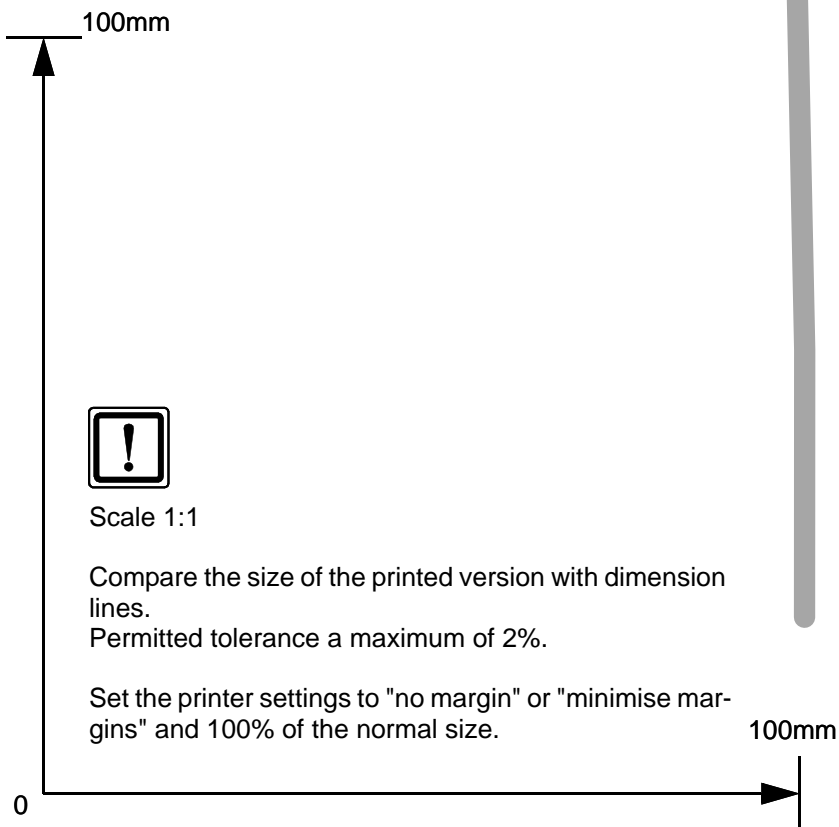
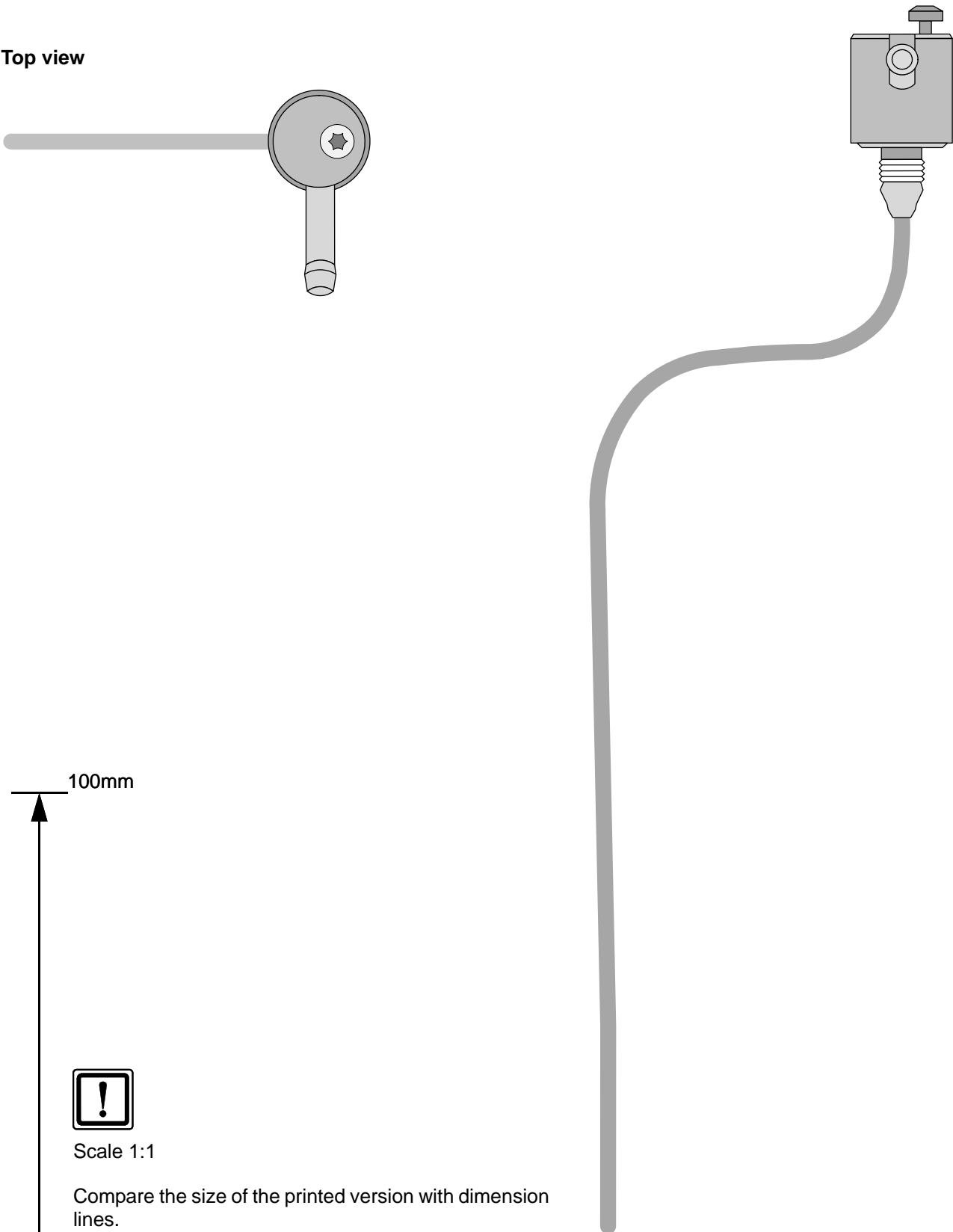
FuelFix Drilling Template





FuelFix 2 WD Template

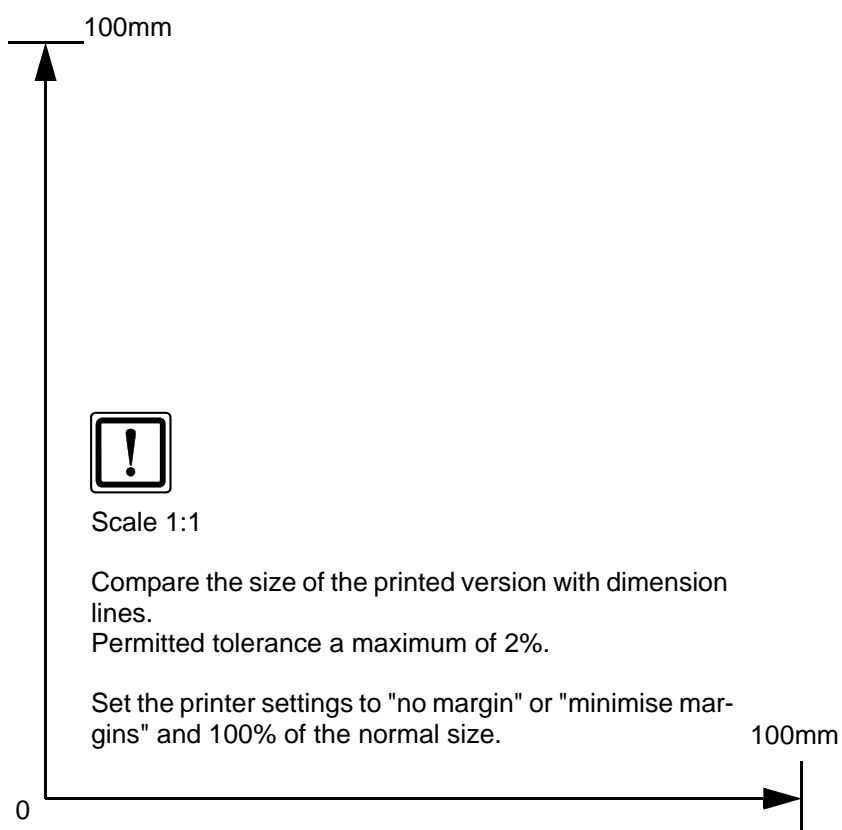
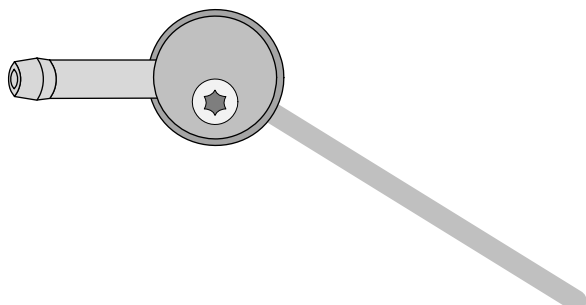
Top view





FuelFix 4 WD Template

Top view



## Operating Instructions for 1 Zone Automatic Air-Conditioning

Please remove page and add to the vehicle operating instructions.

**Note:**

We recommend matching the heating time to the driving time.

Heating time = driving time

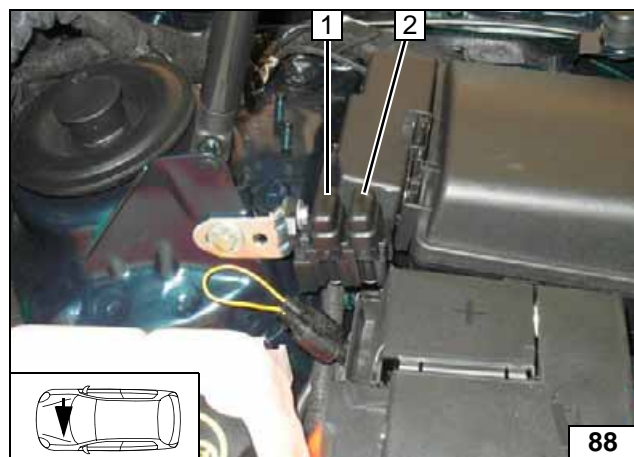
**Example:**

For a driving time of approx. 20 min. (in one direction), we recommend not exceeding a switch-on time of 20 min.

Before parking the vehicle, make the following settings:



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



- 1 1A fuse F2 of heater control and CAN module
- 2 20A heater fuse F1



1-zone A/C control panel

Engine compartment fuses



## Operating Instructions for 2 Zone Automatic Air-Conditioning

Please remove page and add to the vehicle operating instructions.

**Note:**

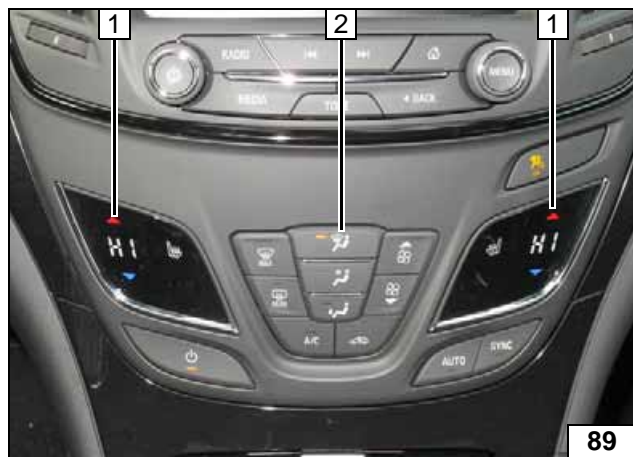
We recommend matching the heating time to the driving time.

Heating time = driving time

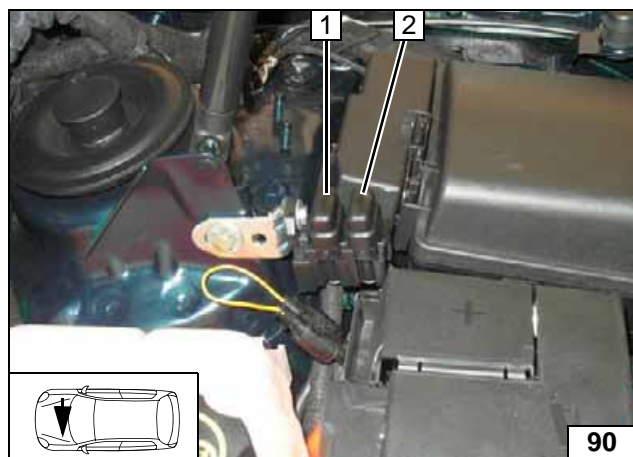
**Example:**

For a driving time of approx. 20 min. (in one direction), we recommend not exceeding a switch-on time of 20 min.

Before parking the vehicle, make the following settings:



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



- 1 1A fuse F2 of heater control and CAN module
- 2 20A heater fuse F1



2-zone A/C control panel

Engine compartment fuses

