Water Heater

Webasto
Feel the Drive

***Thermo Top Evo* Parking Heater**

E1
00 0258

Installation Documentation
VW Caddy

Validity

Manufacturer	Model	Type	EG BE No. / ABE
VW	Caddy	2KN	e1 * 2007 / 46 * 0217 * ...
VW	Caddy	2K	e1 * 2001 / 116 * 0252 * ...

Motorisation	Fuel	Transmission type	Output in kW	Displacement in cm³	Engine code
1.6 TDI	Diesel	5-speed SG	55	1598	CAYE
1.6 TDI	Diesel	5-speed SG	75	1598	CAYD
2.0 TDI	Diesel	6-speed DSG	125	1968	CFJA

SG = manual transmission
DSG = direct gear transmission

From Model Year 2012
Left-hand drive vehicle

Verified equipment variants: Climatic / Climatronic
Front fog light
Headlight washer system

Not verified: Passenger compartment monitoring
4 Motion
Blue Motion

Total installation time: approx. 8 hours

VW Caddy

Table of Contents

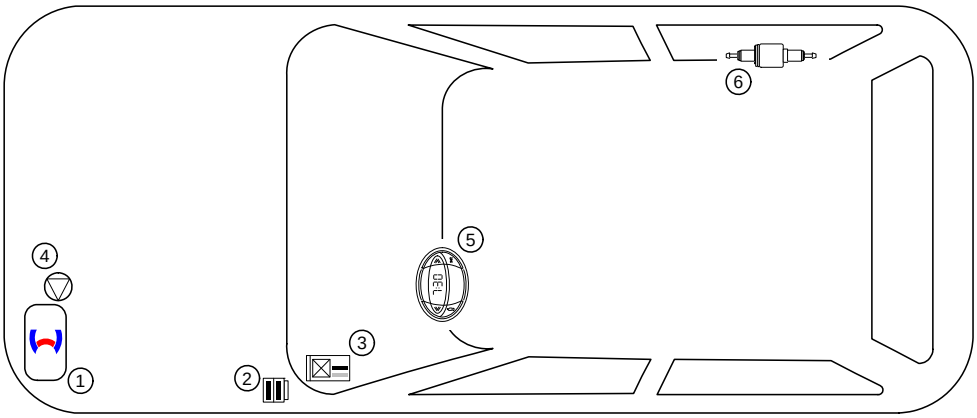
Necessary Components

- Basic delivery scope of *Thermo Top Evo* in accordance with price list
- Installation kit for VW Caddy 2012 Diesel: **1319854B**
- Also required with Climatronic:
  Climatronic additional kit: **1319856A**
- Heater control in accordance with price list and upon consultation with end customer
- In case of Telestart, indicator lamp in accordance with price list and in consultation with end customer

Installation Overview

Legend:

1. Heater
2. Engine compartment fuse holder
3. Passenger compartment relay and fuse holder
4. Circulating pump
5. Digital timer
6. Metering pump



Information on Total Installation Time

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

Information on Operating and Installation Instructions

1 Important Information (not complete)

1.1 Installation and Repair

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

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

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

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

1.2 Operation

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

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

Always switch off the heater before refuelling.

The heater may only be used with the prescribed fuel Diesel (DIN EN 590) or petrol (DIN EN 227).

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

1.3 Please note

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

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

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

Important

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

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

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

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

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

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

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

When installing an IPCU, the corresponding settings must be checked or adjusted before the installation.

2 Statutory regulations governing installation

Guidelines	Thermo Top Evo
Heating Directive ECE R122	E1 00 0258
EMC Directive ECE R10	E1 03 5627

Note

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

Important

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

Note

For vehicles with an EU permit, no entry in accordance with § 19 Sub-Section 4 of Annex VIII b to the Road Traffic Act is required.

2.1 Excerpt from the directive 2001/56/EC Appendix VII for the installation of the heater

Beginning of excerpt.

ANNEX VII

REQUIREMENTS FOR COMBUSTION HEATERS AND THEIR INSTALLATION

1. GENERAL REQUIREMENTS

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

2. VEHICLE INSTALLATION REQUIREMENTS

2.1. Scope

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

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

2.2. Positioning of heater

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

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

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

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

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

2.3. Fuel supply

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

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

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

2.4. Exhaust system

2.4.1. The exhaust outlet must be located so as to prevent emissions from entering the vehicle through ventilators, heated air inlets or opening windows.

2.5. Combustion air inlet

2.5.1. The air for the combustion chamber of the heater must not be drawn from the passenger compartment of the vehicle.

2.5.2. The air inlet must be so positioned or guarded that blocking by rubbish or luggage is unlikely.

2.6. Heating air inlet

2.6.1. The heating air supply may be fresh or recirculated air and must be drawn from a clean area not likely to be contaminated by exhaust fumes emitted either by the propulsion engine, the combustion heater or any other vehicle source.

2.6.2. The inlet duct must be protected by mesh or other suitable means.

2.7. Heating air outlet

2.7.1. Any ducting used to route the hot air through the vehicle must be so positioned or protected that no injury or damage could be caused if it were to be touched.

2.7.2. The air outlet must be so positioned or guarded that blocking by rubbish or luggage is unlikely.

End of excerpt.

In multilingual versions the German language is binding.

VW Caddy

Information on Validity

This installation documentation applies to VW Caddy Diesel vehicles - for validity, see page 1 - from model year 2012 and later, assuming technical modifications to the vehicle do not affect installation, any liability claims excluded. Depending on the vehicle version and equipment, modifications may be necessary during installation with respect to this installation documentation.

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

Technical Information

Special tools
- Hose clamp pliers for self-clamping hose clamps
- Hose clamp pliers for Clic hose clamps of type W
- Automatic wire stripper 0.2 - 6mm²
- Crimping pliers for cable lug / tab connector 0.5 - 6mm²
- Torque wrench for 2.0 - 10 Nm
- Hose clamping pliers
- Metric thread-setter kit
- Webasto Thermo Test Diagnosis with current software

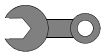
Dimensions
- All dimensions are in mm

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

Explanatory Notes on Document

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

Mechanical system



Electrical system

Coolant circuit

Combustion air

Fuel

Exhaust gas

Software

Special features are highlighted using the following symbols:

Specific risk of injury or fatal accidents

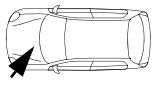
Specific risk of damage to components

Specific risk of fire and explosion

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

Reference to a special technical feature

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



VW Caddy

Preliminary Work

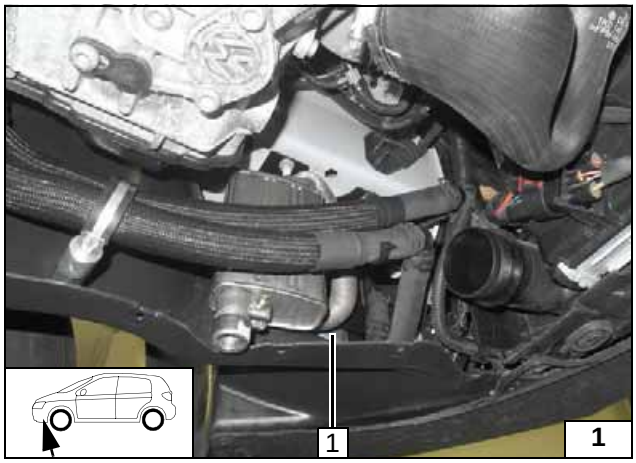
Vehicle

- Open the fuel tank cap.
- Ventilate the fuel tank.
- Close the fuel tank cap again.
- Depressurise the cooling system.
- Disconnect and remove the battery completely together with the carrier.
- Remove the air filter completely.
- Remove the left-hand wheel well trim.
- Remove the underride protection.
- Lower the fuel tank.
- Remove the driver's and front passenger's side footwell trim.
- Remove the instrument panel trim on the driver's side.

Heater

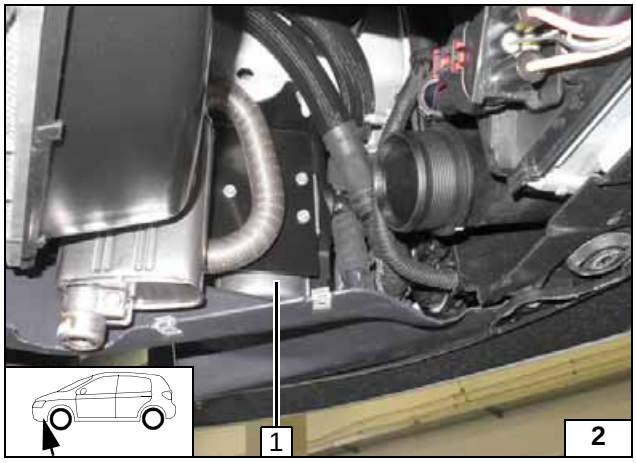
- Remove years that do not apply from the type and duplicate label.
- Attach the duplicate label (type label) in the appropriate place inside the engine compartment.

Heater Installation Location



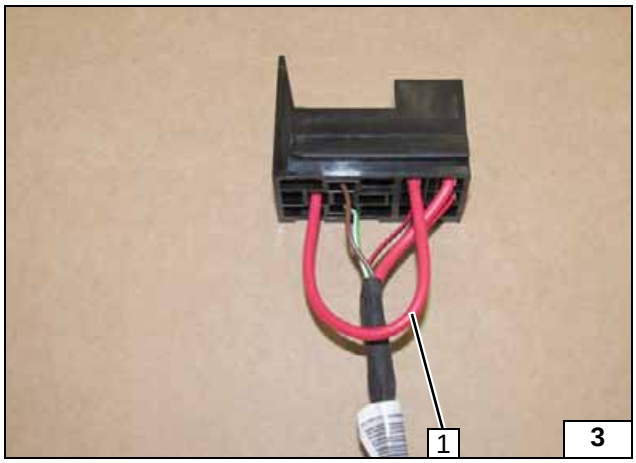
1 Heater

1.6 TDI installation location



1 Heater

2.0 TDI installation location



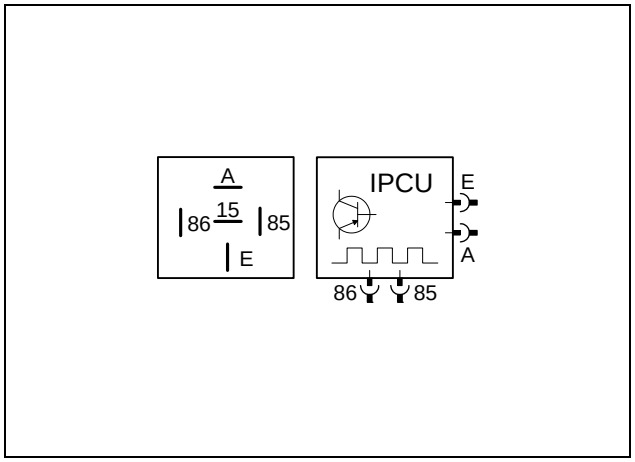
Preparing Electrical System

Climatronic

Wire sections retain their numbering in the entire document.

Removing wire

Detach red (rt) wire **1** from fuse F4 and discard.

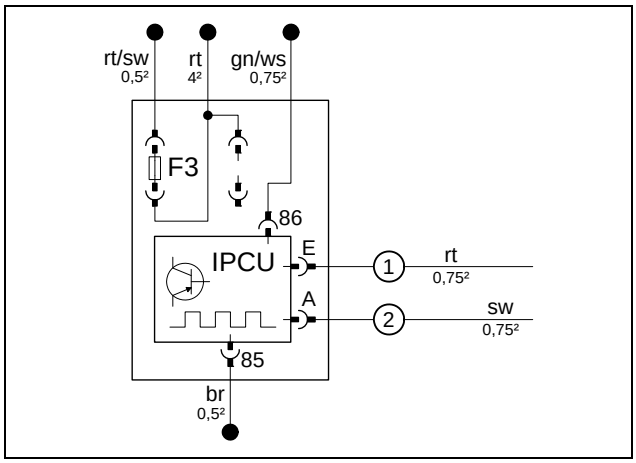


IPCU view on contact side.
The IPCU provided in the kit is pre-programmed with the following settings:

Preparing IPCU

Duty cycle: 30%
Frequency: 400Hz
Voltage: 8V
Function: High side

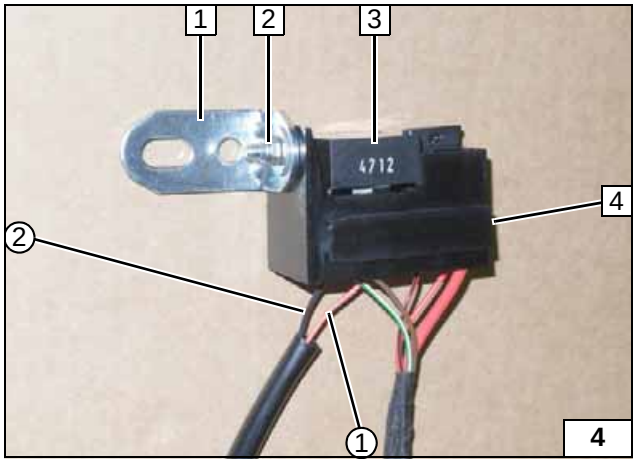
The adjustment values must be checked during the function check of the vehicle and adjusted, if necessary.



Connect wires to socket IPCU. Pull wire ① and ② into protective sleeving.

Premounting passenger compartment relay and fuse holder

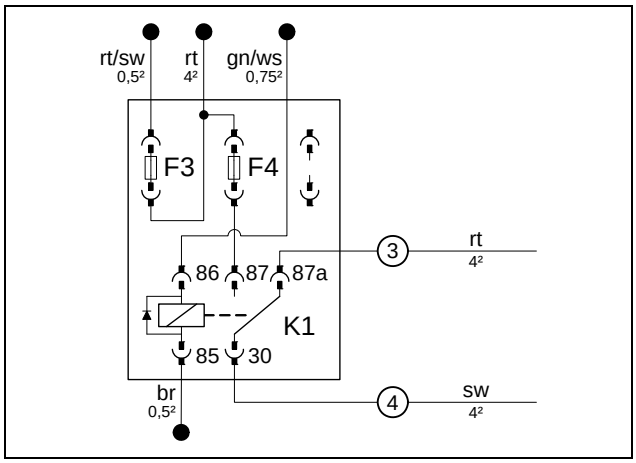
① Red (rt) wire of IPCU/E
② Black (sw) wire of IPCU/A



Install lines according to wiring diagram.
IPCU **3** will only be inserted after the pre-installation of relay and fuse holder **4**.

Premounting passenger compartment relay and fuse holder

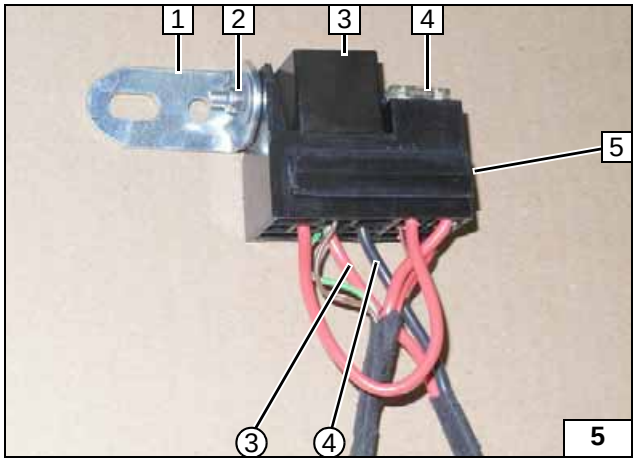
1 Angle bracket
2 M5x16 bolt, large diameter washer [2x], nut
① Red (rt) wire of IPCU/E
② Black (sw) wire of IPCU/A



Climatic

Connect wires to socket of IPCU. Install 25A fuse F4.

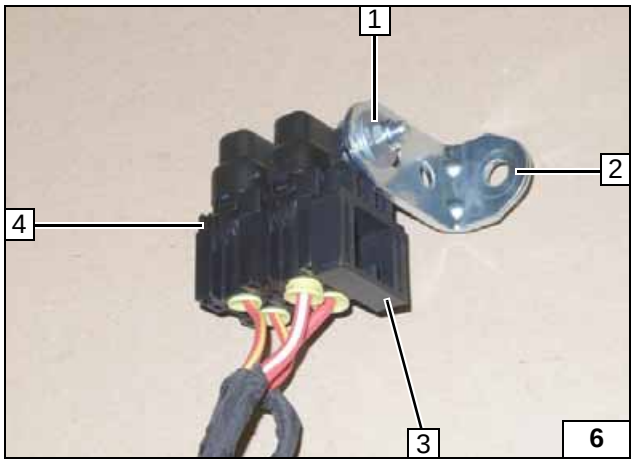
Premounting passenger compartment relay and fuse holder



Install lines according to wiring diagram. K1 relay **3** will only be inserted after the pre-installation of relay and fuse holder **5**.

1 Angle bracket
2 M5x16 bolt, large diameter washer [2x], nut
3 K1 relay
4 25A fuse F4
③ Red (rt) wire of K1/87a
④ Black (sw) wire of K1/30

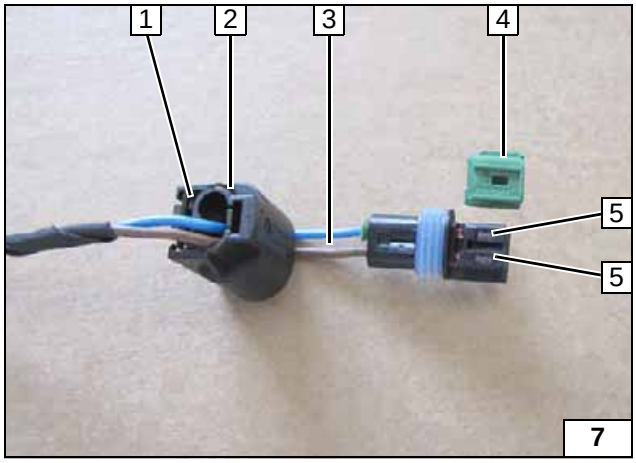
Premounting passenger compartment relay and fuse holder



All vehicles

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

Premounting fuse holder of engine compartment



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

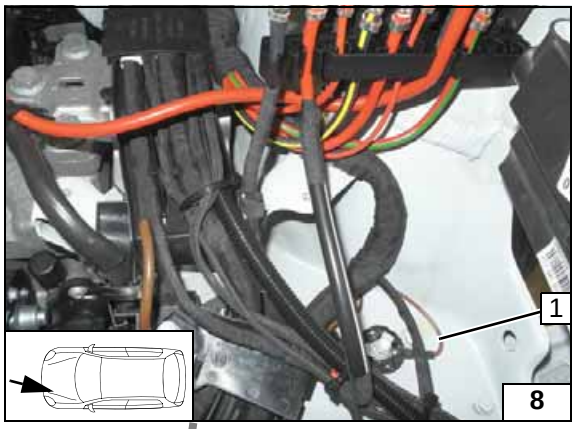
1 Connector housing
2 Lock
3 Blue / brown (bl / br) wires
4 Coding
5 Timer lock

Dismantling connector

Electrical System

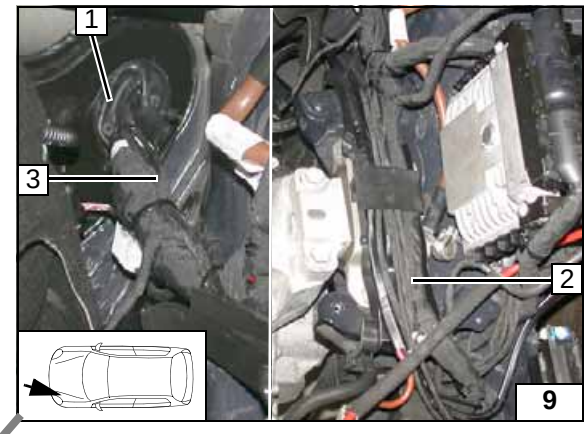
Earth wire

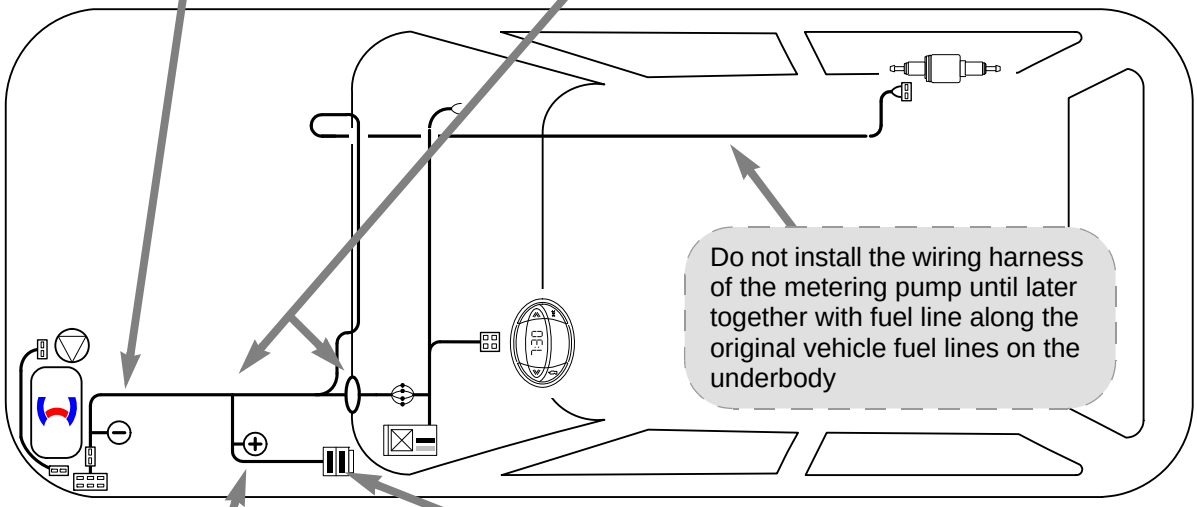
1 Earth on original vehicle earth support point



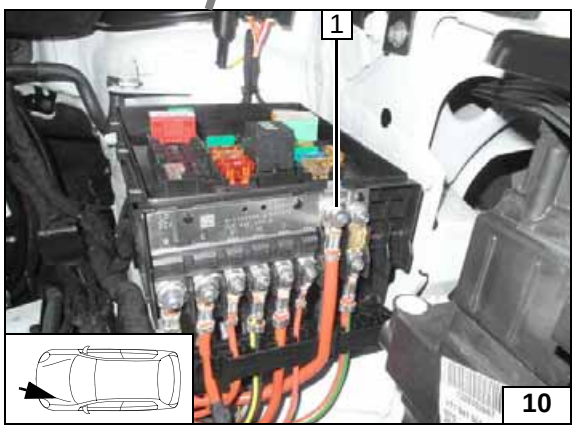
Wiring harness routing, wiring harness pass through

1 Use free protective rubber plug
2 Route wiring harnesses in original vehicle cable duct
3 Wiring harnesses of heater, heater control



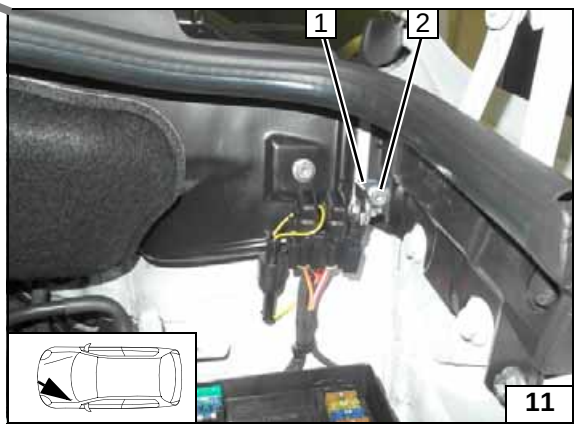


Wiring harness routing diagram



Positive wire

1 Positive wire to positive battery distributor

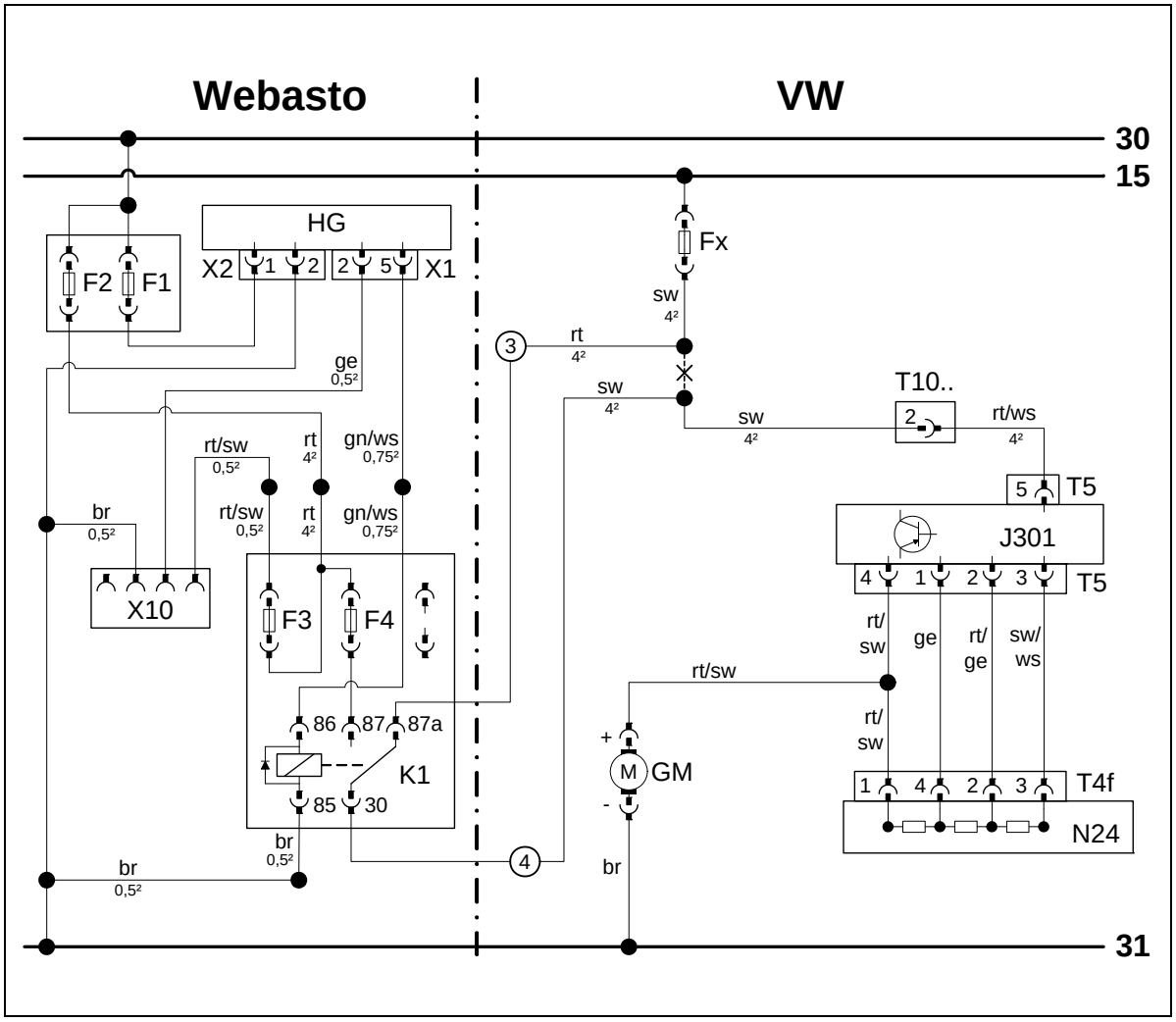


Fuse holder of engine compartment

1 Angle bracket
2 Original vehicle M6 bolt

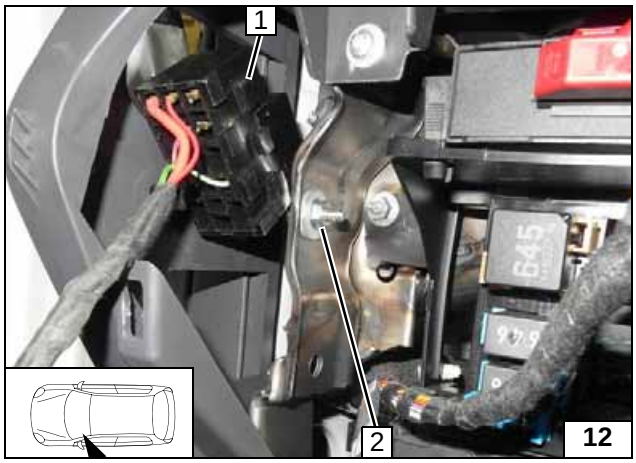
Climatic Fan Controller

Wiring diagram



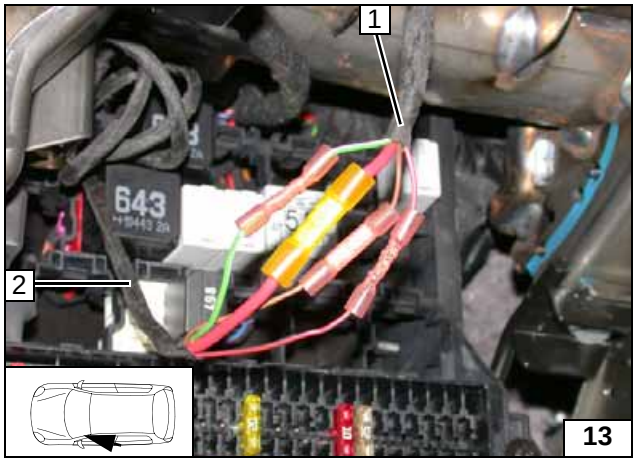
Webasto components		Vehicle components		Colours and symbols	
HG	TT-Evo heater	Fx	40A fan fuse (assignment depends on vehicle and vehicle equipment variant)	rt	red
X1	6-pin heater connector			ge	yellow
X2	2-pin heater connector			sw	black
X10	4-pin connector Heater control	T10..	Connector	br	brown
		T5	5-pin connector J301	ws	white
K1	Fan relay	J301	Control unit of air-conditioning	gn	green
F1	20A fuse	GM	Fan motor		
F2	30A fuse	T4f	4-pin connector N24		
F3	1A fuse	N24	Resistor group	Wiring colours may vary.	
F4	25 A fuse				

Legend



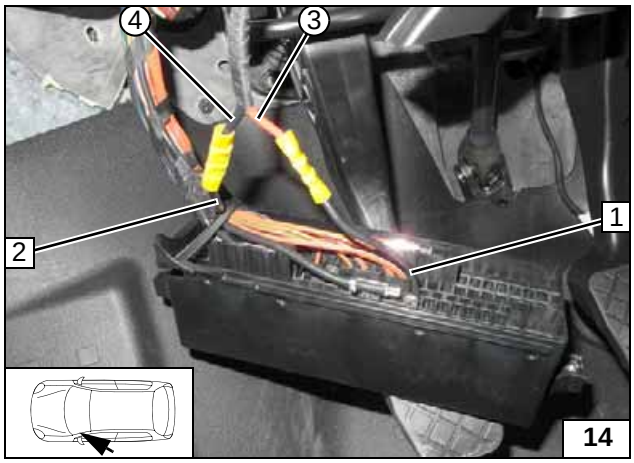
1 Passenger compartment relay and fuse holder
2 M6x20 bolt, angle bracket, large diameter washer, flanged nut, existing hole

Mounting passenger compartment relay and fuse holder



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

Connecting wiring harnesses



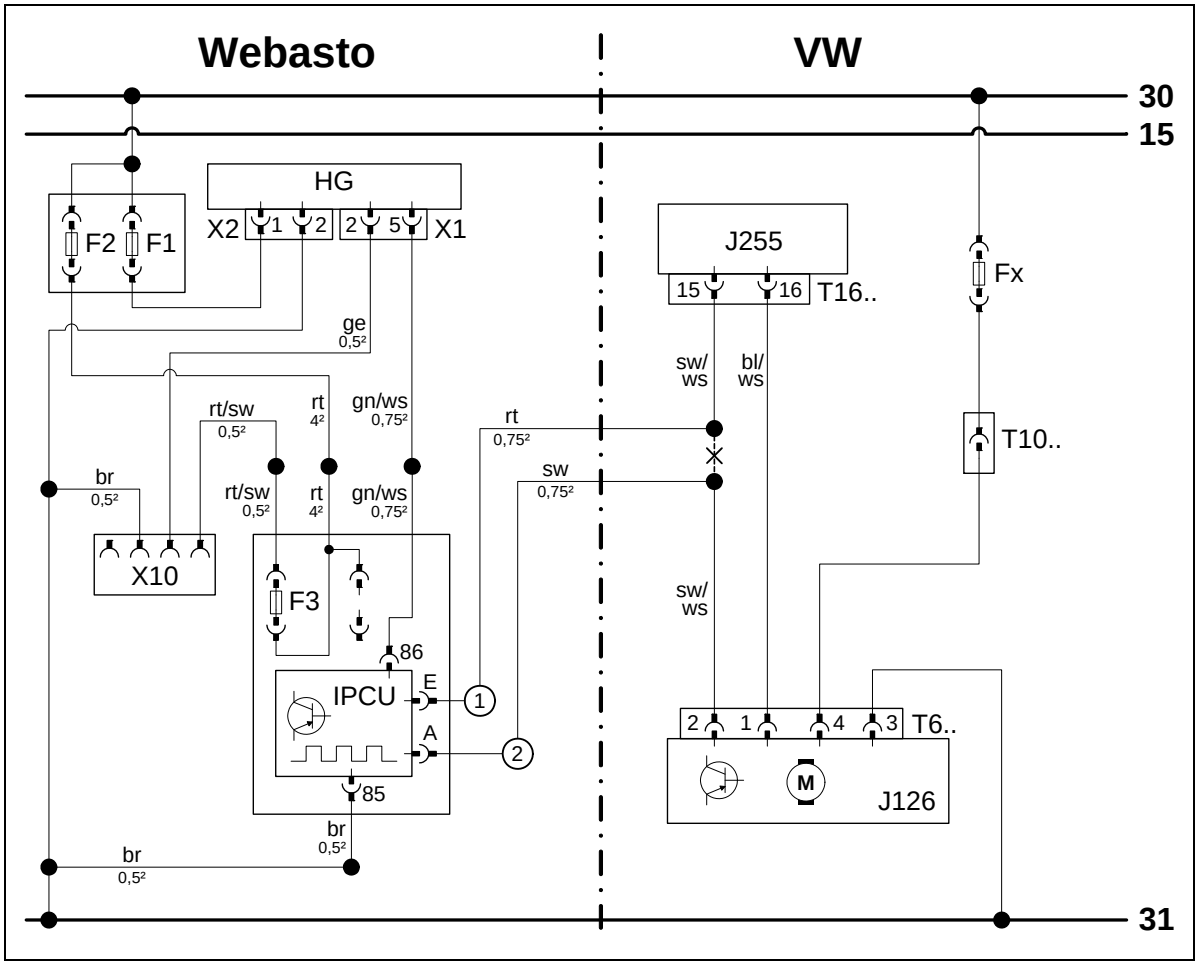
Fuse socket dependent on the respective vehicle equipment variant. Produce connections as shown in the wiring diagram.

1 Black (sw) wire of 40A fan fuse Fx
2 Black (sw) wire of connector T10.. Pin 2
③ Red (rt) wire of K1/87a
④ Black (sw) wire of K1/30

Connection of A/C control unit

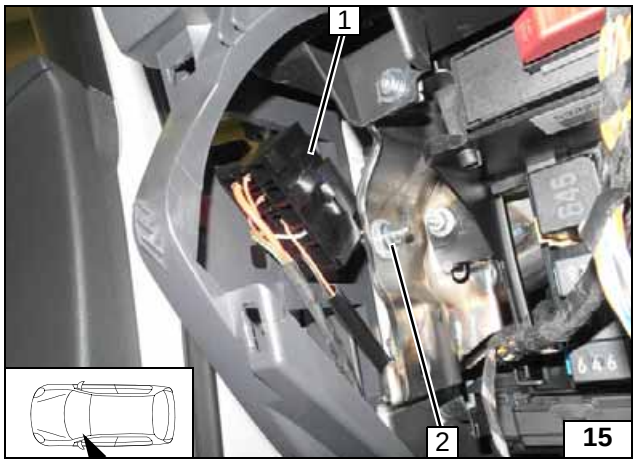
Climatronic Fan Controller

Wiring diagram



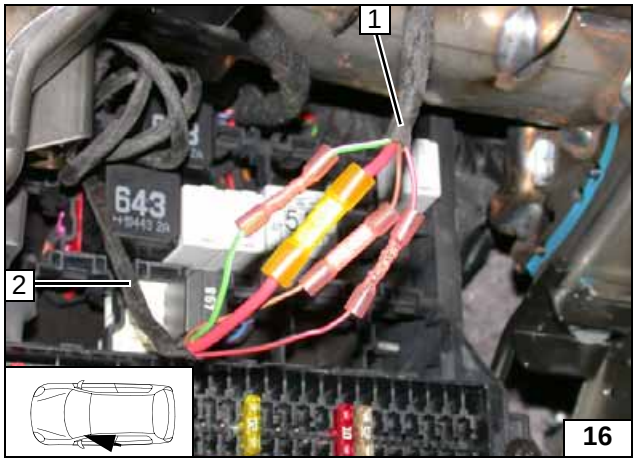
Legend

Webasto components		Vehicle components		Colours and symbols	
HG	TT-Evo heater	J255	A/C control unit	rt	red
X1	6-pin heater connector	T16..	16-pin connector J255	sw	black
X2	2-pin heater connector	Fx	40A fan fuse (assignment depends on vehicle and vehicle equipment variant)	ge	yellow
X10	4-pin connector Heater control			gn	green
				bl	blue
K1	Fan relay			ws	white
F1	20A fuse	T10..	10-pin connection	br	brown
F2	30A fuse				
F3	1A fuse	T6..	6-pin connector J126		
IPCU	Pulse width modulator	J126	Fan unit		
IPCU adjustment values:					
Duty cycle:	30%				
Frequency:	400Hz				
Voltage:	8V			**X**	Cutting point
Function:	High side			Wiring colours may vary.	



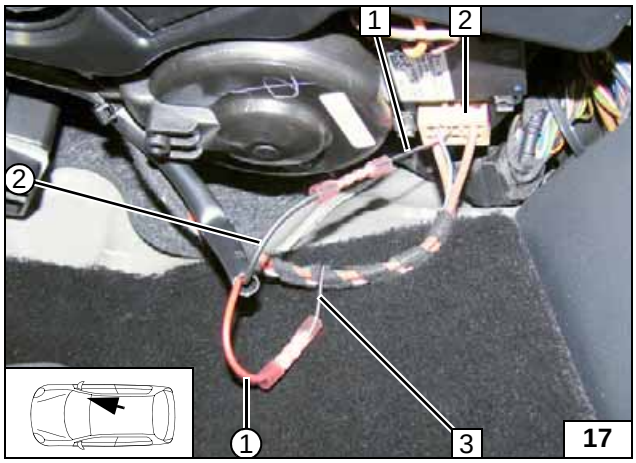
1 Fuse holder
2 M6x20 bolt, angle bracket, large diameter washer, flanged nut, existing hole

Mounting passenger compartment relay and fuse holder



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

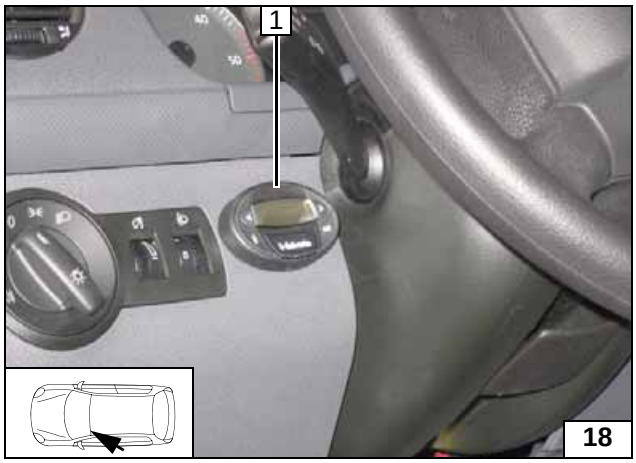
Connecting wiring harnesses



Connection to 6-pin connector T6.. **2** fan unit. Produce connections as shown in wiring diagram.

1 Black/white (sw/ws) wire from 6-pin connector T6.. pin 2
3 Black/white (sw/ws) wire from A/C control unit
① Red (rt) wire of IPCU/E
② Black (sw) wire of IPCU/A

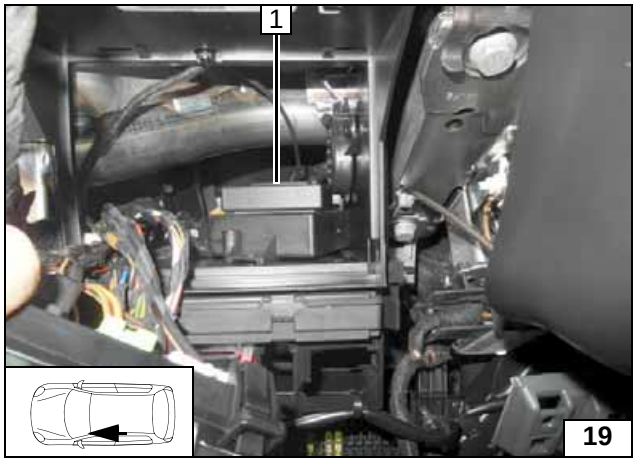
Connecting fan unit



Digital Timer

1 Digital timer

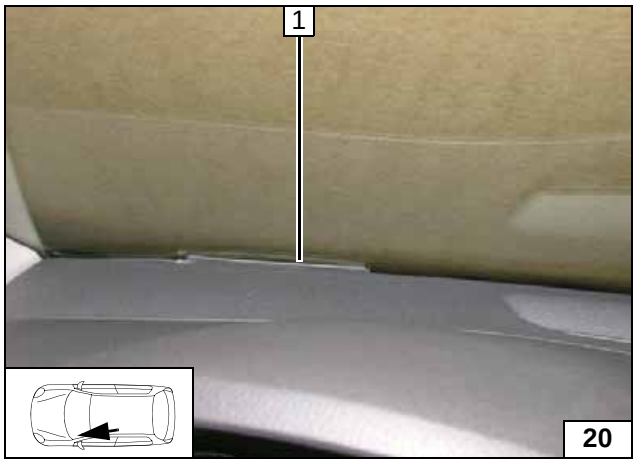
Installing digital timer



Remote Option (Telestart)

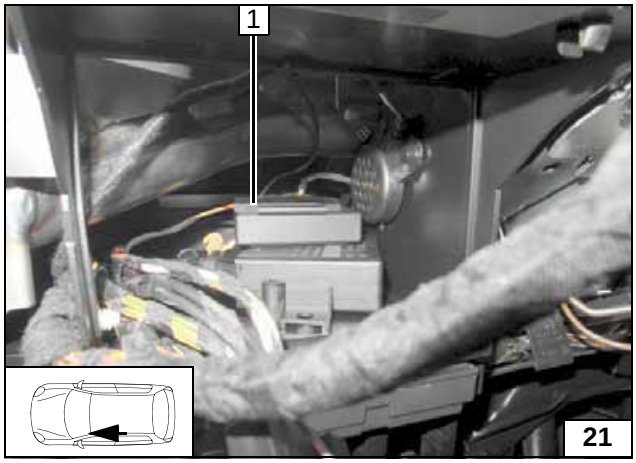
Fasten receiver **1** with adhesive tape.

Mounting receiver



1 Antenna

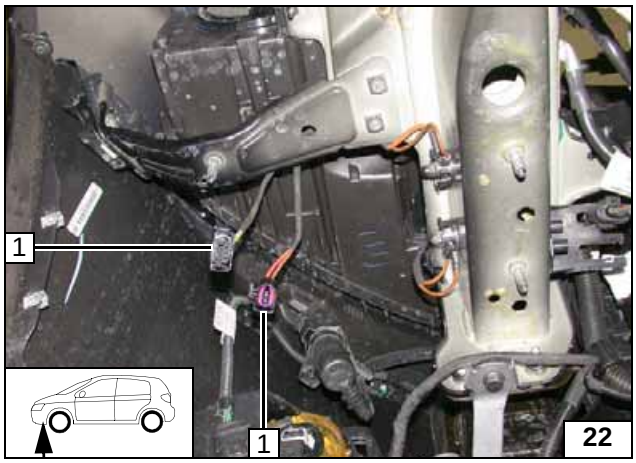
Mounting antenna



Temperature sensor T100 HTM

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

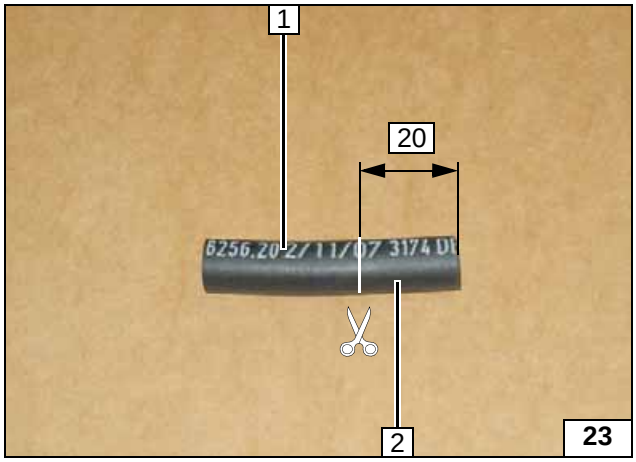
Installing tempera-ture sensor



Preparing Installation Location

1 Wiring harness of heater

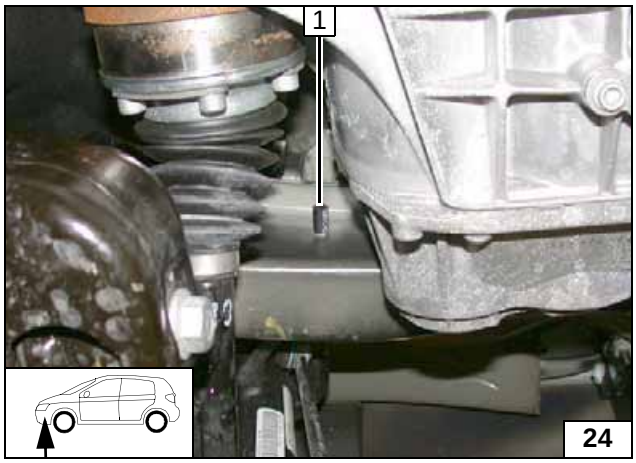
Routing wiring harness



2.0 TDI

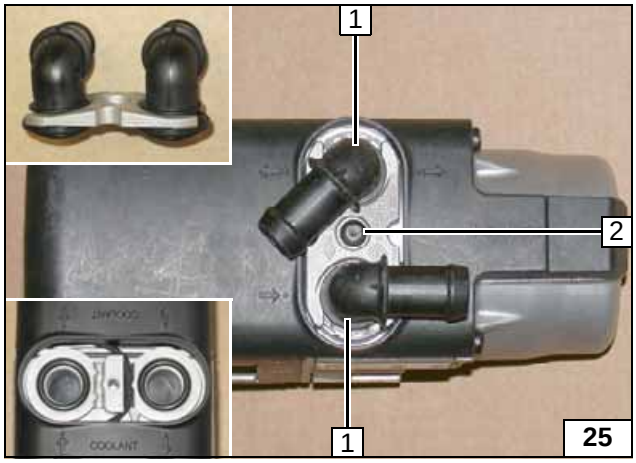
1 Discard section
2 Hose section

Shortening hose section



Slide on 20 mm moulded hose **1** onto original vehicle stud bolt.

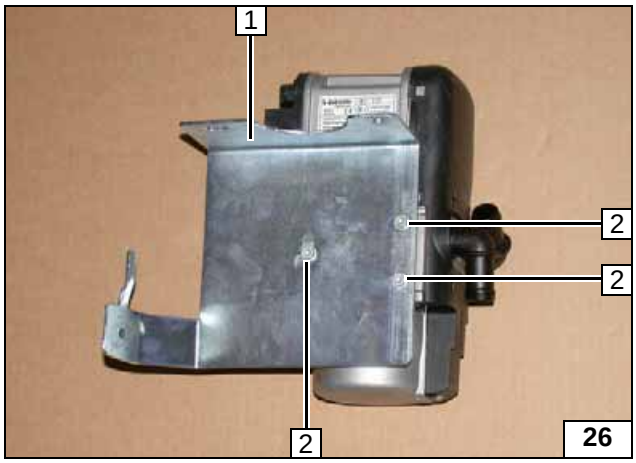
Mounting hose section



Preparing Heater

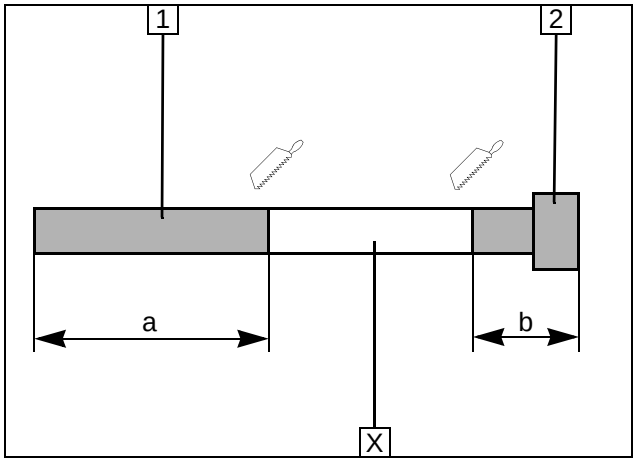
1 Water connection piece, sealing ring [2x each]
2 5x15 mm self-tapping bolt, retaining plate of water connection piece

Mounting water connection pieces



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

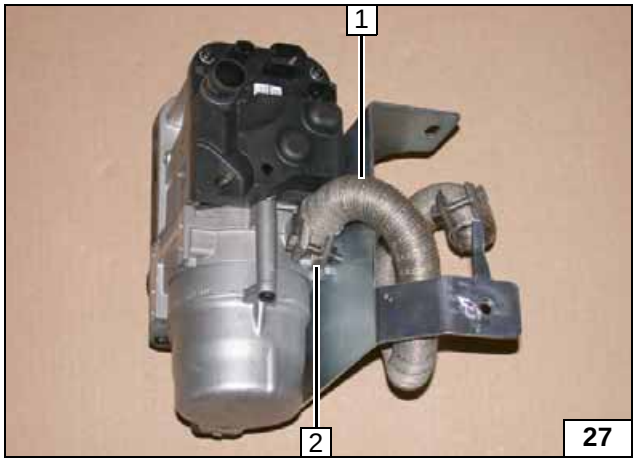
Mounting bracket section A



Discard section **X**.

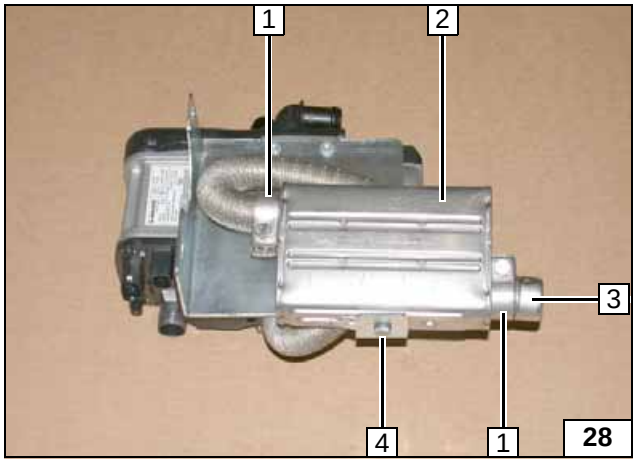
1 Exhaust pipe
a = 470
2 Exhaust end section
b=35

Preparing exhaust pipe



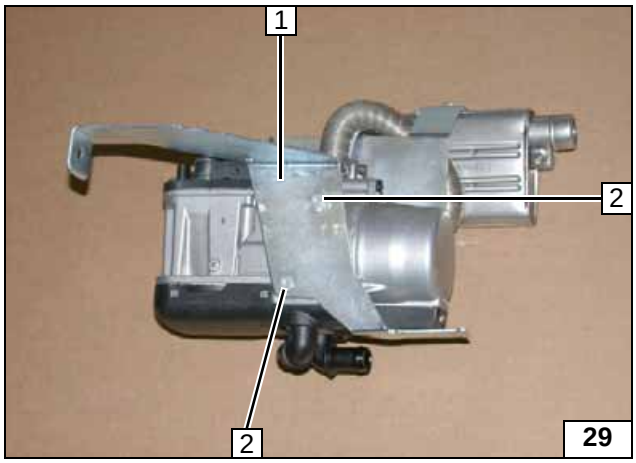
1 Exhaust pipe
2 Hose clamp

Mounting exhaust pipe



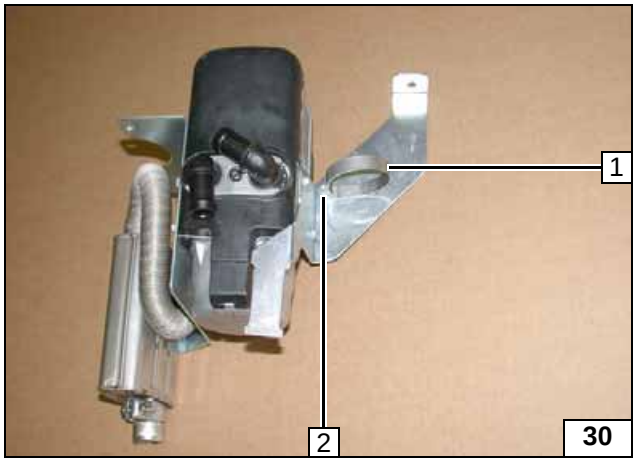
1 Hose clamp [2x]
2 Silencer
3 Exhaust end section
4 M6x16 bolt, spring lockwasher

Installing silencer and exhaust end section



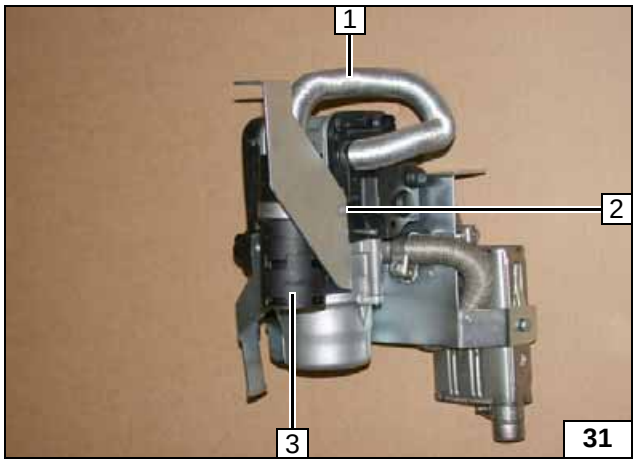
1 Bracket section **B**
2 5x13 self-tapping bolt [2x]

Mounting bracket section B



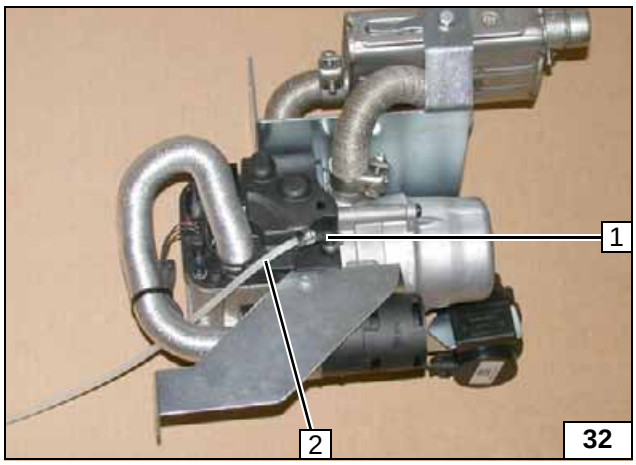
1 51 mm dia. clamp
2 Mount M5x16 bolt, flanged nut loosely

Installing clamp



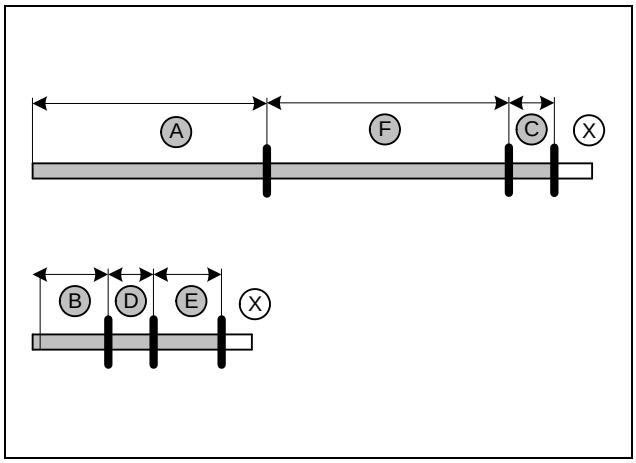
1 Combustion air pipe
2 Tighten M5x16 bolt, flanged nut
3 Intake silencer

Mounting combus-tion air pipe



1 90° moulded hose, 10 mm dia. clamp [2x]
2 Fuel line

Premount-ing fuel line

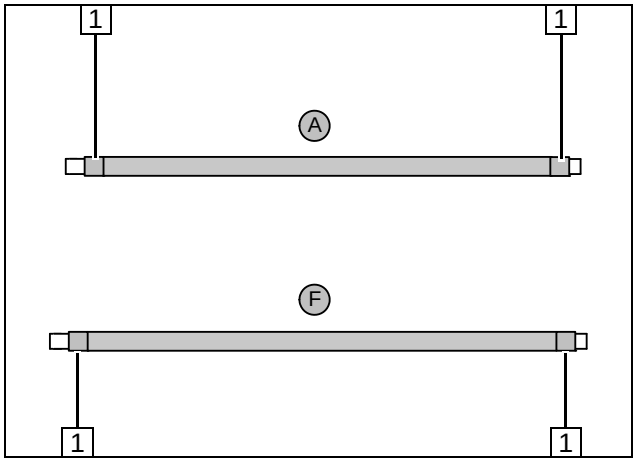


1.6 TDI

Discard section **X**.

A = 960
B = 140
C = 65
D = 70
E = 160
F = 1040

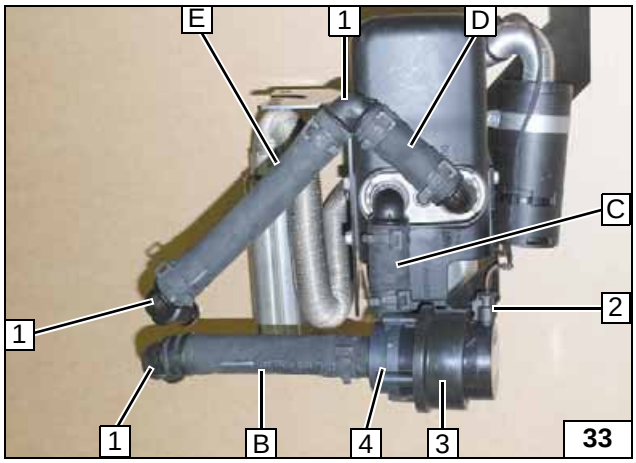
Cutting hoses to length



Slide on braided protection hoses and cut to length. Cut heat shrink plastic tubing to length.

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

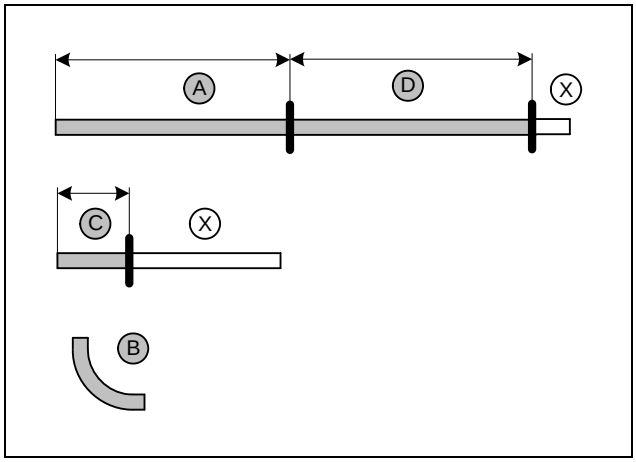
Preparing hoses



All spring clips = 25 mm dia.

1 90° connecting pipe [3x]
2 Connect wiring harness of circulating pump
3 Mounting of circulating pump
4 Circulating pump

Installing hoses

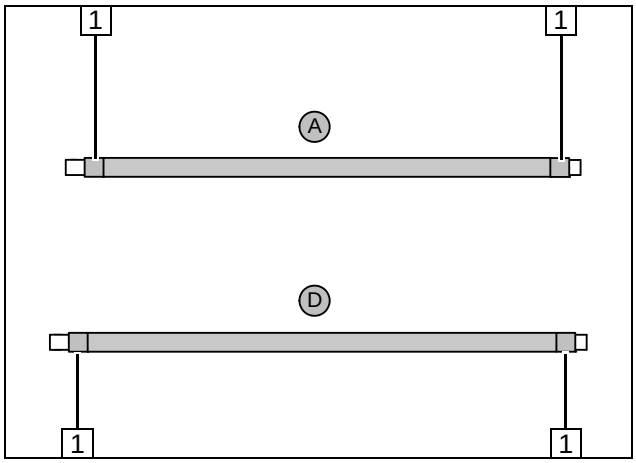


2.0 TDI

Discard section **X**.
Hose **B** = 18 mm dia. 90° moulded hose

A = 1000
C = 65
D = 1130

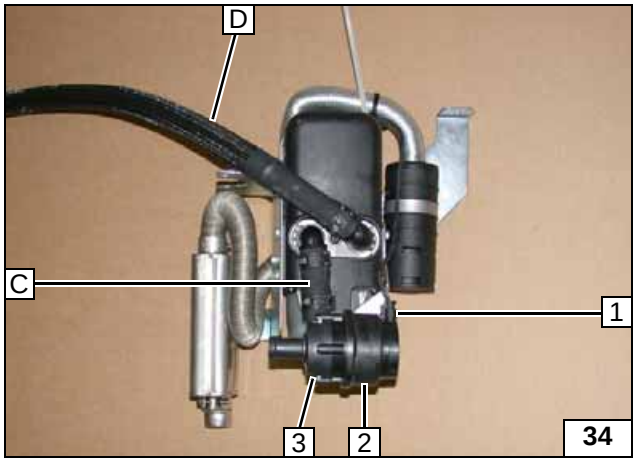
Cutting hoses to length



Slide on braided protection hoses and cut to length. Cut heat shrink plastic tubing to length.

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

Preparing hoses



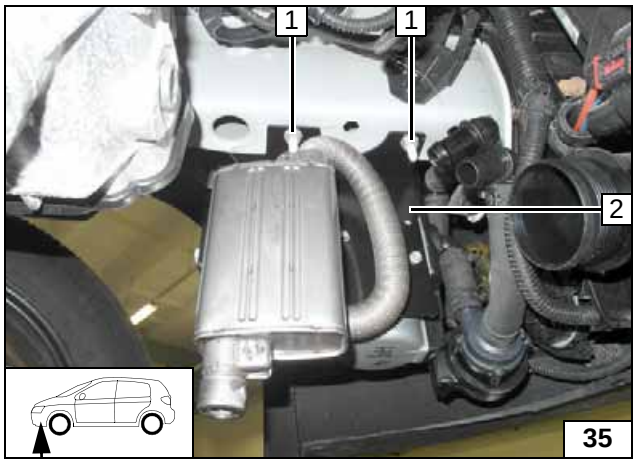
All spring clips = 25 mm dia.

1 Connect wiring harness of circulating pump
2 Mounting of circulating pump
3 Circulating pump

Installing hoses

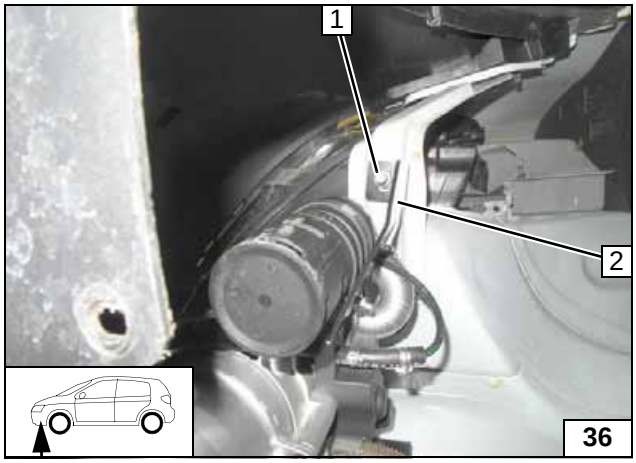
Installing Heater

1.6 TDI



1 Original vehicle stud bolt, M8 flanged nut
2 Bracket section **A**

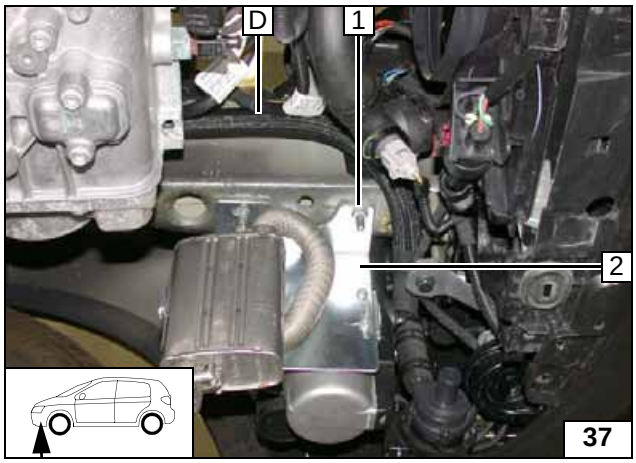
Mounting heater



In case of vehicles without stud bolt, produce 8.5 mm hole through bracket in cross member and fasten bracket using M8x20 bolt and flanged nut. When drilling, watch for components located behind.

1 Original vehicle stud bolt, M8 flanged nut
2 Bracket section **B**

Mounting heater

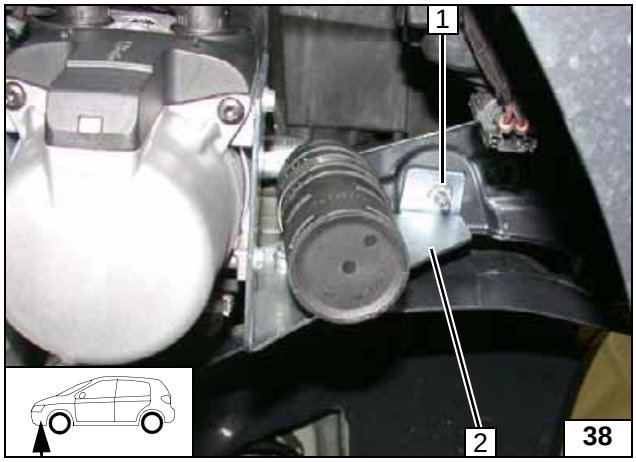


2.0 TDI

Route hose **D** to brake booster

1 Original vehicle stud bolt, M8 flanged nut
2 Bracket section **A**

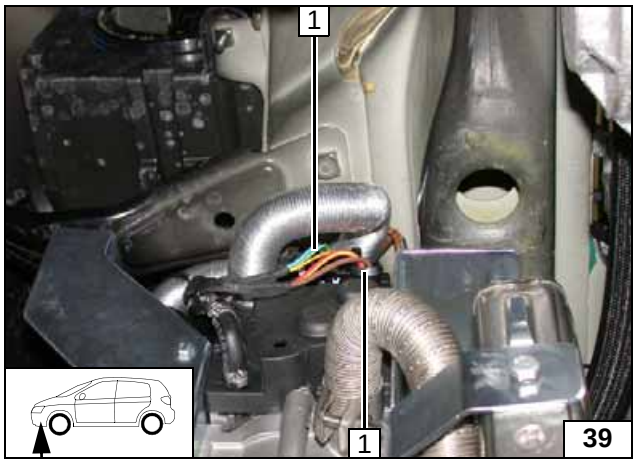
Mounting heater



In case of vehicles without stud bolt, produce 8.5 mm hole through bracket in cross member and fasten bracket using M8x20 bolt and flanged nut. When drilling, watch for components located behind.

1 Original vehicle stud bolt, M8 flanged nut
2 Bracket section **B**

Mounting heater



All vehicles

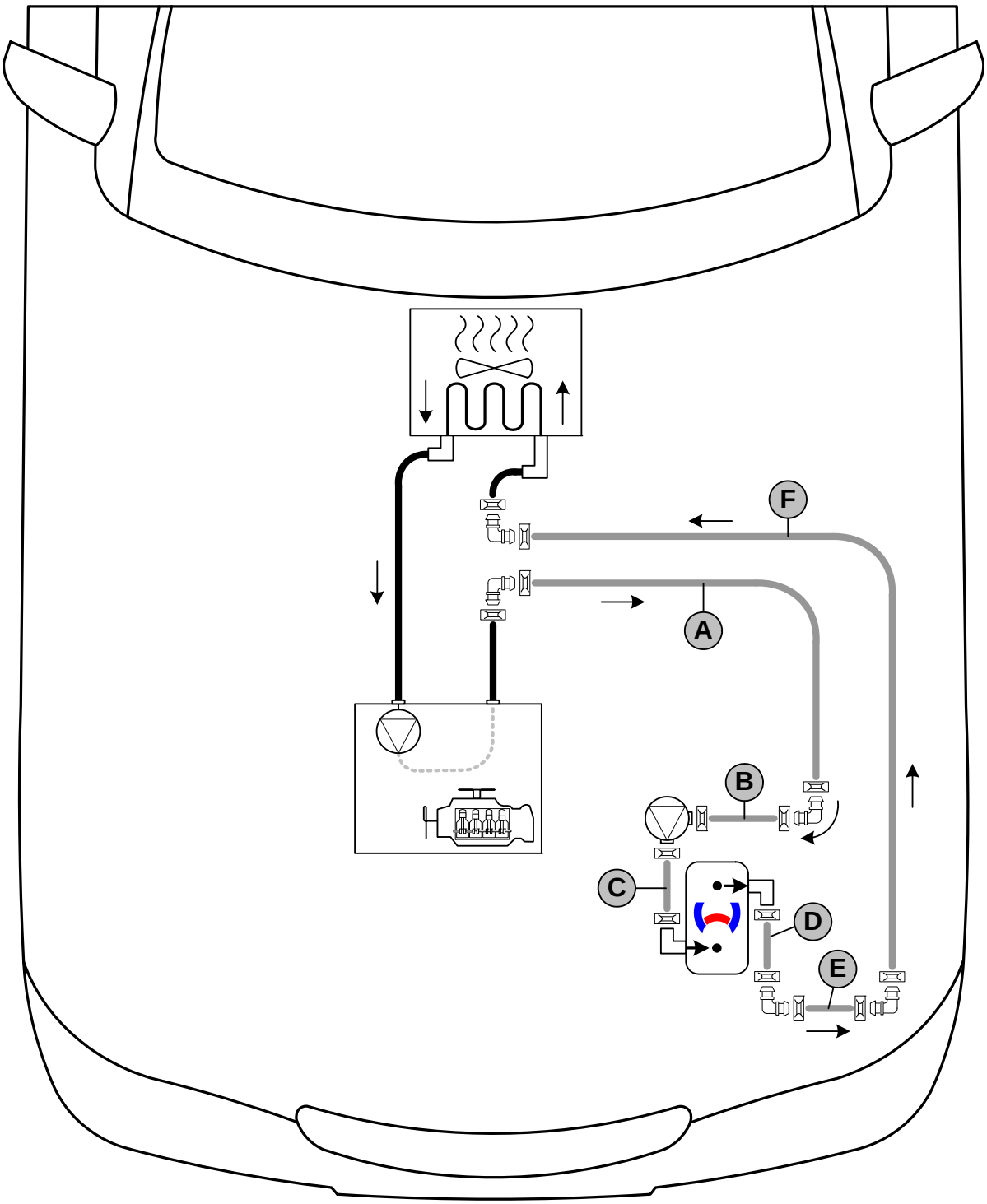
1 Wiring harness of heater [2x]

Mounting wiring harness

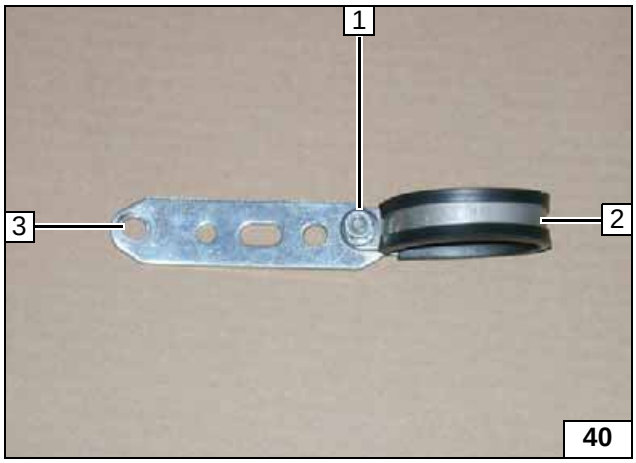
Coolant Circuit 1.6 TDI

WARNING!
Any coolant running off should be collected in an appropriate container. Install hoses so that they are kink-free. Unless specified otherwise, always fasten using cable ties. Position clamps so that other hoses cannot be damaged. The heater must be filled with coolant when installing the hoses.
The connection should be "inline" based on the following diagram:

Hose installation diagram

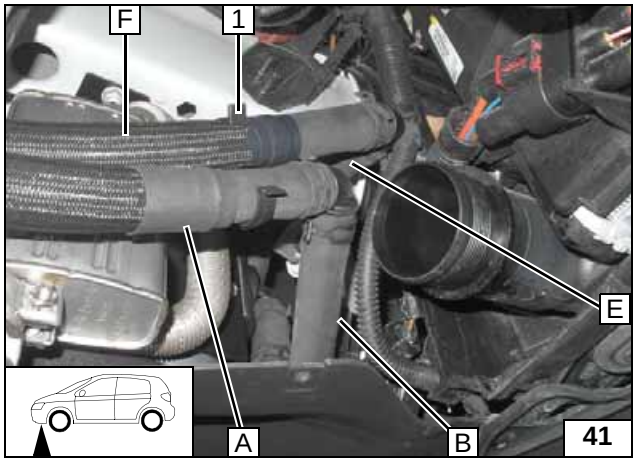


All spring clips = 25 mm dia.
All connecting pipes = 18x18 mm dia.



1 Install M6x20 bolt, flanged nut loosely
2 38 mm dia. rubber-coated p-clamp
3 Drill out hole to 8.5 mm dia.

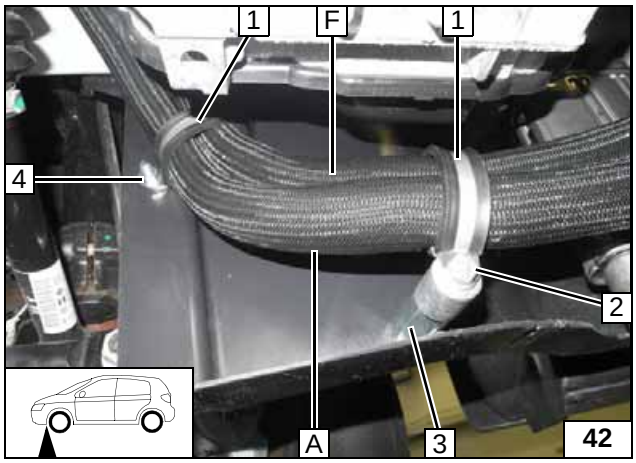
Preparing perforated bracket



Hose of intercooler removed only for demonstrative purposes.

1 Hose bracket

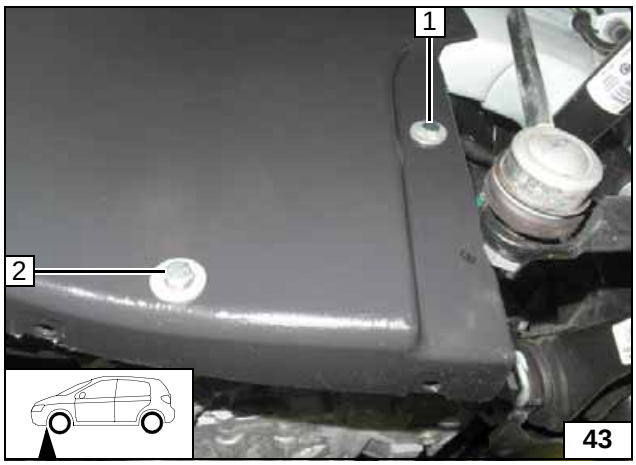
Connecting heater



6.5 mm dia. hole [2] at position **3** and **4** in wheel well trim (also see following image).

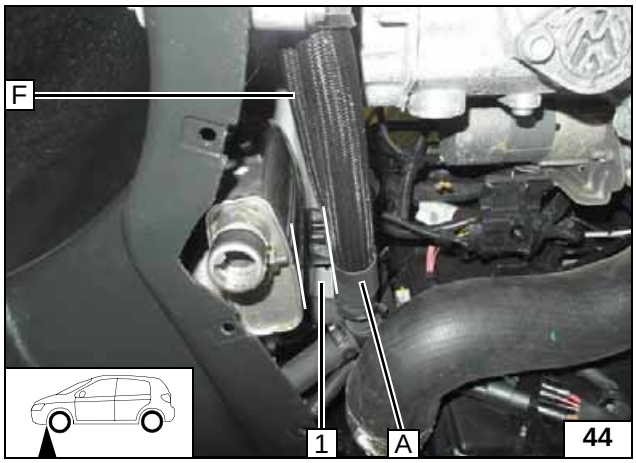
1 38 mm dia. rubber-coated p-clamp [2x]
2 M6x30 bolt, 20 mm shim
3 M6x20 bolt, spring lockwasher, large diameter washer, M6x40 spacer nut
4 M6x20 bolt, spring lockwasher, large diameter washer, flanged nut

Routing in engine compartment



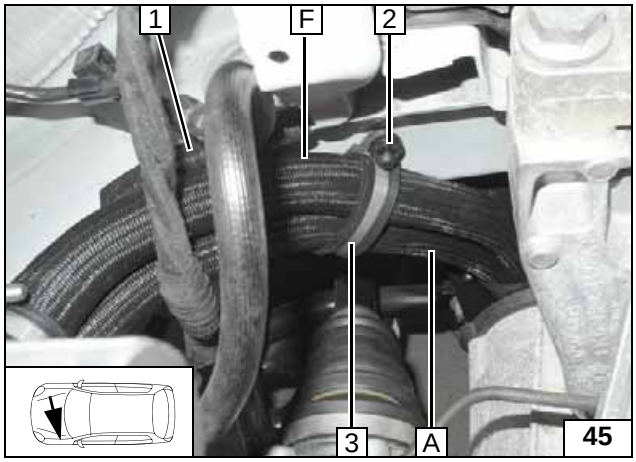
1 M6x20 bolt, spring lockwasher, large diameter washer, 38 mm dia. rubber-coated p-clamp, flanged nut
2 M6x20 bolt, spring lockwasher, large diameter washer, M6x40 spacer nut, 20 mm shim, rubber-coated p-clamp 38 mm dia., M6x30 bolt

Routing in engine compartment



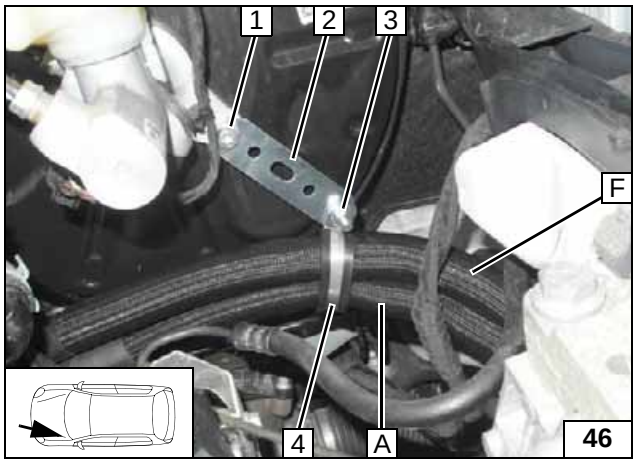
Ensure sufficient distance of hoses **A** and **F** to the exhaust silencer at position **1**.

Routing in engine compartment



1 100 mm edge protection
2 Original vehicle stud bolt, plastic nut
3 38 mm dia. rubber-coated p-clamp

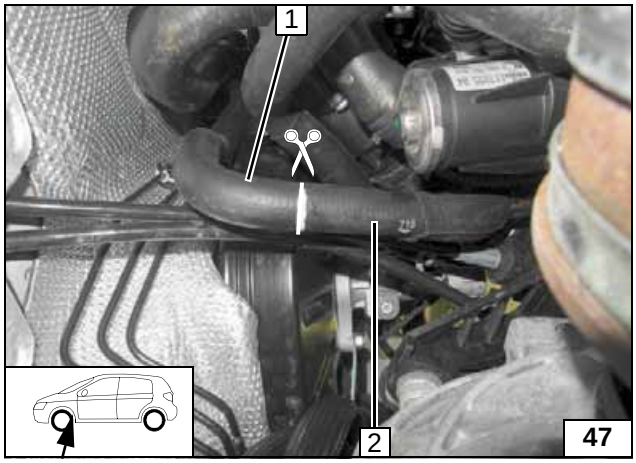
Routing in engine compartment



Route hoses **A** and **F** through 38 mm dia. rubber-coated p-clamp **4** and align.

1 Mount original vehicle bolt, M8 nut
2 Perforated bracket
3 Tighten bolt

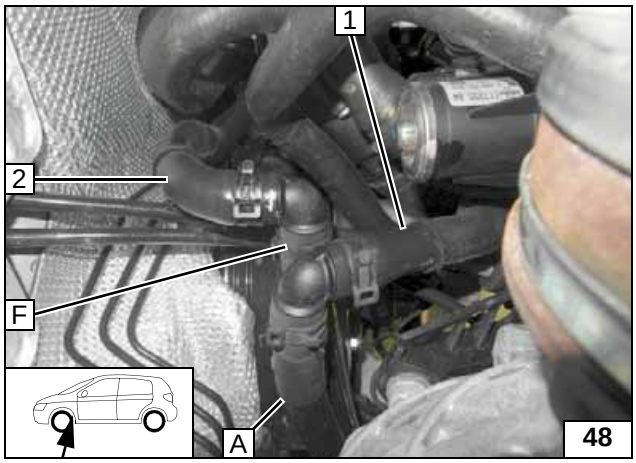
Routing in engine compartment



Cut off hose on engine outlet/heat exchanger inlet at marking.

1 Hose section of heat exchanger inlet
2 Engine outlet hose section

Cutting point



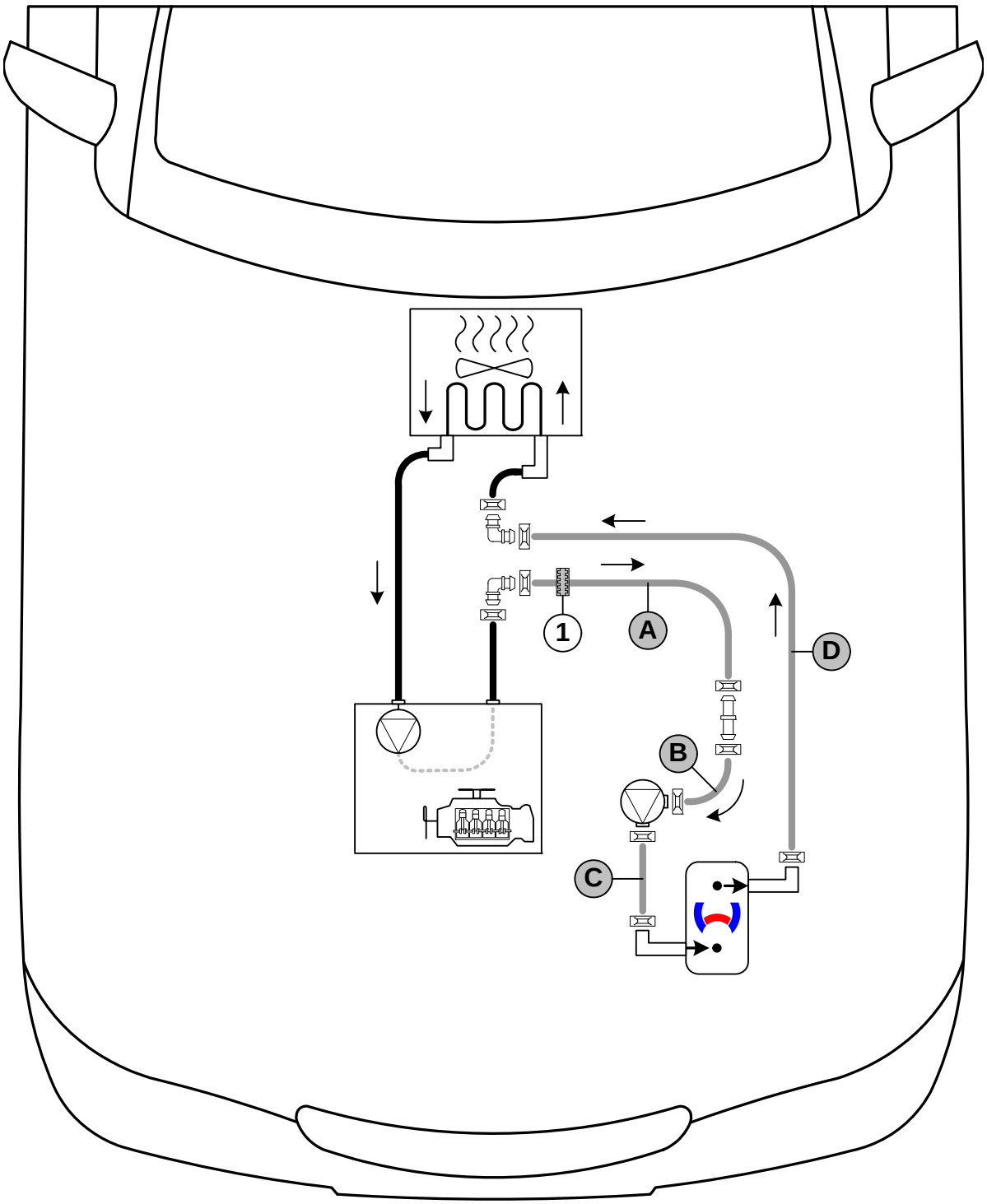
1 Hose of engine outlet
2 Hose on heat exchanger inlet

Connecting engine outlet and heat exchanger inlet

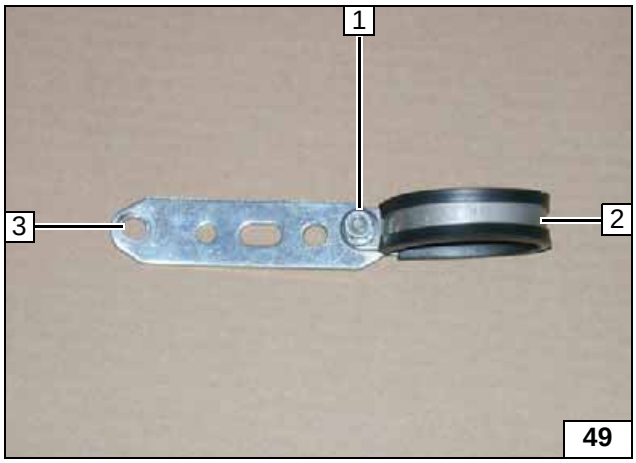
Coolant Circuit 2.0 TDI

WARNING!
Any coolant running off should be collected in an appropriate container. Install hoses so that they are kink-free. Unless specified otherwise, always fasten using cable ties. Position clamps so that other hoses cannot be damaged. The heater must be filled with coolant when installing the hoses.
The connection should be "inline" based on the following diagram:

Hose installation diagram

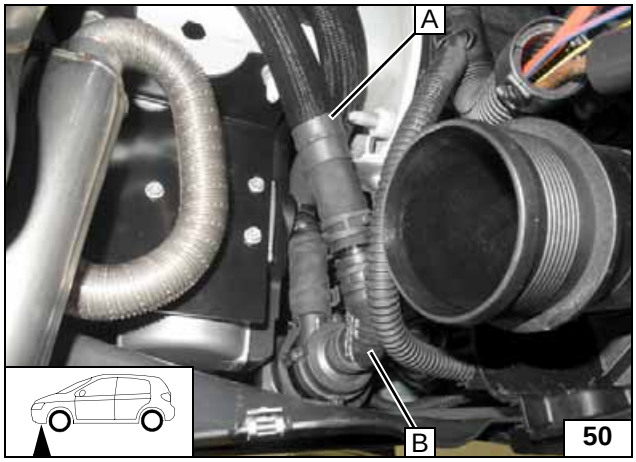


All spring clips = 25 mm dia. **1** = black (sw) rubber isolator .
All connecting pipes and = 18x18 mm dia.

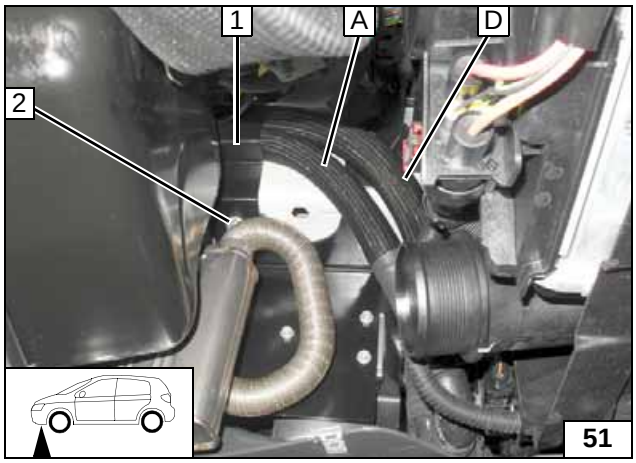


1 Install M6x20 bolt, flanged nut loosely
2 38 mm dia. rubber-coated p-clamp
3 Drill out hole to 8.5 mm dia.

Preparing perforated bracket



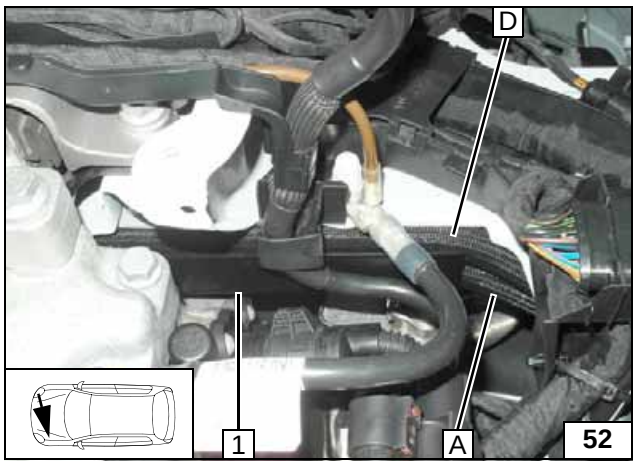
Circulating pump connection



Route hose **A** to brake booster. Align hoses **A** and **D** behind hose bracket **1**. Ensure sufficient distance from neighbouring components.

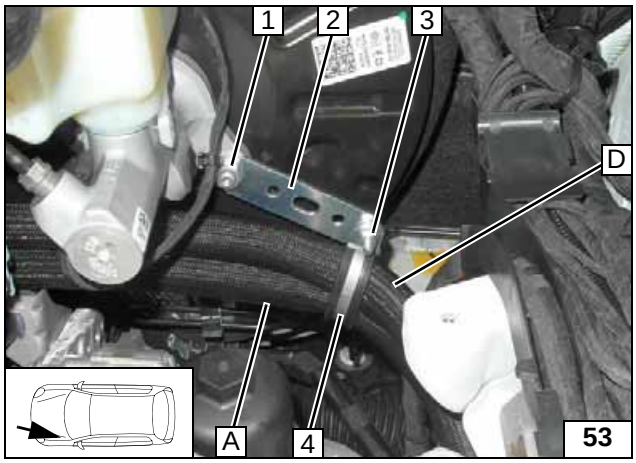
2 Original vehicle stud bolt, M8 flanged nut

Routing on frame side member



Route hoses **A** and **D** in hose bracket **1**. Ensure sufficient distance from neighbouring components.

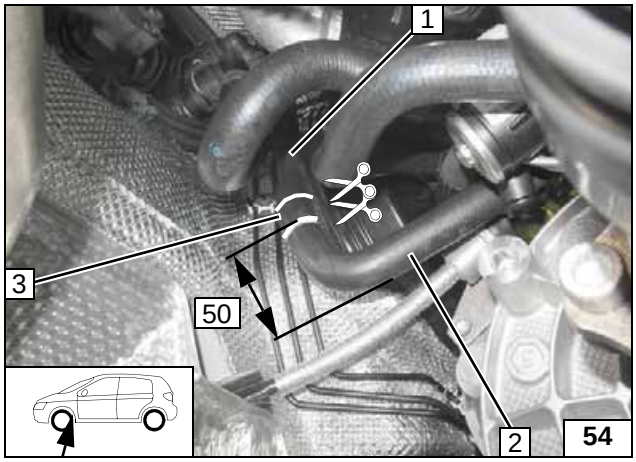
Routing on frame side member



Route hoses **A** and **D** through 38 mm dia. rubber-coated p-clamp **4** and align.

1 Mount original vehicle bolt, M8 nut
2 Perforated bracket
3 Tighten bolt

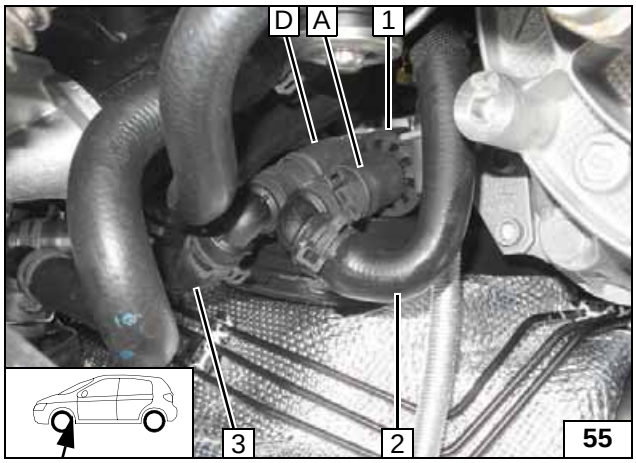
Routing in engine compartment



Cut off hose on engine outlet/heat exchanger inlet at markings.

1 Hose section of heat exchanger inlet
2 Engine outlet hose section
3 Discard 20 mm section

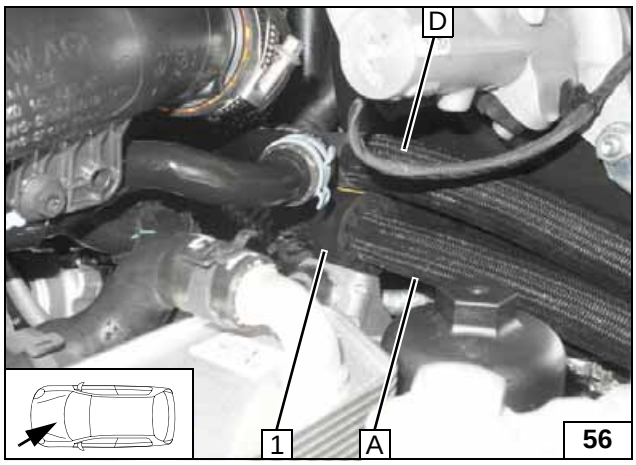
Cutting point



Slide black (sw) rubber isolator **1** onto hose **A**.

1 Hose of engine outlet
2 Hose on heat exchanger inlet

Connecting engine outlet and heat exchanger inlet



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

1 Black (sw) rubber isolator

Aligning rubber isolator

Fuel

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

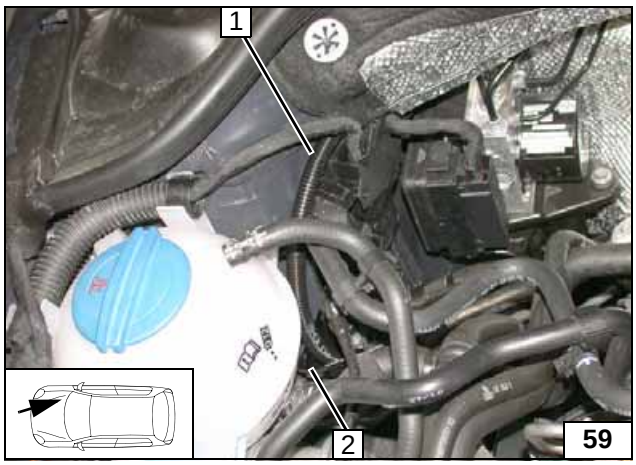
WARNING!
The fuel line and wiring harness are routed to the metering pump as shown in the wiring harness routing diagram.

Route fuel line and wiring harness of metering pump in 10 mm dia. and 1100 mm long corrugated tube **1** to firewall.

Routing lines

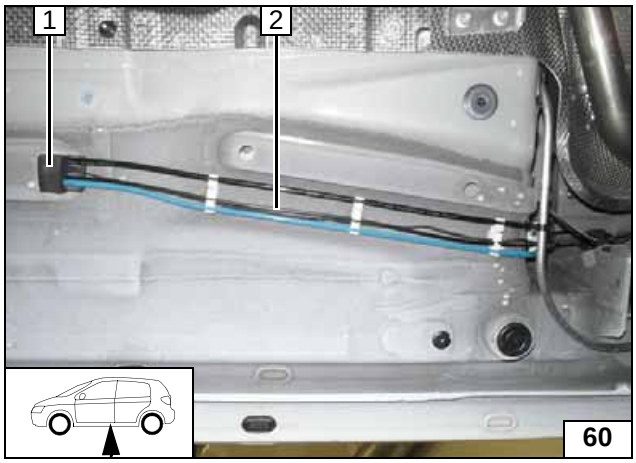
Route fuel line and wiring harness of metering pump **1** to the firewall behind the insulation mat on the right vehicle side.

Routing lines



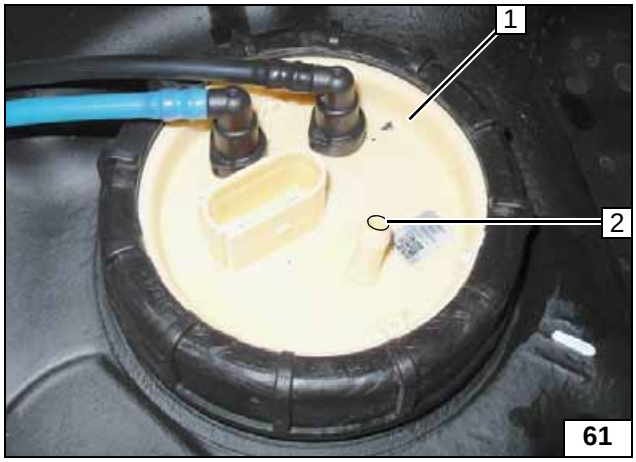
Slide 10 mm dia. corrugated tube onto fuel line and wiring harness of metering pump. Guide fuel line and wiring harness of metering pump **1** into original vehicle line duct **2** and route to underbody.

Routing lines



1 Original vehicle line duct
2 Fuel line and wiring harness of metering pump

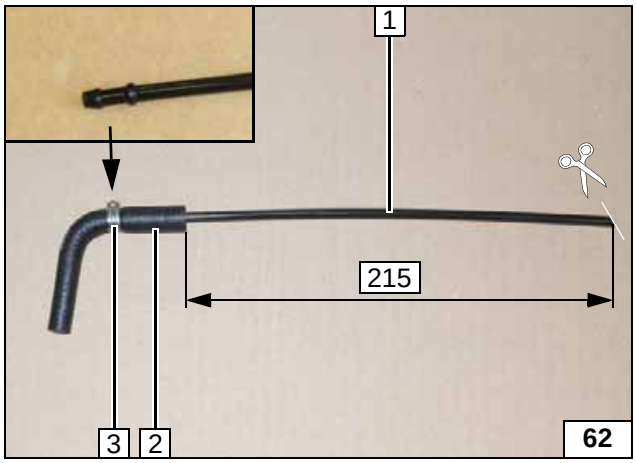
Routing lines



Lower fuel tank in accordance with manufacturer's instructions. Cut 3 mm off blind plug.

1 Fuel-tank sending unit
2 Tip cut off blind plug

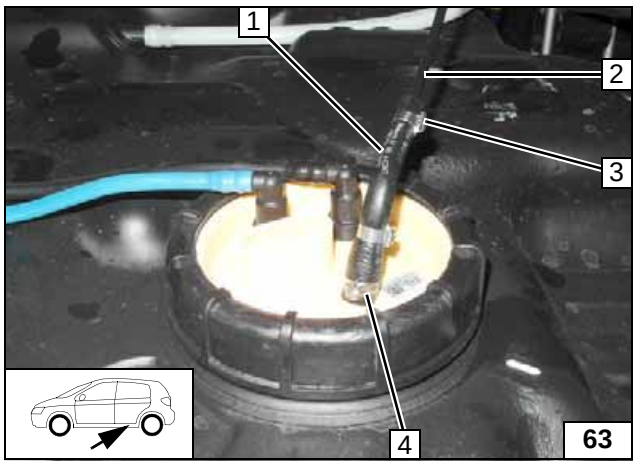
Fuel extraction



Obliquely cut off standpipe **1** at the end.

2 90° moulded hose
3 10 mm dia. clamp

Preparing fuel standpipe



Install fuel tank in accordance with manufacturer's instructions after assembly.

1 90° moulded hose
2 Fuel line of fuel standpipe
3 10 mm dia. clamp
4 13.5 mm dia. clamp

Connecting fuel line

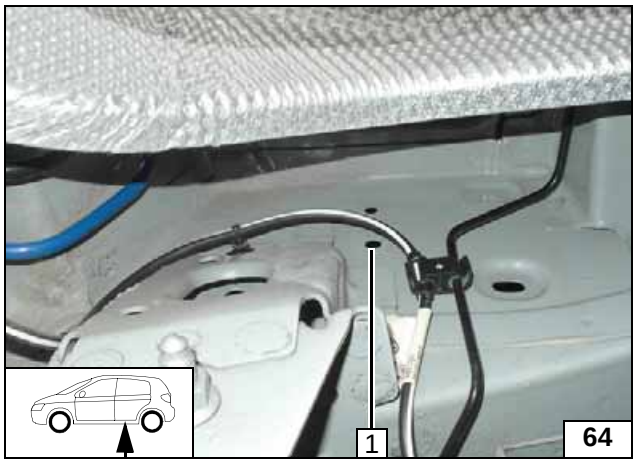


Image shows 1.6 TDI

1 M6 rivet nut, existing hole

Installing rivet nut

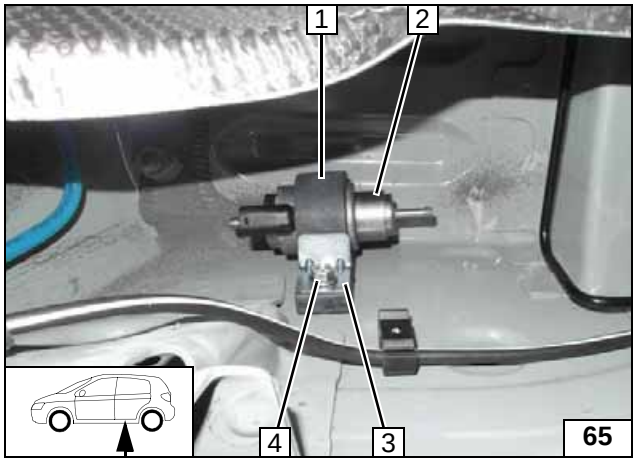
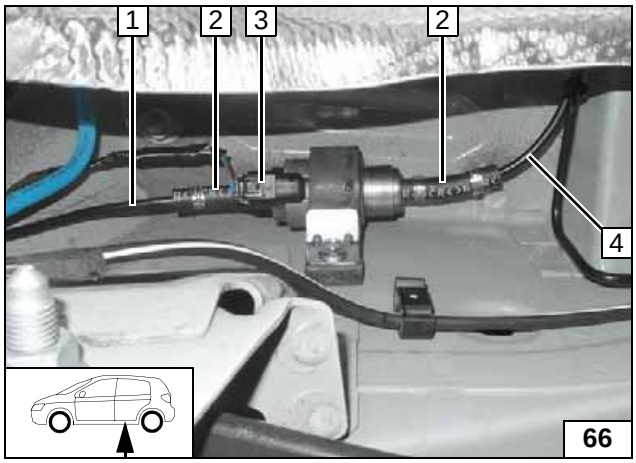


Image shows 2.0 TDI

1 Mounting of metering pump
2 Metering pump
3 Support angle
4 M6x25 bolt

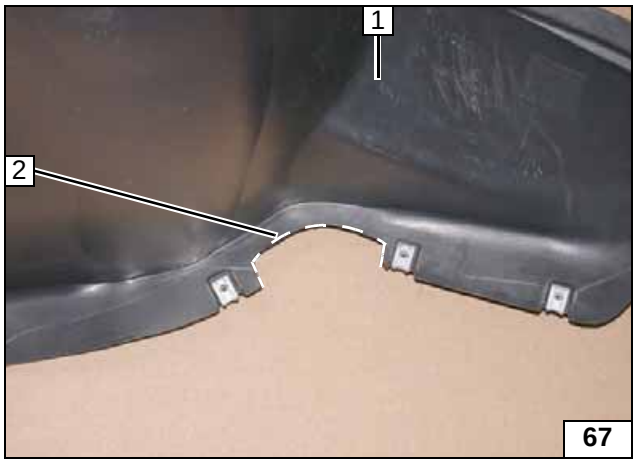
Mounting metering pump



Check the position of the components; adjust if necessary. Check that they have freedom of movement.

1 Fuel line from heater
2 Hose section [2x], 10 mm dia. clamp [4x]
3 Wiring harness of metering pump, connector mounted
4 Fuel line of fuel standpipe

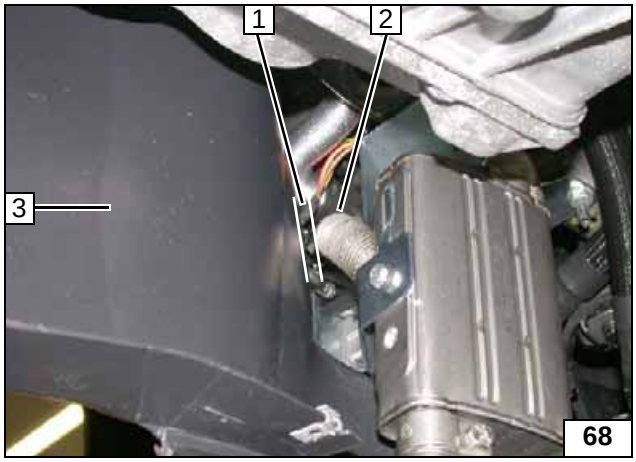
Connecting metering pump



Wheel Well Trim / Underride Protection

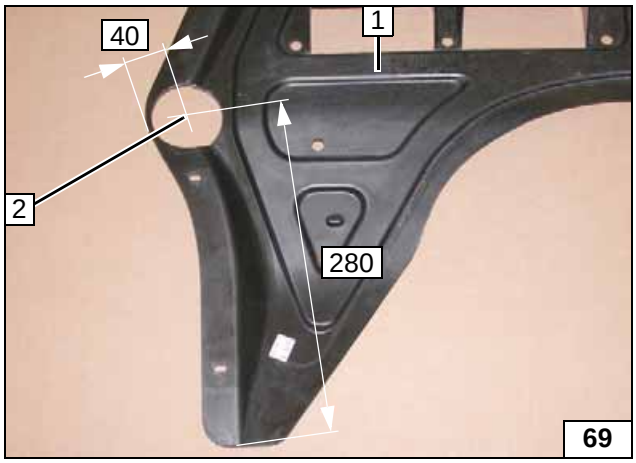
Cut out wheel well trim **1** at the marking **2**.

Cutting out wheel well trim



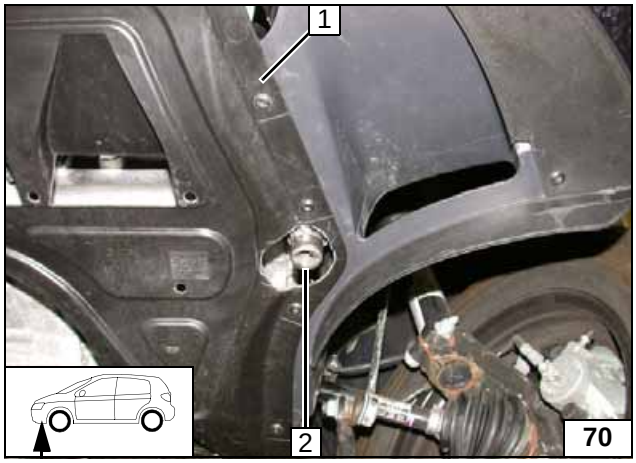
Ensure sufficient distance between wheel well trim **3** and exhaust pipe **2** at position **1** (at least 10 mm).

Installing wheel well trim



1 Underride protection
2 60 mm dia. hole

Cutting out underride protection



Align exhaust end section **2** in centre of hole and flush with underride protection **1**.

Aligning exhaust end section

Final Work

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

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

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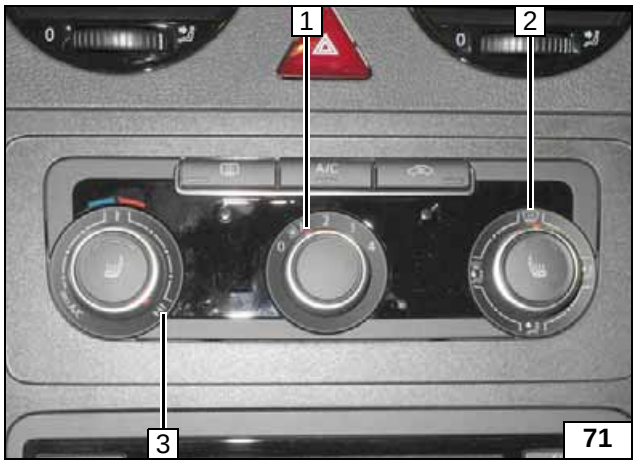
Operating Instructions for Climatic

Please remove this page in case of Climatic and add it to the vehicle operating instructions.

Note:
We recommend matching the heating time to the driving time.
Heating time = driving time
Example:
For a driving time of approx. 20 min. (in one direction), we recommend not exceeding a switch-on time of 20 min.

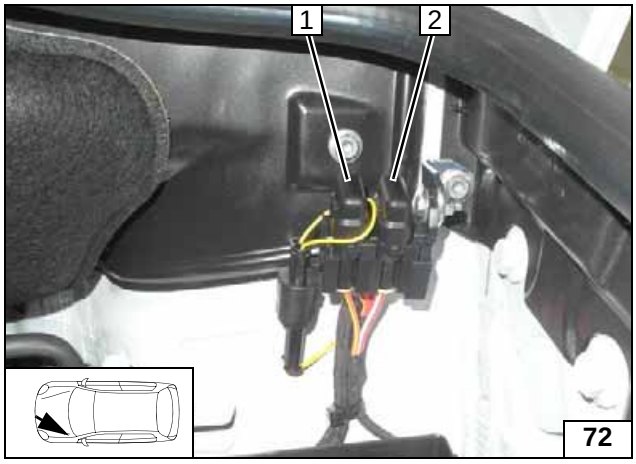
Passenger compartment monitoring, if installed, must be deactivated in addition to vehicle settings for the heating operation.
For instructions on deactivation, please refer to the operating instructions of the vehicle.

Before parking the vehicle, make the following settings:



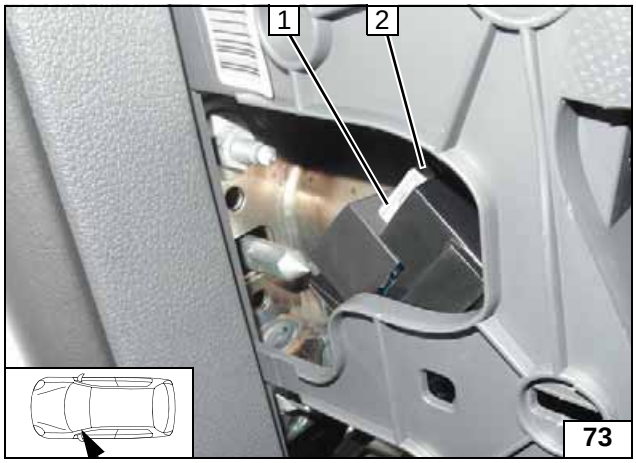
A/C control panel

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



Fuses of engine compartment

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



Fuses of passenger compartment

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

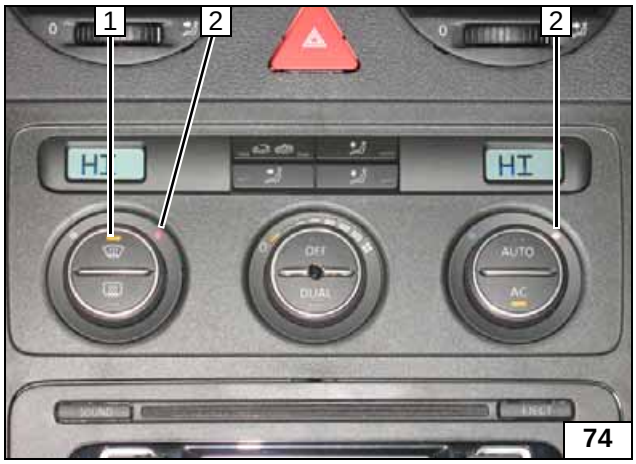
Operating Instructions for Climatronic

Please remove this page in case of Climatronic and add it to the vehicle operating instructions.

Note:
We recommend matching the heating time to the driving time.
Heating time = driving time
Example:
For a driving time of approx. 20 min. (in one direction), we recommend not exceeding a switch-on time of 20 min.

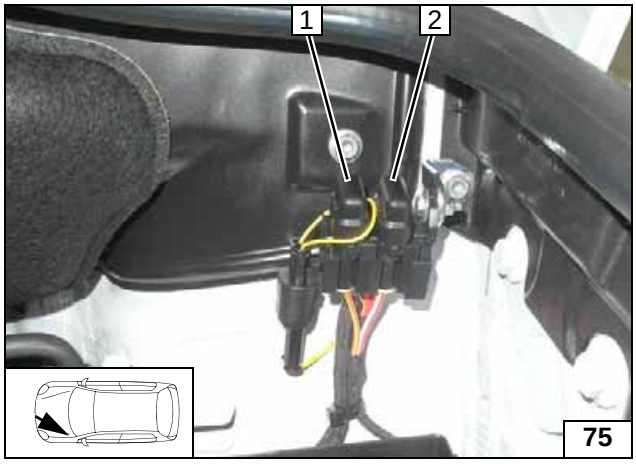
Passenger compartment monitoring, if installed, must be deactivated in addition to vehicle settings for the heating operation.
For instructions on deactivation, please refer to the operating instructions of the vehicle.

Before parking the vehicle, make the following settings:



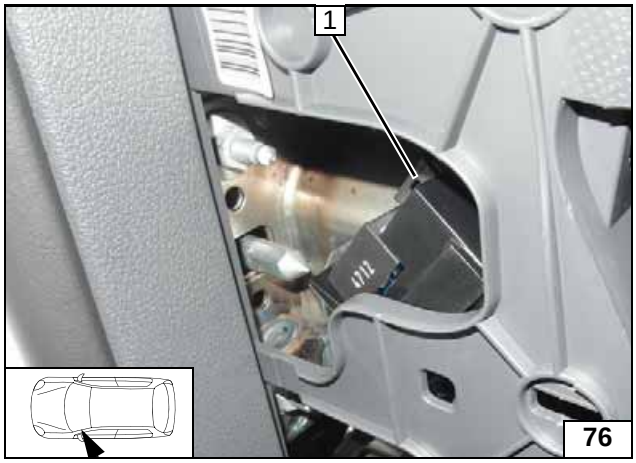
1 Air outlet to windscreen
2 Set temperature to "HI"

A/C control panel



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

Fuses of engine compartment



1 1A fuse F3 of heater control

Fuse of passenger compartment