

Water Heater

Thermo Top C Parking Heater



Upgrade documentation

Additional kit - Comfort - Island-based circuit

VW T5 Diesel

Webasto auxiliary heater upgraded with a parking heating function without engine pre-heating

From model year 2012

Left-hand drive vehicle



WARNING!

Hazard warning:

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.

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

NEVER attempt to install or repair Webasto heating or cooling systems if you have not successfully completed the company training and thereby acquired the required technical skills, or if you do not have access to the required technical documentation, tools and equipment needed to carry out correct installation and repairs.

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

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

Webasto does not accept any liability for defects and damage that are attributable to installation by untrained staff.

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Validity

Manufacturer	Model	Type	EG BE No. / ABE
VW	T5	L148 / L225	e1 * 2001 / 116 * 0218 * ...
VW	T5	7HM / 7HMA	L148
VW	T5	7HCA / 7HX / 7X0	e1 * 2001 / 116 * 0220 * ...
VW	T5	7JO	e1 * 2007 / 46 * 0130 * ...

Motorisation	Engine code	Output in kW	Displacement in cm ³
1.9 TDI	AXC	63	1896
1.9 TDI	AXB	77	1896
2.0 TDI	CAAB	75	1968
2.5 TDI	AXD	96	2461
2.5 TDI	AXE	128	2461

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

Heater / Installation Kit

Quantity	Description	Order No.:
1	Additional Kit "Comfort" VW T5 Diesel 2012	1321085A

Foreword

This installation documentation applies to VW T5 Diesel vehicles with Webasto auxiliary heater upgraded with a parking heating function without engine preheating - for validity, see page 2 - 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 "Upgrade documentation".

However, the regulations of this Upgrade documentation and the "Operating Instructions" must always be observed.

The corresponding rules of technology and any information from the vehicle manufacturer should be observed during the installation work.

General Instructions

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 wires and tie back. Connectors on electronic components have to audibly click into place.

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

When installing an IPCU, check or adjust the corresponding settings before installation.

Special Tools

- Torque wrench for 2.0 - 10 Nm
- Hose clamping pliers
- Unlocking tool for radio navigation device
- Unlocking tool for the radio
- Hook

Preliminary Work

WARNING!

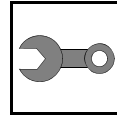
- If present, remove the battery cover.
- If present, remove the engine design cover.
- Disconnect the battery earth connection.
- Remove the partition wall behind the battery.
- Remove the lateral instrument panel trim on the driver's side.
- Remove the lower instrument panel trim on the driver's side.
- Clip out the speaker cover on the top left of the instrument panel (only in case of Telestart).
- Remove the entry trim on the driver's side.
- Uncover heater on the underbody and remove the connector



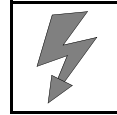
Explanatory Notes on Document

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.

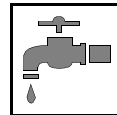
Mechanical system



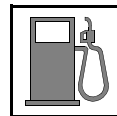
Electrical system



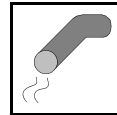
Coolant circuit



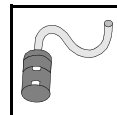
Fuel



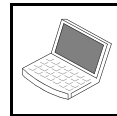
Exhaust gas



Combustion air



Software



Special features are highlighted using the following symbols:



Specific risk of injury or fatal accidents.



Specific risk of damage to components.



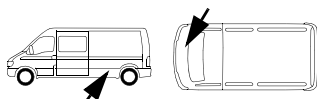
Specific risk of fire or explosion.



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

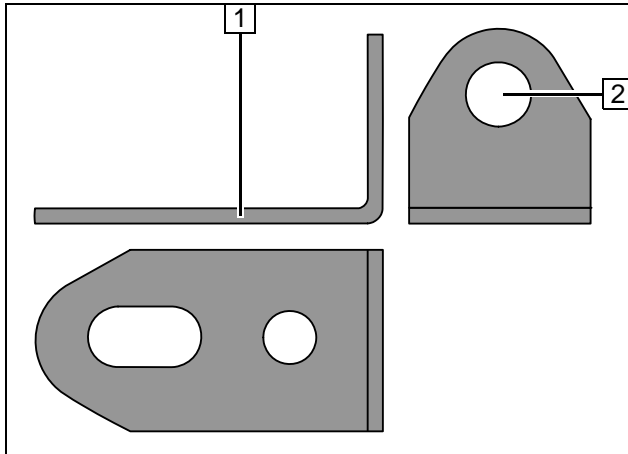


Reference to a special technical feature.



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

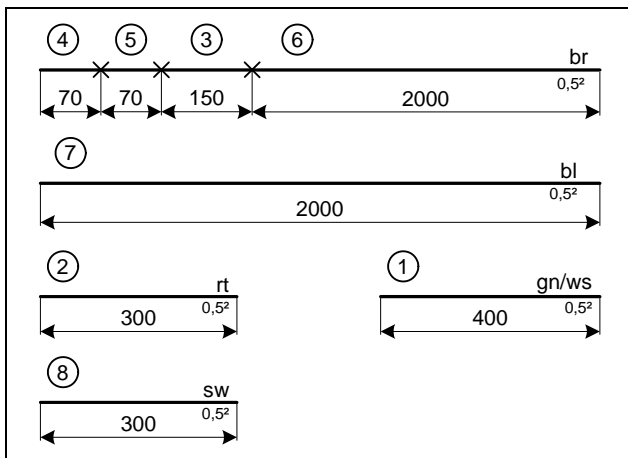
All dimensions are in mm!
Tightening torque of hose clamps = 2.0 + 0.5 Nm!
Tightening torque of Ejet screws, Ejet studs = 10 Nm!



Preparing Electrical System

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

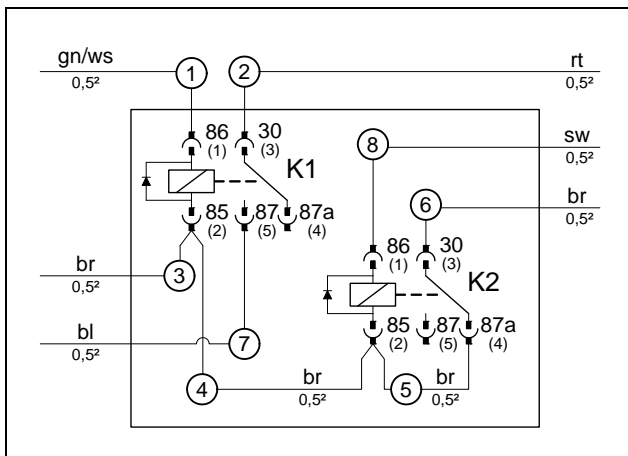
Preparing angle bracket



Wire sections retain their numbering in the entire document.



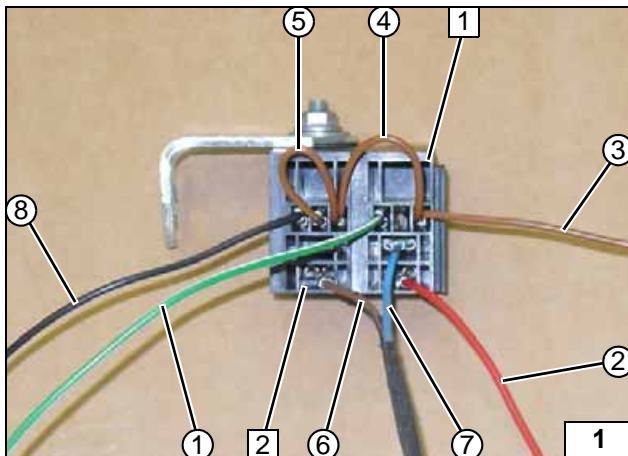
Cutting wires to length



Produce connections as shown in wiring diagram. K1 and K2 relay are inserted into the passenger compartment after installation.



Preparing K1 and K2 relay

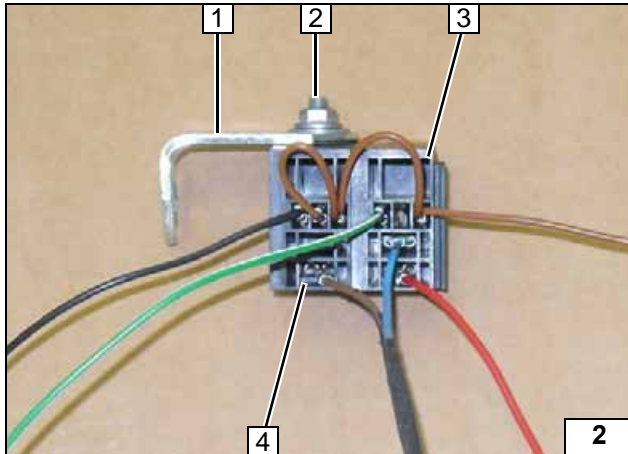


Connect wires to socket of K1 and K2 relay according to wiring diagram. Lock socket of K1 and K2 relay into place.



Connecting wires

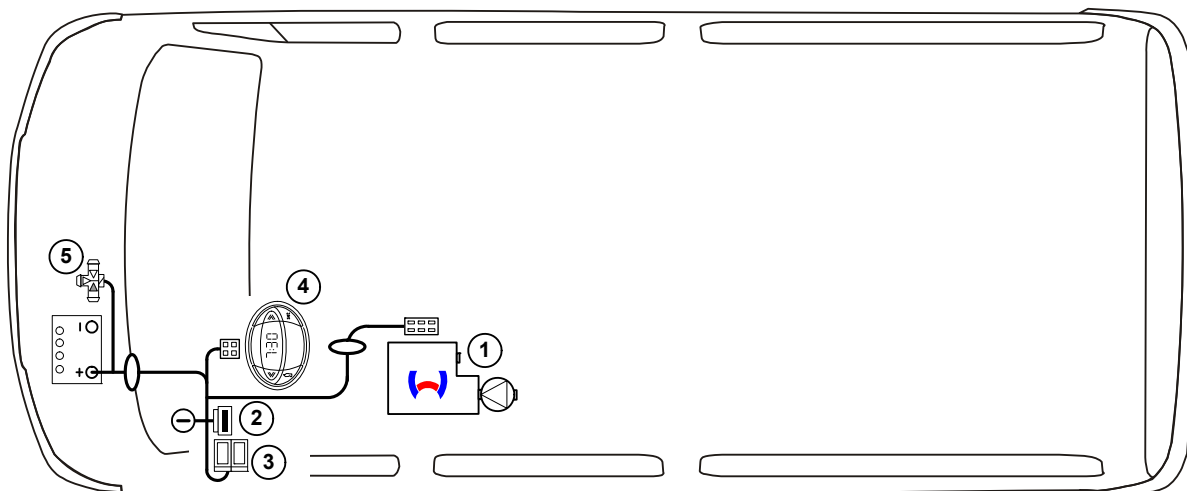
- 1 Socket of K1 relay
- 2 Socket of K2 relay
- ① Green/white (gn/ws) wire of K1/86
- ② Red (rt) wire to K1/30
- ③ Brown (br) wire of K1/85
- ④ Brown (br) wire of K1/85 and K2/85
- ⑤ Brown (br) wire of K2/85 and K2/87a
- ⑥ Brown (br) wire of K2/30
- ⑦ Blue (bl) wire of K1/87
- ⑧ Black (sw) wire of K2/86



- 1 Angle bracket
- 2 M5x16 bolt, large diameter washer, flanged nut
(on tab of K2 relay socket)
- 3 Socket of K1 relay
- 4 Socket of K2 relay

Installing angle bracket

Installation Overview



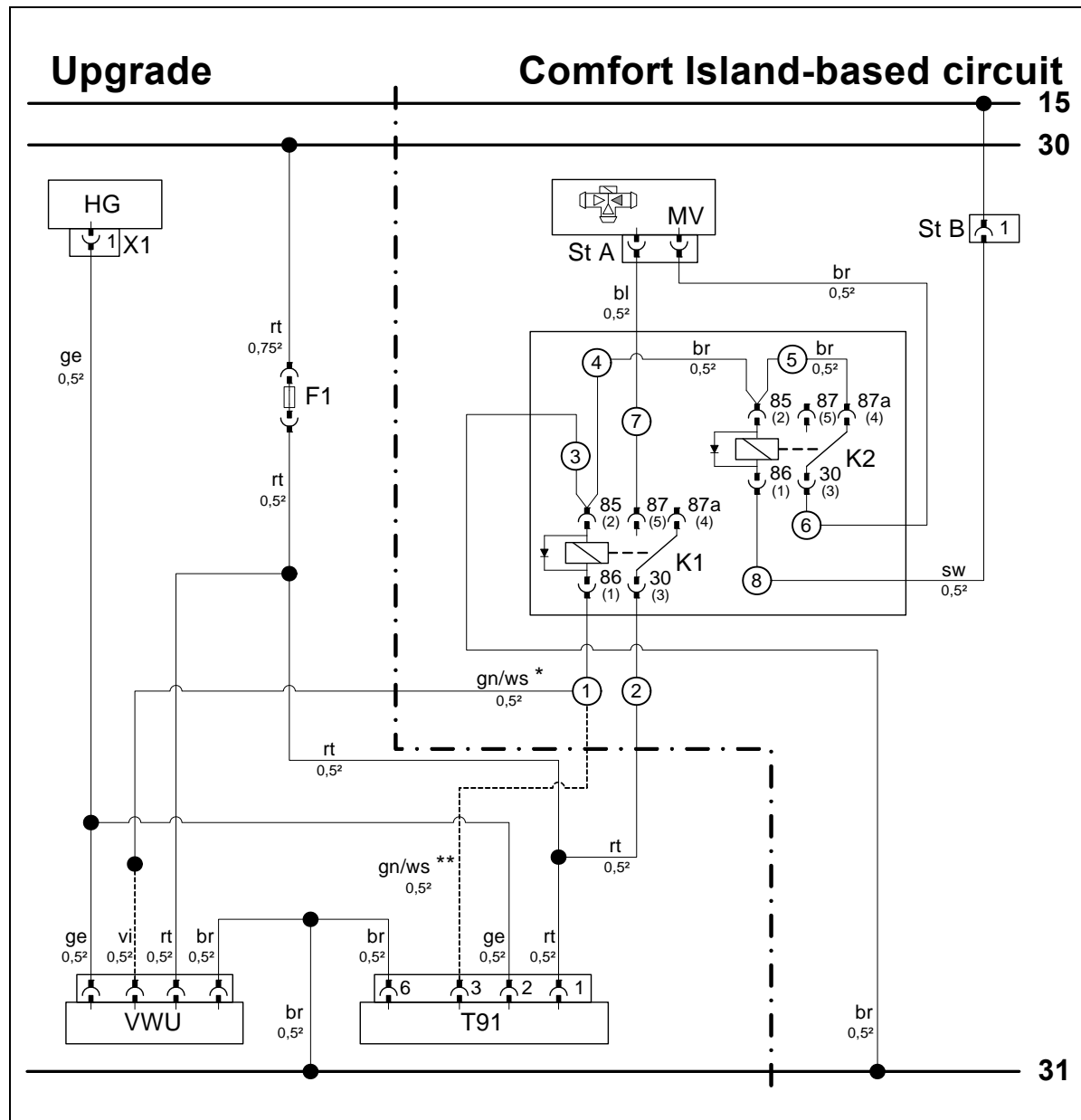
Wiring harness routing diagram

Legend:

- 1. Heater
- 2. Fuse holder F1
- 3. K1 and K2 relay
- 4. Digital timer
- 5. Solenoid valve



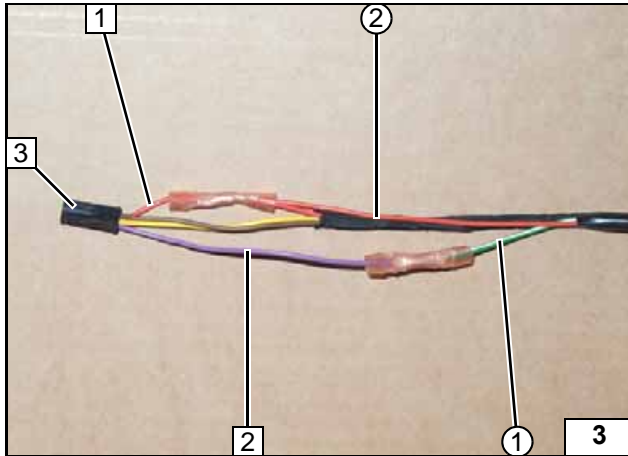
Wiring Diagram



Climatronic wiring diagram

Components		Colours and symbols	
HG	Heater TT-Z/C	rt	red
X1	6-pin heater connector	br	brown
MV	Solenoid valve	ge	yellow
St A	2-pin connector of MV	gn	green
St B	18-pin connector of lighting switch	ws	white
K2	Relay	sw	black
K1	Relay	vi	violet
F1	1A fuse	bl	blue
T91	6-pin connector of Telestart receiver		
VVU	4-pin connector of digital timer	*	Connect only if digital timer is being used.
		**	Connect only if Telestart is being used or if both the digital timer and Telestart are being used.
Wiring colours may vary.			

Legend

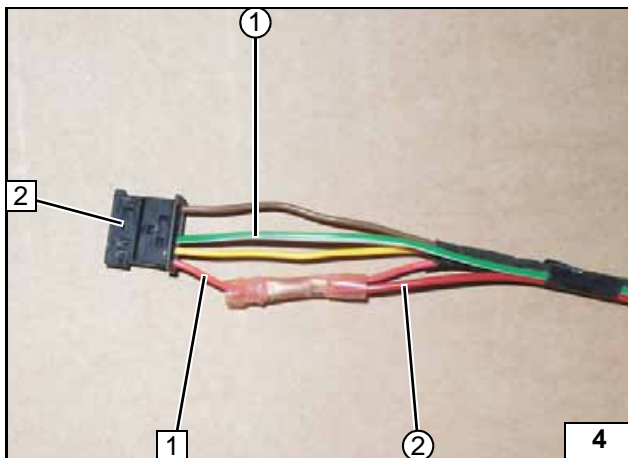


Only in case of digital timer without Telestart

The connection is made on 4-pin connector **3** of the digital timer. Insert additional violet (vi) wire **2** with microtimer into free socket of connector **3**. Produce connections as shown in wiring diagram.

- 1 Red (rt) wire of digital timer connector
- ① Green/white (gn/ws) wire of K1/86
- ② Red (rt) wire to K1/30

Connection on digital timer connector

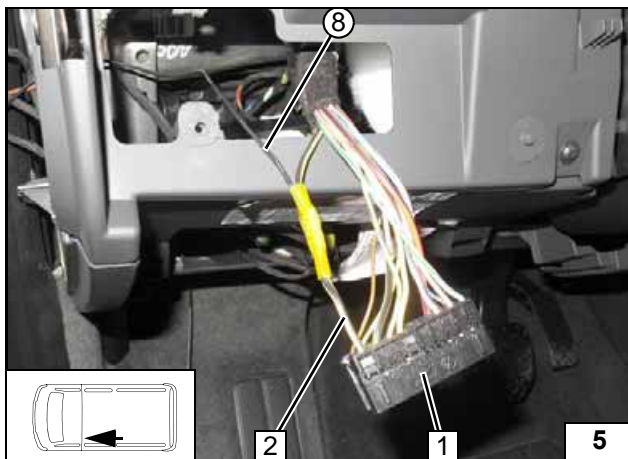


Only in case of Telestart or Telestart with digital timer

The connection is made on 6-pin Telestart connector **2**. Insert green/white (gn/ws) wire **①** of K1/86 with microtimer into socket **2**, Pin 3. Produce connections as shown in wiring diagram.

- 1 Red (rt) wire of Telestart connector, Pin 1
- ② Red (rt) wire to K1/30

Connection on Telestart connector

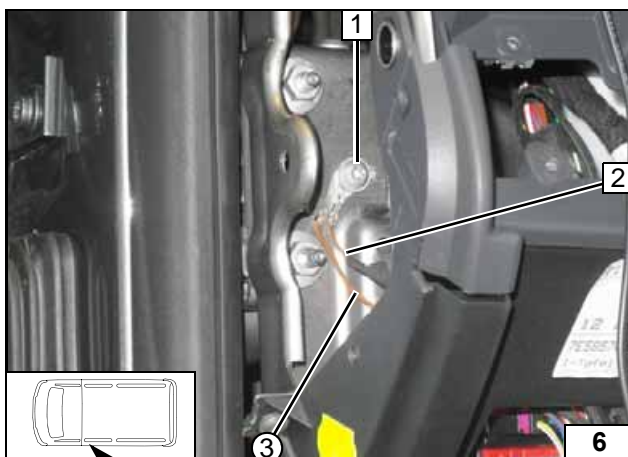


All equipment variants

Connection to 18-pin connector **1** of lighting switch. Produce connections as shown in wiring diagram.

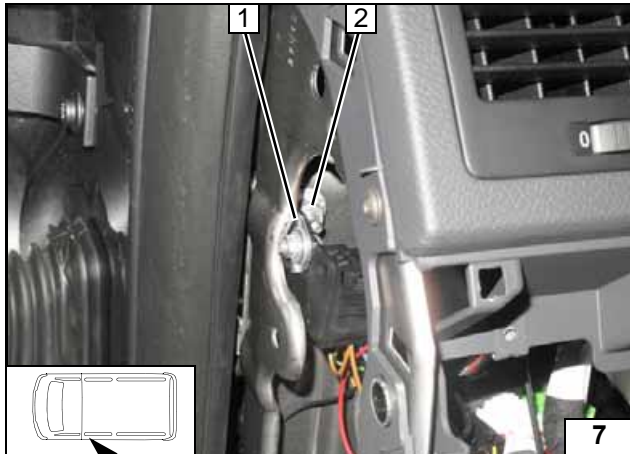
- 2 Black/yellow (sw/ge) wire of connector, Pin 1
- ⑧ Black (sw) wire of K2/86

Connection of lighting switch



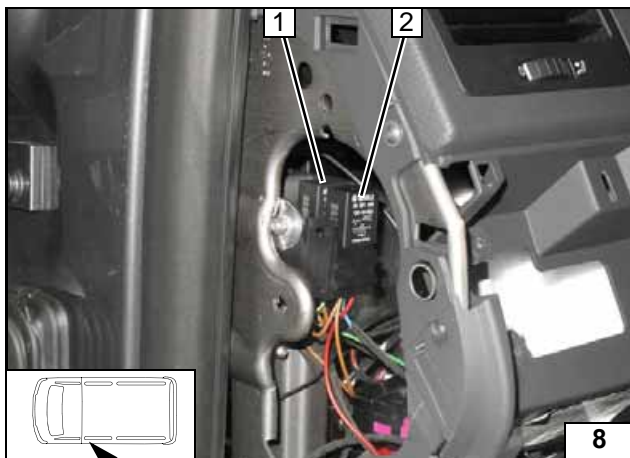
- 1 Original vehicle bolt
- 2 Earth wire of upgrade wiring harness (already mounted)
- ③ Brown (br) wire of K1/85

Connecting earth wire



- 1 Angle bracket
- 2 Original vehicle stud bolt, original vehicle nut

**Installing
K1 and K2
relay**



- 1 Attach K2 relay
- 2 Attach K1 relay

**Installing
K1 and K2
relay**



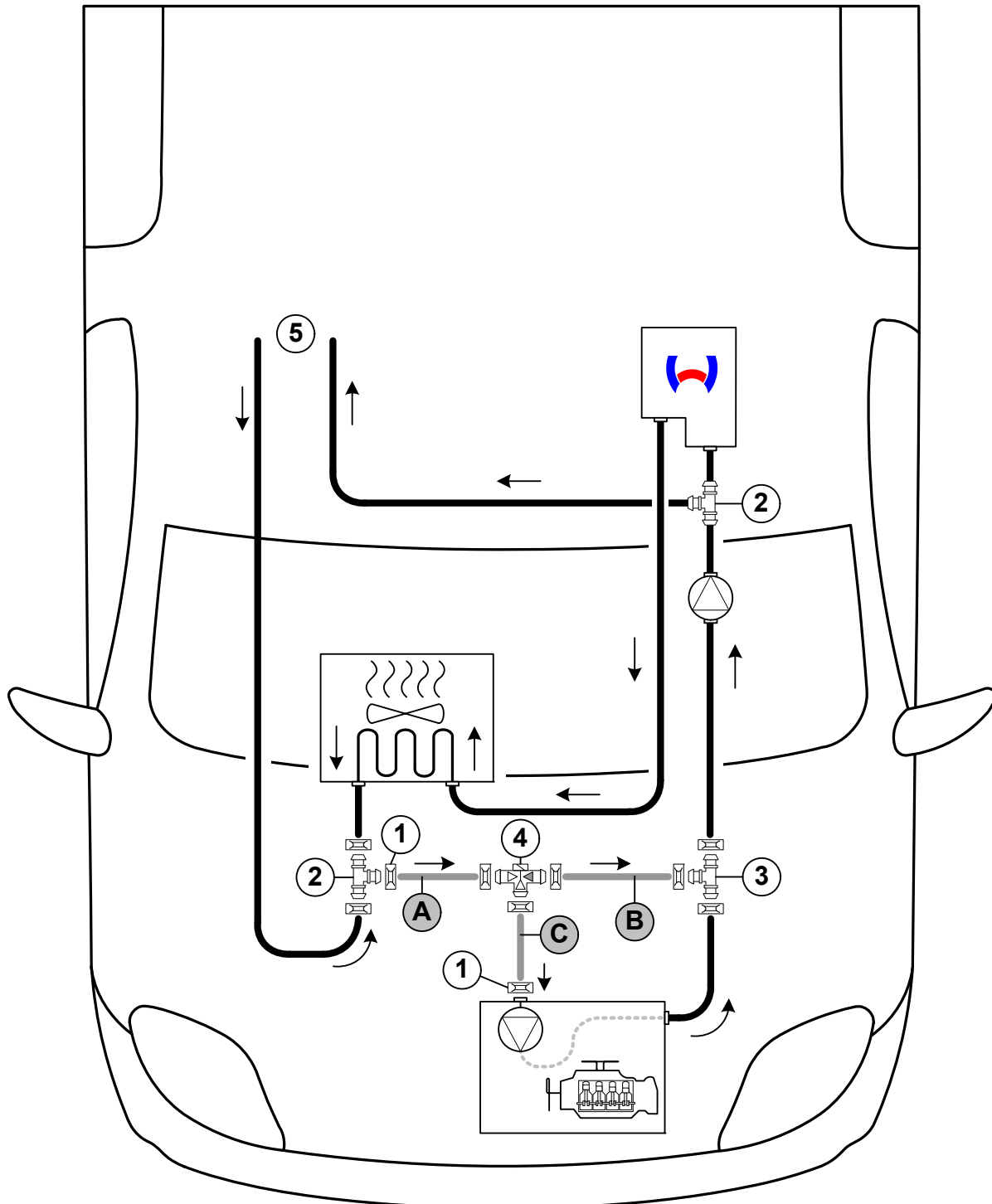
Coolant Circuit






WARNING!

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

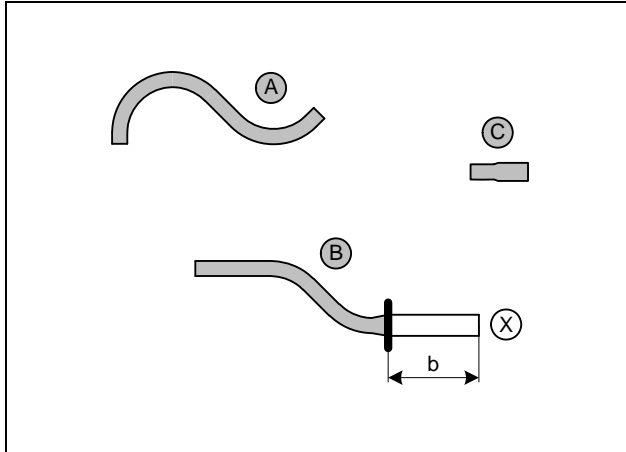


Hose installation diagram



All spring clips without a specific designation  = 25mm dia.
 1 = Original vehicle spring clip . 2 = Original vehicle T-piece . 3 = 18x18x18mm dia. T-piece .
 4 = Solenoid valve . 5 = Connection of second heat exchanger.



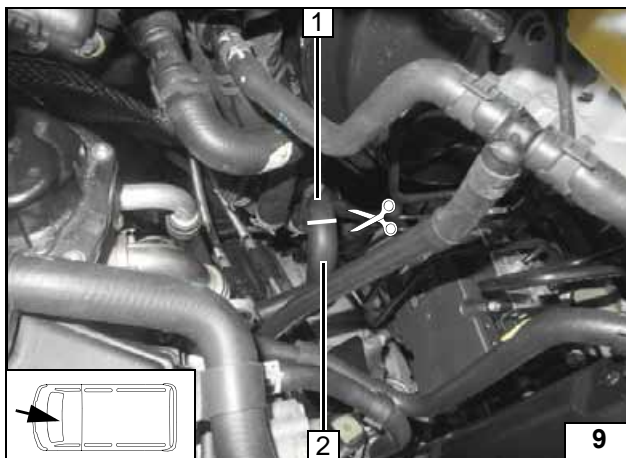


Discard section **X**.
 Hose **A** = 18x18mm dia. moulded hose
 Hose **B** = 18x20mm dia. moulded hose
 (shorten on the 20mm dia. side)
 Hose **C** = 18x20mm dia. moulded hose

b = 45



Cutting hoses to length

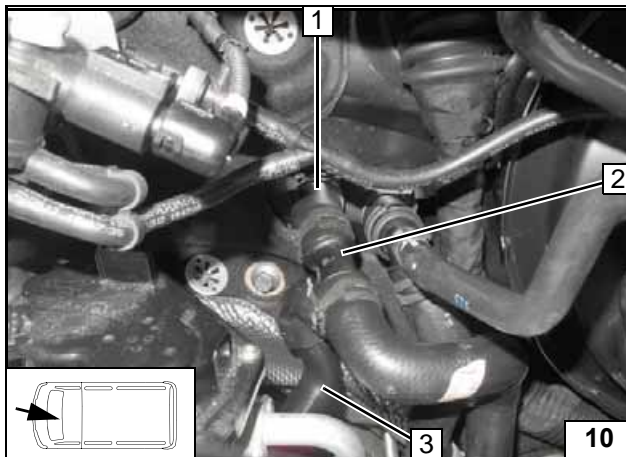


Cut off hose on engine outlet/heater inlet at marking.

- 1 Hose section of heater inlet
- 2 Engine outlet hose section



Cutting point

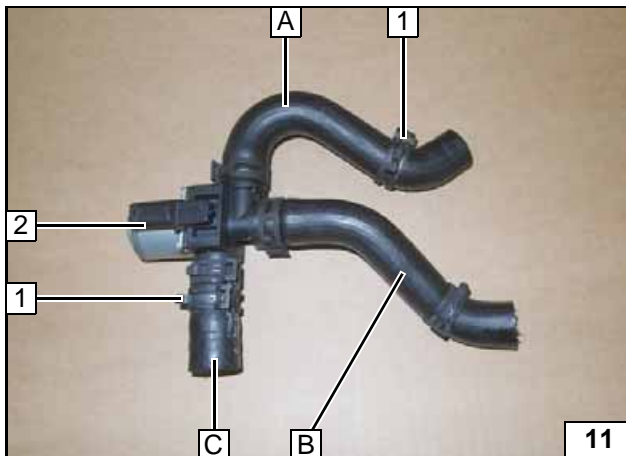


Remove hose of engine inlet **3** and discard. Spring clips will be reused!

- 1 Hose section of heat exchanger inlet
- 2 Original vehicle T-piece



Cutting point

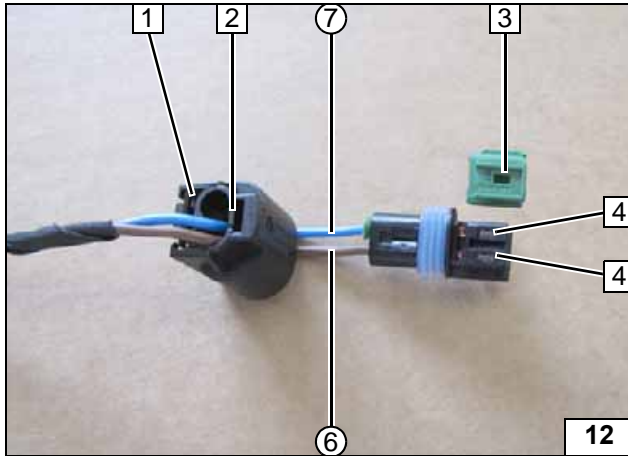


Hose **C** with 18mm dia. on solenoid valve **2**.

- 1 Push on original vehicle spring clip [2x]



Premounting solenoid valve

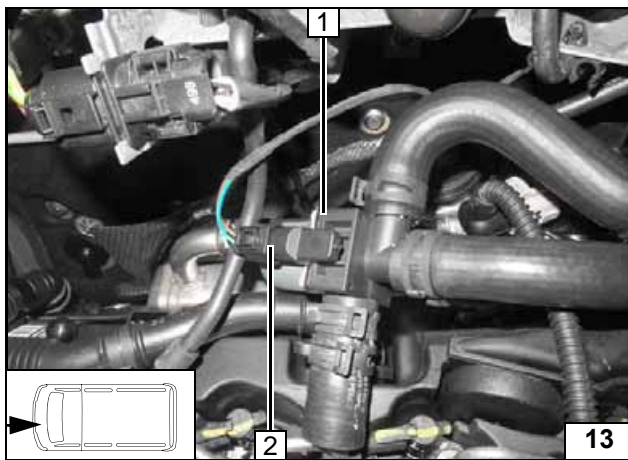


Install connector of solenoid valve. Pin assignment is not relevant.

- 1 Connector housing
- 2 Lock
- 3 Coding
- 4 Timer lock
- 6 Brown (br) wire of K2/30
- 7 Blue (bl) wire of K1/87

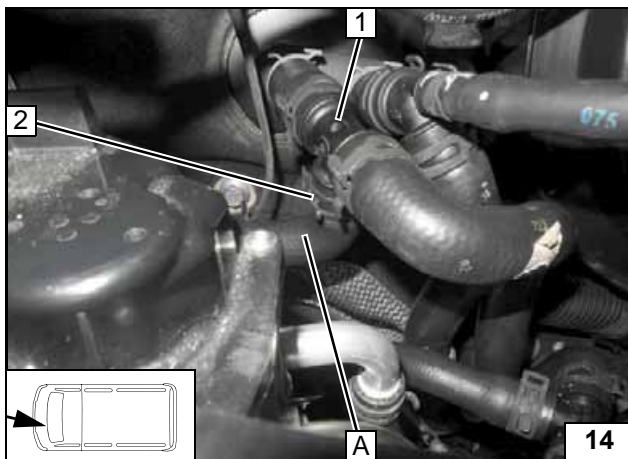


Installing connector



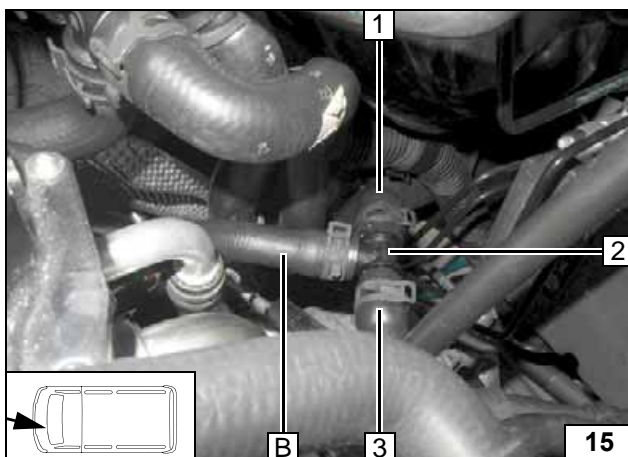
- 1 Solenoid valve
- 2 Attach connector

Premounting solenoid valve



- 1 Original vehicle T-piece
- 2 Original vehicle spring clip

Connecting hose A



- 1 Hose on heater inlet
- 2 18x18x18mm dia. T-piece
- 3 Hose of engine outlet

Connecting hose B

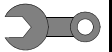


Align hoses and solenoid valve. Ensure sufficient distance from neighbouring components.

- 1 Original vehicle spring clip on connection piece of engine inlet



**Connect-
ing hose C**



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.

- **Connect the battery.**
- **Fill and bleed the coolant circuit according to the vehicle manufacturer's specifications.**
- **Check the proper functioning of the parking heater, see the operating instructions/installation instructions.**



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