

Water Heater

Thermo Top C Motorcaravan Parking Heater 00 0002

Installation Documentation

Iveco Daily

Diesel
From model year 2014
Left-hand drive vehicle
Manual transmission
Manual A/C system
Automatic air-conditioning
Front fog lights
Euro 5



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
Iveco	Daily	FIA 2,3	e3 * 2007/46 * 0118 * ...
Iveco	Daily	FD11C1C	e3 * 2007 / 46 * 0120 * ...

Engine type	Engine model	Output in kW	Displacement in cm ³
F1AFL411B	Diesel	93	2297
F1CFL411H	Diesel	125	2998

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.

The installation location of the digital timer or MultiControl RV should be confirmed with the end customer before installation.

Documentation:

- Please remove page 45 in case of manual air-conditioning and operation via digital timer and add to the operating instructions.
- Please remove page 46 in case of manual air-conditioning and operation via MultiControl RV and add to the operating instructions.
- Please remove page 47 in case of automatic air-conditioning and operation via digital timer and add to the operating instructions.
- Please remove page 48 in case of automatic air-conditioning and operation via MultiControl RV and add to the operating instructions.

Heater / Installation Kit

Quantity	Description	Order No.:
1	Basic delivery scope of Motorcaravan <i>Thermo Top C</i>	9015824A
1	Installation kit for Iveco Daily 2014 Diesel	1323828B
1	In case of automatic air-conditioning: Automatic A/C additional kit for Iveco Daily 2015	1324529A
1	MultiControl RV option	see price list
1	To be ordered additionally in case of MultiControl RV: Installation frame	9030077_
1	Remote Option (Telestart)	see price list

Foreword

This installation documentation applies to Iveco Daily Diesel vehicles - for validity, see page 2 - 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'.

However, the stipulations in this 'installation documentation', the 'operating instructions' and 'installation instructions' for the *Thermo Top C* 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 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).

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

The cabin battery (auxiliary battery), if installed, must be connected to the power supply of the heater.

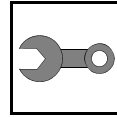
Special Tools

- Hose clamp pliers for auto-tightening hose clamps
- Hose clamp pliers for Clic hose clamps of type W
- Automatic wire stripper 0.2 - 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
- Deep-hole marker
- Webasto Thermo Test Diagnosis with current software

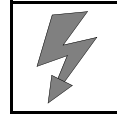
Explanatory Notes on Document

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.

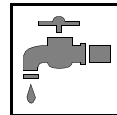
Mechanical System



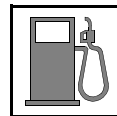
Electrical System



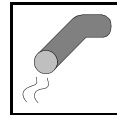
Coolant Circuit



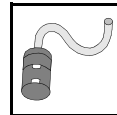
Fuel



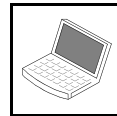
Exhaust Gas



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 and explosion.



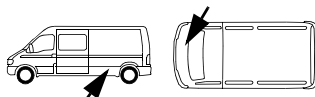
Reference to general installation instructions of Webasto components or to the manufacturer's vehicle-specific documents.



Reference to a special technical feature.



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



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!

Preliminary Work

WARNING!

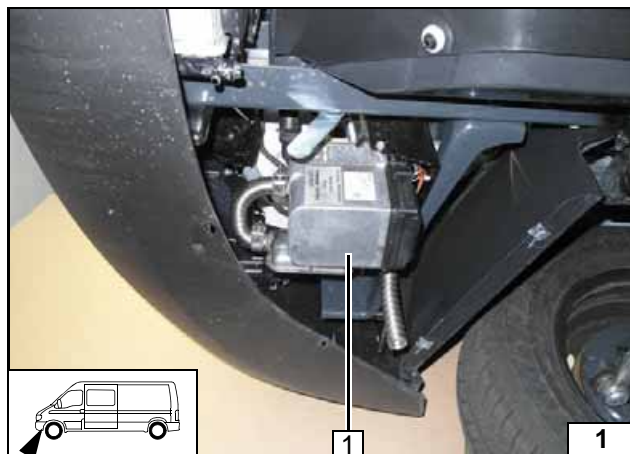
- Open the fuel tank cap, ventilate the tank.
- Close the fuel tank cap again.
- Disconnect the battery.
- Depressurise the cooling system.
- Detach the engine compartment fuse and relay box.
- Remove the engine compartment trim on the right side (only in case of vehicle with vacuum box).
- Detach the power steering reservoir (if present).
- Remove the air filter together with the intake hose.
- Remove the wheel well underide protection on the right side.
- Remove the lower instrument panel trim on the driver's side.
- Remove the A/C control unit, see removal instructions (only in case of automatic air-conditioning in conjunction with MultiControl RV)

The following work should only be performed during the corresponding installation sequence:

- Remove the fuel tank in accordance with the manufacturer's instructions.
- Remove the fuel tank sending unit 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

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

Wire sections retain their numbering in the entire document.

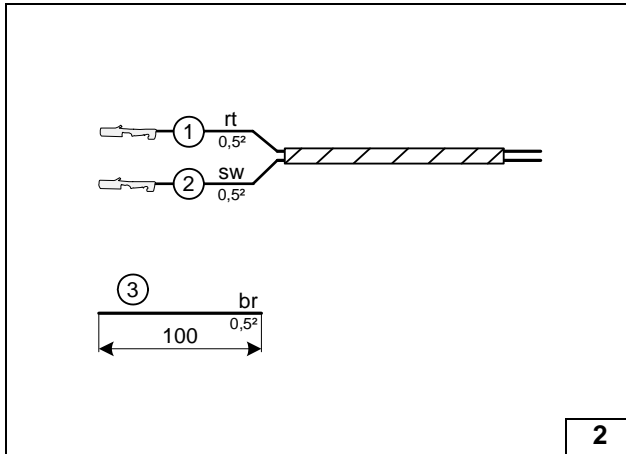
Automatic air-conditioning in conjunction with digital timer 1530

- ① Red (rt) wire from wiring harness of PWM control
- ② Black (sw) wire from wiring harness of PWM control

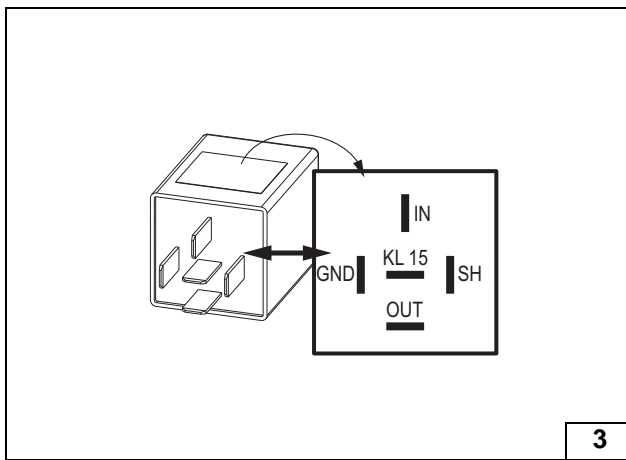
Check the PWM Gateway settings when starting up the heater and adjust if necessary.

Settings:

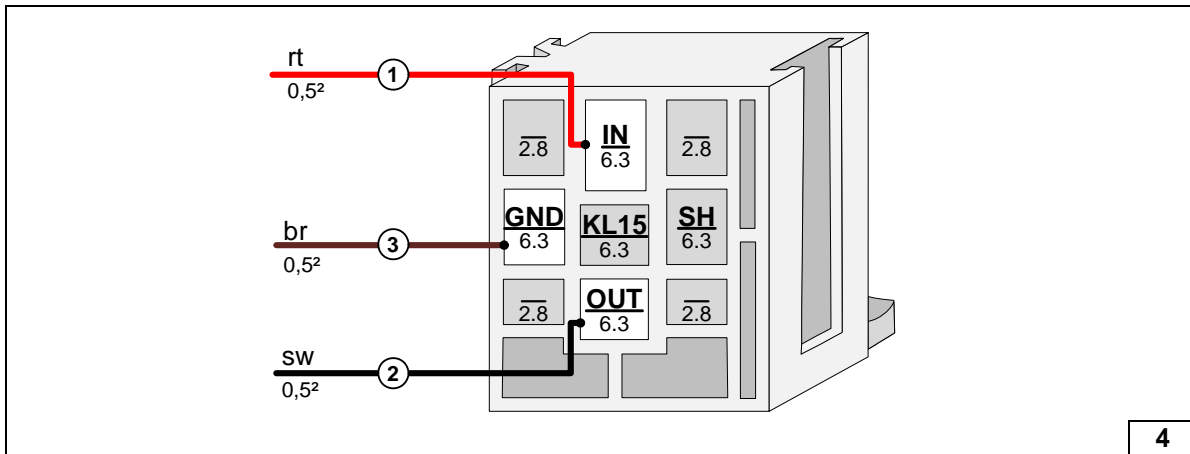
- Duty cycle: 35%
- Frequency: 1200Hz
- Voltage: 4.2V
- Function: High side



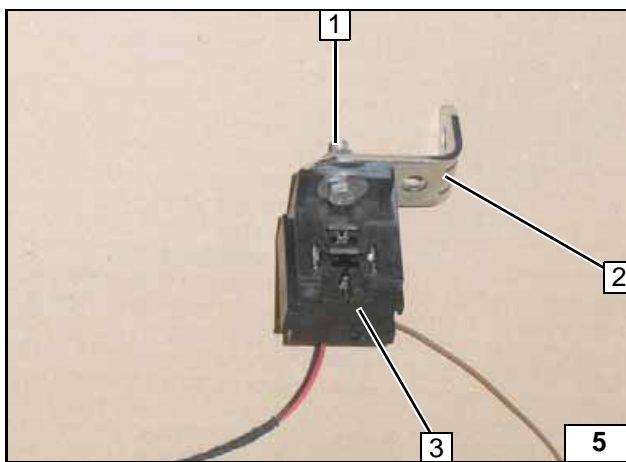
2



3



4



- 1 M5x16 bolt, large diameter washer [2x], nut
- 2 Angle bracket
- 3 PWM GW socket

5



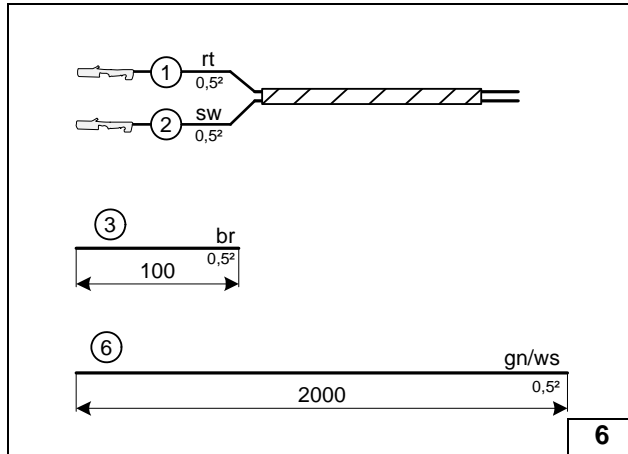
Assigning wires



View of PWM GW

Connecting wires to PWM GW socket

Premounting PWM GW socket



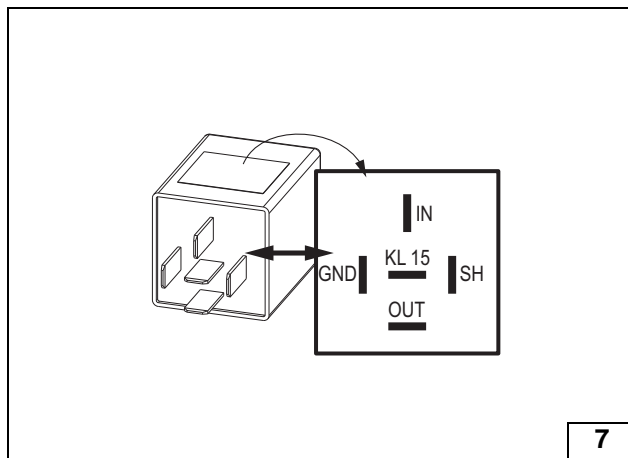
Automatic air-conditioning in conjunction with MultiControl RV

Wire sections retain their numbering in the entire document.

Draw wire ⑥ into provided protective sleeving.

- ① Red (rt) wire from wiring harness of PWM control
- ② Black (sw) wire from wiring harness of PWM control

Preparing / assigning wires



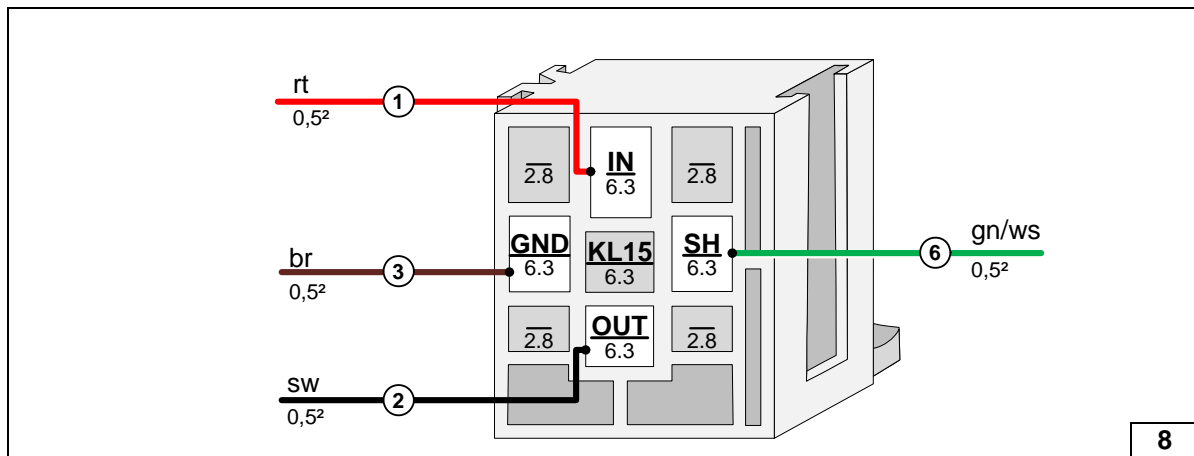
Check the PWM Gateway settings when starting up the heater and adjust if necessary.

Settings:

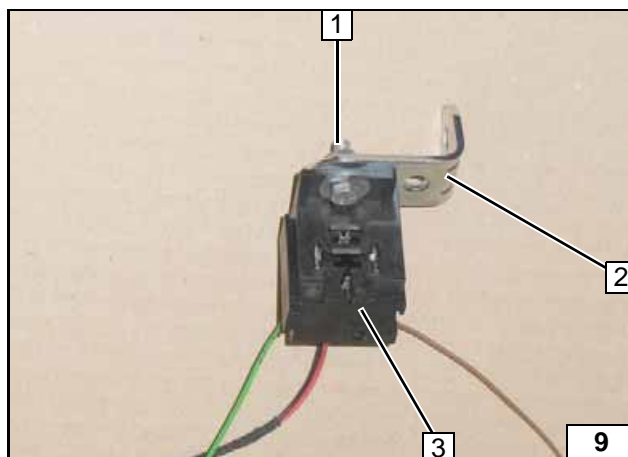
- Duty cycle: 35%
- Frequency: 1200Hz
- Voltage: 4.2V
- Function: High side



View of PWM GW

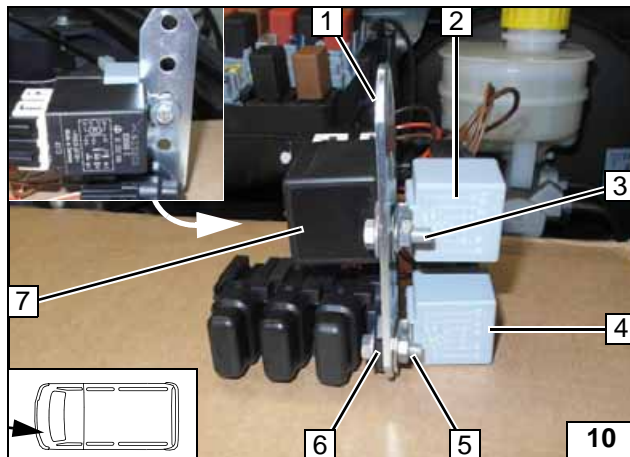


Connecting wires to PWM GW socket

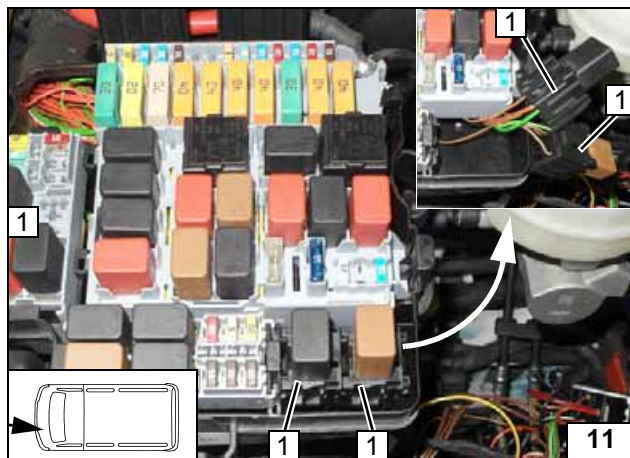


- 1 M5x16 bolt, large diameter washer [2x], nut
- 2 Angle bracket
- 3 PWM GW socket

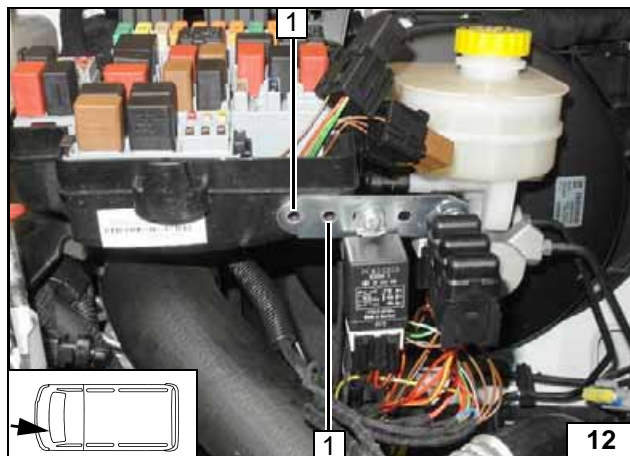
Premounting PWM GW socket

**All vehicles**

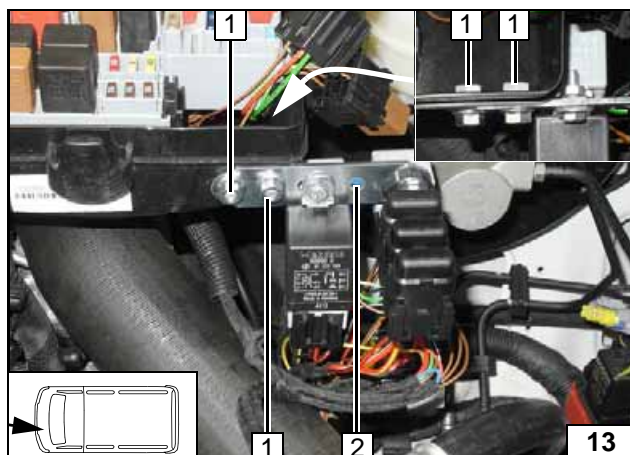
- 1 Perforated bracket
- 2 Relay K3
- 3 M6x16 bolt, flanged nut
- 4 Relay K4
- 5 M5x16 bolt, large diameter washer, nut
- 6 Fuse holder retaining plate
- 7 Relay K5

Premounting relay and fuse holder

Remove original vehicle relay with socket 1 [2x] and put it aside.

Removing original vehicle relay

Position premounted relay holder as shown, copy hole pattern 1 [2x] and drill 7mm hole [2x].
When drilling, be careful of components located behind!

**Hole in fuse and relay box**

- 1 M6x12 bolt, flanged nut
- 2 Premounted perforated bracket

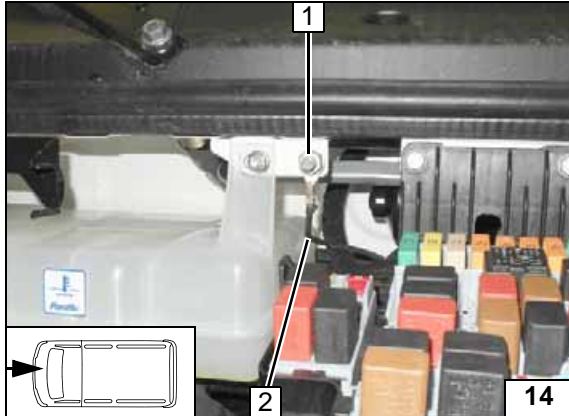
Installing relay and fuse holder



Manual Air-Conditioning Electrical System

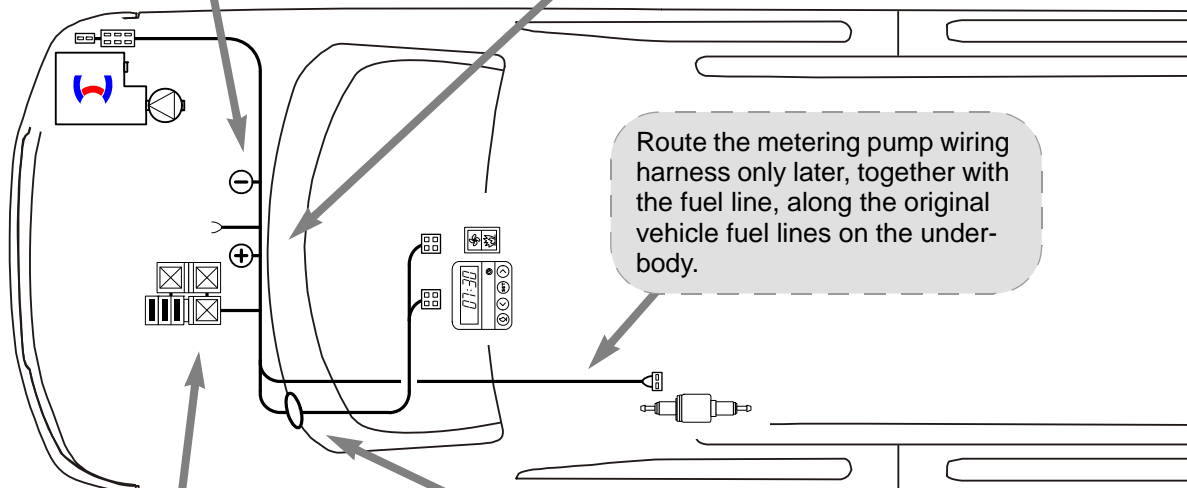
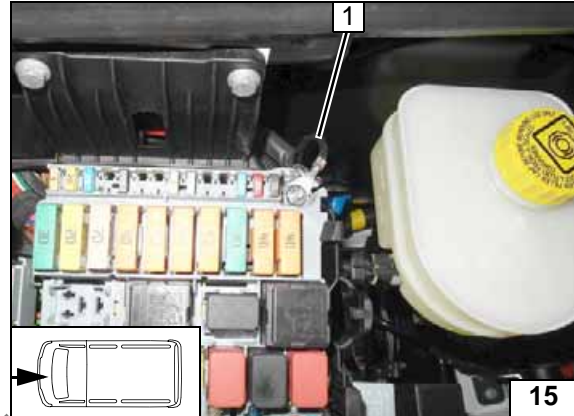
Earth wire (see also the info in the "General Instructions" section)

- 1 M8 flanged nut on original vehicle stud bolt
- 2 Earth wire

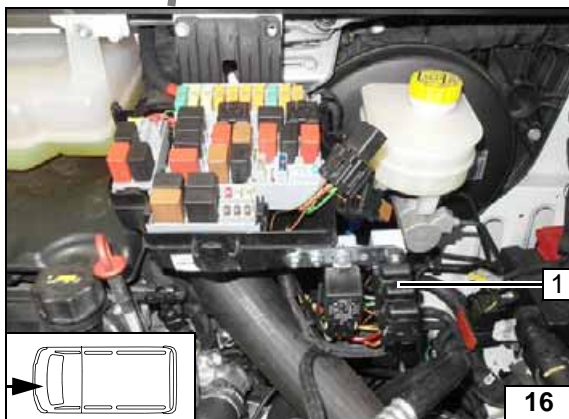


Positive wire (see also the info in the "General Instructions" section)

- 1 Positive wire on original vehicle positive distributor bolt

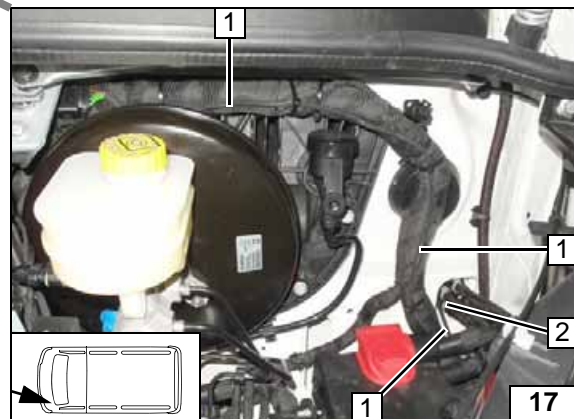


Wiring harness routing diagram



Engine compartment fuse holder

- 1 Fuses F1, F2 and F3



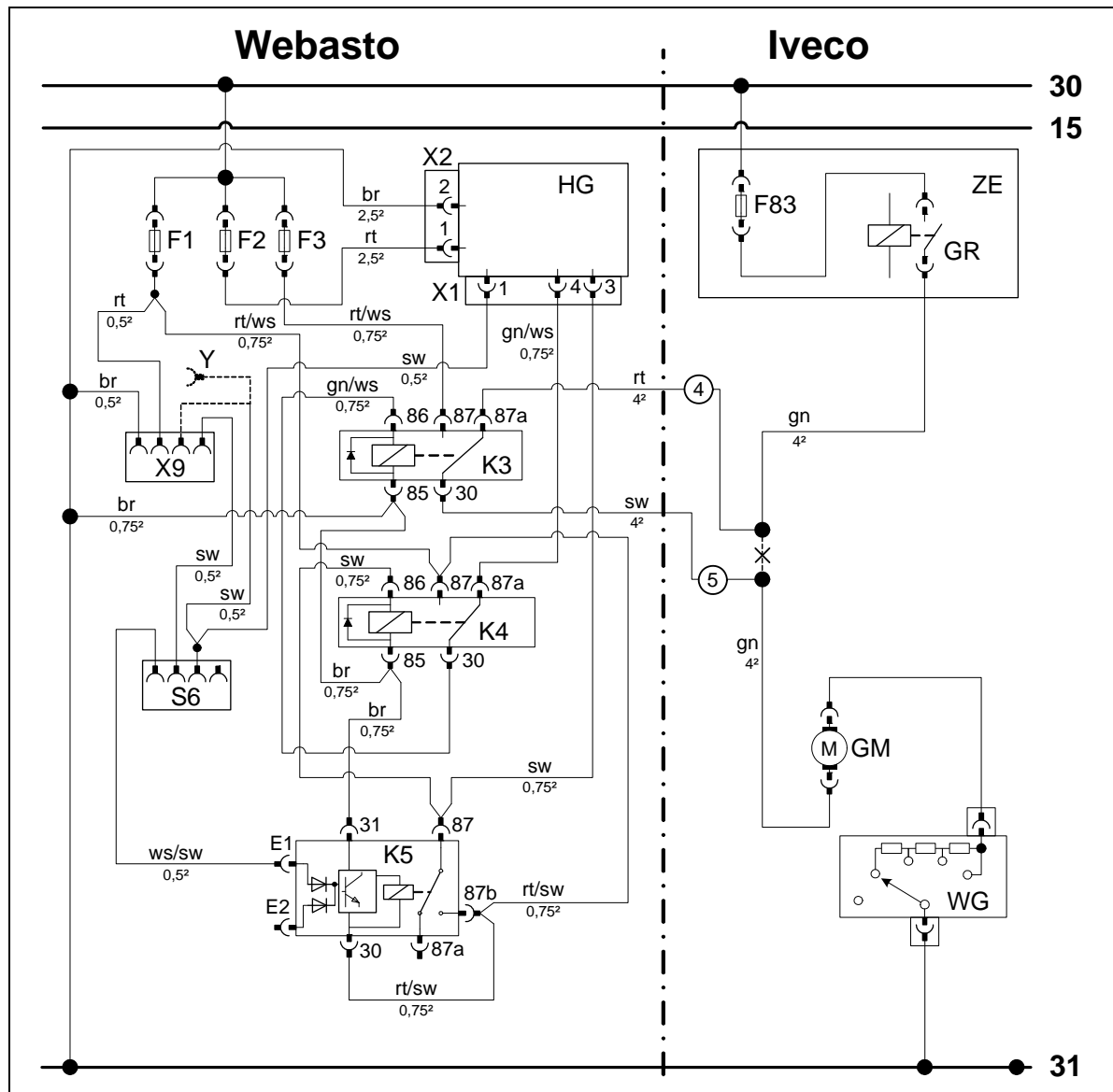
Wiring harness routing / pass through

Fasten wiring harness of heater 1 to original vehicle wiring harness with cable tie.

- 2 Original vehicle passenger compartment pass through



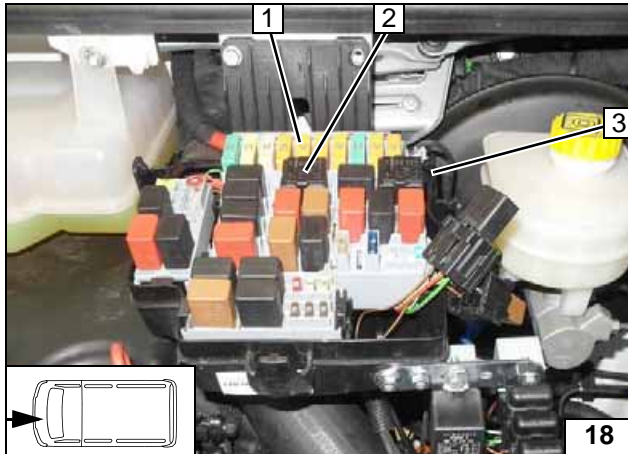
Manual Air-Conditioning Fan Controller



Wiring diagram

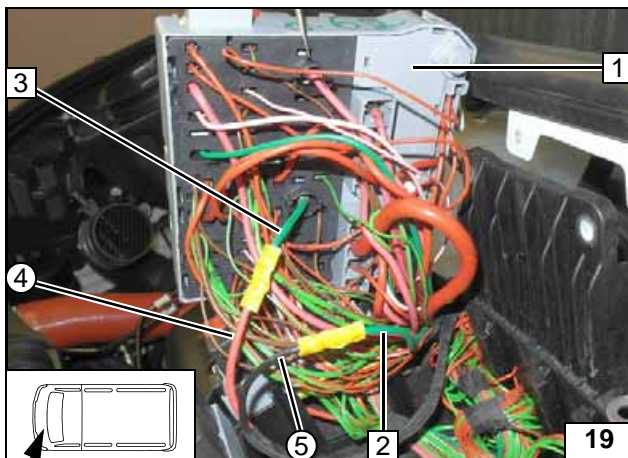
Webasto components		Vehicle components		Colours and symbols	
HG	Heater TT-C 300	ZE	Engine compartment fuse and relay box	rt	red
X1	6-pin heater connector	F83	40A fuse	sw	black
X2	2-pin heater connector	GR	Fan relay	ws	white
F1	1A fuses	GM	Fan motor	gn	green
F2	20 fuse	WG	Resistor group	br	brown
F3	25A fuse				
Y	Wire insulated and tied back (only in case of MultiControl RV)				
X9	Heater controls connector				
K3	Fan relay				
K4	Additional relay				
S6	Toggle switch			X	Cutting point
K5	Electronic relay				Wiring colours may vary.

Legend



- 1 Socket for fan fuse F83
- 2 Socket for fan relay
- 3 Detach fuse and relay box

View of fuse
and relay
box



- 1 Fuse and relay box, detached
- 2 Green (gn) wire of fan motor
- 3 Green (gn) wire of fan relay
- ④ Red (rt) wire of K3/87a
- ⑤ Black (sw) wire of K3/30

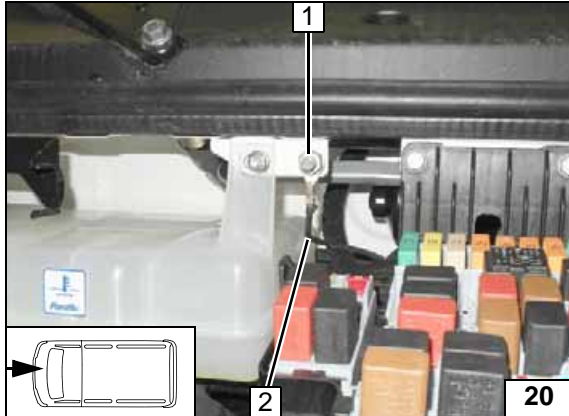
Connecting
fuse and re-
lay box



Automatic Air-Conditioning Electrical System

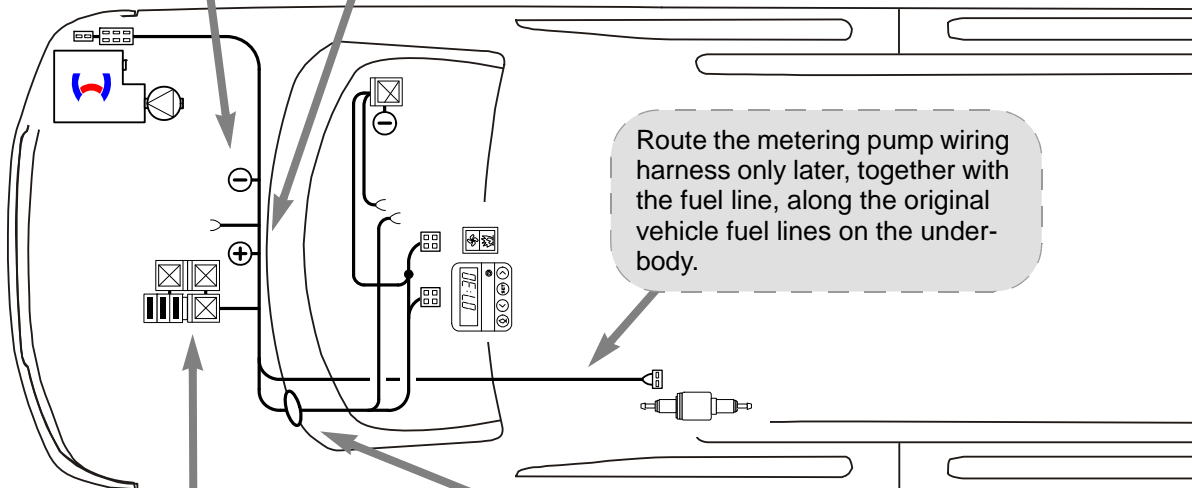
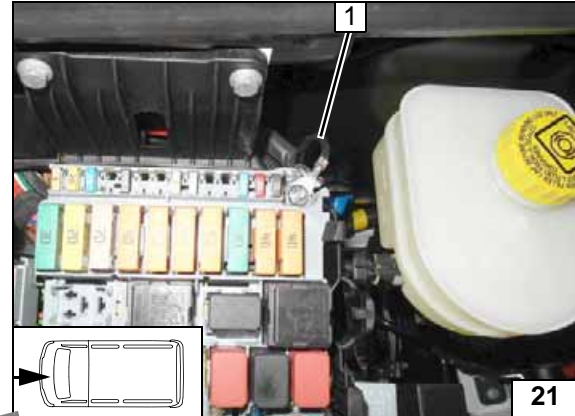
Earth wire (see also the info in the "General Instructions" section)

- 1 M8 flanged nut on original vehicle stud bolt
- 2 Earth wire

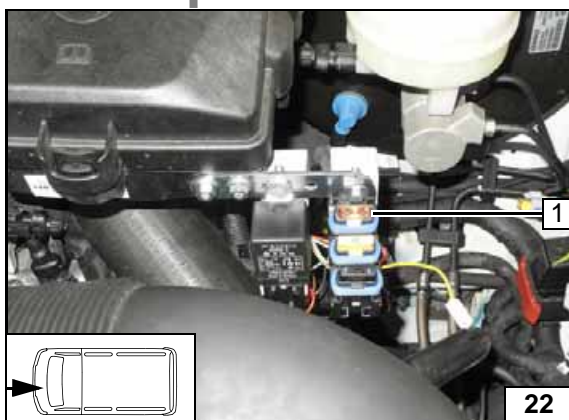


Positive wire (see also the info in the "General Instructions" section)

- 1 Positive wire on original vehicle positive distributor bolt

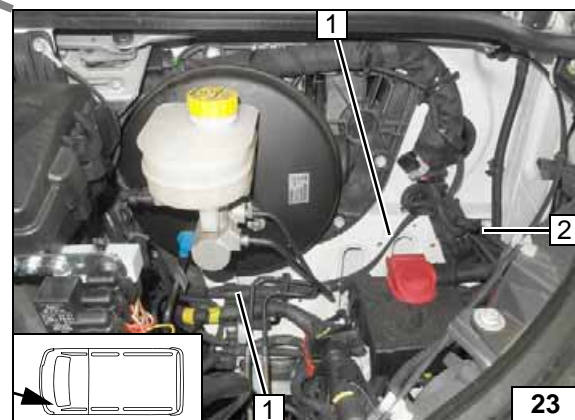


Wiring harness routing diagram



Engine compartment fuse holder

- 1 Replace 25A fuse F3 with 5A fuse.



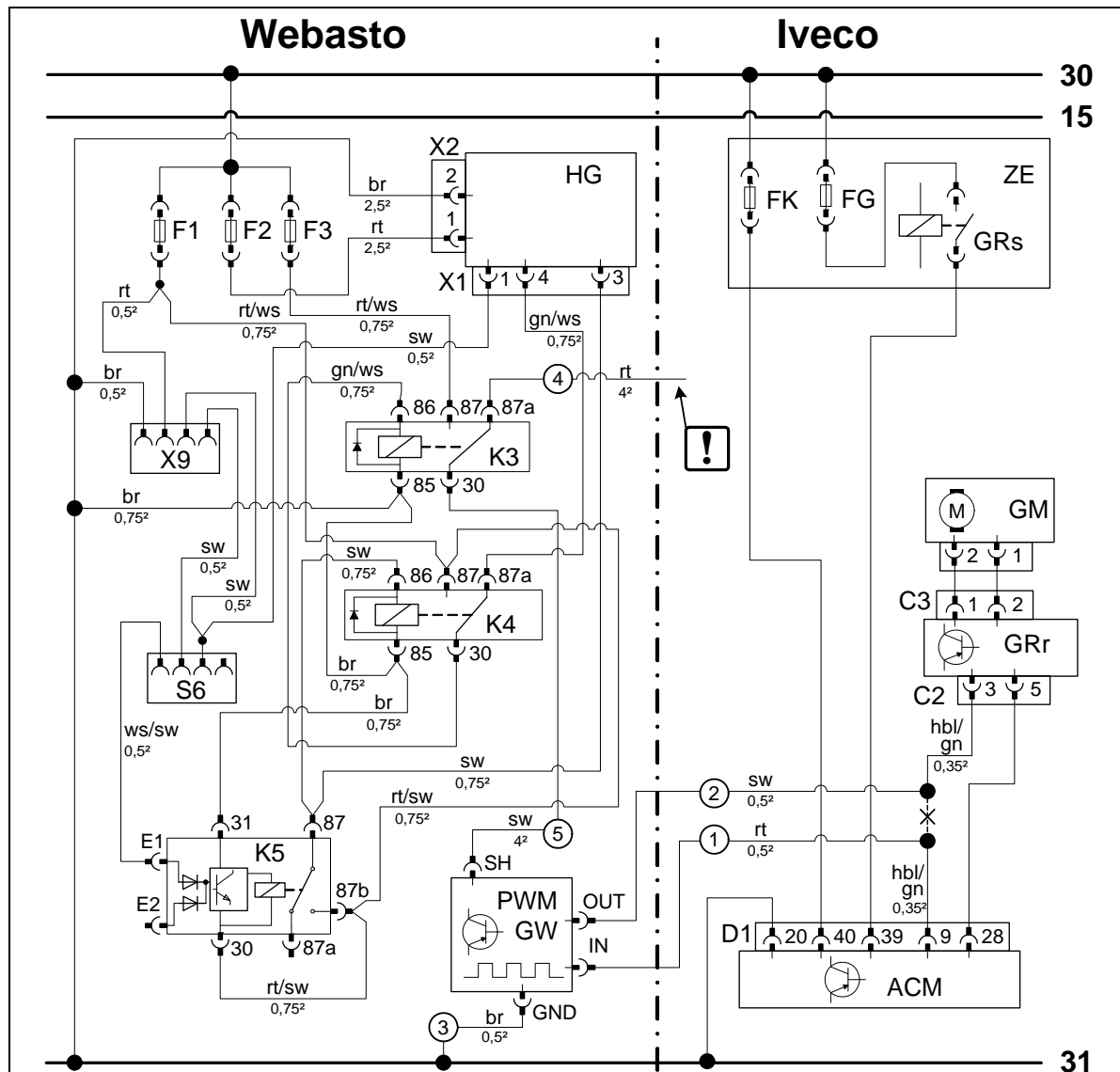
Wiring harness routing / pass through

Fasten wiring harness of heater 1 to original vehicle wiring harness with cable tie.

- 2 Original vehicle passenger compartment pass through



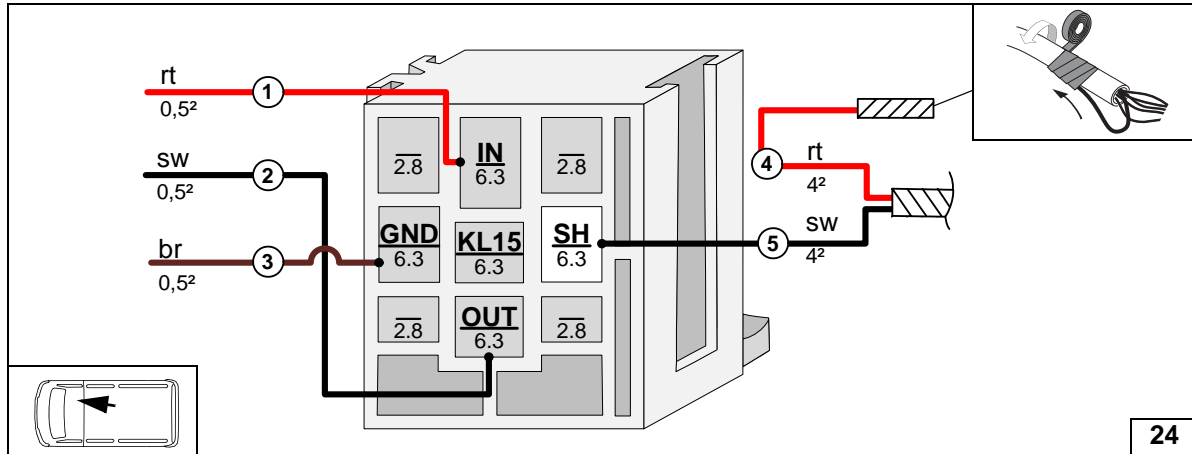
Fan Controller with Digital Timer



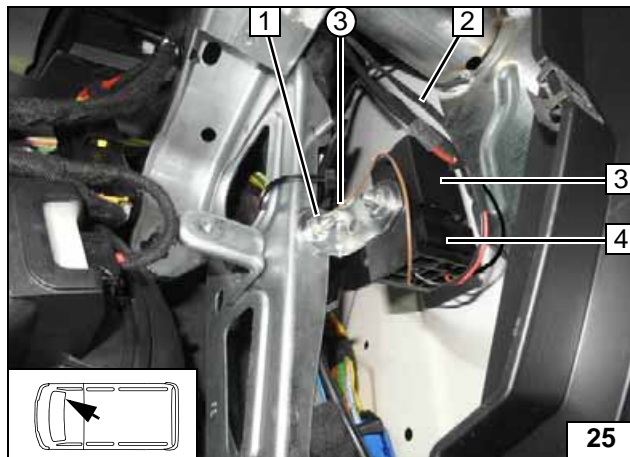
Wiring diagram for automatic air-conditioning with digital timer 1530

Webasto components		Vehicle components		Colours and symbols	
HG	Heater TT-C 300	ZE	Engine compartment fuse and relay box	rt	red
X1	6-pin heater connector	FK	Fuse	ws	white
X2	2-pin heater connector	FG	Fuse	sw	black
F1	1A fuses	GRs	Fan relay	br	brown
F2	20 fuse	GM	Fan motor	gn	green
F3	Replace 25 A fuse with 5A fuse	GRr	Fan controller	bl	blue
X9	Heater controls connector	C3	2-pin connector of GR	gr	grey
K3	Fan relay	C2	6-pin connector of GR	pk	pink
S6	Toggle switch	ACM	A/C control unit	hbl	light blue
K4	Additional relay	D1	Connector of ACM		
K5	Electronic relay				
PWM GW	Pulse width modulator	PWM GW settings		Insulate wire end and tie back Cutting point Wiring colours may vary.	
		Duty cycle: 35%			
		Frequency: 1200Hz			
		Voltage: 4.2V			
		Function: High side			

Legend



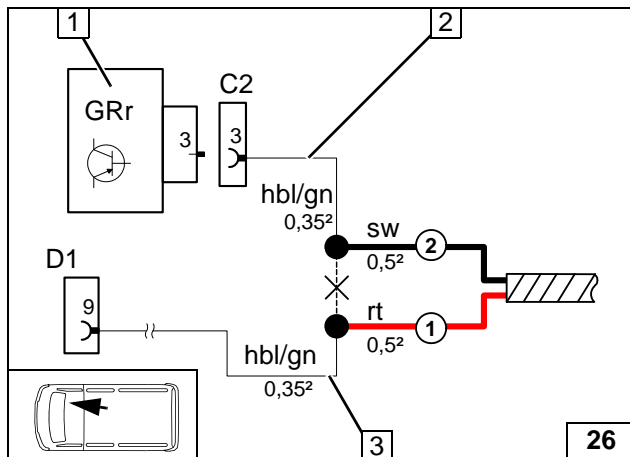
Connect black (sw) wire ⑤ from K3/30 to socket of PWM GW / SH in passenger compartment



- 1 Original vehicle stud bolt, premounted angle bracket, flanged nut
- 3 PWM GW
- 4 PWM GW socket
- ③ Brown (br) wire of PWM GW / GND

Installing PWM GW

Route wiring harness of PWM control 2 (wires ① and ②) to fan controller.



Detach connector C2 from fan controller

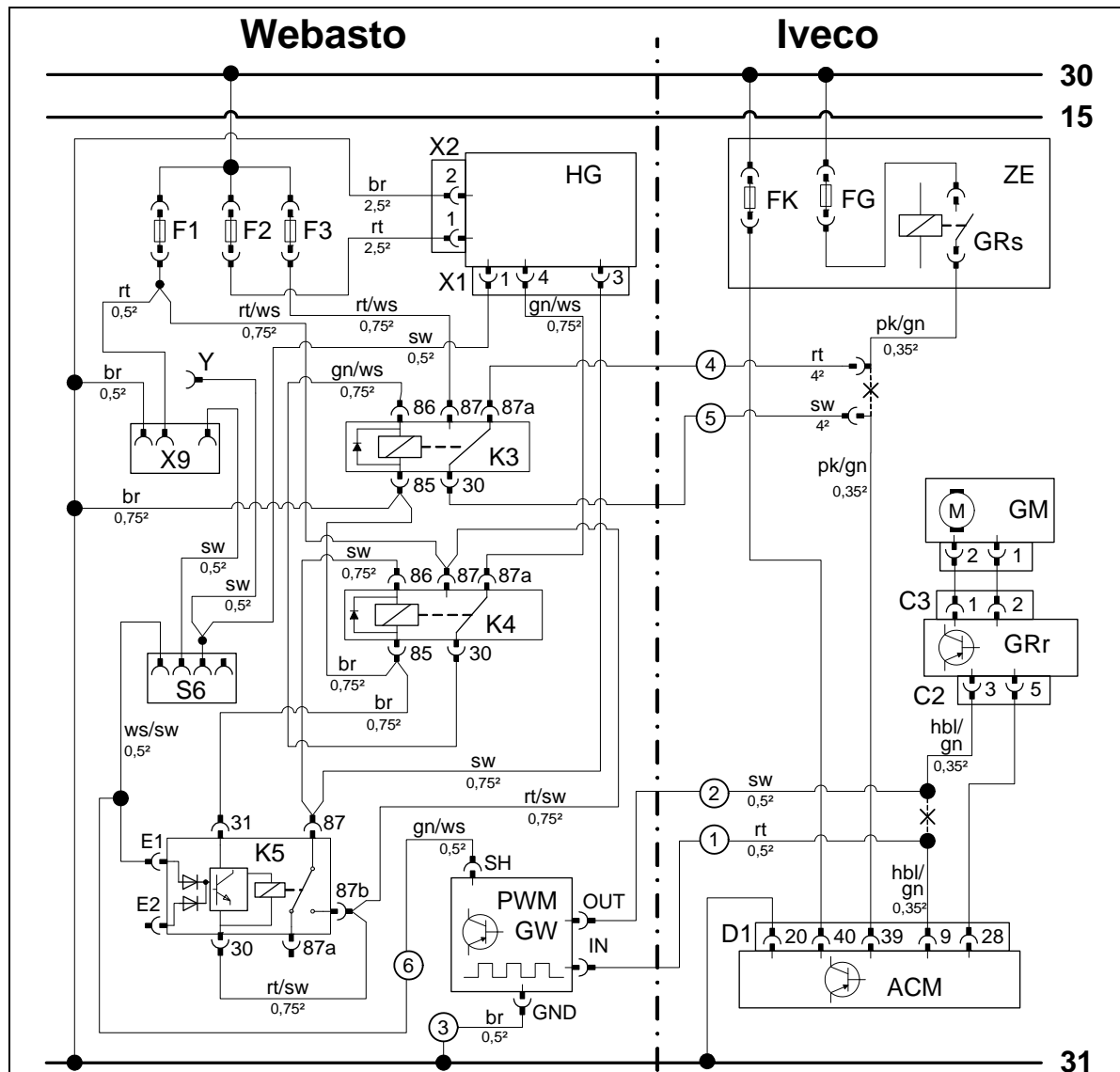
- 1 Fan controller
- 2 Light blue/green (hbl/gn) wire of connector C2/ pin 3 from fan controller
- 3 Light blue/green (hbl/gn) wire of connector D1/ pin 9 from A/C control unit
- ① Red (rt) wire from PWM GW / IN of wiring harness of PWM control
- ② Black (sw) wire from PWM GW / OUT of wiring harness of PWM control

Connecting fan controller





Fan Controller with MultiControl RV



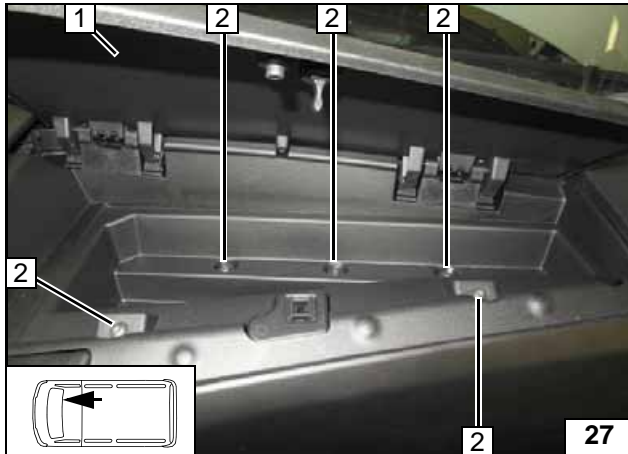
Wiring diagram for automatic air-conditioning with Multi Control RV

Webasto components		Vehicle components		Colours and symbols	
HG	Heater TT-C 300	ZE	Engine compartment fuse and relay box	rt	red
X1	6-pin heater connector	FK	Fuse	ws	white
X2	2-pin heater connector	FG	Fuse	sw	black
F1	1A fuses	GRs	Fan relay	br	brown
F2	20 fuse	GM	Fan motor	gn	green
F3	Replace 25 A fuse with 5A fuse	GRr	Fan controller	bl	blue
Y	Wire insulated and tied back	C3	2-pin connector of GR	gr	grey
X9	Heater controls connector	C2	6-pin connector of GR	pk	pink
K3	Fan relay	ACM	A/C control unit	hbl	light blue
S6	Toggle switch	D1	Connector of ACM		
K4	Additional relay	PWM GW settings			
K5	Electronic relay	Duty cycle: 35%			
PWM GW	Pulse width modulator	Frequency: 1200Hz			
		Voltage: 4.2V			
		Function: High side			
		X Cutting point			
		Wiring colours may vary.			

Legend

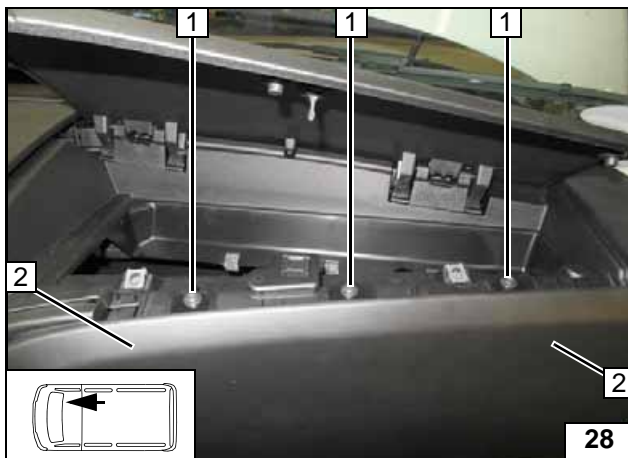


A/C Control Unit Dismantling Instructions



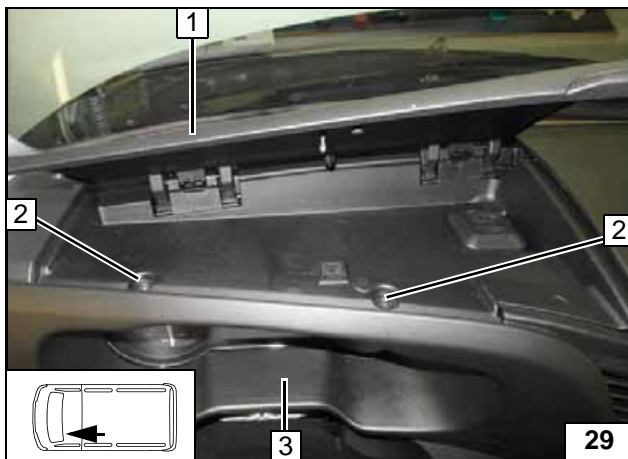
- 1 Open the cover of the storage compartment on the right side
- 2 Bolts [5x]

Removing storage compartment and instrument panel



- 1 Bolts [3x]
- 2 Instrument panel trim

Removing instrument panel trim



- 1 Open the cover of the storage compartment on the left side
- 2 Bolts [2x]
- 3 Instrument cluster trim (other fastening points: see next figure)

Removing trim of instrument cluster



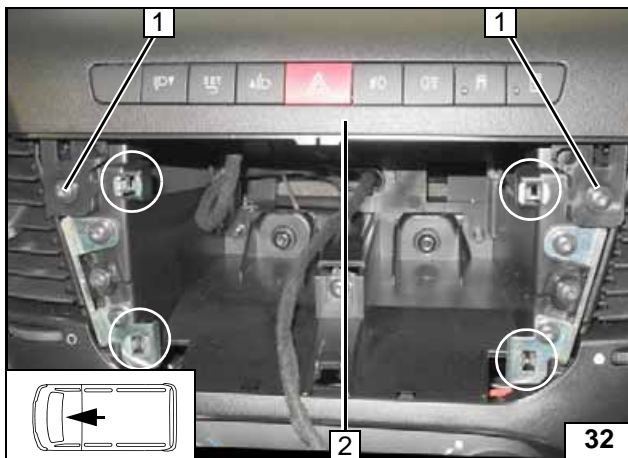
- 1 Fixing points [2x]
- 2 Trim of instrument cluster
- Fastening point, clips [8x]

Removing trim of instrument cluster



- 1 Open the cover of the middle storage compartment
- 2 Pull the screen out backwards (fastening point: see next figure)

Removing screen



- 1 Remove bolts [2x]
 - 2 Button panel
- Screen fastening point, clips [4x]

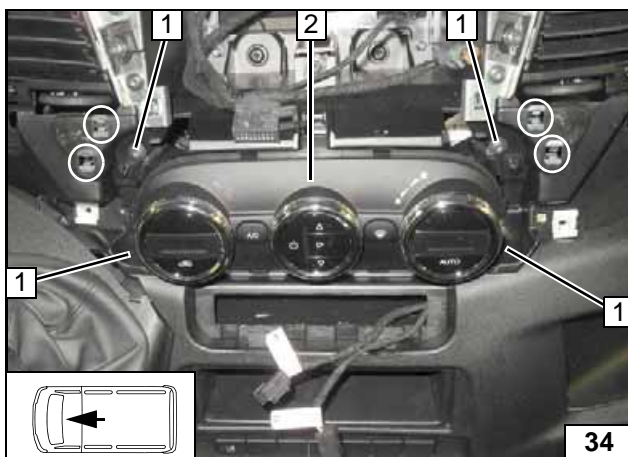
Removing button panel



Pull A/C control panel trim piece 1 out backwards (fastening point: see next figure)

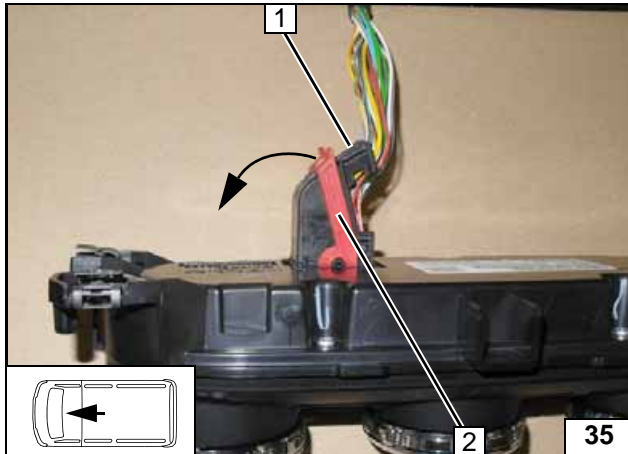


Removing A/C control panel trim piece



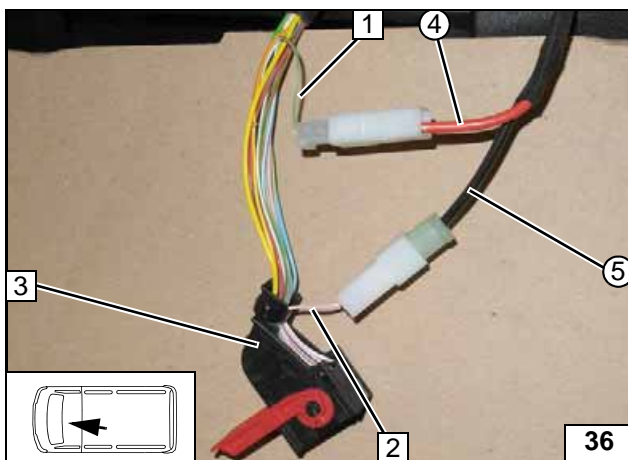
- 1 Remove bolts [4x]
 - 2 A/C control panel
- A/C control panel trim piece fastening point, clips [4x]

Removing A/C control panel



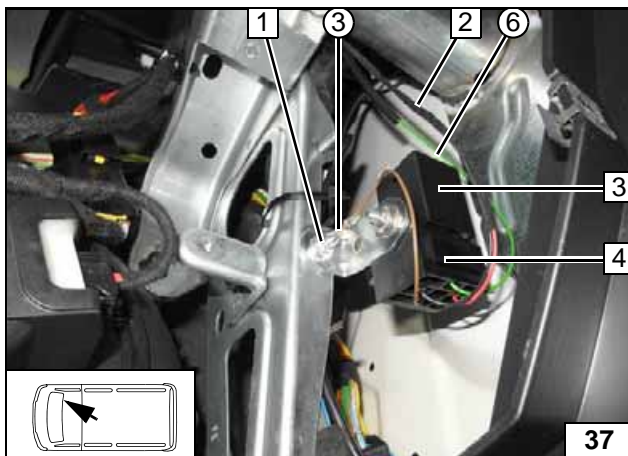
- 1 Connector D1 of A/C A/C control panel
- 2 Lock

**Detaching
connector
D1**



- 1 Pink/green (pk/gn) wire of fan relay
- 2 Pink/green (pk/gn) wire of black connector part D1/ pin 39 from A/C control unit
- 3 Connector D1 of A/C control unit
- ④ Red (rt) wire of K3/87a
- ⑤ Black (sw) wire of K3/30

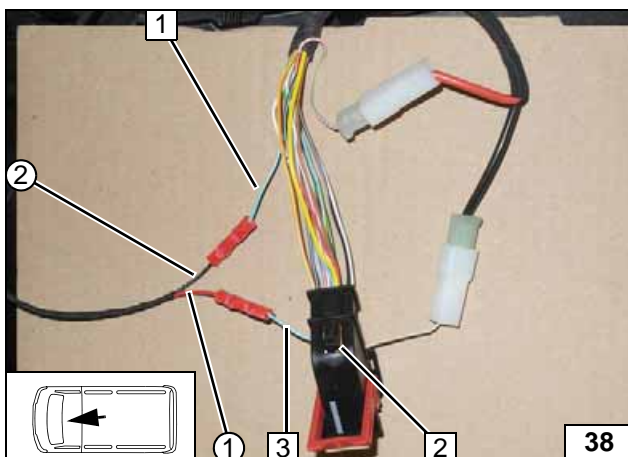
**Connecting
A/C control
unit**



- 1 Original vehicle stud bolt, premounted angle bracket, flanged nut
- 3 PWM GW
- 4 PWM GW socket
- ⑤ Brown (br) wire of PWM GW / GND

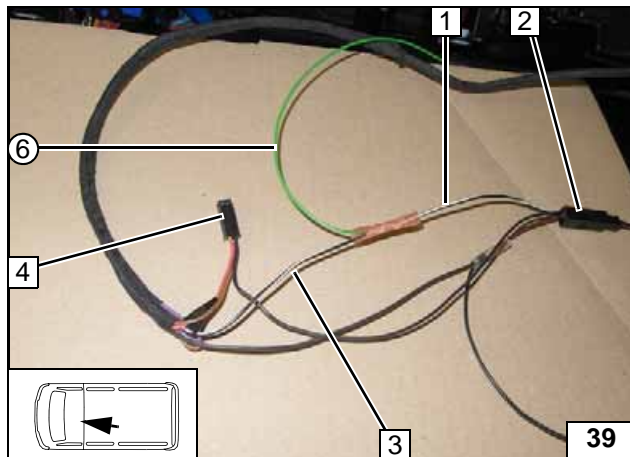
Route green/white (gn/ws) wire ⑥ and PWM control wiring harness 2 to the A/C control unit.

**Installing
PWM GW**



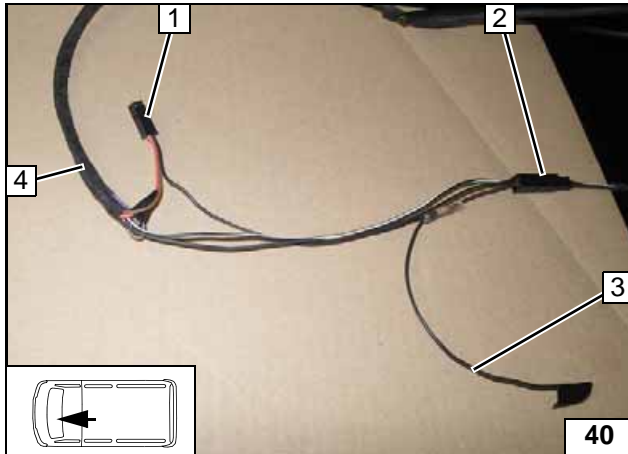
- 1 Light blue/green (hbl/gn) wire of connector C2/ pin 3 from fan relay
- 2 Connector D1 of A/C control unit
- 3 Light blue/green (hbl/gn) wire of grey connector part D1/ pin 9 from A/C control unit
- ① Red (rt) wire from PWM GW / IN of wiring harness of PWM control
- ② Black (sw) wire from PWM GW / OUT of wiring harness of PWM control

**Connect-
ing A/C
control unit**



- 1 White/black (ws/sw) wire to toggle switch connector S6
- 2 Toggle switch connector S6
- 3 White/black (ws/sw) wire of K5/ E1
- 4 Connector X9 of heater control
- ⑥ Green/white (gn/ws) wire of PWM GW / SH

Connecting wire ⑥ from PWM GW



Heater Control

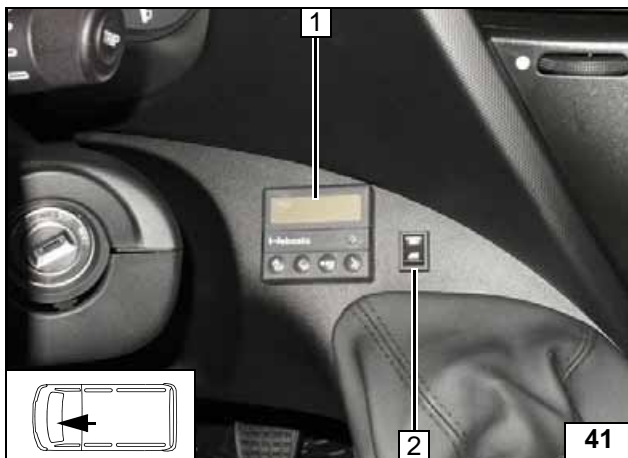
Version 1 - digital timer 1530

Insert loose black (sw) wire 3 into free socket of digital timer connector 1.

- 2 Toggle switch connector S6
- 4 Heater control wiring harness



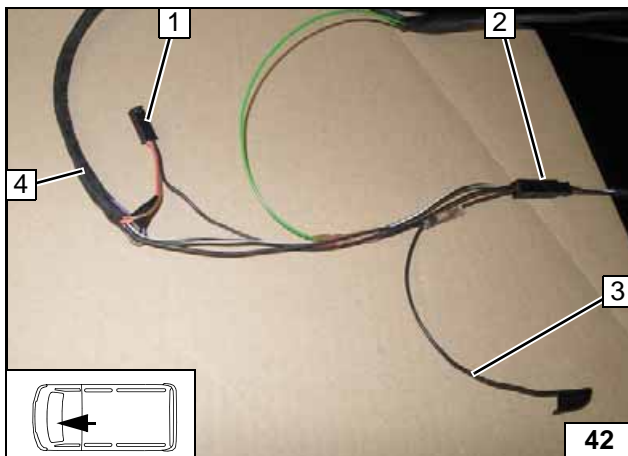
Preparing wiring harness



- 1 Digital timer
- 2 Toggle switch



Installing digital timer



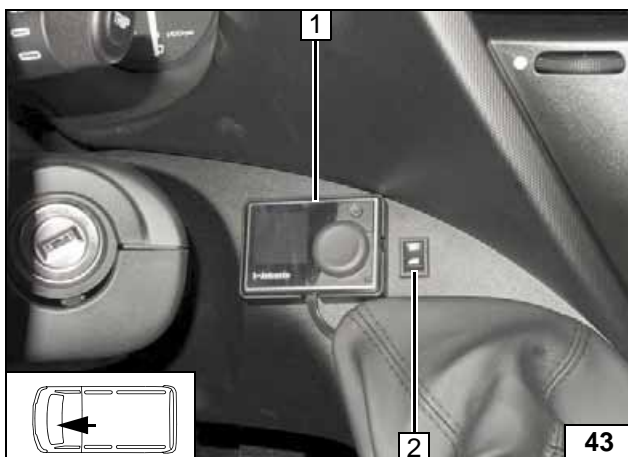
Version 2 - MultiControl RV

Insulate loose black (sw) wire 3 and tie back.

- 1 Connector for MultiControl RV
- 2 Toggle switch connector S6
- 4 Heater control wiring harness



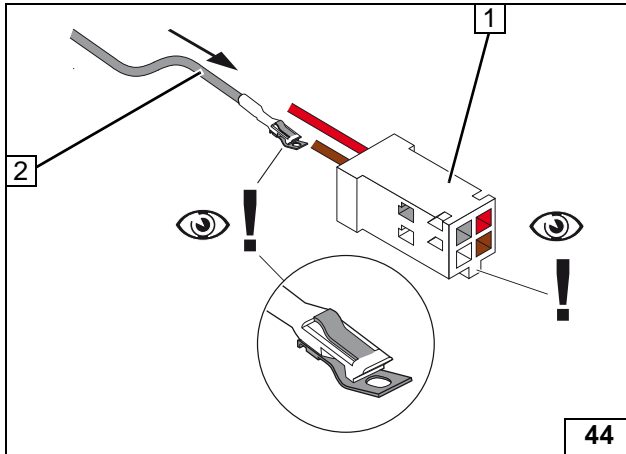
Preparing wiring harness



- 1 MultiControl RV with installation frame
- 2 Toggle switch



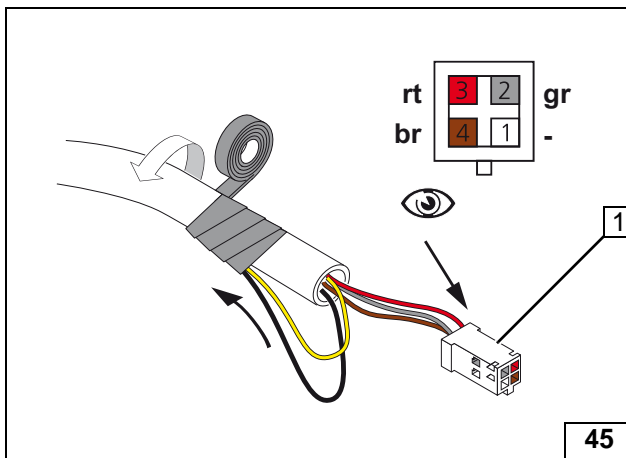
Installing MultiControl RV



Remote Option (Telestart)

- 1 Connector for digital timer / MultiControl RV
- 2 Insert grey (gr) wire in free socket, pin 2

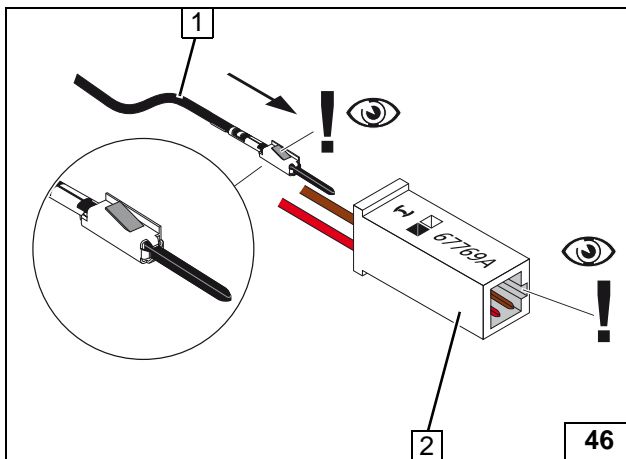
Preparing Telestart adapter wiring harness



Insulate yellow (ge) wire and black (sw) wire.

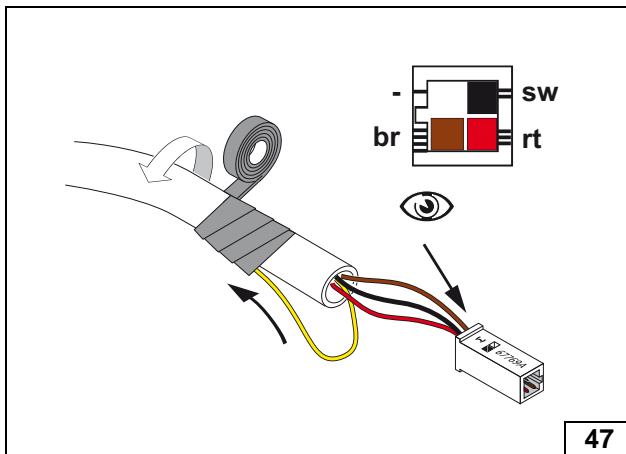
- 1 Connector for digital timer / MultiControl RV

Preparing Telestart adapter wiring harness



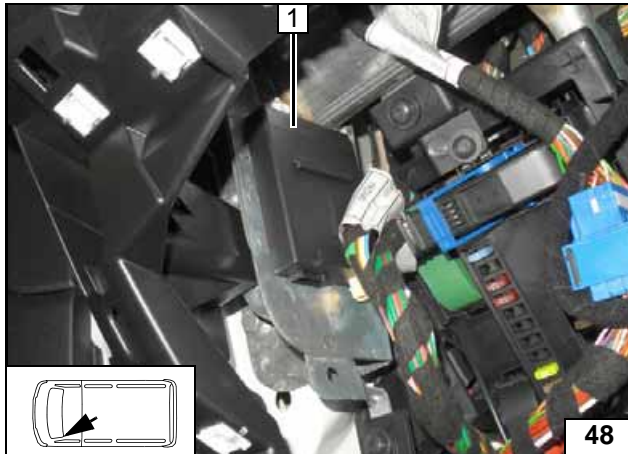
- 1 Insert black (sw) wire in free socket, pin 2
- 2 Connector in the direction of heater wiring harness

Preparing Telestart adapter wiring harness



Insulate yellow (ge) wire.

Preparing Telestart adapter wiring harness



Fasten receiver 1 with double-sided adhesive tape.

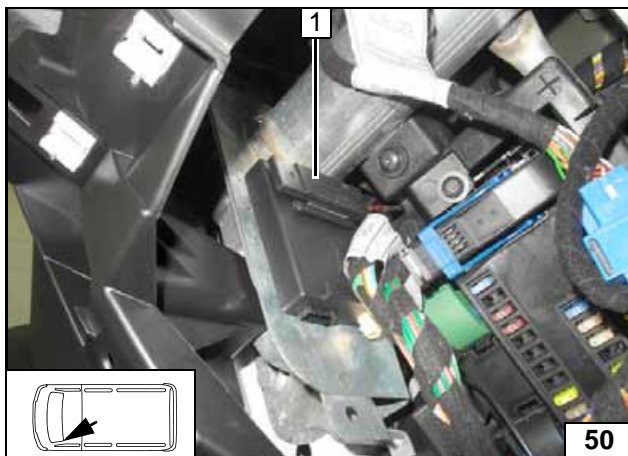


Installing receiver



1 Aerial

Installing aerial

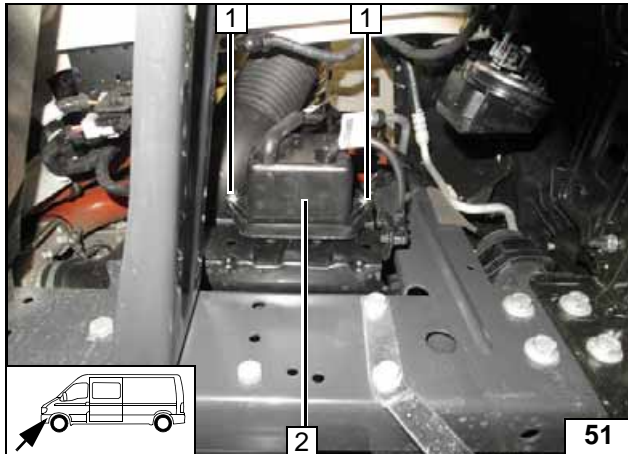
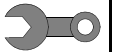


Temperature sensor T100 HTM

Fasten temperature sensor 1 with double-sided adhesive tape.



Installing temperature sensor



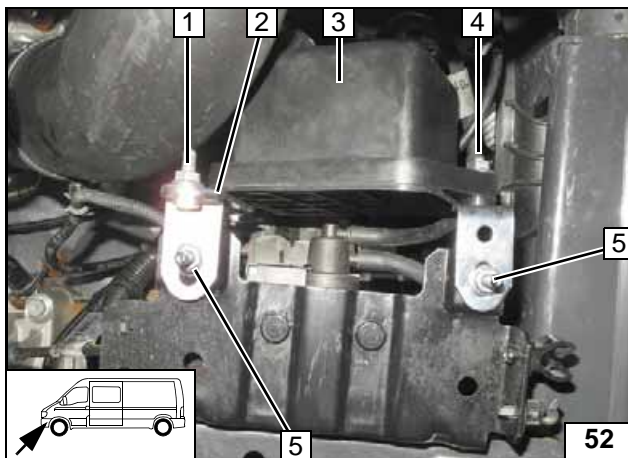
Preparing Installation Location

Moving vacuum box (if present)

Remove original vehicle flanged nuts 1 [2x], will be reused.

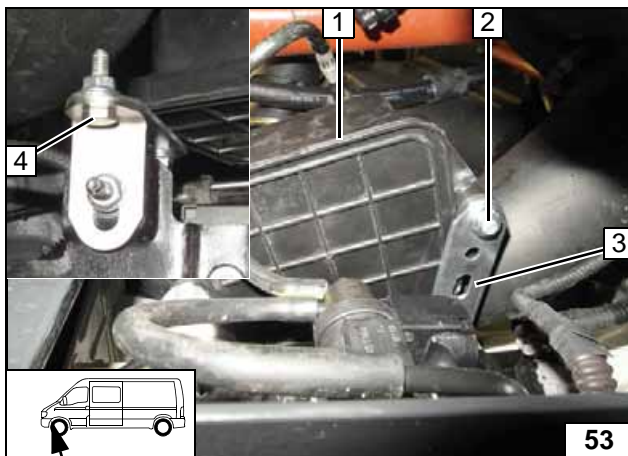
- 2 Vacuum box

Removing vacuum box



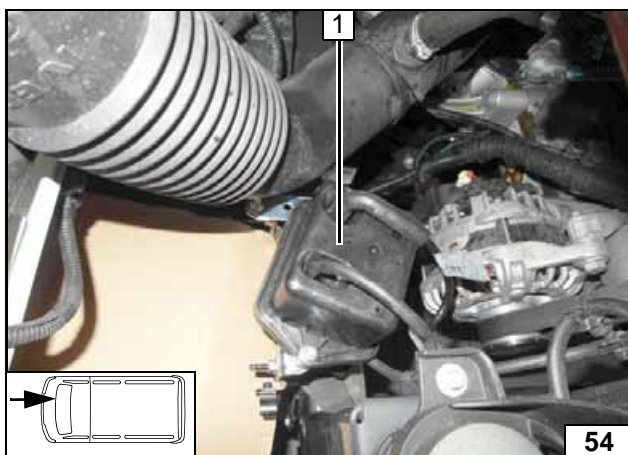
- 1 Install M6x20 bolt, perforated bracket 2 and flanged nut loosely
- 2 Perforated bracket
- 3 Vacuum box
- 4 M6x25 bolt, flanged nut
- 5 Original vehicle stud bolt, angle bracket, flanged nut [2x each]

Installing vacuum box



- 1 Vacuum box
- 2 M6x25 bolt, perforated bracket 3, flanged nut
- 3 Perforated bracket
- 4 Tighten bolt

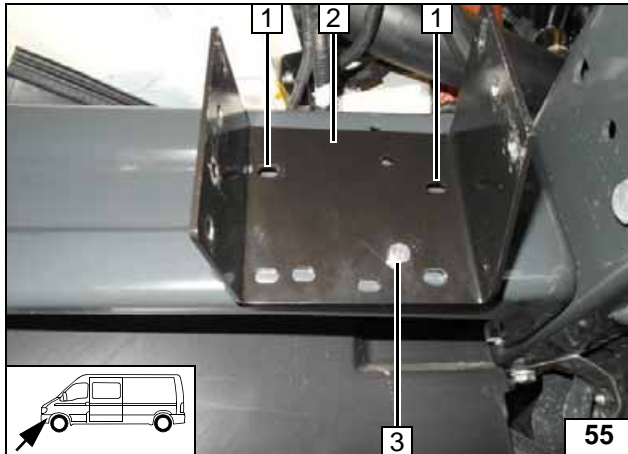
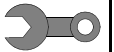
Installing vacuum box



Ensure sufficient distance from neighbouring components.

- 1 Vacuum box

Aligning vacuum box

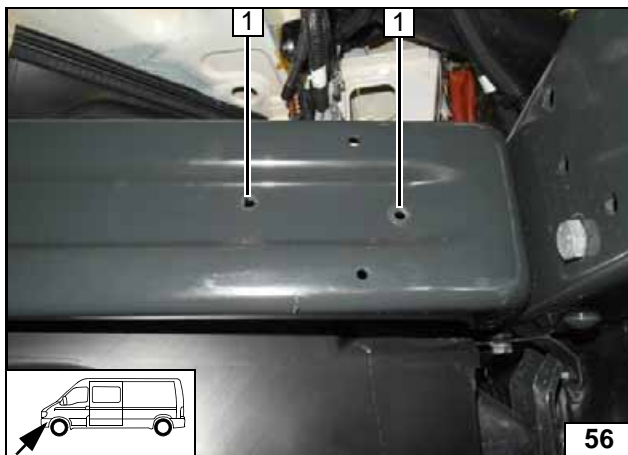


The remaining steps will be shown on a vehicle without vacuum box.

Install bracket 2 loosely and align vertically.

- 1 Copy hole pattern [2x]
- 3 M6x20 bolt, flanged nut, existing hole

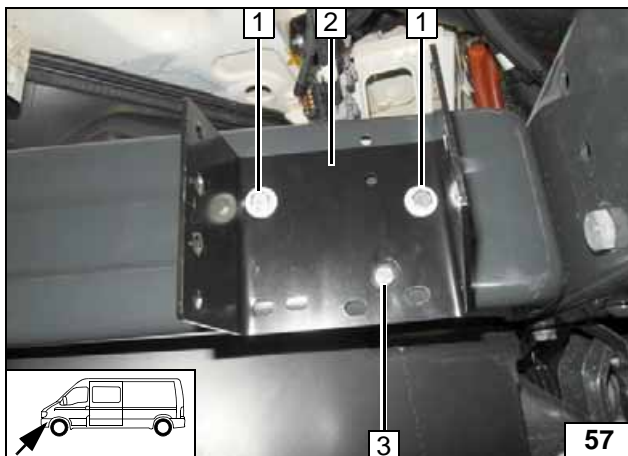
Copying hole pattern



Remove bracket.

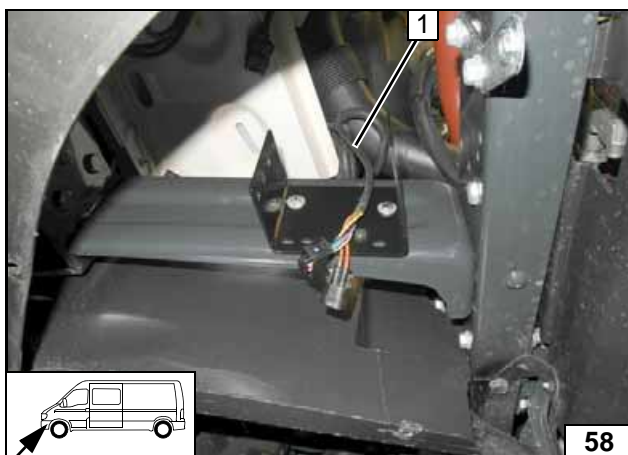
- 1 7 mm dia. hole [2x]

Hole in cross member



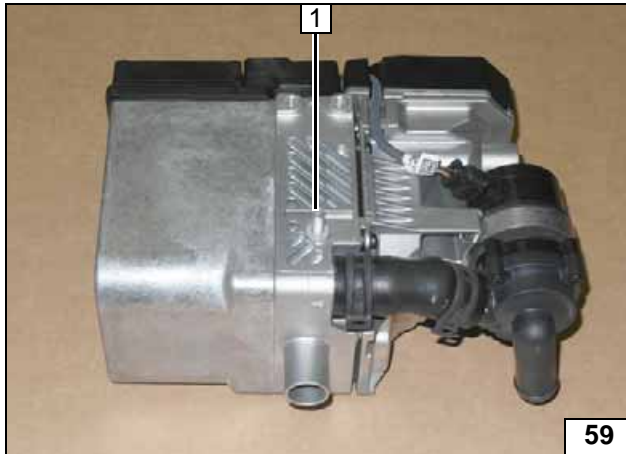
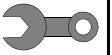
- 1 M6x30 bolt, large diameter washer, 10mm shim, flanged nut [2x each]
- 2 Bracket
- 3 M6x20 bolt, flanged nut

Installing bracket



- 1 Route wiring harness of heater

Wiring harness of heater

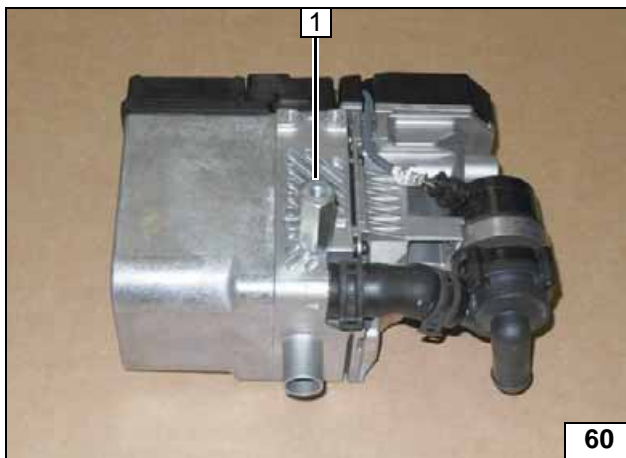


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Preparing Heater

- 1 DG60x14.5/M6x15.5 self-tapping stud bolt

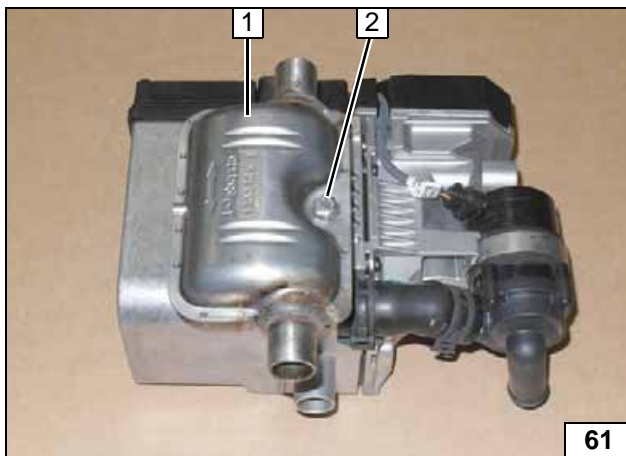
Installing stud bolt



60

- 1 M6x40 spacer nut

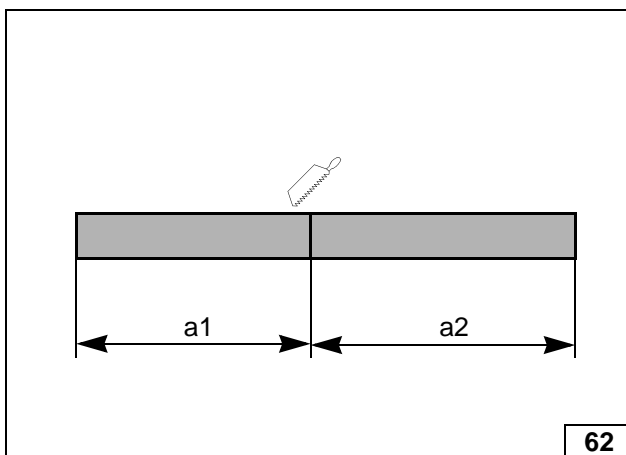
Installing spacer nut



61

- 1 Silencer
2 M6x16 bolt, spring lockwasher

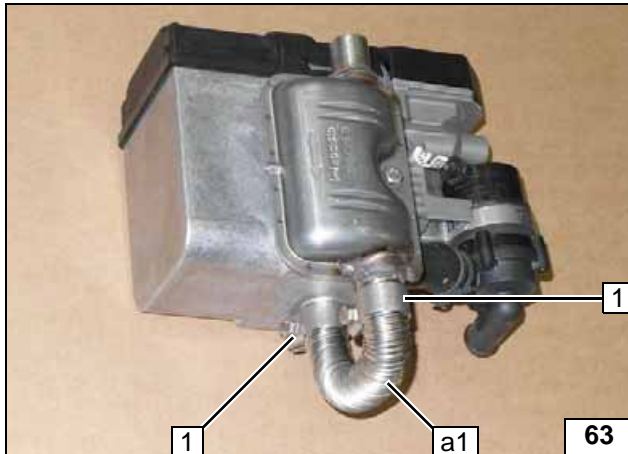
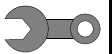
Installing silencer



62

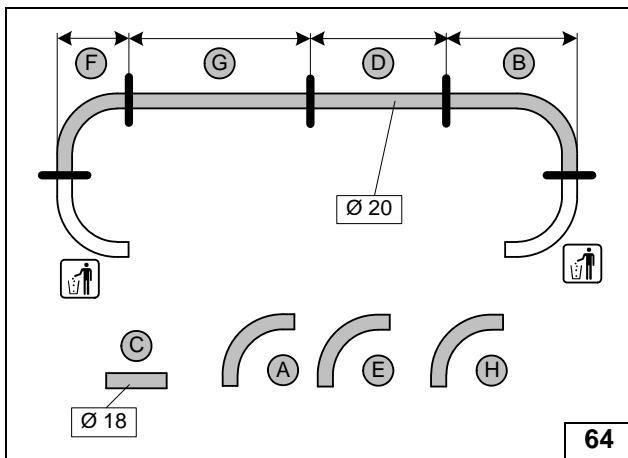
- a1 = 170
a2 = 210

Preparing exhaust pipe



1 Hose clamp [2x]

Installing exhaust pipe a1



Moulded hoses **A** and **E** = 90°, 18mm dia.
Moulded hose **H** = 90°, 18mm dia. (only for 3.0D)



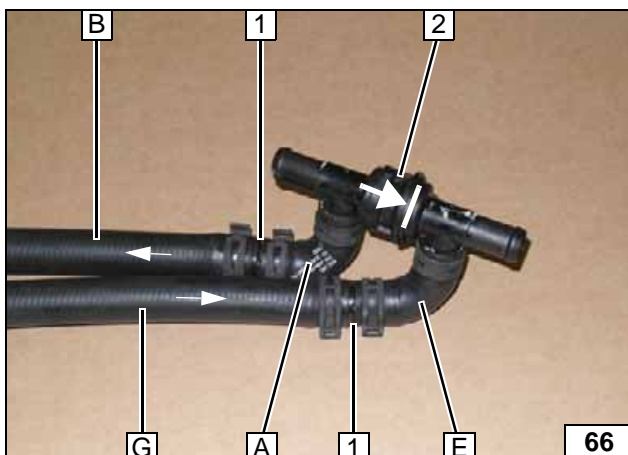
	2.3 D	3.0 D
B	620	630
C	80	80
D	670	580
F	110	110
G	800	850

Cutting to length / assigning hoses



1 27mm dia. spring clip

Mounting hose F

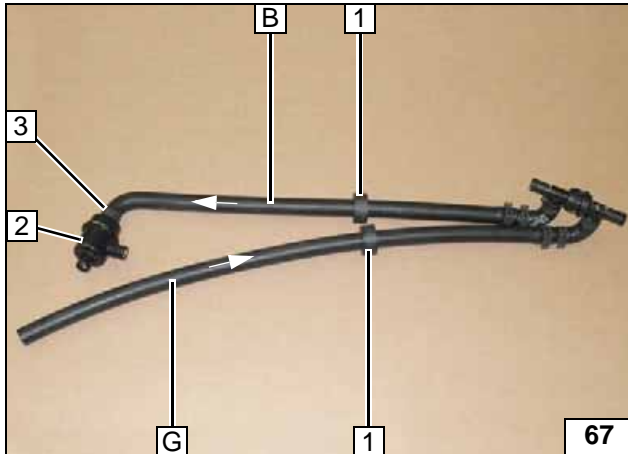
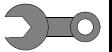


Mind the direction of flow of the check valve!



- 1 18x20mm dia. connecting pipe, 25mm dia. spring clip, 27mm dia. spring clip [2x each]
- 2 Check valve, 25mm dia. spring clip [2x]

Installing check valve

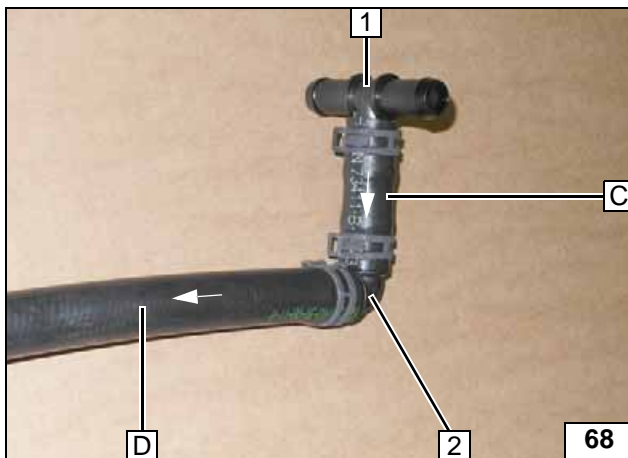


Ensure correct connection of Thermostat 2!

- 1 Slide on black (sw) rubber isolator [2x]
- 3 27mm dia. spring clip

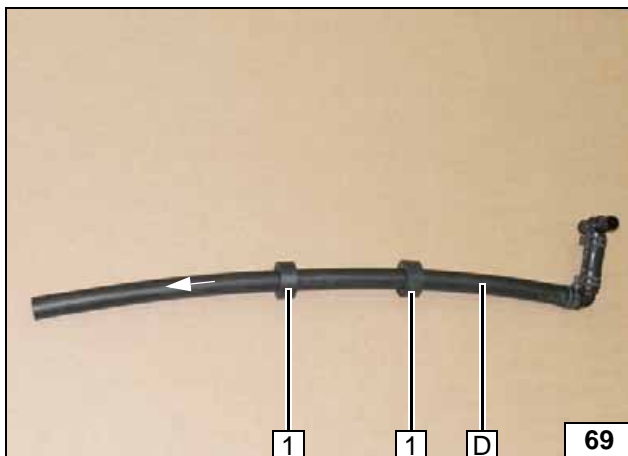


Preparing hose group of heat exchanger inlet



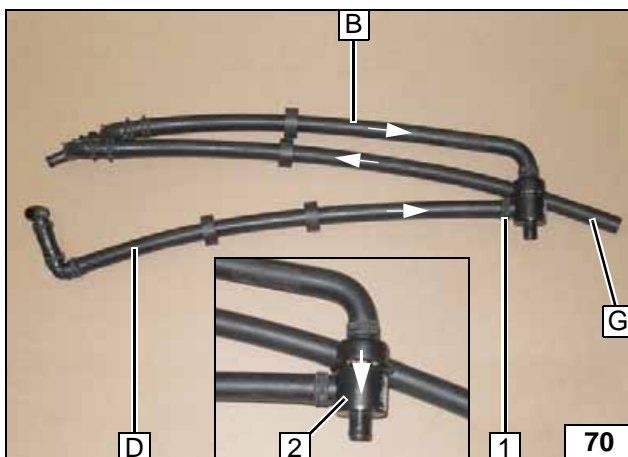
- 1 18x18x18 T-piece, 25mm dia. spring clip
- 2 90°, 18x20mm dia. connecting pipe, 25mm dia. spring clip, 27mm dia. spring clip

Premounting T-piece



- 1 Slide on black (sw) rubber isolator [2x]

Preparing hose group of heat exchanger outlet



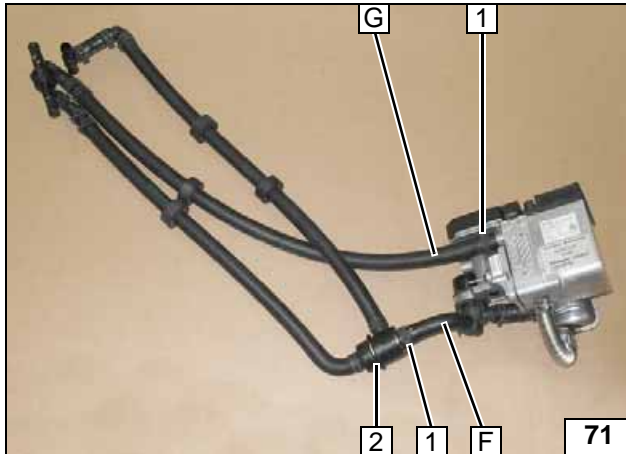
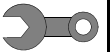
2.3 D

Check the connection of Thermostat 2!

- 1 27mm dia. spring clip

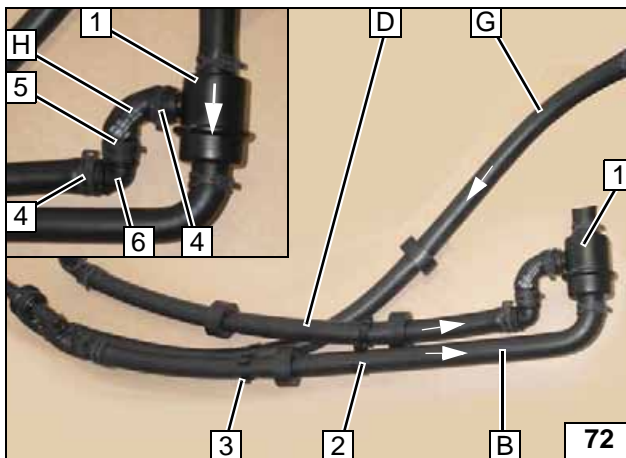


Connecting hose groups



- 1 27mm dia. spring clip [2x]
- 2 Thermostat

Connect-
ing heater

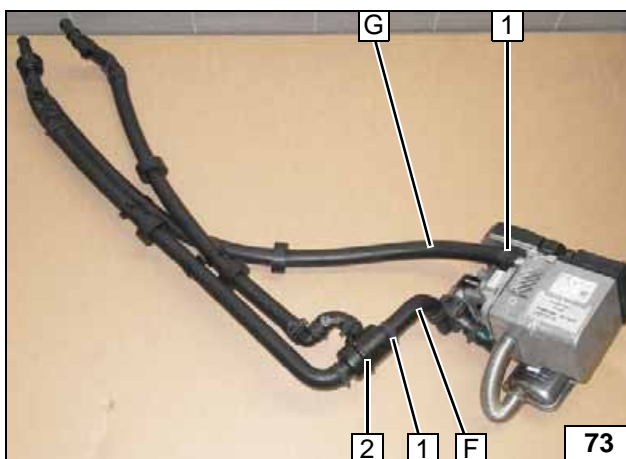


3.0 D

Check the connection of Thermostat 1!

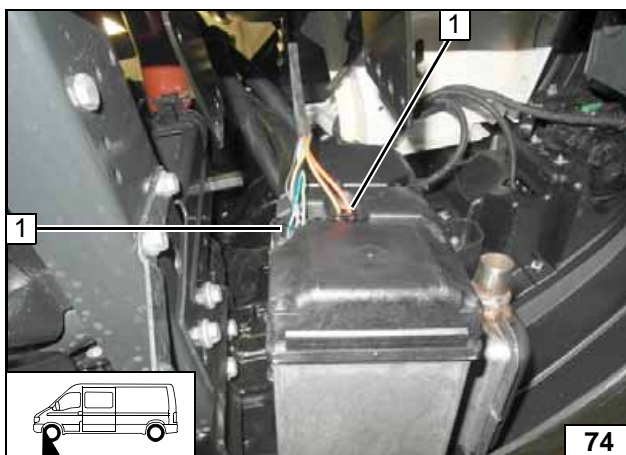
- 2 25x25mm dia. hose bracket on F and D
- 3 25x25mm dia. hose bracket on F and G
- 4 27mm dia. spring clip [2x]
- 5 25 mm dia. spring clip
- 6 90°, 18x20 mm dia. connecting pipe

Connect-
ing hose
groups



- 1 27mm dia. spring clip [2x]
- 2 Thermostat

Connect-
ing heater

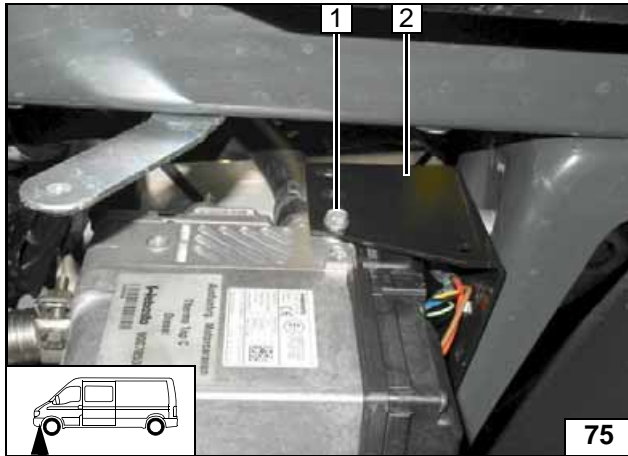
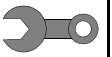


Installing Heater

Route hose to heat exchanger.

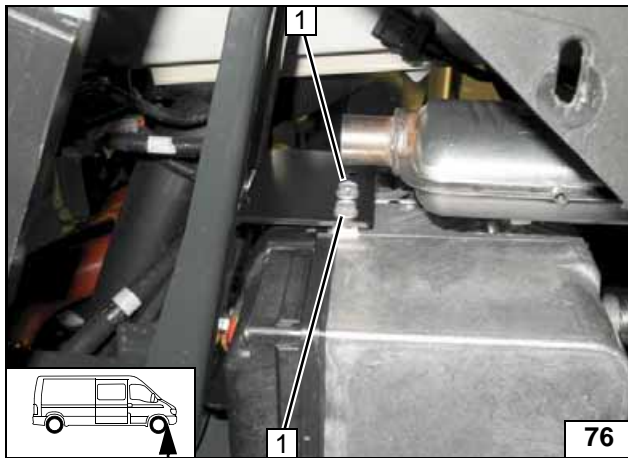
- 1 Heater wiring harness connector [2x]

Mounting
heater wir-
ing har-
ness



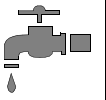
- 1 E-jot screw
- 2 Bracket

Installing heater



- 1 E-jot screw [2x]

Installing heater

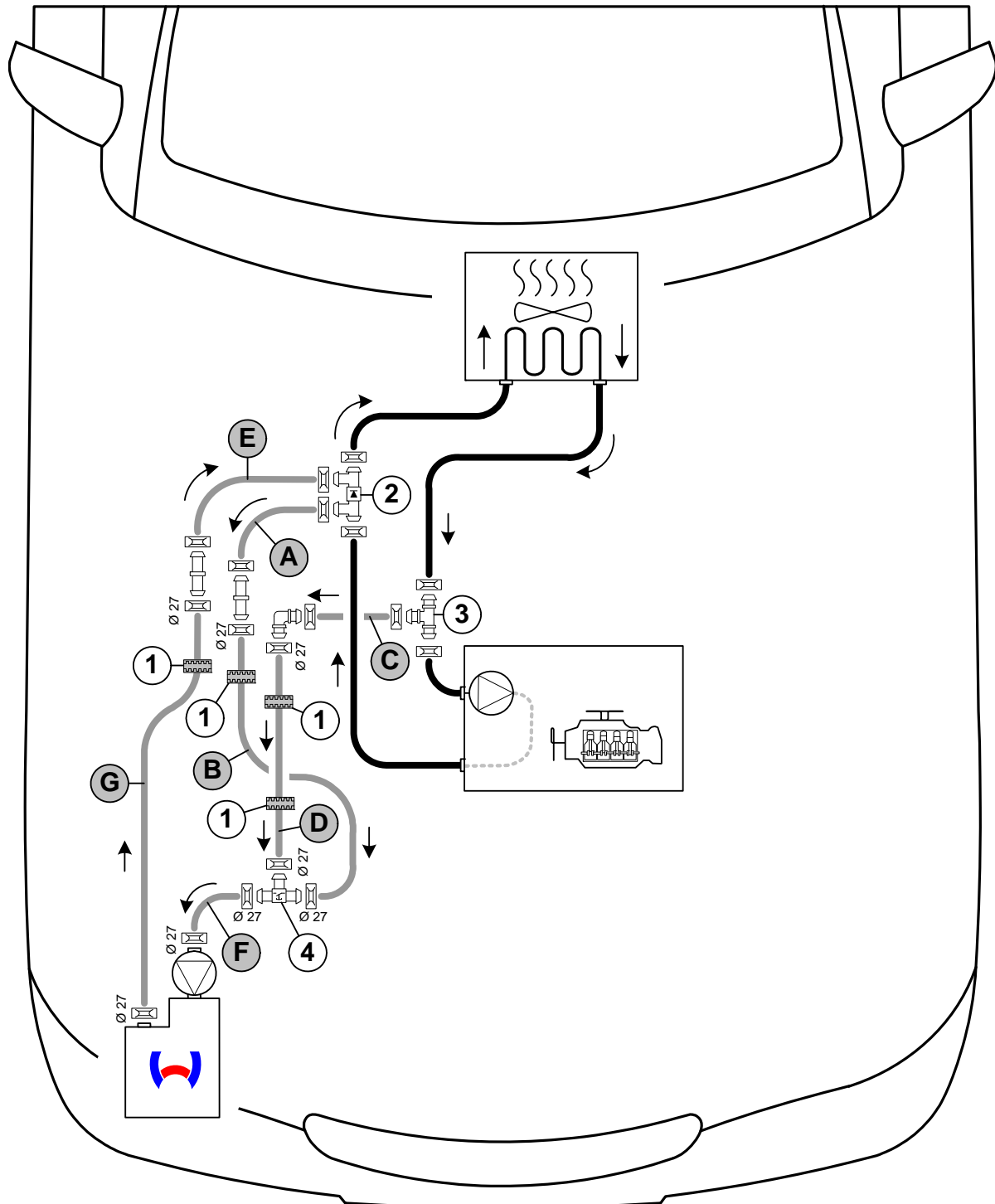


Coolant Circuit for 2.3D Vehicles




WARNING!





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

The connection should be based on the following diagram:

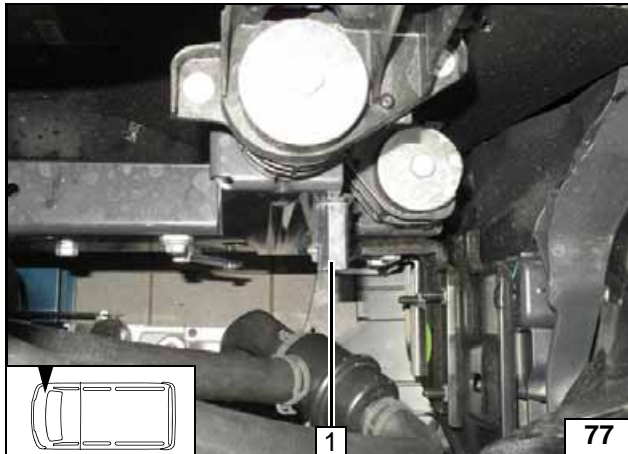


Hose routing diagram

All spring clips without a specific designation  = 25 mm dia. Connecting pipe  = 18x20mm dia. All connecting pipes  = 18x20 mm dia.

1 = Black (sw) rubber isolator  2 = Check valve  3 = T-piece  4 = Thermostat !



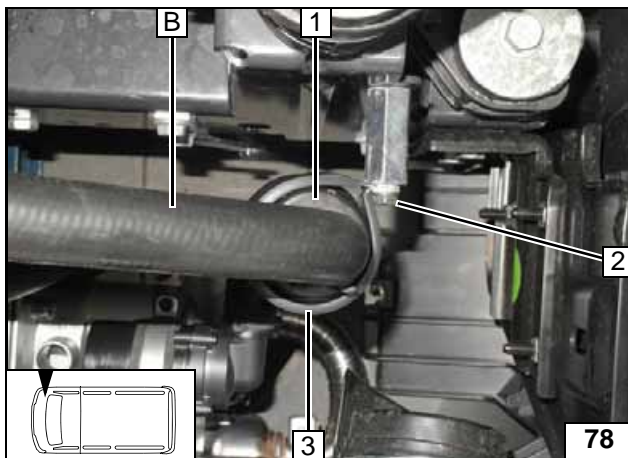


Detach the servo container before the installation and put it aside.

- 1 M6x16 bolt, spring lockwasher, M6x40 spacer nut, existing hole



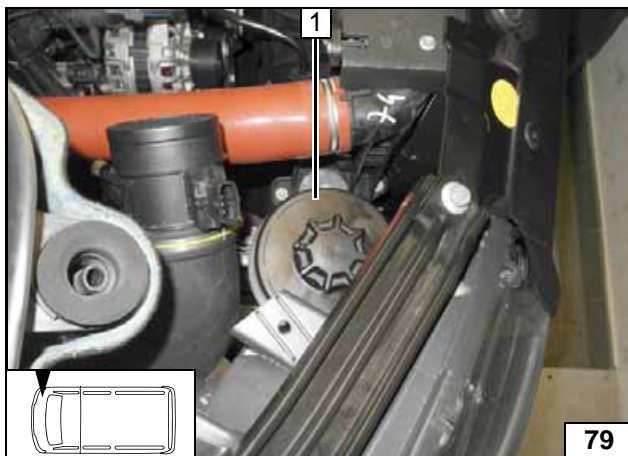
Installing spacer nut



- 1 Thermostat
- 2 M6x16 bolt, spring lockwasher
- 3 48 mm dia. rubber-coated p-clamp

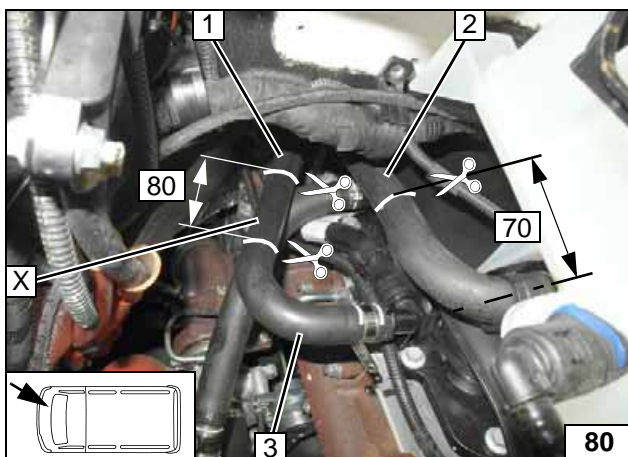


Installing thermostat



- 1 Servo container

Installing servo container



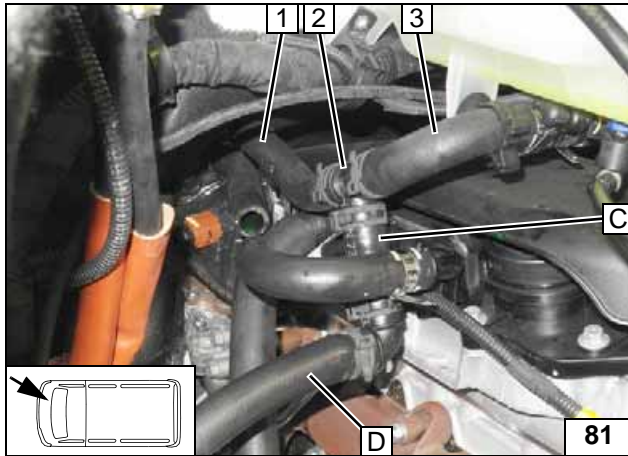
Cut the hoses at the markings.

- 1 Hose section of heat exchanger inlet
- 2 Hose section of heat exchanger outlet
- 3 Hose section on engine outlet



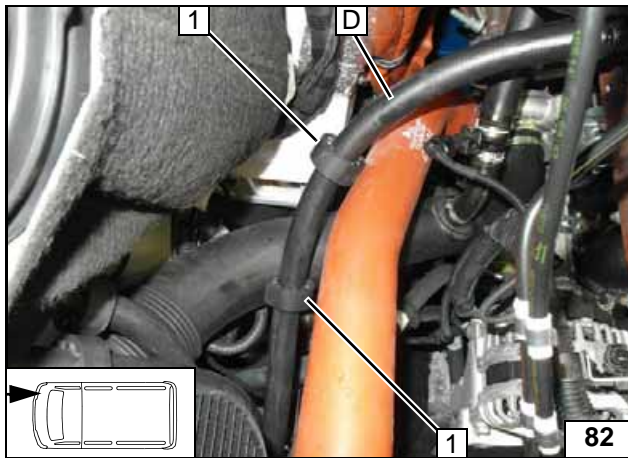
Cutting point

X =



- 1 Hose section of heat exchanger outlet
- 2 T-piece
- 3 Hose section of engine inlet

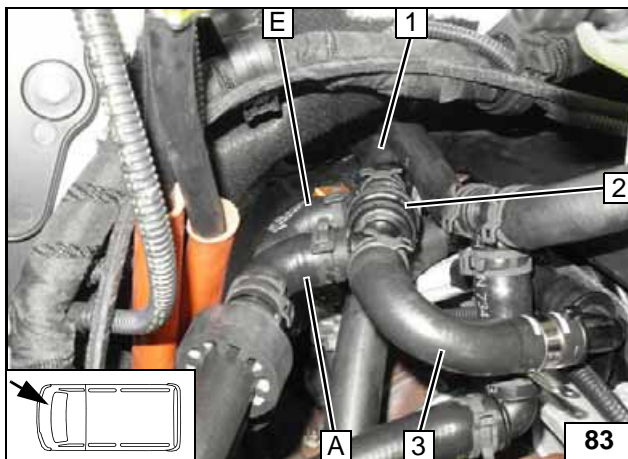
Installing T-piece



Align black (sw) rubber isolator 1 [2x] with original vehicle hoses.

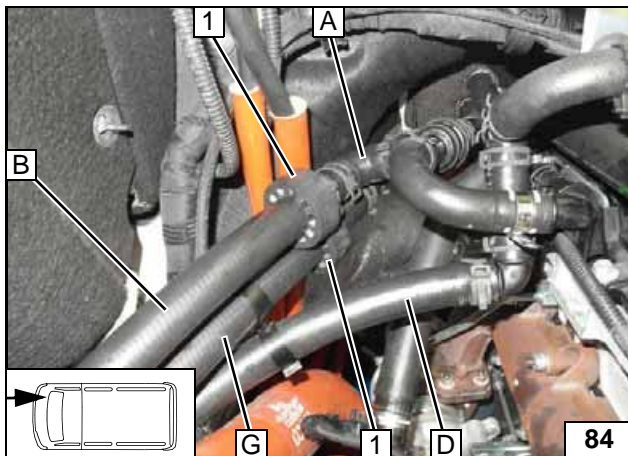


Routing in engine compartment



- 1 Hose section of heat exchanger inlet
- 2 Check valve
- 3 Hose section of engine outlet

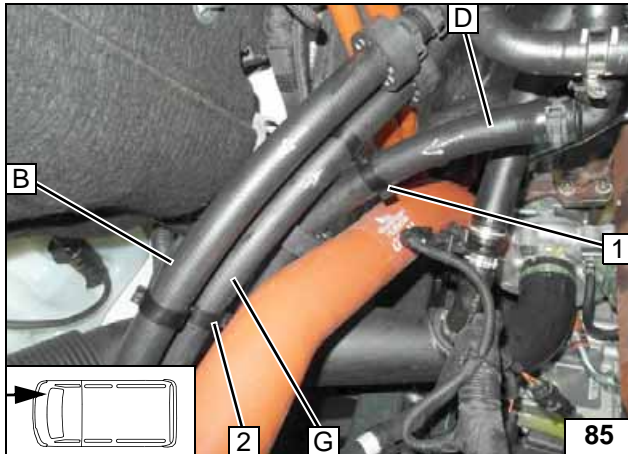
Installing check valve



Align black (sw) rubber isolator 1 [2x] with original vehicle hoses.



Routing in engine compartment

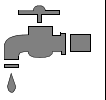


Ensure sufficient distance from neighbouring components.

- 1 Hose bracket between hose **D** and hose **G**
- 2 Hose bracket between hose **B** and hose **G**



**Installing
hose
bracket**

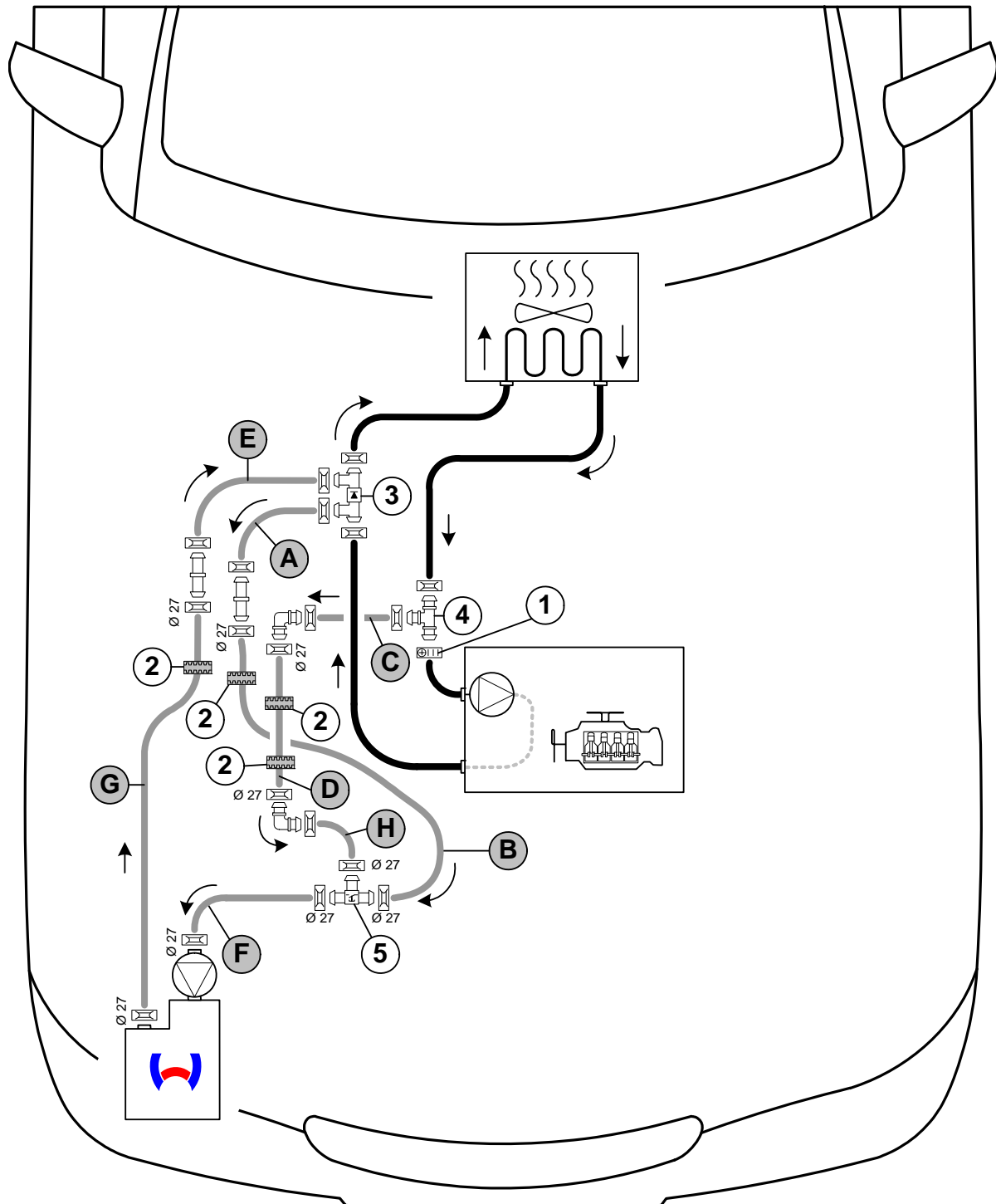


Coolant Circuit for 3.0D




WARNING!



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




The connection should be based on the following diagram:



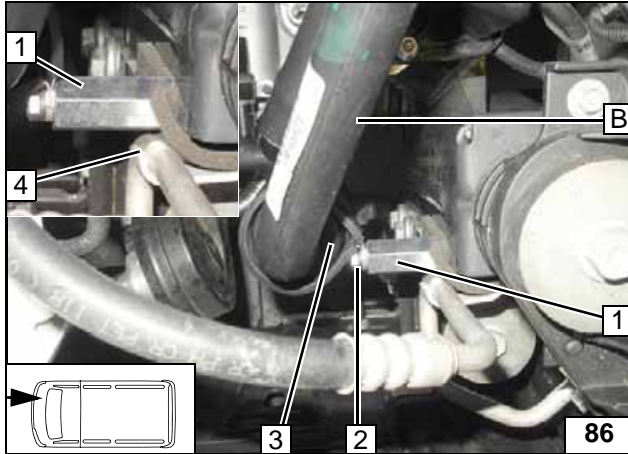
Hose routing diagram

All spring clips without a specific designation  = 25 mm dia. Connecting pipe  = 18x20mm dia. All connecting pipes  = 18x20 mm dia.

1 = Original vehicle hose clamp  = 20-27mm dia. **2** = Black (sw) rubber isolator .

3 = Check valve . **4** = T-piece . **5** = Thermostat !



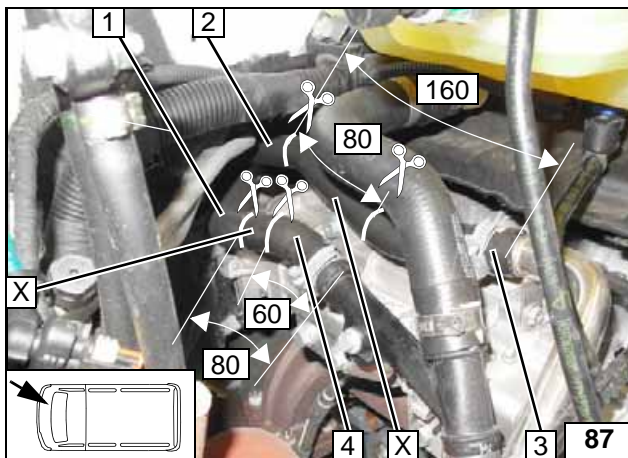


Ensure sufficient distance from the A/C line 4.

- 1 M6x16 bolt, spring lockwasher, M6x40 spacer nut, existing hole
- 2 M6x16 bolt, spring lockwasher, 48mm dia. rubber-coated p-clamp
- 3 Thermostat



Installing thermostat



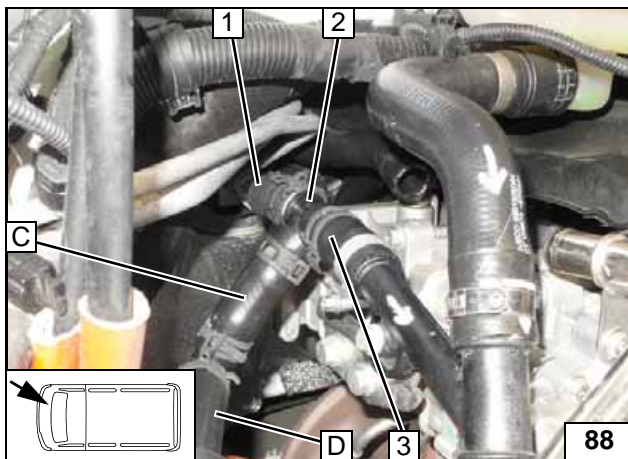
Cut the hoses at the markings.

- 1 Hose section of heat exchanger outlet
- 2 Hose section of heat exchanger inlet
- 3 Hose section on engine outlet
- 4 Hose section of engine inlet

X =



Cutting point



- 1 Hose section of heat exchanger outlet
- 2 T-piece
- 3 Hose section of engine inlet

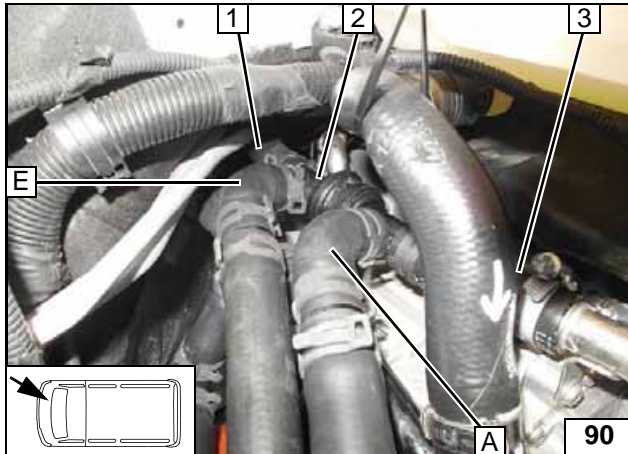
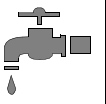
Installing T-piece



Align black (sw) rubber isolator 1 with original vehicle hoses.

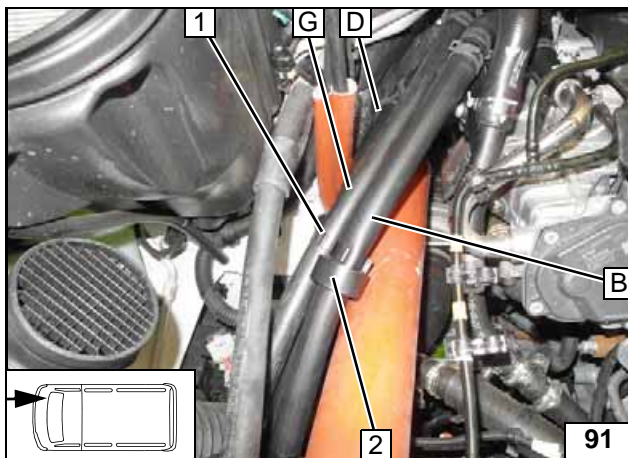


Routing in engine compartment



- 1 Hose section of heat exchanger inlet
- 2 Check valve
- 3 Hose section of engine outlet

Installing check valve

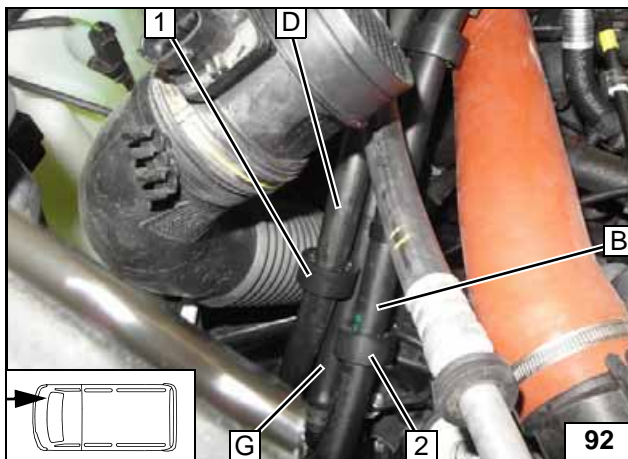


Align black (sw) rubber isolator 2 with original vehicle hoses.



- 1 Hose bracket between hose B and hose G

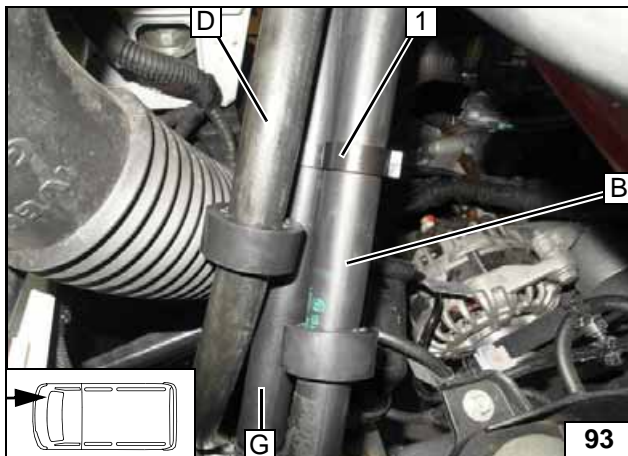
Routing in engine compartment



Align black (sw) rubber isolator 1 with intake hose and align rubber isolator 2 with original vehicle hoses.



Routing in engine compartment



Ensure sufficient distance from neighbouring components.

- 1 25x25 hose bracket between hose B and hose G

Routing in engine compartment



Fuel

CAUTION!

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

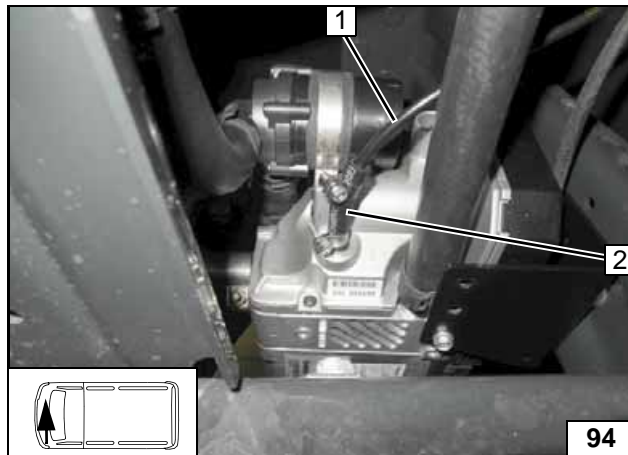
Catch any fuel running off in an appropriate container.

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.

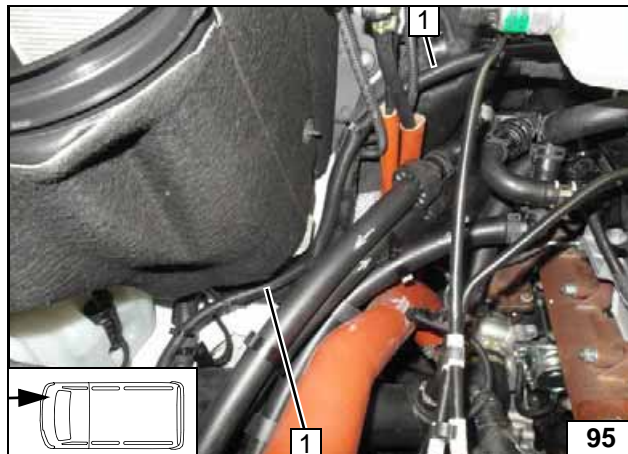
WARNING!

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



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

Connect-
ing heater



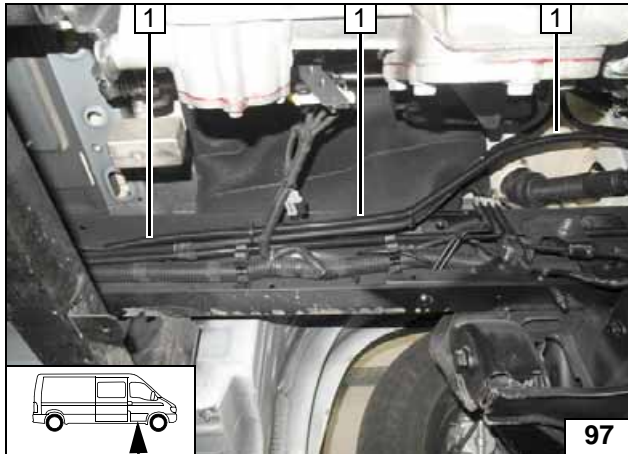
Route fuel line and wiring harness of heater in 13mm dia. corrugated tube 1 (slit) along original vehicle wiring harness up to the fuse holder and secure using cable ties.

Routing
lines



Pull fuel line and metering pump wiring harness into 10mm corrugated tube 1 and route to underbody.

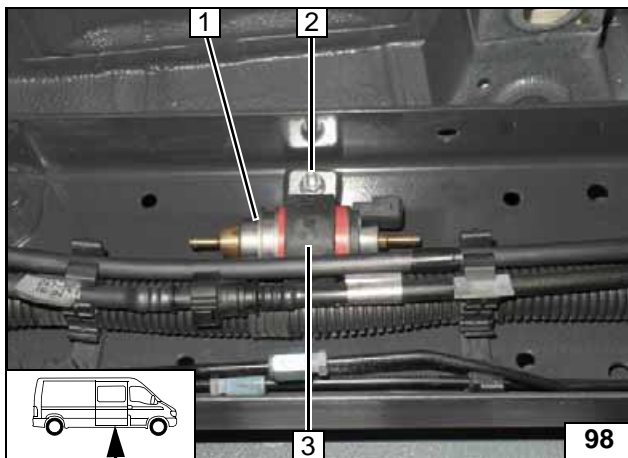
Routing
lines



Route fuel line and metering pump wiring harness in 10mm corrugated tube 1 along original vehicle wires to installation location of metering pump and secure with cable ties.



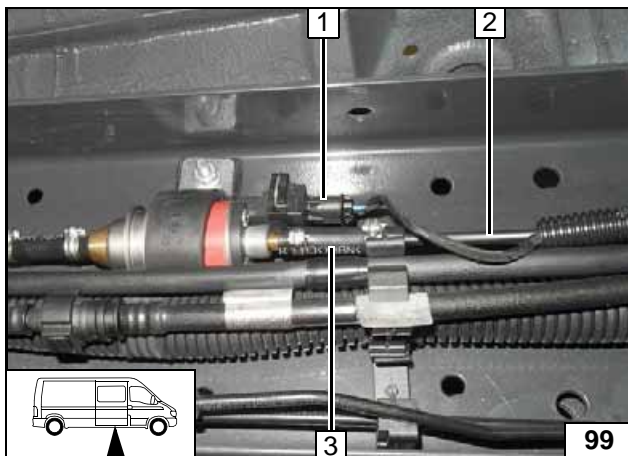
Routing lines



- 1 Metering pump
- 2 M6x25 bolt, support angle bracket, flanged nut, existing hole
- 3 Metering pump mount



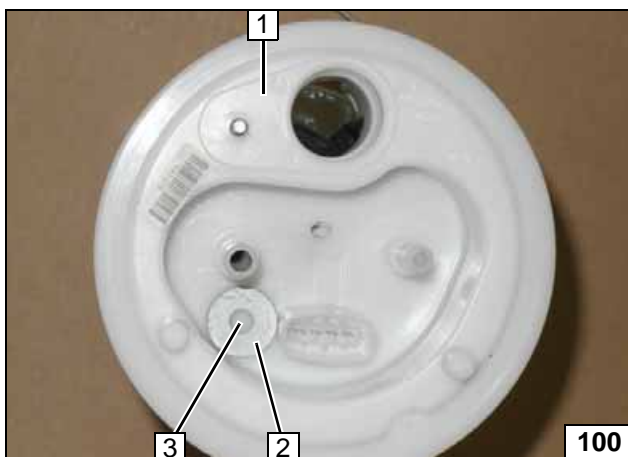
Installing metering pump



- 1 Metering pump wiring harness, connector mounted
- 2 Fuel line of heater
- 3 Hose section, 10mm dia. clamp [2x]



Connecting metering pump



Remove fuel tank and fuel tank sending unit 1 according to manufacturer's instructions.

- 2 Large diameter washer with outer dia. $d_a = 21.6\text{mm}$
- 3 Copy hole pattern, 6mm dia. hole



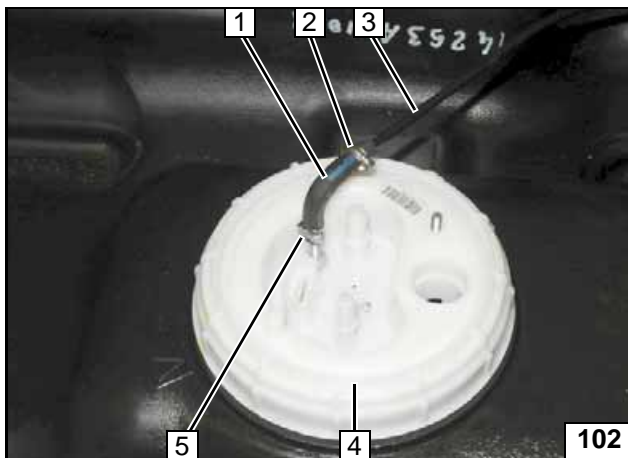
Fuel extraction



Bend fuel standpipe **1** according to template and cut to length.



Installing fuel standpipe



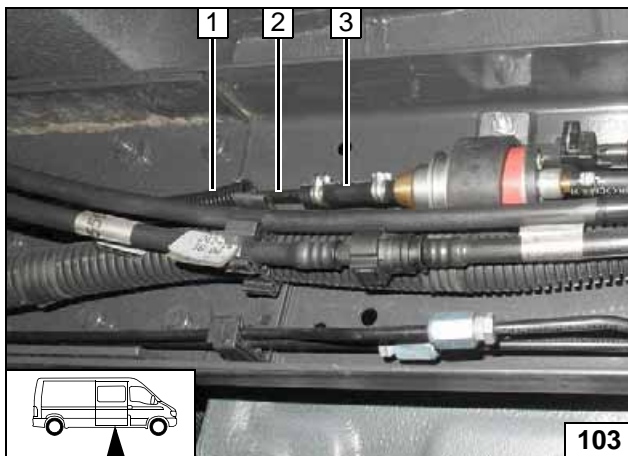
Install fuel tank sending unit **4** in accordance with manufacturer's instructions.



Connecting fuel line

- 1** 90°, 3.5x4.5mm moulded hose (3.5mm side on fuel standpipe)
- 2** 10mm dia. clamp
- 3** Fuel line
- 5** 9mm dia. clamp

Install fuel tank in accordance with manufacturer's instructions.

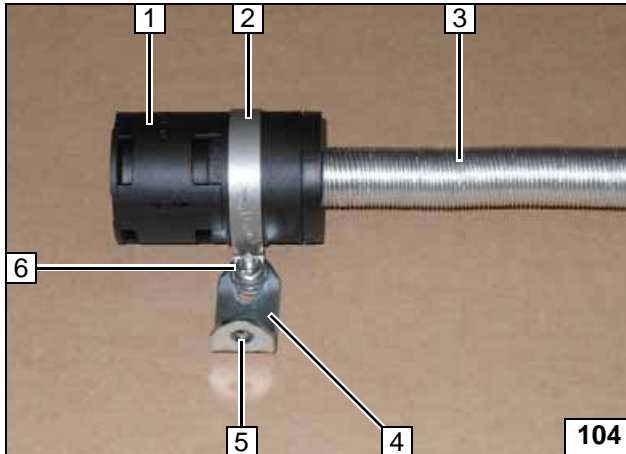
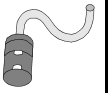


Slide 10mm dia. corrugated tube **1** onto fuel line of fuel standpipe **2**.
Check the position of the components; adjust if necessary. Check that they have freedom of movement.



Connecting metering pump

- 3** Hose section, 10mm dia. clamp [2x]



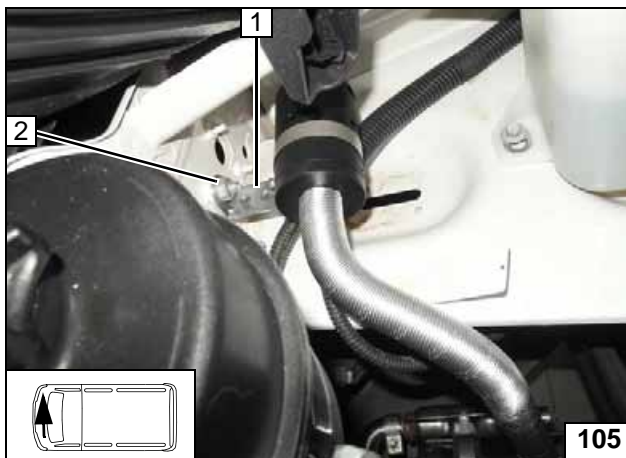
Combustion Air

Drill out angle bracket **4** to 8.5 mm dia. at position **5**.

- 1 Silencer
- 2 51mm dia. clamp
- 3 Combustion air pipe
- 6 M5x16 bolt, large diameter washer [2x], flanged nut



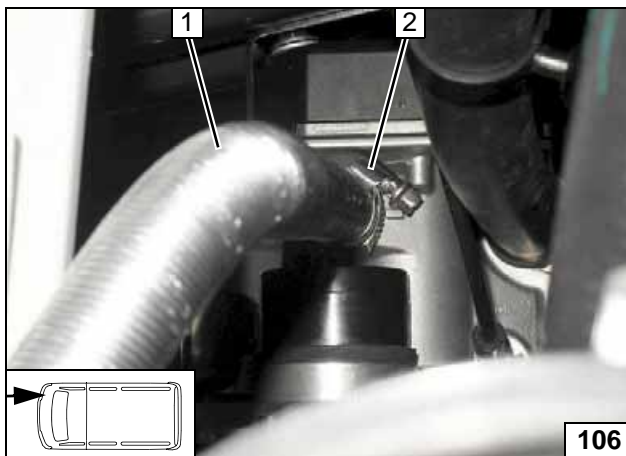
Premounting silencer



- 1 Angle bracket
- 2 M8 flanged nut on original vehicle stud bolt

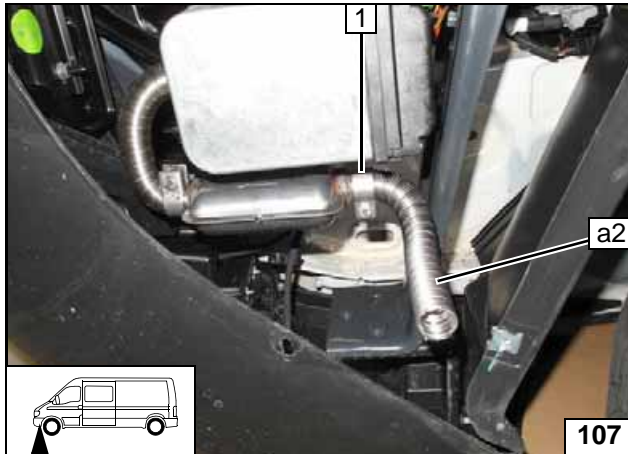
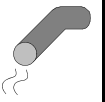


Installing silencer



- 1 Combustion air pipe
- 2 16-27mm dia. hose clamp

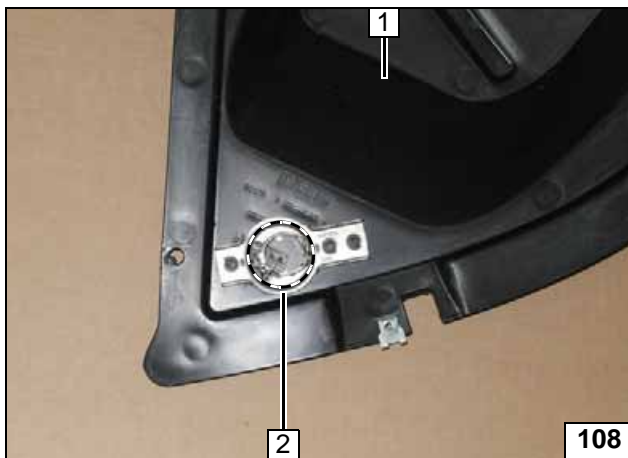
Installing combustion air pipe



Exhaust Gas

- 1 Hose clamp

Installing exhaust pipe a2

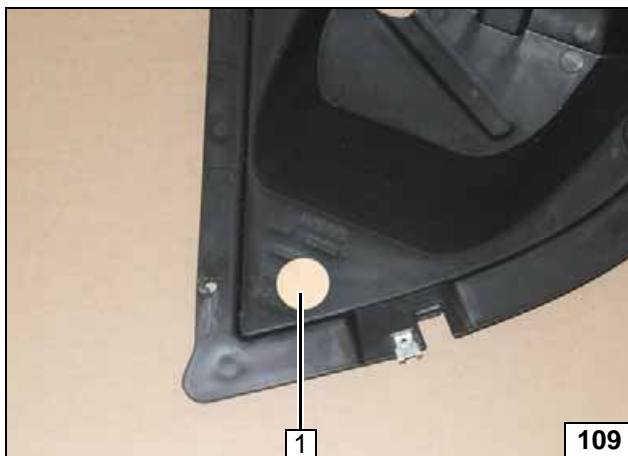


Copy hole pattern of exhaust end fastener as per work step 1 of the installation instructions (see marking).

- 1 Underride protection of the wheel well trim on the right side
- 2 Exhaust end fastener



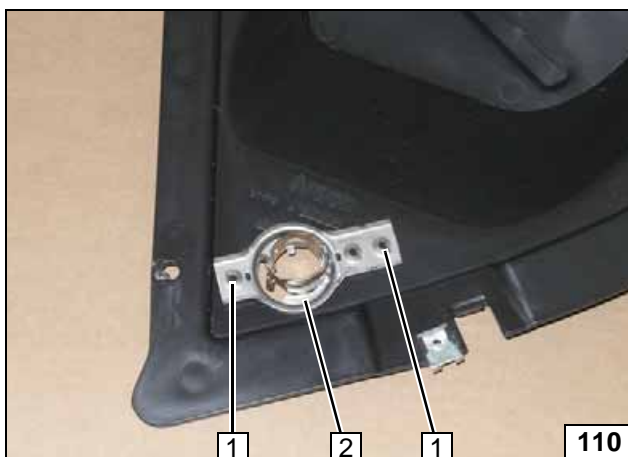
Hole in underride protection



- 1 Hole (as per work step 1 of the installation instructions)



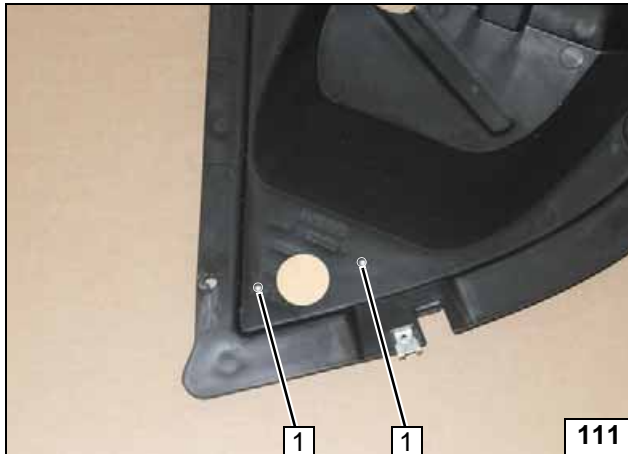
Hole in underride protection



Position exhaust end fastener 2 in the hole as per work step 3 of the installation instructions and copy hole pattern 1 [2x].



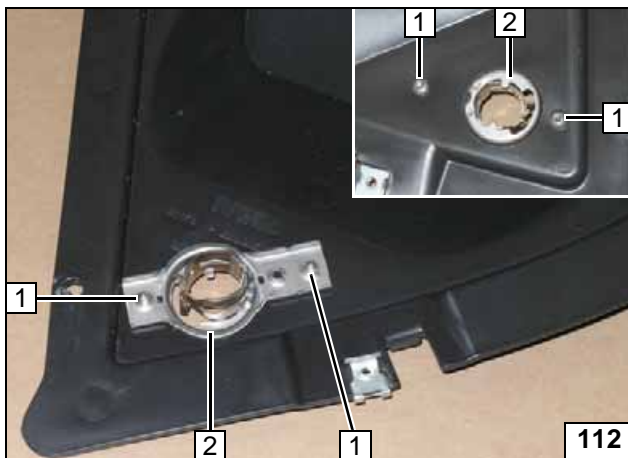
Copying hole pattern



Hole 1 [2x] as per work step 4 of the installation instructions.



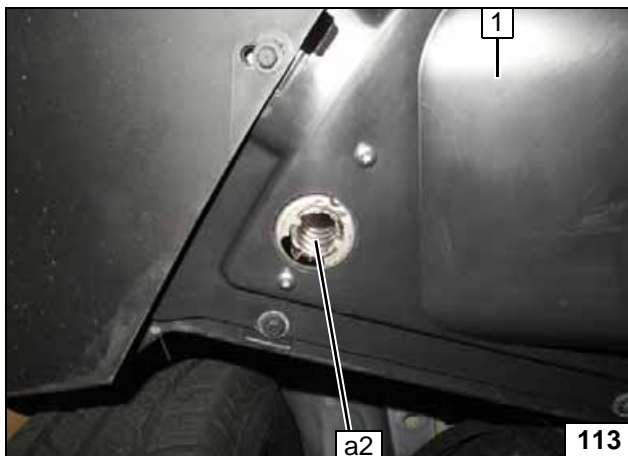
Holes in under-ride protection



- 1 Self-tapping screw 5x13 [2x] as per work step 5 of the installation instructions
- 2 Exhaust end fastener



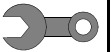
Installing exhaust end fastener



Install under-ride protection of wheel well on the right 1. Install exhaust pipe a2 as per work steps 6 - 8 of the installation instructions.



Installing exhaust pipe a2



Final Work

WARNING!

Reassemble the components in reverse order. Check all hoses, clamps and all electrical connections for firm seating. Insulate and tie back loose lines.

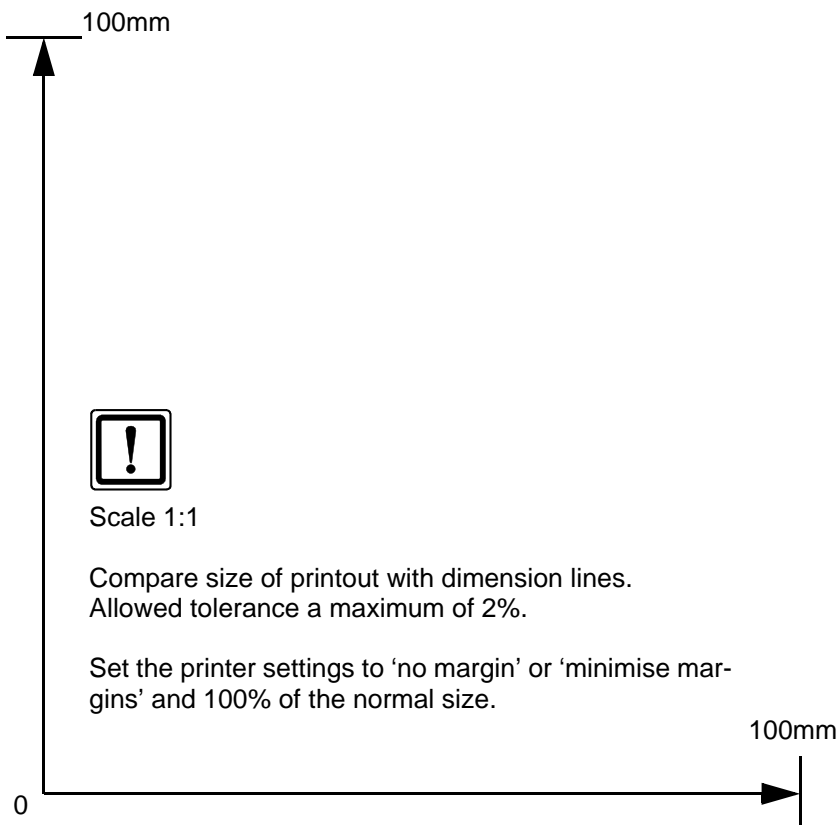
Only use manufacturer-approved coolant. Spray the heater components with anti-corrosion wax (Tectyl 100K).

- **Connect the battery.**
- **Fill and bleed the coolant circuit according to the vehicle manufacturer's specifications.**
- **Set digital timer or program MultiControl RV, teach Telestart transmitter if necessary**
- **Make settings on the A/C control panel according to the 'operating instructions'.**
- **Place the 'Switch off parking heater before refuelling' caution label near the filler neck.**
- **For initial startup and function check, please see installation instructions.**





Fuel Standpipe Template



Operation of Manual A/C / Digital Timer

Please remove page and add to the vehicle operating instructions.

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

Engine pre-heating settings

Note:

We recommend matching the heating time to the driving time.

Heating time = driving time

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:



Settings for engine pre-heating

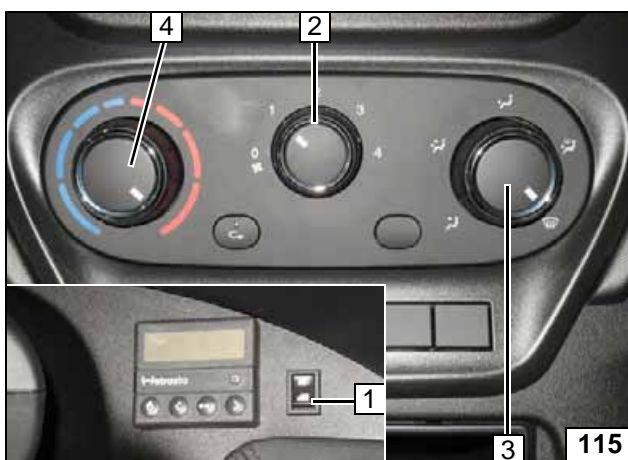
- 1 Dial for engine pre-heating
- 2 Set fan to level '1', or max. '2'
- 3 Air outlet to windscreen
- 4 Set temperature to 'max.'

Cab heating settings

Note:

Ensure that the vehicle battery is supplied with sufficient charging current in continuous heating mode.

Before parking the vehicle, make the following settings:



Settings for cab heating

- 1 Dial for cab heating
- 2 Fan level as desired
- 3 Air outlet as desired
- 4 Temperature as desired

The settings for continuous heating can be varied according to requirements when the high-voltage system is supplied with 220V.



Manual AC



Manual AC

Operation of Manual A/C / MultiControl RV

Please remove page and add to the vehicle operating instructions.

Passenger compartment monitoring, if installed, must be deactivated in addition to the vehicle settings for the heating operation.

For instructions on deactivation, please refer to the operating instructions of the vehicle.

Note:

Program the switch-on time as per the provided operating instructions when using the MultiControl.

Engine pre-heating settings

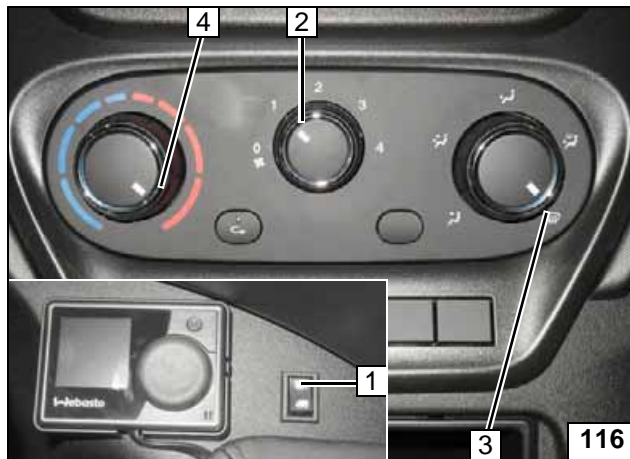
Note:

We recommend matching the heating time to the driving time.

Heating time = driving time

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:



Settings for engine pre-heating

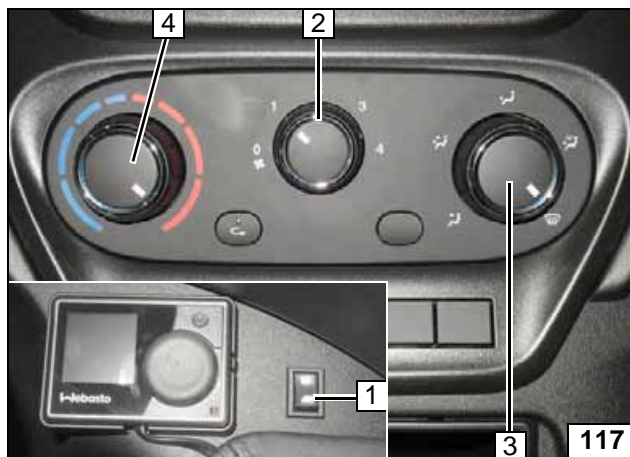
- 1 Dial for engine pre-heating
- 2 Set fan to level '1', or max. '2'
- 3 Air outlet to windscreen
- 4 Set temperature to 'max.'

Cab heating settings

Note:

Ensure that the vehicle battery is supplied with sufficient charging current in continuous heating mode.

Before parking the vehicle, make the following settings:



Settings for cab heating

- 1 Dial for cab heating
- 2 Fan level as desired
- 3 Air outlet as desired
- 4 Temperature as desired

The settings for continuous heating can be varied according to requirements when the high-voltage system is supplied with 220V.



Manual AC



Manual AC

Operation of Automatic A/C / Digital Timer

Please remove page and add to the vehicle operating instructions.

Passenger compartment monitoring, if installed, must be deactivated in addition to the vehicle settings for the heating operation.

For instructions on deactivation, please refer to the operating instructions of the vehicle.

Engine pre-heating settings

Note:

We recommend matching the heating time to the driving time.

Heating time = driving time

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:



Settings for engine pre-heating

Presetting the fan speed is not necessary, it will automatically be set to level 2 to 3.

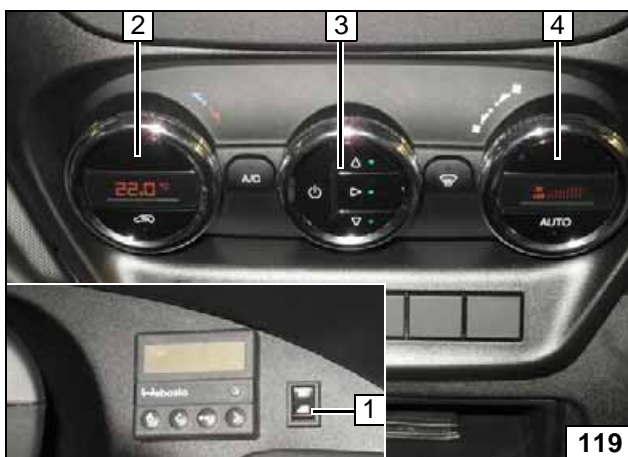
- 1 Dial for engine pre-heating
- 2 Set temperature to 'HI'
- 3 Air outlet to windscreen

Cab heating settings

Note:

Ensure that the vehicle battery is supplied with sufficient charging current in continuous heating mode.

Before parking the vehicle, make the following settings:



Settings for cab heating

1. Dial 1 for cab heating.
2. Switch on parking heater with heater control.
3. Turn the fan speed dial once (the A/C control panel is activated).
4. The following settings are possible now:

- 2 Air outlet as desired
- 3 Temperature as desired
- 4 Fan speed as desired

The settings for continuous heating can be varied according to requirements when the high-voltage system is supplied with 220V.



**Automat-
ic air-con-
ditioning**



**Automat-
ic air-con-
ditioning**

Operation of Automatic A/C / MultiControl RV

Please remove page and add to the vehicle operating instructions.

Passenger compartment monitoring, if installed, must be deactivated in addition to the vehicle settings for the heating operation.

For instructions on deactivation, please refer to the operating instructions of the vehicle.

Note:

Program the switch-on time as per the provided operating instructions when using the MultiControl.

Engine pre-heating settings

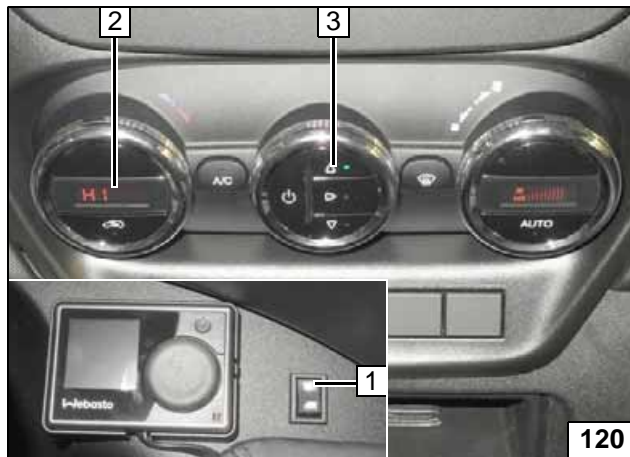
Note:

We recommend matching the heating time to the driving time.

Heating time = driving time

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:



Settings for engine pre-heating

Presetting the fan speed is not necessary, it will automatically be set to level 2 to 3.

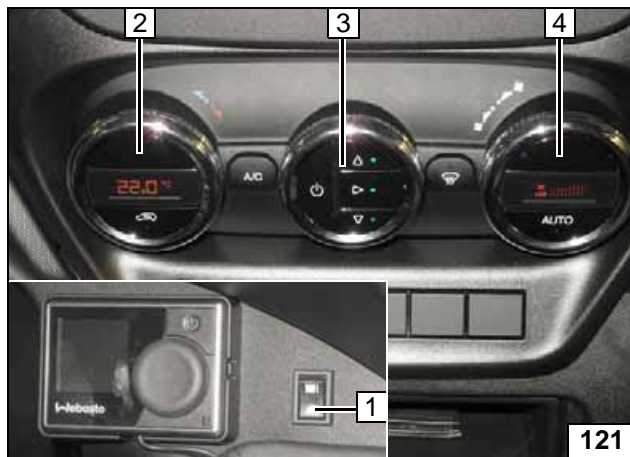
- 1 Dial for engine pre-heating
- 2 Set temperature to 'HI'
- 3 Air outlet to windscreen

Cab heating settings

Note:

Ensure that the vehicle battery is supplied with sufficient charging current in continuous heating mode.

Before parking the vehicle, make the following settings:



Settings for cab heating

1. Dial 1 for cab heating.
2. Switch on parking heater with heater control.
3. Turn the fan speed dial once (the A/C control panel is activated).
4. The following settings are possible now:

- 2 Air outlet as desired
- 3 Temperature as desired
- 4 Fan speed as desired

The settings for continuous heating can be varied according to requirements when the high-voltage system is supplied with 220V.



Automatic air-conditioning



Automatic air-conditioning