

Air Heater Unit



Air Top 2000 ST D 12V Auxiliary Heating

Air Top 2000 ST D 24V Auxiliary Heating

e1

*2001/56*0022

Mitsubishi Fuso Canter Double Cab

Diesel

From model year 2006

For left-hand drive vehicles only



WARNING!

Hazard warning:

Incorrect installation or repair of Webasto heating systems may cause a fire or result in the emission of carbon monoxide, which can be fatal. Serious or fatal injuries can be caused as a result.

Specialist company training, technical documentation, specialized tools and equipment are required to install and repair Webasto heating and cooling systems.

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 warning instructions.

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

Mitsubishi Fuso Canter Double Cab

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Validity

Manufacturer	Model	Type	ABE
Mitsubishi	Canter	FB83	L630
Mitsubishi	Canter	FE74	L631
Mitsubishi	Canter	FE84	L632

Foreword

These installation instructions apply to Mitsubishi Fuso Canter Double Cab vehicles with Diesel engines from model year 2006 and later, assuming technical modifications to the vehicle do not affect installation, any liability claims excluded.

Vehicles and equipment variants, which are not listed in these installation instructions, have not been tested. Installation according to these installation instructions may, however, be possible. Depending on the vehicle version and equipment, modifications may be necessary during installation with respect to these installation instructions.

However, where this is the case the stipulations in the "installation instructions" and "operating and maintenance instructions" for the *Air Top 2000 ST* should be observed.

The installation location of operating controls as well as the placement of the air duct parts should be confirmed with the end customer before installation.

WARNING!

Original vehicle mounting components and/or parts for crash safety may not be changed for the hot air and ventilation ducts.

Mitsubishi Fuso Canter Double Cab

Heater units

Amount	Description	Order No.:
1	Basic scope of delivery <i>Air Top 2000 ST 12V</i> Diesel	9008321C
1	Basic scope of delivery <i>Air Top 2000 ST 24V</i> Diesel	9008319C
1	Installation kit for Mitsubishi Fuso Canter Double Cab Diesel	1311124A

General Instructions

Installation should be carried out according to the general, standard rules of technology. Unless specified otherwise, fasten hoses, lines and cable harnesses to original vehicle lines and cable harnesses using cable clips.

Sharp edges should be fitted with edge protectors (split open plastic hose).

Spray unfinished body areas, such as for example bore holes, with anti-corrosion wax (Tectyl 100K, Order No. 111329)!

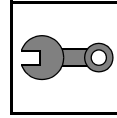
Special Tools

- Torque spanner for 2.0 - 10 Nm
- Levelling tool (Webasto ID number: 82229A)

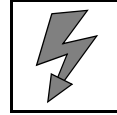
Explanatory Notes on the Document

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

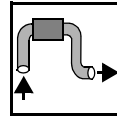
Mechanical work



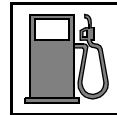
Electrics



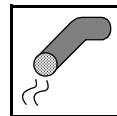
Heizluftsystem



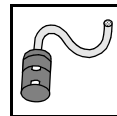
Fuel connection



Exhaust system



Combustion air



Special features are highlighted using the following symbols:



Specific risk of injury or fatal accidents



Specific risk of damage to components



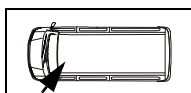
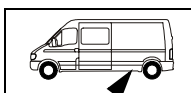
Specific risk of fire or explosion



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



Reference to a special technical feature

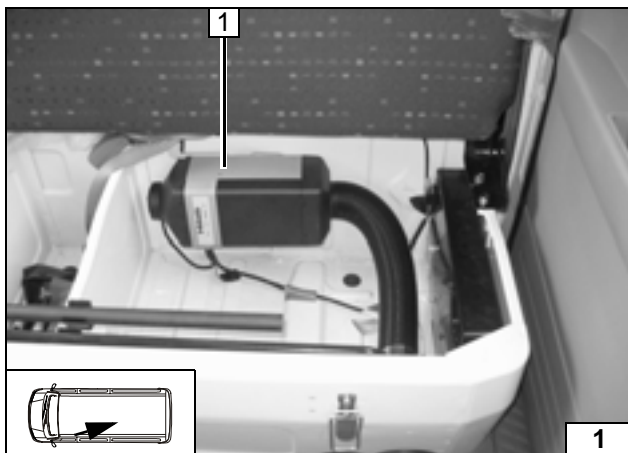


The arrow in the vehicle icon indicates the position on the vehicle and the viewing angle

Preliminary Work

WARNING!

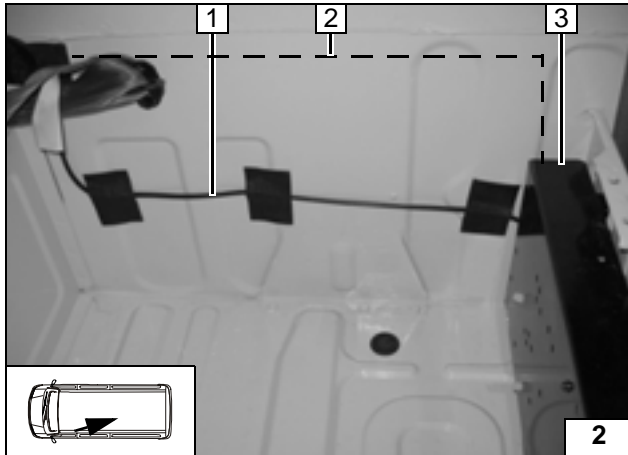
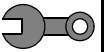
- Disconnect the battery.
- Copy the factory number from the original type label to the duplicate type label.
- Remove years that do not apply from the duplicate label.
- Attach the duplicate label (type label) in the appropriate place.
- Open the tank cap, ventilate the tank.
- Close the tank cap again.
- Completely remove the rear seat
- Remove the plastic panels from the front and back floorboards
- Remove the front and back covers for the right-side entry
- Remove the glove compartment
- Remove fuse and relay box.



Heater Unit Installation Location

- 1 Heater unit

Installation
location



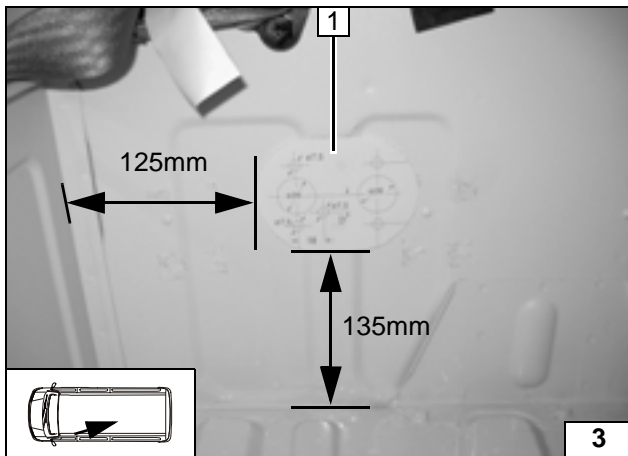
Preparing the Installation Location

On vehicles with the control **3** in the seat box, use tape to place the cable harness **1** as shown in the illustration.

2 New position for cable harness



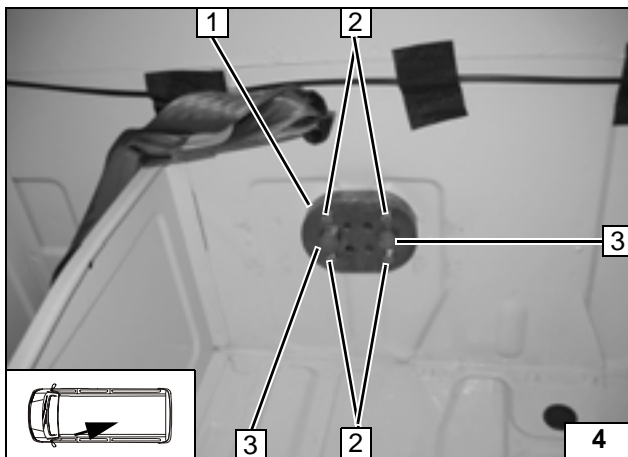
Preparing the installation location



Cut template **1** out of the general installation instructions and position according to the illustration, transfer the hole image and drill the holes according to the template.



Copying the hole image

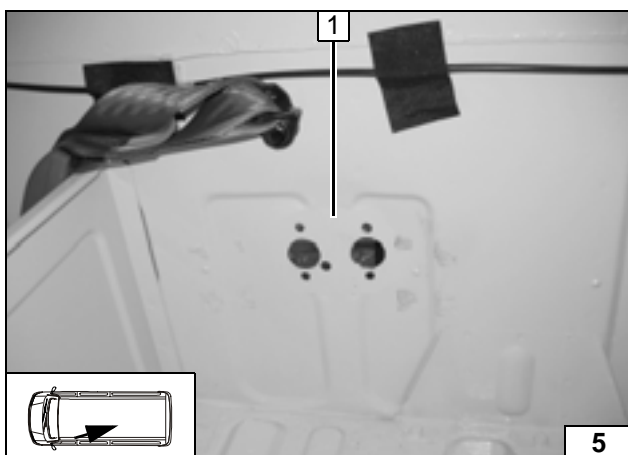


After levelling, seal holes and any chips from corrosion!

- 1** Levelling tool
- 2** M6x20 bolt for positioning [4x]
- 3** SW22 bolt for levelling [2x]

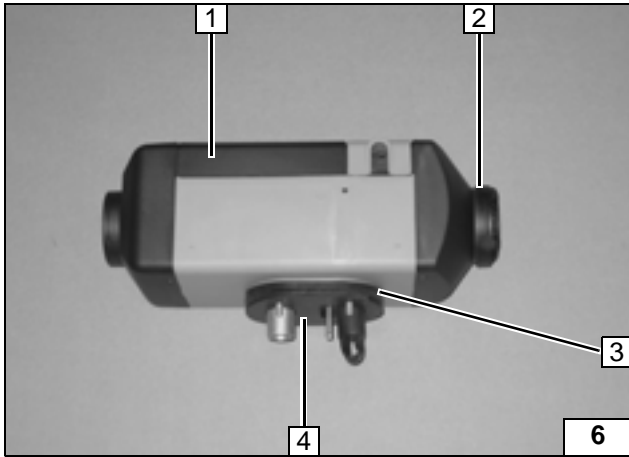
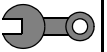


Level the sealing surface



1 Levelled surface

Levelling the sealing surface



Preparing the Heater Unit

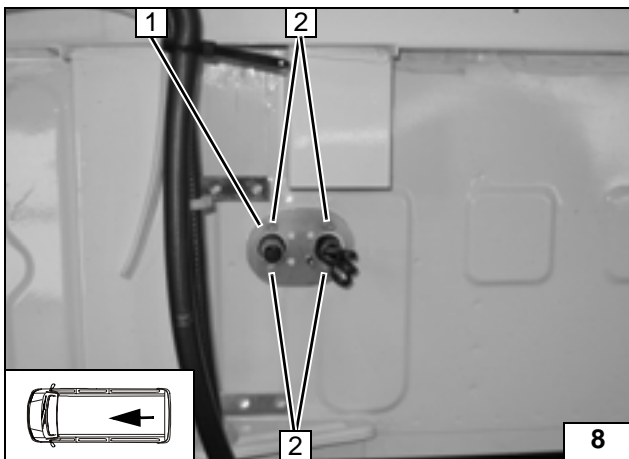
- 1 Heater unit
- 2 Cover on air suction
- 3 Sealant
- 4 6mm spacer disc

Preassembling the heater unit



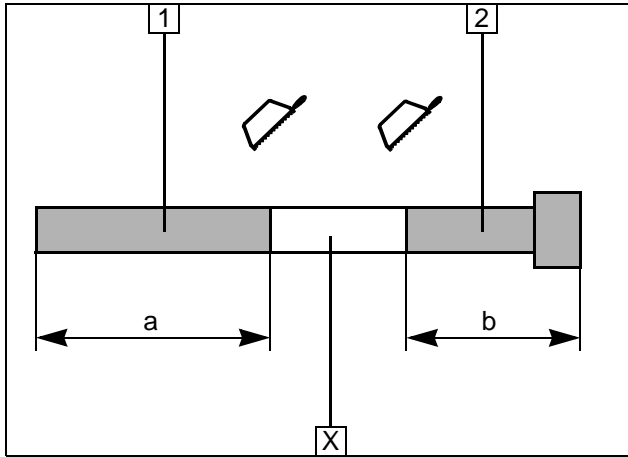
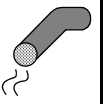
Installing the Heater Unit

Assembling the heater unit



- 1 Assembly plate
- 2 M6 nuts [4x]

Assembling the heater unit

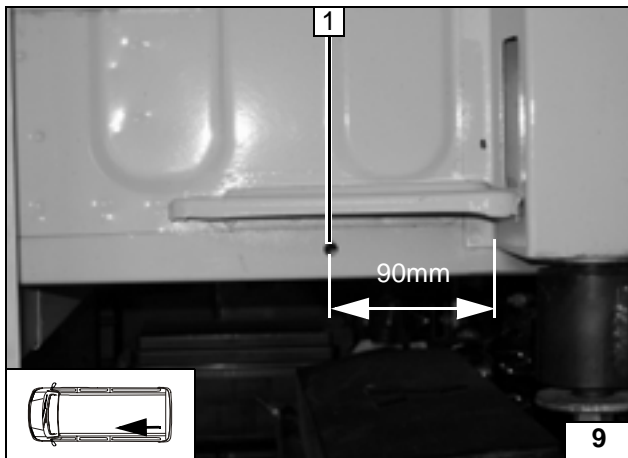


Exhaust System

- 1 Exhaust pipe
a = 720mm
- 2 Exhaust end section
b = 280mm

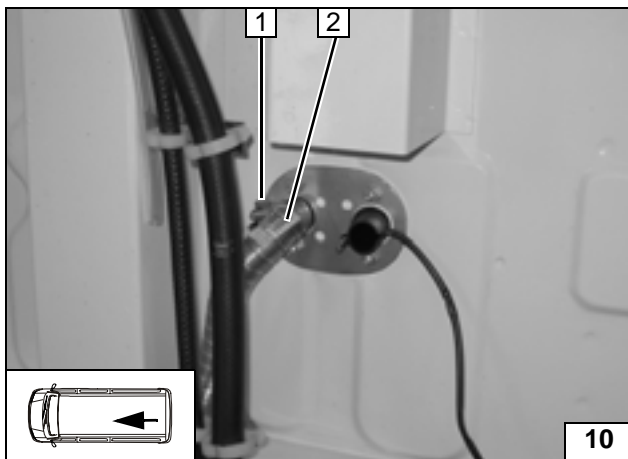
Dispose of section X

Preparing the exhaust pipe



- 1 Ø 7mm bore hole

Copying the hole image

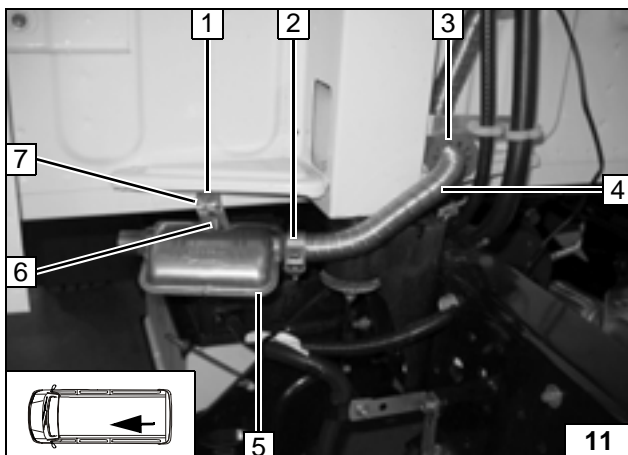


Ensure sufficient distance from adjacent components.

- 1 Hose clamp
- 2 Exhaust pipe

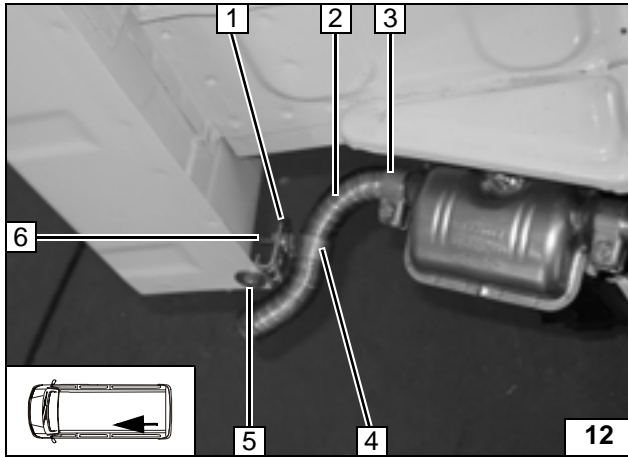
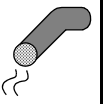


Assembling the exhaust pipe



- 1 M6x20 bolt, flanged nut M6
- 2 Hose clamp
- 3 Red (rt) rubber profile with groove
- 4 Exhaust pipe
- 5 Exhaust silencer
- 6 M6x20 bolt, flanged nut M6
- 7 Angle bracket

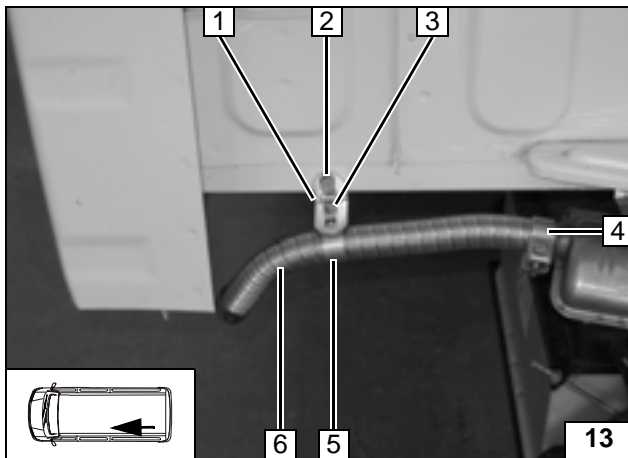
Assembling the exhaust pipe



Only for narrow double-cabs

- 1 Angle bracket
- 2 Exhaust end section
- 3 Hose clamp
- 4 tube clamp
- 5 M6x20 bolt, body washer, Ø 7mm hole, M6 flanged nut
- 6 M6x20 bolt, flanged nut M6

Assembling the exhaust end section

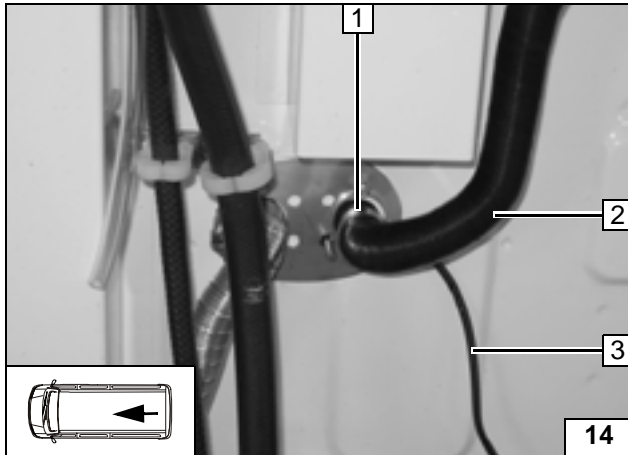
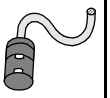


Only for wide double-cabs

- 1 Angle bracket
- 2 M6x20 bolt, body washer, Ø 7mm hole, M6 flanged nut
- 3 M6x20 bolt, flanged nut M6
- 4 Hose clamp
- 5 tube clamp
- 6 Exhaust end section

Assembling the exhaust end section



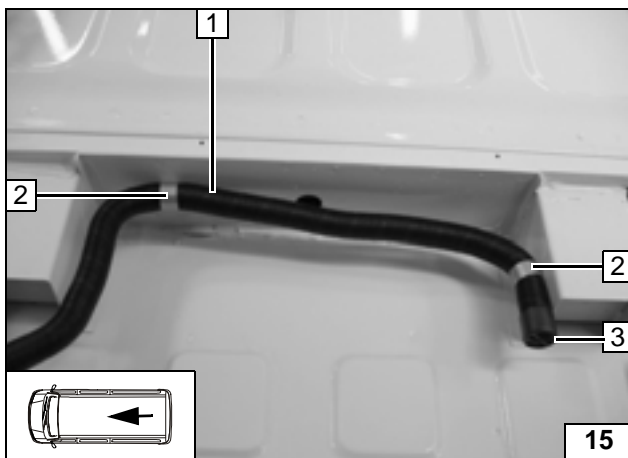


Combustion Air

- 1 Ø 27 mm hose clamp
- 2 Combustion air intake pipe
- 3 Metering pump line in the intake hose nozzle slot



Assembling the vacuum line



- 1 Combustion air intake pipe
- 2 Tube clamps [2x], Ø 4.5mm holes [2x], self-tapping screws [4x]
- 3 Protective cap

Placing the vacuum line



Fuel Connection

CAUTION!

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

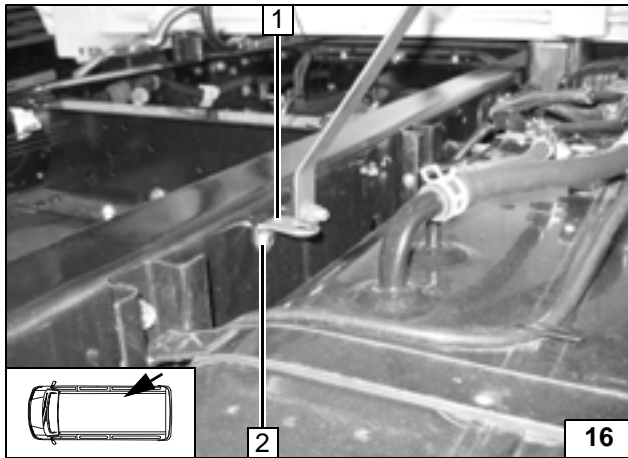
Catch any fuel running off with an appropriate container.

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

Fit the fuel line and cable harness with edge protectors around sharp edges.

WARNING!

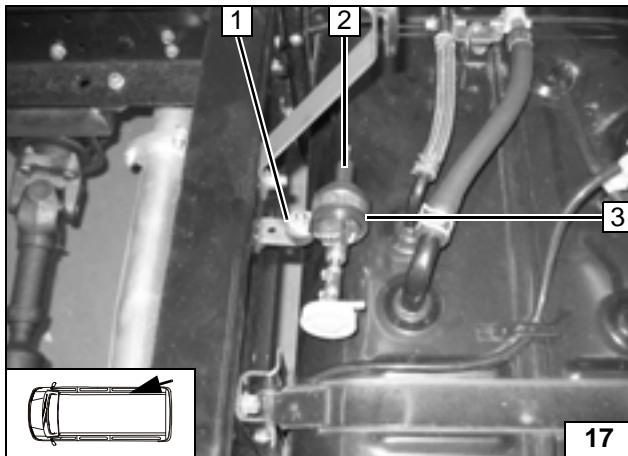
The fuel line and cable harness to the metering pump should be installed based on the cable harness installation diagram.



Note the installation position of the metering pump, see the Installation Instructions. Installation location is to the right next to the vehicle tank.

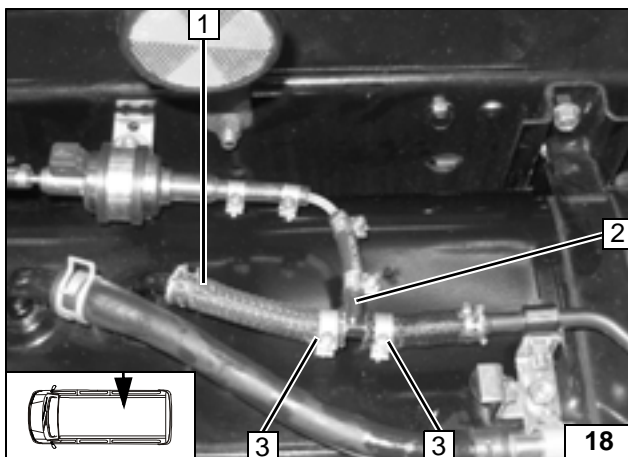
- 1 Angle bracket
- 2 M6x20 bolt, existing hole, body washer, M6 flanged nut

Metering pump installation location



- 1 Silentblock, flanged nut [2x]
- 2 Metering pump
- 3 Rubberized tube clamp

Assembling the metering pump

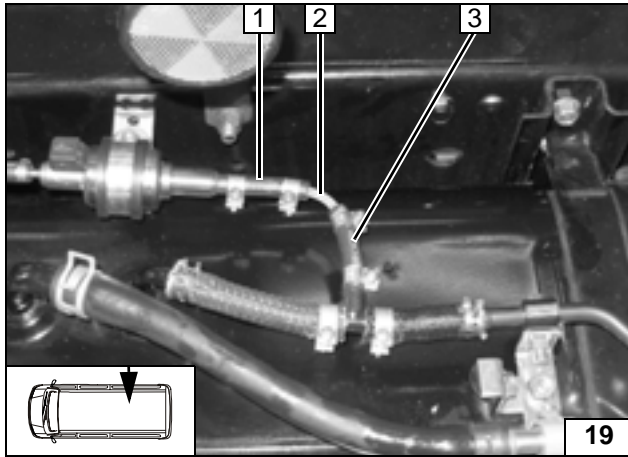


Separate the fuel return line 1 in the middle and shorten by about 20 mm.

- 2 Fuel extractor 10x5x10
- 3 Ø14 mm clamps [2x]

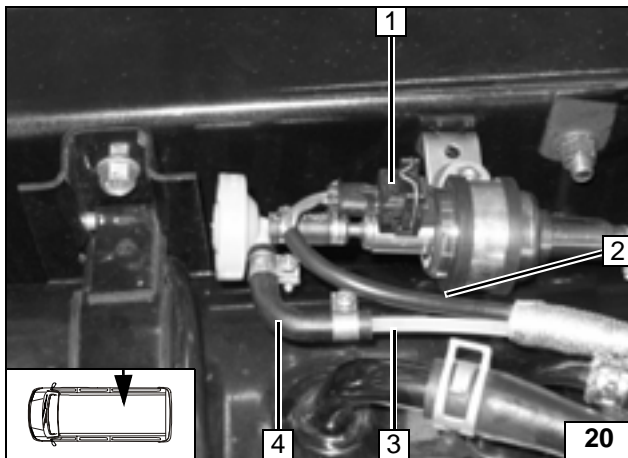


Inserting the fuel extractor



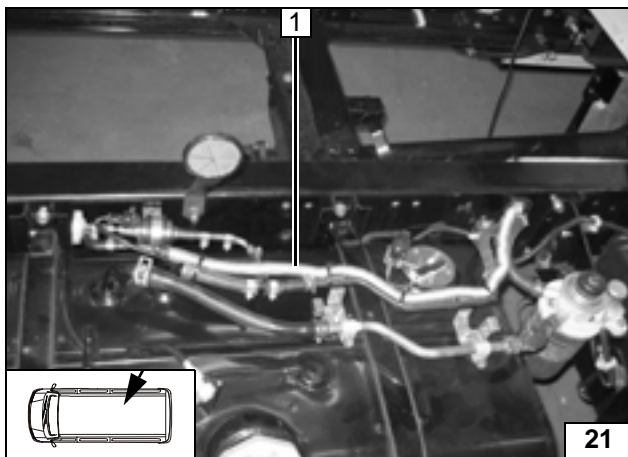
- 1 Hose section, Ø 10 mm hose clamps [2x]
- 2 Mecanyl fuel line
- 3 Hose section, Ø 10 mm hose clamps [2x]

Connect-
ing to the
metering
pump



- 1 Metering pump cable harness connector
- 2 Metering pump cable harness
- 3 Mecanyl fuel line
- 4 90° moulded hose, hose clamps [2x]

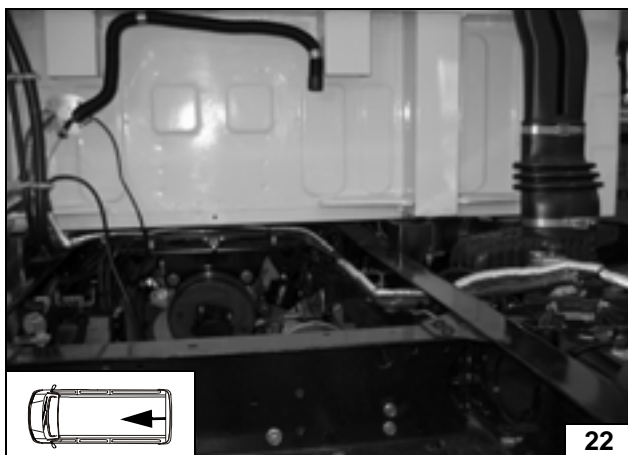
Connect-
ing to the
metering
pump



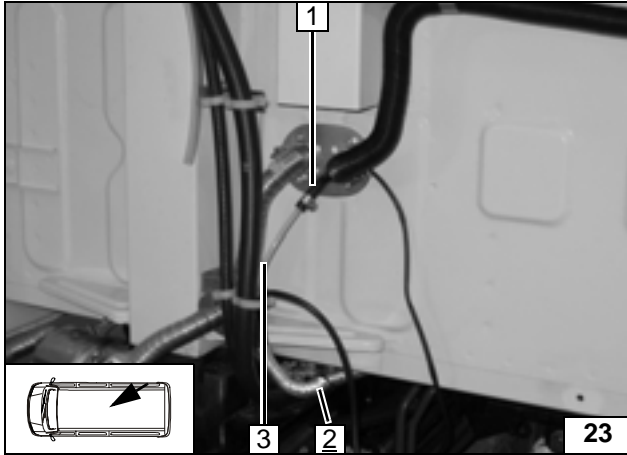
Pull the Mecanyl fuel pipe together with the metering pump cable harness in the heat protection hose 1, run along the original vehicle fuel lines to the installation location of the heater unit and fasten with cable clips.



Install-
ing
lines

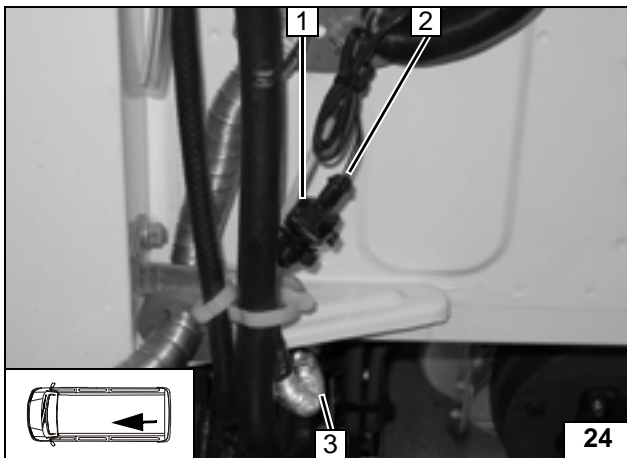


Install-
ing
lines



- 1 90° moulded hose, hose clamps [2x]
- 2 Heat protection hose
- 3 Mecanyl fuel line

Connecting to the heater unit

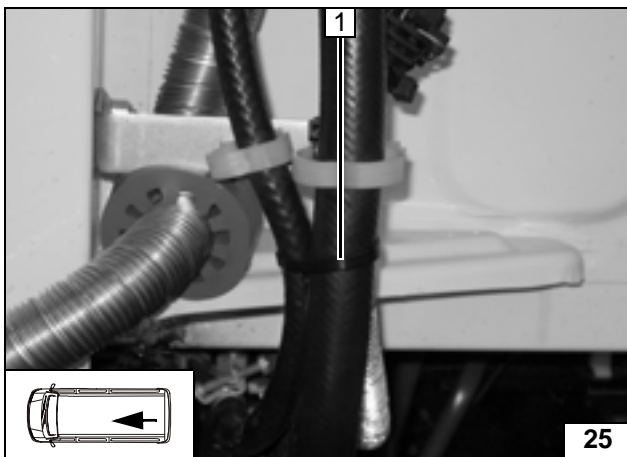


Cut the cable harness metering pump into sections and assemble the connector 1

- 2 Metering pump line from the heater unit
- 2 Heat protection hose



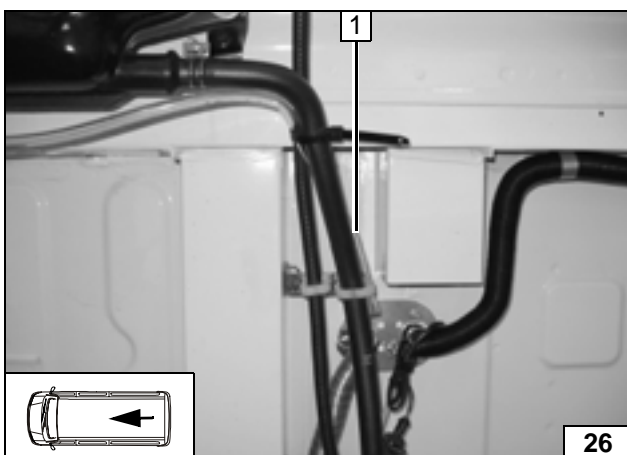
Metering pump cable harness connection



Fasten the metering pump cable harness to original vehicle water hoses with the cable clip 1.



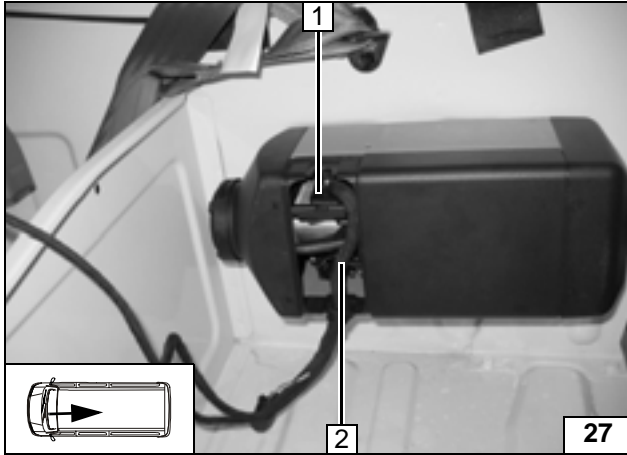
Fastening the lines



Run hose from the expansion tank overflow 1 according to the illustration.



Installing lines

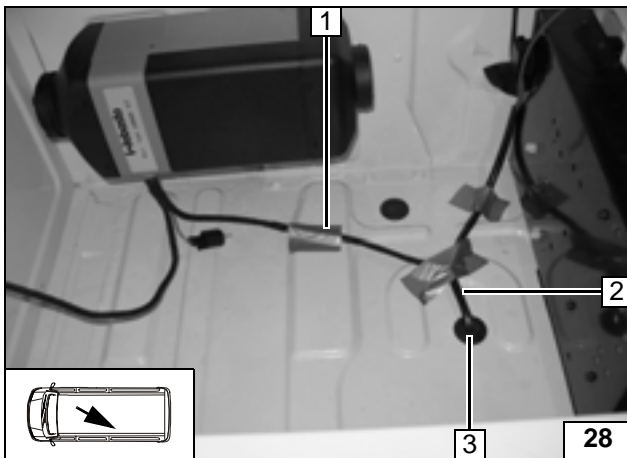


Electrical Connections

- 1 Heater unit cable harness connector
- 2 Heater unit cable harness

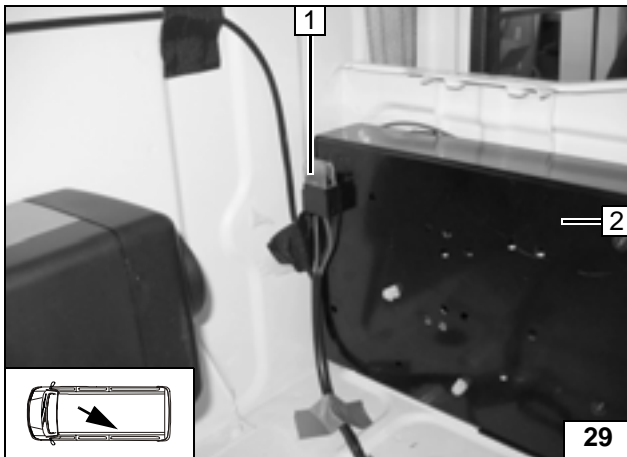


Assembling the cable harness



- 1 Assembly tape
- 2 Heater unit power supply cable
- 3 Protective rubber sleeve

Installing the cable harness



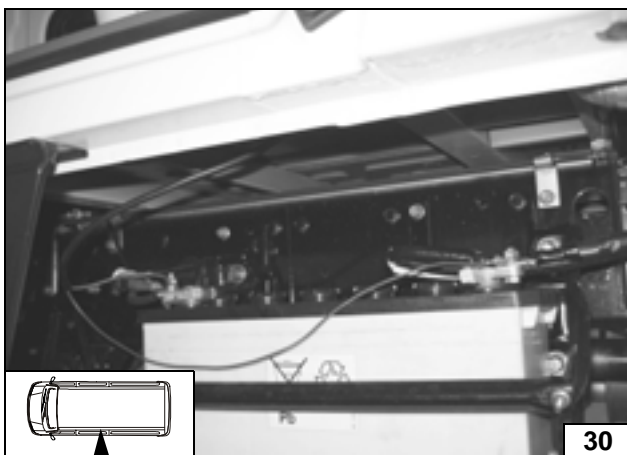
Connect according to the circuit diagram with the flat spring contacts.

- 1 F1 fuse holder, retaining plate, M3x8 countersunk screw, existing hole, body washer, M3 nut
- 2 Controller installation box



Assembling the fuse holder

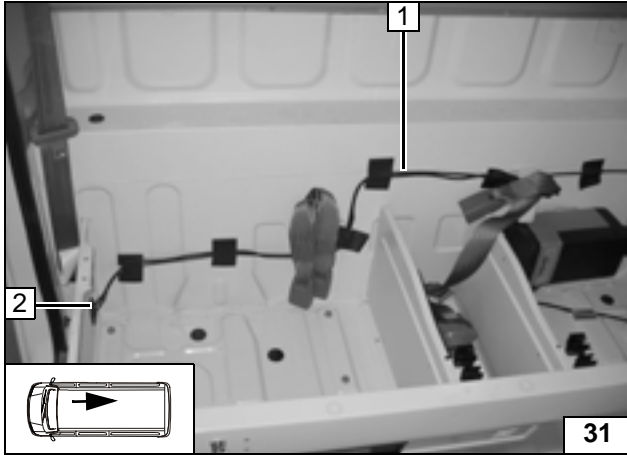
In vehicles without an installation box, assemble the fuse holder on an existing hole.



Connect according to the circuit diagram with the cable sockets contacts.

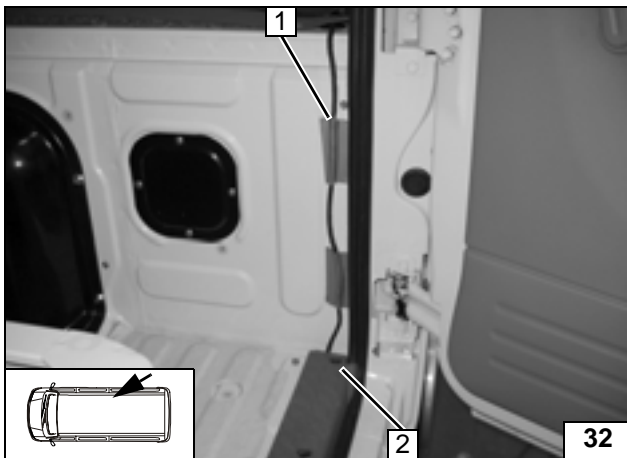


Connecting to the battery



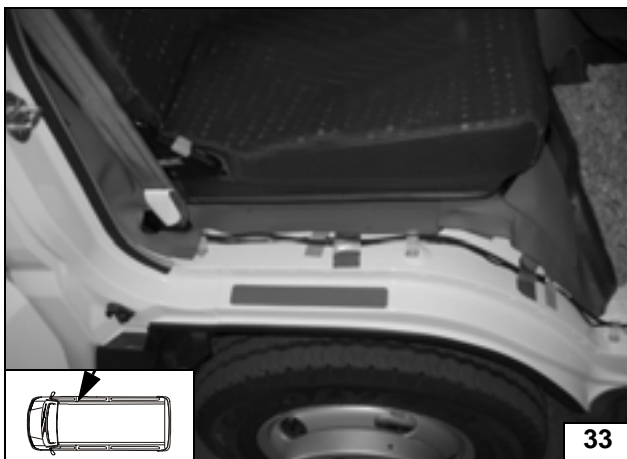
- 1 Combination clock cable harness on existing line
- 2 Protective rubber sleeve

Installing the clock cable harness



- 1 Combination clock cable harness fastened with assembly tape
- 2 Cover for back entry

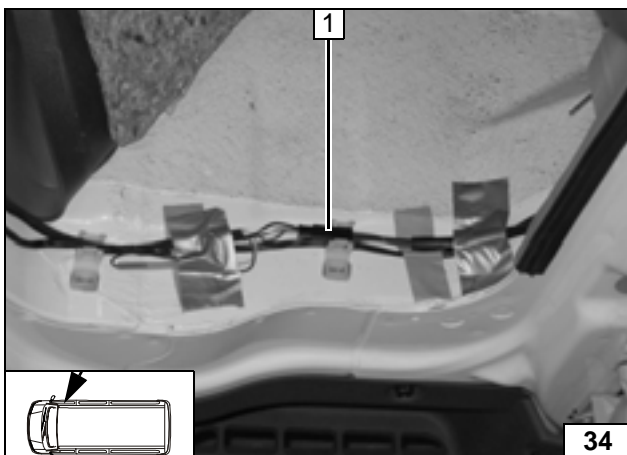
Installing the clock cable harness



Run combination clock cable harness along original vehicle line



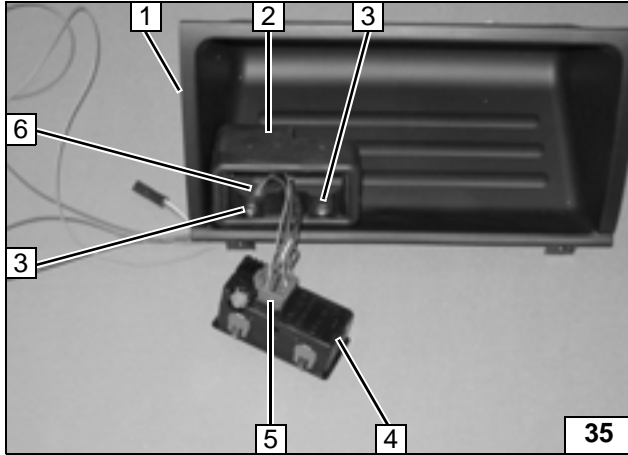
Installing the clock cable harness



Put together the clock cable harness 1 extension and run to the to the clock installation location.



Installing the clock cable harness

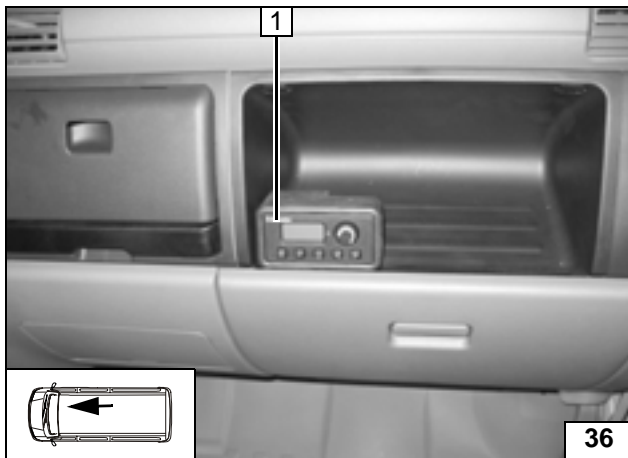


Clock

- 1 Front right storage compartment
- 2 Housing
- 3 Self-tapping screws 5.5x13 [2x]
- 4 Clock
- 5 Connector with cable harness
- 6 Ø 9mm bore hole in the storage compartment



Assembling the clock

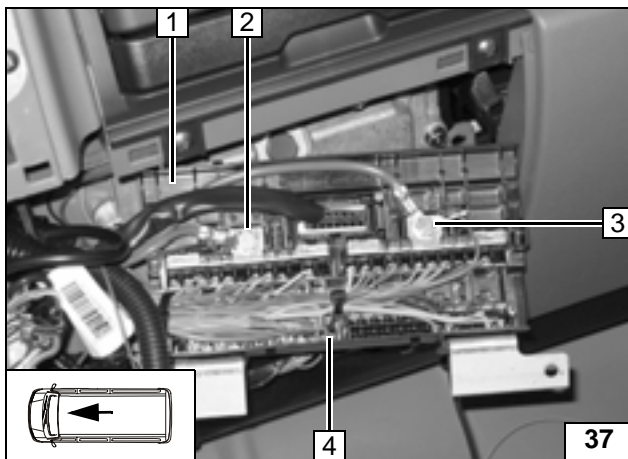


Run the clock power supply lines to the central electrics and connect the clock with the clock extension cable.

- 4 Clock



Assembling the clock

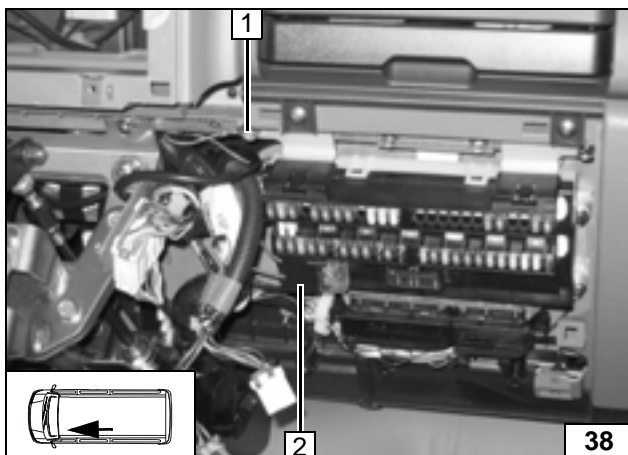


Connect clock power supply according to the circuit diagram.

- 1 central electrics
- 2 Connect +15 terminal with cable socket
- 3 Connect +30 terminal with cable socket
- 4 Connect +58 with bl butt connector

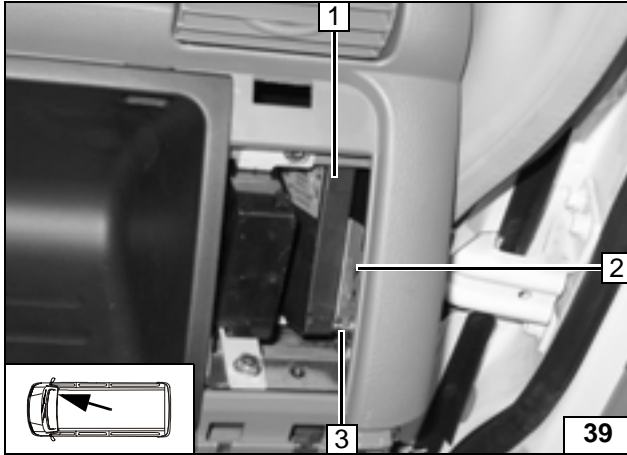


Connect clock power supply



- 1 Connect -31 terminal with cable socket
- 2 F2 fuse holder, retaining plate, self-tapping screw with countersunk head

Connect clock power supply

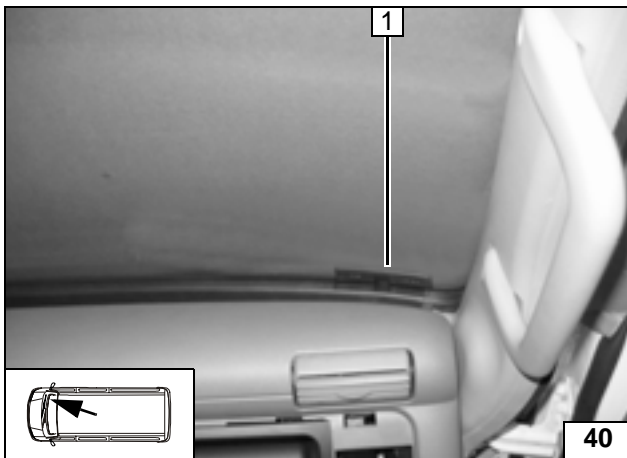


Remote Start Option

- 1 Receiver
- 2 Remote start bracket, drill open hole to $\varnothing 7$ mm.
- 3 Original vehicle thread, M6 flanged nut



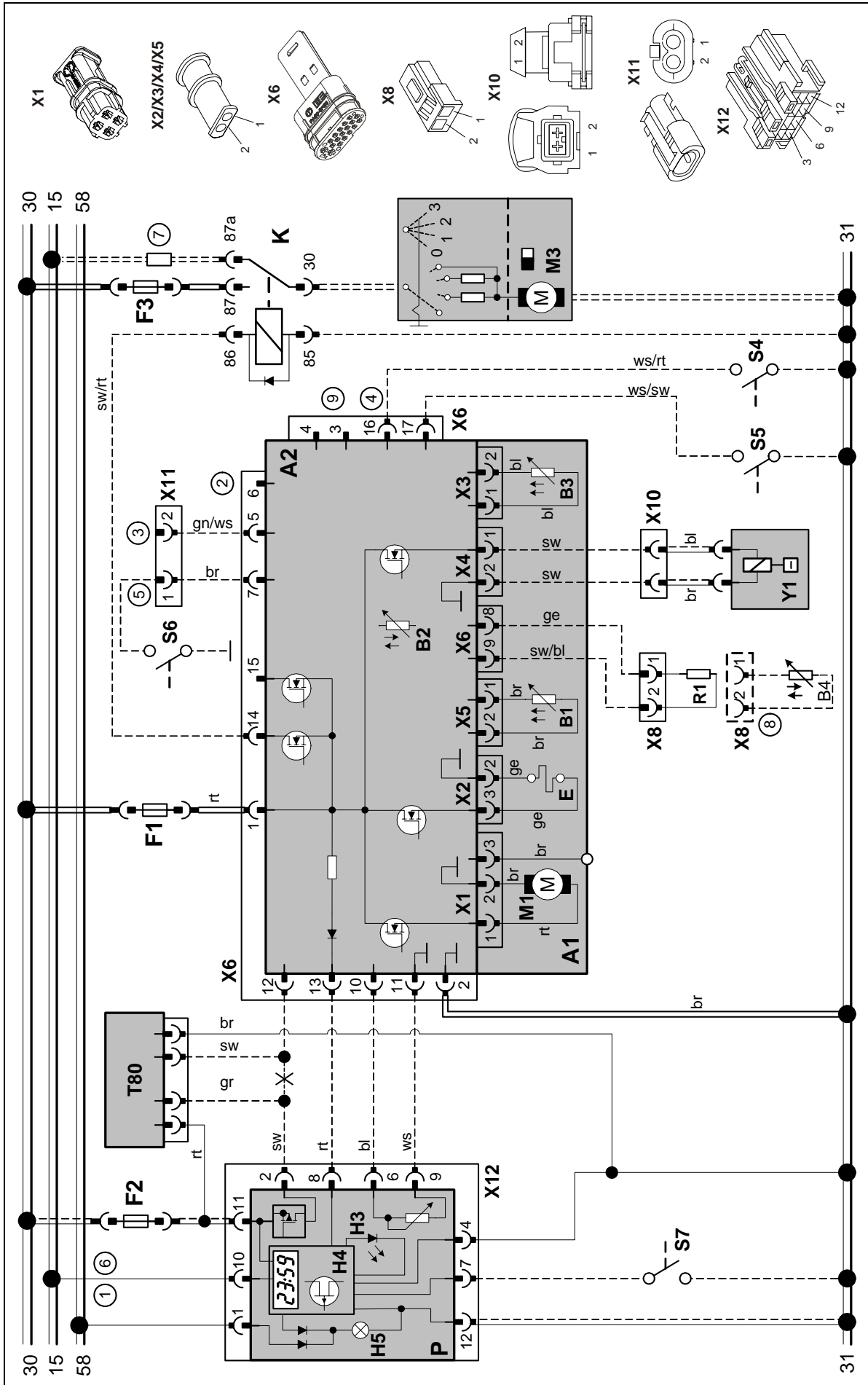
Assembling the receiver



- 1 Antenna

Assembling the antenna

Mitsubishi Fuso Canter Double Cab



Mitsubishi Fuso Canter Double Cab



①	<p>Positive terminal (15/75) to connection 10: Continuous operation with immediate heating as long as the ignition is on.</p> <p>Without positive to connection 10: The heating time can be programmed variables (10 minutes to 120 minutes), the default setting is 120 minutes.</p>
②	K line diagnosis
③	W bus
④	Input pin (pin 16 / connector X6, cable color on the cable harness: wht/red): "Ventilation" (the blower rpm depends on the setting on the operating control)
⑤	CO ₂ adjustment (see repair manual)
⑥	<p>NOTE: If the connection is made to terminal 30, it will be possible to have constant heating if the ignition is switched off. In this case there may be no connection to terminal 15/75.</p>
⑦	Fuse present in vehicle
⑧	If an external temperature gauge (B4) is used, then replace the resistance R1 with the temperature gauge (B4).
⑨	Connection only for ADR vehicles
⑩	<p>NOTE: Grey and violet lines necessary for ADR function</p>
⑪	Stop signal for battery separating switch. The stop input (if present) for the separating switch (S2) must be connected to the control pin 15 / connector X6.

Key to
circuit
diagram

Wire colors	
rt	red
gr	grey
sw	black
br	brown
gn	green
bl	blue
ge	yellow
or	orange
vi	purple
ws	white

Wire cross-sections		
	< 7.5 m	7.5 - 15 m
- - - - -	0.5 mm ²	0.75 mm ²
=====	0.75 mm ²	1.0 mm ²
- - - - -	1.0 mm ²	1.5 mm ²
=====	1.5 mm ²	2.5 mm ²
=====	2.5 mm ²	4.0 mm ²
=====	4.0 mm ²	6.0 mm ²

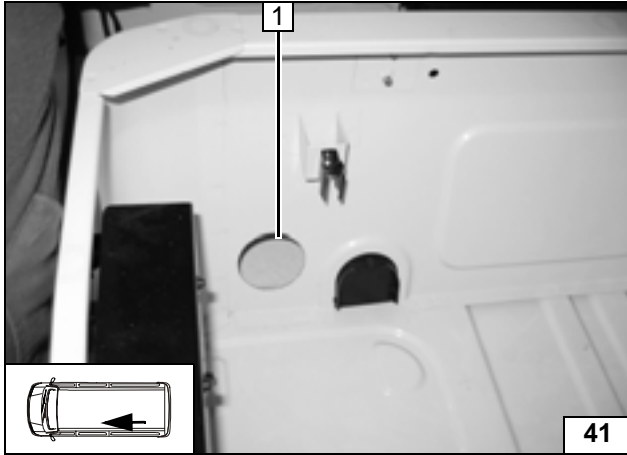
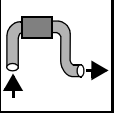
Key to
circuit
diagram

Mitsubishi Fuso Canter Double Cab



Item	Designation	Comment
A1	Heater unit	Air Top 2000 ST
A2	Controller	
B1	Flame detector	only for gasoline equipment
B2	Temperature gauge	Internal
B3	Overheat sensor	Overheat protection
B4	Temperature gauge	External
E	Glow pencil	
F1	Fuse 24V 15A / 12V 20A	Blade-type fuse SAE J 1284
F2	Fuse, 5A	Blade-type fuse SAE J 1284
F3	Fuse max. 15A	Blade-type fuse SAE J 1284
H1	Green LED (at S1)	Operating indicator
H3	Red LED (at P)	Light up immediate heater button, ready indicator, power on control
H4	Heating symbol in the display (at P)	Operating indicator
H5	Lights (at P)	Display and button lights
H6	Lights (min. 1.2 W)	Power on control for the handling device
K	Relay with recovery diode	for vehicle blower
M1	Engine	Fuel and hot air blowers
M3	Engine	Vehicle blower
P	Combination time switch (1531)	Time switch and set value indicator
R1	Resistance 620 Ω	only for internal temperature gauge
S1	Operating control	Set value indicator for switch
S2	1 or 2 pin separating switch	Emergency off switch
S3	Switch	to and for the handling device
S4	Switch	Ventilation
S5	Switch	Peaks sensor
S6	Switch	CO ₂ adjustment (see repair manual)
S7	Button switch	Remote control for immediate heating button
S8	Battery separating switch	
V1	Diode	
V2	Diode	
X1	2-pin plug connection	at A2 (ST B)
X2	2-pin plug connection	at A2 (ST V)
X3	2-pin plug connection	at A2 (ST U)
X4	2-pin plug connection	at A2 (ST Z)
X5	2-pin plug connection	at A2 (ST Y)
X6	2-pin plug connection	at A2 (ST X)
X7	12-pin plug connection	at A2 (ST1)
X8	2-pin plug connection	
X9	4-pin plug connection	at S1
X10	2-pin plug connection	
X11	2-pin plug connection	at Y1
X12	12-pin plug connection	at P
Y1	Metering Pump	
Y2	Solenoid valve	for the handling device

Key to
circuit
diagram

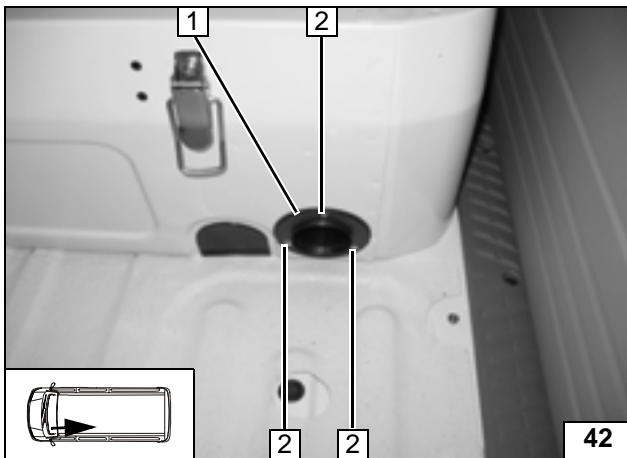


Hot air system

- 1 Ø 60mm bore hole

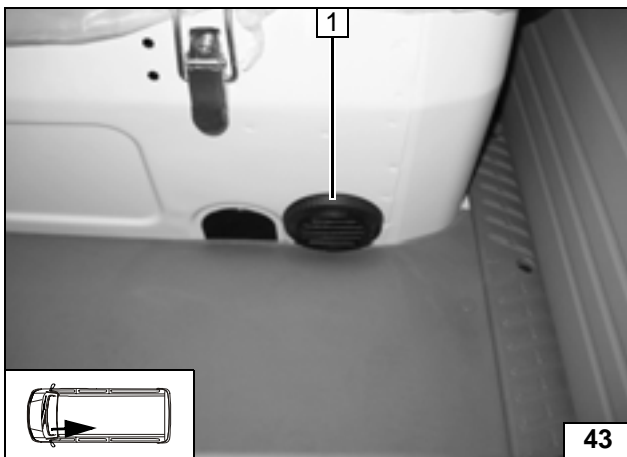


Feed-through to passenger compartment



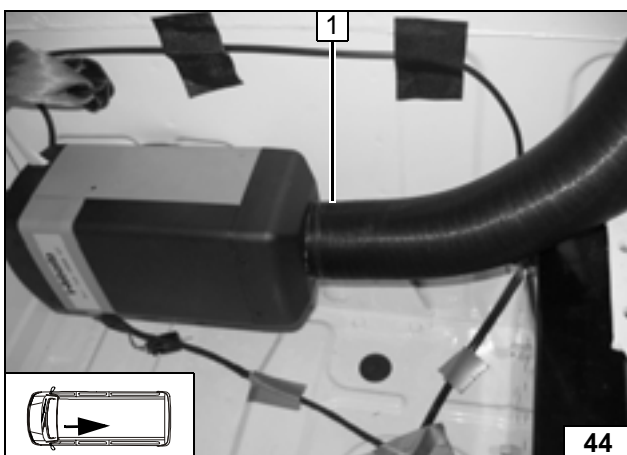
- 1 Dischargers
- 2 M4x8 counter-sunk bolt [3x], Ø 5mm hole [3x], body washer [3x], M4 flanged nut [3x]

Assembling the dischargers



- 1 Discharge grate

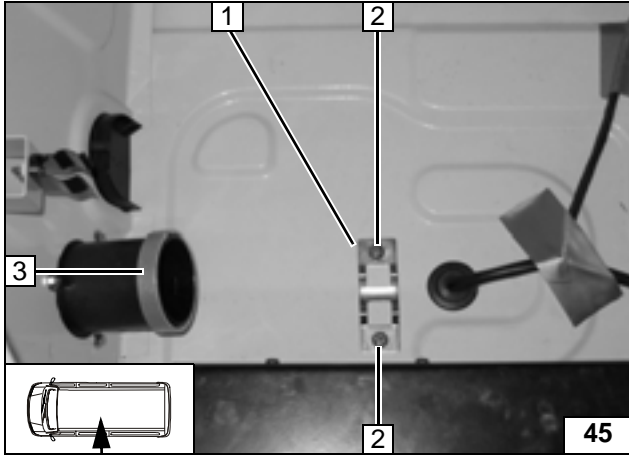
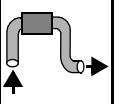
Assembling the discharge grate



- 1 Twist the Ø 60 mm flexible tube, 600 long, onto the heater unit

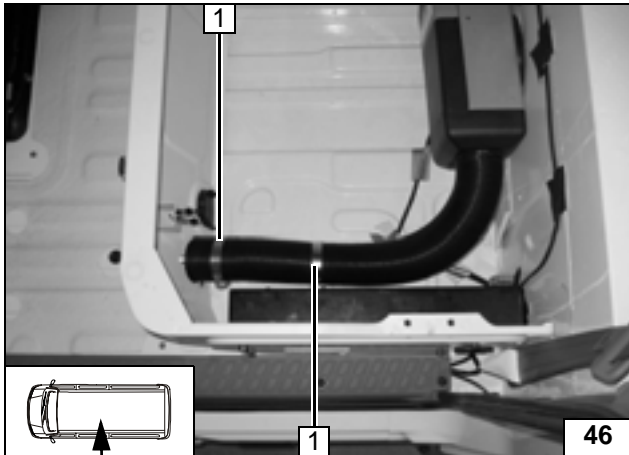
Connecting the flexible tube the heater unit

Mitsubishi Fuso Canter Double Cab



- 1 Console
- 2 Self-tapping screws 5.5x13 [2x]
- 3 Adapter

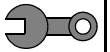
Fastening the flexible tubes



- 1 Ø 50-70mm hose clamps [2x]



Fastening the flexible tubes



Final Work

WARNING!

Reassemble disassembled components in reverse order.

Check that all hose lines, hose, spring band clamps and universal clips, and all electrical connections are securely fastened.

Secure all loose lines using cable clip.

Spray heating unit components with anti-corrosion wax (Tectyl 100K, Order No. 111329).

- Connect battery.
- Set the time switch.
- Check that the air heating operates properly; see operating instructions / installation instructions.
- Attach the "Switch off auxiliary heating before re-fuelling" sticker onto the left side of the B-pillar.



Feel the drive

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