

# Air Heater Unit



**Air Top 2000 ST Air Heater**



## Installation Instructions

### Opel Vivaro

Diesel  
from Model Year 2001  
Left-hand drive vehicle  
not with ESP

Front-passenger double bench seat



#### **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 warnings.

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
Opel	Vivaro	X83	e1 *98 / 14 * 0170 ...
		F7	K830
		E7	L048

Engine type	Engine model	Output in kW	Displacement in cm <sup>3</sup>
F9Q	Diesel	60	1870
F9Q	Diesel	74	1870
M9R	Diesel	66	1995
M9R	Diesel	84	1995
G9U	Diesel	99	2464
G9U	Diesel	107	2464

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

The installation location of a digital timer and summer/winter switch should be confirmed with the end customer before installation.

**Heater Unit/Installation Kit**

Quantity	Description	Order No.:
1	Opel-specific delivery scope of AT 2000 ST 12V D	1311064A

Quantity	Description	Order No.:
1	Installation kit for Air Top 2000 ST with Combination Timer	1312245A

**To be ordered as an option for vehicles with partition wall:**

Quantity	Description	Order No.:
1	Putty for air ducting	1312246A

**To be ordered as an option when using Telestart:**

Note: Telestart only possible in conjunction with combination timer

Quantity	Description	Order No.:
1	Telestart	See price list
1	Y-cable for Telestart/combination timer	1311677A
1	Extension cable (only when using Telestart T100 HTM)	1311816A

**Foreword**

These installation instructions apply to Opel Vivaro Diesel vehicles - for validity, see page 2 - from model year 2001 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 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 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.

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

Spray unfinished body areas, e.g. drilled holes, with anti-corrosion wax (Tectyl 100K, Order No. 111329).

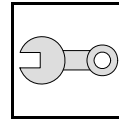
**Special Tools**

- Torque wrench for 2.0 - 10 Nm
- Hole saw, 60 mm dia.
- Stepped drill bit, 26 mm dia.
- Metric thread-setter kit
- Blind rivet tool

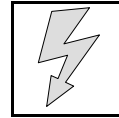
**Explanatory Notes on Document**

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.

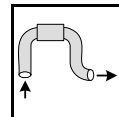
**Mechanical system**



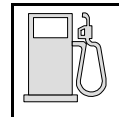
**Electrical system**



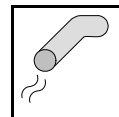
**Heating air**



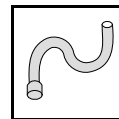
**Fuel**



**Exhaust gas**



**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.

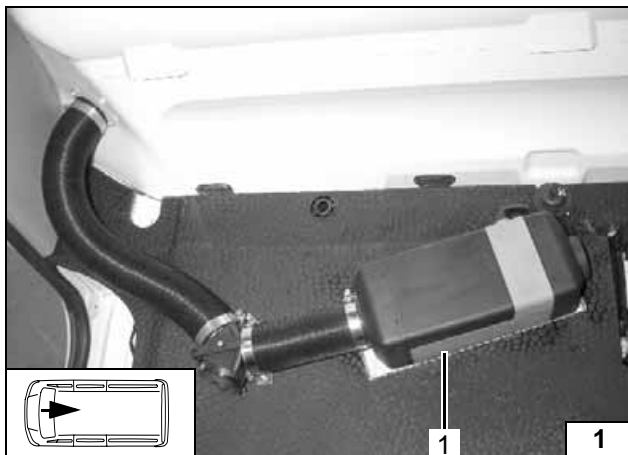
**All dimensions are in mm!**

**Tightening torque of hose clamps = 2.0 + 0.5 Nm!**

## Preliminary Work

### WARNING!

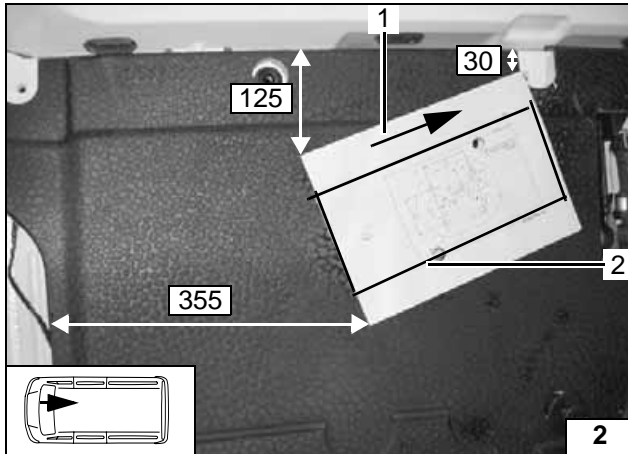
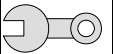
- Open the fuel tank cap, ventilate the tank.
- Close the tank cap again.
- Remove the service door of the battery compartment
- Copy the factory number from the original type label to the duplicate type label.
- Remove years that do not apply from the duplicate label.
- Attach the duplicate label (type label) in the appropriate place.
- Remove the front passenger seat
- Remove the driver's seat
- Remove the left and right-hand door sill trim
- Remove the left-hand A-pillar trim window pillar (when using combination timer or Telestart)
- Remove the interior light (when using combination timer or Telestart)



### Heater unit installation location

1 Heater unit

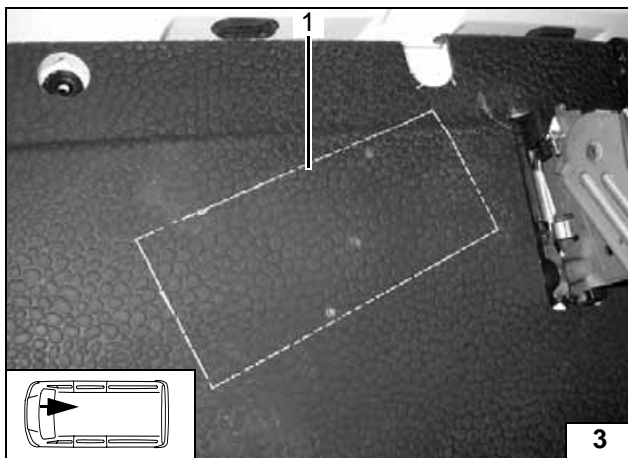
Installation  
location



**Preparing installation location**

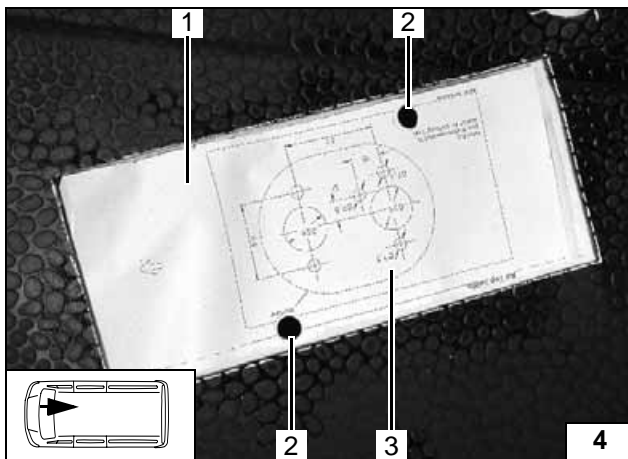
- 1 Template
- 2 Copy cutting edge to insulating mat

Preparing installation location



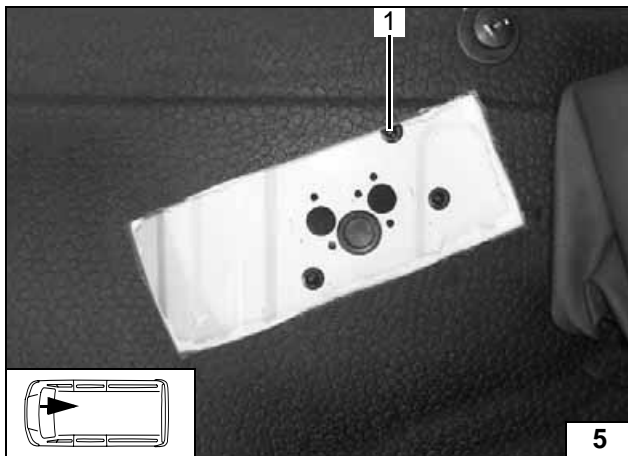
- 1 Cut out within marking

Preparing installation location



- 1 Lay in template
- 2 Align holes
- 3 Copy hole patterns of heater unit

Preparing installation location

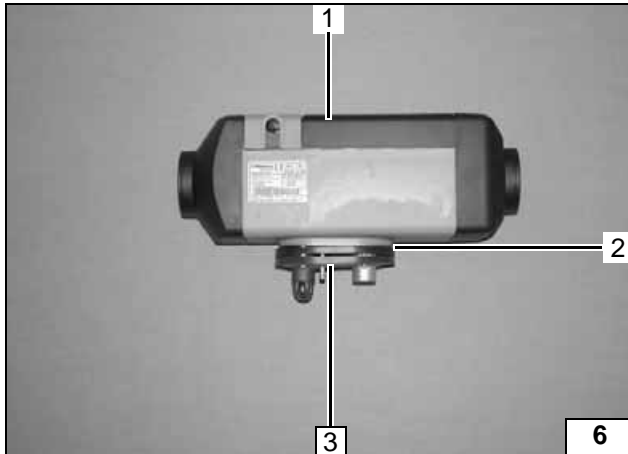
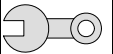


Drill holes according to template.

- 1 Push through cable grommet



Preparing installation location



**Preassembling heater unit**

- 1 Heater unit
- 2 Spacer plate
- 3 Base seal

**Preassem-  
bling  
heater unit**



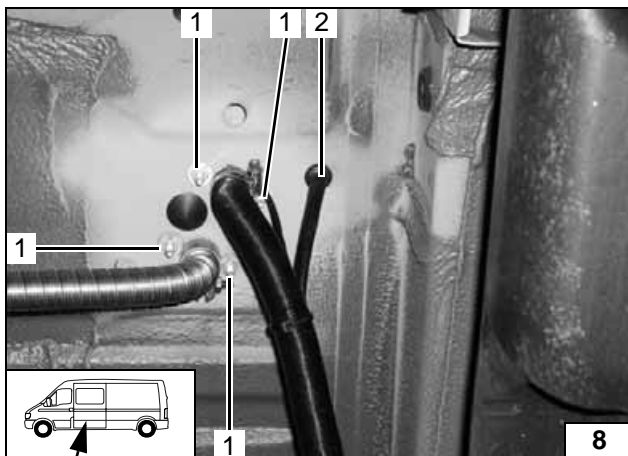
**Installing heater unit**

Route wiring harness of digital timer under floor mat to left-hand A-pillar. Detach fuse holder from wiring harness of power supply and route downward through grommet. Route through wire of metering pump downward.

- 1 Protective grill



**Installing  
heater unit**

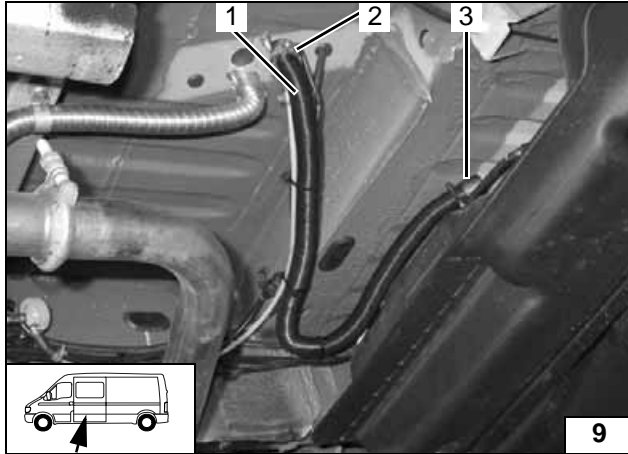
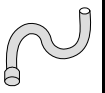


Route wiring harness of power supply **2** to battery box

- 1 Washer, M6 nut [4x each]



**Installing  
heater unit**



### Combustion air

Ensure proper installation position of air intake line, see "Installation Instructions"

- 1 Combustion-air intake pipe
- 2 Hose clamp
- 3 End cap



**Installing combustion-air intake muffler**





## Fuel Connection

### CAUTION!

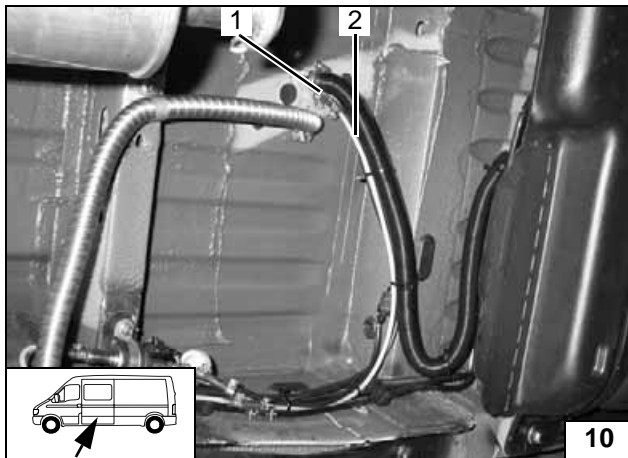
Open the vehicle's fuel tank cap, ventilate the tank and then re-close the tank lock.

Catch any fuel running off with an appropriate container.

Install fuel line and metering-pump wiring harness so that they are protected against stone impact. Unless specified otherwise, always fasten using cable ties. Mount the fuel line and wiring harness with rub protection on sharp edges.

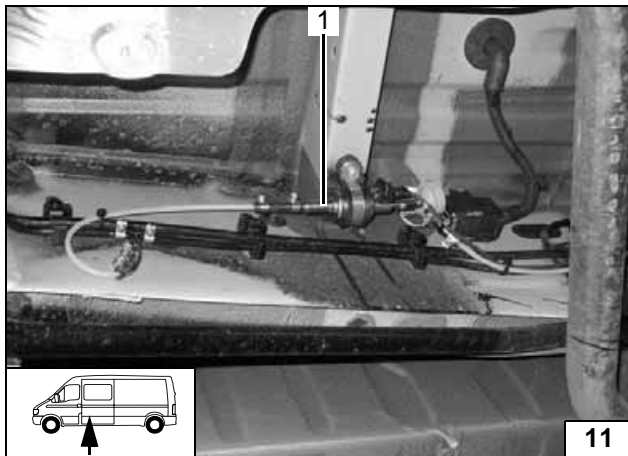
### WARNING!

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



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

Con-  
nection to  
heater unit

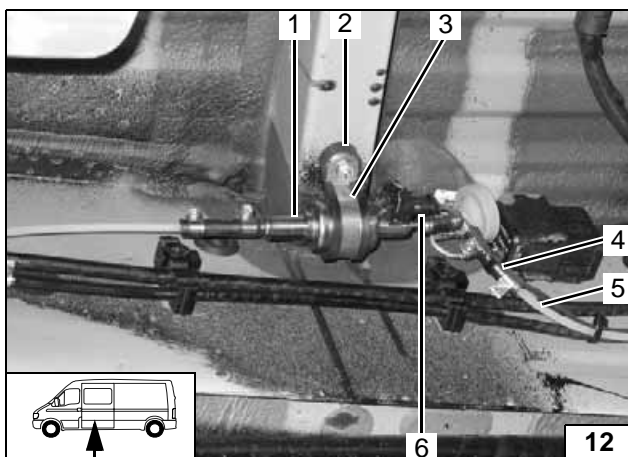


Ensure proper installation position of metering pump, see "Installation Instructions".  
Installation location of cross member for underbody on right.  
Fuel line from heater unit on pressure side of metering pump [side with connector].

- 1 Metering pump

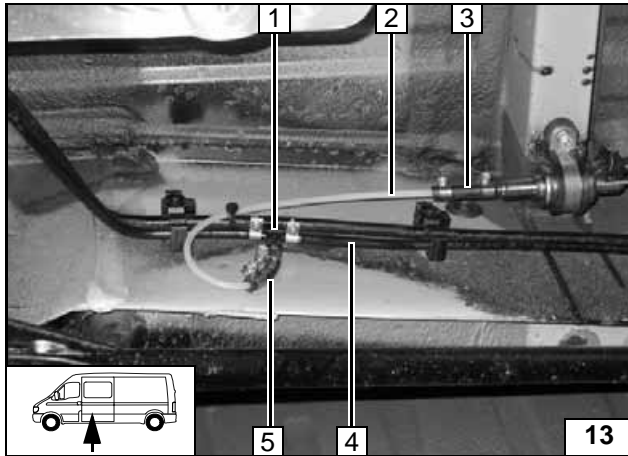


Installation  
location of  
metering  
pump



- 1 Metering pump
- 2 Existing thread or M6 rivet nut, silent block, flanged nut
- 3 Rubber-coated pipe clamp
- 4 Hose section, 10 mm dia. hose clamps [2x]
- 5 Fuel line
- 6 Wiring harness of metering pump with connector housing

Installing  
metering  
pump

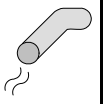


Cut off fuel return line as shown.

- 1 Fuel standpipe, 8 mm dia. hose clamp [2x]
- 2 Fuel line
- 3 Hose section, 10 mm dia. hose clamp [2x]
- 4 Fuel return line
- 5 Hose section, 10 mm dia. hose clamp [2x]



**Removing  
fuel**

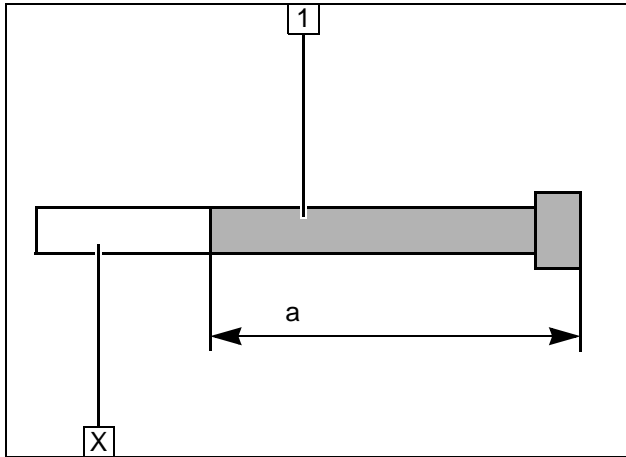


## Exhaust system

### WARNING!

The exhaust system can be assembled in 2 different versions. The version is dependent on the equipment and use of the vehicle!

Before installation, the version must be coordinated with the end customer!

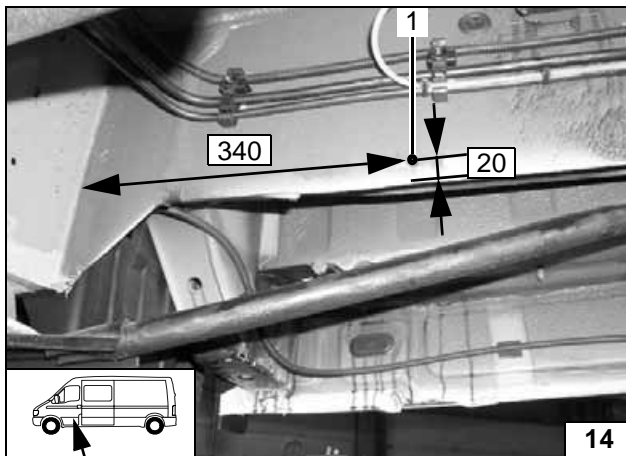


### Right-hand exhaust outlet

- 1 Exhaust pipe  
a = 700

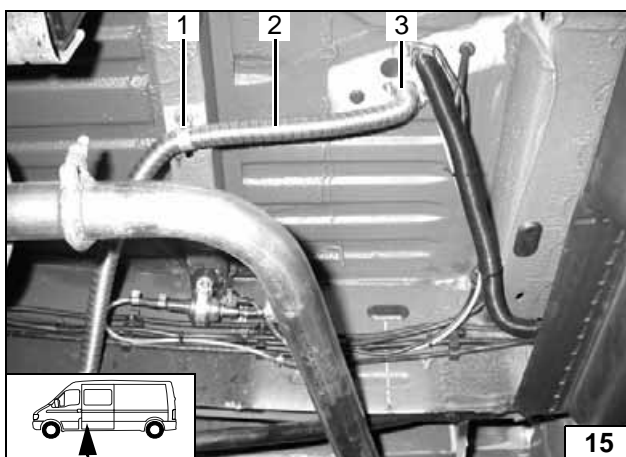
Discard section X.

Cutting exhaust pipe to length



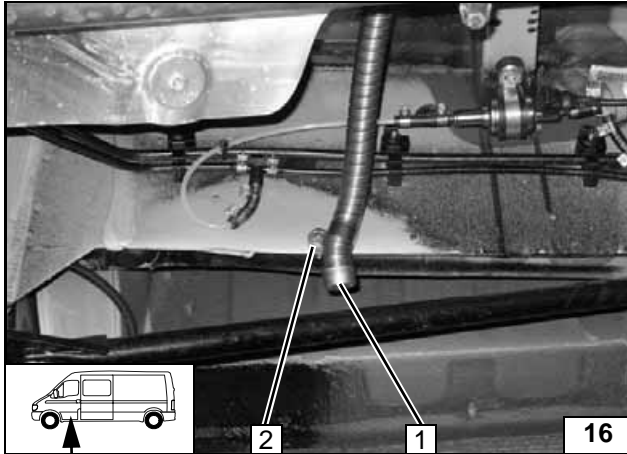
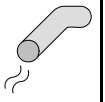
- 1 6.5 mm dia. hole

Drilling hole in cross member



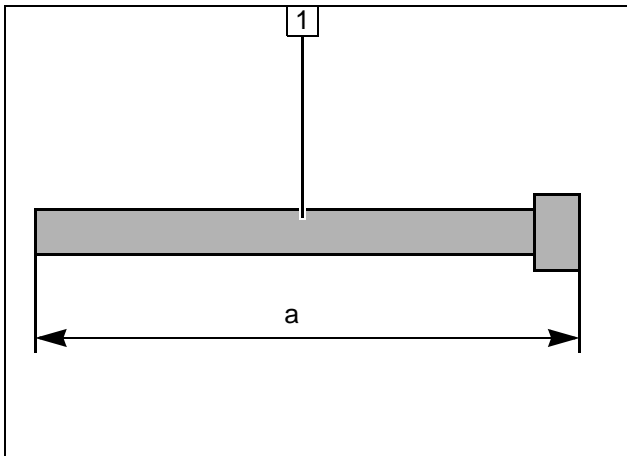
- 1 Rivet nut, M6x30 bolt,  
spring lockwasher, clamp, 10 mm shim
- 2 Exhaust pipe
- 3 Hose clamp

Installing exhaust pipe



- 1 Exhaust end section
- 2 M6x30 bolt, spring lockwasher, clamp, shim 10, flanged nut

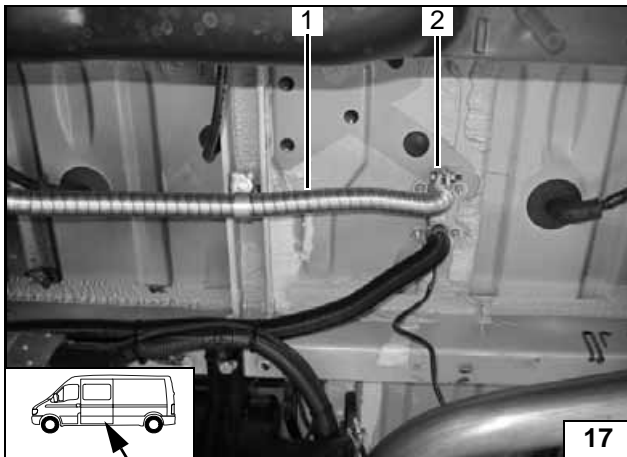
Installing exhaust pipe and end section



**Left-hand exhaust outlet**

- 1 Exhaust pipe  
a = 1200

Exhaust pipe

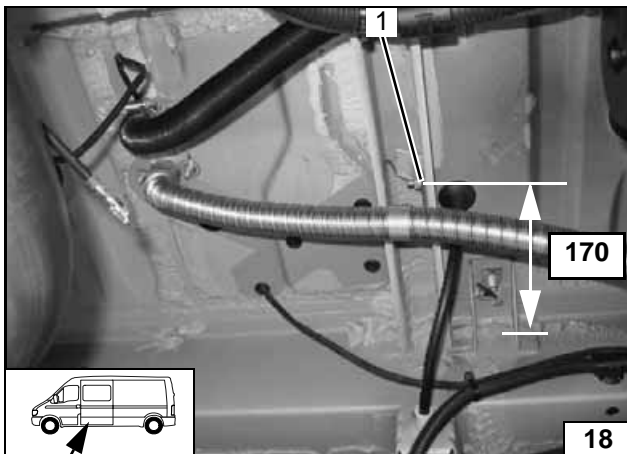


Picture shows vehicle with single seat.

- 1 Exhaust pipe
- 2 Hose clamp



Installing exhaust pipe

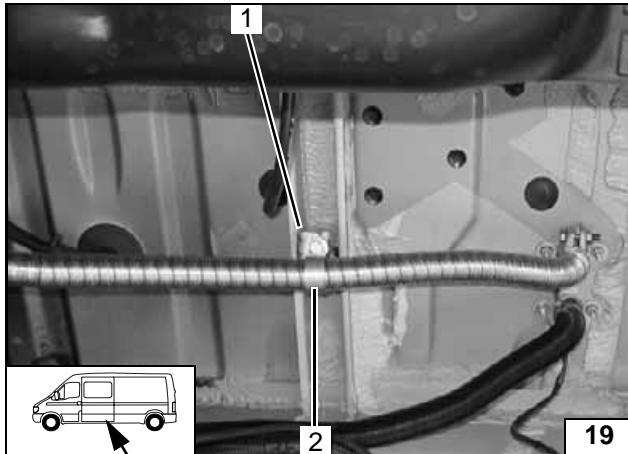
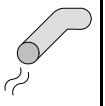


Picture shows vehicle with single seat.

- 1 7 mm dia. hole



Installing exhaust pipe

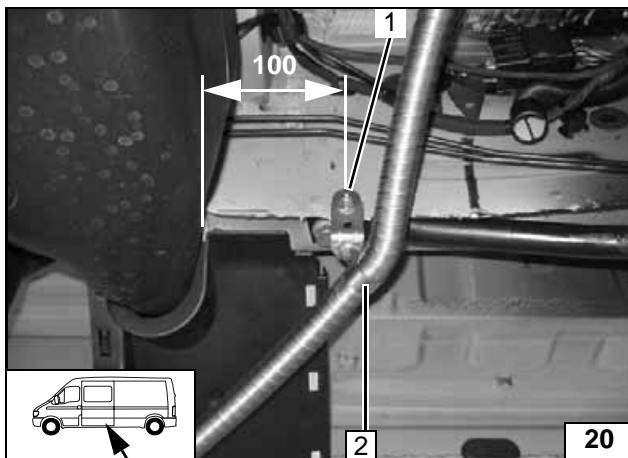


Picture shows vehicle with single seat.

- 1 Angle bracket, M6x20 bolt, 7 mm dia. hole, large diameter washer, flanged nut
- 2 M6x20 bolt, clamp, flanged nut

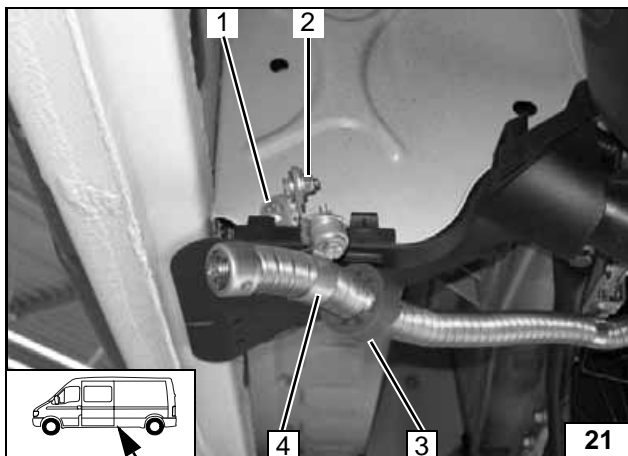


**Installing exhaust pipe**



- 1 Angle bracket, M6x20 bolt, 7 mm dia. hole, large diameter washer, flanged nut
- 2 M6x20 bolt, clamp, flanged nut

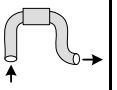
**Installing exhaust pipe**



Position red (rt) rubber profile **3** on plastic trim piece and ensure sufficient distance to neighboring parts.

- 1 M6x20 bolt, angle bracket, existing hole, large diameter washer, flanged nut
- 2 M6x20 bolt, angle bracket, large diameter washer [2x], flanged nut
- 4 M6x30 bolt, clamp, shim 10, flanged nut

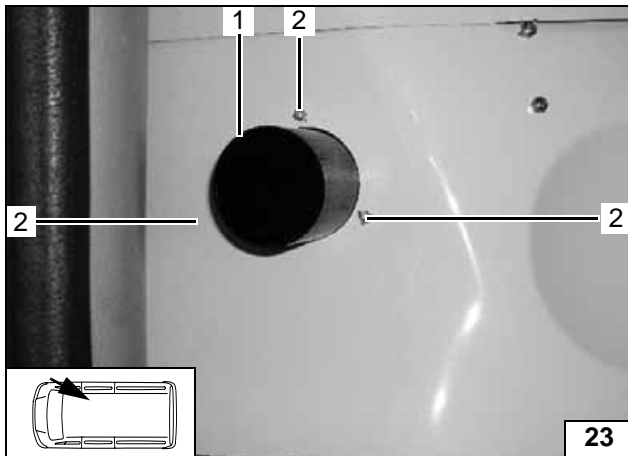
**Installing exhaust pipe and end section**



**Heater unit without air ducting**

- 1 Protective grill

Air ducting



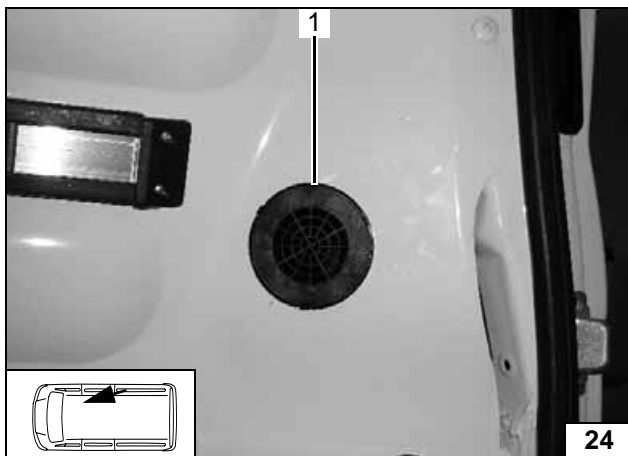
**Heater unit with air ducting**

Copy hole pattern with air outlet and punch out using special tool.

- 1 Air outlet
- 2 5 mm dia. hole, blind rivet 4.8 [3x each]

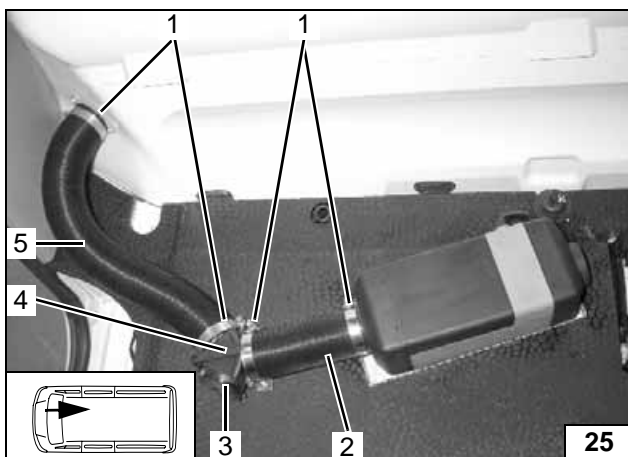


Air ducting



- 1 Cover

Air ducting



Check position of all components and adjust if necessary. Check that they have free clearance.

- 1 50-70 mm clamps [4x]
- 2 60 mm dia. flexible tube, 150 mm long
- 3 Rubber protective grill
- 4 Distribution flap, self-tapping screw [2x]
- 5 60 mm dia. flexible tube, 550 mm long



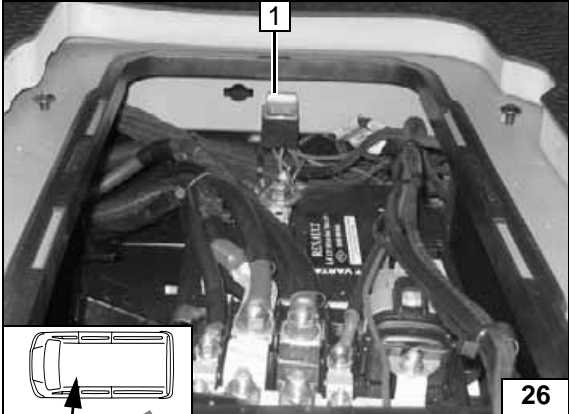
Air ducting



Electrical Connections

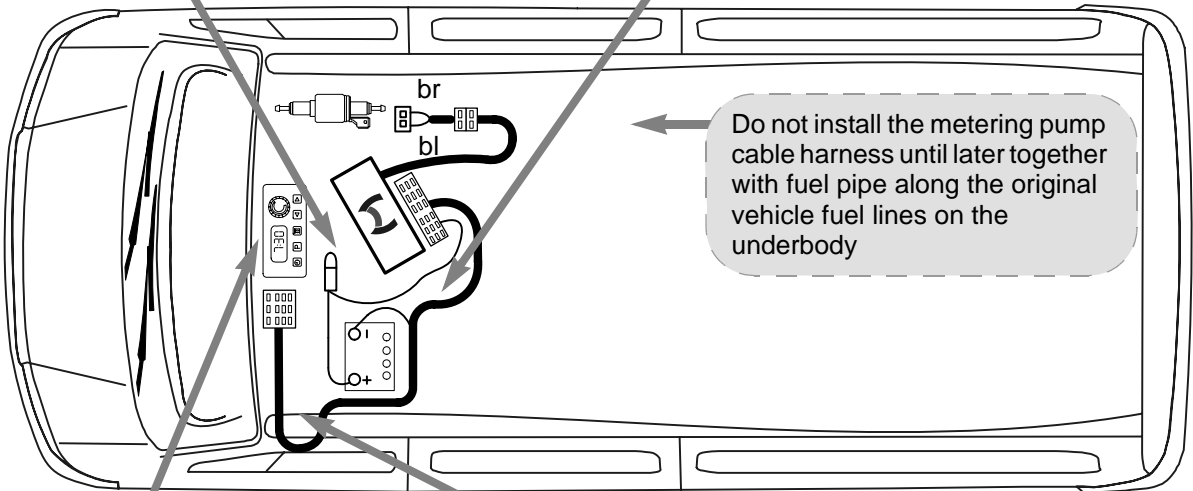
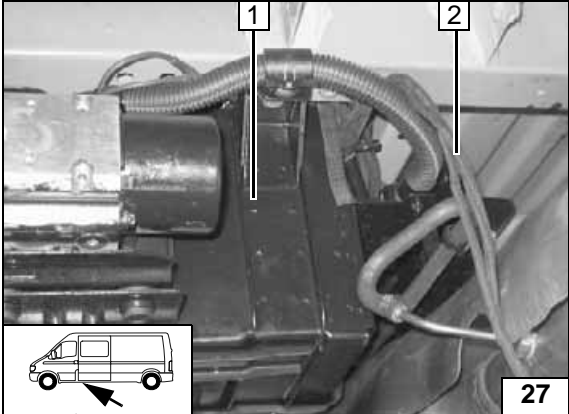
Fuse holder

1 2.5 mm dia. hole, fuse holder

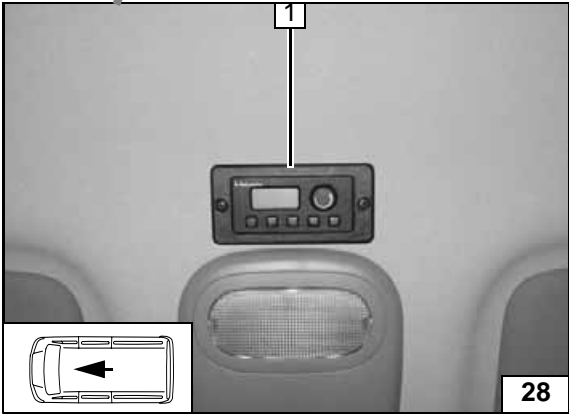


Cable pass through

Route wiring harness of heater unit 2 from underbody into battery box 1

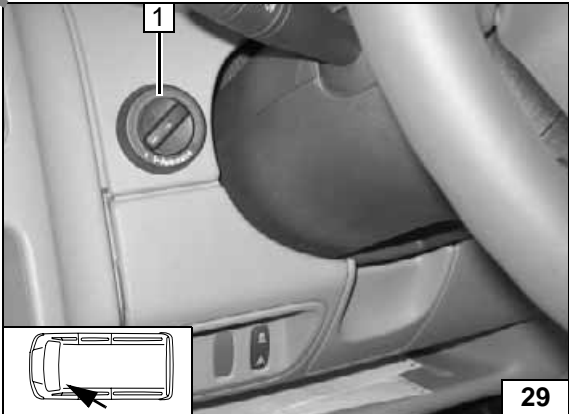


Wiring harness installation diagram



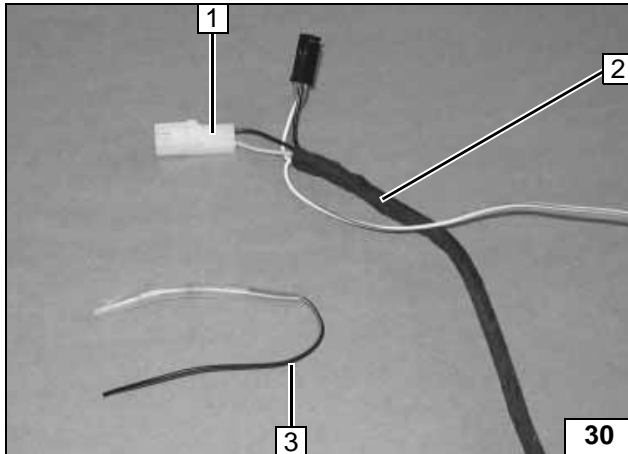
Heater control

1 Combination timer, installation frame



Heater control

1 Switch

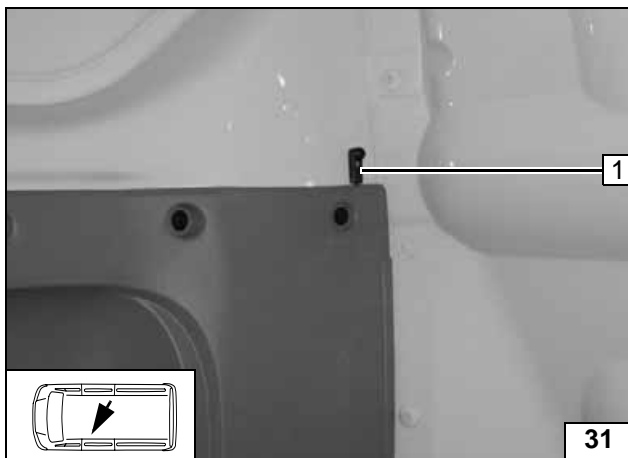


**Temperature sensor option**

Disconnect internal resistor 3 from wiring harness 2 and install connector 1 provided



**Con-  
nection of  
temper-  
ature  
sensor**

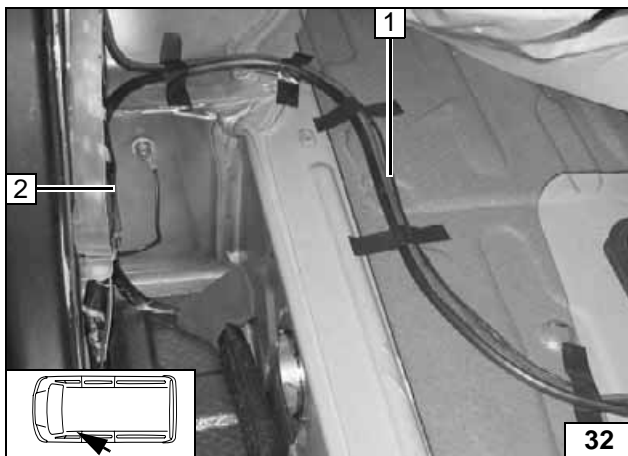


Route temperature sensor wire from installation location of combination timer or switch to installation location of temperature sensor.

Installation location of temperature sensor 1 is a recommendation! Please coordinate installation location with customer prior to installation.



**Con-  
nection of  
tempe-  
rature  
sensor**



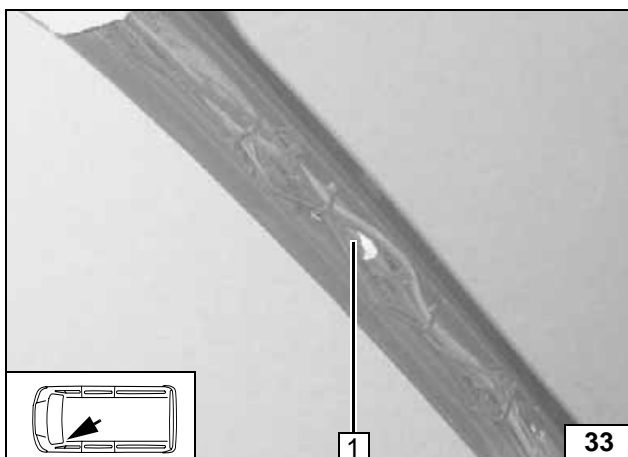
**Routing wiring harnesses**

Secure wiring harnesses with installation strap.

- 1 Wiring harness of heater control
- 2 Wiring harness of temperature sensor AT 2000 ST (option)



**Routing  
wiring  
harness**

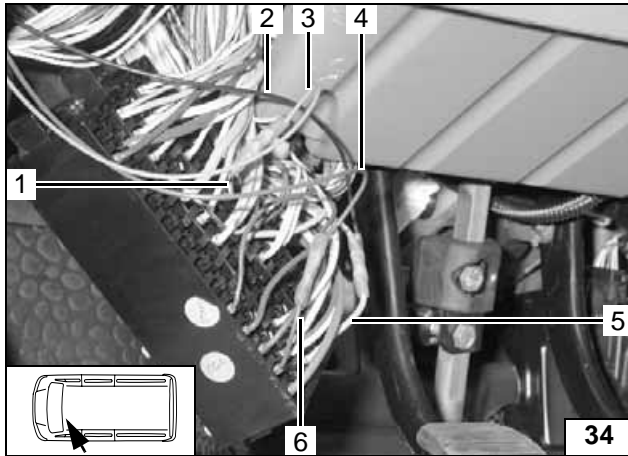


Route wiring harness 1 from combination timer along original vehicle wiring harnesses of left-hand A-pillar to fuse carrier.



**Routing  
wiring  
harness**





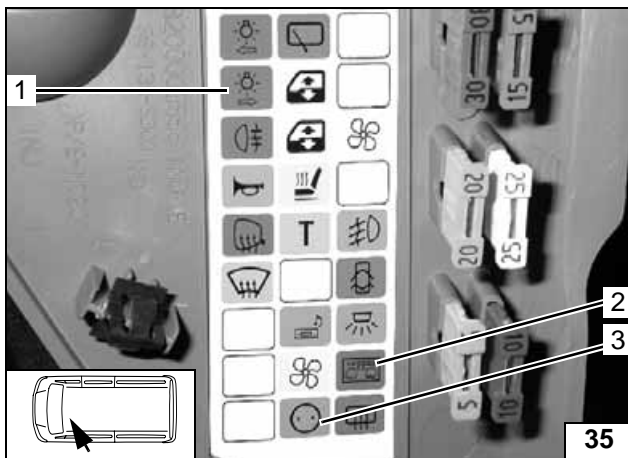
**Connection of combination timer up to 2006 model**

Observe connection diagram on page 19 and 20.

- 1 Blue (bl) wire of fuse for right-hand parking light
- 2 Black (sw) wire for Term. 15A of combination timer
- 3 Gray (gr) wire of Term. 58 of combination timer
- 4 Red (rt) wire of Term. 30 of combination timer
- 5 Yellow (ge) wire of fuse for socket outlet
- 6 Red (rt) wire of fuse for instrument cluster

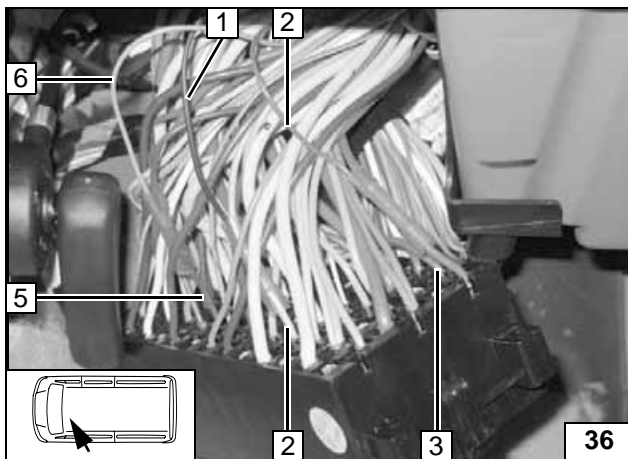


**Con-  
nection of  
combi-  
nation  
timer**



- 1 Fuse of right-hand parking light
- 2 Fuse of instrument cluster
- 3 Fuse of socket outlet

**Con-  
nection of  
combi-  
nation  
timer**



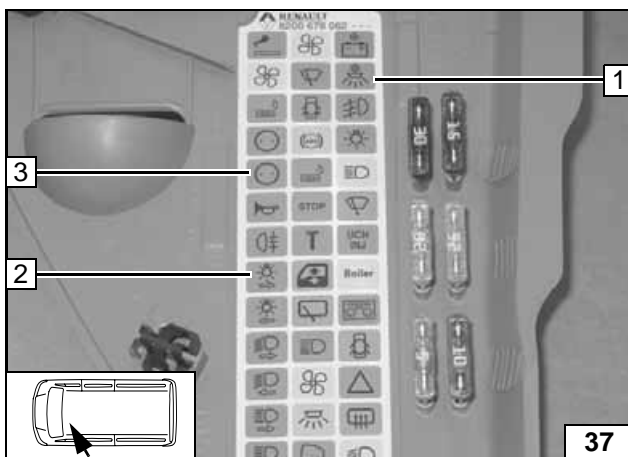
**Connection of combination timer from 2007 model**

Observe connection diagram on page 19 and 20.

- 1 Black (sw) wire for Term. 15A of combination timer
- 2 Red (rt) wire of Term. 30 of combination timer
- 3 Red (rt) wire of fuse for interior lighting
- 4 Yellow (ge) wire of fuse for socket outlet
- 5 Blue (bl) wire of fuse for right-hand parking light
- 6 Gray (gr) wire of Term. 58 of combination timer

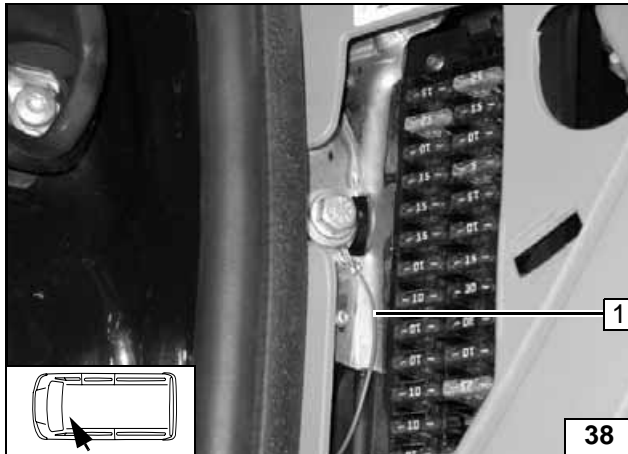


**Con-  
nection of  
combi-  
nation  
timer**



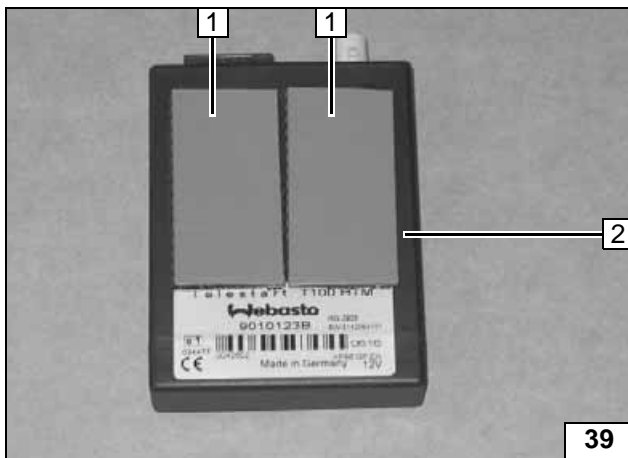
- 1 Fuse of interior lighting
- 2 Fuse of right-hand parking light
- 3 Fuse of socket outlet

**Con-  
nection of  
combi-  
nation  
timer**



1 Brown (br) wire of Term. 31 of combination timer

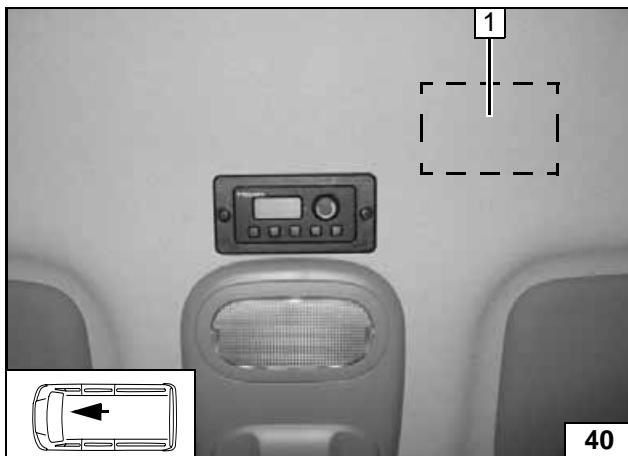
Con-  
nection of  
combi-  
nation  
timer



**Remote option (Telestart)**

1 Adhesive tape  
2 Receiver

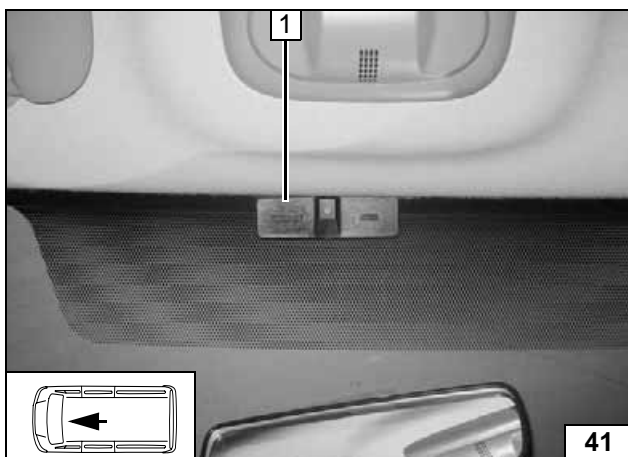
Preparing  
receiver



Receiver 1 fastened on inside of headliner with adhesive tape

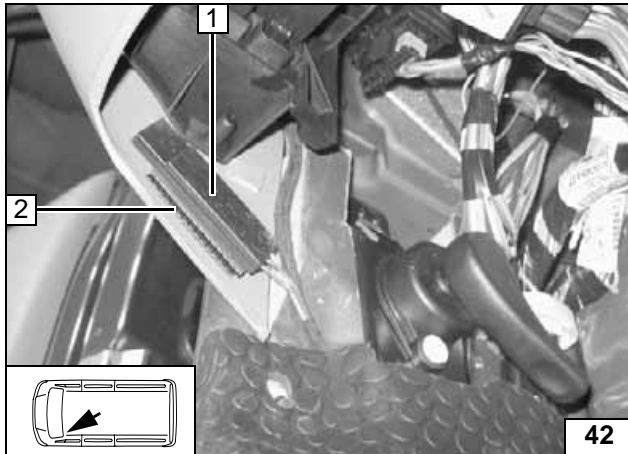


Installing  
receiver



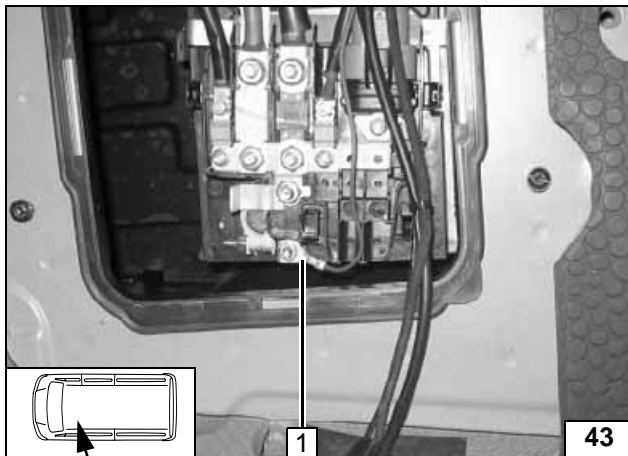
1 Antenna

Installing  
antenna



- 1 Temperature sensor
- 2 2-sided self-adhesive adhesive tape

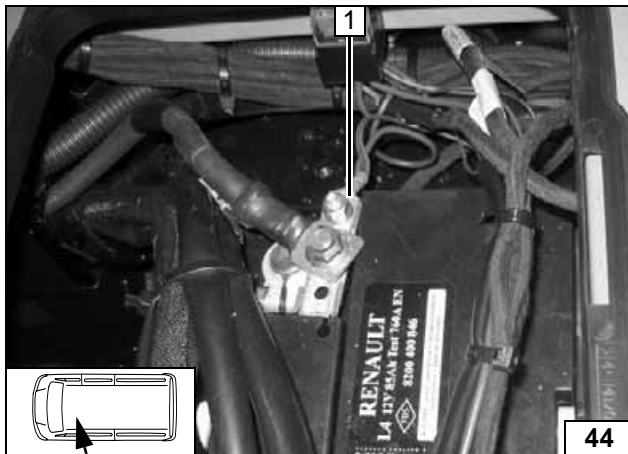
Installing temperature sensor T 100 HTM



**Connection to battery**

- 1 Red (rt) wire, claw cable lug, flanged nut

Connection to positive battery terminal



Shorten red (rt) wire 1 to heater unit, crimp on flat spring contact and install in fuse holder.

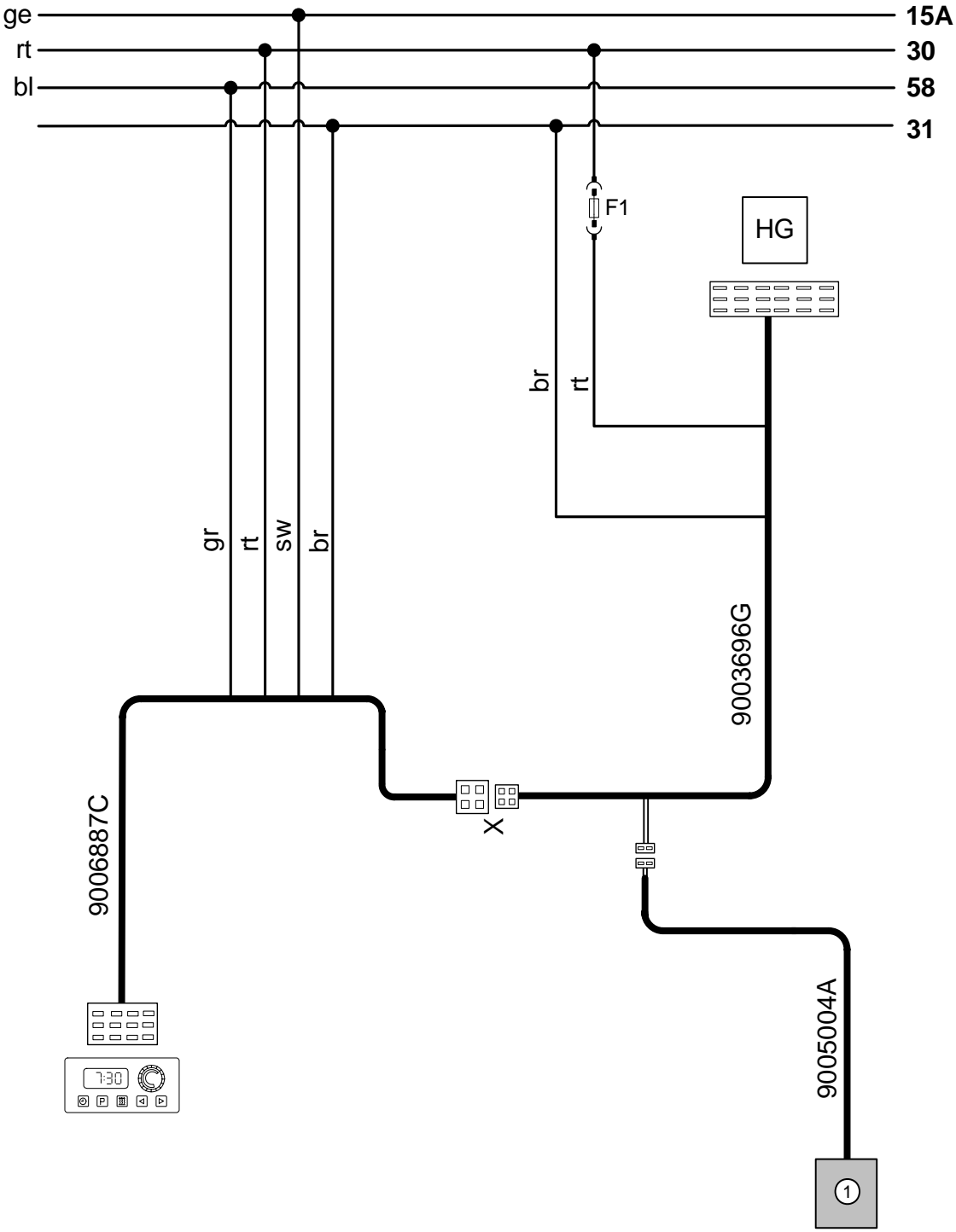
- 1 Brown (br) wire, claw cable lug, flanged nut



Connection to negative battery terminal



Connection Diagram for Combination Timer



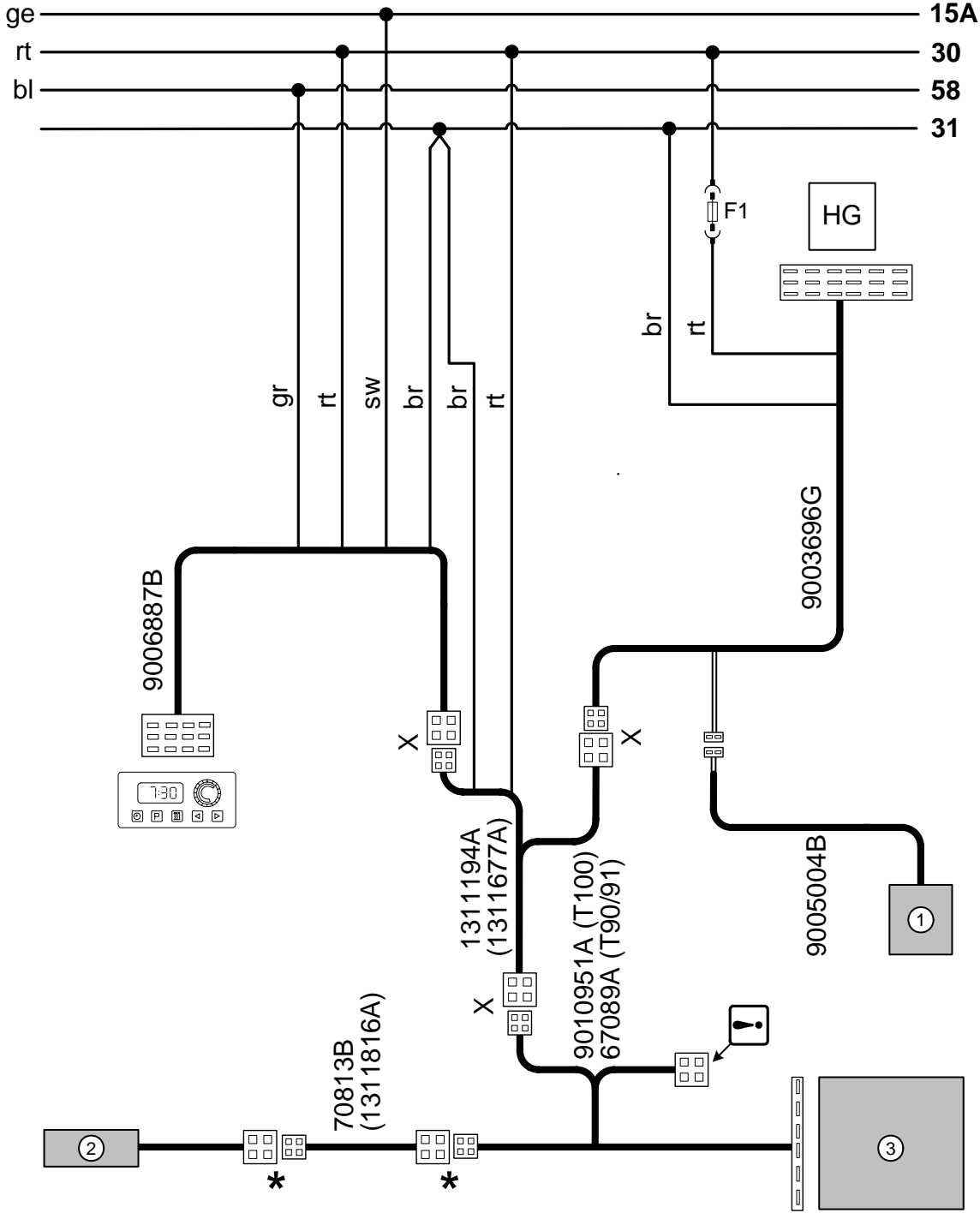
Con-  
nection  
Diagram  
for Combi-  
nation  
Timer

<p><b>X</b> = Connector is connected with matching colors.  <b>Heater unit (HG)</b> = AT2000ST!  <b>1</b> = Temperature sensor of heater unit!  <b>F1</b> = 15A!</p>	<p><b>rt</b> = red  <b>br</b> = brown  <b>sw</b> = black  <b>bl</b> = blue  <b>gr</b> = gray</p>
--	--





Connection Diagram for Combination Timer and Telestart



Con-  
nection  
Diagram  
for Combi-  
nation  
Timer and  
Telestart

<p>X = Connector is connected with matching colors.          * = Connector is connected with change from yellow (ge) to purple (li)  <b>Heater unit (HG) = AT2000ST!</b>          1 = Temperature sensor of heater unit!          2 = Temperature sensor for Telestart only with T100          3 = Telestart          F1 = 15A!   = tie back</p>	<p>rt = red          br = brown          sw = black          bl = blue          gr = gray          ge = yellow          li = purple</p>
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## Operating Instructions for End Customer



Please remove page and add to the vehicle operating instructions.

**Note:** Observe setting for permanent heating option.



Turn ignition key into Radio position (15A)

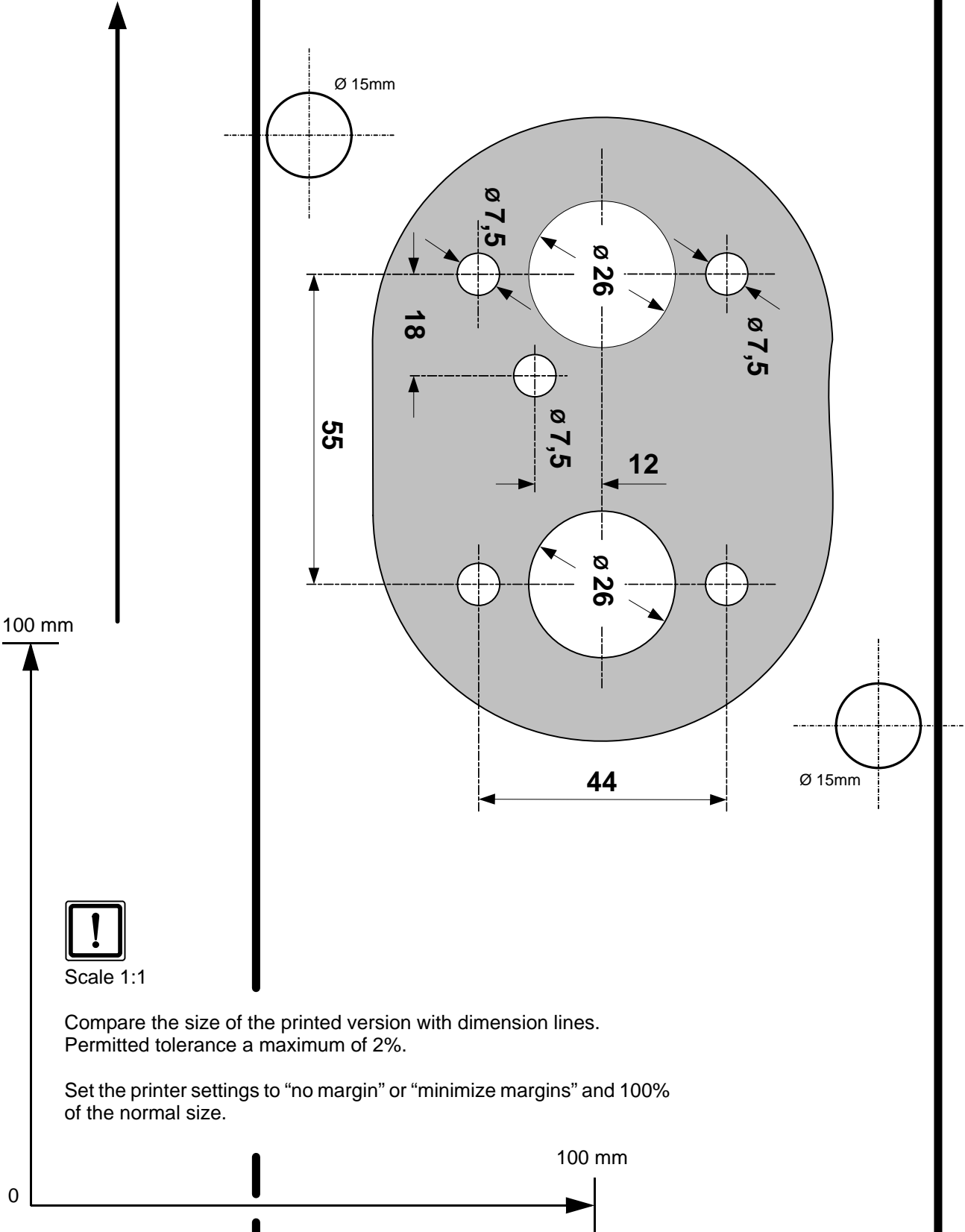


- 1 Set AC button to "OFF"
- 2 Set fan to level "0"

**Webasto**  
*Feel the drive*

Webasto AG  
Postfach 80 - 82132 Stockdorf  
Hotline 01805 / 932278 - Hotfax 0395 / 5592-353  
<http://www.webasto.de>

**Drilling Template**  
(Use entire page  
as template)



Scale 1:1

Compare the size of the printed version with dimension lines.  
Permitted tolerance a maximum of 2%.

Set the printer settings to "no margin" or "minimize margins" and 100%  
of the normal size.