



## **AIR CONDITIONER ASSEMBLY, MAINTENANCE AND USE INSTRUCTIONS**

# **sleeping Well obblò**

1



2



## GENERAL DESCRIPTION

The air conditioner SLEEPING WELL OBLO allows to keep optimum thermal conditions inside the industrial vehicles' driving cabin during day or night stops.

**IT WORKS WHEN ENGINE IS SWITCHED OFF** and is extremely quiet. It can be easily installed on any type of vehicle without alterations (**with existing roof hatch**).

It uses **R-134a** refrigerant (**ecological refrigerant fluid**).

## TECHNICAL INFORMATION

Cooling Capacity	<b>950 Watt/3250 BTU</b>
Evaporator Air Flow	<b>450 m3/h</b>
N° Ventilation Speed	<b>6</b>
Working Voltage	<b>12Vc.c</b>
Power Consumption	<b>32A (max) 16A (standard)</b>
Refrigerant	<b>R-134A</b>
Compressor	<b>Danfoss BD350GH</b>
Functioning with Engine Off	<b>YES</b>
Temperature's Electronic Control w/Digital Control Panel	<b>YES</b>
Remote Control	<b>YES</b>
Weight	<b>70.5 Lbs</b>

## OPERATION/CONTROL PANEL

**SLEEPING WELL OBLO CAN BE USED BY ACTIVATING THE AIR CONDITIONING OR THE FAN FUNCTION ONLY.**

### AIR CONDITIONING (AC)

**TO: TEMPERATURE SET BY USER**

**Tamb: AMBIENT TEMPERATURE DETECTED BY PROBE**

**V1: COMPRESSOR ROTATION SPEED (2500 RPM)**

**V2: COMPRESSOR ROTATION SPEED (4000 RPM)**

**The basic operating principles of the central control unit are:**

About 30" after switching on, the **ventilation starts up automatically**.

The AC system can run for a maximum of **6 hours**.

The display always shows the temperature **set by the user (TO)**.

The temperature which **can be set by the user is between 17°C and 28°C**.

**ON/OFF – TIMER BUTTON OPERATION – TIMER (REF.A – SEE FIG.2)**

**ON/OFF Function:**

When the system is switched OFF, pressing down this button for more than 2 seconds, switches on the AC system.

If the system is switched ON, pressing down this button for more than 2 seconds, switches off the AC system.

**Timer Function: (Ref.A – See Fig.2)**

If the system is switched on, everytime the TIMER button is pressed quickly, the system operation time is reduced by 1 hour.

**MAX A/C BUTTON OPERATION (OFFERS MAXIMUM PERFORMANCE BY THE SYSTEM) (REF.F – SEE FIG.2)**

When the system is running, (by default mode **V<sub>1</sub>**) press the **MAX AC** button to start rotation speed **V<sub>2</sub>** of the compressor for **4 consecutive hours** and the **whole snowflake** symbol will **light up** on the display (despite being usually only half lit at speed **V<sub>1</sub>**).

Once this function has been activated, press the **MAX AC** button again to return to speed **V<sub>1</sub>**. By pressing the **TIMER** button with **MAX AC** engaged, the compressor running time at speed **V<sub>2</sub>** may diminish from 4 to 1 with steps of 1 hour.

### VENTILATION (FAN)

If the fan increase or reduction buttons are pressed (**ref.c – see fig.2**) when the system is switched off, only the evaporator fan is activated, with the choice of 6 different speeds, shown on the central control unit display.








To switch off the fan it is necessary to set the value 0 on the central control unit display, using the fan speed reduction button.

### SAVE BATTERY FUNCTION (AC/FAN)

The save-battery function starts when the power **falls below** a value of **10.4V**.

In this case, the system (AC or VENT) shuts down, also deactivating the fan function and the message **E1** appears on the display and the battery symbol lights up.

### ERRORS SHOWN ON THE DISPLAY (AC/FAN)

Description	Message	Symbol
<b>Battery Voltage</b> (The battery-saver device has cut in. Voltage has fallen below the value of 10.4V).	<b>E1</b>	
<b>Fan over current cut-out</b> (The condenser or evaporator fan overloads the central control unit above the limit allowed. Possible cause: short circuit or blockage of fan rotation).	<b>E2</b>	
<b>Compressor locked</b> (The rotor is locked or the pressure inside the cooling circuit is too high).	<b>E3</b>	
<b>Minimum compressor rotation speed</b> (If the cooling circuit is overloaded, the compressor cannot maintain the minimum rotation speed).	<b>E4</b>	
<b>High temperature on the central control unit</b> (If the cooling circuit is overloaded or the ambient temperature is too high, the central control unit signals this situation).	<b>E5</b>	
<b>Communication error</b> (There is no communication between the display and the central control unit).	<b>E6</b>	
<b>Temperature probe</b> (If the probe short-circuits or is not connected, the system stops).	<b>E7</b>	
<b>Tilt</b> (The system shut-down device installed to operate in the event of tilting has cut in).	<b>E8</b>	

### REMOTE CONTROL

The remote control regulates both the air conditioning function and the fan function.

Using the remote control, it is possible to:

- Switch the system on and off (**ref.a – see fig.2**)
- Regulate the temperature (**ref.b – see fig.2**)
- Regulate the fan speed (**ref.c – see fig.2**)
- Engage the **MAX AC** function (**ref.f – see fig.2**)
- Modify the **TIMER** function (**ref.a – see fig.2**)

## MAINTENANCE AND SUGGESTIONS FOR USE

The **SLEEPING WELL OBLO** comes charged with refrigerant (R-134a) and is already tested. The compressor is already filled with lubricant.

The **SLEEPING WELL OBLO** air conditioner **operates with engines switched off** and is extremely quiet.

We recommend that you do not use **SLEEPING WELL OBLO** while the vehicle is moving. It is designed to operate while the vehicle is stationary.

It's efficient and safe and its power consumption is low and it doesn't compromise the integrity of the vehicle's batteries , always guaranteeing it's setting in motion. It has a save-battery device (see paragraph on operation).

**To improve the SLEEPING WELL OBLO conditioner's efficiency mind the following:**

if possible, before switching it on, park the vehicle away from sunbeams.

Should the temperature inside the cab rise excessively, we recommend, while the vehicle is stationary, starting up the vehicle air conditioning system to reduce the heat as quickly as possible.

Then switch off the vehicle engine and switch on the **SLEEPING WELL OBLO** to maintain the temperature required.

During night rest keep the vehicle's windows closed in order to avoid the wasting of fresh air and the incoming of hot and humid air.

**There is practically no need for the system's maintenance:**

Avoid keeping the conditioner inactive for a long period of time but start it at least **once a month** even during winter months since the functioning of it guarantees the lubrication of components which would dry up if left inactive for too long.

**Periodically** control the condenser battery and, if necessary, clean it with compressed air, being careful to not damaging the aluminum rests. It is good to check the functioning of the condenser's electric fan.

When working near heat exchangers, be careful to not getting cut with the cutting edges of the winglets.

Insects, floss and other material may deposit on the winglets, reducing the efficiency of the heat exchanger.

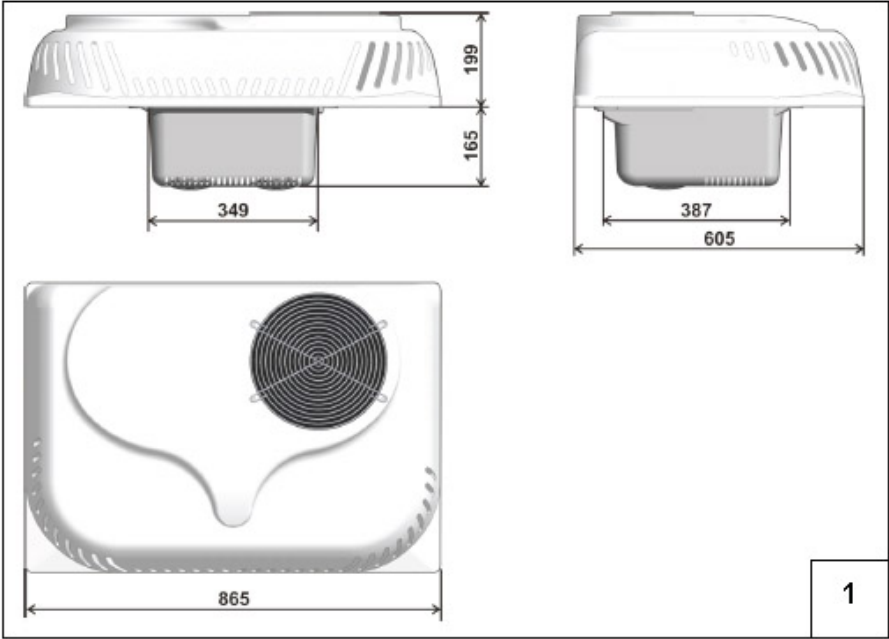
**At the start of each season** inspect every part of the system, including electric components, to make sure there aren't any abnormal conditions.

While washing the vehicle, make sure you don't direct violent jets of water towards the inside of the condenser unit from the lower part and the through the slits of the electric fan; in case protect it with a covering.

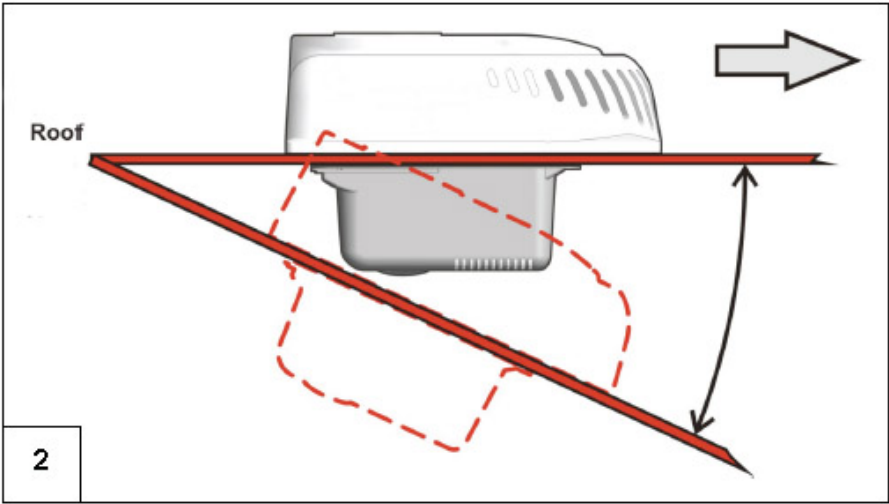
**ANY REPAIR OR INTERVENTION FOR THE CHARGING OR THE COLLECTION OF REFRIGERANT SHOULD BE DONE BY A CERTIFIED A/C TECHNICIAN AS REQUIRED BY EITHER YOUR LOCAL, STATE AND/OR FEDERAL REGULATIONS.**

## MOUNTING INSTRUCTIONS

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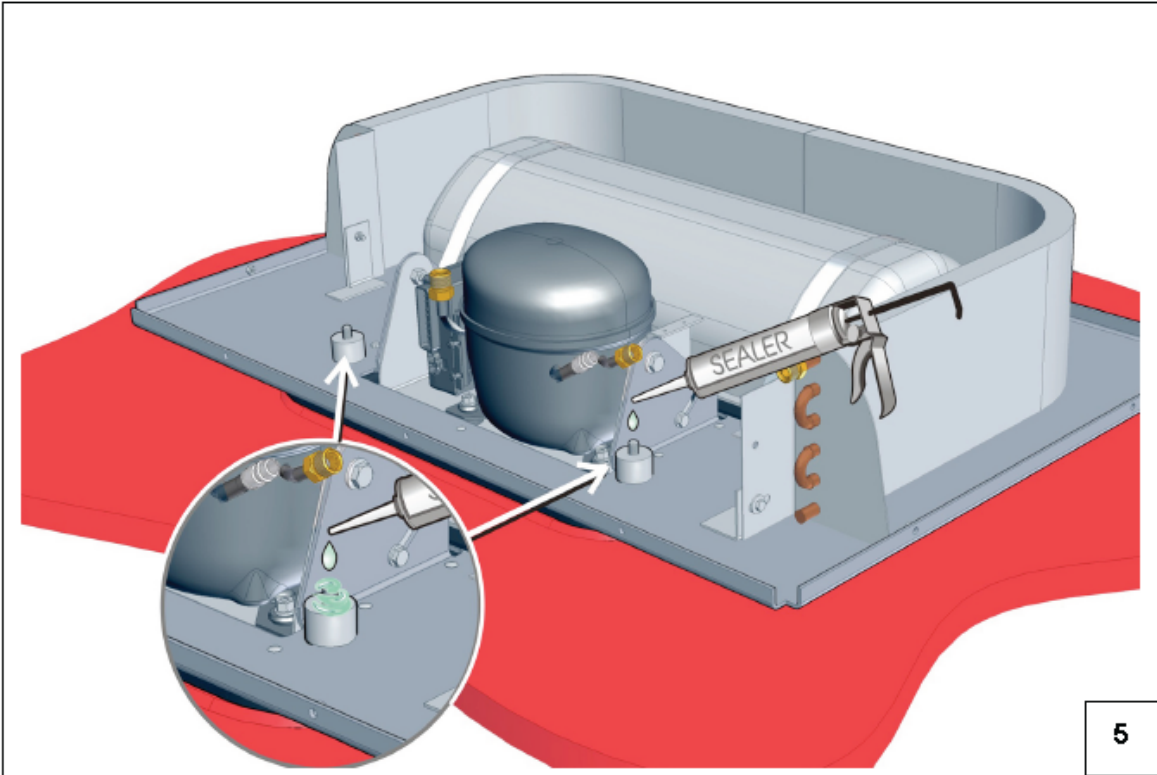
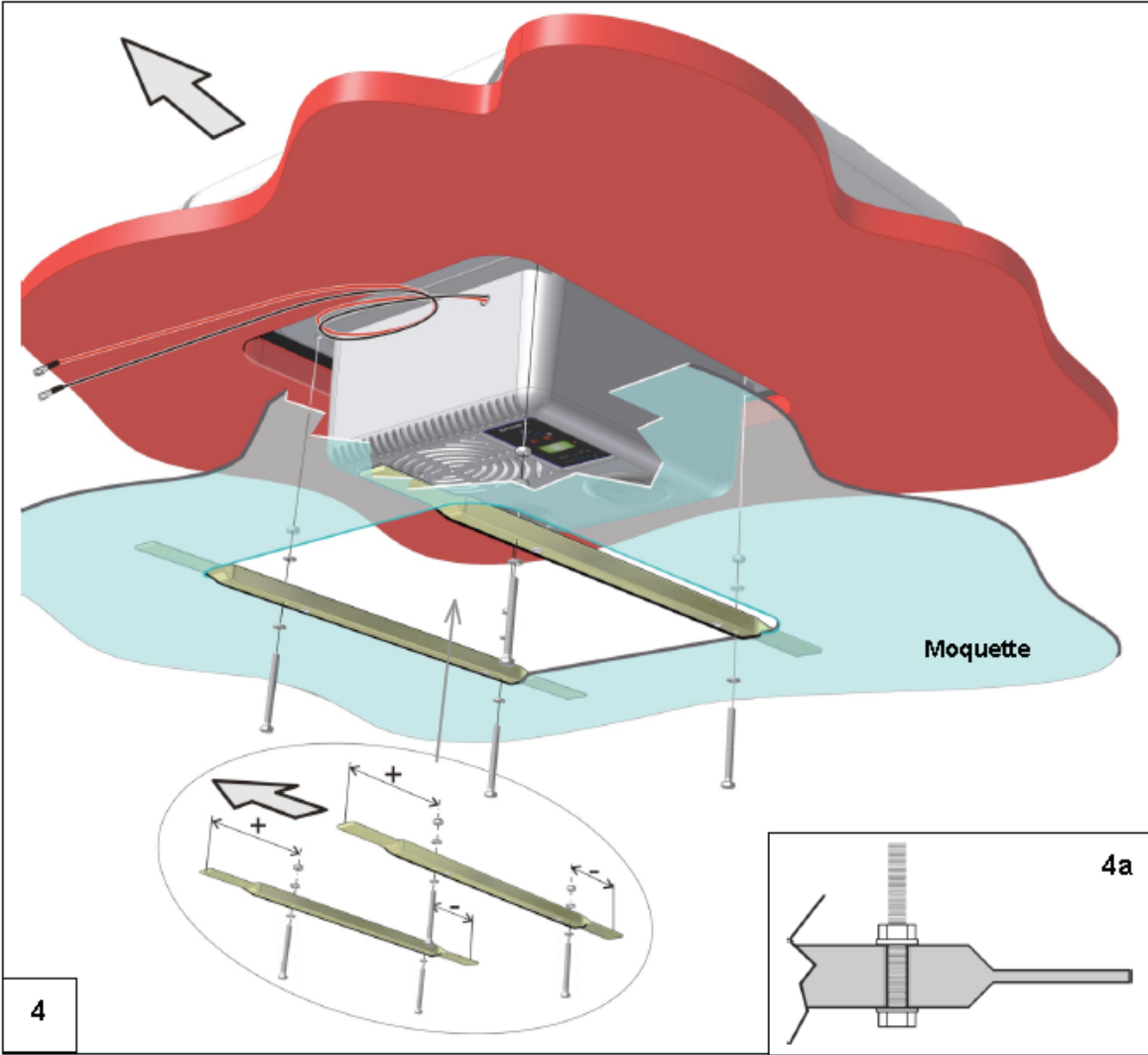
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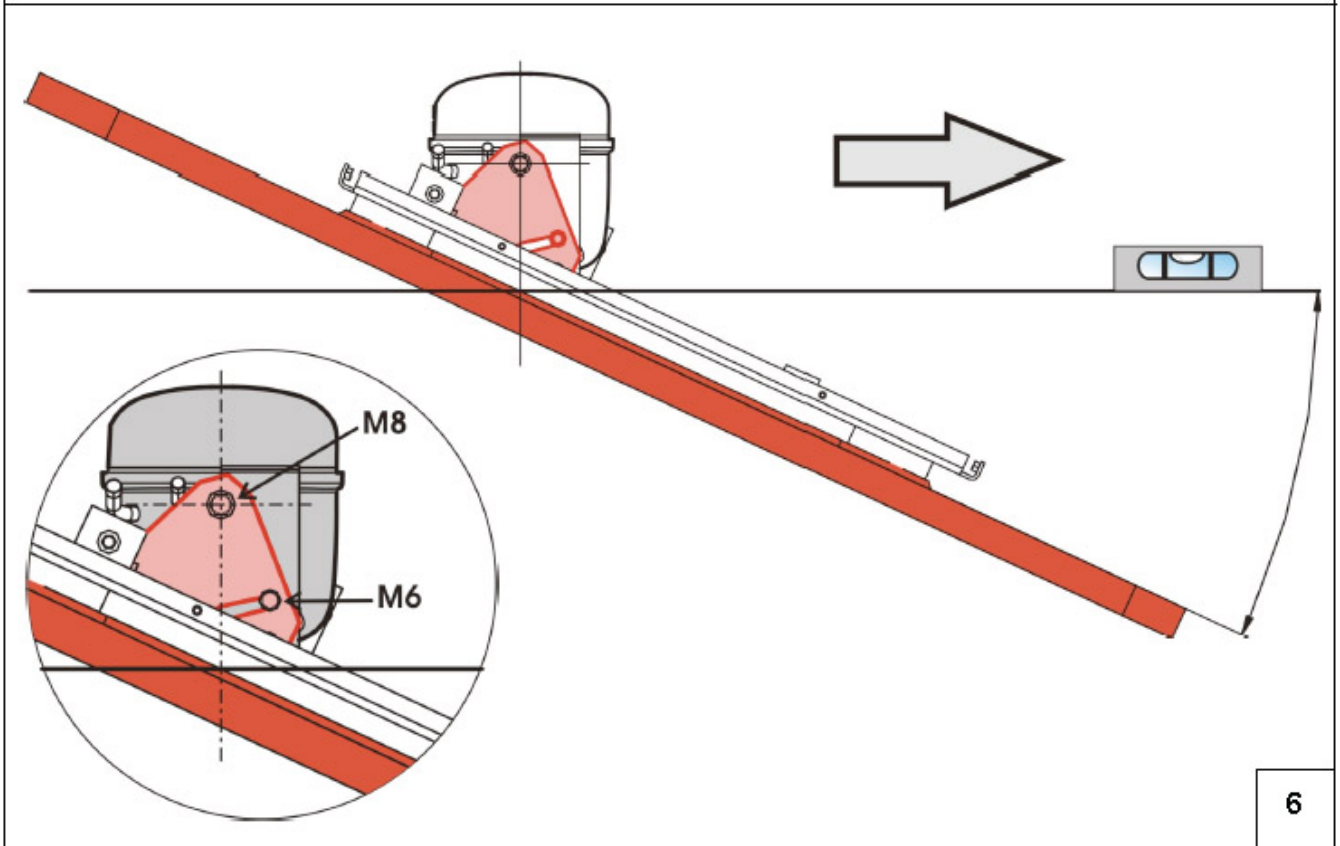
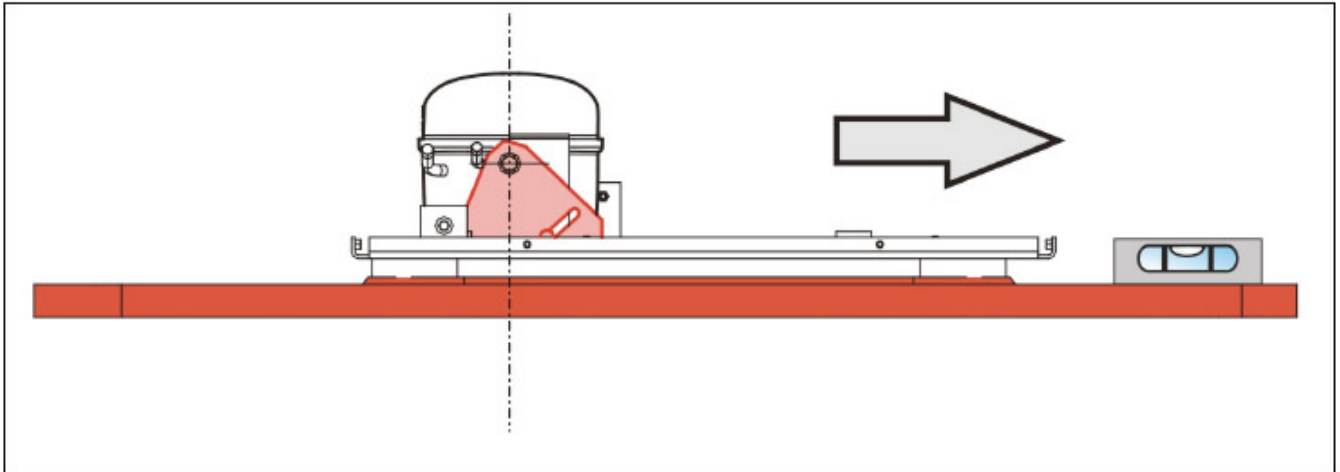


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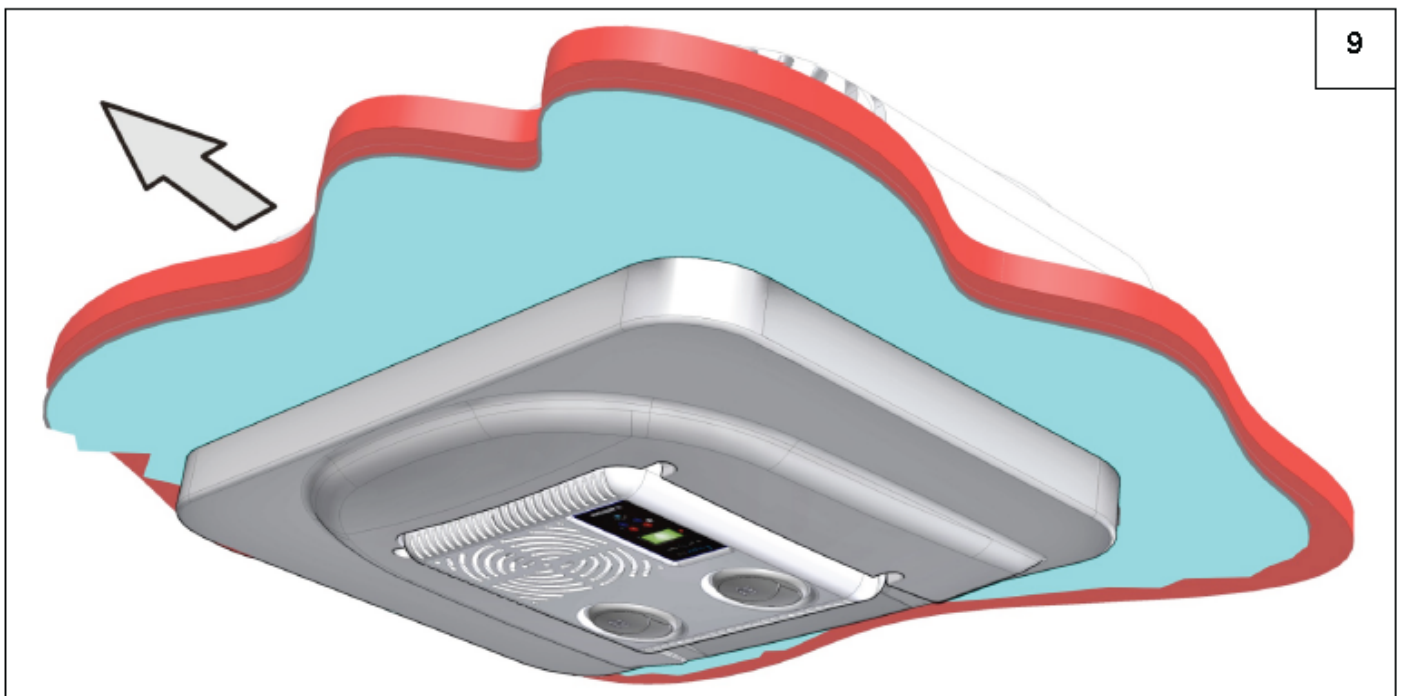
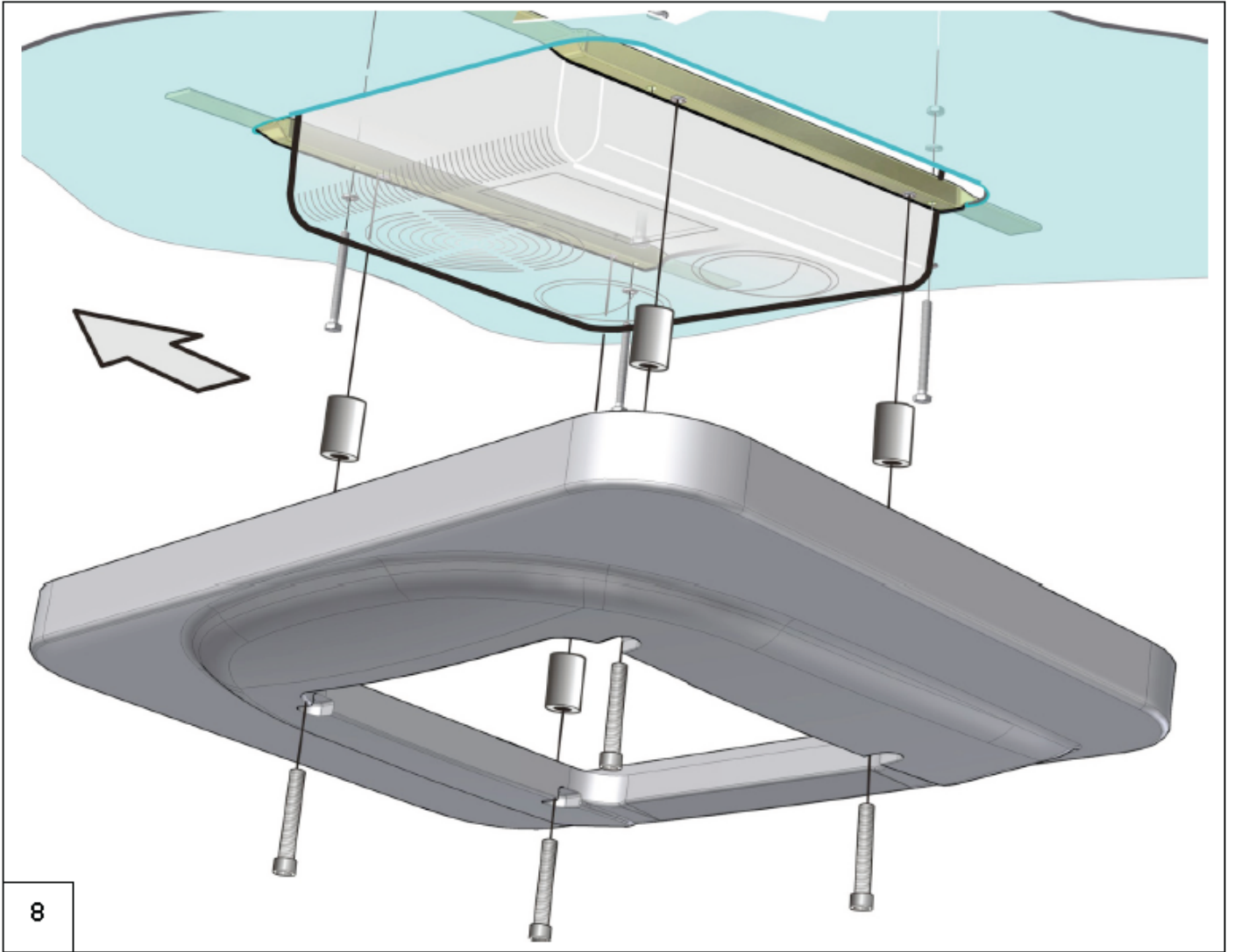


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CAUTION : Do not cover!

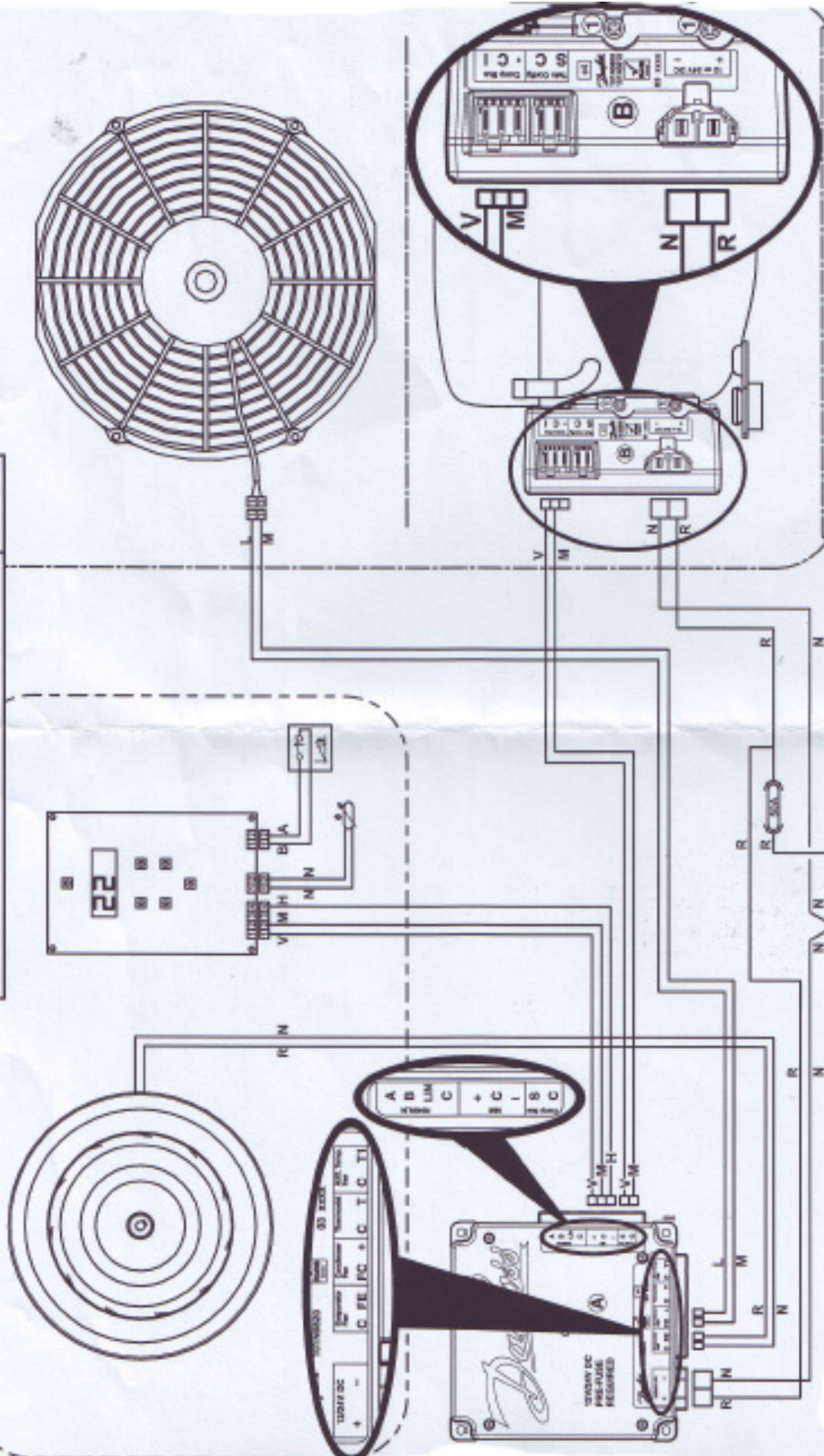
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12V

ELECTRICAL WIRING DIAGRAM



C	ORANGE	M	BROWN
A	AZURE	N	BLACK
B	WHITE	S	PINK
L	BLUE	R	RED
G	YELLOW	V	GREEN
H	GREY	Z	VIOLET

## NOTES

The indications which refer to the RIGHT and to the LEFT concern the driver of the vehicle on the drive way.

### GENERAL DESCRIPTION

The air conditioner **Sleeping Well Oblo** allows to keep optimum thermal conditions inside the industrial vehicles' driving cabins during day or night stops.

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Functioning with Engine Off	<b>YES</b>
Temperature's Electronic Control with Digital Control Panel	<b>YES</b>
Remote Control	<b>YES</b>
Weight	<b>70.5 lbs</b>

**THIS INSTALLATION IS EQUIPPED WITH A PATENTED SYSTEM WHICH MAKES IT POSSIBLE TO KEEP THE REST SURFACE OF THE COMPRESSOR IN A HORIZONTAL POSITION, WITH UP TO 26° INCLINATION OF THE VEHICLE ROOF.**

## GENERAL WARNINGS



**When installing, be sure to follow carefully the instructions given in this manual. The manufacturer declines all responsibilities for damage to equipment or people caused by non-standard system installations or modifications.**

Use the air conditioner exclusively for the use envisaged by the manufacturer and make no arbitrary changes or alterations to the appliance.

Never poke your hands inside the grid of the vents and avoid introducing any object into the system.

**BEFORE INSTALLING THE SYSTEM, DISCONNECT ALL CONNECTIONS TO THE VEHICLE BATTERY.**

Install the roof unit securely to prevent it tipping or falling

During the assembly phases and the creation of holes in the vehicle, make sure that you do not damage wirings or piping of systems already installed.

When working near the heat exchangers of the condenser and the evaporator, be careful not to cut yourself on the sharp edges of the fins.

If the electrical wires have to pass through walls with sharp edges, use protective pipes or specific channels.

Securely fasten the electrical wires, paying special attention to their route along metal walls that conduct electricity; also avoid contact with sharp elements.

Before beginning installation and after positioning the unit on the roof, check that the openings for the air inlet and outlets on the condenser are not blocked or covered.

Check whether, following the assembly of the air conditioner, it is necessary to change the registration of the height of the vehicle indicated in the log (contact the vehicle manufacturer).

Switch off the air conditioner before using automatic washing devices to clean the vehicle.

## MOUNTING STEPS

Disconnect the battery.

**Installation** operations must be carried out exclusively by a specialized technician who is aware of the dangers connected with installation and the relative prescriptions.

Before positioning the unit on the roof of the vehicle, check that it is possible to access it and that it can support the weight of the air conditioner you intend to install.

Rest Sleeping Well Oblo on an adequate surface, making sure that it is stable and that the inner diffuser is not damaged.

Remove the hatch from the roof of the vehicle.

Remove the cover of the Sleeping Well Oblo, unscrewing the 10 fastening screws.

Remove the gasket around the hatch opening (if present) and thoroughly clean the edge of the latter, removing all traces of adhesive and grease.

Fix the temporary Sleeping Well Oblo inside of the hatch; working from the inside of the cabin, fix the supplied frame over the air diffuser checking that, once the installation is finished, it will cover the hatch space correctly.

Ensure that the front and side slots on the air diffuser remain free after it has been fastened in place.

If this is not the case, trim the upper profile of the frame as much as necessary (**see fig.7**).

Remove the Sleeping Well Oblo, fit the gasket supplied to the clean edge and apply sealant to the upper surface (**see fig.3**).

Fit the air conditioner in position inside the hatch, paying attention to the newly inserted gasket (**see fig.4**).

Insert the electrical wires that protrude from the air diffuser between the roof and the inner lining, directing them towards the front of the vehicle (**see fig.4**).

Insert the M8x100 screws with washers and nuts onto the brackets, positioning the latter by inserting the end between the lining and the roof (**see fig.4**). Tighten the screws into the threaded cylindrical holes in the roof unit, then tighten the nuts beneath against the brackets (**see fig.4a**).

Working from the outside, carefully apply sealant above the end of the 2 rear screws which have just tightened into the threaded holes, as shown in **fig.5**.

Working from the outside, adjust the 4 lateral screws on the compressor (2 **M8** and 2 **M6**) and, irrespective of the inclination of the roof, keep the compressor resting base in the horizontal position (**see fig.6**). When the operation has been completed, tighten the 4 screws.

Then fasten the frame in place using T.C.E.I. screws, inserting the 4 spacers supplied (shorten if necessary) (**see fig.8-9**).

Direct the 2 electrical wires towards the dashboard for connection to the fittings on the vehicle's main distribution frame (red wire +12V, -black wire earth).

In the case of direct connection to the battery, use at least a **30 amp** fuse.

After completing the assembly, refit the outer cover (**see fig.10**).

### Drawings in Attachment

The perimeter identified as **A** shows the maximum space occupied by the unit.

**WARNING:** The surface must not have bulks which can keep the unit held up from the level of contact of the gasket.

The perimeter identified as **B** shows the maximum space of the trap door space which can be covered without additional adjusting plates.

The perimeter identified as **C** shows space in relation with the conveyor group that will be inserted inside the trap door.

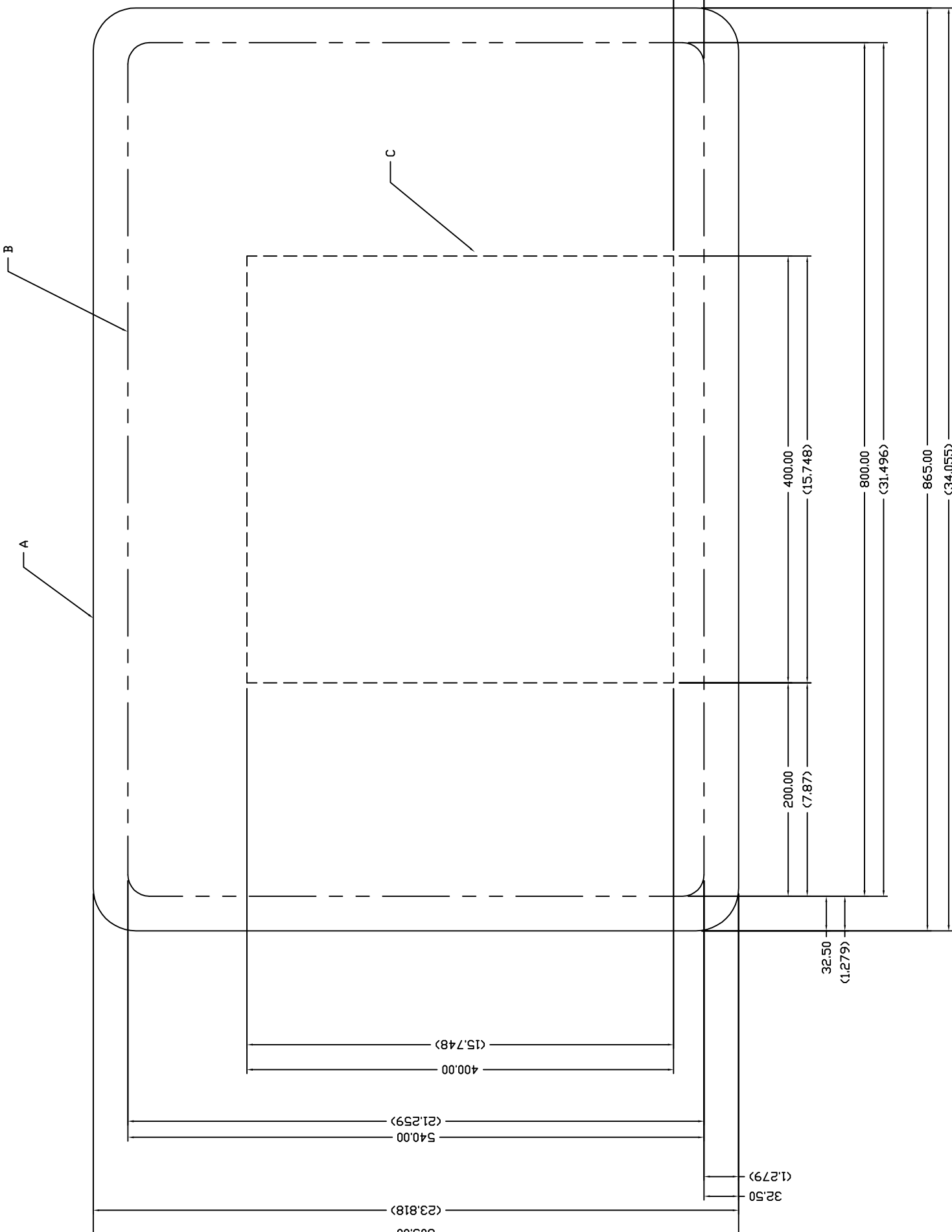
The perimeter identified as **D** shows the maximum space which can be covered with the plastic cover supplied with the system.

The height of the unit is approximately 7 7/8"; verify that, after installation of the unit, total height will not be greater than the maximum allowable, law-abiding height of the truck.

In some circumstances, longer screws (than those supplied with the unit) may need to be used to secure the unit on the truck.

On some trucks, it could be necessary to modify the length of both brackets and spacers to adapt them to the size of the trap door.

The inner plastic cover can be cut to fit the dimensions of the cab.



A

B

C

605.00

(23,818)

540.00

(21,259)

400.00

(15,748)

400.00

(15,748)

200.00

(7,87)

800.00

(31,496)

865.00

(34,055)

32.50

(1,279)

32.50

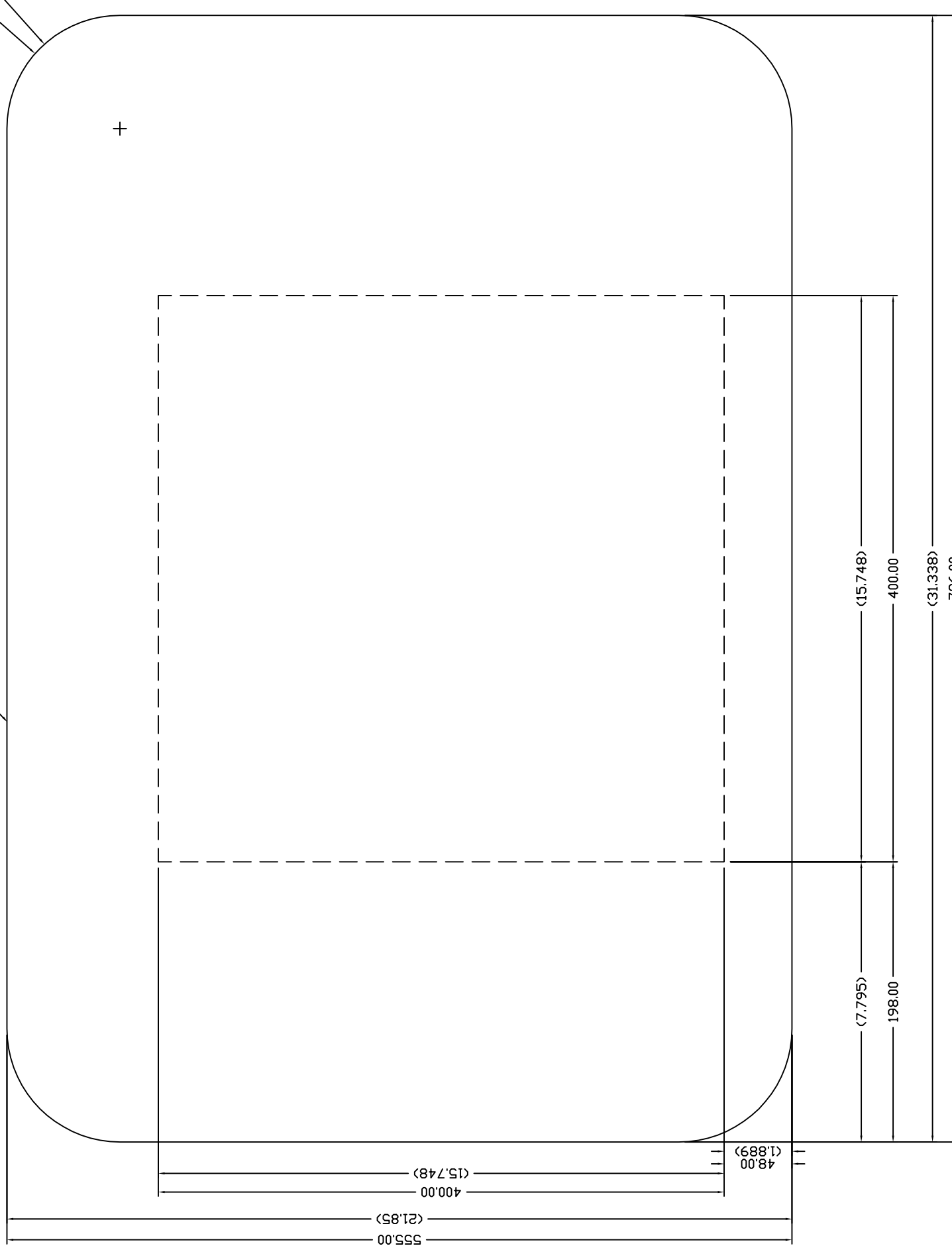
(1,279)

28.50

(1,122)

R80.00  
R31.49

D



555.00  
(21.85)

400.00  
(15.748)

48.00  
(1.889)

(7.795)  
198.00

(15.748)  
400.00

(31.338)  
796.00

# Sleeping Well

**night&day**

12V Air Conditioning No-Idle System



[www.sleepingwell.net](http://www.sleepingwell.net)

**Sleeping Well Warranty Registration**  
**Sleeping Well**

Model #:	<input type="text"/>
Serial #:	<input type="text"/>

**Vehicle Type**

Make:	<input type="text"/>
Model:	<input type="text"/>
VIN:	<input type="text"/>

**Supplier Information**

Purchased From:	<input type="text"/>
Purchased Date:	<input type="text"/>
Installed By:	<input type="text"/>
Installation Date:	<input type="text"/>

**Customer Information**

Name:	<input type="text"/>
Street:	<input type="text"/>
City:	<input type="text"/>
State:	<input type="text"/>
Zip Code:	<input type="text"/>
Phone:	<input type="text"/>
Email:	<input type="text"/>

Register online at [www.sleepingwell.net](http://www.sleepingwell.net)

Or mail your warranty registration form to:  
**Sleeping Well**  
**6315 W. US Hwy 12**  
**Eau Claire, WI 54703**