

Instructions for use VebaBox equipped with or TUC2001



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1 Introduction

Dear Customer,

Thank you for choosing VebaBox. This custom-made product is designed for storage and transport of goods that are sensitive to temperature fluctuations and ensures a stable temperature of your goods at the desired level. Please read the following manual carefully before using your product.



CAUTION:

This guide is published for informational purposes only. VebaBox makes no warranties, express or implied, with respect to the information and descriptions contained in this manual. Such information and descriptions should not be considered all-encompassing or covering for all contingencies, but with the intent of better understanding our product. If you have any questions or would like more information, please contact your local VebaBox representative.

The procedures described herein may only be carried out by suitably qualified personnel. Failure to perform these procedures correctly may cause damage to the VebaBox unit or other property or personal injury.

The VebaBox company and its affiliates shall not be liable in contract or tort (including negligence and/or strict liability) or otherwise, to any person or entity for personal injury, property damage or any other direct, indirect, special or consequential damages or liability, arising out of or arising out of any person's actions in violation of this manual or any of the information, recommendations or descriptions contained herein or the failure of any person to correctly carry out the procedures described herein or to follow caution and safety stickers on the VebaBox unit!

2 Safety measures

VebaBox is a specialized tailor-made product that includes electrical and refrigeration circuits, the installation, use and maintenance of which are subject to special directives and regulations for the protection of human health and the global environment.

This is why the company VebaBox, as the legal owner of the product design and manufacturer, declares and warns that only appointed qualified distributors and technical services are authorized to install and maintain the VebaBox products.

In normal use of the product, users should be aware of the following hazards.



CAUTION: Risk of death due to electric shock! If the VebaBox is powered by 110-230V AC when using the VebaBox, make sure the power supply has a circuit breaker! Check that the voltage specification on the plug label is the same as that of the power supply.

Connect the VebaBox only as follows:

- with the 12V VebaBox power supply installation kit installed by an authorized VebaBox specialist on the electrical circuit of the car and/or on the battery.
- or with the included 110-230 V connection cable to the 110-230V AC power supply.

If the cable is damaged, it must be replaced to avoid potential electrical hazards.

Disconnect the connecting cable for cleaning and maintenance, after use, and before replacing a fuse.



CAUTION: Risk of injury! Batteries contain aggressive and corrosive acids. Prevent battery fluid from coming into contact with your body. If your skin does come into contact with battery fluid, wash the affected body part thoroughly with water. Disconnect the VebaBox and other electrical devices from the battery before connecting the battery to a fast charger. Overvoltage can damage the electronics of the VebaBox.



CAUTION: The VebaBox is not intended for use by children and teenagers or disabled persons unless they are adequately supervised by a responsible person to ensure that they can use the device safely.

Do not use the VebaBox if it is visibly damaged. The VebaBox may only be repaired by qualified personnel. Inadequate repairs can pose significant hazards. If your VebaBox needs to be repaired, please contact your local distributor.

Do not open the refrigerant circuit under any circumstances!

The VebaBox is not suitable for transporting corrosive substances or solvent-containing substances. Food and pharmaceutical products should only be stored in their original packaging and/or packed in suitable containers.



CAUTION: Use tools with insulated handles that are only in good condition during the use and maintenance of the VebaBox.



CAUTION: Risk of death due to electric shock! Do not touch exposed cables with bare hands. This is especially true when the VebaBox is operated via an AC power supply.

Before starting the VebaBox, make sure that the power cable and the plug are dry. Do not place electrical appliances connected to a live power source in the refrigerated container.

Place the VebaBox in a dry place where it is protected from splashing water. Protect the VebaBox and the cable from rain and moisture. Do not place it near open flames or other heat sources (stoves, direct sunlight, gas ovens, etc.).



CAUTION: Risk of overheating! Always ensure adequate ventilation so that the heat generated during normal operation can be dissipated.

Make sure that the ventilation slots are not covered.

Leave at least 100 mm clear from the top and around the VebaBox to ensure adequate ventilation.

Never submerge the VebaBox in water. Do not fill the inner container with ice or liquid.



WARNING: Always wear safety glasses or goggles when working with or near the cooling system or battery. Refrigerant or battery acid can cause permanent damage if it comes into contact with your eyes.



WARNING: Control circuits (except from 110 – 230V AC power input) used in the VebaBox are low voltage. This voltage potential is not considered life-threatening, but the large amount of current available can cause severe burns if shorted to ground.



WARNING: Do not wear jewelry, watches, or rings. These items can short-circuit electrical circuits and cause severe burns to the wearer.



IMPORTANT:

VebaBox cannot be held liable for claims for damages arising from:

- Misuse, improper installation, abnormal maintenance, storage of hazardous chemicals, use of corrosive substances, shipping damage, charging of the cooling system, accident, fire, improper repair, tampering, or abuse.
- Incorrect voltages or faults related to the power supply that are outside the operating parameters of the VebaBox.

3 First aid

3.1 First aid refrigerant

Eyes: After contact with liquid, rinse eyes immediately with large amounts of water. Seek medical attention immediately.

Skin: Rinse touched areas with copious amounts of lukewarm water. Do not apply heat. Wrap burns with a dry, sterile, bulky bandage to protect them from infection or injury. Seek medical attention immediately.

Inhalation: Remove the affected person to fresh air and restore breathing if necessary. Stay with the victim until the arrival of medical workers.

3.2 First Aid – Refrigerant Oil

Eyes: Immediately flush the eyes with large amounts of water for at least 15 minutes while keeping the eyelids open. Seek medical attention immediately.

Skin: Remove contaminated clothing. Wash thoroughly with soap and water. Seek medical attention if irritation persists.

Inhalation: Remove the victim to fresh air and restore breathing if necessary. Stay with the victim until the arrival of the emergency services.

Ingestion: Do not induce vomiting. Contact your local poison control center or doctor immediately

3.3 First Aid – Electric Shock

First: Immediately disconnect the electrical power source in the safest way possible (turn off the car's engine, or emergency switch or connect/disconnect the live circuit with a suitable insulated tool).

Second: When you are sure that the power is off, remove the victims from the hazardous area and put them in the anti-shock position

Third, call your local emergency medical aid and act according to their instructions until the medical assistance specialist takes over and provides further assistance.

3.4 First Aid – Heat Burns

First, remove the victims from the heat source immediately in the safest way.

Second, if you are sure that the heat source has been eliminated, put the victims in the anti-shock position.

Third, call your local emergency medical aid and act according to their instructions until the medical assistance specialist takes over and provides further assistance.

4 General safety rules while using the product

WARNING: Failure to comply with safety precautions may result in death or serious injury and/or damage to the product or environment. Please read this manual carefully and keep it with the product at all times.

- Pay attention to the weight of the product and make sure that you, or the devices used, can support the weight.
- The product should not be placed on inclined surfaces.
- Cargo in VebaBox must be placed securely. Sidewalls should not be subjected to permanent pressure. VebaBox's sidewalls are not designed to carry permanent loads.
- Please read the instruction manual carefully before connecting the product.
- Never insert objects into the vents or fans.
- Do not block air circulation by covering the grilles with objects.
- Do not damage any parts of the refrigeration system containing refrigerants by punching, perforating, crushing, bending, or otherwise. Risk of severe frostbite due to refrigerant evaporation.
- Follow your local regulations for hazardous materials such as refrigerant: fire or explosion hazard.
- Never touch the heat exchanger with bare hands. Risk of cuts to the fingers on sharp ribs.

- Floor may be slippery.

5 Application

The basic function of VebaBox is to keep the goods inside at a regulated, stable, and adjustable temperature, while exposing the box to fluctuating ambient temperatures in the range between -20°C and 50°C or -4°F and 122°F for TUC2001.



PLEASE NOTE: The VebaBox is not built for refrigeration of goods. This means that goods must be pre-conditioned to the required temperature before being placed in the box.



CAUTION: When loading the box, allow space around the air inlet and outlet of the appliance. Goods should be stacked so that there is an opening of at least 10 cm directly under the ceiling of the box. Do not place goods directly under the heat exchanger – risk of dripping water.

The VebaBox TUC2001 is intended to be installed in the enclosed superstructure of any type of van equipped with an alternator power source of at least 12V / 100A DC. The unit is available for installation on one side panel of the box (TUC201B) as well as installation on top of the box (TUC201T).



6 Product Assembly Specifications

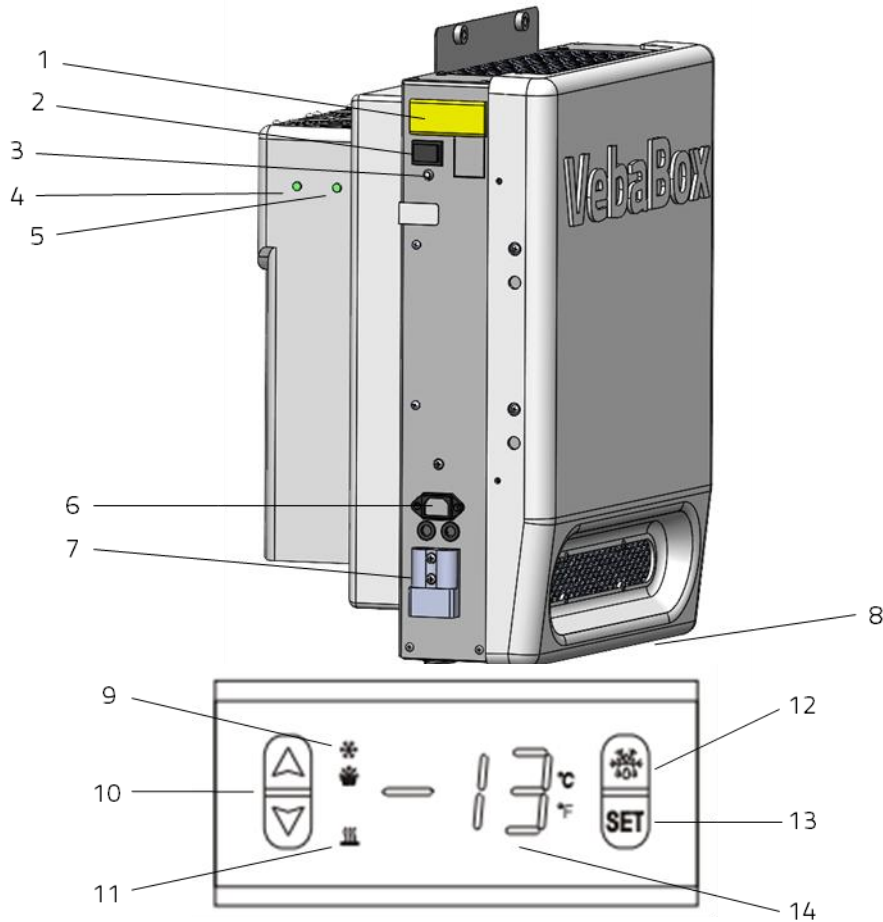
The product assembly consists of:

- a) Basic Parts
 1. VebaBox surface mounted
 2. Thermal unit TUC2001
 3. Power cable set
 4. Mechanical mounting kit
- b) Accessories (optional)
 1. Remote control
 2. LED lighting in the VebaBox
 3. Powerhouse

7 Operation

The thermal unit detects the temperature in the VebaBox by means of a temperature sensor. If the temperature exceeds the set values, the refrigeration unit is turned 'on' and the controlled area is then cooled or heated. When the temperature has reached the set temperature, the thermal unit will automatically switch 'off'. The internal fans will run independently of the temperature for optimal air circulation, so that the temperature inside the VebaBox remains stable.

7.1 Controls



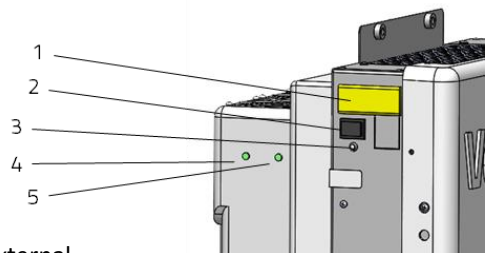
- 1: Temperature controller display
- 2: I/O Switch
- 3: High Pressure Warning/Door Open
- 4: Door Switch Connection
- 5: LED Light Connector
- 6: 110/230 Volt connection
- 7: 12 Volt connection

- 8: Remote Control Connection
- 9: Cool active symbol
- 10: Selecting Buttons
- 11: Heater symbol active
- 12: Defrost symbol active
- 13: SET Button
- 14: Temperature display

7.1.1 Switch the thermal unit 'on'

Use the on/off switch (2) to turn the appliance 'on'. Please note that if the remote control is installed, the power switch on the thermal unit should always be 'off'. In this case, use the power switch on the remote control to turn on the thermal unit.

Note: The thermal unit will only operate when the car's engine is running, unless a Power Pack is installed or you are using an external 110/230V AC power supply.



7.1.2 Temperature Setting

During normal operation, the display shows the current internal temperature. To change the SET temperature:

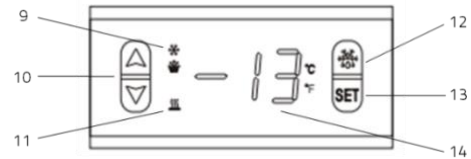
- Press the SET button (13), the set temperature value will start flashing.
- Use the selection buttons (arrows 10) to change the set temperature.

- Press the SET button (13) again to confirm the temperature and return to the current temperature display. (If no button is pressed within 6 seconds, the current temperature will be automatically displayed).

7.1.3 Indicators

The unit has one of 4 possible operational states:

- Cooling active – indicated by symbol (9).
- Heating active – indicated by symbol (11).
- On temperature (in preset tolerance band) – neither symbol 9 nor 11 lights up.
- Delay of the change of operating mode – the flashing of symbol 9 or 11 indicates that the device is changing modes (cooling to heating or vice versa) and is waiting for a preset time delay (3 minutes by default).



7.1.4 Alarm

Alarm function is available on temperature controller. By default, this signals any deviation of more than 3°C from the set temperature. The alarm sound can be muted by pressing any button (the alarm will still be signaled by the flashing of the display).

7.1.5 Thaw

The defrost function is available in the controller, although defrosting is not necessary under normal operating conditions. Therefore, the defrost button should not be used in TUC2001. Automatic defrosting is also prohibited by default.

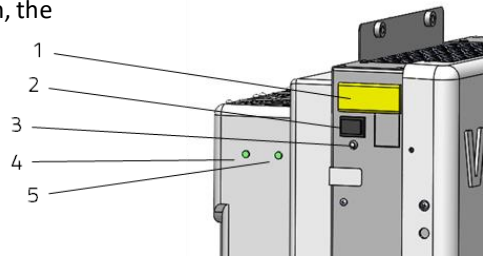
7.2 Remote control

The installation of the thermal unit may include remote dashboard control. If installed, some specific conditions apply:

- Remote display has priority when controlling the temperature. When connected, the display on the thermal unit cannot be used for setting the temperature and does not participate in temperature control.
- The same rules as described in the "controls" section apply to the remote display (including setting the temperature in the box).
- Do not use the power switch on the thermal unit. This switch must always be in the "0" position. Use the switch 'on' remote control to control the unit.

7.3 Door switch

The unit contains an input for the door switch. For proper operation, the door switch must be connected. When the door is opened, the compressor and internal fans are switched 'off' to prevent excessive air exchange. At the same time, the interior lighting is turned 'on'. The red indicator lamp (3) indicates that the door is open.



7.4 High Pressure Warning



The thermal unit is protected against extreme conditions that can cause high refrigerant pressure, such as extremely high ambient temperatures or dirty/clogged heat exchangers. The activation of this protection is indicated by a red indicator light (3).

If you notice that the protection has been activated, make sure that the thermal unit in the car is properly ventilated (check the function of the roof fan). If setting the thermal unit to the correct ambient temperature (-20°C to +50°C or -4°F and 122°F does not resolve the problem), the heat exchanger may be dirty or clogged – contact your local dealer for service.

8 Cleaning & Maintenance

WARNING: Never allow water or other liquids to enter the thermal unit and electronics.

- Turn the product 'off' and disconnect all power cables.
- The VebaBox is not designed for automatic defrosting (not necessary for normal use). If excessive frost develops, turn off the appliance and wait for the ice to melt. Do not remove the ice by mechanical means.
- Clean the product with a damp cloth, possibly with a cleaning agent. NOTE: Do not use abrasives or corrosives as they may damage the surface.
- Gently dry any remaining damp parts with a dry cloth.
- The door seals should be greased every three months to prevent the doors from jamming or cracking. This can be done with, for example, medical petroleum jelly.
- Repairs and maintenance must be carried out by qualified personnel. It is recommended to check the unit at least once a year and clean the internal heat exchangers.

9 Packaging material and safe disposal of products

The packaging protects the product from damage in transit. Keep the original packaging parts for possible future transport of the thermal unit.



Old electrical and electronic products usually contain valuable materials. However, they also contain harmful substances that have been necessary for the products to function properly and safely. Disposal of such products or improper handling of these substances can be harmful to health and the environment. Dispose of the product at a municipal collection point for electrical and electronic equipment. The discarded product should be kept out of the reach of children. Please note that the refrigeration unit contains refrigerants that must be disposed of in accordance with local laws and guidelines.

10 Problem solving

Problem	Analyze	Solution
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<p>The refrigeration unit does not work.</p>	<p>The plug is not connected properly.</p> <p>No input voltage of 12V.</p> <p>Remote control not connected properly.</p> <p>On/off switch in the correct position.</p>	<p>Plug in the power cord and check the 12V or 110V/230V connection.</p> <p>Make sure the car's engine is running. Check the fuse.</p> <p>Check the connection plug of the remote control.</p> <p>Power button.</p> <p>Tip: If you have a remote control, the main power switch on the unit should be in the "0" position</p>
<p>The refrigeration unit does not switch 'off'.</p>	<p>On/off switch in the correct position.</p>	<p>Check that the main switch is 'off' (also on the remote control).</p>
<p>The cooling/heating unit is working, but it is not cooling or heating properly.</p>	<p>The doors are not closed properly.</p> <p>There is a heat source in the box.</p> <p>Temperature set correctly.</p> <p>The evaporator is frozen.</p> <p>Refrigerant leaks.</p>	<p>Close the doors. Check the seal for damage or wear.</p> <p>Use only pre-conditioned goods.</p> <p>Set temperature.</p> <p>Allow the evaporator to defrost by turning off the appliance and allowing the temperature inside the box to rise above freezing.</p> <p>Bel from VebaBox-service.</p>
<p>The red indicator of the indicator light is on, the appliance is working but not cooling.</p>	<p>The door of the box opens.</p> <p>The airways are blocked or dirty.</p> <p>The ambient temperature is more than 50°C / 122°F.</p>	<p>Close the door and make sure the connector is connected to the appliance.</p> <p>Remove the obstruction, dust, or debris. Contact the distributor for regular maintenance.</p> <p>Provide an ambient temperature < 50°C (122°F) through a roof fan.</p>
<p>The cooling/heating is working, but the fan has stopped.</p>	<p>Faulty wire connection / fan defective.</p>	<p>Bel from VebaBox-service.</p>
<p>Display error code.</p>	<p>The LL or HH symbols are shown on the display.</p>	<p>Faulty temperature sensor, call VebaBox service.</p>