

# User Instruction

## Laboratory Freezer **VAC 21**

[Art. 412508021]



## SAFETY INFORMATIONS

The VAC freezers contains environmentally friendly but flammable refrigerants. It means danger of explosion if for any reason the refrigerants are allowed to escape from the system.

The refrigeration system must never be accessed by unauthorized personal.

When transporting and installing the unit, ensure that no part of the tubing system is damaged.

If the tubing is damaged and leak occurs, avoid any ignition sources and naked flames near the unit, and ventilate the room immediately.

In order to avoid formation of flammable gas/air mixtures in case of a leak from the refrigeration system, the room where the unit is placed must have a volume equivalent to 1m<sup>3</sup> per 8 gr. of refrigerant in the cabinet.

### WARNING!!!

The ventilation openings must never be covered or blocked.

Never use a stream or water cleaning device during cleaning or defrosting in order to avoid short circuits in the electrical system.

Do not place any electrical devices in the freezer.

Products containing flammable gasses and explosives must not be stored in the freezer.

All units should be provided with installation and operating instructions. In addition to the Clearances Installation, the instructions should contain such directions and information that the manufacturer considers necessary for installation, maintenance, and use of the refrigerator.

Installation and operating instructions should be provided with cautionary statements concerning the handling, moving, and use of the refrigerator or freezer to avoid either damaging the refrigerant tubing, or increasing the risk of a leak.

The shipping carton of a refrigerator or freezer that employs a flammable refrigerant should be marked

"Caution - Risk of Fire or Explosion due to Flammable Refrigerant Used. Follow Handling Instructions Carefully in Compliance with U.S. Government Regulations".

The warning marking should also appear on the shipping carton, see below.



The installation and operating instructions should indicate that component parts shall be replaced with like components and that servicing shall be done by factory authorized service personnel, so as to minimize the risk of possible ignition due to incorrect parts or improper service.

## USER INSTRUCTIONS

Congratulations with your new freezer, we feel certain that it will be very useful to you for many years ahead. To obtain optimal benefit from your freezer, please read the following instructions thoroughly and act accordingly. The low-temperature freezers are used for freezing and long-term storing of food products, medical preparations (vaccines, blood plasm, ect.) and other biological products.

### 1. Environmental protection and disposal

The packaging is designed to protect the appliance and its components during transportation, and it is made of recyclable materials.

- Please return the packaging to an official collection point for recycling.
- Old appliances contain reusable materials and should not be disposed of together with household refuse.
- Remove the spring-action hinges from the appliance, in order to prevent children from being entrapped in the appliance.
- Ensure that no part of the refrigeration tubing is damaged as the refrigerant in the appliance risks escaping to the environment.
- Information about refrigerant type and amount will be found on the type plate on the rear of the appliance (Fig. 1).

### 2. Safety instructions

- In order to prevent injuries and or damage to the appliance, it should be unpacked and set up by min. two people.
- If upon unpacking the appliance is found damaged, do not connect to the mains, but contact the supplier.
- ***Interference with or repair to the appliance should only be carried out by authorized personnel, in order to avoid any injuries.***

***(Contact the supplier for further information)***

- Never put naked flames or other ignition sources inside the appliance.
- Never touch the freezers interior or products in the freezer when the freezer is operating. Use gloves or alike in order to avoid injuries (frost-bite).
- Keep the key to the appliance away from the appliance and out of the reach of children.

### 3. Connection to the mains

- For safety reasons the appliance must be earthed. If you are in any doubt, please contact an authorized electrician.
- The appliance should be left for 5 hours before it is connected to the mains. If the appliance is connected before that, there is a risk of damaging the compressor.
- If for any reason the appliance is disconnected from the mains, please wait 10 minutes before re-connecting. The electronic starting device needs this time to cool down, before a safe re-start can be made.

### 4. Before use

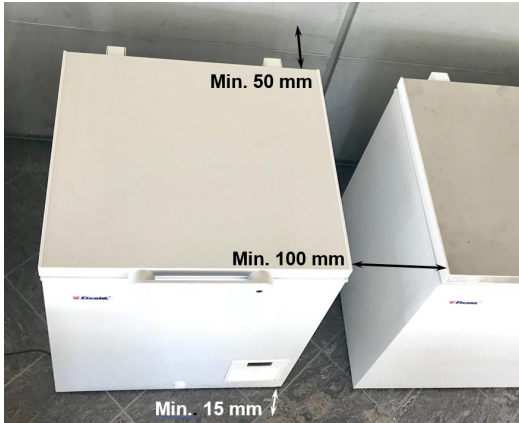
- Before use, the interior of the appliance should be cleaned with a mild soap solution, and wiped off with a dry clean cloth. Never use any kind of solvent or other chemicals

### 5. Setting up the freezer

The freezer should not be placed where it might be splashed with water, in extreme high humidity or in direct sunlight. Any of these factors may lead to a reduction in performance and shorten the life span of the components. The freezer should be placed on a horizontal level, and should not be placed close to a heating appliance or heating tubes. Allow a minimum of 50mm (2") clearance on the side and the back.

The side with the ventilation grill should have a clearance of at least 100 mm (4") in order to

allow the heat from the compressor motor to dissipate. Underneath the appliance these should be a gap of 15 mm approx. (1/2"). On a soft surface, e.g. carpet, it may be necessary to ensure the correct distance by means of spacers.



## 6. Electrical supply

The electrical supply should always be in accordance with the rating plate on the back of the freezer.

The supply must always be in accordance with the law and regulations regarding electrical safety.

If any doubts, contact your supplier.

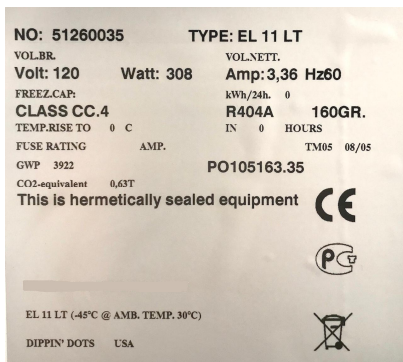


Fig. 1

## 7. Starting Up

In case the compressor does not start when the freezer has been plugged in, the electrical supply may not be in order. Check if there is an electricity supply to the plug or if the fuse is blown. If not please go to trouble shooting page 5.

## 8. Operating the freezer

The empty freezer should be switched on for at least 5-6 hours prior to loading of the freezer.

The freezer should not be loaded above the inside walls which is also the load line limit.

*Please note: After the lid has been opened, there will be a vacuum created inside the freezer due to the low temperatures. Wait a few minutes before trying to re-open the lid otherwise the handle could be damaged.*

## 9. Defrosting

In order for the freezer to work to its maximum efficiency the cabinet should be defrosted when a approx. 2mm thick ice layer has formed inside the cabinet.

The ice layer is easily removed with a plastic or wooden scraper.

**Never use a sharp metal object which might will cause damage to the inner liner.**

The defrosting frequency is determined mainly by two factors the usage pattern (number of lid openings) and the relative humidity.

Excess water can be drained out by using the drain water outlet on the front of the freezer.



## 10. Cleaning

Cleaning should be done when needed.

When used in a dirty environment it might be necessary to remove the compressor

compartment grill and clean the compressor compartment eventually with a vacuum cleaner.

If the cleaning process is neglected there is a risk that the performance of the freezer will be effected and even damage to the compressor could occur due to overheating.



## 11. Storage

If the freezer is stored for a period of the time, the lid should be kept open for free circulation of air inside the cabinet in order to avoid corrosion of the inner liner.

## 12. Temperature control VAC freezers

The temperature inside the freezer is controlled by the electronic controller placed in the front grill.

The controller has a digital readout of the temperature inside the cabinet, and the option of changing the temperature inside the cabinet.

## 13. External voltage and temperature alarm

Optionally the freezer can be equipped with a battery operated alarm box with connections for external alarm for voltage failure and temperature alarm. The battery should be exchanged every two years.

Please note! When commissioning the freezer, the battery must be turned into its correct position.

## 14. Dixell controller



## 15. Functions

*How to see the set point:*

1. Press and immediately release the SET key, the display will now show the set point value.
2. Press and immediately release the SET key or wait for 5 seconds to display the probe value again.

*How to lock and unlock the keyboard:*

1. Press the up and down keys simultaneously for more than 3 seconds.

*How to change the set point:*

1. Press the SET key for more than 3 seconds to change the set point value.
2. The set point value will be displayed and the LED starts flashing.
3. To change the set point value, push the up or down arrow.
4. To memorise the new setting press the SET key again or wait 15 seconds for the controller to return to normal display of the probe temperature.

## 16. Setting the controllers offset value

The freezer is designed for long time and safe storage of sensitive food products.

In some situations, the VAC freezer is also used for other applications like in laboratories for different low temperature test.

Depending on the actual situation it might be necessary to change the controllers offset

value in order to get a correspondence between the reading on the display and the actual temperature inside the cabinet.

The offset can be adjusted in the following way:

*Unlock the keyboard.*

Enter the programming mode by pressing the SET and arrow down keys for 3 seconds.

Select the parameter “Ot” by pressing arrow up or down key.

Press the SET key to display its value.

Use arrow up or down to change its value. The offset can be adjusted to +/- 12 dgr.C

Press SET to store the new value.

Press SET + arrow up or wait 15 seconds without pressing any key. The new value will now be stored.

For more detailed information about programming the Dixell controllers please consult the attached manuals.

## 17. Trouble shooting

The appliance is not operating. Please check the following before calling for service:

*Is the electrical plug connected to the mains (wall socket)? Is the fuse blown?*

The appliance is operating continuously. Please check:

*Is ambient temperature too high?  
Has the appliance recently been loaded with a large of warm products?*

The temperature inside the appliance is too high. Please check:

*Is the Dixell controller set to the correct temperature?*

*Has an excess amount of ice formed inside the appliance?*

If you have checked the above points and the appliance is still not working as expected, please contact your local dealer for further advice.

## 18. LN<sub>2</sub> or LCO<sub>2</sub> back-up

On the rear side of the cabinet there is a label and a marking, where it is possible to insert either a temperature probe or a back-up LN<sub>2</sub> or LCO<sub>2</sub> supply.

The inner and outer skins are pre-drilled.

### **IMPORTANT NOTE !!!**

**Do not attempt to drill or in other way make access to the freezers interior other places than at the marking, there is a risk of damaging the freezers tubing system, resulting in a leakage with inflammable gasses.**



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