



12 RESPONSIBLE
CONSUMPTION
AND PRODUCTION



Vestfrost Solutions is working towards reaching the UN - Global Sustainable Development Goals by 2030.

The Sustainable Development Goals are the blueprint to achieve a better and more sustainable future for all.

In order to implement Goal no 12 "Responsible Consumption and Production", this manual has been printed on recycled paper.



VLS 096Ae RF SDD - EMD-EMS TrueBlue

WARNING

WARNING:

Keep ventilation openings in the appliance's cabinet or in the built-in structure clear of obstruction.

WARNING:

Do not use **mechanical devices** or other means to accelerate the defrosting process, other than those recommended by the manufacturer.

WARNING:

Do not damage the refrigerant circuit.

WARNING:

Do not use **electrical appliances** inside the storage compartment, unless they are of a type recommended by the manufacturer.



WARNING:

Danger: Risk of fire or explosion. Flammable refrigerant is used. To be repaired only by trained personnel.

WARNING:

When positioning the appliance, ensure the power cable is not trapped or damaged.

WARNING:

Do not locate multiple portable socket-outlets or portable power supplies at the rear of the appliance.

- Always keep the keys in a separate place and out of reach of children.
- Children should be supervised to ensure that they do not play with the appliance.
- This appliance is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety.
- Before servicing or cleaning the appliance, unplug the appliance from the mains or disconnect the electrical power supply.
- If the supply cord is damaged, it must be replaced by the manufacturer, its service agent, or similarly qualified persons in order to avoid a hazard.
- Frost formation on the interior evaporator wall and upper parts is a natural phenomenon. Therefore, the appliance should be defrosted during normal cleaning or maintenance.

- Please note that changes to the appliance construction will cancel all warranty and product liability.
- This appliance is intended to be used in household and similar applications.
- Do not store explosives, such as aerosol cans with flammable propellants in the unit.



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PQS Code	Model	PQS Performance specifications Specification reference:	PQS Independent type-testing protocol Product verification protocol:
E003/132e	VLS 096Ae RF SDD	E003/RF05.8	E003/RF05-VP.6

Health and safety guidance – Warning!

Before any repair job be aware of following!

Perform the following steps to prevent ESD damage of connection board and EMS display

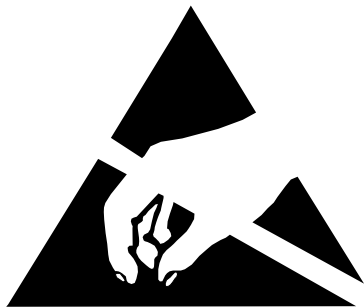
- Use a wired ESD wrist strap that is properly grounded. Touching the chassis before handling parts does not ensure adequate ESD protection on parts sensitive to ESD damage.
- Handle all static-sensitive components in a static-safe area. If possible, use anti-static floor pads and workbench pads.
- When unpacking a static-sensitive component from its shipping carton, do not remove the component from the anti-static packing material until you are ready to install the component. Before unwrapping the anti-static packaging, ensure that you discharge static electricity from your body.
- Before transporting a static-sensitive component, place it in an anti-static container or packaging.

WARNING:

Before servicing or cleaning the appliance, disconnect it from power source.

WARNING:

Danger risk of fire or explosion. Flammable refrigerant used. To be repaired only by trained personnel.



Get to know your VLS 096Ae RF SDD

M2M - Logger data Access
USB Type-C

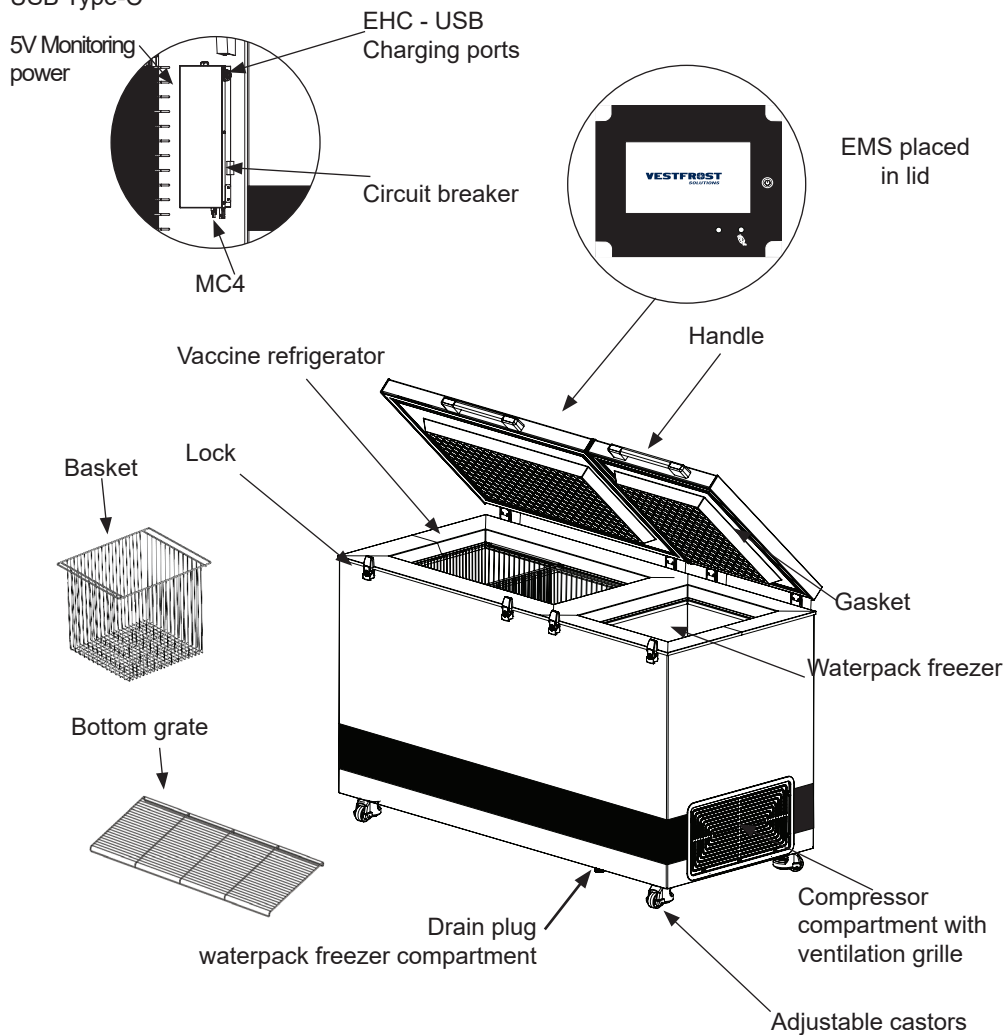


fig. 1

WARNING!**HIGHLY IMPORTANT!**

- Make sure NEVER to place any commodities direct up against the refrigerator sensor cover.

Eg. Water-pack

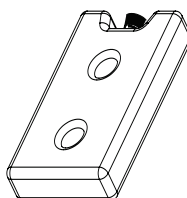


fig. 2

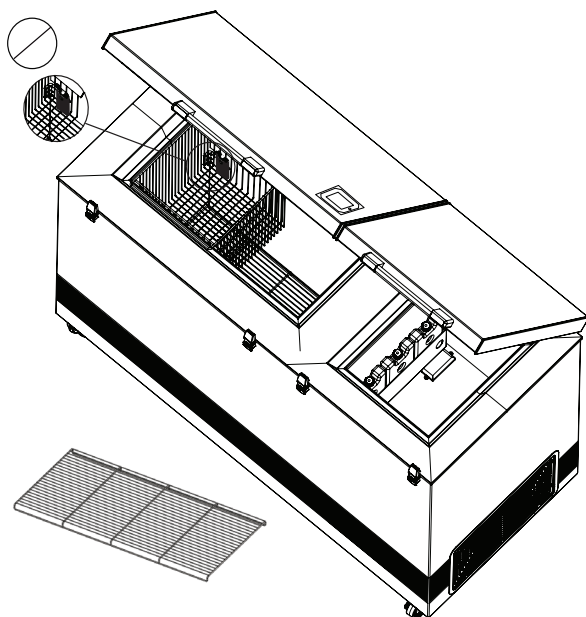


fig. 3

- Bottom grid MUST be used, the baskets are optional as the unit is Grade A

If FT2 are used

The activated Fridge-tag must be placed immediately in its predetermined location. It is recommended and important to place the device in the centre of the refrigerator for an optimal temperature observation.

External sensor

Two hours before activating the device the external sensor must be placed in its predetermined location. It is recommended and important to place the external sensor in the centre of the refrigerator for an optimal temperature observation and to avoid any incorrect measurements when starting the device



fig. 4

Fridge-tag Support



Placing, unpacking and general information

Unpacking

1. Unpack the appliance and check that it has not been damaged. If you observe any damage, inform your supervisor.
2. Check the rating for correct voltage and frequency.
3. Open and remove all internal packing material.

Placing

Install the appliance in a dry and well ventilated place. Avoid installation near heat sources or in direct sunlight.

Place the appliance on the floor and make sure that it is level.

Adjustable feet

Once the appliances is positioned in the exact spot of operation the anti-vibration foot is lowered, and the caster wheel is lifted off the ground, making the equipment completely stationary

When your equipment needs to be moved out of the way, just raise the anti-vibration foot, and push it easily to a new location.

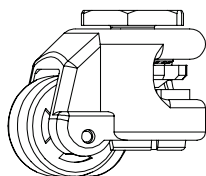


fig. 5

Team Lifting Procedure (When Casters Cannot Be Used)

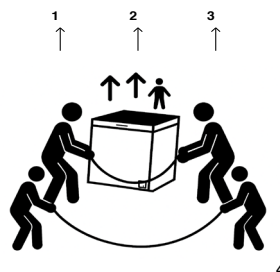
1. **Minimum of four people required;** more may be needed depending on the installation environment.
2. Bend at the knees, not the waist. Keep your back straight.

3. Grip the appliance securely, with the lifting straps positioned on each caster
 - Lift from solid structural areas—never lift from doors, panels, or adjustable components.
4. **Lift together on the count of three,** keeping the appliance close to your body.
5. Move slowly and communicate continually with the lifting team.
6. When lowering the appliance into place, **set it down gently,** keeping fingers and hands clear of pinch points.



CAUTION

Lift with four people



Using Casters (Flat Surfaces Only)

- Ensure all casters are unlocked before moving.
- Push, do not pull, using both hands on sturdy surfaces of the appliance.
- Move at a controlled walking speed.
- Once positioned, lock all casters to prevent unintended movement.

Important Safety Notice

Failure to follow these instructions may result in personal injury, appliance damage, or installation hazards. Always follow local workplace safety regulations and use proper lifting equipment when necessary.

Ventilation

It is important that the appliance is placed well ventilated, so that air can circulate unhindered above, below, and around the appliance. fig.6 illustrates how the necessary air circulation can be ensured. There must be at least 30 mm clearance between the base of the appliance and the floor.

Ventilation openings in the appliance or in built-in structures must be kept clear.

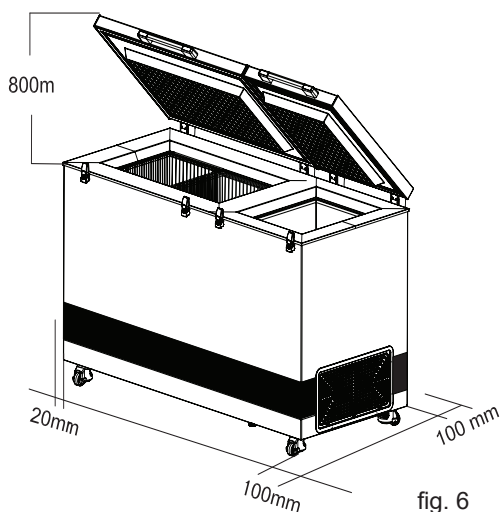


fig. 6

NOTE: There must be free access to the ventilation grille. (On the lower right side of the device)

Important:

Do not use open fire or cigarettes in the proximity of the appliance.

Room temperature

The appliance is designed and adjusted to produce an optimum temperature level in the vaccine compartment at a minimum/maximum ambient temperature of +5°C to +43°C.

NOTE: The appliance must not be placed in ambient temperatures below +5°C.

NOTE: Updated WHO PQS specifications: The temperature specifications of the vaccine storage refrigerator allow brief deviations from the general target of +2°C to +8°C.

Important to know

Vestfrost VLS Line is constructed with external and internal condensers. The internal, also known as skin condensers, work by transferring the heat from the refrigeration system to the outer cabinet of the appliance and are not visible as they are located on the inside of the outer cabinet.

Especially, when the appliance is powered up the first time and must freeze the ice-lining until stabilization, (2-7 days) the outer cabinet will be heated up quite significantly, which should be expected, and it is completely OK.

Actually, a fine indication that the cooling system is working properly.

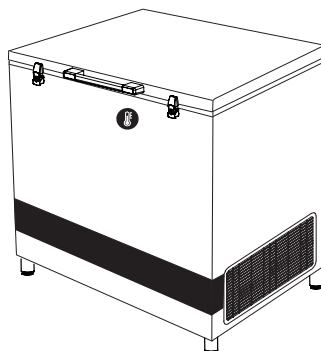


fig. 7

Operation and start up

Starting procedure

Connect the appliance to the solar panels according to table 1, which states the lengths and sizes of the wires used for connecting the appliances.

Standard supplied cable size and length will be 6mm² and 20m.

The screened cables coming from the PV panels are fitted with a male/female MC4 compatible connectors. The connections are then to be mounted to the prefixed male/female MC4 compatible connectors placed at the back of the appliance - See fig. 8

The connections are MC4 plug and play type and can only be fitted correct - male to female/female to male.

Clean the appliance thoroughly before start up.

Turning the appliance off

If the appliance needs to be turned off, it is important to switch off the datalogger.

Level 1 display:

Long pressing the  and a short confirmation press

EMS see separate manual.

It is important to switch off the MCB and disconnect the appliance when it is switched off. When power is reapplied, the thermostat will automatically restart the appliance.

Size:		Max. length:	
Cross section	AWG	[m]	[ft]
[mm ²]	[Gauge]		
2,5	12	8	26
4	12	13	42
6	10	20	65
10	8	32	105

Table 1

Temperature control

It is recommended to check the inside temperature with an accurate thermometer twice a day. The inside temperature must be checked regularly according to WHO's standards and specifications.

Cool down of the appliance

Before the appliance is loaded with vaccines it is highly IMPORTANT to ensure it has fully stabilized the temperatures. It may take two to seven days to stabilize the temperature in a newly installed or repaired refrigerator and two to three days for a freezer. To ensure that the icelining is frozen and the appliance has stabilized do the following:

1. Let the refrigerator run for at least 48
2. Monitor the vaccine compartment temperatures from the EMS display.
3. Check and record the minimum and maximum temperatures in the vaccine compartment each working day for two to seven days (must be between +2° and +8°C).
If temperatures cannot be recorded digitally, check and record temperatures a minimum of two times each workday.

4. Once you have two consecutive days of temperatures recorded within the recommended range, your unit is stable and ready for use.

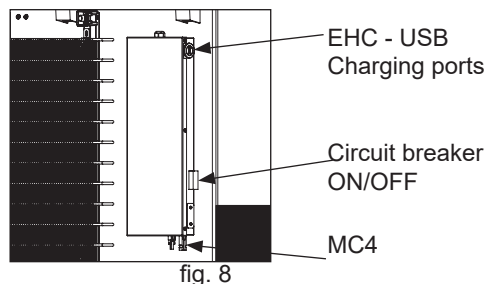
The temperature in the vaccine compartment must always be monitored on the thermometer and be within the range $+2^{\circ}$ to $+8^{\circ}\text{C}$.

Controller

The appliance is equipped with a thermostat that controls the temperature in the vaccine compartment. The thermostat is factory adjusted to a default setpoint, what in most ambient environments will keep the vaccine compartment within desired thresholds of 2° - 8°C . If the refrigerator is not used for a longer period of time, it is recommended to use

ON/OFF switch  to turn the refrigerator OFF.

This disconnects the power from mains.



In case cooler is turned OFF, make sure the vaccine compartment is cleaned and dried thoroughly afterwards, this to prevent problems with odors or mold. To prevent odors taking hold it is highly recommended to keep the lid slightly open.

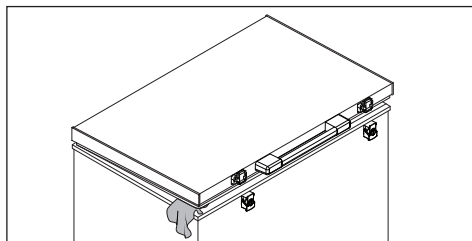


fig. 9

Charger

The appliance is equipped with a USB charger with USB type-A/C socket

The USB charger is only for charging remote temperature monitoring devices

USB output is on when there is sufficient solar radiation on the PV panels

The USB charger can supply up to 12V/35W.

The USB charger can deliver 100Wh/day on average depending on operating conditions.



fig. 10

Loading the appliance

Loading vaccines

When the temperature in the vaccine compartment has stabilized, i.e. and the temperature is between $+2^{\circ}$ and $+8^{\circ}\text{C}$ and the compressor stops and starts, vaccines can be loaded. The vaccines should be placed and arranged in the basket.

Vaccine storage

Below points are recommended vaccine storage advice outlined by Unicef

- Keep the vaccine boxes containing the vaccines in neat rows.
- Different vaccines should be kept separately to facilitate easy identification.
- Keep about, 2 cm. space between boxes of vaccines for circulation of air.
- Store Freeze sensitive vaccines (DPT, TT, IPV, Penta and Hep. B) away from the bottom of the ILR to avoid freezing. Always keep the vaccines in the basket provided in the ILR. OPV, RVV BCG, JE and Measles vaccine to be stored at bottom of basket of the ILR.
- Vaccine should be stored as per their heat and cold sensitivity.

Do not load the vaccine above top of the basket

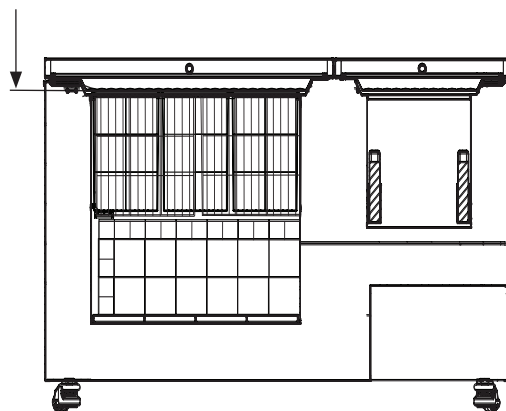


fig. 11

Freezing waterpack:

Place waterpacks in the slots – after 24h the packs are frozen

Frozen waterpacks can be stored in the middle of the freezer

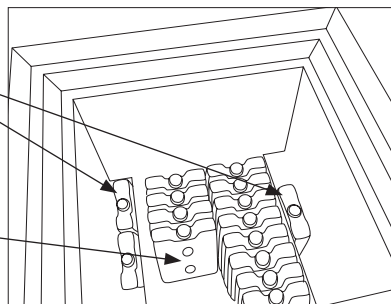


fig. 13

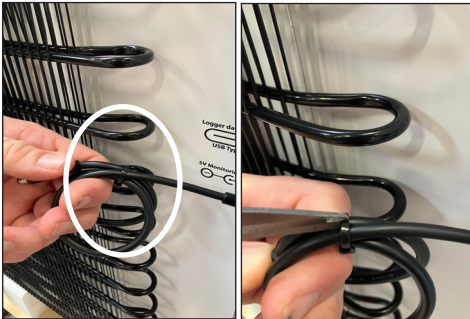
How to connect the M2M captive barrel power cable from a ILR/SDD



The barrel power cable is placed at the rear of the appliance, in the junction-box.



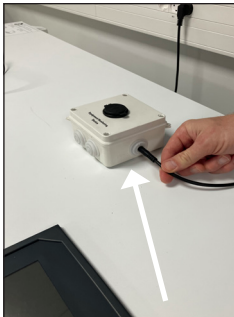
Example/Dummy of External EMD, for instruction purposes only



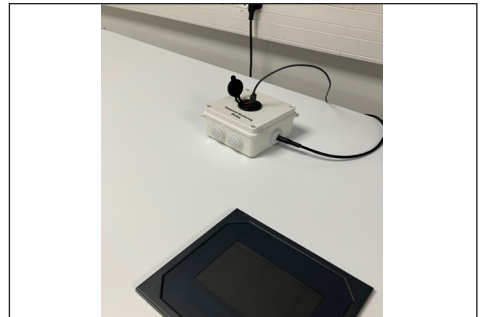
1. Cut the cable tie



2. Prepare the cable make sure the barrel cable is ready for connection.



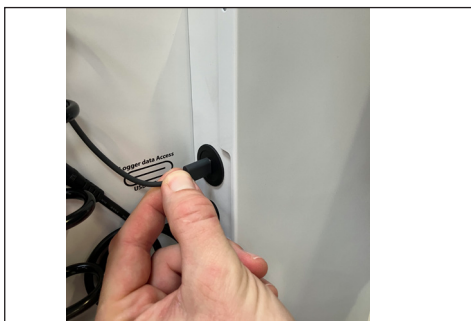
3. Connect the barrel plug to EMD



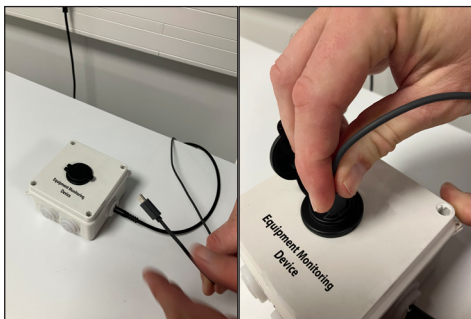
How to connect the USB-C interface to exchange data with an external EMD



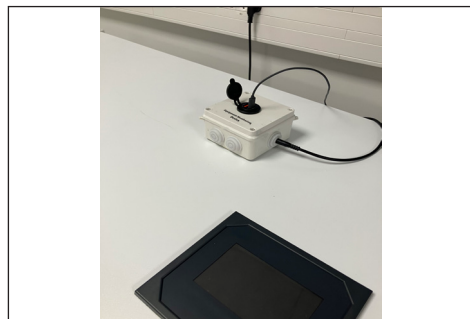
The USB-C socket is placed at the rear of the appliance, in the junction-box.



1. Plug the USB-C male connector into the USB-C socket located in the junction box



2. Plug the USB-C male connector into the USB-C socket in the External EMD



Front panel commands

Level 1 display



fig. 14

-  Stand by/wake display. Long press plus confirmation press will put the device on standby/wake the device.
 -  (UP): To see the max. stored temperature; in programming mode it browses the parameter codes or increases the displayed value.
 -  (DOWN) To see the min stored temperature; in programming mode it browses the parameter codes or decreases the displayed value.
 -  Confirm. First press changes the temperature display to ice bank and lights up the ice cube symbol. Second press switches to hold over time and lights up the clock symbol. Returns automatically after 5 seconds.
 -  Cancel.
-  Refrigerator temperature.
-  Freezer temperature. Is off if freezer is deselected

-  Green LED. Indicated if refrigerator compressor is running.
-  Blue LED. Indicates that energy harvest is active.
-  Yellow LED. Indicates that either refrigerator or freezer lid is open.
-  Blue LED, Indicates when there is data transfer on the USB port.
-  Blue LED, Indicates that the ice bank temperature is shown in the display.
-  Green LED, indicates that the remaining hold over time is shown in the display.

Alarms

In case of an alarm, the display will display the alarm code and the buzzer will sound an alarm.

An alarm can be muted by pressing any button. The display shall still display the alarm code.

During alarm, the display will alternate between the alarm code and the temperature.

Pressing the  button after muting, will reset the alarm.

During battery operation, only high and low surface temperature sensor alarms will be set. (if the temperature is high, there is no longer a charged ice bank and the remaining battery capacity can be used to send alarms)

The device is equipped with an integrated datalogger in accordance with PQS DL01. The datalogger records the vaccine temperature and relevant additional measurements. Please see annex XX1 for full list

The data can be accessed through the USB C port on the back of the refrigerator. The port is marked with "logger data access, USB type C" symbol. By connected a suitable device (Windows pc, smartphone, EMD level2/3) the data can be accessed. The datalogger will present itself as a USB storage device.

The data is stored in a 60-day PDF report and json files per PQS.

How to access data:

Connect a suitable device. The port presents itself as an USB mass storage device, please ensure that your device can handle this protocol.

Transfer the files from the USB storage to your device. The device is read only, so it is not possible to save data to it.

N.B. The device will automatically disconnect after 4 minutes. After additional 6 minutes, the device will be available again. This is to enable the datalogger to update the recorded data.

Powering your EMD level 2/3:

The refrigerator is equipped with the 5V power supply for powering EMD level 2/3. The power supply can deliver 1A. The power is available through a barrel plug on the back of the refrigerator. The plug is labelled "5V Monitoring Power"

Energy Harvest:

The refrigerator is equipped with an energy harvest device to deliver excess power when not needed by the refrigerator. The energy is available through an USB charge port on the back of the refrigerator. USB A and USB C ports are available. UP to 35W can be delivered through the USB port. The port is inactive when the refrigerator is requiring power.

The port is marked "EHC"

- RELT;Relative Time;Required
- RTCW;RTC Wakeup;Required
- TVC;Vaccine Compartment Temperature;Required
- TFRZ;Freezer Compartment Temperature Required, if applicable
- TICE;Ice bank temperature;Manufacturer
- TSUR;Surface temperature;Manufacturer
- TAMB;Ambient temperature;Required
- HAMB;Ambient relative humidity;Optional
- DORV;Door/lid opening (vaccine compartment);Required
- DRCV;Number of door/lid openings (vaccine compartment);Optional
- DORF;Door/lid opening (freezer/other compartment);Required, if applicable
- DRCF;Number of door/lid openings (freezer/other compartment);Optional
- CMPR;Compressor runtime;Required, if applicable
- CMPR2;Secondary Compressor runtime;Required, if applicable
- FANS;Fan speed;Optional
- DCSV;DC supply voltage to the appliance;Required, for solar
- DCCD;DC current drawn by the appliance;Required, for solar

- SVD;DC Supply voltage availability;Manufacturer
- ACSV;AC supply voltage to the appliance;Optional
- ACCD;AC current drawn by the appliance;Optional
- SVA;AC supply voltage availability;Required, for mains
- BLOG;Logger battery remaining;Required
- HOLD;Holdover, autonomy, or independence time;Optional
- TLO_ALARM; total time in seconds below low temp alarm limit;Manufacturer
- THI_ALARM;total time in seconds above high temp alarm limit ;Manufacturer
- ALRM;Alarm condition;Optional
- LERR;Logger Error codes;Required
- AMOD;Appliance model;Required
- AMFR;Appliance manufacturer;Required
- ASER;Appliance manufacturer serial number;Required
- ADOP;Appliance date of production;Required
- APQS;Appliance PQS code;Required
- ACAT;Appliance PQS device type;Required
- CNAM;Compressor Electronic Unit Manufacturer;Required, if applicable
- CSER;Compressor Electronic Unit Product Code;Required, if applicable
- CSOF;Compressor Electronic Unit Software version;Required, if applicable
- CNAM2;Secondary Compressor Electronic Unit Manufacturer;Required, if applicable
- CSER2;Secondary Compressor Electronic Unit Product Code;Required, if applicable
- CSOF2;Secondary Compressor Electronic Unit Software version;Required, if applicable
- LDOP;Logger date of production;Required
- LMFR;Logger manufacturer;Required
- LMOD;Logger model;Required
- LPQS;Logger PQS code;Required
- LSER;Logger serial number;Required
- LSV;Logger software version;Required
- TVC;Vaccine Compartment Temperature;Required
- TFRZ;Freezer Compartment Temperature ;Required, if applicable
- IDRV;Instantaneous door/lid opening (vaccine compartment);Required in sync file
- IDRF;Instantaneous door/lid opening (freezer compartment);Required in sync file

List of alarms and error codes

The following alarms are monitored and logged:

List of Error Codes

A - Vaccine temp. sensor error

B - Ambient temp. sensor error

C - Ice bank temp. sensor error

D - Surface temp. sensor error

E - Freezer temp. sensor error

F - Vaccine comp. door malfunction

G - Freezer comp. door malfunction

H - Power measurement error

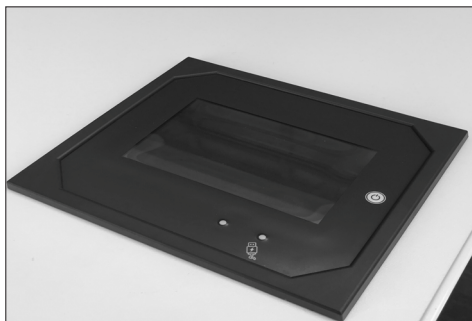
I - Compressor 1 malfunction

J - Compressor 2 malfunction

K - Fan malfunction

Z - Missing/incomplete data records

Battery change



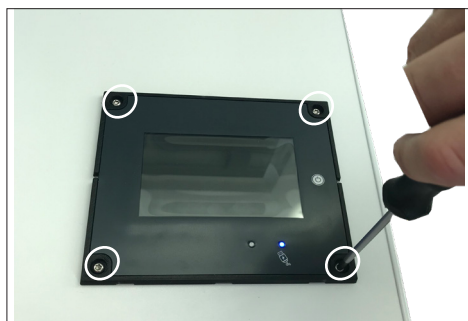
WARNING:

Before changes or cleaning the appliance, disconnect it from power source.

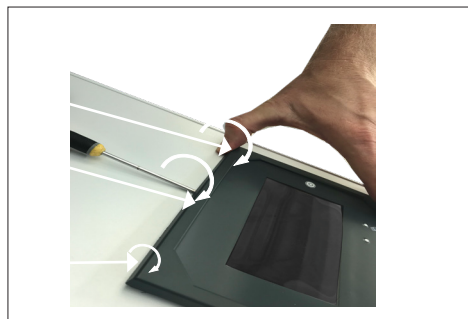


Perform the following steps to prevent ESD damage of connection board and EMS display

- Use a wired ESD wrist strap that is properly grounded. Touching the chassis before handling parts does not ensure adequate ESD protection on parts sensitive to ESD damage.
- Handle all static-sensitive components in a static-safe area. If possible, use anti-static floor pads and workbench pads.
- When unpacking a static-sensitive component from its shipping carton, do not remove the component from the anti-static packing material until you are ready to install the component. Before unwrapping the anti-static packaging, ensure that you discharge static electricity from your body.
- Before transporting a static-sensitive component, place it in an anti-static container or packaging.



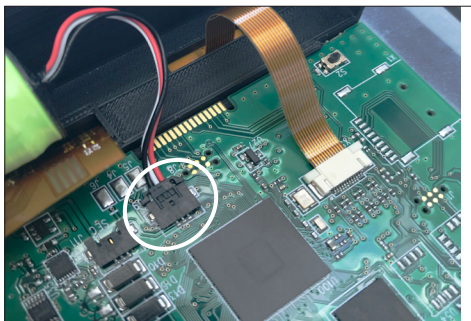
2. To unmount the display unfasten the 4 Torx 20 screws



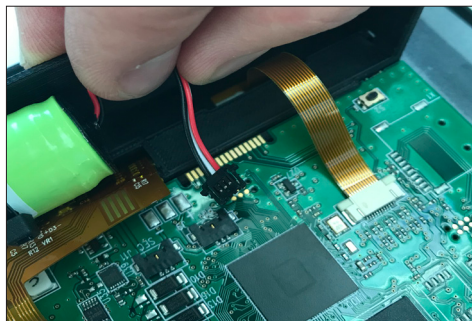
1. Gently place a small screwdriver, under the top part of the display cover and twist the screwdriver to unlock the 3 fixing points



3. Battery position



4. Power wire connection to electronic control unit



5. By hand gently press the lock function on both sides of the power wire plug and slide backwards. The power wire is loose

Maintenance of M2M

1. Keep It Clean

- Use compressed air or a soft brush to remove dust/debris from the plug and port.
- For sticky dirt, gently wipe the metal connector with isopropyl alcohol and a lint-free cloth.

2. Avoid Excessive Force

- Plug and unplug gently—USB-C is reversible, but forcing it can bend internal pins.
- Never yank it out by the cable; grip the connector instead.

3. Protect from Moisture

- Avoid using USB-C devices in wet or humid environments.
- If the plug gets wet, dry it thoroughly before use.

4. Use Quality Cables

- Low-quality or damaged cables can damage your device. Stick to certified brands.
- Inspect regularly for fraying, loose connectors, or overheating.

5. Store Properly

- Don't tightly bend or wrap the cable around plugs.
- Use a case or cable organizer to keep it safe when not in use

Solar panel

Type :	Type 2 according E003/PV01 direkt drive
Nominal voltage:	20V
Nominal power:	2 x 180W (standard test conditions)
Number of parallel connected modules per array:	2 parallel arrays 4 parallel modules pr array
Warranty:	Min. 3 years
Performance guarantee:	25 years (to 80% of original value)
Certificates:	UL, TÜV or compliance with the requirements of IEC 61215 IEC 61730
Electrical data	VS-180MO
Rated power Pmpp [Wp]	180
Power tolerance	± 3%
Rated current Impp [A]	8.278
Rated voltage Vmpp [V]	21.744
Short-circuit current Isc [A]	8.562
Open-circuit voltage [V]	26.164
Max. system voltage [V]	1000
Temperature coefficient [% /°C]	VS-180MO
Temperature coefficient [Pmax]	- 0.28 %
Temperature coefficient [Isc]	- 0.05 %
Temperature coefficient Voc]	- 0.23 %
Specifications	VS-180MO
Cell size	210 x 105 mm N-Type
Number of cells cell type	36(3*12) mono
Weight	10.0 kg
Cable length	850 mm
Cable diameter	4 mm2
Diode	2 x 12 A
Junction Box	IP 65

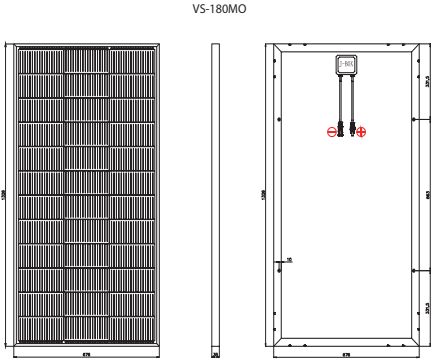


fig. 15

Placing

Solar panels are always to be placed on a stable roof or bar, which is safe and easily accessible (not for the public).

The solar panels are always to be fitted according to the supplier's instructions and with the screws and fittings included or recommended by the manufacturer.

Do not place the solar panels in the shadows of buildings, trees, etc. The surfaces of the solar panels are to be turned directly towards the sun.

Condensation water drainage

Vaccine compartment

Due to humidity in the air combined with cold surfaces inside the vaccine compartment, it should be expected that condensation will form on the sides of the inner lining. The condensation will be collected at the bottom, from where it regularly needs to be drained. If the bottom of the vaccine compartment is covered with condensation water, drainage/drying should be initiated.

Condensation increases if:

- Equipment is opened too frequently.
- Lid not closing properly.
- Lid gasket is defective.
- High level of humidity.

Drainage of condensation water is recommended to be performed in the morning between 7am to 9am when the ambient temperatures are expected to be lowest.

Proceed as follows:

IMPORTANT!

Before condensation drainage vaccines must be moved to another working ILR, SDD or cold box with conditioned icepacks.

1. Disconnect the power supply by switching off the ON/OFF power button or disconnect plug from power socket.
2. Open the drainage plug, placed inside the vaccine compartment.
If the appliance has an auto-drainage system, there is no plug to open. Instead, ensure that the drainage filter is cleaned. See fig. 20
3. Place a tray under the condensation water drain. If the appliance has an auto-drainage system, no need for tray. See fig. 17

4. When all the condensation and water droplets on the lining has been removed carefully, clean the inside cabinet, as well as lid, lid gasket, and outside of the cabinet, using water with a mild, perfume-free detergent. Dry the vaccine compartment with a soft cloth, and make sure, no moisture is remaining after cleaning.
5. Reinsert the internal drainage plug, and check lid gasket is not faulty.
6. Reconnect the power supply by the ON/OFF power button and/or reconnect power plug.
7. When appliance has regained required safe temperatures for storing vaccines 2° - 8 °C, place the vaccines in neat rows with space.

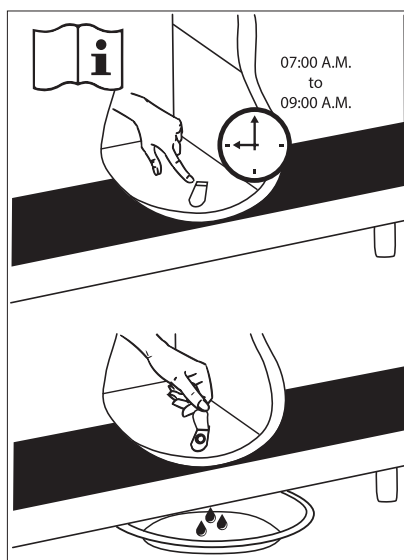


fig. 16

Defrosting of Freezer compartment

The water-packs stored and the humidity of the air gradually causes frost and ice to form in the freezer compartment. A thin layer of frost or ice does not affect freezer performance, but a thick layer could cause the freezer not to cool water-packs satisfactorily. Small amounts of loose frost can be removed using a plastic scraper.

Never use electrical apparatus or sharp implements as these may damage the inside of the appliance.

When the layer of frost and ice exceeds 4-5 mm the freezer should be completely defrosted.

Defrosting should be performed in the morning between 7am to 9am, just before the solar radiation again is powerful enough to start compressor and run refrigeration system.

Proceed as follows:

1. Disconnect the power supply by switching off the ON/OFF button. Important! ONLY switch off the power supply of the freezer compartment.
2. Remove all water-packs from freezer compartment. Place them in an empty coldbox or wrap them up to keep them as cold as possible.
3. Keep the freezer lid open.
4. Unscrew the drain plug placed front right-hand side underneath the appliance.
5. Place a tray under the defrost water drain.
6. Place a bowl of hot (but not boiling) water in the freezer, close the lid and wait approx. 30 minutes before removing loose frost with the plastic scraper.
7. To prevent water from damaging the floor during defrosting, it is advisable to check the defrost water tray from time to time and to cover the floor around the defrost water drain to protect against ice and splashes. When all the frost and ice have melted, clean the inside cabinet, as well lid, lid gasket, and outside of the cabinet using water with a mild, perfume-free detergent. Dry the freezer with a soft cloth, and make sure no moisture is remaining after cleaning.
8. Reinsert the internal and external drainage plugs, and check lid gasket is not faulty.
9. Important! Screw back in position the drain plug, and turn on again the power supply with the ON/OFF button.
10. Check waterpacks are not leaking before returning them to the freezer compartment. Place waterpacks according instructions, approx. 5 minutes after having switched it on. Close the lid.

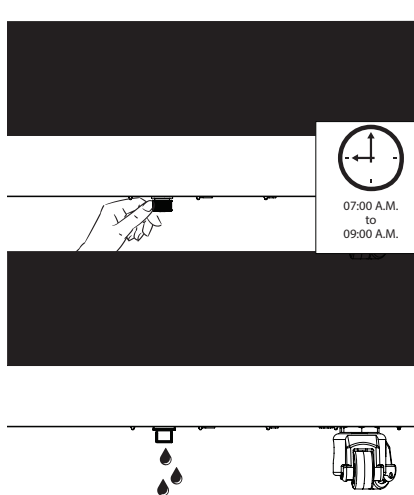


fig. 17

Auto drainage

The appliance is equipped with an auto-drainage function, with a drain hole at the bottom of the vaccine compartment.

The drain is collecting the water droplets generated by the unavoidable condensation that at some point will be created on the inner linings of the vaccine compartment, due to the fact of warm air hitting the cold surface of the wall.

This condensation eventually will run down the sides to the bottom, and water then flows down the drain tube into a drip tray located on top of the compressor which evaporates the liquid as it warms.

If the appliance drain becomes blocked by any objects, the water can't drain away as it should from the vaccine compartment, which will result in water accumulating, which further could result in creating issues with the stored vaccine vials, stickers, cardboard boxes, etc.

This is why it is an important SOP procedure, to regularly ensure that the drain filter is clean and free from dirt and waste.

To do the cleaning, use lukewarm water with a mild cleaning agent on a soft cloth, and wipe off the filter along with the surrounding bottom.

Finish off with a dry dishtowel or similar, to ensure all objects are removed and the bottom is dry.

This is why it is an important SOP procedure, to regularly ensure that the drain filter fig.20 is clean and free from dirt and waste.

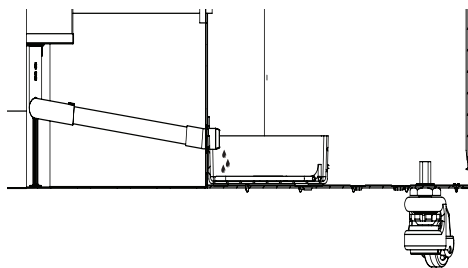


fig.18

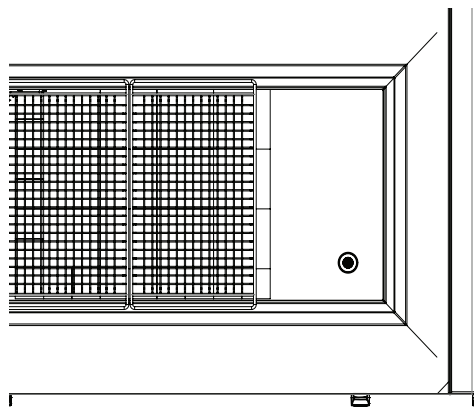


fig.19

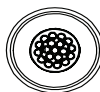


fig.20

Maintenance and cleaning

Maintenance of the appliance

Daily maintenance:

The temperature in the vaccine compartment must always be monitored on the thermometer every morning and evening. Please note that the vaccine in the appliance may not freeze. The temperature is factory set, and should not be adjusted by unauthorized personnel.

Check lid is properly closed and fits tightly to the cabinet of the appliance.

Weekly maintenance:

During normal use, water can accumulate at the bottom of the appliance; remove with a cloth or through the drainage hole.

Wipe off water droplets on the inside wall at the same time.

Check if lid gasket is sealing tight to the top frame when the lid is closed. A tight sealing lid reduces accumulation of water and formation of rime significantly.

Monthly maintenance:

Clean the grille on the back side of the refrigerator once each month.

Yearly maintenance:

Electric connections and components are to be checked and cleaned once a year or more if necessary.

Maintenance of the solar panels

Weekly maintenance:

The solar panels are to be cleaned for dust once each week – or as required. Cleaning must be carried out with water using a soft cloth or wash rag.

Monthly maintenance:

Avoid shading

It should be regularly monitored that shades do not come up such as new towering trees, as this will decrease the amount of energy produced by the system.

Yearly maintenance:

Electric connections and components are to be checked and cleaned at least once a year or more often if required. Because of risk of fire, it is necessary to remove dust and dirt.

Checking that PV panels are clean, free of fractures, scratches, corrosion, moisture penetration and browning.

Cabling should be checked to ensure it is secure.

Checking the mounting hardware to ensure it is in good condition and ensuring the earth connection is continuous.

Checking of junction boxes to ensure there is no water accumulation and that the integrity of lid seals, connections and clamping devices is intact.

All bolts and nuts are to be re-tightened 2 weeks after installation, and then once a year.

Cleaning

Disconnect the power supply before cleaning by using the on/off switch placed at the junction box at the rear of the appliance. The best way to clean the appliance is by using luke warm water with a small amount of unscented detergent. Never use cleaning agents that scour. Use a soft cloth. Rinse with clean water and dry thoroughly. It is important to prevent water from running into the control panel.

The gasket around the lid must be cleaned regularly to prevent discolouration and prolong service life. Use clean water. After cleaning the gasket, check that it continues to provide a tight seal.

If the appliance is not being used for any period of time, switch the appliance off, disconnect the power supply, empty the appliance, clean the inside, and leave the lid open to allow air circulation and prevent smells.

Trouble-shooting

Fault	Possible cause	Remedy
Compressor is not running, and the ice packs are not cold	Be patient, it is most likely that the compressor will start within a few minutes.	If this is not the case, check the following: - Check that power is connected and that the wire from the solar panel to the appliance is intact. - Check the fuse and replace it if necessary. - If the above is OK, call technical supervisor.
Compressor is running, and the temperature is too high	The ventilation grill is blocked. The lid is not closed properly. The fan in the compressor compartment is blocked or defective. The temperature in the room in which the appliance is installed is too high.	Ensure unhindered air circulation. Ensure that the lid is closed properly. Check that the fan is running, if not it should be replaced. Shield the appliance against direct sun light and ensure more ventilation to the room.
Temperature in VLS 086A RF SDD is too low	To low set point on digital controller	Contact technical supervisor for ajustment.
No light in the indicator light during day time	Switch is turned OFF	Turn on the switch

Table 3

Warranty, spare parts and service

Warranty disclaimer

Faults and damage caused directly or indirectly by incorrect operation, misuse, insufficient maintenance, incorrect building, installation or mains connection. Fire, accident, lightening, voltage variation or other electrical interference, including defective fuses or faults in mains installations are not covered by the warranty.

Repairs performed by others than approved service centres and any other faults and damage that the manufacturer can substantiate are caused by reasons other than manufacturing or material faults are not covered by the warranty.

Please note that changes to the construction of the appliance or changes to the component equipment of the appliance will invalidate warranty and product liability, and the appliance cannot be used lawfully. The approval stated on rating plate will also be invalidated.

Transport damage discovered by the buyer is primarily a matter to be settled between the buyer and the distributor, i.e. the distributor must ensure that such complaints are resolved to the buyer's satisfaction.

Before calling for technical assistance, please check whether you are able to rectify the fault yourself. If your request for assistance is unwarranted, e.g. if the appliance has failed as a result of a blown fuse or incorrect operation, you will be charged the costs incurred by your call for technical assistance.

Spare parts

When ordering spare parts, please state the type, serial and product numbers of your appliance. This information is given on the rating plate. The rating plate contains various technical information, including type and serial numbers.

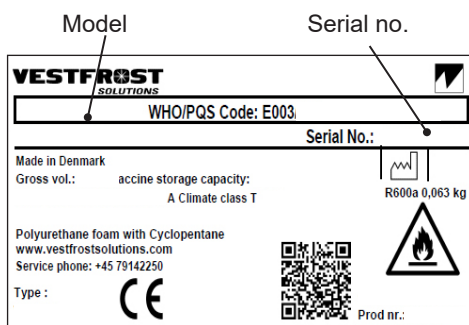


fig. 21

Recycling procedures/Disposal

Information for Users on Collection and Disposal Old Equipment and used Batteries



This symbol on the products, packaging, and/or accompanying documents mean that used electrical and electronic products and batteries should not be mixed with general household waste. For proper treatment, recovery and recycling of old products and used batteries, please take them to applicable collection points, in accordance with your national legislation and the Directives 2012/19/EU and 2006/66/EC.

By disposing of these products and batteries correctly, you will help to save valuable resources and prevent any potential negative effects on human health and the environment which could otherwise arise from inappropriate waste handling.

For more information about collection and recycling of old products and batteries, please contact your local municipality, your waste disposal service or the point of sale where you purchased the items.

Penalties may be applicable for incorrect disposal of this waste, in accordance with national legislation.



For business users in the European Union.

If you wish to discard electrical and electronic equipment, please contact your dealer or supplier for further information.

Information on Disposal in other Countries outside the European Union

These symbols are only valid in the European Union. If you wish to discard this product, please contact your local authorities or dealer and ask for the correct method of disposal.

Disposal

- Empty all contents.
- Defrost completely and clean the interior to prevent odor and mold.
- Remove or destroy locks to avoid risk of child entrapment.
- Remove the 2 batteries as shown in the Technical manual p. 39-40
- The battery must not be disposed of with general household waste.
- Battery and appliance is brought to applicable disposal service.
- Do not attempt to remove refrigerants or compressor oil yourself.

3-Year Warranty Statement

Vestfrost offers a 36-month warranty from the date of shipment for all cold chain equipment. The warranty covers any component failure arising from:

- Manufacturer-related issues
- Production errors
- Defective design
- Defective materials
- Defective workmanship

The warranty does not cover:

- Equipment failure due to abuse, misuse, or use for purposes other than intended
- Incorrect installation
- Lack of preventive maintenance
- Normal wear and tear from regular use
- Any event not caused by production or hardware errors
- Loss of contents stored in the appliance

Claim Procedures in Case of Equipment Failure or Underperformance

1. **Remote Service:** If end users can solve the problem via phone, the local service partner or Vestfrost Technical department will assist with troubleshooting according to the Vest-frost recommendations and training.
2. **On-site Service:** A local service partner or Vestfrost will visit the site with properly trained technical personnel equipped with tools, service manuals, spare parts, etc., to perform maintenance/service on-site.
3. **Off-site Service:** If the issue cannot be resolved through the above two options, the Vestfrost Local Service Partner (LSP) will transport the unit to their authorized workshop for repair.
4. **Swap Service:** If the issue cannot be resolved by the three options, Vestfrost will deliver a new unit to the country's central MoH warehouse as a replacement of the faulty unit. To ensure the best service, it is important to log and register faulty equipment using the Vestfrost Claim Report, including the following information:

To ensure the best service, it is important to log and register faulty equipment with the following information:

- Serial number (very important)
- Model
- Problem description and pictures (troubleshooting)
- Contact information, phone number, and email of the person reporting the issue

Contact Vestfrost Solutions or an authorized sales and service partner for assistance. This warranty shall be governed by the laws of your country.

Contact information of Vestfrost Technical support department:

Phone: +45 79 14 22 22

Email: technicalsupport@vestfrostsolutions.com

Address: Falkevej 12, Esbjerg, Denmark



 **VLS 096Ae RF SDD EMD - EMS TrueBlue**