

MEDICAL REFRIGERATORS



blood bank refrigerators / combined refrigerator-freezers / laboratory freezers / laboratory and pharmacy refrigerators / blood



USER PASSWORD = 555

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0476

Manufacturer's Responsibility





The Manufacturer is responsible as to safety and correct use of these refrigerators only if:

- the operations of setting, change, and repair must be performed by authorised personnel.
- the electrical installation has been carried out in conformity with the instructions.
- the device is used in accordance with this manual.
-

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Index

	<u>Products applicable to this manual</u>	5
	<u>Table of capacity and dimensions</u>	6
	<u>Technical data</u>	6
	<u>Standard and optional fitting</u>	6
1	<u>Standards and general warnings</u>	7
1.1	Certification	
1.2	Testing and warranty	
1.3	Aim, contents and intended user of this manual	
1.4	Product description	
1.5	General safety regulations	
1.6	Client's responsibilities	
1.7	Client service requests	
1.8	Ordering spare parts	
1.9	Aim and intended use of device	
1.10	Unsuitable conditions for use	
1.11	Materials and refrigerants	
2	<u>Installation</u>	10
2.1	Transport and handling	
2.2	Positioning	
2.3	Wiring and electrical hook-up	
2.4	Set-up operations	
2.5	Re-installation	
2.6	Scrapping and disposal	
3	<u>Operation</u>	14
3.1	Safety and accident prevention	
3.2	Safety data plates and guards	
3.3	Operating limits	
3.4	Storage conditions	
4	<u>User's instructions</u>	15
4.1	Start up of the appliance	
4.2	Functions	
4.3	Control panel	
4.4	The menu tree	
4.5	Alarm codes	
4.6	Download data procedure	
4.7	Procedure to disable data logger	
4.8	Procedure to calibrate internal temperature probe S1	
4.9	Update of firmware release	
4.10	GSM module	
4.11	Dry contact for remote alarm	
4.12	Back-up battery	
4.13	Temperature chart recorder	
4.14	Drawer	
4.15	Divider for drawer	

5	<u>Routine maintenance</u>	<u>27</u>
5.1	Cleaning the refrigerator	
5.2	Cleaning the interior and exterior of the appliance	
5.3	Cleaning the condenser	
5.4	Precautionary measures for prolonged disuse	
6	<u>Special maintenance and repairs</u>	<u>30</u>
7	<u>Service & Troubleshooting</u>	<u>31</u>
8	<u>Symbols used</u>	<u>32</u>
9	<u>Annexes</u>	<u>33</u>
9.1	CE declaration of conformity	
9.2	Technical documentation	
9.2.1	Electric wiring diagram	
9.2.2	Safety test report	

PRODUCTS APPLICABLE TO THIS MANUAL

The present manual is exclusively valid and applicable to the following FRI.MED blood bank refrigerators complying with Directive 93/42/EEC of 14th June 1993 concerning medical devices and following amendments.

Blood Bank Refrigerators

SB - FS - PN - AF MODELS

Operating temperature: +2°C to +6°C

Factory pre-set to: +4°C

Models: SB10E, FS15E, FS20E, FS25E, FS30E, PN45E, PN52E, AF70E, AF140E

Plasma Freezer

CL60B/PF MODEL

Operating temperature: -10°C to -42 °C

Factory pre-set to: -40°C

Model: CL60B/PF

All relevant data referring to FRI.MED products can be found on the data label visible on the rear part of the cabinet. Here is an example of the label:

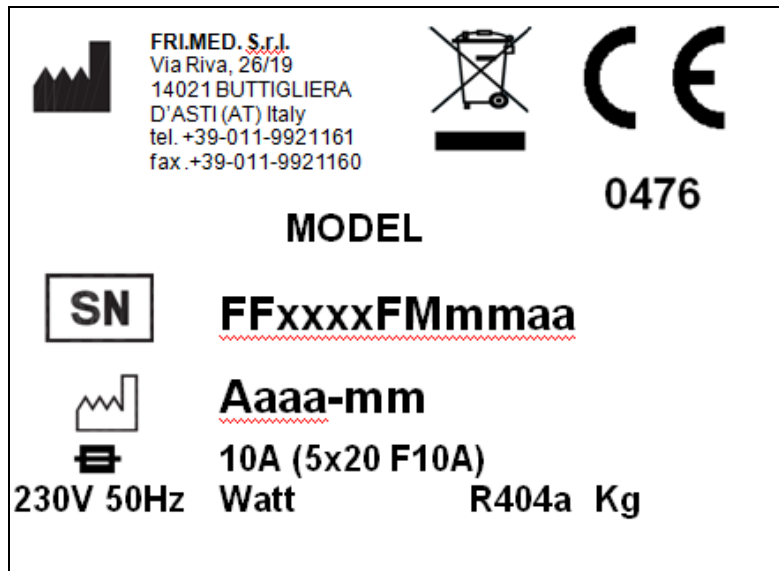


Table capacity and dimensions

MODEL	CAPACITY (LT)	EXTERNAL DIMENSIONS AND UNIT NET WEIGHT		DIMENSIONS OF PACKAGING AND SHIPPING WEIGHT	
		WxDxH (mm)	KG	WxPxH (mm)	KG
SB10E	100	600X600X860	80	680x680x1040	91
FS15E	150	600x600x1360	83	680x680x1590	94
FS20E	200	600x600x1560	94	680x680x1790	105
FS25E	250	600x600x1760	106	680x680x2050	119
FS30E	300	600x600x1960	118	680x680x2150	131
PN45E	450	700x800x1840	133	750x850x2150	146
PN52E	520	700x800x2040	142	750x850x2150	155
AF70E	700	700x800x1990	146	750x850x2150	161
AF140E	1400	1400x800x1990	194	1500x850x2150	220
CL60B/PF	600	780x840x1930	173	910x850x2100	186

Table technical specifications

MODEL	CAPACITY (LT)	VOLT/ Hz	ABSORPTION WATT	GAS TYPE	QUANTITY
SB10E	100	230/50 Hz	245	R404a	0,150 kg
FS15E	150	230/50 Hz	245	R404a	0,200 kg
FS20E	200	230/50 Hz	245	R404a	0,250 kg
FS25E	250	230/50 Hz	360	R404a	0,270 kg
FS30E	300	230/50 Hz	360	R404a	0,290 kg
PN45E	450	230/50 Hz	295	R404a	0,250 kg
PN52E	520	230/50 Hz	295	R404a	0,250 kg
AF70E	700	230/50 Hz	415	R404a	0,250 kg
AF140E	1400	230/50 Hz	510	R404a	0,340 kg
CL60B/PF	600	230/50 Hz	580	R404a	0,600 kg

* Power supply can be one of the following, according to country of destination:

230 V – 50Hz

230 V – 60Hz

115 V – 60Hz

Standard and optional fitting

MODEL	DRAWER	BLOOD BAGS*	STANDARD FITTING	OPTIONAL ACCESSORIES
SB10E	2	64	Glass door	
FS15E	3	96	Drawers	
FS20E	4	128	One way wheels	
FS25E	5	160	Schuko or British type plug	Kit of dividers for drawer
FS30E	6	192	Control panel with alarm system	GSM module for SMS alarms
PN45E	5	275	Remote alarm connection	LAN Port
PN52E	6	330	Data logger	
AF70E	7	385	Temperature chart recorder	
AF140E	14	770	Back-up battery	
CL60B/PF	6	330		

* = BLOOD BAG CAPACITY: 450 ML/EACH

1 STANDARDS AND GENERAL WARNINGS

1.1 CERTIFICATION

All Blood Bank refrigerators are produced in accordance with European Community Regulations applicable at the time of its appearance on the market and are certified as Medical Device in accordance with European Directive 93/42/EEC and following amendments and integrations.

1.2 TESTING AND WARRANTY

The appliance is tested in our works in compliance with established regulations and then shipped ready for use.

The warranty grants the right for the replacement of those parts which turn out to be defective, except for electric and electronic components. Every apparent vice and any difference from the order must be communicated, under pain of decay, to the selling firm within 5 days from the receipt of the goods. Any other vice (non-apparent) must be communicated within 5 days from its finding, and anyhow within the maximum warranty term. The Buyer has the only right to claim for defective parts replacement: every right of compensation for any direct or indirect damage is excluded. The damage due to uncorrected installation of the equipment or the lack of ordinary maintenance/cleaning of the condenser are reasons of immediate expiry of the warranty. The warranty is valid only for the original purchaser and it will never bring the replacing of the equipment. The replacement of defective parts will be made at FRI.MED S.r.l. factory, where the returned goods must be delivered free of any transport expense; the company will arrange to deliver them back ex-works.

1.2 AIM, CONTENTS AND INTENDED USER OF THIS MANUAL

This manual has been prepared with the objective to supply all instructions required for the correct use of the appliance and to keep it in optimal condition. It also contains important user safety information.

The following professional roles are explained in order to define the responsibilities of each involved parties:

Installer: a qualified technician who installs the appliance in accordance with the instructions herein contained.

User: the person who, after having read this manual carefully, uses the appliance in accordance with the intended specification of use described in this manual.


User's responsibilities:

- ensure that the product is kept at suitable temperatures without exceeding +38° of ambient temperature;
- be aware of the regulations governing the conservation of products to refrigerate and to observe any whatsoever hygiene indications that may be applicable.

The user is obliged to read carefully the manual and refer to its information at all times. Particular attention must be paid to the contents of heading 1.4 **General safety warnings**.

Routine maintenance technician: qualified operator able to perform routine maintenance of the appliance by following the instructions in this manual (can be the customer too).

Service engineer: qualified technician, authorised by the manufacturer to perform extraordinary maintenance of the appliance.

The symbol  appears at certain points in the manual to draw the reader's attention to important safety information.

The manufacturer declines any whatsoever responsibility in case of improper use of the appliance deviating from the reasonably construed intended use, and for all operations carried out that are not in compliance with the instructions reported in the manual.

This manual must be stored in an accessible and known place for all operators (installer, user, routine maintenance technician, service engineer).

1 STANDARDS AND GENERAL WARNINGS

1.3 PRODUCT DESCRIPTION

The appliance comprises a single body with panelling in various materials and insulation in expanded polyurethane foam density. The appliance instruments are located on the front panel where the electrical wiring is housed. The motor unit and the condenser unit can be housed either on the top or on the bottom closed by a frontal panel and a rear grid. The interior parts are fitted with suitable supports for drawers and other accessories. Glass doors are fitted with an automatic return device and magnetic seal elements. During the design and construction stage all measures have been adopted to implement total safety including radius interior corners, funnel-shaped base panel to convey condensate to exterior, no rough surfaces, fixed guards protecting moving or potentially dangerous parts.

1.4 GENERAL SAFETY REGULATIONS

Read this manual carefully and follow the prescriptions contained herein.

The user assumes full responsibility in case of operations carried out without observing the instructions in the manual. None of FRI.MED products are designed to work in presence of flammable gases or solvent that may easily burn, hence keep off the unit of any of these situations.

Primary general safety regulations:

- Do not touch the unit with wet hands and/or feet
- Do not use the appliance with bare feet
- Do not insert screwdrivers or other pointed objects between guards or moving parts of the appliance
- Do not pull the power cord to disconnect the appliance from the electrical mains
- Make sure that the appliance is not used by unsuitably qualified persons
- Before performing any cleaning or maintenance on the appliance disconnect it from the electrical mains by switching off the main switch and extracting the plug
- In case of faults or malfunctions, switch off the appliance and do not attempt to repair it by yourself. All service and repair operations must be performed exclusively by a suitable authorized engineer.



This symbol on the equipment indicates a situation of danger. Pay attention and read carefully what it refers to

1.5 CLIENT'S RESPONSIBILITIES

The customer is required to:

- Execute the electrical connection of the appliance
- Prepare the place of installation
- Provide consumable materials for cleaning
- Perform routine maintenance

In the case of power failures or malfunctions do not open the doors in order to maintain as much as possible the internal temperature. If the problem persists for more than few hours, move the contents to a more suitable place.

1.6 CLIENT SERVICE REQUESTS

For all technical problems and any requests for technical service, refer exclusively to your local dealer, pointing out **model and serial number**.

1 STANDARDS AND GENERAL WARNINGS

1.7 ORDERING OF SPARE PARTS

Orders of spare parts must be done by consulting the part reference code and the serial number of your appliance. Consult your dealer.



The user must consult the dealer or the manufacturer, as the case of medical device requires original spare parts, failing which product certification decodes.

1.8 AIM AND INTENDED USE OF DEVICE

The appliance is intended solely for the preservation of blood and blood products

 PRODUCTS MUST BE STORED IN ORDER TO ENSURE EFFICIENT AIR CIRCULATION INSIDE THE APPLIANCE AND SHALL NOT COME OUT OF THE SHELF PERIMETER.

All uses except authorized uses of the appliance shall be construed as “improper use” for which the manufacturer declines all responsibility.

1.9 UNSUITABLE CONDITIONS FOR USE

The appliance must not be used exposed to bad weather, with adapters, multiple sockets or extension leads, in an explosive atmosphere or in an atmosphere with a fire risk or closed to heating sources. In case of built-in refrigerators a proper ventilation of compressor must be provided.


1.10 MATERIALS AND REFRIGERANTS

Materials in contact or potentially in contact with products are in compliance with the relevant directives. The appliance is designed and built so that contact parts can be cleaned before each use. The refrigerants utilized comply with established regulations.

In case of accidental leakage of gas, there is no danger of flammability. Contact service.

2 INSTALLATION

2.1 TRANSPORTATION AND HANDLING

 **The appliance must be transported and handled exclusively in upright position, in observance of the instructions printed on the packing.**

This precaution is necessary to avoid contamination of the refrigerant circuit with compressor lube oil with resulting valve and heat exchanger coil failure and problems starting the electric motor.


The manufacturer cannot be considered responsible for any problems due to transport executed in conditions other than those specified herewith.

The appliance is secured to a wooden base by means of a screw and wrapped in a cartoon box and if requested by the client, cartoon box and wooden crate.

The appliance must be handled using a folk lift truck or a pallet truck with suitable forks (fork length at least equal to 2/3 length of unit). The dimensions and weight of the packed appliance are shown in technical tables (see tables at the beginning of manual).


2.2 POSITIONING

Incorrect positioning can cause damage to the appliance and generate hazardous conditions for personnel. The installer must therefore observe the following general regulations:

- Make sure you maintain a minimum of 10 cm. from the walls and the ceiling
- The room must be well ventilated
- Keep well away from sources of heat
- Avoid direct sunlight
- Remove packing material
- Remove accessories from inside the unit
- Wood basement removal: by means of a hammer until the feet-block hinder ledge, tilt the cabinet to one side and loosen the two thread-forming screws by means of a socket wrench, drag the cabinet from the back side holding the basement still until the four feet have gone out from the containing holes, slightly tilt the cabinet backward and take the basement away pulling it from the front side.
-  Use gloves when handling wooden packing materials and the wooden base to protect the hands from splinters.
- Position the appliance with the help of a spirit level. Adjust the levelling feed on the metal base of the unit if necessary.
- Remove the protective PVC film from the external surfaces of the unit

2.3 WIRING AND ELECTRICAL HOOK-UP

The electrical plant and electrical hook-up operations must be performed by a qualified electrician. For safety reasons adhere to the following indications:

- Check that the electrical plant is suitably sized for the absorbed power of the unit
- If the electrical socket and the plug on the appliance power cord are incompatible, change the plug with a suitable component, ensuring the replacement part is of the approved type
- Insert the cable into the jack (Fig. 1)
- Do not use reductions or multi-way adapters (Fig. 2)
-  It is important to connect the appliance correctly to an efficient earth system executed in compliance with the relevant legislation.
- The appliance must be positioned so that plug can be easily reached (Fig. 2)

2 INSTALLATION



Fig. 1



Fig 2

The refrigerators are equipped with double protection fuses 10A (CEI EN 61010-1, Classification 66-5) (fig. 2 – 3)

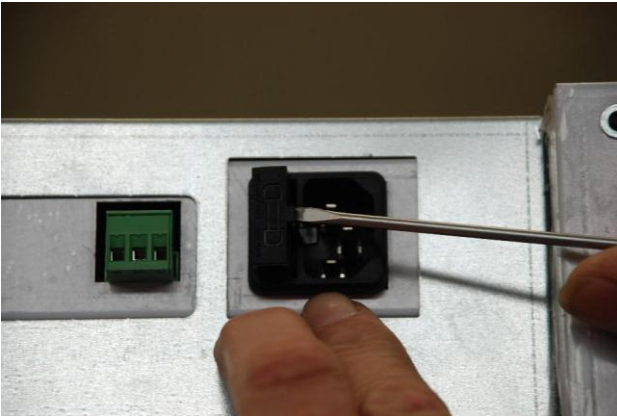


Fig. 3



Fig. 4

2.4 SET UP OPERATIONS

To avoid errors and accidents, perform a series of checks for possible damage sustained during transport, installation and hook-up operations before starting up the unit.

PRELIMINARY CHECKS

- Check the condition of the power cord (no cut or chaffing)
- Check that the feed, door hinges and shelf support are stable
- Check the door seals and drawers are not damaged (broken or scratched) and that the door closes and is sealed properly
- Make sure pipelines, unions are in perfect condition

INDICATIONS FOR OPTIMAL DUTY

- Do not block the motor compartment air vents
- Do not lay objects on the top of the appliance
- Before storing products wait until they are cold
- Arrange the products on suitable drawers. Do not place products directly on the base or against the walls, doors or fixed guards of the unit
- Make sure doors are kept closed

2 INSTALLATION

- Keep the defrost water drain outlet clear
- Limit the frequency and duration of opening; each time the door is opened the internal temperature will alter
- Load products at ambient temperature gradually to allow correct refrigeration
- Perform routine maintenance regularly (see sect. 5)

2.5 RE- INSTALLATION

Observe the following procedure:

- Switch off the appliance from the main switch
- Disconnect the power cord from the electrical outlet
- Handle the appliance in accordance with the instruction heading 2.1
- Follow the instructions in heading 2.2 for positioning and hook-ups in the new location

2.6 SCRAPPING AND DISPOSAL

FRI.MED appliances may contain materials, which at the end of the working life of the apparatus, must be disposed at one of the recycling centres nominated by your Local National Health Department or as specified by the law in force. Scrapping and disposal of the appliance must be carried out in full observance of established legislation in your country.

In particular, the apparatus may contain the following materials:

- Iron
- Copper
- Aluminium
- Non-biodegradable plastics
- Fibre glass for printed circuits
- Ferrite
- Batteries
- CFC-free refrigeration gas
- Electrical and electronic equipment (WEEE)

Frimed S.r.l. shall not be chargeable for any disposal of the apparatus at the end of its working life.



In line with EU Directive 2012/19/UE for waste electrical and electronic equipment (WEEE), this electrical product must not be disposed of as unsorted municipal waste. Please dispose of this product by returning it to your local municipal collection point for recycling.

The term of the useful life of a blood bank refrigerator is 10 years. After this period, the device must be checked and possibly re-conditioned only by the manufacturer.



Before you dispose, verify that the appliance has been sanitized in accordance with internal procedure.

3 OPERATION

3.1 SAFETY AND ACCIDENT PREVENTION

The appliance is designed to include several features to ensure the safety and the protection for the Operators and for the material stored in the cabinets.

The following list describes the protections adopted against mechanical risks:

- **stability:** the appliance is designed and built so that in the intended conditions of operation may remain stable and that it can be used without risk of tipping, falling or sudden movement.
- **surface, edges, corners:** accessible parts of the appliance have no sharp corners, sharp edges or rough surface that could cause injuries.
- **moving parts:** moving parts of the unit are designed, built and configured to avoid risks. Moving parts are protected by fixed guards to prevent accidental contact that could result in injury.

Measures adopted for protection against additional risks:

- **electrical power:** the appliance is designed, built and fitted out with the aim of preventing the risk of electric shock in compliance with established safety legislation
- **noise:** the appliance is designed and built to reduce risks related to the emission of airborne noise to the minimum level.

3.2 SAFETY DATAPLATES AND GUARDS

It is strictly forbidden:

- To tamper or remove the evaporator cover that protects the user from the risk of cutting on the heat exchanger fins;
 - To remove the data plate fixed to the inside edge of the motor housing showing technical specification and earth connection warning;
 - To remove the data plates on the evaporator unit cover near the electrical wiring inside the motor housing which warn the user to disconnect electrical power before working on appliance;
 - To remove the data tag fixed to the power cord showing the type of power supply.
- The manufacturer declines all responsibility for safety of the appliance if the above recommendations are not observed.

3.3 OPERATING LIMITS

The appliance is designed and built to work with ambient temperatures between +10°C and +38°C. It is also destined and tested for tropical countries. If the ambient conditions are different it will not be possible to achieve the top performance levels specified by the manufacturer.

Power supply can be one of the following according to country of destination:

- 230 V – 50Hz
- 230 V – 60Hz
- 115 V – 60Hz

3.4 ENVIRONMENTAL CONDITIONS OF STORAGE

The appliance when not in use must be stored indoors at a temperature not exceeding +38°C and below 0°C.

4 USER'S INSTRUCTIONS

4.1 START UP OF APPLIANCE

Before switching on the unit, check that the electrical connections have been made correctly and above all, that the ground connection is available and working properly (Sect. 2.2.). Perform preliminary cleaning of the unit as described in Section 5.1.

SWITCH ON THE UNIT

To start the appliance, it is necessary to press button ON on the display. The main screen will be displayed and message « FRIMED » will appear. Then you will be requested to enter the user password 555.

USER PASSWORD = 555

TURN OFF THE APPLIANCE

Press the button OFF on the display, you will be asked to enter the user password. If password is correct, after entering the last digit, the appliance switches off.

4.2 FUNCTIONS

ANTIPANIC FUNCTION

In all menu screens, after 120 seconds the key button has been pressed, the controller returns to the main menu, without saving any unconfirmed changes.

LCD FUNCTION – ENERGY SAVING

One minute after pressing any key, the backlight of the screen switches off automatically (stand-by status). Lighting will be switched on again by pressing any key.

DATA LOGGER

When the appliance is on, alarms and data of probes are recorded. Each single record is related to date and time. It's possible to record a maximum of 46000 entries (which corresponds to about one month recording). Then you have to download records on a USB pen drive (a specific alarm will advise you when memory is full).

In case you don't want to download records, press ALARM key and then MUTE key. The alarm message will disappear and the controller will overwrite on previous registrations.

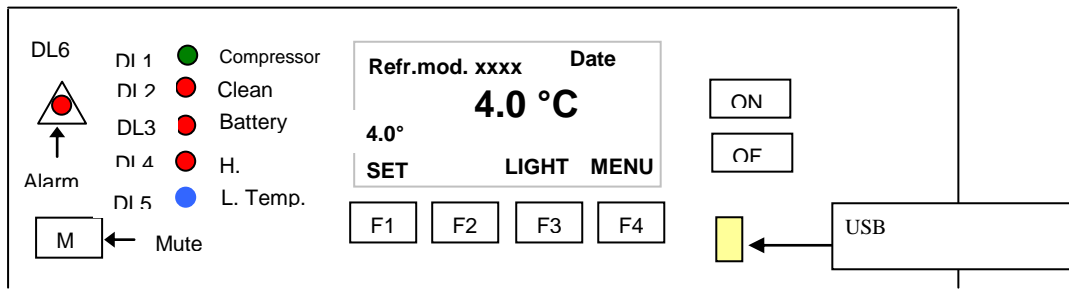
4 USER'S INSTRUCTIONS

4.3 CONTROL PANEL

According to the model, all units are equipped with the same control panel (CPU control board) but with different settings depending on their configuration.



LED DECODING – STATE OF ALARM



LED DL6 on – general alarm

LED DL2 on – condenser dirty/blocked or unsuitable environment

LED DL3 on – power failure or damaged battery

LED DL4 on – high temperature alarm

LED DL5 on – low temperature alarm

KEYS DECODING

F1 – set point key, temperature setting + arrow ↑

F2 – display of alarms memory + arrow ↓

F3 – light key + arrow ←

F4 – menu / ESC

TEMPERATURE SETTING

- Pressing key F1 (SET), set point is shown on the display.

Pressing any of the arrow-keys ↑↓, a message “ enter password XXX” appears. If password inserted is correct, pre-set data appears to be modified. By using arrow-keys ↑↓, the requested value can be set, press “ENTER” to confirm. New data is recorded and main screen/menu is displayed again.

LIGHT

Press key F3 to turn manually on/off light (not present in freezer models)

MENU LIST

Press F4 to enter menu list

4 USER'S INSTRUCTIONS

4.4 THE MENU TREE

1. Alarms
2. Info
3. Display
4. Password

Scroll with arrow ↓ and ↑ to select the menu, then confirm with ENTER.

Parameters are displayed. In order to modify any pre-set parameters, you always need to enter menu by selecting 4.PASSWORD and by entering the user password 555. In this way you access the modifiable menu that is completed by two additional items, that are:

- 0.User parameters
- 5.Update software

Scroll with ↓ and ↑ to choose and select the parameter you need to modify and confirm with “enter”, then the value of parameter blinks, always with ↓ and ↑ you modify the parameter, press “enter” to confirm and the value returns fixed.

In any part of menu/at any time of setting if you push key ESC you go back to the main menu.

1. ALARMS MEMORY

List of latest 20 recorded alarms with data, time and type of alarm.

2. INFO ENTRY

(Following data can't be modified)

- Manual defrost
- Serial number
- Delay door Alarm = delay open door alarm (how many minutes before alarm starts)
- High temp. alarm = delta T value (difference with set point temperature) and delay (how many minutes before alarm starts)
- Low temp. alarm = delta T value (difference with set point temperature) and delay (how many minutes before alarm starts)
- Defrost = time between defrosting cycles
- Time defrost = maximum time of defrosting cycle
- Defrosting type = fan/heater/gas
- Evap. temperature = evaporator temperature that is value detected by probe
- Cond. temperature = condenser temperature that is value detected by probe
- Tot.h. = total number of working hours
- Firmware rel. = xxxxx firmware release
- Fuse = fuse type
- Gas type = type of gas used
- Gas kg = gas quantity
- Data logger

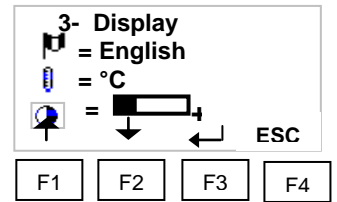
Scroll with ↑ and ↑ to see all data. Once displayed last data or selecting key “esc”, display shows main menu again.

4 USER'S INSTRUCTIONS


3. DISPLAY


The mainboard can be set in the following languages:


: Italian – English – French – Polish - Spanish



To change the language press key "MENU" and by using arrow-keys select 4.PASSWORD, confirm with "ENTER", select 4-1 USER, enter 555 and confirm with ENTER; Select 3-DISPLAY and confirm with ENTER, by means of arrow-keys select the requested language. Confirm by pressing "ENTER", then select "ESC", the display shows main menu again.

: °C-°F

 = to adjust display brightness

 = to set up date and time (selecting YES on option of daytime, the controller updates automatically data on standard daytime; selecting NO, no change is made)

4. PASSWORD

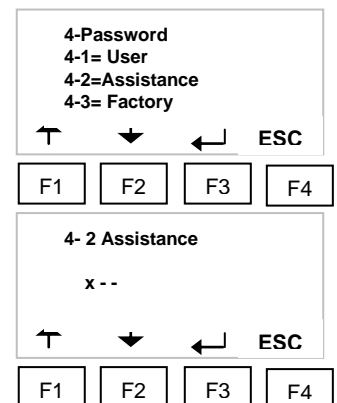
Password levels:

- 1 – User = end user
- 2 – Assistance = technician
- 3 – Factory = factory setting

Enter password. If password is correct, parameters' changes are enabled (according to password level). If password entered is not correct, message "wrong password" will appear on display for five seconds and then it will automatically go back to previous menu.

To modify password data, enter standard user password 555, then select key "PASSWORD" and confirm it; as a consequence the message "CHANGE PASSWORD" will show. Enter new password and confirm it.

In case you forget your modified password, take power off and then give power again, keeping both keys F1 and F2 pressed at the same time. Display shows the message "PASSWORD" blinking, then, it becomes fixed. At this point appliance switches on automatically, you can enter the menu by standard user password.



4 USER'S INSTRUCTIONS

4.5 ALARM CODES

Temperature alarms are activated with a delay.

Error Parameters = wrong parameters entered

Type of alarm	Alarm on Display	Description of alarm
1	AL00	Power Failure = when power is restored, a message is shown indicating length of time of power failure
2	AL01	Faulty Temperature Probe (S1 probe damaged; it can be reset) BT (negative temperature) – compressor works continuously TN (positive temperature) – compressor works according to pre-set ON and OFF times
3	AL02	Damaged probe of Evaporator temperature
4	AL03	High Temperature (=defrost alarm)
5	AL04	Low Temperature (=freezing alarm)
6	AL05	Blocked/dirty condenser (= condenser high temperature alarm) → please see section 5 – ordinary maintenance
7	AL06	Damaged probe of Condenser temperature (= probe S3 damaged)
8	DOOR	Open door alarm
9	AL70	No battery = battery is low; check is made automatically every 10 hours.
10	AL71	No power (= power failure)
13	Full Memory	Full memory – download records
14	Clock	Damaged clock
15	AM1	General alarm - Condenser cleaning
16	AM2	General alarm – check/maintenance on appliance is required
17	AM3	Security

Full Memory – download records. When the appliance is on, alarms and data of probes are recorded. Each single record is related to date and time. It's possible to record a maximum of 46000 entries (which corresponds to about one month recording). Then you have to download records on a USB pen drive (a specific alarm will advise you when memory is full).

In case you don't want to download records, press ALARM key and then MUTE key. The alarm message will disappear and the controller will overwrite on previous registrations

When alarm starts, Led DL6 and buzzer are on, the symbol of triangle is blinking, indicating the code and type of alarm. Above mentioned alarm is recorded in memory of alarm. In order to visualize it, press key F2 (it will be shown as "AL").

Press key MUTE and buzzer is silenced.

When alarm is restored, buzzer is disabled, Led DL6 is off, AL symbol and triangle symbol disappear.

When alarm issue is solved, press key MUTE.

When alarms AL03 and AL04 are no more present, press key Mute, a message "DOWNLOAD RECORDS" appears and you can download records by using USB pen. When procedure is finished, alarm is reset automatically.

4 USER'S INSTRUCTIONS

In case GSM Module and back-up battery are connected, alarm message is forwarded automatically to memorized mobile numbers. When alarm is no more present, a notification message of "standard" working will be forwarded.

IMPORTANT NOTE - whenever an alarm is shown on display, you need to press any key so that the display is on and then select keys ALARM and MUTE to clear it.


In this way the alarm is removed from display, although it will remain in memory of Alarm Menu.

IMPORTANT NOTE - Appliances without back-up battery

In case of power failure, when power returns, alarm AL00 (power failure) appears on display, indicating that the unit has been without power and showing the time when power failed.

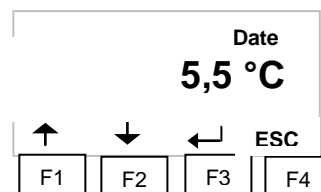
To clear the alarm from display, press any key so that the display is on and then select keys ALARM and MUTE. In this way the alarm is removed from display (it will remain in memory of Alarm Menu).

4.6 DOWNLOAD PROCEDURE

Insert the USB key into the hole, the symbol «  » appears on the display with related messages :

- 1 - Download records (= working temperature and alarms recording)
- 2 - Download data (= parameters setting)
- 3 - Data load (= enter new parameters)

(F1-2-3 corresponds to « arrows » - as indicated in the picture)



1 – **Download records.** To download memory records, press key « ENTER » and confirm it, the message « DOWNLOAD RECORDS » is flashing to indicate operation in progress. Once procedure is finished, the message « DOWNLOAD RECORDS» will be replaced by message « OFF KEY» . By removing the USB pen, the display shows the main menu screen.

In order to read the file in a correct way on your PC, please open it by using the Note Pad program. At the end of download record procedure, a file is generated containing information according to the following format:

M;29-05-12;09:53;4,0;26,5;

Ex : **R** (= initial recording/appliance switch on)

Ex: **M** (=standard functioning) ; **29-05-12** (=date); **09:53** (=hour); **4,0** (=internal temperature); **26,5** (=condenser temperature)

In case an alarm is recorded, the file will appear as follows:

A;29-05-12;09:53;5;

Ex: **A** (=alarm); **29-05-12** (=date); **09:53** (=hour); **5** (=type of alarm)

To identify type of alarm, please refer to section 4.5

2 - Download data (parameters for service) - If you want to download parameters, that is the setting of the refrigerator, press ENTER on Download; you will be requested to digit the Password. Once the password is entered the data will be downloaded. When you read "FINISHED" on display, please remove the USB pen and the display will automatically return to the initial screen.

4 USER'S INSTRUCTIONS

3 - Data load – if parameters need to be modified or updated, please insert USB pen and by pressing « data load», the appliance will be automatically programmed with new data.

4.7 PROCEDURE TO DISABLE THE DATA LOGGER

- Press any key to activate the display
- Press MENU key
- By using the arrow keys go to point 4-PASSWORD+ENTER
- Select USER PASSWORD. By means of arrow keys enter password 555 (5+ENTER, 5+ENTER 5+ENTER)
- In this way you enter the MENU
- Scroll up to point 0-USER PARAMETERS+ENTER
- Then scroll up to point 3-RECORDINGS+ENTER
- By means of arrow keys change YES to NO and press ENTER to confirm
- Exit programming by means of ESC key to return to initial display screen

4.8 PROCEDURE TO CALIBRATE INTERNAL TEMPERATURE PROBE S1

- Press any key to activate the display
- Press MENU key
- By using the arrow keys go to point 4-PASSWORD+ENTER
- Select USER PASSWORD. By means of arrow keys enter password 555 (5+ENTER, 5+ENTER, 5+ENTER)
- In this way you enter the MENU
- Scroll up to point 0-USER PARAMETERS+ENTER
- Then scroll up to point 5-CALIBR.PROBES1+ENTER
- At this point insert the new value and press ENTER to confirm
- Exit programming by means of ESC key to return to initial display screen

Example on how to choose the new parameter to enter: if the temperature showing on display is +4°C, while inside the appliance with a different instrument +6°C is registered, the value to be entered for calibration of probe will be +2°C

4.9 UPDATE OF FIRMWARE RELEASE

Check nr. of release on display

- A. Press MENU
- B. Scroll up to INFO (2)+ENTER
- C. Scroll up to REL.FIRMWARE = (NUMBER)

2) TYPE OF PROCEDURE TO UPDATE FIRMWARE N. 0.32 OR PREVIOUS ONES

If Firmware installed on your appliance is n.032 or previous to this one, please perform the following procedure:

- A. Copy updated firmware on USB pen (DON'T OPEN THE FILE IN YOUR PC)
- B. Switch off the appliance by pressing "OFF" key and by typing password (USER= 555)
- C. Take power off (unplug)
- D. Press at the same time the three keys from left below the display and plug again by keeping the keys pressed.
- E. As soon as display will show various writing, stop pressing the three keys.
- F. Insert the USB pen in the port hole

4 USER'S INSTRUCTIONS

- G. When the word "OFF" will show, take off the USB pen and switch on the appliance again.
- H. In some cases the word "PARAMETER ALARM" can show (depending on firmware release). In order to reset the alarm, press the key "ALL" (third from left side below display)+MUTE key. Repeat the operation until the alarm disappears.

At this point, double check that new Firmware release number has been installed

3) TYPE OF PROCEDURE TO UPDATE FIRMWARE N. 0.35 TO CURRENT RELEASE

If Firmware installed on your appliance is n.035 or following to this one, please perform the following procedure:

- A. Copy updated firmware on USB pen (DON'T OPEN THE FILE ON YOUR PC)
- B. Switch off the appliance by pressing "OFF" key and by typing password (USER= 555)
- C. Press the MENU key and scroll up to PASSWORD(4)+ ENTER
- D. Type password (USER= 555)
- E. Go to main menu and scroll up to "UPDATE SOFTWARE" (point n.5 for user)+ENTER
- F. By means of arrows choose "YES" and confirm with ENTER.
- G. Follow instructions showing on display
- H. At this point various writing will show. Insert USB pen in the port hole
- I. When the word "OFF" will show, take off the USB pen and switch on the appliance again.
- J. In some cases the word "PARAMETER ALARM" can show (depending on FW release). In order to reset the alarm, press the key "ALL" (third from left side below display)+MUTE key. Repeat the operation until the alarm disappears.

At this point, double check that new Firmware release number has been installed

4.10 GSM MODULE (optional)


When an alarm is activated, a message is forwarded to pre-set mobile phone numbers automatically, with:


Name, Serial Number, Alarms codes and description of alarm type.


Moreover, in case appliance includes back-up battery, if power supply is failing, a message is forwarded to selected numbers indicating above mentioned information and "ON BATTERY". When situation has been restored, a message will follow indicating "POWER OK".


By sending a SMS with the word "STATUS" to GSM number, installed into the appliance, you can make an inquiry on its status. You will receive either a reply message with "NO ALARMS" and value of recorded temperature, in case no alarms are present, or the alarms codes detected.


Symbols on display when GSM is connected are:

 GSM is connected

 Field intensity – blinking symbol indicates that no field is present

 Symbol flashing in case of wrong PIN entering → exit configuration/set-up, switch off the appliance and enter PIN number (after three wrong entries, the system is blocked)

 Symbol blinking → it means that SIM hasn't been inserted

 General Error → substitute GSM module

4 USER'S INSTRUCTIONS

IMPORTANT: To use GSM module (if included in the appliance), document will be sent containing password and instructions for GSM module use and loading/recording of mobile phone numbers

4.11 DRY CONTACT FOR REMOTE ALARM

The refrigerator communicates its own state also by means of a dry contact placed in the rear upper side. With remote alarm relay you can signal an alarm condition with a remote-alarm installation on your site. The connection for remote alarm is a clean switch contact. The contact exchanges under all alarm conditions

Note: connections have to be made as indicated below, and above all should be tested with equipment in operation

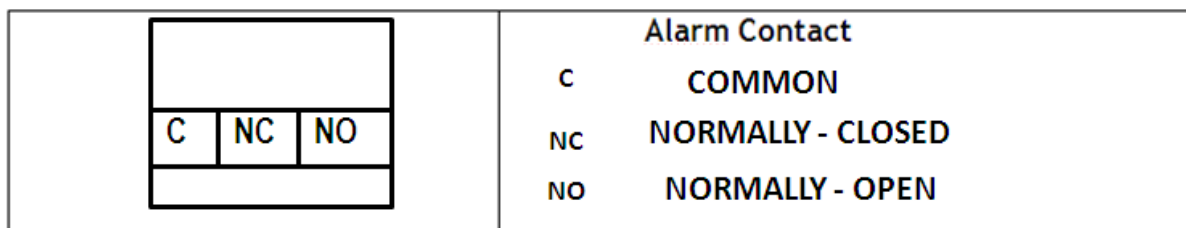


Fig. 5

4.12 BACK-UP BATTERY

The battery back-up allows to monitor the temperature of the appliance and any faults and alarms in case of power failure. It is an optional accessory.

4.13 TEMPERATURE CHART RECORDER

The control panel is arranged to be equipped with temperature chart recorder supplied as standard.

Temperature is recorded on a weekly chart diagram

The appliance is equipped with: diagram discs, battery, pen

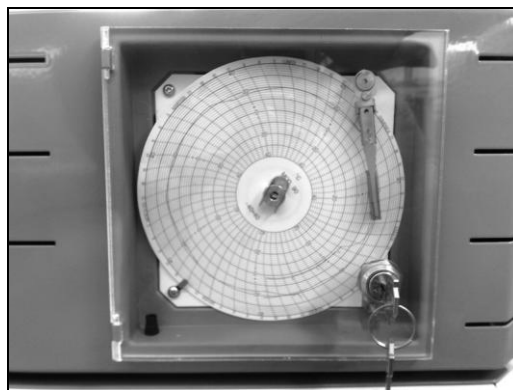


Fig. 6

4 USER'S INSTRUCTIONS

In order to make the pen start operating on chart recorder paper:

1. Open the cover with the key
2. With one hand slightly lift the pen arm, with the other hand remove the protection of the pen
3. Lower the pen
4. Close the cover with key

HOW TO REPLACE THE CHART

1. Open the cover with the key (Fig. 6)
2. Push the spring of the chart holder sideways and lift it. (Fig. 7 – Fig. 8)
3. Remove the chart (Fig. 9 – Fig. 10)
4. Insert the new chart
5. Lower the spring of the diagram holder and push it sideways

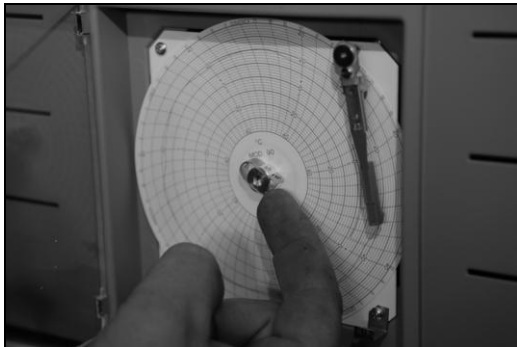


Fig. 7

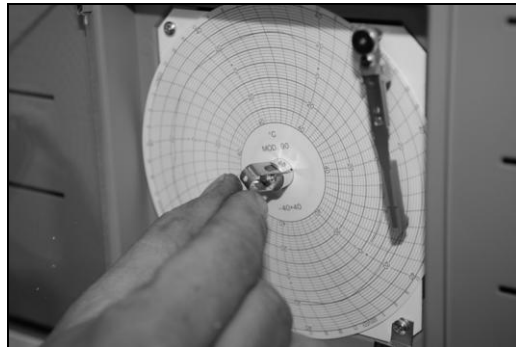


Fig. 8



Fig. 9

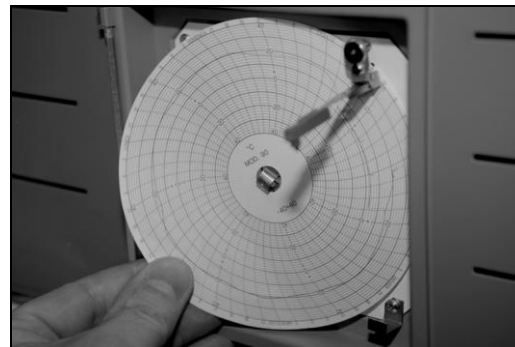


Fig. 10

HOW TO REPLACE THE FIBRE TIPPED PEN

(the fibre tipped pin is a consumable, which has an average duration of about one year)

1. Open the cover with the key (Fig. 6)
2. With one hand slightly lift the pen arm, with the other hand pull out the pen (Fig. 9).
3. Place the new pen, gently pushing it on to the pen arm and remove the protection of the pen.
4. Close the cover with key.

4 USER'S INSTRUCTIONS

HOW TO INSTALL A NEW BATTERY

1. Open the cover with the key (Fig. 6)
2. Lift up the pen (Fig. 9)
3. Lift up the chart disc (Fig. 10)
4. Remove the alkaline battery 1,5 V LR03 and put another new one taking care of polarity (Fig. 11)
5. Lower the pen
6. Close the cover with key



Fig. 11

PEN ARM CALIBRATION

1. We suggest to check recorder's calibration every 6 months
2. If there is a difference greater than $\pm 2\%$ between the digital display and chart recorder, proceed as follows:
3. Take gently the arm (B) of the pen
4. With a small screwdriver calibrate the regulation screw (A) until the fibre pen comes to the correct temperature.

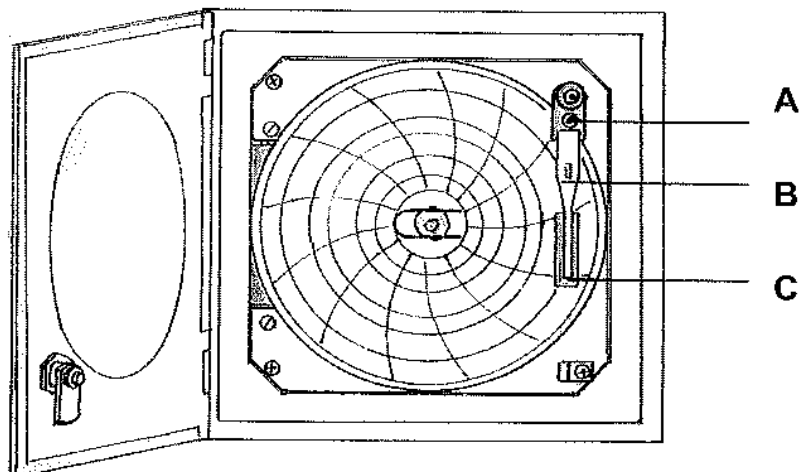


Fig. 12

4 USER'S INSTRUCTIONS

4.14 DRAWER

All blood bank refrigerators are standard fitted with drawers according to the scheme at page 6. Each drawer has a maximum capacity of 20kg.
In case you need to remove the drawer for cleaning, follow the steps outlined below in the photos.



Beware, open only one drawer at a time



fig. 13



fig. 14

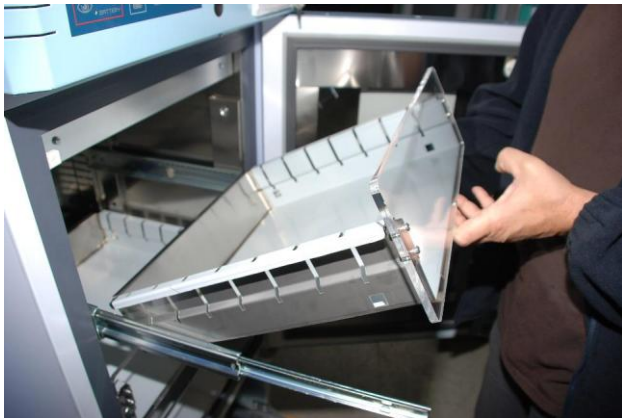


fig. 15

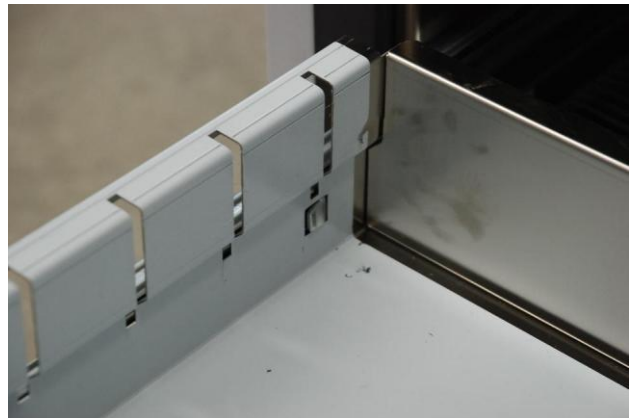


fig. 16



fig. 17



fig. 18

4 USER'S INSTRUCTIONS

4.15 DIVIDER FOR DRAWER AND ITS INSTALLATION

Drawers can be equipped with Plexiglas dividers (optional accessory) that allow the creation of longitudinal compartments inside the drawer. In case you bought the kit of dividers for drawer, you can proceed with the installation of the same following the steps outlined below in the photos. The same procedure has to be followed in case of need to remove the partitions for thorough cleaning.

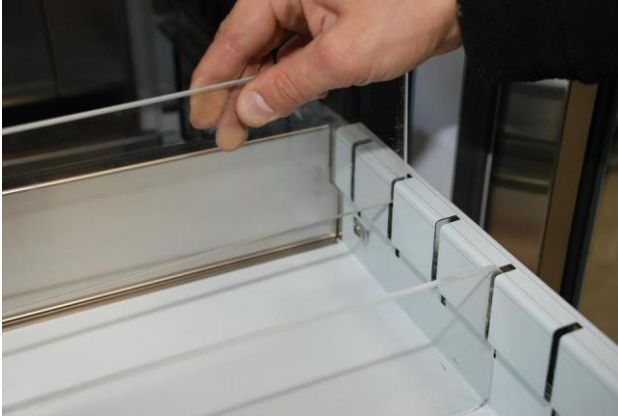


fig. 19



fig. 20

5 ROUTINE MAINTENANCE

Basic safety regulations

We summarise the elementary safety regulations to ensure that the user or maintenance technician can perform the work in conditions of total safety:

- do not touch the unit with wet hands and/or feet;
- do not use the appliance with bare feet;
- do not insert screwdrivers or other pointed objects between guards or moving parts of the appliance;
- do not pull the power cord to disconnect the appliance from the electrical mains;
- before performing any cleaning or maintenance on the appliance disconnect it from the electrical mains by switching off the main switch and extracting the plug.

Prohibited: removal of guards and safety devices

It is strictly forbidden to remove guards or safety devices when performing routine maintenance work. The manufacturer disclaims all liability that may arise if this regulation is not observed.

Emergency measures in case of fire

- Disconnect the unit from the electrical power socket.
- Do not use water to extinguish the fire.
- Use powder or foam extinguishers.

5.1 CLEANING OF REFRIGERATOR

The unit is designed to preserve blood and blood products so it is important to keep it clean for reasons of hygiene and health. The appliance is thoroughly cleaned in our factory before delivery. We recommend, however, that you clean the interior of the appliance before use. Before cleaning the appliance make sure the power cord is disconnected.

5.2 CLEANING THE INTERIOR AND EXTERIOR OF THE APPLIANCE

To this end, we indicate cleaning products to be used for exterior and interior of the appliance:

- Water and neutral detergent and not abrasive only. **Do not use solvent or thinners**
- Cleaning methods: use soft clean cloth with suitable products for both external and internal surfaces
- Disinfection: avoid substances that can alter the organoleptic characteristics of products.
- Rinsing: use a cloth or sponge soaked with fresh clean water. **Do not use water jets**
- Frequency: once a week or at different intervals in accordance with the type of product stored.

IN CASE OF BREAK OR LOSS OF BLOOD FROM THE BAGS STOWED IN DRAWERS OF BLOOD BANK REFRIGERATOR, PLEASE REFER TO INTERNAL HOSPITAL OR LABORATORY PROCEDURE FOR CLEANING AND DISINFECTION.

5.3 CLEANING OF CONDENSER

The condenser is a heat exchanger hence if it is dirty or clogged the air cannot pass freely into the same, it cannot do its job properly and the efficiency of the refrigeration system falls down proportionally. **FOR THOSE REASONS IT IS IMPORTANT TO KEEP CLEAN THE CONDENSER WHERE TYPICALLY IT MEANS TO CLEAN IT MONTHLY.**

WARNING!!

always switch off the unit and disconnect power cord before cleaning, it is dangerous to do it with power: fan may start suddenly at any time!

5 ROUTINE MAINTENANCE

According to the model, compressor can be placed on top or at the bottom of the appliance

Compressor on top

Use a convenient ladder to reach the condenser. Use an air jet or an aspirator with a soft dry brush if necessary (Fig. 21) and remove any dust or fluff from the heat exchanger fins. After cleaning, start the appliance.

! During this operation use the following personal safety measures:

- safety glasses,
- respirator mask,
- gloves

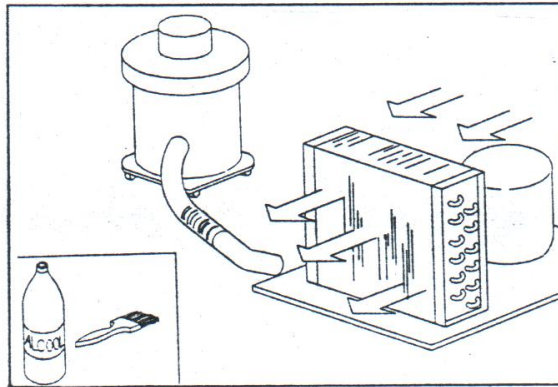


Fig. 21

Compressor at base

To access the condenser at base, unscrew the 2 screws by means of a screwdriver (fig. 22), then pull with both hands the panel at the front bottom of the appliance (fig. 23)



Fig. 22



Fig. 23

After removal, use an air jet or an aspirator with a soft dry brush if necessary and remove any dust (Fig. 24) or fluff from the heat exchanger fins.

5 ROUTINE MAINTENANCE



Fig. 24

5.4 PRECAUTIONS FOR PROLONGED DISUSE

If the refrigerator should remain unused for more than 15 days please proceed as follows:

- Switch off the appliance and disconnect the power cord,
- Clean the interior of the cabinet, shelves, trays, runners and supports, paying special attention to critical areas such as articulations and magnetic sealing strips,
- Leave doors slightly open to prevent accumulation of residual humidity

6 SPECIAL MAINTENANCE AND REPAIRS

All maintenance work not described in the previous sections must be considered “Special Maintenance”.

Special maintenance interventions and repairs are to be performed exclusively by specialised technicians authorised by the manufacturer.

The manufacturer declines all liability in the case of work performed by the user or unauthorised persons, or if non-original spare parts are fitted to the appliance.





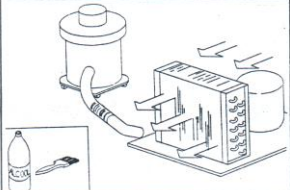
In case of special maintenance of blood bank refrigerator internal compartment, the head of the department that deals with storage of blood is required to make a transfer of the entire contents of the refrigerator in another refrigerator to allow the maintainer work safely. The maintainer is required to operate using gloves and anything else necessary for adequate protection.

7 SERVICE & TROUBLESHOOTING

Here below a list of possible faults that might occur with descriptions of possible causes and a short corresponding actions list to try:

FAULT	POSSIBLE CAUSE	ACTION
The appliance does not switch on	Power switch is OFF Power failure Other	Move main switch ON Check the plug, socket, fuses, electrical line Contact service department
Refrigeration unit does not start	Set temperature has already been reached Defrosting cycle in progress Control panel fault Other	Set new temperature Wait for the end of defrost cycle, switch off and then on again after few minutes Contact service department Contact service department
Refrigeration unit runs constantly but does not reach set temperature	Room temperature too high Condenser dirty Refrigerant needs recharging Fan of condenser does not work Door gasket is damaged Evaporator is coated with ice Defrost valve is open	Provide for better ventilation of the room and clean condenser Clean condenser Contact service department Contact service department Check seals /make sure refrigerator contents are not obstructing the door Defrost manually Contact service department
Water or ice deposits in the drip tray	Drain outlet is clogged Appliance not levelled	Clean drain and drain outlet See heading 2.2

8 SYMBOLS USED

	<p>Remove the tension before removing the protection</p>
	<p>Warning symbol</p>
	<p>Earth symbol</p>
	<p>It is necessary to consult the Instruction Booklet before carrying out the operation</p>
	<p>Clean condenser regularly</p>

9 ANNEXES

The following documentation is enclosed:

8.1 CE DECLARATION OF CONFORMITY

8.2 TECHNICAL DOCUMENTATION

8.2.1 Electric diagram

8.2.2 Safety test report

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