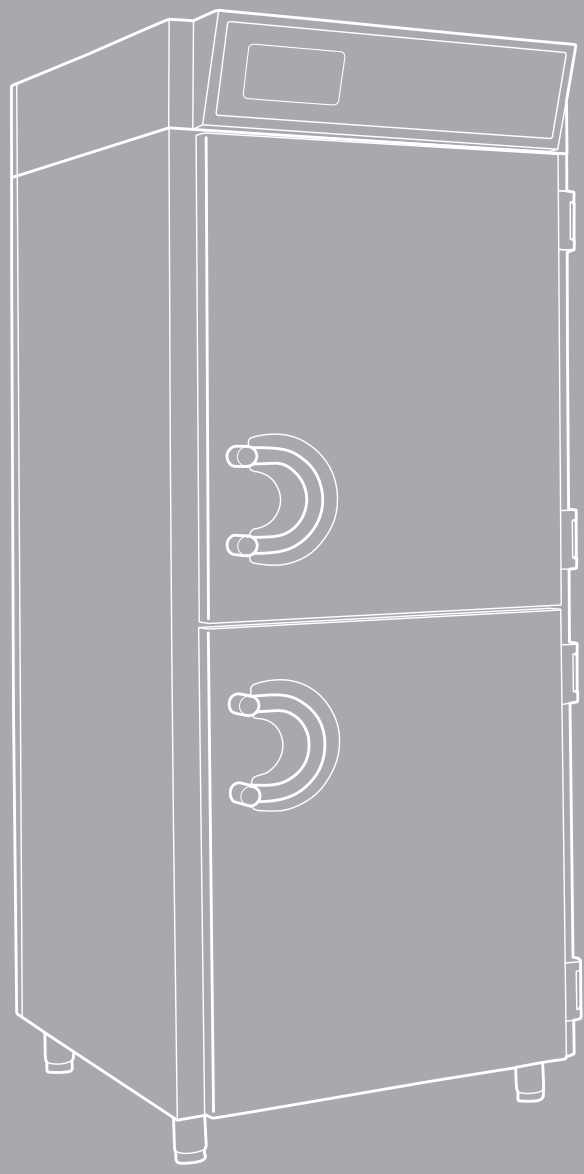


IRINOX

OPERATION AND SERVICE MANUAL

CP Multi

N°REV	REVISION DESCRIPTION	DATE REV.	REVISER
01	UPDATE COVER	27/08/2015	NC

Dear customer,

We wish to thank you for the trust you have shown us by choosing an IRINOX conservation unit, and we ask you to carefully read the manual which will provide you with all the necessary information to immediately start optimal conservation of your products.

We do in any case suggest that you study this manual so as to take advantage of all the potential and benefits that your IRINOX conservation unit has to offer.

Proper operation of the machine also depends on its proper use.

Keep this manual near your conservation unit, so that it can easily be consulted by you and your operators.

Enjoy working with IRINOX!

Register online with Club Irinox : www.irinox.com

The graphic representation of the commands in this manual makes it easier to understand the operations to be performed, so that you can immediately start satisfactorily using your IRINOX conservation unit.

Legend of symbols

suggestions and details for proper use of the conservation unit

instructions for your safety

Additional information in this manual

Guarantee and service information

Validity of guarantee: for single parts, 12 months from invoice date, as shown in the current price lists.

Contacts:

Customer service:	+39.0438.5844
Assistance for use	+39.0438.5844
Technical service - spare parts	+39.0438.2020
Fax	+39.0438.2023
E-mail	irinox@irinox.com
Web site	www.irinox.com

For any request concerning your conservation unit, always specify:

- The model
- The serial number

which are shown on the label on the machine.

CONTENTS

1. GENERAL DOCUMENTATION

1.1. GENERAL WARNINGS

- This manual is an integral part of the product. It provides all information required for correct installation, proper use and maintenance of the machine.
- The user must read this manual and refer to it as needed. It must be kept in a place that that all authorized workers (installer, user, maintenance technician).
- The conservation unit is intended for professional use. Therefore, it is to be used only by skilled personnel.
- The conservation unit is intended only for its designed use, i.e. the conservation of foodstuffs.
- This does not include products that require constant monitoring and recording of the temperature, such as:
  - heat-sensitive chemical products
- - medicines
  - blood products

  The manufacturer shall not be held liable for any damage arising from incorrect and unreasonable use, such as:
  - improper use by untrained personnel.
  - modifications or works which are not specific to the model.
  - use of spare parts which are not original or not specific to the model.
  - failure to comply with even a part of the instructions in this manual.

1.2 INTRODUCTION

Installation must be performed authorized and specialized personnel, respecting the instructions in this manual. Should the machine be supplied with a remote condenser unit, it is the responsibility of the installer to check all connections and to issue a declaration that the installation was duly performed and is in accordance with the aforementioned directive.

1.3 TRANSPORT AND HANDLING

- Loading and unloading of the machine on the means of transport can be performed using a forklift or pallet truck with forks that are more than half as long as the cabinet. The hoisting apparatus must be suitably chosen on the basis of the size and mass of the packaged machine as indicated on the package label (⏩ see Table 1).
- All necessary precautions must be followed when handling the chiller to prevent damage to it and the instructions on the package must be respected.

Table 1

	NET WEIGHT oz	CARDBOARD PACKAGING					CAGE PACKAGING					CRATE PACKAGING				
		L	H	D	cu ft	oz	L	H	D	cu ft	oz	L	H	D	cu ft	oz
Model of conservation units																
CP40 + U.C. BUILT IN	10406-10864*	39.4	102.4	51.2	123.6	11640-12099*	-	-	-	-	-	-	-	-	-	-
CP40	8466	39.4	98.4	51.2	123.6	9700	90.6	36.2	39.4	121.8	11817	92.5	61.0	41.3	137.7	14462
Model of condensing units																
C504	1905-2399*	36.2	29.5	34.6	21.2	2751-3245*	36.2	29.5	34.6	21.2	2751-3245*	37.8	27.6	33.9	21.2	3245-3739*

* Streamlined condensing unit.

NOTE: Cell with glass doors +20kg

1.4. UNPACKING

- Remove the cardboard or wooden packaging or box from the wooden base on which the machine is standing,
  lift the machine using suitable equipment (forklift), remove the wooden base and stand the machine in the chosen place (⏩ see par. 2.2).
- Check the condition of the conservation unit after having removed the packaging.
- Remove the protective PVC film from all sides (fig. 1).
- ⚠ Use protective gloves to handle the packing and the wooden base.
- N.B.: all the various parts of the packaging must be disposed of according to the rules of the various Countries in which the chiller will be used. In any case, none of the packaging must be left in the environment.

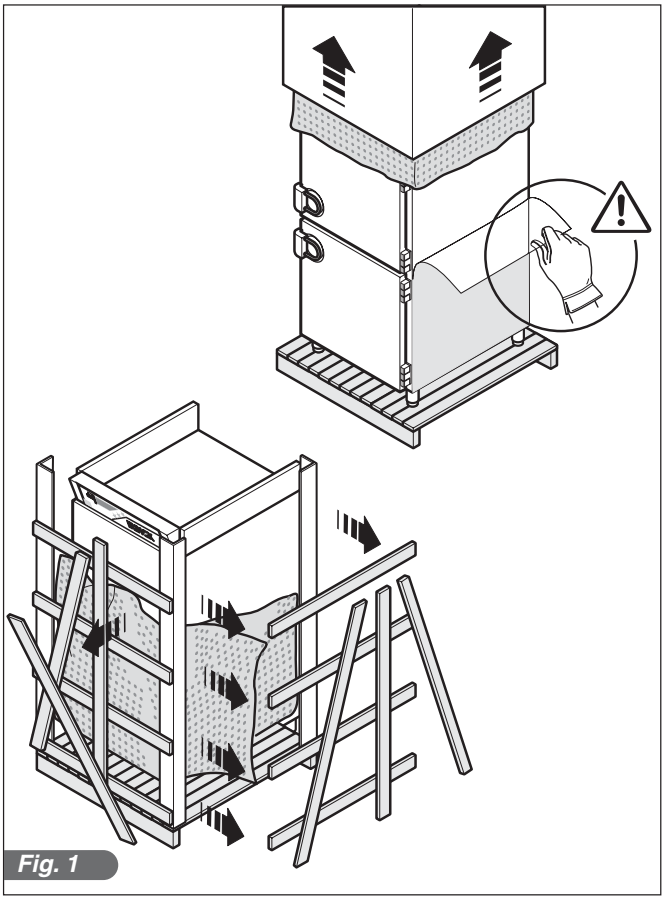


Fig. 1

1.5. BASIC SAFETY INSTRUCTIONS

If the instructions in this manual are not followed, the user takes upon himself responsibility for any operations carried out on the machine.

- These are the safety rules in general:
  do not touch the machine with damp hands or feet
- do not work on the machine barefoot
- do not insert screwdrivers, kitchen utensils or other objects between the guards and moving parts
- before cleaning or carrying out routine maintenance, disconnect the machine from the mains by turning the main switch off and removing the plug
- do not pull at the cable to unplug the machine.

2. INSTALLATION

2.1. PLATE DATA

- Check that the data on the plate and the electric power supply characteristics correspond (V, kW, Hz, no. of phases and available power).
- The plate with the characteristics of the unit is found on the right side of the conservation unit (fig.2) and under the control panel.

Preparation of machinery rooms for the condensing units must comply with fire prevention standards in the country of installation. Contact the local fire department for instructions.

i Also keep in mind that the intervention of safety valves or fuse plugs in the refrigerating circuit will result in the immediate discharge in the environment of all the coolant used. Please arrange for suitable disposal methods and emergency measures as shown in the coolant technical data sheet (⏩ see par. 2.12).

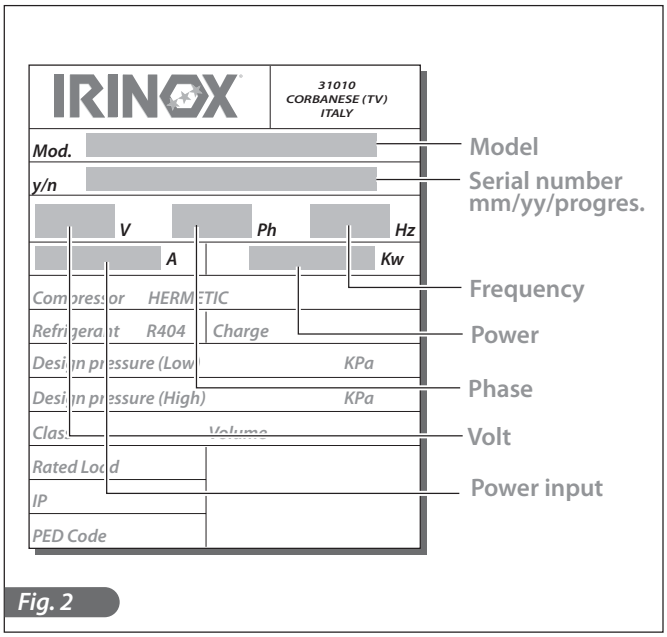


Fig. 2

Climatic classes:
- **T** class tropical (ambient temperature between 64,4°F and 109,4°F) in accordance with standard CEI EN 60335-1
- **5** (temperature 104°F, relative humidity 40%) in accordance with standard UNI EN ISO 23953-2

2.2. POSITIONING

- The machine must be installed and tested by fully respecting the accident-prevention standards, traditional precautions and the laws in force.
- The installer must check for any fire-prevention rules (consult the local fire department for instructions).
- Place the machine in its location.
- Permanently level the appliance by means of the adjustable feet. Use special hoisting apparatus for the heaviest machines (fig. 3).
- If the cells are not levelled, their proper functioning and the drainage of condensation may be jeopardized.

Avoid (Fig.4):

- Places exposed to direct sunlight
- Closed locations that are hot and have poor air circulation (⏩ see table 2).
- Avoid installing the machine near any source of heat.

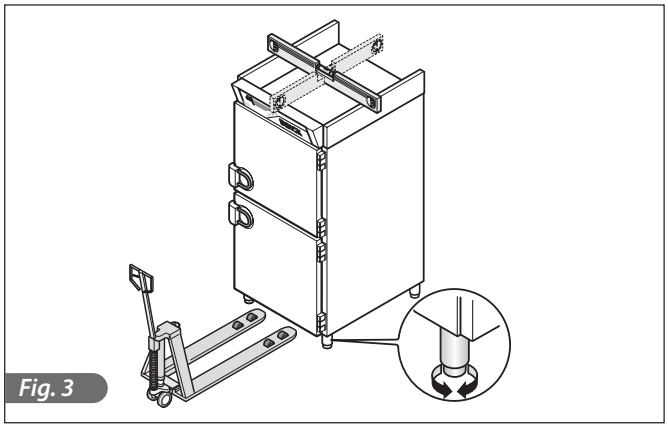


Fig. 3

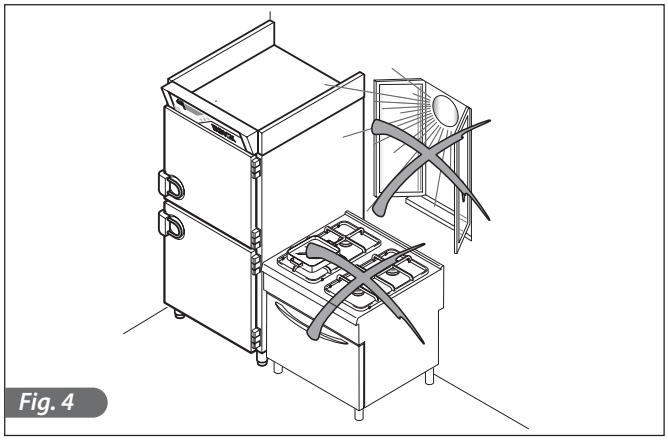
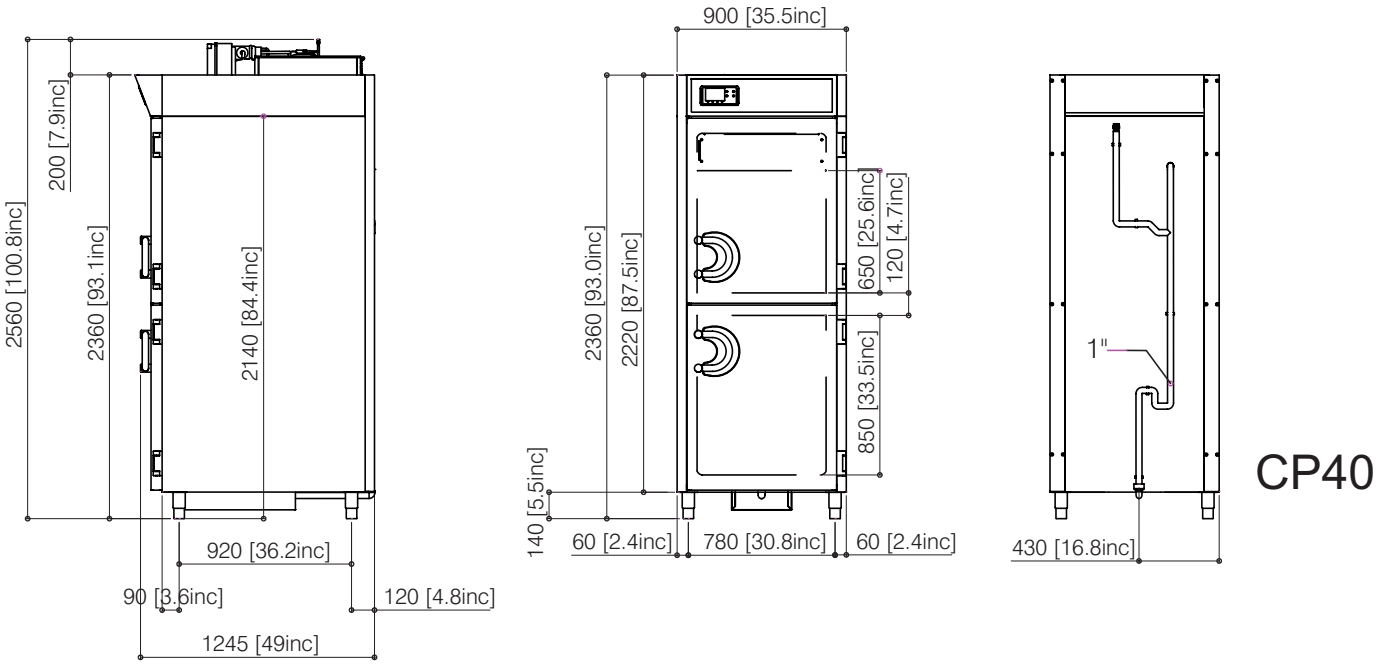
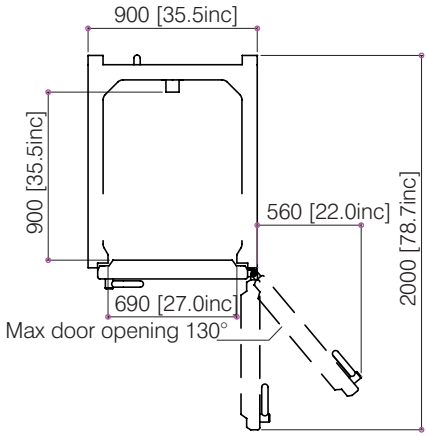


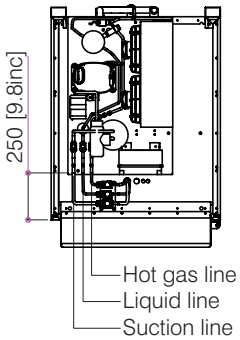
Fig. 4

2.3. DIMENSIONAL DATA

Standard built-in unit



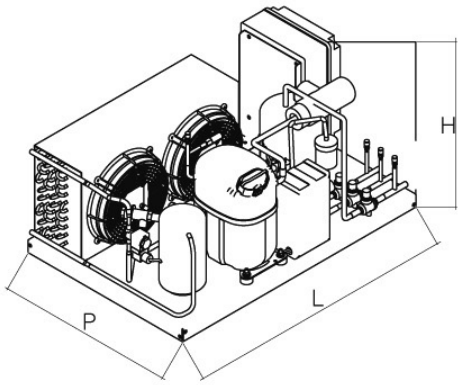




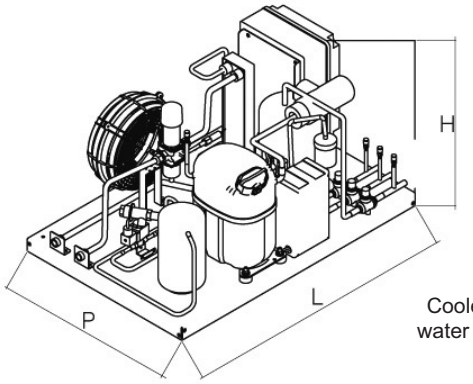
COMBINATION OF CONDENSING UNITS	
MODEL CP	**U.C. MODEL**
CP40	C504

2.3. DIMENSIONAL DATA

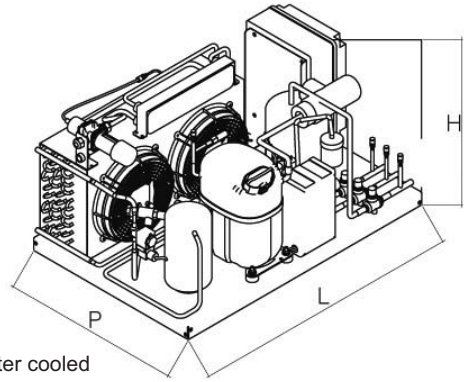
Condensing unit C504



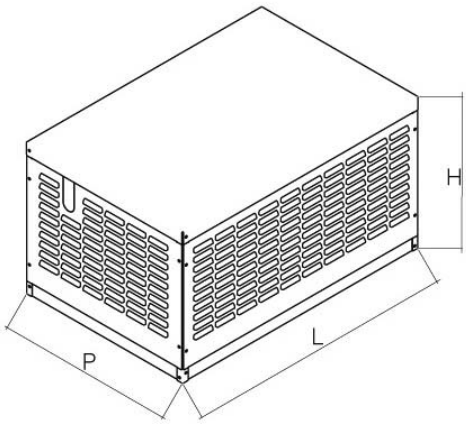
Air cooling



Cooled with well water or city water



Air/city water cooled



Streamline option

Dimensions of remote condensing unit.

MOD.	C504			
DIM. \ MOD.	AIR	WATER	AIR/WATER	STREAMLINED
L	33"			33.5"
P	22"			22.5"
H	17"			19.0"
oz	1905			2398

2.4. AMBIENT TEMPERATURE AND AIR CIRCULATION

For air cooled refrigeration units, the air temperature in the place of operation must not exceed 107,6°C.
Declared performance cannot be guaranteed if this temperature is exceeded.
The remote condensation units must be installed in special rooms or outdoors, protected against direct sunlight. If circumstances make it necessary, the installer must decide whether to provide a covering or shelter. Sufficient air circulation must however be ensured.

i For greater details ⏩ see **table 2.**

Table 2

MINIMUM AIR CIRCULATION FOR CONDENSING UNITS	
MODEL	**yd/h AIR**
C504	1439

Table 3

MAXIMUM WATER CONSUMPTION FOR AIR COOLED CONDENSING UNITS		
MODEL	**Well water [gal/h]**	**City water [gal/h]**
C504	42,3	140
Values referred to the declared condensation power at 14/104°F in accordance with EN12900.		

2.5. COOLING POWERS

Table 4

MODEL	Cooling yield [W]	Condensation power [W]
C504	1807	2748
Declared values at T.evap=-14°F and T.cond.=104°F. Superheating in accordance with EN12900.		

2.6. ELECTRICAL CONNECTION

Up the line from each unit (cell and condensing unit) it is obligatory to install an automatic circuit breaker in compliance with the laws in force in the Country of installation.

The power supply is to be carried to the electrical panel of each single unit, as per the data in **Table 5**.

- The electrical power cables must be properly sized for the units installed;
- The electrical cables must be placed and fastened in the cable passage, and laid suitably for the place of installation;
- Each wire must be inserted to the corresponding terminal.
- The earth wire must be correctly connected to an efficient earthing system.

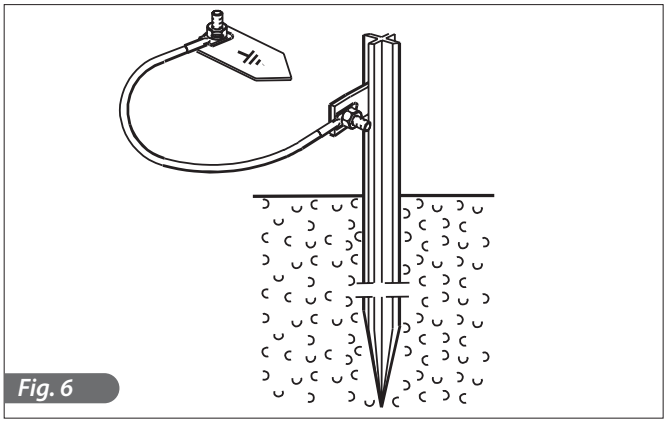


Fig. 6

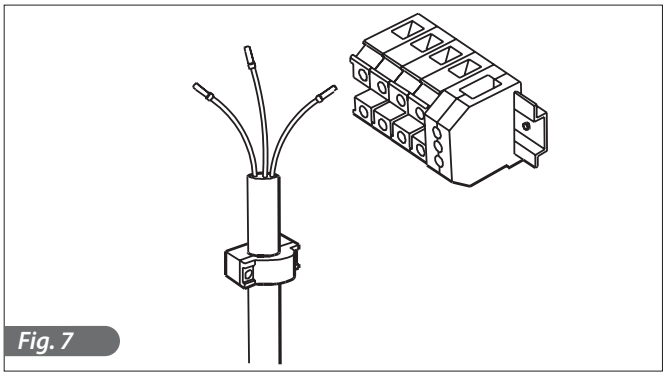


Fig. 7

BUS cable for communication between condensing unit and cells

Twisted and shielded cable 3x0.5mm^2 maximum length 100m.
Connect the cable to the terminals of the electronic cards as shown in the block diagram and in the electrical diagrams. Comply with the codes on the terminal block. The sequence of connection of the units does not make any difference. Start with the BUS of the Master card (condensing unit).
Connect the shield of the BUS cable to earth only in the electrical panel of the condensing unit.

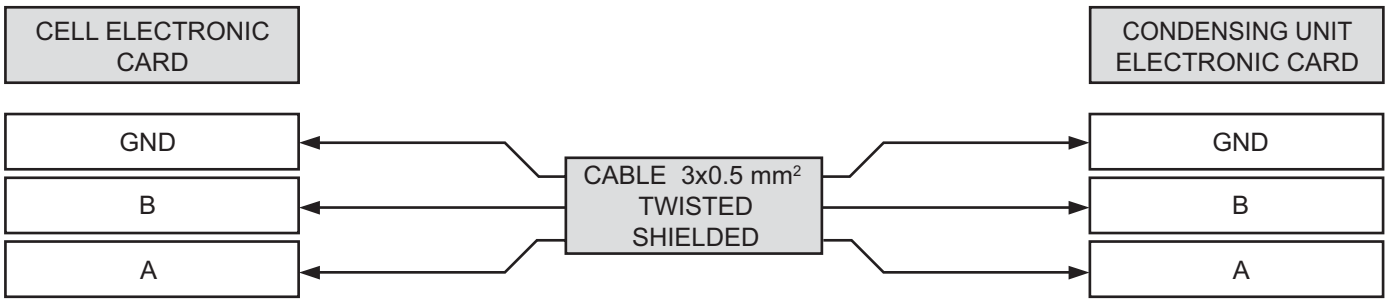
⚠ ***The manufacturer declines any responsibility or guarantee obligations if damage occurs to the unit, persons or things due to installation that is incorrect and/or does not respect the laws in force.***

Table 5

MODEL	POWER SUPPLY			POWER INPUT		CABLE SECTION
	Voltage (V)	Frequency (Hz)	Poles	Power (kW)	Current (A)	
Cabinet CP40	208	60	2P + PE	1,2	5,8	3G11AWG
C504A	208	60	2P + PE	1,2	5,7	3G11AWG
C504M	208	60	2P + PE	1,2	6,0	3G11AWG
C504W	208	60	2P + PE	1,1	5,4	3G11AWG
C504S.S.	208	60	2P + PE	1,2	6,0	3G11AWG

NOTE: cable sized for a length of 25m with industrial voltage drop $\Delta V\% \leq 1\%$
A: Air - M: Mixed Air/Water- W: Well water - S.S.: Super Silenced

"Unit communication BUS cable"



ATTENTION! The shield must be connected to earth only in the condensing unit.
If several cells are to be connected with the bus, the shield of the incoming cable must be spliced with the shield of the outgoing cable. In the cell where the bus ends, the shield must be isolated.

2.7. REFRIGERATION CONNECTION

2.7.1. Installation at same level

General criteria that must be met for the installation of remote units:

1) Slope of pipes (Fig.8)

2) Tightening of brackets on insulated pipes.
For the quantity of brackets to apply on the refrigeration connecting lines of the remote unit ⏩ see **table 6**.

3) Hermetic welding (Fig.10).

4) Creation of vacuum (0.03mBar) in the connection pipes (delivery and suction). Unless otherwise specified, the condensing unit is charged with freon.

5) Check vacuum seal of pipes.

6) Opening of cut-off bibcocks on condensing unit.

7) Check for leaks.

8) Check of exact gas charge via the liquid flow indicator located on the condensing unit.

9) Checking the condensation water circulation and pressure (system with water condensation).

The criteria listed above are sufficient for installation at the same level (Fig.11)

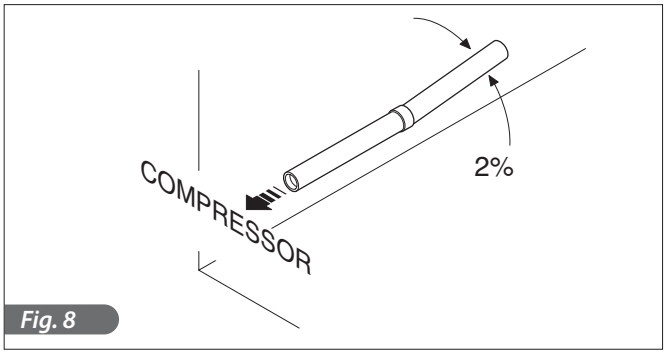


Fig. 8

Table 6

DISTANCE Cell -> Remote group	NUMBER OF BRACKETS
5,5 yd	2
11 yd	3
16,4 yd	5
22 yd	7
27 yd	8

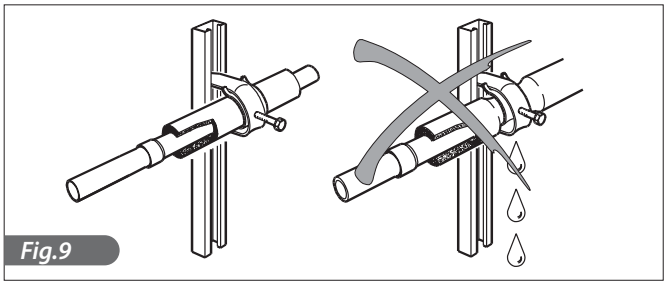


Fig.9

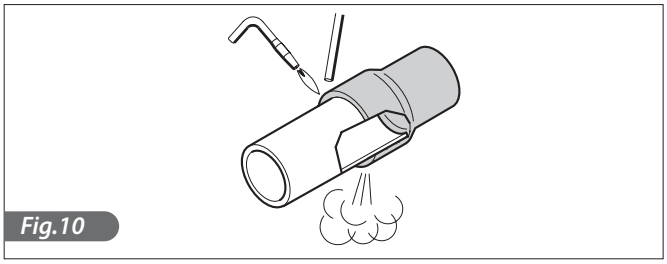


Fig.10

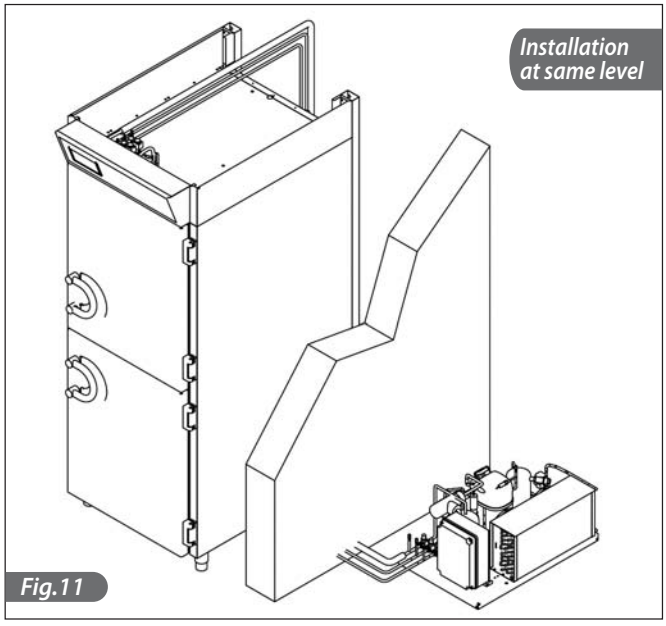


Fig.11

2.7.2. Installation at different levels

If the remote group is installed higher than the unit (fig. 13), it is necessary to fit a siphon at the beginning of each departure or upward section (a), at intervals of 2 yd of difference in level along the return pipe, and at every arrival (b).

If the remote unit is installed lower than the unit, siphons are not necessary (fig. 12).

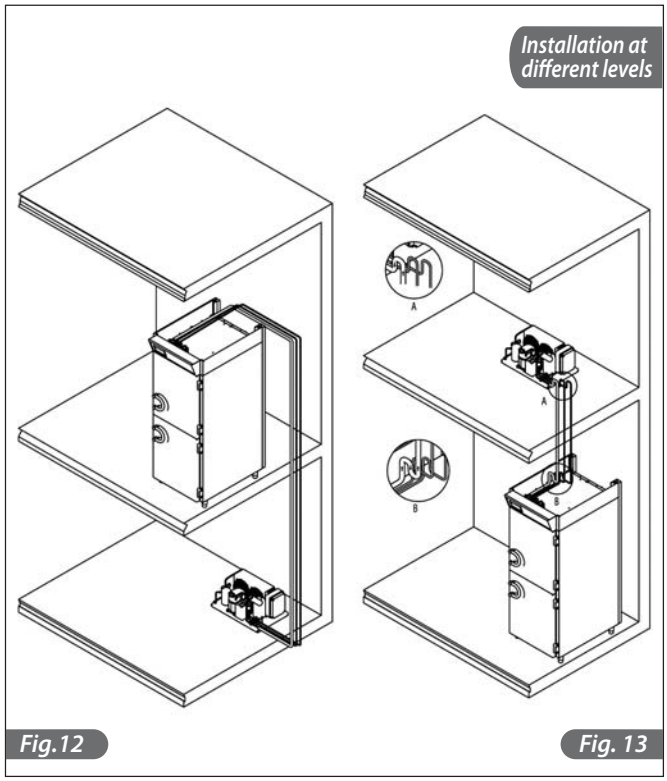


Fig.12 Fig. 13

2.7.3. Refrigeration connection of remote groups

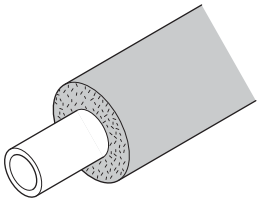
Diameters for appliance feed pipes are sized in accordance with the installation distance up to a maximum of 27 yd (⏩ see **table 7**).
For greater distances please consult the manufacturer.

The insulation of suction and hot gas pipelines must be carried out using good quality insulators of the closed-cell type having a minimum thickness of 19 mm.

Table 7

Condensing unit model	Model of matched cell	Delivery line	Suction line	Hot gas line	Condenser inlet line	Condenser output line
		Ø mm				
C504	CP40	0,39“	0,47“	0,39“	-	-

(1): for unit with remote condenser



2.7.4 Calibration of pressure switches R404a

For calibration of pressure switches R404a ⏩ see **table 8**

Note: all units without a unit of measure are expressed in (relative pressure).

Table 8

Model	AIR COOLING					WATER COOLING			
	Low pressure (L.P.)		High pressure (H.P.)	Fan start-up	Safety valve	Low pressure (L.P.)		High pressure (H.P.)	Safety valve
	PSI	-	PSI	PSI	PSI	PSI	-	PSI	PSI
C504	0	min	400	247	428	0	min	363	413

2.8. CONDENSATION DISCHARGE CONNECTION

For all models, it is necessary to provide a discharge pipe for the condensation and wash water, with a minimum diameter of 1", “Geberit" type or similar.

If there is no connection to a drain, install the container provided for collection of condensation water.
Fasten the support/guide on the bottom of the unit with the four M6 screws provided.
Fasten the extension pipe to the rear discharge pipe of the unit (Fig.15).
Insert the container in the support/guide (fig.16).

Make sure that the extension pipe is tilted towards the container, to prevent water from stagnating inside of it.

For the position ⏩ see par. 2.3.

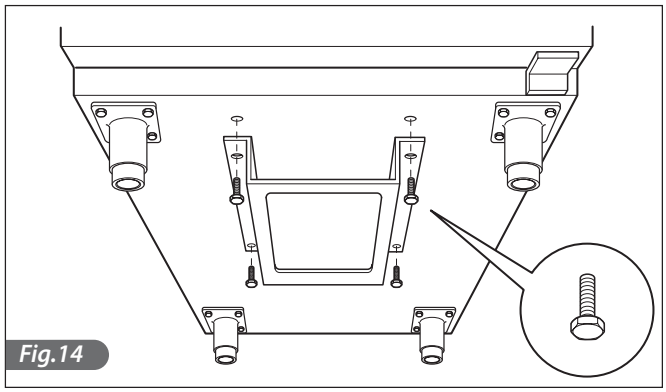


Fig.14

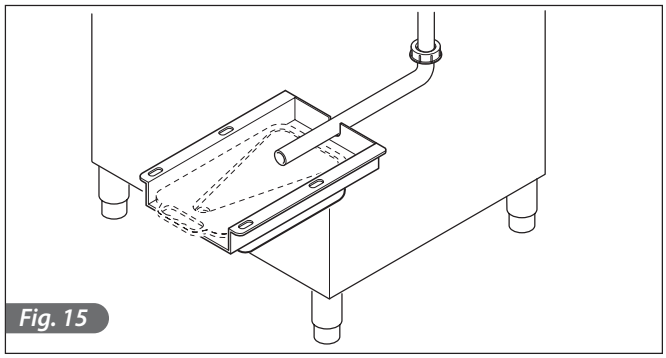


Fig. 15

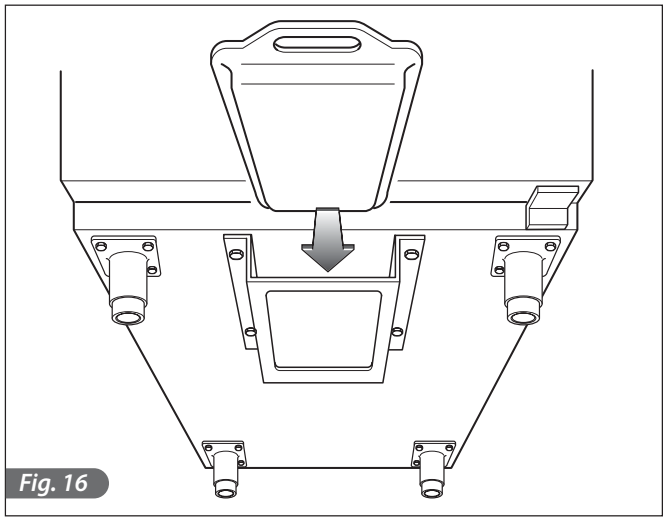


Fig. 16

2.9. CONNECTION OF WATER COOLED UNITS

- When testing (mains water), make sure the machine is at a standstill, that the water supply is ready and that water is not coming out of the condenser drain pipe; in this case, adjust the pressure valve until water coming out is completely stopped (Fig. 17).
- We suggest you install a gate valve and a viewable filter on the water delivery pipeline. The condenser water delivery and discharge pipes are indicated by special nameplates. Both fittings are threaded 3/4”F.
- See ***Table 3*** for maximum water consumption

CHARACTERISTICS OF THE LINE FOR WATER COOLED UNIT	
Maximum inlet pressure of water	232 PSI
Minimum inlet pressure of water	7,25 PSI
Maximum inlet water temperature to ensure normal operation of the unit	77°F (well water) 104°F (city water)

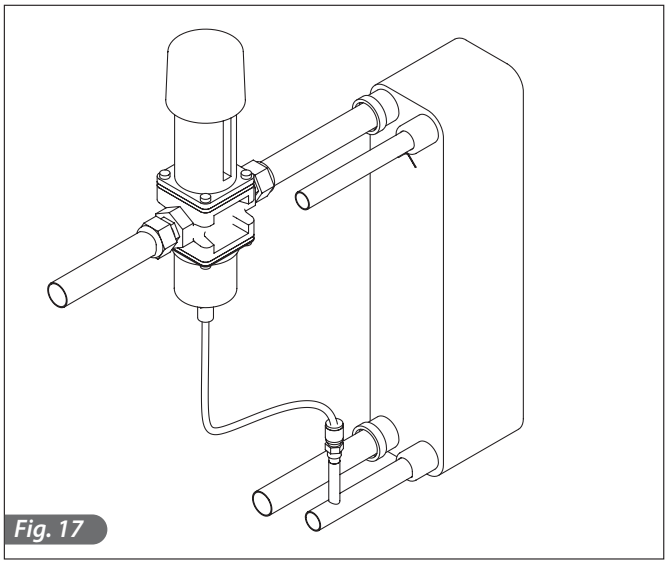


Fig. 17

2.10. NOTES FOR THE INSTALLER

Checking for correct installation and testing:

- Check for possible gas leaks on welded parts or joints made during installation.
- Check for proper insulation of pipes connecting the chiller with the remote condensing unit.
- Check electrical connection.
- Check power inputs.
- Check the standard pressures.
- Check water connection with the pressure valve adjustment during operation as well as proper water condensation circulation.
- Run at least one complete conservation cycle (reach the set temperature), and a manual defrost cycle.

⚠ ***Instruct the customer on the exact utilisation of the chiller with specific reference to the use and requirements of that specific customer.***

⚠ ***Installation and commissioning must be carried out by authorized personnel.***

2.11. SAFETY AND CONTROL SYSTEMS

- Door microswitch (A): blocks operation of the fans in the cell when the door is opened
- Protection fuses (B): protect the circuits against short circuits and overloads.
- Fuse holders (C): contain the fuses and allow opening and disconnection of circuits.
- Circuit breaker (D): protects the circuits against short circuits and overloads.
- Electronic cards (E): based on acquired parameters, they control the various devices of the machine that are connected to them.
- Control of temperature in cell and end of defrosting (F): managed by the electronic card via probe PT1000.
- Safety pressure switch (G): trips in the event of excessive pressure in the refrigerant circuit.
- Safety valve (H): trips in the event of excessive pressure in the refrigerant circuit due to failure of the safety pressure switch.

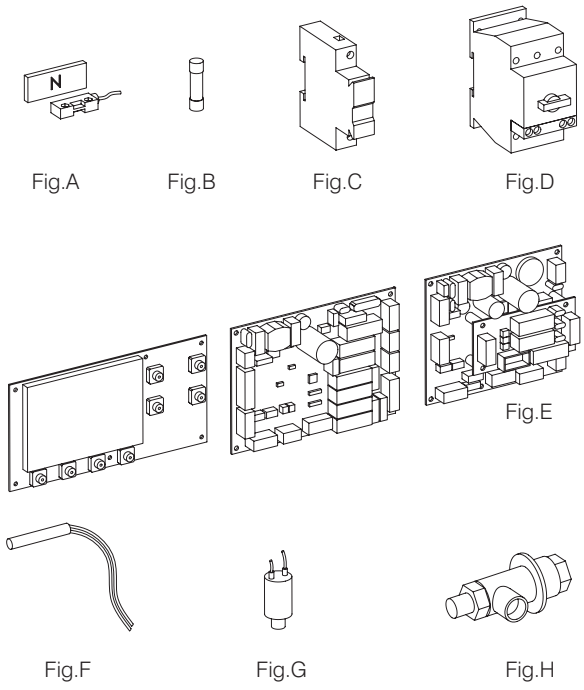


Fig. 19

2.12. R404A GAS SAFETY INFORMATION

• Identification of hazards
Exposure for long periods by inhalation can cause anaesthetic effects. Very high levels of exposure may cause anomalies in heartbeat and cause sudden death. If the product is nebulized or sprayed it can cause cold burns to the eyes and skin. It is dangerous for the ozone layer.

• First aid measures
Inhalation
Move the injured person away from the source of exposure to a warm place where he can rest. If necessary, administer oxygen. Practice artificial respiration if the person has stopped, or seems about to stop, breathing. In the event of cardiac arrest perform CPR. Call for medical assistance immediately.

Contact with the skin
Thaw the parts concerned using water.
Remove contaminated clothes.
Attention: in the event of cold burns, clothes can adhere to the skin. In case of contact with the skin, wash immediately and thoroughly with warm water. If symptoms occur (irritation or blisters) ask for medical assistance.

Contact with the eyes
Wash immediately with an eye-wash or clean water, keeping the eyelids apart for at least 10 minutes. Ask for medical advice.

Ingestion
Do not induce vomiting.
If the injured person is conscious, make him rinse his mouth out and drink 200-300 ml of water.
Request medical assistance immediately.

Further medical care
Treatment for symptoms and support therapy where indicated. Do not administer adrenalin or similar substances after exposure because of the risk of cardiac arrhythmia with the possibility of cardiac arrest.

• Fire-prevention measures
Non-flammable.
Thermal decomposition causes the emission of very toxic and corrosive vapours (hydrogen chloride, hydrogen fluoride). In the event of fire, use breathing apparatus and suitable protective clothes.

Fire extinguishers
Use extinguishers suitable for the type of fire.

• Toxicological information
Inhalation
High concentrations in the atmosphere can cause an anaesthetic effect and possible unconsciousness. Very high levels of exposure may cause anomalies in heartbeat and cause sudden death.
Even higher concentrations can cause suffocation due to reduced oxygen content in the air.

Contact with the skin
If the product is nebulized or sprayed it can cause cold burns to the eyes and skin. It does not seem to be dangerous if absorbed by the skin. Repeated and prolonged contact can cause loss of natural skin oils with consequent drying, chapping and dermatitis.

• Ecological information
It breaks down quite quickly in the lower atmosphere (troposphere). The products or decomposition have high dispersion features and thus have a low concentration.
It does not promote photochemical smog (i.e. it is not part of the volatile organic compounds -VOC- in compliance with the UNECE agreement).
Its ozone destruction potential (ODP) is 0.055 measured against a standard ODP of 1 for cfc11 (according to the uNeP definitions).
This substance is regulated by the Protocol of Montreal (1992 revision).
Product discharges into the atmosphere do not cause long-term water contamination.

• Disposal suggestions
The best solution is to collect and recycle the product. If this is not possible, it must be destroyed in a plant that is authorised and equipped to absorb and neutralize the acid gases and other toxic operating by-products.

• Measures to be followed in the event of accidental dispersion
Make sure that the person eliminating the dispersion is suitably protected (using special apparatus to protect the respiratory tract) while cleaning up spills.
If it is safe enough to do so, isolate the source of dispersion. If the dispersion is modest and ventilation is sufficient, simply let it evaporate.
For dispersion of large quantities:
- ventilate the area;
- contain the spilled material using sand, soil or other suitable absorbing material;
- prevent it from penetrating into drains, sewers, basements and construction excavations because the vapours can cause suffocation.

• Handling
Avoid inhalation of high concentrations of vapours. Concentrations in the atmosphere must be reduced to a minimum and kept at the lowest reasonably possible level, below the professional exposure limit.
The vapours are heavier than the air and for this reason it is possible that high concentrations form near ground level where ventilation is scarce. In these cases, ensure adequate ventilation and wear protective apparatus for the respiratory tract with a reserve supply of air. Avoid contact with open flames and hot surfaces because irritating and toxic products of decomposition may form. Avoid contact of the liquid with eyes/skin.

2.13. DISPOSAL OF THE MACHINE

Demolition and disposal of the machine must be carried out in accordance with standards currently in effect in the country of installation, especially concerning the refrigeration gas and lubrication oil of the compressor.

3. OPERATION

3.1. USE

The CP series of conservation units are designed for the conservation of foodstuffs.
All CPs can work from 59 to -22°F.
In particular
• In positive mode (59 / 23°F), they are suitable for the conservation of fresh products or, for short periods, of cooked foods.
• In negative mode (32/ -13°F), they are suitable for the conservation of frozen products, even for long periods of time.
• In chocolate mode (59 / 23°F), they are suitable for the conservation of chocolate-based products (such as chocolate based candy).

3.2. CONTROL PANEL

DL1: Cell light LED
DL: Compressor operation LED
P1: Relative humidity adjustment key
P2: Cell light on/off key
P3: Enhanced cycle key
P4: Key for download of recorded data
P5: Menu key/value up – **reset alarm**
P6: Menu key/value down
P7: ON/Standby key
P8: Programming/confirmation key

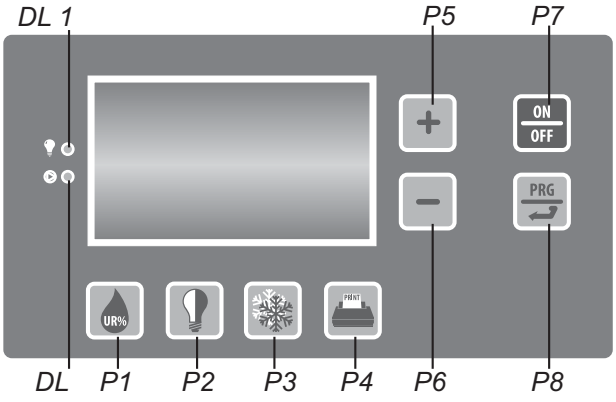


Fig. 20

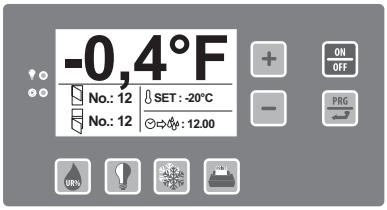
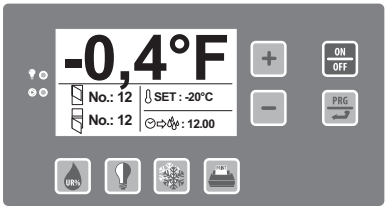
3.3. DESCRIPTION AND OPERATION

LED description

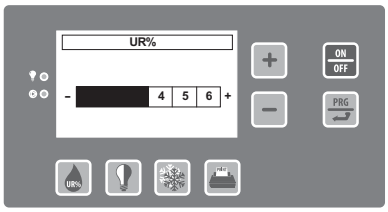
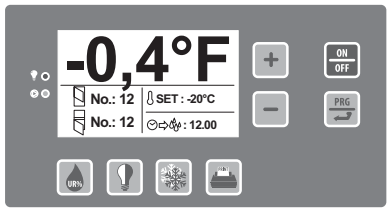
		Off	On	Flashing
	DL1	Cell internal light off	Cell internal light on	NOT INCLUDED
	DL	No compressor running	At least 1 compressor running	All compressors stopped with one compressor in timer-control phase for start-up

Conservation cycle

Phase	Description	Front panel screen
0	Machine power up. For the first three seconds, the display shows the type of machine set.	
1	Press the key P7 ON OFF and the machine will start, shown the screen of phase 2. Press key P7 ON OFF again and the machine will go into standby.	

Phase	Description	Front panel screen
2	**Start of machine operation** The display shows: - cell temperature; **-0,4°F** - number of door openings (at 24:00 each day, the count of openings is reset); **No.: 12** **No.: 12** - set temperature; **SET : - 4°F** - time of next automatic defrost. **: 12.00**	
3	**Modify set temperature** Press keys P5 and P6 to modify the previously set temperature. If the data is not modified within 3 seconds, it is automatically memorized.	
4	**End of conservation cycle** If you press key P7 , the machine will end the conservation cycle and enter standby mode.	

Common functions

Function	Description	Front panel screen
1	**Humidity control** (for cells configured as CP positive, CP positive plus or CP chocolate) Press key P1  to adjust the percentage of relative humidity in the cell. With keys P5  and P6  you can modify the percentage of humidity displayed, with 6 selectable steps. Confirm the selected steps by pressing key P8  or wait 5 seconds without press the keys	
2	**Turing on the cell light (if present)** Press the key P2  to turn on the light in the cell and LED DL1  . Press P2  again and the light goes off. The light comes on automatically when the doors are opened.	
3	Press key P4  to print the register on a printer which may be connected to the RS232 serial port. You can download the data onto a USB key, which is then to be connected to a PC. Data on temperature, data, and time are downloaded. The memory holds recordings for 30 days with measurements made at 15-minute intervals.	
4	**Selection of operating mode** Each CP can work in 3 different modes, with default operating sets. The possible modes are: • Positive; • Negative; • Ciok (Chocolate) The operating mode can be varied only when the machine is in standby. To access mode selection, follow the instructions in Par. 3.6 “PARAMETER PROGRAMMING" and modify parameter 1-8 "Selection of CP model". The machine is set in the factory with the mode specified during the order phase.	
5	**Manual defrosting** Access parameter programming by following the instructions in Paragraph 3.6 “PARAMETER PROGRAMMING". Select manual 4, manual defrosting.	
6	**Sanification** Access parameter programming following the instructions in Paragraph 3.6 "PARAMETER PROGRAMMING" Select "Yes" parameter 1-9 "Sanigen"	

3.4. SHUTDOWN MODES

In case of emergency, to shut down the machine, press the ON/OFF key and cut off the power supply from the main panel (Fig.21).

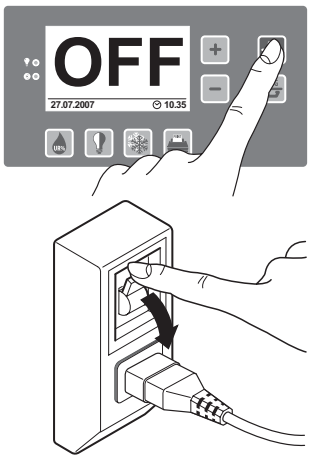


Fig. 21

3.5. SUGGESTIONS FOR USE

Before putting the machine in operation, it is necessary to carefully clean the inside of the cell (⏩ see par. 4.2)

3.5.1. Pre-cooling

Before using the conservation unit for the first time, or after a long period of disuse, pre-cool the cell by running the machine empty until the set working temperature is reached.

To obtain good performance from the machine without altering foods, we suggest the following:

- do not place hot foods or liquids in the cell without a cover.
- arrange products so as to favour cold air circulation throughout the cell.
- avoid prolonged and frequent door opening.

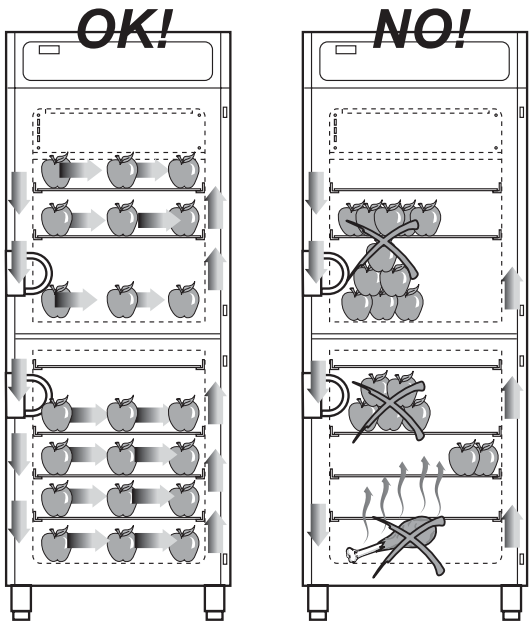


Fig. 22

3.5.2. Loading the machine

Take care that there is enough space between pans, so as to allow sufficient air circulation.

If the machine is not fully loaded, spread the pans and the load evenly throughout the entire height, avoiding concentrations.

When using the CP in positive mode (59÷32°F), run the conservation unit empty for at least four hours so as to work at the desired relative humidity.

3.6. PARAMETER PROGRAMMING

Access the user parameter programming also with the On card.

Press and hold button P8  until the display shows "**user parameters**".
Use of keys for navigation in the menus:

- key P8  : confirms the selected value/menu
- key P5  : scrolls the menu up, increases the value of the selected parameter
- key P6  : scrolls the menu down, decreases the value of the selected parameter

Menu/Parameters Diagram:

Menu	Item	Parameter	Value	Description
Set UP	1-1	Date / Time		sets the time and date of the clock of the machine
	1-2	Summer time	Yes	
			No	
	1-3	Language	Italian English French German Spanish	
	1-4	Displays	°C / °F	
			Bar / PSI	
	1-5	Contrast		adjusts contrast of the display
	1-6	Print Mod.	Printer	Portable printer
			USB key	Download data to PC
	1-7	Release software		shows the versions of software of the Master, Slave-CPU and Slave-Front cards
	1-8	Selection of CP model	CP40P	Conservation unit positive
			CP40N	Conservation device negative
			CP40CioK	Conservation device for Chocolate
	1-9	Sanigen	Yes	Enables the Sanificator
			No	Disables the Sanificator
CP parameters	2-1	Δt thaw alarm	See tab. "Parameter Values"	
	2-2	Thaw alarm delay	See tab. "Parameter Values"	
	2-3	Display of temp. in defrost	1	shows the message "defrost" during defrosting
			2	displays the cell temperature
			3	for the entire time of defrosting, it shows the temperature measured in the cell prior to the start of the defrost cycle
	2-4	Duration of enhanced cycle	See tab. "Parameter Values"	
	2-5	Time of door opening no. 1-2	See tab. "Parameter Values"	
	2-6	Fan speed	See tab. "Parameter Values"	allows variation of the speed of the fans in the cell in manual mode
	2-7	Operating mode of relay of al. RL7	1	in case of power outage
			2	only for shutdown alarms
			3	thaw alarm AL06
			4	thaw alarm AL06 - power outage
	2-8	Frequency of recordings	See tab. "Parameter Values"	

Menu	Item	Parameter	Value	Description
	2-9	Chilling set	See tab. "Parameter Values"	Temperature set for chilling during enhanced cycle
Defrosting parameters	3-1	Time of 1st defrost	See tab. "Parameter Values"	
	3-2	Time of 2nd defrost	See tab. "Parameter Values"	
	3-3	Time of 3rd defrost	See tab. "Parameter Values"	
	3-4	Time of 4th defrost	See tab. "Parameter Values"	
	3-5	Interval between 2 defrosts	See tab. "Parameter Values"	
	3-6	Temperature at end of defrosting	See tab. "Parameter Values"	
	3-7	Max. defrost time	See tab. "Parameter Values"	
Manual defrosting	4			Start the manual defrost cycle
Info	5-1	Cell temperature		
	5-2	Evaporator temperature		
	5-3	Ambient temperature		
	5-4	Low pressure		
	5-5	High pressure		
	5-6	Working hours of compressor 1		
	5-7	Working hours of compressor 2		
	5-8	Working hours of compressor 3		
	5-9	Working hours of compressor 4		
	5-10	Status of the evaporator fan		
Alarms	6			Display the list of alarms
Recordings	7	Display		Insert the start and end date of the recordings to be shown . Choose "Display" and the recording will appear for the selected interval
		Print		Insert the start and end date of the recordings to be printed. Select "Print" to print the recordings of the selected interval

Adjustment of parameter values:

Item	Name	Range	Resolution	Default values				
				CP Ciok	CP+	CP-	CPP+	CPP-
2-1	Δt thaw alarm	1÷30°C	1°C	50°F	50°F	50°F	50°F	50°F
2-2	Thaw alarm delay	1÷30 min.	1 min.	20 min.	20 min.	20 min.	20 min.	20 min.
2-3	Display of temp. in defrost	1-2-3	1	3	3	3	3	3
2-4	Duration of enhanced cycle	10 min.÷6 h	10 min.	NO	NO	NO	2 h	4 h
2-5	Time of door opening no. 1-2	1÷30 min.	1 min.	3 min.	3 min.	3 min.	3 min.	3 min.
2-6	Fan speed	100÷40%	1%	100 %	100 %	100 %	100 %	100%
2-7	Operating mode of relay of al. RL7	1-2-3-4	1	3	3	3	3	3
2-8	Frequency of recordings	15 min.÷4 h	15 min.	30 min.	30 min.	30 min.	30 min.	30 min.
2-9	Chilling set	1F04÷1F03	0,1°C	NO	NO	NO	0°C	-30°C
3-1	time of 1st defrost	00,10÷23,50	10 min.	06,00	06,00	04,00	06,00	04,00
3-2	time of 2nd defrost	Par.3-1÷23.50	10 min.	23,50	23,50	10,00	23,50	10,00
3-3	time of 3rd defrost	Par.3-2÷23.50	10 min.	NO	NO	16,00	NO	16,00
3-4	time of 4th defrost	Par.3-3÷23.50	10 min.	NO	NO	22,00	NO	22,00
3-5	Interval between 2 defrosts	1÷24 h	1 h	12 h	12 h	6 h	12 h	6 h
3-6	Temp. at end of defrosting	1÷50°C	1°C	39,2°F	39,2°F	39,2°F	39,2°F	39,2°F
3-7	Max. defrost time	2÷99 min.	1min.	6 min.	6 min.	6 min.	6 min.	6 min.

CP+ = Conservation unit positive; CP- = Conservation unit negative; CPP+ = Conservation unit enhanced positive; CPP- =Conservation unit enhanced negative; CPCioK= CP Chocolate

4. MAINTENANCE

4.1. ORDINARY MAINTENANCE

The information and instructions contained in this chapter are intended for all personnel who work with the machine: the user, the maintenance technician, and also non-specialised personnel.

Basic safety guidelines

To perform cleaning and maintenance in complete safety, please refer to the standards of safety in par. 1.5 (⏭Fig.23):

- do not touch or work with the machine with damp hands or feet
- do not insert screwdrivers, kitchen utensils or other objects between the guards and moving parts
- before cleaning or carrying out routine maintenance, disconnect the machine from the mains by turning the main switch off and removing the plug
- do not pull on the power cord to disconnect the machine from the power supply

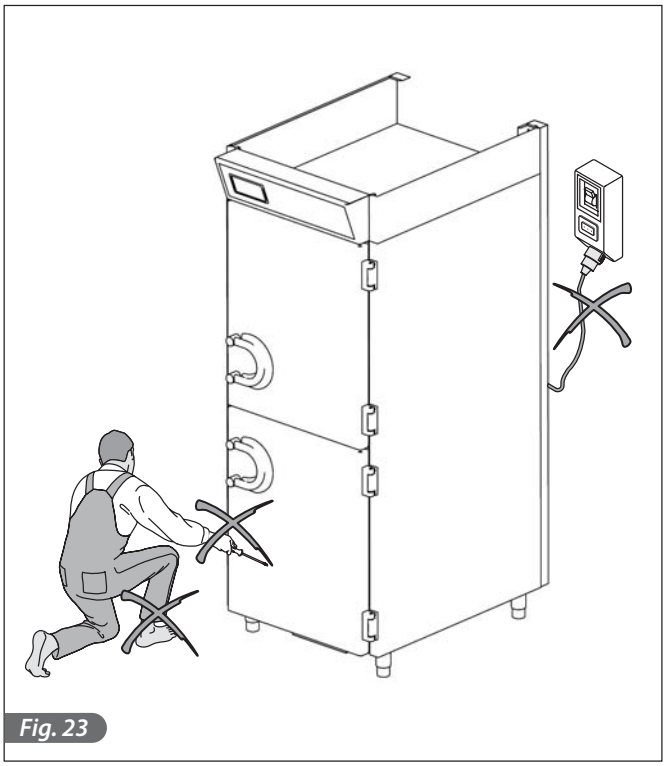


Fig. 23

⚠ It is strictly forbidden to remove guards and safety devices to effect routine maintenance operations. The manufacturer declines any responsibility for accidents caused by not observing the instructions above.

Before putting the machine in operation, it is necessary to carefully clean the inside of the cell as indicated in paragraph 4.2.

4.2. CELL CLEANING

To ensure hygiene and to protect the quality of the foods, the inside of the cell must be cleaned frequently, based on the types of conserved foods.
We recommend weekly cleaning.
The shape of the cell and of the interior components make it possible to clean it using a cloth or sponge.
Use water and neutral, non-abrasive detergents.
The cell can be rinsed using a cloth or sponge dipped in water or a moderate jet of water (having a pressure that does not exceed the pressure of the system).

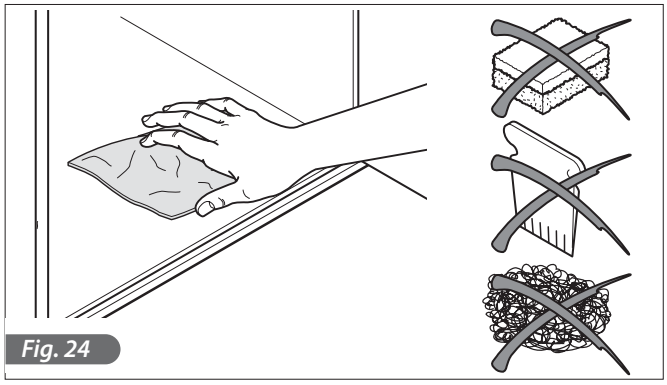


Fig. 24

⚠ Do not scrape the surface using sharp or abrasive objects.

⚠ Do not use abrasive products, solvents or thinners.

When cleaning, always wear protective gloves.

4.3. CLEANING THE CONDENSER

In order for the conservation unit to work correctly and efficiently, the air condenser must be kept clean to allow free airflow. This operation should be done at least every 30 days. This can be done by using a non-metal brush to remove all the dust and lint from the condenser fins. We suggest you use a vacuum cleaner to prevent the dust from going into the environment. If there are any greasy deposits, use a brush soaked in alcohol.

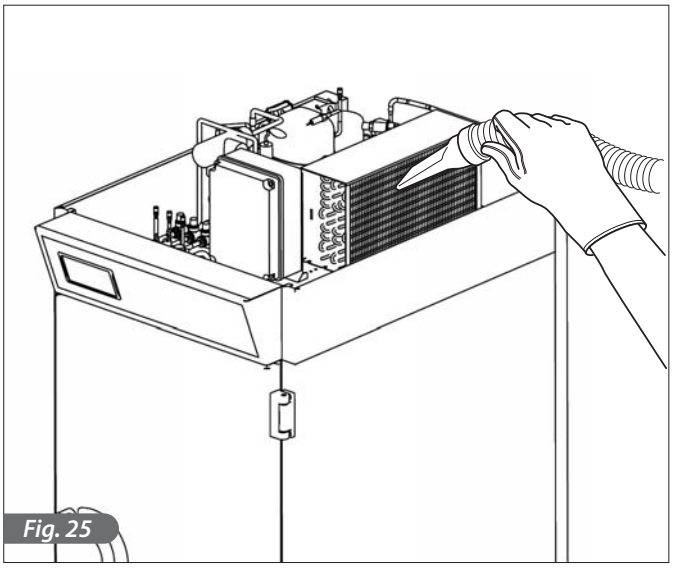


Fig. 25

⚠ Do not scrape the surface using sharp or abrasive objects.

⚠ Always use protective gloves, glasses and masks to protect the respiratory tract during cleaning.

4.4. TROUBLESHOOTING

The electronic control of the machines is equipped with an acoustic and visual signalling system that signals the presence of an alarm which is registered in the alarms list.
Alarm reset and buzzer silence: press key P5 +.

Diagnostics managed by the electronics:

Code	DESCRIPTION DISPLAYED	CAUSE	EFFECT	CARD	CYCLE STOP
ALS00	Loss of data		Loading of default data	Slave-CPU	NO
ALS01	Power outage		Automatic restart when power comes back on	Slave-CPU	NO
ALS02	Probe S1 faulty	Cell temperature probe faulty	The value of S2 41°F is acquired as a reference value	Slave-CPU	NO
ALS03	Probe S2 faulty	Defrost temperature probe faulty	The defrost cycle will run for the time set in parameter 3-9. The fan is controlled when the operation solenoid valve is controlled (YV1)	Slave-CPU	NO
ALS04	Probe S3 faulty	Ambient temperature probe faulty	Visual alarm only	Slave-CPU	NO
ALS05	Low voltage	Card power supply voltage less than	Visual alarm only	Slave-CPU	NO
ALS06	Thawing	After the time set in parameter 2-2, the temperature has risen above the time set in 2-1		Slave-CPU	NO
ALS07	Door 1 open	Upper cell door open	The cell fan is shut off for the time set in parameter 2-5	Slave-CPU	NO
ALS08	Door 2 open	Lower cell door open	The cell fan is shut off for the time set in parameter 2-5	Slave-CPU	NO
ALS09	Clock faulty	Electronic card internal clock faulty	The clock icon in the display is crossed out. The time for the next defrost cycle is shown with a decreasing value. The defrost cycle is run with the values set in parameters 3-5 and 3-7.	Slave-CPU	NO

Code	DESCRIPTION DISPLAYED	CAUSE	EFFECT	CARD	CYCLE STOP
ALS10	FULL MEMORY	Recording memory full	The newly recorded item cancels the last one on the list	Slave-CPU	NO
ALS11	Low voltage	Card power supply voltage less than 33%	Electronic card block	Slave-CPU	YES
ALS12	Thawing	The temperature of the cell has risen above the temperature set in parameter 2-1 after the time set in parameter 2-2. In addition, the cell temperature and defrost probes are faulty		Slave-CPU	YES
ALS13	Slave serial faulty	Failure in serial port of the card	Block of cell card and automatic reset	Slave-CPU	YES
ALS14	Front serial faulty	Failure in serial port of the card	Block of cell card and automatic reset	Slave-CPU	YES
ALS15	Defrosting timeout	The defrost cycle has ended due to elapsed safety time	The alarm is only recorded in the record of alarms	Slave-CPU	YES
ALM00	Loss of data		Loading of default data	Master	NO
ALM01	Low voltage	Card power supply voltage less than	Visual alarm only	Master	NO
ALM02	Power outage		Automatic restart when power comes back on	Master	NO
ALM03	Master serial/external		Visual alarm only	Master	NO
ALM04	Low voltage	Card power supply voltage less than 33%	Electronic card block	Master	YES
ALM05	Power outage			Master	YES
ALM06	Thermal 1	Circuit breaker compressor 1, open		Master	YES
ALM07	Thermal 2	Circuit breaker compressor 2, open		Master	YES
ALM08	Thermal 3	Circuit breaker compressor 3, open		Master	YES
ALM09	Thermal 4	Circuit breaker compressor 4, open		Master	YES
ALM10	Press. Mech.	Activation of high pressure switch	Cycle stop and automatic restart when alarm ceases	Master	YES
ALM11	Master/Slave serial faulty	Failure of the serial port for communications between the cell card and the condenser card	Block of condenser card and automatic reset	Master	YES

Diagnostics NOT managed by the electronics:

MALFUNCTION	POSSIBLE CAUSE	POSSIBLE SOLUTION
The front card of the cell does not turn on	No power supply	Check the connection to the electrical line
	Bus connector for connection to Slave-CPU card disconnected	Insert the bus cable in the dedicated connector both in the front card and in the Slave-CPU card
	Intervention of protection fuses	Replacement of fuses by an authorized technician
The cell fans do not run	No power supply	Check the connection to the electrical line
	Fan faulty	Technician required to replace fan
	Speed control of cell card faulty	Technician required to replace card
The compressor does not work	No power supply	Check the connection to the electrical line
	Fuses tripped for protection of auxiliary circuit (24V)	Replacement of fuses by an authorized technician
	Intervention of internal clixon due to overload	Intervention by a technician
	Intervention of circuit breaker	Technician required to reset the switch and check calibration.
	Activation of high pressure switch	Electronic diagnostics control (alarm ALM10). Intervention by a technician
	No consent from electronic card	Technician required to replace electronic card
	Remote switch faulty	Technician required to replace remote switch
The compressor runs but does not cool the cell	No refrigerant gas	Intervention by a technician
	Solenoid valve faulty	Intervention by a technician
	Condenser dirty	Clean condensing coil
	Liquid line solenoid valve faulty	Technician required to replace solenoid valve or bobbin
	Suction line solenoid valve faulty	Technician required to replace solenoid valve or bobbin
	Defrost line solenoid valve faulty	Technician required to replace solenoid valve or bobbin
The condenser fan does not work	No power supply	Check the connection to the electrical line
	Speed adjuster or pressure switch faulty	Technician required to replace device
	Fan faulty	Technician required to replace fan
	Start condenser faulty	Technician required to replace start condenser
	Non consent from compressor remote switches	Technician required to check compressor remote switches
No evaporator defrost	Incorrect programming of defrost cycles	Check programming of defrost cycles
	Fuse tripped for protection of defrost heating element	Replacement of fuse by an authorized technician
	Solenoid valve or bobbin of hot gas line faulty	Technician required to replace solenoid valve or bobbin
	Solenoid valve or bobbin of defrost line faulty	Technician required to replace solenoid valve or bobbin

4.5. SPECIAL MAINTENANCE

The information and instructions contained in this paragraph are for the exclusive use of specialized personnel who are authorized to intervene on the electronic and refrigeration components of the machine.

4.5.1. How to access the electronic cards and the electrical panels.

The electronic cards and the electrical panels are located in the upper part of the machine, protected by the side strips and by the control panel. Disconnect the electrical power supply before performing maintenance. Then remove the steel covers by loosening the screws. When maintenance is complete, carefully put the covers back in place and tighten the screws.

Fig. 28

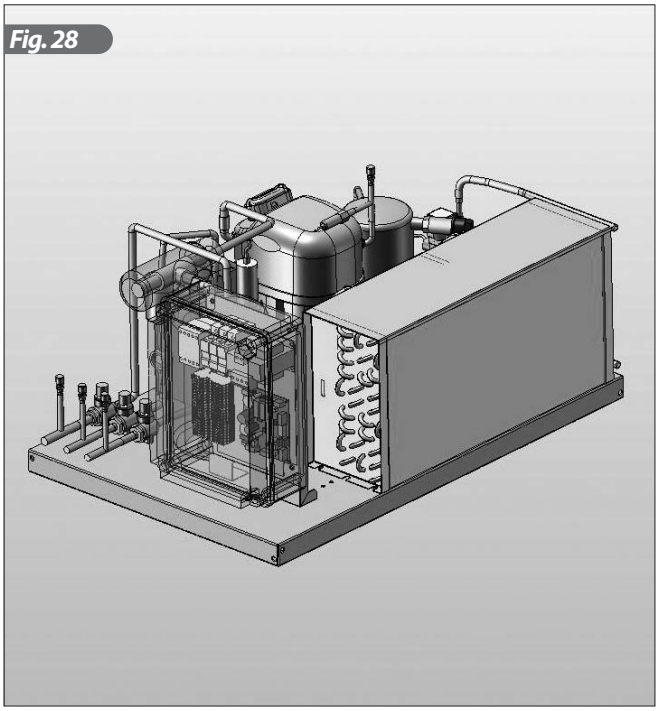


Fig. 29

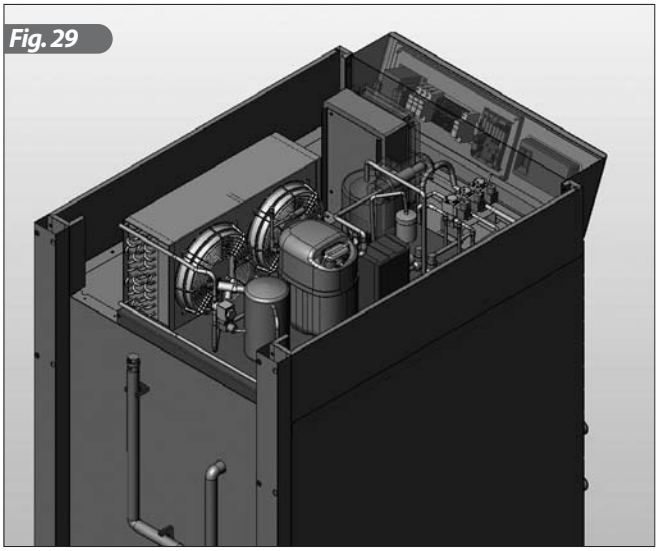
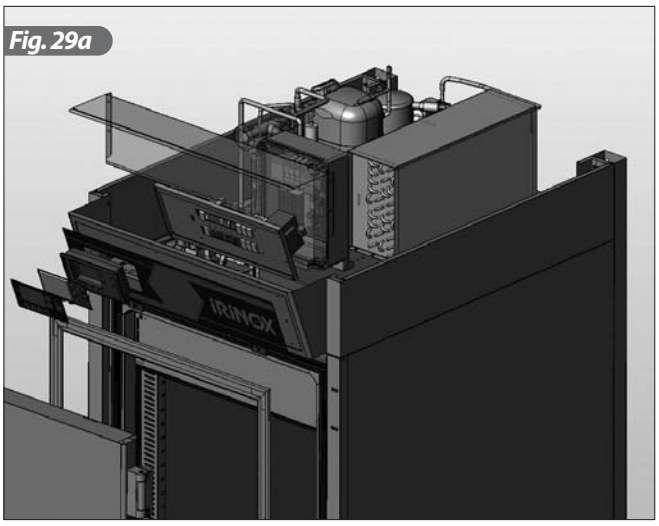
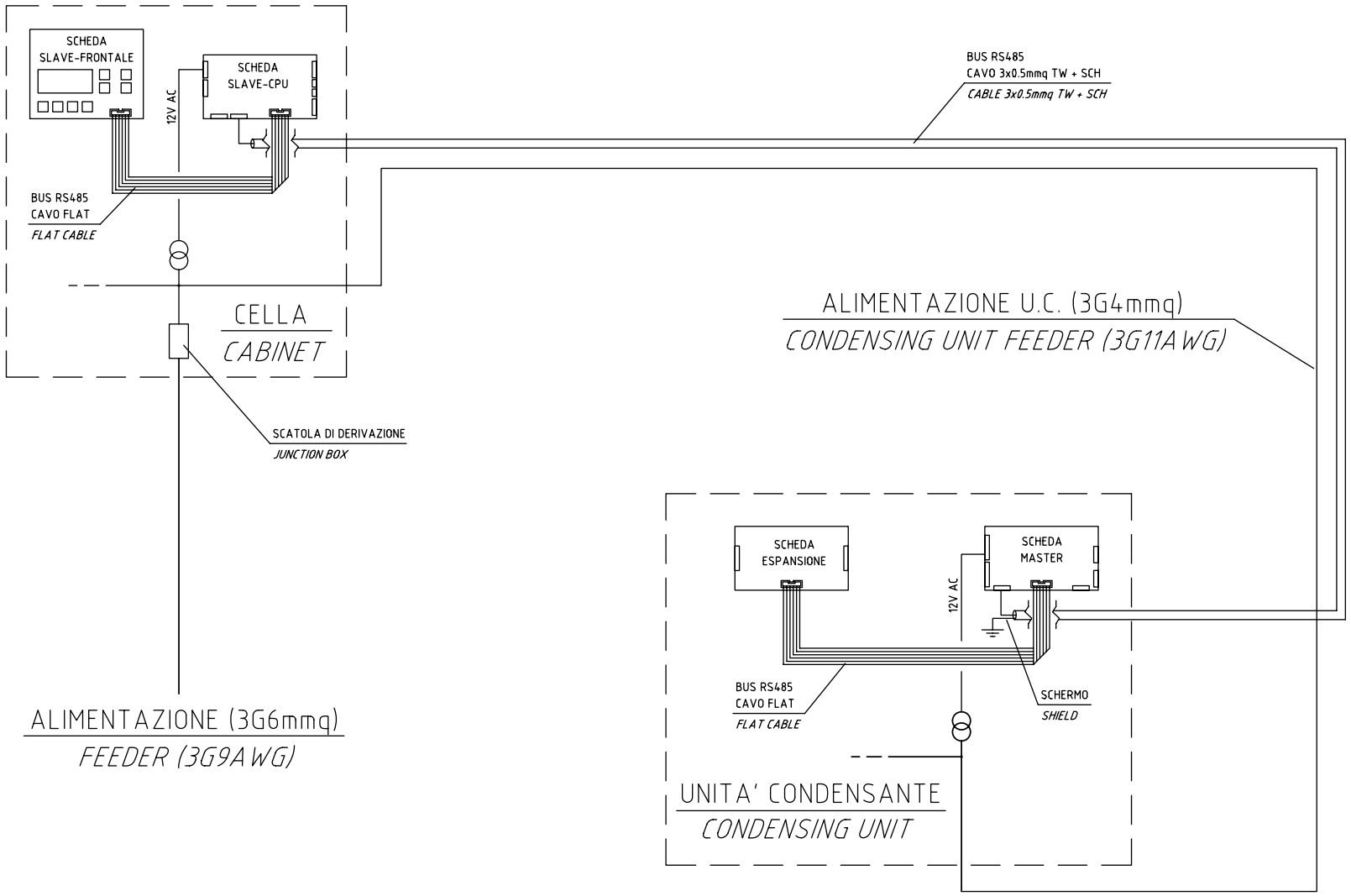


Fig. 29a





REV.	MODIFICA	DATA	FIRME

iRINOX®

Nome File CP BLOCK DIAGRAM	Denominazione CP40 MULTI ETL BLOCK DIAGRAM		Alimentazione	FOGLIO
Eseguito RUI R.	Esecuzioni speciali	Approvato	208V – 60Hz 2P + PE	SEGUE
Data 07/04/2009		Data 18/02/2008		

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