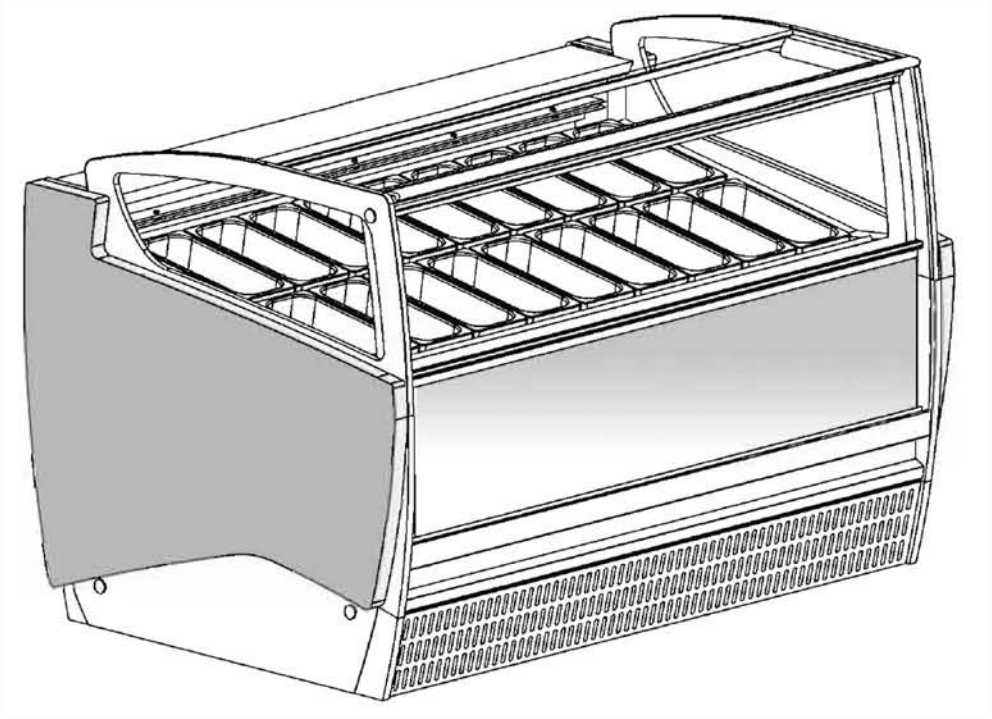
CLABO
GROUP Spa



TRILOGY GT

VETRINA GELATO

GB TECHNICAL HANDBOOK

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DEAR CLIENT

To guarantee the safety of the operator, please ensure that all of the component devices of this display cabinet are in constant working order. The aim of this handbook is to illustrate how to use and maintain the display cabinet, the operator is therefore obliged to follow such guidelines and is responsible for adherence to such.

1 NORMS AND REGULATIONS

1.1 Guarantee norms:

The validity of the guarantee is certified by the tax document and by the label stuck to the card that is enclosed with the product, which contains the bar and alphanumerical codes.
Such documentation will have to be stored by the client and referred to or exhibited in cases of intervention requests during the guarantee period.
Possible damage caused due to transport by third parties, incorrect installation and maintenance, negligence or neglect in use or tampering by third parties will not be covered by guarantee.
A written request will have to be sent to the Sales Management Division or to the local agent to obtain a technical intervention during the guarantee period.
According to its own unquestionable judgement **ClaboGroup** will decide whether it is necessary to repair or replace the components or the entire piece of equipment.
ClaboGroup will not accept any ulterior / different responsibility and this includes direct and / or indirect damages. Cases of replacement of the equipment will not lead to extension or renewal of the guarantee conditions.

1.2 Environmental notes:

- **Packaging**
  Do not throw away of part of the display cabinet packaging but separate it according to the type of material in question (cardboard, wood, steel, polyester, etc…) and dispose of it according to the current laws in vigour in the country of use.
- **End of service of display cabinet**
  When the display cabinet has reached the end of its life span:
  - Remove the refrigerant from the refrigerator circuit of the display cabinet.
  - Empty it of all of the oil it contains and remove all of the rubber parts (e.g. O-ring, rubber trimming).
  - Send it off to be scrapped.

1.3 Identification:

When communicating with the manufacturer or the assistance centres always quote the MATRICULATION NUMBER of the display cabinet, which is situated on the plate fixed to the rear (operator's side) of the counter (fig.1).

Fig. 1

2 INSTALLATION

This product must be installed by qualified personnel.

2.1 Lifting and Movement:

The product is to lifted by a transport vehicle using transport pallets, in the following manner:

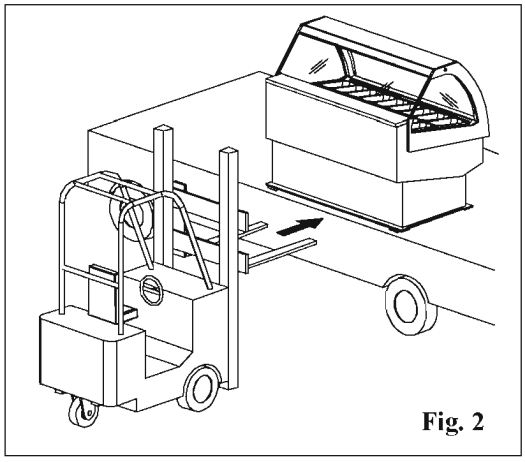


Fig. 2

- Position the forks at the level of the vehicle (e.g. lorry).
- Move forward with the transport pallet so as to insert the forks under the cabinet.
- Ensure that the cabinet is perfectly balanced on the forks before lifting it (fig.2).

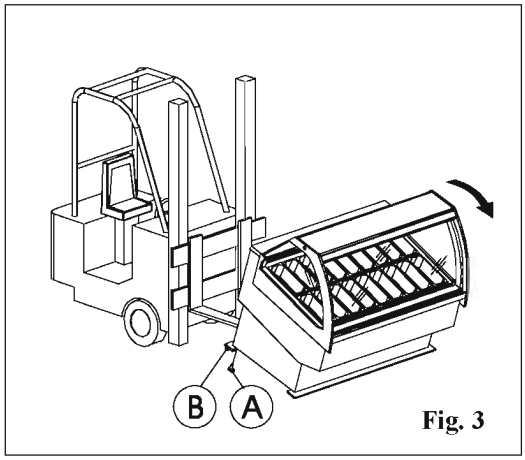


Fig. 3

- Position the cabinet on the ground.
- Lift the cabinet using the pallets as shown in figure 3.
- Unscrew the screws that anchor the lists to the base (fig.3 pos. A) and remove the base (fig.3 pos. B).

Proceed in the same way to remove the other base.

The cabinet must be moved manually when on the ground.

2.2 Positioning:

Please carry out the following operations to ensure correct positioning:

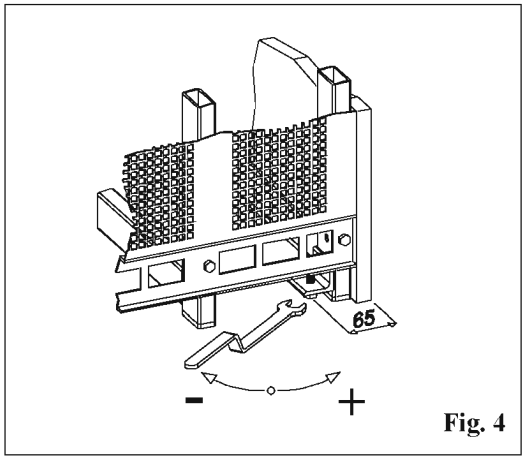


Fig. 4

- Position the cabinet in such a way as to leave sufficient space for use and maintenance in conditions of safety as foreseen by the UNIEN 292/2 norm point 6.2.1 and in paragraph 2.6
- Ensure the existence of a suitable earthing plant as foreseen by the European Norms.
- Once the cabinet is placed in the desidered area,it must be put horizontally through the adjustable feets (fig.4).

2.3 Environmental Specifications:

When positioning the display cabinet remember to consider that its correct operational activity is guaranteed in temperature conditions of < 30°C and relative humidity of < 55%.
Please also ensure that:

- There is sufficient air circulation around the cabinet but no strong currents;
- The cabinet is not near any sources of hot air;
- It is not exposed to direct sunlight;
- The grills for the passage of the cooling air for the condenser are not obstructed (fig.5 pos. A);
- The air conditioning or heating in the environment where the cabinet is positioned is not focused directly on the cabinet.

It is essential to respect the aforementioned conditions in order to avoid malfunctions, which will not be covered by guarantee.

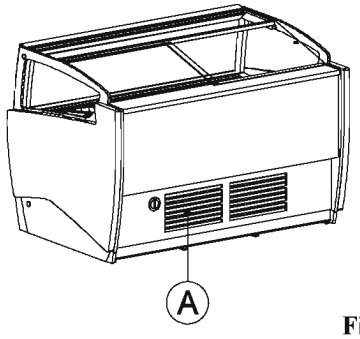


Fig. 5

2.4 Assembly of the side shoulder and front grid:

To assemble the side shoulder proceed as follows

- fix the shoulder lower element (picture 6 position B) to the metal plate (picture 6 position A) through the corresponding self-tapping screws (picture 6 position D) by making the two pre-existing holes coincide (picture 6 position L).
- fix the aesthetic lower plate (picture 6 position C) to the shoulder lower element (picture 6 position B) through the corresponding screws (picture 6 position E) by making the two pre-existing holes coincide (picture 6 position L). Assemble the covering plates, then (picture 6 position F).
- fix the aesthetic shoulder (picture 6 position H) to the technical shoulder (picture 6 position G) through the corresponding self-tapping screws (picture 6 position I), thereby making sure that the back part, i.e. the one indicated in the picture, is correctly aligned.

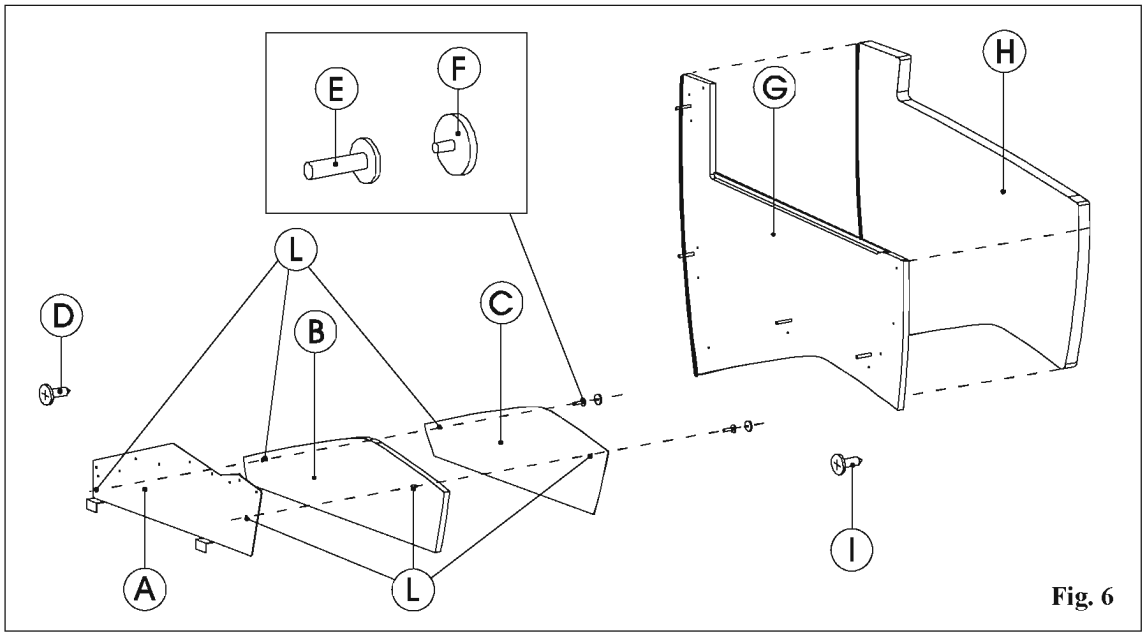


Fig. 6

- fix the side base (picture 7 position A) to the side shoulder (picture 7 position B) through the corresponding self-tapping screws (picture 7 position C), thereby making sure that the front part is correctly aligned.
- fix the front grid (picture 7 position D) to the showcase through the corresponding screws (picture 7 position E).

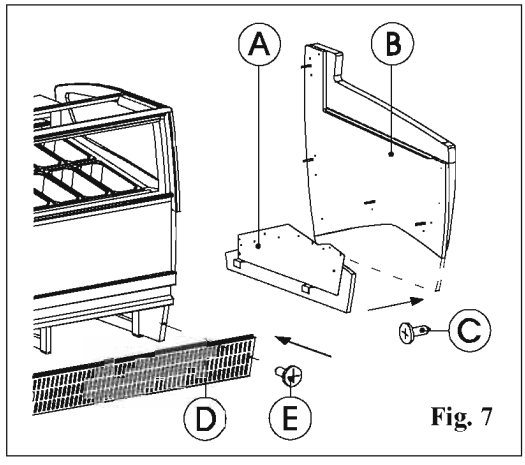


Fig. 7

2.5 Plumbing Connection:

Connect the inlet and outlet tubes to the water plant for water-cooled condenser type display cabinets only. The inlet tube may be recognised by its thermic insulation covering.
WARNING! Please ensure that the taps are open that that the water flows regularly (Fig. 8) before turning on the cabinet.

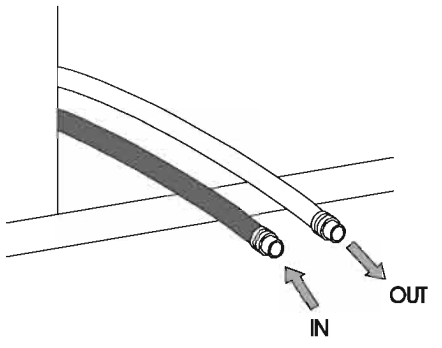


Fig. 8

2.6 Electrical Connection:

Please ensure that there is a suitable earthing plant before installation, as outlined by the current norms in the country of sale. Check that the network tension is compatible with the characteristics outlined on the plate situated on the operator's side of the display cabinet (see fig.1 pag.22). Also check to ensure that the line to which the cabinet is connected is of the correct dimensions to support the load of the cabinet itself.
WARNING! Fluctuations in tension greater than 10% of the nominal tension indicated on the plate may cause permanent damage to the compressor and to the other pieces of electro-mechanical equipment that will not be covered by guarantee.
Respect any national regulations for electrical installations.
Position the general plant switch to OFF.
The display cabinet is supplied with a cable with five wires;
Yellow – Green = Earth
Blue = Neutral
Brown = Phase 1
Black = Phase 2
Black = Phase 3
WARNING! Never cut or remove the aforementioned yellow-green cable for any reason.
The five supply cables must be connected to the main network, which must be equipped with an efficient earthing network, in accordance with the national and local norms (where existent) for electrical installations and they must be suitable for the electrical absorption of the display cabinet. Please refer to the table in chapter 6 – Total Power Absorption column.
WARNING! The electrical connection to the network must be carried out by means of the five wires included, the central plant to which the cabinet is connected must also have a switch with contact openings measuring at least 3mm and protected by fuses.
WARNING! Apply an adequate anchoring method to the supply cable in the connection box, making reference to the table outlined below.

NOMINAL CURRENT OF THE APPLIANCE [A]	NOMINAL SECTION [mm^2]	
	FLEXIBLE CABLES [mm^2]	CABLES FOR EARTHING [mm^2]
3	0,5 ÷ 0,75	1 ÷ 2,5
3 ÷ 6	0,75 ÷ 1	1 ÷ 2,5
6 ÷ 10	1 ÷ 1,5	1 ÷ 2,5
10 ÷ 16	1,5 ÷ 2,5	1,5 ÷ 4
16 ÷ 25	2,5 ÷ 4	2,5 ÷ 6
25 ÷ 32	4 ÷ 6	4 ÷ 10
32 ÷ 40	6 ÷ 10	6 ÷ 16
40 ÷ 63	10 ÷ 16	10 ÷ 25

3 FUNCTIONING

3.1 Start-up:

1) Activate the general switch of the central electrical plant.
2) Activate the general switch of the display cabinet which you will find on the protection panel on the rear of the display cabinet and position it to "1" (fig. 9 pos. A) activating the electrical supply of the display cabinet.

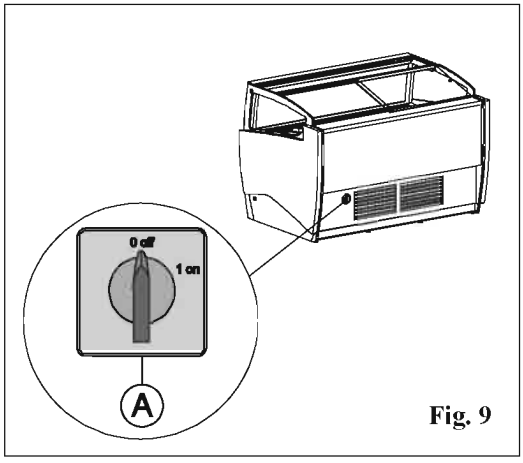


Fig. 9

3.2 Command Console:

The refrigerating plant of the display cabinet is controlled by means of an electronic console.
The electronic console consists of:
1) a command console
2) a display

3.3 Keyboard

T640: tastiera orizzontale a 8 tasti (185x38mm).

To visualise or change the set point. When programming this button is used to select a parameter or to confirm a value.

This button is used during programming for going through the parameter codes or for increasing their value.
If pressed and then released you will visualise the controlled section (LOC, SE2, ALL).
If pressed continually for 3 seconds this button allows you to gain access to the sections menu.

This button is used during programming for going through the parameter codes or decreasing their value.

Keep this button pressed for 3 seconds to start the manual defrosting cycle.

Use this button to turn the display cabinet lights on and off.

Turn the instrument on and off.

3.4 The meaning of the leds

There are a series of luminous points on the display, the meaning of which you will find in the table below:

LED	MODE	Function
❄	ON	Compressor on
❄	FLASHING	Programming phase (flashing with LED 🌀)
🌀	ON	Ventilator and evaporator active
🌀	FLASHING	Programming phase (flashing with LED ❄)
❄	ON	Defrosting active
❄	FLASHING	Dripping time underway
	ON	Keyboard in "ALL" mode
	FLASHING	Keyboard in RVD mode (remote control)
	ON	ALARM SIGNAL - In the "Pr2" programme it indicates that the parameter is also present in "Pr1"

3.5 How to visualise and change the set point

1. Press the SET key and release it to see the set point: you will visualise the set point immediately.
2. To change the set point press the SET key and keep it pressed for 3 seconds: the led will flash ❄ ;
3. To change the value activate ▼ and ▲ .
4. To memorise the new set point, press the SET key or wait 15 seconds to exit the programming feature.

N.B. It is very important to bear in mind that the optimal air temperature varies considerably with the variation of the composition of the ice-cream (in particular the percentages of sugars and fats). Before placing the ice-cream in the display cabinet you should wait about 45 minutes from the start-up of refrigeration in order to allow the plant to reach its set functioning temperature.

3.6 How to set up a manual defrosting cycle

1. Press the DEF key and keep it pressed for more than 2 seconds.

3.7 The ON/OFF Function

By pressing the **ON/OFF** key the instrument will show "OFF".
In this configuration the loads of all of the regulations will be deactivated. To turn the instrument back ON press the **ON/OFF** key again.
The OFF condition allows for the exclusion of the instrument from monitoring without generating any type of alarm.

N.B. The LIGHT key remains active in the OFF position.

3.8 Local Alarms

MESSAGE	CAUSE	STATE OF OUTPUTS
" **P1** "	Thermostat probe failure	Output according to " Con " and " COF " parameters
" **P2** "	Evaporator probe failure	Unchanged
" **P3** "	Auxiliary probe failure	Unchanged
" **HA** "	High temperature alarm	Unchanged
" **LA** "	Low temperature alarm	Unchanged
" **EE** "	Memory anomaly	
" **EAL** "	Digital input alarm	Unchanged
" **BAL** "	Blockage alarm from digital input	Regulation outputs deactivated
" **rtc** "	Clock alarm	Unchanged
" **rtF** "	Clock alarm failure / not present	Alarm output active, other outputs unchanged.

3.9 Automatic defrosting

The display cabinet is complete with an automatic "warm gas" defrosting system that allows for rapid elimination of ice formations on the evaporator fins. The automatic defrosting process is set in the standard configuration every 8 hours.

3.10 Functioning with differentiated and reserve sector

In this configuration the ice-cream display cabinet and the differentiated / reserve sector are controlled with a single keyboard. The luminous red coloured led that appears on the display on the left at the top indicates the section in which it is located, according to the following table:

	ON	Keyboard in "ALL" mode
	OFF	Keyboard in "LOC" mode (ICE-CREAM MACHINE)
	FLASHING	Keyboard in RVD mode (DIFFERENTIATED / RESERVE SECTOR)

Please follow the instructions below to change sections:

1. To change the section press this key for 3 seconds ▲.

2. You will see the message corresponding to the current keyboard programming (LOC, SE2, ALL).
3. Select the selection that you wish (LOC, SE2, ALL) using the ▲ and ▼ keys.
4. Press the SET key to confirm and wait 15 seconds before exiting the programming mode.

The messages that appear on the display are as follows:

LOC: The keyboard shows the temperature values measured, the state of the outputs and the alarms of the section to which it is connected (Default: ice-cream machine section). All of the commands given by the keyboard will be carried out by the local section only (Default: ice-cream machine section).
To see the set point of the ice-cream machine section and change it you must therefore enter the local section (LOC) following the instructions outlined above and then follow the instructions given in paragraph 3.5;

SE2: The keyboard controls the section corresponding to number "2"(Default: SE2= differentiated / reserve sector) and shows the temperature values measured, the state of the outputs and the alarms of that section. All of the commands given by the keyboard will be carried out by that section only.
To see the set point of the differentiated / reserve sector and change it you must therefore enter the "SE2" section following the indications outlined above and then follow the instructions given in paragraph 3.5;

ALL: The keyboard shows the temperature values measured, the states of the outputs and the alarms of the section to which it is connected (ice-cream display cabinet), but the commands given by the keyboard will also be transferred to the other section (differentiated / reserve sector). "As2" will appear on the display in case of alarm, this indicates that the differentiated / reserve sector is in alarm mode. To see details of the type of alarm in question programme the keyboard in such a way that it assumes control of the differentiated / reserve sector.

N.B. To turn on or turn off the ice-cream machine sector and the differentiated / reserve sector at the same time enter the "ALL" section and activate the ON/OFF function. To turn the ice-cream machine section on or off or the differentiated / reserve section on or off, enter the relative section (LOC, SE2) and activate the ON/OFF function

3.11 Stopping the Machine:

To stop the machine completely, activate the switch (A) that is situated behind the back protection panel. Position the general switch to "0" (fig. 10 pos. A) cutting off the electrical supply of the display cabinet.

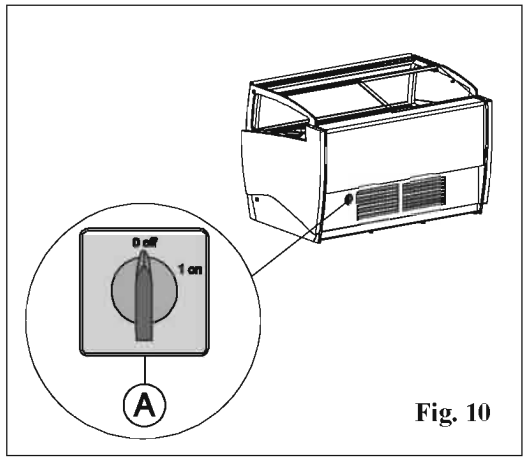
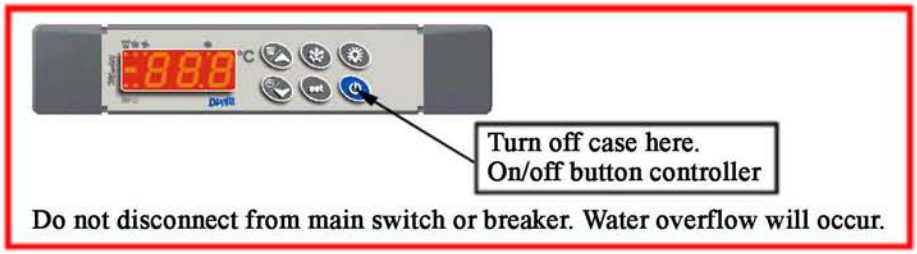


Fig. 10

4 MAINTENANCE

4.1 Preliminary Operations:

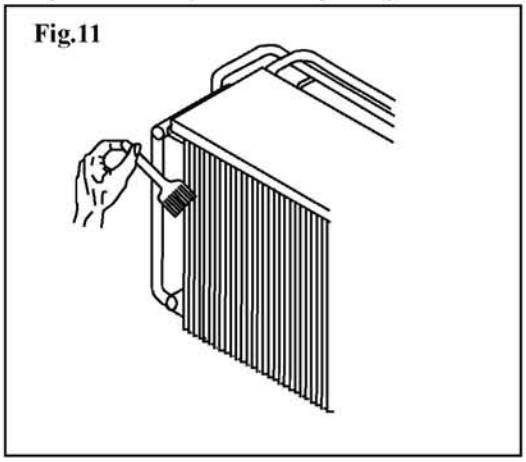
Before carrying out any preliminary maintenance or cleaning operations you must disconnect the electricity supply by turning off the general plant switch in the room where the display cabinet is situated.



4.2 Cleaning the condenser:

Deposits of dirt and dust in general on the fins of the (air) condenser reduce the efficiency of the plant to the point of impeding its functioning and causing damage to the compressor. It is therefore absolutely necessary to clean the condenser on a periodical basis (every 20-30 days) as outlined below:

Fig.11



- Disconnect the electricity supply;
- Remove the metallic grill at the back;
- Remove all dust and dirt present on the fins of the condenser using a brush or a brush and a vacuum cleaner (fig.11).
- Do not use rigid or metallic objects to clean the condenser as such objects could damage it.

4.3 Periodical defrosting:

To ensure that the display cabinet functions in an optimal manner we recommend that you carry out a prolonged defrosting cycle once a week, arresting the display cabinet completely for at least 12 hours, deactivating the electrical switch (A) situated on the rear protection panel of the display cabinet Fig.10.

4.4 General Cleaning:

- **Stainless steel surfaces:** Clean with a sponge or a damp cloth using water and a neutral detergent, rinse and dry off with a soft cloth.
- **Wooden surfaces:** Clean with a sponge or a damp cloth using water and a neutral detergent, rinse and dry off with a soft cloth.
- **Glass surfaces:** Clean with a sponge or a damp cloth using water and a neutral detergent, rinse and dry off with a soft cloth.

5 PRACTICAL TROUBLESHOOTING GUIDE

1) The temperature of the display area is not low enough (the ice-cream is soft)

LIKELY CAUSE	LIKELY REMEDY
Evaporator obstructed by ice.	Carry out defrosting as indicated: - Transfer the product from the display cabinet to a freezer at a temperature of –20°C. - Turn off the main switch for 10 /12 hours so as to allow for the evaporator area to defrost (point 4.3).
Condenser obstructed by dust or other matter.	Clean the condenser as indicated in point 4.2 Remove everything that prevents a regular airflow to the condenser.
The ventilators are not working and / or their blades are damaged.	Request the intervention of the assistance service for the replacement of the same.
The display cabinet is exposed to air currents or direct sunlight	The display cabinet will not function correctly in these conditions; Remove the display cabinet from the air currents and / or direct sunlight
The thermostat is not working properly. With a perfectly functional refrigerating plant, the thermostat maintains a higher temperature in the air than that set.	Call the technical assistance service.
The refrigerated airflow (the "sheet of air") on the ice-cream is irregular.	Check the air circuit (ventilator area, area beneath the evaporator) and remove any obstacles to the circulation of cold air.
Lack of water	Check if there is a water flow, if there is, call the technician for possible water valve rupture, pressurestat problems or other causes.

2) The defrosting water does not drain off properly (that is, the water obtained from the melting of ice during the automatic or manual defrosting phases).

LIKELY CAUSE	LIKELY REMEDY
The defrosting water drainage tube that goes from the cold tub to the tub in which such water is channelled (for evaporation) is blocked.	Open up the drainage tube
The display cabinet is positioned on the ground in such a way that the drainage water is not directed towards the outlet hole.	Ensure that the display cabinet is level on the ground as outlined in point 2.2. It must be completely level.

3) The compressor never stops or it works for very long periods of time.

LIKELY CAUSE	LIKELY REMEDY
The room temperature is very high (e.g. above +32°C).	If it is not possible to lower the room temperature (e.g. by means of air conditioning) the compressor will work almost constantly.
The air condenser is blocked	Clean the condenser as outlined in point 4.2
The thermostat is set too low.	Regulate the thermostat to a higher temperature as indicated in point 3.5
The ventilators are off.	Call the assistance service to individualise the cause and replace them if necessary.

4) The display cabinet does not work

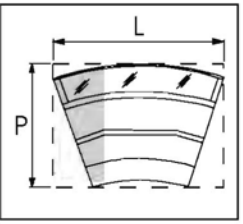
LIKELY CAUSE	LIKELY REMEDY
The cabinet is not plugged in.	Plug it in (see point 2.6)
The trip switch has gone off.	Reinsert the trip switch.
The general switch of the display cabinet is off.	Turn on the general switch of the display cabinet (see point 3.1)

5) The light is not working

LIKELY CAUSE	LIKELY REMEDY
The light switch is not turned on.	Turn on the light switch
The fluorescent light bulb is not inserted properly.	Insert the light bulb properly.
The light bulb is blown.	Replace the light bulb
The “starter” is blown.	Replace the “starter”

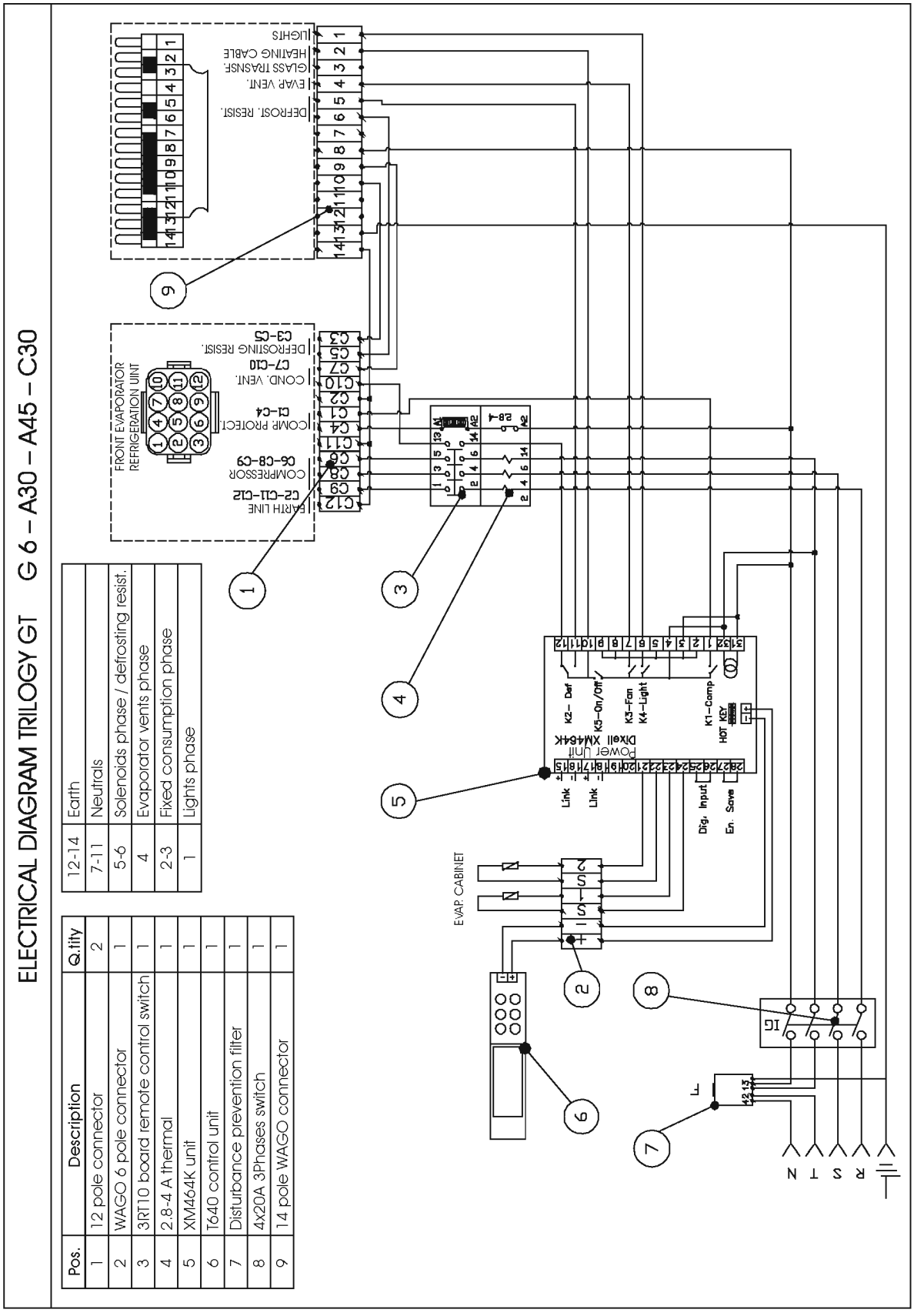
MODELS	COMPRESSOR'S ABSORBED POWER [W]	TOTAL ABSORBED POWER [W]	ELECTRICAL POWER SUPPLY	REFRIGERATING GAS	OPERATING TEMPERATURE FROM THE AIR [°C]	SIZE			WEIGHT [Kg]
						L-mm	P-mm	H-mm	
TRILOGY GT G6	900	1400	**230/3/60**	R404a	-18/-20	1094	1215	1120	280
TRILOGY GT G9	900 + 900	2500	**230/3/60**	R404a	-18/-20	1619	1215	1120	360
TRILOGY GT G12	900 + 900	2750	**230/3/60**	R404a	-18/-20	2144	1215	1120	430
TRILOGY GT A30	900	1650	**230/3/60**	R404a	-18/-20	1569	1262	1120	330
TRILOGY GT C30	900	1500	**230/3/60**	R404a	-28/-20	1597	1277	1120	330
TRILOGY GT A45	900	1500	**230/3/60**	R404a	-18/-20	1142	1253	1120	250

N.B. The showcases' external dimensions are referred to the "raw" model, i.e. without the encumbering aesthetic shoulder.
Each single showcase or canalized showcases should be added no. 2 end shoulders of 40 mm each in length.
In corner showcases the external dimensions have been taken as in the side picture.



7 ELECTRICAL DIAGRAMS

The following electrical diagrams will have to be used by qualified personnel on the basis of the current regulations in vigour in the country of sale.

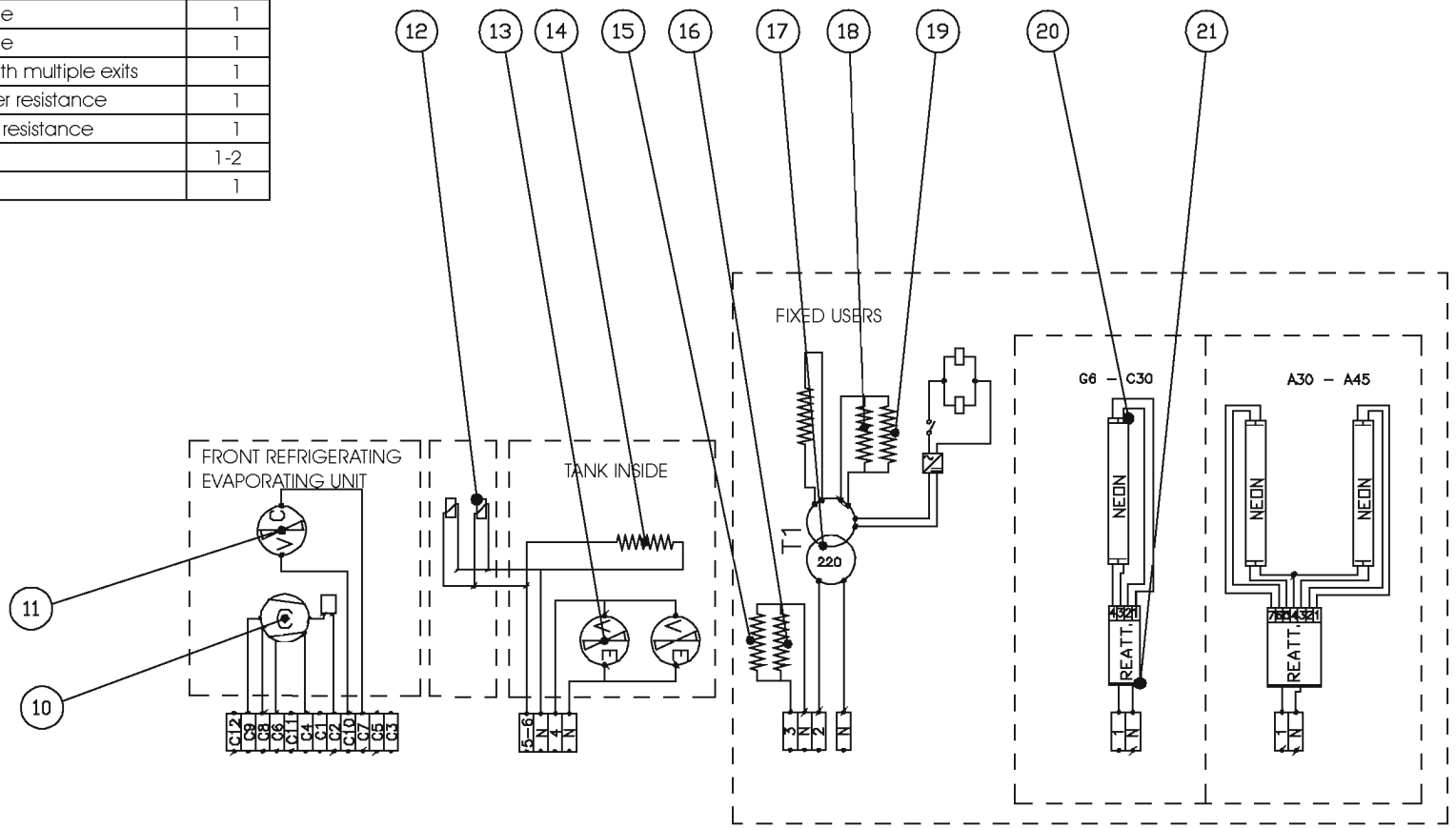


Pos.	Description	Q.tity
1	12 pole connector	2
2	WAGO 6 pole connector	1
3	3RT10 board remote control switch	1
4	2.8-4 A thermal	1
5	XM464K unit	1
6	T640 control unit	1
7	Disturbance prevention filter	1
8	4x20A 3Phases switch	1
9	14 pole WAGO connector	1

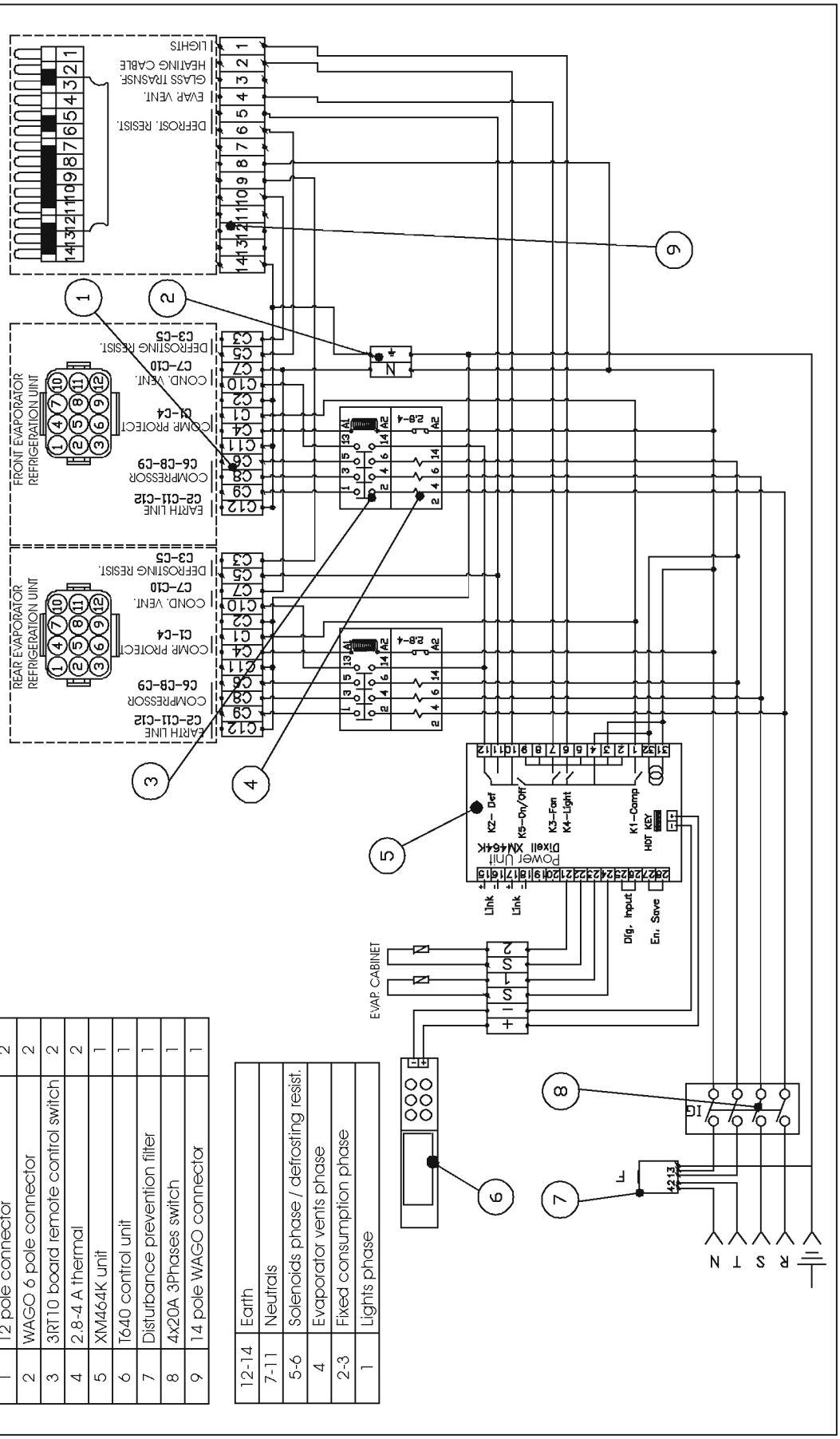
12-14	Earth
7-11	Neutrals
5-6	Solenoids phase / defrosting resist.
4	Evaporator vents phase
2-3	Fixed consumption phase
1	Lights phase

POWER WIRING TRILOGY GT G 6 – A30 – A45 - C30

Pos.	Description	Q.tity
10	Compr. TAJ2446 750 Refrig/h	1
11	Condenser ventilator	1
12	Solenoid EVR6	2
13	Ventilator 52 220/50-60	2
14	Defrosting flexible pipe res.	1
15	Heating cable	1
16	Heating cable	1
17	Transf. 230 with multiple exits	1
18	Right shoulder resistance	1
19	Left shoulder resistance	1
20	Neon	1-2
21	Reactor	1



ELECTRICAL DIAGRAM TRILOGY GT G9 - G12

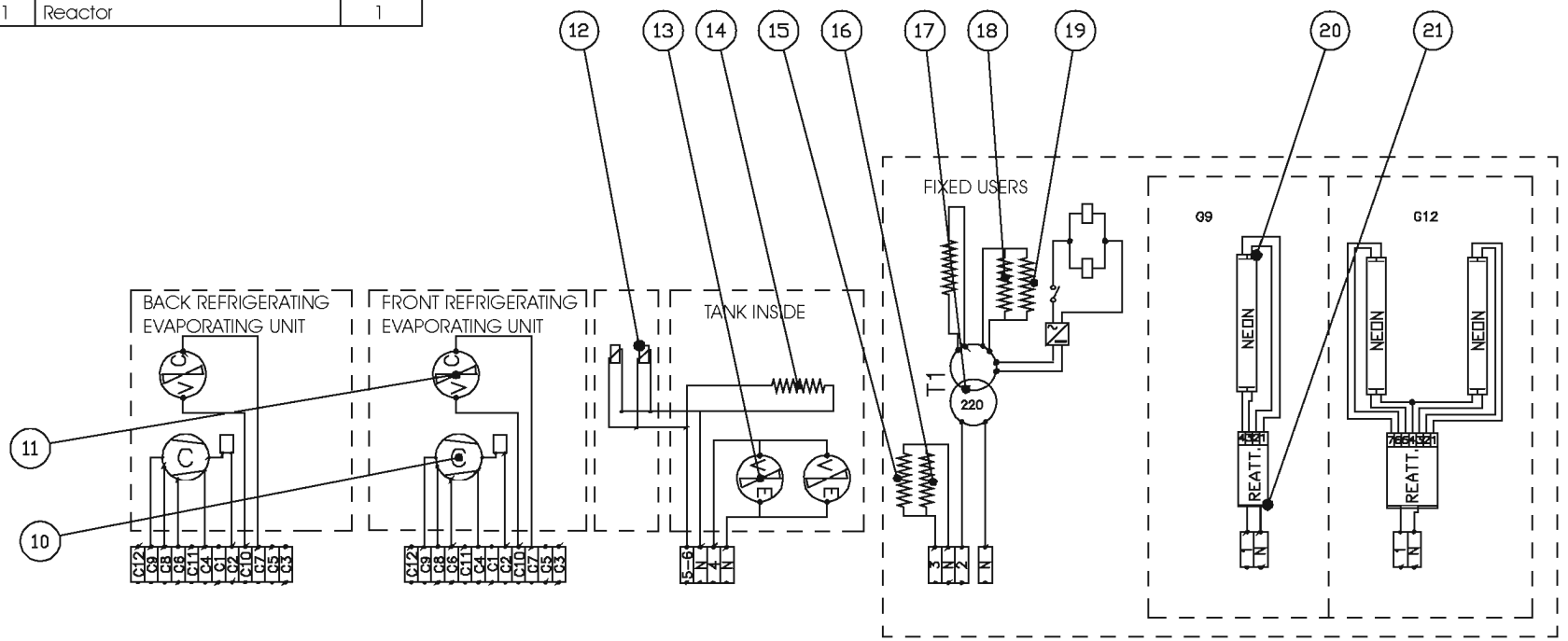


Pos.	Description	Q.tity
1	12 pole connector	2
2	WAGO 6 pole connector	2
3	3RT10 board remote control switch	2
4	2.8-4 A thermal	2
5	XM464K unit	1
6	T640 control unit	1
7	Disturbance prevention filter	1
8	4x20A 3Phases switch	1
9	14 pole WAGO connector	1

12-14	Earth
7-11	Neutrals
5-6	Solenoids phase / defrosting resist.
4	Evaporator vents phase
2-3	Fixed consumption phase
1	Lights phase

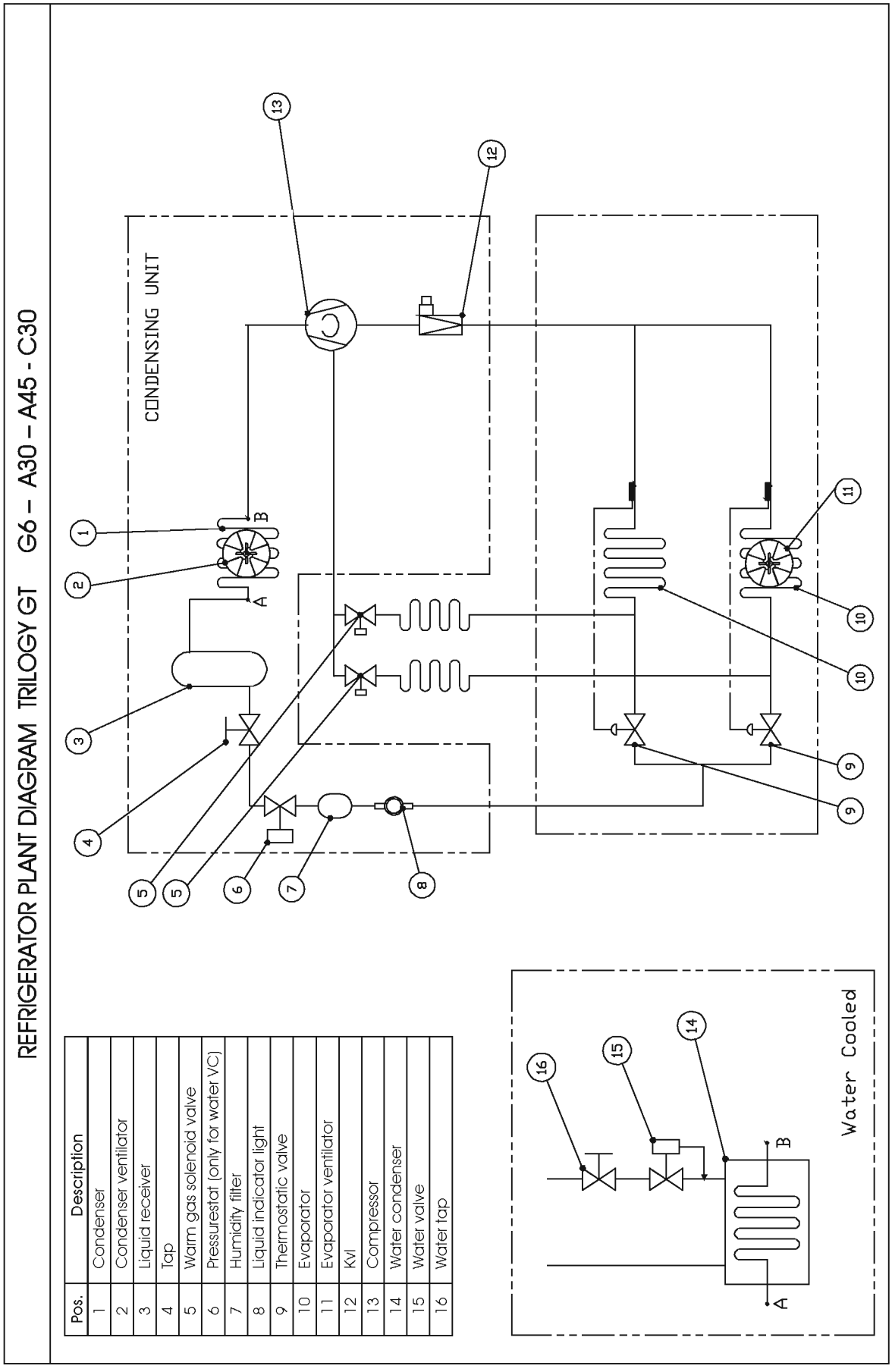
POWER WIRING TRILOGY GT G9 - G12

Pos.	Description	Q.tity
10	Compr. TAJ2446 750 Refrig/h	2
11	Condenser ventilator	2
12	Solenoid EVR6	2
13	Ventilator 52 220/50-60	2
14	Defrosting flexible pipe res.	1
15	Heating cable	1
16	Heating cable	1
17	Transf. 230 with multiple exits	1
18	Right shoulder resistance	1
19	Left shoulder resistance	1
20	Neon	1
21	Reactor	1



ENGLISH

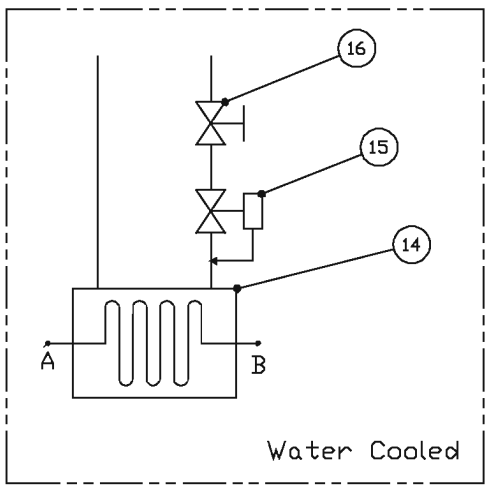
8 REFRIGERATOR PLANT DIAGRAM

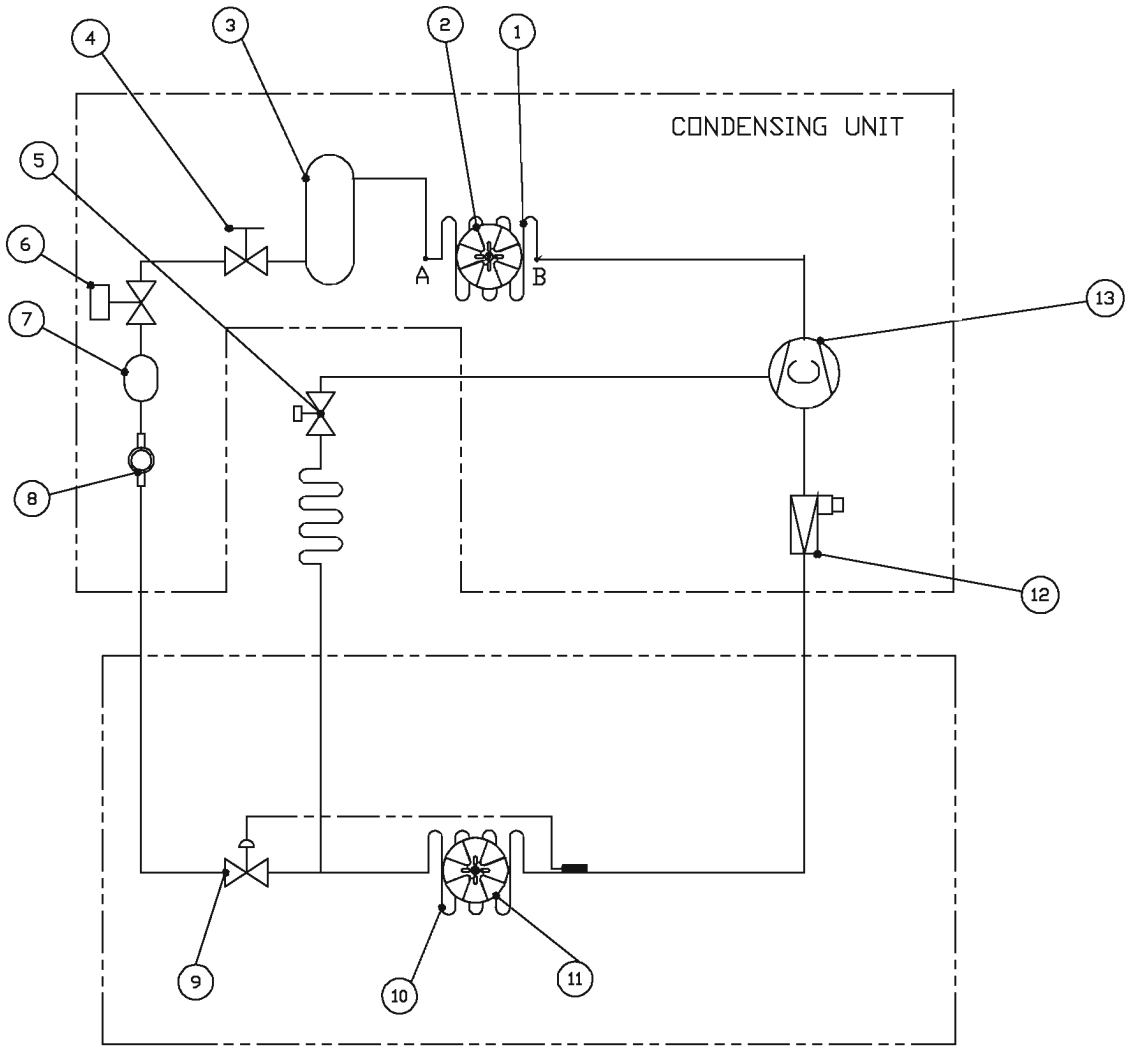


Pos.	Description
1	Condenser
2	Condenser ventilator
3	Liquid receiver
4	Tap
5	Warm gas solenoid valve
6	Pressurestat (only for water VC)
7	Humidity filter
8	Liquid indicator light
9	Thermostatic valve
10	Evaporator
11	Evaporator ventilator
12	Kvl
13	Compressor
14	Water condenser
15	Water valve
16	Water tap

REFRIGERATOR PLANT DIAGRAM TRILOGY GT G9 - G12

Pos.	Description
1	Condenser
2	Condenser ventilator
3	Liquid receiver
4	Tap
5	Warm gas solenoid valve
6	Pressurestat (only for water VC)
7	Humidity filter
8	Liquid indicator light
9	Thermostatic valve
10	Evaporator
11	Evaporator ventilator
12	Kvl
13	Compressor
14	Water condenser
15	Water valve
16	Water tap





2556 Barrington Court | Hayward, CA 94545
Tel: 1.800.672.2784 | 510.441.0441 | Fax: 510.441.0401
www.clabona.com | www.otl-usa.com E-mail: sales@clabona.com

60035 JESI (An) Italy - ZIPA –Viale dell'Industria
Tel. +39 0731 61531 – Fax +39 0731 6153413
www.clabogroup.com - E-mail: info@clabogroup.com