Water - Cooler
FREEZER Art. 65

INSTRUCTIONS FOR USE AND MAINTENANCE

READ CAREFULLY THIS INSTRUCTIONS BOOK BEFORE USING THE COOLER

Via Chiesa, 12 Fr. Ramazzo
36043 Camisano Vicentino (VI)
Tel. 0444 719004
Fax 0444 719044
Web: www.enotecnicapillan.it
e-mail: info@enotecnicapillan.it

INTRODUCTION

This instructions book defines the object for which this machine has been built;it contains all the useful information to guarantee a correct and safe use of the machine.

The constant observation of all the indications written here guarantees the safety of the man and of the machine and guarantees a longer life of the machine.

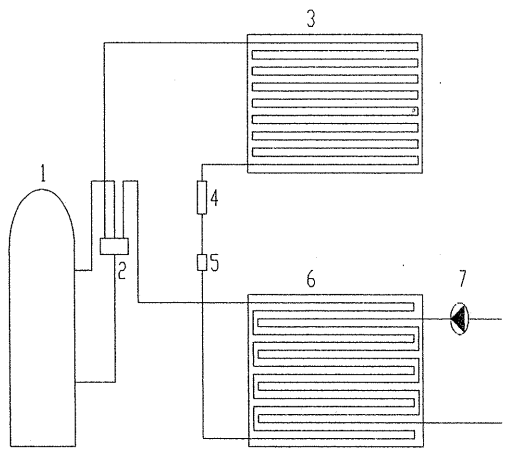
To guarantee a correspondence between this instructions book and the machine, all the parts concerning non-standard configurations will be brought up-to-date every time.

Our company declines any liability for damages to people, things or animals, due to modifications or improper use of the machine; every non-authorized modification will make lose the validity of the guarantee and of this certification.

GENERAL WORKING PRINCIPLES

The cooler is a machine that produces calories; these calories, using an intermediate vehicle (water), are given to the product that has to be conditioned in the ways decided by the user.

Here is the functional scheme: the compressor (1) compresses the gas and then it condenses passing through the condenser (3). Thanks to the cooling caused by the ventilator, the gas starts expanding through the valve (5) that reduces its pressure changing its state and making the gas become cold. Thanks to a fluid that circulates around the gas, the gas gets warm and cools the fluid used to cool.
The compressor, the refrigerant system, the circulation pump, the thermostatic valve and their electric and hydraulic connections are inside a metallic box that is made by aluminium alley and covered by plate inox steel.



TECHNICAL CHARATERISTICS

THE PERFORMANCES OF THE COOLER, THE ELECTRICAL SUPPLIES AND OTHER CHARARERISTICS ARE SHOWN IN THE CHART BELOW:

MODEL	OUTPUT WITH WATER FRIG/H			POWER ABSORBED BY THE COMPRESSOR	SUPPLY DATA
	-10°C	0°C	+10°C		
KW 1.5	1200	2200	3600	1.2 KW	220/240 VOLT 1PH 50/60 HZ
KW 3	2500	4600	7000	2.2 KW	380/415 VOLT 3PH 50/60 HZ
KW 4.5	4000	6700	12000	3.8 KW	380/415 VOLT 3PH 50/60 HZ
KW 6	5000	9200	14000	5 KW	380/415 VOLT 3PH 50/60 HZ
KW 9	8000	13500	20000	7.5 KW	380/415 VOLT 3PH 50/60 HZ
KW 12	10000	19000	28000	10 KW	380/415 VOLT 3PH 50/60 HZ
KW 15	13000	23000	33000	12 KW	380/415 VOLT 3PH 50/60 HZ
KW 9+9	16000	27000	40000	2 X 7.5 KW	380/415 VOLT 3PH 50/60 HZ
KW 12+12	20000	38000	56000	2 X 10 KW	380/415 VOLT 3PH 50/60 HZ

WORKING CONDITIONS

TEMPERATURE OF THE WORKING PLACE

MIN +5°C
MAX +30°C

DIFFERENT VALUES OF WORKING TEMPERATURES CAN MODIFY THE OUTPUT DATA SHOWN IN THE CHART ABOVE AND CAN ALSO LEAD TO A BLOCK OF THE MACHINE FOR MAX OR MIN TEMPERATURE.

P.S.: THE PERFECT WORKING TEMPERATURE IS 20° C (APPROX.); IT IS NECESSARY TO HAVE A GOOD AIR REPLACEMENT IN THE INSTALLATION PLACE.

TEMPERATURES OF THE REFRIGERANT LIQUID (GLYCOLIC WATER)

MIN - 8°C
MAX +30°C

TEMPERATURE OF TRANSPORT AND STOCKAGE
MIN -10°C
MAX +55°C

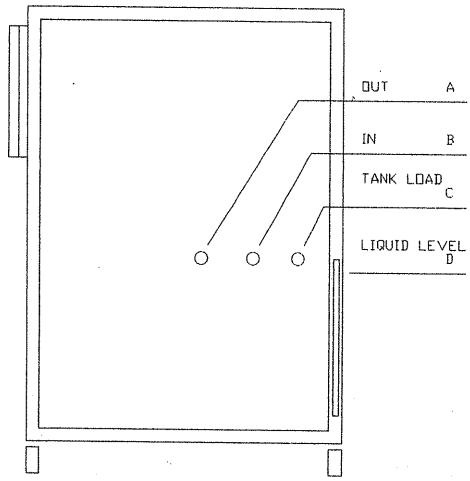
ACCORDING TO CEI EN 60204-1 NORMS

INSTALLATION

In order to have the best efficiency, we suggest installing the cooler as nearer as possible to the tank that has to be refrigerated. In this way you should not have long pipes that can dissipate part of the frigories produced, above all, at low temperatures.

Hydraulic connection

Connect the cooler to the tank or plate(s) with the thermically insulated pipes. The pipes must have the same (or superior) diameter, it is important not to reduce the pipes diameter to a section inferior to the one of the connections of the cooler. (A-B)



Electric connection

Connect the plug (which is part of the equipment) to the current-tap and make sure that the cable section of the machine is the same of the one of the cable you use to connect to your current-tap. Now the cooler is ready to be put in function.

Where to set the cooler:
The cooler using air to cool down, we suggest installing in a windy place, preferably open air.
Sun can block during summer periods for hot temperatures.

In order to have the best efficiency, we suggest installing the cooler as nearer as possible to the tank has to be refrigerated.

Important: the cooler has the water circuit opened, that means the water circuit must be: closed circuit, to avoid reflux of water in the machine.
For that not put safety valves or expansion tank.
When connect a tank is imperative to connect the out of cooler to the lower connect of the tank, to be sure the air inside will be completely out.

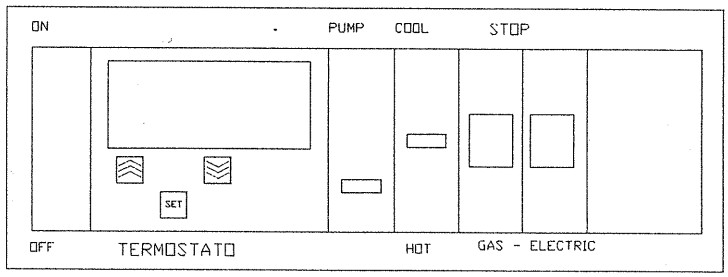
With new installation we suggest to load in the circuit only water to control eventually pipe's losses if you want to load the system with un frezzeable solution remind don't be over 40% of solution.

Warning for the safety of the installer

As a safety measure, before you start installing or doing maintenance of the cooler, be sure to switch-off the general switch of the control panel. It is better to unplug the machine.

CONTROL PANEL

MODEL WITH HEATING SYSTEM



DESCRIPTION

GENERAL SWITCH = TO SWITCH ON THE CONTROL PANEL
THERMOSTAT = CONTROL OF THE TEMPERATURE OF THE REFRIGERANT LIQUID RE
PUMP = SELECTOR TO START UP THE PUMP (2 POSITIONS)
WARM / COLD = SELECTOR TO START UP THE COOLER (3 POSITIONS)
GAS BLOCK =WARNING LIGHT RED
ELECTRIC BLOCK =WARNING LIGHT YELLOW

WARNING FOR THE SAFETY OF THE USER

THE EQUIPMENT WORKS WITH ELECTRICITY WHICH IS DANGEROUS TO PEOPLE'S LIVES AND SO THE ACCESS TO THE INTERIOR PARTS MUST BE ALLOWED ONLY TO ELECTRICIANS.
A DEFECTIVE OR INCOMPLETE EARTHED POWER OUTLET EXPOSES PEOPLE'S LIVES TO SERIOUS RISKS.
THE EQUIPMENT CAN SAFELY WORK ONLY IF IT HAS BEEN INSTALLED IN A PLACE SHELTERED FROM THE RAIN.

STARTING

Refilling of the refrigerant circuit

Refill the cooler's tank up to the level indicated with the data plate (Max). At first refill only with water through the special pipe indicated with (tank loading).

Pump starting

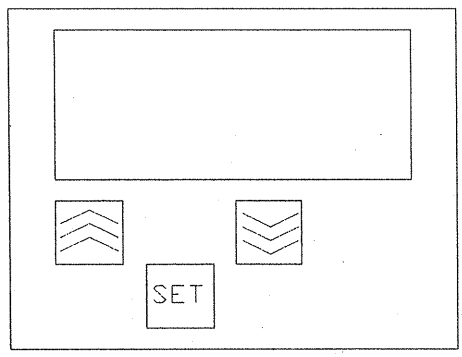
Open the covering of the control panel and switch on the small starting level by lifting it up. After a few seconds the thermostat will switch on and indicate the temperature of the liquid (water) which is inside the tank. To switch the pump on, set the pump selector by lifting the switch up. Control if there are any water leaks in the hydraulic equipment that has been carried out to connect the tanks.

Control of the refrigerant liquid level

Control the liquid level after the pump starting. If the liquid level in the tank is low, fill up until reaching the maximum level (max).

Programming of the working data (thermostat)

To program the thermostat, press the key "set" for some seconds; the tool will indicate the programmable value that will lighten after a few seconds; it is now possible to set up the desired value with the two directional keys to increase or lower the temperature after having visualized the desired value. The thermostat will automatically keep in memory the temperature.



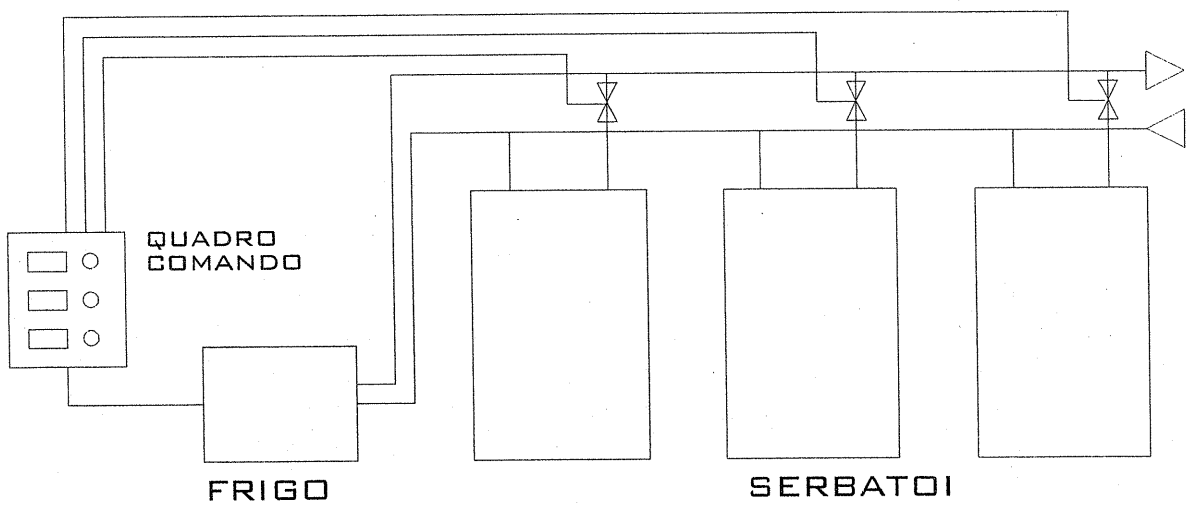
ATTENTION!!!

CONTROL ROTATION

IS VERY IMPORTANT CONTROL THE ROTATION OF THE FAN.
ALL THE MOTORS IS SINCRONIZED WHIT THE FAN IF ROTATION IS NOT CORRECT, TWO LINE CABLE

CONTROL OF THE REFRIGERATOR

THE REFRIGERATOR IS CONTROLLED BY AN EXTERNAL CONTROL-PANEL WHICH CONTROLS THE TEMPERATURES OF THE TANKS. THE CONTROL-PANEL CAN START UP THE REFRIGERATOR AND COOL THE TANK THAT REQUIRES IT. INSIDE THE ELECTRIC PANEL THERE IS A BRIDGE USEFUL TO CONTROL THE PUMP FROM AN EXTERNAL PANEL INDICATED ON THE CIRCUIT DIAGRAM WITH THE ABBREVIATION "PCV" AND IT IS DISPLAYED WITH SOME BLUE TERMINALS.



Starting of the refrigerant unit

It is now possible to start up the refrigerator. Position the selector warm/cold (which is in the control panel) on the ground of the thermostat programming. After some minutes, the refrigerator will start up and then it will stop when the water has reached the programmed value; the refrigerator will start again when the temperature rises.

Refrigerating procedures

The water refrigerators are used to cool the musts in fermentation. To control the fermentations, the refrigerator can be used with water or with mixtures of antifreeze products and water. The refrigerator can be used to achieve the precipitation of the tartaric salts in the wines.

To achieve this, the water-glycol or water-alcohol mixture must have a freezing point at -20/-25° C. The working temperature of the mixture is included between −8° C and −10° C.

Lower temperatures cause the formation of ice on the interior walls of the tanks having opposite effects.

The tanks must be tied up at least for the 60% of their height and entirely isolated.

To make the refrigerating easier, we suggest using a mixer in the tank or to effect reassemblies with an external pump by drawing from the bottom and by admitting from above.

The shorter is the refrigerating time, the bigger is the precipitation of the tartaric salts.

<u>It is suitable to control the antifreeze</u>
<u>Mixture every year and to replace it every three years.</u>

Add methyalted spirit if the freezing point has risen (about the 10% of the total amount)

The minimum temperature that the system can reach without forming ice represents the freezing point.

Important for refrigeration

For −10°c

Use 40% antifreez

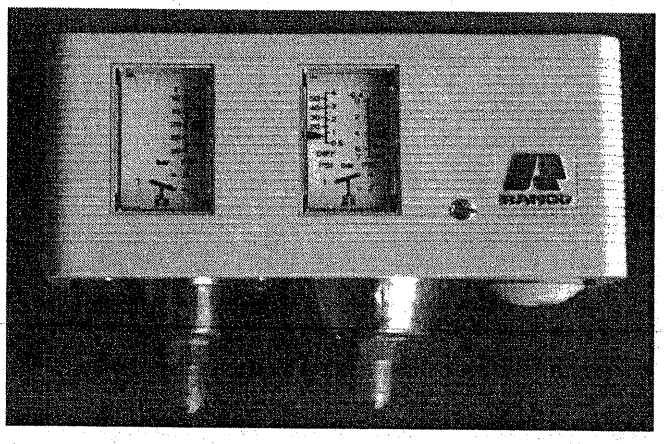
CONTROLS AND BLOCK-SIGNALS

REFRIGERANT'S LIQUID TEMPERATURE

THIS FUNCTION IS PRACTISED BY THE DIGITAL THERMOSTAT THAT KEEPS IN GEAR THE REFRIGERATOR UNTIL IT REACHES THE PROGRAMMED TEMPERATURE; THE REFRIGERATOR STARTS UP FOR ANOTHER TIME WHEN THE TEMPERATURE SHIFTS ASIDE FROM THE DIFFERENTIAL'S VALUE.(2°C)

GAS PRESSURE

A PRESSOSTHAT CONTROLS THE GAS PRESSURE OF THE SYSTEM; PRESSURE VALUES DIFFERENT FROM THE NORMAL ONES, PRODUCE A BLOCK-SIGNAL
(GAS BLOCK, RED LIGHT)



POSSIBLE BLOCK'S CAUSES

LACK OF REFRIGERANT LIQUID.
THE PRESSOSTHAT OF MINIMUM PRESSURE INTERVENES AND IF THERE IS A MODEST LACK OF REFRIGERANT IT AUTOMATICALLY RESTORES AND THE SYSTEM STARTS UP.
OTHERWISE CONTACT THE SERVICE.

THE SYSTEM IS LOCATED IN A QUITE COLD PLACE AND AT THE FIRST STARTING IT CAN STOP. AFTER 2-3 STARTINGS FOLLOWED BY STOPS THE SYSTEM HAVE TO WORK REGULARLY.

THE LIQUID WHICH HAS TO BE COOLED, FREEZES AND IT DOES NOT CIRCULATE ANYMORE AND CONSEQUENTIALLY THE PRESSOSTHAT INTERVENES.

THE CONDENSER IS NOT AIRED ENOUGH.
AIR GOES OUT AT A VERY HIGH TEMPERATURE, AND THE SYSTEM CAN START UP ONLY IF AIR TEMPERATURE GETS LOWER.

IN CASE OF BLOCK DURING THE HOT HOURS OF THE DAY, YOU HAVE TO SWITCH OFF THE REFRIGERATOR AND START IT UP DURING NIGHT HOURS WHEN AIR TEMPERATURES ARE LOWER.

Maintenance and repairs

Warning! Before any maintenance intervention be sure to switch off the general switch or/and to unplug the refrigerator.
All repair or/and substitution interventions must be done only by electrical staff. The non-fulfilment of this rule will make lose the validity of the guarantee.

Control panel

The control panel does not any particular intervention of maintenance, except for the terminals fastening. The terminals must be controlled every 24 months.

Levels control

Gas

Every time you use the machine, control that the gas manometer indicates a value included between 5 and 8 bar. If not, contact the service.

Refrigerant liquid

Every time you use the machine, control that the tank level of the refrigerant liquid is included in the indicated parameters by the level indicator; if not, fill up as indicated in the paragraph "Refrigerating procedures".

Pump

It does not need any maintenance.

Compressor

It does not need any maintenance except for the control of the lockage of the bolts.

Ventilator

It does not need any maintenance.

Condenser

Clean the internal surface at least every six months or every time it is absolutely necessary for external reasons of dusty place. Blowing on the surface with compressed air or water can do the cleaning of this element; if you use water, keep the refrigerator switched off so that it can dry.

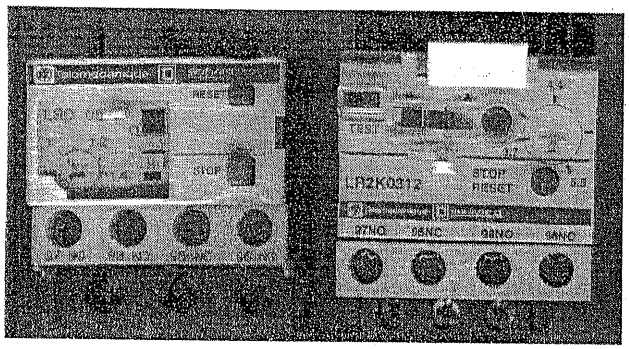
ENGINES ELECTRICAL INPUT

Each engine (pump, compressor, ventilator) is controlled by a thermal cutout, which operates, in some particular case, when the motor consumes, continuosly, higher voltage current, in relation with the setting parameters. When one of the two thermal cutouts starts, it generates a block signal (yellow light for electrical block).

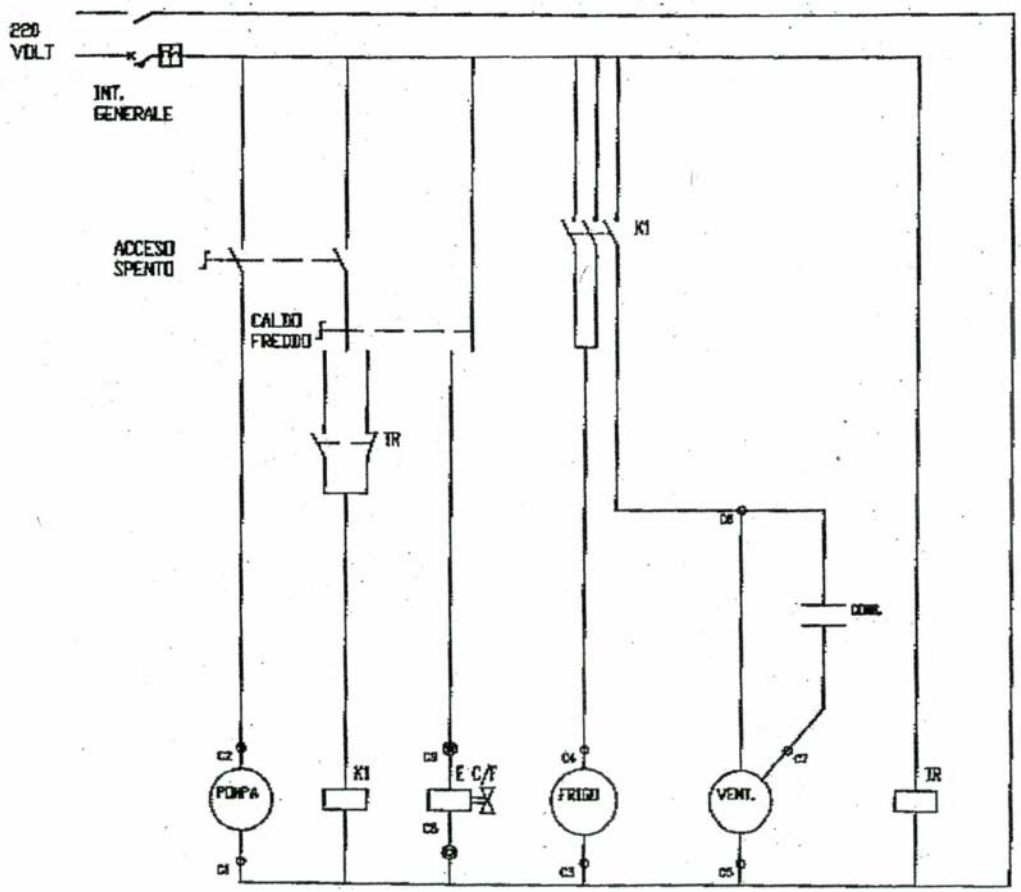
TO RESET THE BLOCK (ALARM)

To reset the alarm, it is necessary to open the electrical panel; inside, in the down side, are situated the control switches of the engines, together with thermal cutouts. Pressing the blue bottom on the right side, the engine starts again.

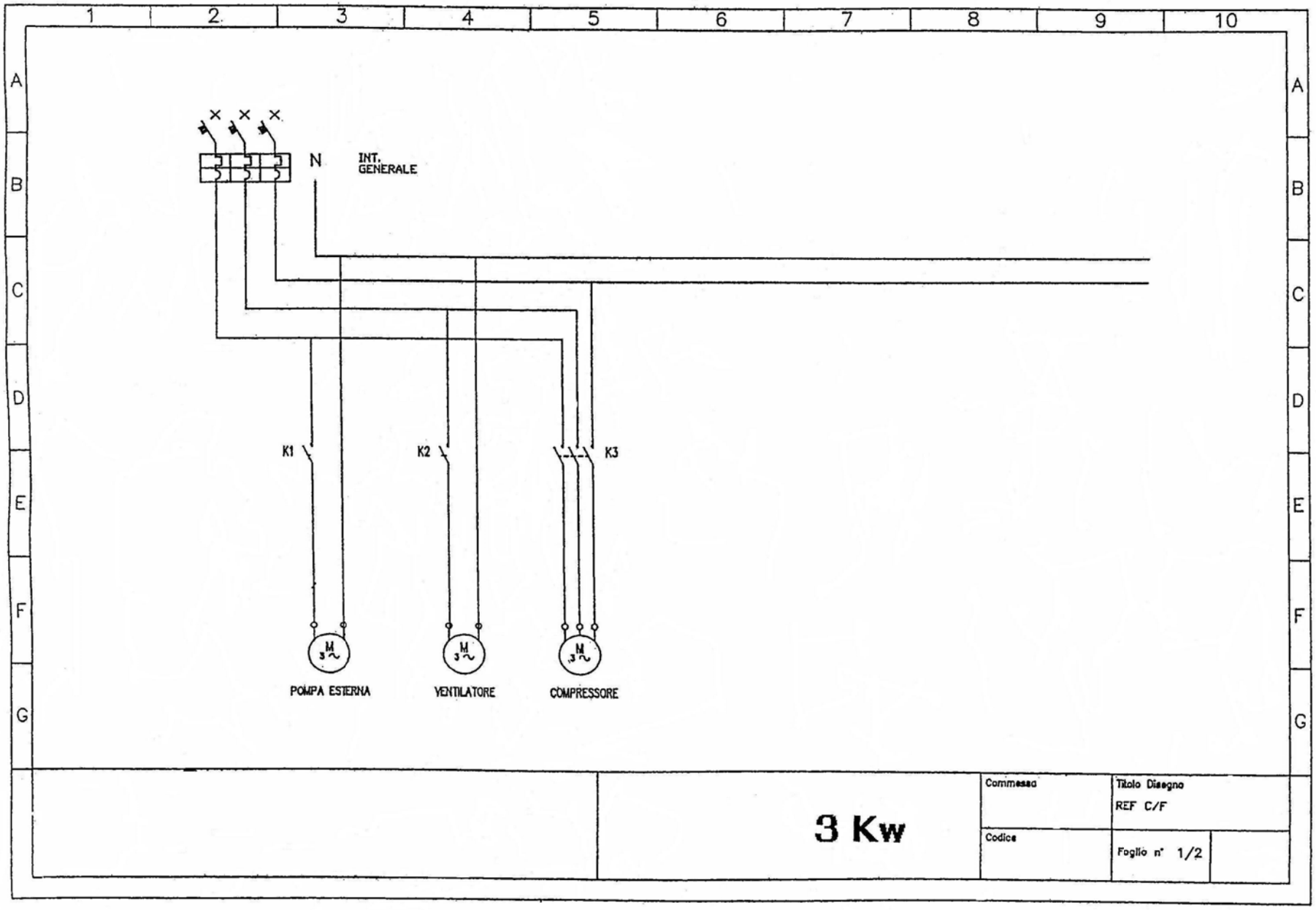
BLUE BOTTOM, THERMAL RESTORE



ELECTRICAL SCHEME



1,5 Kw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GENERALE
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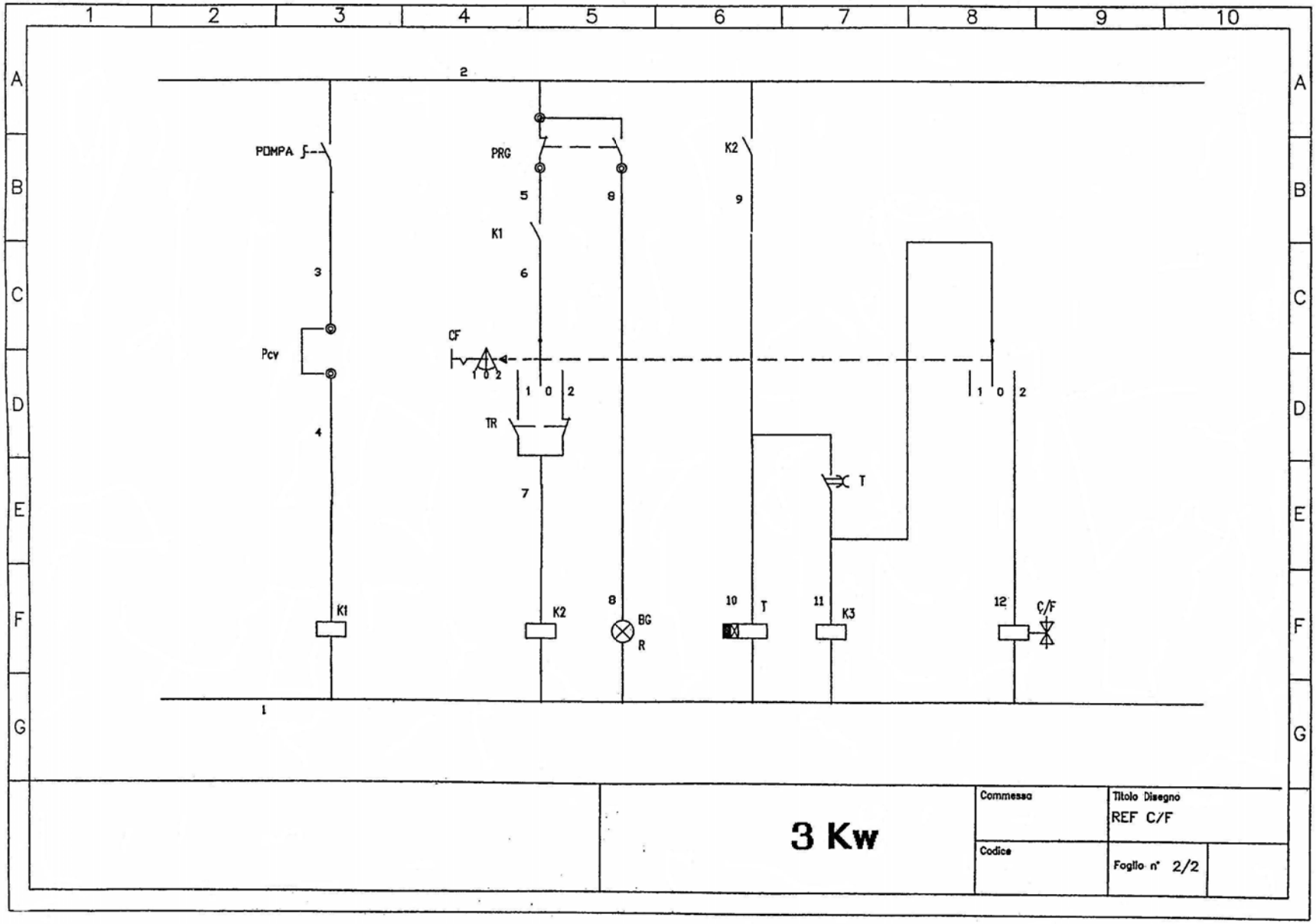
K3
M
3~
POMPA ESTERNA
VENTILATORE
COMPRESSORE
3 Kw
Commessa
Codice
Titolo Disegno
REF C/F
Foglio n° 1/2



	3 Kw	Commessa	Titolo Disegno REF C/F
		Codice	Foglio n° 2/2