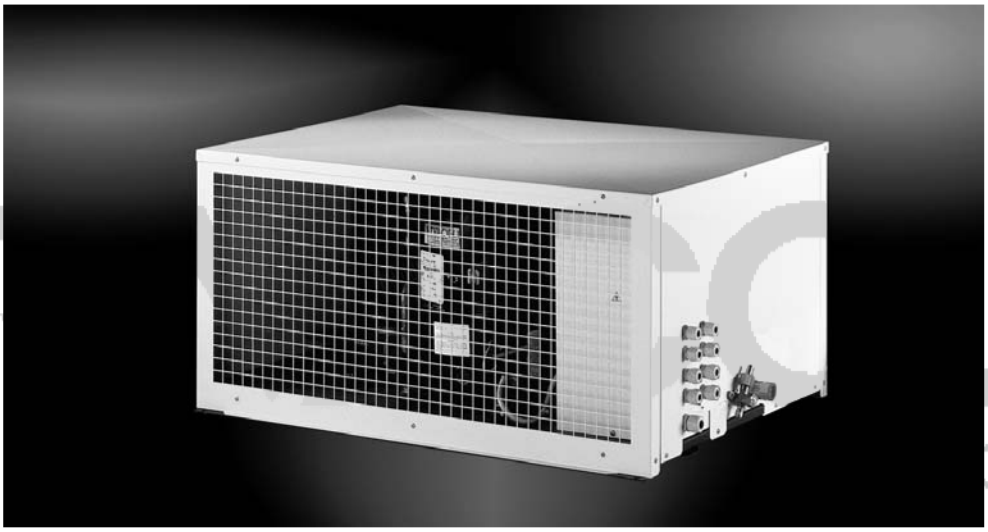
RIVACOLD
MASTERING COLD

UK

USE AND MAINTENANCE HANDBOOK CONDENSING UNITS

SU



ENGLISH

1. CONTENTS

2. PURPOSE OF THE MANUAL

The purpose of this manual is to assist operators in placing the machine into operation correctly, as well as to supply advice and explanations about the relevant safety regulations in force within the European Community and to avoid any possible risks caused by incorrect use.

3. NORMS FOR GENERAL USE

- For a correct and safe use of the machine it is necessary to follow the instructions and guidelines stated in this manual since these refer to:
  - ✓ installation
  - ✓ start-up and use
  - ✓ maintenance
  - ✓ placing out of service and disposal
- *The manufacturer cannot accept any liability for damages resulting from failure to follow the instructions, advice and warnings given in this use and maintenance manual.*
- Read the labels on the machine with care. Do not cover them for any reason and replace them in the event that they become damaged.
- Keep this manual carefully.
- The manufacturer reserves the right to update this manual without any prior notice.
- The machines were designed solely for industrial and commercial refrigeration in a stable seat (the application range is quoted in the company's general catalogue). *They are not intended for any other purpose*: Any other use is to be considered improper and therefore dangerous.
- After removing the packaging, check that every part of the machine is intact; if not, contact the relevant dealer.
- Do not use the machine in atmospheres with inflammables gas or in environments where there is a risk of explosion.
- If an operating fault occurs, switch off the machine.
- Any cleaning or maintenance operations must be carried out by specialist technical staff only.
- Do not wash the unit using direct or pressurised jets of water or with noxious substances.
- Do not use the machine without its safeguards.
- Do not place liquid containers on the machine.
- Keep the machine well away from sources of heat.
- In the event of fire, use a dry-chemical extinguisher.
- Packaging material must be suitably disposed of in accordance with current laws.

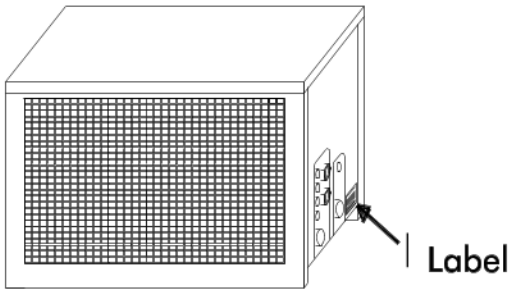
3. MACHINE IDENTIFICATION

All machines are fitted with an identification label (the position of which is shown in Drawing 1), containing the following information:

- code number
- serial number
- electrical input (A)
- electrical input (W)
- refrigerant type
- power supply tension (Volt/Ph/Hz)
- maximum operating pressure value PS HP (high-pressure side) – PS LP (low-pressure side)

- machine category according to the Directive 97/23EC (PED).

Drawing 1



Serial number identification:

- 1st and 2nd numbers = the last two numbers of the year of production
- 3rd and 4th numbers = the week number of the year in which the machine was made
- 5th, 6th, 7th and 8th numbers = progressive number

4. MACHINE DESCRIPTION

Blocksystems from the SU range are consist of a condensing unit that contains a terminal board for electrical connections. The refrigerant follows the compression refrigerating cycle system.

5. INSTALLATION

Before installing, it is necessary to make a layout of the refrigerating system; this must include the following:

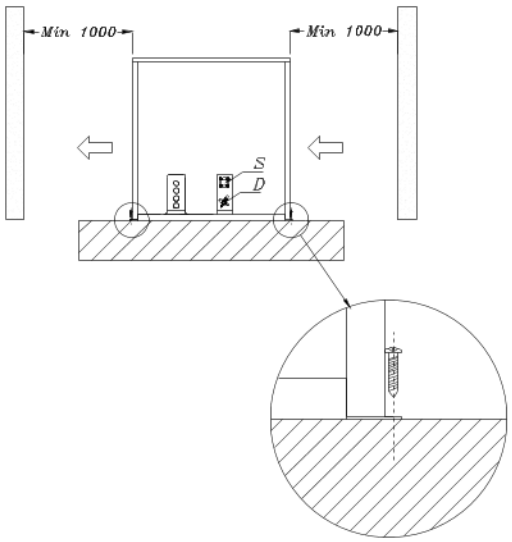
a) all components of the refrigerating system (i.e.: condensing unit, evaporator, thermostatic valve, electrical panel, piping dimensions, any safety devices, etc.)
b) system location
c) piping location

- Installation must only be performed by qualified staff with the necessary technical requirements according to the country in which the machine is installed.
- The machine must not be installed in a closed environment where good air flow is not guaranteed.
- Leave enough space around the machine for it to be possible to perform maintenance operations in safe conditions.
- When moving the machine, use cut-proof protective gloves or a suitable hoisting system.
- The machine must be fixed to the floor or ceiling using 4 screws and in accordance with the instructions illustrated in Drawing 2
- For information about weight, see the table of general features at the end of this manual.

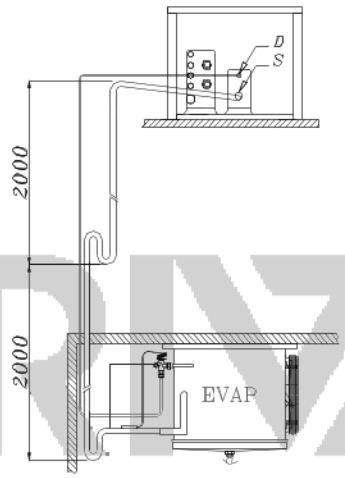
5. 1 Refrigerating connection

In order to make the connections, suction and liquid line piping with the same diameters as the connections fitted on the machine must be provided (see the table of general features at the end of this manual).
These diameters are valid up to a maximum length of 10m. For longer sizes, piping diameters must be of a correct size to guarantee the proper gas speed.
Pipes must be fixed to the wall on bends and welding points and every 1.5m – 2m on straight stretches.

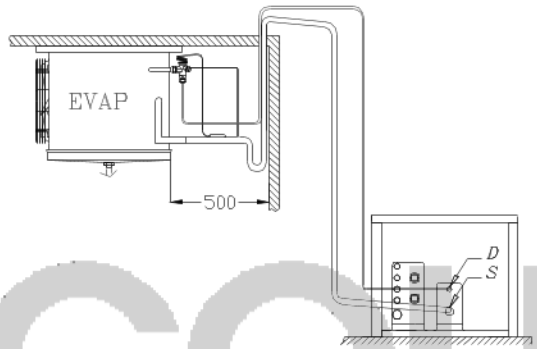
Drawing 2



Drawing 3



Drawing 4



5. 2 Suction line insulation

With an evaporating temperature lower than -10°C, the suction line pipes must be insulated with an anti-condensate pipe that has a thickness of at least 13mm in order to limit its overheating.

5. 3 Oil return

All systems must be designed so as to ensure oil return to the compressor.
In the situation shown in Drawing 3 (condensing unit placed above the evaporator), it is important to fit siphons along the suction line every 2 m of difference in height so as to guarantee oil return to the compressor. In any case, along horizontal stretches it is important for the suction line to have a slope of at least 3% towards the compressor.

5. 4 Adding oil

In the majority of installations where all piping is no longer than 10 m, it is not necessary to add oil. However, when the pipes are oversized compared to standard conditions or they are longer than 10m, a small quantity of oil must be added.

5. 5 Vacuum

For the correct operation of the refrigerating equipment and the duration of the compressor, it is very important for the vacuum in the system to be set correctly. This will ensure that air and above all, humidity contents are below the permitted values. The introduction of new gas types has meant the use of new polyester-type oils that have high-level hygroscopic characteristics and which require more attention when setting the vacuum. We

would advise setting the vacuum on both sides of the circuit. In any case, the target value is a pressure no higher than 5 Pa.

Important: in order to avoid irreparable damage to the compressor, never start it in vacuum conditions and without the gas charge.

During the vacuum and charge procedure, remember to energise the solenoid valve coil of the liquid line

5. 6 Refrigerant charge

After the vacuum-setting operation, the system must be charged with the type of refrigerant stated on the label or with one of the alternative types allowed. To charge the refrigerant correctly, we recommend that, after setting the vacuum, you pump part of the refrigerant into the compressor to "break the vacuum". Then start the compressor so that it sucks up the residual part of the refrigerant.

For the correct calculation of the gas charge, connect gauges to the pressure inlets (already fitted). Pressure values must be compatible with the operating conditions of the machines.

Important: mixtures of refrigerating gas must be loaded into the system in their liquid state only.

Gas charging operations must be carried out by specialised technicians only.

For charging, recovering or checking the refrigerant, use gloves to protect against low temperatures.

5. 7 Leakage checks

A system can operate correctly over time and for the entire duration of the compressor only if all instructions for a correct installation are followed. These include the absence of refrigerant leaks. It has been estimated that leaks of 10% of the refrigerant charge during 15 years of compressor operation still guarantee a good level of operation of the refrigerating system. With the new types of gas (R134a, R404A and mixtures) the possibilities of refrigerant leaks through welding or connections that have not been carried out correctly increase because of the reduced molecular dimensions of these gas. For these reasons, it is very important that welding is checked for leakage using methods and equipment that are suitable for the type of refrigerant in use.

5. 8 Operating cycles

- The system has to be sized so as not to have more than 5 on/off cycles per hour.
- The intervention of the Thermal/Amperometric protection device switches off the compressor, which will be started again after the time required for the protection device contacts to be connected.

5. 9 Operating times

- The systems must be sized for max. 80% of standard compressor operation.
- 100% compressor operation only occurs in special overload and ambient temperature conditions that are outside of the normal permitted operating limits.

5. 10 Pressure switches

- All machines are equipped with HBP (standard) safety pressure switches set at max. 28 bar.
- LBP (optional) safety pressure switches are set according to the gas in use and the compressor application. We recommend using the value stated in the following table:

	Gas	°C=[bar]	Set	Differential
LBP Application MBP	R404A	-25°C=1.5 bar	3 bar	1.5 bar
(medium temp.)	R407C	-25°C=0.8 bar	2.3 bar	1.5 bar
LBP Application LBP	R404A	-46°C=0 bar	3 bar	3 bar
(low temp.)				

- Pressure switch for Pump-down: this must be set considering that the compressor must not start up at intervals that are too close together (5 minutes at least). In these cases, we recommend the use of a timer for the compressor start delay.

5. 11 Pressure relief valves on the liquid receiver

- The machines in risk "category 0" are not equipped with pressure relief valves.
- The machines in risk "category ≥ 1" are equipped with pressure relief valves.

The risk category of each model is stated on its identification label.

5. 12 Electrical installation

The electrical installation must be performed by qualified staff with the relevant technical skills according to the requirements of the country where the machine is installed.

- Fit a thermomagnetic switch with a type-C intervention curve (10-15 In) between the power supply line and the machine-board electrical panel (not supplied) and make sure that the mains voltage corresponds to the voltage stated on the machine label. The permitted tolerance is ± 10% of rated voltage. When sizing the

differential thermomagnetic switch, take into account the electrical input values stated on the label.

- Important note: the thermomagnetic switch must be placed next to the machine so as to be easily seen and reached by a technician in case of maintenance.
- The section of the power supply cable must be adequate for the power absorbed by the machine, which is stated on the relevant label fixed to the machine itself.
- The law requires that the unit be earthed; therefore, it is necessary to connect it to an efficient earthing system. No liability whatsoever can be accepted in the event of failure to comply with this requirement or if the electrical system to which the machine is connected does not comply with the regulations in force.
- For machines with three-phase electrical power, it is necessary to check the rotation direction of the fan-motors. If it does not correspond to the one shown by the arrow on the label placed near the fans, it is necessary to switch off the machine and invert two phases of the mains; it is then possible to re-start the machine.
- A mechanical thermostat set at 40°C must be fitted to the evaporator; this will deactivate the heaters in case of overheating. The thermostat bulb must be placed in the fin assembly in the highest position inside the evaporator.

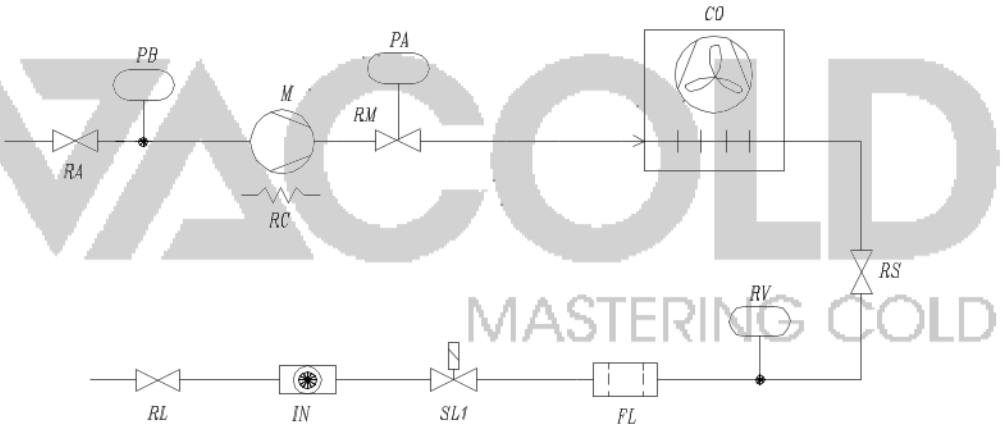
6. TECHNICAL DATA

All SU Blocksystems are supplied in nitrogen pressure. They are provided with safety pressure switches with a fixed setting on the HBP line and with a variable setting on the LBP (optional) line.
The refrigerating diagram of a condensing unit with air-cooled condensation has been included here below:

- Drawing 5 refrigerating diagram of a Blocksystem for capillary systems.
- Drawing 6 refrigerating diagram of a Blocksystem for expansion valve systems.

IMPORTANT NOTE: Refrigerating diagrams of non-standard units will be supplied with the machine.

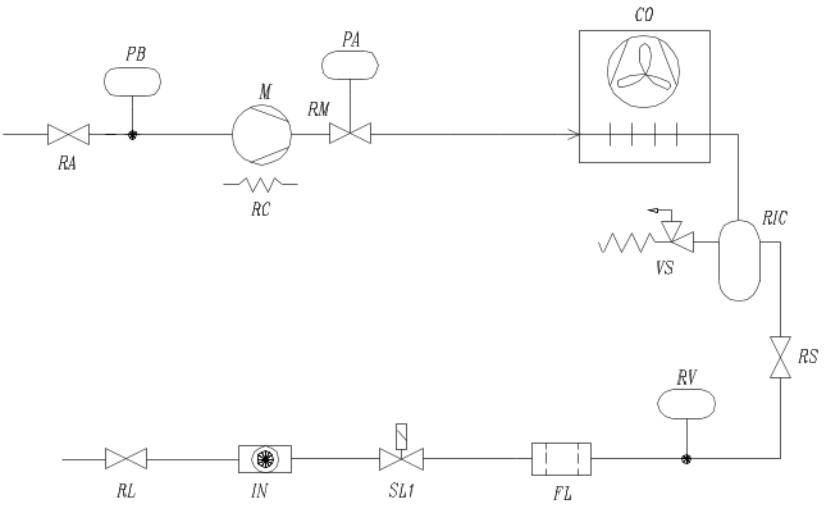
Drawing 5



Key to symbols:

M = Compressor
CO = Condenser
RIC = Liquid receiver
RM = Discharge shut off valve
RA = Suction shut off valve
RL = Liquid shut off valve
RS = Service shut off valve
SL1 = Liquid solenoid valve
RC = Crankcase heater (optional)
IN = Liquid indicator
PA = High pressure switch (Safety)
PB = Low pressure switch (Optionc
FL = Drier filter
RV = Condenser fan speed regulat (Optional)
VS = Pressure relief valve

Drawing 6



* The RM shut off valve is present only on preset compressors

These condensing units can be used in various type of installations:

- For cold rooms
- For refrigerating counters
- For water chillers, etc.

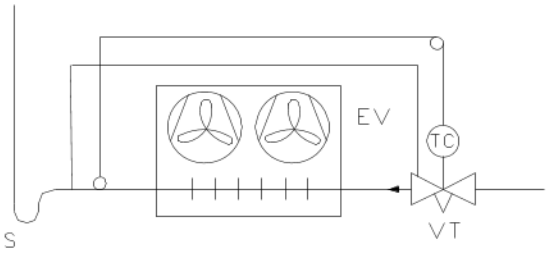
Each condensing unit can be connected to one or more evaporators, of course, always following refrigeration rules. In any case, it is necessary to choose every single component with care. The following section contains examples of refrigerating drawings which complete the refrigerating diagrams shown above.

- Drawing 7 (refrigerating diagram of the evaporating part).

Drawing 7

Key to symbols:

EV = Evaporator
VT = Thermostatic valve
S = Siphon



7. WIRING DIAGRAM

The wiring diagrams have been placed inside the control panel of the machine.

8. PRESSURE RELIEF VALVE (where provided)

8. 1 Instructions and limits of use

Replacement of the pressure relief valve is suggested whenever, during discharge, the build-up of component processing and of pipe residues happens to make the shutting of the seal defective.
Before you replace the valve, make sure that the system is not under pressure or at high-level temperature in the area you are operating.

8. 2 Maintenance/inspection and valve setting

Warning! Maintenance is not provided for pressure relief valves. The removal of the cap or tampering with the seal are considered unauthorized modifications of the setting. This will void the manufacturer's guarantee.
The inspection of the pressure relief valves is reserved to specific Bodies in charge and is regulated by the current laws of the country of installation.

8. 3 Expected lifetime

The pressure relief valve should be checked every 5 years.

9. MAINTENANCE AND CLEANING

Maintenance and cleaning must be carried out by specialist technicians only.
First of all, make sure that the power supply is disconnected.

- Regularly clean **(at least every month)** the condenser by removing dust and grease. If the environment where the unit is located is very dusty, more frequent cleaning may be necessary.
- **In the event that machine parts need replacing, they have to be replaced by items exactly the same to the originals ones**
- Clean the contacts, fixed and mobile, of all contactors; replace them if they show signs of wear. **(every 4 months)**
- Check that all electric terminals, both on electrical panels and terminal boards, are properly connected; also check carefully that the all fuse elements are correctly clamped. **(every 4 months)**
- Visually check the entire refrigerating circuit, even inside the machines, for any traces of refrigerant leaks,

which are signalled by traces of lubricant oil. Intervene in due time and check further in case of doubts.
Checking leaks of cooling gas:
- for systems with 3kg ≤ load of cooling gas < 30kg the check must be annual
- for systems with 30kg ≤ load of cooling gas < 300kg the check must be six-monthly
- for systems with load of cooling gas ≥ 300kg the check must be three-monthly
- if a loss is found, it is necessary to intervene immediately and carry out a verification within 30 days to ensure the repair work has been effective.

- Check that refrigerant is flowing regularly by means of the indicator on the liquid line. **(every 4 months)**
- Check the oil level by means of the special indicator (if fitted) placed on the compressor crankcase. **(every 4 months)**
- Carefully check the colour of the element which is sensitive to humidity through the indicator on the liquid line. Green means dry; yellow means humidity. In the event of humidity, stop the machine immediately, replace the filter on the liquid line and replace both the refrigerant and the oil. Repeat this check after 3 days of operation. **(every 4 months)**
- Check the noise level of the compressor. This check must be performed with caution, as it has to be carried out while the system is operating. Check for ticking or vibrations that result from breakdowns or excessive mechanical friction between moving parts. **(every 4 months)**
- **Important note:** At the end of maintenance, replace all previously removed guards (housing and grid).
- Do not remove the pressure relief valve without having previously recovered the gas inside the liquid receiver.

10. DISPOSAL

If the machine is placed out of service, it is necessary to disconnect it from the mains. The gas contained inside the system must not be dispersed into the environment. The compressor oil is subjected to differentiated waste collection regulations; therefore, we recommend that you do not dispose of the unit as normal iron scrap but that you use a special collection centre, as per the standards and regulations in force.

11. OPTIONAL ITEMS

- R22 gas

  Alternative gases to the R404A standard and recognisable by the appliance code: E=R22

- Condenser-fan speed control

  -Condenser fans pressure switch (where not fitted as standard)

  Stops the condenser fan(s) when condensing pressure drops below the calibrated value, less the differential.

  -Condenser fan speed variator

  To maintain condensing within set limits, the condenser fan speed must be variated according to condensing pressure. This device must be connected to the high-pressure circuit. The instructions for use are attached to the documentation supplied with the machine.

- Low pressure switch

  This operates by stopping the machine when the pressure in the suction circuit drops to below its set value. This occurs as the result of a failure.

- Crankcase heater

  This is used to heat up the compressor crankcase before start up and to keep it warm during stoppage. The heat produced by the heater causes any refrigerant in a liquid state inside the compressor to evaporate.

- Water condensation

  This is obtained by replacing the air-cooled condenser with a water-cooled one.
  To connect water condensers, it is necessary to use pipes with a diameter of no less than those already connected to the Blocksystem, respecting the inlets and outlets. If the machine is sized for condensing using tower water, the inlet pipe is formed by a coupling that connects the two pipes with smaller sections of the condenser. When condensing is to be carried out using cistern water, the inlet pipe can be distinguished by the fact that it has a barostatic valve to regulate water flow.
  Install the shut off valve of the water mains nearest to the operator.
  Never close the water shut off valve while the appliance is operating.
  To improve the performance and duration of the machine, check the following:

- the water temperature must be between 20 and 30°C for water-condensed units using tower water and between 5 and 20°C for water-condensed units using cistern water
- water pressure must be between 1 and 5 bar.

PLEASE NOTE: the water pipes must be protected against low outside temperatures.

- Built-in lectrical box
  The electrical box is fitted inside the housing and it fully controls the machine functioning by means of an external thermostat (the relevant wiring diagram is supplied herewith)

- Voltage monitor
  This device is used to protect the Blocksystem from voltage increases or dips.

- Different voltage

Es: SUM009Z011

1	230/1/50 Hz
2	400/3/50 Hz
3	110/1/60 Hz
4	220/3/60 Hz
5	220/1/60 Hz
6	460/3/60 Hz
7	380/3/60 Hz
8	230/3/50 Hz

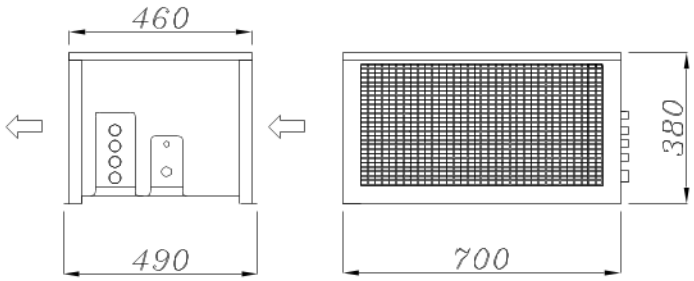
12. TROUBLESHOOTING

	Likely cause	Remedy
A	**The compressor will not start and no humming sound is heard**	
	1 No power. Starter relay contacts open.	1 Check the line or replace the relay.
	2 Thermal circuit breaker intervention.	2 Check the electrical connections.
	3 Electrical connections loose or incorrect.	3 Tighten the connections or reconnect wiring according to the wiring diagram.
B	**The compressor will not start (it makes a humming sound) and the thermal circuit breaker intervenes**	
	1 Electrical connections incorrect.	1 Make the connections again.
	2 Low voltage at compressor.	2 Find and remove the cause.
	3 Faulty start capacitor.	3 Find the cause and replace the capacitor.
	4 The relay does not close.	4 Find the cause and replace the relay if necessary.
	5 Electric motor – winding interrupted or in short circuit.	5 Replace the compressor.
C	**The compressor starts but the relay does not open**	
	1 Electrical connections incorrect.	1 Check the electric circuit.
	2 Low voltage at compressor.	2 Find and remove the cause.
	3 Relay locked closed.	3 Find and remove the cause.
	4 Excessive discharge pressure.	4 Find the cause and replace the relay if necessary.
	5 Electric motor – winding interrupted or in short circuit.	5 Replace the compressor.
D	**Thermal circuit breaker intervention**	
	1 Low voltage at compressor (three-phase motor – phase imbalance).	1 Find and remove the cause.
	2 Thermal circuit breaker faulty.	2 Check characteristics and replace if necessary.
	3 Faulty run capacitor.	3 Find and remove the cause.
	4 Excessive discharge pressure.	4 Check the ventilation and any restrictions or obstructions in the system circuit.
	5 High suction pressure.	5 Check the sizing of the system. Replace the

		condensing unit with a more powerful one if necessary.
	6 Compressor overheated - hot return gas.	6 Check the refrigerant charge; repair any leaks and add gas if necessary.
	7 Electric motor – winding interrupted or in short circuit.	7 Replace the compressor.
E	<u>The compressor starts and runs at brief operating cycles</u>	
	1 Thermal circuit breaker.	1 See the previous point (thermal circuit breaker intervention).
	2 Thermostat.	2 Small differential: correct adjustment.
	3 High-pressure switch intervention due to insufficient condenser cooling.	3 Check the correct operation of the fan motor or clean the condenser.
	4 High-pressure switch intervention due to excess refrigerant gas charge.	4 Reduce the refrigerant charge.
	5 Low-pressure switch intervention due to insufficient refrigerant gas charge.	5 Repair any leaks and add refrigerant gas if necessary.
	6 Low-pressure switch intervention due to expansion valve restriction or blockage.	6 Replace the expansion valve.
F	<u>The compressor runs continuously or for long periods</u>	
	1 Insufficient refrigerant gas charge.	1 Repair any leaks and add refrigerant gas.
	2 Thermostat contacts blocked in the closed position.	2 Replace the thermostat.
	3 System insufficiently sized for the charge.	3 Replace the system with a more powerful one.
	4 Excess charge to be cooled or insufficient insulation.	4 Reduce the charge or improve the insulation, if possible.
	5 Evaporator covered with ice.	5 Defrost.
	6 System circuit restriction.	6 Identify the cause and remove it.
	7 Condenser blocked.	7 Clean the condenser.
G	<u>Run capacitor damaged, interrupted or short circuited</u>	
	1 Incorrect run capacitor	1 Replace with a capacitor of the correct type.
H	<u>Starter relay faulty or burnt out</u>	
	1 Incorrect relay.	1 Replace with a relay of the correct type.
	2 Relay fitted in incorrect position.	2 Fit the relay in the correct position.
	3 Incorrect run capacitor	3 Replace with a capacitor of the correct type.
I	<u>Coldroom temperature too high</u>	
	1 Thermostat set too high.	1 Adjust the setting.
	2 Undersized expansion valve.	2 Replace the expansion valve with one of a suitable type
	3 Undersized evaporator.	3 Replace with an evaporator with a larger surface area
	4 Insufficient air circulation.	4 Improve air circulation
L	<u>Suction pipes frosted</u>	
	1 Excessive passage of gas through the expansion valve or valve oversized.	1 Adjust the valve or replace it with one of the correct size.
	2 Expansion valve locked in the open position.	2 Clean foreign bodies from the valve and replace if necessary.
	3 The evaporator fan motor does not work.	3 Find the cause and remove it.
	4 High gas charge.	4 Reduce the charge.
M	<u>Discharge pipe frosted or wet</u>	
	1 Drier filter restriction.	1 Replace the filter.
	2 Valve on the discharge line partially closed.	2 Open the valve or replace it if necessary.

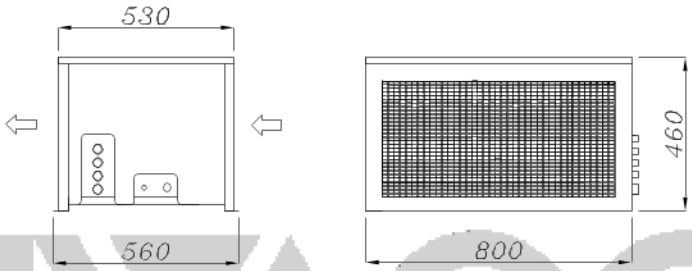
• For the drawings see page 50,51

Drawing. 1



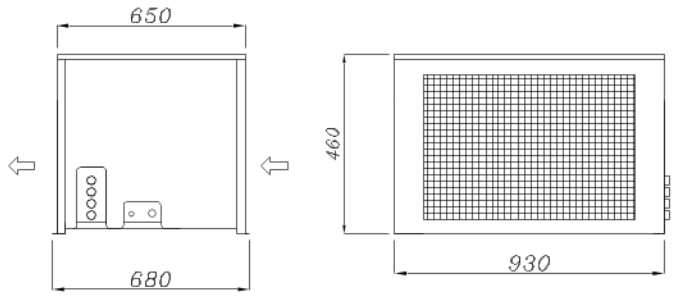
HBP						MBP						LBP					
Mod.	In (A)	Imax (A)	S (mm)	D (mm)	Net.Weight kg	Mod.	In (A)	Imax (A)	S (mm)	D (mm)	Net.Weight kg	Mod.	In (A)	Imax (A)	S (mm)	D (mm)	Net.Weight kg
SUH003_	2,8	4,6	10	6	36	SUM003_	3,6	4,7	10	6	37	SUL003_	2,6	6,8	10	6	46
SUH006_	4,2	4,7	10	6	38	SUM006_	3,6	7,0	10	6	39	SUL006_	3,3	8,4	12	6	50
SUH009_	3,2	5,7	12	6	46	SUM009_	4,2	8,5	12	6	47	SUL009_	5,1	11,0	12	6	57
SUH016_	5	9,0	12	6	57	SUM016_	5,5	11,2	12	6	57						

Drawing. 2



HBP						MBP						LBP					
Mod.	In (A)	Imax (A)	S (mm)	D (mm)	Net.Weight kg	Mod.	In (A)	Imax (A)	S (mm)	D (mm)	Net.Weight kg	Mod.	In (A)	Imax (A)	S (mm)	D (mm)	Net.Weight kg
SUH022_	2,8	5,3	16	10	59	SUM022_	3,3	5,4	16	10	59	SUL016_	3,8	6,2	16	10	68
SUH034_	3,4	4,7	16	10	79	SUM034_	4,1	5,5	16	10	82						

Drawing. 3



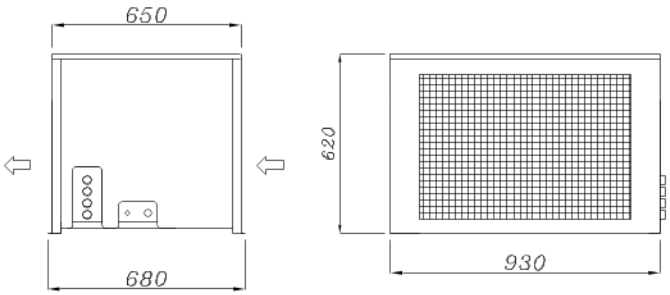
HBP						MBP						LBP					
Mod.	In (A)	Imax (A)	S (mm)	D (mm)	Net.Weight kg	Mod.	In (A)	Imax (A)	S (mm)	D (mm)	Net.Weight kg	Mod.	In (A)	Imax (A)	S (mm)	D (mm)	Net.Weight kg
SUH054_	4,9	7,6	16	10	85	SUM054_	5,2	9,5	18	10	89	SUL024_	4,4	6,3	16	10	85
												SUL034_	5,4	11,1	18	10	97

Legenda/Legend/légende/leyenda/legende

In = Ampere assorbiti alle condizioni nominali / Ampere absorbed at nominal conditions / Ampéres absorbés aux conditions nominales / Nennstromaufnahme / Amperios nominales absorvidos

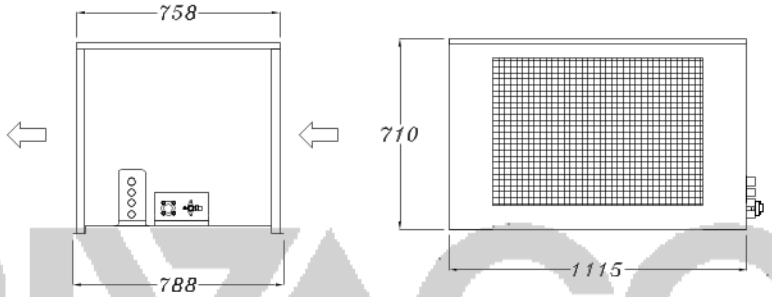
Imax = corrente massima di funzionamento / Maximum operating current / Courant maximal de fonctionnement Corriente máxima de funcionamiento / Daten Verdichtereinheit

Drawing. 4



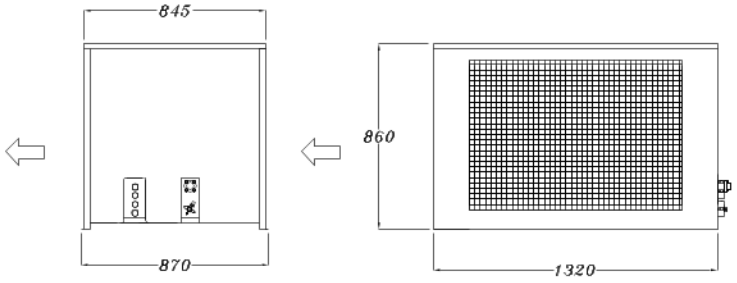
MBP						LBP					
Mod.	In (A)	Imax (A)	S (mm)	D (mm)	Net.Weight kg	Mod.	In (A)	Imax (A)	S (mm)	D (mm)	Net.Weight kg
SUM068_	7,3	10,5	22	12	93	SUL060_	6,9	12,2	28	12	109
SUM080_	6,6	14,7	22	12	107	SUL080_	7,7	13,5	28	12	115

Drawing. 5



MBP						LBP					
Mod.	In (A)	Imax (A)	S (mm)	D (mm)	Net.Weight kg	Mod.	In (A)	Imax (A)	S (mm)	D (mm)	Net.Weight kg
SUM110_	8,8	15,5	28	12	148	SUL130_	10,1	12,4	28	16	177

Drawing. 6



MBP						LBP					
Mod.	In (A)	Imax (A)	S (mm)	D (mm)	Net.Weight kg	Mod.	In (A)	Imax (A)	S (mm)	D (mm)	Net.Weight kg
SUM140_	11,5	20,2	28	12	155	SUL180_	12,2	14,4	35	16	228
SUM200_	15,5	14,4	35	16	177	SUL200_	13,0	17,8	35	16	232
						SUL260_	16,9	19,7	35	16	235

Legenda/Legend/légende/leyenda/legende

In = Ampere assorbiti alle condizioni nominali / Ampere absorbed at nominal conditions / Ampéres absorbés aux conditions nominales / Nennstromaufnahme / Amperios nominales absorvidos

Imax = corrente massima di funzionamento / Maximum operating current / Courant maximal de fonctionnement Corriente máxima de funcionamiento / Daten Verdichtereinheit

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