



# CLIMACOLD

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**SGM008P1**

**SGM010P1**

**SGM012P1**

**SGM016P1**

**SGM020P2**

**SGM024P2**

**SGL011P1**

**SGL014P1**

**SGL017P2**

**SGL020P2**

## **Monoblock Refrigeration Units**

Use and Maintenance Handbook



## SAFETY INSTRUCTIONS

Some provisions in this Use and Maintenance Handbook are unified for monoblock refrigerating units.

CAREFULLY READ THE USE AND MAINTENANCE HANDBOOK.

The Manufacturer shall not be held liable for damage arising from the failure to observe the instructions contained in this Use and Maintenance Handbook.

Keep this Use and Maintenance Handbook for future reference.

- Do not use mechanical devices or other means to accelerate the defrosting process, other than recommended by the manufacturer.
- Do not cover the ventilation holes at the top, bottom and on the sides of the machine.
- Regularly clean the condenser of dust and other dirt at least once every 3 months.
- If the supply cord is damaged it must be replaced by the manufacturer, manufacturer service agent or a similarly qualified person, in order to avoid a hazard.
- Disposal of the machine should be according to national rules.

Do not damage Monoblock refrigeration unit refrigeration system. It contains the refrigerant gas R290. If the refrigeration system is damaged:



- Avoid sparks — do not turn on any electrical machines or lighting fixtures.
- Immediately ventilate the room.
- Means for disconnection must be incorporated in the fixed wiring in accordance with the wiring rules.
- This Monoblock refrigeration unit can be used by children aged from 8 years and above and persons with reduced physical, sensory or mental capabilities or lack of experience and knowledge if they have been given supervision or instruction concerning use of the machine in a safe way and understand the hazards involved. Children shall not play with the machine.

## GENERAL INFORMATION

**This Monoblock refrigeration unit is intended for commercial use!**

THE Monoblock refrigeration unit IS ECOLOGICALLY CLEAN, CONTAINING NO MATERIALS HARMFUL TO THE OZONE LAYER: the refrigerant used is R290, the foaming agent used for the machine insulation is cyclopentane C<sub>5</sub>H<sub>10</sub>.

THE MANUFACTURER GUARANTEES RELIABLE OPERATION OF THE Monoblock refrigeration unit WHEN THE AMBIENT TEMPERATURE IS +10 TO +43 DEGREES CELSIUS, AND THE RELATIVE AIR HUMIDITY NOT MORE, THAN 60 PERCENT. The A-weighted emission sound pressure level is below 70 dB (A).

This Use and Maintenance Handbook is an integral part of the machines (identified, in this document, with the term **MACHINE**) manufactured by AB "SNAIGE". For this reason, it must accompany the MACHINE if transferred to a new user or owner.

This handbook must be carefully stored and protected from any agents which could cause its deterioration, for the entire lifecycle of the machine.

This handbook was drafted for the purpose of providing operators and technicians responsible for the maintenance of the MASCHINE with the essential information and instructions to correctly operate the MASCHINE in safe conditions.

This handbook contains all the data and information necessary for preliminary training of staff responsible for managing the MASCHINE correctly; for this purpose, its use is compulsory.

This manual assumes that the environment in which the MACHINE is installed complies with all applicable regulations regarding workplace safety and hygiene and that the personnel responsible for operation and maintenance are trained.

## **CONTENT OF THE USE AND MAINTENANCE HANDBOOK**

This Maintenance Handbook is for use by operators and technicians to allow them to understand and correctly use the MACHINE. This handbook, other than a functional description of the MACHINE and its main parts, also contains the instructions and indications how to:

- transport and install the MACHINE correctly;
- correct use the MACHINE;
- conduct correct cleaning, regulation and maintenance of the MACHINE;
- pay attention to the fundamental safety and accident prevention regulations.

The staff will therefore have the chance to understand the potential of the device and the problems that may arise during its management.

## **CONVENTION AND DEFINITIONS**

All the documentation relating to the MACHINE was drafted by developing the topics indicated by the Machinery Directive (2006/42/EC) therefore, the *complete reading of all the relative material* is indispensable to **OBTAIN** the best performance FROM the MACHINE and ensure maximum duration of all its units.

The configuration of certain units or devices described or shown in the documents can differ from that in the MACHINE in the specific preparation according to particular requirements or safety norms; in this case, certain descriptions, references or procedures recommended can be generic in order to maintain their efficiency. Drawings mentioned or photographs are provided for example purposes as a reference for easy comprehension of the text.

**MACHINE:** the term used in this Use and Maintenance Handbook to indicate the MACHINE.  
IPD: the acronym indicates Individual Protection Device/s.

**DANGER ZONE:** Any ZONE inside or near the MACHINE in which the presence of an exposed person composes a risk to the safety and health of that person.

**USER:** Any person (business person/company) adequately using the MACHINE or that assigns its use or operations connected to use to trained people.

**OPERATOR:** Staff, generally without specific skills, that conduct the operations necessary to operate the MACHINE and clean the MACHINE and the place in which it is installed; if necessary, the operator can conduct simple regulation and restore of functioning operations on the MACHINE.

**MECHANICAL MAINTENANCE PERSON:** QUALIFIED technician who can intervene on any mechanical unit to regulate or repair it and conduct the necessary maintenance operations. The mechanical maintenance person is not enabled to conduct intervention on the electrical systems when voltage is present.

**ELECTRICAL PERSON:** QUALIFIED technician responsible for all electrical intervention (regulation, maintenance and repairs) and, when necessary, works with voltage present inside the electrical cabinets and the shunt boxes.

## **SUPPORT**

Regarding maximum use of the performance provided by the MACHINE and the extraordinary maintenance operations, this Use and Maintenance Handbook does not replace the experience of the installers, users or maintenance staff that is trained and qualified.

On the subject, the Technical Support Service of AB SNAIGE provides telephone support on the features and simplest interventions to conduct on the MACHINE, sending of documentation material.

## **DEVICE DESCRIPTION**

The MACHINE represents a refrigerating system made up of a condensing unit (outside the cold room), an evaporating unit (inside the cold room), and an electronic control board placed within the condensing unit. The MACHINE can be equipped with one or two refrigerating cycle.

The MACHINE is equipped with a hot-gas defrosting system controlled by the electronic control unit. The defrost is automatic and takes place with a preset frequency that can be modified by the user; it can also be enabled manually via the specific control.

### **THE MACHINE ARE PROTECTED AGAINST OVER PRESSURE.**

#### **The MACHINE is equipped with:**

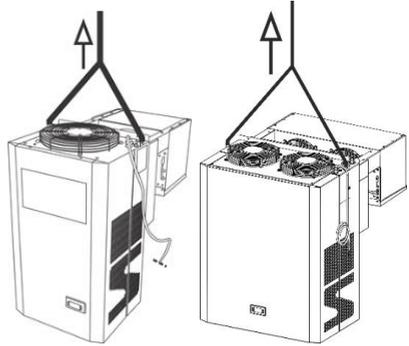
- Support sole of the compressor;
- front panel easy to be removed in order to guarantee an easy access to the components and fast maintenance intervention (can be conducted only by **qualified staff**);
- hermetic compressors with thermal motor protection;
- electronic board that can be programmed according to different user requirements (necessary to contact *the* Technical Support Service);
- heat exchangers with aluminum fins; condensation by air;
- direct gas expansion with capillary tube and automatic defrosting with programmable run, duration and frequency settings;
- condensate collection tray from which the condensate is evaporated or forced condensate discharge;

## THE MACHINE TRANSPORTATION

Lifting to move and subsequently position the MACHINE can be performed using any adequate vehicle that guarantees its lifting in a safe and efficient manner (for example a hoist using a harness system the MACHINE).

**For correctly perform the lifting operations, follow the warnings reported below:**

- Never use two lifting vehicles simultaneously;
- Never stay under suspended loads;
- If using steel ropes, always apply the end eye to the lifting hook;
- If using steel ropes, pay attention not to create sharp bends, i.e. with a bending radius lower than that of the rope end eyelets. Use adequately wide ropes, to enable the angle between the ropes and the horizon to always be over 45°.

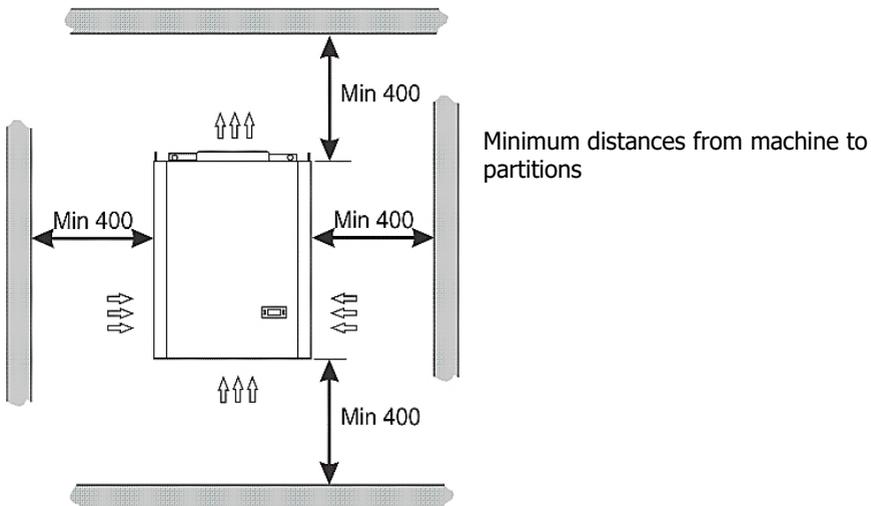


## THE MACHINE INSTALLATION

The installation and possible re-installation of the machine must be conducted directly by **qualified staff**.

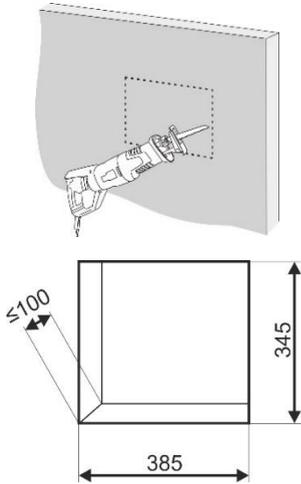
Before proceeding to installing the machine, it is necessary to prepare the power supplies and utilities necessary for the correct functioning of the system, following the indications reported in this chapter and, if necessary, consulting the manufacturer's Technical Office in advance.

**DANGER: the manufacturer declines all responsibility far any damage to property and/or persons deriving from improper interventions conducted by unqualified, untrained or unauthorised staff.**

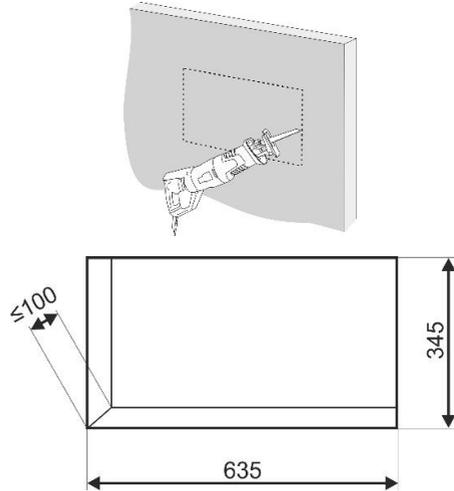


1. When installing the machine, cut a hole in the wall.

**SGL\*\*\*P1, SGM\*\*\*P1**



**SGL\*\*\*P2, SGM\*\*\*P2**



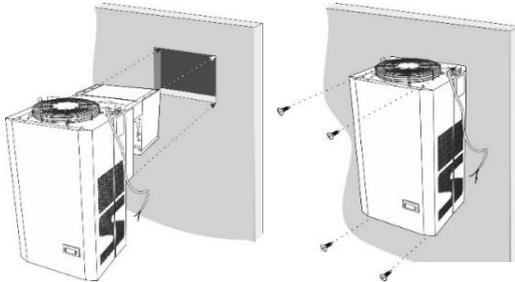
The dimensions of the opening must correspond to the dimensions indicated in the picture. For the SGL\*\*\*P1, SGM\*\*\*P1 the maximum dimensions of the opening cannot exceed 350 mm in height and 395 mm in width.

For the SGL\*\*\*P2, SGM\*\*\*P2 the maximum opening dimensions cannot exceed 350 mm in height and 645 mm in width. Wall thickness up to 100 mm

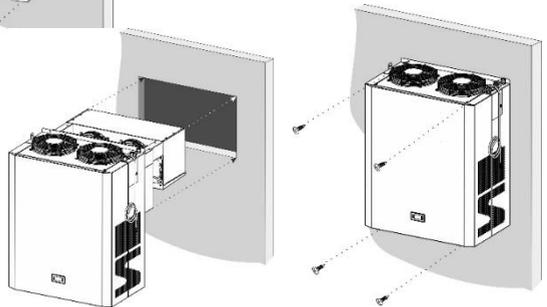
**The dimensions of the hole inside and outside the chamber must be the same.**

2. After inserting the machine into the hole in the wall, screw the mono-block to the wall with four self-tapping screws.

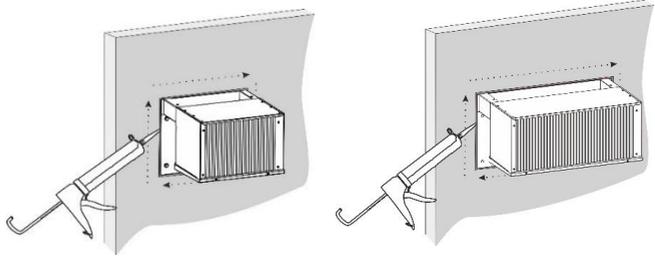
**SGL\*\*\*P1, SGM\*\*\*P1**



**SGL\*\*\*P2, SGM\*\*\*P2**



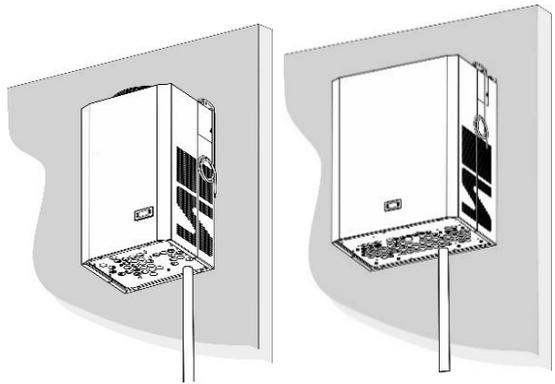
3. After installing the machine, fill gaps larger than 5 mm with self-expanding foam. Gaps smaller than 5 mm sealant with silicone. After inserting the machine into the hole in the wall, it must be screwed to the wall with four self-tapping screws 5,5 x 22 DIN6928 CH Zn6: two self-tapping screws at the top of the machine and two at the bottom of the machine.



**SGL\*\*\*P1, SGM\*\*\*P1**

**SGL\*\*\*P2, SGM\*\*\*P2**

4. In order to prevent water leakage in the room where the machine is installed, it is recommended to additionally connect a flexible water drain pipe  $\varnothing 16\text{mm}$  when the condensate evaporation tank is overfilled. The flexible pipe must be connected to a metal pipe for draining excess condensate at the bottom of the machine. For a secure connection, use a threaded clamp. The drainage pipe must be connected to a sewer or other safe drainage channel.



## **CONNECTION TO THE ELECTRICAL POWER MAINS**

The electrical power supply (also in terms of voltage/frequency) supplied by the purchaser must be sufficient to correctly power the MACHINE. Specifically the following instructions must be followed:

1. The power cable must be laid out (no rolling or overlapping) in a position not exposed to possible knocks or tampering. It must not be near liquids, water or heat sources and must not be damaged (if so, replace it using qualified staff).
2. The power cord of the machine must be connected to a separate 10 A (SGM\*\*\*P1 series) or 16 A (SGL\*\*\*P1 series), for the models SGL\*\*\*P2 and SGM\*\*\*P2 - 32 A circuit breaker without the use of any additional plugs, relays or similar mains circuit breakers to ensure stable electrical, voltage supply to machine.
3. The machine must be properly earthed. Wiring diagram attached.
4. The machine may only be connected by a qualified electrician.
5. It is forbidden to install or connect additional electrical components in the construction.

## TEMPERATURE REGULATION

Short press: **Menu returning back**  
 Long press: **Menu**  
 NOTE: The ECO function is not activated

Short press: **temperature set point, temperature adjustment upwards.**



Short press: **setting confirmation "OK"**  
 Long press: **On/OFF machine**  
 NOTE: The lighting function is not activated.

Short press: **temperature set point, temperature adjustment downward.**  
 Long press: **defrost**

### Temperature setting:

1. The display shows the actual temperature.
2. To activate the temperature setting, press **▲** or **▼**. When the temperature setting mode is activated, the selected temperature value flashes on the display;
3. To set the temperature, select the desired temperature by pressing **▲** (temperature warms up) or **▼** (temperature cools down) again;
4. After setting the temperature, in 30 seconds the set value on the display stops flashing and automatically returns to the actual temperature display.

### Machine operating temperatures

**i** THE SET TEMPERATURE MAY DIFFER FROM THE ACTUAL TEMPERATURE SHOWN ON THE DISPLAY. The table below shows values of the setting and the possible difference from the set temperature:

Temperature setting limits $T_{set}$	Switch-on temperature $T_{on}$	Shutdown temperature $T_{off}$
<b>SGM:</b> $T_{set}$ = from +5 to -5°C	When the temperature rises + 1°C from the set $T_{set}$ ,	When the temperature drops - 3°C from the set $T_{set}$ ,
<b>SGL:</b> $T_{set}$ = from -15 to -25°C	$T_{on} = T_{set} + 1°C$	$T_{off} = T_{set} - 3°C$

Password protection (menu for installer or manufacturer's repair representative): press both the „▲“ and „▼“ keys at the same time, hold for 5 seconds to enter the menu → The display shows „PAS“ → Press „OK“ → Press „▲“/„▼“, to get the code → Press „OK“

## Acknowledging Alarms:

Display Flashing the alarm message. Press any button to acknowledge.

Alarm code	Trigger	Automatic clearance	Information	Comments
„Hi“	Air temperature is higher than „ALA->Hot“ for „ALA->Htd“	User configured	Blink „Hi“ with the highest temperature, if configured: cut in alarm relay, beep buzzer	Hight temperature alarm
„Lo“	Air temperature is lower than „LAT“ for „Ltd“	User configured	Blink „Lo“ with the lowest temperature, if configured: cut in alarm relay, beep buzzer	Low temperature alarm
„uHi“	Line voltage is higher than „Cop->uHi“	Always	Blink „uHi“. If configured: cut in alarm relay, beep buzzer	Hight voltage alarm (the function is activated according to the customer's request)
„uLi“	Line voltage is lower than „Cop->uLi“	Always	Blink „uLo“. If configured: cut in alarm relay, beep buzzer	Low voltage alarm (the function is activated according to the customer's request)
„E01“	„S1“ error	Always	Blink „E01“. If configured: cut in alarm relay, beep buzzer	„S1“ sensor failure (short or open)
„E02“	„S2“ error	Always	Blink „E02“. If configured: cut in alarm relay, beep buzzer	„S2“ sensor failure (short or open)
„E03“	„S3“ error	Always	Blink „E03“. If configured: cut in alarm relay, beep buzzer	„S2“ capacitor sensor failure (short or open)



The temperature in the cooling room may vary depending on the ambient temperature, the amount of products, the temperature of the products and how often the room door is opened and closed.

If a room is cool, the machine cools less. The temperature in the room may therefore rise. To set a lower temperature, change the settings on the electronic controller.

## DEFROSTING, CLEANING AND CARE

THE MACHINE DEFROSTS AUTOMATICALLY. The ice formed on the evaporator is melted by hot steam with the help of a compressor, and the thawed water drains through a water drain channel to a vessel where it evaporates.

The MACHINE evaporator can additionally be defrosted manually. Activated by pressing and holding the **V** key.



REGULARLY CLEAN THE MACHINE. **Remember that when cleaning the machine, you must disconnect the machine from the electrical energy supply.**

## Operation Problems and Their Solutions. What If ...

<b>The compressor doesn't start and/or doesn't emit a humming noise</b>	
Low voltage. Start-up relay with open contacts	Check the supply line or substitute the relay. If the voltage is lower than 195 V, contact the electrical maintenance service
Thermal protector is intervening	Check the electrical connections
Loose electrical connections or wrong electrical connections	Tighten the connections or carry them out again in compliance to the electrical wiring diagram
<b>The compressor does not start up (but releases a humming sound) and the thermal protector intervenes</b>	
Wrong electrical connections	Re-do the connections
Low voltage supply to the compressor	Contact a service technician
Faulty start-up condenser	Substitute the condenser
The start-up relay doesn't close	Identify the cause and replace the relay if needed
The winding on the electrical motor is interrupted or in short circuit	Substitute the compressor
<b>The compressor starts up, but doesn't refrigerate</b>	
Wrong electrical connections	Check the electrical circuit
Defrost valve open	Contact a service technician
Clogged capillary tube	Contact a service technician
Faulty compressor	Replace the compressor
<b>Intervention of the thermal protector</b>	
Low voltage supply to the compressor (unbalanced phases on the tri-phase motors)	Contact a service technician.
Defective thermal protector.	Check its characteristics and replace it if necessary
Overheated compressor, hot return gas	Check ventilation and possible system circuit restrictions or obstructions.
Winding of the compressor motor in short circuit	Check the sizing of the system. Replace the condensing unit with a more powerful one, if necessary
<b>The compressor operates uninterruptedly or for long periods</b>	
Scarce load of refrigerant gas.	Repair the loss and add refrigerant gas till the charge stated in the label.

Controller contacts locked.	Replace the controller.
System not sufficiently sized in function of the load.	Replace the system with a more powerful one.
Excessive load to cool or insufficient insulation.	Reduce the load and improve insulation, if possible.
Evaporator covered with ice.	Contact a service technician.
Restriction in the system circuit.	Clean the condense.
<b>Electric-start capacitor damaged interrupted, or in short circuit</b>	
Wrong electric-start capacitor.	Replace the capacitor with the correct type.
<b>Start-up relay defective or burnt out</b>	
Wrong relay.	Replace the relay with the correct one.
Relay mounted in the incorrect position	Re-assemble the relay in the correct position.
Wrong electric-start capacitor.	Replace the capacitor with the correct type

### **Machines SGM\* technical specification**

Machine code	SGM020P2	SGM012P1	SGM010P1	SGM008P1	SGM024P2	SGM016P1
Temperature setting limits	from +5°C to -5°C					
Cooling capacity, W	1850	1233	1015	785	2263	1508
Current In, A	8,6	4,3	4,2	2,5	9,3	5,3
Power, kW	1,54	0,85	0,79	0,52	2,2	1,1
Voltage	230 / 1 / 50 V/ ph /Hz					
Net weight, kg	92	47	47	46	92	49

### **Machines SGL\* technical specification**

Machine code	SGL017P2	SGL014P1	SGL011P1	SGL020P2
Temperature setting limits	from -15°C to -25 °C			
Cooling capacity, W	1730	1000	685	2007
Current In, A	8,8	5,3	4,5	9,1
Power, kW	1,65	1,07	0,69	2,1
Voltage	230 / 1 / 50 V / ph / Hz			
Net weight, kg	92	52	47	92

## ENVIRONMENTAL PROTECTION INFORMATION



This symbol indicates that once the machine is no longer needed, it cannot be disposed together with other miscellaneous municipal waste. It should be collected and eliminated separately, i.e. in containers specially marked with this symbol in large-dimension rubbish collection areas. Full information on where to submit the old machine safety can be obtained from local government authorities, the shop where you bought the machine or the manufacturer's representatives. The machine can't be disposed of by burning! If you decided to scrap the machine, make it impossible to use in order to prevent possible misadventure. Pull out the electric plug from the electricity supply socket and then cut off the cord. Do not dismantle the machine yourself. Pass it on to recycling companies.

## WARRANTY

The manufacturer guarantees the MACHINE and its equipment manufactured by the same manufacturer as being free of material and manufacturing defects for a period agreed and stipulated in the sales contract of the MACHINE.

### Parts excluded from warranty

The warranty excludes pieces that wear and ail consumable tools and materials possibly supplied by the manufacturer with the MACHINE

### Responsibility of the user

The client is responsible for: electrical system set-up; consumable tools and materials.

### Operations causing warranty invalidity

Any attempt to dismantle, modify or tamper with a MACHINE component by the user or by unauthorised staff leads to the warranty becoming invalid and removes the manufacturer from any responsibility regarding possible damage to persons or property deriving from such tampering.

The manufacturer is also removed from possible responsibility and the warranty is invalid for the MACHINE in the following cases:

- unplanned use of the machine use contrary to requisites in norms in force in the country of use;
- installing the MACHINE in conditions other than those specified in Chapter – Transportation and installation;
- connections non-conforming to specifications;
- use of work equipment other than those specified;
- total or partial non-compliance with the instruction reported in this handbook;
- no or incorrect maintenance;
- use of non-original parts or those not specified by the manufacturer.

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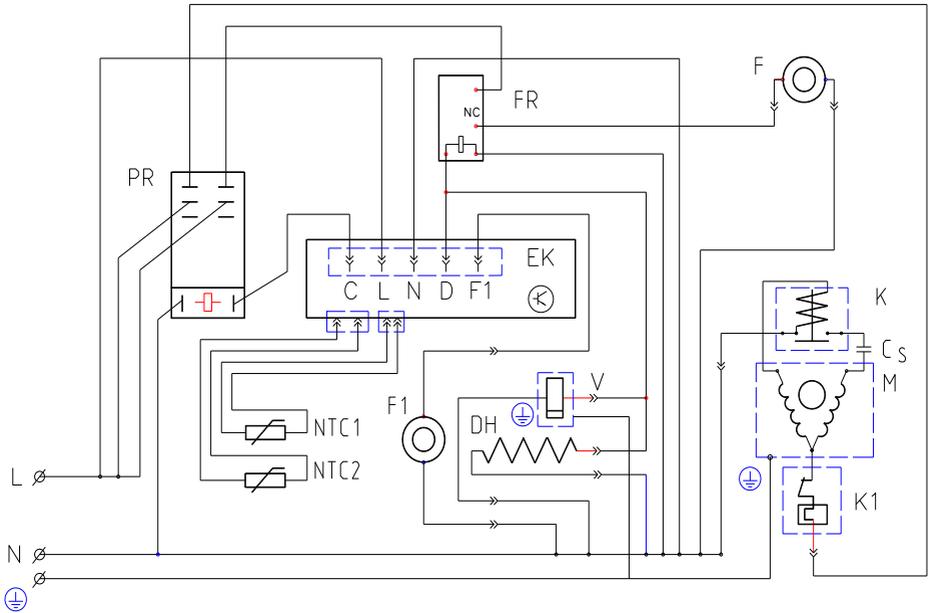
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## Principal circuit diagram

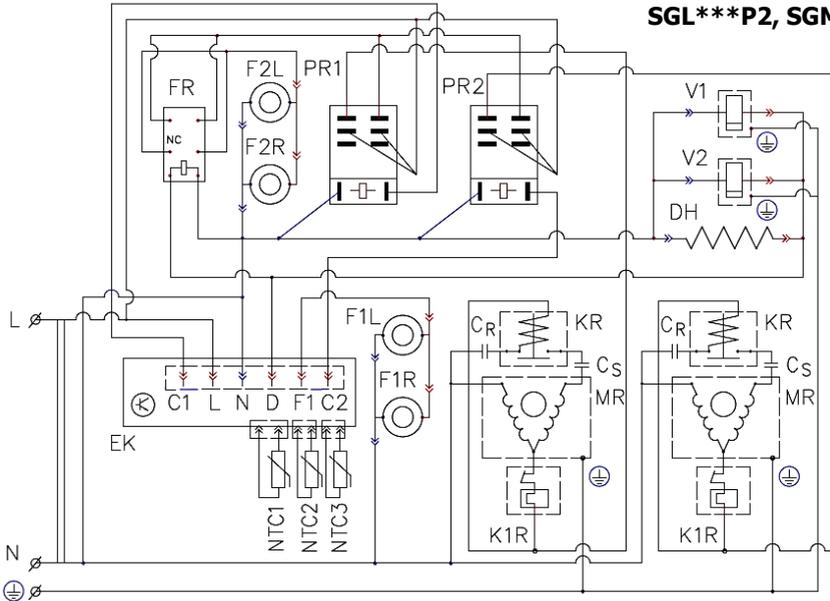
**SGL\*\*\*P1, SGM\*\*\*P1**



EK	Electronic controller
PR	Power relay
FR	Relay for kondenser fan
DH	Defrost heater
V	Valve
NTC1	Air temperature sensor (red marking)
NTC2	Evaporator defrost temperature sensor
F	Condenser fan
F1	Evaporator fan /
M	Compressor motor
K	Starting relay
K1	Overload relay
Cs	Start capacitor

## Principal circuit diagram

SGL\*\*\*P2, SGM\*\*\*P2



EK	Electronic controller
PR1	Power relay for left compressor
PR2	Power relay for right compressor
FR	Relay for kondenser fan
DH	Defrost heater
V1	Valve 1
V2	Valve 2
NTC1	Air temperature sensor
NTC2	Evaporator defrost temperature sensor
NTC3	Protector sensor
F1L	Evaporator fan left
F1R	Evaporator fan right
F2L	Condensaer fan left
F2R	Condensaer fan right
ML	Compressor motor left
KL	Starting device left motor
K1L	Overload protector left
CsL	Start capacitor left
CRL	Run capacitor left
MR	Compressor motor right
KR	Starting device right
K1R	Overload protector right
CsR	Start capacitor right
CRR	Run capacitor right

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