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THERMAL SOLAR LINE

INSTALLATION AND MAINTENANCE MANUAL

V. MI070700EN

AIR CONDITIONING UNIT

ROTARTICA SOLAR 045v

Installation and maintenance manual

Contents

Before proceeding to install the unit, please read the instructions in this installation and maintenance manual carefully.

If the unit is sold or transferred to another premises, always make sure it is accompanied by this installation and maintenance manual.

About this manual.

This guide provides the necessary information for the correct installation and subsequent maintenance of the **ROTARTICA SOLAR 045v** air conditioning unit.

Throughout the manual you will find boxes containing important warnings which must be followed at all times:

⚠ **WARNING**
The texts under the heading WARNING indicate risk of PERSONAL DAMAGE if the instructions in the text are not followed.

IMPORTANT
The texts under the heading IMPORTANT indicate risk of damage to the ROTARTICA unit if the recommendations in the text are not followed.

This Installation and Maintenance Manual also contains important information on the guarantee conditions.

At **ROTARTICA, S.A.** we are constantly developing our design, development and manufacturing techniques, and we therefore reserve the right to include modifications to both components and specifications without prior notice during production.

If you have any queries regarding the **ROTARTICA SOLAR 045v** unit or its accessories, guarantees, etc., please contact your authorised installer, who will be pleased to answer your questions.

Best regards,

ROTARTICA, S.A.

01/ GENERAL WARNINGS

- This unit must be installed by duly qualified personnel with specific technical competence in the air conditioning installation sector, authorised by **ROTARTICA S.A.**
- The installation must be carried out in accordance with the instructions given in this manual.
- This unit must only be used for the purpose for which it was expressly designed, i.e. for cooling and air conditioning applications in accordance with its conditions of functioning. Any other use will be considered inadequate and therefore dangerous.
- It is recommended to protect the unit from any inadequate use which could be dangerous (e.g. keep it away from children's play areas).
- The manufacturers are exempt from any contractual or non-contractual liability for damages arising from errors in solarisation and use, or from failure to observe the recommendations and instructions supplied by the manufacturer.
- After removing the unit packaging, ensure it is fully disposed of. Packaging elements such as plastic bags, expanded polyurethane, tacks, etc. must not be left within reach of children, as they could be dangerous.

02/ MOVING THE UNIT

⚠ WARNING
The unit must be suitably packaged before moving it.

The **ROTARTICA SOLAR 045v** is packaged on a pallet for ease of transportation.

- If the transportation is horizontal, the pallet should be picked up with a pallet truck or fork lift truck and taken to where it is to be installed.
- If the transportation is vertical and the unit needs to be lifted, slings are to be placed under the pallet so that the unit can be hoisted without difficulty.

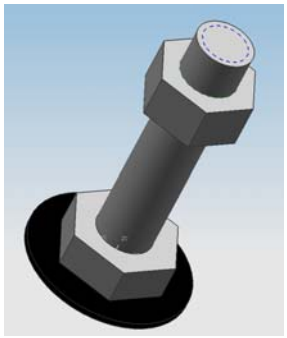
IMPORTANT
It is advisable not to unpack the unit until it is ready to be installed, to prevent any damage occurring to it.

IMPORTANT
Once the unit has been unpacked, no slings are to be used and it is not to be moved by pushing one of its sides, as its internal parts could be damaged.

03/ LOCATION

The **ROTARTICA SOLAR 045v** must be installed in an accessible place. If this is not possible, the chosen location must comply with the necessary conditions for transporting the unit with devices such as a hoist or fork lift truck.

- Stand the unit on a flat surface where there is no danger of rain water accumulating.
- The unit will be standing over the supplied rubber joints as it is shown in the following picture:



The different parts of the group are as follows:

1.- Hexagonal head screw, M14 L=60 DIN 933

2.- Hexagonal nut, M14 DIN 934

3.- Joint, Φ= 40mm y e = 1,5mm

- On installation, the unit must be levelled using adjustable feet.
- The place where the unit is to be installed must have the following elements for its correct connection:
    - An electrical socket.
    - A water intake, for filling the different circuits.
    - A drain outlet, for draining the different circuits.
    - If the chosen location is accessible to the public, it is compulsory to install a metal guard or other type of enclosure around it, to prevent direct access to the unit and installation.
- Unit repair measurements:
    - A distance of 800 mm must be kept clear around the unit, for access in case of any repairs or maintenance needing to be carried out.

04/ PREVIOUS RECOMMENDATIONS

Before the unit is started up, the following must be checked by qualified personnel:

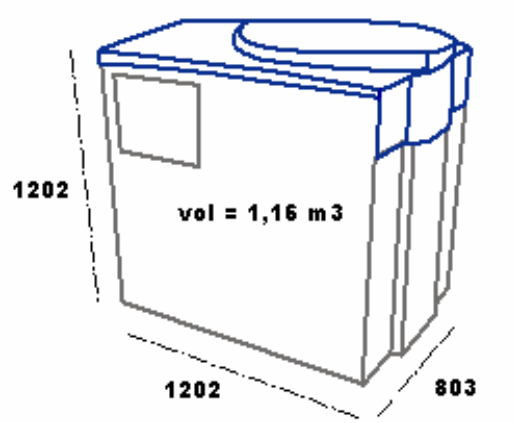
- The electrical supply data are the same as those figuring on the reference plate.
- The hot and cold water circuits are suitably air-tight.
- The unit is correctly connected to an efficient earth installation, as stipulated in the electrical safety regulations in force. The manufacturer is exempt from any liability for damage arising from failure to earth the installation.
- In case of breakdown and/or malfunctioning, the unit will stop, and an LED and an alarm code will indicate the anomaly. **DO NOT ATTEMPT TO REPAIR THE UNIT**.
- To guarantee efficiency of the repairs, and for the correct functioning of the unit, all repairs must be carried out by qualified personnel. The yearly maintenance indicated by the manufacturer should be carried out. Only original spares are to be used. Failure to comply with these rules will nullify the unit's guarantee.

05/ DESCRIPTION OF THE UNIT

An absorption chiller unit functions by means of a thermodynamic cycle which enables cooling to take place with no need for the compressor that normally exists in an air conditioning unit, thereby saving on electrical consumption.

The **ROTARTICA SOLAR 045v** unit is activated by hot water conveyed from thermal solar collectors, producing cold water which cools rooms by means of fan coils or a radiant floor or ceiling.

05.1/ External dimensions



05.2/ Parts of the unit

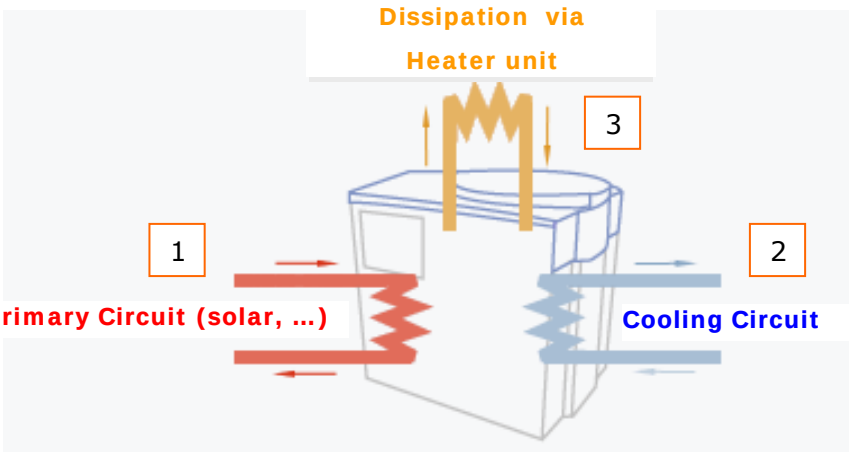
1.- Control panel
2.- Fan

1.- Right side cover
2.- Main exchanger
3.- Left side cover
4.- Emergency stop
5.- Water connections

IMPORTANT
Activating the emergency stop while the unit is running could cause irreversible damage to the appliance. Only use the emergency stop function in case of imminent danger.

05.3/ Hydraulic circuits

The **ROTARTICA SOLAR 045v** unit functions by means of three circuits, which are as follows:



1. Primary circuit: Feed circuit or solar circuit, from which the unit collects the energy it needs to function, in the form of heat.

2. Cooling circuit: Cold water circuit, which conveys the circulating water to the fan coils or radiant systems to cool the corresponding room.

3. Surplus hot water circuit: The surplus hot water remains inside the unit body to be dissipated via the heater unit.

06/ TECHNICAL CHARACTERISTICS

ROTARTICA		
PRODUCT SPECIFICATIONS		SOLAR Air/Water CHILLER
	Technology	SINGLE-EFFECT LiBr/H20 ABSORPTION
	Manufacturer	**ROTARTICA**
	Models	SOLAR 045v
Product Data	Company	ROTARTICA
	Product	Air/Water Chiller
	Nominal cooling power	4.5 kW
	Powered by	Heated water at 90ºC
	Absorbent/Refrigerant	LiBr/H2O
Cold Water Circuit	Capacity (kW)	4,50
	Flow (m3/h)	1,56
	Head Loss (bars)	0,52
Energy Supply Circuit	Heat provided to generator (kW) at 90º	7,20
	Flow (m3/h)	0,90
	Head Loss (bars)	0,36
Electricity Supply	Electricity consumption of Absorption Unit (kW)	1,11
Temperatures	Nominal inlet temperature to generator (ºC)	90
	Nominal chilling temperature (ºC)	12
Dimensions	Length (mm)	1202
	Width (mm)	803
	Height (mm)	1202
	Volume (m3)	1,16
	Weight (kg)	290
Nominal Conditions: **Energy Supply Circuit:** 90ºC and flow 15 l/min, **Chilled Water Circuit:** 12ºC and flow 26 l/min, **Return temperature of dissipation water Circuit:** 35ºC (dry dissipation) and flow 33l/min		
Installation Energy supply via solar panel + boiler (separate or joint). Water connections: Four 1" connections, external installation. Does not need to be fixed to floor.		

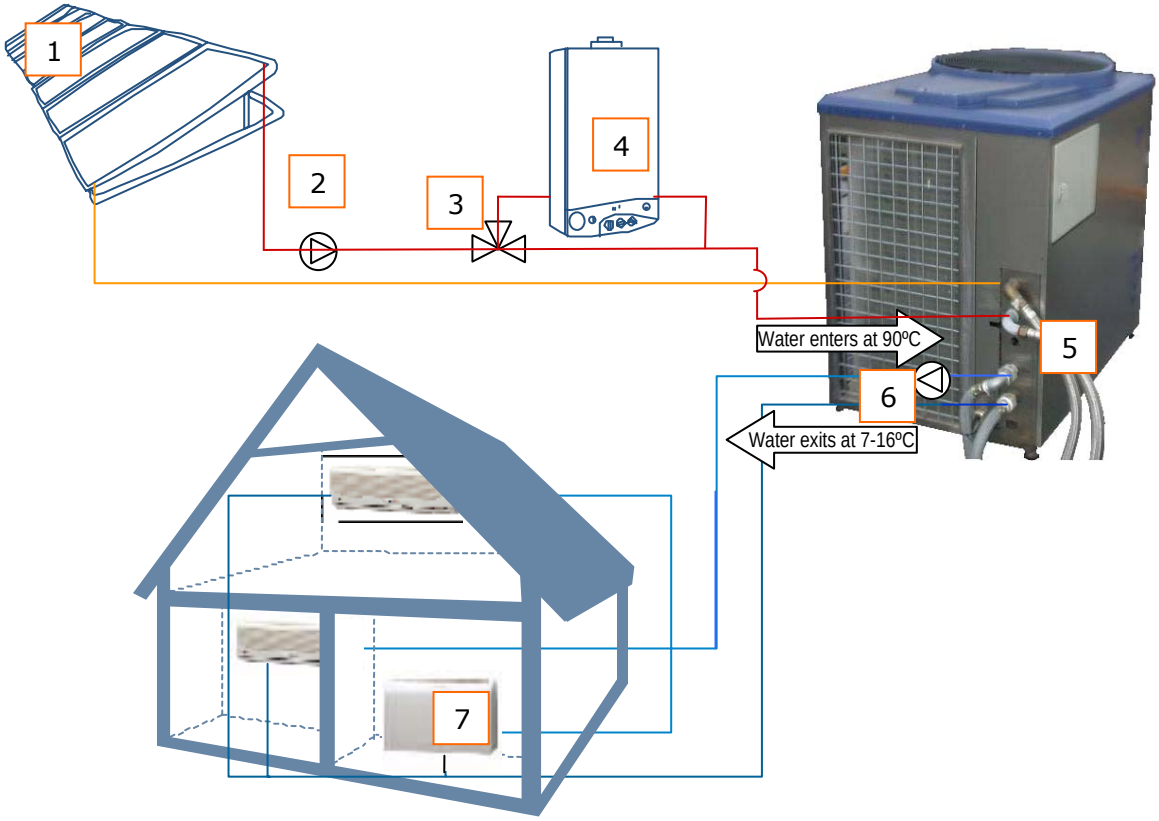
Note: There is not any standard for Absorption Units installed without cooling tower, therefore nominal conditions for ROTARTICA 045v are stated in the previous Technical Characteristics table.

07/ GENERAL FUNCTIONING OF THE UNIT

The unit receives hot water at a temperature of 90ºC from thermal solar collectors (1). The installation includes a support boiler (4), which heats up the water to the required temperature when heating from the sun is insufficient.

Inside the unit, the hot water is transformed into cold water by the thermodynamic absorption process. An amount of residual hot water is also produced and this is dissipated via the heater unit.

The cold water can be distributed throughout the room to be cooled via a radiant floor or ceiling, or through fan coils (7) of any kind, which convert this cold water into air conditioning via their heat exchangers.



1) Thermal solar collectors: These may be flat-plate or vacuum type, the latter type being more efficient. Collectors with an acceptable efficiency up to 90ºC should be used.

2) Primary circuit circulation pump: This pumps the water that is heated up in the collectors, conveying it to the **ROTARTICA SOLAR 045v** unit, where it is treated and turned into cold water in one circuit and hot water in the other.

3) 3-way valves: These, control the water flows and their destinations. The number of valves varies depending on the type of installation.

4) Support boiler: This boiler begins to function when the sun is not sufficient to heat the water up to 90ºC. In this way the necessary energy is provided to reach the unit's optimum functioning point.

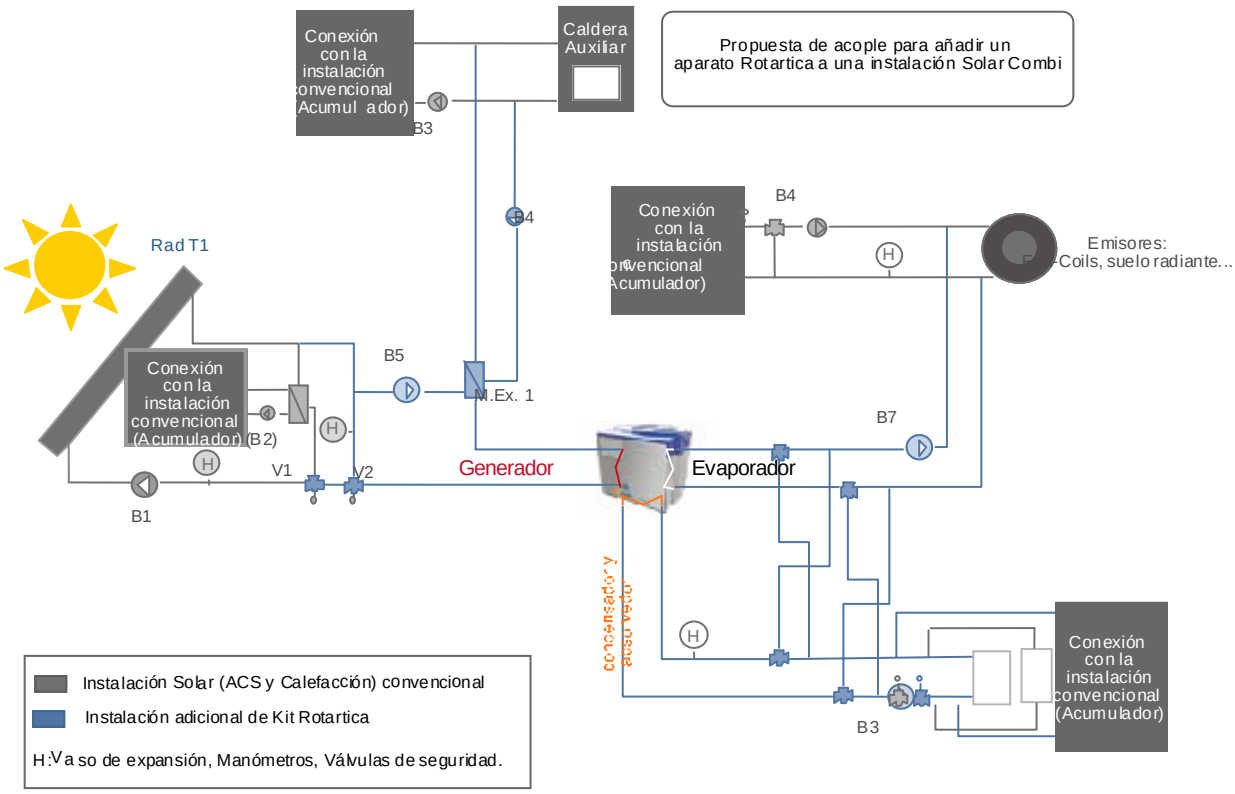
5) Rotartica Solar 045v unit

6) Cold water circuit circulation pump: This pumps the water.

7) Final transmitters (fan coils, radiant floor or ceiling): These provide user comfort via air transmitted by fan coils or by radiating the temperatures required by the user via radiant floors or ceilings.

07.1.1/ Diagram of the complete installation

There are numerous possibilities for installing the **ROTARTICA SOLAR 045v** unit within an already-existing solar installation, or without any previous installation. The proposal shown below is a possible example.



Proposed connection for adding a ROTARTICA unit to a combined solar installation

08/ INSTALLATION.

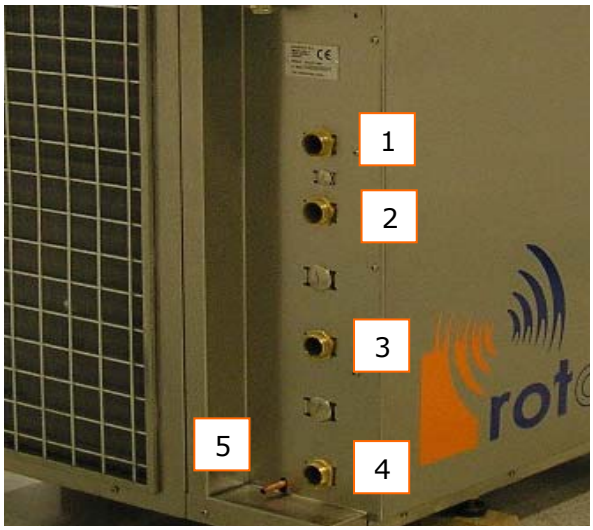
08.1/ Hydraulic installation.

- The following MUST BE FITTED in the hot water circuit (used as an energy source):
  - A hydraulic safety valve calibrated to 3 bar.
  - A shut-off valve, as close as possible to the unit, to cut off its water supply.

- It is also a good idea to fit shut-off taps in the hot and cold water circuits to isolate the installation of the circuits with the unit. These taps are to be placed as close as possible to the unit.
- It is recommended to fit a pressure reducer at 3 bars to the main water inlet through which the circuits are to be filled.
- Drain valves are to be fitted in the hot and cold water circuits, to facilitate any future repairs that may be needed.
- It is recommendable to fit an automatic filling device with 2 bar pressure regulation in the primary (solar) circuit.
- It is recommendable to fit an automatic filling device with 1.5 bar pressure regulation in the cooling circuit.

08.1.1/ Water connections for the unit

The unit includes 4 connectors BSP of 1", for connection to the installation's hydraulic circuit. The installation pipes' minimum internal diameter must be 20mm.



1.- Feed of hot water for the solar circuit (Sun Out)

2.- Return of hot water for the solar circuit (Sun In)

3.- Return of water for the cooling circuit (Cool In)

4.- Feed of water for the cooling circuit (Cool In)

5.- Over pressure circuit drainage tube

- 2 connectors for connection to the hot water circuit, used as an energy source.
- 2 connectors for connection to the cold water circuit pipes. This circuit is connected to the fan coils used for cooling the premises to be air-conditioned.

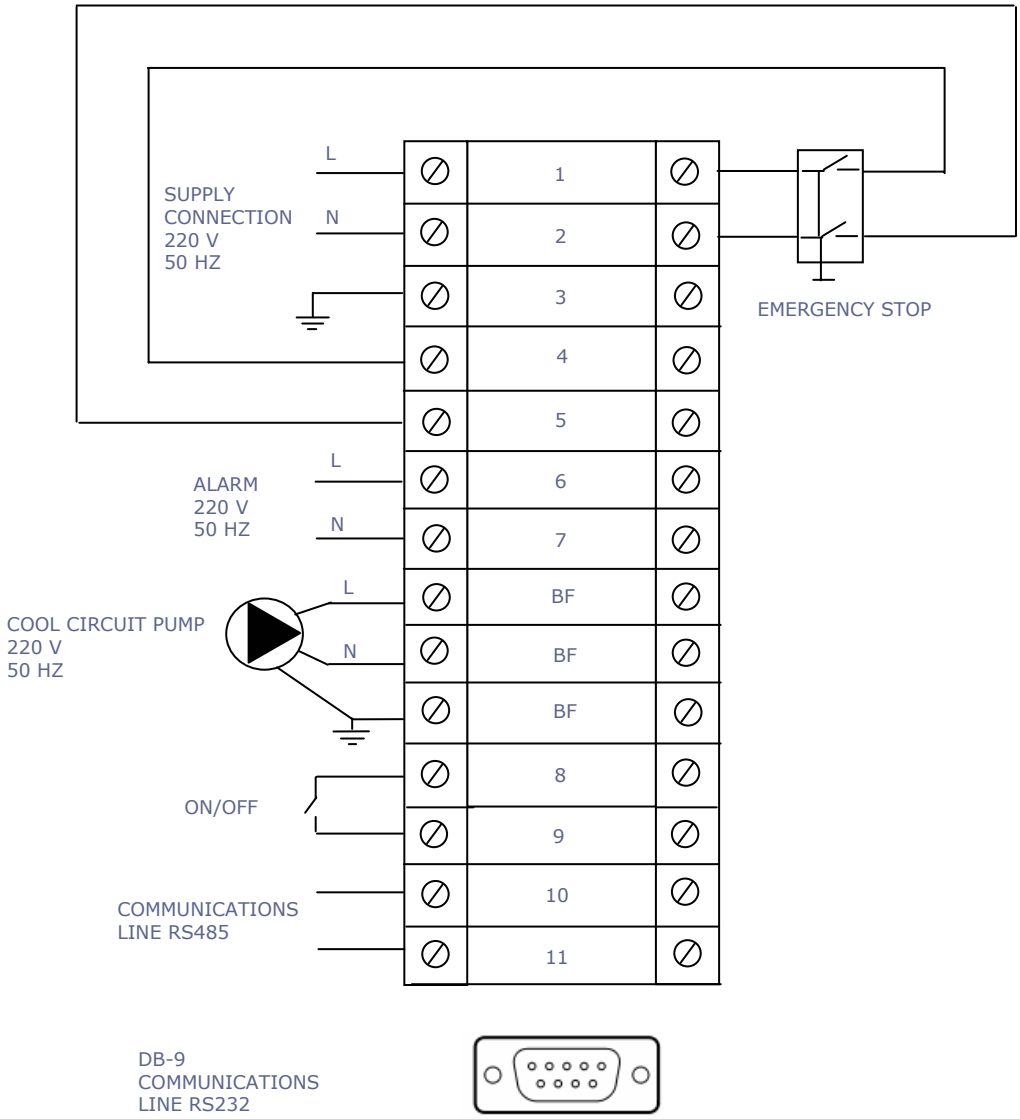
IMPORTANT
A water filter should be placed at the inlet to each circuit of the unit.

08.2/ Electrical installation.

It is important to ensure that the electrical installation is equipped with an efficient earth connection.

A 10-amp magnetothermic must be fitted in the electrical installation to protect the electrical circuit and the motor.

For the **ROTARTICA SOLAR 045v** unit to function, a thermostat must be placed in the room to be cooled. This thermostat has to be connected to the unit's terminal box.



NUMBER CODE

1, 2 and 3: Supply connection (phase, neutral and earth).

6 and 7: OPTIONAL, for connecting an alarm.

BF1, BF2 and BF3: Connection for Cool circuit pump.

8 and 9: Connection of thermostat for the home (to indicate whether or not there is demand in the place to be cooled).

10 and 11: Communications line 485.

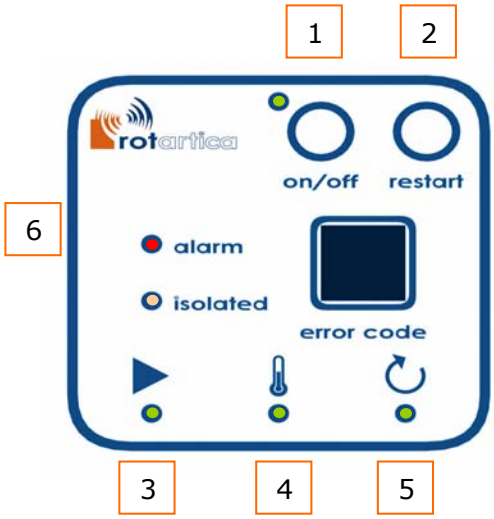
Delta connector: Communications line 232.

09/ START-UP

Connect the unit to the mains at 220-230V 50Hz.

09.1/ CONTROL PANEL

The panel control is located on the front panel of the unit and is the main communication channel between the installer or final user and the appliance or main unit. The figure below shows its configuration:



1 On/off membrane button.

2 Restart membrane button. Allows de unit to be started up again when an alarm situation has been detected (the alarm led has come on).

3 Flow indicator ▶. When the LED is on (green), this indicates that the flow in the three circuits - supply (solar), cooling and residual hot water – is within the ranges established for starting up the generator unit.

If this light is flashing, it means that the anti-frost system has been started up to prevent the circuits controlling the unit from freezing.

4 Temperature indicator . When the LED is on (green), this indicates that the water being received by the generator is at a sufficient temperature (over 80ºC) and does not exceed the maximum safety temperature (130ºC).

5 Rotation indicator . . When the flow and temperature settings are correct and there is user demand (i.e. the room needs to be cooled), the generator unit can begin to turn. When the green light comes on, this confirms the generator unit is turning.

6 Alarm LED. When the alarm LED lights up (red), this indicates that the electronic control has detected operating trouble or that an external or internal variable of the unit is temporarily preventing it from functioning normally. If this happens, it must be restarted manually using the release button.

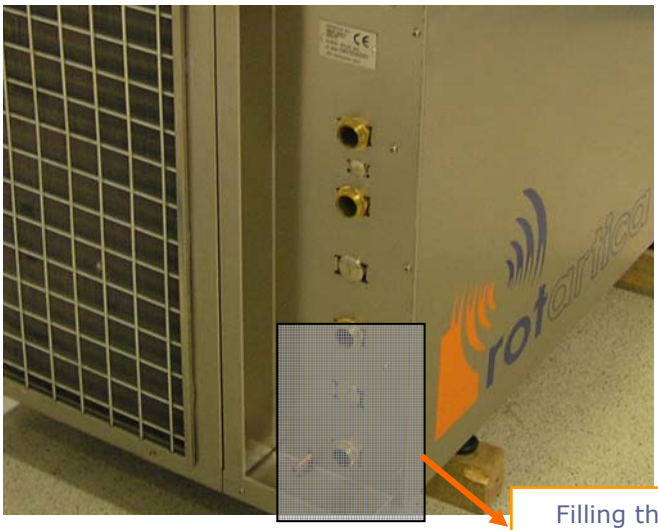
09.2/ Filling the circuits

IMPORTANT: Before starting up the **ROTARTICA SOLAR 045v** unit, the unit's internal circuits are to be filled, together with the rest of the water circuits.

To view the internal circuit filling pressure, remove the left side panel so that the pressure manometers are visible.

- The pressure indicated on the manometers must be between 1.5 and 2 bar (pressure with cold filling water).
- Check the cold and hot water circuits are suitably air-tight.

If the cold water and residual hot water circuits need to be filled, the water head must be connected via the cold water circuit hydraulic connection.

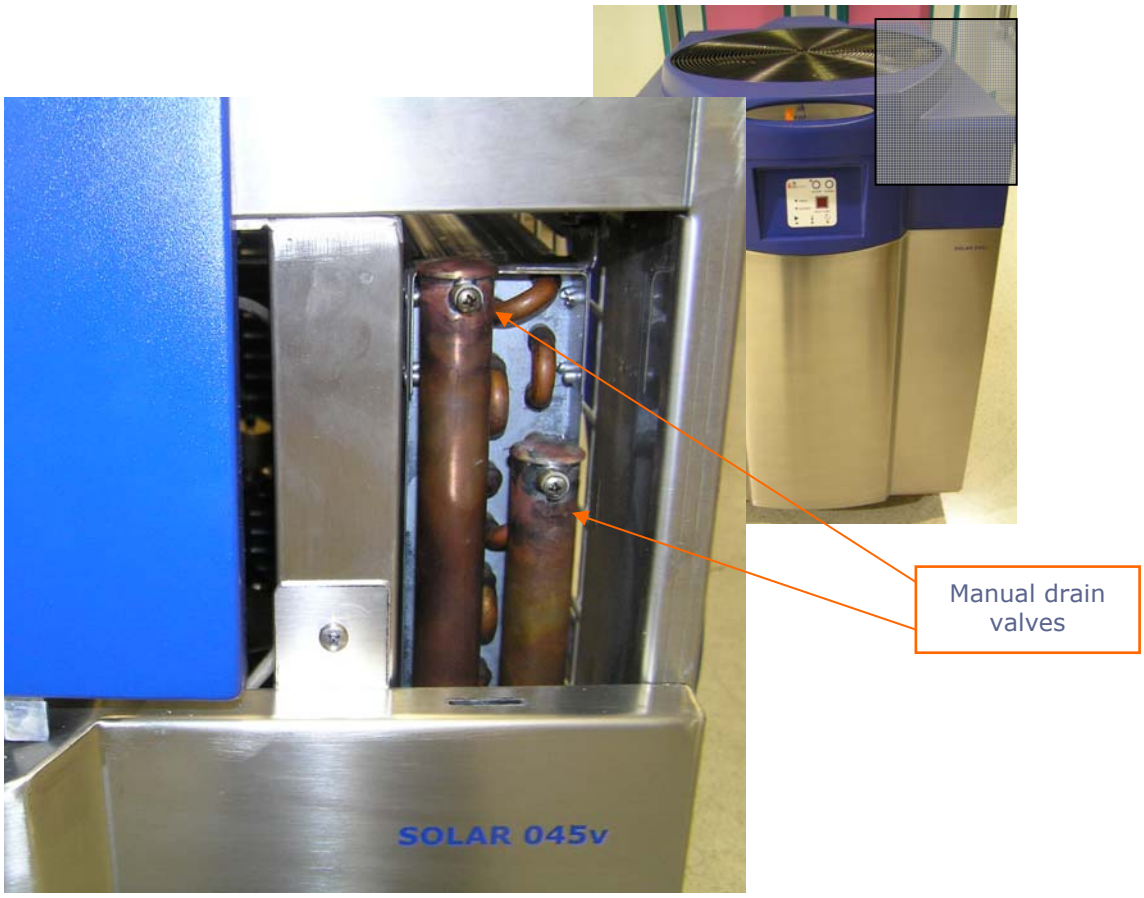


The circuits must be filled until the manometers show a pressure of 1.5 bars.

09.3/ Draining the circuits

The unit has three automatic drain valves. There are also manual drain valves in the outer heat exchanger. To access these, two panels must be removed: the upper panel and the panel housing the control panel.

Correctly drain the 3 circuits. To do this, the pumps must be turned on and off repeatedly, so that the air in the pipes is drained off to the outside.



When the unit is started up, or when it is filled again (after it has been out of use for a long time and the circuits have been drained, for example), the air must be removed from the circuits by means of the manual drain valves. To activate these drain valves, gently turn the screw anti-clockwise and wait for all the air to come out before tightening it again.

IMPORTANT
NEVER remove the manual drain valve screw.

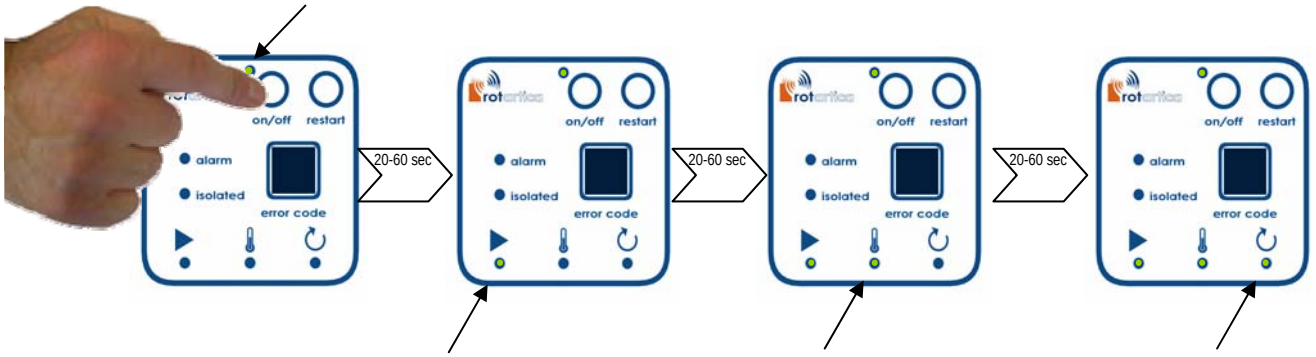
09.4/ Starting up the unit

When the unit has been installed and correctly connected, press the On/off button. The unit will start up automatically, providing the following conditions are fulfilled:

1. There is user demand for cooling (via the thermostat of the room to be cooled, for example).
2. The flow in the circuits is correct (>10l/min in the solar circuit; >20l/min in the cold water circuit; >25l/min in the hot water circuit).
3. The temperature at which the water is reaching the unit generator (solar circuit) is higher than 80ºC.

When the On button is pressed, the control card needs approximately two minutes to perform this check of the demand, flow and temperature. If all the parameters are correct, these two minutes will be the unit's start-up time.

The following figure shows the start-up sequence in normal conditions:



IMPORTANT
For the unit to function correctly, apart from following the instructions given here all the necessary mechanisms for the correct functioning of the whole installation must also be started up.

010/ STOPPING THE UNIT

The unit will stop functioning (i.e. it will switch off) when:

- There is no user demand for cooling.
- The unit is turned off using the On/Off button.

In these two cases the unit will perform a 20-minute stopping cycle.

If one or more of the settings indicated on the control panel (flow, temperature, rotation) are not fulfilled:

- If there is no rotation, alarm nº 20 will be shown on the error code display and the unit stops.
- If one of the minimum flows is lost (flow indicator led off), the system will be isolated (led isolated lights up) and the generator unit will remain turning waiting for the suitable flow.
- If the flow in the three circuits is correct but the temperature in the solar circuit is not sufficient (less than 80ºC), the generator unit will remain turning waiting for the suitable temperature.

If no hot water is reaching the unit due to a problem in the hydraulic heat supply circuit, it will not cool but instead remain on rotation, waiting for hot water to reach it.

011/ BLOCKING/UNBLOCKING THE UNIT

011.1.1/ Blocking

If the red **"alarm"** LED lights up, this means the unit's electronic control has detected functioning problems and/or a breakdown.

The electronic control sends an alarm signal to the control panel and this alarm is also shown on the error code display on the control panel, as described in **Section 14, Functioning anomalies.** At the same time, the red pilot light on the external control panel (alarm LED) will come on and the unit will block.

011.1.2/ Unblocking

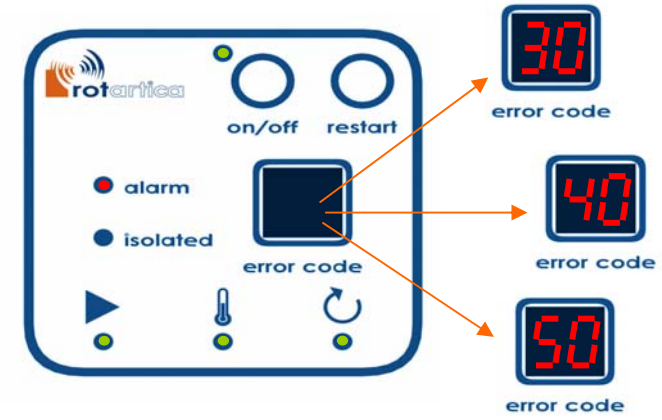
There is a **restart** button for unblocking the unit on the control panel.

If the user notes that the alarm LED has come on, this could either be a temporary alarm due to a passing failure of the unit, or it could be external, i.e. in another part of the installation. In this case, the user can unblock the unit by pressing the restart button. When the release button is pressed to restart the system, the unit should begin functioning again.

If the alarm repeats, this means the anomaly has not been rectified. The breakdown must be repaired by a qualified installer so is necessary to contact the Technical Assistance Service.

IMPORTANT
DO NOT ATTEMPT TO RESTART THE UNIT AGAIN.

If alarms 30, 40 or 50 appear on the "error code" display, the control panel will show the following configuration:



In this case, the unit will run a stopping cycle of 20 minutes' duration. During this time the restart button will not work.

IMPORTANT
When the unit blocks, you must wait 20 minutes before unblocking it again with the restart function. During these 20 minutes the restart button will not be functional.

012/ MAINTENANCE

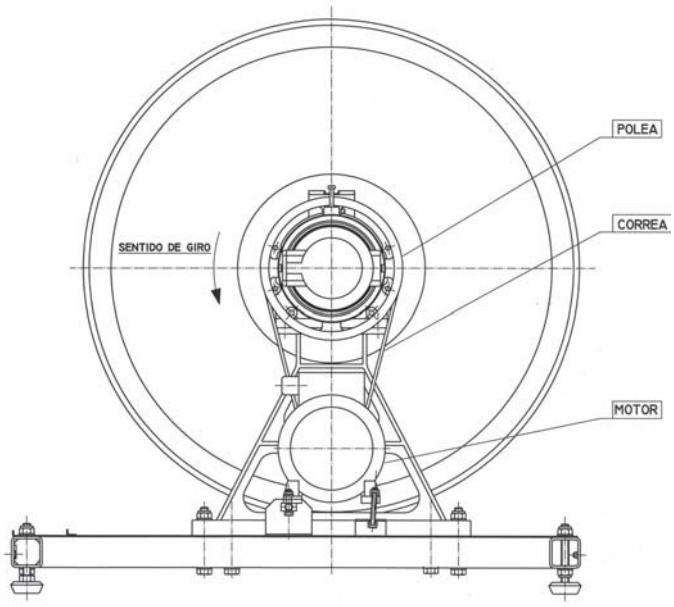
Yearly maintenance should be carried out on the unit. This maintenance should be performed by the **ROTARTICA S.A.** Technical Assistance Service or a qualified installer.

The adjustment, maintenance, repair and upkeep operations for the unit must be done with the unit switched off and disconnected from the mains. All the hydraulic circuit taps must also be turned off.

If any of the pipes of the hydraulic installation circuits need to be disconnected to carry out a maintenance operation, they must be connected again as indicated in point 07.1.1 of this installation manual.

IMPORTANT:

If the unit's rotation mechanism needs to be disassembled for any reason, on mounting it again remember that its turning direction must always be as indicated in the figure below.



013/ FROST PRECAUTIONS

The main unit has anti-frost protection. For this safety device to work, the unit must not be disconnected from the mains.

When the exterior temperature is under 5ºC, the hot and cold water circuit pumps will start up until the exterior temperature reaches 9ºC or more.

When the LED ▶ is flashing, this means the anti-frost system has been activated, i.e. the pumps are functioning.

IMPORTANT
It is the installer's responsibility to protect the solar circuit against frost.

Note: If the unit is to be out of use for a long time, it is recommended to drain the cold water and hot water circuits via the drain valves of these circuits.

014/ EMERGENCY WARNINGS

If the user notes that the alarm LED on the control panel has come on, the restart membrane button should be pressed to start up the unit again (**remember the unblocking only works 20 minutes after the alarm 30, 40 or 50 warning has appeared**). If the attempt fails and

the alarm comes on again, this is a clear sign that the TAS needs to be called to solve the problem detected by the unit's electronic control.

> **⚠ WARNING**
>
> USERS MUST NEVER ATTEMPT TO SOLVE ANY PROBLEM WITH THE UNIT THEMSELVES.

014.1/ Electrical installation

The unit is equipped with an emergency switch which is normally turned to **ON**, and which allows the mains electricity supply to the unit to be cut off.

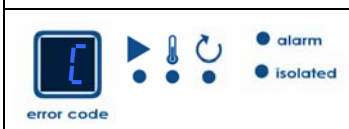
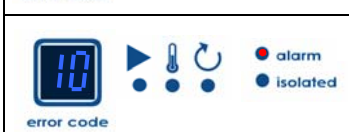
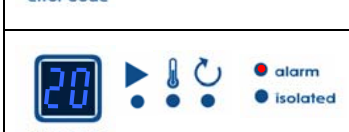
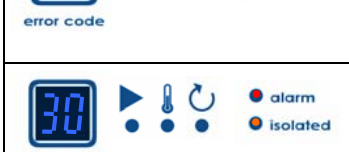
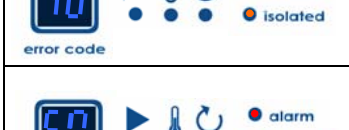
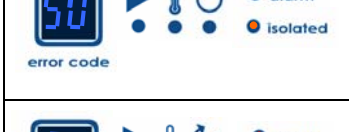
This switch must only be turned to **OFF** when an emergency occurs. If it is turned off when the unit is functioning it may cause an anomaly or breakdown inside the unit which and the Technical Assistance Service will need to be called to rectify it.

014.2/ Hydraulic installation

The installation is equipped with shut-off valves in the two water circuits, which must always be closed if an emergency occurs in any part of the hydraulic installation.

015/ FUNCTIONING ANOMALIES

Código	Descripción	Causa	Solución
	The unit pumps are functioning (LED flashing), the rotation motor has stopped and there is not a suitable temperature in the solar circuit.	The On button is turned to OFF or there is no demand, but the ANTI-FROST system has been activated.	THIS IS PART OF NORMAL FUNCTIONING.
	The flow, the solar circuit temperature and the unit rotation are all OK.	THE UNIT IS FUNCTIONING CORRECTLY.	
	The flow in the three circuits is OK, the solar circuit temperature is sufficient and the generator unit is turning, but the unit is isolated.	The unit is close to crystallisation point.	NO ACTION. THE UNIT RECOVERS BY ITSELF. IT WILL CONTINUE COOLING
	The flow in the three circuits is OK, the temperature in the solar circuit is sufficient and the generator unit is turning, but the unit is isolated.	The temperature in the cold water circuit is under 7ºC.	NO ACTION. THE UNIT RECOVERS BY ITSELF. IT WILL CONTINUE COOLING
	The flow in the three circuits is OK, the temperature in the solar circuit is sufficient and the generator unit is turning, but the unit is isolated.	The temperature in the residual hot water circuit exceeds 55ºC.	NO ACTION. THE UNIT RECOVERS BY ITSELF. IT WILL CONTINUE COOLING

	The flow in the three circuits is OK, the temperature in the solar circuit is sufficient and the generator unit is turning, but the unit is isolated.	The temperature in the supply (solar) circuit exceeds 105ºC.	NO ACTION. THE UNIT RECOVERS BY ITSELF. IT WILL CONTINUE COOLING
	Only the letter “C” appears on the display.	The communication has been lost between the control and the control panel.	Press “restart”. If the alarm persists, call the TAS.
	Only letters “CC” appear on the display.	The communication has been lost between the control and the control panel.(but the communication is recovered).	Press “restart”. If the alarm persists, call the TAS.
	The pumps and the rotation motor have stopped and the red alarm LED has come on.	Vibration alarm.	Press “restart”. If the alarm persists, call the TAS.
	The rotation motor has stopped but the pumps are functioning. The red alarm LED has come on and the green LED for the pumps is flashing.	Vibration alarm, and the exterior temperature is under 5ºC, meaning the ANTI-FROST system is activated.	Press “restart”. If the alarm persists, call the TAS.
	The pumps and the rotation motor have stopped and the red alarm LED has come on.	The generator unit cannot turn (the belt is broken or displaced or the rotation motor has overheated).	Press “restart”. If the alarm persists, call the TAS.
	The rotation motor has stopped but the pumps are functioning. The red alarm LED has come on and the green LED for the pumps is flashing.	The generator unit cannot turn and the exterior temperature is under 5ºC meaning the ANTI-FROST system is activated.	Press “restart”. If the alarm persists, call the TAS.
	The circulation pumps have stopped, the rotation motor has stopped and the unit is isolated.	SUBCOOLING alarm.	The “RESTART” button will not be functional during 20 minutes.
	The circulation pumps are functioning, the rotation motor has stopped and the unit is isolated.	SUBCOOLING alarm and the exterior temperature is under 5ºC, meaning the ANTI-FROST system is activated.	The “RESTART” button will not be functional during 20 minutes.
	The circulation pumps have stopped, the rotation motor has stopped and the unit is isolated.	OVERHAETING alarm.	The “RESTART” button will not be functional during 20 minutes.
	The circulation pumps have stopped, the rotation motor has stopped and the unit is isolated.	SOLAR OVERHEATING alarm.	The “RESTART” button will not be functional during 20 minutes.
	The circulation pumps have stopped, the rotation motor has stopped and the unit is not isolated.	Chill out PT100 probe out of range.	Press “restart”. If the alarm persists, call the TAS.
	The circulation pumps have stopped, the rotation motor has stopped and the unit is not isolated.	Cool in PT100 probe out of range.	Press “restart”. If the alarm persists, call the TAS.
	The circulation pumps have stopped, the rotation motor has stopped and the unit is not isolated.	Hot out PT100 probe out of range.	Press “restart”. If the alarm persists, call the TAS.

	The circulation pumps have stopped, the rotation motor has stopped and the unit is not isolated.	Warm in PT100 probe out of range.	Press “restart”. If the alarm persists, call the TAS.
	The circulation pumps have stopped, the rotation motor has stopped and the unit is not isolated.	Sun in PT100 probe out of range.	Press “restart”. If the alarm persists, call the TAS.
	The circulation pumps have stopped, the rotation motor has stopped and the unit is not isolated.	Sun out PT100 probe out of range.	Press “restart”. If the alarm persists, call the TAS.
	The circulation pumps have stopped, the rotation motor has stopped and the unit is not isolated.	Avería en los circuitos de referencia para medida del SPAN de las sondas PT100.	Press “restart”. If the alarm persists, call the TAS.
	The circulation pumps have stopped, the rotation motor has stopped and the unit is not isolated.	Avería en los circuitos de referencia para medida del CERO de las sondas PT100.	Press “restart”. If the alarm persists, call the TAS.
	The circulation pumps have stopped, the rotation motor has stopped and the unit is not isolated.	Vibration sensor signal broken.	Press “restart”. If the alarm persists, call the TAS.
	The circulation pumps have stopped, the rotation motor has stopped and the unit is not isolated.	FAULT signal alarm.	Press “restart”. If the alarm persists, call the TAS.
	The circulation pumps have stopped, the rotation motor has stopped and the unit is not isolated.	NTC5 probe out of range.	Press “restart”. If the alarm persists, call the TAS.

Note: In summer, water may appear on the unit due to condensation.

ROTARTICA, S.A.
Avda Cervantes, 45
48970 BASAURI
(Bizkaia) SPAIN
Tel: 902 995 922
Mail: rotartica@rotartica.com