




**IMPORTANT:** The manual you are reading contains fundamental information regarding the safety measures to be adopted when installing and starting up. It is therefore of utmost importance that both the installer and the user read the instructions before assembling and starting up.

## 1. GENERAL SAFETY INSTRUCTIONS

These symbols (    ) represent the possibility of danger as a result of not following the corresponding instructions.



**DANGER. Electrocution risk.**

Non-compliance with this instruction involves a risk of electrocution.



**DANGER.**

Non-compliance with this instruction involves a risk of danger to people or things.



**ATTENTION.**

Non-compliance with this instruction involves a risk of damaging the pump or the unit.



## 2. GENERAL SAFETY RULES

### GENERAL OBSERVATIONS



- The machines mentioned in this manual are especially designed to carry out the pre-filtration and the circulation of water in swimming pools.
- They are designed to work with clean water at a temperature that does not exceed 35°C.
- Installation should be carried out in accordance with the specific indications for each step.
- The regulations in force for the prevention of accidents should be heeded.
- Any modification that may be made to the pump requires the previous authorisation of the manufacturer. The original manufacturer-authorized spares and accessories guarantee greater safety. The pump manufacturer is exempt from all responsibility for damage caused by the use of unauthorized spares or accessories.




- During operation the electrical parts of the pump are live. Work can only be carried out on each machine or on connected-equipment after having disconnected them from the electrical supply network and having disconnected the starting mechanisms.
- The user must make sure that assembly and maintenance work is carried out by qualified and authorised people who have previously carefully read the installation and service instructions.
- The operating safety of the machine is only guaranteed with the compliance and respect for that mentioned in the installation and service instructions.
- The value limits stated in the table of technical specifications must under no circumstances be exceeded.
- In the case of defective operation or breakdown, address to your supplier or to his nearest agent.

## **INSTALLATION AND ASSEMBLY WORK WARNINGS**





- While connecting electrical cables to the machine's motor, take care of the mechanism inside the connection box, check that no pieces of cable remain inside after closure and that the earth contact is correctly connected. Connect the motor using the electrical diagram attached to the machine.
  - Check that the electrical cable connections to the machine's terminal box are well set and firmly attached to the connection terminals.
  - The pump electrical installation should have a differential the value of which is not greater than 30mA.
  - Check that the terminal box joint is used correctly, thus preventing water from entering the terminal box of the electric motor. Likewise, check that the packing gland has been placed and pressed correctly inside the joint.
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- Special attention should be paid to ensure that under no circumstances water gets into the motor and the electric voltage parts.
  - Should the envisages use not be different from that mentioned, adaptations and supplementary technical regulations may be necessary in case the envisage use would be different.

### **STARTING-UP WARNINGS**





Before starting the machine up, check the calibration of electric motor protection mechanisms and that the protectors against electrical and mechanical contacts are correctly positioned and fastened.

**NOTE:** Use of the bathing facilities is not recommended while the pump equipment is in operation.  
The pump should not be used when people are in contact with the water.

#### **ASSEMBLY AND MAINTENANCE WORK WARNINGS**



- National installation regulations should be taken into account when assembling and installing the pumps.
- Special attention should be paid to ensure that under no circumstances water gets into the motor and the electric voltage parts.
- Any contact, even accidental, with the machine's moving parts should be avoided while the machine is operating and/or before it completely stops.
- Wait until the machine has completely stopped in order to carry out any work on it.
- Before undertaking any electrical or mechanical maintenance make sure that the

machine has been disconnected from the supply network and starting-up mechanisms are blocked.

- Before working on the machine it is advisable to follow the steps below:
  1. Cut the machine voltage.
  2. Block the starting-up mechanisms.
  3. Check that there is no voltage in the circuits, including the auxiliaries and supplementary services.
  4. Wait until the wheel has stopped completely.

The mentioned list should be considered indicative and not binding, since there may be specific safety rules within specific safety procedures.



- Periodically control:
  - The mechanical parts are firmly secured and the machine support screws are in good condition.
  - Correct positioning and fixing and the condition of the leading-in wires and isolation components.
  - Machine and electric motor temperature. In case of irregularity, stop the machine immediately and proceed with its repair.
  - Machine shake. In case of irregularity, stop the machine immediately and

proceed with its repair.



Because of the complexity of cases dealt with, the installation, use and maintenance instructions in this manual do not intend to examine and deal with all possible service and maintenance situations. If supplementary instructions are necessary or if specific problems arise, do not hesitate to contact the machine distributor or the manufacturer.

### 3. INSTALLATION AND ASSEMBLY

#### GENERAL



- Assembly and installation of our pumps is only permitted in swimming pools or tanks complying with regulation HD 384.7.702. In case of doubt please consult a specialist.
- The pumps come with a pre-filter with an interior basket to collect large particles since these may damage the interior hydraulic part of the pump. This pre-filter means that the pump assembly must be done in a horizontal position.
- All pumps come with a two-drill foot to allow for them to be fixed in the floor by means of an anchor. (Fig. 1).



## TUBING



- The tubing connection must be done stuck to the connecting pipe that is supplied along with the pump; joints from the connecting pipes with the suction and impulsion nozzles are of a screw-thread type and come with sealing joints to avoid water loss. (Fig. 2).
- Impulsion tube installation is done totally perpendicularly and is well-centred with respect to the nozzle to be connected so as to avoid external pressure being exerted on the pump and the tube. Apart from making assembly more difficult, this pressure could even break them (Fig. 2).
- Suction tube installation is done at a slight angle of 2 % towards the pump, thus avoided siphon formation. (Fig.2).
- For the pump's good working, you must prime the pump pre-filter until water dips into the suction tube (Fig.3).

## POSITIONING



- The pumps are of a self-suction type even though assembly below the swimming pool or tank water level is advised to improve performance.





- Should it be necessary to install the pump above the water level, the difference in height should not be more than 2 metres (see Fig. 4). Ensure that the suction tube is as short as possible since a long tube increases suction time and facility load loss.
- It should be ensured that the pump is free from possible flooding and it is given dry ventilation.

## ELECTRICAL UNIT



- The electrical unit should have a multiple separation system with contact opening of at least 3 mm.
- Connection to the mains can only be done using a rigid cable. In the event that a flexible cable is used this should have terminals to connect it to the pump motor terminals.
- A heat protector is incorporated into single-phase pumps. In these, switch installation is sufficient as in the “Network connection” diagram.
- In the three-phase motor a motor guard with heat-magnetic protection needs to be used.
- A protection differential of 0.03 A is needed for any pump in order to protect from electrical escapes (shown in diagrams).

- The heat relay regulation data for the single-phase motor are merely illustrative since the motor comes with an incorporated protector.

### HEAT PROTECTOR TABLE

		P2			
Mod.	Pump Code	HP	kW	V.	Intensity relay regulation (A)
1	Powerstorm 500	0,5	0,409	240	3,24
2	Powerstorm 750	0,75	0,556	240	4,20
3	Powerstorm 1000	1	0,625	240	5,04
4	Powerstorm 1500	1.25	0,820	240	6,48



- For 240 V single-phase pumps use a H07 RN-F3 1.5 mm-type connection hose.
- Before connecting the motor, check the necessary fuse type.
- Check the correct arrangement and connection of the earth wire in the equipment installation.
- It is very important to keep to the installation and electrical connection conditions. Should they not be heeded, the pump manufacturer does not accept any responsibility and considers the guarantee void.
- Special installation regulations may exist.
- The main cable can only be connected by qualified and authorised personnel.
- Incorrect mains connection could result in death.

## 4. START-UP INSTRUCTIONS

### QUESTIONS PRIOR TO START-UP



- Before starting up the pump, carry out the following operations:
  1. Take off the pre-filter cover, unscrewing the nut that holds it (See Fig.5).
  2. Fill the pump with water through the pre-filter until it dips into the suction tube.
  3. If, during these operations the basket should have been taken out, do not



forget to replace it inside the pre-filter so as to prevent large particles from entering the inside of the pump and thus blocking it

4. Check that voltage and network power correspond to those indicated on the pump specification board.



- Put the cover on the pre-filter and screw it closed, without forgetting to place the joint in its housing. ( Fig.5)
- Under no circumstances should pumps work without previously having filled the pre-filter with water. If this is not done, the mechanical joint could be damaged thus producing water loss through this.
- Check that the pump axle turns freely.

#### **START-UP**



- Open all valves and connect the motor.
- Wait a suitable time for tubing auto-priming to take place.

### **5. MAINTENANCE**





- Clean the pre-filter basket regularly in order to avoid drops in pressure. In order to avoid possible basket breakage it is recommended not to knock it during the cleaning process.
- If the pump stops, check that the motor amp consumption during his working is the same or less than that indicated on the manufacturer's specification board, or failing him, contact the nearest Customer Technical Service.



- If the amp rate is higher, consult the manufacturer.
- Empty the pump in cases where it must remain without use for some time, mainly in cold countries where there may be danger of freezing.
- To empty the pump, take off the draining plug 10.
- Each time the pre-filter is opened, clean impurities from the joint seating and the joint itself, to ensure sealing on closure of the cover. (Fig.5).
- The pump components that by their usual work undergo wearing down and/or deterioration must be periodically replaced in order to maintain the good pump performance.

## 6. DISMANTLING



- The motor unit may be dismantled from the pump body without needing to disconnect the pump's suction and impulsion tubing.
- To disconnect the motor unit from the pump body, take out the screws that join them.

## POSSIBLE BREAKDOWNS, CAUSES AND SOLUTIONS



PROBLEMS	CAUSES	SOLUTIONS
THE PUMP DOES NOT PRIME	Air entry in suction tube	Check pipe fittings and suction tube joints
	Bad filter cover sealing	Clean the pre-filter cover and check the condition of the joint
	Motor turning direction incorrect.(III)	Invert two phases of the feeding line
THE PUMP GIVES LOW FLOW-VOLUME	Blocked pre-filter	Clean the pre-filter
	Air entry in suction tube	Check pipe fittings and suction tube joints
	Motor turning direction incorrect.(III)	Invert two phases of the feeding line
	Load loss in suction	Prevent as much as possible, elements that produce load loss
	Wrong voltage	Check that the network voltage corresponds to that on the motor specification board
THE MOTOR STOPS	Increase in terminal box temperature because of voltage arch effect	Check terminal box connections
	Heat protector blows	Correctly connect cables with terminal box terminals
	Terminla boxes badly-connected	Fasten the cable to the terminal correctly Modify size of connection cable to terminal box terminals

## 7. POWERSTORM PUMP SPECIFICATIONS

### 7.1. PRODUCT AND ACCESSORY DESCRIPTION

The pump body is built from state of the art thermoplastics. The pumps are of a self-suction type from 1/3 HP to 1,25 HP and are provided with both single-phase and three-phase motors. A pre-filter has been incorporated into the pump body to prevent the foreign bodies entering and damaging the pump's hydraulic parts.

The motors supplied with the motor pump unit have been protected by IP-55 and are prepared to withstand hot atmospheres and high humidity levels. The motors are also provided with a heat protector that avoids damage to the pump due to excess current.

### 7.2. ELEMENTS SUPPLIED

- Self-suction pump for water circulation in private swimming pools.
- Pre-filter incorporated in the pump body.
- Pre-filter basket.
- Joints and linking hose unions for impulsion and suction tubing connections.
- Pump installation and maintenance manual.



The motor pump unit's functional characteristics are given in the different characteristic curves.

