

# NOCCHI

# SSH

CE

IT - ISTRUZIONI ORIGINALI IN LINGUA ITALIANA



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# CHAPTER 1

## GENERAL INFORMATION

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### 1.1 DOCUMENTATION SUPPLIED

#### 1.1.1 MANUAL

This manual is addressed to the operators responsible for operating the machine during all the technical stages of its life.

#### CONTENTS

This manual contains the following information:

- Manufacturer's declaration
- Safety information
- Commercial information
- Information on documentation
- Machine description
- Transportation information
- Storage information
- Installation information
- Information on adjustments
- Operational information
- Maintenance information
- Dismantling information

Le informazioni sono suddivise nei seguenti capitoli e appendici di questo manuale:

- Chapter 1: General information
- Chapter 2: Description
- Chapter 3: Installation
- Chapter 4: Operation
- Chapter 5: Maintenance
- Chapter 6: Operating problems
- Chapter 7: Dismantling
- Appendix: Product specifications

### 1.2 OWNERSHIP OF INFORMATION

The information contained in this manual is property of PENTAIR INTERNATIONAL Sarl. It is forbidden to reproduce in whole or in part this manual without the explicit authorisation of PENT AIR INTERNATIONAL Sarl. The information contained in this manual is related only to the machines indicated in section "Product Specifications". PENTAIR INTERNATIONAL reserves the right to make the changes deemed necessary to the machines not listed in the "Machine identification data".

### 1.3 MACHINE IDENTIFICATION DATA

MACHINE CODE	DESCRIPTION
DHR	Horizontal multi-stage centrifugal electropump.
4-	Rated flow rate m <sup>3</sup> /h
50	Number of stages x 10

### 1.4 EC COMPLIANCE DECLARATION

See page 2

## 1.5 GENERAL SAFETY INFORMATION

It is advisable to carefully follow the instructions contained in this manual with specific reference to notes, warnings and danger signs.

**DANGER**

This appliance is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety. Children should be supervised to ensure that they do not play with the appliance.

**WARNING**

Users should always follow the accident prevention laws in force in the country where the product is installed.

**DANGER**

Before repairing or servicing the electropump, disconnect it from the socket and/or turn the main switch to Off (when present) to interrupt the power supplied to the electropump. This prevents the electropump from accidentally restarting and from causing accidents to people and/or damages to the people.

**DANGER**

Do not service, install or move the electropump while it is powered, because these operations can cause serious accidents or even death.

**WARNING**

During operation, do not remove or move the electropump.

**DANGER**

Before using the electropump, always check that the cable and all electric devices are efficient, shielded and protected.

**DANGER**

When starting the electropump (by inserting the plug into the socket and/or turning the main switch to on), always wear shoes and make sure that the hands are dry.

**NOTE**

Failure to follow the safety procedures and precautions contained in the documentation supplied shall relieve PENTAIR INTERNATIONAL from all liability thereof.

### 1.5.1 PERSONNEL QUALIFICATIONS

Qualification and protection limits established for operators

OPERATOR	QUALIFICATION	RECOMMENDED INDIVIDUAL PROTECTION MEAN
CARRIER	Knowledge and command of the chapters: <ul style="list-style-type: none"> <li>• General information</li> <li>• Description</li> <li>• Installation</li> </ul>	Protective shoes and gloves.
INSTALLER	Qualification complying with the provisions of the Country of installation, knowledge and command of the chapters: <ul style="list-style-type: none"> <li>• General information</li> <li>• Description</li> <li>• Installation</li> </ul>	Protective shoes and gloves.
USER	Knowledge and command of the chapters: <ul style="list-style-type: none"> <li>• General information</li> <li>• Description</li> <li>• Use</li> </ul>	Protective shoes and gloves, high temperature protecting overall and gloves.
MAINTENANCE MAN	Fitness acknowledged by PENTAIR INTERNATIONAL Sarl, knowledge and command of the chapters: <ul style="list-style-type: none"> <li>• General information</li> <li>• Description</li> <li>• Maintenance</li> </ul>	Protective shoes and gloves.
DEMOLISHER	Knowledge and command of the chapters: <ul style="list-style-type: none"> <li>• General information</li> <li>• Description</li> <li>• Dismantling</li> </ul>	Protective shoes and gloves.



**DANGER**

The machine operates in safety conditions if it is used by qualified personnel in accordance with the instructions and information contained in this manual and present on board. All the operations referred to in this manual should be performed by qualified personnel equipped with the protection means described in this manual.



**NOTE**

PENTAIR INTERNATIONAL shall not be liable for accidents if the machine is used from non qualified or unauthorised personnel and originating from the failure to follow the instructions contained in this manual and present on the machine board.

## 1.5.2 SPECIAL MEASURES

The use of personnel with a qualification differing from the one indicated can endanger the safety of people and/or damage the property.

## CONVENTIONS

### 1.6.1 TERMINOLOGICAL CONVENTIONS

The following conventions have been adopted throughout the manual

- Machine: elettropompe specificate in "Scheda prodotto"
- Authorised technician: person authorised by PENTAIR INTERNATIONAL to perform even the operations not specifically indicated in this manual
- Specialised technician: person authorised to perform even the operations not specifically indicated in this manual after being authorised by PENTAIR INTERNATIONAL

### 1.6.2 TYPESETTING CONVENTIONS



#### DANGER

Le indicazioni di pericolo indicano quelle procedure la cui mancata o parziale osservanza può produrre danni fisici all'operatore.



#### WARNING

Le indicazioni di attenzione indicano quelle procedure la cui mancata o parziale osservanza può produrre danni alla macchina o alle apparecchiature ad essa collegate.



#### NOTE

Le indicazioni di nota contengono delle informazioni, importanti, evidenziate al di fuori del testo a cui si riferiscono.

## 1.7 RECOMMENDED USE

### 1.7.1 RECOMMENDED USE

The machine has been designed, manufactured and protected to allow the transfer, circulation and increase of pressure of the following types of liquid:

- Water with temperature ranging between +10 °C and 90 °C up to 6 bar, 50°C up to 10 bar
- Fluids with a viscosity similar to water, neutral and non-explosive fluids
- The machine has been designed, manufactured and protected to guarantee a flow rate of fluid that changes according to the desired head (see "Product specifications")

### 1.7.2 RECOMMENDED INSTALLATION

The machine has been designed, manufactured and protected to be installed in the following environments:

- Indoors
- Outdoors with protection against atmospheric agents

The machine has been designed, manufactured and protected to be used in the following atmospheric conditions:

- Temperature range: -10 °C and +50 °C
- Relative humidity range: from 30% to 90%

The machine has been designed, manufactured and protected to be:

- Installed horizontally on a flat foundation with dimensions at least equal to the maximum length and width of the pump. For the pump dimensions refer to the appendix "Product specifications", section "Dimensions and weights"
- Permanently fixed on the flat foundation using the 4 bolt holes in the motor support and corresponding bolts with thread lock nuts in order to avoid loosening due to vibrations produced by the pump in service
- Fixed to tubing able to sustain the machine weight

The machine has been designed, manufactured and protected to be supplied with electric energy having the following characteristics:

- 230 V, 50 Hz, single-phase
- 230 V, 50 Hz, three-phase
- 400 V, 50 Hz, three-phase

Different voltage and frequency values are available on request.

### 1.8 NON RECOMMENDED USE

The machine has not been designed, manufactured or protected for the uses not specifically listed under section "Recommended use". In particular the machine has not been designed, manufactured or protected to transfer, circulate or increase the pressure of the following fluids:

- Explosives
- Corrosive fluids
- Fluids derived from crude oil or mixtures containing derivatives of crude oil
- Mixtures containing materials or suspended fibres
- Sea water

For special uses, contact our technical department

#### 1.8.1 LIABILITY ARISING FROM NON RECOMMENDED USE



#### NOTE

PENTAIR INTERNATIONAL shall not be liable for damages to people, animals or property deriving from non recommended use

## 1.9 WARRANTY



### NOTE

Installation, adjustment and maintenance operations that have not been authorised and/or performed by unskilled personnel will invalidate the warranty.

## 1.10 ASSISTANCE



### WARNING

If the pump has been used with noxious or toxic fluids, the pump will be classified as polluted and PENTAIR INTERNATIONAL Srl will have the right to refuse offering its assistance for the pump.

For all assistance requests, contact:  
 PENTAIR INTERNATIONAL Srl – Servizio Assistenza Via Masaccio, 13  
 56010 Lugnano - PISA - ITALY  
 Tel. 050/71.61.11 - Fax 050/70.31.37

## 1.11 HOW TO USE THE DOCUMENTATION SUPPLIED

Operators should carefully read the documentation supplied before performing any operation on the machine. The documentation supplied should be kept along with the machine until it is dismantled, so that it is available in case of need. If the used machine is sold, it will be necessary to supply all the documentation enclosed.

# CHAPTER 2

## DESCRIPTION

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### 2.1 DESCRIPTION

#### 2.1.1 ARCHITECTURE AND OPERATING PRINCIPLES

- DHR electropumps are horizontal centrifugal multi-stage electropumps with suction and delivery mouths arranged at 90°
- DHR electropumps are directly coupled to an asynchronous electric motor or to a three-phase motor with closed casing and external ventilation
- DHR electropumps are self-priming and don't require a priming procedure

#### 2.1.2 MACHINE FRAME

- The suction flange and the pump casing of electropumps DHR are in cast iron GG20
- The shaft, the impellers and the diffusers of electropumps DHR are in stainless steel AISI 304
- The mechanical seals of electropump DHR are constituted by sliding backfaces in graphite/ceramics
- The gaskets of electropumps DHR are in NBR rubber and paper



## 2.2 TECHNICAL CHARACTERISTICS

- Dimensions and weights of machines: See "Product Specifications", paragraph "Dimensions and weights"
- Electric data: See "Product Specifications", paragraph "Electric supply" and identification nameplate
- Pressure: maximum operating pressure: 6 bar (90°C) or 10 bar (50°C)

### 2.2.1 NOISE

The maximum continuous noise equivalent to weighed noise A of acoustic vibrations generated by the machine: 82 dB (A)

### 2.2.2 LIABILITY

PENT AIR INTERNA TIONAL declines any liability in the event of failure to comply with the values indicated in this paragraph.

## CHAPTER 3 INSTALLATION

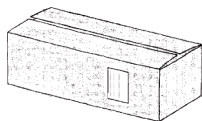
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### 3.1 LIFTING

The machine can be lifted in the following condition, machine packed in a cardboard box.

#### 3.1.1 MACHINE WITHOUT ANY TYPE OF PACKING

It is possible to lift several machines packed in a cardboard box, depending on the machine weight.



### 3.2 TRANSPORTATION

The machine must be transported in the following conditions:

- Machine in horizontal position.
- Machine in fixed position without possibility of moving
- Machine protected from atmospheric agents



**DANGER**

Ascertain that the conditions referred to in the points above are met during transportation.

### 3.3 STORAGE

#### 3.3.1 CHARACTERISTICS OF THE STORAGE AREA

The storage area should have the following physical characteristics:

- Sufficient extension to contain the machine and the packing, when present, and to enable its lifting by means of the lifting devices provided
- Flat and horizontal resting surface
- Resting surface with a capacity above the weight of the machines stored
- Protection against accidental impacts

#### 3.3.2 ENVIRONMENTAL CHARACTERISTICS OF THE STORAGE AREA

The storage area should have the following environmental characteristics:

- Acceptable temperature range:  $+7^{\circ}\text{C} \div +50^{\circ}\text{C}$
- Relative humidity range:  $30 \div 90\%$
- Protection from atmospheric agents



#### WARNING

Mantenere la macchina in posizione orizzontale.

### 3.4 PRELIMINARY INSPECTIONS

#### 3.4.1 ASSESSMENT OF DAMAGE

- Check the integrity of the packing
- Open the packing and extract the machine
- Check that the received machine complies with the characteristics indicated in the order

Check that the machine has not suffered damage, and verify in particular that the following components are integral:

- Motor fan cover
- Intermediate chambers
- Cast iron parts
- Terminal block cover



#### WARNING

Keep the original packing in the event it were necessary to transport the machine in future.

#### 3.4.2 DAMAGE REPORTING

If non compliance characteristics or damages are detected, immediately report the problem to PENT AIR INTERNATIONAL or to the distributor within and no later than 8 (eight) days from the date of purchase.

### 3.5 PREPARATION OF THE INSTALLATION SITE

#### 3.5.1 CHARACTERISTICS OF THE INSTALLATION SITE

The installation site should have the following characteristics:

- Simplify the positioning and access to the machine
- Enable safe connections to tubing
- Offer a minimum distance of 150 m from each point of the machine and from obstacles
- Enable a safe connection to the electric system
- Offer an appropriate natural and/or lighting designed to guarantee full operational safety
- Guarantee a sufficient ventilation for the motor fan



#### WARNING

Do not cover or obstruct the motor fan cover grid.

**ENVIRONMENTAL CONDITIONS**

- Acceptable temperature range: +7 °C ÷ +50 °C
- Acceptable relative humidity range: 30 ÷ 90%
- Protection from atmospheric agents

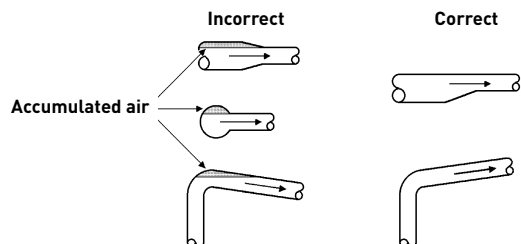
**CONNECTION**

The pipes used to connect the machine should have the following characteristics:

- Minimum diameters with dimensions suited to the machine
- The distance and position of the two pipes should comply with the indications given in "Product specifications", paragraph "Dimensions and weights"
- Anchoring to fixed support in order not to exert tension and/or vibrations on the machine
- Lack of air locks, as shown in the piping figure
- Suction pipe length reduced to a minimum
- Load losses in the suction pipe reduced to a minimum (if the machine is used to suck fluid, see "Machines installed above the water level")
- Gates on the delivery and suction line
- If the machine is installed above water level, a stop valve should be fitted on the suction line
- If the machine supplies a boiler, a stop valve should be fitted on the delivery line

If the machine is designed to operate with a closed valve on the delivery line, a recirculation pipe should be provided for protection purposes. The pipe should have the following characteristics:

**PIPE ASSEMBLY**



Connection between:

- Delivery and suction line
- Delivery and drainage pipe

Controls should be performed by means of:

- Thermostatic valve
- Solenoid valve driven by a pressure switch or a thermostat

**POWER SUPPLY**

Electric power supply should have the following characteristics:

- Offer a differential protection
- Offer voltage and frequency values compliant with the values indicated on the motor nameplate
- Offer a power not below the value indicated on the motor nameplate
- Be equipped with an appropriate thermal protection
- Be equipped with a thermal relay adjusted according to the actual current absorbed
- Be equipped with a cut-off switch with protective fuses
- Be equipped with cables with a section suitable to the power absorbed by the motor

**ACCESS**

Connect the machine so that it can be easily accessible for maintenance operations.

## SUPPORTING SYSTEM

The machine supporting system can correspond to one of the following configurations:

- The machine can be connected to a fixed pipe able to maintain the machine in position
- The machine can be connected to a pipe and rested on a base having the characteristics indicated in "Product specifications" under paragraph "Dimensions and weights"
- The machine can be connected to a pipe and fixed, by means of nuts, to a base having the characteristics indicated in "Product specifications", paragraph "Dimensions and weights"

### 3.6 INSTALLATIONS



#### DANGER

All installation operations should be performed while the electropump is disconnected from the mains.



#### WARNING

Do not install the machine in environments containing gases and/or inflammable or explosive materials.



#### DANGER

Electropumps are designed so that all the moving parts are rendered inoffensive by means of protections. Do not use the electropump if these protections have been removed or are damaged, since this could cause serious accidents to people.



#### WARNING

The machine supply line should always have a differential circuit breaker.

#### 3.6.1 CONNECTION OF THE MACHINE TO THE PIPES

To connect the machine to the pipes, perform the following operations:

- Position the machine so that the arrows present on the base correspond to the direction of the fluid flow
- Tighten the threaded ends of the pipes to the delivery/suction mouths using T eflon as sealing material

#### 3.6.2 CONNECTION TO THE MAINS

##### MACHINES WITH THREE-PHASE MOTORS



#### DANGER

The installer will have to make sure that the electric supply system has an adequate grounding compliant with the laws in force.



#### WARNING

Check that the supply system has a differential switch with a degree of sensitivity of  $\Delta = 30$  mA (EN 61008-1 / EN 61009-1).



#### DANGER

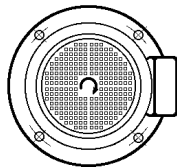
Before removing the cover from the terminal block of the motor and before performing operations on the machine, make sure that the supply line has been cut-off.

To connect the machine to the mains, perform the operations described here below:

- Make sure that the motor is suitable to the mains voltage and frequency
- Cut the electric system off by using a cut-off switch
- Loosen the screws that fix the cover to the terminal block
- Insert the supply cable into the cable holder
- Connect the phases and ground to the terminals
- Reposition the cover of the terminal block with the related gasket
- Tighten the screws that fix the cover to the terminal block
- Supply the machine with the cut-off switch
- Supply one current impulse and check the direction of rotation of the motor

A- If the direction of rotation complies with the direction of the rotation indicated by the arrows shown on the machine head, the connections are correct

B- If the direction of rotation is opposed to the one shown by the arrows present on the machine head, perform the following operations:



- Cut the electric system off by using the cut-off switch
- Loosen the screws that fix the terminal block cover in position
- Invert the connection of the two phases
- Reposition the terminal block cover with the related gasket
- Tighten the screws of the terminal block cover

### MACHINES WITH SINGLE-PHASE MOTORS

To connect the machine to the mains, perform the operations described here below:

- Make sure that the motor is suitable to the mains voltage and frequency
- Cut the electric system off by using a cut-off switch
- Loosen the screws that fix the cover to the terminal block
- Insert the supply cable into the cable holder
- Connect the lines to the grounding system
- Reposition the cover of the terminal block with the related gasket
- Tighten the screws that fix the cover to the terminal block - Insert the electric supply by using the cut-off switch
- Supply one current impulse to the machine
- Check the direction of rotation of the motor

A- If the direction of rotation complies with the direction of the rotation indicated by the arrows shown on the machine head, the connections are correct

B- If the direction of rotation is opposed to the one shown by the arrows present on the machine head, perform the following operations:

- Cut the electric system off by using the cut-off switch
- Loosen the screws that fix the terminal block cover in position
- Use a bolt to temporarily short-circuit the ends of the condenser
- Change the position of the bridges
- Remove the bolt
- Reposition the terminal block cover with the related gasket
- Tighten the screws of the terminal block cover

## CHAPTER OPERATION

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### WARNING

Always start the machine after filling it with fluid, as explained under sections "Operation" and "Priming".

### 4.1 PRIMING



### NOTE

A machine is considered below the water level if the level of the fluid to pump is above the suction mouth of the machine, both with closed or open loop systems.

#### 4.1.1 MACHINES INSTALLED BELOW THE WATER LEVEL

To fill a machine below the water level, perform the following operations:

- Close the gate on the delivery line
- Loosen the priming cap
- Slowly open the gate on the suction line

When the fluid starts to exit from the priming cap, perform the following operations:

- Re-tighten the priming cap
- Fully open the gate on the suction line
- Open the gate on the delivery line



#### DANGER

Make sure the priming cap is perfectly tightened.

#### 4.1.2 MACHINES INSTALLED ABOVE THE WATER LEVEL (ON THE SUCTION SIDE)



#### NOTE

A machine is considered above the water level if the level of the fluid to pump is below the suction mouth of the machine, both with closed or open loop systems.

To fill a machine above the water level, perform the following operations:

- Open the gate on the suction line
- Open the priming cap
- Add the fluid through the priming cap until it starts to come out from the cap
- Close the gate on the delivery line

When it is no longer possible to add further fluid, perform the following operations:

- Re-tighten the priming cap
- Start the machine
- Open the gate on the delivery line



#### DANGER

Make sure the priming cap is perfectly tightened.

#### 4.2 START-UP

Perform the following operations to start the machine for the first time:

- Open the gate on the suction line
- Slowly open the gate on the delivery line to avoid water hammering on the delivery line
- Adjust the thermal relay depending on the current absorbed by the motor
- Start the machine
- Adjust the enabling and disabling pressure of the pressure switch that controls the operation of the machine

### 4.3 CHECKING THE FREQUENCY OF STARTS AND STOPS

To check the frequency of starts and stops, perform the following operations [Check the operation of the machine for an hour]:

If the number of starts/stops is above 40, adjust the control equipment in order to reduce the frequency.



#### WARNING

Always check that the machine is filled. Never start the machine without fluid, as indicated under section "Operation", "Priming"

## CHAPTER 5 MAINTENANCE

---

### 5.1 LUBRICATION

- The gasket on the shaft is self-adjusting. The sealing surfaces are resistant to wear and are lubricated by the pumped fluid
- The bearings of the machine are lubricated by the pumped fluid
- The ball bearings of the motor are self-lubricated with grease resistant to heat



#### WARNING

If the machines are installed, used and serviced in accordance with the instructions and directions given in this manual, they do not require lubrication. Follow the instructions and directions given in this manual.

### 5.2 TEMPORARY DISABLING

To disable the machine for a long period of time, perform the following operations.

Cut the electric system off by using a cut-off switch, if ambient temperature falls below the freezing temperature of the pumped fluid, perform the following operations:

A - If the whole system has to be disabled, drain the system

B - If it is not necessary to drain the whole system:

- Close the gates on the delivery and suction lines
- Remove the priming and drainage caps
- Allow all the fluid to drain from the machine
- Store the priming and drainage caps for future use, without reassembling them on the machine



#### ATTENZIONE

Before restarting the machine, fill it as indicated under sections "Operation" and "Priming"

### 5.3 PERIODICAL INSPECTION

Ad intervalli regolari effettuare i controlli seguenti:

- Hydraulic performances
- Lack of fluid leaks
- Motor overheating
- Relay tripping time
- Start-up frequency
- Correct operation of automatic controls
- Vibrations
- Noise

A - If check-ups do not reveal the presence of abnormal conditions, continue to use the machine until the next check-up

B - If check-ups reveal the presence of abnormal conditions, perform the operations described here below:

- Refer to table "Problems/Causes" under "Operating problems"
- If the problem and cause is listed in table
- "Problems/Causes" under "Operating problems", contact an authorised technician or a specialised technician and report the abnormal condition found
- If the problem and the cause is not listed in table "Problems/Causes" under "Operating problems", contact an authorised technician or a specialised technician.

#### 5.4 EXTRAORDINARY MAINTENANCE

Extraordinary maintenance operations performed after problems, failures, breakage or technical updates should be performed only by authorised or specialised technicians.



#### NOTE

PENTAIR INTERNATIONAL declines any liability and cancels all warranty contracts in presence of:

- Operations not documented in this manual and performed on the machine.
- Extraordinary maintenance carried out by others than authorised or specialised technicians.

## CHAPTER 6 OPERATING PROBLEMS

PROBLEM	CAUSES
THE MOTOR FAILS TO RUN WHEN STARTED	1) The line voltage has been interrupted.
	2) Burnt fuse.
	3) Tripped thermal relay.
	4) No conduction in the starter contacts or faulty coil.
	5) Burnt fuses in the auxiliary circuit.
	6) Faulty motor.
THE STARTER THERMAL SWITCH TRIPS WHEN VOLTAGE IS APPLIED	1) Burnt fuse.
	2) Faulty starter contacts.
	3) Faulty electric connections.
	4) Faulty motor windings.
	5) The machine is mechanically blocked.
	6) The thermal relay calibration is too low.
THE THERMAL RELAY TRIPS OCCASIONALLY WITHOUT APPARENT REASON	1) The thermal relay calibration is too low.
	2) The line voltage is periodically missing.
	3) The line voltage in peak periods is too low.
THE THERMAL RELAY HAS NOT TRIPPED, BUT THE MACHINE IS UNABLE TO RUN	1) The line voltage has been interrupted.
	2) Burnt fuse.
	3) No conduction in the starter contacts or faulty coil.
	4) Burnt fuses in the auxiliary circuit.



PROBLEM	CAUSES
THE MACHINE FLOW RATE IS IRREGULAR	1) The suction pipe is undersized.
	2) The availability of fluid to be sucked is insufficient.
	3) The fluid level is too low.
	4) The pressure on the suction side is insufficient.
	5) The suction pipe is partially obstructed.
THE MACHINE RUNS BUT FAILS TO SUPPLY FLUID	1) The suction pipe or pump are obstructed.
	2) The bottom (or stop) valve is blocked in closed position.
	3) Leaks in the suction line.
	4) Air in the suction line or pump.
WHEN STOPPED THE MACHINE RUNS IN OPPOSITE DIRECTION	1) Leaks in the suction pipe.
	2) Faulty bottom (or stop) valve.
	3) The bottom (or stop) valve is blocked in partially or fully opened position.

## CHAPTER 7

### DEMOLITION

#### 7.1 MACHINE DISABLING

- Cut the system off using the cut-off switch
- Close the gates on the suction and delivery lines
- Loosen the screws that fix the terminal block cover
- Disconnect the wires from the terminal block
- Remove the supply cable from the cable holder
- Remove the priming and drainage caps
- Allow all the fluid to drain from the machine
- Loosen the screws that fix the machine to the base
- Lift the machine as described under "Installation", "Lifting" -Transport the machine as indicated under "Installation", "Transportation"

To re-use the machine, perform the following operations:

- Reposition the priming and drainage caps on the machine
- Reposition the terminal block cover with the related gasket
- Tighten the screws that fix the terminal block cover
- Close the delivery and suction holes to prevent dirt from entering inside the machine
- Store the machine as indicated in "Installation", "Storage"



#### NOTE

PENTAIR INTERNATIONAL shall not be liable of parts of the machine are recycled or re-used.

#### 7.2 RESIDUAL RISKS AFTER DISABLING



#### WARNING

The machine has been manufactured with non biodegradable materials. The machine should be dismantled only in a deposit equipped for these operations.