

# **FILTER PROJECT**

*Air-Water System*



## **WATER SUCTION CABIN**

**CE**

## **INSTALLATION USE AND MAINTENANCE MANUAL**

Revision 01 – 03/2021

FILTER PROJECT SRL  
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## USER MANUAL

(It is absolutely forbidden to copy this handbook in any way.  
The transgressors will be punished according to the law standards)

# WATER SUCTION CABIN

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## INTRODUCTION

Dear client, thank you for having chosen the “water suction cabin” and we are glad to make available to you our manual, that it is not only an integral part of the machine, but it also allows the using of the machine with maximum safety and productivity.

### NOTE

**We invite you to read this technical manual with care and to keep it in reach at all times to the operator who is responsible for the use, maintenance and installation of the machine.**

This handbook must always accompany the machine and in the case the machine should be sold this handbook must be handed over to the new owner.

## RESPONSABILITY

This manual reflects the state of the art at the moment the machine is introduced on the market, which has been constructed according the CE standards.

The instructions in this manual don't substitute, but summarize the obligations of the safety and hygiene standards.

Consequently FILTER PROJECT S.r.l. declines any responsibility in the case of:

- The wrong use towards the rules of safety and hygiene;
- A Wrong predisposition of the zone and of the structures there where the plant will operate;
- A lack of or wrong observation of the instructions supplied in the manual;
- Defects in the line voltage;
- Non authorized modification of the machine;
- Use and maintenance of the machine by not trained personnel.

## SAFETY INFORMATION

The employer is responsible for the instruction of the personnel, including the person who are in charge of the maintenance of the machine. They must be informed of the following: about the risks of accidents, the operator's predisposed safety devices, the risks of sound emission and about the general anti-accident rules for seen by the standards.

Before start working it is necessary that the operator knows the positioning and functioning of all the controls of the machine.



**The tampering, substitution or modifying of one or more parts of the machine, relieves the manufacturer from any civil and penal responsibility.**

## INTRODUCTION

### A) USE

The water suction cabin has been purposely designed for the dust blasting and suction of dust produced during working of plastic material, removed by various tools.

The WATER SUCTION CABIN may be:

- With or without water veil.

### B) OPERATION DESCRIPTION

- **Suction cabin with and without water veil**

It's functioning is very simple: the air full of dust is sucked in by internal ventilators and it's filtered through the water veils, the dust having absorbed the water, becomes heavy and falls in the tank below full of water and it is then transformed in mud.

To eliminate the suction cabin's external veils it is sufficient closing the rolling shutter placed at the beginning of the tubing, in this case the dust blasting will occur only in the internal part of the suction cabin.

The water used is always the same and therefore must be substituted periodically.  
The out-coming air is perfectly cleaned and may be recycled in the environment.

### C) OPERATING TIPS

Position the pieces to be worked on, on a support in front of the water veil (or the panels), at a maximum distance of the one meter.

For obtaining a major result, we suggest to use the extension box.







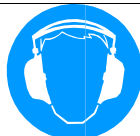

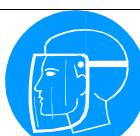
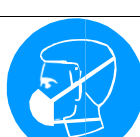
**The components bought from external suppliers (ex. Pump, Motor, Electrical components) should have the registered mark CE and / or corresponding to specific applicable standards.**

**Remember that the use of not – original material shall void the manufacturer's guarantee and any civil or penal responsibility on our part.**

## WARNINGS RELATING TO SAFETY



The water suction cabin has a number of safety warnings near the parts that can present a risk for the operator when in use, when they are in proximity to them or when performing maintenance on them.

The symbols used in the safety warnings are indicated as below:

Do not lubricate moving parts	
Do not use open flames Warning present if the machine extracts flammable dusts	
Presence of flammable material Warning present if the extractor filter extracts flammable dusts	
Do not open when the machine is in operation	
Use hearing protection	
Use protective gloves	
Use protective screens	
Use dust masks	

## SPECIFICATION PLATE

On the lateral panel of the water suction cabin, there is a metal plate that shows the characteristics of that particular model.

		
Strada della Selva – Fraz. Lobia 37047 San Bonifacio – Verona – ITALY Tel. +39 0456183191 – Fax +39 0456187030 web-site: <a href="http://www.filter-project.it">www.filter-project.it</a>		
MODELLO / MODEL		
N. SERIE / SERIAL N.		
ANNO / YEAR		
PORTATA / CAPACITY (LT.)		
PESO / WEIGHT (KG)		

## POST-SALE SUPPORT

After the WATER SUCTION CABIN has been put into service, the user may contact the FILTER PROJECT SLR after sales team al support with matters regarding:

- **Problems during operation**
- **Spare parts**
- **Inspections and repairs**

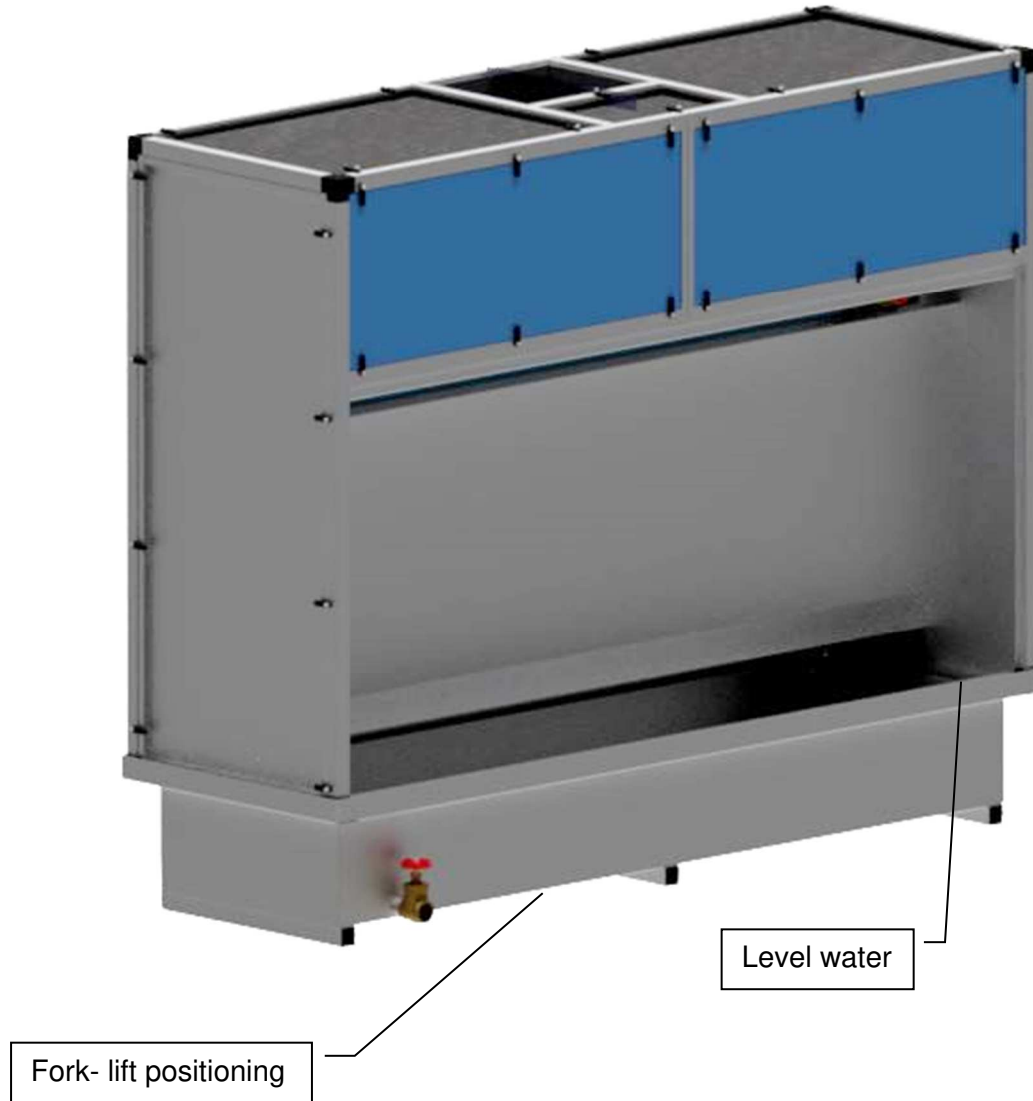
If you required support, FILTER PROJECT SRL must have the following information about the WATER CABIN:

- **Type and model**
- **Serial number**

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## MOVEMENT AND TRANSPORT

The machine is large and heavy and must be moved by adequate lifting means as shown in the drawing below.



## MACHINE INSTALLATION

### A) POSITIONING

The machine must be positioned in a covered environment and no anchorage is necessary, provided that the support surface is levelled.

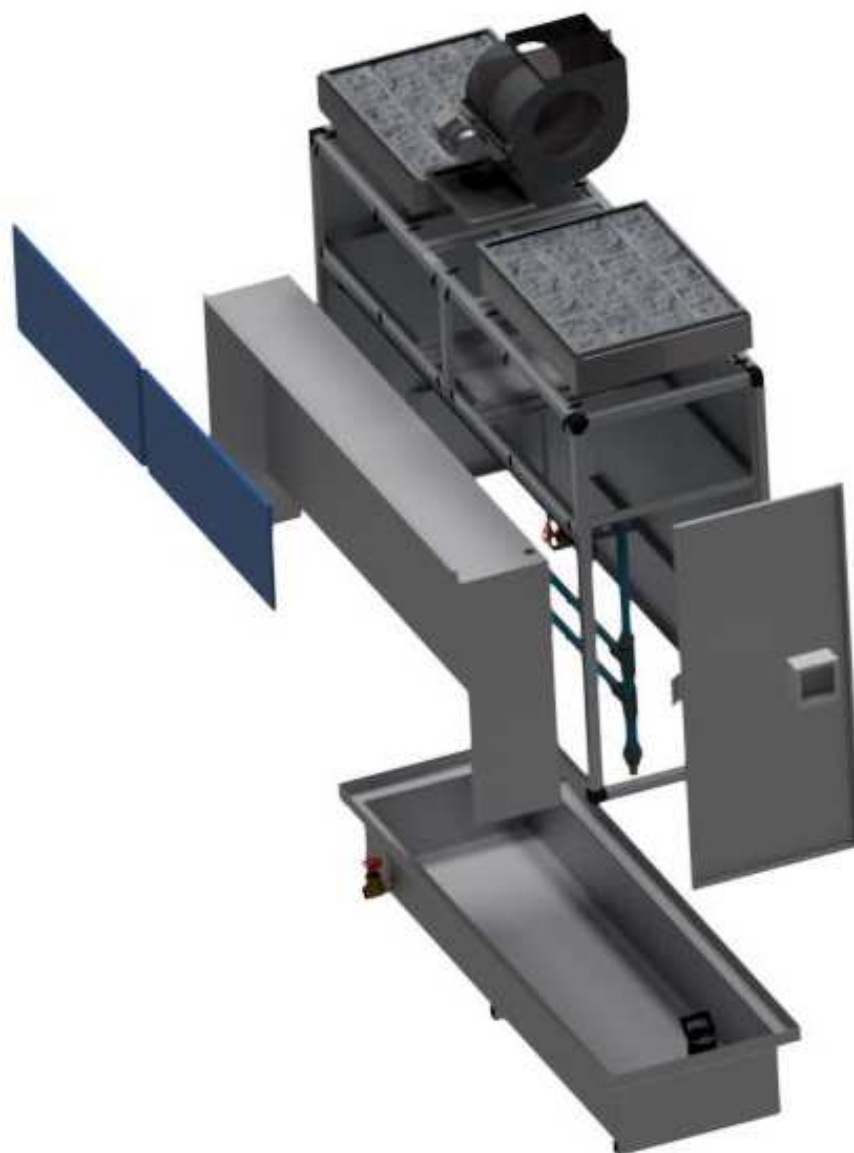
### B) FILLING AND DISCHARGE OF THE WATER BLASTING

The tank is filled by the appropriate adapter (water entrance)

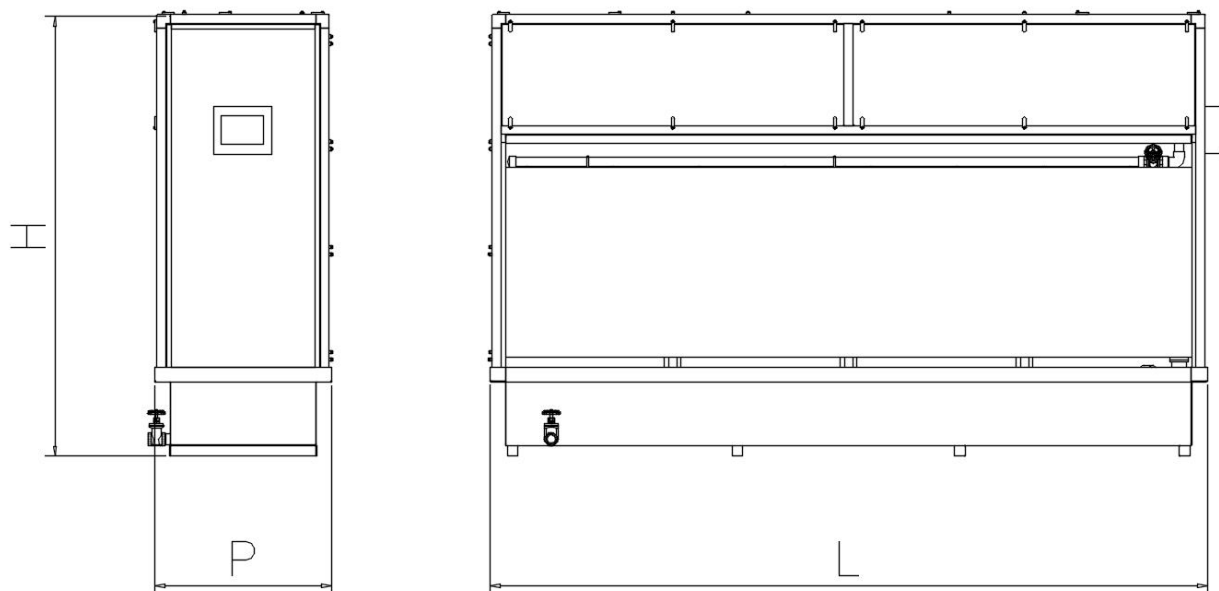
N.B. the water level must be maintained at 10cm from the superior border of the tank below

### C) ELECTRICAL CONNECTIONS

- Before the installation of the cabin, be assured that the alimentation net is provided with a grounding and that it is according CE standards.
- The machine must be connected to the main using a 3 phase cable + ground, having a minimal section of 4mm according CE standards.
- Verify the correct rotation of the internal pump's ventilator, indicated by the arrow.
- The ventilator and the pump of the water veils must always work together; if this does not occur you will not obtain the desired effect.





**TECHNICAL SPECIFICATIONS**


Model	L (mm)	P (mm)	H (mm)	Weight (Kg)	Power	Blasting	Noisiness
CA020	1980	980	2430	230	1 x 2,2 Kw	95 %	74 dB
CA030	2980	980	2430	320	1 x 3 Kw	95 %	74 dB
CA040	3980	980	2430	420	2 x 2,2 Kw	95 %	74 dB

Model	Droplet separator (mm)	Q.ty	Submerged Pump	Voltage	
				220V	400V
CA020	650x880x180	2	1,1 Kw (1, 5Hp)	7,5 A	4,3 A
CA030	1065x880x180	2	1,1 Kw (1,5 Hp)	7,5 A	4,3 A
CA040	585x880x180	2	1,5 Kw (2 Hp)	8,3 A	5,0 A
	650x880x180	2			

## MAINTENANCE

- Substitute the blasting water, that is found inside the tank of the cabin, once every 15 days. N.B.: the blasting water must only be discharged in the dirty water stocking tank and not in the environment.
- Weekly check the state of cleanliness of the atomization nozzle.
- Monthly check if the ventilator blades have an excessive and irregular encrustation, and eventually remove.
- Monthly wash the drop-stopper with a jet stream of water



Drop separator or drop-stopper

## DUST BLASTING AND NOISINESS VERIFICATION

The sampling has been executed inside the production lift building in the following way:

### TOTAL DUST:

Samples before and after the blasting system using cellulose membranes mounted on a filter holder, respecting the kinetic conditions as for seen by the UNICHIM methods.

Suction pumps TCR-TECORA mod. BRAVO and ZAMBELLI ZB/2

Total dust entering: 486 mg

Blasting percentage: 96.3%

### ASPIRATION SPEED

The measurements have been made with an anemometer connect to a BADUC/A-L.S.I. system

It was thought necessary to execute the following tests:

- |                      |             |
|----------------------|-------------|
| A) Opening entrance  | V=2.2M/SEC  |
| B) Operator position | V=0.56M/SEC |

### NOISINESS

For the measurements a sound-level meter integrator class 1 Larson Davis mod.LD824 has been utilized, as according IEC 60651-1993, IEC 60804-1993, Draft IEC 1672 and ANSI S1.4-1985 standards, with calibration of the same by a reference instrument class 1 Larson Davis mod.CAL200.

The measurements have been made at a height of 160cm from the surface in the following position:

- |   |         |
|---|---------|
| A) Medium level sound pressure with machine in function | 74,9 dB |
| B) Superficial sound pressure level                     | 74,1dB  |

## SUBMERGED PUMP – OPERATING INSTRUCTION

These pumps are recommended for pumping sewage water. They must be used in compliance with local laws.

**Before installation and use read the following instructions carefully. The manufacturer declines all responsibility in the event of accident or damage due to negligence or failure to observe the instructions described in this booklet or in conditions that differ from those indicated on the rating plate. It also declines all responsibility for damage caused by improper use of the water pump.**

When storing, do not pile weights or other boxes on top.

### SAFETY

**Before carrying out checks or doing any maintenance, clear the system by disconnecting the voltage, unplug the pump from the socket and then rinse the pump well with clean water.**

The water pumps comply with the EEC Directives 2006/42/CEE, 2006/95/CEE, 2004/108/CEE, 2002/95/CEE including the latest amendments. Before installing the water pump, make sure that the power supply mains is earthed and complies with regulations. They are not suitable for pumping inflammable liquids or for operating in places where there is danger of explosion. Avoid contact between the power supply and the liquid to be pumped. Do not modify the components of the water pump.

**The water pump must never be lifted or transported by its supply cable or float switch; it must be held by the appropriate handgrip.**

Keep hands or other objects away from the hole under the pump casing near the supporting feet. Do not use the pump in swimming pools, garden ponds or similar places when people are in the water.

### PRELIMINARY INSPECTION

Unpack and check that it is in perfect condition.

Also check that the data on the rating plate correspond to the required data.

If there is any problem contact the supplier immediately, specifying the type of fault.

**CAUTION: if there is any doubt about the safety of the machine, do not use it.**

### CONDITIONS OF USE

The following conditions must be observed when using the water pump:

- Maximum fluid temperature: + 40°C.
- Maximum density of the liquid pumped: 1.1 kg/dm<sup>3</sup>.
- pH of the liquid: 5 ÷ 9.
- Voltage variation allowed: ±5% (in the case of single-phase voltage 220÷240 V and three-phase voltage 380÷415 V, these are the permitted limit values).
- Protection index: IP 68.
- Max. immersion depth: 10 m.
- Minimum emptying level: [75 mm x VXC-PVXC-MC/50] [85 mm x VXC-MC/70]  
[100 mm x PVXC/70]
- Maximum diameter of solid particles sucked up: [50 mm x VXC-PVXC-MC-PMC/50]  
[70 mm x VXC-PVXC-MC-PMC/70]

### INSTALLATION

Installation can be a fairly complex operation.

It must therefore be carried out by competent and authorized installers.

**CAUTION: during installation apply all safety regulations issued by the competent authorities and use common sense at all times.**

Do not underestimate the risk of drowning if the installation has to be performed in a well at a certain depth. Make sure there are no toxic discharges or harmful gases present in the atmosphere. If the installation involves welding, take all necessary precautions to avoid explosions. Always remember the danger of infection and take all hygiene-health precautions. If the bottom of the well or the surface on which the pump rests is uneven and there is the possibility of stones, debris, mud etc. accumulating there, lay a level raised supporting base. The **PMC** and **PVXC** models are installed by means of two 3/4" guide pipes. When the pump is lowered down these pipes, it will automatically couple with the foot and its elbow previously positioned on the bottom of the well. If the well is more than 5-6 m deep, it must be provided with intermediate brackets or supports both for the guide pipes and the power supply cable. The delivery piping may be either rigid or flexible as long as the cross-section for passage of the fluid is no smaller than that of the pump delivery outlet. To avoid the backflow of liquid from the discharge manifold, install a check valve after the pump delivery outlet. If the pump is installed in a well, the well must measure at least 800x800x800 mm. The starting and stopping level of the pump can be varied by increasing or decreasing the free length of the float. For the motor to be cooled correctly the water level should not drop below [380 mm x VXC-MC/50] [390 mm x PVXC/50] [430 mm x VXC-MC/70] [440 mm x PVXC/70]

### ELECTRICAL CONNECTIONS

The single-phase versions are supplied as standard with a control box which comprises a capacitor, two-phase switch and an amperometric overload cutout with manual re-set. If the overload cutout trips, check the cause of the overload before priming again.

**CAUTION: it is the installer's responsibility to perform the connections in compliance with the regulations in force in the country of installation.**

**Make sure that there is no voltage at the line wire terminals before connecting.** Check that the data on the rating plate corresponds to the rated line values.

When carrying out connections make sure that there is an efficient earth circuit.

The earth wire must be longer than the live wires, and must be the first wire to be connected when the pump is being set up and the last to be disconnected during disassembly.

It is advisable to install a differential switch.

A thermal overload cutout in the winding and a thermal amperometric device with manual re-set housed in the control box protect the pump motor against voltage overload.

The three-phase motor has three standard thermal overload cutouts connected to the supply cable which must be connected to the control panel by the user.

For three-phase motors the rotation direction may be inverted; in this case performance is much lower than the rated values.

In order to check whether the connection is correct, proceed as follows:

**a) pump to be installed:** when started up, the pump tends to rotate in an anticlockwise direction seen from above.

**b) pump installed and submerged in the fluid to be pumped:** measure the current absorbed by the pump when working using a snap-on ammeter; if the direction of the rotation is incorrect, the values will be approximately double those indicated on the rating. To invert the direction of rotation simply invert two of the phases.

**CAUTION: never poke fingers or other objects into the hole under the pump casing near the supporting feet to check the direction of rotation.**

**Repair of the pump by personnel not authorized by the manufacturer will render the guarantee null and void and will entail operating with potentially dangerous equipment.**

**CAUTION: any tampering may lead to performance being reduced and danger to persons and/or things.**

Where there is the risk of freezing, empty the well or remove the pump and store it in a suitable place.

### PERIODICAL CONTROLS

**Before doing anything, make sure that the pump is disconnected from the power source and that there is no possibility of accidental connections.**

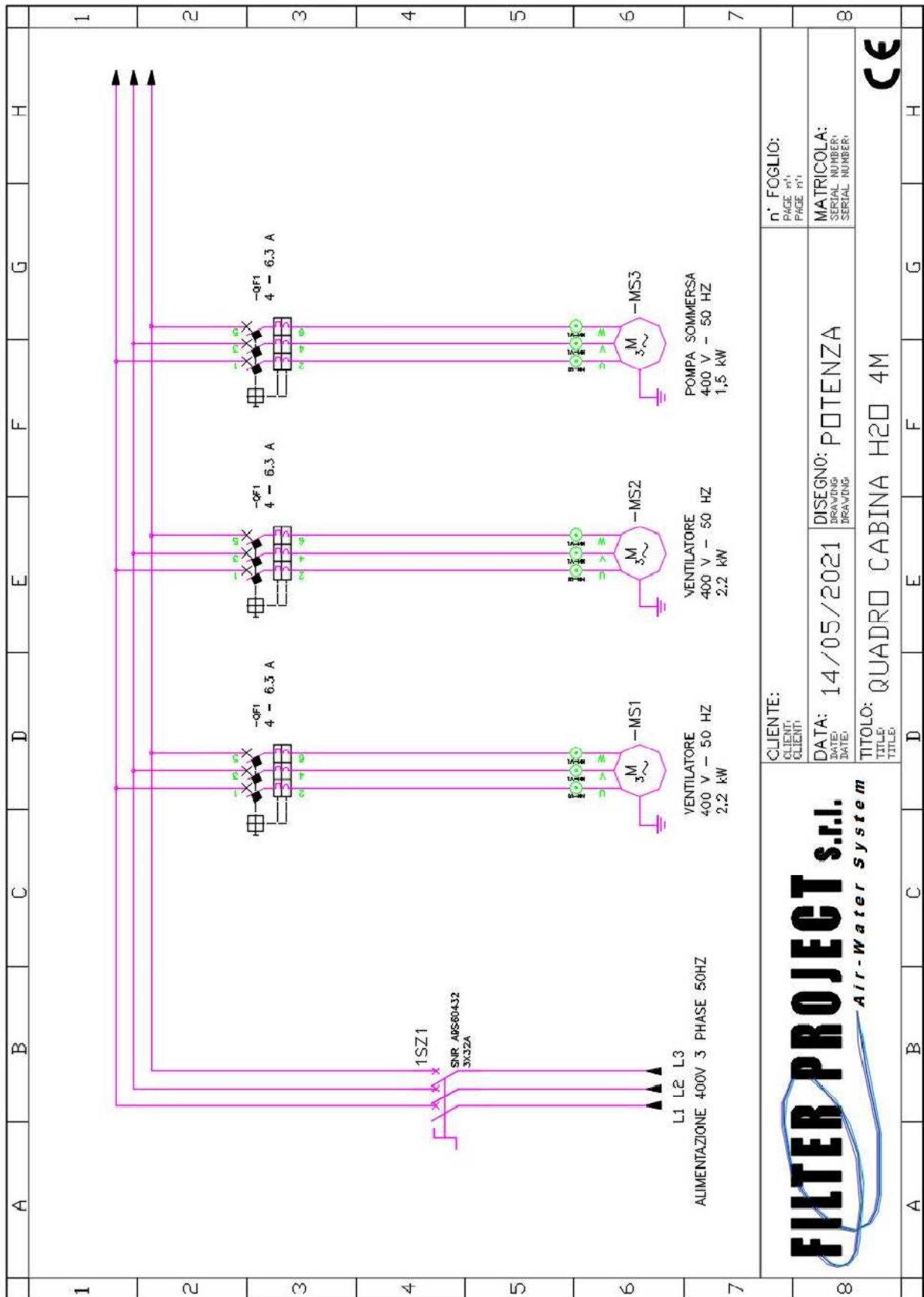
You are advised to check the following periodically: The condition of the cables and grommets, especially at their attachment points. The impeller must not be excessively worn, otherwise performance will be reduced; consult a Pedrollo dealer for replacement. Check that the suction area is clean.



**SUBMERGED PUMP – TROUBLESHOOTING**

FAULT	CHECK (possible cause)	REMEDY
1. The motor does not start and makes no noise.	A. Check that the motor is live. B. Check the protection fuses. C. The float switch does not allow starting.	B. If they are burnt-out, change them. C. -Ensure that the float moves freely. -Ensure that the float is efficient (contact the supplier).
2. The pump does not deliver.	A. The intake grid or the pipes are blocked. B. The impeller is worn or blocked. C. The check valve, if installed on the delivery pipe, is blocked in closed position. D. The level of the liquid is too low. When starting, the level of the liquid must be higher than that of the strainer. E. The required head is higher than the pump characteristics.	A. Remove the blockage. B. Change the impeller or remove the blockage. C. Check that the valve is operating correctly and replace it if necessary. D. Adjust the length of the float switch cable (SEE THE PARAGRAPH ON "ADJUSTING THE FLOAT SWITCH").
3. The pump does not stop.	A. The switch is not deactivated by the float.	A. -Ensure that the float moves freely. -Check float efficiency (the contacts could be damaged - contact the supplier).
4. The flow is insufficient.	A. Ensure that the intake grid is not partly blocked. B. Ensure that the impeller or the delivery pipe are not partly blocked or encrusted. C. Ensure that the impeller is not worn. D. Ensure that the check valve (if fitted) is not partly clogged. E. On three-phase motors, check that the direction of rotation is correct (See the paragraph on "CHECKING THE DIRECTION OF ROTATION").	A. Remove any blockage. B. Remove any blockage. C. Change the impeller. D. Carefully clean the check valve. E. Invert the connection of two supply wires.
5. The thermal overload protection stops the pump.	A. Check that the liquid to be pumped is not too dense as this could cause overheating of the motor. B. Check that the water temperature is not too high. C. The pump is partly blocked by impurities. D. The pump is mechanically blocked.	C. Carefully clean the pump. D. Check whether there is rubbing between the moving and fixed parts; check the wear of the bearings (contact the supplier).

**ELECTRIC DIAGRAM**



CLIENTE:

**FILTER PROJECT s.r.l.**  
Air-Water System

n° FOGLIO:

PAGE n°:

PAGE n°:

MATRICOLA:

SERIAL NUMBER:

SERIAL NUMBER:

DATA: 14/05/2021

DISSEGNO: POTENZA

DATE: 14/05/2021

DATE: 14/05/2021

DATE: 14/05/2021

DATE: 14/05/2021

TITOLO: QUADRO CABINA H2O 4M



**THIS MANUAL MAY BE SUBJECTED TO CHANGE  
WITHOUT PRIOR NOTIFICATIONS!  
FOR ANY REQUIREMENTS OR EXPLANATIONS  
OF THE INFORMATION CONTAINED IN  
THIS MANUAL CONTACT OUR TECHNICAL  
SUPPORT SERVICE. WITH THE SUCTION CABIN  
DESIDES THIS MANUAL IT IS FURNISHED  
A MANUAL FOR USE, MAINTENANCE AND  
ELECTRICAL SYSTEM, IF EXISTANT.**