POMPE PERISTALTICHE CON STRUMENTO INTEGRATO
SERIE HYPER POOLCONTROL B
NORME DI INSTALLAZIONE, USO E MANUTENZIONE

PERISTALTIC METERING PUMPS WITH INTEGRATED CONTROLLER
HYPER POOLCONTROL B SERIES
OPERATING INSTRUCTIONS AND MAINTENANCE

POMPES DOSEUSES PERISTALTIQUES AVEC CONTROLEUR
MODELES HYPER POOLCONTROL B
NORME DI INSTALLAZIONE, USO E MANUTENZIONE

ITALIANO

ENGLISH

FRANCAIS

UNI EN ISO 9001:2000
9190.ETAD

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Il simbolo sotto riportato indica che il prodotto non può essere smaltito come normale rifiuto urbano.
Le Apparecchiature Elettriche ed Elettroniche (AEE) possono contenere materiali nocivi per l'ambiente e la salute e pertanto devono essere oggetto di raccolta differenziata: smaltite quindi presso apposite discariche o riconsegnate al distributore a fronte dell'acquisto di una nuova, di tipo equivalente o facente le stesse funzioni.
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(UK) WASTE OF ELECTRICAL AND ELECTRONIC EQUIPMENT DIRECTIVE (WEEE, RAEE in Italy) 2002/96/EC AND SUBSEQUENT AMENDMENT 2003/108/EC

The marking shown below indicates that the product cannot be disposed of as part of normal household waste.
Electrical and Electronic Equipment (EEE) can contain materials harmful to health and the environment, and therefore is subject to separate waste collection: it must be disposed of at appropriate waste collection points or returned to the distributor against purchase of new equipment of similar type or having the same functions.
The directive mentioned above, to which make reference for further details, provides for punitive actions in case of illegal disposal of such waste.

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La réglementation susmentionnée, à laquelle nous vous renvoyons pour les détails et les approfondissements ultérieurs, prévoit des sanctions pour la mise en décharge abusive desdits rebus.

INDEX

1.0 - ⚠ HINTS AND WARNINGS

Please read the warning notices given in this section very carefully, because they provide important information regarding safety in installation, use and maintenance of the pump.

- *Keep this manual in a safe place, so that it will always be available for further consultation.*
- *The pump complies with EEC directives No.89/336 regarding "electromagnetic compatibility" and No.73/23 regarding "low voltages", as also the subsequent modification No.93/68.*

N.B. The pump has been constructed in accordance with best practice. Both its life and it electrical and mechanical reliability will be enhanced if it is correctly used and subjected to regular maintenance.

1.1 - ⚠ WARNING:

Any intervention or repair to the internal parts of the pump must be carried out by qualified and authorized personnel. The manufacturers decline all responsibility for the consequences of failure to respect this rule.

GUARANTEE: 2 years (the normal wearing parts are excluded, i.e.: valves, nipples, tube nuts, tubing, filter and injection valve). Improper use of the equipment invalidates the above guarantee. The guarantee is exfactory or authorized distributors.

1.2 - SHIPPING AND TRANSPORTING THE PUMP

The pump should always be moved in a vertical (and never in a horizontal) position. No matter what the means of transport employed, delivery of the pump, even when free to the purchaser's or the addressee's domicile, is always at the purchaser's risk. Claims for any missing materials must be made within 10 (ten) days of arrival, while claims for defective materials will be considered up to the 30th (thirtieth) day following receipt. Return of pumps or other materials to us or the authorized distributor must be agreed beforehand with the responsible personnel.

1.3 - ⚠ PROPER USE OF THE PUMP

- *The pump should be used only for the purpose for which it has been expressly designed, namely the dosing of liquid additives. Any different use is to be considered improper and therefore dangerous.The pump should not therefore be used for applications that were not allowed for in its design. In case of doubt, please contact our offices for further information about the characteristics of the pump and its proper use.*
  The manufactures cannot be held responsible for damage deriving from improper, erroneous or unreasonable use of the pump.

1.4 - ⚠ RISKS

- *After unpacking the pump, make sure it is completely sound. In case of doubt, do not use the pump and contact qualified personnel. The packing materials (especially bags made of plastics, polystyrene, etc.) should be kept out of the reach of children: they constitute potential sources of danger.*
- *Before you connect the pump, make sure that the voltage ratings, etc., correspond to your particular power supply. You will find these values on the rating plate attached to the pump.*
- *The electrical installation to which the pump is connected must comply with the standards and good practice rule in force in the country under consideration.*
- *Use of electrical equipment always implies observance of some basic rules: In particular:*

1 - do not touch the equipment with wet or damp hands or feet;
2 - do not operate the pump with bare feet (Example: swimming pool equipment);
3 - do not leave the equipment exposed to the action of the atmospheric agents;
4 - do not allow the pump to be used by children or unskilled individuals without supervision;

- *In case of breakdown or improper functioning of the pump, switch off, but do not touch. Contact our technical assistance for any necessary repairs and insist on the use of original spares. Failure to respect this condition could render the pump unsafe for use.*
- *When you decide to make no further use of an installed pump, make sure to disconnect it from the power supply.*

Before carrying out any service on the item, check:

1. ***Disconnect the pins from the mains or by means of a two poles switch with 3 mm minimum distance between the contacts. (Fig. 4).***
2. ***Relieve all the pressure from the peristaltic pump and injection tube.***
3. ***Drain or flush all dosing liquid from the peristaltic.***

In event of possible losses in the hydraulic system of the pump (breakage of the "O" ring gasket, the valves or the hoses) the pump should immediately be brought to a stop, emptying and depressurizing the delivery hose while taking all due safety precautions (gloves, goggles, overalls, etc.).

1.5 - ⚠ TOXIC AND/OR DANGEROUS LIQUID DOSAGE

To avoid risk from contact with the hazardous liquids or toxic fumes, always adhere to the notes in this instruction manual:

- *Follow the instructions of the dosing liquid manufacturer.*
- *Check the hydraulic part of the pump and use it only if it is in perfect condition.*
- *Use only the correct materials for the tubing, valves and seals to suit the liquid to be dosed; where possible shield the tubing with PVC conduit.*
- *Before disconnecting the metering pump, make sure to flush out and neutralize the pump head with the proper reagent liquid.*

1.6 - ASSEMBLING AND DISMANTLING THE PUMP

1.6.1 - ASSEMBLY

All metering pumps are normally supplied fully assembled. For greater clarity, please consult the exploded view of the pump appended at the end of the manual, which shows all the pump details and a complete overview of all the pump components. These drawings are in any case quite indispensable whenever defective parts have to be re-ordered. For the same purpose, the appendix also contains other drawings showing the hydraulic parts (pump head and valves).

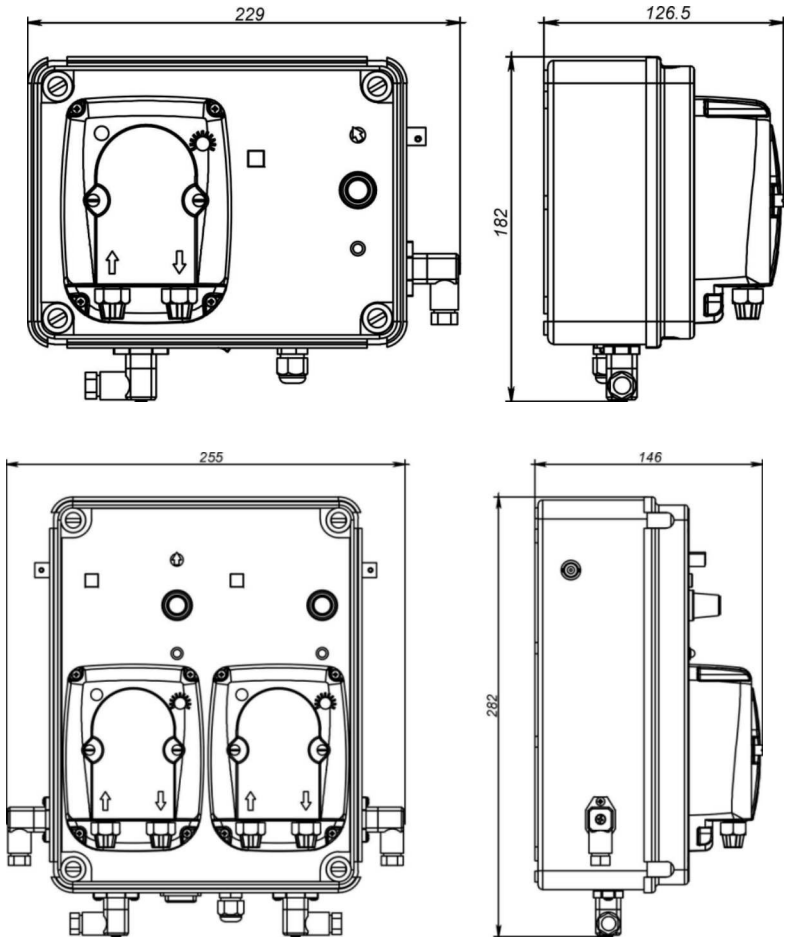
1.6.2 - DISMANTLEMENT

Proceed as follows before you dismantle the pump or before performing any other operation on it:

1. *Disconnect the pins from the mains or by means of a two poles switch with 3 mm minimum distance between the contacts. (Fig. 4).*
2. *Relieve all the pressure from the peristaltic pump and injection tube.*
3. *Drain or flush all dosing liquid from the peristaltic.*

This operation calls for special attention, and you should therefore consult the drawings in Appendix and Chapter 1.4“RISKS” before you commence work.

OVERALL DIMENSIONS (*Fig. 1*)



2.0 - PERISTALTIC PUMPS HYPER POOLCONTROL B SERIES

2.1 - OPERATION

Peristalsis is a wave of automatic contractions propelling contents along channel or tube, this led to a peristaltic action. By mechanical simulation of biological peristalsis rollers crush tube walls togheter to form a seal while roller moves along the tube, then the previously compressed tube regains original form and sucks fluid into the formed vacuum. The fluid will follow the roller until tube is not compressed any more, then to avoid a flow back a second roller compress the tube, pushing the fluid out of the pump and repeating the suction action while the pump continues to operate the rollers which are fitted on a special rotor create suction lift and outlet pressure.

2.2 - COMMON FEATURES

- *The products are manufactured according CE regulation*
- *Plastic housing in GW PLAST© Material*
- *Level control setting included (supplied without probe)*
- *Standard power supply (fluctuations not to exceed ±10%): 230 V a.c. 50 Hz single phase.*
- *Power supply upon request (fluctuations not to exceed ±10%): 110 V a.c. 50-60 Hz single phase*

2.3 - LIQUID ENDS MATERIALS

1 - Hose: *Santoprene®*
2 - Filter: *Standard - Polypropylene*
3 - Suction hose: *PVC Cristal®*
4 - Discharge hose: *Polyethylene*

TECHNICAL FEATURES

TIPO	PORTATA MASSIMA		PRESSIONE MASSIMA		PESO NETTO		DIMENSIONI D'INGOMBRO MAX						POTENZA ASSORBITA	GIRI MOTORE	Ø TUBETTO Santoprene®
							MAX OVERALL DIMENSIONS								
TYPE	*MAX FLOW*		*MAX PRESSURE*		*NET WEIGHT*		altezza height		larghezza width		profondità depth		*ABSORBED POWER*	*ROTATION SPEED*	*TUBE SIZE* Santoprene®
Hyper PoolControl B pH	l/h	gal/h	bar	psi	kg	lb	mm	in	mm	in	mm	in	Watts	giri/min - rpm	mm
1-3	**1**	**0.26**	**3**	**43.5**	**1.50**	**3.30**	182	7.16	229	9.01	126.5	4.98	**10**	**25**	**3,2 x 9,6**
2-2	**2**	**0.53**	**2**	**29**	**1.50**	**3.30**	182	7.16	229	9.01	126.5	4.98	**10**	**25**	**4,8 x 9,6**
3-3	**3**	**0.80**	**3**	**43.5**	**1.50**	**3.30**	182	7.16	229	9.01	126.5	4.98	**10**	**50**	**4,8 x 9,6**

TIPO	PORTATA MASSIMA		PRESSIONE MASSIMA		PESO NETTO		DIMENSIONI D'INGOMBRO MAX						POTENZA ASSORBITA	GIRI MOTORE	Ø TUBETTO Santoprene®
							MAX OVERALL DIMENSIONS								
TYPE	*MAX FLOW*		*MAX PRESSURE*		*NET WEIGHT*		altezza height		larghezza width		profondità depth		*ABSORBED POWER*	*ROTATION SPEED*	*TUBE SIZE* Santoprene®
Hyper PoolControl B RX	l/h	gal/h	bar	psi	kg	lb	mm	in	mm	in	mm	in	Watts	giri/min - rpm	mm
1-3	**1**	**0.26**	**3**	**43.5**	**1.50**	**3.30**	182	7.16	229	9.01	126.5	4.98	**10**	**25**	**3,2 x 9,6**
2-2	**2**	**0.53**	**2**	**29**	**1.50**	**3.30**	182	7.16	229	9.01	126.5	4.98	**10**	**25**	**4,8 x 9,6**
3-3	**3**	**0.80**	**3**	**43.5**	**1.50**	**3.30**	182	7.16	229	9.01	126.5	4.98	**10**	**50**	**4,8 x 9,6**

TIPO	PORTATA MASSIMA		PRESSIONE MASSIMA		PESO NETTO		DIMENSIONI D'INGOMBRO MAX						POTENZA ASSORBITA	GIRI MOTORE	Ø TUBETTO Santoprene®
							MAX OVERALL DIMENSIONS								
TYPE	*MAX FLOW*		*MAX PRESSURE*		*NET WEIGHT*		altezza height		larghezza width		profondità depth		*ABSORBED POWER*	*ROTATION SPEED*	*TUBE SIZE* Santoprene®
Hyper PoolControl B pH/RX	l/h	gal/h	bar	psi	kg	lb	mm	in	mm	in	mm	in	Watts	giri/min - rpm	mm
1-3	**1**	**0.26**	**3**	**43.5**	**3.00**	**6.61**	282	11.10	255	10.03	146	5.74	**14**	**25**	**3,2 x 9,6**
2-2	**2**	**0.53**	**2**	**29**	**3.00**	**6.61**	282	11.10	255	10.03	146	5.74	**14**	**25**	**4,8 x 9,6**
3-3	**3**	**0.80**	**3**	**43.5**	**3.00**	**6.61**	282	11.10	255	10.03	146	5.74	**14**	**50**	**4,8 x 9,6**

3.0 - INSTALLATION

a. *- Install the pump in a dry place and well away from sources of heat and, in any case, at environmental temperatures not exceeding 40°C. The minimum operating temperature depends on the liquid to be pumped, bearing in mind that it must always remain in a liquid state.*

b. *- Carefully observe the regulations in force in the various countries as regards electrical installations (Fig.2).* ***When the supply cable is devoid of a plug, the equipment should be connected to the supply mains by means of a single-pole circuit breaker having a minimum distance of 3 mm between the contacts. Before accessing any of the electrical parts, make sure that all the supply circuits are open.***

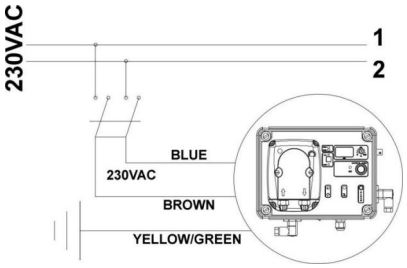


Fig. 2

c.- *Locate the pump as shown in fig. 3 bearing in mind that it may be installed either below or above the level of the liquid to be dosed, though the level difference should not exceed 2 meters. In case of liquids that generate aggressive vapours, do not install the pump above the storage tank unless the latter is hermetically sealed.*

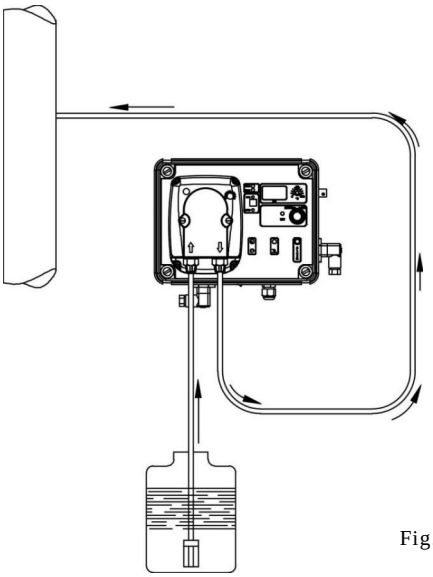


Fig. 3

d.- *Slide the hoses over the nipples, pushing them right home and then fix them with appropriate tube nuts (Fig.4).*

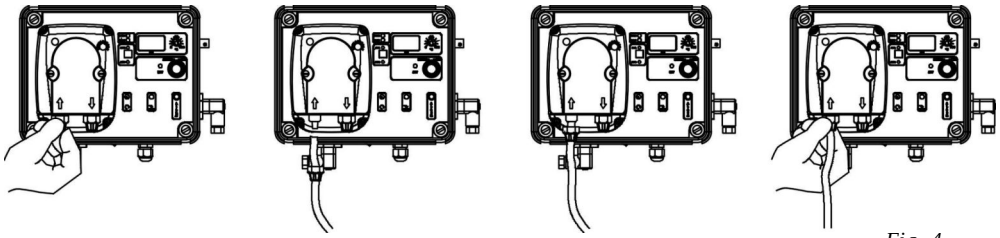


Fig. 4

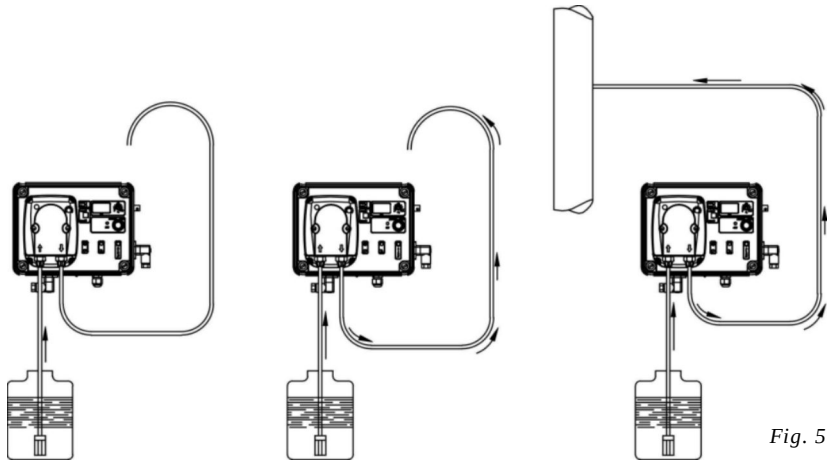


Fig. 5

Before attaching the delivery hose to the plant, prime the peristalòtic by going through the sequence shown in fig. 5. In case of priming difficulties, use a normal syringe to suck liquid from discharge nipple while the pumèp is in operation, continuing until you actually see the liquid rise in the syringe. Use a short lenght of suction hose to connect the syringe to the discharge nipple.

f. *Try to keep both the suction and discharge hoses as straight as possible, avoiding all unnecessary bends. operation, continuing until you actually see the liquid rise in the syringe. Use a short length of suction hose to connect the syringe to the discharge nipple. In case of a pump equipped with an air bleed valve, unscrew the air relief valve B up to all the air in the pump head will be out.*

f. *- Try to keep both the suction and discharge hose as straight as possible, avoiding all unnecessary bends.*

g. *- Select the most appropriate injection point on a pipe of the plant to be treated and there fit a 3/8" female steel gas thread connector (similar to BSPm). This connector is not supplied with the pump. Screw the injection valve to the gas connector, inserting a gasket as shown in Fig. 6. Then connect the discharge hose to the conical connector on the injection valve and fix it with the supplied tube nut G. The injection valve also acts as no return valve by means of a cylinder sleeve (elastomer, standard supplied in Viton).*

3.1 - INJECTION VALVE INSTALLATION DIAGRAM Fig. 6

A *- Pipework*
B *- Valve guide*
C *- Polypropylene nipple*
D *- Lip valve*
E *- 3/8" Double threaded nipple*
G *- Hose tube nut*
M *- Conical connector for attaching the discharge hose*
N *- 3/8" female steel gas thread connector*
T *- Polyetylene hose*

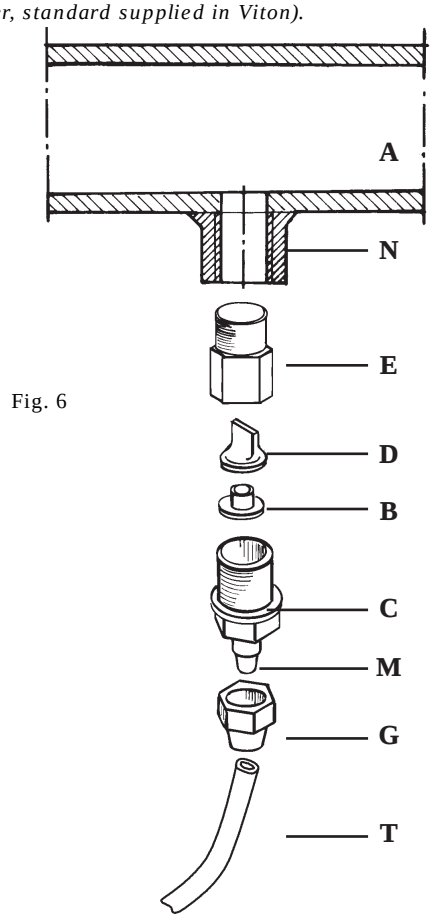


Fig. 6

4.0 - MAINTENANCE

1. *Periodically check the chemical tank level so as to avoid the pump operates without liquid. This would not damage the pump, but may damage the process plant due to lack of chemical.*
2. *Check the pump operating condition at least every 6 months, pump head position, screws, bolts and seals; check more frequently where aggressive chemicals are pumped, especially:*
   - the additive concentration in the process plant; a reduction of this concentration could be caused by the wearing of the hose, in which case it needs to be replaced or by the clogging of the filter which then has to be cleaned as in point 3 here below.
3. *The Company suggests periodically cleaning off the hydraulic parts (valves and filter). We cannot say how often this cleaning should be done as it depends on the type of application, we also cannot suggest what cleaning agent to use as this will depend on the additive used.*

Operating suggestions when dosing sodium hypochlorite (most frequent case):

a - *disconnect the pins from the mains or by means of a onnipolar switch with 3 mm minimum distance between the contact.*

b - *disconnect discharge hose from process plant;*

c - *remove the suction hose (with filter) from the tank and dip it into clean water;*

d - *switch on the peristaltic pump and let it operate with water for 5 to 10 minutes;*

e - *switch OFF the pump, dip the filter into a hydrochloric acid solution and wait until the acid finishes cleaning;*

f - *switch ON the pump again and operate it with hydrochloric acid for 5 minutes in a closed-circuit, with suction and discharge hose dipped into the same tank;*

g - *repeat the operation with water;*

h - *re-connect the peristaltic pump to the process plant.*

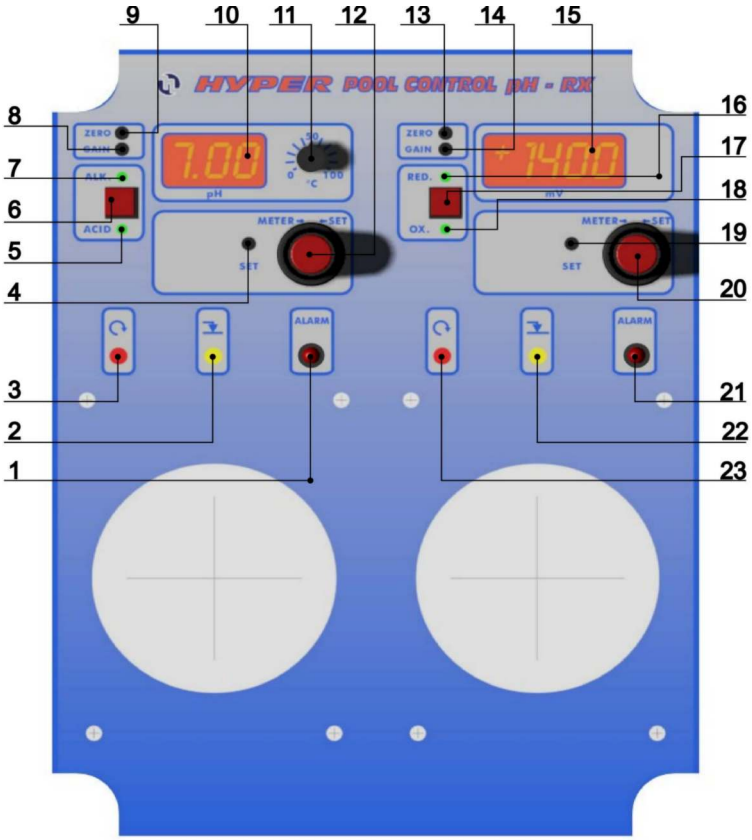


Fig. 7

5.0 - HYPER POOLCONTROL B pH/RX

5.1 - COMMANDS (Fig. 7)

1 - Max time alarm LED "red"
2 - Level alarm LED "yellow"
3 - Peristaltic active LED "red"
4 - Setpoint adjustment trimmer (pH instrument)
5 - Acid signal LED "green"
6 - ACID/ALK. selector
7 - Alkaline signal LED "green"
8 - "Gain" calibration (pH instrument)
9 - "Zero" calibration (pH instrument)
10 - Display (pH instrument)
11 - Temperature compensation knob
12 - METER/SETPOINT selector (pH instrument)
13 - "Zero" calibration (RX instrument)
14 - "Gain" calibration (RX instrument)
15 - Display (RX instrument)
16 - Reductive signal LED "green"
17 - RED./OX. selector
18 - Oxidant signal LED "green"
19 - Setpoint adjustment trimmer (RX instrument)
20 - METER/SETPOINT selector (RX instrument)
21 - Max time alarm LED "red"
22 - Level alarm LED "yellow"
23 - Peristaltic active LED "red"

5.2 - INSTRUMENT FEATURES

This peristaltic pump with built-in controller, activates the dosing when measured of pH or Redox (ORP) are in ON zone of the pump up to reach the setpoint.
Pump is working in ON/OFF mode.

Measuring range:
pH 0÷14; RX ±1400 mV
Upon request: 4÷20 mA output

5.3 - ALARM FUNCTION

HYPER POOLCONTROL B has a new important feature, i.e. OVERDOSING ALARM TIME. For any kind of problems may occur in the pool, or in a different plant (wrong calibration, dirty or broken electrode, recirculation pump damaged etc) if the pump doesn't reach the setpoint in a certain time means that something is wrong and for safety reasons HYPER POOLCONTROL B stops the dosing, a relay output (Fig. 9) and a front LED will be powered on.
User can set this alarm time, i.e. the maximum allowed dosing time, from 10 to 150 minutes. User can regulate this time through internal Dip Switched; please check Fig. 8.
Note: to disable the alarm time, please check Dip Switch setting in scheme of Fig. 10.

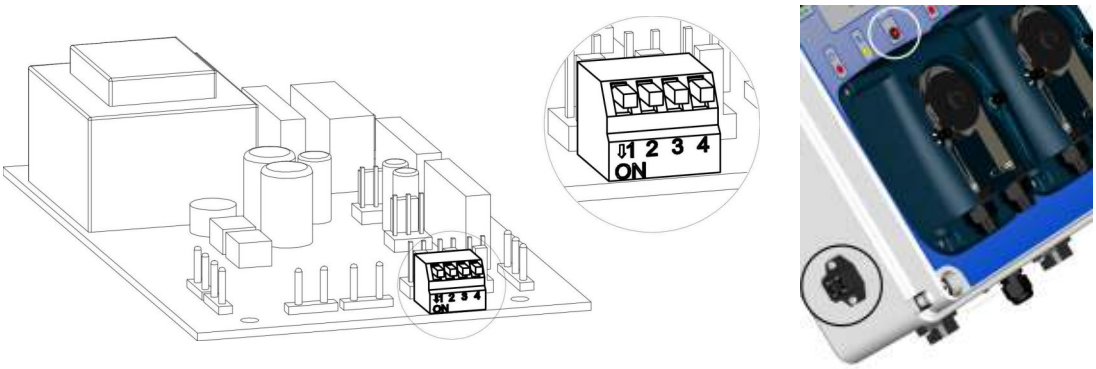


Fig. 8

As described before the maximum alarm dosing time can be set through Dip Switch as showed in Fig. 10. Such switch is placed in the power circuit board fixed on the bottom of the pump casing. Following it is described different alarm timing setting through Dip Switch

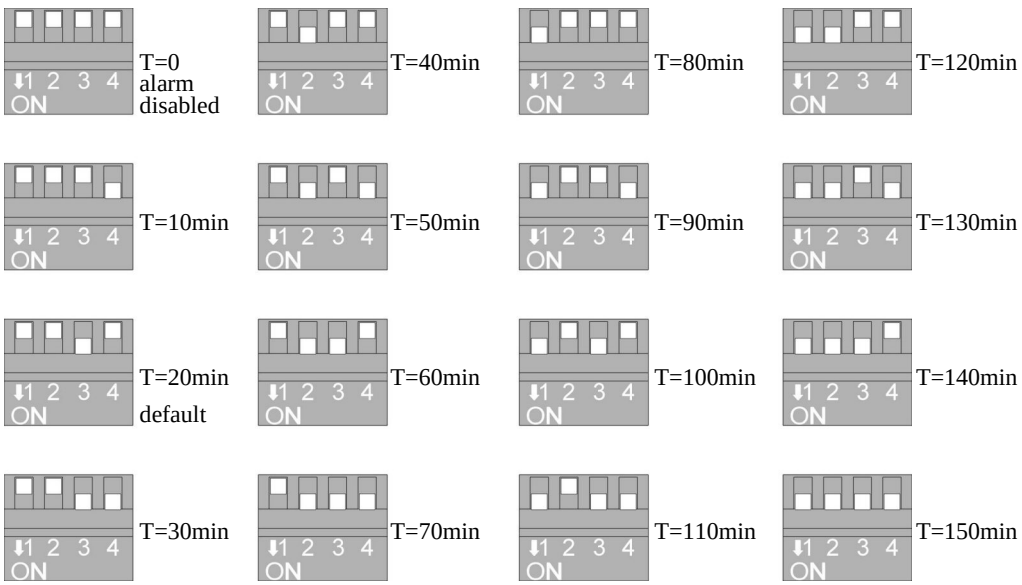
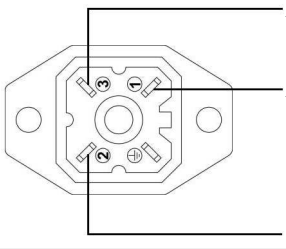


Fig. 10

5.4 - ALARM CONNECTOR WIRING

Alarm connector wire assembly	*Functions and technical informations*
	*Connection to* ***alarm signal*** *Configuration:* *Pin 1 = Normally Open (N.O.)* *Pin 2 = Normally Closed (N.C.)* *Pin 3 = Common* *Pin ⏚ = No connection*

5.5 - COMMISSIONING THE INSTRUMENT

A. Install Hyper PoolControl B as described in Chapter 3.0 "INSTALLAZIONE"

B. Place the electrode in the electrode holder

C. Connect the electrode to the instrument by means of the female BNC connector rotating it through 90°

D. Position the ***Meter/Set selector*** *(12 or 20) on* ***Set*** *and use the plastic screw-driver supplied with accessories and turn the* ***Setpoint adjustment trimmer*** *(4 or 19) to adjust the desired value (pH or mV)*

E. Position the ***Meter/Set selector*** *(12 o 20) on* ***Meter****, use the* ***ACID/ALK*** *or* ***RED/OX selector*** *(6 o 17) to select the required type of intervention. Following are described some example:*

Example 1 (pH measure): if the intervention point is set at pH 9 and an acidification is required, set the ***Intervention selector*** *(6) to ACID, pump will then start dosing the additive every time the pH rises above 9. If it is desired to alkalinize the system, set the* ***Intervention selector*** *(6) to ALK, in which case the pump will come into operation every time the pH drops below 9.*

Example 2 (mV measure): Consider that a reductive chemical solution (ex. Sodium bisulfite) lower the measure, viceversa an oxidative chemical solution (ex. Sodium hypochlorite) higher the measure. Then consider this example: If the intervention point is set at 700mV and an oxidation is required, set the Intervention selector (17) to OX. The pump will then start dosing the additive every time the solution potential drops below 700mV. If it is desired to perform a reducing action, set the Intervention selector (17) to RED., in which case the pump will come into operation every time the solution potential rises above 700mV. Bear in mind that Redox measurements are affected by pH variations; if this factor is subject to considerable oscillations, we would advise that Hyper PoolControl B RX can be supplemented with either pH pump or pH instrument combined with a peristaltic pump (for example Hyper PoolControl B pH). In this case Hyper PoolControl B pH/RX has both versions.

F. It must not be forgotten that adequate time must be allowed for the additive to become uniformly distributed, otherwise the value read on the display will differ from the real system state.

5.6 - CALIBRATION

All HYPER POOLCONTROL B are calibrated at the factory at a temperature of 20°C, small regulating adjustments are required on installation. These are due to the type of electrode used and the working temperature prevailing in the plant, especially the latter exerts a considerable influence on th pH value. Please note temperature error can be conpensated by operating the ***Temperature compensation knob*** *(11). The adjustments enabling calibration are located on the front panel; these adjustments are necessary at regular intervals, as the electrodes not only tend to change their physico-chemical composition. We would advise that the calibration curve be checked at least once a month, using the routine described below:*

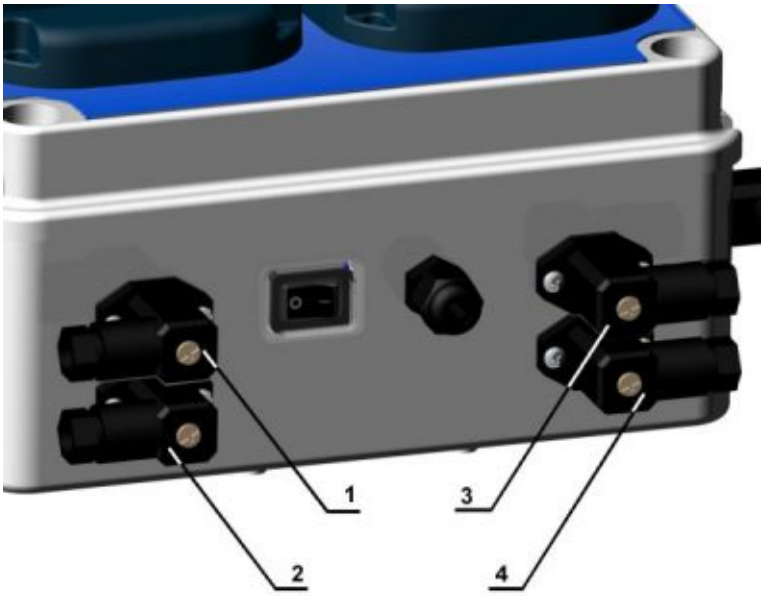
pH instrument calibration: *when checking the calibration, use two buffer solutions at pH 4 and pH 7if you wish to work in the Acid range or, alternately pH 7 and pH 9 if you wish to work in the Alkaline range.*

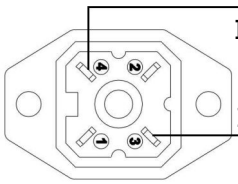
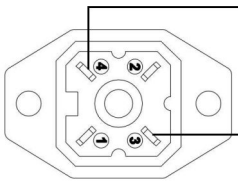
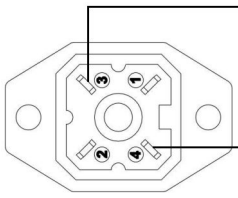
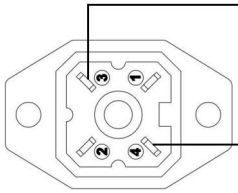
- *Adjust* ***Temperature compensation knob*** *(11) according installation temperature.*
- *Dip the electrode into pH 7 buffer solution for few seconds*
- *Adjust "**ZERO**" **calibration trimmer** (9) until display shows 7.00*
- *Dip the electrode into pH 4 or pH 9 buffer solution for few seconds*
- *Adjust "**GAIN**" **calibration trimmer** (8) until display shows pH value according to the used solution*

RX instrument calibration: *Disconnect the electrode from the pump and short-circuit the female BNC connector by the use of copper wire.*

- *Use the plastic screw-driver supplied with accessories to turn the "**ZERO**" **calibration trimmer** (13) until display shows "0"*
- *Re-connect the electrode and immerse it in a buffer solution of well defined mV value, then agitate the solution*
- *Adjust "**GAIN**" **calibration trimmer** (14) until display shows the correct mV value of the buffer solution*

6.0 - SERVICE CONNECTOR WIRING DIAGRAMS AND FUNCTIONS



Service connector wire assembly	*Functions and technical informations*
 BLUE BLUE *To level probe* **Pos. 1**	***Level probe** connection (**pH**)* *Configuration:* *Pin 1 = No connection* *Pin 2 = No connection* *Pin 3 = Level probe wire* *Pin 4 = Level probe wire*
 (-) (+) *Output mA signal* **Pos. 2**	***Output mA signal** connection (**pH**)* *Configuration:* *Pin 1 = No connection* *Pin 2 = No connection* *Pin 3 = (+) mA signal wire red* *Pin 4 = (-) mA signal wire black*
 BLUE BLUE *To level probe* **Pos. 3**	***Level probe** connection (**RX**)* *Configuration:* *Pin 1 = No connection* *Pin 2 = No connection* *Pin 3 = Level probe wire* *Pin 4 = Level probe wire*
 (+) (-) *Output mA signal* **Pos. 4**	***Output mA signal** connection (**RX**)* *Configuration:* *Pin 1 = No connection* *Pin 2 = No connection* *Pin 3 = (+) mA signal wire red* *Pin 4 = (-) mA signal wire black*

7.0 - TROUBLE-SHOOTING COMMON TO HYPER POOLCONTROL B

7.1 - MECHANICAL FAULTS

As the system is quite robust there are no apparent mechanical problems. Occasionally there might be a loss of liquid from the nipple because the tube nut has loosened, or more simply the peristaltic tube has broken.
In this case they have to be replaced. After repair, the peristaltic pump will need to be cleaned of additive residues which can damage the pump casing.

❶ *- POWER SWITCH ON, RED LED IS ON (3, 21), PERISTALTIC TURNING BUT THE ADDITIVE IS NOT INJECTED*

a. *Check the integrity of peristaltic tube. Should the tube be swollen, check tube material against our chemical resistance compatibility chart.*

b. *Check clogging of the filter*

c. *Check clogging of the injection valve*

7.2 - ELECTRICAL FAULTS

❶ *POWER SWITCH ON RED LED IS OFF (3, 21), PERISTALTIC PUMP DOES NOT TURN*

a. *Check power supply (socket, plug, power switch ON), if the pump doesn't work contact manufacturer, Customer Service, Dealer or Distributor.*

❷ *THE PUMP DOES NOT MEASURE CORRECTLY*

a. *Check the calibration of instrument*
b. *Check the efficacy of the electrode*

❸ *THE PERISTALTIC PUMP FAIL TO DOSE*

a. *Make sure the "Setpoint" has been correctly set*
b. *Make sure the "ACID/ALK" or "RED./OX." switch is on the right position, i.e. that it concords with the required dosing.*

❹ *IN CASE THE ADDITIVE LEVEL IS BELOW THE LEVEL PROBE AND LEVEL ALARM IS STILL OFF*

Check the level switch connection, short circuit poles connector (Chapter 6 SERVICE CONNECTOR WIRING DIAGRAMS AND FUNCTIONS) in case the alarm is on, replace the switch;
if the alarm is off, contact Manufacturer, Customer Service, Delear or Distributor.

Attention: when removing the perstaltic pump from the plant, use great care in detaching the delivery hose from the connector nipple, because it could contain some residual additive.