

ESPANGO – peristaltic pumps technology
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CONFORMITY « CE » DECLARATION

With this declaration we declare that the peristaltic pump ESPANGO model **IPL10**

Version _____

Serial no. _____ year _____

Is made according to the CE directive: 2006/42/CE

Technical dept.
Fabio Miccolis

Manager
Aldo Scaletti

Milan, _____

DDT

QUALITY

CUSTOMER

CAUTION

All the peristaltic pumps supplied by ESPANGO are mostly employed to transfer POTENTIALLY DANGEROUS chemical products.

STICK WITH the following instructions:

- . **the assembly and the application have to be executed only by an authorized staff;**
- . **follow the functioning and the maintenance norms; when in doubt please contact our technical dept.;**
- . **near the pumps the operators have to wear appropriate protection clothing (helmet, glasses or screen, aprons, boots, gloves, etc.);**
- . **do not intervene on the pumps with tools when they are in function; in case of disassembly or inspection previously wash and reclaim all the components which have been in contact with the liquids.**

N.B.: these warnings are part of the conformity declaration or of the instructions manual when accompanied to them.

INSTALLATION, PROGRAMMING & MAINTENANCE INSTRUCTIONS

PERISTALTIC PUMPS IPL 10 RANGE



IPL10/24



IPL10/30



IPL10/100

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Please carefully read the present instructions manual before starting to work with the pump and closely stick with it in order to avoid errors which could cause damages, especially to the health and to the environment.

The data indicated in the present manual refer to the standard model.

Eventual variations realized on specific customer demand could partially or totally modify them.

In case of need, please contact our Technical Dept. (phone 02 5830 4949 – espango@espango.it) for any useful explanation.

1. GENERAL SECURITY INFORMATION

1.1 APPLICATIONS

The employment of peristaltic pumps to transfer liquids or gases has many advantages: thanks to its operating principle it is the only pump able to carry fluids without any direct contact with the product.

A new tube for each product can be employed, avoiding heavy cleaning.

By using a peristaltic pump you can sterilize on-line the vessels connected with the tube and sterilize the whole system.

The product is gently carried without stress, centrifugations or turbulent actions which could damage it; this is an additional advantage of this pump.

- . The peristaltic pump **IPL 10** is designed to be used in a laboratory or for industrial purposes.
- . The tube can be quickly replaced.
- . The high rpm motor, coupled with a precise control system, guarantees an uniform conveyance of the product.
- . The speed of the pump **IPL 10** is adjustable and it allows a precise control of the pumped volumes.
- . This pump is reversible. The rotation can be freely chosen. Even if the pump can run in both rotation directions, it is better to use the “clockwise” one.

1.2 SAFETY

The safety – respect for people, environment and materials – mostly depends on the behaviour of the employees who use the pump.

Please, carefully read this manual before starting to work with the pump. The respect of our instructions will avoid errors which could be dangerous, especially concerning the health and the environment.

When using this pump, the operator has always to refer to the present manual.

It has always to be available to all the people charged to use this pump.

We recommend to keep a copy of the manual close to the pump.

For safety reasons the equipment has always to be used by a qualified staff.

Before switching the pump on, please verify that the cable and the plug are not damaged; in case they are, don't connect the pump to the mains.

The voltage of the pump has always to be the same of the mains voltage.

Whatever action on the electric components has to be executed by qualified staff and the pump has to be under security conditions (switched off, cable unplugged).

Only original parts and accessories must be used. We strongly discourage the employment of not original spare parts, which can bring to unknown risks.

The characteristics and the safety of the pump can be granted only if all the required controls, the maintenance and the repairs are executed by our authorized staff.

The manufacturer assumes no responsibility in case repairs are not executed by his Technical Service or if not original parts or accessories should be used.

The manufacturer assumes no responsibility in case of misuse of the pump.

2. SETTING

2.1 POSITIONING

Handle the pump with care, avoiding shocks. Never pick up the pump by its head or by the cable. The pumps doesn't have to be installed in a excessively dusty place.

Place the **IPL 10** pump on a solid and non-flammable surface and be sure that it is firmly supported.

The pump has to be protected from direct sunlight (UV radiation).

2.2 ELECTRICAL CONNECTION

The pump has a flexible cable.

Please use the plug to connect and disconnect the pump from the mains.

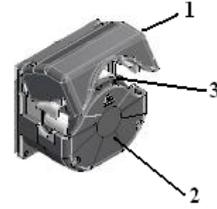
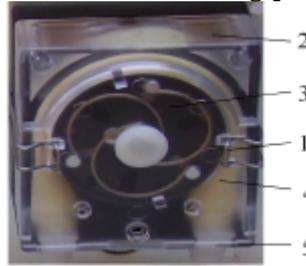
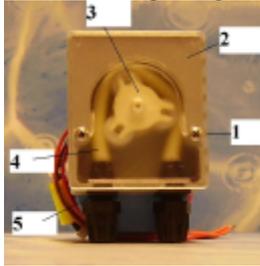
Before switching the pump on, verify that the cable and the plug are not damaged; in case they are, do not connect the pump to the mains.

The voltage of the pump has to be the same of the mains one.

3. DESCRIPTION

3.1 PUMPING HEAD

The **IPL 10** pumps can be provided with the following pumping head models:



IPL 10/24: head IPS24 - 2 or 3 rollers (see photo)

IPL 10/30: head IPS30 - 3 or 6 rollers (see photo)

IPL 10/100: head IPS100 - 3 or 6 rollers (see photo)

IPL 10/24: head IPS24

Components identification:

1. fastening screws
2. transparent case
3. roller rotor
4. tube
5. plastic fittings

IPL 10/30: head IPS30

Components identification:

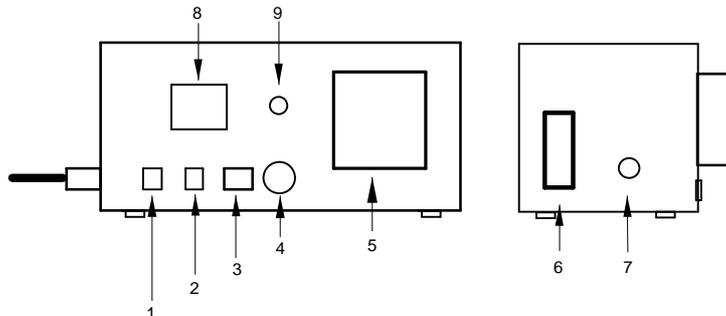
1. closing spring
2. transparent case
3. roller rotor
4. tube
5. plastic hooks

IPL 10/100: head IPS100

Components identification:

1. moving part
2. roller rotor
3. fixed part

On request and for special applications different pumping heads models can be used. In this case, make reference to the technical indications given by our technical dept.



3.2 CONTROL PANEL

1. Operation light (optional foot switch)
2. Start/stop button
3. Forward direction selection
4. Speed control potentiometer
5. Pumping head
6. Power pack: cable connection, switch, safety fuse
7. Cable output of the exterior foot switch (optional)
8. On/off timer (optional)
9. Switch on timer button (optional)

4. FUNCTIONING

4.1 TUBE INSERTION

THE PUMP MUST BE SWITCHED OFF!

PUMPING HEAD IPS24

1. Unscrew both fastening screws (1)
2. Remove the old tube (4)
3. Lay the tube in the pumping head, eventually slightly turning the roller rotor (3) to facilitate the handle, hooking it to the case by mean of its plastic fittings (5).
4. Introduce the transparent cover again (2)
5. Fix the two screws firmly blocking all.

PUMPING HEAD IPS30

1. Open the two springs (1) placed on the sides of the case
2. Withdraw the part of the transparent moving-head (2) slightly turning it forward/down
3. Withdraw the old tube (4)
- 4a. For tubes with plastic fittings: lay the tube in the pumping head hooking it to the case by mean of its plastic fittings (5)
- 4b. For bushings without hooks: lay the tube in the pumping head, keeping it in slight tension at its end, introduce the supplied plastic rider, block the tube and keep it in slight tension.
5. Insert the part of the moving-head again (2) starting from the side closer to the tube exit. For the bushings version please remember to always keep the tube in slight tension.
6. Hook the two metal springs (1) to the case firmly blocking all.

PUMPING HEAD IPS100

1. Open the upper mobile part of the head (1) gently pulling it upward
2. Withdraw the old tube
3. Lay the new tube on the roller rotor (2) inside the moving-head, keeping it in slight tension at its ends
4. Still keeping the tube in slight tension, close the upper part of the moving-head until you hear the coupling click.

Now the pump is ready for use.

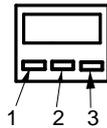
IMPORTANT NOTE: we guarantee its correct functioning only with tubes supplied and approved by us for quality and measures. NEVER USE TUBES WHICH QUALITY IS NOT SPECIFIC FOR PERISTALITIC PUMPS.

4.2 FUNCTIONING SUGGESTIONS

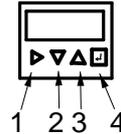
- In order to avoid too high pressure, suction and delivery tubes have to be as short as possible. Prevent bottlenecks and limit curves in rigid tubes.
- Employ big diameter tubes at low speed for a longer life tube.
- Employ small diameter tubes at highest possible speed for a better precision.
- When using viscous liquids proceed at low speeds. A high wall thickness tube has a better spring back and it increases the suction capacity.
- If the chemical resistance of the tube in respect of the product to be pumped is unknown, a practical test is recommended: weigh a piece of tube (3/4 cm) and soak it in the liquid for at least 24 hours. Then visually control that the tube is not deformed and weigh it again; a variation of 10% of the weight is acceptable. Afterwards, test the tube at the normal functioning conditions.

4.3 FUNCTIONING WITH TIMER (OPTIONAL VERSION)

Timer 1 secondo



Timer 0,01 secondo



4.3.1 VERSION WITH 1" TIMER

- . Press the key 1. "PROG" on the front to activate the programming of the ignition time
- . Scan with the key PROG the functionality hours/minutes/seconds. Use the keys 2. "+" / 3. "-" to modify the set value. Press again the key PROG to save the set value.

4.3.2 VERSION WITH 0.01" TIMER

- . Press the key 1 to activate the programming of the ignition time
- . Scan with the key 1 the functionality hours/minutes/seconds/tenths/centimes. The value to be set will blink, use the keys 2 and 3 to increase or decrease the set value – press the key 1 to move on the following value to be modified, until the end of the values.

How to activate the pump

- select on the front from the key no. 1 the position I or II
- on the position I the timer will be activated by the pulse of the pedal
- press the pedal ONCE or press the key 3. "START" on the control panel

The pump will work for the selected uptime and will stop at its expiry, releasing a beep.

The pump is now waiting for a new input to run again.

In order to "PAUSE" the pump DURING operation press again the pedal or the key "START".

Press again the pedal of the key "START" in order to restart the pump. The pump will work for the remaining time indicated on the viewer.

It is possible to use the pump with timer also manually in two different modalities:

- 1) Continuous ignition: use the button no. 2 on the front, position ON. The pump will run in continuous.
- 2) Power pulse: set the key no. 2 on the position OFF and the key no. 1 on the position II; the pump will start with the pedal pressure and will stop at its release.

4.4 FUNCTIONING PROBLEMS

PROBLEM	POSSIBLE CAUSE	CORRECTIVE ACTION
1. The pump doesn't start	a. the cable is not connected b. burnt/defective fuse c. the rotor is blocked due to wrong assembly	connect the cable change the fuse assemble correctly
2. the tube is mashed and the range is reduced	Wrong tube dimensions or the tube is worn	Use the appropriate tube or replace it
3. The range of the pump is incorrect	a. the tube material is not compatible with the liquid b. dirty rolls c. wrong tube dimensions d. The pumped product is very viscous	Use the tube suitable for the product Disassemble the pumping head and clean it Use the appropriate tube Use the appropriate tube
4. The pumps stops during work	There was an overload and the fuse is burnt	Switch the pump off and solve the overload cause, then change the fuse

Note: security fuses are placed in the power pack at the side of the pump

4.5 SWITCH OFF

Switch off the pump setting the switch on the position OFF.

Disconnect the cable from the mains.

Should the pump be kept inactive for a long period (days or weeks), remove the tube from the pumping head.

If you don't remove the compression, the tube could permanently remain deformed with a consequent reduction of its performances and endurance.

5 MAINTENANCE

The performances of the **IPL 10** pump can be granted only if all the requested controls, the extraordinary maintenance and the repairs are made by our authorized staff.

5.1 CLEANING

Use a water and delicate soap solution, with a smooth cloth, without abrasive to clean the surfaces and the control commands. Avoid to use degreasing or abrasive products, because they could irreversibly damage the surfaces.

Should the pump become dirty because of chemical products, etc., it will have to be immediately cleaned in order to avoid their hardening.

Never pour a liquid on the pump during the running or the cleaning!

It is warmly recommended to proceed to an accurate cleaning of the pumping head after a long running period. Residual particles coming from the normal wear of the tube could adhere to the rollers, compromising their precise function.

Product residuals have to be regularly removed from the suction and delivery fittings, so that a correct flow of the product is assured, avoiding bottlenecks.

The motor module and the head bearings do not need any maintenance. **Never lubricate them!**

5.2 DISINFECTION/DECONTAMINATION

The plastic case can be decontaminated in case of organic contamination, treating it externally with a disinfectant solution.

As far as disinfection is concerned, you have to act according to the current legislation. Contact the manufacturer before using cleaning and disinfecting methods which are different from the ones indicated in the present manual, because you could damage the pump.

6. TECHNICAL SPECIFICATIONS

CHARACTERISTICS

Measurement units

Case dimensions, net of pumping head
(width x height x length)

mm

120 x 120 x 240

Case dimensions, pumping head included

IPS24 (width x height x length)

mm

146 x 120 x 240

IPS30 (width x height x length)

mm

166 x 120 x 240

IPS100 (width x height x length)

mm

175 x 120 x 240

Weight

kg

1.5

230 Volt version

Power

V/Hz

230 Volt/ 50/60 Hz

W

head IPS24: 10 Watt

head IPS30: 30 Watt

head IPS100: 50 Watt

Fuse

A / V

head IPS24: 1 x Fuse 1.5 A /
250 V – delayed

IPS30: 1 x Fuse 1.5 A /
250 V – delayed

head IPS100: 1 x Fuse 2.0 A /
250 V – delayed

24 Volt AC/DC version

Power / Fuse

V

24 Volt AC/DC

see 230 Volt version