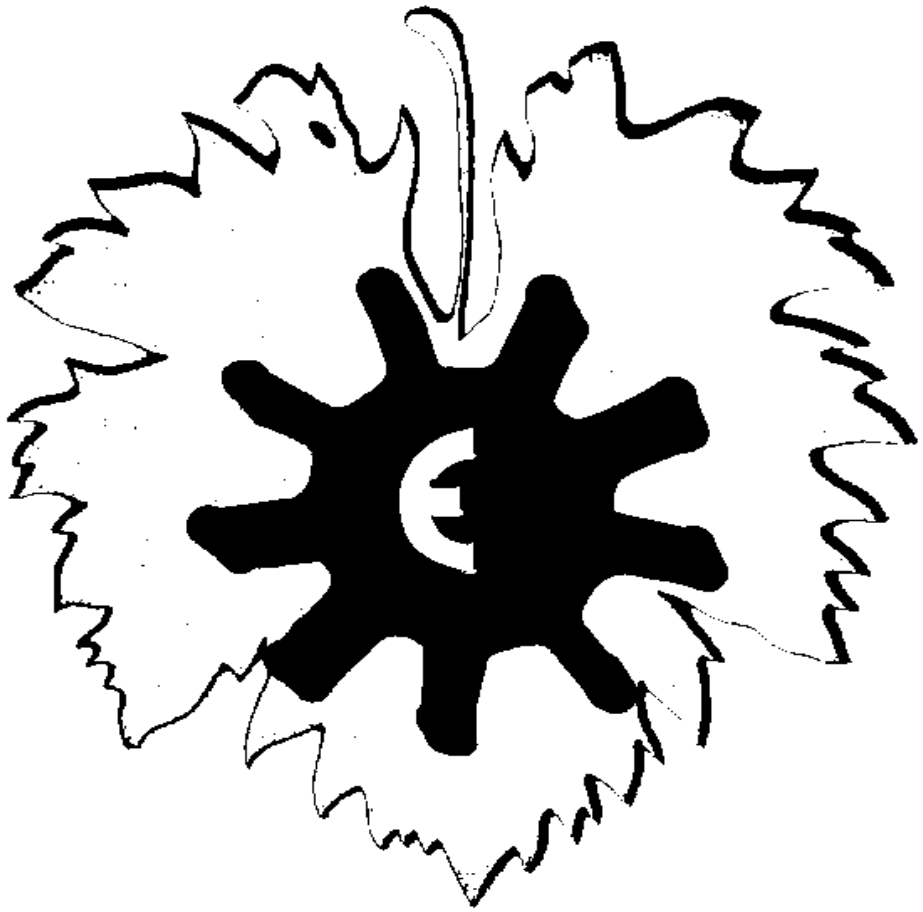
ENOITALIA S.r.l.

Instructions for use and technical manual



Self-priming electric pumps “EURO”

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MANUAL

This manual contains information on the reception, installation, operation, assembly, disassembly and maintenance of the Enoitalia electric pump.

Enoitalia reserves the right to modify this manual without notice.

INSTRUCTIONS FOR STARTER

This manual contains useful information for the use and management of your pumps.
Read the instructions carefully and follow the instructions provided before starting the pump.

It is very important to keep these instructions in a specially dedicated place.

SECURITY

Danger signals

General danger for people

Danger of injury caused by moving parts

Electric danger

Danger of corrosive substances

Danger! Hanging loads

EC Declaration of Machinery Conformity

Manufacturer and seller of the machine

ENOITALIA s.r.l.
Via Prov. Pisana, 162 Cerreto Guidi (Fi)

MODEL

SELF-PRIMING ELECTRIC PUMP

Year of manufacture: **2018**

The undersigned company hereby DECLARES at its own responsibility that the machine which this declaration refers to complies with the provisions of :

- Directive 2006/42/EC (machinery directive) and subsequent modifications and national dispositions of enactment.
- Directive 2006/95/EC (low voltage directive) and national dispositions of enactment.
- Directive 2004/108/EC (electromagnetic compatibility directive) and national dispositions of enactment.

The machine also complies with the Harmonised Standards
UNI EN : 349; 954/1; 1050; 547-1-2-3 ; 894-1-2-3 ; 953; 981; 1005-1-2-3-4-5; 1037.
UNI EN ISO: 3744; 7000; 12100-1-2; 11202; 11205 ; 11688-1-2; 14121-1; 13857;
UNI EN ISO 1186.
Technical standards and specifications CEI EN 60204/1.
National technical standards and specifications: UNI ISO 1819; UNI ISO 7149;
UNI 7544; 45020; 60447; 60447.

Cerreto Guidi, 25/07/2018

The Manufacturing Chief

Stefano Menichetti

TYPE OF PUMP:

– BELTED WITH TROLLEY

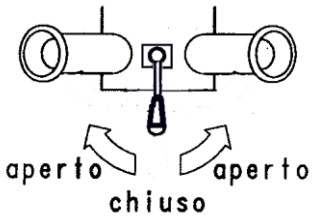
– COAXIAL

- MECHANICAL VARIATOR

- ELECTRONIC VARIATOR

1. DESCRIPTION

The self-priming electric pump with rubber impeller is suitable for the transfer of delicate food liquids even in the presence of suspended bodies (such as wine, milk, oil, de-stemmed grapes, fruit juices), and a wide range of chemical substances.
The electro pump is able to work in both directions of rotation. The pump body is made entirely of AISI 304 stainless steel, while the impeller is made entirely of rubber for food use (Certificate N° 2218 del 05/11/98; N° 2218/b del 05/11/98; N° 2844 del 30/11/98 in accordance with D.M. del 21/03/73 e D.M. n° 220 del 26/04/93).
In the COAXIAL and with INVERTER models the pump is connected directly to the crankshaft, while in the "BELT TRANSMISSION" models the pump is connected to a pulley connected to the engine with transmission belts; on the MECHANICAL VARIATOR and REDUCER models the pump is connected to a cardan shaft.
In each model the pump can be easily opened to allow ordinary cleaning and maintenance operations to be carried out by the qualified staff.
The models EURO 20, EURO 30, EURO 40, EURO 50, EURO 60 can be provided with BY-PASS: a valve in stainless steel AISI 304 is placed externally to the body pump, which allows you to adjust the pressure as you like. It is not to be used to regulate the flow, but it allows to close the outlet pipe and let the product recycle for a few seconds avoiding overloads to the engine (ATTENTION max 10 sec. to avoid problems of overheating and / or damage to the product).



The electric pump consists of the following components:
-ENGINE
-TROLLEY (optional in the coaxial models)
- MOTOR PULLEY (where provided)
-PUMP PULLEY (where provided)
- BELT (where provided)
-PUMP SUPPORT
-RUBBER IMPELLER
-MECHANICAL SEAL
- STAINLESS STEEL DISC
- STAINLESS STEEL SHAFT
-ELECTRICAL PANEL

2. POSITIONING, CHECKS AND INSTALLATION

The electric pump must be positioned firmly in a stable and horizontal position with respect to the ground (operate the brake of the wheels in the models provided with them), and the level of the liquid to be transferred must be at a maximum depth not exceeding 5/6 meters from the axis of the pump, and the aspiration system must be below the liquid level of at least 10-15 cm.

Checks before installation: before connecting the machine, make sure that the motor voltage (shown on the plate) corresponds to that of the mains and that the switch is set to the "Zero" stop position. The electrical safety of this machine is allowed only if it is connected to an effective earthing system, performed according to current electrical standards. The verification and possible installation of the appropriate electrical components must be carried out by qualified staff. Furthermore, the use of multiple sockets or adapters is not recommended; if their use is

indispensable, it is necessary to use only products that comply with current safety standards, respecting the flow limit in current value and maximum power.

Pipe connection: the pipes must be rigid and reinforced, and must be fixed to the pump by means of special clamps, avoiding the formation of bottlenecks that could prevent the regular flow of the liquid.

IMPORTANT: never start the machine when empty (in the absence of liquid). The first time the machine is started, it is necessary to carry out a preliminary washing in order to remove any manufacturing remains.

3. FUNCTIONING

The EURO self-priming electric pumps are driven by an electric motor (made in compliance with all current safety regulations), whose switch, when the machine is off, must always be positioned on the "central zero".
To start, the switch must be set to the desired speed, or to position "1" for models with only one speed. The mouth of the pump which will suck the liquid is determined by the direction of rotation of the impeller, which can be controlled by observing the rotation of the van on the back of the engine.

STARTING:

the starting mode varies according to the model purchased.

SINGLE PHASE COAXIAL MODELS:

On this type of pump, the electrical panel is equipped with a double condenser: one for commissioning (standard on all single-phase motors) and a special boost condenser to guarantee additional power during start-up.
In addition to the "0" stop position, the rotation inverter also presents position 1 (clockwise rotation), position 2 (counter clockwise rotation) and position with AVV spring start, indicated both after number 1 and number 2.
To start the machine, turn the switch in the required direction for 2 seconds in the AVV position, which must be released as soon as the pump starts running.
CAUTION: Do not insert the switch in the AVV position, otherwise you risk damaging the internal boost condenser. FOR THE EURO 20 MODEL an electric solution is provided.
The AVV position is not present, but after the pump has been stopped, it needs to wait for 5 seconds before a new start.
If the pump is supplied with automatic stop and start systems (for example pressure switch or flow switch), in single-phase coaxial versions, it is not possible to invert the direction of rotation (except for the EURO 20 model).

THREE-PHASE COAXIAL MODELS, WITH INTEGRATED PANEL:

On EURO 20-30-40-50-60 coaxial models with integrated electrical panel, the pump has an inverter installed on the electric motor. In addition to the stop position "0" on the rotation inverter, position 1 (clockwise rotation) and position 2 (counter clockwise rotation) are also indicated.
To start the machine, simply turn the inverter in the required direction.

THREE-PHASE COAXIAL MODELS WITH SEPARATE PANEL:

The three-phase coaxial models with separate panel show up with a control panel installed on a trolley.
In addition to the rotation inverter, they have a magnetic protection switch, which must be activated after connecting the pump to the mains. To activate it, simply press the BLACK button.
Then to start the pump, turn the inverter to the required position. On these models it is possible to stop the machine either by positioning the inverter on "0" or by pressing the emergency stop button.
CAUTION: after pressing the emergency stop, to reactivate the pump, turn the button in the direction of the turn signal and activate the magnetothermic switch again.

DOUBLE SPEED MODELS WITH BELT TRANSMISSION:

On these models a separate control panel is installed, complete with magnetothermic protection and multipolar rotation inverter. The inverter has a central "0", three positions on the left (102) and 3 positions on the right (102). The number 1 indicates the minimum speed in both directions. The number 2 indicates the maximum speed in both directions.
For operation of the magnetothermic protection see paragraph "Three-phase coaxial models with separate panel".

SINGLE-PHASE MODELS WITH BELT TRANSMISSION:

These models have an integrated control panel on the electric motor. For operation, see paragraph "Single-phase coaxial models".

MODELS WITH MECHANICAL SPEED VARIATOR:

This type of pump is available only with THREE-PHASE motorization, and has a separate control panel installed on the trolley. For the operation of the panel, see paragraph "Three-phase coaxial models with separate panel". Attached to this manual there is a specific section dedicated to the operation of this type of pumps.

MODELS WITH ELECTRONIC SPEED VARIATOR:

See specific paragraph at the end of the manual.
In addition to the above models, the pumps can have the following special control panels:

1) **CONTROL PANEL WITH AUTOMATIC PRESSURE SWITCH:**

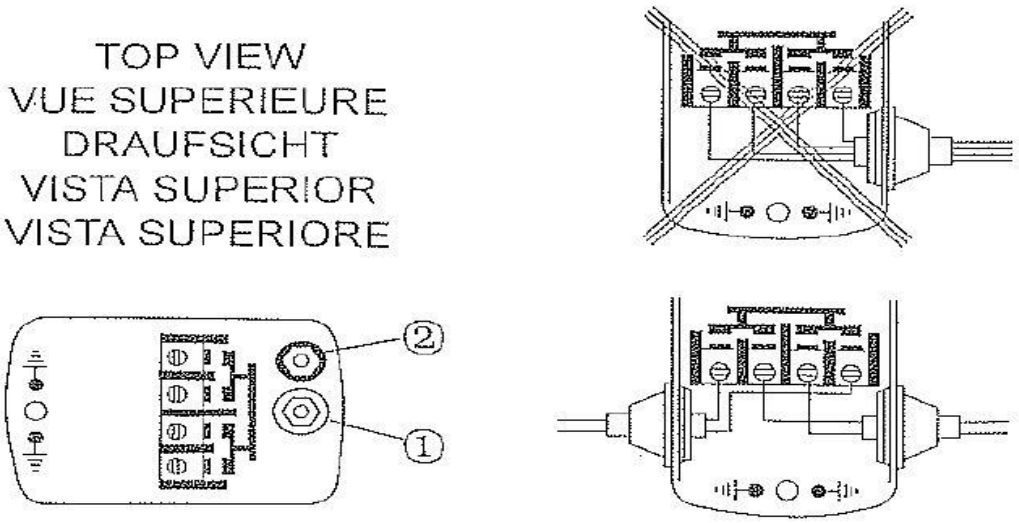
Available on all three-phase models (except for the EURO 20 pump) and on models with electronic variator (both three-phase and single-phase).

The pump is equipped with a special fitting consisting of a non-return valve, buffer tank (in some cases it is not supplied) and a pressure switch panel. This fitting is installed on the pump in the liquid delivery direction (check the direction of the turn signal indicated on the non-return valve, which must coincide with the liquid direction). The power supply is given by the pressure switch panel, which in turn is connected to the mains. Inside the pressure switch panel there are the adjustment screws to set the pressure for insertion and disconnection of the pressure switch circuit.

To operate the pump, after making the electrical connection, position the rotation inverter at position 1 in the desired flow direction. The pump will start running. When the delivery circuit is closed (usually with a tap or dispensing gun), the pump will continue to run for a few moments until the set pressure is reached.

CAUTION: When first used, open the valve located above the buffer tank to allow all the air in the circuit to escape and avoid foam problems**.** When the circuit is reopened, for a few moments the liquid flows out due to the push of the internal pressure and then the pump is activated.
The two adjustment screws located inside the pressure switch allow to establish the stop and restart time of the pump.

CAUTION: for models equipped with an electric variator, a connection is provided between the pressure switch and the control panel. The power supply on these models is always supplied to the general panel and not to the pressure switch. On the general panel there is an AUTOMATIC / MANUAL selector to select operation with the pressure switch or in manual mode.



MAKE THE ADJUSTMENTS IN THE FOLLOWING ORDER:

1) **INSERTION:** To increase the insertion point when the pressure decreases, screw the calibration nut (1)
2) **DISINSERTION:** To increase the operating point when the pressure increases, screw the differential adjustment nut (2)

CONTROL PANEL WITH FLOW SWITCH: ("Dry Stop")

This is an accessory available on all three-phase models (except EURO 20) and on all versions with electronic variator (both single-phase and three-phase). The pump is supplied with a special stainless steel fitting on which the flow sensor is installed. The fitting must be installed on the delivery pipe of the product, making sure that the turn signal on the sensor corresponds to the direction of the product. In the absence of liquid, the sensor stops the pump. To activate the pump on the control panel, in addition to a manual / automatic selector, there is a BY PASS button. In case of automatic operation, it must be pressed to allow the pump to start and fill the pipes, temporarily interrupting the flow switch sensor control. Once the pipes are filled, the button must be released and the pump will continue to work, stopping in the absence of the liquid.

3) CONTROL PANEL WITH ON / OFF RADIO CONTROL:

This is an accessory available on all three-phase pump models (except EURO 20). On models with electronic variator, a specific radio remote control is provided. The ON / OFF radio remote control simply allows the pump to be switched on and off remotely, even if the direction and speed can not be changed. On the control panel there is a selector for the operation of the machine with radio control, or with local commands. The direction of travel and speed (on models with mechanical or double speed variator) must be set on the control panel.
In the case of a pump with an electric variator, the remote control has the function of switching on, switching off, varying the speed, changing the direction of rotation. On the pump control panel there is a selector to control the machine remotely or with the commands on it.
The maximum distance of use varies according to the rooms in which it is used. It is advisable to perform signal tests before using the pump.

4) PANEL WITH SETTING TIMER:

Available on all models with three-phase motorization.

FUNCTIONING:

After starting the engine, priming takes place after a few moments; if more than 10/13 seconds pass, turn off the engine and disconnect the power cable, check the correct fixing, and the lack of holes in the supply pipes as they can cause air infiltration. If the machine is provided with by-pass, it is possible to act on this valve in order to increase (valve closed) or decrease (valve open) the flow rate as you want.
IMPORTANT: the by-pass must be closed at the beginning of processing and for the suction of solid parts.

To switch off the machine, simply position the engine switch on the "center zero".
In the event of an emergency stop, it is necessary to restart the machine in the reverse direction of rotation, and immediately reverse the rotation, thus allowing the elimination of any bodies that prevent the rotation of the impeller.

4. CLEANING AND MAINTENANCE

After the use, it is necessary to wash the machine in order to preserve its mechanical and hygienic characteristics. It is necessary to run the machine for a few minutes with clean water, proceeding then with the complete emptying of the liquid contained in the pipes and in the pump body. For sanitization, use warm water with clinical solutions for washing and sanitizing, with concentrations compatible with the rubber components of the machine.
If a lasting stop of the machine is expected, it is advisable to introduce a few drops of glycerine oil into the pump, then reactivate the pump for a few seconds.

Maintenance: all the pump components are checked and adjusted in the factory before shipping. So the machine does not need any special maintenance, but only regular checks over time, which also increase the duration of the machine.
IMPORTANT: These checks must be carried out by qualified personnel and with the machine disconnected from the power supply.
The checks to carry out are the following:

- Check the impeller wear

- Check the transmission belts wear
- Check the sealing gaskets. For replacement, remember to clean both surfaces of the seal with alcohol to remove oil and grease remains
- Check the bearing
- Check the lubricating oil in models with speed variator.

In case of any repair operations it is necessary to use the original spare parts by contacting the retailer or directly the manufacturer.

Possible causes of malfunction

PROBLEMS	SOLUTIONS
The pump can not push with sufficient pressure or has a reduced capacity.	-Check the pipes dimensions -Check that the circuit is free from obstructions -Check that the largest disk and the o-rings are correctly installed -Check that the BY PASS valve is closed - Adjust the tension of the transmission belts - Check the impeller wear
Loss of liquid from the motor flange or from the pump support.	Check and replace the seals if necessary
Breakage of one or more impeller fins.	Change the impeller by contacting the dealer or directly the manufacturer
The machine starts with difficulty.	-Check that the machine is powered by the correct mains voltage. Do not use extensions with insufficient diameter that may cause voltage drops. -Check the operation of the boost condensator on the single-phase models (with the disassembled pump body, start the engine and check if the motor increases the vibration when the AVV position is switched on). In the case of three-phase motors with a thermomagnetic switch, make sure you have pressed the black button and that it stays on. - In the case of pumps with an inverter panel, open the control panel and check the thermomagnetic switch and the internal fuses.

5. WARNINGS

- Place the machine in a dry place and protect it from moisture
- Do not use the machine to transfer flammable liquids, explosives or explosive atmospheres, as the motor is not flameproof
- The temperature of the liquids to be decanted must be between +5 ° C and 65 ° C; higher temperatures cause deterioration of the impeller performance
- Before starting the machine, check that it has not been damaged during transport (breakages or dents that could compromise its operation)
- Never make the electrical connection, activation of the controls or any other operation on the electric parts with wet hands
- Never remove the crankcase (in the models where it is provided) during machine processing and during washing

- Carefully read this manual in its entirety before using the machine, and store it for any future reference
- The company Enoitalia S.r.l. is not responsible for damages resulting from any changes made by third parties to the machine
- The company Enoitalia S.r.l. has the right to make constructive changes at any time without obligation of communication.

MECHANICAL MOTOVARIATOR INTEGRATION

The pump is equipped with a mechanical variator, installed on a trolley with a control panel separate from the motor body.

The manual handwheel with gravitational indicator allows you to vary the speed from 190 to 900 rpm.

Attention: the speed must be changed only with the pump running and not with the engine switched off. Different operations may cause the variator to break down.

The variator is supplied with lubricating oil and an indicator of the quantity of oil present inside it.

The control panel is equipped with the following components:

- **Motor protection switch with absorption regulator.** When starting the machine for the first time, and after a power failure, press the black reset button.
- **Rotation inverter:** allows to stop and change the direction of rotation of the pump.
- **Emergency stop:** in case of danger allows the pump to stop immediately.

ELECTRONIC MOTOVARIATOR INTEGRATION

The pump is equipped with an electrical panel for controlling the speed and the various switch-off / switch-on / inversion functions. The electric motor installed is with separate ventilation (servoventilated). The servoventilated motor is always powered at 220V single-phase.

The pump has been adjusted to parameters that allow it to work in an optimal speed range: from 0 to 890 rpm. Inside the electrical panel the inverter display is visible, on which the values of the output frequency of the motor appear, and at each variation Hz correspond approximately 20 rpm (for example 20 Hz correspond to about 400 rpm; 30 Hz correspond to about 600 rpm).

However, it is possible to see on the display the number of rotations per minute corresponding to the value of the Hz to which the pump works, entering with the keyboard in the programming system of the inverter and carefully following the instructions of the "User Manual".

However, it is advisable to keep the inverter parameters on the values set by the factory; and in any case any variation of the parameters must be carried out by expert personnel. To change the direction of rotation, it is advisable to set the pump to average speed values, because the machine's starting capacity is reduced if the speed is too low.

ATTENTION: Models with integrated reducer can work at maximum power at any speed.

The components on the panel are the following:

- **GENERAL SWITCH**: it is used to switch on the pump panel, turning the selector switch to position 1. To stop the pump completely, set it to 0. The panel switch-on allows the power supply and immediate activation of the cooling fan installed on the electric motor.

- **WIRED REMOTE CONTROL:** with power selector and reversing and switching commands, it must be connected to the panel through the appropriate connector. The REMOTE mode must also be selected on the panel to activate operation with the remote control.

- **LOCAL / REMOTE control**: it is used to set the pump functioning with the remote control (REMOTE), or with the start and stop commands on the electrical panel (LOCAL).

- **FAUL INVERTER**: it is the warning alarm that indicates a power overload for the electric variator. In case of lighting, turn the pump off, wait about 30 seconds and restart it. This light can switch on in the following cases:

    - as a result of prolonged use of the pump at very low rotations: simply increase a little the rotation speed.

    - Difficulty in starting: increase a little the starting speed and check the impeller wear.

    - Difficulty in reversing the direction of rotation: increase the rotation speed and check the impeller wear status.

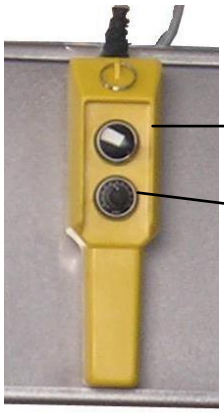
    - Failure of the electronic variator: contact the dealer or the manufacturer.

- **FLOW SWITCH**: this accessory must be connected to the appropriate connector on the electrical panel, and with the appropriate terminals to the outlet port of the pump. The function is to stop the pump in the absence of liquid. It is activated by positioning the appropriate selector on FLUSSOSATO. In the first use, to allow the pump to fill the pipes, it is possible to bypass the sensor by keeping the BY-PASS FLOW SWITCH pressed. As soon as the pipes are filled with liquid, release the button and the pump will continue to work automatically.

- **PROBE**: the pump is prepared for the connection of a further external probe with open / closed signal (for example pressure switch or level probe). Position the selector on Probe for automatic operation.

- **GEAR SELECTOR:** allows the pump to start and the direction inversion. On position 0, the pump stops.

- **POTENTIOMETER**: allows speed adjustment from 0 to 800 (maximum speed set by default). On some models, in addition to the inverter electric panel, a pre-couple reducer is installed to increase the engine power in the phase of reduced speed and rotation reversals. On this version the electric motor is not servoventilated.



GEAR SELECTOR / STOP / INVERSION

POTENTIOMETER

PANEL CLOSURE

WIRED REMOTE CONTROL

MOTOR CONNECTOR

TIMER RANGES:

Ranges		sec	min	hours	10h
1	Time range	da 0.1s a 1s	da 0.1 min a 1 min	da 0.1h a 1h	da 1.0h a 10h
5		da 0.5s a 5s	da 0.5 min a 5 min	da 0.5h a 5h	da 5h a 50h
10		da 1.0s a 10s	da 1.0 min a 10 min	da1.0h a 10h	da 10h a 100h
50		da 5s a 50s	da 5 min a 50 min	da 5h a 50h	da 50h a 500h

All the PM4H-W models are multirange with 16 selectable ranges.

SETTING MODE

1) Selection of the operating mode [PM4H-A]
Turn the appropriate selector with a screwdriver to set one of the 8 different operating modes. The achievement of the various modes is signaled both by a "click" and by the display of the symbol corresponding to the functioning mode.

ON FL FO 0F1 SF OS 0F2 OC

If the position reached is not stable, the timer may not work correctly.

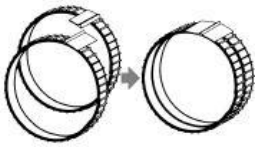
2) Setting of the time range (for all models)
Turn the appropriate selector with a screwdriver to set one of the 16 time ranges from 1s to 500h. The set time increases by turning the selector clockwise and decreases by turning it counter-clockwise.

3) Setting of the time (for all models)
Turn the time setting knob to reach the desired one. When you want to use the instantaneous output, check that the indicator is positioned under the "0" (instantaneous exit zone). Once power is supplied, it is no longer possible to change the time range, set time or operating mode. To make a new setting it is necessary to turn off the power or reset the timer.

How to use "Stop ring" [PM4H series]

1) Fixed time setting
Set the desired time and put 2 stop rings together.
Insert the rings into stopper to fix the time.

2) Fixed time range setting
Example: Time range 20s to 30s.
a) Shorter time value setting
Set the dial to 20s.
Place the stop ring at the right side of stopper.
b) Longer time value setting
Set the dial to 30s.
Place the stop ring at the left side of stopper.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