



Adjustable peristaltic pumps with timer

Model D-25VT 253-3r

Codes 1.9745.11 and 1.9770.00



INSTRUCTION MANUAL

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Marked



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1- GENERAL INTRODUCTION

Peristaltic pumps pump all types of liquids without coming into contact with mechanical components, as is the case with other pumps. They are easy to operate and require minimal maintenance.

The pumped substance is propelled inside a flexible tube by the vacuum generated by a set of rotors that successively squeeze and release the tube's surface. The liquid passes directly from its container to another without any contamination, avoiding backflow when the pump stops because the tube is squeezed by the roller.

The corrosive nature of some substances or other characteristics that prevent the use of conventional pumps make peristaltic pumps especially useful for transferring or dispensing such substances.

Flow rates from 120 ml/minute to 4700 ml/minute are obtained.

A large number of tubes or hoses of different sizes are available, made from materials resistant to various substances.

2- PACKING LIST	Code	Quantity
D-25VT pump	1.9745.51 / 1.9770.00	1
*Set of tubes		1
Power cable		1
Pedal connector	1.0005.37	1
Instruction Manual		1

*

0.5 m Silicone inner Ø 6.4 mm. Code 1.8762.64, (1 m) and 2 PP conical connectors. Code 8.0080.14

0.5 m Silicone inner Ø 8.0 mm. Code 1.8762.80, (1 m) and 2 PP conical connectors. Code 8.0080.20

0.5 m Silicone inner Ø 9.6 mm. Code 1.8762.96, (1 m) and 2 PP conical connectors. Code 8.0080.20

3- RECEPTION

To ensure proper reception and use of the device, and user safety, we recommend reading this manual carefully before unpacking the device and subsequent use, especially the following points:

3.1- THE MANUAL

This manual must be kept at all times within reach of the user of the equipment.

3.2- UNPACKING

Carefully unpack the appliance, checking that the contents match the packing list.
Report any eventuality immediately.

3.3- EXPLOSIVE MIXTURES

Avoid using the appliance when there is a possibility of generating explosive and flammable gas mixtures.
The ATEX Directive is not contemplated.

3.4- RESPONSIBILITY






In accordance with European regulations 89/655/EEC, the lack of proper maintenance and the alteration or replacement of any component exempts the manufacturer from any liability for any damage that may occur.

3.5- REPAIRS

The devices to be sent to *DINKO* technical services *must* be **clean and disinfected**.
Otherwise, they will be rejected and returned with postage at the owner's expense.

3.6- SIGNS AND SYMBOLS

Always heed the hazard warning signs and symbols that appear in this manual or on labels attached to the pump body, such as those shown below.

SIGNS/SYMBOLS	INTERPRETATION-MEANING
	Avoid contact of fingers with moving parts
	Danger-Risk-Caution
Before opening DISCONNECT the network cable  Before removing cover PULL-OUT plug	Before accessing the inside of the Pump, disconnect the power cable from the mains.
	Possible overheating - Do not touch
100-230V AC 50/60Hz	Alternating current supply voltage
110V AC 60Hz	Alternating current supply voltage
12V DC	DC supply voltage
	<p>Disposal of waste electrical and electronic equipment by users within the European Union.</p> <p>It is not disposable as household waste.</p> <p>Deliver to the agency for recycling electronic equipment.</p> <p>Contact your local office, the store where you purchased the equipment, or your local waste disposal service.</p> <p>Recycling helps conserve natural resources. Make sure it is recycled while protecting human health and the environment.</p>

4- DESCRIPTION HEAD 253-3r

The D-25Vplus peristaltic pumps in this manual are fitted with the 253-3r head which allows easy access to the tube for removal when it needs to be replaced.

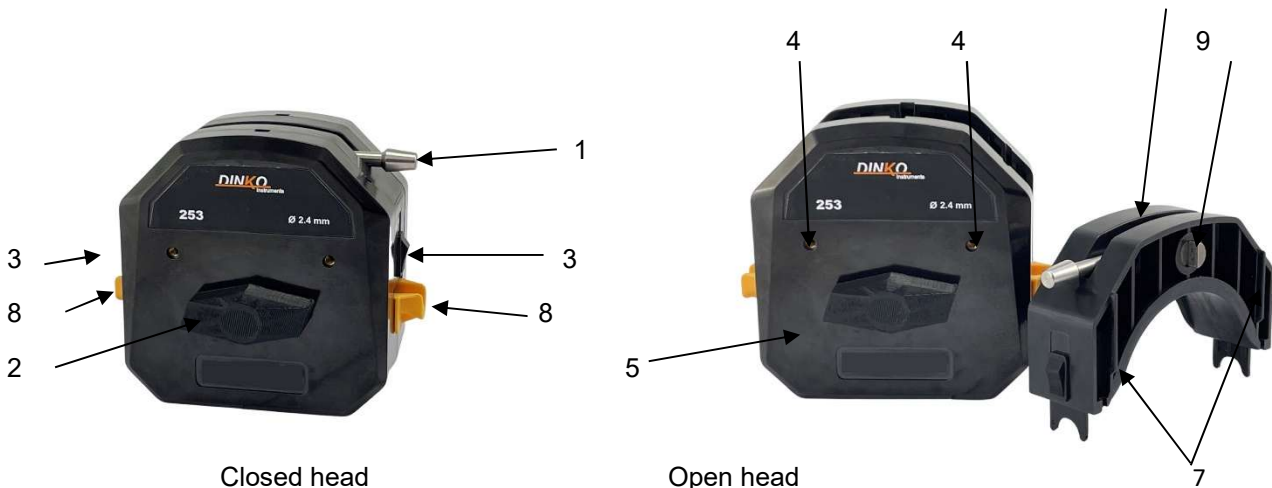
To change the tube, you must remove the upper part of the head. To do this, the lever (number 1 in the photo) must always be positioned to the left of the head. Once in place, pull it upwards using the two retainers on either side (number 3 in the photo).

Once the top part is removed, we proceed to place the tube we want to work with, taking care that it is centered on the yellow guides located on both sides (number 8 in the photo).

Now we'll replace the top part, checking that the lever (number 1 in the photo) is on the left. Carefully insert the top part, ensuring that the four rails (number 7 in the photo) on the removable part and the central part (number 9 in the photo) fit into their corresponding guides. Once properly oriented, press down until the two parts of the head, the fixed one (number 5 in the photo) and the removable one (number 6 in the photo), are level. Check that the tube is properly centered. Once in this position, slowly move the lever (number 1 in the photo) from left to right, checking that all the parts are properly aligned.

NEVER PERFORM THIS OPERATION WITH THE EQUIPMENT IN OPERATION.

4.1- HEAD 253-3r : 6



1 - Lever to open the head.

2 - Drive axle output guard.

3 - Seals.

4 - Metric threads 4 for fixing the complementary head. 9 - Metal central guide

5 - Fixed part of the head.

6 - Moving part of the head.

7 - Header guides.

8 - Tube guides.

The 253-3r headstock accepts an accessory headstock, which sits in front of the existing headstock. To install it, remove guard 2 to align the accessory headstock with the shaft and insert the two assembly screws.

With two heads, the typical peristaltic flow rate can be eliminated. To achieve this, when positioning the secondary head, the rotor rollers must be oriented opposite the rollers of the main head.

Each header will have a flow rate depending on the diameter of the installed pipe. If they are the same diameter, the flow rate will double.

The option of using a Y-connection to join the tubes of both heads (1) will allow the peristaltic pulse to be cancelled. It is important to remember that the final discharge and, especially, suction tubes must be of a larger diameter than the head tubes. If this is not possible, the total flow rate will be somewhat lower than the theoretical expected.

4-2 FRONT PANEL 5

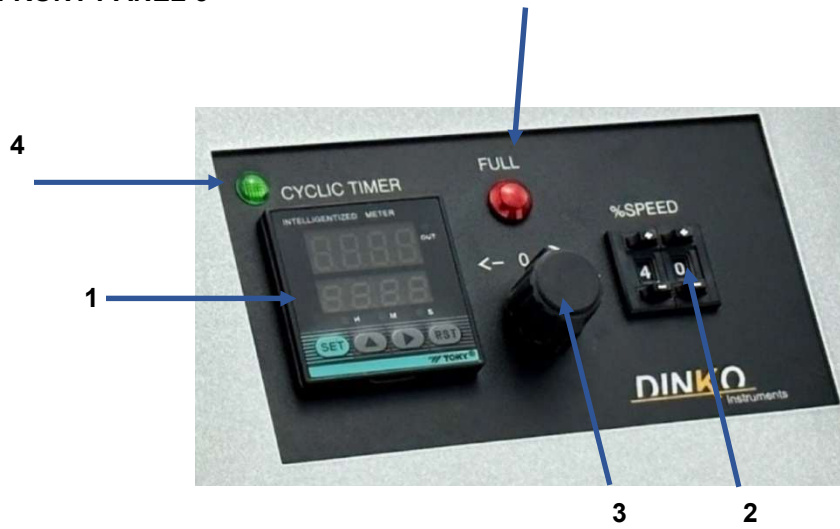


Figure a

- 1- Cyclic timer
- 2- Numerical speed control
- 3- Engine speed and stop selector
- 4- Pilot lamp
- 5- FULL maximum flow button

4-3 REAR PANEL

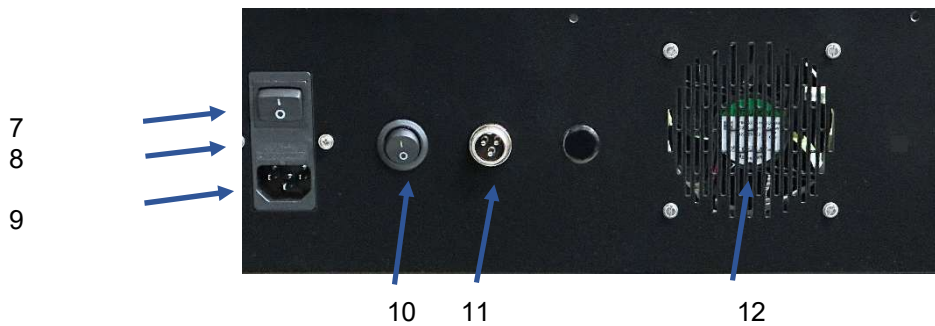


Figure b

- 7- Main ON/OFF switch
- 8- Fuse box
- 9- Take food
- 10- Timing mode selector
- 11- Voltage-free pedal input
- 12- Fan.

5- SPECIFICATIONS

5.1 DIMENSIONS

Pump: 340 x 280 x1 80. Weight 7 Kg

Operation: between 100 and 240V. 50/60 Hz. Amp 0.5 /1

5.2 FLOW TABLE - Indicative regulation intervals for each tube

Code ▼	rpm	Head	6.4 mm	8.0 mm	9.6 mm	◀Tube Ø
Identifier	-	-	24#	35#	36#	-
1.9745.51	350	253-3r	120-2000	180-3000	250-3500	Flow rate ml/min
1.9770.00	500●	253-3r	250-2700	350-3700	300-4700	

●Brushless motor.

The flow rates indicated are approximate and refer to liquids with a viscosity similar to water at normal temperature and without discharge back pressure.

Various factors can alter pump flow rates, such as tolerances in tube diameters, the viscosity of the pumped products, and any variations in the length of the tubes from feed to discharge, in distance, or height.

6- START-UP

INITIAL CONSIDERATION:

For correct dosing with a Peristaltic Pump with timer, you must first select the appropriate tube, both in composition and measurements, to perform the dosing of the desired volume.

Tests must always be carried out to determine the volume delivered per unit of time.

To do this, you need to perform a series of dosages and check the dosed volume. If the dosed volume needs to be increased, the dosing time will need to be increased; if it needs to be decreased, it will need to be reduced.

Once we have determined this time, we can start working in the mode that best suits us.

6.1 In installations for processes or assemblies that include a *DINKO Pump*, no must be put into service before checking that the safety regulations of the European Machinery Directive 2006/42/EC.

6.2 Set the motor rotation direction selector to the "0" position (Figure a (3)).
Check the position of the **IO selector** (figure b (10)).

Select the speed using the percentage numeric indicator buttons. With a 100% reproducibility, a speed range of 0 to 99% of the speed is available maximum with an accuracy of 1% (Figure a (2)).

6.3 Install the selected tube

During the first few minutes of operation, some newly installed pipes stretch, altering the distance between the pipe and its attachments to the rollers. Readjust the pipe in the head to prevent the rollers from unexpectedly tearing it.

Marking the tube with a marker makes it easier to detect a faulty tube attachment to its head, which will cause the tube to break due to the rollers.

Place the pipes for loading and unloading the fluid to be pumped.

See instructions in sections **4-4 TUBE INSTALLATION and CHANGING TUBE**

6.4 Set the main switch to the OFF position (Figure b (7)).

6.5 Connect the power cable to the rear connector and to the mains. (100-240V 50/60Hz). (Figure b (10)).

6.6 Press the main switch to the ON position (Figure b (7)).

Proceed to programming the timer. See description, section 7.

7-TIMER

When the device is connected, the timer turns on and remains on standby. To start it, press the ▲ (6) key.



- ← 1- OUT Open/closed contact indicator - red light
- ← 2 - Measured time (red)
- ← 3 - Scheduled time (green)
- ← 4 - Units of time (hour-minute-second) H/M/S-pilot green




- 5- **SET** button
- 6- Increment button
- 7- Scroll button
- 8- Reset button

The timer allows different working methods, depending on the selected menus






7.1 Menu Selection

Pressing **SET** for more than 3 seconds enters the Menu function. After selecting or modifying a parameter, press **SET** to move on to the next one. If you hold down SET for more than 10 seconds without touching anything, you'll return to the original screen.

Menu sequence – Factory programming

 <p>Press SET</p>	<p>rAn1</p> <p>Select the units of HM/S time and time maximum for t.Off .</p>	<p>Pressing ▲ selects the decimals and whether they are H/M/S or H/M or M/S</p> <p>H from 99.99 to 9999 M from 99.99 to 9999 S from 99.99 to 9999 H/M 99.59 M/S 99.59</p>
 <p>Press SET</p>	<p>rAn2</p> <p>Same for t.on</p>	<p>Idem</p>
 <p>Press SET</p>	<p>U-d</p> <p>Select the way to counting time</p>	<p>Pressing ▲ selects</p> <p>↑ U - Crescent mode</p> <p>↓ d – Decreasing mode</p>

Menu sequence – Factory programming

 <p>Press SET</p>	<p>int Select time of answer.</p>	<p>Pressing ▲ selects</p> <p>1 mS ↕ 20ms</p>
 <p>Press SET</p>	<p>out Select the menu you want use Description of the different modes in the Modes of use section</p>	<p>Pressing ▲ selects</p> <p>n (N Mode) → F (F Mode) ↑ ↓ C (C Mode) ← R (R Mode)</p>
 <p>Press SET</p>	<p>stA Select the start-up: manual or automatic .</p>	<p>Pressing ▲ select</p> <p>YES - (When the team must press ▲ to that the start is put into operation first time (manual))</p> <p>↕</p> <p>No- When connected it puts into motion automatically .</p>
 <p>Press SET</p>	<p>HoLd Select that if the cut is made current, when restarted, follow the menu where it was cut or started again.</p>	<p>Pressing ▲ selects</p> <p>Yes – Continue</p> <p>↕</p> <p>no - Start over</p>
 <p>Press SET</p>	<p>LoCy Pressing ▲ selects ways to lock the menu</p>	<p>LO - Nothing</p> <p>↓</p> <p>L-1 Lock Reset</p> <p>↓</p> <p>L - 2 Lock function time and menu.</p> <p>↓</p> <p>L-3 - Block all</p>

7-2 Selection of running and stopping time.

The timer has 2 programming times **t.oFF** and **t.on indicating** the status of the timer contacts.



t.oFF will always be the first to count and then **t.on will start** .

N, F modes we can only program the **t.oFF** , whereas in **R mode** , we must configure the **t.oFF** and he **t.on** .

To enter the time selection menu, press ►. The first digit from the left will flash. ▲ will change the value. ► will move to the next position, continuing until all four digits are reached.

When all four digits have been selected, press **SET** to confirm the selection.

Menu sequence

 <p>Press SET</p>	<p>t.oFF</p> <p>Indicates that the contacts are closed and allow the equipment operation</p>	<p>Time parameters of 0.015 – 9999 H were selected in the <u>rAn1 function</u> of the menu .</p>
 <p>Press SET</p>	<p>t.on .</p> <p>Indicates that the contacts are open and do not allow the operation of the equipment. It is indicated by a red light. R and C menu only .</p>	<p>The time parameters of 0.01S – 9999 H They were selected in the <u>rAn2 function</u> of the menu .</p>

7.3 Modes of use

The pump has a timing mode selector with two positions, **O** and **I**, **on the back** (figure b (10)).

In position **O** , when the timer is started (by pressing the **▲** key on the timer, it will start counting the programmed times), the head will run for the time programmed as **t.oFF** .

In position **I** , when the timer is started (by pressing the **▲** key on the timer, it will start counting the programmed times), the head will remain off for the time programmed as **t.oFF** .

7.3.a - Mode N

This working mode is used for:

- When you want to program a single dosage, the unit will run for the programmed time and then stop when the timer is activated.

Programming:

Timing mode selector in position O (figure b (10)).

Engine rotation direction selector in position “0” (◀ or ▶) (figure a (3)).

Turn the unit off and then on again. With the unit on, press **▲** and check the programmed **t.oFF time** (lower green display). If it needs to be changed, see 7-2 Selecting the operating and stopping time (page 10).

Position the rotation direction selector to the desired position so that the head rotates clockwise or counterclockwise.

To start the head, press the **RST key** , and if the pedal is connected, press the pedal.

The head starts up for the time programmed as **t.oFF** .

In green we will see the programmed time as **t.oFF** and in red we will see how the time increases from 0 to **t.oFF** .

Once the **t.oFF time has elapsed, we will see the same time** on both displays , red and green, it will stop counting and the head will stop.

To perform another dosage, press the **RST key**, or if the pedal is connected, press the pedal. If the pedal is connected, dosage can be started using either the RST key or the pedal.



It is the factory programming.

- When you want to program a single delayed dosage; that is, when the timer is activated, it will count the programmed time with the head stopped, and when that time is up, the head will start working until the equipment is stopped.

Programming:

Timing mode selector in position I (figure b (10)).

Engine rotation direction selector in position "0" (◀ or ▶) (figure a (3)).

Turn the unit off and then on again. With the unit on, press ▲ and check the programmed delay time **t.oFF** (lower green display). If it needs to be changed, see 7-2 Selecting the operating and stopping time (page 11).

To start the equipment press the **RST key** , and if the pedal is connected, press the pedal.

Position the rotation direction selector to the desired position so that the head rotates clockwise or counterclockwise when the **t.oFF ends** .

The head will remain stopped for the time programmed as **t.oFF** .

In green we will see the programmed time as **t.oFF** and in red we will see how the time increases from 0 to **t.oFF** .

Once the **t.oFF time has elapsed** , we will see the **same time** on both displays , red and green, the counting will stop and the head will start.

To perform another delayed dosage, press the **RST key** , or if the pedal is connected, press the pedal. If the pedal is connected, the cycle can be started using either the RST key or the pedal.



7.3.b - Mode F

Same as **Mode N** , but:

Once the **t.oFF time has finished** , we will see the **t.oFF time** on the green display . and the red display will continue counting the time.

7.3.c- R Mode

Asymmetric cyclic mode, in which an operating time and a stopping time are programmed to be repeated indefinitely.

This working mode is used for:

- When we want to perform repetitive dosing of a specific volume, with a pause between each dosing to transfer the rubber to another container for another dosing. (Filling containers with the same volume)

t.oFF will be the first half and **t.on** will be the second half.

In the timer programming we will select:

out r (R-Mode)
Sta no →
Hold no →

Timing mode selector in position O (figure b (10)).

Engine rotation direction selector in position "0" (◀ or ▶) (figure a (3)).

The first half will be a march and the second a stoppage.

March Stop March Stop March
t.oFF t.on

Timing mode selector in position I (figure b (10)).

Engine rotation direction selector in position "0" (◀ or ▶) (figure a (3)).

The first half will be a stoppage and the second half will be a march.

. Stop March Stop March
t.oFF t.on

Once the working mode has been selected, turn off the pump and remove the external connector.

When the pump is started, the cycle we have selected will begin.

Note: To use the pump without the timer:

To be able to use the peristaltic pump without taking into account the timer, that is, the pump head starts when we turn on the pump and stops when we turn it off.

For the equipment to work like this, it is necessary to program the timer as follows:

- Pressing SET for more than 3 seconds enters the Menu function. After selecting or modifying a parameter, press SET to move on to the next one. If you hold down SET for more than 10 seconds without touching anything, you'll return to the original screen.
- In the timer menu, set the Sta section to YES. →
- Timing mode selector in position O (figure b (10)).
- Engine rotation direction selector in position "0" (◀ or ▶) (figure a (3)).
- Turn off the equipment and turn it on.
- Set the direction of rotation selector to the desired position (◀ or ▶) (figure a (3)).
- The motor will run and the timer will remain on without starting to count.
- To set the timer to count, you would have to press ▲

IT IS THE FACTORY PROGRAMMING

8- ACCESSORIES

8.1 Scale for calibration of flow rates and dosages .

To measure the dosed quantity in the calibration process of peristaltic pumps, it is very effective to use a precision scale with digital reading.

If the liquid to be pumped has a density of "1," there will be no difference between grams and milliliters. Otherwise, calculate the density by weighing a quantity of the liquid with a measuring cylinder, for example, 25 ml, and then tare it on the scale.

Divide the weight indicated on the digital reader of the scale in grams by the milliliters contained to obtain density according to the ratio, $D = M / V$.

There is always the option to calibrate the pump directly based on weight instead of volume.

Reproducibility 0.1 g. Capacity 600 g. Code 8.9812.02

Reproducibility 0.01 g. Capacity 500 g. Code 1.9812.04

Characteristics:

- ◆ Single digital readout plate, with high visibility backlit LCD screen.
- ◆ Easy to use and highly robust with ABS casing and moisture-proof membrane keypad.
 - ◆ Stainless steel plate, 157x128 mm (8.9812.02);
 - ◆ 133x182 cm stainless steel plate (Code 1.9812.04).◆ External auto calibration.
 - ◆ Units of measurement: grams, pounds, and ounces
- ◆ Continuous tare up to 600 g (Code 8.9812.02), 500 g (Code 1.9812.04)
- ◆ Power supply 230V 50/60Hz ◆ Non-slip rubber feet
- ◆ Working temperature: +5°C to +40°C. Maximum operating humidity: 80% RH



8.9812.02



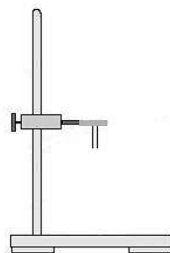
1.9812.04

8.2 Graduated cylinder, 25 ml. Code 1.9808.20

8.3 Silicone Grease, 50 g. Lubrication of peristaltic tubes. Code 8.0030.03

8.4 Foot support. Code 1.8003.08

Useful as a dosing tube/tip holder. Base: 150 x 70 cm. Pole, height 70 cm. Sliding holder for dosing tip .



PERISTALTIC TUBING CONNECTORS

8.5 Reducing connectors - splice / equal ends, polypropylene



For 1.6mm inner Ø tubes. Code 1.0080.15
For 3.2mm inner Ø tubes. Code 1.0080.18
For 4.8mm inner diameter tubes. Code 1.0080.05
For 6.4/8mm inner diameter tubes. Code 1.0080.14
For 9/12 mm inner diameter tubes. Code 1.0080.20

8.6 Y-shaped connectors, polypropylene



Y-shaped connector, 6 mm Ø. Code 1.0120.26
Y-shaped connector, 8 mm Ø. Code 1.0120.48
Y-shaped connector, 10 mm Ø. Code 1.0120.32
Y-shaped connector, 12 mm Ø. Code 1.0120.33

8.7: Connectors - Stainless Steel Micro-Tube - Splicing and Dosing

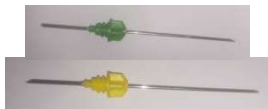
Straight splice 40 mm length

Stainless steel tube for 0.5 and 0.8 mm Ø tubes, 25 units. Code 8.0056.14
Stainless steel tube for 1.6 mm Ø tubes, 25 units. Code 8.0056.06
Stainless steel tube for 3.2 mm Ø tubes, 25 units. Code 8.0056.08
Stainless steel tube for 4.8 mm Ø tubes, 25 units. Code 8.0056.10
Stainless steel tube for 6.4 mm Ø tubes, 25 units. Code 8.0056.12



Dosage 130 mm length with a bevel

Stainless steel tube . Dosage for 0.5 and 0.8 mm Ø tubes, 10 units. Code 8.0056.15
Stainless steel tube . Dosage for 1.6 mm Ø tubes, 10 units. Code 8.0056.07
Stainless steel tube . Dosage for 3.2 mm Ø tubes, 10 units. Code 8.0056.09
Stainless steel tube . Dosage for 4.8 mm Ø tubes, 10 units. Code 8.0056.11
Stainless steel tube . Dosage for 6.4 mm Ø tubes, 10 units. Code 8.0056.13



Length 38mm

Micro-tube 0.8 mm outer diameter, 10 pcs. Code 1.0077.23
Micro-tube 0.9 mm outer diameter , 10 pcs. Code 1.0077.26

Clamping flange P. Code 1.0120.01
Clamping flange G. Code 1.0120.12

8.8 Anti-float 304 stainless steel for suction pipes

For peristaltic tubes with 1.6 and 3.2 mm inner diameter. Code 1.0303.10
For peristaltic tubes with an inner diameter of 4.8 mm. Code 1.0303.11
For peristaltic tubes with an inner diameter of 6.4 mm. Code 1.0303.12
For peristaltic tubes with an inner diameter of 8.0 mm. Code 1.0303.13
For peristaltic tubes with an inner diameter of 9.6 mm. Code 1.0303.14
For peristaltic tubes with an inner diameter of 12.7 mm. Code 1.0303.15



8.9: Stainless steel dosing tubes with non-return valve

For 3.2 and 4.8 mm Ø tubes int . Stainless steel tip 4 mm ext. Ø wall 1 mm.
Code 1.0302.10
For 4.8 and 6.4 mm Ø tubes int . Stainless steel tip 6 mm ext. Ø wall 1 mm.
Code 1.0302.11
For 6.4 and 8 mm Ø tubes int . Stainless steel tip 8 mm ext. Ø wall 1 mm.
Code 1.0302.12
For 8 and 9.6 mm Ø tubes int . Stainless steel tip 10 mm ext. Ø wall 1 mm.
Code 1.0302.13



8.10: Peristaltic pump pulse damper - Code 1.0078.80

8.11: Adapter hose and connector for pulse dampener

For 24# tube. Code 1.0078.81. For 35# pipe. Code 1.0078.82
For 36# tube Code 1.0078.83



9- CHANGING TUBE

Each pump is supplied with a set of medical/food grade silicone peristaltic tubing that meets FDA and USP standards and is autoclavable at 120°C, with a peristaltic range of up to 120°C and medium life.

The peristaltic quality of the tubes or rubbers consists of their ability to quickly recover their roundness once the rollers of the peristaltic head of the pump have compressed them to generate the circulation of liquids inside.

In addition, it must offer a minimum mechanical quality to overcome the wear caused by continuous compression of the rollers without losing its peristaltic capacity.

The Bombs use Tubing with a wall thickness calibrated to 2.4 mm. Greater thickness will severely damage the motor shaft, while a thinner thickness will prevent peristaltic function, and the pump will not pump any liquid.

Thick liquids are best pumped with large pipe diameters at low speeds. For external connections, it's best to use pipes with a larger diameter than the one used in the pump head. The height difference between the inlet and outlet always influences pump performance, especially with thick liquids.

pump feed and discharge pipes can have any wall thickness with an inside diameter as close as possible to that used in the header or larger, especially on the suction side.

The set of external tubes or connections must be as direct and straight as possible.

There is a range of rubbers that offer different chemical compatibilities with the products to be pumped.

Pump calibration must be updated whenever the pump's operating conditions change, such as when changing pipe, diameter or rubber type, distances, new connections, etc.

The standard tubing supplied with the pump is made of medical/food grade silicone according to FDA and USP standards, autoclavable at 120°C, with a peristaltic range of use up to 80°C and medium duration.

Important: The head tubes should be lightly coated with silicone grease to extend their life and facilitate starting at low rpm. Silicone grease, 50g. Code 8.0030.03

Press the OF switch. Remove the tube as described in the "Description" section.
When installing the new tube, it must be centered over the rollers to prevent the rotor from pinching it.

Be careful not to pinch your fingers. Close the head.

During the first few minutes of operation, some newly installed pipes elongate, which alters the distance between the pipe and its attachments to the rollers. Readjust the pipe in the head to prevent the rollers from unexpectedly tearing it.

Marking the tube with a marker makes it easier to detect a faulty attachment of the tube to its head, which will cause the tube to break due to the rollers.

Because the friction of the tubes with the rollers increases with the diameter of the tubes, the minimum adjustable speed increases the larger the tube.

It is advisable to use a speed slightly higher than the minimum adjustable speed observed since the motor may stop at any moment and cause the regulation circuit to overheat, which could damage if it remains in this situation for a long time.

9.1 AVAILABLE TUBES

PHARMA Autoclavable multiple times.
Sterilizable by ETO and Gamma .
Medical-food grade, class VI USP, 21CFR 177.2600 and FDA.
Non-hemolytic.
Excellent resistance to chemicals.
ISO 10993. Low permeability and good abrasion resistance.
Long duration.
Use temperature, -51°C to 132°C .
Beige color.

SILICONE Autoclavable .
The most versatile tube. Platinum Cure quality silicone.
Average duration.
Medical/food grade. Excellent biocompatibility.
Maximum temperature: 140°C.
Translucent.

TYGON A-60-G ® Autoclavable
Compatible with Ozone, UV light and disinfectants .
High resistance to fatigue and abrasion.
Resistant to acids, alkalis and alcohols.
Use temperature -59°C to 135°C.
Black color.

VITON ® Autoclavable
Suitable for acids and non -acetone solvents .
Maximum temperature 300°C.
Black color.

9.2 - 2.4mm wall calibrated tube codes, 1 meter

▼ Tube - Internal Ø ►	6.4 mm	8.0 mm	9.6 mm
PHARMA	1.8802.64	1.8802.80	1.8802.96
SILICONE	1.8762.64	1.8760.80	1.8760.96
TYGON A-60-G ®	1.8756.64	1.8756.80	1.8756.96
VITON ®	1.8791.64	1.8791.80	1.8791.96

10- ORDERING INFORMATION

Peristaltic pump head 253-3r. for 2.4 mm wall tubing. Model D-25VT.

Codes: 1.9745.11 and 1.9770.00

11- CHANGING FUSES

The fuse box is part of the power supply base located on the rear of the pump. See figure.



Main switch

Fuse box

Power base

Pry the fuse box between the center of the fuse box and the top of the power supply base with a screwdriver to remove it.

The box remains in place without being completely removed. There are two fuses.

Press the box inwards to restore its original position.

Remember to replace any used fuses.

12- TROUBLESHOOTING

The following table of faults, their causes and possible solutions does not purport to cover all possibilities. However, user inconveniences that actually have easily avoidable causes can be avoided.

PROBLEM	CAUSE	SOLUTION
It doesn't start and it doesn't the pilot lights are on	Lack of nutrition Blown fuse Unknown	Check cable and plugs Change fuse Request Technical Service
The head rotor does not rotate, but the pilots shine	Broken tube that prevents it Faulty engine Faulty programming	Change the tube Request Technical Service Review programming
The rotor is spinning, the tube is not broken, but it doesn't pump	Exhausted, worn out tube Insufficient tube wall Empty feed tank Chemical incompatibility of the tube	Change tube Install suitable pipe Load the tank Choosing the right tube
Flow rate below theoretical	High viscosity Over-pumping circuit Internal obstruction in the tube Insufficient tube wall High discharge back pressure Chemical incompatibility of the tube	Use a larger tube Ø Short circuit Clean Install suitable pipe Lower back pressure Choosing the right tube
The head tube moves	Small tube diameter Faulty tube installation	Choosing a suitable tube Check the fixings

13- MAINTENANCE – SPARE PARTS

13.1 LUBRICATED

Before any examination or repair of the appliance, it is necessary to disconnect the power supply. Every initiative must be carried out by qualified personnel to avoid major problems.

Entrust your device to a technical service authorized by *DINKO Instruments*.



The engine and its block do not require lubrication so they do not have maintenance.

The rotor bearings are self-lubricating, but it is advisable to lightly lubricate them with silicone grease (ref. 8.0030.03 or similar) from time to time, along with the rollers or the head opening lever and its guides, especially if they have been washed.

Remove the head cover and access the rollers (See figure)

The head tube must be replaced periodically and systematically to avoid the inconvenience of it breaking while the pump is in operation.

13.2 TUBES

The head tube must be replaced periodically and systematically to avoid the inconvenience of it breaking while the pump is in operation.

13.3 WASHING

After finishing using the pump, it is advisable to purge the contents of the tubes to avoid possible solidification that could clog their interior, especially in small-diameter tubes. Preferably, pump some inert, compatible liquid to complete the flush. Take care to avoid possible splashing.

13.4 SPARE PARTS

Head 253-3r. **Code 1.0078.44**

Main circuit. **Code 1.0063.30**

Driver/control for 500 rpm motor. **Code 1.0077.38**

Power supply 100-24V. **Code 1.8093.21**

24VDC motor, 350 rpm. **Code 1.0080.01**

24VDC brushless motor, 500 rpm. **Code 1.0077.37**

Pedal. **Code 1.9740.02**

Cyclic timer. **Code 1.0045.13**

14- WARRANTY

DURATION:

The warranty is valid for a period of one year from the date the appliance is put into operation, provided the warranty card is returned to us within eight days of its initial commissioning. Without this condition, the warranty will not be valid.

SCOPE OF WARRANTY:

The warranty covers manufacturing and material defects for an average work week of 40 hours. The warranty is reduced proportionally with increasing work hours.

Repairs will be carried out at our factory. Otherwise, the warranty will only include the replacement of defective components.

DINKO will not be responsible for transportation costs or for any consequences resulting from the immobilization of the device.

Parts replaced free of charge remain our property, and we reserve the right to request their return, postage-free to our address.

Repairs or replacement of parts during the warranty period do not extend the initial warranty.

Our liability is limited to the attached warranty and not to possible accidents to persons or other things. Any alteration of the device by the user voids the warranty.

DINTER SA / DINKO Instruments c/ Encarnació , 123-125 / 08024 - Barcelona

Declares that the articles mentioned in the attached list, to which this declaration refers, comply with the essential safety requirements of the applicable European Directive:

- Low Voltage Directive D2014/35/EEC of 26 February 2014 and applicable since 2016 in Concordance with the recommendations of the LVD Directive.
- Essential requirements of Annex I of the Machinery Directive 2006/42/EEC of 17 May 2006
- Electromagnetic compatibility EC relating to the Electromagnetic Compatibility Directive 2014/30/EEC in accordance with EMC recommendations.
- Safety for electrical measuring, control and laboratory equipment. Requirements relating to EMC. EN 61326
- Safety rules for electrical measuring, control, and laboratory devices. Part I. General requirements EN 61010-1

However, the user must observe the assembly and connection instructions indicated in the technical instruction catalogues.

Name Joan A. Bravo

Josep X. Sensada

Position: Technical

Director , Quality Manager

Signature



Model: Peristaltic Pumps D-25VT

OTHER *DINKO* APPLIANCES

Magnetic Stirrers Stirrers .

- *Orbital Shakers*

- *Rotary Stirrers / Rotary Stirrers*

- *Rod Stirrers Stirrers*

- *Sand Baths / Sand Baths*

- *Dosing Pumps / Proportioner Pumps*

Vacuum Pumps Pumps

- *Peristaltic Pumps / Peristaltic Pumps*

- *Metal block heaters / Heater Metallic Blocks*

- *Colorimeters*

- *Conductimeters / Conductimeters*

Temperature Controllers Controllers

- *Extractor for meat analysis / Extractor for mince analysis*

- *Infrared Heaters / Infrared Ovens*

- *Spectrophotometers / Spectrophotometers*

- *Photometers*

- *Turntables*

- *Kits for water analysis*

- *Microscopes*

- *Nephelometers / Nephelometers*

- *Oximeters / Oxygen Meters*

- *pH meters*

- *Heating Plates / Heater Plates*

- *Respirometers*

- *Timers*

- *Trichinoscopes / Trichinoscopes*

- *Grinders-Homogenizers / Blenders-Homogenizers*

- *Turbidimeters / Turbidimeters*



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