



VARIABLE FLOW PERISTALTIC PUMPS

Model D-25Vplus

Code 1.9735.XX

MANUAL



April 2023

DINTER^{sa}

c/ Encarnació, 123 -125. Tel. +34 93 284 69 62. Fax +34 93 210 43 07

e-mail: dinter@dinko.es

www.dinko.es

08024-Barcelona

1- GENERAL INTRODUCTION.....	3
2- PACKING LIST.....	3
3- RECEPTION.....	3
4- DESCRIPTION.....	5
5- START UP.....	7
6- CHANGE OF TUBES.....	10
7- INFORMATION FOR ORDERING.....	11
8- MAINTENANCE - SPARE PARTS.....	12
9- ACCESSORIES.....	13
10- CHANGING THE FUSES.....	15
11- FLOW TABLES.....	15
12- WARRANTY.....	16
13- EC DECLARATION OF CONFORMITY.....	17
14- OTHER EQUIPMENT.....	18

1- GENERAL INTRODUCTION

Peristaltic pumps pump all kinds of liquid substances without coming into contact with mechanical elements as in other pumps.

They are easy to use with minimal maintenance.

The pumped substance is impelled into an elastic tube by the vacuum generated by rotors that successively press and release the surface of the tube.

The liquid passes directly from its container to another without any contamination and without going back when the pump stops, since the tube remains pressed by the roller.

Some aggressive substances prevent the use of conventional pumps and make peristaltic pumps very useful for the transfer or dispensing of such substances.

Flow rates are obtained from 0,02ml/minute up to several liters per minute.

A large number of different size tubes or hoses made of materials resistant to various hazardous substances are available.

The following instructions are intended to ensure correct reception and use of the device, and the safety of the user.

To this end, we recommend reading this manual in detail before proceeding to unpack the device and subsequent use.

For proper conservation of the device, it is necessary to avoid its installation in areas with corrosive atmospheres or exposed to liquid splashes.

Avoid using the device when there is the possibility of generating explosive and flammable gas mixtures.

2- PACKING LIST

Description	Code	Quantity
Peristaltic Pump D-25Vplus	1. 9735.XX	1
Set of connections		1
Power cord		1
Instruction Manual		1

3- RECEPTION

To ensure correct reception, use of the device, and user safety, we recommend reading this manual in detail before proceeding to unpack the device and subsequent use, and especially the following points:

3.1-THE MANUAL

This manual must be permanently kept within the equipment user's reach

3.2-UNPACKING

Unpack the appliance, checking that the contents match the packing list.

Immediately notify any eventuality.

3.3-EXPLOSIVE MIXTURES

Avoid using the device when there is the possibility of generating explosive gas mixtures and flammable. The ATEX Directive is not covered.

3.4-LIABILITY

According to European regulation 89/655/CEE, the lack of adequate maintenance and the alteration of component, exempts the manufacturer from any responsibility for any damage that may occur.






3.5-REPAIRS

Devices to be sent to *DINKO* technical services must be clean and disinfected.

Otherwise, they will be rejected and returned with postage paid by the owner.

3.6-SIGNS AND SYMBOLS

Pay attention at all times to the danger warning signs and symbols that will appear in this manual or on labels attached to the body of the Pump such as those shown below.

SIGN/ SYMBOL	INTERPRETATION-MEANING
	Avoid finger contact with moving parts
	Danger-Risk-Caution
Before opening DISCONNECT the network cable  Before remove cover PULL OUT plug	Before accessing the interior of the Pump, disconnect the power cable from the network.
	Possible overheating - Do not touch
110-230V AC 50/60Hz	AC power supply voltage
110V AC 60Hz	AC power supply voltage
12V DC or 24V DC	DC power supply voltage
	Disposal of waste electrical and electronic equipment by users within the European Union. It is not disposable as household waste. Deliver to the agency for recycling of electronic equipment. Contact your local office, the store where you purchased the equipment, or your household waste disposal service. Recycling helps conserve natural resources. Make sure it is recycled protecting human health and the environment.

4- DESCRIPTION

The D-25V plus peristaltic pumps are provided with a head that allows access to the tube for its extraction when it must be replaced due to wear or for sterilization.

On 50-3r head pumps, the head cover is removed by removing its retaining screws.

They admit various tube sizes which, combined with the speed regulation and the different motorizations, give a great variety of flows, as can be seen in the flow guide table.

With the FULL key, number 3 in the description on the front panel, the maximum speed of the motor is obtained, in the loading, purging and cleaning operations.

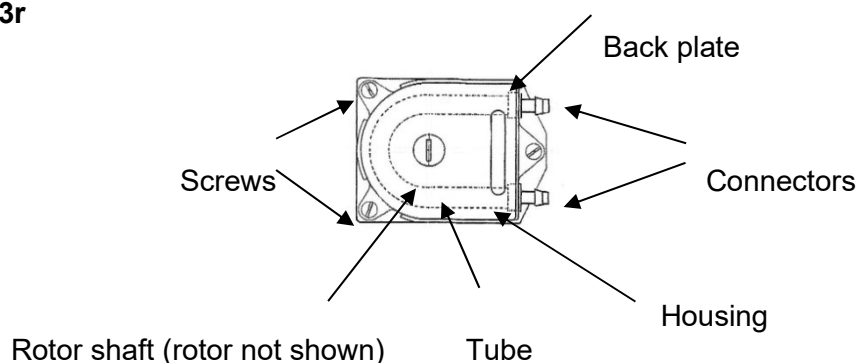
Keys 1 and 2 allow choosing the direction of rotation of the motor for flow inversion.

On the back is the connection for the network cable with integrated fuse holder, connection for pedal and input for 0-10 V analog signal.

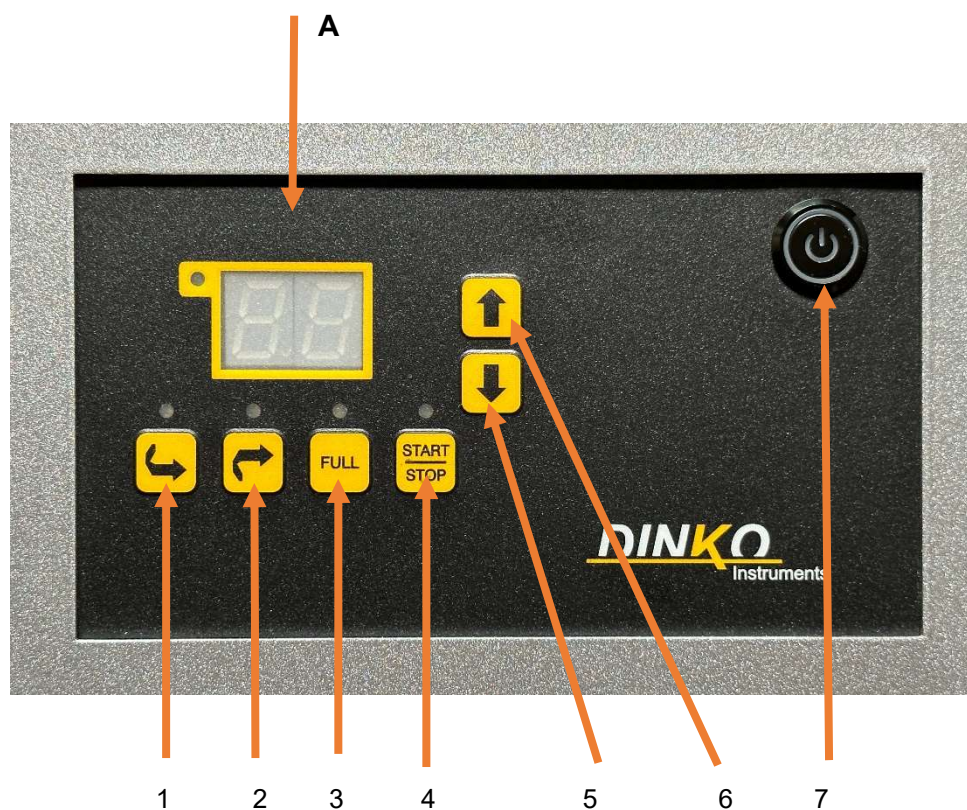
Consult the dosage table and install the appropriate tube.

4.1 HEADS:

HEAD 50-3r



4.2- DESCRIPTION OF THE FRONT PANEL



A-Digital Reader

1-key direction of rotation

2-key direction of rotation

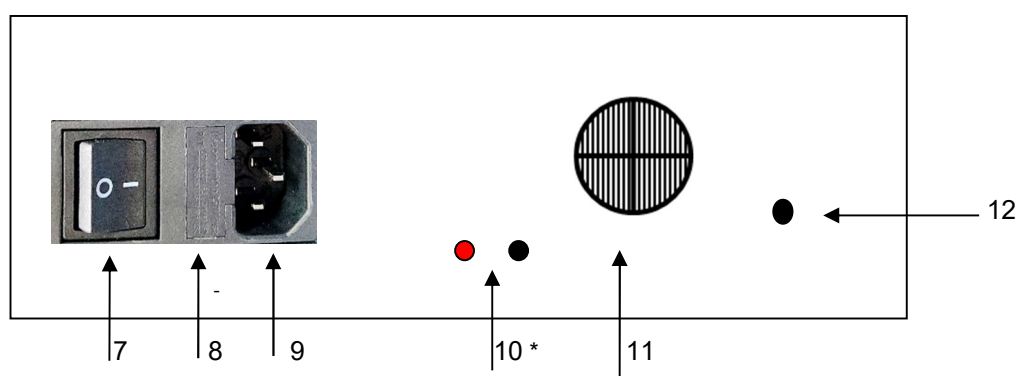
3-Key Full

4-Start / Stop key-Memo start

5 and 6- Decrease and increase keys

7- Switch for programming

4-4 REAR PANEL DESCRIPTION



7 - Main ON/OFF switch

8 - Fuse box

9 - Power socket

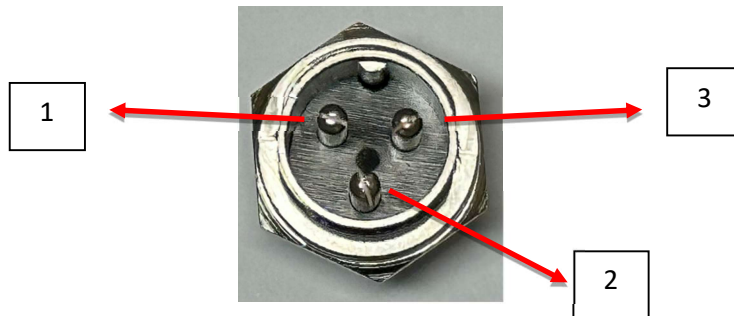
10 - Analog signal input 0-10 V (+ red, – black)

11 - Fan

12 - Voltage free pedal input

3-PIN CONNECTOR (Voltage-free open contact).

ON/OFF CONNECTION



1- Pin for voltage-free output connection (NO). Pump off.

2- Not connected, DO NOT USE.

3- Pin for voltage-free output connection (NO). Pump off.

If we physically join pins 1 and 3, the pump will start working.

5- _START UP

Make sure that the mains voltage is between 110 and 230 V.

Connect the power cable to the rear plug and to the network.

Consult the indicative flow table and install the appropriate tube.

See tips in the Tube Change and Head Description section.

Select the desired function.

OPERATING MODES.

Available modes:

A- Pumping mode operation.

B- Ramp mode operation.
Ramp programming

Ramp access

C- Cyclic mode operation.
Programming cycles
Access cycles

D- Single Cycle mode operation with pedal.
Programming cycles

Access cycles

· Pumping function - Procedure:

- 1- Connect to the network
- 2- Activate rear switch no. 7 ON/OFF. The green indicator lights up. Press the front button number 13 of the pumps that mount it.
- 3- Select the motor speed in % by pressing the decrease or increase keys n° 5 or n° 6
- 4- If it is necessary to change the direction of rotation, press keys no. 1 or no. 2
- 5- Press key no. 4 Start / Stop / Memo Start to start or stop pumping.
- 6- If you want the pump to resume its operation under the established conditions after an unexpected power cut or voluntary shutdown by the main switch, press key n.4 for 5 seconds. Its pilot light will flash as long as it is not deactivated by simply pressing the 4 Start / Stop / Memo Start button.

To facilitate loading, purging or cleaning tasks, press key no. 3 Full. The speed will increase to the maximum. Pressing the Full key again will recover the programmed speed.

· Ramp function - Procedure

- 1- Connect to the network.
- 2- Hold down keys no. 2 and no. 3 while operating the rear ON/OFF switch no. 7, and then the front switch no. 13. The green light will light up and the yellow light of key no. 2 will light intermittently. The displayed value indicates the total ramp time in minutes. Range: 1 to 99 minutes
- 3- Press keys no. 5 or no. 6 to set the time value.
- 4- Press key n° 4 Start / Stop to memorize the chosen value.
- 5- The initial speed of the ramp will be displayed on the screen. Press keys no. 5 or no. 6 to set the initial speed value in %
- 6- Press key no. 4 to memorize the chosen value.
- 7- The final speed of the ramp appears on the screen. Press keys no. 5 or no. 6 to set the final value of the ramp.
- 8- Press key no. 4 to memorize the chosen value.
The ramp can be increasing or decreasing.
- 9- Activate the rear ON/OFF switch no. 7 or the front switch no. 13. The ramp parameters are loaded.

Ramp Access

To access the loaded ramp, hold down key no. 2 while operating the rear ON/OFF switch no. 7 or the front switch no. 13.

The indicator will indicate the engine speed %.

The ramp starts.

All keys will remain inactive during the process.

At the end of the ramp, press any key to repeat the ramp.

To exit the ramp function, activate the rear ON/OFF switch no. 7 or the front switch no. 13.

· Cycle Programming Function

- 1- Connect to the network
- 2- Hold down keys no. 1 and no. 3 while operating the rear ON/OFF general switch no. 7 and then the front switch no. 13. The green light will light up and the yellow light of key no. 1 will light intermittently. The displayed value indicates the operating time in seconds. Range: 1 to 99 seconds
- 3- Press keys no. 5 or no. 6 to set the value of the operating time in seconds.
- 4- Press key n° 4 Start / Stop to memorize the chosen value.
- 5- The standby time will appear on the screen. Press keys no. 5 or no. 6 to set the value between 1 and 99 seconds.
- 6- Press key no. 4 to memorize the chosen value.
- 7- The motor speed in % appears on the display. Press keys no. 5 or no. 6 to set the chosen value.
- 8- Press key n°4 to memorize the chosen value.
- 9- Activate the rear ON/OFF general switch no. 7 or the front switch no. 13. The cycle is loaded.

Access to the Cycle

To access the loaded cyclic, keep key no. 1 pressed while operating the rear ON/OFF switch no. 7 or the front switch no. 13.

The display will alternately indicate the remaining time of each cycle.

To stop the process, activate the rear general ON/OFF switch no. 7 or the front switch No. 13.

Single Cycle function with pedal-Programming

- 1- Connect to the network.
- 2- Hold down keys no. 1 and no. 3 while operating the rear ON/OFF general switch no. 7 or the front switch no. 13. The green light will light up and the yellow light of key no. 1 will light intermittently. The displayed value indicates the operating time in seconds. Range: 1 to 99 seconds
- 3- Press keys no. 5 or no. 6 to set the value of the operating time in seconds.
- 4- Press key n° 4 Start / Stop to memorize the chosen value.
- 5- The standby time will appear on the screen. Press the keys no. 5 or no. 6 to set the value 0
- 6- Press key no. 4 to memorize the chosen value.
- 7- The motor speed in % appears on the display. Press keys no. 5 or no. 6 to set the chosen value.
- 8- Press key no. 4 to memorize the chosen value.
- 9- Activate the rear ON/OFF general switch no. 7 or the front switch no. 13. The cycle is loaded.

Access to the Cycle with pedal

Install the pedal.

To access the loaded cyclic, keep key no. 1 pressed while operating the rear ON/OFF switch no. 7 or the front switch no. 13.

Press the foot switch and the cycle will begin.

The display will alternately indicate the remaining time of the cycle after each press of the foot switch.

To stop the process, activate the rear general ON/OFF switch no. 7 or the front switch No. 13.

NOTE:

While using the 0-10V and rear 4-20mA analog input, the ramp and cycle functions are not accessible.

The footswitch connection is active during use of the footswitch pump and cycle function.

When using the 0-10V / 4-20mA regulation, the regulation keys 5 and 6 are inactivated.

6- CHANGE OF TUBES

Press the OFF switch. Extract the tube according to the indications described in the "Description" and "Head" section.

When the new tube is installed, it should be centered over the rollers to prevent the rotor from pinching it.

Check that the pump is OFF.

On the sides of the head where the peristaltic tube enters and exits, a sliding button acts on the tube fixers. Slide the button to release or clamp the tube. When the button is released, it recovers the position by itself.

In general, new tubes can stretch during the first 30 minutes of operation. If this happens, they must be tightened again to avoid unexpected breakage. To detect the elongation of the tube to the head it is useful to conveniently mark the tube with a marker.

Since the friction of the tubes with the rollers increases with the diameter of the tubes, the minimum adjustable speed increases the greater the diameter of the tube.

It is not advisable to use a lower speed, even if the motor starts, since at any moment it can stop and cause the regulation circuit to overheat, which could be damaged if it remains in this situation for a long time.

It is desirable to use a speed somewhat higher than the minimum observed speed.

When using two heads at the same time, it may be necessary to limit the diameter of the tubes to be used, especially with tubes of high hardness.

The pump supply and discharge tubes can have any wall thickness, but not the tube that is installed in the head, whose wall must be 1,6mm.

The silicone tubes supplied with each pump are medical / food grade according to FDA and USP standards, autoclavable at 120° C, with a peristaltic range of use up to 80° C and medium duration.

Other materials available are:

The most mechanically resistant tubes are PHARMA, TYGON L®, TYGON A-60-C®, TYGON A-60-G® and medium-duration SILICONE and VITON®

However, the durability also depends to a large extent on the chemical nature of the pumped liquid, the pressure, the existing temperature and naturally the engine revolutions.

Proper choice of tubing ID prevents higher RPM demand from the peristaltic pump motor with small diameter tubing and decreased tubing life.

AVAILABLE MATERIALS:

PHARMA	Autoclavable multiple times. ETO and Gamma sterilizable. Medical-food grade, class VI USP, 21CFR 177.2600 and FDA. Not hemolytic. Excellent resistance to chemicals. ISO 10993. Low permeability and good resistance to abrasion. Long duration. Use temperature, -51°C to 132°C . Beige.
SILICONE	Autoclavable. The most versatile tube. Platinum Cure quality silicone. Medium duration. Medical/Food Grade. Excellent biocompatibility. Maximum temperature. 140°C. Translucent.
TYGON A-60-C ®	Autoclavable multiple times. Food grade Long duration. Resistant to acids, alkalis, oxidizing agents. Use temperature: -59°C to 135°C. Beige.
TYGON A-60-G ®	Autoclavable Compatible with Ozone, UV light and disinfectants. Long duration Great resistance to fatigue and abrasion. Resistant to acids, alkalis and alcohols. Use temperature -59°C to 135°C. Black colour.
VITON ®	Autoclavable Suitable for acids and non-acetone solvents. Maximum temperature 300°C. Medium duration Black colour.

7- ORDERING INFORMATION

Code ▼	rpm	Head	Article
1.9735.12	30	50-3r	Peristaltic Pump
1.9735.15	80	50-3r	Peristaltic Pump
1.9735.00	240	50-3r	Peristaltic Pump
1.9740.01			Foot switch

8- MAINTENANCE-SPARE PARTS

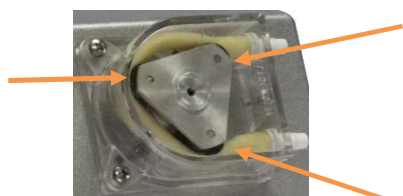
Before any examination or repair of the appliance, it is necessary to disconnect the mains plug.

Any initiative must be carried out by qualified personnel to avoid greater evils.

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

The engine and its block do not require greasing, 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 next to the rollers or the head opening lever and its guides, especially if they have been washed.



The head tube must be replaced periodically in a systematic way to avoid the inconvenience of its breaking during full operation of the pump.

Code	Description
1.0077.04	Back plate 50.
1.9740.01	Foot switch
1.0077.03	Housing 50.
1.0063.30	Main control circuit
1.0077.01	Motor-reducer 50, 24V 240 rpm.
1.0077.10	Motor-reducer 50, 24V DC 80 rpm
1.0077.24	Motor-reducer 50, 24V DC 30 rpm.
1.8093.16	Power supply
1.0077.02	Rotor 50-3r

1.6mm wall calibrated tube codes, 1 meter

Tube/ID	0,5mm	0,8mm	1,6mm	3,2mm	4,0mm	4,8mm	6,4mm
PHARMA		1.8801.08	1.8801.16	1.8801.32		1.8801.48	1.8801.64
TYGON A60C®			1.8740.16	1.8740.32			
TYGON A60G®			1.8750.16			1.8750.48	1.8750.64
SILICONE	1.8760.05	1.8760.08	1.8760.16	1.8760.32	1.8760.40	1.8760.48	1.8760.64
TYGON L®			1.8770.16	1.8770.32		1.8770.48	1.8770.64
VITON®		1.8790.08	1.8790.16	1.8790.32		1.8790.48	1.8790.64

Figure 2 shows the connectors used for the connections corresponding to tubes with an internal diameter of 0,5 and 0,8 mm in the head 50-3r.



Stainless steel capillary tube connector for 0,5mm tube. Code 1.0077.23*

Stainless steel capillary tube connector for 0,8mm tube. Code 1.0077.26*

Figure 2 *Bag of 10 units

Codes for 2 connectors with 15cm of tube for pump head 50-3. Pack of

Tube - Ø	0,5 mm	0,8 mm	1,6 mm	3,2 mm	4,0 mm	4,8 mm	6,4 mm
PHARMA		1.8717.08	1.8717.16	1.8717.32		1.8717.48	1.8717.64
TYGON A-60-C ®			1.8745.16	1.8745.32		1.8745.48	1.8745.64
TYGON A-60-G ®			1.8755.16	1.8755.32		1.8755.48	1.8755.64
SILICONE	1.8765.05	1.8765.08	1.8765.16	1.8765.32	1.8765.40	1.8765.48	1.8765.64
VITON ®			1.8795.16	1.8795.32		1.8795.48	

Note: The packs for 0,5 and 0,8 are of 3

9- ACCESSORIES

9.1 Balance for flow and dosage calibration.

Reproducibility 0,01 g. 1000g capacity. Code 1.9812.01

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



If the liquid to be pumped has density "1" there will be no difference between grams and millilitres. Otherwise, calculate the density by weighing a quantity of the liquid with the help of a 25ml test tube, for example, previously taring the test tube on the scale.

Divide the weight indicated on the digital readout of the scale in grams by the millilitres contained in the test tube to obtain the density according to the relationship,

$$D = M / V.$$

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

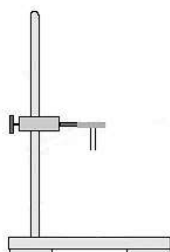
Specifications :

- ◆ Single digital reading platter, with highly visible backlit LCD screen.
- ◆ Simple use of great robustness with ABS casing and hermetic anti-humidity membrane keyboard
- ◆ Stainless steel pan, 157x128mm ◆ External auto calibration ◆ Units of measure: grams, pounds and ounces.
- ◆ Continuous tare up to 1000 g ◆ Power supply 230V 50/60Hz
- ◆ Non-slip rubber feet
- ◆ Working temperature: from +5°C to +40°C. Maximum use humidity, 85% RH

9.2 Graduated cylinder, 25 ml. Code 1.9808.20

9.3 Silicone grease, 50g. Lubrication of peristaltic tubes. Code 8.0030.03

9.4 Standing support. Code 1.8003.08



Useful as a support for the tube/dispensing tip. Foot: 150 x 70cm. Bar, height 70cm. Sliding support for dosing tip.

Connectors for peristaltic tubes



9.5 Reducing Splice Connectors / Same Ends, Polypropylene

For tubes 1,6/3,2mm. inside Ø. Code 1.0080.15

For tubes 3,2/4,8mm inside Ø. Code 1.0080.18

For tubes 4,8/6,4mm inside Ø. Code 1.0080.05

For tubes 6,4/8mm inside Ø. Code 1.0080.14

For tubes 8/12,7mm inside Ø. Code 1.0080.20



9.6 Straight connector for fitting/reducer, polypropylene

Straight connector / reducer Ø 4-5-8 to 7-10-12mm. Light 1,6/4,6mm.
Code 1.0120.31



9.7 Form Y connectors, polypropylene

Y shape connector, 6mm. either. Code 1.0120.26

Y shape connector, 8mm. either. Code 1.0120.48

Y shape connector, 10mm. either. Code 1.0120.32

Y-shaped connector, 12mm. either. Code 1.0120.33

9.8 Connectors-stainless steel micro-tube- Connection and dosage

Straight connection 40 mm length

Microtube for 0,5 and 0,8mm Ø tubes, 25 Units. Code 8.0056.14

Microtube for 1,6mm Ø tubes, 25 Units Code 8.0056.06

Microtube for tubes 3,2mm Ø, 25 Units. Code 8.0056.08

Microtube for 4,8mm Ø tubes, 25 Units Code 8.0056.10

Microtube for 6,4mm Ø tubes, 25 Units Code 8.0056.12



Dosage 130 mm length with a bevel

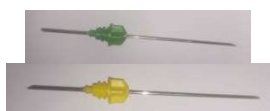
Dosage microtube for 0,5 and 0.8 mm Ø tubes, 10 Units. Code 8.0056.15

Dosage microtube for 1.6 mm Ø tubes, 10 Units. Code 8.0056.07

Dosage microtube for 3.2 mm Ø tubes, 10 Units. Code 8.0056.09

Dosage microtube for tubes 4.8 mm Ø, 10 Units. Code 8.0056.11

Dosage microtube for 6.4 mm Ø tubes, 10 Units. Code 8.0056.13



Length 38mm

Micro-tube 0,8mm outer Ø, 10 Units Code 1.0077.23

Micro-tube 0,9mm outer Ø, 10 Units Code 1.0077.26

Clamping flange P. Code 1.0120.01

Clamping flange G. Code 1.0120.12



9.10 Anti-floating sunk Head

For peristaltic tubes of 3,2 mm Ø. **Code 1.0303.10**

For peristaltic tubes of 4,8 mm Ø. **Code 1.0303.11**

For peristaltic tubes of 6,4 mm Ø. **Code 1.0303.12**

For peristaltic tubes of 8,0 mm Ø. **Code 1.0303.13**

For peristaltic tubes of 9,6 mm Ø. **Code 1.0303.14**

For peristaltic tubes of 12,7 mm Ø. **Code 1.0303.15**



9-11 Stainless steel tubes for dosing with backflow valve

For tubes size 4mm. **Code 1.0302.10**

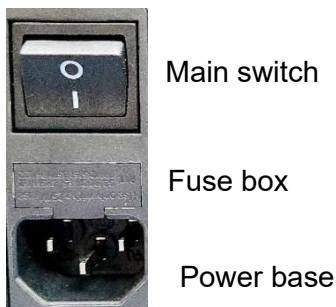
For tubes size 6mm. **Code 1.0302.11**

For tubes size 8mm. **Code 1.0302.12**

For tubes size 10mm. **Code 1.0302.13**

10- CHANGE OF FUSES

The fuse box is part of the power base located at the rear of the pump. See Figure.



Pry with a screwdriver between the central part of the fuse holder box and the upper part of the power supply base to remove the fuse holder box. The box remains attached without being fully extracted. There are two fuses.

Press the box in to restore its original position.

Remember that you have already used the spare fuse.

11- FLOW TABLES

Indicative adjustment intervals for each tube diameter

Code	rpm	0,5mm	0,8mm	1,6mm	3,2mm	4,0mm	4,8mm	6,4mm	Tube Ø
1.9735.00	240	0,6-5,2	1,5-16	5,6-65	25-225	35-283	70-400	130-700	ml/min
1.9735.15	80	0,15-2,2	0,4-5,6	1,3-24	3,8-73	5,9-114	8,9-145	16-258	
1.9735.12	30	0,05-0,8	0,13-2,0	0,6-7,5	1,5-23	2,1-35	3,2-45	5,7-81	

Flows calculated with water under normal conditions without outlet back pressure.

12- WARRANTY

12.1 DURATION:

The guarantee is established for a period of 1 year from the date of commissioning of the device, provided that the guaranteed card is returned to us within 8 days of said commissioning.

Without this condition the guarantee will not be valid.

12.2 SCOPE OF WARRANTY:

The guarantee is given against manufacturing and material defects for an average work week of 40 hours.

The guarantee is reduced proportionally to the increase in working hours.

Repairs will be made in our factory.

Otherwise, the guarantee will only include the replacement of the defective elements.

DINKO will not be responsible for the transportation costs, nor will it assume responsibility for the consequences caused by the immobilization of the device.

The parts replaced free of charge remain our property, reserving the right to request their return, free of postage to our address.

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

Our responsibility is limited to the attached guarantee and not to possible accidents to persons or other things.

Any alteration of the device by the user voids the guarantee.

13- "CE" DECLARATION OF CONFORMITY

DINTER S.A - *DINKO Instruments* c/ Encarnació, 123-125 / 08024- Barcelona

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

- Low Voltage Directive Directive D2006/95/CEE of December 12, 2006
- Essential requirements of Annex I of the Machinery Directive 2006/42/CEE of May 17 from 2006
- Electromagnetic Compatibility Directive 2004/108/CEE of December 15, 2004
- Safety for electrical measurement, control and laboratory devices. Requirements relating to the EMF. IN 61326
- Safety rules for electrical measurement, control and laboratory devices. Part I. General prescriptions EN 61010-1

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

Name	Joan A. Bravo	Josep X. Sensada
Position:	Technical Director	Responsible for Quality

Signature



Model: Peristaltic Pumps D-25Vplus- 50-3r

OTHER DINKO APPARATUS

- Blenders-Homogenizers
- Colorimeters
- Conductivity Meters
- Dosing Pumps
- Extractor for meat analysis
- Heating Plates
- Infrared Stoves
- Kits for water analysis
- Magnetic Stirrers
- Metallic block heaters
- Microscopes
- Nephelometers
- Orbital Shakers
- Oximeters
- Peristaltic Pumps
- pH-meters
- Photometers
- Respirometers
- Rod Stirrers
- Rotary Stirrers
- Sand Baths
- Spectrophotometers
- Temperature Controllers
- Timers / *Timers*
- Trichinoscope - TriquiVisor
- Turbidity Meters
- Turn dishes
- Vacuum Pumps



DINTER, S.A c/ Encarnació, 123-125. Tel. +34 93 284 69 62. 08024-Barcelona

dinter@dinko.es www.dinko.es
