

PERISTALTIC PUMP VARIOUS HEADS

Model D-25VXi

Codes 1.9733.05/9738.00/1.9738.01/3734.05/1.9739.00/1.9739.01



MANUAL

June 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

INDEX

	Page
1- GENERAL INTRODUCTION	3
2- PACKING LIST	3
3- RECEPTION	4
4- DESCRIPTION	5
5- START UP	5
6- CHANGING THE TUBES	6
7- ORDERING INFORMATION	7
8- MAINTENANCE – SPARE PARTS	7
9- COMPLEMENTS	8
10- TROUBLESHOOTING	10
11- CHANGING FUSES.....	10
12- FLOW CHART	11
13- WARRANTY	11
14- EC DECLARATION OF CONFORMITY	12
15- OTHER <i>DINKO APPLIANCES</i>	13

1- GENERAL INTRODUCTION

The following considerations are intended to guarantee correct reception and use of the device, as well as the safety of the user. To this end, we recommend reading this manual in detail before proceeding to unpack the device and subsequent use.

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

-Carefully unpack the appliance, checking that the contents match the packing list.
Immediately notify any eventuality.

-For the correct conservation of the appliance it is necessary to avoid its installation in areas with atmospheric corrosive or exposed to liquid splashes.

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

-According to the European regulations of use 89/655/CEE, the lack of adequate maintenance and the alteration or change of any component, exempts the manufacturer from any responsibility for the damage that could occur.

-The devices that are sent to the technical services of *DINKO Instruments* must be perfectly **clean and disinfected**. Otherwise, they will be rejected and returned with postage paid by the owner.

2- PACKING LIST

Description Code	Quantity
Peristaltic Pump D-25VXi	1
Set of connections	1
Power cord	1
Warranty	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- RESPONSIBILITY






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
	<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 of electronic equipment.</p> <p>Contact your local office, the store where you purchased the equipment, or your household waste disposal service.</p> <p>Recycling helps conserve natural resources.</p> <p>Make sure it is recycled protecting human health and the environment.</p>

4- DESCRIPTION

The D-25VXi peristaltic pump is provided with 50-2r heads that allow access to the tube for extraction when it must be replaced due to wear or for sterilization. It will suffice to remove the cover by removing the three fastening screws.

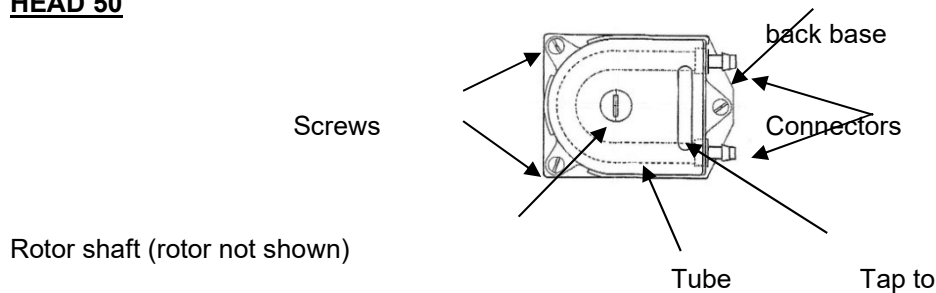
They admit different tube sizes that, combined with the electronic speed regulation, give a great variety of flows, as can be seen in the table of indicative flows in the manual.

On the back they incorporate a connector for pedal (foot switch) and remote-control operation, power socket with fuse box and general ON/OFF switch.

On the front there are switches to change the direction of flow and stop as well as potentiometers for percentage speed regulation, per channel.

Pumps are manufactured with the number of heads requested or with other heads with higher performance.

HEAD 50



FRONT



1-Drive pilot light. 2- Pump heads. 3- Potentiometers 10 turns speed control %

4-flow direction and stop switches

5- START UP

Assemble the chosen tube in each head. See "Changing tubes".

Make sure that the mains voltage is between 100 and 230 V.

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

In facilities for processes or assemblies that include a *DINKO* Pump, they must not enter into service before checking that the safety standards of the European Machinery Directive 2006/42/EC are met.

Press the ON switch.

The speed regulation knob is a potentiometer with a numerical counter of turns from 1 to 10.

The dial is numbered from 1 to 10 for each turn, so the regulation is from 0 -100%, in increments of 1% and repeatability of 100%.

Each head has its speed regulator and flow direction change and stop switch.

If you want a spindle not to work, act on the individual stop and flow direction switch instead of placing the regulator at 0% to avoid any small rotation of the motor due to residual currents.

6- CHANGE OF TUBES

Press the OFF switch. Extract the tube according to the indications described in the “Description” and “Heads” section.

When removing the tube from the heads, do it together with its fixing terminals.

When the new tube is installed, it should be centered over the rollers to prevent the rotor from pinching it. Take advantage of the slow rotation of the rotor to insert the new tube. This avoids forcing the axis when trying to place the tube with the rotor stopped.

Be careful not to pinch your fingers. Put the lid back on.

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 elongation or insufficient fixation of the tube to the head, it is useful to properly mark the tube with a marker.

A tube set is supplied with each pump.

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

AVAILABLE MATERIALS

The most mechanically resistant tubes are PHARMA, TYGON A-60, TYGON A-60-G and SILICONE with medium duration, but the durability also depends to a large extent on the chemical nature of the pumped liquid, the pressure, existing temperature and naturally of engine revolutions.

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

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.
Average 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.
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.
Black color

7- ORDERING INFORMATION

Code ▼	Model	heads	Flow ml/min	Engine rpm
1.9733.05	D25V2i	2x50-2r	0.1-100	30
1.9738.00	D25V2i	2x50-2r	0.4-300	80
1.9738.01	D25V2i	2x50-2r	1-700	240
1.9734.05	D25V4i	4x50-2r	0.1-100	30
1.9739.00	D25V4i	4x50-2r	0.4-300	80
1.9739.01	D25V4i	4x50-2r	1-700	240

Dimensions: with 2 heads, 32x26x14cm. Weight: 5. With 4 heads, 26x34x27cm. Weight: 6Kg

8- MAINTENANCE-SPARE PARTS



Before proceeding with any examination or repair of the device, disconnect the power supply.

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

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

LUBRICATED

The engine and its block do not require greasing, so they are maintenance-free.

The rotor bearings are self-lubricating, but it is advisable to lightly lubricate them together with the rollers with silicone grease ref. 8.0030.03 or similar from time to time, especially if they have been washed.

PIPES

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

WASHED

At the end of the use of the pump, it is advisable to purge the contents of the tubes to avoid possible solidifications that could obstruct their interior, especially in tubes with a small internal diameter, and preferably pump some inert and compatible liquid to complete the washing. Pay attention to avoid possible splashes.

SPARE PARTS

Head base 50. Code 1.0077.04

Flow direction and stop switch. Code 1.0015.05

Power supply, head 50. Code 1.8093.16

Flow direction switch control. Code 1.0025.01

Engine 50, 24V 240rpm. Code 1.0077.01

Potentiometer 10 turns. Code 1.0062.06

Rotor 50-2r. Code 1.0077.11

Front cover head 50. Code 1.0077.03

Main control circuit. Code 1.0060.03

Dial for 10-turn potentiometer. Code 1.0062.07

Foot switch. Code 1.9740.01

Motor 50, 12V DC 240rpm. Code 1.0077.28

Pedal for D25V. Code 1.9740.01

Switch button. Code 1.0015.09

Rotor 50-3r. Code 1.0077.02

Fan. Code 1.0042.01

1.6mm wall calibrated tube codes, 1 meter

Internal Ø tube ► ▼	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 A-60-C ®			1.8740.16	1.8740.32			
Tygon A-60-G ®			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
Viton ®		1.8790.08	1.8790.16	1.8790.32		1.8790.48	1.8790.64

Codes for 2 connectors with 15cm tube for 50-3r head. Pack with 5 games

Internal Ø tube ▶ ▼	0,5mm	0,8mm	1,6mm	3,2mm	4,0mm	4,8mm	6,4mm
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: 0.5 and 0.8 tube packs contain 3 sets



Figure no. 2 shows from left to right the head cover 50 with tube installed, a connection /tube that represents all tubes from 1.6 to 6.4 mm in diameter and a connection/tube corresponding to the 0.5 and 0.8 mm tubes provided with charge/discharge capillaries in stainless steel.

Figure nº2

9- ACCESSORIES

9.1 Balance for flow and dosage calibration.



Reproducibility 0.1 g. 600g capacity. Code 1.9812.02

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

has density "1" there will be no difference between grams and millilitre's. 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 millilitre's 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.

Characteristics:

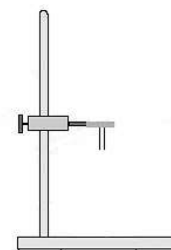
- ◆ Single digital reading platter, with highly visible backlit LCD screen.
- ◆ Simple use of great robustness with ABS casing and hermetic anti-humidity membrane keyboard
 - ◆ Stainless steel pan, 157x128mm
 - ◆ External self-calibration
 - ◆ Units of measure: grams, pounds and ounces
- ◆ Continuous tare up to 600 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 Connectors - Splice / Same Ends, Polypropylene



For 1,6/3,2mm internal Ø tubes. Code 1.0080.15
For 3,2/4,8mm internal Ø tubes. Code 1.0080.18
For 4,8/6,4mm internal Ø tubes. Code 1.0080.05
For 6,4/8mm internal Ø tubes. Code 1.0080.14
For 8/12,7mm internal Ø tubes. 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-316 stainless steel tube - Connection and dosage

Straight connection 40mm length



Tube for peristaltic tubes 0,5 and 0,8mm Ø, 25 Units Code 8.0056.14
Tube for peristaltic tubes 1,6mm Ø, 25 Units Code 8.0056.06
Tube for peristaltic tubes 3,2mm Ø, 25 Units Code 8.0056.08
Tube for peristaltic tubes 4,8mm Ø, 25 Units Code 8.0056.10
Tube for peristaltic tubes 6,4mm Ø, 25 Units Code 8.0056.12

Dosage 130mm length with a bevel

Dosing tube for peristaltic tubes 0,5 and 0,8mm Ø, 10 Units. Code 8.0056.15
Dosing tube for peristaltic tubes 1,6mm Ø, 10 Units Code 8.0056.07
Dosing tube for peristaltic tubes 3,2mm Ø, 10 Units. Code 8.0056.09
Dosing tube for peristaltic tubes 4,8mm Ø, 10 Units. Code 8.0056.11
Dosing tube for peristaltic tubes 6,4mm Ø, 10 Units. Code 8.0056.13



Length 38mm

Micro-tube 0,8 mm OD, 10 Units. Code 1.0077.23
Micro-tube 0,9 mm OD, 10 Units. Code 1.0077.26



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

9.9 304 stainless steel anti-floaters for suction tubes



For peristaltic tubes with 1,6 and 3,2mm ID. Code 1.0303.10
For 4,8mm ID peristaltic tubing. Code 1.0303.11
For 6,4mm ID peristaltic tubing. Code 1.0303.12
For 8,0mm ID peristaltic tubing. Code 1.0303.13
For 9,6mm ID peristaltic tubing. Code 1.0303.14
For 12,7mm ID peristaltic tubing. Code 1.0303.15

9.10: Stainless steel dosing tubes with non-return valve

For 3,2 and 4,8mm ID tubes, stainless steel tip 4mm OD wall 1mm. Code 1.0302.10
For 4,8 and 6,4mm ID tubes, stainless steel tip 6mm OD wall 1mm. Code 1.0302.11
For 6,4 and 8mm ID tubes, stainless steel tip 8mm OD wall 1mm. Code 1.0302.12
For 8 and 9,6mm ID tubes, stainless steel tip 10mm OD wall 1mm. Code 1.0302.13



10-TROUBLESHOOTING

The following table of faults, their causes and possible solutions, is not intended to cover all possibilities. However, inconveniences to the user can be avoided which actually have easily avoidable causes.

PROBLEM	CAUSE	SOLUTION
It does not start and the pilot lights do not light	lack of food blown fuse unknown	Check cable and plugs change fuse Request Technical Service
The head rotor does not turn, but the pilots shine	Broken tube that prevents it faulty engine	change tube Request Technical Service
The rotor turns, the tube is not broken, but it does not pump	exhausted, worn tube Insufficient tube wall empty feed tank Tube Chemical Incompatibility	change tube Install suitable tube charge the deposit choose suitable tube
Flow below theoretical	high viscosity excessive pump circuit Internal obstruction in the tube Insufficient tube wall High discharge back pressure Tube Chemical Incompatibility	Use a larger tube \varnothing short circuit Clean Install suitable pipe lower back pressure choose suitable tube
The head tube moves	small tube diameter Faulty tube installation	Choosing a suitable tube Check the fixings

11- 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.

13- FLOW TABLES

Indicative adjustment intervals for each tube diameter

Rpm ▼	0,5mm	0,8mm	1,6mm	3,2mm	4,0mm	4,8mm	6,4mm	◀Tube Ø
240	0,6-5,2	1,5-16	5,6-65	25-225	35-283	70-400	130-700	ml/min
80	0,15-2,2	0,4-5,6	1,3-24	3,8-73	5,9-114	8,9-145	16-258	
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	

The indicated flows are approximate and refer to liquids with a viscosity similar to water at 20°C without outlet backpressure.

14-WARRANTY

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.

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 transport 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 SA *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 Pump D-25VXi

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
