



DIGITAL SPEED TYPE PUMP

peristaltic pump User Manual

BT100M/BT300M/BT600M



NOTED :

Before operating, please read this User Manual carefully.



Warning:

Due to the wear, may cause the tube cracks. If it happened, the liquid will overflow from the tube, then may damage the human body and equipment, so please often check and timely replace the tube!

Please ensure plug the power cord directly into a wall outlet, and to avoid the use of extension cords

If the power cord or plug became frayed or have other damaged, please unplug the power plug (pull out the plug but not the power cord)

If the following condition occurs, turn off the power and pull out the plug (pull out the plug but not the power cord):

1. The liquid is spilled on the unit.
2. When you think the machine needs maintenance or repair.

Customer's power outlet must have a reliable earth ground

Please ensure the power was off, when you want to load or unload the foot switches and other external controllers, to avoid the external control interface's burning.

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Digital speed type pump M series

Product introduction

Digital speed type pump

4-LED DOUBLE DISPLAY PERISTALTIC PUMP
WITH FLOW RATE CALIBRATION FUNCTION.

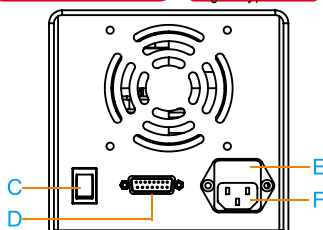
PRODUCT INTRODUCTION :

- ▲ Can be run with several pump heads :YZ1515x /YZ2515x/DG series etc
- ▲ Bidirectional high torque, low power motor ,can run with multi-channels .
- ▲ Long lifetime ,easy to operate with switch knob .with high precision .suitable for high accuracy liquid transfer
- ▲ With full speed button ,can fill or empty the tube rapidly
- ▲ With Memory function. To avoid suddenly power off cause data lost .
- ▲ With DB15 interface to reach external control :speed ,start /stop. direction
- ▲ With RS485 communication interface,support MODBUS communication protocol.The protocol can be customized depend on your requirement.....



Economical

High-precision
Digital type



Typical application :

- ◆ water treatment
- ◆ For liquid chromatography
- ◆ Cell culture fluid filtration
- ◆ Supporting the dry granulator
- ◆ Laboratory use

CRPUMP Digital speed type pump—BT100M



OPERATIONAL PRINCIPLE



PUMP CHARACTERISTICS

No pollution/ low shear /simple maintenance/wide application

- A: driver B: pump head
C: Switch
D: external control interface
E: insurance F: power plug

Note : The use of external control interface on page 8.

CRPUMP Absorbed pump
In 10 years

To provide comprehensive services in all aspects for you

Peristaltic pump was made of 3 parts :driver /pump head / pump tube ,simple to operate .

This catalog provide technical parameters details and

Speed type pump Instructions for use

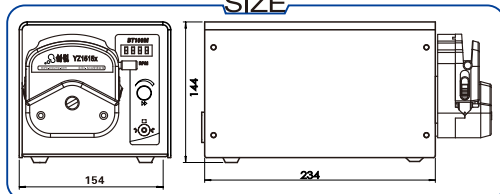


B CRUMP Digital speed type pump—BT300M

C CRUMP Digital speed type pump—BT600M



SIZE



Demand:

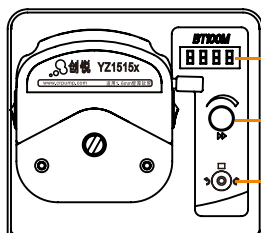
One foodfactory requires to transfer H2O2 to disinfection , need the flowrate 700ml/min . This factory requires precision transmission ,and should Conform to the hygiene



FOR EXAMPLE

CRUMP

M series operating panel



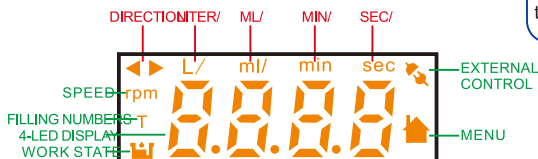
4-led display
flowrate or speed

Adjust speed
full speed

menu operation

Left /stop/right
switch

OPERATION PANEL



LED DISPLAY INTERFACE

Method :

Use BT300M/YZ1515x ,with 17#ID6.4mm flowrare range : 0.29-870ml/min silicon tube With FDA certification and that pump can add anglogy control or RS485 communication protocol which can control the pump through the central controller

◆ M SERIES OPERATION GUIDE :

● CCW-STOP-CW SWITCH

- Change to CW run ,CCW run or stop with the CCW-STOP-CW

● SWITCH

- speed (flow rate)regulates function
- Set the required speed (flow rate)with the speed(flow rate) adjusting knob

● MENU OPERATION

- When the pump on not work state ,press the knob, enter into the menu ,rotate the knob to choose the corresponding options ,put the button to confirm.

● FULL SPEED

- When the pump in the speed mode work state, press the full speed button ,The pump will run as the highest speed .display "100 " .this function will finish the fill empty and clean rapidly .Release the button. The pump will run as before .



Menu Operation

--1- BOOT DISPLAY : DEVICE ADDRESS
(1~32)

A0-- CHOOSE THE DISPLAY MODE

A0-0 SPEED

A0-1 FLOWRATE

A1-- E-CONTROL AND SYSTEM SETTING

A1-0 SPEED CONTROL MODE

C0-0 0-5v

C0-1 0-10v

C0-2 4-20MA

C0-3 0-10KHz

C0-4 INTERNAL CONTROL
(DEFAULT)

ESC (EXIT)

A1-1 DIRECTION MODE

Note:

- When selecting A0-0 (speed display) mode you can open the A1 options menu (set, control system)
- When selecting A0-1 (flow) mode you can open the A1 options menu (set of external control, system), A2 (pump head pump set), E0 (calibration)

C1-0 INTERNAL CONTROL
(DEFAULT)

C1-1 EXTERNAL CONTROL

ESC (EXIT)

A1-2 START/STOP CONTROL MODE

C2-0 INTERNAL CONTROL
(DEFAULT)

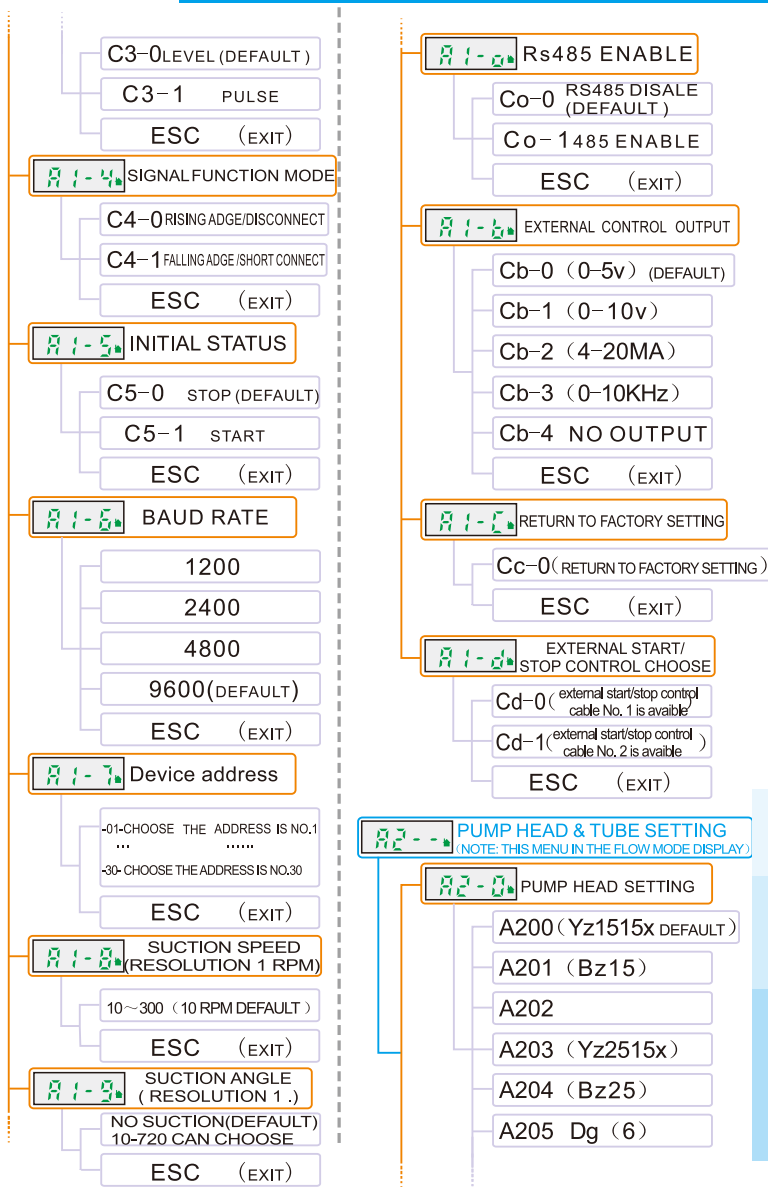
C2-1 EXTERNAL CONTRA

ESC (EXIT)

A1-3 START/STOP SIGNAL MODE

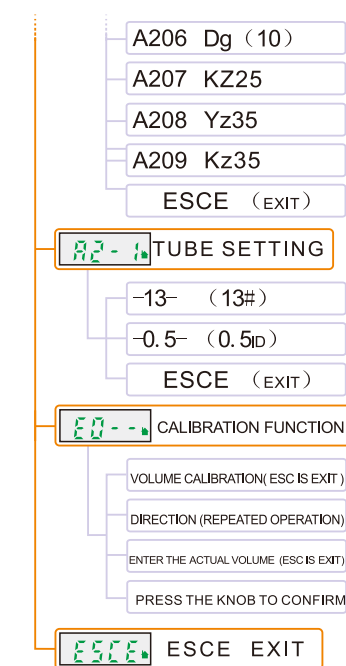
Digital speed type pump M series

Product introduction



Digital speed type pump M series

Product introduction



💡 Tube and calibration parameter are on the Parameter table.

Application one: speed mode transmission

Transmission fluid to rotate speed of 80rpm/min.

- (1) Press the button to enter the **A0- -** (display of choice).
- (2) Press the knob to enter **A0-0** (and rotate speed display mode).
- (3) Press the knob to determine the current model for the speed display mode.
- (4) To rotate **ESC** and press the knob (return to the main interface).
- (5) Rotate the knob to the **800**
- (6) The **▶◀** According to the operation of the peristaltic pump 80rpm/min **800**

Application two: flow mode transmission

Transmission fluid to rotate speed of 80ml/min.

- (1) Press the button to enter the **A0- -** (display of choice).
- (2) Press the knob and rotate to enter **A0-1** (flow).
- (3) Press the knob to determine the current model for the flow pattern.
- (4) To rotate and press the knob **ESC** (return to the main interface).
- (5) Rotate the knob to the **800**
- (6) The **▶◀** peristaltic pump according to the 80ml/min operation **800**

Application three: calibration fluid

With 8 ml/min speed transmission fluid.

- (1) Turn the peristaltic pump to flowrate mode
- (2) Customers can choose right pump head and tube. For example, user choose YZ1515X pump head and 13# tube, need to enter **A2-0**, choose A200, then enter **A2-1**, choose -13-.
- (3) Return main interface, adjust the flowrate as 8ml/min. If the flowrate not precise, user can use calibration function to adjust.
- (4) Enter to **E0- -** displaying 8ml
- (5) Pull **▶◀**, peristaltic pump will transfer liquid and auto stop when reach the set time, and metering and store the liquid volume.
- (6) Pull **▶◀** to stop position, displaying 8.000. Use the digital knob to input the actual calibration volume.
- (7) Then press the knob to the main interface.

CRUMP

Parameter Table

Calibration volume: 0.001ml ~ 999L			Actual volume : 0.001ml ~ 999L		
RANGE	UNIT	RESOLUT	RANGE	UNIT	RESOLUT
0.001-9.999	ml	0.001	0.001-9.999	ml	0.001
10-99.99	ml	0.01	10-99.99	ml	0.01
100-999.9	ml	0.1	100-999.9	ml	0.1
1000-9999	ml	1	1000-9999	ml	1
10.00-99.99	L	0.01	10.00-99.99	L	0.01
100.0-999.9	L	0.1	100.0-999.9	L	0.1
1000-9999	L	1	1000-9999	L	1



Technical Indicators

TECHNICAL INDICATORS		ISO 9001:2000 SUPPLIER CERTIFIED	CE DECLARATION OF CONFORMITY	1 year warranty
driver mode Technical parameter	BT100M	BT300M	BT600M	
SPEED RANGE	0.1~100rpm	0.1~300rpm	0.1~600rpm	
RESOLUTION	0.1rpm			
FLOWRATE RANGE	0.0015~380ml/min	0.0015~1140ml/min	0.0015~2280ml/min	
FLOWRATE ERROR	< 0.5%			
SPEED CONTROL	DIGITAL KNOB CONTROL			
DISPLAY	4-LED DISPLAY CURRENT SPEED OR FLOWRATE			
POWER SUPPLY	AC220±10% (STANDARD) /AC110V±10% (OPTIONAL)			
POWER	< 22W	< 35W	< 50W	
EXTERNAL CONTROL INTERFACE	START/STOP ,DIRECTION. SPEED CONTROL ((OPTIONAL) RS485 SERIAL COMMUNICATION			
OPERATING CONDITION	TEMPERATURE 0 TO 40°C, RELATIVE HUMIDITY < 80%			
DRIVE DIMENSIONS (L×W×H)	234X144X140 (mm)		254X184X145 (mm)	
DRIVE WEIGHT	3.98Kg	4.3Kg	4.8Kg	
IP	IP31			



M Series 's Pump Head And Tube

Optional pump head					ISO 9001:2000 SUPPLIER CERTIFIED	CE DECLARATION OF CONFORMITY	1 year warranty
TUBE MODE DRIVE MODE	SUITABLE PUMP HEAD & FLOWRATE REFERENCE(ml/min)						
	YZ1515x BZ15		YZ2515x BZ25		DG1~12 (6)	DG1~12 (10)	
	13# 14# 19# 16# 25# 17# 18#		15# 24#		0.5*0.8、1*1、2*1、2.4*0.8、3*1		
BT100M	0.007~380		0.17~290		PER CHANNEL 0.0015~42.17	PER CHANNEL 0.0015~32	
BT300M	0.007~1140		0.17~870		PER CHANNEL 0.0015~45	PER CHANNEL 0.0015~33	
BT600M	0.007~2280		0.17~1740		PER CHANNEL 0.0015~45	PER CHANNEL 0.0015~33	



Note: the use of the pump head to see the pump head vser manual.



M Series Pump Head Tube Corresponding To The Table

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PUMP HEAD MODE	TUBE NO	TUBE MODE
A200 (YZ1515x)	-13-	13# DEFAULT
	-14-	14#
	-16-	16#
	-17-	17#
	-18-	18#
	-19-	19#
	-25-	25#

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PUMP HEAD MODE	TUBE NO	TUBE MODE
A201(BZ15)	-13-	13# DEFAULT
	-14-	14#
	-16-	16#
	-17-	17#
	-18-	18#
	-19-	19#
	-25-	25#

PUMP HEAD MODE	TUBE NO	TUBE MODE
A203 (YZ2515x)	-15-	15# DEFAULT
	-24-	24#
	-35-	35#
	-36-	36#

PUMP HEAD MODE	TUBE NO	TUBE MODE
A204(BZ25)	-15-	15# DEFAULT
	-24-	24#

PUMP HEAD MODE	TUBE NO	TUBE MODE
A208(YZ35)	-73-	73# DEFAULT
	-82-	82#

PUMP HEAD MODE	TUBE NO	TUBE MODE
A205(DG6)	-0.5-	0.5*0.8 DEFAULT
	-1.0-	1*1
	-2.0-	2*1
	-2.4-	2.4*0.8
	-3.0-	3*1
	-4.8-	4.8*1

PUMP HEAD MODE	TUBE NO	TUBE MODE
A206(Dg10)	-0.5-	0.5*0.8 DEFAULT
	-1.0-	1*1
	-2.0-	2*1
	-2.4-	2.4*0.8
	-3.0-	3*1
	-4.8-	4.8*1

Digital speed type pump M series

Product introduction

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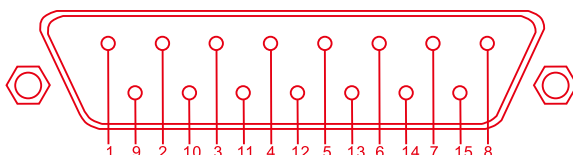
PUMP HEAD MODE	TUBE NO	TUBE MODE
A207(KZ25)	-15-	15# DEFAULT
	-24-	24#
	-35-	35#
	-36-	36#

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PUMP HEAD MODE	TUBE NO	TUBE MODE
A209(KZ35)	-86-	86# DEFAULT
	-90-	90#
	-88-	88#
	-92-	92#



series driver control needs to answer the pin



EXTERNAL CONTROL INTERFACE DIAGRAM

THE EXTERNAL CONTROL PIN PARAMETER TABLE

ISO 9001:2000
SUPPLIER CERTIFIED

CE
DECLARATION OF CONFORMITY

1 year
warranty

PIN	E-CONTROL INPUT INTERFACE DEFINITION	INPUT WIRE COLOR
1	E-c Ground	Black
2	485 Interface A	Brown
3	E-c Ground	Black
4	Start/stop 2	Grey
5	Direction	Green
6	E-c Ground	Black
7	0-10khz Input	Blue
8	0-5v Input	Blue
9	485 Interface B	White
10	E-c Ground	Black
11	Start/stop 1	Red
12	E-c Enable	Yellow
13	E-c Ground	Black
14	4-20mA Input	Blue
15	0-10V Input	Blue

● DRIVE EXTROCONTROL INTERFACE (DB-15) DESCRIPTION

- 15-pin connector on the back of the machine is done by an external signal to control the machine interface. First prepare a DB15 connector (hole), and several different colors of the signal cable to the 15-pin female connector to open, according to the following sequence diagram welding wire signal lines of different colors, and the signal lines 15-pin connector clip line fixed together, if necessary, can be reinforced plastic injection, and



Note : 1 ,External control line is optional

2 ,If the wire less than 8 pcs ,the final 2 use for RS485 : for example :black is E-C ground ,red is start/stop , yellow&green are 485 (5 wires)

3,External wire operation guide : A)enable and ground wire connect and disconnect ,to control enter or exit the external control

B)start/stop 1 and ground wire connect and disconnect , to control the stop and start ; start/stop2 and ground wire connect and disconnect ,to check if there is voltage signal to control the start/stop .

C)Direction and ground wire connect and disconnect , to control the pump's direction

D)Between the Speed and ground will connect to the 0-5v 0-10v 4-20ma 0-10khz , control signal .



Functions And Features

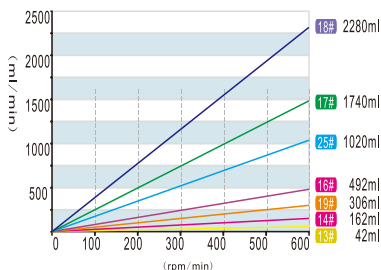
- 1.applicable pump heads: YZ1515x, YZ2515x DG series
- 2.FULL SPEED button available for filling in & emptying out
- 3.Memory function available in case of power off
- 4.Good capability price rate



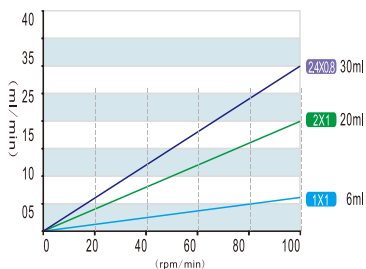
The Reference Flow Diagram

WARM TIP:

Please refer to the characteristics of each hose to purchase, In order to make your more suitable for liquid filling.



YZ1515x YZ2515x



DG-1、DG-2、DG-4、DG-6
DG-8、DG-12(6Roller、10Roller)



CRUMP 创锐 Normal imported tubing and features:

To ensure the best working conditions of Chuangrui peristaltic pumps, we recommend below imported tubing for your selections:

■ long life	■ low adsorptivity	■ strong temperature resistance
■ corrosion resistance	■ conform to American standard	



PharMed biological ingredients, cell research using peristaltic pump tubes



- ◆ It can be long term used in the peristaltic pump, and has several times longer life than silicone tube.
- ◆ Can be disinfected repeatedly under high temperature and high pressure.
- ◆ Biocompatibility could reach ISO10993 standard, and conform to the US USP Class VI, FDA and NSF standard.
- ◆ Air tightness is the 60 times of silicone tube.



Fluran F-5500-A tubes with corrosion resistance



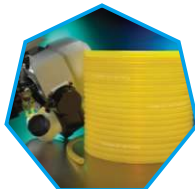
- ◆ Resistance to most strong acid and alkali, fuel oil, organic solvents, etc.
- ◆ Can be long term used under the circumstances of highest 204°C temperature.
- ◆ With strong resistance to ozone and weather resistance.
- ◆ Excellent elasticity and flexibility, is the ideal tubing for transferring corrosive medium.



Norprene A-60-F tubes for food with high temperature resistant performance



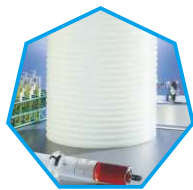
- ◆ Working under temperature from -51°C to 135°C.
- ◆ To be disinfected repeatedly under high temperature and high pressure is available.
- ◆ Resistant to most universal type of detergents and disinfectants, not easy to be ageing compared with ordinary rubber, almost unbreakable, and steam sterilization is available.
- ◆ Avirulent and odorless, conform to the US FDA, 3-A and NSF standard.
- ◆ Outstanding wear resistance, suitable for peristaltic pump



Tygon F-4040-A tubes for fuel oil and lubricating oil



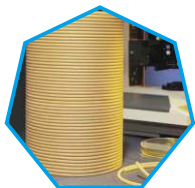
- ◆ Resistant to the vast majority of petroleum chemicals, not brittle, no swelling.
- ◆ Resistance to ozone and ultraviolet light.
- ◆ Apply to transferring gasoline, diesel, heating oil, chip compound oil and glycol or other kinds of refrigerants.



Tygon R-3603 tubes for the physical and chemical analytical instruments



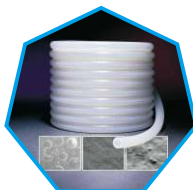
- ◆ Resistant to almost all of the inorganic chemicals commonly used in the laboratories.
- ◆ Soft, transparent, not easy to be ageing and not brittle, with better air tightness than rubber tubes.
- ◆ Outstanding low temperature resistance will keep flexible when using in -43°C.
- ◆ Can be used as condenser, incubator, gas tube, drain pipe and other kinds of laboratory hoses and peristaltic pump tubes.



Norprene Chemical tubes with chemical resistance



- ◆ Norprene Chemical tubes with excellent chemical resistance and much longer using life.
- ◆ The tube inner wall made by Teflon material, surface smooth, does not contain plasticizers, resistance to liquid absorption.
- ◆ Outer layer made by long life wear resistant material, is your ideal choice for transporting acid, alkali, alcohol, ketone and other kinds of corrosive liquids.



Tygon 3350 healthful silicone tubing



- ◆ Platinum sulfide healthful silicone tubing.
- ◆ With hydrophobic inside surface, could improve the liquidity.
- ◆ With very smooth inner wall, low adsorptivity and less precipitate; biocompatibility could reach ISO10993 standard, and conform to the US USP Class VI, FDA and NSF standard.



Micro flow tube

ISO 9001:2000 CE 1 year warranty

Tube	0.5X0.8	1X1	2X1	3X1	2.4X0.8	3.2X0.8
Hose section (1:1)						
Wall thickness(mm)	0.8	1	1	1	0.8	0.8
Inside diameter(mm)	0.5	1	2	3	2.4	3.2
Pressure (Mpa)	Continuous			0.1		
	Interval			0.1		

The basic flow tube

ISO 9001:2000 CE 1 year warranty

Tube	13#	14#	19#	16#	25#	17#	18#	15#	24#	35#	36#
Hose section (1:1)											
Wall thickness(mm)	1.6						2.4				
Inside diameter(mm)	0.8	1.6	2.4	3.1	4.8	6.4	7.9	4.8	6.4	7.9	9.6
Pressure (Mpa)	Continuous			0.17			0.14			0.1	
	Interval			0.27			0.24			0.14	

Industrial hose

ISO 9001:2000 CE 1 year warranty

Tube	73#	82#	86#	90#	88#	92#
Hose section (1:1)						
Wall thickness(mm)	3.3		6.3		4.8	
Inside diameter(mm)	9.6	13	9.5	19	12.7	25.4
Pressure (Mpa)	Continuous		0.17		0.1	
	Interval		0.27		0.1	



Accessories Optional

• FK-1C

- Distribution Controller .
can Achieve Rationing.



• FOOT SWITCH:

To control the pump's start/stop

- ⚠ Noted: Foot switch and dispensing controller is optional, these devices control only pump start and stop state operation of the pump speed and direction through the panel switch settings.

Trouble shooting

ISO 9001:2000
SUPPLIER CERTIFIED

CE
DECLARATION OF CONFORMITY

1 year
warranty

Fault Display	Reason	Method
Open the pump, The fan and display are normal work, to control the start/stop, the pump not work.	Motherboard insurance blown fuse	Change It
	Drive is broken	Change It
Open the pump, The fan and display are normal work, to control the start/stop, the motor is normal work, but the pump head didn't work.	The rubber coupler is broken	Change It
The pump is normal work, but it's not display.	The connect line is Loose or damaged.	Reinstall the line or replace a new line.

CRPUMP 创锐 Chuangrui peristaltic pumps maintenance, warranty and after sale service:

● MAINTENANCE

- When the pump is idle, we recommend you to release the tubing from pressure, to avoid the distortion of the tubing under long terms extrusion.
- Keep pump rollers clean and dry. It will increase the abrasion and reduce the service life of the tubing once the roller surface was unclean. Please dry the rollers once there were liquids on. It will damage the rollers under long time soaking.

● WARRANTY & SERVICE:

- One year product warranty (excluding pump tube), during the warranty period as a result of user mishandling or man-made damage, the Company is not responsible for repair. Other repairs expired for the warranty period, please only pay maintenance costs.



PURSUIT OF EXCELLENT QUALITY CREATION OF CUSTOMER VALUE

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