Intelligent dispensing type peristaltic pumps

peristaltic pump User Manual

BT100FC/BT300FC/BT600FC

⚠ NOTED :

Before operating, please read this User Manual carefully.

2019.5.1.0Edition

⚠ 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.

Intelligent dispensing type peristaltic pumps   with LCD touch screen, more intelligent dispensing pump drives.

Product Introduction

▲With 3.5 inches color LCD screen, displaying English and Chinese. Running states real-time displaying function, showing the flow rate and motor revolving speed at the same time, touch screen controlling.

▲With intelligent calibration function, could calibrate the flow rates and infusion volume; suitable for high precision transferring fluids.

▲Customer data saving function: can save 9 sets of data for customers.

▲Accurate angle controlling function ensures to high precision distribution and metering.

▲Memory function available in case of power off, reliable and safety.

▲Applicable pump heads: YZ, DG, BZ series, etc.

A

B

INTELLIGENCE

Touch screen control
More intelligent

Typical application:
1. Monoclonal antibody production
2. High precision transmission of intermediate
3. Transferring micro flow rates liquid with high precision
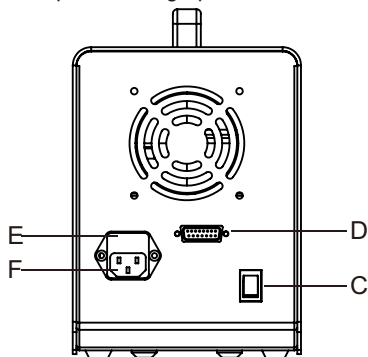
A **CRPUMP** Intelligent dispensing type peristaltic pumps–BT100FC

Flow rate range
0 . 0 0 1 5 ~ 3 8 0 m l / m i n

A Drive   B Pump heads;
C Power switch   D External interface
E Safety   F Power socke

💡   Note: The instructions of the external interface please check page 15.

E

F

D

C

B *CRPUMP* Intelligent dispensing type peristaltic pumps--BT300FC

——— Flow rate range ———

0 . 0 0 1 5 ~ 1 1 4 0 m l / m i n
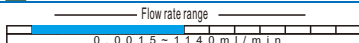
Dimension drawing
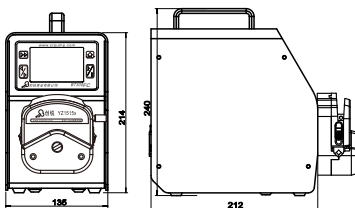
case

REQUIREMENT:
A pharmaceutical company needs to dispense pharmaceuticals, 10ml per vial, and to fill 150 vials per minute. They will use conveyor belts to work automatically, and it will take 0.5 second once the conveyor belts moving.

SOLUTION:
Select BT600FC intelligent dispensing peristaltic pump, matching two white YZ1515x pump heads, 17# silicone tubing. Silicone tubing conforms to the hygiene standards of food enterprises, can be sterilized under high temperature and pressure. And pump body adopts stainless steel housing, could meet the medicine GMA health standards.
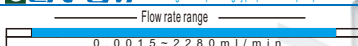
More information

Chuangrui pump warm reminding:

Please select suitable type and texture tubes, to guarantee the optimum performance of the peristaltic pumps. Please contact our customer service in case any questions, thanks.

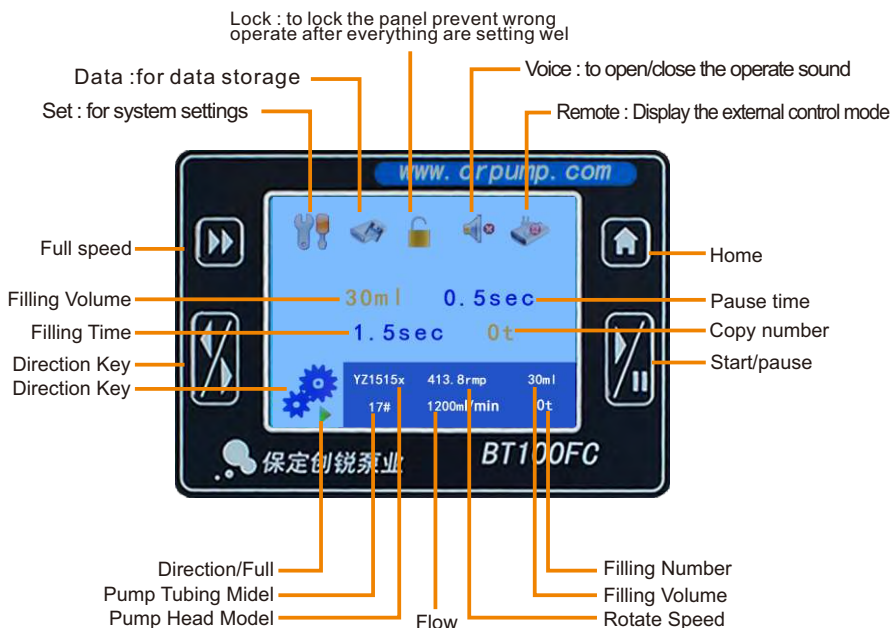**C** *CRPUMP* Intelligent dispensing type peristaltic pumps--BT600FC

——— Flow rate range ———

0 . 0 0 1 5 ~ 2 2 8 0 m l / m i n

CRPUMP 创锐 Peristaltic pumps FC series operation panel:

Lock : to lock the panel prevent wrong operate after everything are setting wel

Data :for data storage

Set : for system settings

Voice : to open/close the operate sound

Remote : Display the external control mode

Full speed

Home

Filling Volume

Pause time

Filling Time

Copy number

Direction Key

Start/pause

Direction Key

www.crpump.com

30ml   0.5sec

1.5sec   0t

YZ1515x   413.8rmp   30ml

17#   1200ml/min   0t

保定创锐泵业   BT100FC

Direction/Full

Pump Tubing Midel

Pump Head Model

Filling Number

Filling Volume

Rotate Speed

Flow

Operation panel diagram

◆ FC series peristaltic pump operation panel divide into:

» 1. Key Areas: Full Speed Direction Key Home Start/Pause

» 2. Graphical menu area: Settings Data Operation Lock/Unlock Sound off, ///// External Control

» 3. Filling parameter input area: Filling Volume Fill Time Stop Time Filling Number

» 4. State parameter display area: These parameters are displayed: Animation Instructions Operation/Direction/Pump Head Model/Pump Tubing Model/ Rotate Speed/Flow rate/Filling Volume/Filling Number

» 5.Partition as follows

Graphical menu in figure

Filling parameter area

Status values
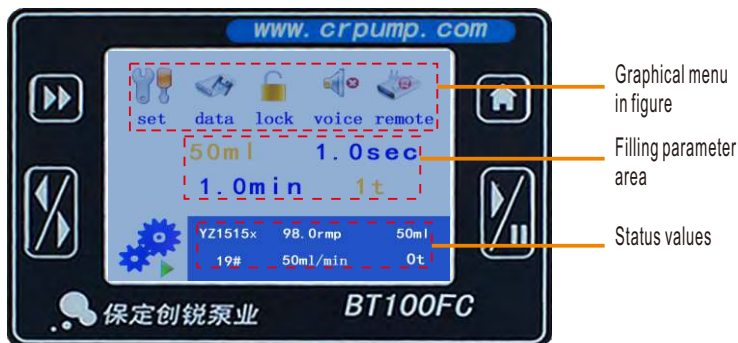
Operation panel partition diagram

Set : for system settings

Data :for data storage

Lock : to lock the panel prevent wrong operate after everything are setting well.

Voice : to open/close the operate sound.

Remote : Display the external control mode .

◆ **FC series peristaltic pumps Description of function buttons**:

● **Start/Pause Button**
➢ Control drive's run and stop, first time you press the button the drive will run, press again the drive will stop, and then press it, the drive continues to run.

● **Direction Button**
➢ Each time you press the button, the revolving direction of the drive will be changed.
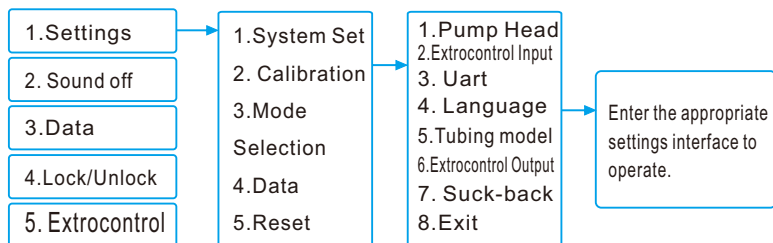
● **Full Speed Button**
➢ Also known as emptying and cleaning key, press the button the drive will run at full speed, press again to return to the original state.

● **Home Button**
➢ After user's entry the interface, you can press this button to quickly return to the main interface without saving the data.

CRPUMP创锐 FC pump Graphical menu in figure

1.Settings	→	1.System Set	1.Pump Head	
2. Sound off		2. Calibration	2.Extrocontrol Input	
3.Data		3.Mode	3. Uart	Enter the appropriate
4.Lock/Unlock		Selection	4. Language	settings interface to
5. Extrocontrol		4.Data	5.Tubing model	operate.
		5.Reset	6.Extrocontrol Output	
			7. Suck-back	
			8.Exit	

> Calibration : this function is for filling volume calibration , when you think the filling is not precision . then you can use this function .
> Mode Selection: work mode .Fill mode is for bottle fill . Transfer mode is for constant transfer .
> Data : This function is for data storage . when you have several filling data need to change . you can use this function.
> Reset : back to the factory setting.
> Pump head : to choose the right pump head model which comes with the pump.
> External input : External control signal setting .
> Uart : System setting . No need to set .
> Language : English /Chinese
> Tube model : Choose the right tube model which insert in the head .
> External output : non standard . need to customized .
> Such-back : which can send the reverse run and speed of the pump . to avoid the drip of the liquid .

Graphics menu

◆ **FC Instructions for filling parameter area:**

● **Set the Filling Volume**
> 1.Click the filling quantity value, will show the small keyboard.
> 2.Click the Volume Range 0.001ml-9999L (show the max. and min. value for the using pump head and tubing, can only input the value in this range).
> 3.Unit: ml / L
> 4.When the filling stop can click on the input value, but if the drive running, you can't click on the input value.
> 5.Set the keyboard:

Filling volume:

Max: 9999L   Min: 0. 001ml   Enter the filling volume you want

124. 5 ml

1	2	3	C
4	5	6	U
7	8	9	Esc
0	.	OK	

C ———— Delete

U ———— Unit setup

Esc ———— Exit

OK ———— Confirm

Filling volume setting interface

● **Set the filling time**
» 1.Click the Filling time quantity value, will show a small keyboard, then input your filling time
» 2.Range: 0.1sec - 9999min; Unit: sec, min
» 3.When the filling stop you can click on the input value, but if the drive running, you can't click on the input value
» 4.With countdown function
» 5.Set the keyboard:

Filling time:

Max: 9999min   Min: 0. 1s   Filling time range

234. 5 s

1	2	3	C
4	5	6	U
7	8	9	Esc
0	.	OK	

C ———— Delete

U ———— Unit setup

Esc ———— Exit

OK ———— Confirm

Filling time setting interface

6

- **Set the Stop Time**
- 1. Click the Stop Time quantity value, will show a small keyboard, then input your interval time
- 2. Time Range: 0.1sec-9999min
- 3. Units:sec(second), min (minute)
- 4. Stop time value is to set the interval time between two fillings; it can be only set when the filling is stopped.
- 5. During the filling period, the stop time cannot be set
- 6. With countdown display function
- 7. Set the keyboard:

Pause time:

Max: 9999min   Min: 0.1s — Pause time range

124. 5 s

1	2	3	C — Delete
4	5	6	U — Unit setup
7	8	9	Esc — Exit
0	.	OK — Confirm

Pause time setting interface

- **Set the Filling Number**
- 1. Click on the Filling Number quantity value, will show a small keyboard, and then input your filling number
- 2. Range: 0-9999 times, 0 on behalf of the infinite time
- 3. When the filling stop you can click on the input value, but if the drive running, you can't click on the input value
- 4. Set the keyboard:

More information

Chuangrui pump warm reminding:

Please select suitable type and texture tubes, to guarantee the optimum performance of the peristaltic pumps. Please contact our customer service in case any questions, thanks.

Copy number :

Max : 9999t   **Min : 0t** — Copy number range

1241t

1	2	3	C	— Delete
4	5	6		
7	8	9	Esc	— Exit
0	.	OK	— Confirm

Copy number setting interface

CRPUMP创锐 FC series pumps Menu operation method

- PUMP HEAD SELECTION
➤ Select the current use of the pump head models
➤ Turn on the power, enter the initial interface, Click Settings, enter the setup menu; Click System Set, enter the system setup menu; Click Head, enter the pump head selection menu; then choose your current pump head. Click Enter, save and exit;Click Cancel, exit without saving.
- PUMP TUBE SELECTION
➤ Select the current use of the pump tubing models
➤ Turn on the power, enter the initial interface, Click Settings, enter the setup menu; Click System Set, enter the system setup menu; Click Tube, enter the pump tube selection menu; then choose your current pump Tube. Click Enter, save and exit;Click Cancel, exit without saving. (if you just want to change the tubing which the same pump head use, you can just enter the Pump tube selection menu, to choose the suitable model)

💡 NOTED: YZ series pump heads' tubing selections depend on the model (such as 13#/14# etc.); DG series pump head's tubing selections depend on the inside diameter of the tube (for example, 2*1 tube, should choose the 2.00). Set values most close to the actual using hose inside diameter, to ensure the calibration accuracy. Pump heads and the application of hose are described in details of the manual.

⟫⟫ Product Introduction

- External control input
  - Select External control input parameters
  - Turn on the power, enter the initial interface, Click Settings, enter the setup menu; Click System Set, enter the system setup menu;ClickExternalcontrol Input, enter the extrocontrol Input menu; choose the suitable control items; Click Enter, saved and exit; Click Cancel, exit without saving.

- **Communication Settings**
  - Select the pump communication parameters
  - From initial interface press the System icon to enter the setup menu; click System Settings to enter the system setup menu; click Communication Settings to enter the communication settings menu; choose the appropriate control items (including: broadcast address, local address, baud rate); click Enter to save and exit; click Exit to exit without saving.
  - FC pump also has 485 serial communication bus interfaces to be connected to the host computer (computer, PLC, SCM). PC can simultaneously connect up to 30 devices with 485 serial communication bus interface functions; when using with multiple devices to communicate with the host computer, it must know the machine number for each device, this device ID is the only number that should be connected together, and each machine number of the devices is not the same. The factory default value for each pump is "1"; it could be reset by remote controlling through the host computer or by manually changing from the setting menu. Change the following steps: Press the Enter key to enter the menu options, move the cursor to adjust the parameter settings, press the Enter key to enter, find the machine number option and press the Enter key to enter, you can adjust the machine number.

Note: (1) Connected each pump in 485 bus interface must have a unique different numbers, otherwise communication errors.
2. Specific communication protocol and instruction set instructions, please contact with the dealer.

- Language
- Choose Chinese/English
- Turn on the power, enter the initial interface, Click Settings, enter the setup menu; Click System Set, enter the system setup menu; Click Language, enter the language selection menu; Choose your suitable language; Click Enter, save and exit;Click Cancel, exit without saving.

- Suck-back Set
- Select Suck-back parameters
- Turn on the power, enter the initial interface, Click Settings, enter the setup menu; Click System Set, enter the system setup menu; Click Suck- back, enter the suck-back set menu; Choose the suitable control items (angel and speed); Click Enter, saved and exit; Click Cancel, exit without saving.

- Calibration Guide
- Pump accuracy calibration, in order to reach the high precision dispensing, when the pump replace a new hose, external conditions changed or other conditions causing flow rate deviation, the flow rate can be corrected to meet users' requirements of flow accuracy.
- Turn on the power, enter the initial interface, Click Settings, enter the setup menu, Click Calibration, enter the calibration guide menu:

Calibration Wizard:

Pipe:14#, Flowrate:224.8ml/min

Amount of flowrate: 320ml

(pls enter the actual
value you need)

Next   Exit

Calibration Guide Interface

CRPUMP创锐 Interface analysis of the FC series correction guide for the crawling pump

Calibration Data:

Liquid volume 1: 321.3ml

Liquid volume 2: 321.3ml

Liquid volume 3: 321.3ml

(Tested repeatedly input the results)

| Back | Next | Exit |

Actual filling volume interface

The interface shows the current using pump tube, conveying fluid volume and advice calibration volume. If the suggested calibration volume is big, you can reduce the value according to the filling condition; input the calibration value and then click Next, enter the calibration menu, or click Exit Back to previous menu.

R**unning**:

Time reamining:85. 41s

Cancel

Countdown interface

More information

Chuangrui pump warm reminding:
Please select suitable type and texture tubes, to guarantee the optimum performance of the peristaltic pumps. Please contact our customer service in case any questions, thanks.

The pump will automatically stop after finishing setting, or click Cancel to cancel the calibration, and return to the calibration interface.
After 3 times calibration and enter the measured values, click Next to save the data, click Exit, to finish the calibration.
- Mode Selection
- The system default allocation mode
  Data
  Preserve the existing filling data; you can save at most nine filling data
  It has Delete Save Use Exit Options

CRPUMP创锐 FC Graphic menu operation method

- The gear icon
- Show the running state of the pump.
- When the pump is running, the gear will run; When the pump stop, the gear stop.

- **Direction & Full speed icon**
- By pressing the arrow keys to change the running direction of the motor, so different direction arrows will change.
- Press the Full Speed button will display double arrows, indicating motor full speed running.

- Other status values are shown
- Pump Head show
- Pump Tube show
- Speed display, the unit is rpm, the system automatically displays based on flow rate
- Filling times showed a cumulative function
- Real conveying fluid volume display with countdown function
- Real filling time display with countdown function

CRPUMP创锐 FC series pumps technical parameters

Technical guidance			CE DECLARATION OF CONFORMITY	1 year warranty

Technical parameters	Drive type	BT100FC	BT300FC	BT600FC
Speed range		0.1～100rpm	0.1～300rpm	0.1～600rpm
Speed resolution		0.1rpm		
Velocity range		0.0015～380ml/min	0.0015～1140ml/min	0.0015～2280ml/min
Velocity error		＜0.5%		
Speed control mode		Touch screen adjustment		
Display mode		Color LCD display(English and ChineseOptional)		
Allocation times		0～9999t		
Allocate time		0.1s ～9999min		
Interval time		0.1s ～9999min		
Return suction angle		10°～720°（1° Stepping）		
Return suction speed		10～300rpm		
Power Supply		AC220V±10%（Standard）Or AC110V±10%（Optional）		
Power		＜22W	＜35W	＜50W
External control interface		START/STOP .DIRECTION. SPEED CONTROL ((OPTIONAL) RS485 SERIAL COMMUNICATION		
Working environment		Temperature0～40℃，Relative humidity＜80%		
Drive size		254X184X145（mm）		
Drive weight		3.98Kg	4.3Kg	4.8Kg
Protection level		IP31		

More information

Chuangrui pump warm reminding:

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CRPUMP 创锐 The applicable pump heads and tubes

Optional pump heads type

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suitable tubing Drive type	applicable pump bead and reference flow rate (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	
BT100FC	0.007~380		0.17~290		per channel 0.0015~42.17	per channel 0.0015~32
BT300FC	0.007~1140		0.17~870		per channel 0.0015~45	per channel 0.0015~33
BT600FC	0.007~2280		0.17~1740		per channel 0.0015~45	per channel 0.0015~33

💡 Notes: the use of the pump heads, please check the user manual of the pump heads.

Can choose part of
the pump head tube display
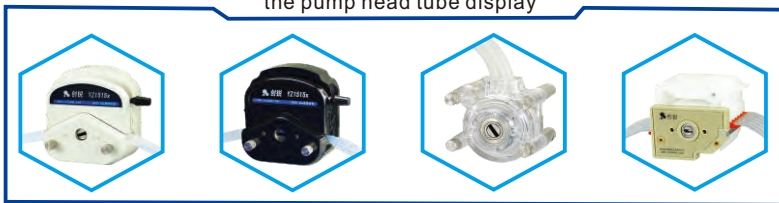
Optional Extended Accessories for FC

Foot switch User Guide:

Settings→System Set → Exinput → { Ctrl→Analog
Item→Start Stop
Signal→Pulse }

External control interface (DB-15) introduction

The 15-pin interface on the back of the machine is the controlling interface to operate the machine through the external signals.
Firstly prepare a DB15 connector (with holes) and various colors signal wires, then open the 15-pin interface, weld on the signal wires according to the sheet in Page 7, and fix the wires together using the clip on the interface, you may inject some glue to reinforce these wires; and at last install the shell and screws.

Hose connection

CRPUMP创锐 Functions & Features

> True color LCD touch screen, convenient and intuitive.
> With flow calibration function, making the flow control more precise, applicable to transferring quantitative fluid.
> Large graphic LCD screen used in conjunction with the key switches, makes the man-machine interface friendly and easy to use.
> With RS485 communication interface, our company can provide communication protocols for customers. And also to customize the software of the host computer is available.
> Higher cost performance.

More information

Chuangrui pump warm reminding:

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CRPUMP创锐 The external control interface technical parameters

1 9 2 10 3 11 4 12 5 13 6 14 7 15 8
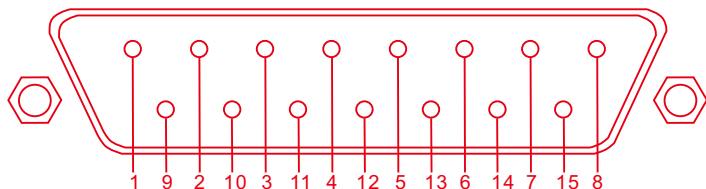
The external control interface sketch

• Drive external control interface (DB–15) introduction:
> The 15–pin interface on the back of the machine is the controlling interface to operate the machine through the external signals.

Firstly prepare a DB15 connector (with holes) and various colors signal wires, then open the 15–pin interface, weld on the signal wires according to the below sheet, and fix the wires together using the clip on the interface, you may inject some glue to reinforce these wires; and at last install the shell and screws.

External control interface technical parameters

PIN	E-C INPUT INTERFACE DEFINITION	E-C OUTPUT INTERFACE DEFINITION
1	E-c Ground	Suspended
2	485 Interface A	E-c output enable output B
3	E-c Ground	Start/stop output B
4	Start/stop 2	Direction Output B
5	Direction	E-c Ground
6	E-c Ground	4 ~ 20mA output negative
7	0-10kHz Input	E-c Ground
8	0-5V Input	E-c Ground
9	485 Interface B	E-c output enable output A
10	E-c Ground	Start/stop A
11	Start/stop 1	Direction Output A
12	E-c Enable	0~10kHz output
13	E-c Ground	4 ~ 20mA output positive
14	4-20mA Input	0~10V output
15	0-10V Input	0~5V output

Notes: 1.The external control interface is a selective accessory.

2. The using method of the external interface: (A) Enabled wire and Ground wire connect or shut, control the entry of the external control. (B) Start/Stop 1 wire and Ground wire connect or shut, control the start and stop of the pump; Start/Stop 2 wire and Ground wire control the start and stop through the voltage signal (less than 30V). (C) Direction wire and Ground wire connect or shut, control the running direction of the pump. (D) Between Speed wire and Ground wire, join up 0-5V, 0-10V, 4-20mA, 0-10kHz, etc. controlling wire signal.

If you need other functions, please contact the manufacturer for external control.

>>> Product Introduction

CRPUMP创锐 / **External control line color**

- Common external control input lines are as follows:
- ① When using the "start/stop" function, the corresponding color: start-stop/ground=brown/blue.

  ②When the "485 communication" function is selected, the corresponding color: 485A/485B=brown/blue.

  ③ When using the "start/stop, direction" function, the corresponding color: enable / start-stop / direction / ground = brown / gray / blue / black.

  ④ When the function of "start/stop, analog input (0-10kHz/0-5V/0-10V/4-20mA)" is selected, the corresponding color: enable/start-stop/analog input/ground=brown/gray/blue/ black

  ⑤ When the function of "start/stop, direction, analog input (0-5V/0-10V/4-20mA)" is selected, the corresponding color: enable/start-stop/direction/analog input/ground=brown/ gray/blue/double/black.

  ⑥ When the function of "start/stop, direction, analog input (0-10kHz/0-5V/0-10V/4-20mA), 485 communication" is selected, the corresponding color: enable/start-stop/direction/analog input/485A /485B/ground: brown/gray/blue/yellow/green/red/black.

  ⑦ When using the "start/stop, 485 communication" function, the corresponding color: enable / start-stop / 485A / 485B / ground = brown / double / blue / gray / black.

  ⑧ When using the "start/stop, direction, 485 communication" function, the corresponding color: enable / start-stop / direction / 485A / 485B / ground = yellow / green / red / blue / gray / black.

  Common external control output lines are as follows:

  ① When the "start/stop" function is selected, the corresponding color: start-stop A/start-stop B=brown/blue.

  ② When using the "analog output" function, the corresponding color: 4 ~ 20mA positive / 4 ~ 20mA negative: (brown / blue) ‖ 0 ~ 5V / ground: (brown / blue) ‖ 0 ~ 10V / ground: (brown / blue) ‖ 0 ~ 10kHz / ground: (brown / blue).

  ③ When using the "start/stop, analog output" function, the corresponding color: start-stop A / start-stop B: (brown / blue), 4 ~ 20mA positive / 4 ~ 20mA negative: (gray / black) ‖ 0 ~ 5V / ground : (gray / black) ‖ 0 ~ 10V / ground: (gray / black) ‖ 0 ~ 10kHz / ground: (gray / black).

  ④ When the "Direction" function is selected, the corresponding color: direction A / direction B = brown / blue.

  ⑤ When the "Enable Output" function is selected, the corresponding color: external control enable output A/external control enable output B=brown/blue.

  If you need other functions, please contact the manufacturer for external control.

CRPUMP创锐 Chuangrui peristaltic pump tubing technical parameters

Micro flow tube

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Tube	0.5X0.8	1X1	2X1	3X1	2.4X0.8	3.2X0.8
Hose section						
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					
Pressure（Mpa） Interval	0.1					

The basic flow tube

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Tube	13#	14#	19#	16#	25#	17#	18#	15#	24#	35#	36#
Hose section											
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	0.07	0.17		0.14	
Pressure（Mpa） Interval	0.27				0.24	0.14	0.1	0.27		0.24	

Industrial hose

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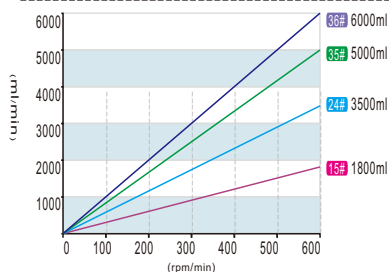| Tube	73#	82#	86#	90#	88#	92#
Hose section						
Wall thickness（mm）	3.3		6.3		4.8	
Inside diameter（mm）	9.6	13	9.5	19	12.7	25.4
Pressure（Mpa） Continuous	0.17	0.1	0.14			
Pressure（Mpa） Interval	0.27	0.1	0.14			

CRPUMP The Reference Flow Diagram

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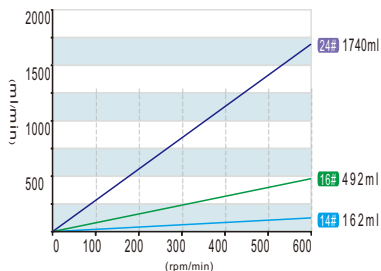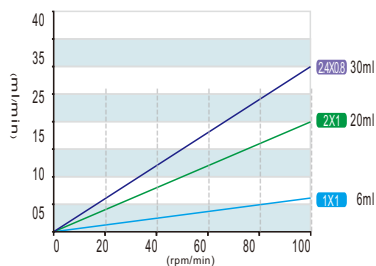Please refer to the characteristics of each hose to purchase, In order to make your more suitable for liquid filling.

18# 2280ml
17# 1740ml
25# 1020ml
16# 492ml
19# 306ml
14# 162ml
13# 42ml

YZ1515x YZ2515x

24# 1740ml
16# 492ml
14# 162ml

BZ15/25

36# 6000ml
35# 5000ml
24# 3500ml
15# 1800ml

KZ25

24X0.8 30ml
2X1 20ml
1X1 6ml
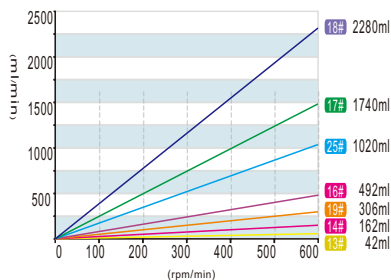
DG–1、DG–2、DG–4、DG–6 DG–8、DG–12(6、10)

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.**

Trouble shooting

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 is not display .	The connect line is Loose or damaged .	Reinstall the line or replace a new line .
No response to the touch screen But the keys by reaction	The touch screen lock screen	Click the touch screen lock screen button Remove the lock screen
The touch screen and keys No response	Drive control Open state control	Enter the system control Shut down control options

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Operation requirements:

1.The name of the fluid:_____
2.Flow rates (ml/min):_____
3.Fluid properties (Corrosion, viscosity, temperature, etc.):_____
4.Whether the fluid contains insoluble granules or suspended solids:_____
5.The running time for the pump (hour/day):_____
6.The pressure of outlet and entry, suction and delivery lift:_____
7.Others:_____

Your contact details:
1.Company name:_____
2.Address:_____
3.Contact person:_____
4.Tel.:_____
5.Fax:_____
6.E-mail:_____

The way you need our reply:
By calling:_____
By fax:_____
By E-mail:_____

✂- -

PURSUIT OF EXCELLENT QUALITY
CREATION OF CUSTOMER VALUE

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