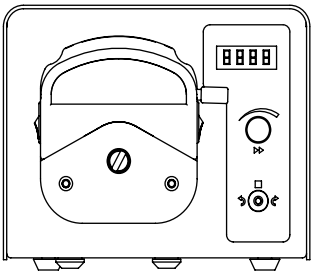
TE 騰億科技有限公司
LABORATORY TECHNOLOGY CO.,LTD.

PRODUCT OPERATION MANUAL



TE100M/TE300M/TE600M

//Thank you for choosing the peristaltic pump, please read this manual carefully before use to ensure correct operation, use effect and product maintenance.//

V1.0

Important information

- Please read this operation manual carefully before using the product!
- The contents of this operation manual are for reference only.
- The company reserves the right to change the product (design or specification) without prior notice.
- If you need the latest version of this manual, please contact The company or an authorized distributor.

Safety warning

- Before any cleaning or maintenance work, be sure to cut off the power supply.
- The tube may have cracks due to wear and tear, causing liquid to overflow from thetube,so check it frequently,and replace the tube in time!
- Please connect the power cord directly to the wall outlet, and avoid using extension Cords.
- If the power cord or plug is frayed or otherwise damaged, Please turn off the power immediately and pull off the power plug(hold the plug in your hand, not the power cord).
- If the following situations occur, turn off the power and unplug the power plug (hold the plug instead of the power cord):
  1.Fluid is spilled on the machine.
  2.You think this machine needs maintenance or repair.
  3.The product is abnormal.
- The power supply must have a reliable grounding.
- The foot switch or other external control plug must be installed and unloaded when the power is off to prevent the external control interface from being burned.

QUICK INSTALLATION OPERATION

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Appendix 1:1 comparison table of tube size

PART 1 Matters needing attention

>>Matters needing attention

Please read the operating instruction manual carefully before operating this equipment.

- **Safety:**

1.The staff responsible for the installation or maintenance of this equipment shouldhave the experience and ability to carry out related work.
2.This product is not applicable to the ATEX explosion-proof directive and cannot beused in flammable and explosive environments.
3.When pumping dangerous liquids, please follow safety precautions.
4.Please determine whether you need to wear personal protective equipment when operating the pump in accordance with the nature of the transfer fluid and industry specifications.
5.Non-professionals should not install this pump with other equipment to reduce safety risks.
6.For hazardous fluids, a dedicated operation process must be specified to prevent personal injury.
7.The power plug can disconnect the power supply and drive in an emergency. Do notplace the pump in a workplace where it is difficult to cut off the power supply,Otherwise it will affect the emergency stop operation.

- **Tube:**

1.In the event of a tube failure, ensure that the fluid in the pump tube of the pump head can be discharged to a suitable container or drain.
2.A ruptured tube may cause fluid to splash. Please take appropriate protective measures.
3.When disassembling the tube, it is necessary to drain the medium and cut off the power supply to ensure that the pipeline is pressure-free.
4.Ensure that the chemicals to be handled are compatible with the pump head, tubes and accessories.

- **Rollor :**

1.Do not touch the rollers while the pump is running.
2.Keep the rollers clean and dry to reduce tube wear.
3.Do not lubricate the pump head rollers by yourself. Improper operation may cause the tube to run out or the pump head shell to corrode.

- **Drive:**

1.There are no user-serviceable parts in the pump.
2.The power socket on the back of the driver is equipped with a user-replaceable built- in fuse. Only products of the same category can be used to replace the fuse.
3.The surface of the driver and the pump head are not resistant to organic solvents and strong corrosive fluids. If the liquid is splashed or accumulated, please remove and clean it in time.
4.After the pump enters the external control mode. The external control icon in the upper right corner of the LED screen lights up, and the pump can realize start&stop/direction/speed control in the external control mode.

PART 2 Unboxing

>>Unboxing

2.1 Unpacking inspection

Confirm that the pump is packaged in good condition. Please check the packing list, when unpacking, check the product model and the number of accessories, and check whether the parts are damaged during transportation. If you have any questions, please contact us immediately.
The packing list is sent with the goods, and the actual delivery content is subject to the list.

2.2 Product storage

This product can be stored for a long time, but before putting it into operation, please confirm that the drive, pump head or tubes and other accessories can be used normally. The tubes are commonly used consumables. Pay special attention to the use time and expiration date.

PART 3 Product description

>>Product description

3.1 Principle of Peristaltic Pump Operation

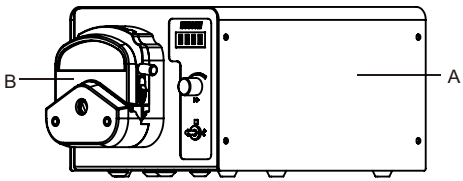
- The peristaltic pump uses the rotor to alternately squeeze and release the tube to transfer fluid, just like squeezing a tube full of fluid with a finger. As the finger slides forward, when a negative pressure is formed in the tube, the liquid flows with it.

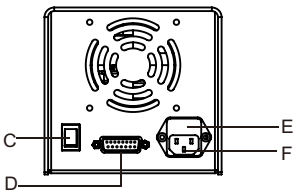
3.2 Product features

∗Suckback function: can effectively prevent liquid from dripping and ensure transmission accuracy;
*Full speed function: can quickly clean, fill and empty the tube;
*Flow calibration: multiple calibrations can be performed to reduce flow rate error and ensure flow accuracy;
*External control: support Modbus protocol, analog control, support OEM;
*Adapt to a variety of pump heads, wide flow range;
*Stable operation, high transmission accuracy.

3.3 Product structure

·Drive





A：Drive B：Pump head C：Power switch D：External interface E：Fuse F：Power socke

· Pump head/tube selection and reference flow

【Digital speed type peristaltic pump-this series can match the pump head】

Max Flow unit: (ml/min) Tube model (ID*Wall thickness)mm

	Model	Max Speed	13# (0.8*1.6)	14# (1.6*1.6)	19# (2.4*1.6)	16# (3.1*1.6)	25# (4.8*1.6)	17# (6.4*1.6)	18# (7.9*1.6)
 YZ1515x	TE100M	100rpm	7	27	51	82	170	290	380
	TE300M	300rpm	21	81	153	246	510	870	1140
	TE600M	600rpm	42	162	306	492	1020	1740	2280
 TX315	TE100M	100rpm	7	26	56	99	208	350	480
	TE300M	300rpm	21	77	168	293	659	1050	1440
	TE600M	400rpm	28	106	227	399	830	1400	1930

	Model	Max Speed	15# (4.8*2.4)	24# (6.4*2.4)
 YZ2515x	TE100M	100rpm	170	290
	TE300M	300rpm	510	870
	TE600M	600rpm	1020	1740
 TX325	TE100M	100rpm	180	300
	TE300M	300rpm	600	980
	TE600M	400rpm	760	1230

	Model	Max Speed	0.5*0.8	1*1	2*1	3*1	2.4*0.8
 DG	TE100M	100rpm (10)	1.5	4	13	27	17.8
		100rpm (6)	2	6	19	36	24.5

Note: Test environment-normal temperature and pressure, Test fluid-water. The data is for reference only, and the actual situation prevails.

3.4 Technical parameter

Drive type	TE100M	TE300M	TE600M
Max speed	100rpm（Reversible）	300rpm（Reversible）	600rpm（Reversible）
Speed resolution	0.1rpm	0.1rpm	0.1rpm
Max flow	480ml/min	1440ml/min	2280ml/min
Display mode	4-digit LED displays current speed/flow		
Speed control mode	Digital knob to adjust speed		
Power Supply	AC220V±10% （Standard）or AC110V±10%（optional）		
Return suction angle	10°~720°(0° is no return suction)		
Return suction speed	10-100rpm	10-300rpm	10-300rpm
Power	＜22W	＜35W	＜50W
External control interface	DB-15		
External control method	Start control/direction control/speed control(0-5V, 0-10V, 4-20mA optional) RS485 serial communication		
Ambient temperature	0℃-40℃		
Drive size(mm)	234x154x143	234x154x143	254x184x150
Drive weight(kg)	3.98	4.3	4.8
Protection level	IP31(Indoor use, avoid long-term exposure to ultraviolet rays）		

Note: The test environment for flow data is normal temperature and pressure, and the test fluid is water. The values are for reference only, please refer to the actual situation.

PART 4 Product installation

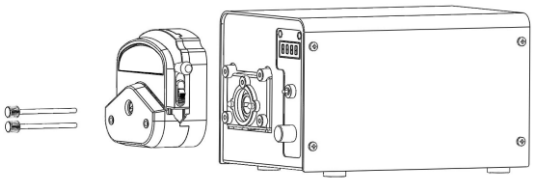
>> Product installation

4.1 Pump head/pump tube installation

Before performing any loading, unloading or maintenance activities, be sure to disconnect the pump from the main power supply.

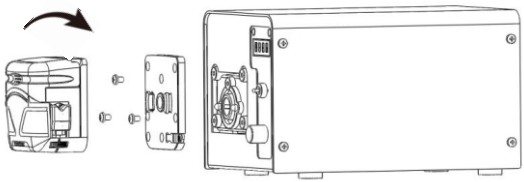
The pump head installation diagram:

YZ1515x(YZ2515x)

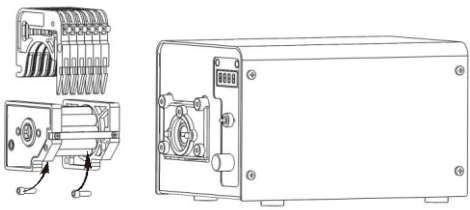


TX315(TX325)

Turn clockwise to buckle on the connecting plate

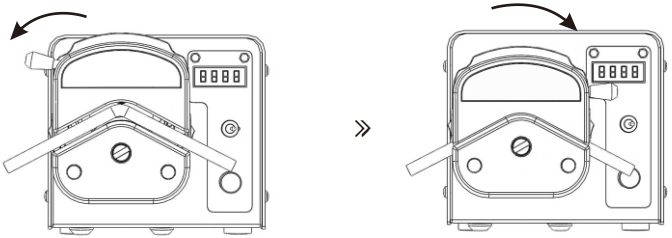


DG series pump head

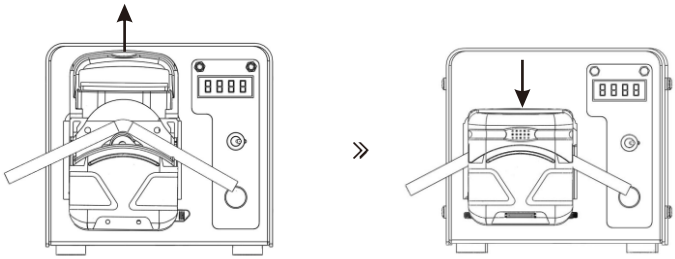


The pump tube installation diagram:

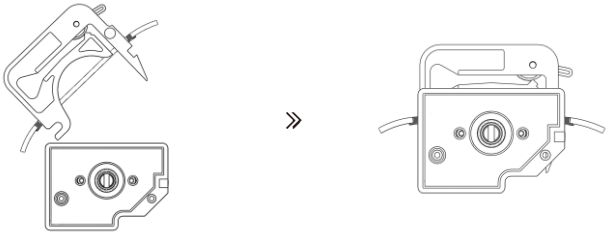
YZ1515x(YZ2515x)



TX315(TX325)



DG series pump head



4.2 Installation suggestions and precautions

Installation suggestions

>> Application accessories such as foot switch, countersunk head, check valve, filling nozzle, connector, etc. can be selected according to actual conditions.
>> For the size and selection of the tube, please refer to 3.3 Product Structure • Pump head/tube selection and reference flow Related Content.
>> For pump head models and options, please refer to 3.3 Product Structure • Pump Head/tube Selection and Reference Flow Related Contents.

①Before cleaning, maintaining and installing the equipment, be sure to disconnect the control power supply.
②The driver should be placed on a flat and rigid surface.
③The ambient temperature of the pump should not exceed 104° F (40° C), and air circulation should be ensured to ensure the heat dissipation of the pump.
④ The start-stop key (shortcut key) on the operation panel can quickly change the direction and control the start-stop, but it is recommended to install an emergency stop device on the main circuit of the power supply to ensure higher safety.
⑤ Make sure that the inner wall of the tube is clean and free of foreign matter before use. The shorter the pipeline, the better, and the suction and lift should not be too long.
⑥Determine the running direction of the pump (forward and reverse) according to the specific location of the fluid placement and supporting machinery on site, which is conducive to later operation.
⑦In order to meet the requirements of flow and flow rate, a peristaltic pump tube with matching diameter is required.
⑧The pump itself has self-priming characteristics, which can effectively prevent the backflow of liquid. Generally, there is no need to install valves at the outlet and inlet of the tube. You can also install a one-way valve in the pipeline according to actual needs to avoid fluid leakage when the pump head and tube fail.

Precautions

• The diameter of the pipeline at the inlet is not less than the inner diameter of the pump tube, and a delivery pipe with a diameter ⩾ the inner diameter of the pump tube should be selected.

• When transferring viscous liquids, it is necessary to maintain a low speed operation to improve the filling efficiency. It is recommended to connect a flexible tube no less than 1 meter between the inlet and the outlet to reduce the pulse and reduce the pulse loss.
• Try to put the pump at the same level or a lower level of the liquid to be transferred to improve the transfer efficiency of the pump.
• To replace a new tube or liquid, re-calibrate the liquid volume to ensure the accuracy of liquid transmission.
• When the peristaltic pump is running, all valves in the pipeline must be opened normally.
• Control wires and power wires are not allowed to have sharp bends, and it is not recommended to bundle them together.
• This product cannot be used for the transmission of any chemical substances incompatible with the pump head and tube.

PART 5 Product operation

>>Product operation

5.1 Line connection

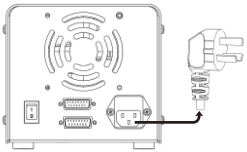
Power connection:

AC220V±10% (standard) power supply or AC110V±10% (optional) power supply.

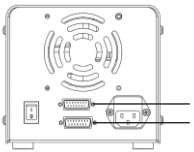
Ensure that all power supplies are matched to equipment power and are well grounded.

The position of the pump should ensure that it is convenient to disconnect the power supply when operating the equipment.

Power supply wiring diagram:



External control wiring diagram:



Note: For the specific external control input/output interface definition, please refer to "5.7 External Control Operation" for details

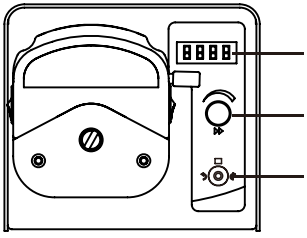
5.2 Power-on

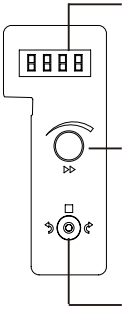
·Power-on inspection

①Check whether the pump pipe has been installed correctly, and whether the tube inlet pipe and outlet pipe have been correctly connected.
②Check whether it is connected to a matching power supply.
③Check whether the peristaltic pump has been installed according to "4.2 Installation suggestions and precautions".
After the pump is turned on, the LED display will light up and you can start specific operations and settings.

5.3 Operation panel and display

·Operation panel



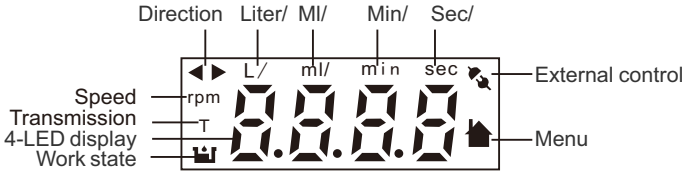


• The LED screen displays the current working status:
speed mode-displays the current speed; flow mode-displays the current flow.

①Adjust speed： Turn clockwise, the speed/flow rate increases; turn counterclockwise, the speed/flow rate decreases.
②Full speed:In Full speed mode, the tube can be filled, rinsed and emptied quickly.
③Menu operation: Press to enter the menu, and rotate left and right to become the [Select] button; when it is pressed, it is the [OK] button

When the "Left /stop/right switch" is moved to the left, the pump runs counterclockwise; when it is moved to the right, the pump runs clockwise, and when it is moved to the middle, it stops.

·Digital Display



4-LED display screen, different icons light up, it shows the current working status of the pump

5.4 Quick operation

***Switch**

After confirming that the power supply is installed correctly, press the drive switch  "|"-Power on"○"-power off.

***Start &stop**

Turn the "Left /stop/right switch" on the operation panel to the middle position and the pump will stop running.

***Direction control**

Flick to the left, the current is reverse transmission; flick to the right, the current is forward transmission.

***Adjust speed**

According to the diagram: adjust clockwise, the speed will gradually increase, counterclockwise adjustment, the speed will gradually decrease.

***Full speed**

In the running state, long press the knob, the pump enters full speed mode (▶▶) after releasing the button, it returns to the previous running state.

5.5 Application case

Applocation 1:speed mode transmission (Transmission fluid to rotate speed of 80rpm/min.)

(1)Press the button to enter the  (display of choice).

(2)Press the knob to enter  (speed display mode).

(3)Press the knob to determine the current model for the speed display mode.

(4)To rotate  and press the knob (return to the main interface).

(5)Rotate the knob to the 

(6)The ● according to the operation of the peristaltic pump 80rpm/min 

Applocation 2:flow mode transmission (Transmission fluid to rotate speed of 80ml/min.)

(1)Press the button to enter the  (display of choice).

(2)Press the knob to enter  (floe display mode).

(3)Press the knob to determine the current model for the flow display mode.

(4)To rotate  and press the knob (return to the main interface).

(5)Rotate the knob to the 

(6)The ● according to the operation of the peristaltic pump 80ml/min 

Applocation 3:calibration fluid (With 8 ml/min speed transmission fluid.)

(1)Turn the peristaltic pump to float mode.

(2)Customers can choose right pump head and tube. For example, user choose YZ1515X pump head and 13# tube, need to enter  choose A200, then enter  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  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 calibrtation volume ,and press the knob to confirm.

(7)Then press the knob to the mian interface.

Note： If the actual liquid volume accuracy does not meet the requirements, you can enter E0-- and repeat the calibration several times.

Applocation 4：Foot switch (only controls start and stop)

(200ml/min flow rate to transfer liquid, foot switch to control start and stop)

(1)Press the button to enter the A0--（display of choice).

(2)Press the knob to enter A0-1（floe display mode).

(3)Press the knob to determine the current model for the flow display mode.

(4)To rotate ESC and press the knob (return to the main interface).

(5)Rotate the knob to 200

(6)Press and turn the knob to enter A1--（External control 、 system settings）

(7)Press and turn the knob to enter A1-0（Speed control selection) Press the knob to select C0-4 (internal control speed)

(8)Press and turn the knob to enter A1-2（Start&Stop control selection） Press the knob to select C2-1（External control start & stop）

(9)Use the button ↻ ● ↺ on the panel to control the running direction

(10)Turn the knob to ESC to exit and return to the main interface step by step

Note: the mode of start stop signal is level mode by default

*** First boot default factory settings**

Factory setting: This series peristaltic pump, the factory setting display mode is speed mode, pump head model is YZ1515x, tube model is 13#, if there is a need for replacement, it needs to be reset. (Refer to 5.6 Menu Function Operation)

Note：The factory settings can be adjusted according to the actual needs of customers.

Operation instruction details 5.6 Menu function operation

(If it is not necessary, please do not adjust the parameter items at will)

Device address selection	1	Boot display
Default display mode	Speed mode	A0-0
External control speed mode	0-5V control	C0-0
External control direction mode	External control direction	C1-1
External control Start&Stop mode	External control start & stop	C2-1
Start-stop signal mode	level mode	C3-0
Initial state of pulse signal	Stop	C5-0
Communication baud rate	9600	A1-6：9600
Suck back speed selection	10rpm	A1-8：10
Suck back angle selection	0°（No suck back）	A1-9：0
485 enable selection	485 disabled	Co-0
External control output setting	0-5V output	Cb-0
External control start-stop line selection	1 is valid	Cd-0
Pump head setting	YZ1515x	A200
Pump tube setting	13#	A2-1 ：-13-

*After the pump is turned on, it runs according to the default setting. All operating parameters can be changed by adjusting the knob(5. 6 Menu function operation)

5.6 Menu function operation

Operation process

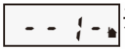
①Press the speed control button to enter the first-level menu from the main interface:A0- - / A1- - / A2- -.

②Turn the knob to select, and press the knob (OK) to enter the second level menu:Ax-x. (If the operation item is up to the second-level menu, press the knob (OK) after the selection is completed to complete the function setting. To exit, turn the knob to ESC to exit step by step.)

③Turn the knob to select, ress the knob (OK)to enter the three-level menu...

④Turn the knob to select, ress the knob (OK),After finishing the function setting, turn the knob to ESC to exit step by step.

*Boot display,Device address (1-30)

Boot display 

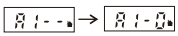
Main interface → First level menu → second level menu → thirdlevel menu

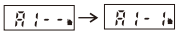
 → ***Display mode selection: A0- -**

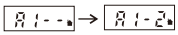
①Speed display  → 

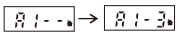
②Flow display → 

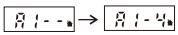
 → ***External control,、system setting: A1--**

(1)Speed control method selection 
- C0-0 0-5V control • C0-3 0-10kHz control
- C0-10 -10Vcontrol • C0-4 Internal control speed
- C0-2 4-20mA control • ESC

(2)Direction control method selection 
- C1-0 Internal control direction
- C1-1 External control direction
- ESC

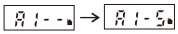
(3)Start&stop control method selection 
- C2-0 Internal control direction Start&stop
- C2-1 External control direction Start&stop
- ESC

(4)Start-stop signal mode selection 
- C3-0 Level mode
- C3-1 Pulse mode
- ESC

(5)Signal action mode 

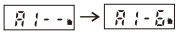
Level, pulse signal selection
- C4-0 Low level/Falling edge start
- C4-1 High level/Rising edge start
- ESC

(6)Initial state pulse signal



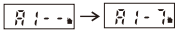
- C5-0 Stop
- C5-1 Run
- ESC

(7)Communication baud rate selection



- 1200 • 2400
- 4800 • 9600
- ESC

(8)Device address selection



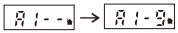
- -01- Choose address as（1）
- -30- Choose address as（30）
- ESC

(9)Suck back speed selection

- 10-300
- ESC

Resolution 1rpm

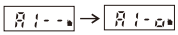
(10) Suck back angle selection



- 0，10-720°
- ESC

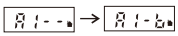
Resolution 1°

(11)485 enable selection



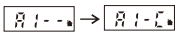
- Co-0（485 disabled）
- Co-1（485 enable）
- ESC

(12)External control output setting



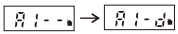
- Cb-0 (0-5V output) • Cb-3 (0-10kHz output)
- Cb-1（0-10V output ） • Cb-4 (no output)
- Cb-2（4-20mA output) • ESC

(13)Restore factory settings



- Cc-0 （Restore calibration K value）
- Cc-1 （Restore factory settings）
- ESC

(14)External control start-stop line selection



- Cd-0 （valid）
- Cd-1 （Invalid）
- ESC

 → *Pump head and pump tube setting: A2--

Note:This menu is displayed in flow mode

(1)pump head setting A2-- → A2-0 →

- A200 （YZ1515x）
- A201 （BZ15）
- A202 （TX315）
- A203 （YZ2515x）
- A204 （BZ25）
- A205 DG（6）
- A206 DG（10）
- A207 KZ25
- A208 YZ35
- A209 KZ35
- ESC

(2)pump tube setting A2-- → A2-1 →

- -13- （13#）
- -0.5- （ID 0.5mm）
- ESC

 → *Calibration function: E0--

Calibration function E0-- →

- Set calibration fluid volume
- Direction key operation (REPEATED OPERATION)
- Enter the actual volume
- Press the knob to confirm

（P12 Applocation 3）

 → *Exit display:ESC

Exit display ESC

Instruction manual:

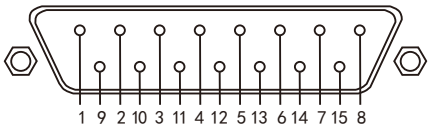
* When A0-0 (speed display) mode is selected, A1 option menu (external control, system setting) can be opened.
* When A0-1 (flow display) mode is selected, the A1 option menu (external control, system setting), A2 (pump head and pump tube setting), E0 (calibration function) can be opened.

5.7 External control operation

Please provide the correct signal to the pin, do not exceed the specified range of the signal value, and do not connect the power supply voltage to other pins to avoid permanent damage.

Make sure that the end of the multi-strand cable is fastened with a cable tie to prevent the risk of electric shock.

· DB15 The external control interface sketch



The external control interface sketch

Drive external control interface (DB-15 description)

1、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 wire and Ground wire connect or shut, control the start and stop of the pump.
(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.

2、External control output port provides optional.

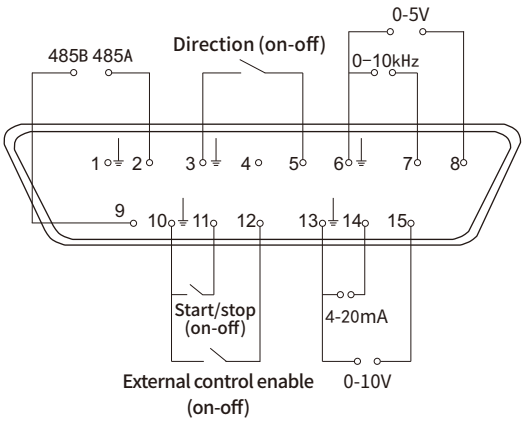
*The 15-pin interface on the back of the machine is the controlling interface to operate the machine through the external signals.
Firstly prepare a DB15 connector (with holes) and various colors signal wires, then open the 15-pin interface, weld on the signal wires according to the below sheet, and 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 input

-External control input interface definition

PIN	1	2	3	4	5	6	7	8
DEFINITION	E-c Ground	485 interface A	E-c Ground		Direction	E-c Ground	0-10kHz Input	0-5V Input

9	10	11	12	13	14	15
485 interface B	E-c Ground	Start /stop 1	E-c Enable	E-c Ground	4-20mA Input	0-10V Input



1、3、6、10、13 are all E-c Ground

External control input wiring diagram

【External control input line color function definition】

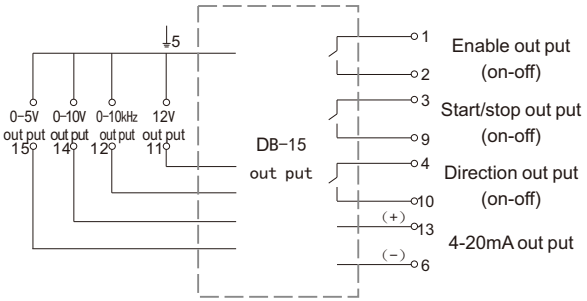
Serial number	Function	Corresponding function of wire
1	485 communication	brown---485A blue---485B
2	start/stop	brown---start/stop blue---E-c Ground
3	start/stop、direction	brown---E-c Enable gray---start/stop blue---direction black---E-c Ground
4	start/stop、analog input： （0-10kHz / 0-5V / 0-10V / 4-20mA）	brown---E-c Enable gray---start/stop blue--- 0-10kHz/0-5V/0-10V/4-20mA black---E-c Ground
5	start/stop、direction、analog input：（0-10kHz / 0-5V / 0-10V / 4-20mA）	bBrown---E-c Enable gray---start/stop blue--- direction two-color---0-10kHz/0-5V/0-10V/4-20mA black---E-c Ground
6	start/stop、direction、analog input（0-10kHz / 0-5V / 0-10V / 4-20mA)、485 communication	brown---E-c Enable gray---start/stop blue--- direction yellow---0-10kHz/0-5V/0-10V/4-20mA green---485A Red---485B black---E-c Ground
7	start/stop、485 communication	brown---E-c Enable two-color---start/stop blue--- 485A gray---485B black---E-c Ground
8	start/stop、direction、485 communication	yellow---E-c Enable green---start/stop red--- direction blue---485A gray---485B black---E-c Ground

· External control output (Optional)

-External control output interface definition:

PIN	1	2	3	4	5	6	7	8
DEFINITION	Enable output A	Enable output B	Start-stop output B	Direction Output B	E-c Ground	4-20mA output negative	E-c Ground	E-c Ground

9	10	11	12	13	14	15
Start-stop output A	Direction Output A	12V voltage output	0-10kHz output	4-20mA output positive	0-10V output	0-5V output



5、7、8 are all E-c Ground

External control output wiring diagram

【External control output line color function definition】

Serial number	Function	Corresponding function of wire
1	start-stop output	brown---start-stop output A blue---start-stop output B
2	4-20mA output	brown---4-20mA output positive blue---4-20mA output negative
3	0-5V/0-10V/0-10kHz output	brown---0-5V/0-10V/0-10kHz output blue---E-c Ground
4	start-stop、4-20mA output	brown---start-stop output A blue---start-stop output B gray---4-20mA output positive black---4-20mA output negative
5	start-stop、0-5V/0-10V/ 0-10kHz output	brown---start-stop output A blue---start-stop output B gray---0-5V/0-10V/0-10kHz output black---E-c Ground
6	direction output	brown---Direction output A blue---Direction output B
7	enable output	brown---Enable output A blue—Enable output B
8	12V voltage output	brown---12V voltage output blue---E-c Ground

Note: When the external control input/output is analog control speed, there will be some deviation due to different signal source types. If it affects normal use, please contact the dealer or the company !

*Accessories

The following accessories are products selected by customers. If you want to know more or need to buy, please contact the company .

Accessories	Image	Features
Flat mouth Filling nozzle		Connecting tube, precise filling
Closing-type Filling nozzle		Connecting tube, precise filling, splash proof
Foot switch		Control peristaltic pump start and stop
Check valve		Connecting tube,Prevent backflow of transferred liquid
countersunk		Connecting tube,Prevent the tube from sucking the bottom
Filling stand		Fixed tube or filling nozzle
Measuring cup		Used for volume measurement of liquids
Straight connector		Connect tube system（2 tubes）
Y-type tee connector		Connect tube system（3 tubes）
T-type External connector		Connect tube systems（3 tubes）

PART 6 Troubleshooting and maintenance

>>Troubleshooting and maintenance

Note: There are no parts in the pump that can be repaired by the user. If you need repairs, please contact the dealer or the company !

6.1 Troubleshooting

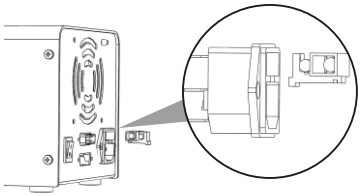
*No response at boot	>>If a circuit protection device is installed, confirm that the circuit has not tripped >>Confirm that the power plug is inserted into a working socket >>Check whether the power cord is firmly inserted >>Check whether the fuse at the power interface is blown
*The fan and display screen are normal,but cannot be started	>> Check if the device is in external control mode >>Check if the keys are working
*The pump is turned on and the pump head cannot run	>>After cutting off the power, manually check whether the pump head is rotating normally >>Check if the coupling is damaged
* Low or no flow when the pump is running	>>Check whether the material supply is normal >>Check if the tube is entangled or blocked >>Check that all valves are open >>Check if the tube is in the middle of the roller >>Check whether the tube is cracked or damaged >>Check the running direction >>Check whether the pump head roller can rotate flexibly
*Pump cannot be controlled in external control mode	>> Check whether the external control icon in the upper right corner of the LED display is on >> Check whether the external control settings are correctly connected >> Check if the signal source is normal

6.2 Product maintenance

Warning: Before attempting any maintenance, be sure to cut off the power to the pump.

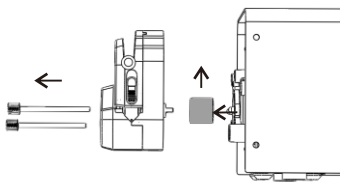
·Replace the fuse

①Place the power switch in the "off" position（“|”On,“○”Off）
②Disconnect the AC power input cord from the outlet.
③Take out the spare built-in fuse from the power socket of the pump.
④Replace the original fuse.



·Replace the pump head coupling

①Place the power switch in the "off" position（“|”On,“○”Off）
②Disconnect the AC power input cord from the outlet.
③Remove the tube pump head and take out the coupling.
④Install a new coupling, install the pump head and pump tube.



·Basic maintenance and cleaning

Basic maintenance

①Open the pump head when it is not working to avoid tube deformation caused by prolonged extrusion.
②Keep the pump head rollers clean and dry to prevent surface damage and reduce tube wear; if there is splashing liquid, please wipe it dry as soon as possible.
③Check the wear of the tube regularly and replace it in time to prevent leakage.

④The pump head roller does not need to add lubricating oil, and improper operation may cause the tube to shift or corrode.
⑤Not used to deal with chemical substances incompatible with the pump head or tube.
⑥The pump head is not resistant to organic solvents and strong corrosive liquids. Please deal with it in time if there is effusion.
⑦Please be aware of the storage recommendations and the expiration date of the tube so that it can be used normally after long-term storage.
⑧Built-in fuse, pump head shaft and other replaceable accessories, need to be installed under the guidance of professionals.
⑨It is recommended that the working environment temperature be between 0-40°C.

Note: There are no parts in the pump that can be repaired by the user. If you need repairs, please contact the dealer or the company !

Cleaning
Warning: Before attempting any maintenance, be sure to cut off the power to the pump. When there are stubborn stains on the pump housing, please use a mild detergent to scrub the surface. Do not immerse the pump in liquid or use too much liquid to clean it.

6.3 Warranty information

·Warranty commitment
①The product is guaranteed for one year (consumables such as tubes are not included in the warranty). If there is a failure during the warranty period, you can enjoy free repair and replacement of parts; if it is damaged by man, it is not covered by the warranty.
②If the warranty period is exceeded, only the cost will be charged when repairing.
③There are no parts in the pump that can be repaired by the user. If you need repairs, please contact the dealer or the company !
Note: The company does not guarantee the applicability of all its products, and any employee or distributor has no right to change or violate the above warranty clauses; The company is only responsible for repairing, replacing or replacing products in accordance with the actual situation and reasonable compliance requirements.

·Relevant details

① The company will not be responsible for any direct or indirect losses caused by external reasons such as operating errors or human negligence that are not the product's own quality problems.

Direct loss: products, supporting machinery, working environment, surrounding buildings, etc.

Indirect loss: labor loss, profit loss, etc.

②The company will not be responsible for the transportation damage caused by the returned products and accessories during the return journey.

③In any case, the compensation cost received by the customer shall not exceed the actual payment price.

· Non-warranty scope

The following conditions are not included in the free maintenance of the warranty:

①The product has exceeded the warranty period.

②Product failure caused by abuse, misuse or accidental damage by the company 's judgment.

③Product problems caused by ultraviolet rays or direct light.

④It is not the damage caused by after-sales personnel in the repair or disassembly process.

⑤Damage caused by chemical erosion or long-term improper maintenance.

⑥Product failure caused by force majeure factors such as natural disasters.

⑦The operator fails to follow the corresponding operation suggestions and requirements, improper loading and unloading, improper maintenance, and improper operation.

⑧ Failures or damages that are not caused by the quality of the product itself.

Note: The company reserves the right to modify the above terms at any time.

6.4 Return information

①If there is a product that needs to be returned/repaired, please contact the sales, distributor or The company according to the delivery related process to quickly solve the after-sales problems such as return, replacement, and repair.

②If there is no special agreement or written instructions, please return and exchange the goods within the specified time.

③When applying for after-sales service, please provide a clear reason for the return, specific information about the contacted substances, and responsible for the cleaning of the product (especially products that have been exposed to toxic chemical substances or harmful substances to the human body)
④ When returning the product to the factory, please pay attention to the packaging specifications to prevent damage to the pump during transportation; The company will not be responsible for product damage caused by improper packaging and will not be included in the warranty.

***Disclaimer**

• The content of this operation manual is for reference only.
• The company reserves the right to change the product (Design or specification)without prior notice.
• The information contained in this article has been edited from the correct perspective. The company will not be responsible for any errors.
• If you need the latest version of the operation manual, please contact the company .
• The company will not be responsible for any loss caused by non-product quality problems or human errors.

***Caveat**

• This product is not suitable for equipment with its own problems.
• Do not place this product in hazardous work areas, flammable and explosive environments, including but not limited to the transmission of flammable liquids.

Appendix 1:1 comparison table of tube size

>>1:1 comparison table of tube size

Micro flow tube

Tube		0.5x0.8	1x1	2x1	3x1	2.4x0.8	3.2x0.8
Tube 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					

Basic flow tube

Tube		13#	14#	19#	16#	25#	17#	18#
Tube section (1:1)								
Wall thickness (mm)		1.6						
Inside diameter (mm)		0.8	1.6	2.4	3.1	4.8	6.4	7.9
Pressure (Mpa)	Continuous	0.17				0.14	0.1	0.07
	Interval	0.27				0.24	0.14	0.1

Tube		15#	24#	35#	36#
Tube section (1:1)					
Wall thickness (mm)		2.4			
Inside diameter (mm)		4.8	6.4	7.9	9.6
Pressure (Mpa)	Continuous	0.17		0.14	
	Interval	0.27		0.24	

Industrial tube

Tube		73#	82#
Tube section (1:1)			
Wall thickness（mm）		3. 3	
Inside diameter（mm）		9. 6	12. 7
Pressure （Mpa）	Continuous	0. 17	0. 1
	Interval	0. 27	0. 1

Tube		86#	90#
Tube section (1:1)			
Wall thickness（mm）		6. 3	
Inside diameter（mm）		9. 5	19
Pressure （Mpa）	Continuous	0. 14	
	Interval	0. 14	

Tube		88#	92#
Tube section (1:1)			
Wall thickness（mm）		4. 8	
Inside diameter（mm）		12. 7	25. 4
Pressure （Mpa）	Continuous	0. 14	
	Interval	0. 14	

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