

J I H P U M P[®]

EA series Peristaltic Pumps Manual



BT-50EA Series
BT-100EA Series
BT-300EA Series
BT-600EA Series

重庆杰恒蠕动泵有限公司

CHONGQING JIEHENG PERISTALTIC PUMPS CO., LTD.

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1, Security



Please read this manual carefully before use!

- To avoid causing fires or electric shock please do not use this product outdoor or in wet environment.
- To reduce the risk of electric shock or possibility damage to the machine, please use ground the 3 hole AC220V socket.
- **Install 220V AC power cord into the socket at the back of pump,then power on.**
- Don't place heavy objects on the pump or allow the liquid flow into this machine.
- Don't cover the pump vents.
- When power on, parts of the electrical components is in working condition, so please turn off the power switch after shutdown. If not use in long time,unplug the power cord.
- Tube is the only consumables. Cracks due to wear hose maycause the liquid to overflow from the tube,and it may harm human's body or equipment. It depends on your understanding and control of the pump liquid,no legal causal relationship with the products!

2,Introduction

Peristaltic pump, also named hose pump or current pump, is a new type of industrial used pump, and widely used in pharmaceutical, food, chemical, environmental, laboratory and other industries, it can transfer with sensitive, viscous, corrosive, grinding sheared, high purity requirements, and contain particulate matter dielectric material.

As a volume of hose pump, the flow rate range is between $0.15\text{ml/min} \sim 50\text{m}^3/\text{h}$, its flow and speed is a constant linear relationship, i.e., the rotational speed of the drive means corresponding to the output flow of a certain value. As this pump is limited to the structure and materials, the pump speed is not too high, pressure also not high, usually in 2-4 bar, therefore, depending on the process requirements, different software configuration tube is particularly important.

Peristaltic pump pumped fluid only through high flexible hose, so not leak and pollute surrounding environment, in line with pharmaceutical production "GMP" and food production "FDA" standards.

BT-EA series peristaltic pump used chip-driven technology, LED display the speed, it's simple operation, stable performance, can save the input parameters. Smallest 0.1rpm



Introduction

DGx,153Yx,253Yx,314D pump heads are suit for EA series.The flow rate from 0.001-3000ml/min,and speed can be adjusted manually or automatically through external control interface.Store the running parameter automatically.

Drive+pump head +tube consists a peristaltic pump.Drives provide power and external control function.Pump head is key component,function to chuck hose. Only the hose member contact with the liquid.

Advantages of peristaltic pump:

High purity pollution:liquid only contacts the ho-se, easy to clean,replace hose just need a few sceond.

Efficient:with self-priming, check valve capacity.

High precision:dispensing 1% and reproducibility of 0.5%

Low cut:pumpable shear sensitive liquids and organic solvents, solids conveying fluid.

Low maintenance:Quick plug,no valves and seals.

Easy control:timing,speed and filling pumping.

3, Suitable pump head

| Pump head | Tube (ID×Thickness) | Flow rate(ml/min) |
|-----------|---------------------|-------------------|
|-----------|---------------------|-------------------|



DG Series

1. 02*0.86

2. 79*0.86

Single channel

0.001-45



153Yx-PSU

14# (1.6*1.6)

16# (3.1*1.6)

25# (4.8*1.6)

17# (6.4*1.6)

18# (7.9*1.6)

Single channel

0.001-2280



253Yx-PPS

15#(4.8*2.4)

24#(6.4*2.4)

35#(7.9*2.4)

36#(9.6*2.4)

Single channel

0.001-3000



314D

14# (1.6*1.6)

16# (3.2*1.6)

25# (4.8*1.6)

17# (6.4*1.6)

18# (7.9*1.6)

Single channel

0.001-2280

5, Specification

① Pump head

| Model | Tube | Max flow rate (mL/min) | | | |
|-------------------|---------------------|------------------------|------|------|------|
| | | 50r | 100r | 300r | 600r |
| DG | 1×1 2×1 3×1 | 3.5 | 7 | 22 | 45 |
| 153Y _x | 14# 16# 25# 17# 18# | 190 | 380 | 1140 | 2280 |
| 253Y _x | 15# 24# 35# 36# | 193 | 386 | 1170 | 3000 |
| 314D | 14# 16# 25# 17# 18# | 190 | 380 | 1140 | 2280 |

② Drive

| | | | | |
|--------------------|--|----------|----------|----------|
| Item | 50rpm | 100rpm | 300rpm | 600rpm |
| Speed range | 0.1-50r | 0.1-100r | 0.1-300r | 0.1-600r |
| Max speed | 50r | 100r | 300r | 600r |
| Velocity | 0. 1rpm | | | |
| Suck vacuum | 0.3MPA(3 meter water column) | | | |
| Discharge pressure | 0.3MPA(3 meter water column) | | | |
| Control mode | Membrane keys | | | |
| Function | Manual control,external control,appointment time | | | |
| External control | 0-5V,0-10V,4-20mA,RS485 | | | |
| Display | LED digital | | | |
| Power | Ac 220V±10%,50Hz/60Hz(Standard) | | | |
| Consumed power | <18W | <36W | <54W | |
| Work condition | Temperature 0~40℃, relative humidity <85% | | | |
| Drive dismension | L210*W150*H150 | | | |
| Drive weight | 2. 6Kg | 3. 0Kg | 3.6Kg | |
| Protection class | IP31 | | | |
| Suitable pump head | DG,153Yx,253Yx,314D | | | |

6, Installation

① Pump Head Installation

The pump head is mounted on drive with 2 special screws (M4), (If you used in two channels, need longer screw) . Insert the M4 screws into the mounting holes of the pump head, then tighten the mounting screws to connecting hole of drive.

Note: 1, the installation is slightly different for different head.

2, the pump head is installed at the factory on the drive, only in case of cleaning or replace tube that to disassembly of the pump head, and installation as the steps above.

3, Try to guarantee the same degree of the two M4 screws tight when tighten the screw, and not too tight to prevent deformation of the head noise.



Picture 1



Picture 2



Picture 3

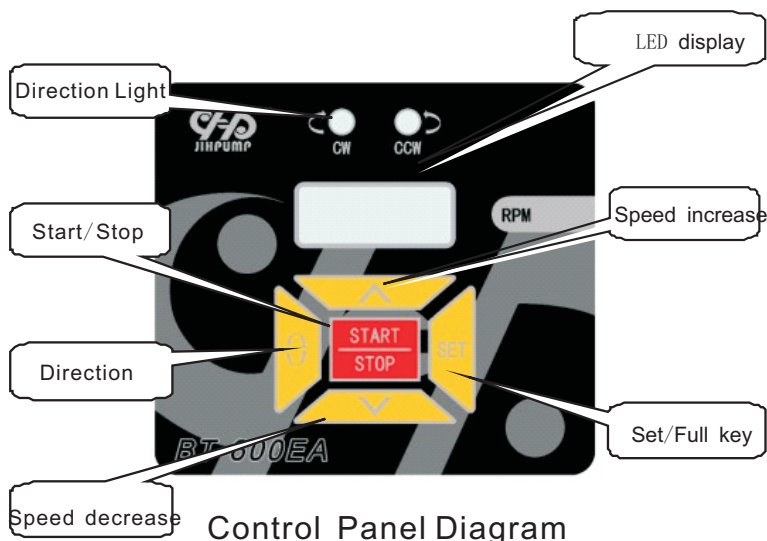


Lift the clamp, put the tube into the pump head, straighten the hose, press the bar

② Hose installation (Different head installed in different way)

Roating the rod to rise the briquette (Figure 2), put the hose into the gap between the briquette and lower support, then straightening the hose (Figure 3), then pull the briquetting in the opposite direction. Note: the card adapter is spring free on both sides of the head, when installed the card, you can slide card freely.

③ Operation Menu



Start/stop key: General as running command key, in setting state as confirm key.

Direction key: change the direction in run or standby state.

Speed increase key: improve the speed in running, in settings to option key.

Speed decrease key: reduce the speed in running, in settings to option key.

④ Function

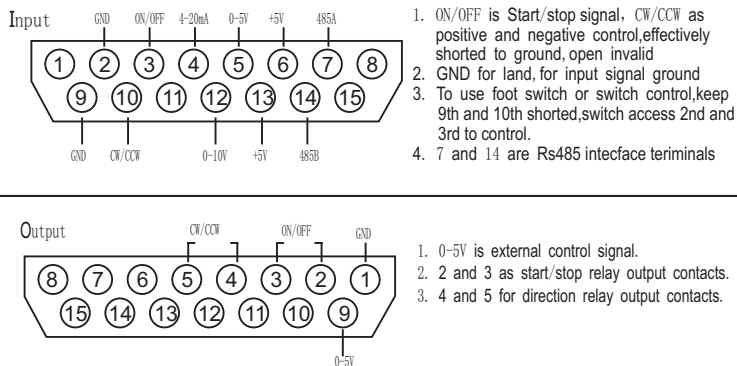
You can control this pump in two ways: internal control and external control. Internal control means operate it through the pump buttons; external control means you can provide analog communication interfaces and foot switch to control it. Factory setting for internal control. If you want to use external control, press the set key in standby mode to setting (See the fifth setup instructions), access the standard Db15 interface on the rear of the pump. (For internal control, setting in "close" will work)

The pump can identify the foot switch automatically, to control the pump start and stop (must be set into internal state).

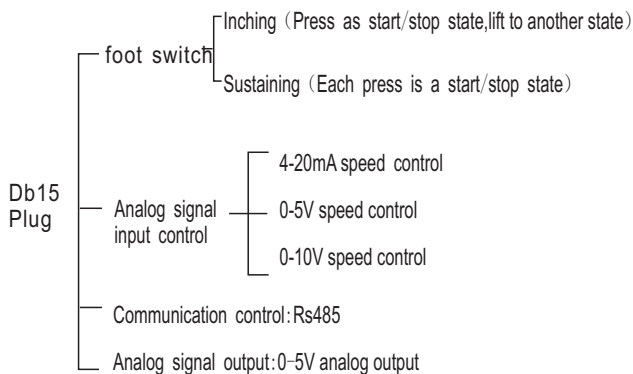
Internal control function: start and stop, reversing, lifting speed

External control: accept analog signal to adjust the speed, start and stop, direction, pin defined as below:

External Control Module Definition



External control function



⑤ Set manual(For filling,timing,external control)

1,Description for the control interface

There are "↑", "↓", "↶", "↷", "ON/OFF", "SET" in the control interface (Increase speed,reduce speed,steering switch,start/stop,time setting). In case of LED display speed,press "↶↷" to change the direction,"↑" "↓" to adjusted the speed,"ON/OFF" start/stop, press "SET" button to enter time controlled settings.

2, Process control settings

Only in the standby state that can press "SET" key to set all functions,before outing factory is set to 0.If you do not need to run the pump for automatic control,do not set this function:

Operation Tip:In standby mode,press the "SET" button for 3s to enter the settings,then press the arrow keys to select the item you want to set, to be set,press the start/stop key to enter the setup data,and then start and sstop key to cnfirm,withdraw at any time when display any H!

H01:Time unit setting(seconds,minutes,hours)

1) , In the standby state,press "SET" key to enter into setting interface, LED

Show code H01,press "ON/OFF" key to enter time unit set;

2) Then press "↑" or "↓" to select the desired time unites("1"means time unit in seconds,"2"means time unit in min,"3"means time unit in hour)

3) , after time units setted,press "ON/OFF" to confirm,LED display H01,you can proceed to the next setting,or press setting key "SET" to confirm and exit , LED display the speed,pump into standby.

Note:The time unit can be set in hours minutes seconds,calculated in accordance seconds.

H02:Run time setting

Set way as above

H03: Stop(interval) time setting

H04: Run times setting H05: set clear parameters

Press "↑" key, when LED displayed code H05, press "ON/OFF" to enter the parameter setting clear, LED will displayed "-88-", means has been cleared;

H06: Speed setting

The default speed is the maximum speed.

H07: Enable external control settings

1: Inner control

2: Exter control

H08: Slave address

0-30, pump identification (communicatin with, generally not set)

H09: Foot switch

1: Sustaining (as a start and stop time for each depressed state)

2: Inching (Press is a start/stop state, release is another state)

H10: Suck-back angle settings

0-360°

H11: External control type

1——0-5V

2——0-10V

3——4-20Ma

Tips: without setting external control fto switch, two operation mode in optional: sustaining or inching.

Setting Guide

| Code | Item | Figure | Means | Notes |
|------|-----------------------------|-----------|---------------|-----------------------------------|
| H-01 | Time unit | 1 | Second | |
| | | 2 | Minute | |
| | | 3 | Hour | |
| H-02 | Boot time | 0-59 | Second | Data combined into second |
| | | 0-59 | Minute | |
| | | 0-23 | Hour | |
| H-03 | Stop time | 0-59 | Second | Data combined into second |
| | | 0-59 | Minute | |
| | | 0-23 | Hour | |
| H-04 | Run qty | 0-9999 | Frequency | |
| H-05 | Clear date | -88- | | Clear all items |
| H-06 | Max speed | 0.0-600.0 | rpm/min | |
| H-07 | External control is enables | 1 | Inter-control | Foot switch is also inter-control |
| | | 2 | Exter-control | |
| H-08 | Slave address | 0-30 | | Choose the type in H11 |
| H-09 | Foot switch | 1 | Sustaining | |
| | | 2 | Inching | |
| H-10 | Suck-back angle | 0-360 | Degree | |
| H-11 | External control type | 1 | 0-5V | Confirm H07 option to "2" |
| | | 2 | 0-10V | |
| | | 3 | 4-20mA | |
| | | 0 | MODBUS | |
| H-12 | Power on state | 1 | Standby power | Invalid timing mode |
| | | 2 | Run on power | |

7, Maintenance

1, Before operate the peristaltic pump, please check the hose carefully every time, and before stop running, pumping water to cleaning the hose. In order to extend the service life of the hose, especially when operated more than 8 hours, should hose outwardly (suction side) pull 80-100mm, to prevent the hose damaged due to excessive wear or bending of the hose.

2, The silicone hose impatience acids, alkalis, organic solvents. Before use, you'd best to use a short hose immersed in the test solution.

3, Regular checks of the silicone hose that squeezed and prevent aging and damaged, to avoid liquid flow in the pump head or motor.

4, Keep the roll-tank clean, as the wheel is rolling friction.

5, The peristaltic pump used special high elastic silicone hoses. For pumping acids, alkalis, organic solvents or long-life hose, please contact JIHPUMP.

9, Service

JIHPUMP' s service is not stopped after saleing,all products suppling with “one year warranty and lifetime maintenance”.And in the same time providing humane sales tracking,technical support and other services to ensure your convenience,pleasant to use in the hands of a peristaltic pump.

After receive the products,If you have any comments or unsatisfactory,please contact JIHPUMP's service centers freely,we stand ready to solve your issues.You can also get in touch with JIHPUMP marketing department,they also can provide professionals imformation about your products applications,maintenance support,maintenance and others.

Thanks again for use JIHPUMP!Your feedback is important to us to enhance innovation capability and power source,we will cherish each of your suggestions and comments!

10, Package

| Item | Model | Unit | Qty. | Note |
|------|-------------------------|------|------------------------------|--|
| 1 | Drive | pc | 1 | |
| 2 | 153Yx | pc | 1 | Choose one |
| | 253Yx | pc | 1 | |
| | DGx | pc | 1 | |
| | 313D | pc | 1 | |
| 3 | Power line | pc | 1 | |
| 4 | 1. 02*0. 86 2. 79*0. 86 | m | 1 | DGx |
| 5 | 14# | m | 2 for one size tube | Pump head 253Yx or 314D allocated one size tube |
| 6 | 16# | | | |
| 7 | 25# | | | |
| 8 | 17# | | | |
| 9 | 18# | | | |
| 10 | 15# | m | 2 for one size tube | Pump head 253Yx allocated one size tube |
| 11 | 24# | | | |
| 12 | 35# | | | |
| 13 | 36# | | | |
| 14 | Operate manual | pc | 1 | |
| 15 | Warranty card | pc | 1 | |



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