

## **Important Information:**

Please read operation manual carefully before operation.

## **Warning:**

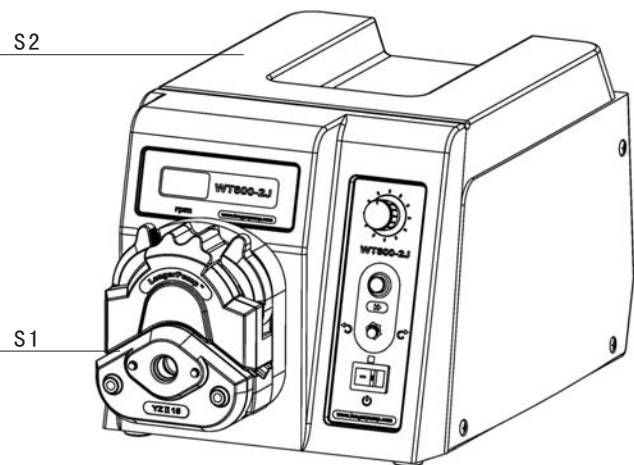
- Tubing breakage may result in fluid sprayed from pump. Use appropriate measures to protect operator and equipment. Please check the tubing frequently and changing the tubing in time.
- If the power line or the plug are worn or damaged please pull out the plug (Hold the plug not the power line when pulling out).
- Please shut down the power supply and pull out the plug when you think the pump needs to be maintained or repaired.
- Shut down the power supply of the pump when connecting to external control equipment.

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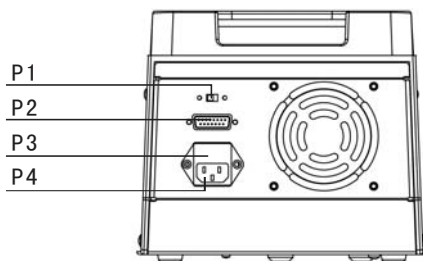
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## Introduction

Acceptable pump heads for WT600-2J are YZ1515x, YZ2515x, YZ1115, YZ1125, BZ25, KZ25, DG15-24 and DMD25. The pump delivers flow rates from 4.2 to 6000 mL/min. Driven by DC brushless motor the pump has features of high efficiency, low vibration, high torque and maintenance-free. It can drive double pump heads. The speed can be adjusted manually or automatically through external control. The external control includes analog control and communication control.



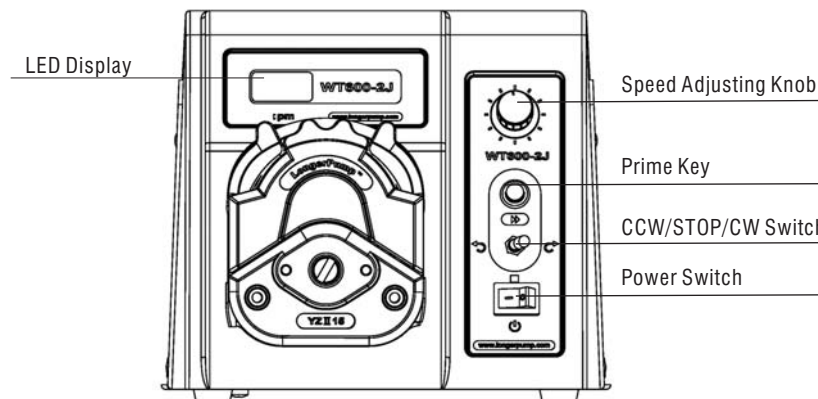
- S Standard Configuration
- S1 Pump Head
- S2 Drive
- P Parts
- P1 External Control Switch
- P2 External Control Port
- P3 Fuse Socket
- P4 Power Socket



### Reference:

- Please refer to page 4 for detailed external control function.
- Make sure the power line of the pump is grounded reliably to protect the operator in humid condition.

## Basic Operation



### • Speed Adjusting Knob

In manual control mode, turn the **Speed Adjusting Knob** clockwise the speed increase; Turn the **Speed Adjusting Knob** counter clockwise the speed decrease. Turn the **Speed Adjusting Knob** rapidly the increment or decrement of the speed is 10 rpm. The pump speed is from 60 rpm to 600 rpm.

### • Prime Key

In manual control mode press down the **Prime Key** to enter prime status when the pump runs at full speed (that is 600 rpm) and the LED displays the max. speed for emptying, filling and rinsing operation. Release the **Prime Key** the pump returns to its primary status.

### • CCW/STOP/CW Switch

In manual control mode, pull the CCW/STOP/CW switch in left position the pump rotates counter clockwise and in right position the pump rotates clockwise and in middle position the pump stops.



### Note:

The CCW/STOP/CW switch must be pulled out first, then put it in the right position. Or the CCW/STOP/CW switch can not be triggered.

### • Power Switch

Open or shut down the power supply.

## Acceptable Pump Heads and Tubing

| Pump Head                                                                                             | Tubing                      | Flow Rates<br>(mL/min)       |
|-------------------------------------------------------------------------------------------------------|-----------------------------|------------------------------|
| <br>(1, 2) × YZ1515x | 13# 14# 19# 16# 25# 17# 18# | Single Channel<br>4.2 – 2200 |
| <br>(1, 2) × YZII15  | 13# 14# 19# 16# 25# 17# 18# | Single Channel<br>4.2 – 2200 |
| <br>(1, 2) × YZ2515x | 15# 24#                     | Single Channel<br>100 – 1600 |
| <br>(1, 2) × YZII25  | 15# 24# 35# 36#             | Single Channel<br>100 – 3000 |
| <br>KZ25             | 15# 24# 35# 36#             | 180 – 6000                   |
| <br>BZ25           | 24#                         | 174 – 1600                   |
| <br>DG15-24        | 16# 25# 17#                 | Single Channel<br>50 – 1800  |
| <br>DMD25          | 119# 120# 15# 24# 35# 36#   | 30 – 4000                    |

 Note: The working speed for DMD25 pump heads is less than 350 rpm.

## Changing the Pump Head

The pump head has been installed on drive before leaving the factory. Please follow below procedure when changing a new pump head is needed.

1. Loose the tightening screws which connecting the pump head and the drive. Take down the pump head.
2. Insert the flat end of the new pump head's shaft to the slot of drive's coupling. Make the positioning hole of the pump head match the positioning pin of the drive.
3. Tighten the screws which connecting the pump head and the drive. Try your best to tighten the screws in the same degree. Do not over-tighten the screws to prevent the housing from deforming. (Please reference the pump head operating manual for details.)

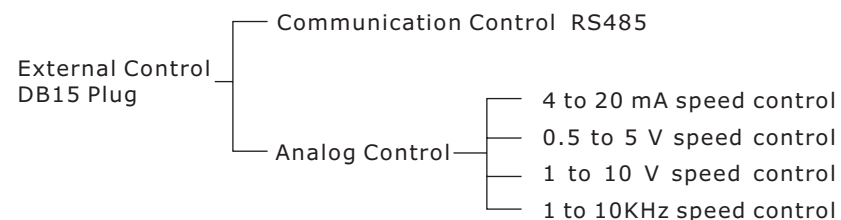


Note: Shut down the power supply before changing a new pump head.

### ❖ Check the Pump Head Occlusion

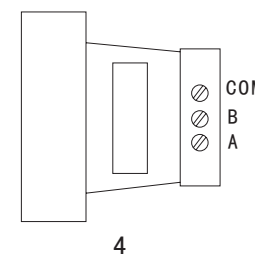
Load the tubing in pump head and insert one side of tubing in water and blow to the other side. There should be no air bubble in water. If there is air bubble in water, that's because the wall thickness of the tubing is too thin to be used in this pump head.

## External Control Function



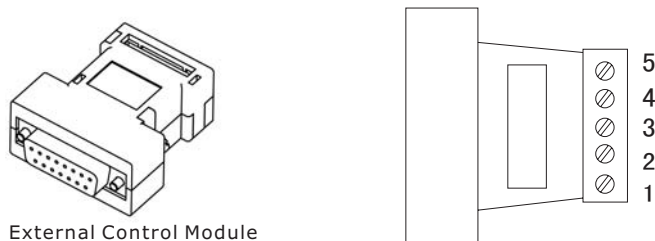
### ❖ Communication Control

- The pump can connect to control computer (computer, PLC, SCM) through RS485 serial communication module (shown as below). Please contact Longer company for communication protocol.



### ❖ Analog Single Input function

Make the Remote Control Switch in "on" position. External Control Module is shown as below.

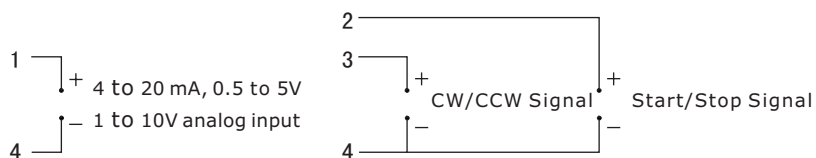


#### Note:

Five kinds of standard external control module need to be ordered separately according to special requirements.

### • Terminals Definition:

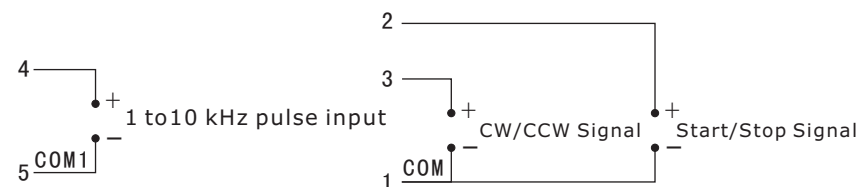
- Terminal 1 Analog input in 4 to 20 mA, 0.5 to 5V, 1 to 10V external control module to control the speed of pump.
- Terminal 2 External control start/stop input. Open, the pump runs; Close, the pump stops.
- Terminal 3 External control direction input. Open, the pump runs clockwise; Close, the pumps runs counter clockwise.
- Terminal 4: COM of external control input.



0.5 to 5V, 1 to 10V, 4 to 20mA  
External Control Input Module Connection Diagram

### ❖ Pulse Signal Input Function:

- Terminal 1 COM of external control input
- Terminal 2 External control start/stop input. Open, the pump runs; Close, the pump stops.
- Terminal 3 External control direction input. Open, the pump runs clockwise; Close, the pumps runs counter clockwise.
- Terminal 4 Pulse input in 1-10 kHz pulse external control module to control the speed of the pump.
- Terminal 5 COM of pulse input

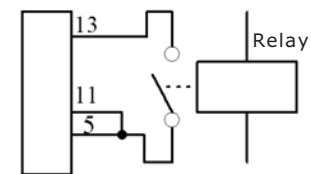


1 to 10 kHz Pulse Signal Input Connection Diagram

### ❖ Footswitch Function

Connect **Footswitch** to **External Control Port** to control Start/Stop of pump.

External Control Port



Connection Diagram for Footswitch

Terminal 13: Start/Stop control. Close or input pulse, the pump stops; Open or input pulse again, the pump runs

Terminal 5, 11: COM when connecting terminal 5 and 11 together.



#### Note:

Footswitch is optional accessories. It can only control the start and stop of the pump. The speed and direction of the pump are controlled by the knob and switch on the operation panel.

## Optional Accessory

### ❖ Dispenser

Connect to external control port. Control the start and stop of the pump to realize dispensing and filling.

### ❖ Footswitch

Connect to external control port. Control the start and stop of the pump.



### Note:

Dispenser and footswitch are optional accessories. They can only control the start and stop of the pump. The speed and direction of the pump are controlled by switches on front panel.

## Maintenance

- When the pump is idle, we recommend you to release the tubing from pressure. This helps to protect the tubing from unnecessary strain and prolongs its service life
- Keep rollers clean and dry. This will prolong the service lives of tubing and pump head.
- The surface of drive and the pump head are not organic solvent and aggressive liquids resistant. Please pay attention when using.



### Note:

If a trouble happens, please contact us or our dealers.

## Warranty

The warranty period for this product is one year. If repair or adjustment is necessary within the warranty period, the problem will be corrected at no charge if it is not due to misuse or abuse on your part, as determined by the manufacturer. Repair costs outside the warranty period, or those resulting from product misuse or abuse, may be invoiced to you.

## Technical Specifications

### ❖ Functions

|                         |                                                                                                                                               |
|-------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------|
| Applicable Pump Head:   | YZ1515x, YZ2515x, YZII15, YZII25, BZ25, KZ25, DG15-24, DMD25                                                                                  |
| Display:                | 3 digits LED displays the speed                                                                                                               |
| Speed Control:          | Rotary encoded switch                                                                                                                         |
| Direction Control:      | cw and ccw reversible                                                                                                                         |
| Memory Function:        | Storing the running parameter automatically                                                                                                   |
| Prime:                  | Fast filling and emptying                                                                                                                     |
| Communication:          | RS485                                                                                                                                         |
| External Control Input: | Start/stop control, direction control, speed control (4 to 20mA, 0.5 to 5V, 1 to 10V, 1 to 10kHz corresponding to the speed of 60 to 600 rpm) |
| Cooling Mode:           | Heat-emitting fan                                                                                                                             |

### ❖ Specifications

|                               |                                                 |
|-------------------------------|-------------------------------------------------|
| Flow Rates:                   | 4.2 to 6000 mL/min                              |
| Speed:                        | 60 to 600 rpm                                   |
| Speed Accuracy:               | ± 1.0%                                          |
| Speed Resolution:             | 1.0 rpm                                         |
| Output Torque:                | ≥ 1.60N·M                                       |
| Applicable Power:             | AC 176 to 264V 50Hz/60Hz                        |
| Power Consumption:            | ≤ 200 W                                         |
| Operating Condition:          | Temperature 0 to 40℃<br>Relative humidity < 80% |
| Drive Dimensions (L × W × H): | 292 × 185 × 180 (mm)                            |
| Drive Weights:                | 5.2 kg                                          |
| IP Rating:                    | IP 31                                           |



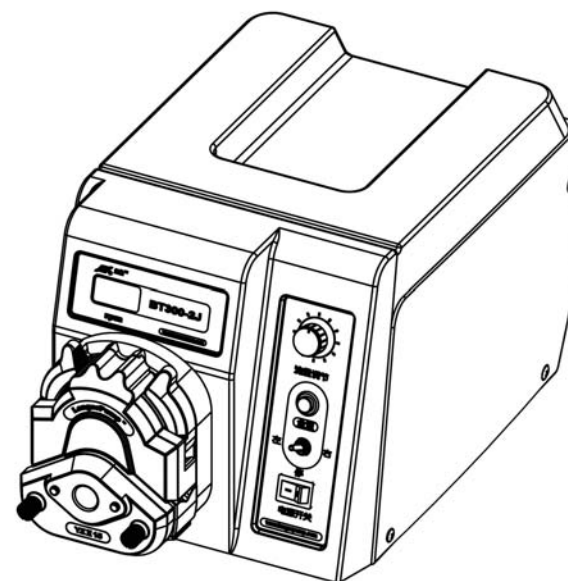
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# WT600-2J Longer Peristaltic Pump



## WT600-2J PERISTALTIC PUMP OPERATING MANUAL



Baoding Longer Precision Pump Co.,Ltd.