

A silver, rectangular peristaltic pump is the central focus, positioned on a light-colored laboratory bench. The pump has a front panel with the 'LAB1ST' logo and a side panel with a ventilation grille. A clear plastic tube is connected to the top of the pump. In the background, there are several glass beakers and vials, some containing blue liquid. The overall scene is brightly lit, suggesting a clean, professional laboratory environment.

LAB1ST

Peristaltic Pump



Labfirst Scientific Instruments (Shanghai) Co., Ltd.

TYD Series Laboratory Syringe Pump

- Lab1st TYD series syringe pump adopts integrated table model design, 4.3-inch HD LCD touch screen display and operation, can assembly 1~10 plastic syringes or gas tight syringes, size range of syringe 10 μ l~140ml, flow range 0.184nl/min~173.718ml/min.
- Use excellent control system and precision mechanical structure, linear travel accuracy $<\pm 0.35\%$, multiple working modes are available, powerful function It is very suitable for high precision micro-transmission of various fluids in scientific research and experiment.
- Drive screw fixation using high strength aviation bearing, compared with traditional copper sleeve bearing, the service life of the screw has been significantly improved, and the accuracy is higher.
- Strong Anti-EMI performance, continuous and stable operation under high voltage electrostatic field.
- RS485 communication, compatibility MODBUS protocol, automation control system can be composed of computer, PLC, single chip computer etc. multiple host computers.

- Assembly 1 to 10 plastic syringes or gas tight syringes.
- Multiple working mode options.
- Color LCD touch screen, convenient operation.
- Support screen lock, key mute operation.
- Button with indicator light,clearly working state.
- support for a variety of syringes, can be customized syringes.
- High accuracy control.
- Syringe protection and traffic jam alarm.
- RS485 communication, support the MODBUS protocol.
- External signal control start-stop and direction.
- Wide range power input.
- Full metal shell.



TYD01-01(Single channel)



TYD02-01(Single channel)



TYD03-01(single channel)



TYD01-02(dual channel)



TYD02-02(dual channel)



TYD02-04(4 channels)



TYD02-06(6 channels)



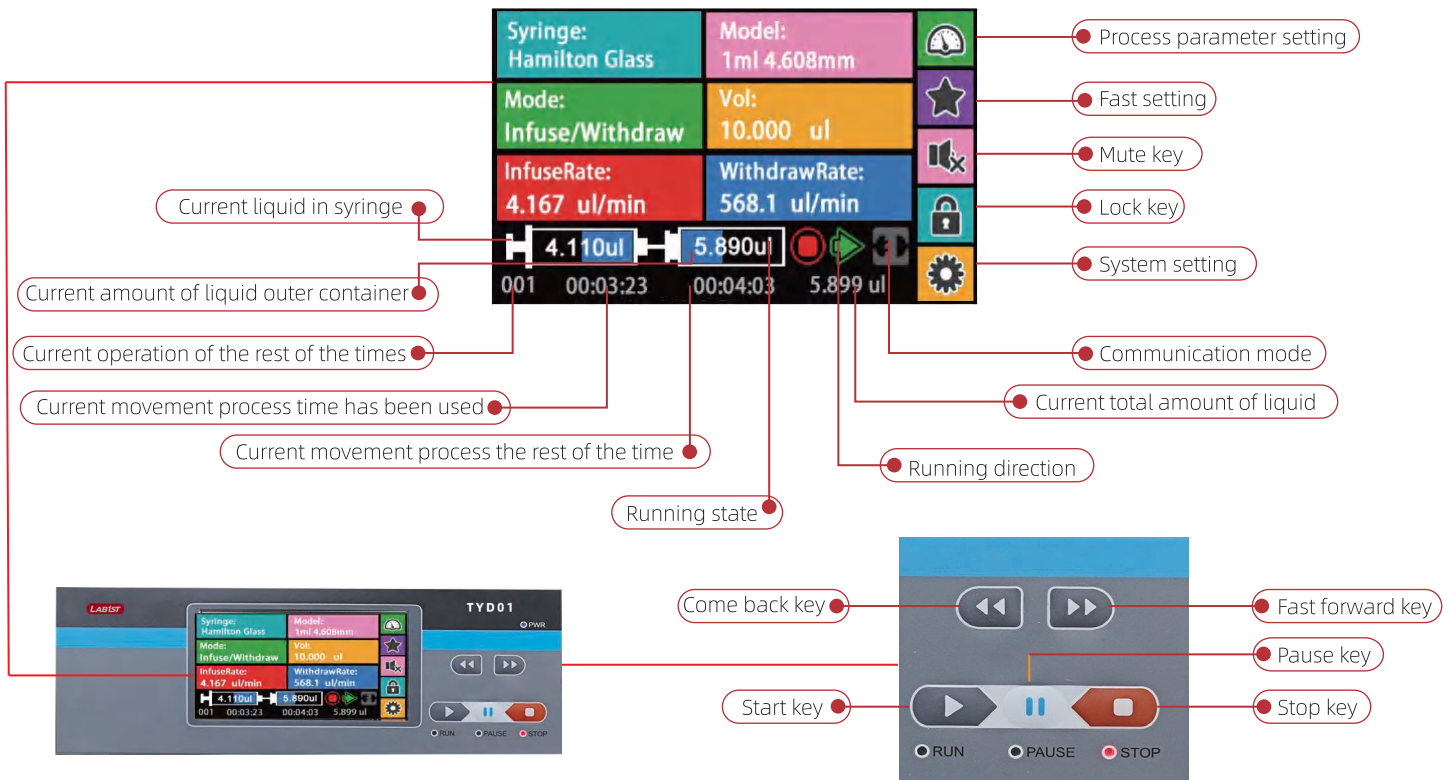
TYD02-10(10 channels)

Technical Parameters

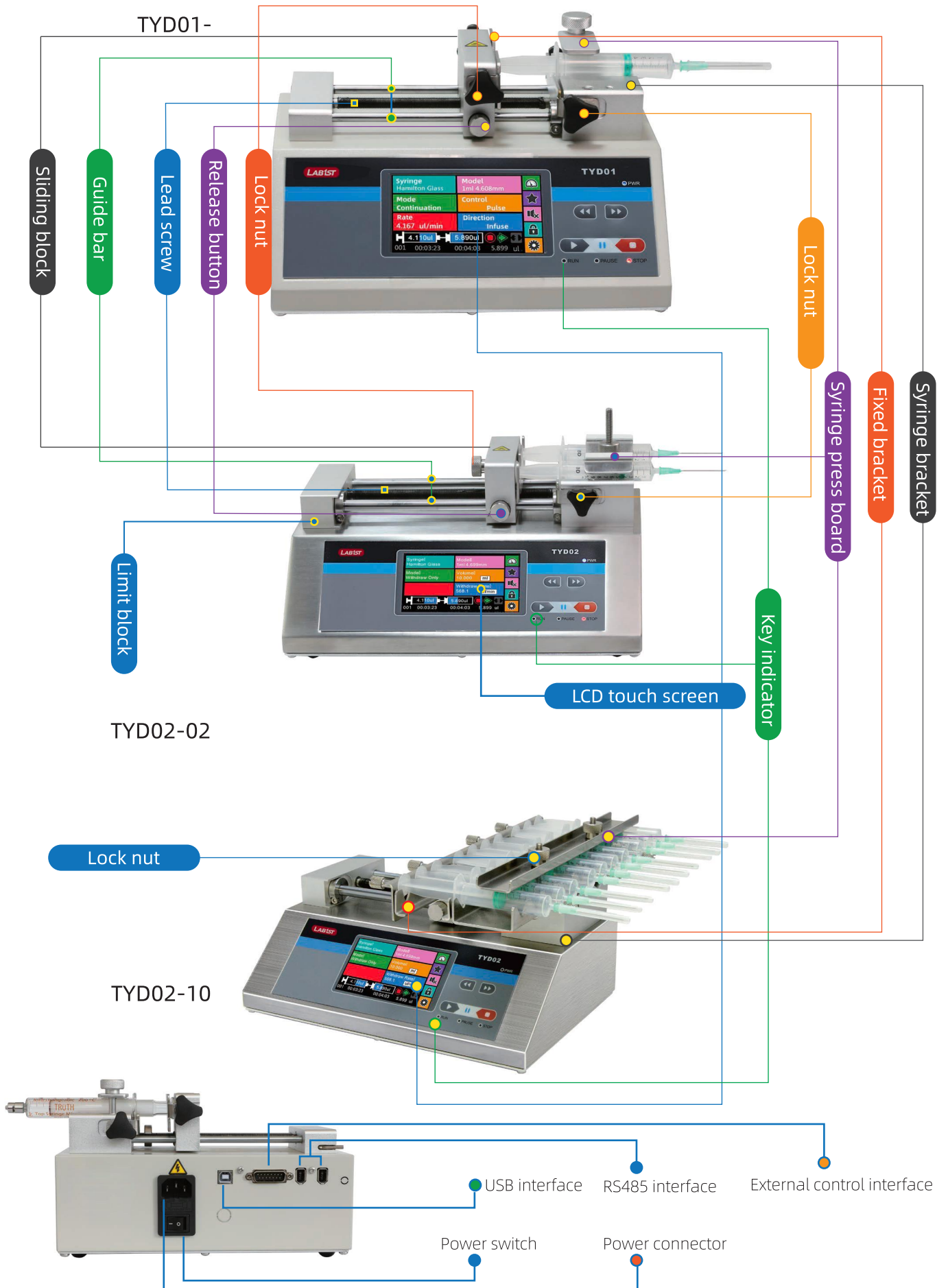
Parameters	Model	TYD01-01	TYD01-02	TYD02-01	TYD02-02	TYD03-01	TYD02-04	TYD02-10	TYD02-06
Work mode	infuse,withdraw,infuse /withdraw,withdraw/infuse,continuous mode								
Number of channel		1	2	1	2	1	4	10	6
Stroke of pump	110mm		140mm		110mm		140mm		
Advance per microstep	0.156µm/µstep		0.156µm/µstep		0.03125µm/µstep		0.156µm/µstep		
Linear speed	1µm/min ~ 150mm/min		1µm/min ~ 150mm/min		0.2µm/min ~ 30mm/min		1µm/min ~ 150mm/min		
Linear resolution	1µm/min		1µm/min		0.2µm/min		1µm/min		
Accuracy	error<±0.35% (>30% of pump stroke)								
Max rated linear force	>16kgf		>20kgf		>16kgf		>20kgf		
Thrust regulation	1 ~ 100% arbitrary adjustable								
Syringe size	10µl ~ 60ml		10µl ~ 140ml		10µl ~ 60ml		10µl ~ 10ml		10µl ~ 60ml
Syringe selection	built-in main manufacturers, the main model syringe to choose. Can use custom syringe, direct input syringe size and diameter								
Flow rate	0.184nl/min ~ 83.318ml/min		0.184nl/min ~ 173.718ml/min		0.037nl/min ~ 16.663ml/min		0.184nl/min ~ 24.520ml/min		0.184nl/min ~ 83.318ml/min
Flow calibration	through the calibration procedure to obtain more accurate fluid volume								
Display	4.3" color LCD screen display and transfusion volume, residual fluid volume, flow ,operation direction ,syringe specification, etc. Animation display operation								
Operation mode	touch screen + button								
Power-off memory	storing the running parameters automatically								
Function	pause and stop, the sound tip, the lock parameters, fast forward and retreat quickly ,display brightness adjustment								
State signal output	1 road start-stop status ,1 road direction status								
Control signal input	1 road startup status ,1 road directional signal								
Communication interface	RS485 , MODBUS Protocol								
Dimension mm	245×195×140		290×205×180		245×195×140		290×228×180		290×263×190
Weight	3.2kg		4.4kg		3.2kg		4.8kg		5.0kg
Power supply	AC100 ~ 240V , 50/60Hz								
Temperature	5 ~ 40°C								
Relative humidity	<80%								

Above flow parameters are obtained by using silicone tube to transfer pure water under normal temperature and pressure, in actually using it is effected by specific factors such as pressure, medium etc. Above for reference only.

LCD Touch Screen



Components and Connections



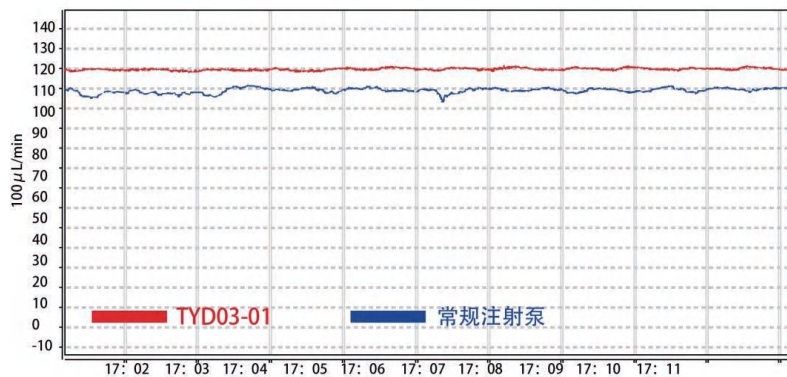
Reference Table of Syringe Specifications and Flow Rate

Flow Range (nl/min ~ ml/min)

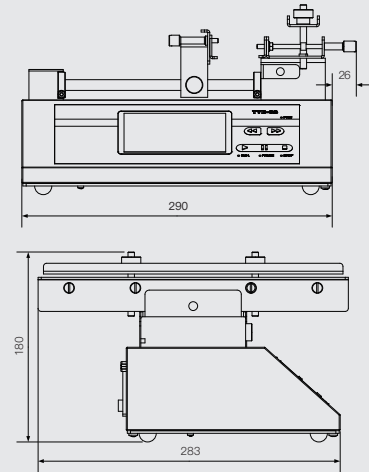
Syringe size	Syringe ID (mm)	TYD01-01\02	TYD02-01\02	TYD03-01	TYD02-04\10	TYD02-06
10μl	0.485	0.184 ~ 0.027	0.184 ~ 0.027	0.037 ~ 0.005	0.184 ~ 0.027	0.184 ~ 0.027
25μl	0.729	0.417 ~ 0.0626	0.417 ~ 0.0626	0.083 ~ 0.0125	0.417 ~ 0.0626	0.417 ~ 0.0626
50μl	1.03	0.833 ~ 0.125	0.833 ~ 0.125	0.166 ~ 0.025	0.833 ~ 0.125	0.833 ~ 0.125
100μl	1.457	1.667 ~ 0.250	1.667 ~ 0.250	0.333 ~ 0.050	1.667 ~ 0.250	1.667 ~ 0.250
250μl	2.304	4.169 ~ 0.625	4.169 ~ 0.625	0.833 ~ 0.125	4.169 ~ 0.625	4.169 ~ 0.625
500μl	3.256	8.326 ~ 1.248	8.326 ~ 1.248	1.665 ~ 0.249	8.326 ~ 1.248	8.326 ~ 1.248
1ml	4.699	17.342 ~ 2.601	17.342 ~ 2.601	3.468 ~ 0.520	17.342 ~ 2.601	17.342 ~ 2.601
5ml	11.989	112.890 ~ 16.933	112.890 ~ 16.933	22.578 ~ 3.386	112.890 ~ 16.933	112.890 ~ 16.933
10ml	14.427	163.469 ~ 24.520	163.469 ~ 24.520	32.694 ~ 4.904	163.469 ~ 24.520	163.469 ~ 24.520
20ml	19.05	285.027 ~ 42.754	285.027 ~ 42.754	57.004 ~ 8.550	—	285.027 ~ 42.754
30ml	21.59	366.090 ~ 54.913	366.090 ~ 54.913	73.219 ~ 10.982	—	366.090 ~ 54.913
60ml	26.594	555.459 ~ 83.318	555.459 ~ 83.318	111.093 ~ 16.663	—	555.459 ~ 83.318
100ml	35.7	—	1000.982 ~ 150.147	—	—	—
140ml	38.4	—	1158.117 ~ 173.718	—	—	—

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Flow Stationarity Curve



TYD02-10



Dimension (mm)

