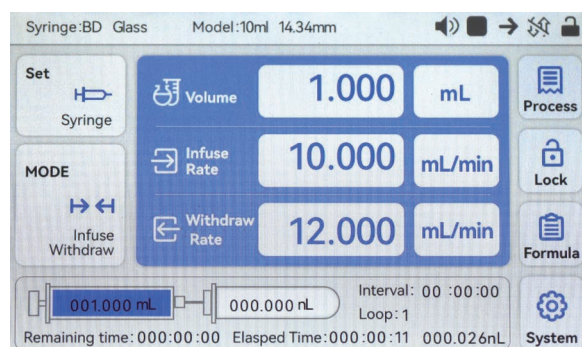




## TYD03-01(New)Laboratory Syringe Pump

- Lead Fluid TYD03-01 laboratory syringe pump is a high-precision and multifunctional desktop syringe pump designed specifically for laboratory applications. Its unique design and functional features make it a good choice for various experimental environments.
- Adopts integrated table model design, 5-inch HD LCD touch screen display and operation, can assembly 1 plastic syringe or gas tight syringe, size range of syringe 10 $\mu$ L ~ 60mL, flow range 0.037nL/min(10 $\mu$ L) ~ 16.663mL/min(60mL).
- Use excellent control system and precision mechanical structure, linear travel accuracy $\leq\pm 0.35\%$ , 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.
- TYD03-01 has 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.



Increase time mode for more convenient operation

## Feature

### • Display and Operation

5-inch high resolution color LCD touch screen, convenient operation.

Support screen lock, key mute operation.

Button with indicator light, clearly working state.

### • Multiple Working Modes and Syringes Support

Built-in multiple syringe manufacturers and specifications, while supporting customized syringes, making them more flexible and diverse.

Including five working modes, including infuse and withdraw, to meet different experimental operation requirements.

### • High Precision Control and Safety Protection

Pre store multiple sets of data, meet high-precision control requirements

Syringe protection and traffic jam alarm function to ensure the safety and reliability of the experimental process.

### • Communication and External Control

RS485 communication, support the MODBUS protocol, makes communication and remote control more convenient.

External control signal controls Start and Stop, Direction, Physical isolation of External Control Signals.

### • Applicability and Convenience

Made of plastic housing, suitable for various experimental environments.

Support wide range of power input, making it more flexible and easy to use.

Multiple convenient designs, such as screen lock and button mute, make the experimental process smoother and more efficient.

## Technical Parameter

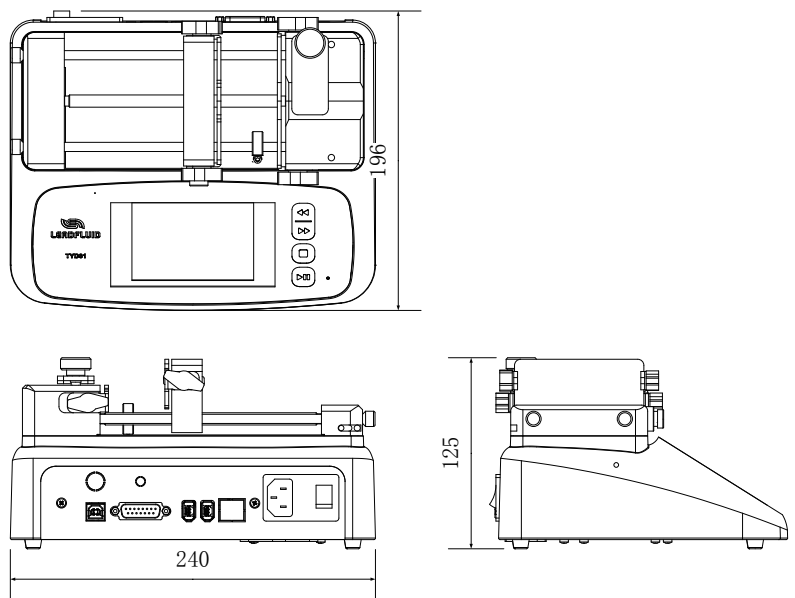
Parameter	TYD03-01
Work mode	Infuse, withdraw, infuse / withdraw, withdraw / infuse, continuous mode
Number of channel	1
Stroke of pump	110mm
Advance per microstep	0.03125 $\mu$ m/ustep
Linear speed	0.2 $\mu$ m/min ~30mm/min
Accuracy	Error $\leq$ ±0.35%, (>30% of pump stroke)
Max rated linear force	>16kgf
Thrust regulation	1 ~ 100% arbitrary adjustable
Syringe size	10 $\mu$ L ~ 60mL, one syringe
Syringe selection	Built-in main manufacturers, the main model syringe to choose. Can use custom syringe, direct input syringe size and diameter
Flow rate	0.037nL/min(10 $\mu$ L) ~16.663mL/min(60mL)
Flow calibration	Through the calibration procedure to obtain more accurate fluid volume
Display	5-inch 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 and stop status ,1 road directional signal
Communication interface	RS485 communication interface, MODBUS protocol
Power supply	AC100 ~ 240V,50/60Hz
Working environment	Temperature 5 ~ 40°C, relative humidity < 80%
Dimension mm(L×W×H)	240×196×125mm
Weight	2.99kg
IP grade	IP31

## Reference Table of Syringe Specifications and Flow Rate

Syringe	Syringe ID(mm)	Mix Flow(nL/min)	Max Flow(mL/min)
0.5μL	0.103mm	1.666	0.249
1μL	0.146mm	3.348	0.502
2μL	0.206mm	6.665	0.999
5μL	0.343mm	16.663	2.499
10μL	0.485mm	36.949	5.542
25μL	0.729mm	83.478	12.522
50μL	1.03mm	166.646	24.996
100μL	1.457mm	0.333	50.018
250μL	2.304mm	0.833	125.076
500μL	3.256mm	1.665	249.792
1000μL	4.608mm	3.335	0.500
1mL	4.699mm	3.468	0.520
3mL	8.585mm	11.557	1.736
5mL	11.989mm	22.578	3.386
10mL	14.427mm	32.694	4.904
20mL	19.05mm	57.004	8.550
30mL	21.59mm	73.219	10.982
50mL	28.998mm	111.093	16.663
60mL	28.998mm	111.093	16.663

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.

### Dimension (mm)



Statement: The final explanation right of above information belongs to Lead Fluid.