CE

BT101L Intelligent Flow Peristaltic Pump

BT101L intelligent flow peristaltic pumps adopt color LCD and touch screen technology. The operator can input the flow rate directly, simple operation, the operating interface is intuitive. Mainly uses in controlling the flow transmission, the highest accuracy of controlling flow is ±0.2%. Unique time dispensing function to meet the requirement of repeated timing and quantitative transmission of fluids, intelligent temperature control technology, in order to reduce unnecessary operating noise. RS485 communication, adopts the MODBUS
communication protocol, the pump is easier to be connected with other equipments,

Features

- Color LCD display, touch screen and keypad for operating.
- LF-Touch-OS software system, efficient and stable, with good human-computer interaction mode, convenient product customization and upgrade.
- Start/stop, reversible direction, full speed, adjust speed and state memory (power-down memory).
- Speed resolution 0.1rpm.
- Flow display, flow control and flow accumulation.
- Flow calibratiion function.
- Easy dispensing function, it realizes the repeat timing quantitative dispensing without the time controller.
- Intelligent temperature control function to minimize peristaltic pump noise, 45 decibel super mute design.
- External high-low electrical level controls the start/stop, reversible direction and easy dispensing function, optically coupled isolator, external analog adjusts the rotate speed.
- RS485 interface, MODBUS protocol is available, easy to connect other equipments.
- The internal structure adopts double-deck isolation design, and the circuit board with conformal coating makes it dust-proof and moisture-proof.
- Super anti-interference feature, wide input voltage range, acceptable for the complex power environment.
- ABS plastic housing, creative streamlined appearance, concise and beautiful.
- Can drive multi-channels and various types of pump heads.

Display Panel and Operating Keypads

Technical Parameters

Parameters	BT101L
Flow range	0.00011 ~ 750mL/min
Speed range	0.1 ~ 150rpm
Speed resolution	0.1rpm
Speed accuracy	< ±0.2%
Power supply	AC 100~240V，50Hz/60Hz
Power consumption	< 30W
External control interface	External control input level 5V, 12V (standard), 24V (optional), External control analog 0-5V (standard), 0-10V, 4-20mA (optional)
Communication interface	RS485 communication interface, MODBUS protocol is available
Working environment	Temperature 0 ~ 40℃, relative humidity < 80%
IP grade	IP31
Dimension（L×W×H）	258mm×180mm×197mm
Weight	3.6 kg


DG6/10-1/2/4


DS6/10-1/2/4


YZ15


YZ15T

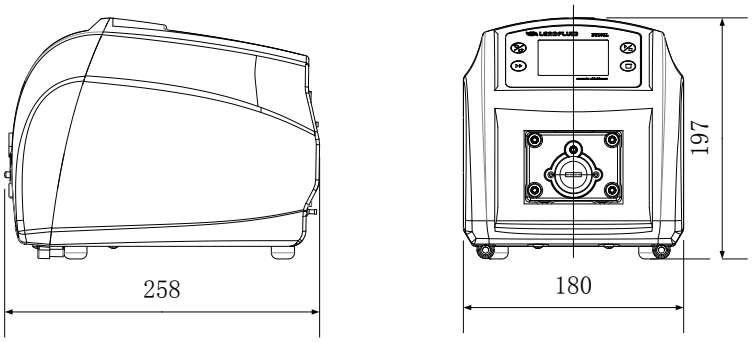

YT25

BT101L Applicable Pump Head and Tube, Flow Parameters

Drive Type	Pump Head	Channel	Tube	Single Channel Flow Rate（mL/min）
BT101L	DG/DS(6 rollers)	1,2,4	Wall 0.8 ~ 1mm，ID≤3.17mm	0.00016 ~ 49
	DG/DS(10 rollers)	1,2,4	Wall 0.8 ~ 1mm，ID≤3.17mm	0.00011 ~ 32
	YZ15/YZ15T	1,2	13#14#19#16#25#17#18#	0.005 ~ 641
	YT25	1	114#116#15#24#35#36#	0.024 ~ 750

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)



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ROHS

Lead Fluid YZ15T Peristaltic Pump Head

The YZ15T peristaltic pump head adopts high-quality materials and manufacturing processes to ensure the stability and reliability of peristaltic pump operation; Suitable for tubes with a wall thickness of 1.6mm and a flow rate of up to 2400ml/min (silicone tube), it can quickly and efficiently transport various media, improving work efficiency; The pump head is easy to maintain and clean, with low maintenance costs; Customization design can be carried out according to actual needs to meet the needs of different industries.

● Optimized exterior design

The YZ15T pump head adds a rear cover design to enhance product integrity. The appearance is simple and generous, and the curved lines are more powerful. The independent small cover facial mask is also added on the rear cover plate, making the product more standardized.

● Increase the gap adjustment structure of the pressure tube to improve its applicability

By adjusting the screws on the top of the pump head, the pressure tube gap can be adjusted, making the pump head more suitable for various tubes of different specifications, improving pressure, enhancing the applicability of the pump head, and extending the service life of the tubes.

Note: This adjustment screw has been adjusted before leaving the factory. We suggest that you do not adjust it yourself. If you encounter any problems, please feel free to contact us and we will provide you with timely service.

● Unique tube clamp linkage mechanism enhances the convenience of tube installation

By adding a tube clamp linkage mechanism, the tube clamp is retracted towards the inner side of the tuube clamp groove when the pressure block is opened, achieving simultaneous opening of the pressure block and tube clamp, improving the convenience of tube installation, reducing operational difficulty, and improving work efficiency. This structure has been granted a patent with patent number CN215860728U.

■ **Adaptive clamping device:**

This device can automatically adapt to the use of tubes with different inner diameters, without the need for manual adjustment, making the use of the product more convenient.

■ **Classic pump head opening method:**

Can quickly replace tubes in just a few seconds, greatly improving product efficiency and convenience.

■ **PPS material shell:**

This material has the characteristics of resistance to organic solvents and other corrosive liquids, greatly improving the durability and corrosion resistance of the product.

■ **Stainless steel roller:**

This roller can meet the high-strength usage requirements of the pump head at high speeds and for long periods of time, while also having a long service life.

■ **Support multi-channels pump head:**

This pump head supports cascading use of multiple pump heads and can be expanded to up to 10 channels.

Note: When two pump heads are connected in series, the rollers are staggered at 60 °, which can effectively reduce fluid pulsation and improve transmission speed.

Patent design: tube clamp linkage mechanism

Lead Fluid YZ15T Pump Head

The YZ15T pump head has undergone innovative design and introduced a tube clamp linkage mechanism. When the operator opens the pressure block, the spatial distance between the upper and lower tube clamps is significantly expanded. This allows users to easily replace hoses with one hand, greatly improving work efficiency.

Traditional peristaltic pump head

When replacing the tube in the traditional peristaltic pump head, due to the limited space between the upper and lower pipe clamps, the operator often needs to pull the upper tube clamp with one hand and replace the tube with the other hand, which is extremely inconvenient and affects work efficiency.

Flow Parameter

Tube material: Silicone、Pharmed、Viton、Tygon E-3603、Tygon Chemical、Tygon A-60-F、Tygon A-60-G　　Wall thickness:1.6mm

Tube Material	Tube	Flow(ml/min) 30rpm	60rpm	100rpm	300rpm	600rpm
Silicone	13#	2.1	4.2	7.0	21.1	41.0
	14#	7.9	15.6	26.4	79.1	158.5
	19#	16.2	31.7	53.9	161.6	331.1
	16#	28.2	54.9	94.1	282.4	572.5
	25#	60.4	116.2	201.2	603.7	1201.6
	17#	94.1	174.7	313.7	941.1	1728.5
	18#	141.1	255.6	470.2	1410.6	2479.1
Pharmed	13#	1.9	3.7	6.2	18.6	37.2
	14#	8.0	15.9	26.7	80.1	162.5
	19#	16.6	28.2	55.3	165.9	338.6
	16#	22.8	55.9	76.1	228.2	598.4
	25#	57.3	110.8	190.9	572.7	1169.6
	17#	88.8	170.9	296.0	888.1	1832.5
	18#	130.0	243.5	433.3	1299.9	2817.8

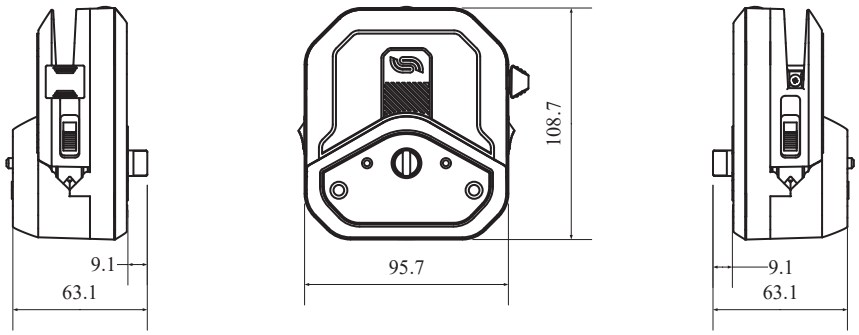
The above flow data are all obtained from the transfer of pure water using YZ15T-3 pump head (3 rollers)under normal temperature and pressure conditions in the Lead Fluid laboratory. This data is for reference only.

Technical Parameter

Channel	1 (Max expand to 10 channels)
Roller	3/6
Tubing Method	Fixation of pump head tube clamp
Pressure Tube Clearance	Adjustable
Pump Head Material	PPS+PP+PA66+metal
Roller Material	S304
Dimension	95.7×108.7×63.1 mm
Working environment	Temperature 0-40℃, humidity<80%RH
Bear Liquid Temperature	Within 200℃
Corrosion Resistance	Resistant to most acid, alkali, salt liquids and organic solvents.

Dimension

Unit: mm



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DS Series Multichannel Pump Head

- Lead Fluid DG series card-type pump head designed for small flow and multi-channel fluid transmission,it can realize simultaneous transmission of more than 1-48 tubelines with compact structure and convenient use.
- Exquisite structure design, even compared with traditional multi-roller pump head, can still provide very low transmission pulsation.
- Reasonable mechanical structure and high precision processing technology ensure the consistency of flow between channels.
- The card-type structure can be loaded and unloaded independently, which is easy to replace and fix the pump tube.
- There are two kinds of card pressure tube device ratchet adjusting device and adaptive spring device, adjustment card with shift display, pressure tube clearance can be based on manual adjustment according to the size of tube, to adapt to different wall thickness of tube and transmission pressure. Self-adaptive design of spring card , pressure tube clearance will be adjusted automatically according to the thickness of tube.
- High strength stainless steel is used as the material of pump head roller, and POM and PVDF high function plastics are selected as the card material to meet the requirements of different working conditions.
- Can suitable for tube of wall thickness 0.8~1mm, ID 0.13~3.17mm Silicone, Pharmed, PVC, Viton and other materials and specifications, single channel flow range is 0.0001~49mL/min.
- Number of pump head roller 6 or 10 optional, 6 rollers pump head with wide flow range, long tube lifetime, 10 rollers pump head with less transmission pulsation and tube wear higher.
- Can match speed below 100rpm stepper motor, servo motor, AC gear motor, DC gear motor and other motors.

The unique card buckle structure of the DS pump head improves the convenience of card installation and disassembly, and improves the overall stability of the pump head through the stable cooperation of the card buckle and the card, which improves the pressure stability of the tube, improves the flow stability, and improves the consistency of pressure and flow between different channels.

DS Pump Head Material

Roller	*stainless steel 304/316*
Card	*POM/PVDF*

Flow Parameters(6rollers)

Tube material:Silicone,Pharmed,PVC,Viton.etc Wall thickness 0.8~1mm

Tube	Size (ID×wall)	Flow(mL/min) 1rpm	30rpm	60rpm	100rpm
Pharmed	0.25×0.9 mm	0.006	0.18	0.37	0.61
	0.76×0.85 mm	0.051	1.52	3.02	4.97
	1.3×0.85 mm	0.121	3.65	7.27	12.08
	1.52×0.85 mm	0.142	4.26	8.50	14.13
	1.85×0.85 mm	0.222	6.66	13.27	21.99
	2.79×0.84 mm	0.434	13.01	25.67	41.14
Silicone	0.5×0.92 mm	0.023	0.68	1.35	2.23
	1×0.92 mm	0.076	2.27	4.51	7.49
	2×0.92 mm	0.253	7.60	15.19	25.23
	2.4×0.92 mm	0.358	10.75	21.50	35.82
	3×0.92 mm	0.513	15.39	30.80	50.90

Notes:the above flow data are tested by the DS series 6 roller pump head transmitting pure water under the condition of normal temperature and pressure in Lead Fluid laboratory, and this data is for reference only. There is wear phenomenon for tube with inner diameter of 3mm and above, which affects the service life and is not recommended. Please consult Lead Fluid engineers for specific conditions.

Flow Parameters (10 rollers)

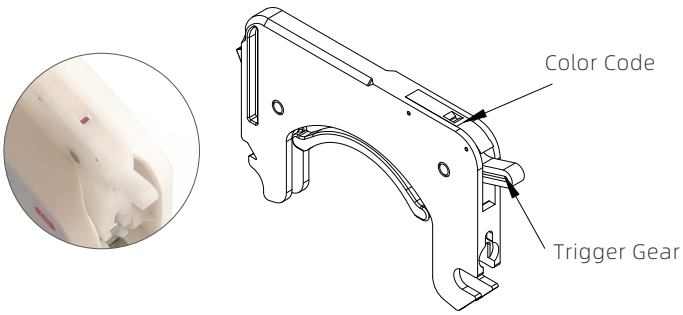
Tube material:Silicone,Pharmed,PVC,Viton.etc Wall thickness 0.8~1mm

Tube	Size (ID×wall)	Flow(mL/min) 1rpm	30rpm	60rpm	100rpm
Pharmed	0.25×0.9 mm	0.00523	0.161	0.323	0.533
	0.76×0.85 mm	0.04317	1.295	2.580	4.275
	1.3×0.85 mm	0.113	3.400	6.752	11.129
	1.52×0.85 mm	0.139	4.224	8.386	13.786
	1.85×0.85 mm	0.169	5.083	9.992	16.437
	2.79×0.84 mm	0.286	8.574	16.912	27.845
Silicone	0.5×0.92 mm	0.022	0.65	1.28	2.12
	1×0.92 mm	0.072	2.16	4.28	7.12
	2×0.92 mm	0.241	7.22	14.43	23.97
	2.4×0.92 mm	0.340	10.21	20.43	34.03
	3×0.92 mm	0.487	14.62	29.26	48.36

Notes:the above flow data are tested by the DS series 10 roller pump head transmitting pure water under the condition of normal temperature and pressure in Lead Fluid laboratory, and this data is for reference only. There is wear phenomenon for tube with inner diameter of 3mm and above, which affects the service life and is not recommended. Please consult Lead Fluid engineers for specific conditions.

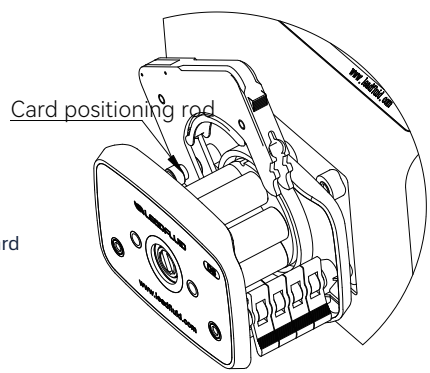
DS10 Card Types

Ratchet Adjusting Card: pressure tube clearance can be adjusted by ratchet structure , there are 7 adjusting gears with color marks corresponding to tube of different specifications and materials, can work under the optimum pressure tube clearance without user debugging, obviously prolonged the tube lifetime, if need larger outlet pressure,the pressure tube clearance can be reduced by adjusting the gear, and the operation is simple.



Spring Card: automatic adjustment of pressure tube clearance through high performance alloy spring , in order to adapt to the wall thickness change of tube due to long-term use , the uniform stability of flow can be effectively guaranteed.


Adaptive Spring Card




6 rollers

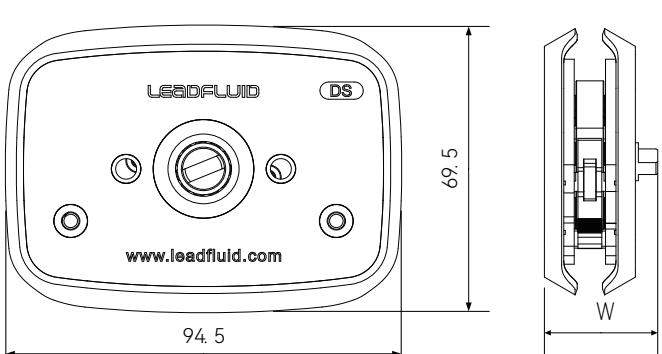
Pump Head Specification

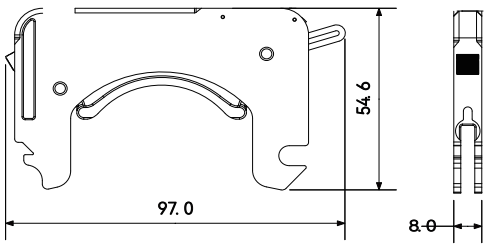
Channel	6 rollers:1/2/4/6/8/12 10 rollers:1/2/4/8/12 (After cascading the pump head, it can be expanded to 48 or more channels)
Rollers	6/10
Speed range	≤100 rpm/min
Flow range	≤50 mL/min
Tube	Wall:0.8mm-1mm,ID:0.13mm-3.17mm
Tubing fixing	Ratchet adjusting card, spring card
Clearance adjustment	Adjustable
Working environment	Temperature 0 ~ 40℃, relative humidity < 80%
Applicable Motor	stepper motor, servo motor, AC gear motor, DC gear motor,etc.


10 rollers

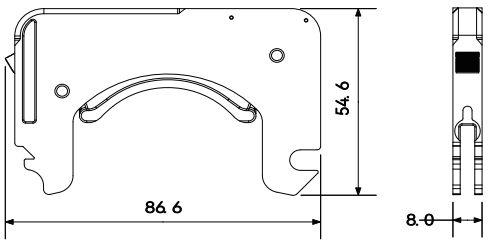
Installation Size Diagram

Unit:mm





Ratchet adjusting card

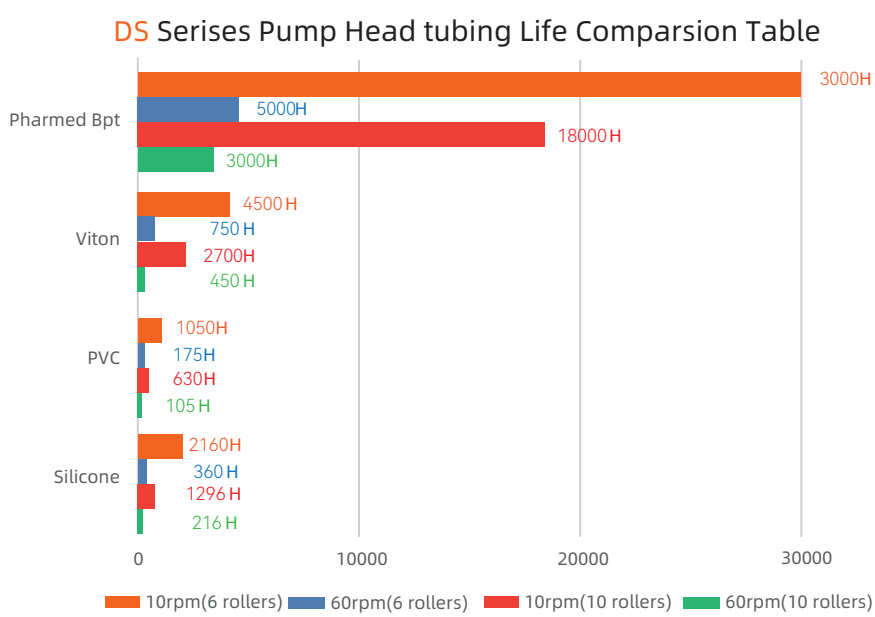


Spring card

Pump head dimension(W×H) :69.5×94.5
Pump head thickness dimension (W): 30+8×N（N means channels）

Ratchet adjusting card dimension(L×H×W):97×54.6×8
Spring card dimension(L×H×W):86.6×54.6×8

Tube Life Comparison Table



Notes:

The above data are all test results obtained by Lead Fluid laboratory under normal temperature and pressure for the transmission of pure water, which are for reference only; the actual service life may be affected by specific factors such as pressure, temperature, medium characteristics, tube batch and wall thickness; for specific problems, please contact Lead Fluid engineers to get better technical support.

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