

LSP01-1A/2A, LSP04-1A Syringe Pump

LSP01-1A/2A



LSP04-1A



Functions and Features

Syringe selection: The syringe can be selected in the manufacturer table which includes manufacturer, material and size or input the inner diameter of the syringe barrel directly

Easy to operate: Combining big screen LCD display with rotary encoded switch and membrane keypad makes the operation simple and prompt

Working mode: Infusion

Memory function:

1. The parameters are saved in EEPROM. The parameters don't need to be reset when power returns after an interruption

2. In flow rates mode, the pump remains running or stop according to the setting parameters when power returns after an interruption

Protection function: The pump will stall and give an alarm when the drive structure of the pump is blocked

Communication function: Realize computer control through RS485 communication interface

External control function: Input/output control

Calibration function: Acquire accurate volume through calibration

Syringe protection: Adjust syringe rest to prevent syringe from damaging

Infusion only syringe pumps. The acceptable syringes for LSP01-1A/2A are from 10 μ L to 60 mL and for LSP04-1A is from 10 μ L to 10 mL. Suitable for high accuracy and small flow rates liquid transferring.

Specifications Comparison Table

Syringe Pump	LSP01 - 1A	LSP01 - 2A	LSP04 - 1A
Max. No. of syringes	1	1	4
Infusion volume per microstep	0.13 μ L (60 mL Syringe)	0.026 μ L (60 mL Syringe)	0.026 μ L (10mLSyringe)
Syringe size	10 μ L - 60mL	10 μ L - 60mL	10 μ L - 10mL
Flow rates	0.831nL/min - 54.155mL/min	0.166nL/min - 10.83mL/min	0.831nL/min - 21.675mL/min
Advance per microstep	1/16step: 0.156 μ m	1/16step: 0.03125 μ m	1/16step: 0.156 μ m
Max. linear rate	65mm/min	13mm/min	130mm/min
Min. linear rate	5 μ m/min	1 μ m/min	5 μ m/min
Max. step rate	6933 (1/16step) / sec		13867 (1/16step) /sec
Min. step rate	16 (1/16 step) /30 sec		
Working mode	Infusion		
Linear force	> 9kgf		
Accuracy	$\leq \pm 0.5\%$ error in the condition of > 30% of max. infusion distance		
Operating mode	Rotary encoded switch and membrane keypad		
Display	128 x 64 graphic LCD		
Power	AC 100 - 240 V		
Operating condition	Temperature 5 $^{\circ}$ C - 40 $^{\circ}$ C Relative humidity < 80 %		
Dimensions	280 \times 210 \times 140 (mm)		280 \times 250 \times 140 (mm)
Weight	3.6 kg		4.5kg

Syringe Pump	Syringe	I.D. (mm)	Flow Rates (μ L/min - mL/min)	Linear Rate	Part Number
LSP01 - 1A	50 μ L	1.03	0.004 - 0.054	5 μ m/min - 65mm/min	0503401
	10mL	14.57	0.834 - 10.837		
	60mL	32.57	4.166 - 54.155		
LSP01 - 2A	50 μ L	1.03	0.001 - 0.011	1 μ m/min - 13mm/min	0503411
	10mL	14.57	0.167 - 2.167		
	60mL	32.57	0.833 - 10.831		
LSP04 - 1A	50 μ L	1.03	0.004 - 0.108	5 μ m/min - 130mm/min	0503451
	1mL	4.61	0.083 - 2.170		
	10mL	14.57	0.834 - 21.675		

Note: Flow rates = Linear rate \times Section area of the barrel

LSP01-1BH Syringe Pump



This pump is a single channel high pressure syringe pump. The acceptable syringes are 2.5mL-100mL stainless steel syringes. Because of the extra linear force this pump is suitable for transferring viscous fluids or delivering the fluid to reactors in chemical applications.

Functions and Features

Syringe selection: The syringes can be selected in the manufacturer table which includes manufacturer, material and size or input the inner diameter of the syringe barrel directly

Easy to operate: Combining big screen LCD display with rotary encoder switch and membrane keypad makes the operation simple and prompt.

Working mode: Infusion, withdrawal, infusion/withdrawal, withdrawal/infusion, continuous

Memory function:

1. The parameters are saved in EEPROM . The parameters don't need to be reset when power returns after an interruption
2. In flow rate mode, the pump remains running or stop according to the setting parameters when power returns after an interruption

Protection function: The pump will stall and give an alarm when the drive structure of the pump is blocked

Communication function: Realize computer control through RS485 communication interface

External control function: Input/output control

Calibration function: Acquire accurate volume through calibration

Syringe protection: Adjust syringe rest to prevent syringe from damaging

Specifications

Syringe size	2.5 - 100 (mL)
Linear force	45kg
Advance per microstep	0.156 μ m (1/16step)
Infusion volume per microstep	0.149 μ L (100mL syringe 1/16step)
Max. Step rate	13867 (1/16step)/sec
Min. step rate	16 (1/16step)/30sec
Max. linear rate	130mm/min
Min. Linear rate	5 μ m/min
Flow rates	0.09 μ L/min - 124.36mL/min
Accuracy	\leq 0.5% error in the condition of \geq 30% of max. Infusion distance
Operating mode	Rotary coded switch and membrane keypad
Display	128 64 graphic LCD
Power	AC100 - 240V
Operating condition	Temperature 5 $^{\circ}$ C - 40 $^{\circ}$ C Relative humidity <80%
Dimensions	280 250 140 (mm) (L \times W \times H)
Weight	6.3kg

Syringe Pump	Part Number	Inner Diameter (mm)	Syringe (mL)	Flow Rates	Outlet Pressure	Linear Rate	Weight (kg)
LSP01 - 1BH	0503431	4.79	2.5	5.406 μ L/hr - 140.5mL/hr	>19.48MPa	5 μ m/min - 130mm/min	6.3
		9.53	8	21.399 μ L/hr - 556.3mL/hr	>5.05MPa		
		19.13	20	86.226 μ L/hr - 2241.8mL/hr	>1.25MPa		
		28.6	50	192.727 μ L/hr - 5010.9mL/hr	>0.56MPa		
		34.9	100	286.986 μ L/hr - 7461.6mL/hr	>0.37MPa		

Note: Flow rates=Linear rate \times Section area of the barrel

LSP02/10-1B Syringe Pump

These pumps are multi-channel syringe pump which have infusion/withdrawal mode. The acceptable syringes for LSP02-1B are from 10 μ L to 140mL and the acceptable syringes for LSP10-1B are from 10 μ L to 10mL. Suitable for high accuracy and small flow rates liquid transferring.

Functions and Features

Syringe selection: The syringe can be selected in the manufacturer table which includes manufacturer, material and size or input the inner diameter of the syringe barrel directly

Easy to operate: Combining big screen LCD display with rotary encoded switch and membrane keypad makes the operation simple and prompt.

Working mode: Infusion, withdrawal, infusion/withdrawal, withdrawal/infusion, continuous

Memory function:

1. The parameters are saved in EEPROM. The parameters don't need to be reset when power returns after an interruption.
2. In flow rates mode, the pump remains running or stop according to the setting parameters when power returns after an interruption.

Protection function: The pump will stall and give an alarm when the drive structure of the pump is blocked

Communication function: Realize computer control through RS485 communication interface

External control function: Input/output control

Calibration function: Acquire accurate volume through calibration

Syringe protection: Adjust syringe rest to prevent syringe from damaging



Specifications Comparison Table

Syringe Pump	LSP02 - 1B	LSP10 - 1B
Max. No. of syringes	2	10
Infusion volume per microstep	0.13 μ L (60 mL BD Syringe)	0.0257 μ L (10mL BD Syringe)
Syringe size	10 μ L - 140mL	10 μ L - 10mL
Flow rates	0.831nL/min - 150.5mL/min	0.831nL/min - 21.675mL/min
Advance per microstep	1/16step: 0.156 μ m	
Max. step rate	13867 (1/16step) /sec	
Min. step rate	16 (1/16 step) /30sec	
Max. linear rate	130mm/min	
Min. linear rate	5 μ m/min	
Working mode	Infusion, withdrawal, infusion/withdrawal, withdrawal/infusion, continuous	
Linear force	>18kgf	
Accuracy	$\leq \pm 0.5\%$ error in the condition of >30% of max. infusion distance	
Operating mode	Rotary encoded switch and membrane keypad	
Display	128 \times 64 graphic LCD	
Power	AC 100 - 240 V	
Operating condition	Temperature 5 $^{\circ}$ C-40 $^{\circ}$ C Relative humidity: < 80%	
Dimensions	280 \times 250 \times 140 (mm)	280 \times 330 \times 140 (mm)
Weight	4.3 kg	5.3 kg

Syringe	I.D. (mm)	LSP02 - 1B			LSP10 - 1B		
		Ref. Flow Rates (μ L/min - mL/min)	Linear Rate (μ m/min - mm/min)	Part Number	Flow Rates (μ L/min - mL/min)	Linear Rate (μ m/min - mm/min)	Part Number
50 μ L	1.03	0.004 - 0.108	5 - 130	0503441	0.004 - 0.108	5-130	0503461
1mL	4.61	0.083 - 2.170			0.083 - 2.170		
2.5mL	7.28	0.208 - 5.411			0.208 - 5.411		
5mL	10.30	0.417 - 10.832			0.417 - 10.832		
10mL	14.57	0.834 - 21.675			0.834 - 21.675		
25mL	23.03	2.083 - 54.153					
50mL	32.57	4.166 - 108.310					
60mL	32.57	4.166 - 108.310					

Note: Flow rates=Linear rate \times Section area of the barrel

OEM Products

Longer company has accumulated rich experience in research and manufacture of peristaltic pump. Utilizing present resources which include software, hardware, materials and market, etc. we can provide reasonable and economical OEM products with professional design. Longer company also can design or manufacture special products to meet customers' requirements.






Utilize present products — Stable functions and short delivery period (preferred)

Custom design — To meet your special requirements (Batch purchasing)

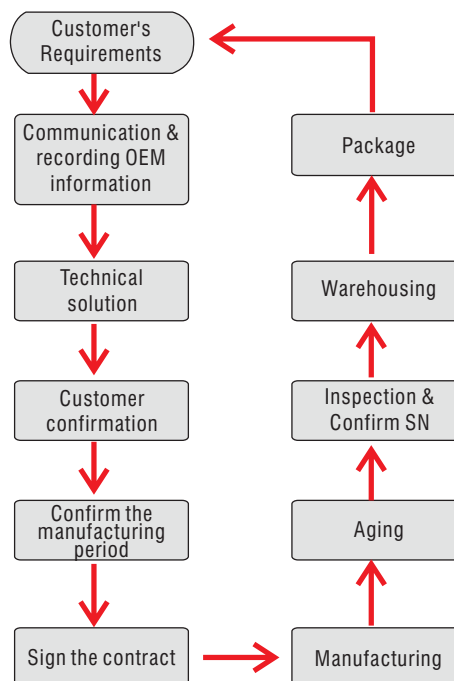
OEM Applications

- Fluids sampling of inspection or testing instruments
- Feeding of fluids equipments
- Dispensing and filling fluids equipments
- Other fluids transfer

OEM Examples

Type	Introduction	Functions and Features	Specifications
 OEM10/TH15	OEM10 has four kinds of optional fixed speed which can deliver max. flow rates of 167 ml/min, it is one of ideal OEM product and has been widely used in environment monitoring, ferment, and filling industry, etc.	OEM10 adopts AC synchronous motor which has stable speed and high repeatability. Pump head with two spring rollers can reduce the abrasion of tubing and prolong the tubing life.	Speed: Four kinds of fixed speed of 5, 20, 60, 110 rpm, reversible Power supply: AC220V Power consumption: 15W Dimensions: 105.5 110 80 (mm) Weight: 0.7kg
 OEMBJ60-01/WX10	The pump delivers flow rates from 0.001 to 24 mL/min. The speed can be adjusted by BCD DIP coding switch which is divided into 15 levels, or controlled by external pulse.	Suitable for tubing which the inner diameter is less than 3.17 mm and wall thickness is from 0.8 to 1.0 mm. Reasonable and fine shape, compact size, DC power supply, ideal for OEM.	Speed: 0 - 60 rpm, reversible Speed precision: 1 rpm Speed control: BCD switch, the speed is 1, 3, 5, 7 rpm when the speed is less than 10 rpm and the increment is 5 rpm when the speed is more than 10 rpm Power supply: 12V/1A DC Power consumption: Less than 10 W Dimension: 116 60 73 (mm) Weight: 0.55 kg
 OEMBJ100-01/JY15-12	The pump delivers flow rates from 0.7 to 170 mL/min. The speed can be adjusted by BCD DIP coding switch which is divided into 15 levels, or controlled by external pulse.	Suitable for tubing with wall thickness of 1.6 mm. Low speed, high flow rates, long life. Reasonable and fine shape, compact size, DC power supply, ideal for OEM.	Speed: 0 - 60 rpm, reversible Speed precision: 1 rpm Speed control: BCD switch, the increment is 5 rpm when the speed is less than 50 rpm and the increment is 10 rpm when the speed is more than 50 rpm Power supply: 12V/2A DC Power consumption: Less than 25 W Dimension: 118 60 86 (mm) Weight: 0.58 kg
 OEM103/DG-2	OEM103 adopts step motor with bracket and shock absorption parts which reduce the vibration and make it easy to load pump head. It has been widely used in flow injection analysis instrument and ultraviolet radiation analysis instrument.	Driver need to be designed or selected to drive the step motor. Acceptable pump heads are YZ and DG series pump heads.	Max. Speed: 100 rpm (DG pump heads) 300 rpm (YZ pump heads) Dimensions: 130 120 115 (mm)
 OEMWX15-12	OEMWX15-12 delivers the maximum flow rates of 46 ml/min, small size; it is suitable to be built in customers equipment.	OEMWX15-12 adopts DC gear motor and #16 silicon tubing, user can control flow rates by adjusting voltage of motor.	Speed: 0-100 rpm, reversible Power supply: DC24V or DC12V Dimension: 70 60 50 (mm) Weight: 0.2kg

Note: Operating condition is temperature 0 to 40°C, relative humidity < 80%.



TJ-1A/L0107-1A SYRINGE PUMP

TJ-2A/L0107-2A



The pumps combine precision, compact size with ease of install and operation. It can hold μL unit standard glass syringe. The features of accurate distance control and broad linear speed range (7.94 $\mu\text{m}/\text{min}$ - 79.4 mm/min) can meet versatile requirements. Its vertical (horizontal) installation structure makes this pump easily used in micromanipulator, stereotaxic instrument for various biologic research applications.

Functions and Features

- Working mode:** TJ-1A/L0107-1A: Infusion
TJ-2A/L0107-2A: Infusion, withdrawal, infusion/withdrawal, withdrawal/infusion, continuous
- User-defined glass syringe:** Save 4 inner diameters of user-defined glass syringe barrel
- Linear force output:** Full stroke > 20 N
- Memory function:** Select resume operation or remain stopped when power returns after an interruption
- Signal output:** Start/Stop output, cw/ccw output (open collector)
- Calibration:** Acquire accurate volume through calibration
- Fast forward & fast reverse:** Infusion or filling at the max. Speed

Specifications

- Max. Infusion distance:** 70 mm
- Acceptable glass syringe:** 5 - 1000 (μL)
- Linear speed:** 7.94 $\mu\text{m}/\text{min}$ - 79.4 mm/min
- Adjusting resolution:** 7.94 $\mu\text{m}/\text{min}$
- Distance resolution:** 0.165 μm
- Linear force:** > 20 N
- Operating mode:** Membrane keypad and rotary encoded switch
- Accuracy:** $\leq 0.5\%$ error in the condition of $\geq 30\%$ of max. infusion distance
- Display:** 128 \times 64 graphic LCD
- External control:** Start/Stop control, fast forward control, fast reverse control
- Communication interface:** RS485
- Power:** AC 100 V - 240 V or DC 12 V
- Power consumption:** ≤ 10 W
- Operating condition:**
Temperature 0 - 40 $^{\circ}\text{C}$
Relative humidity < 80 %
- Controller dimensions (L \times W \times H):** 170 \times 108 \times 65 (mm)
- Controller weight:** 0.8 kg
- Drive unit dimensions (L \times W \times H):** 180 \times 46 \times 78 (mm)
- Drive unit weight:** 0.6 kg
- IP rating:** IP 21

Syringe Pump (Part Number)	Glass Syringe Specification (μL)	Barrel Inner Diameter (mm)	Effective Stroke (mm)	Flow Rates (nL/min - $\mu\text{L}/\text{min}$)	Syringe Material	Weight (kg)
TJ - 1A / L0107 - 1A (0503101) (0503001)	5	0.35	51.97	0.764 - 7.64	Glass Syringe	Controller 0.8 Drive Unit 0.6
	10	0.50	50.93	1.559 - 15.59		
	25	0.80	49.74	3.989 - 39.89		
	50	1.10	52.61	7.544 - 75.44		
TJ - 2A / L0107 - 2A (0503111) (0503011)	100	1.60	49.74	15.96 - 159.6		
	250	2.30	60.17	32.98 - 329.8		
	500	3.25	60.27	65.85 - 658.5		
	1000	4.61	59.91	132.5 - 1325		

Note: Flow rates = Linear rate \times Section area of the barrel

TS-1A/L0107-1A SYRINGE PUMP

TS-2A/L0107-2A



The pumps combine precision, compact size, multiple functions with ease of operation. It can hold μL unit standard glass syringe. The features of accurate distance control and broad linear speed range ($7.94\mu\text{m}/\text{min}$ - $79.4\text{mm}/\text{min}$) can meet versatile requirements. The drive unit is separate, easy to installation and combination. Its vertical (horizontal) installation structure makes this pump easily used in micromanipulator, stereotaxic instrument for various biologic research applications.

TS-2A/L0107-2A
 Infusion/Withdrawal
 Lock devices
 See **View**

SYRINGE PUMP

Specifications

- Max. infusion distance:** 70 mm
- Acceptable glass syringe:** 5 μL - 1000 μL
- Linear speed:** 7.94 $\mu\text{m}/\text{min}$ - 79.4 mm/min
- Adjusting resolution:** 7.94 $\mu\text{m}/\text{min}$
- Distance resolution:** 0.165 μm
- Linear force:** >20 N
- Operating mode:** Membrane keypad and rotary encoded switch
- Accuracy:** \leq 0.5% error in the condition of \geq 30% of max. infusion distance
- Display:** 128 \times 64 graphic LCD
- External control:** Start/Stop control, fast forward control, fast reverse control
- Communication interface:** RS485
- Power:** AC 100 V - 240 V or DC 12 V
- Power consumption:** <40 W
- Operating condition:** Temperature 0 - 40 $^{\circ}\text{C}$
Relative humidity <80 %
- Controller dimensions (L \times W \times H):**
170 \times 108 \times 65 (mm)
- Controller weight:** 0.9 kg
- Drive unit dimensions (L \times W \times H):**
180 \times 46 \times 78 (mm)
- Drive unit weight:** 0.6 kg
- IP rating:** IP 21

Functions and Features

- Parameters setting:** The parameters of each channel can be different.
- Running control:** Each drive unit can be controlled separately; Or four drive units can be controlled to run simultaneously or run at different time.
- Channel copy:** All drive units can run according to the parameters of one drive units of them
- Delaying startup:** Delaying startup time of each channel can be controlled separately
- Memory function:** Select resume operator or remain stopped when power returns after an interruption
- Block protection:** When one drive unit stops accidentally, the system will warm and stop
- Working mode:** TS-1A/L0107-1A: Infusion
TS-2A/L0107-2A: Infusion, withdrawal, infusion/withdrawal, withdrawal/infusion, continuous
- External control:** Start/stop input control signal which is pulse mode to swith the states of start and stop
Each channel has two ways OC gate output to indicate the start/stop and direction of the channel
- Communication:** Realize computer control through RS485 communication interface

Main Functions for Each Channel

- Syringe selection:** The syringe can be selected in the manufacturer table which includes manufacturer, material and size
- User-defined glass syringe:** Save 4 inner diameters of user-defined glass syringe barrel
- Parameters setting:** Set dispensing volume, infusion time, pause time and copy number
- Display mode selection:** Different parameters (volume, flow rate, linear speed) can be selected in the main display interface
- Fast forward & fast reverse:** Infusion or withdrawal at the max. speed
- Calibration:** Acquire accurate volume through calibration

Syringe Pump (Part Number)	Glass Syringe Specification (μL)	Barrel Inner Diameter (mm)	Effective Stroke (mm)	Flow Rates (nL/min - $\mu\text{L}/\text{min}$)	Syringe Material	Weight (kg)
TS - 1A / L0107 - 1A (0503151) (0503001)	5	0.35	51.97	0.764 - 7.64	Glass Syringe	Controller 0.8 Drive Unit 0.6
	10	0.50	50.93	1.559 - 15.59		
	25	0.80	49.74	3.989 - 39.89		
	50	1.10	52.61	7.544 - 75.44		
TS - 2A / L0107 - 2A (0503161) (0503011)	100	1.60	49.74	15.96 - 159.6		
	250	2.30	60.17	32.98 - 329.8		
	500	3.25	60.27	65.85 - 658.5		
	1000	4.61	59.91	132.5 - 1325		

Note: Flow rates=Linear rate \times Section area of the barrel