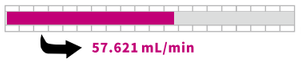
Laboratorial Syringe Pump

dLSP 500 Series

Max. Flow Rate



- Dedicated PC software and Android App permit remote control and monitoring
- Intelligent diagnosis and voice reminder for working progress and pump status
- High precision and stable fluid delivery with good EMC performance, ideal for microfluidic and electrospinning application
- 7 inch full touch screen with intuitive graphic interface for fantastic interactive experience
- Custom parameters can be configured quickly, and be stored and easily recalled
- User access control and log record for safety management. With the electronic signature function, Pro pump can meet FDA (21CFR Part 11) audit trail requirements

	dLSP 510	dLSP 520	dLSP 510 Pro	dLSP 520 Pro
Work mode	Infusion only, withdrawal only, infusion/withdrawal, withdrawal/ infusion, auto repeated, programming (on dedicated PC software)			
Number of channel	1	2	1	2
Pusher advance per microstep	0.03255μm/μstep		0.015625μm/μstep	
Linear speed	0.0833μm/min-180mm/min		0.04μm/min-86.4mm/min	
Step speed	23.4375 sec/μstep-10.85 μsec/μstep			
Linear travel accuracy (Rated)	±0.5%		±0.35%	
Linear travel CV(Rated)	±0.05%			
Linear force (Rated)	40lbs/18kg @ 100% force selection			
Motor and drive	1.8° step motor with 1/64 microstepping			
Syringe	0.5uL-60mL	0.5uL-30mL	0.5uL-60mL	0.5uL-30mL
User-defined syringe	Travel≤108mm, OD≤31.5mm	Travel≤108mm, OD≤26mm	Travel≤108mm, OD≤31.5mm	Travel≤108mm, OD≤26mm
Display	7 Inch, 1024x600, IPS HD LCD			
Language	Chinese or English, set as needed			
Control mode	Tooch screen control, dedicated PC or Android App control, footswitch control, RS485 communication control			
Interface	RS485(optional), USB-B,USB-A,Wifi, bluetooth, Ethernet, footswitch 3 outputs- solid state relay signal, 2 inputs-switch signal or TTL signal, 4-20mA signal(optional)			
Wireless connectivity(optional)	Wifi, bluetooth			
Programming function	Parameter configured based on work flow: constant, ramp, loop, delay, repeat, I/O output trigger, I/O event input trigger, tooch screen trigger			
Calibration	Improve flow rate/ dispensing volume precision and accuracy			
Parameter method	Parameter methods can be stored and easily recalled			
Real time clock	Date and time can be set			
Audible alarm	For keypad clicks, end of run, near end of run, power on, motor stall, calibration reminder, etc.			
Voice reminder	N/A		For working progress, alarm, diagnosis	
Intelligent diagnosis	N/A		For presence of syringes, syringe leakage	
Screen lock	To prevent misoperation			
User access control	Three levels of user accesses(administrator, developer, operator), in line with safety management requirement(21CFR Part 11)			
Predictive maintenance	Real-time monitoring of pump running status providing information such as alarms, regular maintenance, predictive maintenance			
Log record	Record the complete operation history of the pump, and can be exported directly			
Electronic signature and audit trail	N/A		Meet the requirement of 21CFR Part 11 (on dedicated PC software)	
Support 3Q(IQ/OQ/PQ)	Meet GMP requirement			
EMC	CE (TUV) certified			
Deminsion(L×W×H)	Drive unit: 260mm×185mm×180mm, Controller: 190mm×123mm×33mm			
Power supply	AC 100V-240V/30W 50/60Hz		AC 100V-240V/20W 50/60Hz	
Operating condition	Temperature: 5℃-40℃, Relative humidity<85%			
IP rating	IP31			
Weight	Drive unit: 3.49kg, Controller: 0.37kg			

Product Model		dLSP 510/dLSP 520	dLSP 510 Pro/dLSP 520 Pro
Syringe	Syringe ID (mm)	Reference flow rate (nL/min-mL/min)	
0.5ul	0.1	0.0007-0.0014	0.0003-0.0007
5ul	0.35	0.008-0.017	0.004-0.008
10ul	0.5	0.016-0.035	0.008-0.017
25ul	0.8	0.042-0.090	0.020-0.043
50ul	1.1	0.079-0.171	0.038-0.082
100ul	1.6	0.167-0.362	0.080-0.174
500ul	3.25	0.691-1.493	0.332-0.717
1ml	4.72	1.458-3.150	0.700-1.512
2ml	9	5.299-11.451	2.545-5.497
5ml	13.1	11.227-24.261	5.391-11.645
10ml	16.6	18.028-38.956	8.657-18.699
20ml	19	23.618-51.035	11.341-24.497
30ml	23	34.609-74.786	16.619-35.897
60ml (510 series)	29.14	55.554-120.044	26.677-57.621

* CE certified product based on request *

Laboratorial Syringe Pump

L0107 Series

Mainly used in laboratorial applications. Controller and drive unit are separated. The drive unit has syringe holder and clamp.

Specifications \ Model	TJ-1A/L0107-1A	TS-1A/L0107-1A, TS-1A-B/L0107-1A	TJ-2A/L0107-2A	TS-2A/L0107-2A, TS-2A-B/L0107-2A
Work mode	Infusion		Infusion, withdrawal, infusion/withdrawal, withdrawal/infusion, continuous	
Drive unit	1	1 to 4	1	1 to 4
Stroke of drive unit	70mm			
Pusher advance per microstep	0.165μm			
Linear speed	7.94μm/min-79.4mm/min (Flow rate=Linear speed * Section area of the barrel)			
Linear speed resolution	7.94μm/min			
Linear travel accuracy	≤±0.5% when travel ≥30% of drive unit stroke			
Linear force(max.)	>20N			
Syringe selection	Built-in syringe branches, sizes and IDs for selection			
Syringe user-defined	Can store four user-defined syringe IDs			
Flow rate calibration	Improve flow rate accuracy			
Running parameters setting	Parameters, such as dispensing volume, can be set by each channel. Or all channels use the parameters of the specified channel			
Start setting	Each drive unit can be started separately, simultaneously or according to each delay time			
Display setting	Display volume, flow rate or linear speed			
Power-off memory	Select keeping previous status or resetting parameters when powered on			
Fast forward/backward	Infuse or withdraw liquid at full speed			
Status signal output	2 output signals (OC gate signal) to indicate start/stop and direction			
Control signal input	3 input signals (TTL signal) to control start/stop, fast forward and fast backward			
Communication interface	RS485			
Controller dimensions (L×W×H)	170×108×65 (mm)	235×178×74 (mm)	170×108×65 (mm)	235×178×74 (mm)
Controller weight	0.5kg	0.8kg	0.5kg	0.8kg
Drive unit dimensions (L×W×H)	180×46×78 (mm)			
Drive unit weight	0.6kg			
Power supply	AC 90V-260V/10W	AC 90V-260V/40W	AC 90V-260V/10W	AC 90V-260V/40W
Operating temperature	0 to 40°C			
Relative humidity	<80%			

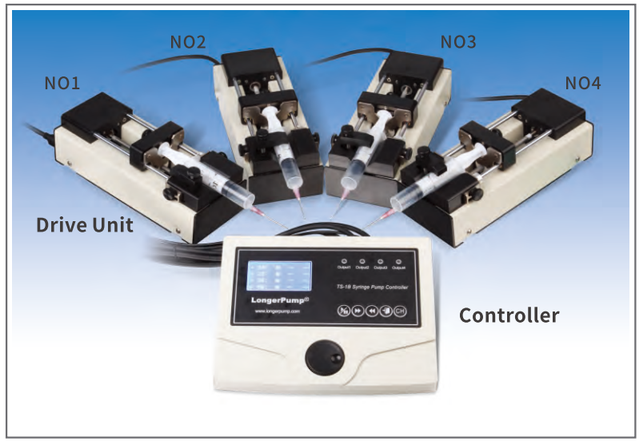
Controller Model(Product code, Language) /Drive Unit Model(Product code)	Syringe (μL)	Syringe Id(mm)	Flow Rate(nL/min-μL/min)
TJ-1A(05.03.10A, Chinese and English)/L0107-1A(05.03.00A) TJ-2A(05.03.11A, Chinese and English)/L0107-2A(05.03.01A) TS-1A(05.03.15A, Chinese)/L0107-1A(05.03.00A) TS-1A-B(05.03.15B, English)/L0107-1A(05.03.00A) TS-2A(05.03.16A, Chinese)/L0107-2A(05.03.01A) TS-2A-B(05.03.16B, English)/L0107-2A(05.03.01A)	5	0.35	0.764-7.64
	10	0.50	1.559-15.59
	25	0.80	3.991-39.91
	50	1.10	7.546-75.46
	100	1.60	15.96-159.6
	250	2.30	32.99-329.9
	500	3.25	65.87-658.7
	1000	4.61	132.5-1325

* CE certified product based on request *

Laboratorial Syringe Pump

TJ-3A/W0109-1B, TS-1B/W0109-1B

Mainly used in laboratorial applications.
Controller and drive unit are separated.



Specifications \ Model	TJ-3A/W0109-1B	TS-1B/W0109-1B, TS-1B-B/W0109-1B
Work mode	Infusion, withdrawal, infusion/withdrawal, withdrawal/infusion, continuous	
Drive unit	1	1 to 4
Stroke of drive unit	90mm	
Pusher advance per microstep	0.165μm	
Linear speed	7.94μm/min-79.4mm/min (Flow rate=Linear speed * Section area of the barrel)	
Linear speed resolution	7.94μm/min	
Linear travel accuracy	≤±0.5% when travel ≥30% of drive unit stroke	
Linear force(max.)	>90N	
Syringe selection	Built-in syringe branches, sizes and IDs for selection	
Syringe user-defined	Can store four user-defined syringe IDs	
Flow rate calibration	Improve flow rate accuracy	
Running parameters setting	Parameters, such as dispensing volume, can be set by each channel. Or all channels use the parameters of the specified channel	
Start setting	Each drive unit can be started separately, simultaneously or according to each delay time	
Display setting	Display volume, flow rate or linear speed	
Power-off memory	Select keeping previous status or resetting parameters when powered on	
Fast forward/backward	Infuse or withdraw liquid at full speed	
Status signal output	2 output signals (OC gate signal) to indicate start/stop and direction	
Control signal input	3 input signals (TTL signal) to control start/stop, fast forward and fast backward	
Communication interface	RS485	
Controller dimensions (L×W×H)	170×108×65 (mm)	235×178×74 (mm)
Controller weight	0.5kg	0.8kg
Drive unit dimensions (L×W×H)	245×100×95 (mm)	
Drive unit weight	1.3kg	
Power supply	AC 90V-260V/10W	AC 90V-260V/40W
Operating temperature	0 to 40°C	
Relative humidity	<80%	

Controller Model (Product code, Language)	Drive Unit Model (Product code)	Syringe (mL)	Syringe ID(mm)	Flow Rate (μL/min-mL/min)
TJ-3A (05.03.12A, Chinese and English) TS-1B (05.03.17A, Chinese) TS-1B-B (05.03.17B, English)	W0109-1B (05.03.02A)	1	4.72	0.139-1.39
		2	9.00	0.505-5.05
		5	13.10	1.07-10.7
		10	16.60	1.718-17.18
		20	19.00	2.251-22.51
		30	23.00	3.298-32.98
		60	29.14	5.295-52.95

* CE certified product based on request *

SYRINGE PUMP

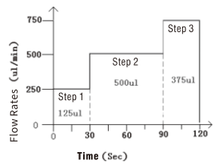
Laboratorial Syringe Pump

TJP-3A/W0109-1B

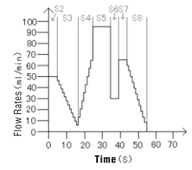
Mainly used in laboratorial applications. Controller and drive unit are separated. With the programmable function, you can customize complex infusion/withdrawal process, such as stepped infusion, combination constant speed and ramped speed infusion, trigger dispense or periodic dispense.

Work mode	Infusion, withdrawal, infusion/withdrawal, with drawal/infusion, continuous, programmable
Drive unit	1
Stroke of drive unit	90mm
Pusher advance per microstep	0.165μm
linear speed	7.94μm/min-79.4mm/min (Flow rate=Linear speed * Section area of the barrel)
Linear speed resolution	7.94μm/min
Linear travel accuracy	≤±0.5% when travel ≥30% of drive unit stroke
Linear force(max.)	>90N
Syringe selection	Built-in syringe branches, sizes and IDs for selection
Syringe user-defined	Can store four user-defined syringe IDs
Flow rate calibration	Improve flow rate accuracy
Running parameters setting	Parameters, such as dispensing volume, can be set by each channel. Or all channels use the parameters of the specified channel
Display setting	Display volume, flow rate or linear speed
Power-off memory	Select keeping previous status or resetting parameters when powered on
Fast forward/backward	Infuse or withdraw liquid at full speed
Status signal output	2 output signals (OC gate signal) to indicate start/stop and direction
Control signal input	Falling edge or TTL signal to control Start/stop
Communication interface	RS485
Controller dimensions (L×W×H)	170×108×65 (mm)
Controller weight	0.5kg
Drive unit dimensions (L×W×H)	245×100×95 (mm)
Drive unit weight	1.3kg
Power supply	AC 90V-260V/10W
Operating temperature	0 to 40°C
Relative humidity	<80%

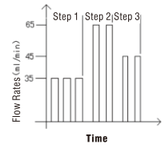
TJP-3A/W0109-1B
Programmable Functions



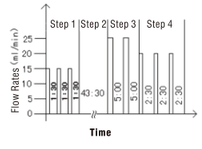
1. Multi-step uniform speed (profile) infusion



2. Complicated curve of Uniform Speed & Uneven Speed



3. Trigger Dispense



4. Periodic Dispense

Controller Model (Product Code)	Drive Unit Model (Product Code)	Syringe (mL)	Syringe ID(mm)	Flow Rate (μL/min-mL/min)
TJP-3A(05.03.13A)	W0109-1B(05.03.02A)	1	4.72	0.139-1.39
		2	9.00	0.505-5.05
		5	13.10	1.07-10.7
		10	16.60	1.718-17.18
		20	19.00	2.251-22.51
		30	23.00	3.298-32.98
		60	29.14	5.295-52.95

* CE certified product based on request *

SYRINGE PUMP

Laboratorial Syringe Pump

TJ-4A/SL0104-1A, TJ-4A/SL0107-1A

TJ-4A/SL0104-1A

Mainly used in veterinary medicine applications for intracellular injections or biological chemical dosing with small volume in picoliters.

Drive unit has small size and lightweight, can be mounted on stereotaxic apparatus and micromanipulator.

Specifications \ Model	TJ-4A/SL0104-1A	TJ-4A/SL0107-1A
Work mode	Infusion, withdrawal, infusion/withdrawal, withdrawal/infusion, continuous	
Drive unit	1	
Stroke of drive unit	40mm	70mm
Pusher advance per step	3.048μm	
Linear speed	3.048μm/min-128.016mm/min(Flow rate=linear speed * section area of the barrel)	
Linear speed resolution	3.048μm/min	
Linear travel accuracy	≤±0.5%(when travel≥30% drive unit stroke)	
Linear force (max.)	>10N	
Syringe selection	Built-in syringe branches, sizes and IDs for selection	
Syringe user-defined	Can store four user-defined syringe IDs	
Flow rate calibration	Improve flow rate accuracy	
Running parameters setting	Parameters, such as dispensing volume, dispensing time, can be set through controller	
Display setting	Display volume, flow rate or linear speed	
Power-off memory	Select keeping previous status or resetting parameters when powered on	
Fast forward/ backward	Infuse or withdraw liquid at full speed	
Status signal output	2 output signals (OC gate signal) to indicate start/stop and direction	
Control signal input	3 input signals (TTL signal) to control start/stop, fast forward and fast backward	
Communication interface	RS485	
Controller dimensions (L×W×H)	170×108×65(mm)	
Controller weight	0.5kg	
Drive unit dimensions (L×W×H)	130×35×34(mm)	160×35×34(mm)
Drive unit weight	258g	289g
Power supply	AC 90V-260V/10W	
Operating temperature	0 to 40°C	
Relative humidity	<80%	

Controller Model(Product Code)	Drive Unit Model(Product Code)	Syringe(μL)	Syringe ID(mm)	Flow Rate(nL/min-μL/min)
TJ-4A (05.03.14A)	SL0104-1A (05.03.03A)	0.5	0.15	0.054-2.26
		1	0.20	0.096-4.02
		2	0.35	0.293-12.32
		5	0.50	0.598-25.1
		10	0.80	1.53-64.35
		25	1.10	2.90-121.66
		50	1.46	5.08-213.3
	SL0107-1A (05.03.04A)	0.5	0.10	0.024-1.0
		1	0.15	0.054-2.26
		2	0.20	0.096-4.02
		5	0.35	0.293-12.32
		10	0.50	0.598-25.1
		25	0.80	1.53-64.35
		50	1.10	2.90-121.66
		100	1.46	5.08-213.3

SYRINGE PUMP

Laboratorial Syringe Pump

LSP Series

Mainly used in laboratorial applications.

Integrated structure.

CE

LSP01-1A/2A

LSP02-1B

LSP02-2A

LSP04-1A

LSP10-1B

Specifications \ Model	LSP01-2A	LSP02-2A	LSP01-1A	LSP04-1A	LSP02-1B	LSP10-1B
Work mode	Infusion				Infusion, withdrawal, infusion/withdrawal, withdrawal/infusion, continuous	
Channel	1	2	1	4	2	10
Stroke of pump	140mm					
Pusher advance per microstep	0.03125μm		0.156μm			
Linear speed	1μm/min-13mm/min		5μm/min-65mm/min	5μm/min-130mm/min(Flow rate=Linear speed * Section area of the barrel)		
Linear speed resolution	1μm/min		5μm/min			
Linear travel accuracy	≤±0.5% when travel ≥30% of pump stroke					
Linear force(max.)	>90N	>290N	>90N	>180N		
Syringe selection	Built-in syringe branches, sizes and IDs for selection					
Syringe user-defined	Can store four user-defined syringe IDs					
Flow rate calibration	Improve flow rate accuracy					
Running parameters setting	Infusion volume, infusion time, etc				Infusion/Withdrawal volume, infusion time, withdrawal time, pause time, etc	
Display setting	Display volume, flow rate or linear speed					
Power-off memory	Storing the running parameters automatically					
Status signal output	2 output signals (OC gate signal) to indicate start/stop and direction					
Control signal input	Falling edge or TTL signal to control Start/stop					
Communication interface	RS485					
Dimensions (L×W×H)	280×210×140(mm)			280×250×140(mm)		280×330×140(mm)
Weight	3.6kg			4.5kg	4.3kg	5.3kg
Power supply	AC 90V-260V/15W			AC 90V-260V/20W		
Operating temperature	0 to 40°C					
Relative humidity	<80%					

Controller Model (Product Code)		LSP01-2A(05.03.41A) LSP02-2A(05.03.47A)	LSP01-1A(05.03.40A)	LSP04-1A(05.03.45A)	LSP02-1B(05.03.44A)	LSP10-1B(05.03.46A)
Syringe	Syringe ID(mm)	Flow Rate(μL/min - mL/min)				
10uL	0.50	0.0002-0.0026	0.001-0.0128	0.001-0.0255	0.001-0.0255	0.001-0.0255
25uL	0.80	0.0005-0.0065	0.0025-0.0327	0.0025-0.0653	0.0025-0.0653	0.0025-0.0653
50uL	1.10	0.0095-0.0124	0.0048-0.0618	0.0048-0.1235	0.0048-0.1235	0.0048-0.1235
100uL	1.60	0.002-0.026	0.0101-0.1307	0.0101-0.2614	0.0101-0.2614	0.0101-0.2614
250uL	2.30	0.0042-0.054	0.0208-0.2701	0.0208-0.5401	0.0208-0.5401	0.0208-0.5401
500uL	3.25	0.0083-0.1078	0.0415-0.5392	0.0415-1.0784	0.0415-1.0784	0.0415-1.0784
1mL	4.72	0.0175-0.2275	0.0875-1.1373	0.0875-2.2747	0.0875-2.2747	0.0875-2.2747
2mL	9.00	0.0636-0.827	0.3181-4.1351	0.3181-8.2702	0.3181-8.2702	0.3181-8.2702
5mL	13.10	0.1348-1.7522	0.6739-8.7608	0.6739-17.522	0.6739-17.522	0.6739-17.522
10mL	16.60	0.2164-2.8135	1.0821-14.068	1.0821-28.135	1.0821-28.135	1.0821-28.135
20mL	19.00	0.2835-3.6859	1.4176-18.429	-	1.4176-36.859	-
30mL	23.00	0.4155-5.4012	2.0774-27.006	-	2.0774-54.012	-
60mL	29.14	0.6669-8.6699	3.3346-43.349	-	3.3346-86.699	-

* CE certified product based on request *

SYRINGE PUMP

Laboratorial Systematic Syringe Pump

LSP01-3A, LSP02-2B

Mainly used in Lab applications.
Excellent EMC performance, ESD≥Level IV (IEC 61000-4-2)

Specifications \ Model	LSP01-3A	LSP02-2B
Work mode	Infusion	Infusion, withdrawal, infusion/withdrawal, withdrawal/infusion, continuous
Channel	1	2
Stroke of pump	140mm	
Pusher advance per microstep	0.156μm	
Linear speed	5μm/min-65mm/min	5μm/min-130mm/min(Flow rate=Linear speed * Section area of the barrel)
Linear speed resolution	5μm/min	
Linear travel accuracy	≤±0.5% when travel≥30% of pump stroke	
Linear force(max.)	>90N	>180N
Syringe selection	Built-in syringe branches, sizes and IDs for selection	
Syringe user-defined	Can store four user-defined syringe IDs	
Flow rate calibration	Improve flow rate accuracy	
Running parameters setting	Infusion volume, infusion time, etc	Infusion/Withdrawal volume, infusion time, withdrawal time, pause time, etc
Display setting	Display volume, flow rate or linear speed	
Power-off memory	Storing the running parameters automatically	
Status signal output	2 output signals (OC gate signal) to indicate start/stop and direction	
Control signal input	Falling edge or TTL signal to control Start/stop	
Communication interface	RS485	
Dimensions (L×W×H)	280×210×140 (mm)	280×250×140 (mm)
Weight	3.6kg	4.3kg
Power supply	AC 196V-240V/20W	AC 196V-240V/40W
Operating temperature	0 to 40°C	
Relative humidity	<80%	

Controller Model (Product Code)		LSP01-3A (05.03.40B)	LSP02-2B (05.03.44B)
Syringe	Syringe ID(mm)	Flow Rate(μL/min - mL/min)	
10μL	0.50	0.001-0.0128	0.001-0.0255
25μL	0.80	0.0025-0.0327	0.0025-0.0653
50μL	1.10	0.0048-0.0618	0.0048-0.1235
100μL	1.60	0.0101-0.1307	0.0101-0.2614
250μL	2.30	0.0208-0.2701	0.0208-0.5401
500μL	3.25	0.0415-0.5392	0.0415-1.0784
1mL	4.72	0.0875-1.1373	0.0875-2.2747
2mL	9.00	0.3181-4.1351	0.3181-8.2702
5mL	13.10	0.6739-8.7608	0.6739-17.522
10mL	16.60	1.0821-14.068	1.0821-28.135
20mL	19.00	1.4176-18.429	1.4176-36.859
30mL	23.00	2.0774-27.006	2.0774-54.012
60mL	29.14	3.3346-43.349	3.3346-86.699

* CE certified product based on request *

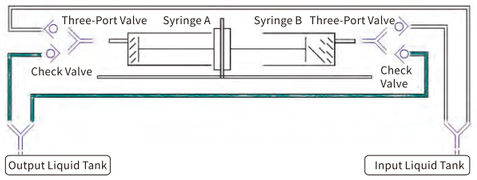
Laboratorial Systematic Syringe Pump

LSP01-1C

Mainly used in laboratorial applications.
High accuracy, suitable for continuous transferring of low-flow liquid.

Work mode	Infusion and withdrawal synchronous and continuous
Channel	1
Stroke of pump	140mm
Pusher advance per microstep	0.156um
Linear speed	5um/min-65mm/min
Linear speed resolution	5um/min
Linear travel accuracy	≤±0.5% when travel ≥30% of pump stroke
Linear force(max.)	>90N
Syringe selection	Built-in syringe branches, sizes and IDS for selection
Syringe user-defined	Can store four user-defined syringe IDS
Flow rate calibration	Improve flow rate accuracy
Running parameters setting	Dispensing volume, infusion time, etc.
Display setting	Display volume, flow rate or linear speed
Power-off memory	Storing the running parameters automatically
Status signal output	1 OC gate signal to indicate start/stop
Control signal input	Falling edge or TTL signal to control start/stop
Communication	RS485
Dimensions (L×W×H)	280×210×140(mm)
Weight	3.6kg
Power supply	AC 90V-260V/15W
Operating temperature	0 to 40°C
Relative humidity	<80%

LSP01-1C Tubing Connection Illustration



Model	Product Code	Syringe	Syringe ID(mm)	Flow Rate(μL/min-mL/min)
LSP01-1C	05.03.42A	10uL	0.50	0.001-0.0128
		25uL	0.80	0.0025-0.0327
		50uL	1.10	0.0048-0.0618
		100uL	1.60	0.0101-0.1307
		250uL	2.30	0.0208-0.2701
		500uL	3.25	0.0415-0.5392
		1mL	4.72	0.0875-1.1373
		2mL	9.00	0.3181-4.1351
		5mL	13.10	0.6739-8.7608
		10mL	16.60	1.0821-14.068

* CE certified product based on request *

Laboratorial High-pressure Syringe Pump

LSP01-1BH

Mainly used in laboratorial applications. Suitable for viscous and high pressure liquid transferring.

Work mode	Infusion, withdrawal, infusion/withdrawal, withdrawal/infusion, continuous
Channel	1
Stroke of pump	140mm
Pusher advance per microstep	0.156μm
Linear speed	5μm/min-130mm/min
Linear speed resolution	5μm/min
Linear travel accuracy	⩽±0.5% when travel ⩾30% of pump stroke
Linear force(max.)	＞450N
Syringe selection	Built-in syringe branches, sizes and IDs for selection
Syringe user-defined	Can store four user-defined syringe IDs
Flow rate calibration	Improve flow rate accuracy
Running parameters setting	Infusion volume, infusion time, withdrawal time, pause time, etc
Display setting	Display volume, flow rate or linear speed
Power-off memory	Storing the running parameters automatically
Status signal output	2 output signals (OC gate signal) to indicate start/stop and direction
Control signal input	Falling edge or TTL signal to control Start/stop
Communication interface	RS485
Dimensions (L×W×H)	280×250×140 (mm)
Weight	6.3kg
Power supply	AC 90V-260V/25W
Operating temperature	0 to 40°C
Relative humidity	＜80%

Model	Product Code	Syringe(mL)	Syringe ID(mm)	Flow Rate (μL/min-mL/min)	Outlet Pressure (Mpa)
LSP01-1BH	05.03.43A	2.5	4.79	0.0901-2.3426	19.48
		8	9	0.3181-8.2702	7.07
		20	19.05	1.4251-37.053	1.58
		50	28.6	3.2121-83.5152	0.56
		100	34.9	4.7831-124.361	0.37

* CE certified product based on request *

Industrial Syringe Pump

SP1-CX, MSP1-CX

- Mainly used in OEM equipment and instruments, especially for lab automation systems and IVD application.
- Rotating valve, and misc. accessories available.
- RS485, RS232 or CAN bus communication interface.

	SP1-CX	MSP1-CX
Main Spec		
Accuracy	⩽1.0 % (syringe ⩾1 mL)	
Precision	CV⩽0.05% at full stroke (with syringe ⩾ 500uL)	CV⩽0.05% at full stroke (with syringe ⩾1mL)
Wetted material	Borosilicate glass, PTFE, PFA, CTFE, ETFE, UHMW-PE	
Dimension(L×W×H)	114mm x 65mm x 254mm	110mm x 44.4mm x127mm
Weight	2.15 kg	1.0 kg
Power supply	DC 24V, 1.5A (peak)	
Syringe and Drive		
Syringe fitting	1/4"-28 thread	
Syringe	50uL, 100uL, 250uL, 500uL, 1mL, 2.5mL, 5mL, 10mL, 25mL	50uL, 100uL, 250uL, 500uL, 1mL, 2.5mL, 5mL
Syringe material	Borosilicate glass, stainless steel plunger with PTFE coating, PTFE or UHMW-PE plunger tip	
Resolution (standard mode)	6000 steps with 0.01mm in 1 step	3000 steps with 0.01mm in 1 step
Resolution (microstep mode)	48000 microsteps with 1.25um in 1 microstep	48000 microsteps with 0.625um in 1 microstep
Travel	60mm	30mm
Time for full stroke	1.26s-1200s	
Drive system	Ball screw drive with optical encoder	
Valve & Valve Drive		
Turn Time	⩽250ms between adjacent ports	
Valve options	Standard: 3-port valve, optional: 3-port distibution valve, 4-port valve, T-valve, Y-block	
Max pressure	0.68MPA	
Fitting	1/4"-28 thread	
Communication		
Interface	RS485, RS232, CAN bus, external control input and output	
Protocol	Data terminal, OEM protocol (serial) or CAN	
Baud rate	RS485 or RS232: 9600bps or 38400bps CAN bus: 100 KB, 125 KB 250 KB, 500 KB or 1MB	
Format	Data bit: 8; parity: none; stop bit: 1; half duplex (RS232/485)	
Firmware		
Topology group	Up to 15 pumps in one group, support group control and individually addressed	
Upgrade firmware online	"One Click" by customer through PC Utility	
Homing Algorithm	Plunger home position is identified by motor stall, which will reduce the dead volume of the system	
Halt function	For better interactive control, "h" command is used to halt execution of the command string during plunger movement. To resume execution with "R" or "r" command	
Microstep mode	Set microstep mode for smoother motion with 48000 microsteps per stroke, 1/8 microstepping or 1/16 microstepping	
Programmable parameter	Programmable ramps, cut-off velocity, plunger speeds, backlash compensation, programmable work-flow command set , delays and loops, terminate moves, diagnostics, absolute and relative positions	
Environmental		
Operating temperature	Recommended: 15°C-40°C , use low temperature syringe for low temperature application	
Operating Humidity	＜80% RH, no condensation	
Storage temperature	-20°C-65°C	
Storage Humidity	＜80% RH, no condensation	

* CE certified product based on request *

Industrial Syringe Pump

MSP1-D1, MSP1-E1

Mainly used in OEM equipment and instruments, especially for automation systems.
Rotating valve, panel installation, RS485 or RS232 communication control.

Specifications \ Model	MSP1-D1	MSP1-E1
Accuracy	≤1%(rated stroke)	
Precision	Repeatability≤0.5%(rated stroke)	
Rated stroke (steps)	30mm(1000 steps)	
Linear speed	0.5mm/s-15mm/s	
Time for rated stroke	2s-60s	
Control resolution	0.03mm(1 step)	
Transmission mechanism	Rack and pinion drive	
Plunger drive force (max.)	≥68N	
Secondary plunger drive force (max.)	≥34N	-
Syringe	500μL，1mL，2.5mL，5mL	
Valve	3 port 120°	3-way solenoid valve
Valve plug turn time	≤280ms between adjacent ports	≤100ms
Wetted material	Borosilicate glass, PTFE, PCTFE	Borosilicate glass, PTFE, PEEK
Max. pressure	0.68Mpa	0.1Mpa
Tubing fitting	1/4"-28 thread	
Syringe fitting	1/4"-28 thread	
Signal input	1 input signals (TTL signal, drive current > 16mA)	
Signal output	1 output signals (OC gate signal) to indicate the working status	
Communication interface	RS485 or RS232	
Bit rate	9600bps or 38400bps	
Pump ID setting	Set the pump ID through BCD dial switch (0 to E corresponding to pump address 1-15)	
Pump parameters setting	Set the parameters through DIP switch	
Dimension (L×W×H)	100×65×127(mm)	
Power supply	DC 24V/1.5A	
Operating temperature	15 to 40°C	
Relative humidity	<80%	
Weight	0.9kg	

Industrial Multi-Channel Syringe Pump

SP4-D1, SP4-E1

Mainly used in OEM equipment and instruments, especially for automation systems.
Four channels synchronously running, high strength housing, panel or soleplate installation, RS485 or RS232 communication control.

Specifications \ Model	SP4-D1	SP4-E1
Accuracy	≤1% (rated stroke)	
Precision	Repeatability≤0.5% (rated stroke)	
Rated stroke (steps)	60mm (1000 steps)	
Linear speed	0.03mm/s-24mm/s	
Time for rated stroke	2.5s-2000s	
Control resolution	0.06mm (1 step)	
Transmission mechanism	Synchronous belt mechanism	
Plunger drive force (max.)	≥68N for four channels	
Syringe	50μL, 100μL, 250μL, 500μL, 1mL, 2.5mL, 5mL	
Valve	No	3-way solenoid valve
Valve plug turn time	-	≤100ms
Wetted material	Borosilicate glass, PTFE, PPS	Borosilicate glass, PTFE, PEEK
Max. pressure	0.68 MPa (valve)	0.1MPa
Tubing fitting	1/4” -28 thread	
Syringe fitting	1/4” -28 thread	
Signal input	2 input signals (TTL signal, drive current >16mA) to restart the pump after pause	
Signal output	3 output signals (OC gate signal) to indicate the working status	
External Solenoid valve control	Can control 4 pcs of independent 24VDC solenoid valve. The rated drive signal for each valve is DC24V/200mA	With built-in solenoid valve
Communication interface	RS485 or RS232	
Bit rate	9600bps or 38400bps	
Pump ID setting	Set the pump ID through BCD dial switch	
Pump parameters setting	Set the parameters through DIP switch	
Dimension (L×W×H)	140×167×261.5 (mm)	
Power supply	DC 24V/1.5A	
Operating temperature	15 to 40°C	
Relative humidity	<80%	
Weight	2.4kg	