


FLOM Products Catalog



VER. 7.0
SPRING 2019

Fluid Control Systems and Parts

(for HPLC and Industrial Use)

Plunger pumps

Valves

Degassing units

Liquid Level Sensor

Plumbing
(Fittings, Joints and Tubings)



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PUMPS

VALVES

DEGASSING UNITS

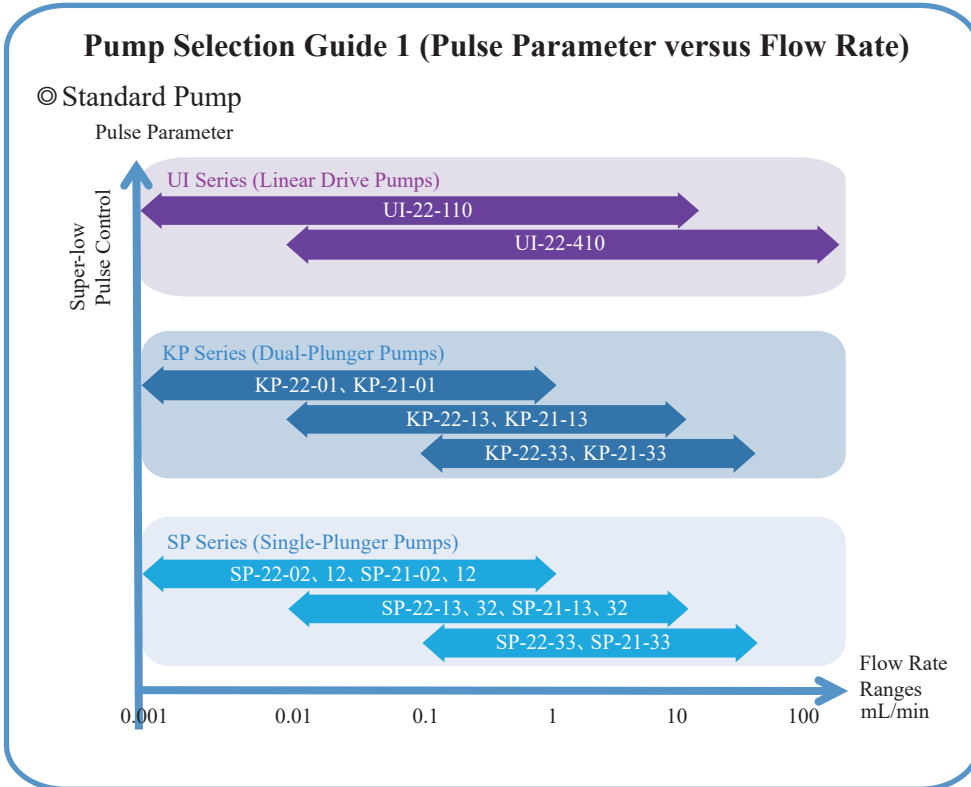
LIQUID LEVEL SENSOR

PLUMBING

OTHER PARTS

Guide for Plunger Pump Selection

FLOM Plunger Pumps are compact and easy to use. Use the guide below to select the pump that is right for your application, whether handling high viscosity solvents, bubble-sensitive situations, super-low pulsation and high throughput or high pressure applications. Also match the pump head material to the application at hand, whether SUS (stainless steel), PEEK (polyetheretherketone), plastic or PCTFE.



Pump Selection Guide 2 (Pump Head Material)

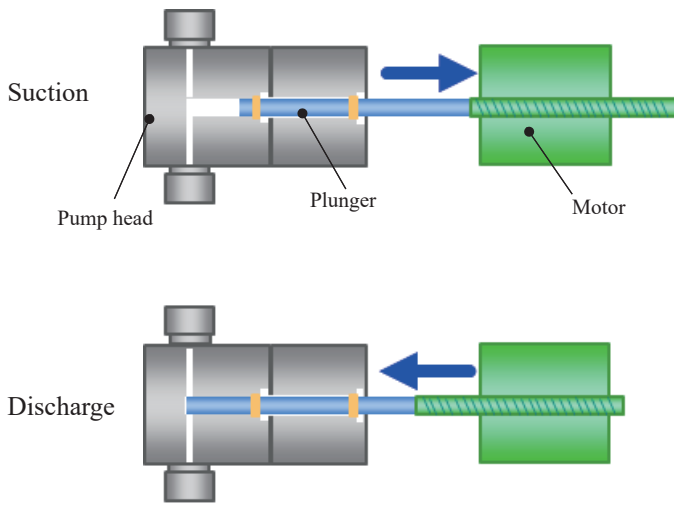
Pump Head Material	PCTFE	PEEK (Polyetheretherketone)	SS (Stainless Steel)
Application	Sulfuric Acid Solutions	Saline Solutions, Ionic Component Analysis	Organic Solvents, etc.
Max Pressure	2 MPa	20 MPa	35 MPa

Plunger Pump Design and Features

FLOM Plunger Pumps come in two configurations: linear drive and cam drive.

PUMP UNIT

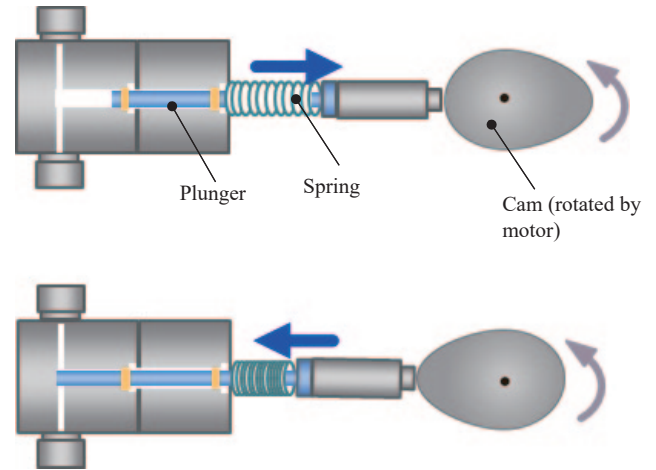
Linear Drive (UI Series)



In a linear drive, the plunger moves along the same axis as the motor. In the graph above, the plunger moves left/right.

- Since the stroke is long, suction is greatly increased.
- With the elimination of vertical play, abrasion on the plunger is reduced.
- Highly wear-resistant plunger seals drastically reduce seal leaks even with highly volatile liquids, leading to longer pump life.

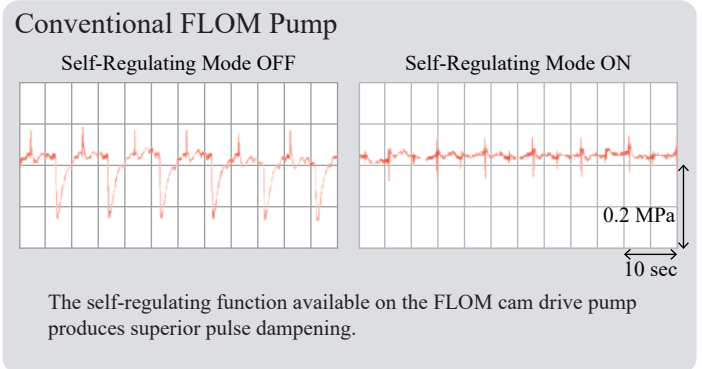
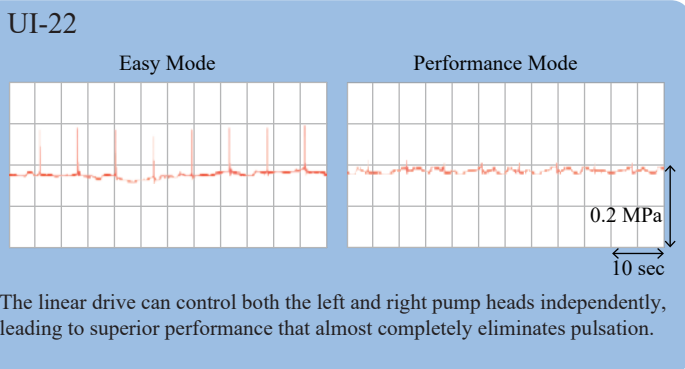
Cam Drive (AI, KP, SP Series)



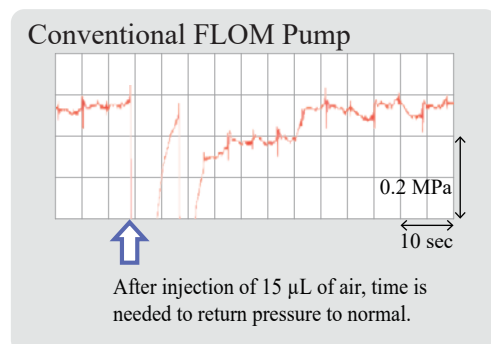
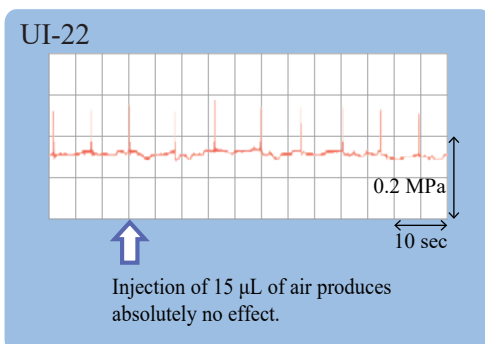
In this configuration, a cam is used to translate the motor's circular motion into linear motion. The forward motion of the cam supplies the energy needed by the spring for the return motion.

- Since a portion of the energy used to push the plunger is needed to compress the spring, a stronger motor is required.
- The movement of the cam produces vertical play causing wear, which requires periodic replacement of the plunger.

• Comparison of Pulsation with a Conventional Pump



• Air Mixture Tests





Intelligent Pump
UI-22-110, SS, PEEK, PCTFE

Linear Drive Pulse Control Intelligent Pump UI-22 series

Combines High Precision Flow with Ease of Use

Features

- Reduces pulsation to an absolute minimum, making super low pulsation flow possible
- Problems with bubbles greatly reduced
- Plunger seal life extended
- Limit switches for both high and low pressures
- Space-saving compact design
- 2 or more pumps can be externally controlled thru RS-232C interface
- Choose either PEEK or Stainless Steel to match solvent used

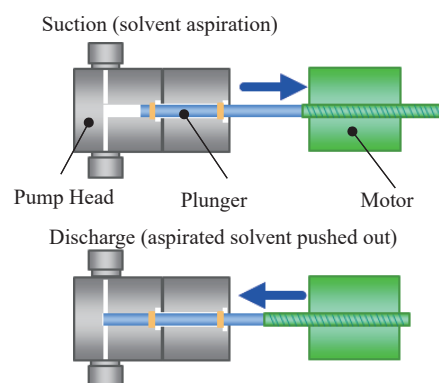
PUMP UNIT

Product name	Intelligent Pump					
Part number	UI-22-110			UI-22-410		
Pump head material	SS	PEEK	PCTFE	SS	PCTFE	
Max pressure *1	35 MPa	20 MPa	2 MPa	5 MPa	2 MPa	
Flow rate range	0.001 ~ 9.999 mL/min			0.01 ~ 99.99 mL/min		
Flow per stroke	80 µL			708 µL		
Plunger stroke	10 mm					
Flow accuracy	< 0.3 %					
Features	Active pulse reduction, Flow volume calibration, Upper and lower pressure limiter					
Pressure accuracy	< 5 %					
Wetted materials	SS type: SS, Sapphire, Ruby, PTFE, PCTFE PEEK type: PEEK, Sapphire, Ruby, PTFE, PCTFE PCTFE type: PCTFE, Sapphire, Ruby, PTFE, ETFE					
Remote control	Input: Pump on/off, Output: Error signal					
Communication	RS232C					
Dimensions	144 (H) x 105 (W) x 240 (D) mm					
Weight	Approx. 5.6 Kg					
Order code	SLP-P509	SLP-P514	SLP-P517	SLP-P511	SLP-P510	

*1: Maximum pressure is only sustained intermittently. Continuous pump operation at maximum pressure cannot be guaranteed.

Note: The specifications and product design may change without prior notice.

Linear Drive Design



The UI-22 pump uses a linear driver mechanism in which the plunger moves in line with the motor's axis. Because aspirated air can be easily discharged, and with the seal suffering almost no wear, tiny leaks from the seal are eliminated, which means that even highly volatile solvents can be efficiently pumped.

NEW Automatic Back Pressure Regulator Auto BPR BP-11 Series For use with UI-22 Series

Features

- Provide consistent pressure with tracking variable pump pressure in real time
- For use with UI-22 Series Intelligent Pump



Auto BPR
BP-11, PCTFE

Product name	Auto BPR	
Part number	BP-11S	BP-11D
Wetted material	SUS, PFA	PCTFE, PFA
Fluid path diameter	0.6mm	
Pressure range	0.10~5.00MPa	
Flow rate	0.1~100ml/min	
Pressure control range*1	0.5~5.00MPa	
Control accuracy	±0.1MPa	
Pressure signal	uses pressure signal from UI-22 [DC1-5V]	
Remote control	RS232C, RS485, START-IN, READY-OUT	
Dimensions	144(W)×79×(H)×240(D) mm excluding protuberances	
Weight	Approx. 2.7kg	
Order Code	SBP-F012	SBP-F019

*1: When using distilled water or methanol, settable pressure is 0.5~5.0MPa, settable flow rate is 0.1~50.0ml/min.
Note: for flow rates outside the 0.1~50.0ml range, contact FLOM.

Dual Pump
KP-22-13, SSDual Pump
KP-22-13, PEEKDual Pump
KP-22-13, PCTFE

Medium to High Pressure Pumps Dual Pump KP-22 Series

A general-use pump with pressure sensor

Features

- High precision and stable flow volumes
- Equipped with pulse control for reduced fluctuations in pressure
- Real-time display of pressure
- Metered flow mode allows setting to desired flow volumes
- Upper and lower pressure limiter
- RS-232C interface for computer control
- Variety of seals to choose from depending on solvent
- Choose from 3 different models to match desired flow ranges
- Choose from 3 different pump head materials

Product name	Dual Pump with pressure sensor								
Part number	KP-22-01			KP-22-13			KP-22-33		
Pump head material	SS	PEEK	SS	PEEK	PCTFE	SS	PEEK	PCTFE	
Max pressure *1	30 MPa	20 MPa	30 MPa	20 MPa	2 MPa	5 MPa	5 MPa	2 MPa	
Flow rate range *2	0.001 ~ 1.000 mL/min			0.01 ~ 10.00 mL/min			0.1 ~ 50.0 mL/min		
Flow per stroke	4 µL			32 µL			154 µL		
Flow accuracy	± 0.3 %								
Features	Pulse control *3, Flow volume calibration, Upper and lower pressure limiter Constant pressure flow *4, Set volume dispensing								
Pressure accuracy	± 5 %								
Wetted materials	SS type: SS, Sapphire, Ruby, PTFE, PCTFE PEEK type: PEEK, Sapphire, Ruby, PTFE, PCTFE PCTFE type: PCTFE, Sapphire, Ruby, PTFE, ETFE								
Remote control	Input: Pump on/off, Output: Error signal								
Communication	RS232C								
Dimensions	144 (H) x 79 (W) x 285 (D) mm								
Weight	SS type: 4.3 kg, PEEK and PCTFE type: 3.8 kg								
Order code	SDP-P1081	SDP-P1080	SDP-P1077	SDP-P1076	SDP-P1114	SDP-P1079	SDP-P1078	SDP-P1111	

*1: Maximum pressure is only sustained intermittently. Continuous pump operation at maximum pressure cannot be guaranteed.

*2: The unit cannot run continuously at maximum flow rate.

*3: Pulse control is activated below the flow pressure of 5 MPa.

*4: Constant pressure flow mode adjusts the flow rate in real time to stabilize the pressure at the set range.

Note: The specifications and product design may change without prior notice.

Dual Pump
KP-21-13, SSDual Pump
KP-21-13, PEEK

Medium to High Pressure Pumps Dual Pump KP-21 Series

A general-use pump without pressure sensor

Features

- High precision and stable flow volumes
- RS-232C interface for computer control
- Variety of seals to choose from depending on solvent
- Choose from 3 different models to match desired flow ranges
- Choose from 2 different pump head materials

Product name	Dual Pump without pressure sensor					
Part number	KP-22-01		KP-22-13		KP-22-33	
Pump head material	SS	PEEK	SS	PEEK	SS	PEEK
Max pressure *1	30 MPa	20 MPa	30 MPa	20 MPa	5 MPa	5 MPa
Flow rate range *2	0.001 ~ 1.000 mL/min		0.01 ~ 10.00 mL/min		0.1 ~ 50.0 mL/min	
Flow per stroke	4 µL		32 µL		154 µL	
Flow accuracy	± 0.3 %					
Features	Flow volume calibration, Set volume dispensing					
Pressure accuracy	-					
Wetted materials	SS type: SS, Sapphire, Ruby, PTFE, PCTFE PEEK type: PEEK, Sapphire, Ruby, PTFE, PCTFE					
Remote control	Input: Pump on/off, Output: Error signal					
Communication	RS232C					
Dimensions	144 (H) x 79 (W) x 285 (D) mm					
Weight	Approx. 3.4 kg					
Order code	SDP-P1087	SDP-P1086	SDP-P1083	SDP-P1082	SDP-P1085	SDP-P1084

*1: Maximum pressure is only sustained intermittently. Continuous pump operation at maximum pressure cannot be guaranteed.

*2: The unit cannot run continuously at maximum flow rate.

Note: The specifications and product design may change without prior notice.



PCS Pump
SP-22-13, SS

PCS Pump
SP-22-13, PEEK

Single Plunger Pumps PCS Pump SP-22 Series

Single plunger pump equipped with pressure sensor

Features

- Low-cost, simple to operate single plunger pump
- Equipped with pulse reduction mechanism (quick return mode)
- Real-time pressure display
- Upper pressure limiter
- Convenient precision metered solvent volume dispensing
- Choose from 5 different models to match desired flow ranges

Product name	PCS Pump with pressure sensor									
Part number	SP-22-02		SP-22-12		SP-22-13		SP-22-32		SP-22-33	
Pump head material	SS	PEEK	SS	PEEK	SS	PEEK	SS	PEEK	SS	PEEK
Max pressure *1	20 MPa	20 MPa	20 MPa	20 MPa	10 MPa	10 MPa	5 MPa	5 MPa	2 MPa	2 MPa
Flow rate range *2	0.001 ~ 1.000 mL/min		0.01 ~ 2.00 mL/min		0.1 ~ 5.0 mL/min		0.1 ~ 10.0 mL/min		0.1 ~ 50.0 mL/min	
Flow per stroke	8 µL		16 µL		32 µL		77 µL		154 µL	
Stroke length	2 mm		2 mm		4 mm		2 mm		4 mm	
Flow accuracy	± 0.5 %									
Features	Pulse reduction *3, Flow volume calibration, Upper and lower pressure limiter, Constant pressure flow *4, Set volume dispensing									
Pressure accuracy	± 5 %									
Wetted materials	SS type: SS, Sapphire, Ruby, PTFE, PCTFE PEEK type: PEEK, Sapphire, Ruby, PTFE, PCTFE									
Remote control	Input: Pump on/off, Output: Error signal									
Communication	RS232C									
Dimensions	144 (H) x 79 (W) x 285 (D) mm									
Weight	Approx. 3.0 kg									
Order code	SSP-P3062	SSP-P3061	SSP-P3064	SSP-P3063	SSP-P3066	SSP-P3065	SSP-P3068	SSP-P3067	SSP-P3070	SSP-P3069

*1: Maximum pressure is only sustained intermittently. Continuous pump operation at maximum pressure cannot be guaranteed.

*2: The unit cannot run continuously at maximum flow rate.

*3: Pulse reduction does not imply that pulses will be eliminated completely.

*4: Constant pressure flow mode adjusts the flow rate in real time to stabilize the pressure at the set range.

Note: The specifications and product design may change without prior notice.



PCS Pump
SP-21-13, SS

PCS Pump
SP-21-13, PEEK

Single Plunger Pumps PCS Pump SP-21 Series

Single plunger pump equipped without pressure sensor

Features

- Low-cost, simple to operate single plunger pump
- Equipped with pulse reduction mechanism (quick return mode)
- Convenient precision metered solvent volume dispensing
- RS-232C interface for computer control
- Choose from 5 different models to match desired flow ranges
- Choose either SS or PEEK pump head materials

Product name	PCS Pump without pressure sensor									
Part number	SP-21-02		SP-21-12		SP-21-13		SP-21-32		SP-21-33	
Pump head material	SS	PEEK	SS	PEEK	SS	PEEK	SS	PEEK	SS	PEEK
Max pressure *1	20 MPa	20 MPa	20 MPa	20 MPa	10 MPa	10 MPa	5 MPa	5 MPa	2 MPa	2 MPa
Flow rate range *2	0.001 ~ 1.000 mL/min		0.01 ~ 2.00 mL/min		0.1 ~ 5.0 mL/min		0.1 ~ 10.0 mL/min		0.1 ~ 50.0 mL/min	
Flow per stroke	8 µL		16 µL		32 µL		77 µL		154 µL	
Stroke length	2 mm		2 mm		4 mm		2 mm		4 mm	
Flow accuracy	± 0.5 %									
Features	Pulse reduction *3, Set volume dispensing *4									
Pressure accuracy	-									
Wetted materials	SS type: SS, Sapphire, Ruby, PTFE, PCTFE PEEK type: PEEK, Sapphire, Ruby, PTFE, PCTFE									
Remote control	Input: Pump on/off, Output: Error signal									
Communication	RS232C									
Dimensions	144 (H) x 79 (W) x 285 (D) mm									
Weight	Approx. 3.0 kg									
Order code	SSP-P3052	SSP-P3051	SSP-P3054	SSP-P3053	SSP-P3056	SSP-P3055	SSP-P3058	SSP-P3057	SSP-P3060	SSP-P3059

*1: Maximum pressure is only sustained intermittently. Continuous pump operation at maximum pressure cannot be guaranteed.

*2: The unit cannot run continuously at maximum flow rate.

*3: Pulse reduction does not imply that pulses will be eliminated completely.

*4: The range of settable volume is 0.01~1000 mL or 0.1~1000 mL, depending on the model.

Note: The specifications and product design may change without prior notice.