

# FLOM Products Catalog

2020.VER. 8.2



## High Precision Fluid Control Devices and Components

Plunger Pumps  
Switching Valves  
Degassing Units  
Tube Reactors  
Liquid Level Sensors  
Tubing



## Message to Our Customers

Inception	Our company started in October 1990 as a developer and manufacturer of components for liquid flow control, particularly as it applied to liquid chromatography. At first we focused on supplying the large OEMs involved in analytical instrumentation with high-pressure valves and related products.
Growth	The next year we began selling our GASTORR line of super-compact, high performance degassing systems to the OEM, general, and overseas markets. In 1992 we reached another milestone with the development of the super-compact non-pulsatile feedback control pump. We were highly gratified to see this pump, embodying a revolutionary feedback system, become a major hit widely used in a multitude of analytical applications.
Expansion	We have introduced many new products to the market since our inception, and in every instance we have focused on our core mission as a component maker, always striving to develop and manufacture products with ever high performance and quality. As part of our international sales effort, we aggressively market our components in the US, Europe, Australia, and many parts of Asia, exhibiting not only at Pittcon, the world's largest analytical fair, but in many other venues throughout the world as well. And every year we announce and demo our latest creations to manufacturers and distributors throughout the industrialized world.
Our Mission	Current analytical applications demand not only ever higher performance and precision, but also demand products with minimal environmental impact (which includes resource recycling). In line with this new realities, we at FLOM have rededicated ourselves to providing high performance, compact, light, and low cost components that amply comply with the latest environmental regulations and recycling initiatives. As good corporate citizens we take pride in developing new products that contribute to the growth of the analytical market, and to the greater benefit of human society as well.

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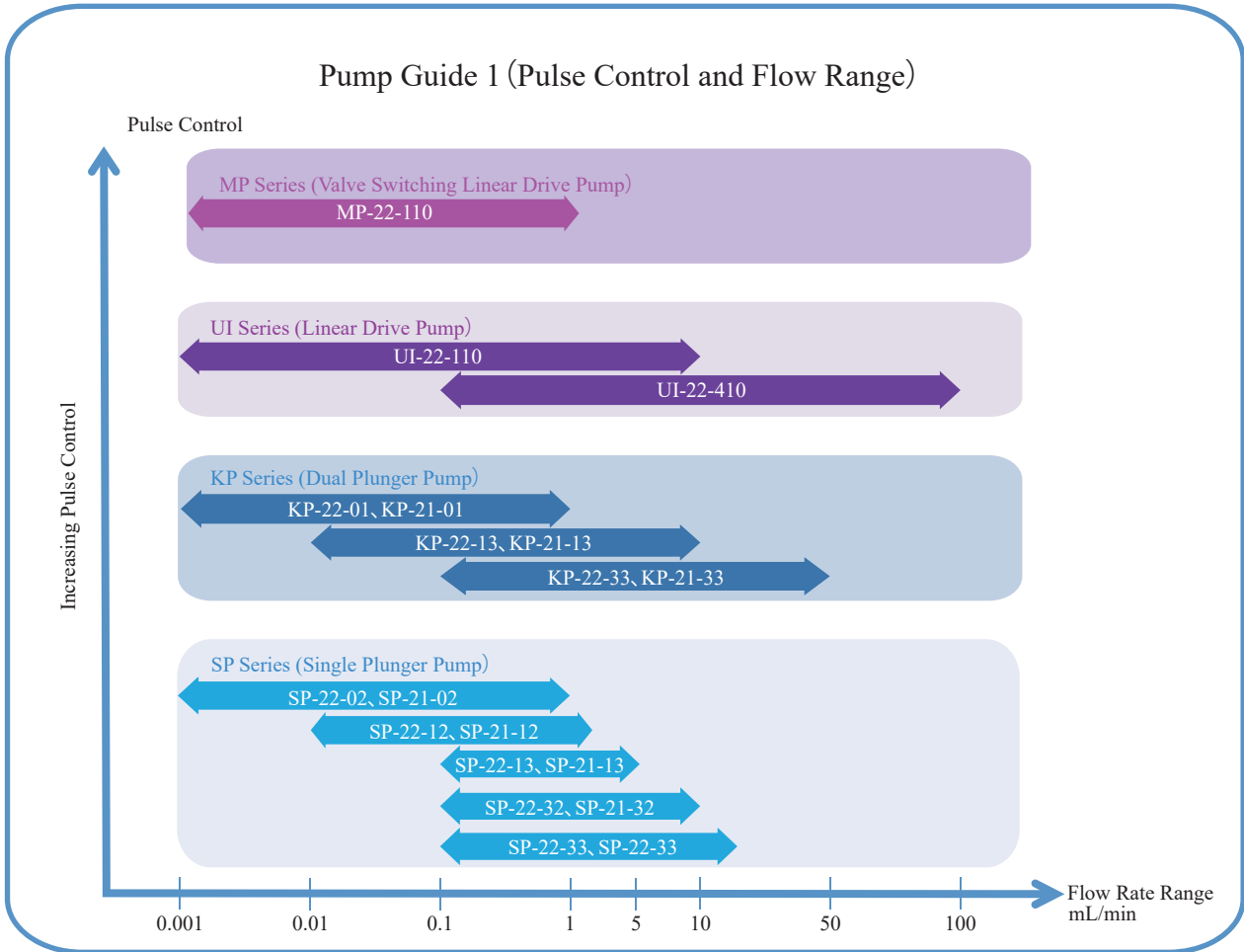
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Note: The specifications and product design may change without prior notice. Due to continual product improvement, the photos and illustrations in this catalog may not match the current appearance of the products described herein. Contact your FLOM sales representative or distributor for information about special order products, which are not listed in this catalog.

# 1. Plunger Pumps

## Selection Guide for Plunger Pumps

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 Guide 2 (Pumphead Material)**

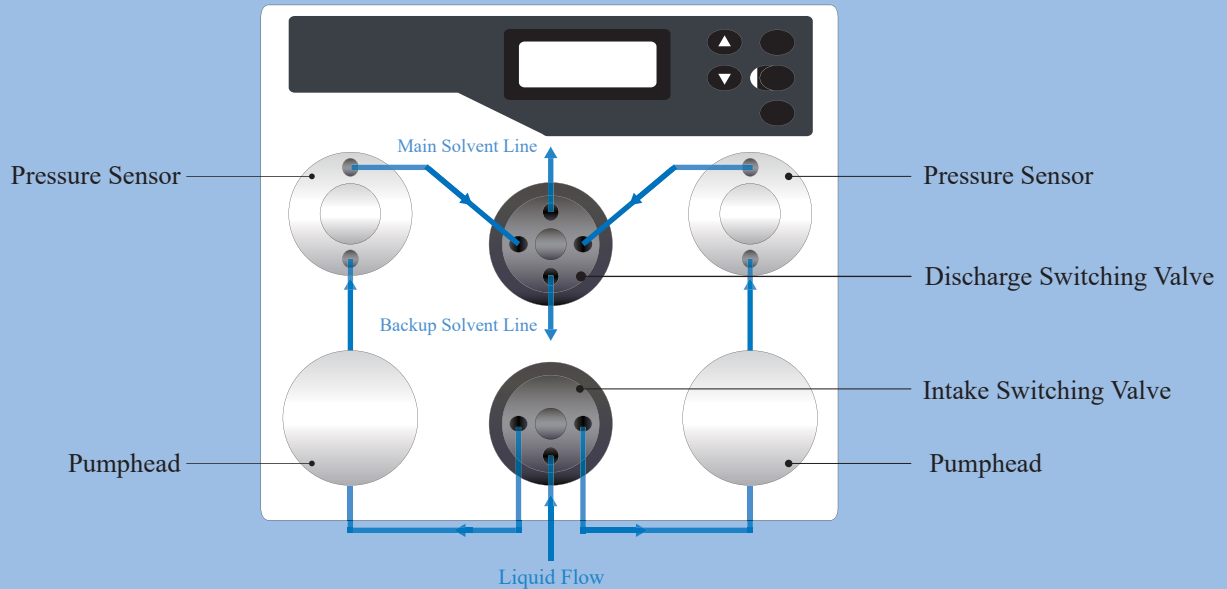
Material	PCTFE	PEEK	SUS
Max Pressure	2 MPa (290 psi)	5 - 20 MPa* <sup>1</sup> (725 - 2900 psi)	5 - 35 MPa* <sup>1</sup> (725 - 5075 psi)
AVOID use with	<ul style="list-style-type: none"> <li>tetrahydrofuran</li> <li>halogenated solutions under high temp</li> </ul>	<ul style="list-style-type: none"> <li>tetrahydrofuran</li> <li>halogenated solutions</li> <li>strong acids</li> </ul>	<ul style="list-style-type: none"> <li>strong acids</li> <li>certain inorganic salts</li> </ul>

\*<sup>1</sup>: depends on device

## Intelligent Micro Pump MP-22

Pump and Valve Integrated as only FLOM can do it!  
FLOM's newest addition to its line of plunger pump solutions.

### ● MP-22 Design and Features



#### < Check Valve-Less Design >

A switching valve is used in place of a check valve. This achieves super low pulse control under low flow rates that check valves can't handle.

#### < Features of the Micro Pump MP-22 >

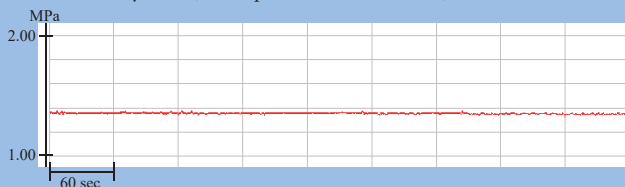
Check valve-less design combines super low pulse control under low flow rates with the pressure resistance advantages of plunger pump functionality, achieving continuous stable flow rates.

#### ◎ Simple to set up

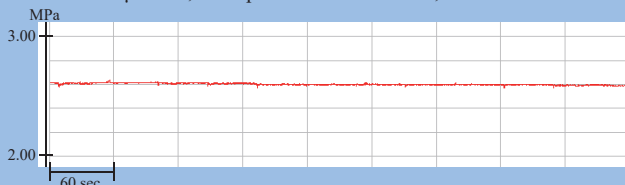
To set up, all you need do is connect the tubing.  
Easy setup by pressing a button.

### ● MP-22 Flow Stability

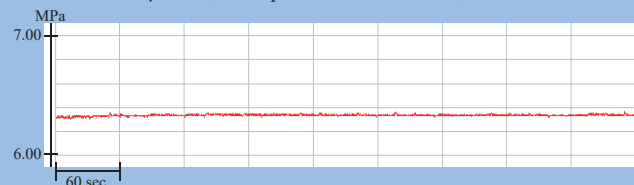
• Flow rate: 50  $\mu\text{L}/\text{min}$ , Output Pressure: 1.4 MPa, Solvent: Methanol



• Flow rate: 100  $\mu\text{L}/\text{min}$ , Output Pressure: 2.6 MPa, Solvent: Methanol



• Flow rate: 250  $\mu\text{L}/\text{min}$ , Output Pressure: 6.3 MPa, Solvent: Methanol





Intelligent Micro Pump  
MP-22-110S

NEW

### Valve Switching Micro Pump

## Intelligent Micro Pump MP-22

Check valve-less design for super low pulse control under low flow rates

### Features

- Improved near-zero pulse flow
- Problems with bubble greatly reduced
- Easy setup
- Upper and lower pressure limiters
- Space-saving compact design
- External control available with RS232C protocol

Product name	Intelligent Micro Pump
Part number	MP-22-110S
Pumphead material	SUS
Max Pressure*1	35 MPa (5075 psi)
Flow rate range*2	0.1 - 999.9 $\mu$ L/min
Flow per stroke	80 $\mu$ L
Plunger stroke	10 mm
Flow accuracy*3	< 0.3 %
Features	Active pulse reduction, Upper/lower pressure limiters
Pressure accuracy	< 5%
Wetted materials	Sapphire, Ruby, PTFE, PCTFE, PFA, ETFE, FFKM, HDPE, PEEK, SUS
Remote control	Input: PUMP ON / OFF, Output: Error signal
Communication	RS232C, RS485 (between FLOM devices)
Dimensions	150 (H) $\times$ 160 (W) $\times$ 280 (D) mm, excluding protuberances
Weight	Approx. 6.7 kg
Power	AC100 - 240 V (50 / 60 Hz) MAX 140 VA
Order Code	SMP-P505

\*1: Maximum pressure is only sustained intermittently.

\*2: Maximum output is not sustainable over long periods of time.

\*3: Using Methanol at flow rate 10~500 $\mu$ L/min, output pressure > 1 MPa ~ 20MPa

NEW

### Roller Pump

## Roller Pump WP-21

Great for plunger pump cleaning and basic pumping applications

### Features

- Space-saving compact design
- Choose tubing to match your solvent
- Tube cassette can be set in any of 4 directions

Product name	Roller Pump
Part number	WP-21
Flow rate range	4 step settings (approx. 0.5 • 1.0 • 2.0 • 3.0 ml/min)
Switching	4 steps from front switch (rotary style)
Features	hold down front switch to purge (approx. 5 mL/min)
Flow accuracy	$\pm$ 5 % (Pharmed BPT)
Output pressure	90 kpa or less (Pharmed BPT)
Intake pressure	-90 kpa or less (Pharmed BPT)
Temperature range	5 - 50 $^{\circ}$ C
Rotary direction	Clockwise when viewed from front
External I/O	Input: OFF/ ON switch (powering on begins pumping) Output: Error Signal
Tubing	Pharmed BPT / Fluran F-5500-A / TransMaster TM-15
Dimensions	65 (H) $\times$ 46 (W) $\times$ 110 (D) mm, excluding protuberances
Weight	Approx. 0.5 kg
Power	AC100 - 240 V (50 / 60 Hz) MAX 15 W
Order code	SWP-F021



Roller Pump  
WP-21



Pharmed BPT  
(standard)



Fluran F-5500-A  
(sold separately)



TransMaster TM-15  
(sold separately)

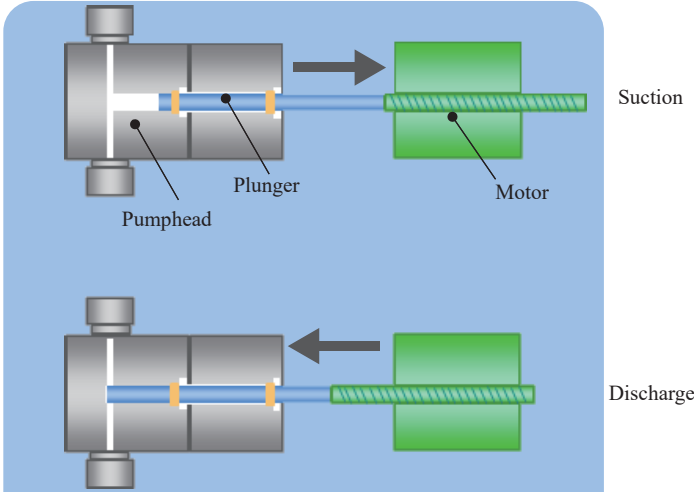
※ Product comes with Pharmed BPT tubing standard.

Please contact us if you prefer Fluran F-5500-A or TransMaster TM-15 tubing.  
Pumping action begins automatically as soon as the power is turned on.

# Plunger Pump Design and Features

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

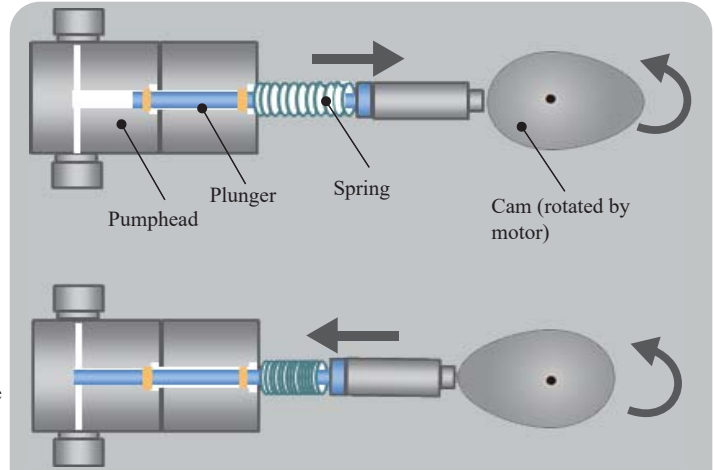
## Linear Drive (UI Series)



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

Left and right pumpheads are independently controlled.  
The plunger stroke is about 2.5 times longer than in a cam drive, producing much more powerful suction and discharge actions.

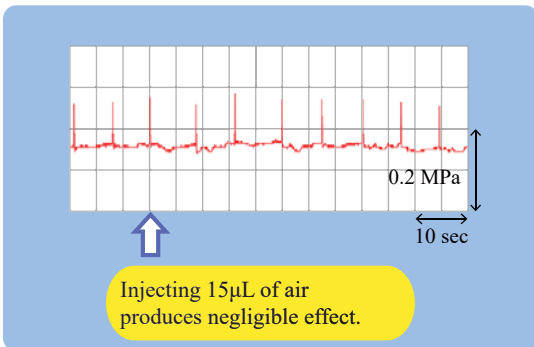
## Cam Drive (KP, SP Series)



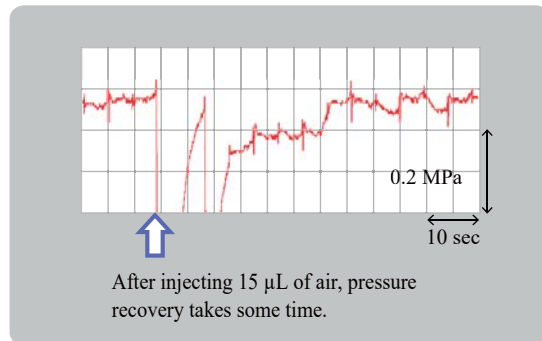
In this design, a cam translates the circular motion of the motor into linear motion. This linear motion powers plunger movement and also loads the spring for the return motion.

1 motor can be used to power 2 plungers in this case, but the cam's rotary action can cause the plungers to wobble up and down (thus there is a limit to stroke length).

### ● Response to air injection

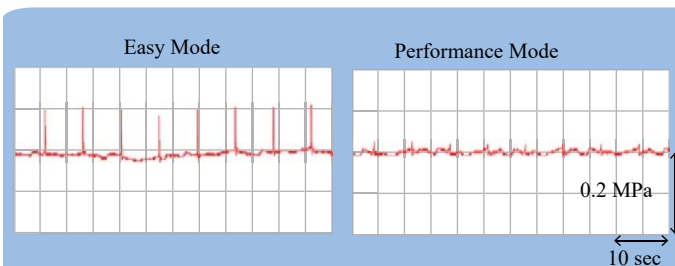


✦ Since right and left pumpheads are controlled separately, their output is stable even with the injection of air.



After injecting 15 µL of air, pressure recovery takes some time.

### ● UI-22 Series Flow Stability



#### Easy Mode

When air is injected, prioritizes stable flow. Suitable for situations where degassing cannot be done.

#### Performance Mode

Prioritizes pulse control. Maximizes performance when degassing is being used.

Linear Motor Pulse Control Intelligent Pump

**Intelligent Pump UI-22 Series**

Combines high precision flow and ease of use

**Features**

- Pulses reduced to absolute minimum making low flow rate pumping possible
- Bubble problems greatly reduced
- Long life plunger seal
- Upper and lower pressure limiters
- Space-saving compact design
- Control with RS232C protocol
- Choose SUS, PEEK, or PCTFE to fit your solvent

Intelligent Pump  
UI-22-110SIntelligent Pump  
UI-22-110PIntelligent Pump  
UI-22-110D

Product name	Intelligent Pump					
Part number	UI-22-110S	UI-22-110P	UI-22-110D	UI-22-410S	UI-22-410P	UI-22-410D
Pumphead material	SUS	PEEK	PCTFE	SUS	PEEK	PCTFE
Max pressure*1	35 MPa (5075 psi)	20 MPa (2900 psi)	2 MPa (290 psi)	5 MPa (725 psi)	5 MPa (725 psi)	2 MPa (290 psi)
Flow rate range*2	0.001 - 9.999 mL/min			0.01 - 99.99 mL/min		
Flow per stroke	80 $\mu$ L			708 $\mu$ L		
Plunger stroke	10 mm					
Flow accuracy	< 0.3 %					
Features	Active pulse reduction, upper/lower pressure limiters					
Pressure accuracy	< 5 %					
Wetted materials	SUS: Sapphire, Ruby, PTFE, PCTFE, PFA, FFKM, HDPE, PEEK, SUS PEEK: Sapphire, Ruby, PTFE, PCTFE, PFA, ETFE, FFKM, HDPE, PEEK PCTFE: Sapphire, Ruby, PTFE, PCTFE, PFA, ETFE, FFKM					
Remote control	Input: PUMP ON / OFF, Output: Error signal					
Communication	RS232C, RS485 (between FLOM devices)					
Dimensions	144 (H) $\times$ 105 (W) $\times$ 240 (D) mm, excluding protuberances					
Weight	Approx. 5.6 kg					
Power	AC100 - 240 V (50 / 60 Hz) MAX140 VA					
Order Code	SLP-P509	SLP-P514	SLP-P517	SLP-P511	SLP-P516	SLP-P510

\*1: Maximum pressure is only sustained intermittently.

\*2: Maximum output is not sustainable over long periods of time.

Auto Back Pressure Regulator for the UI-22 Series

**Auto BPR BP-11 Series**

## Automatic Pressure Regulation

**Features**

- Provide consistent pressure by tracking variable pump pressure in real time
- UI Series provides stable flow, BP-11 maintains set pressure

Auto BPR  
BP-11S

Product name	Auto BPR	
Part number	BP-11S	BP-11D
Wetted materials	SUS, PFA	PCTFE, PFA
Path diameter	0.6 mm	
Pressure range	0.10 - 5.00 MPa (14.5 - 725 psi)	
Flow rate range	0.1 - 100 mL/min	
Pressure range*1	0.5 - 5.00 MPa (72.5 - 725 psi)	
Pressure accuracy	$\pm$ 0.1 MPa ( $\pm$ 14.5 psi)	
Pressure signal range	uses pressure signal from UI-22 [ DC1 - 5V ]	
Communication	RS232C, RS485 (START-IN, READY-OUT)	
Dimensions	144 (H) $\times$ 79 (W) $\times$ 240 (D) mm, excluding protuberances	
Weight	Approx. 2.7 kg	
Power	AC100 - 240 V (50 / 60 Hz) MAX 70 VA	
Order Code	SBP-F012	SBP-F019

\*1: Using distilled water or methanol, pressure 0.5~5.0MPa / flow rate 0.1~50.0mL/min are controllable.

\*: please contact us if you need flow rates outside 0.1~50.0mL/min.



Dual Pump  
KP-22-13SDual Pump  
KP-22-13P

## Dual Plunger Pump Dual Pump KP-22 Series

A general use pump equipped with pressure sensor

### Features

- Cam-driven design with high flow accuracy and low pulsing
- Pressure sensor allows setting upper/lower limits
- 6 separate configurations of flow range/pumphead material
- RS232C control protocol

Product name	Dual Pump (with pressure sensor)					
Part number	KP-22-01S	KP-22-01P	KP-22-13S	KP-22-13P	KP-22-33S	KP-22-33P
Pumphead material	SUS	PEEK	SUS	PEEK	SUS	PEEK
Max pressure*1	25 MPa (3625 psi)	20 MPa (2900 psi)	25 MPa (3625 psi)	20 MPa (2900 psi)	5 MPa (725 psi)	5 MPa (725 psi)
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	
Plunger stroke	2 mm		4 mm		4 mm	
Flow accuracy	< 0.3 %					
Features	Pulse control*3, Consistent pressure flow*4, Set volume dispensing*5, Upper/lower pressure limiters*6					
Pressure accuracy	< 5 %					
Wetted Material	SUS: Sapphire, Ruby, PTFE, PCTFE, PFA, ETFE, FFKM, HDPE, PEEK, SUS PEEK: Sapphire, Ruby, PTFE, PCTFE, PFA, ETFE, FFKM, HDPE, PEEK					
Remote control	Input: PUMP ON / OFF, Output: Error signal					
Communication	RS232C					
Dimensions	144 (H) × 79 (W) × 285 (D) mm, excluding protuberances					
Weight	Approx. 4.3 kg					
Power	AC100 - 240 V (50 / 60 Hz) MAX 80 VA					
Order Code	SDP-P1081	SDP-P1080	SDP-P1077	SDP-P1076	SDP-P1079	SDP-P1078

\*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 based on cam rotary compensation, activated below a flow pressure of 5 MPa.

\*4: Set consistent pressure flow mode adjusts the flow rate in real time to stabilize pressure. It uses the average of measured pressure and does not attempt pulse control.

\*5: In set volume mode, when the set volume has been dispensed, pumping automatically stops.

\*6: The lower pressure limiter can only be set by RS232C remote control.

Dual Pump  
KP-21-13SDual Pump  
KP-21-13P

## Standard Dual Plunger Pump Dual Pump KP-21 Series

A general use pump without pressure sensor

### Features

- Cam-driven design with high flow accuracy and low pulsing
- Reasonable price without equipping pressure sensor
- 6 separate configurations of flow range/pumphead material
- RS232C control protocol

Product name	Dual Pump (without pressure sensor)					
Part number	KP-21-01S	KP-21-01P	KP-21-13S	KP-21-13P	KP-21-33S	KP-21-33P
Pumphead material	SUS	PEEK	SUS	PEEK	SUS	PEEK
Max pressure*1	25 MPa (3625 psi)	20 MPa (2900 psi)	25 MPa (3625 psi)	20 MPa (2900 psi)	5 MPa (725 psi)	5 MPa (725 psi)
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	
Plunger stroke	2 mm		4 mm		4 mm	
Flow accuracy	< 0.3 %					
Features	Set volume dispensing*3					
Pressure accuracy	—					
Wetted Material	SUS: Sapphire, Ruby, PTFE, PCTFE, PFA, ETFE, FFKM, HDPE, PEEK, SUS PEEK: Sapphire, Ruby, PTFE, PCTFE, PFA, ETFE, FFKM, HDPE, PEEK					
Remote control	Input: PUMP ON / OFF, Output: Error signal					
Communication	RS232C					
Dimensions	144 (H) × 79 (W) × 285 (D) mm, excluding protuberances					
Weight	Approx. 4.3 kg					
Power	AC100 - 240 V (50 / 60 Hz) MAX 80 VA					
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.

\*3: In set volume mode, when the set volume has been dispensed, pumping automatically stops.

## Single Plunger Pump PCS Pump SP-22 Series

Single plunger pump equipped with pressure sensor

### Features

- Can choose Quick Return mode for Pulse Control
- Pressure sensor allows setting upper/lower limits
- 10 separate configurations of flow range/pumphead material
- RS232C control protocol



PCS Pump  
SP-22-13, SUS

PCS Pump  
SP-22-13, PEEK

Product name	PCS Pump (with pressure sensor)									
Part number	SP-22-02S	SP-22-02P	SP-22-12S	SP-22-12P	SP-22-13S	SP-22-13P	SP-22-32S	SP-22-32P	SP-22-33S	SP-22-33P
Pumphead material	SUS	PEEK	SUS	PEEK	SUS	PEEK	SUS	PEEK	SUS	PEEK
Max pressure*1	20 MPa (2900 psi)		20 MPa (2900 psi)		10 MPa (1450 psi)		5 MPa (725 psi)		2 MPa (290 psi)	
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 - 20.0 mL/min	
Flow per stroke	8 $\mu$ L		16 $\mu$ L		32 $\mu$ L		77 $\mu$ L		154 $\mu$ L	
Plunger stroke	2 mm		2 mm		4 mm		2 mm		4 mm	
Flow accuracy	$\pm 0.5\%$									
Features	Pulse control*3, Set volume dispensing*4, Upper/lower pressure limiters									
Pressure accuracy	$< 0.5\%$									
Wetted Material	SUS: Sapphire, Ruby, PTFE, PCTFE, PFA, ETFE, FFKM, HDPE, SUS PEEK: Sapphire, Ruby, PTFE, PCTFE, PFA, ETFE, FFKM, HDPE, PEEK									
Remote control	Input: PUMP ON / OFF, Output: Error signal									
Communication	RS232C									
Dimensions	144 (H) $\times$ 79 (W) $\times$ 285 (D) mm, excluding protuberances									
Weight	Approx. 3.0 kg									
Power	AC100 - 240 V (50 / 60 Hz) MAX 80 VA									
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 control is based on cam rotary compensation, activated below a flow pressure of 5 MPa.

\*4: In set volume dispensing mode, when the set volume has been dispensed, pumping automatically stops.



PCS Pump  
SP-21-13, SUS

PCS Pump  
SP-21-13, PEEK

## Single Plunger Pump PCS Pump SP-21 Series

Single plunger pump without pressure sensor

### Features

- Can choose Quick Return mode for Pulse Control
- Reasonable price without equipping pressure sensor
- 10 separate configurations of flow range/pumphead material
- RS232C control protocol

Product name	PCS Pump (without pressure sensor)									
Part number	SP-21-02S	SP-21-02P	SP-21-12S	SP-21-12P	SP-21-13S	SP-21-13P	SP-21-32S	SP-21-32P	SP-21-33S	SP-21-33P
Pumphead material	SUS	PEEK	SUS	PEEK	SUS	PEEK	SUS	PEEK	SUS	PEEK
Max pressure*1	20 MPa (2900 psi)		20 MPa (2900 psi)		10 MPa (1450 psi)		5 MPa (725 psi)		2 MPa (290 psi)	
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 - 20.0 mL/min	
Flow per stroke	8 $\mu$ L		16 $\mu$ L		32 $\mu$ L		77 $\mu$ L		154 $\mu$ L	
Plunger Stroke	2 mm		2 mm		4 mm		2 mm		4 mm	
Flow accuracy	$\pm 0.5\%$									
Features	Set volume dispensing*3									
Pressure accuracy	—									
Wetted Material	SUS: Sapphire, Ruby, PTFE, PCTFE, PFA, ETFE, FFKM, HDPE, SUS PEEK: Sapphire, Ruby, PTFE, PCTFE, PFA, ETFE, FFKM, HDPE, PEEK									
Remote control	Input: PUMP ON / OFF, Output: Error signal									
Communication	RS232C									
Dimensions	144 (H) $\times$ 79 (W) $\times$ 285 (D) mm, excluding protuberances									
Weight	Approx. 3.0 kg									
Power	AC100 - 240 V (50 / 60 Hz) MAX 80 VA									
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: In set volume dispensing mode, when the set volume has been dispensed, pumping automatically stops.

## Pump Accessories



High Pressure Damper 9810

Low Pressure Damper 9800

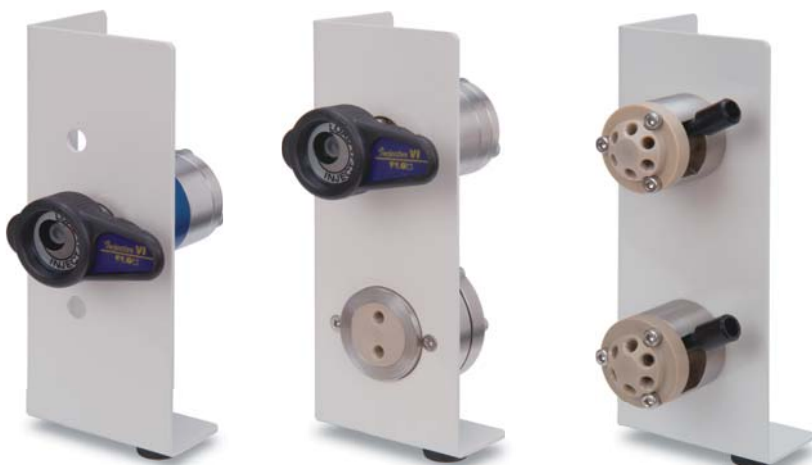
### Pulse Dampers

These pulse dampers will improve flow performance on SP and KP type pumps. Choose either high or low pressure type.

Product name	High Pressure Damper	Low Pressure Damper
Part number	9810	9800
Max pressure	20 MPa (2900 psi)	2 MPa (290 psi)
Pulse control range	8 - 12 MPa (1160 - 1740 psi)	0.1~0.7 MPa (14.5 - 101.5 psi)
Internal volume	Approx. 3.5 mL	Approx. 0.8 mL
Wetter material	PEEK , PTFE	PEEK , FEP
Thread size	No.10-32 UNF	No.10-32 UNF
Dimensions	φ50 mm × 36.5 (D) mm	φ45 mm × 33 (D) mm
Weight	Approx. 0.3 kg	Approx. 0.3 kg
Order Code	PDM-F001	PDM-F002

### Side Panels for Valve Attachment

For attachment of switch valves, sample injectors, and other accessories to pumps. Can be attached to all UI, KP, and SP type pumps.

Side Panel 4512  
Injector TypeSide Panel 4513  
Injector/Damper TypeSide Panel 4514  
Small Manual Valve Type

Product name	Side Panel		
Part number	4512	4513	4514
Pump type	UI-22, KP-2x, SP-2x Series		
Attachable parts	VI-11 , VI-12, MI-11 , V05	VI-11 , VI-12 , MI-11 , V05	V200, V201, V204 V239, V512
Damper attachable	No	Yes	No
Dimensions	144 (H) × 60 (W) × 44 (D) mm, excluding protuberances		
Order code	PB1001-10	PB1001-09	PB1001-11

## 2. Degassing Units

We have redesigned our AG and BG Series units for truly trouble-less operation. Consult our “Degassing Performance Comparison Chart” below to find the right unit for your application.



Gastorr AG-42

Gastorr AG-44

Product Name	Gastorr Solvent Degassing Units	
Product Number	AG-42-01	AG-44-01
Channels	2	4
Internal volume	340 $\mu$ L	
Flow rate	$\leq$ 10 mL/min	
Vacuum range	100 hPa fixed	
Thread size	1/4-28 UNF	
Wetted material	Teflon™ AF*1, ETFE, PTFE	
Remote control	—	
Dimensions	108 (H) $\times$ 70 (W) $\times$ 240 (D) mm, excluding protuberances	
Weight	Approx. 2.1 kg	
Power	AC 100 - 240 V (50 / 60 Hz) MAX 80 VA	
Order code	SGA-G3001	SGA-G3002

\*1: Teflon™ AF is a registered trademark of the Chemours Corporation.  
Note: cannot be used with fluorinated solvents.

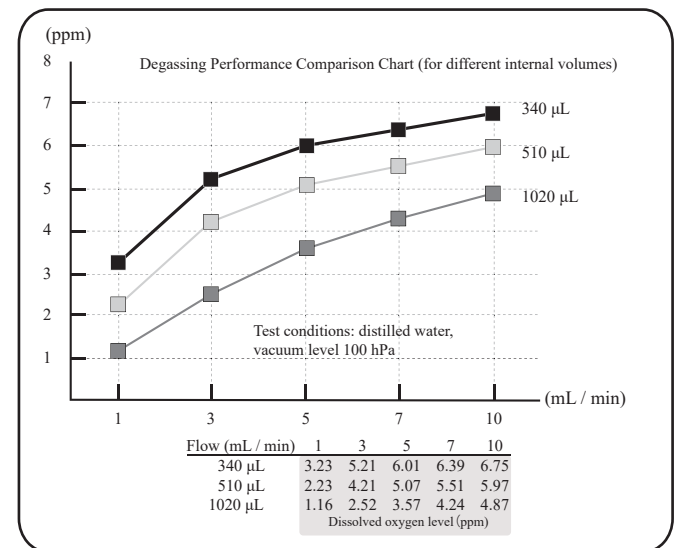
NEW

### Solvent Degassing System Gastorr AG Series

A trouble-less degassing series

#### Features

- Low-cost alternative for low flow applications
- Auto cleaning function prevents vacuum pump deterioration
- CPU control achieves stable degassing
- Independent chamber design prevents solvent contamination
- Choose from 2 channel or 4 channel configurations



Note that degassing performance varies greatly depending on operating conditions.



Gastorr BG-42

Gastorr BG-44

NEW

### Solvent Degassing System Gastorr BG Series

A trouble-less degassing series equipped with larger internal volume and real time display

#### Features

- Pick the model with the right internal volume for your application
- Auto cleaning function prevents vacuum pump deterioration
- CPU control achieves stable degassing
- Independent chamber design prevents solvent contamination
- Choose from 2 channel or 4 channel configurations
- Real time display of vacuum level

Product Name	Gastorr Solvent Degassing Units			
Product Number	BG-42-02	BG-44-02	BG-42-10	BG-44-10
Channels	2	4	2	4
Internal volume	510 $\mu$ L		1020 $\mu$ L	
Flow rate	$\leq$ 10 mL/min			
Vacuum range	100 hPa fixed			
Thread size	1/4-28 UNF			
Wetted material	Teflon™ AF*1, ETFE, PTFE			
Remote control	Input: — Output: Error signal			
Dimensions	108 (H) $\times$ 70 (W) $\times$ 240 (D) mm, excluding protuberances			
Weight	Approx. 2.1 kg			
Power	AC 100 - 240 V (50 / 60 Hz) MAX 80 VA			
Order code	SGA-G3003	SGA-G3004	SGA-G3005	SGA-G3006

\*1: Teflon™ AF is a registered trademark of the Chemours Corporation.  
Note: cannot be used with fluorinated solvents.



## Solvent Degassing System Gastorr FG-42



Gastorr FG-42

Degassing system for fluorinated solvents

### Features

- Designed for use with fluorinated solvents
- Auto cleaning function prevents vacuum pump deterioration
- CPU control achieves stable degassing
- Real time display of vacuum level
- Independent chamber design prevents solvent contamination

Product Name	Gastorr Solvent Degassing Unit	
Product Number	FG-42	
Channels	2	
Internal volume	10 mL	
Flow rate	≤ 5 mL/min	
Vacuum range	150 hPa fixed	
Thread size	1/4-28UNF	
Wetted material	PTFE, ETFE, PPS	
Remote control	Input: — Output: Error signal	
Dimensions	108 (H) × 70 (W) × 240 (D) mm, excluding protuberances	
Weight	Approx. 2.3 kg	
Power	AC100 ~ 240 V (50 / 60 Hz) MAX 80 VA	
Order code	SGA-G3008	

## Solvent Degassing for Fractionating Applications Gastorr PG Series



Gastorr PG-41, PEEK

Gastorr PG-42, PEEK

Degassing systems with flow rates up to 50 mL/min for fractionating applications

### Features

- Flow rates up to a max of 50 mL/min
- Auto cleaning function prevents vacuum pump deterioration
- CPU control achieves stable degassing
- Real time display of vacuum level
- Independent chamber design prevents solvent contamination
- Choose from 1 channel or 2 channel configurations

Product Name	Gastorr Solvent Degassing Units	
	PG-41P	PG-42P
Channels	1	2
Internal volume	62.0 mL	
Flow rate	≤ 50 mL/min	
Vacuum range	150 hPa	
Thread size	1/4-28UNF	
Wetted material	PEEK : PTFE, ETFE, PEEK	
Remote control	Input: — Output: Error signal	
Dimensions	180 (H) × 90 (W) × 400 (D) mm, excluding protuberances	
Weight	Approx. 5.0 kg	Approx. 6.0 kg
Power	AC100 ~ 240 V (50 / 60 Hz) MAX 80 VA	
Order code	SGA-G3501	SGA-G3502

### 3. Valves

We at FLOM have many years of experience developing switching valves and injectors featuring a variety of materials and functionality. The trend in recent years has been to increase our line-up with more compact and high-pressure products. If you don't see what you're looking for here, let us know what you want. We can probably design a product that fits your needs perfectly.

#### Selection Guide for Valves

FLOM valves come in 3 varieties of drive: manual, automatic, or pneumatic (air-driven).

#### Valve Types

Manual	Automatic		Pneumatic (Explosion-proof)
	Stand-alone	OEM	
Injectors <b>VI Series</b> (Standard) <b>MI-11</b> (Ultra high pressure) Switching Valves <b>V Series</b>	<b>VA-21 Series</b> (High pressure, Long life, Non-metallic, High volume)	<b>VA-21A Series</b> (Standard speed switching)  <b>VF-02 Series</b> (High Speed switching)	<b>415 Series</b>



#### Type of Valve Heads (Examples)

<b>4-port switching</b> 	<b>6-port switching</b> 	<b>16-port switching</b> 
<b>2-way 3-port switching</b> 	<b>2-way 4-port switching</b> 	<b>4-port rotary</b> 
<b>6-port rotary</b> 	<b>8-port rotary</b> 	<b>12-port rotary</b> 



Valve Unit VA-21

## Automatic Switching Valves Valve Unit VA-21 Series

For general, high speed, and fraction analyses, choose the flow paths you need to cover a wide variety of applications

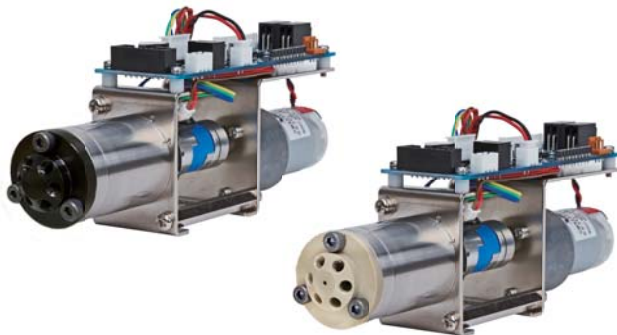
### Features

- Pick the valve type that fits your application
- Featuring high flow and non-metallic types
- Long valve life based on FLOM technology

### Valve Drive

Product Name	Automatic Switching Valve
Product Number	VA-21
Drive	Direct drive by DC motor
Switching Modes	2 position switching, rotary
Manual Input	Position change, position reset
Remote Control	Input : position change / set / reset, Output : position, error
Communication	RS232C , RS485(between FLOM device)
Power	AC100 ~ 240V , 50/60Hz , MAX 50 W
Dimensions	116 (H) × 66 (W) × 200 (D) mm , excluding protuberances
Weight	Approx 2.0 kg

Choose the valve head you need from the chart on the right.  
Consult us directly if you can't find the type you need on the chart.



Valve Unit VA-21A

## Auto Switching Valves for OEMs Auto Valve VA-21A Series

Auto Switching VA-21 valves for OEM applications

### Features

- Space-saving compact design
- Remote control with RS232C/RS485 protocols


### Valve Drive



Product Name	Automatic Switching Valve
Product Number	VA-21A
Drive	Direct drive by DC motor
Switching Modes	2 position switching, rotary
Remote Control	Input : position change / set / reset, Output : position, error
Communication	RS232C , RS485(between FLOM device)
Power	DC+24V
Weight*1	Approx 0.8 kg


\*1: weight shown is only for reference. Weight can vary greatly depending on type of valve head installed.

FLOM welcomes your queries about valve heads and specifications.



## Switching Valves


Product number	VA-21-601	VA-21-602	VA-21-603	VA-21-604
Type	6-port			
Path Position				
Max Pressure	40 MPa (5800 psi)	30 MPa (4350 psi)	40 MPa (5800 psi)	30 MPa (4350 psi)
Wetted materials	SUS , PEEK	PEEK	SUS , PEEK	PEEK
Tube OD	1/16"	1/16"	1/16"	1/16"
Thread size	No.10-32UNF	No.10-32UNF	No.10-32UNF	No.10-32UNF
Path diameter	0.25 mm (0.01")	0.25 mm (0.01")	0.5 mm (0.02")	0.5 mm (0.02")
Order Code	SAV-VA-21-601	SAV-VA-21-602	SAV-VA-21-603	SAV-VA-21-604

Product number	VA-21-605	VA-21-606	VA-21-607	VA-21-608	VA-21-609	VA-21-610
Type	6-port				4-port	
Path Position						
Max Pressure	20 MPa (2900 psi)	20 MPa (2900 psi)	5 MPa (725 psi)	5 MPa (725 psi)	40 MPa (5800 psi)	30 MPa (4350 psi)
Wetted materials	SUS , PEEK	PEEK	SUS , PEEK	PEEK	SUS , PEEK	PEEK
Tube OD	1/16"	1/16"	3.0 mm or 1/8"	3.0 mm or 1/8"	1/16"	1/16"
Thread size	No.10-32UNF	No.10-32UNF	M8×1.25	M8×1.25	No.10-32UNF	No.10-32UNF
Path diameter	1.0 mm (0.04")	1.0 mm (0.04")	2.0 mm (0.079")	2.0 mm (0.079")	0.5 mm (0.02")	0.5 mm (0.02")
Order Code	SAV-VA-21-605	SAV-VA-21-606	VA-21-607	VA-21-608	VA-21-609	VA-21-610

Product number	VA-21-611	VA-21-612	VA-21-613	VA-21-614
Type	1-2 port (3-way valve)			
Path Position				
Max Pressure	40 MPa (5800 psi)	30 MPa (4350 psi)	5 MPa (725 psi)	5 MPa (725 psi)
Wetted materials	SUS , PEEK	PEEK	SUS , PEEK	PEEK
Tube OD	1/16"	1/16"	3.0 mm or 1/8"	3.0 mm or 1/8"
Thread size	No.10-32UNF	No.10-32UNF	M8×1.25	M8×1.25
Path diameter	0.5 mm (0.02")	0.5 mm (0.02")	2.0 mm (0.079")	2.0 mm (0.079")
Order Code	SAV-VA-21-611	SAV-VA-21-612	SAV-VA-21-613	SAV-VA-21-614

## Rotary Valves

Product number	VA-21-615	VA-21-616	VA-21-617	VA-21-618	VA-21-619	VA-21-620
Type	1-4 port rotary			1-6 port rotary		
Path Position						
Max Pressure	40 MPa (5800 psi)	30 MPa (4350 psi)	40 MPa (5800 psi)	30 MPa (4350 psi)	5 MPa (725 psi)	5 MPa (725 psi)
Wetted materials	SUS , PEEK	PEEK	SUS , PEEK	PEEK	SUS , PEEK	PEEK
Tube OD	1/16"	1/16"	1/16"	1/16"	3.0 mm or 1/8"	3.0 mm or 1/8"
Thread size	No.10-32UNF	No.10-32UNF	No.10-32UNF	No.10-32UNF	M8×1.25	M8×1.25
Path diameter	0.5 mm (0.02")	0.5 mm (0.02")	0.5 mm (0.02")	0.5 mm (0.02")	2.0 mm (0.079")	2.0 mm (0.079")
Order Code	SAV-VA-21-615	SAV-VA-21-616	SAV-VA-21-617	SAV-VA-21-618	SAV-VA-21-619	SAV-VA-21-620

Product number	VA-21-621	VA-21-622
Type	1-12 port rotary	
Path Position		
Max Pressure	20 MPa (2900 psi)	20 MPa (2900 psi)
Wetted materials	SUS , PEEK	PEEK
Tube OD	1/16"	1/16"
Thread size	No.10-32UNF	No.10-32UNF
Path diameter	0.5 mm (0.02")	0.5 mm (0.02")
Order Code	SAV-VA-21-621	SAV-VA-21-622

### VA-21 Optional Accessories

P/N	Name
UF2100-01	VA-21 I/O Cable (only for change/reset)
UF2100-02	VA-21 Serial Comm Cable
PF505-01	RS485 Comm Cable
PF505-03	RS485 Comm Extension Cable



## Auto Valves for OEMs Auto Valve VF-02 Series



Auto Valve VF-02-1005

High-speed, long life and compact design in a auto switching valve for OEM applications

### Features

- Space-saving super compact design
- High revolving speed (60°, 0.1 second) reduces pressure shock  
the ceramic type seal improves seal life to 100,000 cycles
- Can switch in valvehead rated to 100 MPa for super high speed analytical applications
- Detachable valvehead permits fast, efficient maintenance

### Valve Drive

Product Name	Auto Switching Valve for OEMs
Product Number	VF-02
Drive	Direct drive by DC motor
Switching Mode	2-position switching
Remote Control	Operation Input : position switching, home position reset Status Output : position, error
Power	DC 24 V
Weight*1	about 0.7kg

\*1 : weight shown is only for reference. Weight can vary greatly depending on type of valve head installed.

### Valve Heads (Contact FLOM if you need valve heads with specs not shown in graph below.)

Product Number	VF-02-1002	VF-02-1003	VF-02-1005	VF-02-1103	VF-02-1104	VF-02-1039
Type	6-port					
Path Position						
Max pressure	40MPa (5800 psi)	40MPa (5800 psi)	20MPa (2900 psi)	40MPa (5800 psi)	40MPa (5800 psi)	40MPa (5800 psi)
Wetted material	SUS, PEEK	PEEK(outer layer SUS)	PEEK	SUS,PEEK, Ceramic	PEEK(outer layer SUS), Ceramic	SUS,PEEK
Tube OD	1/16"	1/16"	1/16"	1/16"	1/16"	1/16"
Path diameter	0.4mm (0.016")	0.4mm (0.016")	0.4mm (0.016")	0.4mm (0.016")	0.4mm (0.016")	0.25mm (0.01")
Thread size	No.10-32UNF	No. 10-32UNF	No.10-32UNF	No.10-32UNF	No.10-32UNF	No.10-32UNF

Product Number	VF-02-1034	VF-02-1056	VF-02-1010	VF-02-1012	VF-02-1013	VF-02-1015
Type	6-port		3-port 2-way		4-port	
Path Position						
Max pressure	40MPa (5800 psi)	20MPa (2900 psi)	40MPa (5800 psi)	20MPa (2900 psi)	40MPa (5800 psi)	20MPa (2900 psi)
Wetted material	PEEK(outer layer SUS)	PEEK(outer layer SUS)	SUS, PEEK	PEEK	SUS,PEEK	PEEK
Tube OD	1/16"	1/16"	1/16"	1/16"	1/16"	1/16"
Path diameter	0.25mm (0.01")	0.25mm (0.01")	0.4mm (0.016")	0.4mm (0.016")	0.4mm (0.016")	0.4mm (0.016")
Thread size	No.10-32UNF	No.10-32UNF	No.10-32UNF	No.10-32UNF	No.10-32UNF	No.10-32UNF

Product Number	VF-02-1040	VF-02-1058	VF-02-1050	VF-02-1065
Type	8-port		6-port vertical injection port	
Path Position				
Max pressure	40MPa (5800 psi)	20MPa (2900 psi)	40MPa (5800 psi)	20MPa (2900 psi)
Wetted material	SUS,PEEK	PEEK	SUS,PEEK	PEEK
Tube OD	1/16"	1/16"	1/16"	1/16"
Path diameter	0.25mm (0.01")	0.25mm (0.01")	0.4mm (0.016")	0.4mm (0.016")
Thread size	No.10-32UNF	No.10-32UNF	No.10-32UNF	No.10-32UNF



Air Valve 415

## Pneumatic Drive Valves Air Valve 415 Series

Pneumatically driven valve particularly suitable for explosion-proof

### Features

- Valve switching done pneumatically (no electric power)
- Space-saving compact design

### Valve Drive

<b>Product Name</b>	<b>Air Valve</b>
<b>Product Number</b>	<b>415</b>
Drive	Pneumatic Drive
Air Tube OD*1	1/8"

\*1: for tube sizes other than 1/8", contact FLOM .

Valve Heads (contact FLOM if you need a valve not shown here)

Product Name	415-605	415-606
<b>Product Number</b>	<b>6-port</b>	
Switching Modes		
Max Pressure	20 MPa (2900 psi)	20 MPa (2900 psi)
Wetted Material	SUS , PEEK	PEEK
Tube OD	1/16"	1/16"
Fluid Path	1.0 mm (0.04")	1.0 mm (0.04")
Thread Size	No.10-32 UNF	No.10-32 UNF



Manual Injector VI-11



UHPLC Micro Injector MI-11

## Manual Sample Injectors

### Manual Sample Injector VI Series

#### Features

- Choose Stainless Steel or PEEK for the fluid path
- Can output injection marker signal

## Ultra High Pressure Injectors

### UHPLC Micro Injector MI-11

#### Features

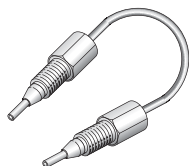
- Ultra high-pressure spec allows sample injection into high pressure fluid pathways
- Ultra high precision minimizes sample loss
- Can output injection marker signal

Product name	Manual Sample Injector		
Part number	VI-11	VI-12	MI-11
Wetted materials	SUS,PEEK,Ceramic	PEEK,Ceramic	SUS,PEEK,Ceramic
Max Pressure	35 MPa (5,075 psi)	35 MPa (5,075 psi)	100 MPa (14,500 psi)
Tube OD	1/16"	1/16"	1/16"
Path diameter	0.5 mm (0.02")	0.5 mm (0.02")	0.25 mm (0.01")
Port thread size	No. 10-32 UNF	No. 10-32 UNF	No. 10-32 UNF
Sample loop (standard)	20 µL (SUS)	20 µL (PEEK)	5 µL (SUS)
Injection maker	Built-in (1.5 m lead wire enclosed)		
Order code	VH-V271	VH-V276	VH-V340

### Optional Accessories

#### VI-11 Sample Loop (For OD 1/16" SUS)

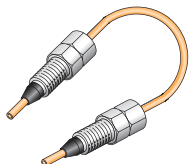
P/N	Volume
7501	10 µL
7502	20 µL
7503	50 µL
7504	100 µL
7505	200 µL
7506	500 µL
7507	1 mL



SUS, 20 µL

#### VI-12 Sample Loop (For OD 1/16" PEEK)

P/N	Volume
7201	10 µL
7202	20 µL
7203	50 µL
7204	100 µL
7205	200 µL
7206	500 µL
7207	1 mL



PEEK, 20 µL

#### MI-11 Sample Loop (For OD 1/16" SUS)

P/N	Volume
7500M	5 µL

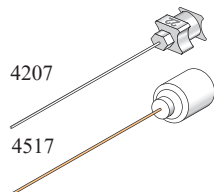


SUS, 5 µL

#### VI-11 • VI-12 Syringe Needles

P/N	Volume
4207	SUS22G* <sup>1</sup>
4517	PEEK* <sup>2</sup>

- \*<sup>1</sup> ID 0.5 mm  
\*<sup>2</sup> OD 0.7 mm x ID 0.3 mm



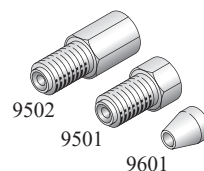
4207

4517

#### MI-11 Syringe

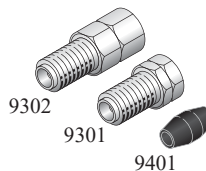
P/N	Volume
4701	SUS26G*

- \* ID 0.25 mm



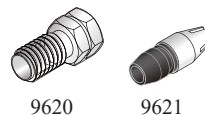
#### SUS Fittings (Qty : 10 / pack)

P/N	Name
9502	1/16 Fitting L
9501	1/16 Fitting S
9601	1/16 Ferrule



#### PEEK Fittings (Qty : 10 / pack)

P/N	Name
9302	1/16 DoubleLock Fitting L
9301	1/16 DoubleLock Fitting S
9401	1/16 DoubleLock Ferrule



#### Dual Fittings (Qty : 10 / pack)

P/N	Name
9620	Dual-Fitt Set
9621	Dual-Fitting
9623	Replacement ferrule(5 / pack) Replacement ferrule(10 / pack)

#### Injector Panel

P/N	Name
4515	Injector Panel

- \* The valve in the picture is not included and must be purchased separately.  
\* This cannot be attached to FLOM pumps. See page 8 for side panels for valve attachment to FLOM pumps.






Manual Valve V05

## Manual Valve

A convenient manual valve for switching between flow paths.

### Features

- Low torque design for easy switching
- Maximum pressure 35MPa (5000 psi)

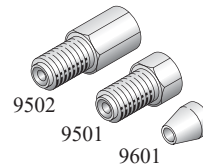
<b>Product Name</b>	<b>Manual Switching Valve</b>
<b>Product Number</b>	<b>V05</b>
Type	Analytical 6-port
Path position	
Max pressure	35 MPa (5075 psi)
Wetted material	SUS , PEEK
Tube OD	1/16"
Fluid Path Diameter	0.6 mm (0.024")
Order Code	VH-V05

### Optional Accessories



#### PEEK Fittings (Qty : 10 / pack)

P/N	Name
9001	Easy Fitt
9003	Hex Fitt
9135	Hex Fitt Mini



#### Fittings (Qty : 10 / pack)

P/N	Name
9502	1/16 Fittings L
9501	1/16 Fittings S
9601	1/16 Ferrules

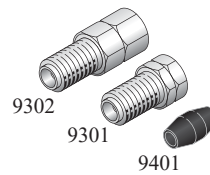


#### Injector Panel\*

P/N	Name
4515	Injector Panel

\* The valve in the picture is not included and must be purchased separately.

\*This cannot be attached to FLOM pumps. See page 8 for side panels for valve attachment to FLOM pumps.



#### Fittings (Qty : 10 / pack)

P/N	Name
9302	1/16 DoubleLock Fittings L
9301	1/16 DoubleLock Fittings S
9401	1/16 DoubleLock Ferrules



Manual Valve V200      Manual Valve V239

## Compact Manual Valve

A convenient, ultra-compact valve for switching flow paths

### Features

- Attach to the valve panel (sold separately) to allow operation from valve head side
- A line-up of 5 units to cover a wide variety of applications

Product Name	Manual Switching Valve	
Product Number	V200	V201
Type	Analytical 6-port	Analytical 3 port 2 way
Path position		
Max pressure	20 MPa (2900 psi)	20 MPa (2900 psi)
Wetted material	PEEK	PEEK
Tube OD	1/16"	1/16"
Fluid Path Diameter	0.6 mm (0.024")	0.6 mm (0.024")
Thread size	No.10-32 UNF	No.10-32 UNF
Order Code	VH-V200	VH-V201

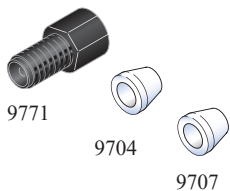
Product Name	Manual Switching Valve		
Product Number	V204	V512	V239
Type	Analytical 1-2 rotary	Analytical 1-2 rotary	Analytical 1-2 rotary
Path position			
Max pressure	20 MPa (2900 psi)	30 MPa (4350 psi)	1 MPa (145 psi)
Wetted material	PEEK	SUS , PEEK	PEEK
Tube OD	1/16"	1/16"	φ3 or 1/8"
Fluid Path Diameter	0.8 mm (0.03")	0.8 mm (0.03")	1.0mm (0.04")
Thread size	No.10-32 UNF	No.10-32 UNF	1/4-28 UNF
Order Code	VH-V204	VH-V512	VH-V239

## Optional Accessories



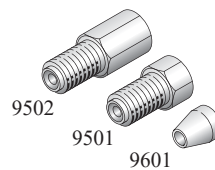
PEEK Fittings (Qty : 10 / pack)

P/N	Name
9001	Easy Fitt
9003	Hex Fitt
9135	Hex Fitt Mini



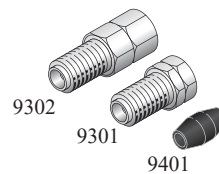
Fittings (Qty : 10 / pack)

P/N	Name
9771	1/8HEX Flat Seal Fittings
9704	ø3•M6 Flat Seal Ferrules
9707	1/8•M6 Flat Seal Ferrules



Fittings (Qty : 10 / pack)

P/N	Name
9502	1/16 Fittings L
9501	1/16 Fittings S
9601	1/16 Ferrules



Fittings (Qty : 10 / pack)

P/N	Name
9302	1/16 DoubleLock Fittings L
9301	1/16 DoubleLock Fittings S
9401	1/16 DoubleLock Ferrules

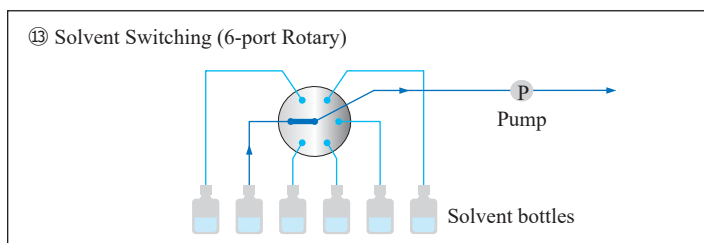
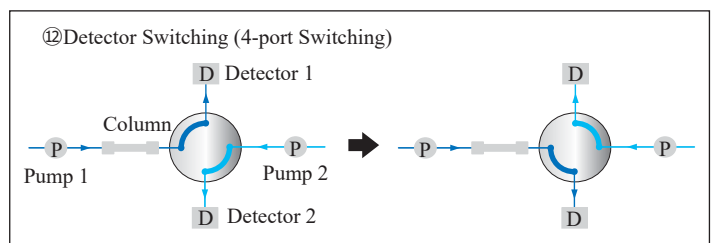
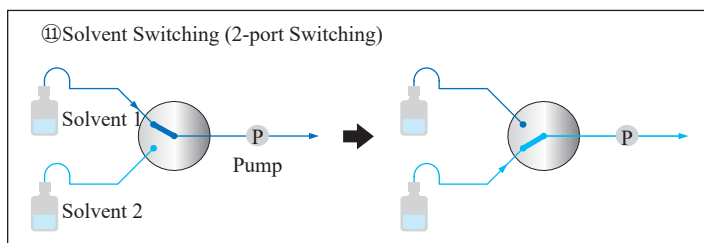
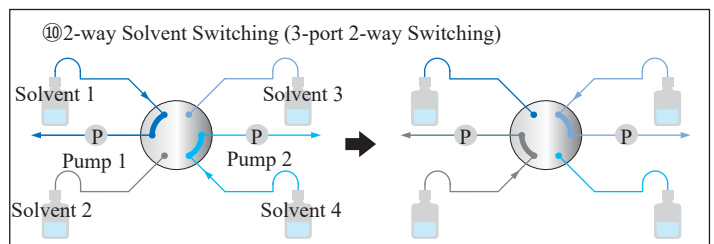
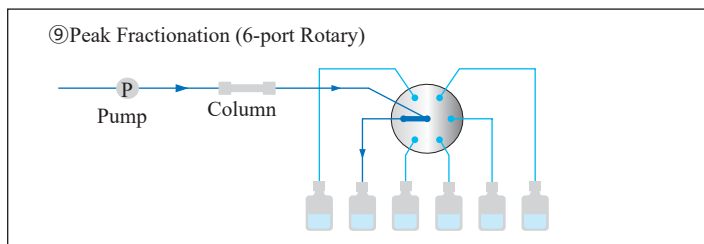
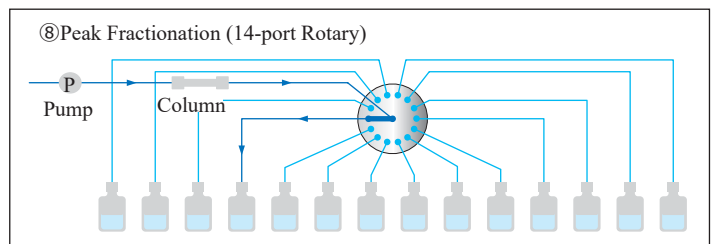
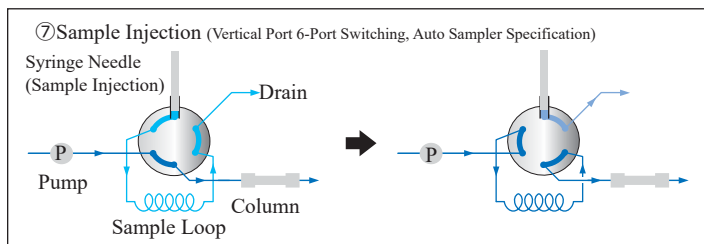
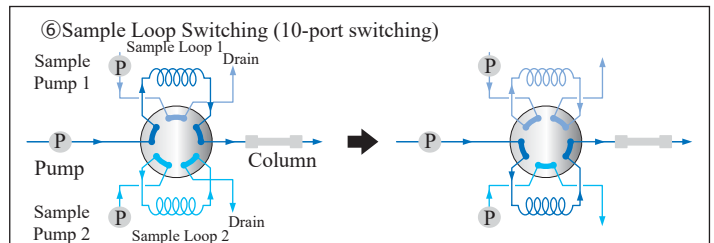
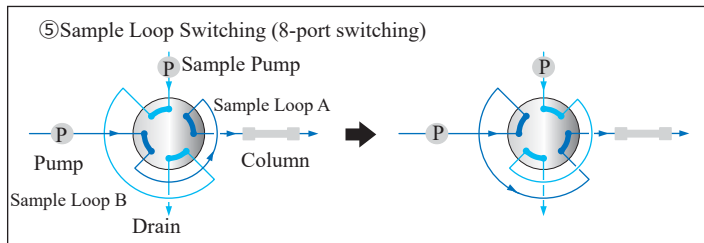
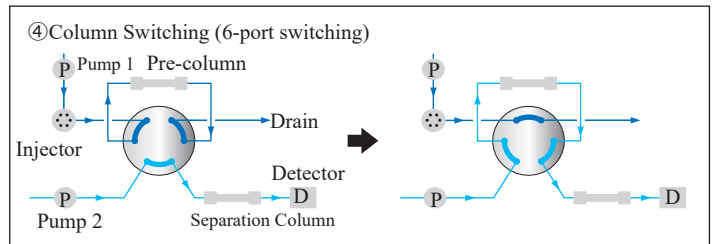
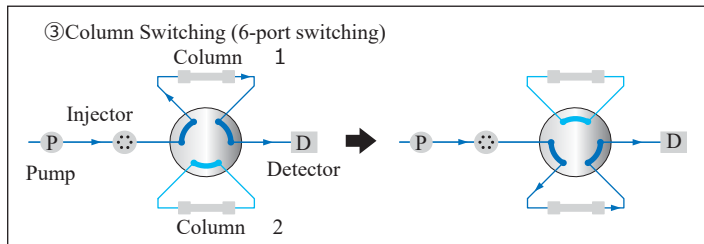
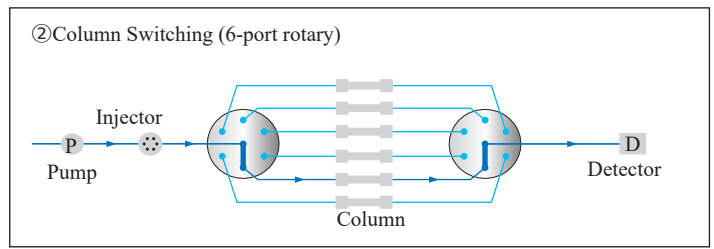
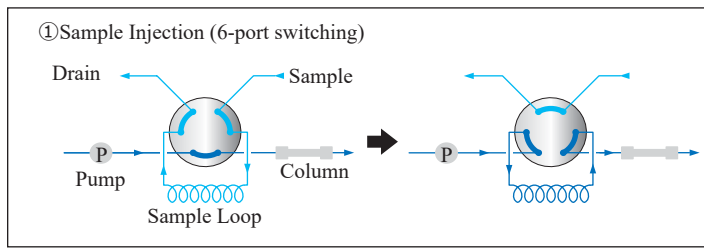


Compact Valve Panel  
(for V200, 201, 204, 239, V512)

P/N	Name
45150	Valve Panel

# Type of Switching Valves

These are only a few typical designs – there are many others. If you don't find the configuration you're looking for here, please contact us for more options.



VALVES

## 4. Liquid Level-Sensing Reservoir Sensors

### Liquid Level Sensors Sonic Reservoir Sensor SR-13

Non-contact liquid level sensor using sound wave



Sonic Reservoir Sensor SR-13

#### Features

- Monitor liquid levels in solvent bottles and waste tanks
- Liquid level displays
- Alarm sounds at low level
- One-touch connection
- Control with RS232C protocol (option)

<b>Product Name</b>	<b>Sonic Reservoir Sensor</b>
<b>Product Number</b>	<b>SR-13</b>
Wetted material	PTFE
Remote control	Input : — Output: Error signal
Communication	RS232C (option)
Dimensions	115 (H) × 85 (W) × 80 (D) mm, excluding protuberances
Weight	Approx 0.7 kg
Power	AC ~ 240 V (50 / 60 Hz) MAX 15W
Order Code	FA007-500



#### SR-13 Accessories

P/N	Name
FD007-502	Solvent probe
FD007-503	Waste probe
FD007-504	Solvent bottle
FD007-505	Waste tank
FD007-506	Serial port



Solvent probe



Waste probe



Solvent bottle



Waste tank

## 6. Reactors



Reactor RT-11

Product name	Reactor
Product number	RT-11
Heat regulation	Block Reactor (Cartridge Style)
Temperature range	40 ~ 100°C (when ambient temp is 25°C)
Accuracy	±1.0°C
Reaction tube*1	OD 1/16" × 10m × 1 tube
Safety feature	Overheating Prevention Function (120°C)
Remote control	Input : Signal conducted, Output : Signal released
Dimensions	170 (H) × 110 (W) × 285 (D) mm, excluding protuberances
Weight	Approx 3.5 kg
Power	AC100V (50 / 60 Hz) MAX130 VA
Order code	SOV-K452

\*1: PTFE tube (OD 1/16" × ID 0.5mm × 10m) comes as standard accessory

### Reactor RT-11

A chemical reaction chamber settable from 40° to 100° C

#### Features

- High accuracy temperature regulation
- Real-time display of internal temperature
- Tube cartridge for easy replacement
- Can set up to 10m of OD 1/16" tubing
- Overheating prevention function

### Reactor RT-12

A chemical reaction chamber settable from 40 to 180°C



Reactor RT-12

Product name	Reactor
Product number	RT-12
Heat regulation	Block Reactor (Cartridge Style)
Temperature range	40 ~ 180°C (when ambient temp is 25°C)
Accuracy	±1.0°C
Reaction tube* 1	O.D. 1/16" × 10m × 1 tube
Safety feature	Overheating Prevention Function (200°C)
Remote control	Input : Signal conducted, Output : Signal released
Dimensions	170 (H) × 110 (W) × 285 (D) mm, excluding protuberances
Weight	Approx 4.5 kg
Power	AC100V (50 / 60 Hz) MAX 130 VA
Order code	SOV-K451

\*1: PTFE tube (OD 1/16" × ID 0.5mm × 10m) comes as standard accessory

#### Features

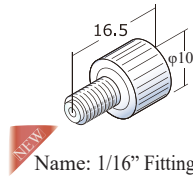
- High accuracy temperature regulation
- Real-time display of internal temperature
- Tube cartridge for easy replacement
- Can set up to 10m of OD 1/16" tubing
- Overheating prevention function



## 7. Tubing and Fittings

### ○ETFE Fittings for OD 1/16", 1/8", 3.0 mm, 2.0 mm tubing

ETFE Ferrule Type (No.10-32UNF, OD 1/16" tubing)

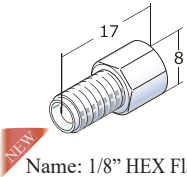


Name: 1/16" Fittings D  
P/N: 9820D  
Material: ETFE  
Quantity: 10 / pack

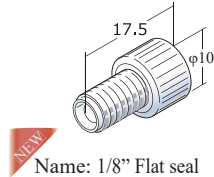


Name: 1/16" ferrule D  
P/N: 9821D  
Material: ETFE  
Quantity: 10 / pack

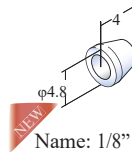
FLAT SEAL Series (1/4-28UNF, OD 3.0 mm or 1/8" tubing)



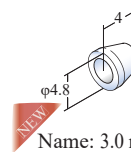
Name: 1/8" HEX Flat seal  
Fittings  
P/N: 9822D  
Material: ETFE  
Quantity: 10 / pack



Name: 1/8" Flat seal  
Fittings  
P/N: 9823D  
Material: ETFE  
Quantity: 10 / pack

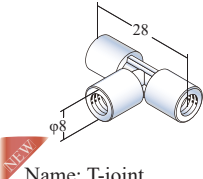


Name: 1/8"•M6 Flat seal  
ferrule  
P/N: 9707  
Material: ETFE  
Quantity: 10 / pack

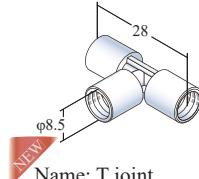


Name: 3.0 mm•M6 Flat seal  
ferrule  
P/N: 9704  
Material: ETFE  
Quantity: 10 / pack

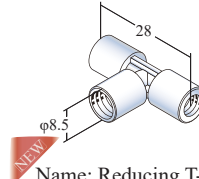
T-joints



Name: T-joint  
P/N: 9824D  
Material: ETFE  
Thread: No.10-32UNF  
ID: 1.0 mm  
Quantity: 1



Name: T joint  
P/N: 9825D  
Material: ETFE  
Thread: 1/4-28UNF  
ID: 1.0 mm  
Quantity: 1



Name: Reducing T-joint  
P/N: 9826D  
Material: ETFE  
Threads: No.10-32UNF, 1/4-28UNF  
ID: 1.0 mm  
Quantity: 1



○SUS Fittings, for OD 1/16” tubing  
**Ultra High Pressure Fittings (up to 140 MPa)**



Name: Dual-Fitt SET  
 P/N: 9620  
 Material: SUS316, PEEK  
 Quantity: each 10 / pack

Name: Dual-Fitting  
 P/N: 9621  
 Material: SUS316  
 Quantity: 10 / pack

Name: Replacement ferrule  
 P/N: 9623-05 (5 / pack), 9623-10 (10 / pack)  
 Material: SUS316, PEEK  
 Quantity: 5 / pack, 10 / pack

**Dual-Fitt**

Reuseable high pressure joints

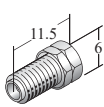
**Features**

- Reduces tube twisting
- Hexagonal ultra high pressure type
- Ferrule does not bite into tube, making reuse easy

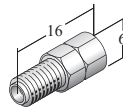
Tightening Guideline (Values will vary depending on tube type.)			
Sealing Torque	0.4 N•m	0.8 N•m	1.4 N•m
Pressure Rating	50 MPa (7252 psi)	100 MPa (14500 psi)	140 MPa (20300 psi)

**High Pressure Fittings (up to 60 MPa)**

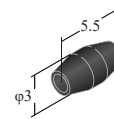
DOUBLE LOCK Series (No.10-32UNF, OD 1/16” tubing)



Name: 1/16” DoubleLock Fittings S  
 P/N: 9301  
 Material: SUS316  
 Quantity: 10 / pack



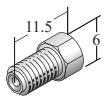
Name: 1/16” DoubleLock Fittings L  
 P/N: 9302  
 Material: SUS316  
 Quantity: 10 / pack



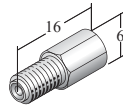
Name: 1/16” DoubleLock Ferrule  
 P/N: 9401  
 Material: PEEK  
 Quantity: 10 / pack

**High Pressure Fittings (up to 40 MPa)**

SUS Ferrule type (No.10-32UNF, OD 1/16” tubing)



Name: 1/16” Fittings S  
 P/N: 9501  
 Material: SUS316  
 Quantity: 10 / pack



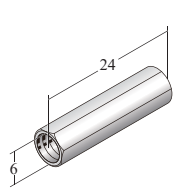
Name: 1/16” Fittings L  
 P/N: 9502  
 Material: SUS316  
 Quantity: 10 / pack



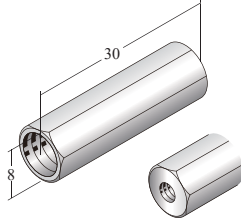
Name: 1/16” Ferrule  
 P/N: 9601  
 Material: SUS316  
 Quantity: 10 / pack

## ○SUS Unions, Joints, and Tubing

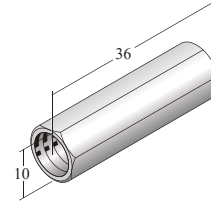
### SUS Unions



Name: Union  
P/N: 9511  
Material: SUS316  
Thread: No.10-32UNF  
ID: 0.5 mm  
Quantity: 1

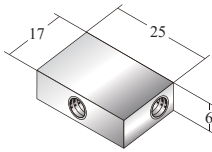


Name: 1/8" x 1/16" Reducing Union  
P/N: 9309  
Material: SUS316  
Thread: M8×1.25, No.10-32UNF  
ID: 1.0 mm  
Quantity: 1

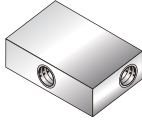


**NEW**  
Name: 1/8" Union  
P/N: 9330  
Material: SUS316  
Thread: M8×1.25  
ID: 2.0 mm  
Quantity: 1

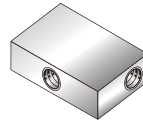
### SUS T-joints



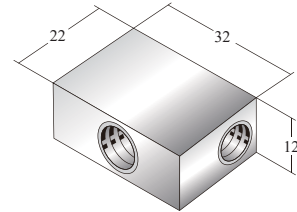
Name: T-joint 0.3 mm  
P/N: 9513-03  
Material: SUS316  
Thread: No.10-32UNF  
ID: 0.3 mm  
Quantity: 1



Name: T-joint 0.5 mm  
P/N: 9513-05  
Material: SUS316  
Thread: No.10-32UNF  
ID: 0.5 mm  
Quantity: 1

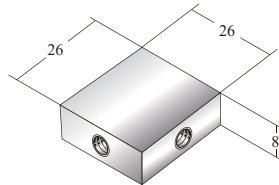


Name: T-joint 1.0 mm  
P/N: 9513-10  
Material: SUS316  
Thread: No.10-32UNF  
ID: 1.0 mm  
Quantity: 1



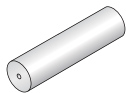
Name: 1/8" T-joint  
P/N: 9313  
Material: SUS316  
Thread: M8×1  
ID: 1.0 mm  
Quantity: 1

### SUS Cross Joints (OD 1/16")

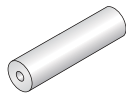


**NEW**  
Name: Cross joint 1.0 mm  
P/N: 9520  
Material: SUS316  
Thread: No.10-32UNF  
ID: 1.0 mm  
Quantity: 1

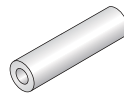
### SUS Tubing (OD 1/16" , 1/8")



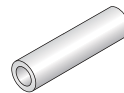
Name: SUS Tubing  
P/N: 7021  
OD: 1/16"  
ID: 0.25 mm  
Length: 10 m



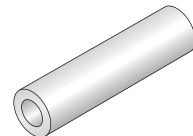
Name: SUS Tubing  
P/N: 7022  
OD: 1/16"  
ID: 0.5 mm  
Length: 10 m



Name: SUS Tubing  
P/N: 7023  
OD: 1/16"  
ID: 0.8 mm  
Length: 10 m



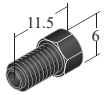
Name: SUS Tubing  
P/N: 7024  
OD: 1/16"  
ID: 1.0 mm  
Length: 10 m



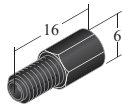
Name: SUS Tubing  
P/N: 7025  
OD: 1/8"  
ID: 2.1 mm  
Length: 2 m

○ PEEK Fittings, for 1/16" tubing  
Medium Pressure Fittings (~35 MPa)

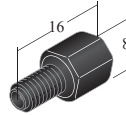
DOUBLE LOCK PEEK Series (No.10-32UNF, OD 1/16" tubing)



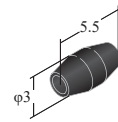
Name: 1/16" Double Lock Fitting S  
P/N: 9411  
Material: PEEK  
Quantity: 10 / pack



Name: 1/16" Double Lock Fitting L  
P/N: 9412  
Material: PEEK  
Quantity: 10 / pack



Name: 1/16" HEX Double Lock Fitting  
P/N: 9415  
Material: PEEK  
Quantity: 10 / pack



Name: 1/16" Double Lock Ferrule  
P/N: 9401  
Material: PEEK  
Quantity: 10 / pack

DOUBLE LOCK PEEK Series (with PEEK Ferrule)



Name: 1/16" Double Lock Fitting S Set  
P/N: 9411-9401  
Material: PEEK  
Quantity: 10 sets / pack



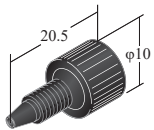
Name: 1/16" Double Lock Fitting L Set  
P/N: 9412-9401  
Material: PEEK  
Quantity: 10 sets / pack



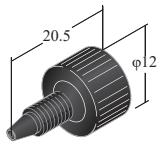
Name: 1/16" HEX Double Lock Fitting Set  
P/N: 9415-9401  
Material: PEEK  
Quantity: 10 sets / pack

Medium Pressure Fittings (~ 20 MPa)

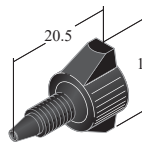
EASY FITT Series (No.10-32UNF, OD 1/16" tubing)



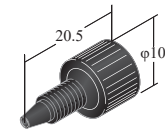
Name: Easy Fitt 10 mm  
P/N: 9001  
Material: PEEK  
Quantity: 10 / pack



Name: Easy Fitt 12 mm  
P/N: 9002  
Material: PEEK  
Quantity: 10 / pack

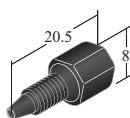


Name: Easy Fitt Type 2  
P/N: 9130  
Material: PEEK  
Quantity: 10 / pack

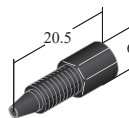


Name: Stop Fitt  
P/N: 9004  
Material: PEEK  
Quantity: 10 / pack

HEX FITT Series (No.10-32UNF , OD 1/16" tubing)

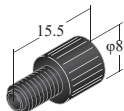


Name: Hex Fitt  
P/N: 9003  
Material: PEEK  
Quantity: 10 / pack

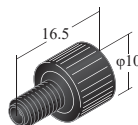


Name: Hex Fitt Mini  
P/N: 9135  
Material: PEEK  
Quantity: 10 / pack

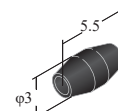
DOUBLE LOCK PEEK Series (No.10-32UNF, OD 1/16" tubing)



Name: 1/16" EASY8 Double Lock Fitting  
P/N: 9416  
Material: PEEK  
Quantity: 10 / pack



Name: 1/16" EASY10 Double Lock Fitting  
P/N: 9413  
Material: PEEK  
Quantity: 10 / pack



Name: 1/16" Double Lock Ferrule  
P/N: 9401  
Material: PEEK  
Quantity: 10 / pack

DOUBLE LOCK PEEK Series (with PEEK ferrule)



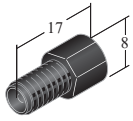
Name: 1/16" EASY 8 Double Lock Set  
P/N: 9416-9401  
Material: PEEK  
Quantity: 10 sets/pack



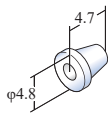
Name: 1/16" EASY 10 Double Lock Set  
P/N: 9413-9401  
Material: PEEK  
Quantity: 10 sets/pack

○ Other Polymer Fittings for OD 1/16", 1/8", 3.0 mm, 2.0 mm tubing  
Low Pressure Fittings (~1 MPa)

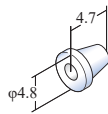
FLAT SEAL Series (1/4-28UNF, OD 1/16" or 2.0 mm tubing)



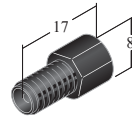
Name: 2.0 mm HEX Flat Seal Fitting  
P/N: 9772  
Material: PEEK  
Quantity: 10 / pack



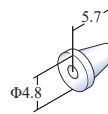
Name: 2.0 mm M6 Flat Seal Ferrule (Penetrating)  
P/N: 9755  
Material: ETFE  
Quantity: 10 / pack



Name: 2.0 mm M6 Flat Seal Ferrule (Non-Penetrating)  
P/N: 9705  
Material: ETFE  
Quantity: 10 / pack

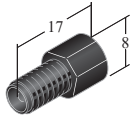


Name: 1/16" HEX Flat Seal Fitting  
P/N: 9773  
Material: PEEK  
Quantity: 10 / pack

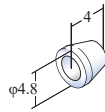


Name: 1/16" M6 Flat Seal Ferrule  
P/N: 9706  
Material: ETFE  
Quantity: 10 / pack

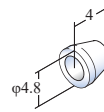
FLAT SEAL Series (1/4-28UNF, OD 3.0 mm or 1/8" tubing)



Name: 1/8" HEX Flat Seal Fitting  
P/N: 9771  
Material: PEEK  
Quantity: 10 / pack

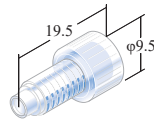


Name: 1/8" M6 Flat Seal Ferrule  
P/N: 9707  
Material: ETFE  
Quantity: 10 / pack



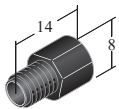
Name: 3.0 mm M6 Flat Seal Ferrule  
P/N: 9704  
Material: ETFE  
Quantity: 10 / pack

FLAT SEAL PLUG

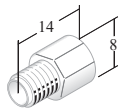


Name: Flat Seal Plug  
P/N: 9720P  
Material: PP  
Quantity: 10 / pack

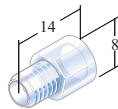
FLAT SEAL Series (M6x1, OD 2.0 mm tubing)



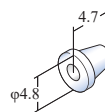
Name: 2.0 mm M6 Flat Seal Fitting  
P/N: 9752  
Material: PEEK  
Quantity: 10 / pack



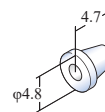
Name: 2.0 mm M6 Flat Seal Fitting  
P/N: 9732  
Material: POM  
Quantity: 10 / pack



Name: 2.0 mm M6 Flat Seal Fitting  
P/N: 9762  
Material: PP  
Quantity: 10 / pack

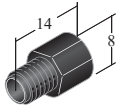


Name: 2.0 mm M6 Flat Seal Ferrule (Penetrating)  
P/N: 9755  
Material: ETFE  
Quantity: 10 / pack

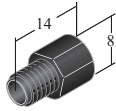


Name: 2.0 mm M6 Flat Seal Ferrule (Non-Penetrating)  
P/N: 9705  
Material: ETFE  
Quantity: 10 / pack

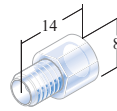
FLAT SEAL Series (M6×1, OD 3.0 mm tubing)



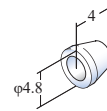
Name: 3.0 mm•M6 Flat Seal Fitting  
P/N: 9751  
Material: PEEK  
Quantity: 10 / pack



Name: 3.0 mm•M6 Flat Seal Fitting  
P/N: 9731  
Material: POM  
Quantity: 10 / pack

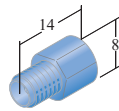


Name: 3.0 mm•M6 Flat Seal Fitting  
P/N: 9761  
Material: PP  
Quantity: 10 / pack

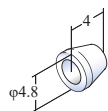


Name: 3.0 mm•M6 Flat Seal Ferrule  
P/N: 9704  
Material: ETFE  
Quantity: 10/pack

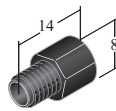
FLAT SEAL Series (M6×1, OD 1/8" or 1/16" tubing)



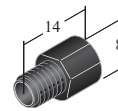
Name: 1/8"•M6 Flat Seal Fitting  
P/N: 9760  
Material: PP  
Quantity: 10 / pack



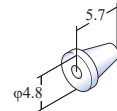
Name: 1/8"•M6 Flat Seal Ferrule  
P/N: 9707  
Material: ETFE  
Quantity: 10 / pack



Name: 1/16"•M6 Flat Seal Fitting  
P/N: 9753  
Material: PEEK  
Quantity: 10 / pack

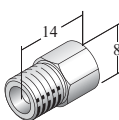


Name: 1/16"•M6 Flat Seal Fitting  
P/N: 9734  
Material: POM  
Quantity: 10 / pack

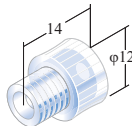


Name: 1/16"•M6 Flat Seal Ferrule  
P/N: 9706  
Material: ETFE  
Quantity: 10 / pack

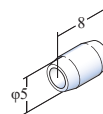
DOUBLE LOCK Series (M8×1, OD 3.0 mm • 1/8" tubing)



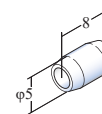
Name: 1/8" Double Lock Fitting  
P/N: 9304  
Material: SUS316  
Quantity: 10 / pack



Name: 1/8" Double Lock Fitting  
P/N: 9305  
Material: PP  
Quantity: 10 / pack

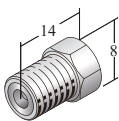


Name: 1/8" DoubleLock Ferrule  
P/N: 9402  
Material: ETFE  
Quantity: 10 / pack

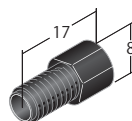


Name: 3.0 mm Double Lock Ferrule  
P/N: 9405  
Material: ETFE  
Quantity: 10 / pack

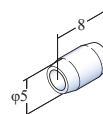
DOUBLE LOCK Series (M8×1.25, OD 3.0 mm • 1/8" tubing)



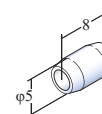
Name: 1/8" Double Lock Fitting  
P/N: 9303  
Material: SUS316  
Thread: M8×1.25  
Quantity: 10 / pack



Name: 1/8" Double Lock Fitting  
P/N: 9303P  
Material: PEEK  
Thread: M8×1  
Quantity: 10 / pack

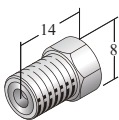


Name: 1/8" DoubleLock Ferrule  
P/N: 9402  
Material: ETFE  
Quantity: 10 / pack

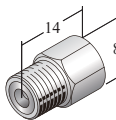


Name: 3.0 mm Double Lock Ferrule  
P/N: 9405  
Material: ETFE  
Quantity: 10 / pack

SUS Fitting (M8×1.25, M8×1, OD 1/8")



Name: 1/8" Fitting  
P/N: 9306  
Material: SUS316  
Thread: M8×1.25  
Quantity: 10 / pack



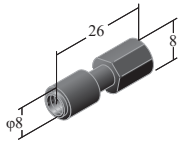
Name: 1/8"•M8 Fitting  
P/N: 9311  
Material: SUS316  
Thread: M8×1  
Quantity: 10 / pack



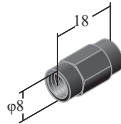
Name: 1/8" Fitting Ferrule  
P/N: 9321  
Material: SUS316  
Quantity: 10 / pack

## ○ PEEK Unions and Joints

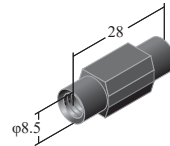
### Unions



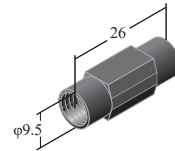
Name: Union  
P/N: 9005  
Material: PEEK  
Thread: No.10-32UNF  
ID: 0.5 mm  
Quantity: 1



Name: Union  
P/N: 9736  
Material: POM  
Thread: M6×1  
ID: 1.0 mm  
Quantity: 1

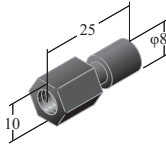


Name: Union  
P/N: 9101  
Material: PEEK  
Thread: 1/4-28UNF  
ID: 1.0 mm  
Quantity: 1

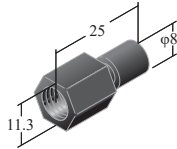


Name: Union  
P/N: 9111  
Material: PEEK  
Thread: M8×1  
ID: 1.0 mm  
Quantity: 1

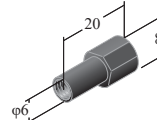
### Reducing Unions



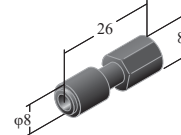
Name: Reducing Union  
P/N: 9110  
Material: PEEK  
Thread: 1/4-28UNF,  
No.10-32UNF  
ID: 1.0 mm  
Quantity: 1



Name: Reducing Union  
P/N: 9008  
Material: PEEK  
Thread: M8×1, No.10-32UNF  
ID: 1.0 mm  
Quantity: 1

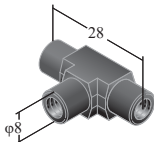


Name: Reducing Union  
P/N: 9737  
Material: POM  
Thread: M6×1, No.10-32UNF  
ID: 1.0 mm  
Quantity: 1

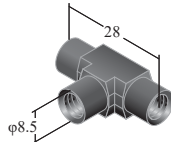


Name: Reducing Union  
P/N: 9112  
Material: PEEK  
Thread: No.10-32UNF, Syringe  
ID: 1.0 mm  
Quantity: 1

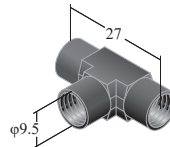
### T-joints



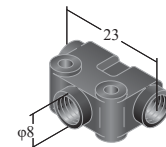
Name: T-joint  
P/N: 9006  
Material: PEEK  
Thread: No.10-32UNF  
ID: 0.5 mm  
Quantity: 1



Name: T-joint  
P/N: 9131  
Material: PEEK  
Thread: 1/4-28UNF  
ID: 1.0 mm  
Quantity: 1

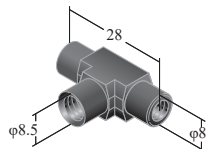


Name: T-joint  
P/N: 9121  
Material: PEEK  
Thread: M8×1  
ID: 1.0 mm  
Quantity: 1

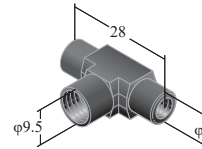


Name: T-joint  
P/N: 9738  
Material: POM  
Thread: M6×1  
ID: 1.0 mm  
Quantity: 1

### Reducing T-joints

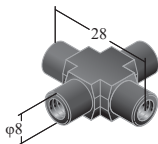


Name: Reducing T-joint  
P/N: 9108  
Material: PEEK  
Thread: No.10-32, 1/4-28UNF  
ID: 1.0 mm  
Quantity: 1

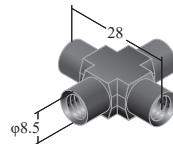


Name: Reducing T-joint  
P/N: 9107  
Material: PEEK  
Thread: No.10-32UNF, M8×1  
ID: 1.0 mm  
Quantity: 1

### Cross Joints



Name: Cross Joint  
P/N: 9007  
Material: PEEK  
Thread: No.10-32UNF  
ID: 1.0 mm  
Quantity: 1



Name: Cross Joint  
P/N: 9109  
Material: PEEK  
Thread: 1/4-28UNF  
ID: 1.0 mm  
Quantity: 1

## ○ PEEK, PTFE, ETFE, PFA Tubing

### PEEK Tubing (OD 1/16")



Name: PEEK Tubing  
P/N: 5999  
Line Color: Red  
OD: 1/16"  
ID: 0.13 mm  
Length: 5 m  
10 m



Name: PEEK Tubing  
P/N: 6001  
Line Color: Blue  
OD: 1/16"  
ID: 0.25 mm  
Length: 5 m  
10 m



Name: PEEK Tubing  
P/N: 6002  
Line Color: Orange  
OD: 1/16"  
ID: 0.50 mm  
Length: 5 m  
10 m

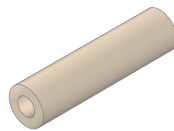


Name: PEEK Tubing  
P/N: 6003  
Line Color: Green  
OD: 1/16"  
ID: 0.75 mm  
Length: 5 m  
10 m

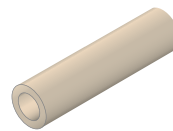


Name: PEEK Tubing  
P/N: 60031  
Line Color: Gray  
OD: 1/16"  
ID: 1.0 mm  
Length: 5 m  
10 m

### PEEK Tubing (O.D.1/8")

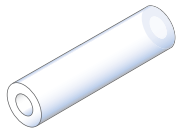


Name: PEEK Tubing  
P/N: 6004  
OD: 1/8"  
ID: 1/16"  
Length: 5 m

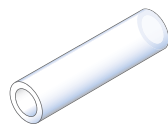


Name: PEEK Tubing  
P/N: 60042  
OD: 1/8"  
ID: 2.0mm  
Length: 5 m

### PTFE Tubing



Name: PTFE Tubing  
P/N: 7213  
OD: 1/8"  
ID: 1/16"  
Length: 10 m



Name: PTFE Tubing  
P/N: 7005  
OD: 3.0 mm  
ID: 2.0 mm  
Length: 10 m



Name: PTFE Tubing  
P/N: 7211  
OD: 1/16"  
ID: 0.25 mm  
Length: 10 m



Name: PTFE Tubing  
P/N: 7210  
OD: 1/16"  
ID: 0.50 mm  
Length: 10 m



Name: PTFE Tubing  
P/N: 7212  
OD: 1/16"  
ID: 0.80 mm  
Length: 10 m



Name: PTFE Tubing  
P/N: 7215  
OD: 1/16"  
ID: 1.0 mm  
Length: 10 m

### ETFE Tubing



Name: ETFE Tubing  
P/N: 7009  
OD: 1/16"  
ID: 0.20 mm  
Length: 10 m



Name: ETFE Tubing  
P/N: 7010  
OD: 1/16"  
ID: 0.30 mm  
Length: 10 m



Name: ETFE Tubing  
P/N: 7011  
OD: 1/16"  
ID: 0.50 mm  
Length: 10 m

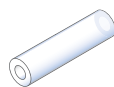


Name: ETFE Tubing  
P/N: 7012  
OD: 1/16"  
ID: 0.80 mm  
Length: 10 m

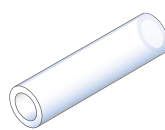


Name: ETFE Tubing  
P/N: 7013  
OD: 1/16"  
ID: 1.0 mm  
Length: 10 m

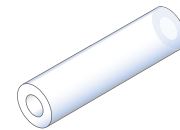
### PFA Tubing



Name: PFA Tubing  
P/N: 7103  
OD: 2.0 mm  
ID: 1.0 mm  
Length: 10 m



Name: PFA Tubing  
P/N: 7104  
OD: 3.0 mm  
ID: 2.0 mm  
Length: 10 m



Name: PFA Tubing  
P/N: 7105  
OD: 1/8"  
ID: 1/16"  
Length: 10 m

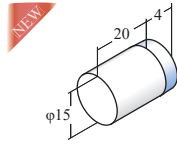


## 8. Other Products

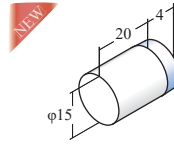
### ○ Filters

#### Solvent Filters

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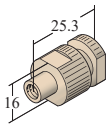
**Name:** Suction Filter  
**P/N:** 8810  
**Pore size:** 20  $\mu\text{m}$   
**Connection:** OD 1/8", 3 mm tubing  
**Material:** PTFE, PCTFE  
**Quantity:** 1



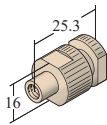
**Name:** Suction Filter  
**P/N:** 8811  
**Pore size:** 20  $\mu\text{m}$   
**Connection:** OD 1/16" tubing  
**Material:** PTFE, PCTFE  
**Quantity:** 1

#### Solvent Filters (Inline)

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**Name:** PEEK Inline Filter  
**P/N:** 8502  
**Pore size:** 5  $\mu\text{m}$   
**Connection:** No.10-32UNF  
**Material:** PEEK  
**Quantity:** 1



**Name:** PEEK Inline Filter  
**P/N:** 8501  
**Pore size:** 10  $\mu\text{m}$   
**Connection:** No.10-32UNF  
**Material:** PEEK  
**Quantity:** 1



**Name:** PEEK Frit (Replacement for inline filter)  
**P/N:** 8512  
**Pore size:** 5  $\mu\text{m}$   
**Material:** PEEK  
**Quantity:** 5 / pack



**Name:** PEEK Frit (Replacement for inline filter)  
**P/N:** 8511  
**Pore size:** 10  $\mu\text{m}$   
**Material:** PEEK  
**Quantity:** 5 / pack

## ○ Solvent Bottles

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Name: Schott Solvent Bottle  
P/N: 9841  
Capacity: 1000 mL  
Cap: 9851 Bottle Cap  
Quantity: 1



Name: Schott Solvent Bottle  
P/N: 9842  
Capacity: 500 mL  
Cap: 9851 Bottle Cap  
Quantity: 1



Name: Bottle Cap  
P/N: 9851  
Size: GL45 (for Schott Solvent Bottles)  
Tubing OD can be 1/8", 3.0 mm, 2.0 mm, 1/16"  
Quantity: 1

## ○ Tube Cutters

---



Name: PEEK Tube Cutter  
P/N: 9830  
Quantity: 1



Name: SUS Tube Cutter  
P/N: 9831  
Quantity: 1

### **SUS**

Stainless Steel. The material is mainly steel, but is corrosion resistant due to the chromium alloy, which forms a chromium oxide layer on the surface. Since it cannot be corroded by organic solvents and is highly pressure resistant, it is commonly used in pump heads, valve stators, tubing, fittings, and HPLC columns.

### **PEEK**

Abbreviation for the plastic, polyetheretherketone. Exhibits superlative chemical and mechanical resistance properties. Since it has much higher resistance than other high polymer materials, all of which are inferior to stainless steel in this respect, it is used in everything from pump heads and pump rotor seals to tubing and fittings. Especially good in analytical applications of ionic substances or certain solvents which can corrode metal.

### **PTFE**

Abbreviation of Polytetrafluoroethylene, a material exhibiting extremely high chemical resistance. Resistant to a wide variety of organic solvents and strongly acid/alkaline solutions, used as tubing in degassing units and in standard tubing and fitting products. However, because of its weak mechanical properties, it should only be used in low-pressure applications.

### **PCTFE**

Abbreviation of Polychlorotrifluoroethylene. Compared to PTFE, among organic solvents its use is restricted to strong acid/alkaline mixtures, but since it exhibits the strongest mechanical properties of all the fluorocarbon polymers, it is the 3rd most used material for pumpheads, after SUS and PEEK.

### **ETFE**

Abbreviation of Ethylene Tetrafluoroethylene. This material offers a good balance between chemical and mechanical resistance, and ease of formation. Used in a wide variety of tubing applications.

### **PFA**

Abbreviation of Perfluoroalkoxy alkane. Usually combined with Tetrafluoroethylene. Close to the chemical resistance of PTFE but much easier to form, so used in specialty components where PTFE is difficult to work with.

### **Teflon®AF**

This is an amorphous polymer that, except for specialty fluorocarbon polymers, matches PTFE in its high chemical resistance. Since it has extremely high gas permeability compared to other fluorocarbon polymers, it is extremely useful as degassing tubing inside degassing units. Teflon is a registered trademark of the Chemours Company (USA).

### **FFKM**

Abbreviation of the elastomeric form of poly(tetrafluoro ethylene) or PTFE. This rubber-like substance exhibits very high chemical resistance, so when both chemical resistance and high elasticity are required, this materials is often chosen.

### **HDPE**

Abbreviation of High Density Poly Ethylene. This high molecular weight polymer shows high flexibility and strong mechanical properties, so is often used to make pump plunger seals, where both chemical and abrasion resistance are required.

### **PPS**

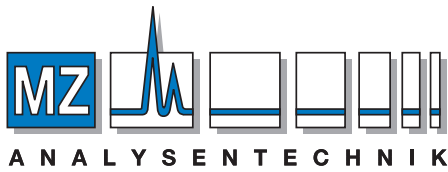
Abbreviation of Polyphenylene sulfide. Considered by some a “super engineering plastic” because of its high performance in chemical and mechanical resistance as well as in ease of molding. Often used in the vacuum chambers of degassing devices.

### **POM**

Abbreviation of Polyoxymethylene, widely referred to as Polycetal. This plastic is a well-balanced blend of chemical resistance, strength, slidability, abrasion resistance and cost performance. Widely used in fittings.



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