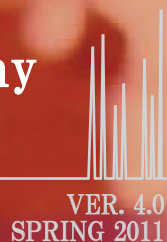


# FLOM Products for Chromatography Complete LC Components Catalog



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Micro Pump MP-12

Product name	<b>Micro Pump</b>
Part number	<b>MP-12</b>
Max pressure* <sup>1</sup>	5MPa/20MPa
Flow rate range	0.1~20.0 $\mu$ L/min
Flow per stroke	124 $\mu$ l
Flow accuracy	0.3%
Features	Non-pulsatile flow control, Flow volume calibration
Pressure accuracy	5%
Wetted materials	PEEK, SS, Sapphire, PTFE, Ceramics
Remote control	Input: PUMP ON/OFF Output: Error signal
Communication	RS232C, DB-9
Dimensions (mm)	220(H) x 170(W) x 350(D)
Weight	13kg
Order code	<b>SMP-P403</b>

\* The specifications and product design may change without prior notice. Consult with your local distributor for the latest specifications.  
<sup>1</sup> Maximum pressure does not guarantee the continuous pump operation at the highest pressure. It may result in damage of the pump.  
<sup>1</sup> 5MPa and 20MPa pressure sensors are available. Consult with your local distributor for details.

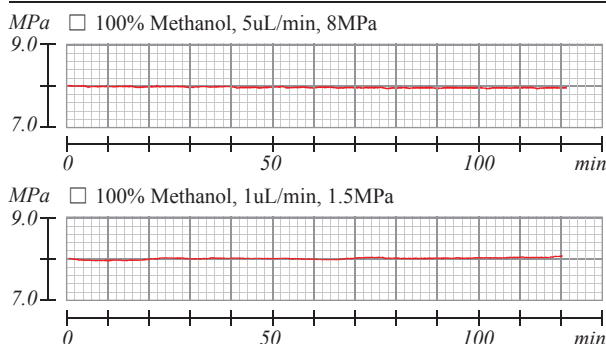
## Microflow Pumps Micro Pump MP-12

Featuring 2 specialty valves and pressure sensors providing non-pulsatile flow control. Provides a steady flow from 0.1 $\mu$ L to 20 $\mu$ L.

### Features

- flow rates of 1 - 20.0 $\mu$ L/min
- non-pulsatile flow with independently controlled double plungers
- easy to read backlit LCD display
- real-time display of flow pressures
- column integrity protected by convenient upper-limit pressure switch
- multi-layer, solvent-resistant seal design
- RS-232C interface for computer control
- comes equipped with GASTORR VG-01 degasser unit

### Pressure Pulsation Data



Intelligent Pump  
AI-12-13 SUS

Intelligent Pump  
AI-12-13 PEEK

Product name	<b>Intelligent Pump</b>		
Part number	<b>AI-12-01</b>	<b>AI-12-13</b>	<b>AI-12-33</b>
Max pressure* <sup>1</sup>	30MPa/20MPa	30MPa/20MPa	5MPa
Flow rate range	0.001~0.999 $\mu$ L/min	0.01~9.99 $\mu$ L/min	0.1~50.0 $\mu$ L/min
Flow per stroke	4 $\mu$ l	32 $\mu$ l	154 $\mu$ l
Flow accuracy	0.3%		
Features	Active pulse reduction, Flow volume calibration, Upper pressure limiter, Lower pressure limiter		
Pressure accuracy	5%		
Wetted materials	SS type: SS, Sapphire, Ruby, PTFE, PCTFE PEEK type: PEEK, Sapphire, Ruby, PTFE, PCTFE		
Remote control	Input: Pump on/off, Output: Error signal		
Communication	RS232C		
Dimensions (mm)	144(H) x 79(W) x 305(D)		
Weight	3.8~4.3kg		
Order code (PEEK)	<b>SIP-P2005</b>	<b>SIP-P2001</b>	<b>SIP-P2003</b>
Order code (SS)	<b>SIP-P2006</b>	<b>SIP-P2002</b>	<b>SIP-P2004</b>

\* The specifications and product design may change without prior notice. Consult with your local distributor for the latest specifications.  
<sup>1</sup> Maximum pressure does not guarantee the continuous pump operation at the highest pressure. It may result in damage of the pump.  
<sup>1</sup> The maximum pressure is 30MPa for SS types and 20MPa for PEEK type.

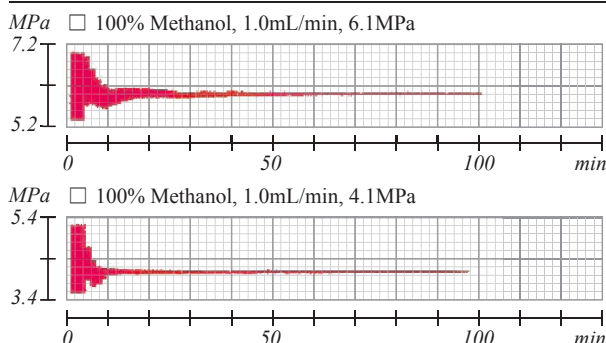
## Pulse Control Pumps Intelligent Pump AI-12 Series

A high performance pump with pressure sensing and real-time pulse control. External computer control possible through the RS-232C interface.

### Features

- high precision and stable flow volumes
- easy to read backlit LCD display
- self-regulating mechanism greatly reduces pressure fluctuations
- column integrity protected by convenient upper-limit pressure switch
- low-pressure limit switch allows automatic shutdown upon leak detection
- RS-232C interface for computer control
- multi-layer, solvent-resistant seal design
- can choose from 3 different models to match desired flow ranges
- space-saving compact design
- choose either PEEK or SS to match solvent used

### Pressure Pulsation Data





Intelligent Pump HI-12-33

## Pulse Control Fractionating High Pressure Pump Intelligent Pump HI-12-33

Through pulsatile control this pump can dispense 25 mL fractions at 20MPa. Flow rates of up to 50mL (10MPa) possible.

### Features

- can produce high flow rates with high pressure
- easy to read backlit LCD displays show real-time flow pressures
- self-regulating mechanism greatly reduces pressure fluctuations
- column integrity protected by convenient upper-limit pressure switch
- low-pressure limit switch allows automatic shutdown upon leak detection
- computer control of 2 or more units through RS232 interface possible

Product name	<b>Intelligent Pump</b>
Part number	<b>HI-12-33</b>
Max pressure *1	20MPa (~25mL/min) 10MPa (~50mL/min)
Flow rate range	0.1~50.0mL/min
Flow per stroke	154 μl
Flow accuracy	0.3%
Features	Active pulse reduction, Flow volume calibration, Upper pressure limiter, Lower pressure limiter
Pressure accuracy	5%
Wetted materials	SS, Sapphire, Rubby, PTFE, PCTFE
Remote control	Input: Pump on/off, Output: Error signal
Communication	RS232C
Dimensions (mm)	184(H) x 110(W) x 395(D)
Weight	7.5kg
Order code	<b>SIP-P2104</b>

\* The specifications and product design may change without prior notice. Consult with your local distributor for the latest specifications.  
\*1 Maximum pressure does not guarantee the continuous pump operation at the highest pressure. It may result in damage of the pump.



Dual Pump HP-12-33

## Fractionating High Pressure Pump Dual Pump HP-12-33

A general-use, high pressure and high flow rate fractionating pump with exceptionally stable pressure and flow. Flow rates up to 50mL

### Features

- can produce high flow rates with high pressure
- easy to read backlit LCD displays show real-time flow pressures
- column integrity protected by convenient upper-limit pressure switch
- special steady-state pressure mode provides stable flow \*2
- RS-232C interface for computer control

Product name	<b>Dual Pump</b>
Part number	<b>HP-12-33</b>
Max pressure *1	20MPa(~25mL/min) 10MPa(~50mL/min)
Flow rate range	0.1~50.0mL/min
Flow per stroke	154ul
Flow accuracy	0.5%
Features	Flow volume calibration, Steady-state pressure mode, Set volume dispensing*2
Pressure accuracy	5%
Wetted materials	SS, Sapphire, Rubby, PTFE, PCTFE
Remote control	Input: Pump on/off, Output: Error signal
Communication	RS232C
Dimensions (mm)	184(H) x 110(W) x 395(D)
Weight	7.5kg
Order code	<b>SDP-P1102</b>

\* The specifications and product design may change without prior notice. Consult with your local distributor for the latest specifications.  
\*1 Maximum pressure does not guarantee the continuous pump operation at the highest pressure. It may result in damage of the pump.  
\*2 Even when steady-state mode is operative, there will be some pulse fluctuations within the margin of error.

Dual Pump  
KP-22-13 SUSDual Pump  
KP-22-13 PEEK

Product name	Dual Pump		
Part number	KP-22-01	KP-22-13	KP-22-33
Max pressure <sup>*1</sup>	25MPa/20MPa	25MPa/20MPa	5MPa
Flow rate range <sup>*2</sup>	0.001~1.0mL/min	0.01~10.0mL/min	0.1~50.0mL/min
Flow per stroke	4ul	32ul	154ul
Flow accuracy	0.3%		
Features	Pulse control, <sup>*3</sup> Flow volume calibration, Upper pressure limiter, Constant pressure flow, <sup>*4</sup> Set volume dispensing		
Pressure accuracy	5%		
Wetted materials	SS type: SS, Sapphire, Rubby, PTFE, PCTFE PEEK type: PEEK, Sapphire, Rubby, PTFE, PCTFE		
Remote control	Input: Pump on/off, Output: Error signal		
Communication	RS232C		
Dimensions (mm)	144(H) x 79(W) x 285(D)		
Weight	3.8~4.3kg		
Order code (PEEK)	SDP-P1080	SDP-P1076	SDP-P1078
Order code (SS)	SDP-P1081	SDP-P1077	SDP-P1079

\* The specifications and product design may change without prior notice. Consult with your local distributor for the latest specifications.

<sup>\*1</sup> Maximum pressure does not guarantee the continuous pump operation at the highest pressure. It may result in damage of the pump.

<sup>\*2</sup> The maximum pressure is 25MPa for SS types and 20MPa for PEEK type.

<sup>\*3</sup> Pulse control is activated below the flow pressure of 5MPa.

<sup>\*4</sup> Constant pressure flow mode adjusts the flow rate in realtime to stabilize the pressure at the set range.

## Medium to High Pressure Pumps Dual Pump KP-22 Series

A general-use pump for a wide variety of liquid chromatography applications. Equipped with pressure sensor, this multi-use pump can handle either set volume dispensing or constant pressure applications.

### Features

- high precision and stable flow volumes
- equipped with pulse control for reduced fluctuations in pressure
- easy to read backlit LCD display
- real-time display of pressure
- column integrity protected by convenient upper-limit pressure switch
- metered flow mode allows setting to desired flow volumes
- RS-232C interface for computer control
- variety of seals to choose from depending on solvent
- can choose from 3 different models to match desired flow ranges
- optional inert (PEEK) pump
- space-saving compact design

## Medium to High Pressure Pumps Dual Pump KP-21 Series

A low-cost general-use providing steady flows for simple applications.

### Features

- high precision and stable flow volumes
- easy to read backlit LCD display
- RS-232C interface for computer control
- can choose from 3 different models to match desired flow ranges
- optional inert (PEEK) pump
- space-saving compact design

Dual Pump  
KP-21-13 SUSDual Pump  
KP-21-13 PEEK

Product name	Dual Pump		
Part number	KP-21-01	KP-21-13	KP-21-33
Max pressure <sup>*1</sup>	25MPa/20MPa	25MPa/20MPa	5MPa
Flow rate range <sup>*2</sup>	0.001~1.0mL/min	0.01~10.0mL/min	0.1~50.0mL/min
Flow per stroke	4ul	32ul	154ul
Flow accuracy	0.3%		
Features	Flow volume calibration Set volume dispensing		
Pressure accuracy	-		
Wetted materials	SS type: SS, Sapphire, Rubby, PTFE, PCTFE PEEK type: PEEK, Sapphire, Rubby, PTFE, PCTFE		
Remote control	Input: Pump on/off, Output: Error signal		
Communication	RS232C		
Dimensions (mm)	144(H) x 79(W) x 285(D)		
Weight	3.4~4.3kg		
Order code (PEEK)	SDP-P1086	SDP-P1082	SDP-P1084
Order code (SS)	SDP-P1087	SDP-P1083	SDP-P1085

\* The specifications and product design may change without prior notice. Consult with your local distributor for the latest specifications.

<sup>\*1</sup> Maximum pressure does not guarantee the continuous pump operation at the highest pressure. It may result in damage of the pump.

<sup>\*2</sup> The maximum pressure is 25MPa for SS types and 20MPa for PEEK type.

## Medium to High Pressure Pumps PCS Pump SP-22 Series

Low-cost, simple to operate single plunger pumps. Can provide both reduced pulse flow and solvent volume dispensing.



PCS Pump  
SP-22-13 SUS

PCS Pump  
SP-22-13 PEEK

### Features

- equipped with pulse reduction mechanism (quick return mode)
- easy to read backlit LCD display
- real-time pressure display
- column integrity protected by convenient upper-limit pressure switch
- convenient precision metered solvent volume dispensing
- RS-232C interface for computer control
- can choose from 5 different models to match desired flow ranges
- optional inert (PEEK) pump
- space-saving compact design

Product name	PCS Pump				
Part number	SP-22-02	SP-22-12	SP-22-13	SP-22-32	SP-22-33
Max pressure* <sup>1</sup>	20MPa	20MPa	10MPa	5MPa	2MPa
Flow rate range	0.01~1.0ml/min	0.01~2.0ml/min	0.1~5.0ml/min	0.1~10.0ml/min	0.1~20.0ml/min
Flow per stroke	8ul	16ul	32ul	77ul	154ul
Stroke length	2mm	2mm	4mm	2mm	4mm
Flow accuracy	0.5%				
Features	Pulse reduction* <sup>2</sup> , Flow volume calibration, Upper pressure limiter, Set volume dispensing* <sup>3</sup>				
Wetted materials	SS type: SS, Sapphire, Rubby, PTFE, PCTFE PEEK type: PEEK, Sapphire, Rubby, PTFE, PCTFE				
Remote control	Input: Pump on/off, Output: Error signal				
Communication	RS232C				
Dimensions (mm)	144(H) x 79(W) x 285(D)				
Weight	3.0kg				
Order code (PEEK)	SSP-P3061	SSP-P3063	SSP-P3065	SSP-P3067	SSP-P3069
Order code (SS)	SSP-P3062	SSP-P3064	SSP-P3066	SSP-P3068	SSP-P3070

\* The specifications and product design may change without prior notice. Consult with your local distributor for the latest specifications.

\*<sup>1</sup> Maximum pressure does not guarantee the continuous pump operation at the highest pressure. It may result in damage of the pump.

\*<sup>2</sup> Pulse reduction mechanism does not achieve continuous flow.

\*<sup>3</sup> The range of settable volume is 0.01-1000mL or 0.1-1000mL, depending on the model.

## Medium to High Pressure Pumps PCS Pump SP-21 Series

Low-cost version of SP-22 type which enables pulsed flow control. Can also handle steady-state applications.



PCS Pump  
SP-21-13 SUS

PCS Pump  
SP-21-13 PEEK

### Features

- equipped with pulse control mechanism (quick return mode)
- easy to read backlit LCD display
- convenient precision metered solvent volume dispensing
- RS-232C interface for computer control
- variety of seals to choose from depending on solvent
- can choose from 5 different models to match desired flow ranges
- optional inert (PEEK) pump
- space-saving compact design

Product name	PCS Pump				
Part number	SP-21-02	SP-21-12	SP-21-13	SP-21-32	SP-21-33
Max pressure* <sup>1</sup>	20MPa	20MPa	10MPa	5MPa	2MPa
Flow rate range	0.01~1.0ml/min	0.01~2.0ml/min	0.1~5.0ml/min	0.1~10.0ml/min	0.1~20.0ml/min
Flow per stroke	8ul	16ul	32ul	77ul	154ul
Stroke length	2mm	2mm	4mm	2mm	4mm
Flow accuracy	0.5%				
Features	Pulse reduction* <sup>2</sup> , Set volume calibration* <sup>3</sup>				
Wetted materials	SS type: SS, Sapphire, Rubby, PTFE, PCTFE PEEK type: PEEK, Sapphire, Rubby, PTFE, PCTFE				
Remote control	Input: Pump on/off, Output: Error signal				
Communication	RS232C				
Dimensions (mm)	144(H) x 79(W) x 285(D)				
Weight	3.0kg				
Order code (PEEK)	SSP-P3051	SSP-P3053	SSP-P3055	SSP-P3057	SSP-P3059
Order code (SUS)	SSP-P3052	SSP-P3054	SSP-P3056	SSP-P3058	SSP-P3060

\* The specifications and product design may change without prior notice. Consult with your local distributor for the latest specifications.

\*<sup>1</sup> Maximum pressure does not guarantee the continuous pump operation at the highest pressure. It may result in damage of the pump.

\*<sup>2</sup> Pulse reduction mechanism does not achieve continuous flow.

\*<sup>3</sup> The range of settable volume is 0.01-1000mL or 0.1-1000mL, depending on the model.



Peristaltic Pump TP-11

Product name	<b>Peristaltic Pump</b>
Part number	<b>TP-11</b>
Flow rate range* <sup>1</sup>	0.5~15mL/min (1 channel)
Flow accuracy	5% or less
Max pressure	Appr. 2kg/cm <sup>2</sup>
Max viscosity	2Pa (2000cP)
Temperature range	0~50°C * <sup>2</sup>
Ambient temp range	5~40°C * <sup>3</sup>
Panel control	Up/Down keys
Flow directionarity	Standard flow/reverse flow
Features	Purge mode, Max flow rate reset
Materials for rotor mechanics	PPS (Rotor shaft, bracket, tube holder) PEEK (roller)
Tube capacity	2
Settable tube materials	Silicon, Pharmed®, Kalrez®, Tygon®
Settable tube OD	OD2.0~4.0mm
Dimensions	144(H) x 79(W) x 285(D)
Weight	3.0kg
Order code	STP-F004

\* The specifications and product design may change without prior notice. Consult with your local distributor for the latest specifications.

\*<sup>1</sup> The range assumes the use of the tube with OD4.0mm and ID2.0mm.

\*<sup>2</sup> The range may vary if the solvent condition changes.

\*<sup>3</sup> The range may vary if condensation occurs.

\* Pharmed is a registered trademark of Saint-Gobain Performance Plastics.

\* Kalrez and Tygon are the registered trademarks of DuPont Performance Elastomers, LLC.

## Tube Pumps

### Peristaltic Pump TP-11

Convenient, general-use pump to use with fluid wash and exhaust. With a simple operation based on tube-pinching rollers, only the tubes come in contact with the solvent.

#### Features

- cantilevered arm allows simple tube replacement
- standard 2 channels can be expanded to 3 channels
- new roller design drastically reduces pulsation
- only tubes in contact with solvent (can specify tube material based on solvent type)

## Pumps for LC Pumps

### Cleaning Pump WP-11

Compatible with all FLOM pumps. Helps prevent excess wear and abrasion on plungers and plunger seals when using high salt solvents.

#### Features

- Palm-size compact design
- Diaphragm pump for long pump life
- can be connect to all FLOM high pressure pumps



Cleaning Pump WP-11

Product name	<b>Cleaning Pump</b>
Part number	<b>WP-11</b>
Flow rate range* <sup>1</sup>	0.4mL/min
Wetted materials	PEEK, ETFE, Silicon, POM
Port thread size	M6
Dimensions (mm)	72(H) x 50(W) x 120(D)
Weight	0.5kg
Power voltage	AC100V
Order code	SWP-P351

\* The specifications and product design may change without prior notice. Consult with your local distributor for the latest specifications.

\*<sup>1</sup> The range is pre-set at 4mL/min and it cannot be changed.

## Pump Accessories



High Pressure Damper 9810



Low Pressure Damper 9800

Product name	High Pressure Damper	Low Pressure Damper
Part number	9810	9800
Max pressure	20MPa	2MPa
Pressure range*1	8~12MPa	0.1~0.7MPa
Internal volume	3.5mL	0.8mL
Wetted materials	PEEK, PTFE	PEEK, FEP
Thread size	No.10-32UNF	No.10-32UNF
Dimensions (mm)	φ 50 x 36.5	φ 45 x 33
Weight	0.3kg	0.3kg
Order code	PDM-F001	PDM-F002

\* The specifications and product design may change without prior notice. Consult with your local distributor for the latest specifications.  
 \*1 The range indicates the effective range of damper's pressure pulse reduction.

## Pulse Dampers

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



Side Panel 4512  
Injector type



Side Panel 4513  
Injector/Damper type



Side Panel 4514  
Small manual valve type

Product name	Side Panel		
Part number	4512	4513	4514
Pump type	AI-12, KP-12, KP-11, SP-12, SP-11 series		
Attachable parts	VI-11, VI-12, MI-11, V series	9800, 9810, VI-11, VI-12, MI-11, V series	V200 series
Dimensions (mm)	144(H) x 60(W) x 44(D)		
Order code	PB1001-10	PB1001-09	PB1001-11

\* The specifications and product design may change without prior notice. Consult with your local distributor for the latest specifications.  
 \*1 The prices are for the panels only -- the accessory parts must be purchased separately.

## Side Panels for Valve Attachment

For attachment of switch valves, sample injectors, and pulse dampers to pumps. Can be attached to all AI, KP, and SP type pumps.

# Solvent Degassing System Gastorr AG series



Gastorr AG-32

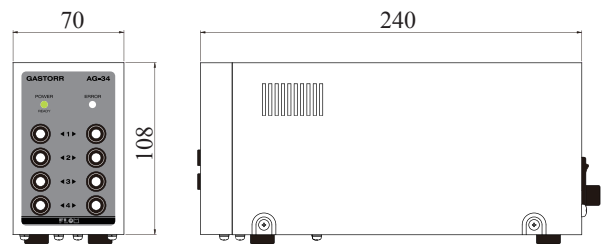
Gastorr AG-34

- CPU control achieves stable baseline
- automatic cleaning function prevents vacuum pump deterioration
- error detection alerts user to faulty degassing operation
- space-saving compact design

Product name	Gastorr	
Part number	AG-32-01	AG-34-01
Channels	2	4
Internal volume	314uL	
Max flow rate	10mL/min	
Degassing efficiency	Refer to "Flow Rate and Dissolved Oxygen Level" Fig.1	
Vacuum level	70hPa	
Vacuum range	2hPa	
Thread size	1/4-28UNF	
Wetted materials	Teflon AF <sup>®</sup> , ETFE, PPS	
Communication	-	
Dimensions (mm)	H108mm X W70mm X D240mm (casing only)	
Weight	1.9kg	
Power consumption	0.8A, 80VA	
Voltage range	AC100~240V 50/60Hz	
Order code	SGA-G2008	SGA-G2009

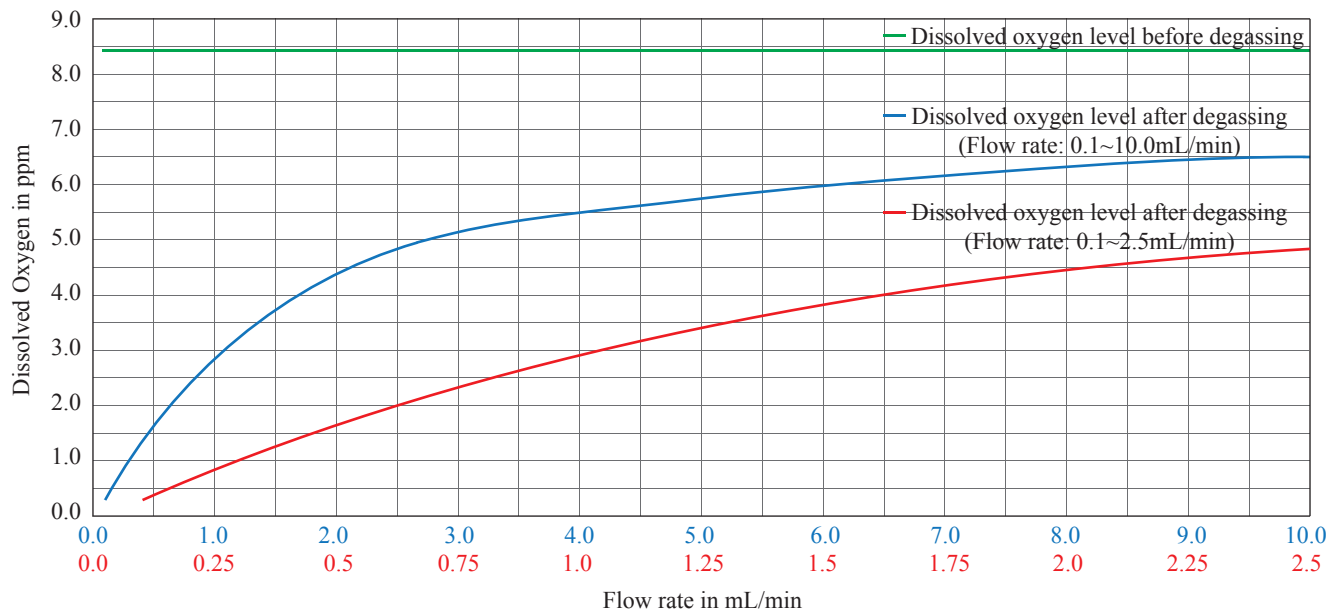
\* The specifications and product design may change without prior notice. Consult with your local distributor for the latest specifications.  
 \* All trademarks are property of their respective owners.  
 \* The data shown in "Flow rate and Dissolved Oxygen Level (Figure 1)" is taken according FLOM testing guideline. Consult FLOM Corporation for detail.

## Dimensions



## Flow Rate and Dissolved Oxygen Level (Figure 1)

- Solvent: Distilled water 25°C
- Vacuum level: 70hPa
- Degassing unit: AG-34-01





## Solvent Degassing System Gastorr BG series



Gastorr BG-32

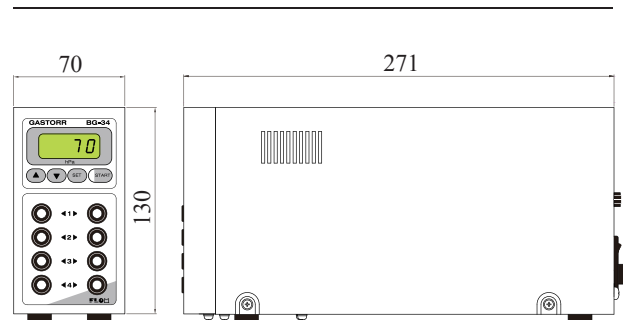
Gastorr BG-34

- CPU control achieves stable baseline
- automatic cleaning function prevents vacuum pump deterioration
- Real time display of chamber vacuum level
- error detection alerts user to faulty degassing operation
- RS232C interface for computer control

Product name	Gastorr			
Part number	BG-32-02	BG-34-02	BG-32-10	BG-34-10
Channels	2	4	2	4
Internal volume	510uL		1021uL	
Max flow rate	10mL/min			
Degassing efficiency	Refer to "Flow Rate and Dissolved Oxygen Level" Fig.2			
Vacuum level	Adjustable with Up/Down keys (70~170hPa)			
Vacuum range	2hPa			
Thread size	1/4-28UNF			
Wetted materials	Teflon AF®, ETFE, PPS (PEEK)*			
Communication	RS232C			
Dimensions (mm)	H130mm X W70mm X D271mm (case only)			
Weight	2.4kg			
Power consumption	0.8A, 80VA			
Voltage range	AC100~240V 50/60Hz			
Order code	SGA-G2001	SGA-G2002	SGA-G2005	SGA-G2006

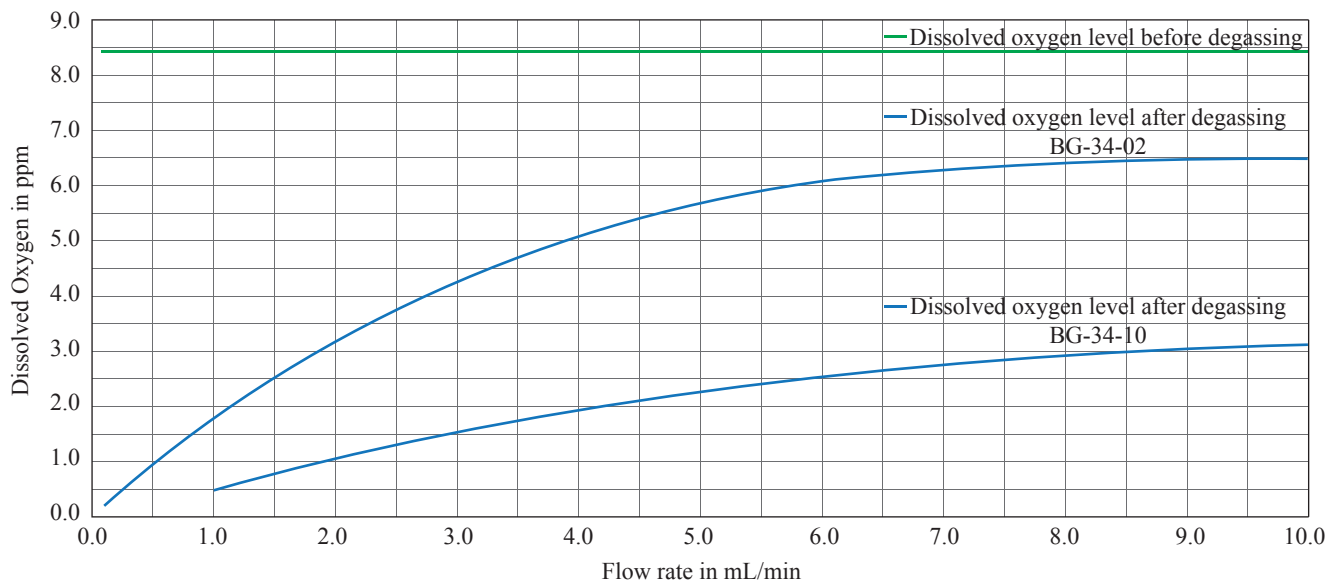
\* The specifications and product design may change without prior notice. Consult with your local distributor for the latest specifications.  
 \* All trademarks are property of their respective owners.  
 \* The data shown in "Flow rate and Dissolved Oxygen Level (Figure 2)" is taken according FLOM testing guideline. Consult FLOM Corporation for detail.

### Dimensions



### Flow Rate and Dissolved Oxygen Level (Figure 2)

- Solvent: Distilled water 25°C
- Vacuum level: 70hPa
- Degassing unit: BG-34-02/BG-34-10



## Solvent Degassing for Micro-analytical Applications Gastorr VG Series

The Gastorr VG Series comes equipped with high-performance Teflon AF® tubing for degassing very low solvent volumes. Especially suited to ultra-low volume analysis.



Gastorr VG-23

Gastorr VG-25

### Features

- maximum flow rate of 10mL/min
- CPU control achieves stable degassing
- automatic cleaning function prevents vacuum pump deterioration
- easy to read backlit LCD display
- Real time display of chamber vacuum level
- independent chamber design eliminates solvent contamination
- error detection alerts user to faulty degassing operation
- space-saving compact design
- choose from 2 channel or 4 channel configurations

Product name	Gastorr	
Part number	VG-23	VG-25
Channels	3	5
Internal volume	0.6ml	
Max flow rate	3.0ml/min	
Vacuum level	170hPa	
Vacuum range	10hPa	
Port thread size	No.1/4-28UNF	
Wetted materials	Teflon AF®, ETFE, PPS	
Dimensions (mm)	120(H) x 70(W) x 325(D)	150(H) x 70(W) x 325(D)
Weight	2.0kg	2.3kg
Voltage range	AC100~240V	
Order code	SGA-G1019	SGA-G1020

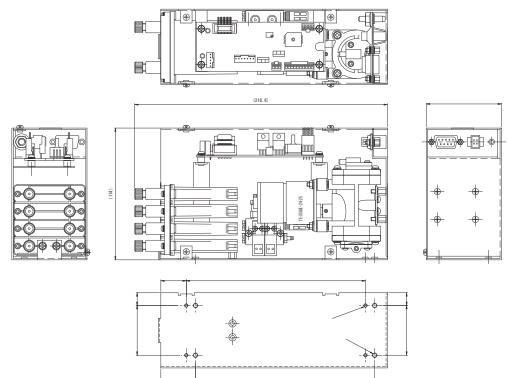
\* The specifications and product design may change without prior notice. Consult with your local distributor for the latest specifications.  
\* All trademarks are property of their respective owners.

Discontinued

### Dimensions



Gastorr VG-05



Product name	Gastorr				
Part number	VG-01	VG-02	VG-03	VG-04	VG-05
Channels	1	2	3	4	5
Internal volume	0.6ml				
Max flow rate	3.0ml/min				
Vacuum level	170hPa				
Vacuum range	10hPa				
Port thread size	No.1/4-28UNF				
Wetted materials	Teflon AF®, ETFE, PPS				
Dimensions (mm)	120(H) x 49.2(W) x 254(D)				
Weight	1.0~1.4kg				
Voltage range	DC24V				
Order code	SGA-G1076	SGA-G1077	SGA-G1078	SGA-G1079	SGA-G1056

\* The specifications and product design may change without prior notice. Consult with your local distributor for the latest specifications.

\* All trademarks are property of their respective owners.

\* Contact authorized FLOM distributors for price information.

## Solvent Degassing for Fractionating Applications Gastorr PG Series

Flow rates up to 50mL/min with these degassing systems for fractionating applications. Specify either Stainless Steel or PEEK as your fluid path material.



Gastorr  
PG-21 PEEK

Gastorr  
PG-22 SUS

### Features

- maximum flow rate of 50mL/min
- CPU control achieves stable degassing
- automatic cleaning function prevents vacuum pump deterioration
- easy to read backlit LCD display
- Real time display of chamber vacuum level
- choose from either Stainless Steel or PEEK as your fluid path material
- independent chamber design eliminates solvent contamination
- error detection alerts user to faulty degassing operation
- choose from 1 channel or 2 channel configurations

Product name	Gastorr			
Part number	PG-21		PG-22	
Channels	1		2	
Internal volume	62.0ml			
Max flow rate	50.0ml/min			
Vacuum level	150hPa			
Vacuum range	5hPa			
Port thread size	No.1/4-28UNF			
Wetted materials	PTFE, ETFE, SUS	PTFE, ETFE, PEEK	PTFE, ETFE, SUS	PTFE, ETFE, PEEK
Dimensions (mm)	180(H) x 90(W) x 400(D)			
Weight	5.5kg	5.0kg	6.5kg	6.0kg
Voltage range	AC100~240V			
Order code	SGA-G1105	SGA-G1107	SGA-G1106	SGA-G1108

\* The specifications and product design may change without prior notice. Consult with your local distributor for the latest specifications.  
\* All trademarks are property of their respective owners.



Auto Valve VF-11-1002

## High Speed Auto Valves Auto Valve VF-11 Series


A new valve type developed for long worklife under high pressures. The high revolving speed reduces pressure shock on the column.




### Features


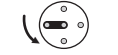
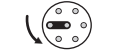
- Bvalve head designed for high pressure applications
- reduces pressure shock through high revolving speed of 0.1 second
- the ceramic type seal improves seal life to 100,000 cycles
- detachable valvehead permits fast, efficient maintenance
- valveheads can be exchanged

Product name	<b>Auto Valve</b>
Part number	<b>VF-11</b>
Automatic control	Direct drive by stepmotor
Manual control	Front panel keypad
Remote input/output	Level Logic: Position change (2-position switching only) Pulse Logic input: 2-position change, rotary port selection, Home position reset, CPU reset Pulse Logic output: Port position, error
Voltage range	AC100~240V
Dimensions (mm)	100(H) x 66(W) x 285(D)
Weight	0.7kg

\* The specifications and product design may change without prior notice. Consult with your local distributor for the latest specifications.  
\* All trademarks are property of their respective owners.

Part number	VF-11-1002	VF-11-1003	VF-11-1005	VF-11-1103	VF-11-1104	VF-11-1036
Application	6 port analytical	6 port analytical	6 port analytical	6 port analytical	6 port analytical	6 port micro analytical
Description	High pressure, SS	High pressure, inert	Inert	High pressure, SS, Ceramic	High pressure, Ceramic, inert	High pressure, SS, low volume
Path position	 6 port 2 position					
Max pressure	40MPa (5800psi)	40MPa (5800psi)	20MPa (2900psi)	40MPa (5800psi)	40MPa (5800psi)	40MPa (5800psi)
Wetted materials	SS, PEEK	PEEK (SS exterior)	PEEK	SS, Ceramic, PEEK	PEEK(SS exterior), Ceramic	SS, 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")
Order code	SAV-VF-11-1002	SAV-VF-11-1003	SAV-VF-11-1005	SAV-VF-11-1103	SAV-VF-11-1104	SAV-VF-11-1036

Part number	VF-11-1037	VF-11-1056	VF-11-1010	VF-11-1012	VF-11-1013	VF-11-1015
Application	6 port micro analytical	6 port micro analytical	Path selection	Path selection	4 port analytical	4 port analytical
Description	High pressure, inert, low volume	Inert, low volume	High pressure, SS	Inert	High pressure, SS	Inert
Path position	 6 port 2 position		 Dual 3 port 2 ways		 4 port 2 position	
Max pressure	40MPa (5800psi)	20MPa (2900psi)	40MPa (5800psi)	20MPa (2900psi)	40MPa (5800psi)	20MPa (2900psi)
Wetted materials	PEEK(SS exterior)	PEEK	SS, PEEK	PEEK	SS, 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")
Order code	SAV-VF-11-1037	SAV-VF-11-1056	SAV-VF-11-1010	SAV-VF-11-1012	SAV-VF-11-1013	SAV-VF-11-1015

Part number	VF-11-1040	VF-11-1058	VF-11-1016	VF-11-1018	VF-11-1007	VF-11-1009
Application	8 port micro analytical	8 port micro analytical	Path selection	Path selection	Path selection	Path selection
Description	High pressure, SS, low volume	High pressure, inert, low volume	High pressure, SS	High pressure, inert	High pressure, SS	Inert
Path position	 8 port 2 position		 4 port selector		 6 port selector	
Max pressure	40MPa (5800psi)	20MPa (2900psi)	40MPa (5800psi)	20MPa (2900psi)	40MPa (5800psi)	20MPa (2900psi)
Wetted materials	SS, PEEK	PEEK	SS, PEEK	PEEK	SS, 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")
Order code	SAV-VF-11-1040	SAV-VF-11-1058	SAV-VF-11-1016	SAV-VF-11-1018	SAV-VF-11-1007	SAV-VF-11-1009

\* The specifications and product design may change without prior notice. Consult with your local distributor for the latest specifications.  
\* All trademarks are property of their respective owners.



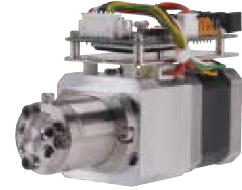
Auto Valve VF-01-1002



Auto Valve VF-01-1005



Auto Valve VF-01-1006



Auto Valve VF-01-1050

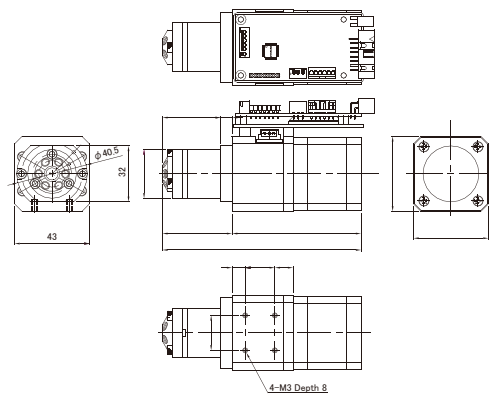
## High Speed Auto Valves for OEM Systems Auto Valve VF-01 Series

A new generation of automatic valves for high pressure OEM applications, featuring long life and high switching speed. Super compact design that incorporates the control board and the motor drive in one. Also includes detachable valveheads.

### Features


- space-saving super compact design
- the VF-01-1050 comes equipped with vertical port for easy attachment to auto sampler
- reduces pressure shock through high revolving speed of 0.1 second
- the ceramic type seal improves seal life to 100,000 cycles
- can switch in valvehead rated to 100MPa for super high speed analytical applications
- detachable valvehead permits fast, efficient maintenance




### Dimensions





Product name	<b>Auto Valve</b>
Part number	<b>VF-01</b>
Automatic control	Direct drive by stepmotor
Manual control	-
Remote input/output	Level Logic: Position change (2-position switching only) Pulse Logic input: 2-position change, rotary port selection, Home position reset, CPU reset Pulse Logic output: Port position, error
Voltage range	DC24V
Weight	0.7kg

\* The specifications and product design may change without prior notice. Consult with your local distributor for the latest specifications.  
\* All trademarks are property of their respective owners.

Part number	VF-01-1002	VF-01-1005	VF-01-1103	VF-01-1104	VF-01-1003	VF-01-1036
Application	6 port analytical	6 port analytical	6 port analytical	6 port analytical	6 port analytical	6 port micro analytical
Description	High pressure, SS	inert	High pressure, SS, Ceramic	High pressure, inert, Ceramic	High pressure, inert	High pressure, SS, low volume
Path position	 6 port 2 position					
Max pressure	40MPa (5800psi)	20MPa (2900psi)	40MPa (5800psi)	40MPa (5800psi)	40MPa (5800psi)	40MPa (5800psi)
Wetted materials	SS, PEEK	PEEK	SS, Ceramic, PEEK	PEEK(SS exterior), Ceramic	PEEK(SS exterior)	SS, 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")

Part number	VF-01-1037	VF-01-1056	VF-01-1010	VF-01-1012	VF-01-1013	VF-01-1015
Application	6 port micro analytical	6 port micro analytical	Path selection	Path selection	4 port analytical	4 port analytical
Description	High pressure, inert, low volume	Inert, low volume	High pressure, SS	Inert	High pressure, SS	Inert
Path position	 6 port 2 position		 Dual 3 port 2 way		 4 port 2 position	
Max pressure	40MPa (5800psi)	20MPa (2900psi)	40MPa (5800psi)	20MPa (2900psi)	40MPa (5800psi)	20MPa (2900psi)
Wetted materials	PEEK(SS exterior)	PEEK	SS, PEEK	PEEK	SS, 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")

Part number	VF-01-1040	VF-01-1058	VF-01-1050	VF-01-1065
Application	8 port micro analytical	8 port micro analytical	Vertical port injection	Vertical port injection
Description	High pressure, SS, low volume	High pressure, inert	High pressure, SS	Inert
Path position	 8 port 2 position		 6 port 2 position	
Max pressure	40MPa (5800psi)	20MPa (2900psi)	40MPa (5800psi)	20MPa (2900psi)
Wetted materials	SS, PEEK	PEEK	SS, 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")

\* The specifications and product design may change without prior notice. Consult with your local distributor for the latest specifications.  
\* All trademarks are property of their respective owners.



Valve Unit VA-11

## Automatic Valve Valve Unit VA-11 Series

FLOM's standard automatic valve series for general use. Useful in a variety of applications from general analysis, to fractionating high-speed analytical applications.

### Features


- Multiple flow patterns can be adapted to your specific analytical setup
- can be setup with a variety of flow diameters from micro-analysis to fractionating applications
- can be configured with inert materials for fluid contact areas
- useful for UHPLC chromatography
- over 300 different types of valve heads available\*<sup>1</sup>



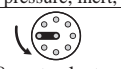

Product name	Valve Unit
Part number	VA-11
Automatic control	Direct drive by DC motor
Manual control	Front panel keypad
Remote input/output	Level Logic: Position change (2-position switching only) Pulse Logic input: 2-position change, rotary port selection, Home position reset, CPU reset Pulse Logic output: Port position, error
Voltage range	AC100~240V
Dimensions (mm)	144(H) x 79(W) x 285(D)
Weight	2.3kg

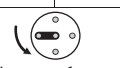
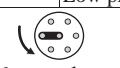
\* The specifications and product design may change without prior notice. Consult with your local distributor for the latest specifications.

\* All trademarks are property of their respective owners.

<sup>1</sup> For valvehead units not listed here, contact FLOM for further details.

Part number	VA-11-385	VA-11-386	VA-11-65	VA-11-66	VA-11-68	VA-11-76
Application	6 port micro analytical	6 port micro analytical	6 port analytical	6 port analytical	6 port analytical	6 port analytical
Description	UHPLC, SS	UHPLC, SS, Ceramic	High pressure, SS	Inert	SS, M8	Inert, M8
Path position	 6 port 2 position					
Max pressure	125MPa (18000psi)	104MPa (15000psi)	35MPa (5000psi)	20MPa (2900psi)	10MPa (1450psi)	10MPa (1450psi)
Wetted materials	SS, polymer	SS, PEEK, Ceramic	SS, PEEK	PEEK (SS exterior)	SS, PEEK	PEEK (SS exterior)
Tube OD	1/16"	1/16"	1/16"	1/16"	3.0mm, 1/8"	3.0mm, 1/8"
Path diameter	0.25mm (0.01")	0.4mm (0.016")	0.6mm (0.024")	0.6mm (0.024")	2.0mm (0.079")	2.0mm (0.079")
Order code	SAV-VA-11-385	SAV-VA-11-386	SAV-VA-11-65	SAV-VA-11-66	SAV-VA-11-68	SAV-VA-11-76

Part number	VA-11-213	VA-11-140	VA-11-120	VA-11-127	VA-11-108
Application	4 port analytical	4 port analytical	Path selection	Path selection	Path selection
Description	High pressure, SS	Inert	SS	Low pressure, inert, M8	SS
Path position	 4 port 2 position		 Dual 3 port 2 way	 8 port selector	 12 port selector
Max pressure	35MPa (5000psi)	20MPa (2900psi)	20MPa (2900psi)	5MPa (725psi)	15MPa (2175psi)
Wetted materials	SS, PEEK	PEEK (SS exterior)	SS, PEEK	SS, PEEK	SS, PEEK
Tube OD	1/16"	1/16"	1/16"	1/8"	1/16"
Path diameter	0.6mm (0.024")	0.6mm (0.024")	0.6mm (0.024")	1.4mm (0.055")	0.6mm (0.024")
Order code	SAV-VA-11-213	SAV-VA-11-140	SAV-VA-11-120	SAV-VA-11-127	SAV-VA-11-108

Part number	VA-11-249	VA-11-141	VA-11-67	VA-11-74	VA-11-69	VA-11-77
Application	Path selection	Path selection	Path selection	Path selection	Path selection	Path selection
Description	SS	Inert	High pressure, SS	Inert	Low pressure, SS, M8	Low pressure, inert, M8
Path position	 4 port selector		 6 port selector			
Max pressure	20MPa (2900psi)	20MPa (2900psi)	40MPa (5800psi)	15MPa (2175psi)	5MPa (725psi)	5MPa (725psi)
Wetted materials	SS, PEEK	PEEK (SS exterior)	SS, PEEK	PEEK (SS exterior)	SUS, PEEK	PEEK (SS exterior)
Tube OD	1/16"	1/16"	1/16"	1/16"	3.0mm, 1/8"	3.0mm, 1/8"
Path diameter	0.6mm (0.024")	0.8mm (0.031")	0.8mm (0.031")	0.8mm (0.031")	2.0mm (0.079")	2.0mm (0.079")
Order code	SAV-VA-11-249	SAV-VA-11-141	SAV-VA-11-67	SAV-VA-11-74	SAV-VA-11-69	SAV-VA-11-77

\* The specifications and product design may change without prior notice. Consult with your local distributor for the latest specifications.

\* All trademarks are property of their respective owners.

## Automatic Valves for OEM Systems Auto Valve VA-11A/413 Series

This is the VA-11 type Auto Valve in an embeddable configuration for OEM systems. All valveheads usable on the VA-11 can also be used with the VA-11A.



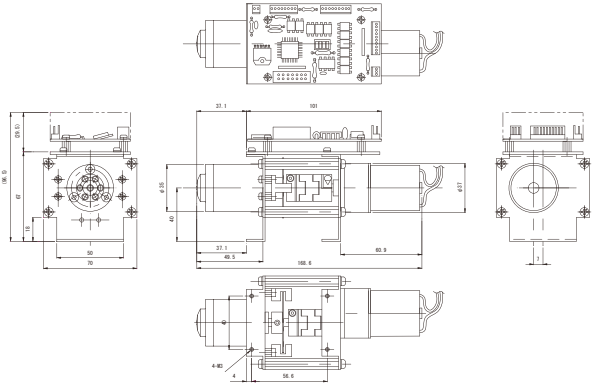
Auto Valve VA-11A

Auto Valve 413

### Features

- space-saving compact design
- can be equipped with large size high torque valveheads for high volume flow applications
- the super-small 413 Embedded Valve Series takes up even less space and weighs less than the already compact VA-11A series\*1

### Dimensions




Product name	Auto Valve	
Part number	VA-11A	413
Automatic control	Direct drive by stepmotor	
Manual control	-	
Remote input/output	Level Logic: Position change (2-position switching only) Pulse Logic input: 2-position change, rotary port selection, Home position reset, CPU reset Pulse Logic output: Port position, error	
Voltage range	DC24V	
Weight *2	1.0kg	0.8kg





\* The specifications and product design may change without prior notice. Consult with your local distributor for the latest specifications.



\* All trademarks are property of their respective owners.

\*1 The model 413 can only be installed on a limited number of pumps. Contact FLOM for more details

\*2 The weigh of each model varies, depending on the valvehead. Contact FLOM for more details.

Part number	VA-11A-385	VA-11A-386	VA-11A-65	VA-11A-66	VA-11A-68	VA-11A-76
Application	6 port micro analytical	6 port micro analytical	6 port analytical	6 port analytical	6 port analytical	6 port analytical
Description	UHPLC, SS	UHPLC, SS, Ceramic	High pressure, SS	Inert	SS, M8	Inert, M8
Path position	 6 port 2 position					
Max pressure	125MPa (18000psi)	104MPa (15000psi)	35MPa (5000psi)	20MPa (2900psi)	10MPa (1450psi)	10MPa (1450psi)
Wetted materials	SS, polymer	SS, PEEK, Ceramic	SS, PEEK	PEEK (SS exterior)	SS, PEEK	PEEK (SS exterior)
Tube OD	1/16"	1/16"	1/16"	1/16"	3.0mm, 1/8"	3.0mm, 1/8"
Path diameter	0.25mm (0.01")	0.4mm (0.016")	0.6mm (0.024")	0.6mm (0.024")	2.0mm (0.079")	2.0mm (0.079")

Part number	VA-11A-213	VA-11A-140	VA-11A-120	VA-11A-127	VA-11A-108
Application	4 port analytical	4 port analytical	Path selection	Path selection	Path selection
Description	High pressure, SS	Inert	SS	Low pressure, inert, M8	SS
Path position	 4 port 2 position		 Dual 3 port 2 way	 8 port selector	 12 port selector
Max pressure	35MPa (5000psi)	20MPa (2900psi)	20MPa (2900psi)	5MPa (725psi)	15MPa (2175psi)
Wetted materials	SS, PEEK	PEEK (SS exterior)	SS, PEEK	SS, PEEK	SS, PEEK
Tube OD	1/16"	1/16"	1/16"	1/8"	1/16"
Path diameter	0.6mm (0.024")	0.6mm (0.024")	0.6mm (0.024")	1.4mm (0.055")	0.6mm (0.024")

Part number	VA-11A-249	VA-11A-141	VA-11A-67	VA-11A-74	VA-11A-69	VA-11A-77
Application	Path selection	Path selection	Path selection	Path selection	Path selection	Path selection
Description	SS	Inert	High pressure, SS	Inert	Low pressure, SS, M8	Low pressure, inert, M8
Path position	 4 port selector		 6 port selector			
Max pressure	20MPa (2900psi)	20MPa (2900psi)	40MPa (5800psi)	15MPa (2175psi)	5MPa (725psi)	5MPa (725psi)
Wetted materials	SS, PEEK	PEEK (SS exterior)	SS, PEEK	PEEK (SS exterior)	SUS, PEEK	PEEK (SS exterior)
Tube OD	1/16"	1/16"	1/16"	1/16"	3.0mm, 1/8"	3.0mm, 1/8"
Path diameter	0.6mm (0.024")	0.8mm (0.031")	0.8mm (0.031")	0.8mm (0.031")	2.0mm (0.079")	2.0mm (0.079")

\* The specifications and product design may change without prior notice. Consult with your local distributor for the latest specifications.

\* All trademarks are property of their respective owners.



Manual Sample Injector VI-11

## Manual Sample Injectors Manual Sample Injector VI Series

Manual injector for convenient sample path switching. Specify either Stainless Steel or PEEK as your fluid path material. Equipped with built-in injection marker.

### Features

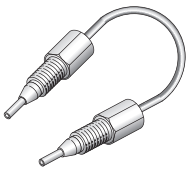
- choose either Stainless Steel or PEEK as fluid handling material
- maximum pressure 35 MPa
- equipped with injection marker
- optional syringe needle made of inert material

Product name	Manual Sample Injector	
Part number	VI-11	VI-12
Wetted materials	SS, PEEK, Ceramic	Ceramic, PEEK
Max pressure	35MPa	
Tube OD	1/16"	
Path diameter	0.5mm (0.02")	
Port thread size	No.10-32UNF	
Sample loop	20uL (SS, 1/16")	
Injection marker	Built-in, PTFE-coated wire (1.5m length)	
Order code	VH-V271	VH-V276

\* The specifications and product design may change without prior notice. Consult with your local distributor for the latest specifications.  
\* All trademarks are property of their respective owners.

### Optional parts

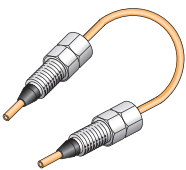
20uL sample loop



#### Sample loop (1/16" stainless steel)

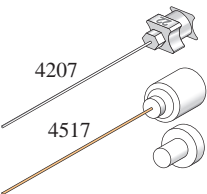
Part No.	Volume
7501	10uL
7502	20uL
7503	50uL
7504	100uL
7505	200uL
7506	500uL
7507	1mL

20uL sample loop



#### Sample loop (1/16" PEEK)

Part No.	Volume
7201	10uL
7202	20uL
7203	50uL
7204	100uL
7205	200uL
7206	500uL
7207	1mL



#### Syringe needle

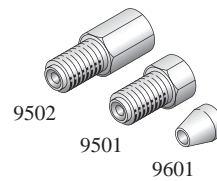
Part No.	Description
4207	SUS22G (ID0.5mm)
4517	PEEK(OD0.7mmxID0.3mm)



#### Injector panel \*

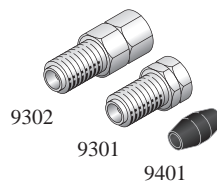
Part No.	Description
4515	Injector panel

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



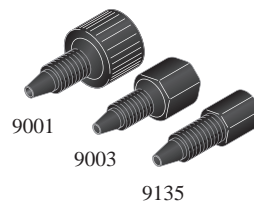
#### SS nuts & ferrules (10/pkg)

Part No.	Description
9502	1/16 Nut L
9501	1/16 Nut S
9601	1/16 Ferrule



#### SS nuts & PEEK ferrules (10/pkg)

Part No.	Description
9302	1/16 DoubleLock Nut L
9301	1/16 DoubleLock Nut S
9401	1/16 DoubleLock Ferrule



#### PEEK nuts & ferrules (10/pkg)

Part No.	Description
9001	Easy Fitt
9003	Hex Fitt
9135	Hex Fitt Mini





UHPLC Micro Injector MI-11

## Manual Micro-injectors for Ultra High Pressure UHPLC Micro Injector MI-11

A new manual injector developed specifically for UHPLC applications. Can also be used for regular micro-analytical applications.

### Features

- Ultra high pressure specs (100MPa) allow injection into high pressure fluid pathways
- ultra high precision sample injector minimizes sample loss
- 0.25mm flowpath reduces sample diffusion
- micro-switch injection marker prevents malfunctions
- comes with 5uL sample loop and 10uL micro-syringe

Product name	<b>UHPLC Micro Injector</b>
Part Number	<b>MI-11</b>
Wetted materials	SS, PEEK, Ceramic
Max pressure	100MPa (15000psi)
Tube OD	1/16"
Path diameter	0.25mm (0.01")
Port thread size	No.10-32UNF
Sample loop	5uL (SUS, 1/16")
Injection marker	Built-in, with PTFE-coated wire (1.5m length)
Order code	<b>VH-V340</b>

\* The specifications and product design may change without prior notice. Consult with your local distributor for the latest specifications.  
 \* All trademarks are property of their respective owners.

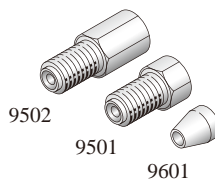
### Optional parts

5uL sample loop



Sample loop (1/16" stainless steel)

Part No.	Volume
7500	5uL



SS nuts & ferrules (10/pkg)

Part No.	Description
9502	1/16 Nut L
9501	1/16 Nut S
9601	1/16 Ferrule



Syringe

Part No.	Description
4701	SUS26G (ID0.25mm)



Injector panel\*

Part No.	Description
4515	Injector panel

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



Valve Unit 415

Product name	<b>Air Valve</b>
Part number	<b>415</b>
Drive method	Pneumatic drive
Gas tube OD	1/8", 6.0mm

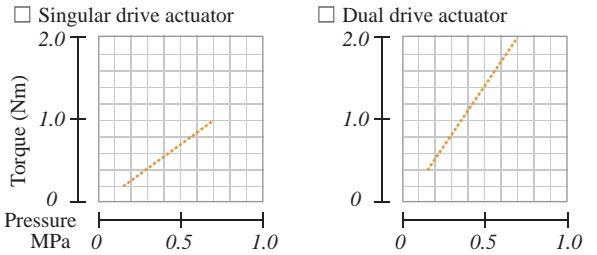
## Pneumatic Drive Valves Air Valve 415 Series

A pneumatic drive valve that safely switches without requiring an electric motor. Of particular use in environments where anti-explosion measures are required.

### Features

- valve switching done pneumatically (no power source required)
- compact design allows embedding within larger systems
- high pressure, long life valveheads
- optional external switch for monitoring

### Torque data



Part number	415-65	415-66	415-86	415-58	415-327	415-68	415-76
Application	6 port analytical	6 port analytical	6 port analytical	6 port analytical	6 port analytical	6 port preparative	6 port preparative
Description	High pressure, SS	Inert	Inert	Inert	High pressure, SS	SS	Inert
Path position	 6 port 2 position						
Max Pressure	35MPa (5000psi)	20MPa (2900psi)	25MPa (3600psi)	10MPa (1450psi)	40MPa (5800psi)	10MPa (1450psi)	5MPa (725psi)
Wetted materials	SS, PEEK	PEEK(SS exterior)	SS, PEEK	PEEK	SS, PEEK	SS, PEEK	PEEK(SS exterior)
Tube OD	1/16"	1/16"	1/16"	1/16"	1/16"	1/8", 3.0mm	1/8", 3.0mm
Path diameter	0.6mm (0.024")	0.6mm (0.024")	0.6mm (0.024")	0.6mm (0.024")	0.4mm (0.016")	2.0mm (0.079")	2.0mm (0.079")
Price							

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## Manual Valves Manual Valve V Series

A convenient manual valve for high pressure flow applications. Choose from either Stainless Steel or PEEK as your fluid path

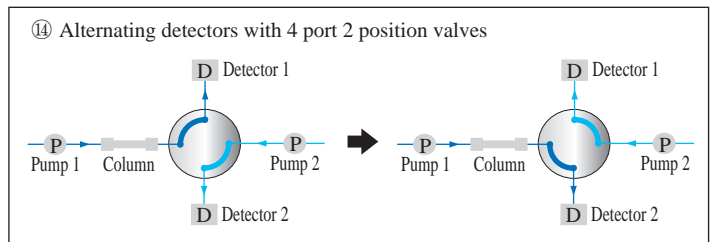
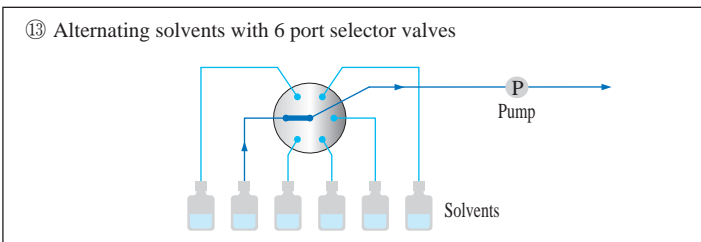
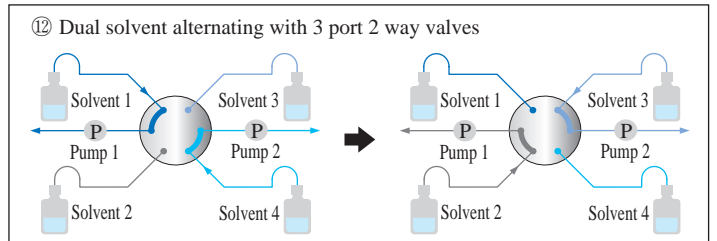
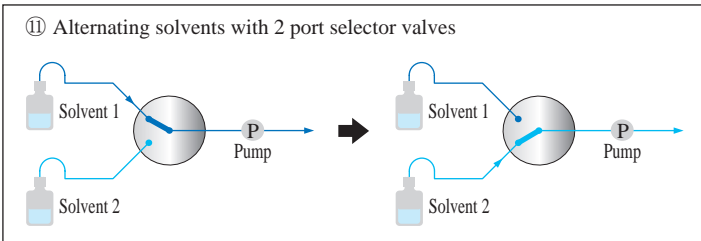
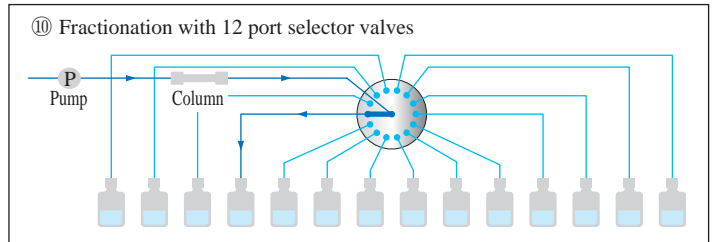
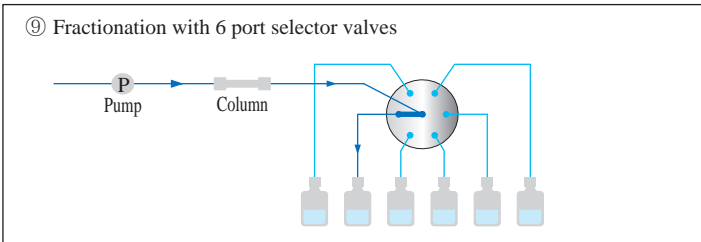
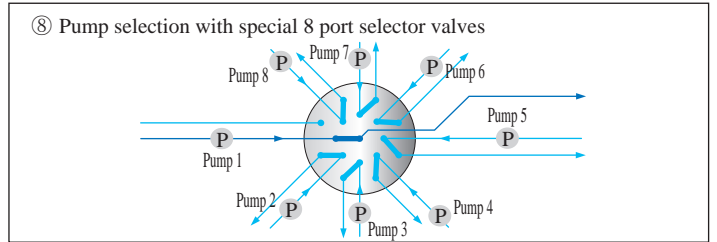
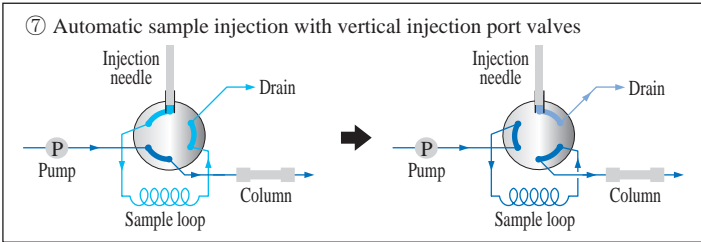
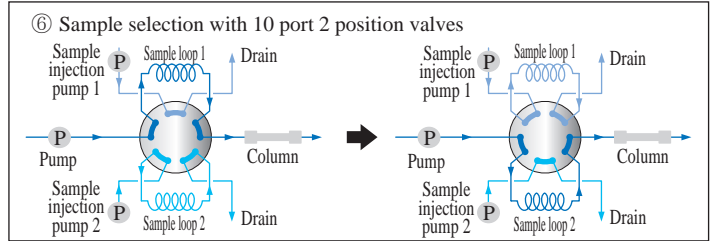
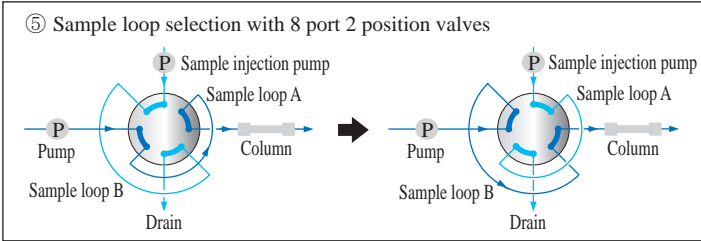
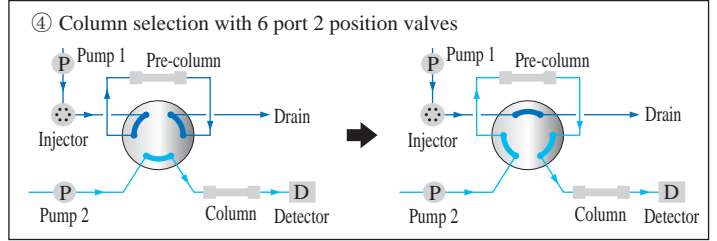
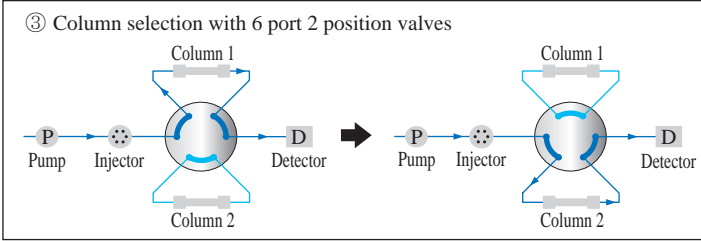
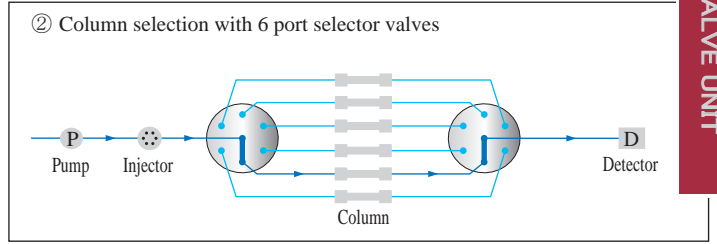
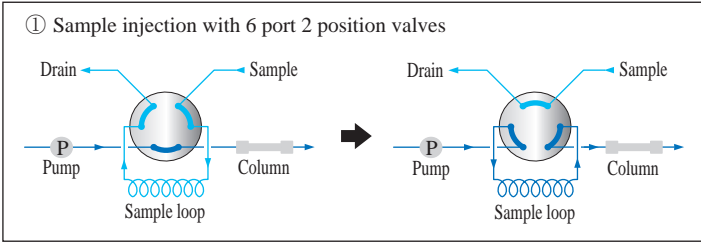
### Features

- low torque design allows low power switching (V05)
- since handle is placed in front, if panel is installed allows operation from the valvehead side (V200 Series)
- choose either Stainless Steel or PEEK as your fluid path material

Part number	V05	V200	V201	V204	V239
Application	6 port analytical	6 port analytical	Path selection	Path selection	Path selection
Description	High pressure, SS	Inert	Inert	Inert	Inert
Path position	 6 port 2 position		 Dual 3 port 2 ways		 2 port selector
Max pressure	40MPa (5800psi)	20MPa (2900psi)	20MPa (2900psi)	20MPa (2900psi)	1MPa (145psi)
Wetted materials	SS, PEEK	PEEK	PEEK	PEEK	PEEK
Tube OD	1/16"	1/16"	1/16"	1/16"	3.0mm, 1/8"
Path diameter	0.4mm (0.016")	0.6mm (0.024")	0.6mm (0.024")	0.8mm (0.03")	1.0mm (0.04")
Order code	VH-V05	VH-V200	VH-V201	VH-V204	VH-V239

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 \* All trademarks are property of their respective owners.

# Valve Path Diagrams





Column Oven 502

Product name	<b>Column Oven</b>
Part number	<b>502</b>
Temp. control	Heated/cooled air circulation
Temp. range	15~60°C (25°C ambient temperature)
Display accuracy	0.5°C
Thermal cutoff	Automatic shutdown at 70°C
Remote output	Error signal
Oven size (mm)	20(H) x 42(W) x 320(D)
Oven capacity	250mm column x2
Dimensions (mm)	144(H) x 79(W) x 400(D)
Weight	4.0kg
Voltage range	AC100~240V
Order code	SOV-K001

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## Thermostatic Ovens Column Oven 502

These ovens permit precise regulation of temperature through air circulation system. The electronically controlled cooler also allows keeping the heating chamber at precise temperatures below ambient air temperature.

### Features

- can be placed horizontal for space saving
- equipped with cooling mechanism (up to -10°C below ambient)
- fine control of chamber atmosphere temperature via air circulation
- removable cover allows easy access to columns
- holds a total of two 250mm columns
- real-time display of chamber air temperature
- equipped with gas sensor and temperature limiting switch for safety



Column Oven 505

Product name	<b>Column Oven</b>
Part number	<b>505</b>
Temp. control	Heated/cooled air circulation
Temp. range	15~60°C (25°C ambient temperature)
Display accuracy	0.5°C
Thermal cutoff	Automatic shutdown at 70°C
Remote output	Error signal
Oven size (mm)	70(H) x 90(W) x 340(D)
Oven capacity	250mm column x4
Dimensions (mm)	144(H) x 159(W) x 400(D)
Weight	6.0kg
Voltage range	AC100~240V
Order code	SOV-K002

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## Thermostatic Ovens Column Oven 505

The larger 505 has the same specifications as the 502, with an increased capacity to hold up to 4 columns at a time.

### Features

- equipped with cooling mechanism (up to -10°C below ambient)
- fine control of chamber atmosphere temperature
- removable cover allows easy access to columns
- holds a total of four 250mm columns
- real-time display of chamber air temperature
- equipped with gas sensor and temperature limiting switch for safety



Reactor 522

Product name	<b>Reactor</b>
Part number	<b>522</b>
Temp. control	Heat block
Temp. range	40~180°C (Ambient temperature of 25°C)
Display accuracy	1.0°C
Tube	OD1/16" x 10m x 1
Thermal cutoff	Automatic shutdown at 200°C
Dimension (mm)	144(H) x 80(W) x 400(D)
Weight	4.3kg
Voltage range	AC100
Order code	SOV-K201

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## Reactors Reactor 522

A high-temperature reactor vessel developed especially for reaction chromatography applications. Temperature control ranges from 40°C to 180°C.

### Features

- high precision temperature control
- real-time display of chamber temperature
- can be set up to 180°C
- can be set up with 1/16" tubing up to 10m in length
- equipped with temperature limiting switch for safe operation



Reactor 523

Product name	<b>Reactor</b>
Part number	<b>523</b>
Temp. control	Heat cartridge
Temp. range	40~100°C (Ambient temperature of 25°C)
Display accuracy	1.0°C
Tube	OD1/16 x 10mx1
Thermal cutoff	Automatic shutdown at 120°C
Dimension (mm)	144(H) x 80(W) x 289(D)
Weight	3.0kg
Voltage range	AC100
Order code	SOV-K301

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## Reactors Reactor 523

Based on the 522 Series, but redesigned for a more compact form factor and ease of tubing installation/replacement.

### Features

- space-saving super compact design
- high precision temperature control
- real-time display of chamber temperature
- tube cartridge design for extreme ease of replacement
- can be set up with 1/16" tubing up to 10m in length
- equipped with temperature limiting switch for safe operation

### Easy tube installation/replacement

The tube cartridge pulls out from the front panel for easy access. No tool is required.

