Keyto垦拓

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Expertise in Fluidic,

Precision Machining and Microfluidic Technology.



Keyto Fluid Technology Co., Ltd.



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About Us



Keyto Fluid Technology Co., Ltd. focuses on the development of critical components and subsystems in the field of medical devices and environmental protection analytical instruments. We are best-in-class in this segment and the vital manufacturer of fluid components with advanced technology, complete specifications and large company scale.

Keyto was founded in Shenzhen in 2010, with a registered capital of 60 million RMB (about \$9.2 million). Keyto has more than 500 employees worldwide, and the headquarters covers an area of 17,000m². Keyto is a national high-tech enterprise, the "Little Giant" enterprise specializing in new and unique technologies, and the winner of the Nanshan Entrepreneurs Star Competition in 2013. Because of it's innovation, Keyto has obtained more than 100 independent R&D patents. Keyto has five subsidiaries: Keyto Precision Machining Technology Co., Ltd., Chengdu Keyto Medical System Technology Co., Ltd., Keyto Precision Molding Technology Co., Ltd., Keyto India and Keyto Malaysia. Keyto also has marketing offices in Beijing, Nanjing, Shandong, the United States and Europe.





















Keyto was established with a focus on the R&D and sales of microfluidic precision control components.

2013-2014



Keyto obtained the ISO9001 quality management system certification. The whole series of products obtained CE and RoHS certifications. Established the machining center, achieving autonomous control over precision component processing.

Honored with the national-level title of "High-Tech Enterprise"



Successfully achieved breakthroughs in the processing technology of flow cytometry sorting nozzles, entering the field of life science



Successfully introduced ventilator proportional valve technology into respiratory anesthesia applications.

Collaborated with BGI Genomics on the technological research project for the microfluidic integrated system used in gene sequencer.



Keyto was awarded the national title of "Little Giant" enterprise specializing in new and unique technologies.

Collaborated with the Institute of Medical Devices on the research projects for ventilators and key components.



Introduced the SADP series of high-end liquid handling modules to the market, breaking technological dominance and collaborating with multiple units on ventilator research project.



Keyto obtained ISO13485 medical device quality management system certification and ISO14001 environmental management system

Keyto Precision Molding Technology Co., Ltd. was officially operational, achieving technological breakthroughs in precision injection molding components such as microfluidic chips.

Innovation Towards Future

Keyto Global

Originate from Shenzhen,

advance towards the WOrld





Headquarters:

Shenzhen Keyto Fluid Technology Co., Ltd.
Specializes in the research and development, production, and sales of fluid system solutions and components in the fields of healthcare, medical testing, environmental analysis equipment, etc. Located in Bao'an District, Shenzhen City.



Subsidiaries:

Keyto Precision Machining Technology Co., Ltd. Focuses on precision machining of manifolds and specialty components. Located in Bao'an District, Shenzhen City.

Keyto Precision Molding Technology Co., Ltd. Specializes in precision mold and injection molding. Located in Bao'an District, Shenzhen City.



Chengdu Keyto Medical System Technology Co., Ltd.

Concentrates on the development of pneumatic liquid handling ADP and fluid system integration. Located in the High-tech West Zone of Chengdu.

Keyto Malaysia Subsidiary

We specialize in the manufacturing of liquidcircuit system solutions and core components for overseas medical testing and environmental protection analysis equipment.

Marketing Offices: Marketing offices are established in various domestic and international regions including Beijing, Nanjing, Shandong, the United States, Europe, and others.

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Quality Assurance



R Quality Assurance Team and Equipment

Keyto prioritizes product quality above all else. The number of quality control personnel accounts for over 20% of the total workforce. To ensure the highest standards, we have implemented a comprehensive quality assurance process throughout the supply chain, production, and after-sales service. We utilize various electronic data platforms, such as PDM, ERP, MES, and PLM, to record and update the entire process in real-time, ensuring traceability.

Our Quality Center has 12 years of experience in quality management and features an independent reliability testing center. We perform regular multi-dimensional reliability verification and type test, including mechanical, environmental, and performance evaluations, in accordance with industry laws and regulations and customer-specific requirements to ensure the safe use of our products in various environments and conditions.

Inspection equipments: 3D OGP, white light interferometer, metallographic analysis microscope, 2.5D projector, coordinate measuring machine (CMM), profilometer, cylindricity measuring instrument, salt spray tester, mute test room, constant temperature and humidity chamber, high temperature aging chamber, RoHS testing equipment, laser diameter measuring instrument, air gaging, high resolution digital microscope, bench center, etc.

Special inspection services: Super-microporous test, cylindricity test, surface quality inspection and detection, low temperature freezing test, drop/vibration/simulated transportation test platform.

R Product Certification

Product Qualifications: The entire series is certified by CE and RoHS, with flexible OEM & ODM services available, and all products undergo full inspection before shipment.

Intellectual Property Rights: All products possess independent intellectual property rights, along with the core process equipment and self-developed automated testing systems.

Quality Control: Certified by ISO 9001, ISO 13485, and ISO 14001, equipped with a comprehensive reliability testing platform.



Products



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Programmable Syringe Pump

Features:

- 1. High precision with limited dead volume.
- 2. Available with options for sapphire valves, ceramic valves, or solenoid valves.
- 3. Fast response and precise switching, with a wide range of speed settings for flexible configuration.
- 4. Built-in drive control with programmable input commands.
- 5. Compatible with multiple communication protocols, offering long-term durability and maintenance-free operation.



Valve types:





6-port distribution valve





















3-port non-distribution port

4-port non-distribution valve

4-port dual-loop valve

3-port distribution port







9-port distribution valve





12-port distribution valve

	Specification
	≤1%, full stroke (room temperature, 1mL and above syringe, deionized water) Note 1
	≤0.1%, full stroke (room temperature, 1mL and above syringe, deionized water) Note 1
Total step number at full stroke (step)	3000 or 6000
	30mm or 60mm
	30mm stroke: Standard mode 3,000 steps, Hi-Res mode 24,000 steps. 60mm stroke: Standard mode 6,000 steps, Hi-Res mode 48,000 steps.
Optional syringe volumes	100μL, 250μL, 500μL, 1mL, 2.5mL, 5mL, 10mL (10mL only for 60mm)
Valve types	3, 6, 9 ports are optional
	Stator: PEEK, PCTFE; Rotor: PTFE, UHMW-PE
	1/4-28 UNF
	RS232, RS485, CAN
Baud rate	RS232/485: 9600 or 38400; CAN: 100kb, 125kb, 250kb, 500kb, 1Mb
Voltage	DC 24V
	127mm*44.5mm*107mm(30 strokes); 228mm*44.5mm*100mm(60 strokes)

Note 1: For reference only, the actual accuracy and Cv depend on the different brands and sizes of glass syringes.

Glass Syringe

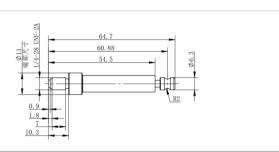
Fetures:

- 1. Diverse categories: 50µL~25mL syringe volumes; UHMW-PE, PTFE sealing materials and conical, flat, zero dead volume plunger seal structure for choice.
- 2. Good sealing performance: advanced processing technology of high borosilicate glass, good chemical resistance of wetted materials and high wear resistance;
- 3. High precision, no cross-contamination; optional for use on 30mm, 60mm stroke syringe pumps;
- 4. Quality is guaranteed: automated testing equipment to ensure product consistency.



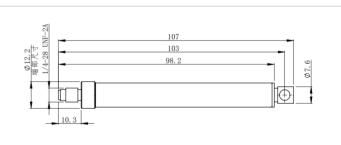


30mm stroke 500µL glass syringe









Glass Syringe Specification

Syringe volume	30mm stroke: 250μL, 500μL, 1mL, 2.5mL, 5mL 60mm stroke: 250μL, 500μL, 1mL, 2.5mL, 5mL, 10mL, 25mL
Plunger button	30mm: side groove (XC-style); 60mm: side aperture (XL-style)
Accurary	<0.5% (run at 100%stroke)
Drag force	<26N (Except 25mL syringe)
Pressure	Within 20s under 0.6MPa pressure, pressure drop ≤0.6kPa
Lifetime	PTFE: 400,000 full stroke cycles; UHMW-PE: 800,000 full stroke cycles Tested with water (actual lifetime depends on working conditions)

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Rotary Shear Valve

Features:

- 1. Can replace valve manifold, reducing heat generation from long-time operation, while achieving the same functionality as valve manifold with smaller internal volume of the common flow path.
- 2. Long lifetime, excellent wear resistance, and fast response time on the market.
- 3. Offers a variety of wetted material options, covering compatibility with all reagents (specific selection required upon inquiry).
- 4. Compatible with almost all common rotary valve communication protocols.
- 5. Incoming material fully inspected, with capability for surface quality checks on all components.



Туре	Number of ports	Standard model	Port connection	Wetted material	Communication	Dimensions
	6	31B6-21-IYU/3C3			61 83 ±0.1	
	8	31B8-21-IYU/3C3	1//-28 LINE	/4-28 UNF PCTFE, sapphire, FKM		23.50 a
Dis	10	31BB-21-IYU/3C3	1/4-20 UNF			1 222
Distribution	12	31AD-21-IYU/3C3				8 8 8 5 7 7 1 4 1 5 1 5 1 5 1 5 1 5 1 5 1 5 1 5 1 5
ă	16	31AH-21-IYU/3C3				120 2 2 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2
	24	315K-21-KYD/3C5	6-40 UNF PEEK, sapphire, zirconia, fluororubber		RS232\RS485\CAN	56.2 56.7 56.1 152.6*65*54.65 (Unit: mm)
Non-dis	2-position 6-port	32B6-23-IAU/3C3	1/4-28 UNF	PCTFE, sapphire, FKM		136.4*65*61 (Unit mm)
Non-distribution	High pressure rotary shear valve	3246-54-SEY/3C6	10-32UNF taper hole	SUS316L, KT-064 with coating		125.1*70.89*54 (Unit: mm)

Rotary shear valve accessories

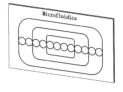
Tubing/Fitting	i.	For 1.6mm O.D. tubing	6-40 UNF	FJ-XJ-M2/PE1.6	Nut/ferrule: PEEK Lock ring: SS316L	12 235000 01.5 2 2 35000 01.5 2 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3
	I.	For 3.2mm	1/4-28 UNF	FJ-XJ-U2/PE3.2Ф7	Nut: PP Ferrule: PVDF	25.00 WE WELL WITH ME TO THE TOTAL OF THE TO
		O.D. tubing M6	M6	FJ-XJ-M2/PE3.2Ф7		10.5 g iii
Q	å å	For 1.6mm O.D. metal tubing	10-32 UNF	1	Nut/fitting SS SUS316L	

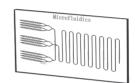
Manifold

Microfludic chips

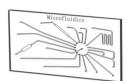
- * Utilizing diffusion bonding technology, microfluidic chips offer distinct advantages over solvent bonding or laser welding. The flow path inner walls of microfluidic chips exhibit a bright surface, free of residue and contamination, ensuring excellent sealing performance. They can also be prepackaged with a variety of reagents.
- * Available materials include PMMA, PP, PC, PVC, PS, etc., offering good biocompatibility.
- * The fluid path orifice ranges from 50μm to 200μm, integrating sampling, dilution, reagent addition, reaction, separation, and detection in one chip to save the reagents.

Applications:





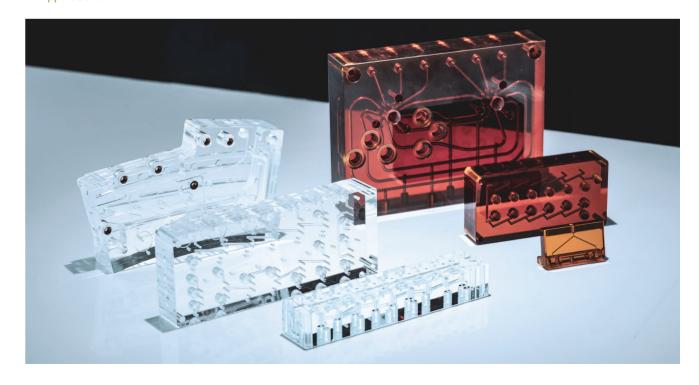




Bonded Manifold

- * Bonded manifolds are produced by connecting multiple layers under high pressure and temperatures, with the original bond lines barely detectable.
- * Keyto bonded manifold products are highly visualization, providing a pure flow path free of adhesive substances or contamination. They offer flexible integration capability and good biocompatibility.
- * Materials such as PMMA, PEI, and PVC are available. According to customers' needs, the fluid path design and multiple layers can be customized.

Applications:



Innovation Towards Future Keyto 竪桁 9 | 10 SADP16/SADP18 SP20

Features:

- 1. Multi-pipetting units with movement mechanism that allows for minimum tip-to-tip spacing of 9mm;
- 2. Offers automatic tips pick-up and ejection, tips presence detection, high-speed liquid level detection, clot detection, aspiration of air detection, and liquid level following when used with the Keyto Z-axis;
- 3. Compatible with the most disposable tips in the market;
- 4. Z axis and movement mechanism are optional.













SADP16 SADP18

Model	SADP16	SADP18
Displacement	1μL-1000μL	5µL-1000µL
Liquid level detection	PLLD(pressure-based	liquid level detection)
Weight	< 330g	<400g
Tip volume	10μL, 50μL, 200μL, 1mL	10μL, 50μL, 200μL, 1mL
Dimensions	265.1mm*100mm*16mm	251mm*74.3mm*17mm
	CAN, RS485, RS232	CAN, RS485, RS232
Drive design	Coreless brushless motor with encoder, integrated with ball screw	Stepper motor without encoder, integrated with ball screw
Working temp.	15°C ~ 35°C	15°C ~ 35°C
Voltage	24V DC, 0.5A	24V DC, 0.5A
	>1 million cycles	>1 million cycles

Features:

- 1. Compact design, compatible probe length: 12mm, 40mm, 65mm;
- 2. Offers automatic tip pick-up and ejection, tip sensor, liquid level detection, liquid level following when used with the Z-axis;
- 3. Unique sealing solution, the lifetime can reach more than 1 million cycles;
- 4. Different displacements are available: 100μL, 250μL, 1mL which facilitates high-speed liquid dispensing of small volume;
- 5. Compatible with most disposable tips in the market.





SP20

Item	SP20
Displacement	5µL-1000µL
Liquid level detection	PLLD (pressure-based liquid level detection)
Weight	<400g
Tip volume	10μL, 50μL, 200μL, 1mL
Dimensions	116mm*50mm*28mm
Communication	CAN, RS485, RS232
Drive design	Thru-shaft designed linear stepper motor integrated with guide rail
Working temp.	15°C ~ 35°C
Voltage	24V DC, 0.5A
Lifetime	>1 million cycles

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SP28 SD61

Features:

- 1. Compatible probe length: 12mm, 40mm, 65mm
- 2. Three solutions are optional to suit different applications
- 3. The lifetime can reach more than 1 million cycles
- 4. Compatible with most disposable tips in the market
- 5. Different displacements are available: 100µL, 250µL, 500µL, 1mL, which facilitates high-speed liquid dispensing of small volume
- 6. Two pipette units with movement mechanism allow for minimum tip-to-tip center spacing of 9mm or 18mm







Option 1: Tip ejector

Option 2: Tip ejector + Tip sensor

Option 3: Tip ejector + Tip sensor + Liquid level detection + Liquid level following + Clot detection

ltem	SP28
Displacement	5µL-1000µL
Liquid level detection	PLLD (pressure-based liquid level detection)
Weight	≤500g
Tip volume	Compatible with the most tips in the market, customizable
Dimensions	140mm*33mm*28mm (Option 1 and 2), 140mm*28mm*45.5mm (Option 3)
Communication	CAN, RS485, RS232
Drive design	Stepper motor
Working temp.	15°C ~ 35°C
Voltage	24V DC, 1A
Lifetime	>1 million cycles

Features:

- 1. Long lifetime, high performance
- 2. Versatile integration. Compatible with a wide range of products including syringe pumps, bonding manifolds, valve manifolds, etc.
- 3. Various options for wetted materials
- 4. Compact size



Туре	Product Image	mage Dimensions			
S D 6 1	Keyto CE RAHS NOWANANGOON SOUTH AND CONTROLLED IN THE RELIEF IN THE	2-02-219 1-2 1-2 2-3 32.6*12.5*6.2 (Unit mm)			

Valve Structure	Direct-operated valve
Valve Type	Two-way, two-position
Number of Ports	2
Orifice	1.0mm
Power	24V: 2W; 12V: 2W
Cv	0.012
Medium	Water, air, weak acid, weak alkali (select according to medium requirements, communicate with the manufacturer for specific specifications of strong acid and alkali)
Operating Temperature	5°C ~ 55°C
Pressure Resistance (in-out)	-70kPa~200kPa
Leakage	0
Response Time	<25ms
Dead Volume	0
Voltage Fluctuation Range	From -10% to +10%

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Proportional Valve

Features:

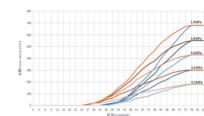
- 1. Wide range of flow control
- 2. It can be automatically adjusted for closed-loop control
- 3. Precise and stable flow control
- 4. Long lifetime



	ltem	Standard model	Orifice	Voltage & power	Max. working differential pressure/MPa	Max. flow rate	Dimensions
		PV02-221/C1	0.08mm	12V, 1W	.V, 1W 1MPa	650mL/min (1MPa)	6. 75
		PV02-221/C2	0.15mm			1600mL/min (1MPa)	7.15-0.1
		PV02-221/C3	0.3mm			8L/min (1MPa)	93.2質
P V 0 2	The state of the s	PV02-221/C4	0.5mm			10L/min (1MPa)	15.5 17.3 * 44.3 (Unit mm)
2	• •	PV02-221/C5	0.76mm			25L/min (1MPa)	≅ 8
		PV02-221/C7	1.27mm	12V, 2.5W	700kPa	52L/min (700kPa)	15.5
		PV02-221/C9	1.6mm		350kPa	35L/min (350kPa)	17.3
	PV03	PV03-222/CA	2.3mm	12V, 3.5W		18L/min (50kPa)	Ø14 Ø7.5
V		PV03-222/CB	4.5mm	121/ 2 51//	300kPa	120L/min (200kPa)	φ16.5*40.25 (Unit: mm)
		4.5mm PV03-222/CD	12V, 2.5W	12V, 2.5W	I.5mm 12V, 2.5W		180L/min (200kPa)

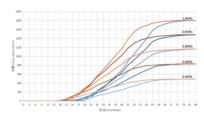
(PV02) current-flow curve, DC12V voltage series

Φ0.08mm orifice(power 1W)

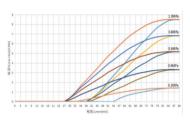




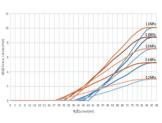
Φ0.15mm orifice(power 1W)



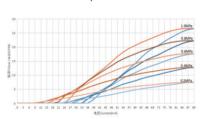




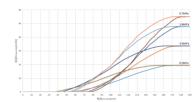
Φ0.5mm orifice(power 1W)



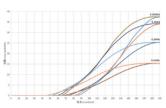
Φ0.76mm orifice(power 1W)



Φ1.27mm orifice(power 2.5W)

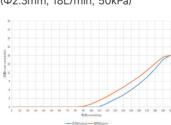


Φ1.6mm orifice(power 2.5W)

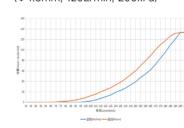


(PV03) DC12V voltage series

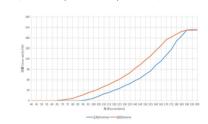
PV03-22*-CA current-flow curve (Φ2.3mm, 18L/min, 50kPa)



PV03-22*-CB current-flow curve (Φ4.5mm, 120L/min, 200kPa)

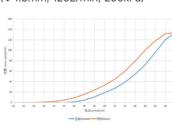


PV03-22*-CD current-flow curve (Φ4.5mm, 180L/min, 200kPa)

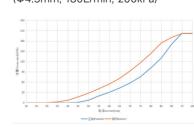


(PV03)DC24V voltage series

PV03-24*-CB current-flow curve (Φ4.5mm, 120L/min, 200kPa)



PV03-24*-CD current-flow curve (Φ 4.5mm, 180L/min, 200kPa)







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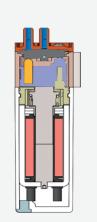
1013

Features:

- 1. Compact structure, small internal volume, limited dead volume, high precision, long lifetime, limited pumping volume
- 2. Medium including water, air, acid and alkali and organic solvents
- 3. Suitable for applications with strict requirements on installation space, precision sampling and integrated manifold

Instructions:

- 1. Tubing valve: compatible with 1.5-2 mm inner diameter PVC tube or silicone tube (shore hardness: 55-75 degrees)
- 2. Threaded valve: compatible with thread to barbed adapters (converted according to hose connector outer diameter) or the flangeless fitting (use of nut depends on flangeless fitting outer diameter)
- 3. There are two types of 1013 series 2-way solenoid valve: N.O. and N.C.



C :6: t:	Orifice	Flow rate	Pressure	Power (optional)
Specification	1.5mm	5g/s	-75kPa~250kPa	24V: 1.8W; 12V: 1.8W

Tubing	4 4	Standard model	Body (Optional)	Diaphragm (Optional)	99 — — — — — — — — — — — — — — — — — —	
solenoid	and the state of t	1013-22-EPN/5N	PEEK		13*16.5*64.2 (Unit mm)	
valve	1079	1013-32-EPN/5N	. ==.\			
Base-mo		Standard model	Body (Optional)		2- 0 22 安装孔 7 0 15 深15	
Base-mounted solenoid valve	HATTER HA	1013-22-ELB/5N	PEEK, PVDF	PEEK. PVDF		13*24.5*58 (Unit: mm)
olenoid	KEYTO KEYTO	1013-32-ELB/5N	,		205	
	4	Standard model	Body (Optional)	EPDM, FKM, FFKM	2MB%5	
Threaded	underwichten anderstellen ander	1013-22-EMU/5N	POM, PVDF,		(Unit: mm)	
ed solen	A Comment	1013-32-EMU/5N	PTFE, PEEK		6	
solenoid valve		Standard model	Body (Optional)		13*40.5*72.4 (Unit: mm)	
Ф		1013-32-FKU/5NC157	POM, PEEK		14-29 UNF (3X)	

Features:

- 1. Isolation structure with multiple options for connection types.
- 2. Strong corrosion resistance and fast response time.
- 3. Long lifetime.
- 4. Slight liquid volume fluctuation
- 5. All diaphragm valve flow rates are stated under conditions
- of 25°C, 50kPa, and pure water environment.



	Model	Standard model	Body (Optional)	Diaphragm (Optional)	Dimensions
	Tubing	1033-22-FCN/5N4S		EPDM, FFKM	2-\$\phi_3_3\vec{\text{COM\vec{\pi}}}{\text{\text{x\vec{\pi}}}} \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \
	Tubing valve	1033-32-FCN/5N4S			27 33 ± 0. 1
	Base-mounted valve	1033-22-EKB/5N4S	PEEK, PVDF		27*16*53 (Unit: mm) 29 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9
	ounted	1033-32-EKB/5N4S	Orifice: 1.6mm		2-M2.5*0.45
	Threaded valve	1033-22-EKU/5N4S			35.2 32:0.1 (Unit: mm)
1 0 X 3	and valve	1033-32-EKU/5N4S			mm)
X 3	Tubing valve	10B3-22-EKN/5NS	PEEK		54 *21.5 *76. 85 (Unit: mm)
	valve	10C3-32-EKN/5NS			(Ushi: mm) 9 18 2-03
	Base-mounted valve	10B3-22-EKB/5NS		EDDM EEKM	3-96, 45T0, 8 27:50, 1 2-93, 38 (Unit mm)
	ounted ve	10C3-32-EKB/5NS	Orifice: 2mm, 3mm	EPDM, FFKM	11 nm d
	Emery Threaded	10B3-22-EKG/5NS			40.8*19*71.5 (Unit mm)
	ed valve	10C3-32-EKG/5NS			章 61 (1977).5

Model			Pressure range	Power
1033	1.6mm	7.5g/s	-75kPa~250kPa	3.5W
10B3	2mm	17g/s	-75kPa~500kPa	6W
10C3	3mm	29g/s	-75kPa~200kPa	6W

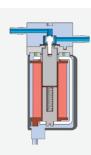
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1021

1012/PDV01

Features:

- 1. High pressure resistance, long lifetime. The waterproofing solution is available.
- 2. Medium including water, air and some organic solvents
- 3. It is suitable for the application with more impurities and crystals



=		Standard model	Body (Optional)	Diaphragm (Optional)	24. 5	6
Tubing valve		1021-21-EPN/5N5C365	PPS			65.5*20.5*24.5 (Unit: mm)
valve		1021-31-EPN/5N5C365	PPS		0011000	5*24.5
		1021-41-EPN/5N5C365	PPS		IN端 /OUT端	
=	4 4	Standard model	Body (Optional)		<u>2-₩₹5</u> 安業乳	(P
Tubing valve	The state of the s	1021-21-EHN/5N	PVDF			57.8*20.5*42.5 (Unit mm)
Œ		1021-31-EHN/5N	PVDF		24.5	
Τh	4 4	Standard model	Body (Optional)	EPDM, FKM, FFKM		
Threaded valve	The property of the property o	1021-22-EMU/5N	PPS, POM		2-N3▼5 安業孔	58.9*20.5*24.5 (Unit: mm)
lve		1021-32-EMU/5N	PPS, POM			51
Base-mounted valve		Standard model	Body (Optional)		41, 5 34, 4 ± 0, 1	58
nuor		1021-21-EPB/5N	PPS		2-03.53	58*20.5*41.5 (Unit: mm)
ted v		1021-31-EPB/5N	PPS		安装机 ST	*41.5
alve		1021-41-EPB/5N	PPS		12. 6 8. 21	

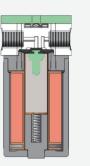
Instructions:

- 1. Tubing valve: it is compatible with 2 mm inner diameter PVC tube or silicone tube (shore hardness: 55~75)
- 2. Threaded valve: It is compatible with thread to barbed adapters (converted according to hose fittings outer diameter) or the flangeless fitting (use of nut depends on flangeless fitting outer diameter)

Specification	Orifice	Flow rate	Pressure range	Power
	2mm	11g/s	-70kPa~200kPa	4W

Features:

- 1. Long lifetime
- 2. High temperature resistance (Max. 220°C)
- 3. Super limited dead volume
- 4. Multiple wetted part materials are available
- 5. Excellent acid and alkali resistance
- 6. Low resistance along the flow path



	i Ko	Standard model	Body (Optional)	Diaphragm (Optiona	N 2- M3°4,5
1	7/0 (Cast his second se	1012-22-DZU/5N	PFA, PVDF	FFKM	\$2.1* q25 (Unit: mm)
0 1 2	_	Standard model	Body (Optional)	Diaphragm (Optional)	26.5
	The state of the s	1012-22-DCU/5N	PTFE, PVDF	FFKM	② ② ② ② ② ② ② ② ② ② ② ② ② ② ② ② ② ② ②
		Standard model	Body (Optional)	Diaphragm	2×M3₹3
P D V 0 1	Keryto ce natis 2thy Sunos Was Surens and Title 2	PDV01-2111/C1	PEEK, PPS, PTFE	PTFE	52.8° 425.4 Unit: mm) Ø 25.4
	35 St	Standard model	Body (Optional)	Diaphragm	
	THE PROPERTY OF SHAPE AND ADDRESS OF SHAPE AND ADDR	PDV01-3211/C2	PEEK, PPS, PTFE	PTFE	67.6 ° φ 25.4 (Unit: mm) 67.6 ° φ 25.4

Model		Flow rate	Pressure range	Power	
1012	1.3mm	5g/s	0~1.5MPa	3.5W-15W	
PDV01-2	1.5mm	Ealo	0-700kPa	E 21M	
PDV01-3	ПППС.1	5g/s	0~700kPa	5.2W	

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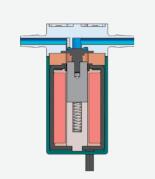
1022/1032/1042

Features:

- 1. Large flow, high pressure resistance, long lifetime, small internal volume, small dead volume
- 2. Medium including water, air, organic solvents and acid-base reagents etc.
- 3. Suitable for sampling module, cleaning module, dilution module and waste liquid dispensing module etc.

Instructions:

- 1. The inlet port shall be the pressure port with positive and negative pressureapplied
- 2. The silicone tube shall be inserted or removed in the direction of the tubing valve barb. Avoiding angled insertion and removal, and gravity collision to prevent the nozzle from breaking
- 3. Reagent resistance mainly related to the valve body and diaphragm material. If you have any question about selection, please feel free to contact us





Series	Orifice	Flow rate	Pressure range	Power
1022	2mm 3-way threaded valve1.6mm	2-way 6.8g/s 3-way 6.0g/s	2-way -70kPa~300kPa 3-way -70kPa~250kPa	3.5W
1032	2.5mm	8.5g/s	-70kPa~200kPa -70kPa~200kPa	3.5W
1042	4~5mm	17~34g/s	-70kPa~200kPa	2-way 6W, 3-way 7W

1022-22-EPN/5N EPDM, FKM POM, PVDF, EPDM, FKM, 1022-22-ECU/5N 1022 @ * B series 1022-32-EPN/5N PPS EPDM. FKM PVDF, POM, EPDM, FKM, 1022-32-TCU/5N FFKM 1032-22-EPN/5N EPDM. FKM 1032 series 1032-32-EMN/5N POM EPDM, FKM 1042-22-EPN/5N PPS, PVDF EPDM, FKM 1042 series 1042-32-EPN/5N PPS. PVDF EPDM. FKM 1042-22-EMB/8NC7 **EPDM** 1042-22-THG/5NC164 **PVDF** EPDM, FKM

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Pinch Valve

Features:

- 1. Excellent sealing performance, with the medium only present within the tubing, reducing cross-contamination.
- 2. Suitable for applications with many impurities and particles.



1		Standard model	Number of ways		4-M3*3.5	
2 2 4	2 to Thereman 2 to 12 to	1224-22-B1C/5NC1	2-way N.C.	Base mounted	9 8 = 6	58*φ25 (Unit: mm)
4		1224-12-D1C/5N	2-way N.O.	Base mounted Bracket mounted	11	
1		Standard model	Number of ways		Ø28	
2 1 3	Congression of the state of the	1213-32-B1C/5N		Base mounted	4-M3*3.5	60.7*φ22 (Unit: mm)
3		1213-32-D1C/5N	3-way	Base mounted Bracket mounted	7785 33	2
		Standard model	Number of ways			102.5*73*36 (Unit: mm)
1 2 6 9	PP STATE OF THE PROPERTY OF TH	1269-22-Z1C/0NS	2-way N.C.		45	73*36 _{mm)}
6 9		Standard model		Bracket mounted		102.5*73*36 (Unit: mm)
Two second (455 may second) and second second in the sec	The property of the property o	1269-32-Z1C/0NS	3-way		45	3*36

Series	Flexible tube specification shore hardness 60	Flow rate	Pressure range	Power
1224	2*4mm	8.5g/s	N.O. : 250kPa, N.C. : 150kPa	12V:5.1W、24V:5.4W
1213	1.5*3mm/1.6*3.2mm	5g/s	-75kPa~200kPa	3.5W
1269	6*9mm	85g/s	0kPa~80kPa	12W

Valve Manifold

Features:

- 1. It offers the flexibility of multi-inlet with one outlet or one inlet with multi-outlet configurations, with individual control for each valve.
- 2. It is suitable for various media, including water, air, organic solutions, strong acids, and bases.
- 3. The solenoid valve manifold is highly integrated, compact, lightweight, easy to install, and well-suited for multi-reagent sampling applications.
- 4. The manifold can be customized to meet specific customer flow path requirements.

Instructions:

- 1. Flow rate test environment: 25°C, 50kPa, pure water condition
- 2. Please refer to the technical specification for dimension
- 3. Threaded port number=2+1+X, X=1,2,3,4...12, etc.
- 2 COM ports +1 optional COM port +optional branch port

	Model	Item	Specification	Orifice	Flow rate	Power	Pressure	
		Standard model	1384-22-MHU/5N					
		Body material (optional)	PTFE, PVDF	1.6mm	5g/s	3.2W	C-NC: -70kPa~150kPa NC-C: 50kPa	
		Diaphragm material (optional)	FFKM					
Dire		Standard model	1351-22-MFU/5N					
ect-op		Body material (optional)	PTFE, PVDF, POM	1.3mm	5g/s	4.2W	-70kPa~200kPa	
Direct-operated valve manifold		Diaphragm material (optional)	EPDM, FFKM					
valve		Standard model	13A2-12-FHU/5N			3g/s 2.8W	-70kPa~250kPa	
manif		Body material (optional)	PTFE, PVDF	1.5mm 3g/s	3g/s			
old		Diaphragm material (optional)	FFKM					
		Standard model	1385-32-FHU/5N				-70kPa~250kPa	
		Body material (optional)	PTFE, PVDF	1.4mm	3g/s	2.8W		
		Diaphragm material (optional)	FFKM					
Roc		Standard model	1321-52-TVU/5N					
Rocker valve manifold		Body material (optional)	PMMA, POM, PTFE, PVDF	1.4mm	4g/S	2.8W	-70kPa~250kPa	
		Diaphragm material (optional)	EPDM, FFKM					

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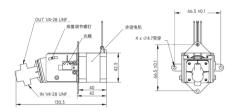
Metering Pump

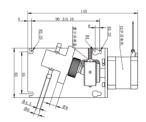
Features:

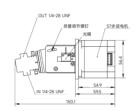
- 1. Driven by a stepper motor, ensuring smooth operation through internal friction pairs, capable of achieving both single-cycle and multi-cycle precise dosing functions.
- 2. Throughout the liftime of the metering pump, it maintains extremely high and stable dosing accuracy.
- 3. Angle adjustment range: 0.5-20°.
- 4. Maximum suction height ≥ 6m.
 - (Note: For metering pumps with the same piston diameter, the suction height and pressure head vary with the displacement. The larger the displacement, the larger the suction height and pressure head.)
- 5. Long lifetime and high-performance 1.8° two-phase stepper motor.



Drawings:









5J05/5J07

5J10

Item	Metering Pump					
Displacement (µL)	170	300	700	100/300		
Piston diameter (mm)	5	7	10	7		
Rotational speed (rpm)	60-600	60-600	60-300	60-360		
Stepper motor (1.8°)	42 stepp	42 stepper motor				
Maximum suction height (m)	(6	4	6		
Lifetime	30 million cycles					
Accuracy (%)		±1%		±3%		
Coefficient of variation (Cv)		0.1	5%			
Piston material		Zirconia/Alumina		Alumina		
Housing material		PVDF				
Port connection	1/4-28 UNF / M8 Tubir					
Maximum placement angle (°)		2	0			

Piston Pump

	Model	Standard model		Chamber	
Standard pump		5005-12-BUP/64C	Zirconia	PMMA, PCTG, POM	136*42*60 (Unit: mm)
Small volume pump		5010-11-BUA/64C	Zirconia/316L	PMMA, PCTG	120.4*28*33 (Unit: mm)
Large volume pump		50F0-69-BU/64C	Zirconia	PMMA, PTFE, POM	173.9*42*54 (Unit: mm)
Piston pump integrated 2-way valve		5010-12-BUP/64C -018	Zirconia	PCTG	136*42*60 (Unit: mm)
Piston pump integrated 3-way valve		5010-12-EU/64C -012	Zirconia	PMMA, PTFE	193.2*45*61 (Unit: mm)

Parameter/volume										
Volume	100µL	250µL	10mL	20mL						
Piston diameter(mm)	3.17 5.01 7.08 10.01 15.84 22.39 2.24						22	22.39		
Volume per step(µL/step)	0.05	0.05 0.125 0.25 0.5 1.25 2.5 0.025							2.5	
Stroke(mm)				12.7	7			25.4	50.8	
Motor rated current(A)		1.2 2								
Maximum motor rotational speed(r/s)		12 12							8	
Cv	<1.2% (Cv within run at not less than 2%stroke) <1% (Cv within run at not less than 10%stroke)									

Specification	Motor step angle	Lead of screw	Stroke/step	Port connection	Lifetime
Specification	1.8°	1.27mm	0.00635mm	M6, 1/4-28 UNF	5 million cycles

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Syringe Module

Pumps

Features:

High precision, maintenance free, unique sealing solution and advanced processing technology



Series	200C-60	2001-60	2002-60	2005-60	2010-60	2025-60	2050-60	201A-60		
Volume	50µL	100µL	250µL	500µL	1mL	2.5mL	5mL	10mL		
Stroke (mm)				6	60					
Piston diameter (mm)	1.02	1.45	2.3	3.25	4.6	7.3	10.3	14.6		
		SUS	316L			Zirc	onia			
		3 millio	n cycles			2 million	n cycles			
Dispense precision Notes 1	2%									
Dispense accuracy Cv Notes 2	1.5%									
Operating pressure (MPa)	0.3									

Note 1: The accuracy and Cv are measured using deionized water at a total volume of 2%.

Note 2: Testing is conducted in a static wind environment at 21-25°C.

	Model	Item	Sepcification		Volume	Stroke (mm)	Dispense precision	Disp	ense accuracy Cv	
Single syringe		Standard model		7266-32/63N-608						
		Piston material	Zirconia/316L		10mL	60				
module		Motor Rated Current	1.2A/2A/2.3A optional					<1.5% Cv within run at notless than 2% stroke <1% Cv within run at not less than 10% stroke		
Multi-channel syringe module	**************************************	Standard model	7262-34/33N-602							
hannel :	hannel	Piston material	Zirconia/316L		1mL*5	60	2%			
syringe	• •	Motor Rated Current	1.2A/2A/2.3A optional							
Syring	6 minutes	Standard model	5436-32/33N-486-012							
Syringe integrated valves		Piston material	al Zirconia/316L		2.5mL*2	30				
rated		Motor Rated Current 1.2A/2A/2.3A options		optional						
Specificatio	Motor step angle	Lead of screw	Stroke per step Volu		step Volume per step (µL/step)		Port connection		Lifetime	
ication	1.8°	2.5mm, 6mm	0.0125mm, 2.08×V 0.03mm 2.08×displace		×10 ⁻⁴ 5×V×10 ⁻⁴ µ re: V represents ment of a single	ıL/step the pump.	1/4-28 UNF		2 million cycles	

Main features:

- 1. It supports extremely high accuracy and precision of liquid aspiration and dispensing: <1.2% (Cv within run at not less than 2% stroke)
- 2. Versatility in types: Offers a range of options from 50uL to 15mL, suitable for various instrument conditions;
- 3. Material compatibility: Can be used with a wide range of liquids due to compatibility with different materials such as PTFE, UPE, POM, etc.

Features:

- 1. Low noise, long lifetime
- 2. The excellent sealing solution ensures no back-flow when the motor is powered off
- 3. Large flow makes it suitable for cleaning, dispensing waste, setting up vacuum and other applications



	Model	Standard model	Medium	Flow rate	Operating pressure	Lifetime	Dimensions
Single	0	7121-31-ELA		300mL/min			Ø12
Single-head diaphragm pump		7121-62-ELA	Liquid	600mL/min	Pressure head (mH2O)≥200kPa, Suction height	Brush: 3000 hrs	67.3*57.8*30.2 (Unit: mm)
aphragm		7121-31-ELN	Liquid	300mL/min	(mH2O)≤-80kPa, Vacuum (AIR)≤-40kPa	Brushless: 10000 hrs	3*30.2
pump	1	7121-62-ELM		600mL/min			10 27 5
Double-head diaphragm pump		7102-52-EAN	Gas	8L/min	Pressure head (mH2O)≥120kPa, Vacuum (AIR)<-70kPa	Brush: 10000 hrs	78.4.*78.*38 (Unit: mm))
Rolling pump		7421-32-ELN	Liquid	300mL/min	Pressure head (mH2O)≥120kPa, Suction height (mH2O)≤-50kPa	Brushless: 1500 hrs	60°27°33 (Unit: mm)
pump		7401-41-ELN		1.4L/min	Pressure head (mH2O)≥90kPa, Vacuum (AIR)≤-40kPa	Brushless: 3000 hrs	7*333 mmn)
Single-head air pump		7101-A2-EAN	Gas	5L/min	Pressure head (mH2O)≥130kPa, Vacuum (AIR)<-70kPa	Brushless: 10000 hrs	81.6 81.6 81.6 81.6 81.6 81.6 81.6 81.6
High pressure diaphragm pump	7521-31-EPD	- Liquid	0.30L/min	Pressure head (mH2O)>600kPa, Suction height	Brushless:	74.2*47.1*52.5 (Unit mm)	
	7521-32-EPD	Liquid	U.3UL/min	(mH2O)≤-80kPa, Vacuum (AIR)≤-30kPa	hrs	1.152.5 mm)	

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Precision Molding

Precision Molding: Injection Molding Mold

Quality Assurance in Processing:



Configured with automated mold production management systems, covering processes from copper electrode processing, inspection, to EDM machining, ensuring timely progress, data compensation, and data tracking; guaranteeing mold processing accuracy and reducing human errors.

Processing Control Capabilit

Material Selection Capability

The accuracy of molding parts can reach 0.005-0.01mm; Capable of processing high-precision molds and experience in injection molding of high-temperature materials such as PEEK, PEI, PPS, PSU, LCP, as well as fluoroplastics such as PVDF, PFA, ETFE.

Strict control over material, with spectral, RoHS, and melt flow index testing for each batch of raw materials, ensuring the stability of injection molded products and product traceability; online monitoring of finished products during the injection molding process with timely alarms, ensuring the safety of molds and injection molding machines, as well as the stability of plastic products.

Integrated Module Series



Chemiluminescent Substrates Module

Functions:

- a. Integrated valve with no tube connection
- b. Visual fluid path in light-free conditions
- c. Highly integrated reagent dispensing



Digestion Module

Functions:

- a. Modular function management for the convelnience of maintenance b. High-pressure valve integrated module supports configurations on demand
- c. Optimize fluid path details



8-Channel Tip Module

Functions:

- a. Automatic tip ejection
- b. Improve the efficiency of sampling and consistency of data



Flow Cytometer (FCM) Fluid Pat

Functions:

a. Cleaning device with filtering function b. Integrated pressure chamber, flow control detection



96-Channel Pipette Assembly

Functions

- a. Automatic tip ejection
- b. It can aspirate and dispense 96 groups of samples simultaneously and improve efficiency of sampling and consistency of data



6-Channel Tip Module

Functions:

a. Automatic tip ejectionb. Improve the efficiency of sampling and consistency of data



Degassing Module Features:

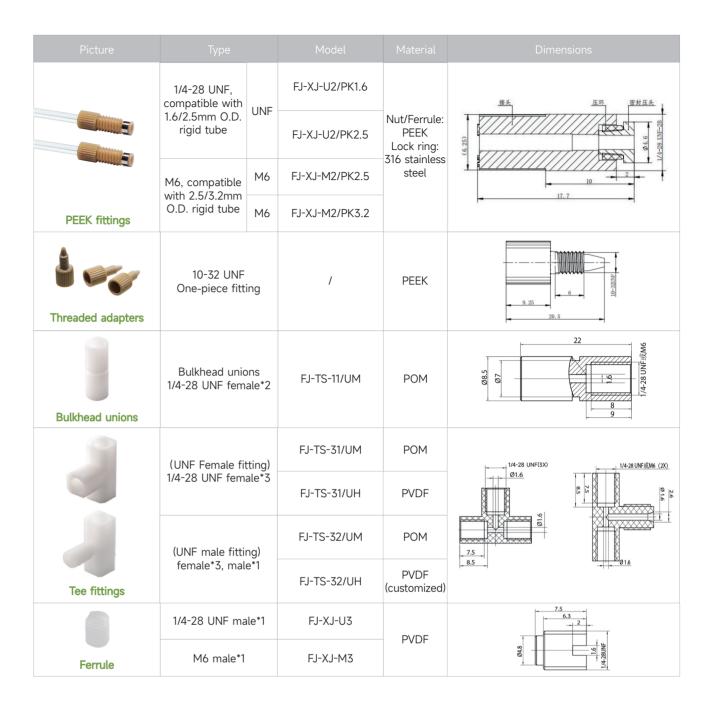
- 1. Ultra-high degassing efficiency.
- 2. Compact size.
- 3. Excellent degassing consistency.
- 4. Can be used in combination with multiple degassing chambers.
- 5. Features continuous degassing functionality.
- 6. Excellent chemical resistance.



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Fittings & Consumables

Picture	Туре		Model	Material	Dimensions		
	1/4-28 UNF		FJ-XJ-U1/PX	PP	9.2 螺紋标记: M6歳1/4-28 UNF 1.3		
Thread to barbed adapters	М6	M6 FJ-XJ-M1/PX		FF	34U 8C-1/17(00)		
	1.6mm O.D.	UNF	FJ-XJ-U2/PE1.6Ф9.3				
	rigid tube	M6	FJ-XJ-M2/PE1.6Ф9.3				
	2mm O.D.	UNF	FJ-XJ-U2/РЕ2Ф9.3		1/4-28 UNF 螺纹外径6.2		
	rigid tube	M6	FJ-XJ-M2/РЕ2Ф9.3	Nut: PP Ferrule: ETFE			
	2.5mm O.D. rigid tube	UNF	FJ-XJ-U2/PE2.5Ф9.3		% K.T.		
		M6	FJ-XJ-M2/PE2.5Ф9.3		20		
	3.2mm O.D.	UNF	FJ-XJ-U2/PE3.2Ф9.3				
Flangeless fittings	rigid tube	M6	FJ-XJ-M2/РЕ3.2Ф9.3				
	1.6/2/2.5/3.2mm	UNF	FJ-XJ-U2/PE3.2Ф9.3	Nut: PP Ferrule:			
		M6	FJ-XJ-M2/PE3.2Ф9.3		14-28UNF 製成外代606.2		
	O.D. rigid tube	UNF	FJ-XJ-U2/PE3.2Ф7	PVDF (compact)	10.5		
Flangeless fittings		M6	FJ-XJ-M2/PE3.2Ф7				
PEEK fittings	6-40 UNF 1.6mm O.D. rigid tube		FJ-XJ-M2/PE1.6	Nut/Ferrule: PEEK Lock ring: 316 stainless steel	(0.50)		



Pipette Tips







50µL sterile Tip & with filter

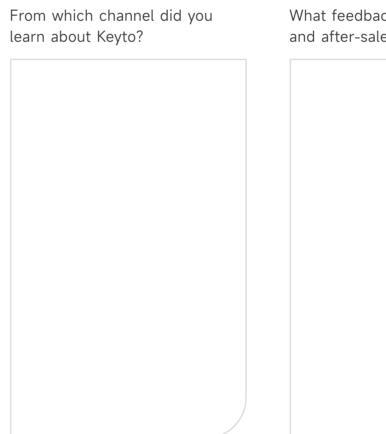
200µL sterile Tip & with filter

1000µL sterile Tip & with filter

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What products do you often purchase from Keyto?	How do you rate the use of our product				



What feedback do you have about our pre-sales and after-sales service?

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