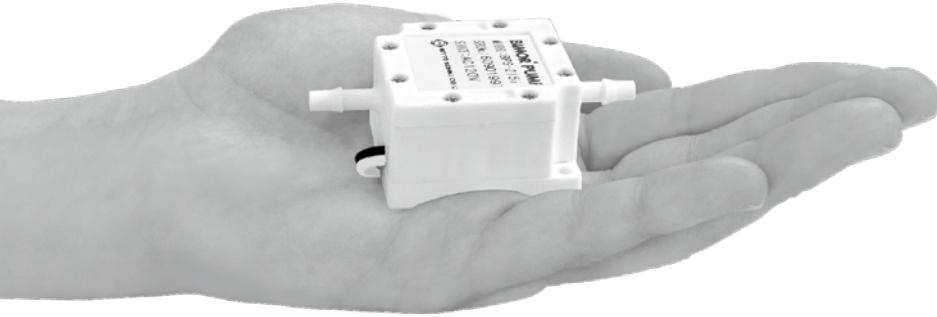


压电泵 / Piezoelectric Pump

BIMOR泵 / BIMOR PUMP

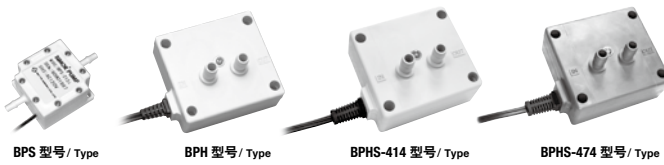


液体可抽吸!

Suitable for pumping liquids

用途例 / Applications

- 供排 / For supply and drainage
- 医用灌注 / For medical injection
- 冷却循环 / For cooling circulation
- 取样 / For liquid sampling



BPS 型号 / Type

BPH 型号 / Type

BPHS-414 型号 / Type

BPHS-474 型号 / Type

使用条件 / Conditions of Use	BIMOR泵 / BIMOR PUMP
使用环境温度 / Ambient temperature	5~50°C ^{※1}
使用环境湿度 / Ambient humidity	35~85% ^{※2}
使用流体温度 / Fluid temperature	5~50°C

※1) 不结冰 / No freezing ※2) 不结露 / No condensation

小型、轻量、长寿命、低噪音

由于压电双晶片也起到隔膜的作用，无马达、旋转轴和其他复杂机构，因此振动小、故障少。BIMOR泵比传统泵重量更轻、噪音更低、寿命更长。已实现60个月免维护连续运转。

低消耗功率、低电磁噪声

BIMOR泵由低耗能压电元件驱动。因此，运行成本低，几乎不会产生电磁噪声。

流量调节方便

BIMOR泵的流量与电压和频率成正比，因此调节流量与调节电压和频率一样方便。
可在额定电压或更低的情况下使用本产品。

用途广泛

零部件可用几种材料制成，因此无论是用于液体还是气体，均可选择最适合要求的材料。目前BIMOR泵已广泛应用于医药、科研、计算机和化工等多种领域。
下表中的“适用介质”仅供参考。请确认它们是否适合所有使用条件。

Compact, lightweight, durable & quiet

As the Bimorph has no motors or shafts or other troublesome mechanisms. We have achieved maintenance free continuous operation for 60 months.

Low power consumption & electromagnetic noise

The Bimor is driven by low energy consuming piezoelectric elements. Consequently it costs very little to run and emits virtually no electromagnetic noise.

Simple flow rate adjustment

As the flow rate of the Bimor is proportional to the voltage and frequency, adjusting the flow rate is as simple as adjusting either one.

You may use the product at the rated voltage or lower.

Application versatility

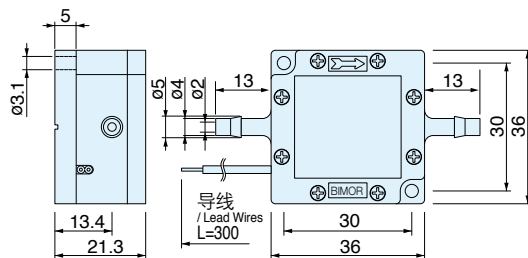
The parts can be made of several different materials, so you can select the material appropriate to your needs, be it a liquid application. The Bimor is currently employed in a variety of different fields including medicine, scientific research, and the PC and chemical industries.

外形尺寸 / Dimensional Outline Drawing

(单位 / Unit: mm)

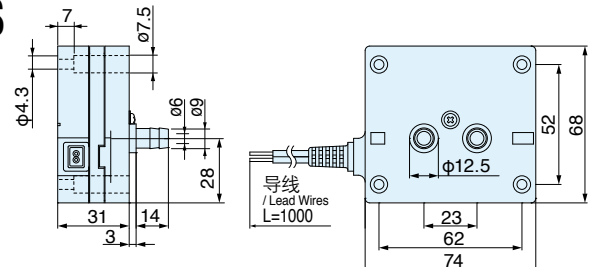
BPS

型号 / type



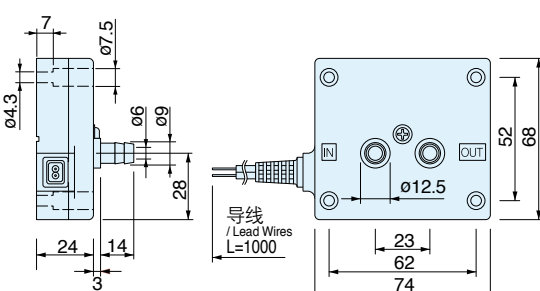
BPHS

型号 / type



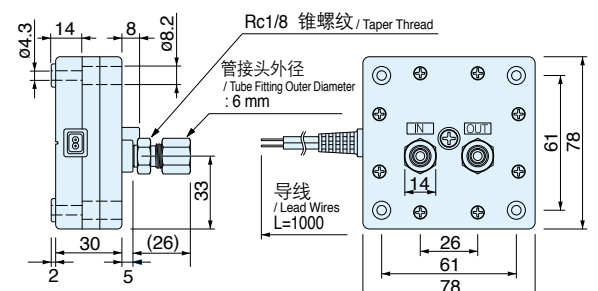
BPH

型号 / type



BPF

型号 / type



LIQUID PUMP

Piezoelectric Pump

BIMOR泵 / BIMOR PUMP

压电泵系列 / Piezoelectric Pump series

规格 / Specifications

电压/Voltage(AC) — 120 V 60Hz					接液材料 / Liquid Surface Materials			本体重量 / Weight (g)
型式 / Model	消耗电流 / Current (mA)	自吸力 / Self-priming Pressure (kPa)	流量 / FlowRate (mL/min)	吐出压力 / Discharge Pressure (kPa)	壳体 / Housing	接液板 / Liquid Contact Sheet	止回阀/O形环 / Valve / O-ring	
BPS-215i	3	3	30	15	PP	PP	IIR	40
BPH-214E	15	8	350	18	PP	PTFE	EPDM	140
BPH-214G		7		17			FKM	
BPH-414E	30	12	500	35	PPS	PTFE	EPDM	170
							FFKM	

● BPS 型号/type



● BPH 型号/type



● BPF 型号/type



电压/Voltage(AC) — 100 V 60Hz					接液材料 / Liquid Surface Materials			本体重量 / Weight (g)
型式 / Model	消耗电流 / Current (mA)	自吸力 / Self-priming Pressure (kPa)	流量 / FlowRate (mL/min)	吐出压力 / Discharge Pressure (kPa)	壳体 / Housing	接液板 / Liquid Contact Sheet	止回阀/O形环 / Valve / O-ring	
BPS-215i	3	3	36	20	PP	PP	IIR	40
BPS-235G		1.5						
BPH-214i	15	8	350	18	PP	PP	IIR	140
BPH-214D							VMQ	
BPH-214E	7	17	17	35	PP	PTFE	EPDM	
BPH-214G							FKM	
BPH-414i	30	12	500	35	PP	PP	IIR	170
BPH-414D							VMQ	
BPH-414E	10	450	450	32	PPS	PTFE	EPDM	
BPH-414G							FKM	
BPH-474G	30	10	400	35	PPS	PTFE	FFKM	180
BPH-474P							FEP	
BPF-465P	30	10	400	35	PFA	PTFE	FFKM FEP	350
BPHS-414i	30	12	700	35	PP	PP	IIR	150
BPHS-414E							EPDM	
BPHS-414G	10	500	500	35	PPS	PTFE	FKM	
BPHS-474G							FKM	
BPHS-474P	FFKM	FFKM FEP						

材料说明 / Material Description

- EPDM 乙丙橡胶 / Ethylene Propylene Rubber
- FEP 氟乙烯丙烯 / Fluoroethylene Propylene
- FFKM 氟橡胶(全氟) / Fluorine Rubber (Perfluoro)
- FKM 氟橡胶 / Fluorine Rubber
- IIR 丁基橡胶 / Butyl Rubber
- PP 聚丙烯 / Polypropylene
- PTFE 四氟树脂(聚四氟乙烯) / Tetrafluoroethene (Polytetrafluoroethylene)
- VMQ 二甲基硅橡胶 / Dimethyl Silicon Rubber

● BPHS-414i/E/G



● BPHS-474G/P



UNIMOR泵 / UNIMOR PUMP

压电泵系列 / Piezoelectric Pump series

规格 / Specifications

电压/Voltage(AC) — 100 V 60Hz					接液材料 / Liquid Surface Materials			本体重量 / Weight (g)
型式 / Model	消耗电流 / Current (mA)	自吸力 / Self-priming Pressure (kPa)	流量 / FlowRate (mL/min)	吐出压力 / Discharge Pressure (kPa)	壳体 / Housing	接液板 / Liquid Contact Sheet	止回阀/O形环 / Valve / O-ring	
UPS-112E	3	3	36	15	PP	PTFE	EPDM	13.3
UPS-112G							FKM	

● UPS-112E



● UPS-112G

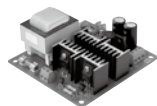


另售品

/ Optional Accessories

DC 驱动用变换器 / DC drive inverter

全部机型 / For all models	
型式 / Model	ED30-12/24V
输入电压 / Input Voltage	12 V DC 以及 24 V DC
额定时间 / Duty Cycle	连续 / Continuous
外观尺寸 / Dimensions	L101×W94×H45 mm



泵驱动电源 / Pump drive power supply

型式 / Model	FCD-12	FCA-100
输入电压 / Input Voltage	12 V DC	100 V AC 以及 200 V AC
输出电压 / Output Voltage	AC100V (固定 / Fixed)	
输出频率 / Output frequency	10~120 Hz	
外观尺寸 / Dimensions	W100×L190×H47 mm (除去突起部 / Remove the protrusion)	
重量 / Dimensions	约 / About 700 g	



泵小型化的未来

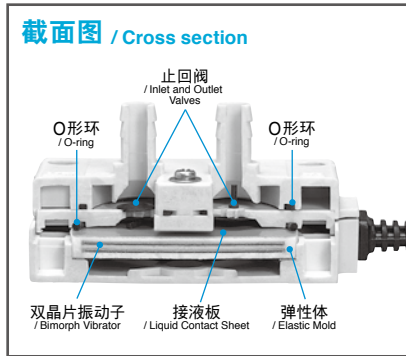
The Next Step in Pump Miniaturization

革新的科学技术

/ Revolutionary piezoelectric bimorph technology

压电双晶片振动子作为泵的动力部，采用将带有双面电极的薄型压电元件粘贴于弹性金属板的结构，由于在这种振动子上施加电压后会产生弯曲变形，因此施加交流电压后，振动子将会根据该电压和频率发生振动。

The Bimor's driving force, the bimorph, comprises two parallel piezoelectric wafers. Their nature is to expand or contract depending on the direction of the voltage. Therefore when an alternating current is applied, one wafer expands then contracts while the other contracts then expands, causing the bimorph to bend. Repeating the cycle creates the pumping action.

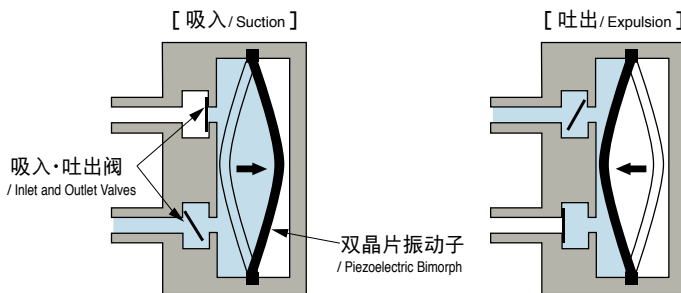


原理, 构造 / Principle, Structure

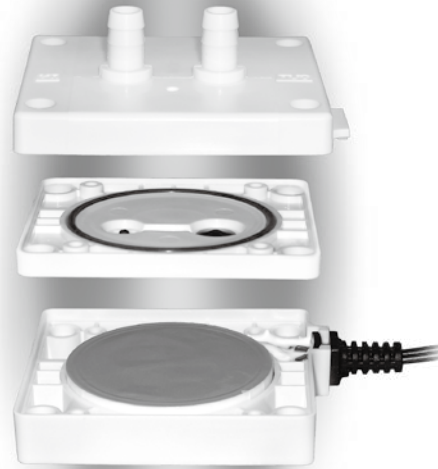
『BIMOR 泵』将压电双晶片振动子的变位动作直接作为泵的运转驱动力。

"The Bimor pump" uses the displacement operation of the piezoelectric bimorph vibrator as the direct source of the pumping action.

驱动力: 压电双晶片弯曲 / Driving Power: Piezoelectric Bimorph Winding



BIMOR振动子(双晶片振动子) / Piezoelectric Bimorph	UNIMOR振动子(单晶片振动子) / Piezoelectric Unimorph
<p>弹性金属板 / Flexible metal plate 压电振动子 / Piezoelectric vibrators</p>	<p>弹性金属板 / Flexible metal plate 压电振动子 / Piezoelectric vibrator</p>



耐药品适用 / 不适用

suitable / unsuitable chemical liquids

型式 / Model	○ 适正例 / Examples of suitable chemical liquids	✕ 不适正例 / Examples of unsuitable chemical liquids
BPS-215i BPH-214i BPH-414i BPHS-414i	乙醇, 稀盐酸, 碳酸钠, 苯甲醛, 甲醛水 Ethanol, Dilute hydrochloric acid, Sodium carbonate, Benzaldehyde, Formalin	二甲苯, 矿物油, 四氯化碳, 三氯乙烯, 甲苯, 苯
BPH-214E BPH-414E BPHS-414E	氨水, 乙醇, 稀盐酸, 苛性钾, 苛性苏打, 甲醇 Ammonia water, Ethanol, Hydrochloric acid, Caustic potash, Caustic soda, Methanol	Xylene, Mineral oil, Carbon tetrachloride, Trichloroethylene, Toluene, Benzene
BPS-235G	乙醇, 二甲苯, 硅油, 煤油, 甲苯, 苯 Dilute hydrochloric acid, Xylene, Silicone oil, Kerosene, Toluene, Benzene	氨水, 盐酸, 过氧化氢, 次氯酸钠, 硝酸, 硫酸 Ammonia water, Hydrochloric acid, Hydrogen peroxide, Sodium hypochlorite, Nitric acid, Sulfuric acid
BPH-214D BPH-414D	氨水, 乙醇, 次氯酸钠, 甲醇 Ammonia water, Ethanol, Dilute hydrogen peroxide, Sodium hypochlorite, Methanol	苛性苏打, 四氯化碳, 硅油, 三氯乙烯, 甲苯, 苯 Caustic soda, Carbon tetrachloride, Silicone oil, Trichloroethylene, Toluene, Benzene
BPH-214G BPH-414G BPHS-414G	乙醇, 过氧化氢, 矿物油, 次氯酸钠 Ethanol, Dilute hydrogen peroxide, Mineral oil, Sodium hypochlorite	丙酮, 氨水, 冰醋酸, 氟酸, 甲醛水 Acetone, Ammonia water, Glacial acetic acid, Hydrofluoric acid, Formalin
BPH-474G BPHS-474G	乙醇, 二甲苯, 四氯化碳, 硅油, 三氯乙烯 Ethanol, Xylene, Carbon tetrachloride, Silicone oil, Trichloroethylene	丙酮, 氨水, 氯磺酸, 冰醋酸, 氟酸, 甲醛水 Acetone, Ammonia water, Chlorosulfonic acid, Glacial acetic acid, Hydrofluoric acid, Formalin
BPH-474P BPHS-474P	乙醇, 三氯甲烷, 冰醋酸, 苯, 甲基乙基酮 Ethanol, Chloroform, Glacial acetic acid, Benzene, Methyl ethyl ketone	氯磺酸, 氟油, 氟碳致冷剂 R-112, 氟碳致冷剂 R-113 Chlorosulfonic acid, Fluorine oil, CFC 112, CFC 113
BPF-465P	乙醇, 王水, 臭氧, 四氯化碳, 浓硝酸, 浓硫酸, 发烟硫酸 Ethanol, Aqua regia, Ozone, Carbon tetrachloride, Concentrated nitric acid, Concentrated sulfuric acid, Fuming sulfuric acid,	氟油, 氟碳致冷剂 R-112, 氟碳致冷剂 R-113 Fluorine oil, Fluorocarbon refrigerant R-112, Fluorocarbon refrigerant R-113
UPS-112E	氨水, 乙醇, 稀盐酸, 苛性钾, 苛性苏打, 甲醇 Ammonia water, Ethanol, Hydrochloric acid, Caustic potash, Caustic soda, Methanol	二甲苯, 矿物油, 四氯化碳, 三氯乙烯, 甲苯, 苯 Xylene, Mineral oil, Carbon tetrachloride, Trichloroethylene, Toluene, Benzene
UPS-112G	乙醇, 过氧化氢, 矿物油, 次氯酸钠 Ethanol, Dilute hydrogen peroxide, Mineral oil, Sodium hypochlorite	丙酮, 氨水, 冰醋酸, 氟酸, 甲醛水 Acetone, Ammonia water, Glacial acetic acid, Hydrofluoric acid, Formalin