

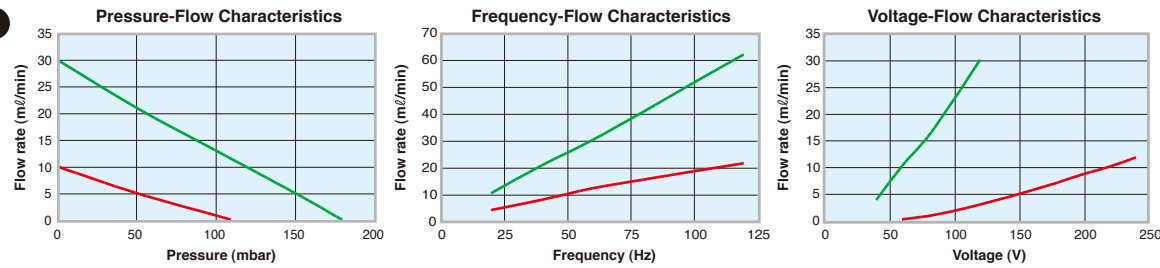
BIMOR PUMP

BPS · BPH · BPF series

Flow rate Characteristic

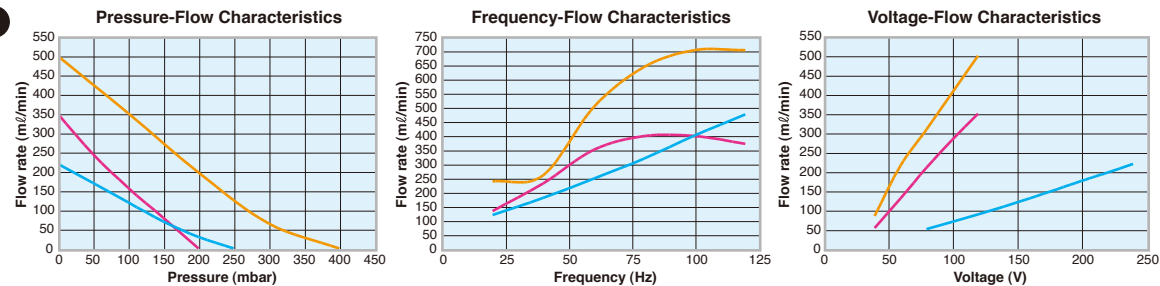
BPS series

120V 60Hz type
230V 50Hz type



BPH series

(BPH-414i)
120V 60Hz type
(BPH-214i)
120V 60Hz type
(BPH-214i)
230V 50Hz type



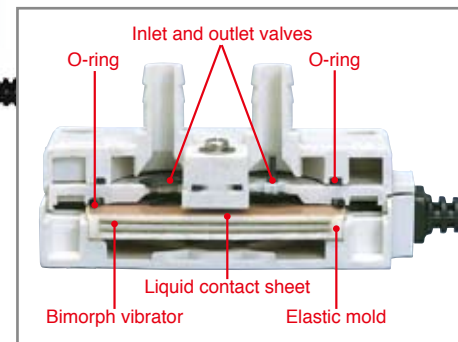
The Next Step in Pump Miniaturization

<Revolutionary piezoelectric bimorph technology>

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.



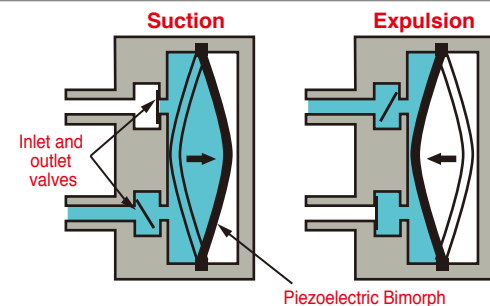
Cross section



Principle / Structure

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

Driving power: Piezoelectric Bimorph winding



ATTENTION

- Please read "User's Instructions" and "Directions for use" before using the product.
- Please confirm the suitability of the applied liquid or gas before use.
- Please do not intake or eject any liquid that contains a solid material. The contained solid material may damage the inlet and outlet valves.
- Please do not intake or eject any liquid that may crystallize. Any crystallized material may lower the performance of the inlet and outlet valves.
- The surge current shortens the lifetime of the product. Please consider installing 2 resistors, 820 Ohm value, connected in parallel between the product and the power supply, or other suitable soft start device, in order to avoid high surge currents.
- The performance is measured with the pump positioned horizontally. The orientation of the product may influence the performance.
- When there is hydraulic pressure from a Siphon phenomenon, leakage may occur. Please place the tank below the outlet valve or install a solenoid or manual valve on the outlet piping if the application needs to shut off the flow completely.

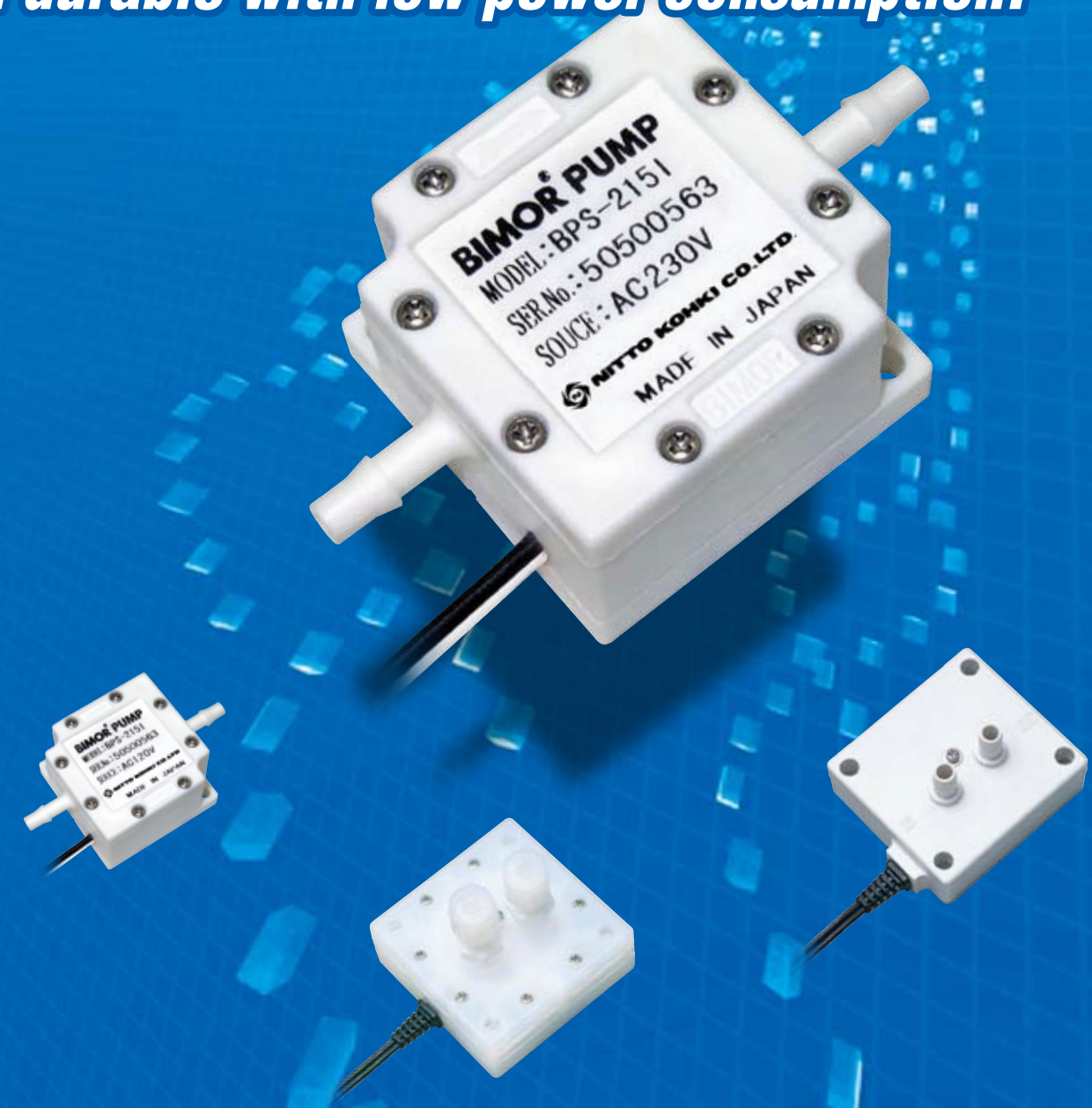


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★ It is the user's responsibility to determine suitability of the product from the performance date described in the table. The user assumes all risks and liability whatsoever in connection therewith. Environmental and application conditions may affect advertised life. Specifications and designs are subject to change at any time without notice.

*Remarkably compact, lightweight,
and durable with low power consumption!*



Suitable for pumping both liquids and gases!



Compact, lightweight, durable & quiet

As the Bimorph also acts as a diaphragm it has no motors or shafts or other troublesome mechanisms, and thus minimal vibrations and fewer breakdowns. The Bimor is lighter, quieter and more durable than traditional pumps.

To date we have achieved maintenance free continuous operation for 60 months. And these tests continue.

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 or gas application. The Bimor is currently employed in a variety of different fields including medicine, scientific research, and the PC and chemical industries.

Applications



- For supply and drainage
- For cooling circulation
- For medical injection
- For sampling



- For pressure expansion
- For sampling (inhale)

Specifications	Dimensions	Voltage(AC) — 120V 60Hz				Voltage(AC) — 230V 50Hz				Liquid Surface Materials			Mass (g)	Suitable Liquids			
		Model	Current (mA)	Self-priming Pressure(mbar)	FlowRate (mL/min)	Outlet Pressure (mbar)	Model	Current (mA)	Self-priming Pressure(mbar)	FlowRate (mL/min)	Outlet Pressure (mbar)	Housing				Liquid Contact Sheet	Valve/O-ring
BPS type 		BPS-215i	3	30	30	150	BPS-215i	4	4	10	100	PP	PP	IIR	40	Chlorinated Detergents	BPS type
		BPS-235G		15			POM		PTFE			FKM	Xylene, Benzene, Toluene				
BPH type 		BPH-214i	15	80	350	180	BPH-214i	15	80	220	180	PP	PP	IIR	140	Chlorinated Detergents	BPH type
		BPH-214D					VMQ							Water, Alcohols, Weak Alkalines			
		BPH-214E					EPDM							Potash, Caustic Sodas, Hydrochloric Acids			
		BPH-214G	70	170	PP	PTFE	FKM	Sodium Hypochlorite, Hydrochloric Acids, Sulfuric Acids, Lubricating Oils									
		BPH-414i	30	120	500	350	PP	PP	IIR	140	Chlorinated Detergents						
		BPH-414D							VMQ		Water, Alcohols, Weak Alkalines						
		BPH-414E							EPDM		Potash, Caustic Sodas, Hydrochloric Acids						
		BPH-414G	450	320	PPS	PTFE	FKM	FFKM	170	Hydrochloric Acids, Sulfuric Acids, Lubricating Oils							
		BPH-474G	100	400						350	Strong Acids, Strong Alkalines, Polar Solvents						
BPH-474P	15	70	250	350													
BPF type 		BPF-465P	30	100	400	350	PFA	PTFE	FFKM	FEP	350	Strong Acids, Strong Alkalines, Polar Solvents	BPF type				
		BPF-265P	15	70	250	350											

The performance data is measured at the rated conditions.

- ※ 1) The reference data is based on water at 25 degrees Celsius with unloaded condition.
- ※ 2) The ambient operating temperature range is from 5 to 50 degrees Celsius, the ambient liquid temperature range is from 5 to 50 degrees Celsius (non-freezing), and the ambient operating humidity range is from 35 to 85% (non-condensing). When the liquid temperature is low, the valve will be hardened. As a result, the flow rate will be decreased. This could be applied for liquids with high viscosity. The materials that will be under influence of the applied liquids or gases are the housing, liquid contact sheets, valves, and O-rings. Please confirm the suitability under any

applied conditions. Any minute quantities of additives and composite materials found in certain liquids may influence the performance of the unit several months later.

- ※ 3) You may use the product at low voltage, but it will result in lower outlet pressure.
- ※ 4) Performance may be compromised by restrictive tubing/piping or mounting position of the pump in the application.
- ※ 5) The above performance data is measured at the rated condition as we described.

Note: The Bimor does not fulfill explosion-proof construction in any applications. Please install isolating transformers or similar protective devices on the wiring for your safety.

Material Description

- EPDM --- Ethylene Propylene Rubber
- FEP --- Fluoroethylene Propylene
- FFKM --- Fluorine Rubber (Perfluoro)
- FKM --- Fluorine Rubber
- IIR --- Butyl Rubber
- POM --- Polyacetal
- PFA --- Fluororesin (Perfluoroalkoxy)
- PP --- Polypropylene
- PPS --- Polyphenylene Sulphide
- PTFE --- Tetrafluoroethylen (Polytetrafluoroethylene)
- VMQ --- Dimethyl Silicon Rubber

Durability

Longevity test : ● Sample A ● Sample B ● Sample C ● Sample D

