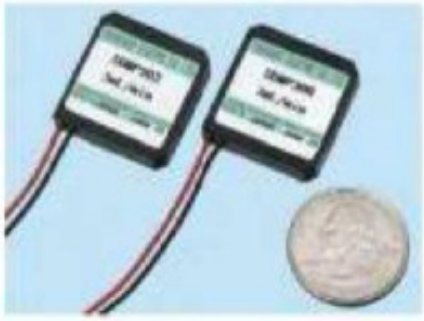
Pinch Valves
mini to large Tube

PiezoElectric Pumps



micro Fluidics

microSyringe Pump

Isolation Valves
mini to large Ports

mini Peristaltic
Pump

Fluidics

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ECHnology Pty Ltd

Australian Distributors
Importers & Manufacturers
www.chromtech.net.au

Metering Pumps

Products

Metering Pumps

This is a solenoid driven diaphragm metering pump. The pumped can be set by manually adjusting the distance of the plunger's movement in the solenoid.

List of Metering Pumps

MCP Series

A pump with a maximum pumped volume of 50µl. The adjustable range of pumped volume per shot is 5 - 50µl.

Adjustable range of pumped volume	5 ～ 50µl
Maximum operating frequency	4Hz
Outer dimensions	30.0 x 26 x 63.5mm

MLP Series

A pump with a maximum pumped volume of 200µl. Excellent repeated pumped volume accuracy of 1%. The adjustable range of pumped volume per shot is 10 - 200µl.

Adjustable range of pumped volume	10 ～ 200µl
Maximum operating frequency	2Hz
Outer dimensions	36.0 x 50.0 x 70.0mm

PKP Series

A pump with a maximum pumped volume of 500µl. Excellent repeated pumped volume accuracy of 1%. The adjustable range of pumped volume per shot is 50 - 500µl.

Adjustable range of pumped volume	50 ～ 500µl
Maximum operating frequency	2Hz
Outer dimensions	36.0 x 43.0 x 78.0mm

Miniature Peristaltic Pump

Miniature Peristaltic Pump

RP-Q1

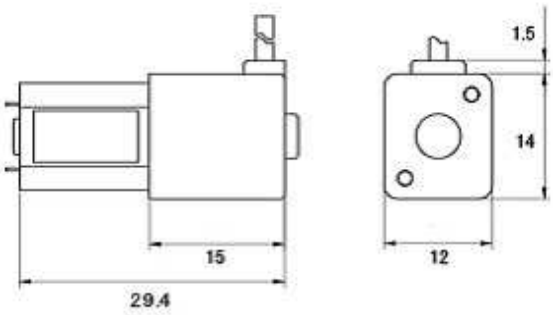
Features

- Compact size: Dimensions of 30 mm X 12 mm X 14 mm
- Low Power consumption: only 0.12 W

Specifications

Discharge Rate	0.45 ml/min ±15 % (tap water at 20 ℃)
Discharge Pressure	50 kPa
Tube Material	Silicone (I.D. 1.5 mm)
Motor	DC geared motor
Rated Voltage	DC 3 V
Power Consumption	0.12 W
Weight	11 g

Dimensions



Note: Details including specifications etc. may be changed at any time without notice.

Pen-Type Glass Syringe Pump

Features

- Remarkably small outer dimensions of Dia. 8.8 x L 121 mm, now with a built-in 2-phase stepper motor (with a reduction gear).
- With a lightweight of only 33 g, this pump is very suitable for installation on a microscope stage, inside an incubator, or on moving parts, etc.
- Continuous microlitre transfer system can also be made possible by operating 2 pieces of syringe pumps alternately.
- Theoretical resolution is 21 nl.
- Has a built-in sensor that enables zero-point detection.
- In addition to the needle model in the above picture, a No.6-40UNF threaded port model and a special attachment model to connect with our small 3-way valve are also available.
- A driver for operating this pump has also been prepared.

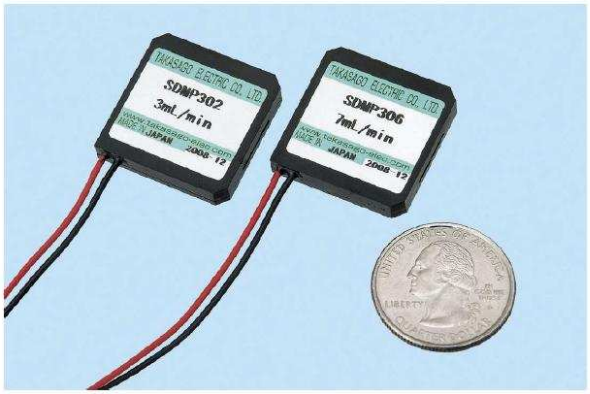
Specifications

Model Number	SAP-100G-N
Syringe Capacity	100 µ l
Theoretical Resolution	21 nl
Duty Cycle	10 s ED=33%
Maximum Frequency	1500 Hz
Wetted Materials	Glass (barrel), PTFE (tip), Stainless Steel (needle) • Extremely small amount of silicone oil applied to the tip as lubricant.
Outer Dimensions	Dia. 8.8 × L121 mm (excluding the needle)
Needle Size	22G (I.D. 0.4 × O.D. 0.72 × L51mm)
Weight	33 g

Note: Details including specifications may change without notification.

PiezoELECTRIC MicroPUMP

PIEZOELECTRIC MICRO PUMPS
SDMP 302/306



Features

- Small-sized, lightweight and slim.
- No metal is used as wetted materials.
- Low noise and low power consumption.
- Flow rate is adjustable by changing drive voltage or drive frequency.
- Self-priming is possible.

Specifications

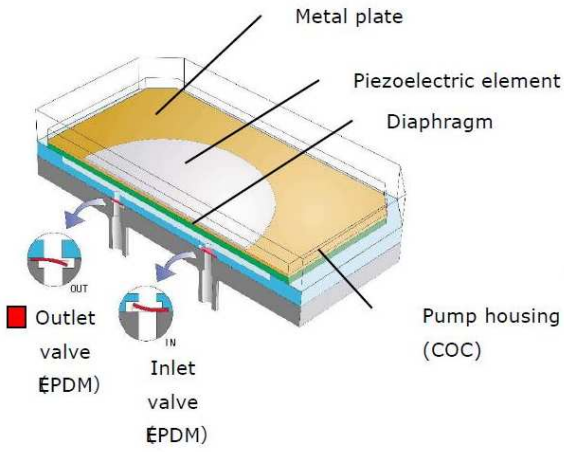
Model Number	SDMP 302	SDMP 306
Pump Type	Piezoelectric Diaphragm Pump	
Flow Rate	3 ml/min (Typical)	7 ml/min (Typical)
Pump Pressure	40 kPa (Typical)	45 kPa (Typical)
Drive Voltage	60 – 250 Vp-p	
Drive Frequency	10 - 60 Hz	
Suction Load Pressure	-1.0 kPa	
Operating Temperature	5 - 50 ˚C	
Wetted Materials	PEEK (polyether ether ketone) and Perfluoroelastomer	
External Dimensions	33 × 33 × 9 mm	
Weight	Approx. 4 g	
Connection Tube Dimensions	I.D. 0.6 mm, O.D. 1.2 mm, L 2.5 mm	I.D. 1.2 mm, O.D. 2.2 mm, L 3.5 mm

Specifications are measured using a drive waveform in sine wave. Pump pressure and flow rate would increase when driven at our standard waveform.

We also provide SDMP 320, which has the flow rate of 20 ml/min(Typical).
External dimensions: 33 x 33 x 5.5 mm
Connection tube dimensions: I.D. 1.8 mm, O.D. 2.8 mm, L 5.0 mm

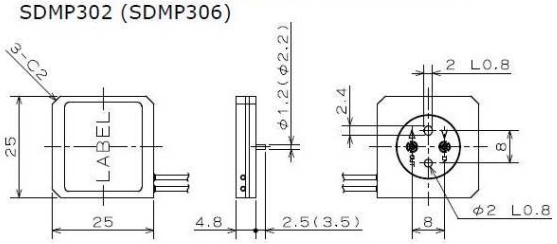
Note: Details including specifications may change without notification.

Internal structure

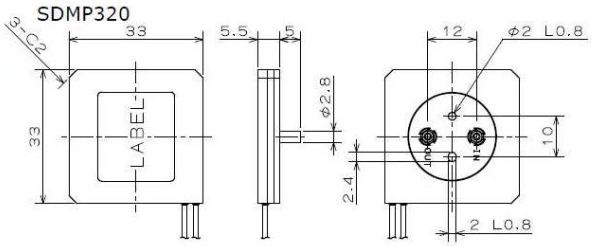


Appearance and Dimensions

SDMP302 (SDMP306)



SDMP320



Driver board MPD-200A

For research and development

This driver board is a thin, compact and lightweight, yet high-voltage circuit board, designed for the piezoelectric micro pumps. From a regular 5 VDC input voltage, it can easily generate the high voltage supply of approximately 250 Vp-p, 40 Hz necessary for driving the micro pumps.

Item	Specifications
Input Voltage	5 VDC ± 5%
Output Frequency	1 – 60 Hz
Output Voltage	50 – 340 Vp-p
Number of Pumps Connectable	2 pieces (maximum)
External Dimensions, Weight	30 x 30 x 15 mm, approx. 8 g

Controller MPC-200A

For research and development

This is a compact and lightweight controller that can provide the high voltage power necessary for driving the micro pumps. It is user-friendly with a front panel digital display for configuring the output voltage and output frequency, and a memory function to store the latest setting used.

Item	Specifications
Input Voltage	5 VDC ± 5%
Output Frequency	1 – 60 Hz
Output Voltage	60 – 300 Vp-p
Number of Pumps Connectable	2 pieces (maximum)
External Dimensions, Weight	75 x 34 x 100 mm, approx. 130 g
Attachment	AC adapter

Tygon Tubing (Accessory)

Model: TYGON 2001 (For Methanol)

Sizes: I.D. 0.79 mm (SDMP 302), I.D. 1.59 mm (SDMP 306), I.D. 2.38 mm (SDMP 320)

Note: If you observe a reduction in flow rate using these tubes, please use ones with larger I.D.

Pinch Valves

Products

- Valves
  - Solenoid Valves
    - Diaphragm Isolated Valves
    - Pinch Valves
  - Others
    - Air Operated Valves
    - Shape Memory Alloy Valve
- Pumps
  - Small Syringe Pumps
    - Pen-Type Syringe Pumps
  - Transfer pump
    - Piezoelectric Micro Pumps
    - Peristaltic Pumps
  - Metering Pumps
    - Metering Pumps
- Manifolds and Chips
  - Manifolds
    - Standard Manifolds
    - Customized Manifolds
    - Bonded PTFE Manifold
  - Chips
    - Film Chips
    - Bonded Plastic Chips
- Others
  - Fittings
    - Fittings for PTFE tubing

These are a type of valve that directly pinches tubing made of a soft material such as silicone in order to open and close it. The only wetted material is the tubing, therefore cleanliness of the flow path can be maintained and cross-contamination avoided through exchanging tubing after use. It is also possible to use this valve with slurry which is fluid containing small particles.

List of Pinch Valves

PE Series

The smallest pinch valve in our product range with an actuator of 14 mm in diameter.

Tubing inner diameter	0.8mm
Tubing outer diameter	2.4mm
Tubing material	silicone
Operating pressure	0～100 kPa
Power consumption	2.8W
Outer dimensions	21×26×55.1 mm

PS Series

This is a standard miniature pinch valve for small diameter tubing. There are the three types - NC (Normally Closed), NO (Normally Open) and Dual which has both an N.O. and N.C. side that are simultaneously operated.

Tubing inner diameter	0.8～1.6mm
Tubing outer diameter	2.4～3.2mm
Tubing material	silicone、PharMed®
Operating pressure	0～150 kPa
Power consumption	3W
Outer dimensions	26×39.2×49.5 mm

PSK Series

This is the PS pinch valve with the tube holding feature.

Tubing inner diameter	0.8～1.6mm
Tubing outer diameter	2.4～3.2mm
Tubing material	silicone、PharMed®
Operating pressure	0～150 kPa
Power consumption	3W
Outer dimensions	26×39.2×49.5 mm

PM Series

This valve supports a wide range of tubing materials such as silicone, PharMed® and Tygon®.This pinch valve can be freely used as an NC/NO type with a single tube or as a Dual type with two tubes. It can also be configured as a 3-way valve by using a Y-shaped fitting.

Tubing inner diameter	0.8～1.6mm
Tubing outer diameter	2.4～3.2mm
Tubing material	silicone、PharMed®、Tygon®
Operating pressure	0～150 kPa
Power consumption	4.4W
Outer dimensions	26×40×60 mm

Tubing inner diameter	0.8～1.6mm

Pinch Valves

PMK Series

This is the PM pinch valve with the tube holding feature.

Tubing outer diameter	～ 2.4 3.2mm
Tubing material	silicone、PharMed®、Tygon®
Operating pressure	0 ～ 150 kPa
Power consumption	4.4W
Outer dimensions	26×40×60 mm

PL Series

This is a pinch valve adopting a latching solenoid, which maintain the valve open or closed state through the utilization of a permanent magnet. Please click here for more details on the latching mechanism.

Tubing inner diameter	0.8～2.0mm
Tubing outer diameter	2.4～4.0mm
Tubing material	silicone
Operating pressure	0～150 kPa
Power consumption	8W (when energized)
Outer dimensions	30.4×30.4×61.7 mm

PK Series

This is a standard pinch valve for medium diameter tubing (Inner diameter of around 3-6mm).

Tubing inner diameter	1.6～6.4mm
Tubing outer diameter	4.8～9.6mm
Tubing material	silicone
Operating pressure	0～50 kPa
Power consumption	10W
Outer dimensions	36×40×65～88.3 mm

NP Series

This is an improved model of the PK series. There is a slit in the tube holder by which to insert tubing from the side of the pinch valve.

Tubing inner diameter	2.0～6.4mm
Tubing outer diameter	4.0～9.6mm
Tubing material	silicone
Operating pressure	0～50 kPa
Power consumption	10W
Outer dimensions	36×40×64.5～87.5 mm

EPK Series

This is a standard pinch valve for large diameter tubing.

Tubing inner diameter	10.0～15.0mm
Tubing outer diameter	13.0～19.0mm
Tubing material	silicone
Operating pressure	0～50 kPa
Power consumption	60W
Outer dimensions	φ64×112～132 mm

EL Series

This is an equivalent model to the EPK series (for large diameter tubing) but with latching mechanism. Please click here for more details on the latching mechanism.

Tubing inner diameter	10.0～15.0mm
Tubing outer diameter	13.0～19.0mm
Tubing material	silicone
Operating pressure	0～50 kPa
Power consumption	15W (when energized)
Outer dimensions	φ64×128.7～140.7 mm

* Tygon® and Pharmed® are registered trademarks of Saint-Gobain Performance Plastics.

Fittings for PTFE Tubing

Fitting for PTFE tubing

There are two types of screw fittings, a flare type with the seal parts inserted in the end of the tubing and a flange type, which is used with tube-ends modified into a trumpet shape. We can offer a variety of fittings depending on the tubing diameter and the thread size.

List of Fittings for PTFE tubing

SM Series

This is a flare type fitting for a flat bottom thread. Simply insert the flange-shaped moulded seal part ("Seal Joint") into the end of the tubing for use. It is easy to use because there is no need to shape the end of the tubing.

Tubing inner diameter	1.0～4.0 mm
Tubing outer diameter	2.0～5.0 mm
Thread size	M6, 1/4-28UNF, M8 P=1, 5/16-24UNF, M5

FM Series

It is necessary for the user to enlarge the end of the PTFE tubing into a trumpet shape before using this fitting.

Tubing inner diameter	1.0～4.0 mm
Tubing outer diameter	2.0～5.0 mm
Thread size	M6, 1/4-28UNF, M8 P=1, 5/16-24UNF, M5

SMC Series

This is a straight fitting for a taper pipe thread. It is made from machined fluoropolymers, so it has high chemical compatibility.

Tubing inner diameter	1.0～10.0 mm
Tubing outer diameter	2.0～12.0 mm
Thread size	R1/8, R1/4, R3/8

SML Series

This is an elbow fitting for a taper pipe thread. It is useful for limited plumbing space.

Tubing inner diameter	1.0～10.0 mm
Tubing outer diameter	2.0～12.0 mm
Thread size	R1/8, R1/4, R3/8

Electric Manifolds and microFLUIDIC Chips

Electric Manifolds and Microfludic Chips

The use of a manifold for the plumbing between individual valves and pumps can bring compact installation of components, a decrease in plumbing and a reduction in flow-path length. We can propose manifolds to meet your requirements by variations such as material and manufacturing processes etc. Chips with fine channels can offer offering competitive prices in mass production quantities through bonding injection-moulded plastic plates or resin films. For this reason, these chips are suitable for use as disposable testing chips.

List of Manifolds and Microfludic Chips

Manifolds

Standard Manifolds

Our standard range consists of line-type manifolds mounted with EXV series, STV series and WTA series valves. These products achieve a shorter delivery time compared to custom-made manifold valve units.

Customized Manifolds

Using our precise processing machines, we manufacture customized manifolds according to your requirements. In addition to solenoid valves and pumps, sensors, filters, or fittings can also be mounted on the customized manifolds. We are pleased to offer you manifolds with flow channel configuration suitable to applications.

Bonded PTFE Manifold

This is a 100% PTFE manifold, with internal channels made by the bonding of two layers of modified PTFE. The internal channels are pre-machined on the bonding surfaces. Due to excellent chemical resistance, this product is compatible with a wide range of fluids.

Microfludic Chips

Film Chips

The Film Chip is extremely thin and made with precise channels micromachined in layers of bonded resin films.. It is flexible and can be curved. Through the mounting of fluid control devices such as miniature valves on the film, employment as a microTAS application is possible. Available film materials are chemically-inert Polyimide (PI), COC (Cyclic olefin copolymer) and Polyethylene naphthalate.

Bonded Plastic Chips

A range of chips made by bonding precision-moulded plastic plates is available, offering competitive prices in mass production quantities. The minimum channel size is 50μm square. Channel pattern can be freely designed. A choice of material COC (cyclic olefin copolymer), PMMA (acrylic) and PS (polystyrene) is available. These materials all exhibit excellent optical characteristics.

Solenoid Isolation Valves

Diaphragm Isolated Valves

The valve part and the actuator part (solenoid) of these valves are sectioned by a diaphragm so the fluid does not come into contact with the metal parts of the solenoid. The wetted materials are PTFE, PEEK, or PPS, etc so as to be compatible with a wide range of fluids.

List of Diaphragm Isolated Valves

Website : www.chromtech.net.au E-mail : info@chromtech.net.au TelNo : 03 9762 2034 . . . in AUSTRALIA

Orifice smaller than ϕ1 mm | Orifice ϕ1~2 mm | Orifice larger than ϕ2 mm

FV series

The size of this valve is just 4.2mm square. This is an innovative and groundbreaking ultra-small solenoid-driven diaphragm isolated valve. The internal volume is now only 1.1µl - contributes to reductions in reagent and improvements in accuracy.

Orifice diameter	0.4mm
IN port pressure	0 • 100 kPa
Power consumption	1•1.2W
Outer dimensions	4.2 x 4.2 x 23.1mm

FLV series

This valve is a latching solenoid valve in which the open and closed status of the valve is maintained by magnetic force. Contributes low power consumption, because electricity is consumed only when energized. With the size of 4.2 mm square, it is an innovative and groundbreaking ultra-small solenoid valve of an internal volume just 1.1µl. This valve is suitable for micro fluidic control.

Orifice diameter	0.4mm
IN port pressure	0 • 100 kPa
Power consumption	2.4•3W(when energized)
Outer dimensions	4.2 x 4.2 x 23.1mm

KV series

A diaphragm isolated valve of width just 6mm. substantial shortening of the flow-path between ports and reduction in mounting space are made possible by the manifold-mountable type. The internal volume is just 10 micro liters on both the IN and OUT port.

Orifice diameter	0.8mm
IN port pressure	0 • 100 kPa
Power consumption	1.8W
Outer dimensions	6.0 x 50.0 x 12.5mm

LV series

This manifold mountable diaphragm valve is just 8.9 x 10.4mm, giving a footprint of less than 1cm2. It simultaneously realizes a very small internal volume of 3.3µl at the IN port and 8.3µl at the OUT port, and a shortening of the flow-path between ports.

Orifice diameter	0.8mm
IN port pressure	0 • 100 kPa
Power consumption	1.2W
Outer dimensions	8.9 x 10.4 x 28mm

EXAK series

This is a zero-pumping volume type of diaphragm isolated valve. Fluoropolymer is used for all of the wetted parts giving it great chemical compatibility. The outer dimensions are a very compact φ12.0 x H 48.1 (mm).

Orifice diameter	0.8mm
IN port pressure	-40 • 100 kPa
Power consumption	0.94W
Outer dimensions	12 x 26.0 x 35.45mm

EXAKN series

This is a zero-pumping volume type of diaphragm isolated valve. Perfluoroelastomer is used for the seal part and the valve has increased sealing ability. The outer dimensions are a very compact φ14.0 x H 42.3 mm.

Orifice diameter	0.8mm
IN port pressure	-40 • 300 kPa
Power consumption	1.2W
Outer dimensions	φ14.0 x 42.3mm

EXV series

This is a diaphragm isolated manifold mountable valve with a moulded body. it is small with dimensions of W 14mm x H 32mm. You can choose the body material from the highly chemically resistant PEEK or PPS.

Orifice diameter	1.0mm
IN port pressure	-20•200kPa
Power consumption	2.8W
Outer dimensions	14.0 x 25.0 x 31.7mm

Orifice smaller than φ1 mm | Orifice φ1–2 mm | Orifice larger than φ2 mm

STV series

This is a diaphragm isolated valve of outer dimensions φ20.0 x 42.5 mm. Highly chemically compatible materials PTFE, PEEK, PPS, etc. are available for the valve body material. This valve is a popular model among small inert solenoid valves and is playing an active role in a wide range of applications.

Orifice diameter	1.0•1.2mm
IN port pressure	-50 • 200 kPa
Power consumption	1.7•2.9W
Outer dimensions	φ20.0 x 42.5mm

XTA series

This is a diaphragm-isolated valve with a microcomputer control circuit built in as standard. By making use of the characteristics of the control circuit, we have added types of valve possessing various features to this series, such as a silent type, high pressure type, and low power consumption type. Various body materials and port connections including a manifold-mountable type are available. While the open frame solenoid gives the XTA series a good cost performance, it is also covered by a stainless steel case of refined design.

Orifice diameter	1.2 • 2.0mm
IN port pressure	-50 • 600kPa
Power consumption	0.8 • 3.1W
Outer dimensions	24.0 x 20.6 x 53.9mm

MTV series

This valve has the outer diameter Φ26.0 mm and represents TAKASAGO brand.The

PTFE machined diaphragm has a high chemical compatibility. There are a wide variety of valve bodies such as moulded bodies or machined bodies, thread port connections or hose barbconnections, etc.

Orifice diameter	1.0•2.0mm
IN port pressure	-100 • 600 kPa
Power consumption	1.9•4.4W
Outer dimensions	φ26.0 x 57mm

JTV series

This is a miniature 2-way elastomer diaphragm isolated valve. The hose barb connection enables you to connect silicone tubing directly to the valve.

Orifice diameter	1.2mm
IN port pressure	0 • 80 kPa
Power consumption	1.0W
Outer dimensions	φ14.5 x 34.1mm

WLB series

This valve is a latching solenoid valve. Electricity is consumed when energization is only required just an instant opening or closing, so heat generation is very limited.

Orifice diameter	2.0mm
IN port pressure	-50 • 200 kPa

Power consumption	8.0W (when energized)
Outer dimensions	25.0 x 26.0 x 55.9mm

Orifice smaller than φ1 mm | Orifice φ1~2 mm | Orifice larger than φ2 mm

MCV series

This is an elastomer diaphragm isolated valve with an diameterφ26.0mm. There are a wide variety of body materials or port connections etc.

Orifice diameter	2.0mm
IN port pressure	-27•100 kPa
Power consumption	2.6W
Outer dimensions	φ26.0 x 48.7mm

MLV series

The outer dimensions of this diaphragm isolated valve are φ30.0 x 57.2 mm(mm). The PTFE machined diaphragm has a high chemical compatibility. The port connection can be selected from M8, 5/16-24UNF, Rc1/8 and 1/8-27NPT.

Orifice diameter	2.5mm
IN port pressure	-40 • 200 kPa
Power consumption	3.1•4.4W

Outer dimensions	φ30.0 x 57.2mm

ACV series

This is a 2-way valve with a moulded actuator, a moulded body and an elastomer diaphragm. The port connections are the hose barbs to which silicone tubing can be connected directly.

Orifice diameter	3.0mm
IN port pressure	-55 • 100 kPa
Power consumption	5.0W
Outer dimensions	34.0 x 47.0 x 62.0mm

YTV series

The outer dimensions of this diaphragm isolated valve are 40 x 40 x 90 mm. A PTFE machined diaphragm is used in this valve with 2-way and 3-way versions available.

Orifice diameter	3.0mm
IN port pressure	-100 • 150 kPa
Power consumption	5.0W
Outer dimensions	40.0 x 50.0 x 77.0mm

DTV series

The orifice diameter of this diaphragm isolated valve is φ3-4mm and the outer dimensions are 42.0 x 36.0 x 74.5 mm. Increasing the percentage of about 60 % of the parts used for this valve are purchased

from China, enabling an excellent cost performance.

Orifice diameter	4.0mm
IN port pressure	-90 • 200 kPa
Power consumption	5.0•7.0W
Outer dimensions	36 x 42.0 x 74.5mm

NPV series

This is a proportional diaphragm valve for chemical fluids whose flow is controllable by changing the input voltage. It has a comparatively large orifice diameter of 4mm. It has excellent chemical compatibility because PTFE is used for all the wetted parts.

Orifice diameter	4.0mm
IN port pressure	0 • 100 kPa
Power consumption	7W(at 24 VDC)
Outer dimensions	φ40 × •95 mm

NRV series

The orifice diameter of this diaphragm isolated valve is φ4-6 mm. Valve bodies machined from a variety of materials are available. Select the port connection from Rc1/4, 1/4-15NPT, Rc1/8, 1/8-27NPT.

Orifice diameter	4.0•6.0mm
IN port pressure	-90 • 200 kPa

Power consumption	5.5•10.0W
Outer dimensions	φ44.0•45.0 x 80.0•84.0mm

PKV series

This is a diaphragm isolated valve with a wide range of orifice diameters from φ3.5 - 6mm and outer dimensions of 66.0 x 45.0 x 75.0mm. The standard materials are PEEK for the body and PTFE for the diaphragm.

Orifice diameter	4.0•6.0mm
IN port pressure	-90•200kPa
Power consumption	6.0•21.0W
Outer dimensions	40.0 x 42.0 x 71.0mm

HTV series

This 2-way diaphragm isolated valve has a large orifice diameter of φ10.0mm. The PTFE machined diaphragm used for this model has a high chemical compatibility.

Orifice diameter	10.0mm
IN port pressure	-90 • 100 kPa
Power consumption	10W
Outer dimensions	60.0 x 75.0 x 124.0mm

Air Operated Valves

Air Operated Valves

These are pneumatically driven valves. As solenoids are not used, heat is not generated by the actuator making them suitable for use with fluids sensitive to changes in temperature. They can also be used in environments unsuitable for electric devices, such as inflammable atmospheres.

List of Air Operated Valves

PMDP Series

This is a small Air Operated Valve with outer dimensions of φ25.0 x 47.7 (mm) . The orifice diameter is 1.8 - 2.0mm. A maximum pressure up to 500kPa is a characteristic of this valve.

Orifice diameter (mm)	1.8～2.0mm
Inlet pressure (Maximum)	500kPa

PDT Series

This is an Air Operated Valve with outer dimensions of φ44.5 x 52.0 (mm) . The orifice diameter is 4.0 - 5.0 (mm). PTFE is employed for the body and seal material, providing high chemical compatibility.

Orifice diameter (mm)	4.0～5.0mm
Inlet pressure (Maximum)	300kPa