MEDO

JQA-2160
Linear Products Division
JQA-EM4057
Headquarters
Research Center
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Cat.No. **Lk001**

NITTO KOHKI's

Air Compressors & Vacuum Pumps

- **DC LINEAR Piston Compressor** (Low Pressure Series)
- **DC LINEAR Piston Vacuum Pump**
- **AC LINEAR Piston Compressor** (Low Pressure Series)
- **AC LINEAR Piston Compressor** (Intermediate Pressure Series)
- **AC LINEAR Piston Vacuum Pump**
- **AC LINEAR Piston Blower**
- **AC LINEAR Air Compressor / Vacuum Pump** (Made-to-order Item)
- **AC LINEAR Diaphragm Pump**
- **DC Diaphragm Pump**
- **DC Piston Pump**
- **PIEZOELECTRIC PUMP**
- **MINIATURE DIAPHRAGM PUMP**

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NITTO KOHKI CO.,LTD.

Air Compressors & Vacuum Pumps

DC LINEAR Piston Compressor (Low Pressure Series)

Model	Rated Pressure MPa {kgf/cm²}	bar	psig	Max. Pressure MPa {kgf/cm²}	bar	psig	Rated Airflow ℓ/min	cfm	Page
DAH102-X1	0.02 {0.2}	0.2	2.84	0.05 {0.5}	0.5	7.11	5	0.177	9
DAH102-Y1	0.02 {0.2}	0.2	2.84	0.05 {0.5}	0.5	7.11	5	0.177	10
DAH105-X1	0.05 {0.5}	0.5	7.11	0.08 {0.8}	0.8	11.4	2.5	0.088	11
DAH105-Y1	0.05 {0.5}	0.5	7.11	0.08 {0.8}	0.8	11.4	2.5	0.088	12

DC LINEAR Piston Vacuum Pump

Model	Attainable Vacuum kPa {mmHg}	mbar	in.Hg	Free Air Displacement ℓ/min	cfm	Page
DVH130-X1	-40 {-300}	-400	-11.8	7	0.247	15
DVH130-Y1	-40 {-300}	-400	-11.8	7	0.247	16
DVH145-X1	-60 {-450}	-600	-17.7	3	0.106	17
DVH145-Y1	-60 {-450}	-600	-17.7	3	0.106	18

Air Compressor Low Pressure Series

Mark: Made-to-order

Model	Rated Pressure MPa {kgf/cm²}	bar	psig	Max. Pressure MPa {kgf/cm²}	bar	psig	Rated Airflow ℓ/min	cfm	Page
AC0102	0.02 {0.2}	0.2	2.84	0.04 {0.4}	0.4	5.69	5	0.177	21
AC0201A	0.01 {0.1}	0.1	1.42	0.02 {0.2}	0.2	2.84	20	0.71	22
AC0301A	0.01 {0.1}	0.1	1.42	0.03 {0.3}	0.3	4.27	28	0.99	23
AC0401A	0.01 {0.1}	0.1	1.42	0.035 {0.35}	0.35	4.98	35	1.24	24
AC0602	0.015 {0.15}	0.15	2.13	0.035 {0.35}	0.35	4.98	40	1.41	25
AC0901	0.01 {0.1}	0.1	1.42	0.04 {0.4}	0.4	5.69	80	2.83	26
AC0902	0.02 {0.2}	0.2	2.84	0.045 {0.45}	0.45	6.4	55	1.94	27
AC0501	0.01 {0.1}	0.1	1.42	0.035 {0.35}	0.35	4.98	45	1.59	49

AC LINEAR Piston Compressor (Intermediate Pressure Series)

Model	Rated Pressure MPa {kgf/cm²}	bar	psig	Max. Pressure MPa {kgf/cm²}	bar	psig	Rated Airflow ℓ/min	cfm	Page
AC0105	0.05 {0.5}	0.5	7.1	0.08 {0.8}	0.8	11.4	2.5	0.088	29
AC0110	0.1 {1.0}	1.0	14.2	0.12 {1.2}	1.2	17.1	0.8	0.028	30
AC0207	0.07 {0.7}	0.7	9.96	0.1 {1.0}	1.0	14.2	3.5	0.124	31
AC0410A	0.1 {1.0}	1.0	14.2	0.13 {1.3}	1.3	18.5	5	0.177	32
AC0610	0.1 {1.0}	1.0	14.2	0.15 {1.5}	1.5	21.3	8	0.283	33
AC0910	0.1 {1.0}	1.0	14.2	0.15 {1.5}	1.5	21.3	16	0.565	34
AC0920	0.2 {2.0}	2.0	28.4	0.3 {3.0}	3.0	42.6	8	0.283	35

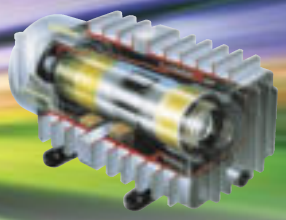
AC LINEAR Piston Vacuum Pump

Mark: Made-to-order

Model	Attainable Vacuum kPa {mmHg}	mbar	in.Hg	Free Air Displacement ℓ/min	cfm	Page
VP0125	-33.3 {-250}	-333	-9.84	7	0.247	37
VP0140	-53.3 {-400}	-533	-15.7	3	0.106	38
VP0435A	-46.7 {-350}	-467	-13.78	25	0.88	39
VP0450	-66.7 {-500}	-667	-19.7	18	0.64	40
VP0625	-33.3 {-250}	-333	-9.84	40	1.41	41
VP0660	-80 {-600}	-800	-23.6	25	0.88	42
VP0940	-53.3 {-400}	-533	-15.7	60	2.12	43
VP0645	-60 {-450}	-600	-17.7	10	0.35	50
VP0945	-60 {-450}	-600	-17.7	12	0.424	51
VP0660x2	-93.3 {-700}	-933	-27.5	Series 25	0.88	52
	-80 {-600}	-800	-23.6	Parallel 50	1.77	

AC LINEAR Piston Blower

Model	Rated Pressure MPa {kgf/cm²}	bar	psig	Rated Airflow ℓ/min	cfm	Page
LA-28B	0.011 {0.11}	0.11	1.56	28	0.99	45
LA-45B	0.011 {0.11}	0.11	1.56	45	1.59	
LA-60B	0.015 {0.15}	0.15	2.13	60	2.12	46
LA-80B	0.015 {0.15}	0.15	2.13	80	2.83	
LA-100	0.018 {0.18}	0.18	2.56	100	3.53	47
LA-120	0.018 {0.18}	0.18	2.56	120	4.24	



Medo pumps are unique products that feature a linear-motor-driven free piston system. Utilised in varied applications, from life support systems to robotics, Nitto Kohki has developed a comprehensive series of precision air compressors and vacuum pumps that incorporate this uniquely functional design. Proven throughout the world for over two decades, we are proud to have been selected by many leading companies in advanced industries as their primary supplier of air compressor type equipment.

AC LINEAR Diaphragm Pump

Model	Max. Vacuum kPa {mmHg}	mbar	in.Hg	Rated Pressure MPa {kgf/cm²}	bar	psig	Max. Pressure MPa {kgf/cm²}	bar	psig	Rated Airflow ℓ/min	cfm	Page
VC0100 Dual	-14.7 {-110}	-147	-4.33	0.004 {0.04}	0.04	0.57	0.016 {0.16}	0.16	2.28	6	0.21	55
VC0100 Blower				0.004 {0.04}	0.04	0.57	0.016 {0.16}	0.16	2.28	6	0.21	56
VC0101 Dual 120V	-18.7 {-140}	-187	-5.51	0.01 {0.1}	0.1	1.42	0.018 {0.18}	0.18	2.56	10	0.35	57
VC0101 Dual 230V	-10 {-76}	-100	-2.95	0.01 {0.1}	0.1	1.42	0.015 {0.15}	0.15	2.13	10	0.35	
VC0101 Blower				0.01 {0.1}	0.1	1.42	0.02 {0.2}	0.2	2.84	10	0.35	58
VC0101S Dual	-24 {-180}	-240	-7.08	0.005 {0.05}	0.05	0.71	0.026 {0.26}	0.26	3.70	15	0.53	59
VC0101S Blower				0.005 {0.05}	0.05	0.71	0.026 {0.26}	0.26	3.70	15	0.53	60
VC0201 Dual	-18.7 {-140}	-187	-5.5	0.01 {0.1}	0.1	1.42	0.018 {0.18}	0.18	2.56	20	0.71	61
VC0201 Blower				0.01 {0.1}	0.1	1.42	0.018 {0.18}	0.18	2.56	20	0.71	62
VC0301 Dual	-21.3 {-160}	-213	-6.3	0.01 {0.1}	0.1	1.42	0.02 {0.2}	0.2	2.84	25	0.88	63
VC0301 Blower				0.01 {0.1}	0.1	1.42	0.02 {0.2}	0.2	2.84	25	0.88	64
VC0201B	-18.7 {-140}	-187	-5.5	0.01 {0.1}	0.1	1.42	0.018 {0.18}	0.18	2.56	20	0.71	65
VC0301B	-21.3 {-160}	-213	-6.3	0.01 {0.1}	0.1	1.42	0.02 {0.2}	0.2	2.84	25	0.88	66

DC Diaphragm Pump / DC Piston Pump

Model	Attainable Vacuum kPa {mmHg}	mbar	in.Hg	Max. Pressure MPa {kgf/cm²}	bar	psig	Free Air Displacement ℓ/min	cfm	Page
DP0125	-33.3 {-250}	-333	-9.84	0.03 {0.3}	0.3	4.27	2.5	0.088	69
DP0140	-53.3 {-400}	-533	-15.7	0.05 {0.5}	0.5	7.1	4	0.141	70
DP0102	-26.7 {-200}	-267	-7.87	0.045 {0.45}	0.45	6.4	5	0.177	71
DP0102S	-26.7 {-200}	-267	-7.87	0.045 {0.45}	0.45	6.4	7	0.247	72
DP0102H-X1	-50.7 {-380}	-507	-15	0.08 {0.8}	0.8	11.4	4	0.141	73
DP0102H-X2				0.08 {0.8}	0.8	11.4	4	0.141	74
DP0105-X1	-66.6 {-500}	-666	-19.7	0.25 {2.5}	2.5	35.6	2.8	0.1	75
DP0105-Y1	-66.6 {-500}	-666	-19.7	0.25 {2.5}	2.5	35.6	2.8	0.1	76
DPA0105-X1				0.22 {2.2}	2.2	31.3	2.8	0.1	77
DPA0105-Y1				0.22 {2.2}	2.2	31.3	2.8	0.1	78
DP0110-X1	-66.6 {-500}	-666	-19.7	0.15 {1.5}	1.5	21.3	7.5	0.26	79
DP0110-Y1	-66.6 {-500}	-666	-19.7	0.15 {1.5}	1.5	21.3	7.5	0.26	80

PIEZOELECTRIC PUMP

Model	Discharge Pressure kPa	Flow Rate mℓ/min	Self-priming Pressure kPa	Page
120V AC 60Hz				
BPS-215i	15	30	3	83
BPS-235G	15	30	1.5	
BPH-214i	18	350	8	
BPH-214D	18	350	8	
BPH-214E	18	350	8	
BPH-214G	17	350	7	
BPH-414i	35	500	12	
BPH-414D	35	500	12	
BPH-414E	35	500	12	
BPH-414G	32	450	10	
BPH-474G	35	400	10	
BPH-474P	35	400	10	
BPH-465P	35	400	10	
230V AC 50Hz				
BPS-215i	10	10	0.4	84
BPS-235G	10	10	0.4	
BPH-214i	18	220	8	
BPH-214D	18	220	8	
BPH-214E	18	220	8	
BPH-214G	17	220	7	
BPH-274G	35	250	7	
BPH-274P	35	250	7	
BPF-265P	35	250	7	

MINIATURE DIAPHRAGM PUMP

Model	Working Pressure kPa	bar	psig	Flow Rate mℓ/min	cfm	Self-priming Pressure kPa	Page
DPE-100	100	1	14.5	100	0.0035	20	87
DPE-400	100	1	14.5	400	0.0141	40	88

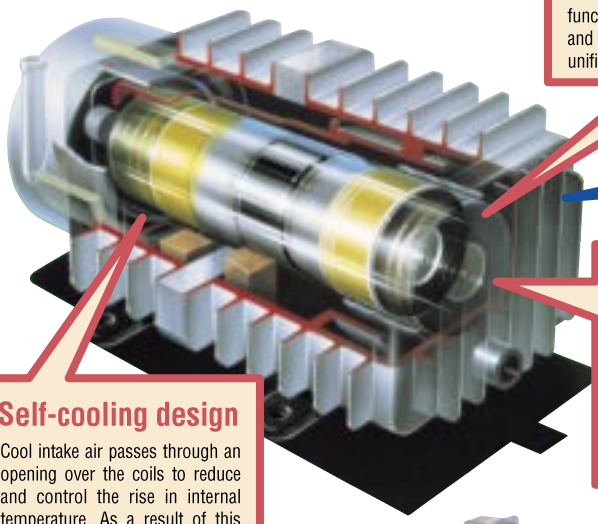
LINEAR MOTOR DRIVEN FREE PISTON MECHANISM

The Linear-motor-driven Free Piston System is not only ideal for upgrading existing systems but can also be used for future design improvement. Compact, quiet, and vibration free, the extremely reliable Free Piston Pump will enhance your system performance and extend its operating life.

The Electro-magnet and return spring alternatively drive the piston inside the cylinder, the mechanical resonance of which is synchronized with the input current cycle. In a single mechanism, the piston combines the functions of two normally independent devices; a pump and a motor.

Compact integrated design

This unique system enables the mechanical resonance of a single part. An incredibly compact, lightweight design is achieved by combining what are entirely independent functions in conventional pumps - the motor and the compressor - into a superior single, unified structure.

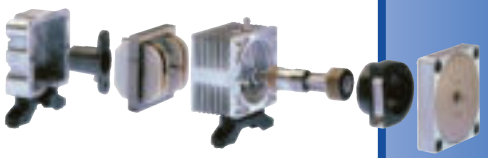


Hyper pressure control mechanism

Should the output pressure exceed the rated value, the piston will automatically adjust to a shorter stroke. Additionally, power consumption will automatically reduce, guarding against possible temperature overloads.

Self-cooling design

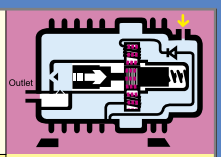
Cool intake air passes through an opening over the coils to reduce and control the rise in internal temperature. As a result of this feature, it is possible to almost completely seal the unit, thus improving the suppression of internal operating noise.



A silicon diode in between the coils converts the full-wave input current into half-rectified current. In turn this activates and deactivates the electro-magnet, producing a smooth mechanically resonating action.

Operating Principle

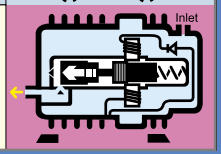
A. The energised electro-magnet attracts the piston, compresses the return spring, and draws air into the cylinder through the opened inlet valve.



Current

No Current

B. When the electro-magnet is de-energized, the return spring pushes the piston back, forcing the compressed air out of the cylinder through the now opened outlet valve.



Fewer components

This uniquely simple and reliable design has no complicated transmission components such as crankshafts, connecting rods, ball bearings, etc. typically found in conventional pump designs. Fewer parts means fewer problems.

Air Compressors & Vacuum Pumps

Air Brush

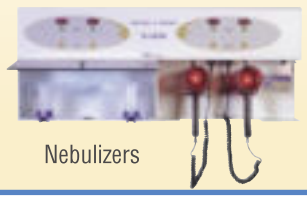
Soldering Fume Remover

Muscular Electro-Therapy Unit

Our Valued Customers & Applications

Coffee Maker

Pap smear Tester



Nebulizers

Sewage Treatment Aeration

Experience gained in well over two decades of designing, engineering, manufacturing and continually perfecting our products in thousands of applications has resulted in a "functionally intelligent" package. Please review these key design features and see how every design element contributes overall to the creation of a superior compressor or vacuum pump.

Compact and Lightweight

with the motor and compressor combined into the single structure

With the piston as the only moving part, efficient space utilisation enables our pump to be considerably smaller and lighter than other pumps. This allows the OEM design engineer increased packaging options for other internal components.

Low Noise Level

No transmission assemblies, means less noise

With no need for complicated transmission mechanisms riding on ball bearings, or actuating linkages creating friction and noise, Nitto Kohki's pumps are inherently quieter. Additionally, the almost completely sealed configuration further suppresses secondary internal operating noises.

Low Vibration

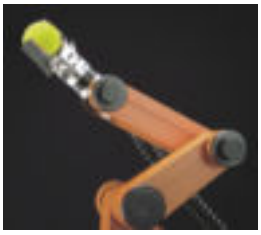
using an ultra-lightweight piston

The extremely low mass, short stroke, die cast piston minimises reactive force vibrations. Secondary vibrations are isolated or absorbed through the soft elastomeric mounting pads.

Clean Operation - Clean Air

due to oil-less construction

All wearing surfaces use no oil, grease or other contaminating lubricants. The combination of a precision Teflon® sleeved piston assisted by an "air-bearing effect" made possible through a unique air path design, assures that the outlet air is completely free of oil.



Instant Response

enabling easy start-ups in frequent on-off short cycle applications

A very low starting current enables our pumps to produce immediate performance in quick short cycle applications, even in the presence of residual back pressure.

Minimal Pulsating Effect

due to the high resonating speed

The piston's mechanical resonance speed is synchronised with the input power frequency regardless of the load, i.e., 3000 strokes at 50Hz, and 3600 strokes at 60Hz per minute. This high speed produces shorter pulses which translate into a smoother, more uniform and "linear" motion.

Automatic Pressure Adjustment

with intelligent pressure monitoring

Should an operating condition create excessive pressure, the piston stroke length proportionally reduces to accommodate the condition. Along with this adjustment, power consumption is correspondingly reduced, decreasing or eliminating the potential for system malfunctions or permanent damage.

Low Power Consumption

truly energy efficient through integrated design

Since the low mass piston is the only moving part, frictional losses are minimised, allowing lower starting and running current, and thus greater efficiency. Related benefits are realised through a lower rise in temperature, facilitating a longer operating life for the pump and the other components within your system.

Longer Durability

increased OEM value

All key design features listed here combine to provide superior performance in all the important aspects of superior pump design. This enables the OEM engineer to have complete confidence in incorporating the unit into the most demanding systems, in the most advanced equipment.

Easy maintenance

only air filter and piston to change

Replacement of the piston can be easily performed by simply removing the four screws holding the head cover in place. A completely oil-less construction is achieved through the combination of two elements: the superior abrasion resistance of the Teflon® seals that cover the piston contact surfaces and the "air bearing effect" created by the unique air path design.

How to Use This Catalog

This catalogue is designed to aid you in selecting the most appropriate product for your specific application. The INDEXES on page 1 and 2 show the corresponding pages of particular models. The page on which each model is shown consists of a specification table, a performance chart, a power consumption chart, and an external/mounting dimensions diagram.

Explanation of Technical Terms

For compressors

Rated pressure:	This is the optimum pressure point, where you will get the best capabilities such as performance and service life, and where the pump is designed to have almost the same airflow regardless of input cycle, whether it is 50Hz or 60Hz.
Rated airflow:	The discharge airflow volume at the rated pressure.
Maximum pressure:	The highest obtainable pressure at which the pump was designed to produce zero discharge airflow (not assured; referential value only).
Power consumption:	The input wattage value during operation at the rated pressure.
Current:	The electric current value when operated at rated pressure (for reference only).
Duty cycle:	The period of operation time in which the coil temperature will not exceed the coil insulation class limit for which it was designed.
Airflow characteristics:	Discharge pressure-airflow curve (for reference only).
Power consumption characteristics:	Discharge pressure-power consumption curve (for reference only).

For vacuum pumps

Maximum vacuum:	The highest vacuum the pump can attain with the pump inlet closed (except some of the exclusive models).
Free air displacement:	The airflow volume at zero vacuum (within three (3) minutes after the start).
Power consumption:	The maximum input wattage on the power consumption curve (up to the maximum vacuum point).
Electric current:	The maximum electric current on the current characteristics (for reference only).
Rated operating time:	The longest continuous running time within the range of coil insulation classification (without additional cooling).
Airflow characteristics:	Vacuum degree-airflow curve (for reference only).
Power consumption characteristics:	Vacuum degree-power consumption curve (for reference).
Exhaust characteristics:	The time required to attain the respective vacuum within a 10 liter container (for reference).

For DC pumps

Operating ambient temperature:	0~40˚C (5~50˚C for only DP0105)
Operating ambient humidity:	30~85% without condensation present

Verify in your application if the pump outlet must be unloaded before restarting.

Application examples and applicable fluids for compressors and vacuum pumps

Application: for incorporation into equipment **Applicable fluid:** Air

For compressors & vacuum pumps

Life expectancy:	Expected accumulated operating hours until the discharge airflow reduces by 20% under rated conditions. The actual life might vary in accordance with the actual operating conditions or environment such as output pressure setting, maintenance schedule, ventilation, ambient temperature, duty cycle, etc. Please note that operation with quite different supply voltage than the rated will not only affect the pressure, the vacuum rate and the airflow but may also influence the life expectancy of the pump.
Rated frequency:	In the case of AC drive, the rated frequency will be different by the versions, some are only for 50Hz or for 60Hz, some are for both 50Hz and 60Hz.
Coil insulations:	The suggested classe, most bare units attaining “E” class, is based on Japanese electric regulations. They are merely suggestions since bare units are considered as “components” and are not classified as complete products or systems.

Insulation Class (for reference)	(Temperature limit, degrees C)
A	100
E	115
B	125
F	150
H	170

Outside & mounting dimensions:	Useful for assessing the required space for installation. Allow extra 5-10 mm each in order to prevent the pump from hitting its surroundings as it vibrates on rubber insulating feet.
Rated power supply:	The two major types are 115V AC/60Hz and 230V AC/50Hz. However, most of the models, not all of them, can be used at both 50Hz and 60Hz with different performance characteristics.
Operating ambient temperature:	0～40˚C
Operating ambient humidity:	30～85% non-condensing

For liquid pumps

Self-priming power:	The power that the pump will draw 25˚C water up.

1kPa is equal to the power that draws up 25˚C water by 10cm.

Improvement suggestion

While our compressors and vacuum pumps employ a unique internal coil cooling feature to reduce or control the rise in internal temperature, please be advised that operating at higher than rated pressures may result in elevated temperatures. Should these temperatures become excessive, operating duty cycles may need to be reduced, or the use of an auxiliary cooling fan should be considered.

This catalogue will give the guidelines to let you determine the appropriate model for your application(s). However, in certain cases you may need further detailed information, which will be provided in the form of a specifications sheet for each model/version by our technical staff who will further assist you in your selection.

It is recommended for OEM customers to confirm the specifications required in writing before placing orders.

Precautions for Use

Before using any of our products, please be sure to read the following precautions and the product's operation manual.

Precautions for Compressors

⚠ CAUTION

⚠ WARNING **Do not let the unit take in any gas other than air.** There is a risk of an explosion, fire or electric shock.

Make sure the unit is operated in a completely dry area. There is the risk of a short circuit causing a fire or an electric shock.

- **The unit must be used as assembled in a device that has the appropriate casing and wiring.** Using it without appropriate casing may cause fire, electric shock or burns.
- **Do not give the unit heavy external shock during storage and transportation,** which may cause malfunction of the unit.
- **Do not use the unit with a power supply other than the voltage shown on the unit.** Negligence may cause a fire or an electric shock.
- **Do not install the unit in a completely enclosed case (box) without proper or adequate ventilation.** This may cause a fire or an electric shock.
- **Use the unit within the proposed ambient temperature range.** Using it out of the range may cause a fire or an electric shock.
- **Units must not be modified.** Modification may cause a fire or an electric shock.
- **Do not place flammable substances near the unit.** This may cause a fire.
- **Units with grounding screws should be earthed (grounded), except when connected to a double insulation device.** Not earthing the unit may result in a fire or an electric shock.
- **The unit must be installed at a level higher than the water surface when it is used for bubbling.** If installed at a lower level, fluid may flow into the unit and cause an electric shock.
- **Do not allow anything to be placed on or to fall onto the electric cable,** which may damage the cable, causing a fire or an electric shock.
- **Do not pull, cut, twist, heat up or unnecessarily bend the electric cable,** which may damage the cable, causing a fire or an electric shock.
- **When installing the unit into another device, the cable from the unit should be connected securely to the wiring of the device by such as soldering, crimping or screw fastners.** A loose connection may cause a fire or an electric shock.
- **The unit must not be disassembled or repaired by any other person than who has received Nitto Kohki technical training. (Except in the case of filter and piston maintenance and inspection in accordance with the operation manual.)** Otherwise it may result in a fire or an electric shock due to faulty operation.
- **The unit must be disconnected from its power source before the cleaning or replacing filters.** Failure to do so may result in an electric shock or injury.

Precautions for Vacuum Pumps

⚠ CAUTION

⚠ WARNING **Do not let the unit take in any gas other than air.** There is a risk of an explosion, fire or electric shock.

Make sure the unit is operated in a completely dry area. There is the risk of a short circuit causing a fire or an electric shock.

- **Do not install the unit in a completely enclosed case (box).** This may cause a fire or an electric shock.
- **The unit must be used as assembled in a device that has the appropriate casing and wiring.** Using it without appropriate casing may cause fire, electric shock or burns.
- **Do not give the unit heavy external shock during storage and transportation,** which may cause malfunction of the unit.
- **Do not use the unit with a power supply other than the voltage shown on the unit.** Negligence may cause a fire or an electric shock.
- **Use the unit within the proposed ambient temperature range.** Using it out of the range may cause a fire or an electric shock.
- **Units must not be modified.** Modification may cause a fire or an electric shock.
- **Do not place flammable substances near the unit.** This may cause a fire.
- **In case there is a chance of moisture, particles, dirt or dust in the air the unit suck in, an additional filtration device must also be installed on the inlet port of the unit.** Contaminated air may cause an electric shock.
- **Units with grounding screws should be earthed (grounded), except when connected to a double insulation device.** Not earthing the unit may result in a fire or an electric shock.
- **The unit must be installed at a level higher than the water surface when it is used for bubbling.** If installed at a lower level, fluid may flow into the unit and cause an electric shock.
- **Do not allow anything to be placed on or to fall onto the electric cable,** which may damage the cable, causing a fire or an electric shock.
- **Do not pull, cut, twist, heat up or unnecessarily bend the electric cable,** which may damage the cable, causing a fire or an electric shock.
- **When installing the unit into another device, the cable from the unit should be connected securely to the wiring of the device by such as soldering, crimping or screw fastners.** A loose connection may cause a fire or an electric shock.
- **The unit must not be disassembled or repaired by any other person than who has received Nitto Kohki technical training. (Except in the case of filter and piston maintenance and inspection in accordance with the operation manual.)** Otherwise it may result in a fire or an electric shock due to faulty operation.
- **The unit must be disconnected from its power source before the cleaning or replacing filters.** Failure to do so may result in an electric shock or injury.

Precautions for Blowers

⚠ CAUTION

⚠ WARNING **Do not let the unit take in any gas other than air.** There is a risk of an explosion, fire or electric shock.

- **Do not place the unit on the spot where may be soaked with water or covered with snow.** This may cause an electric shock or a fire.
- **Do not use the unit in a damp or wet place.** This may cause an electric shock or fire.
- **Always place the unit above water level.** Failure to do so may result in an electric shock or fire.
- **Use a waterproof wall outlet socket to supply power to the unit.** Failure to do so may cause an electric shock or fire.
- **Use a power supply equipped with a set of earth leakage and overcurrent breakers.** Failure to do so may result in an electric shock or fire.
- **Electric work must be done by a qualified electrician.** Failure to do so may result in an electric shock or fire.
- **Do not modify the unit.** Modification may cause a fire or an electric shock.
- **Do not use with the outlet port closed or at free displacement.** This may cause an electric shock, malfunction, or fire.
- **Do not use the unit with a power supply other than the voltage shown on the unit.** Negligence may cause a fire or an electric shock.
- **Never touch the power plug with wet hands.** This may causes an electric shock.
- **Insert the power plug securely to the hilt of the contact blades so that it does not wobble.** Failure to do so may result in an electric shock.
- **Do not put anything on the power cable.** This may causes a fire or an electric shock.
- **Do not place anything near the unit (within 50cm reach)** This may cause a fire or an electric shock.
- **Do not use the unit where flammables, such as gasoline, solvents, lacquer, benzene, etc. are being used.** This may cause a fire or an explosion.
- **Check the power plug at least once a year for dirt and dust and clean.** Failure to do so may result in an electric shock or a fire.
- **The power plug must be disconnected before the air filter is cleaned or replaced.** Negligence may cause an electric shock or accident.
- **Always grasp the power plug not the cable when disconnecting the unit from the power socket.** Pulling it out by grasping the cable may cause an electric shock or short circuit.
- **Any disassembled air filter must be put back before resuming the operation.** Negligence may cause a fire or an electric shock.
- **Never try to disassemble or repair the unit.** This may cause an electric shock or an injury. Any repairs must be done by an electrician authorized by Nitto distributors.
- **Do not cover Blower with a box or the like without proper or adequate ventilation.** This may cause malfunction and fire.

Precautions for Liquid Pumps

⚠ CAUTION

⚠ WARNING **Please confirm the suitability of the liquid that passes through the unit before use.** Otherwise there will be possible leak, burst, fire or electric shock.

- **Please avoid any liquid that contaminated with solids such as deblis or dust.** If dust sticks to the valve, the unit may not give a good performance. When intrusion of dust is expected, place a filter to the inlet.
- **Please avoid any liquid that may crystallize.** If crystals stick to the valve, the unit may not give a good performance. Preparatory test on the unit with the liquid is recommended.
- **The performance is measured with the unit at its proper position, which is described in the user' s manual. Different unit positions or the nozzle directions may result in different performances.**

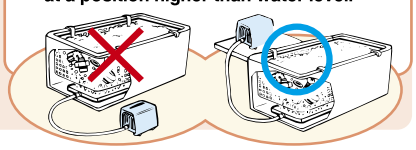
When in use of compressors and vacuum pumps

As compressors and vacuum pumps employ self-cooling system, if used at more than rated pressure, **duty cycle of some of the models will be shortened.**

- When you want to prolong the duty cycle, it is recommended for you to cool the compressor with fans. For instance, AC0902, whose duty cycle is 30 minutes, is effective.

- Do not use the compressor near **flammable gas.**
- Do not use the compressor **in the rain or in wet and damped place.**
- Do not suck **corrosive gas.**

- Be sure to install and use the compressor **at a position higher than water level.**



Please check with our distributor in advance if you like to use the compressor/vacuum pump **at free displacement (0MPa)**, or the vacuum pump **with inlet port closed**, or the compressor **at maximum pressure**.

Handling Problems

In any of the right cases, **stop operation immediately,** switch off the power and disconnect the unit from the power supply. Ask our distributor for repair.

- When **oil such as lubricant** has been applied to the unit in error.
- When the unit has suffered a severe **shock such as being dropped.**
- When **liquid such as water** has entered into the unit by mistake.
- When an **abnormal operation** is observed, such as the emission of smoke, or an unusual smell or noise.

Conversion Tables

Pressure / Flow Rate / Vacuum

Pressure

	MPa	kgf/cm^2 (bar)	psig
	0.30	3.0	42.7
	0.28	2.8	39.8
	0.25	2.5	35.6
	0.20	2.0	28.5
	0.18	1.8	25.6
	0.15	1.5	21.3
	0.12	1.2	17.1
	0.10	**1.0**	**14.2**
	0.08	0.8	11.4
	0.07	0.7	9.96
	0.05	0.5	7.11
	0.045	0.45	6.40
	0.04	0.4	5.69
	0.035	0.35	4.98
	0.034	0.34	4.84
	0.03	0.3	4.27
	0.02	0.2	2.84
	0.018	0.18	2.56
	0.015	0.15	2.13
	0.011	0.11	1.56
	0.01	0.1	1.42
	0.007	**0.07**	**1.00**
	0.005	0.05	0.71
*	0	0	0

Flow Rate

CFM	LPM	CFM	LPM
0.035	**1.00**	2.12	60.0
0.070	2.00	2.25	63.7
0.100	2.83	2.47	70.0
0.105	3.00	2.50	70.8
0.177	5.00	2.65	75.0
0.250	7.08	2.75	77.9
0.353	10.0	2.83	80.0
0.500	14.2	3.00	85.0
0.530	15.0	3.18	90.0
0.708	20.0	3.25	92.0
0.750	21.2	3.50	99.1
0.883	25.0	3.53	100
1.00	**28.32**	3.75	106
1.06	30.0	3.89	110
1.24	35.0	4.00	113
1.25	35.4	4.24	120
1.41	40.0	4.50	127
1.50	42.5	5.00	142
1.59	45.0	5.30	150
1.75	49.6	6.00	170
1.77	50.0	7.00	198
2.00	56.6	7.06	200

Vacuum

	kPa	mmHg	mbar	in.Hg
*	0	0	0	0
	−13.3	−100	−133	−3.94
	−26.7	−200	−267	−7.87
	−33.3	−250	−333	−9.84
	−44.0	−330	−440	−13.0
	−45.3	−340	−453	−13.4
	−46.7	−350	−467	−13.8
	−53.3	−400	−533	−15.7
	−60.0	−450	−600	−17.7
	−66.7	−500	−667	−19.7
	−73.3	−550	−733	−21.7
	−80.0	−600	−800	−23.6
	−93.3	−700	−933	−27.6
	−100	−750	−1000	−29.5
**	−101.3	−760	−1013	−29.9

* Gauge pressure
** Absolute vacuum

Pressure

to \ from	MPa	kgf/cm^2	bar	psig
MPa	1	10	10	142
kgf/cm^2	0.1	1	1	14.2
bar	0.1	1	1	14.2
psig	0.007	0.07	0.07	1

Vacuum

to \ from	kPa	mmHg	in.Hg	mbar
kPa	−1	−7.50	−0.295	−10
mmHg	−0.133	−1	−0.0394	−1.335
in. Hg	−3.39	−25.4	−1	−33.92
mbar	−0.1	−0.75	−0.0295	−1

AIR COMPRESSOR

DC LINEAR

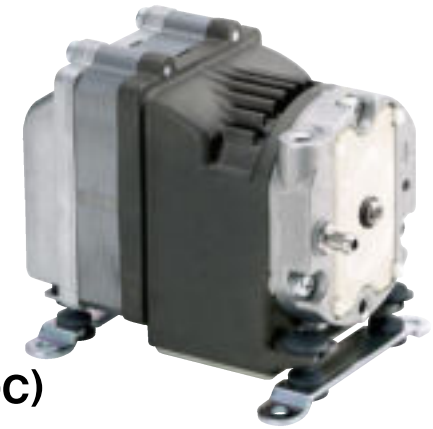
Low Pressure Series

Piston Compressor

LINEAR Piston DC

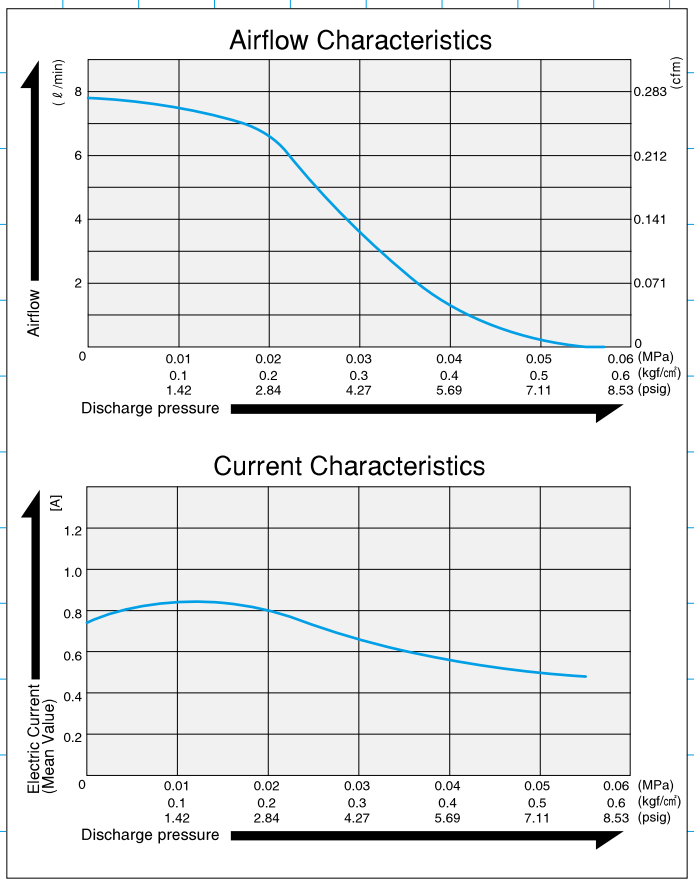
Compressor LOW pressure

MOTOR FREE
PISTON SYSTEM



DAH102-X1 (12V DC)

Airflow & Electric Current



Specifications

	(SI)	(EURO)	(U.S.A.)
Rated Pressure	0.02 MPa {0.2 kgf/cm²}	0.2 bar	2.84 psig
Rated Airflow	5 ℓ /min ※		0.177 cfm
Rated Voltage	12 V DC		
Maximum Pressure	0.05 MPa {0.5 kgf/cm²}	0.5 bar	7.11 psig
Current (Mean Value)	0.81A		
Life Expectancy	10,000 hours		
Outlet	6 mm O.D. hose barb		
Duty Cycle	Continuous		
Coil Insulation Class	A or its equivalent		
Mounting Dimensions	76 mm(L) x 70 mm(W)		3"(L) x 2-3/4"(W)
Gross Weight	0.91 kg		2.01 Lbs.
Leadwire Length	300 mm		11-13/16"

※ Air displacement at rated pressure.

Please read the page of "How to Use This Catalog" first for correct use of compressors and pumps.

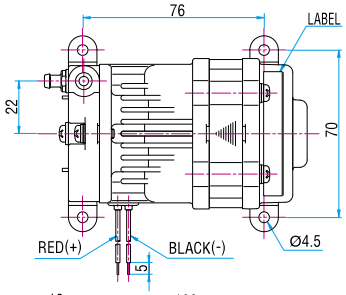
General Conditions

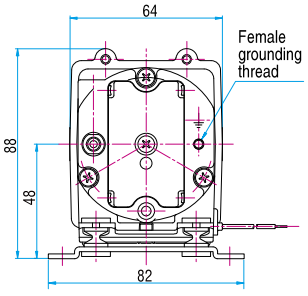
Ambient Temperature: 0 ~ 40˚C
Ambient Humidity: 30 ~ 85%
Fluid: Air

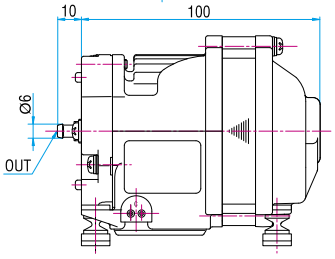
Applications

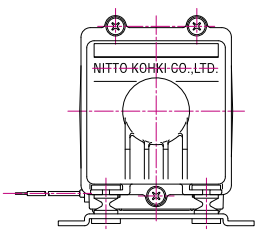
Medical equipment, analyzers, etc.

Sketch Drawing and Mounting Dimensions Diagram (mm)







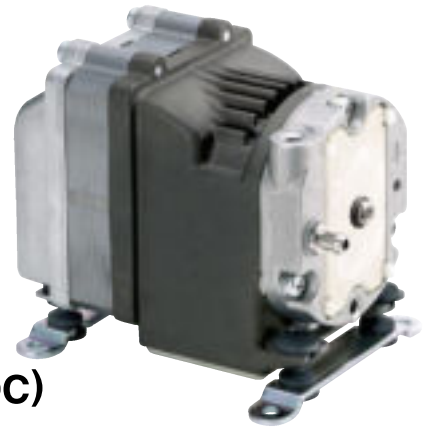


COMPRESSOR

LINEAR Piston DC

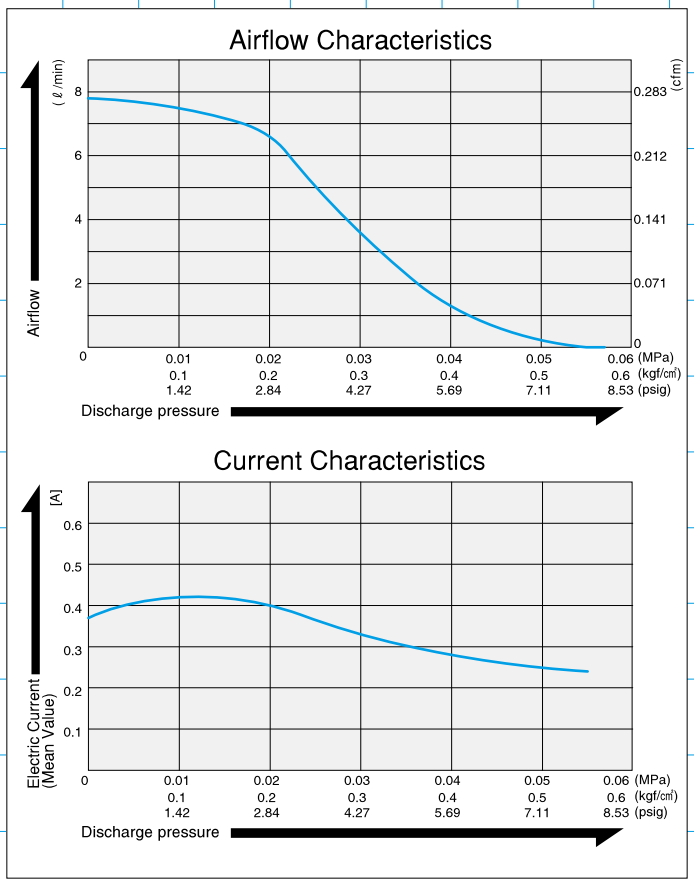
Compressor LOW pressure

MOTOR FREE
PISTON SYSTEM



DAH102-Y1 (24V DC)

Airflow & Electric Current



Specifications

	(SI)	(EURO)	(U.S.A.)
Rated Pressure	0.02 MPa {0.2 kgf/cm²}	0.2 bar	2.84 psig
Rated Airflow	5 ℓ /min ※		0.177 cfm
Rated Voltage	24 V DC		
Maximum Pressure	0.05 MPa {0.5 kgf/cm²}	0.5 bar	7.11 psig
Current (Mean Value)	0.40A		
Life Expectancy	10,000 hours		
Outlet	6 mm O.D. hose barb		
Duty Cycle	Continuous		
Coil Insulation Class	A or its equivalent		
Mounting Dimensions	76 mm(L) x 70 mm(W)		3"(L) x 2-3/4"(W)
Gross Weight	0.91 kg		2.01 Lbs.
Leadwire Length	300 mm		11-13/16"

※ Air displacement at rated pressure.

Please read the page of "How to Use This Catalog" first for correct use of compressors and pumps.

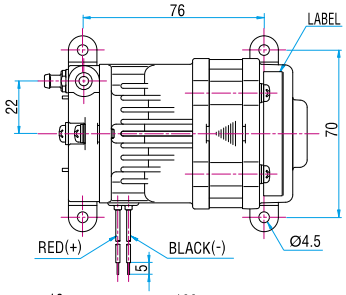
General Conditions

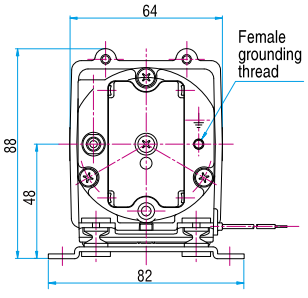
Ambient Temperature: 0 ~ 40˚C
Ambient Humidity: 30 ~ 85%
Fluid: Air

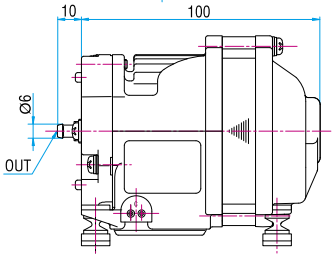
Applications

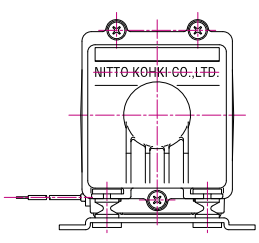
Medical equipment, analyzers, etc.

Sketch Drawing and Mounting Dimensions Diagram (mm)





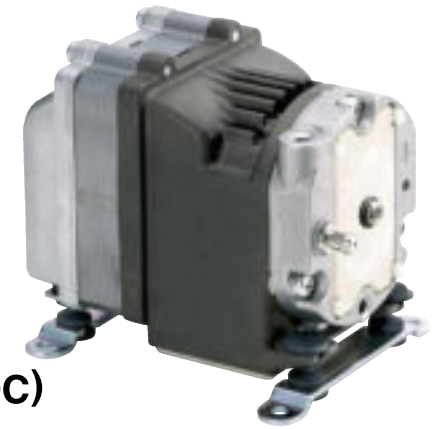




LINEAR Piston DC

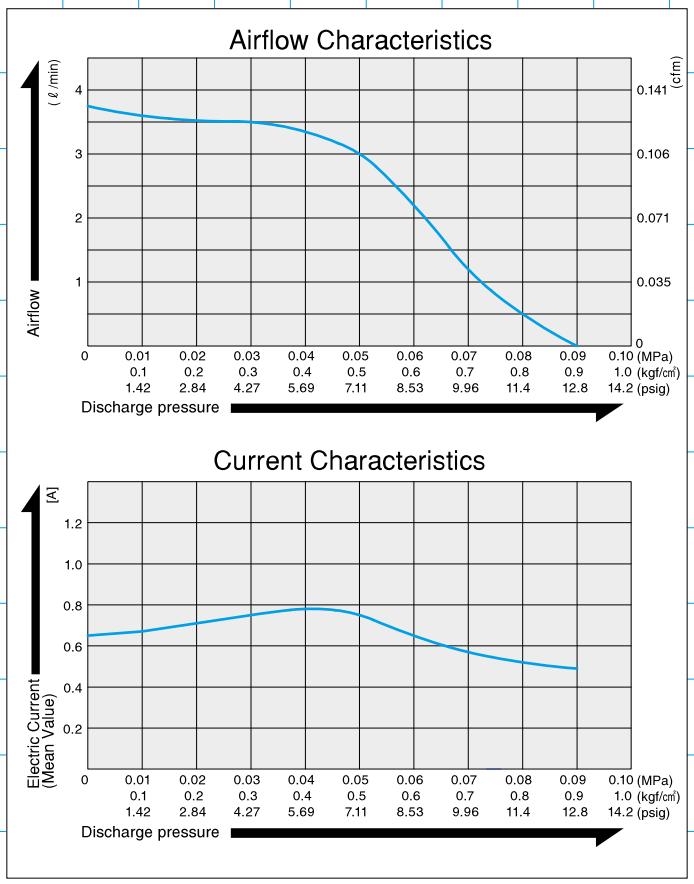
Compressor | LOW pressure

MOTOR FREE
PISTON SYSTEM



DAH105-X1 (12V DC)

Airflow & Electric Current



Specifications

	(SI)	(EURO)	(U.S.A.)
Rated Pressure	0.05 MPa {0.5 kgf/cm²}	0.5 bar	7.11 psig
Rated Airflow	2.5 ℓ /min ※		0.088 cfm
Rated Voltage	12 V DC		
Maximum Pressure	0.08 MPa {0.8 kgf/cm²}	0.8 bar	11.4 psig
Current (Mean Value)	0.74A		
Life Expectancy	10,000 hours		
Outlet	6 mm O.D. hose barb		
Duty Cycle	Continuous		
Coil Insulation Class	A or its equivalent		
Mounting Dimensions	76 mm(L) x 70 mm(W)		3"(L) x 2-3/4"(W)
Gross Weight	0.91 kg		2.01 Lbs.
Leadwire Length	300 mm		11-13/16"

※ Air displacement at rated pressure.

Please read the page of "How to Use This Catalog" first for correct use of compressors and pumps.

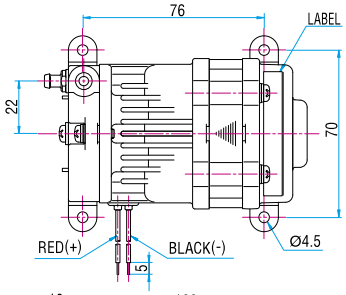
General Conditions

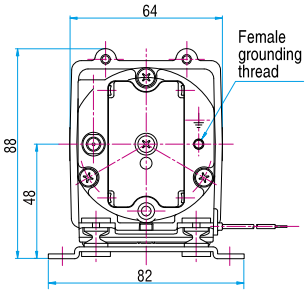
Ambient Temperature: 0 ~ 40˚C
Ambient Humidity: 30 ~ 85%
Fluid: Air

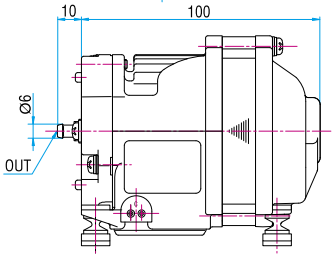
Applications

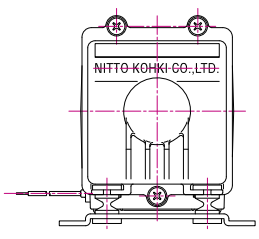
Medical equipment, analyzers, etc.

Sketch Drawing and Mounting Dimensions Diagram (mm)





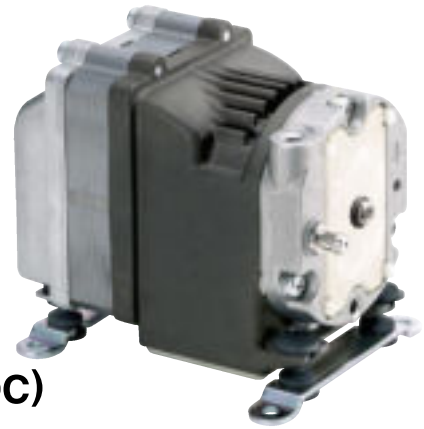




LINEAR Piston DC

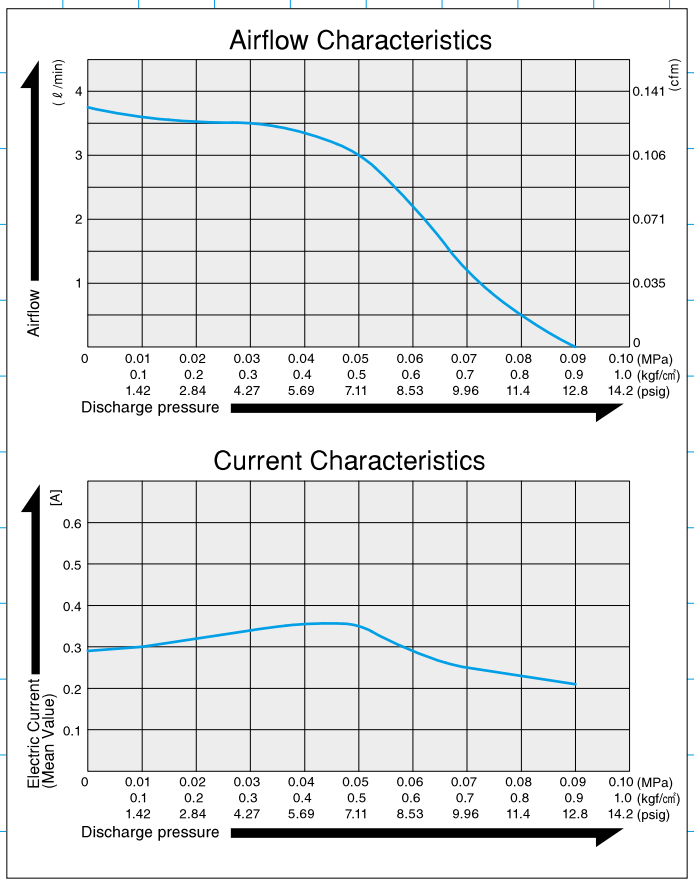
Compressor | LOW pressure

MOTOR FREE
PISTON SYSTEM



DAH105-Y1 (24V DC)

Airflow & Electric Current



Specifications

	(SI)	(EURO)	(U.S.A.)
Rated Pressure	0.05 MPa {0.5 kgf/cm²}	0.5 bar	7.11 psig
Rated Airflow	2.5 ℓ /min ※		0.088 cfm
Rated Voltage	24 V DC		
Maximum Pressure	0.08 MPa {0.8 kgf/cm²}	0.8 bar	11.4 psig
Current (Mean Value)	0.35A		
Life Expectancy	10,000 hours		
Outlet	6 mm O.D. hose barb		
Duty Cycle	Continuous		
Coil Insulation Class	A or its equivalent		
Mounting Dimensions	76 mm(L) x 70 mm(W)		3"(L) x 2-3/4"(W)
Gross Weight	0.91 kg		2.01 Lbs.
Leadwire Length	300 mm		11-13/16"

※ Air displacement at rated pressure.

Please read the page of "How to Use This Catalog" first for correct use of compressors and pumps.

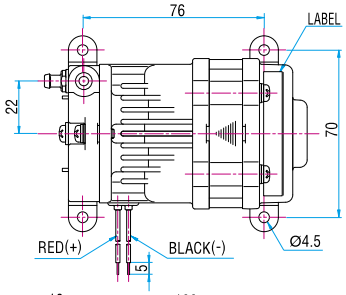
General Conditions

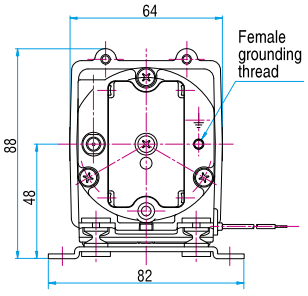
Ambient Temperature: 0 ~ 40˚C
Ambient Humidity: 30 ~ 85%
Fluid: Air

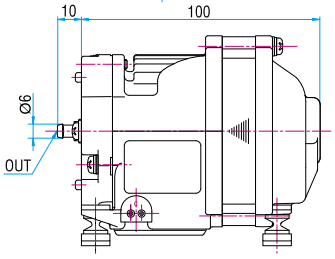
Applications

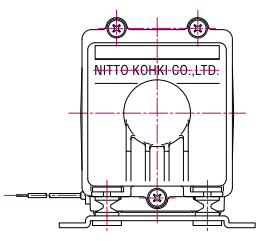
Medical equipment, analyzers, etc.

Sketch Drawing and Mounting Dimensions Diagram (mm)









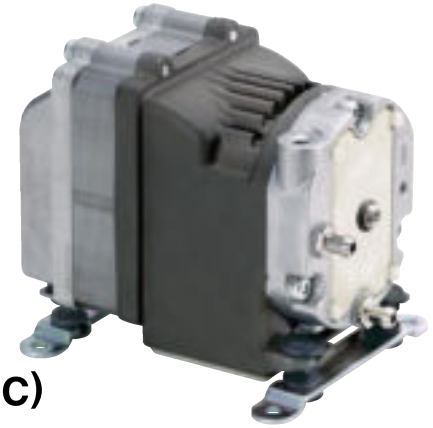
VACUUM PUMP

DC LINEAR
Piston Vacuum Pump

Vacuum

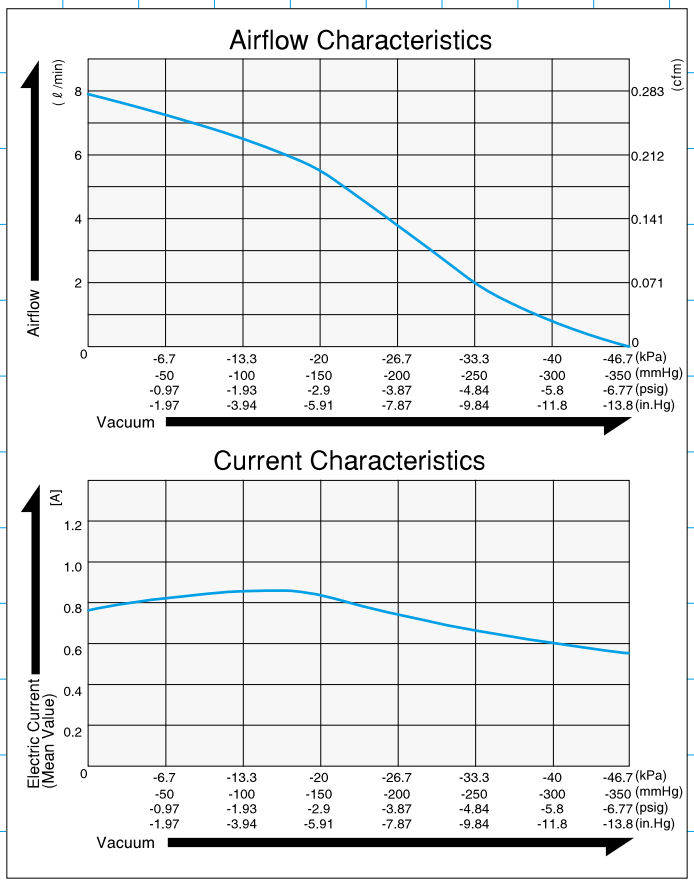
LINEAR Piston DC

MOTOR FREE
PISTON SYSTEM



DVH130-X1 (12V DC)

Airflow & Electric Current



Specifications

	(SI)	(EURO)	(U.S.A.)
Attainable Vacuum	-40 kPa {-300 mmHg}	-400 mbar	-11.8 in.Hg
Free Air Displacement	7 ℓ /min ※		0.247 cfm
Rated Voltage	12 V DC		
Current (Mean Value)	0.86A		
Life Expectancy	10,000 hours		
Inlet	6 mm O.D. hose barb		
Outlet	6 mm O.D. hose barb		
Duty Cycle	Continuous		
Coil Insulation Class	A or its equivalent		
Mounting Dimensions	76 mm(L) x 70 mm(W)		3"(L) x 2-3/4"(W)
Gross Weight	0.91 kg		2.01 Lbs.
Leadwire Length	300 mm		11-13/16"

※ Air displacement at no-load operation

Please read the page of "How to Use This Catalog" first for correct use of compressors and pumps.

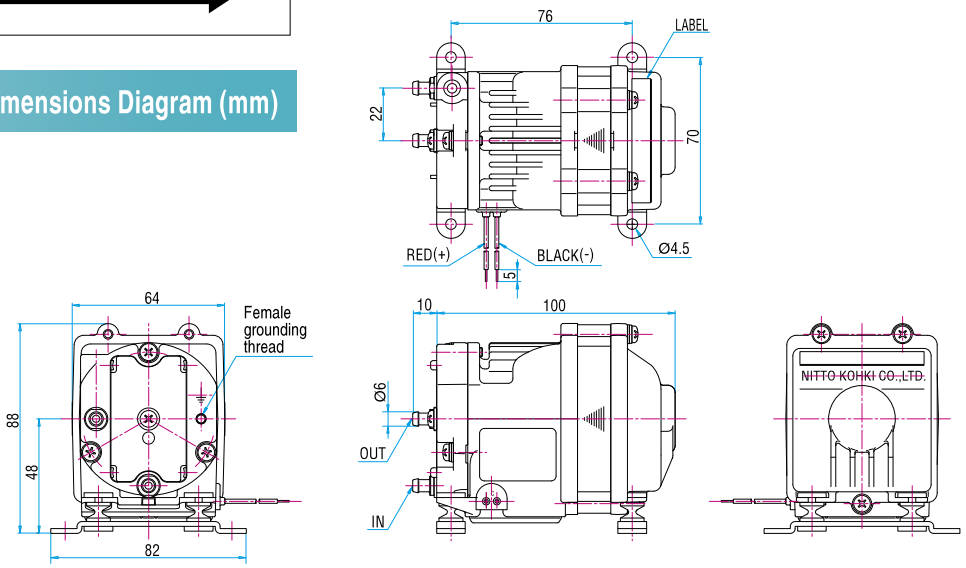
General Conditions

Ambient Temperature: 0 ~ 40˚C
Ambient Humidity: 30 ~ 85%
Fluid: Air

Applications

Medical equipment, analyzers, etc.

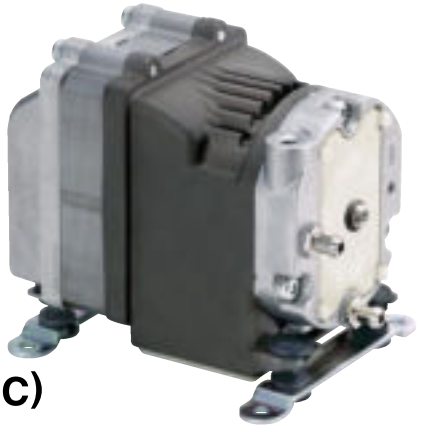
Sketch Drawing and Mounting Dimensions Diagram (mm)



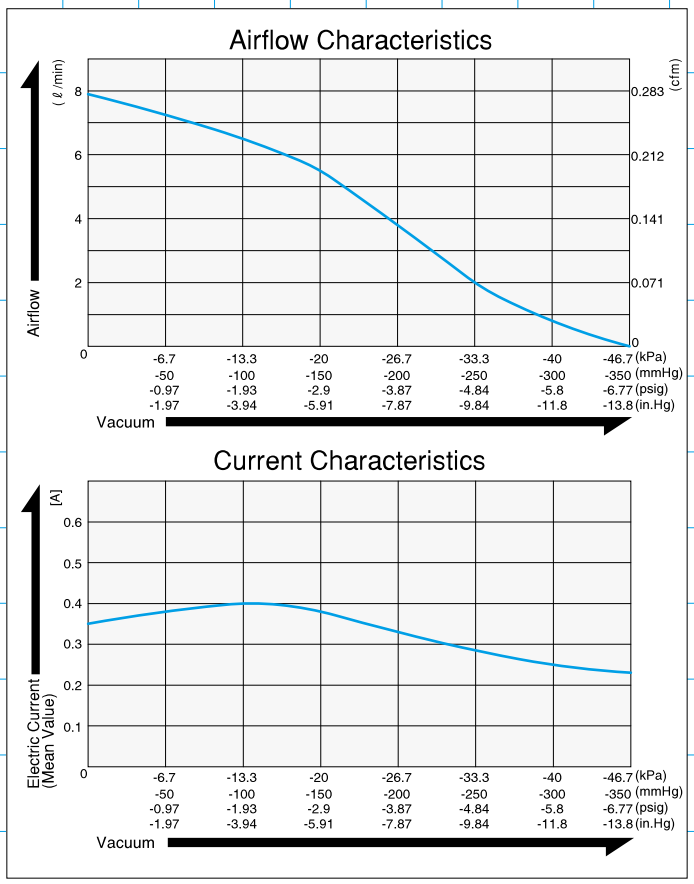
LINEAR Piston DC

MOTOR FREE
PISTON SYSTEM

DVH130-Y1 (24V DC)



Airflow & Electric Current



Specifications

	(SI)	(EURO)	(U.S.A.)
Attainable Vacuum	-40 kPa {-300 mmHg}	-400 mbar	-11.8 in.Hg
Free Air Displacement	7 ℓ /min ※		0.247 cfm
Rated Voltage	24 V DC		
Current (Mean Value)	0.41A		
Life Expectancy	10,000 hours		
Inlet	6 mm O.D. hose barb		
Outlet	6 mm O.D. hose barb		
Duty Cycle	Continuous		
Coil Insulation Class	A or its equivalent		
Mounting Dimensions	76 mm(L) x 70 mm(W)		3"(L) x 2-3/4"(W)
Gross Weight	0.91 kg		2.01 Lbs.
Leadwire Length	300 mm		11-13/16"

※ Air displacement at no-load operation

Please read the page of "How to Use This Catalog" first for correct use of compressors and pumps.

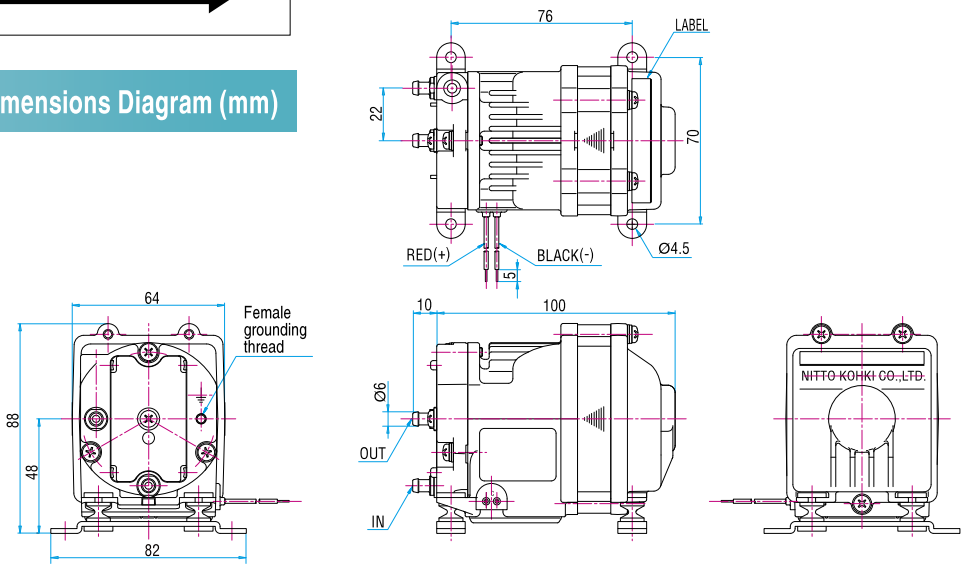
General Conditions

Ambient Temperature: 0 ~ 40˚C
Ambient Humidity: 30 ~ 85%
Fluid: Air

Applications

Medical equipment, analyzers, etc.

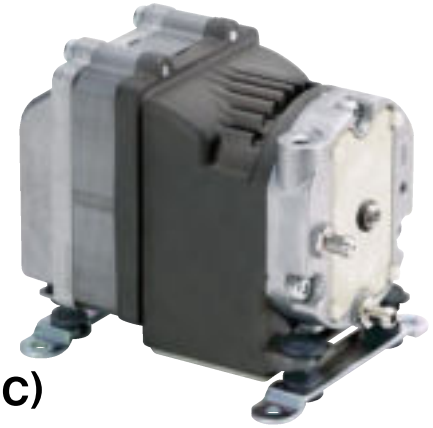
Sketch Drawing and Mounting Dimensions Diagram (mm)



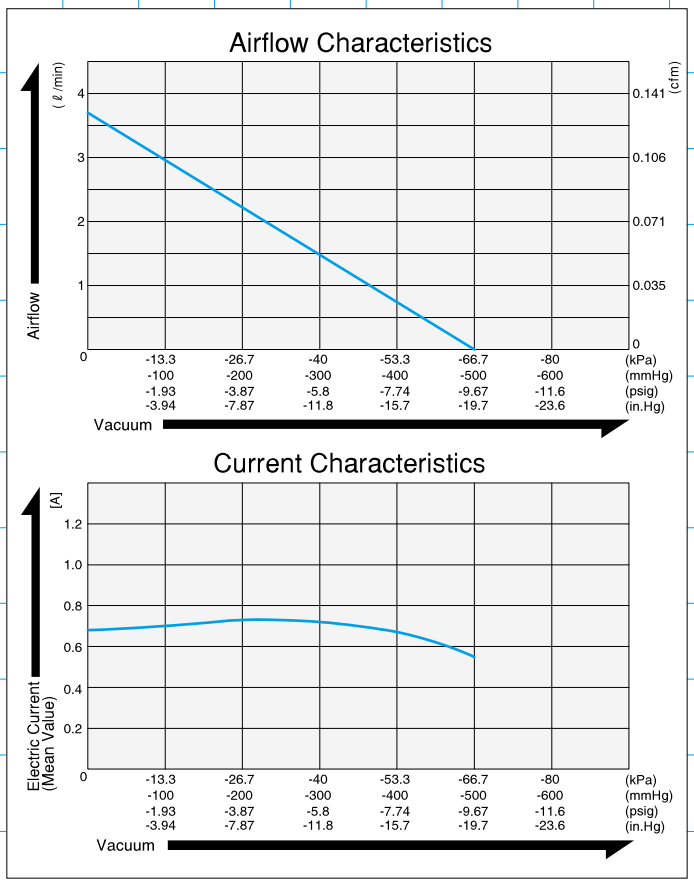
LINEAR Piston DC

MOTOR FREE
PISTON SYSTEM

DVH145-X1 (12V DC)



Airflow & Electric Current



Specifications

	(SI)	(EURO)	(U.S.A.)
Attainable Vacuum	-60 kPa {-450 mmHg}	-600 mbar	-17.7 in.Hg
Free Air Displacement	3 ℓ /min ※		0.106 cfm
Rated Voltage	12 V DC		
Current (Mean Value)	0.73 A		
Life Expectancy	10,000 hours		
Inlet	6 mm O.D. hose barb		
Outlet	6 mm O.D. hose barb		
Duty Cycle	Continuous		
Coil Insulation Class	A or its equivalent		
Mounting Dimensions	76 mm(L) x 70 mm(W)		3"(L) x 2-3/4"(W)
Gross Weight	0.91 kg		2.01 Lbs.
Leadwire Length	300 mm		11-13/16"

※ Air displacement at no-load operation

Please read the page of "How to Use This Catalog" first for correct use of compressors and pumps.

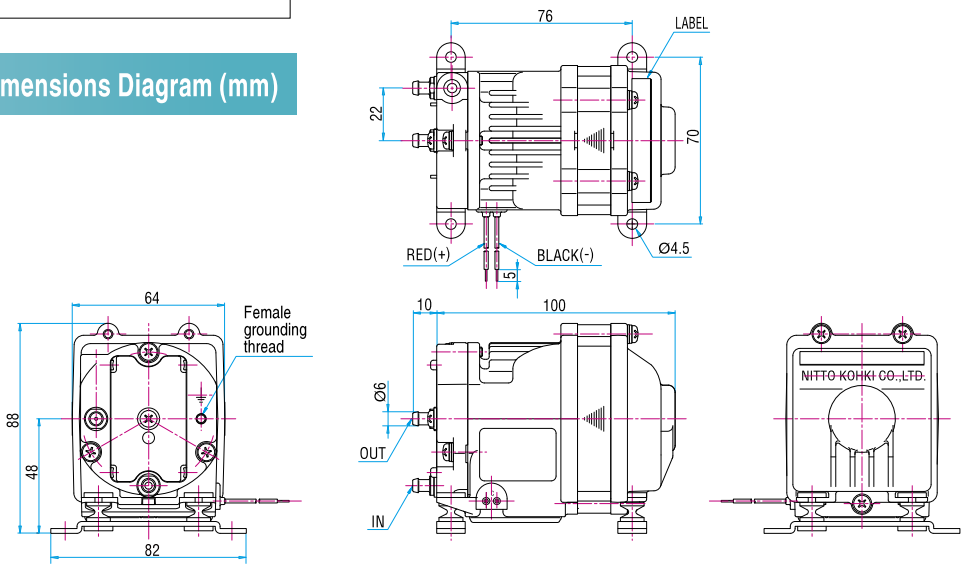
General Conditions

Ambient Temperature: 0 ~ 40˚C
Ambient Humidity: 30 ~ 85%
Fluid: Air

Applications

Medical equipment, analyzers, etc.

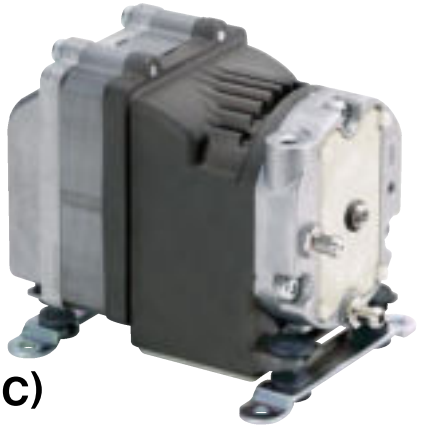
Sketch Drawing and Mounting Dimensions Diagram (mm)



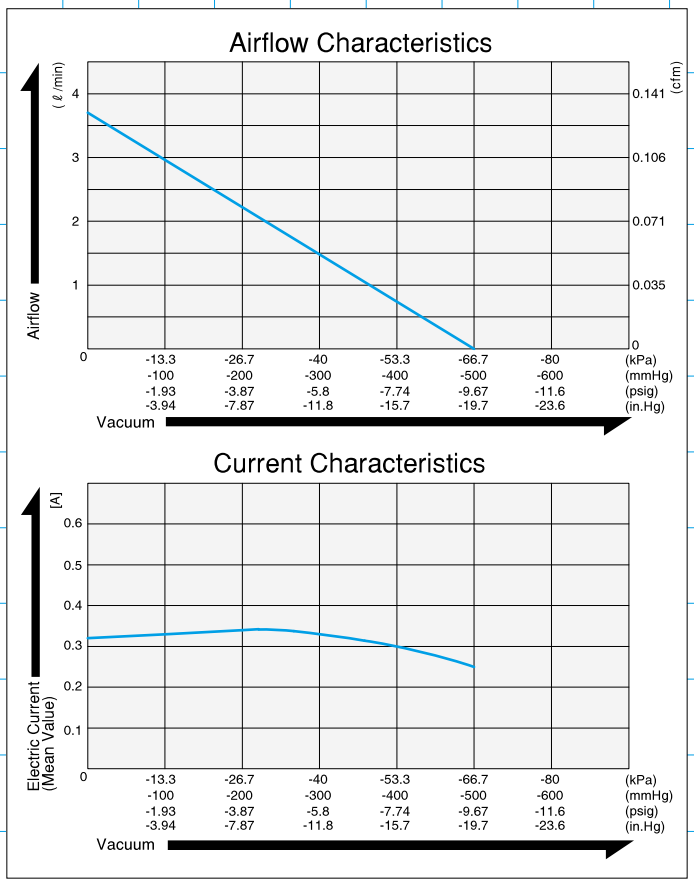
LINEAR Piston DC

MOTOR FREE
PISTON SYSTEM

DVH145-Y1 (24V DC)



Airflow & Electric Current



Specifications

	(SI)	(EURO)	(U.S.A.)
Attainable Vacuum	-60 kPa {-450 mmHg}	-600 mbar	-17.7 in.Hg
Free Air Displacement	3 ℓ /min ※		0.106 cfm
Rated Voltage	24 V DC		
Current (Mean Value)	0.34 A		
Life Expectancy	10,000 hours		
Inlet	6 mm O.D. hose barb		
Outlet	6 mm O.D. hose barb		
Duty Cycle	Continuous		
Coil Insulation Class	A or its equivalent		
Mounting Dimensions	76 mm(L) x 70 mm(W)		3"(L) x 2-3/4"(W)
Gross Weight	0.91 kg		2.01 Lbs.
Leadwire Length	300 mm		11-13/16"

※ Air displacement at no-load operation

Please read the page of "How to Use This Catalog" first for correct use of compressors and pumps.

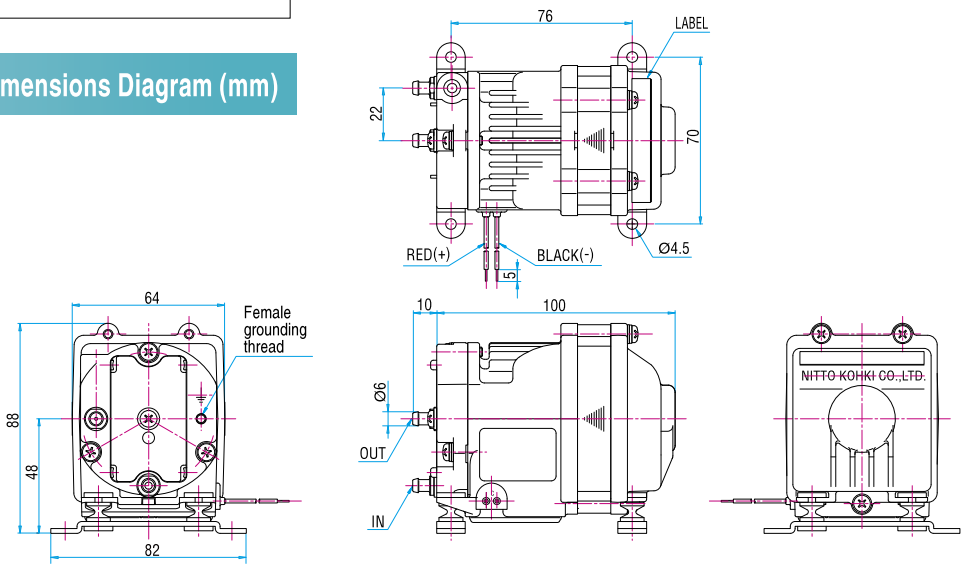
General Conditions

Ambient Temperature: 0 ~ 40˚C
Ambient Humidity: 30 ~ 85%
Fluid: Air

Applications

Medical equipment, analyzers, etc.

Sketch Drawing and Mounting Dimensions Diagram (mm)



AIR COMPRESSOR

Low Pressure Series

AC LINEAR

Piston Compressor

Compressor

LOW pressure

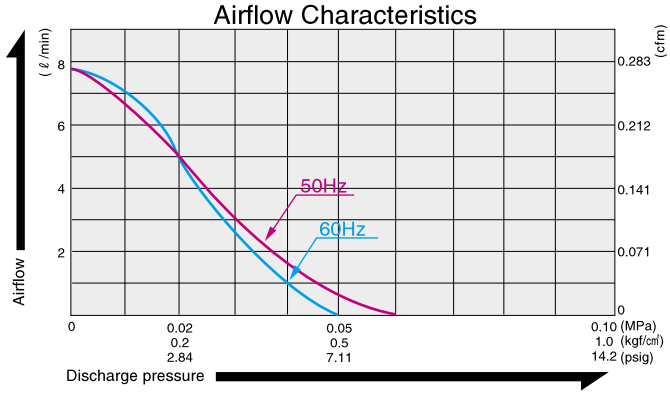
COMPRESSOR

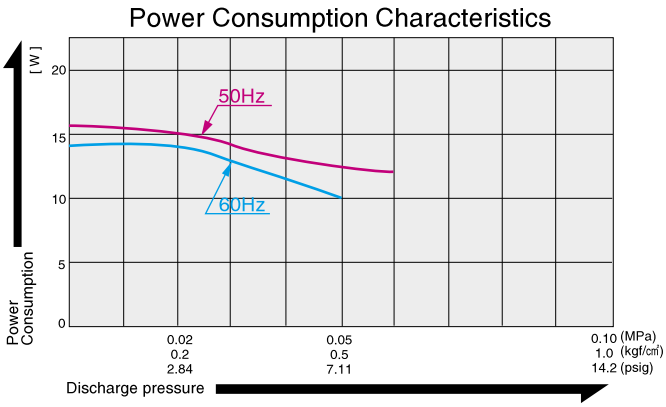
LINEAR
AC0102

Compressor LOW pressure

MOTOR FREE
PISTON SYSTEM

Airflow & Power Consumption



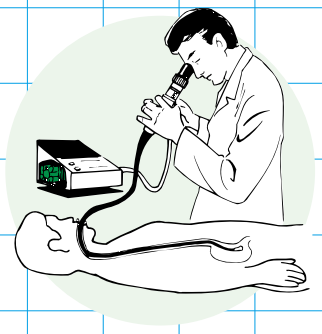


Specifications

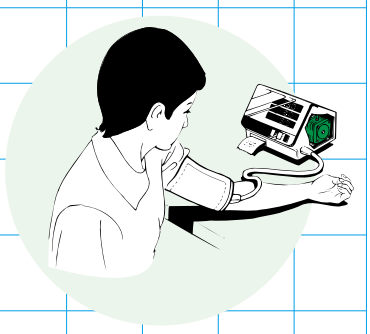
	(SI)	(EURO)	(U.S.A.)
Rated Pressure	0.02 MPa {0.2 kgf/cm²}	0.2 bar	2.84 psig
Rated Airflow	5 ℓ /min		0.177 cfm
Rated Voltage	115 V AC or 230 V AC		
Maximum Pressure	0.04 MPa {0.4 kgf/cm²}	0.4 bar	5.69 psig
Power Consumption	14 W or 15 W		
Rated Frequency	60 Hz or 50 Hz		
Life Expectancy	3,000 hours		
Outlet	6 mm O.D. hose nipple		
Duty Cycle	Continuous		
Coil Insulation Class	E or its equivalent (JETL) and B for UL		
Mounting Dimensions	48 (L) x 62 (W) mm		1-7/8"(L) x 2-7/16"(W)
Gross Weight	0.7 kg		1.54 Lbs.
Leadwire Length	200 mm		7-7/8"

Please read the page of "How to Use This Catalog" first for correct use of compressors and pumps.

Application Examples

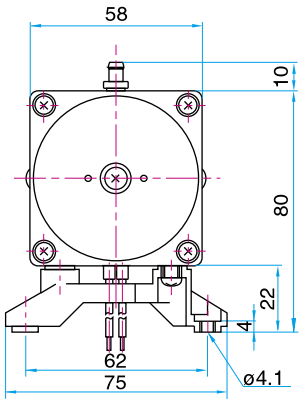


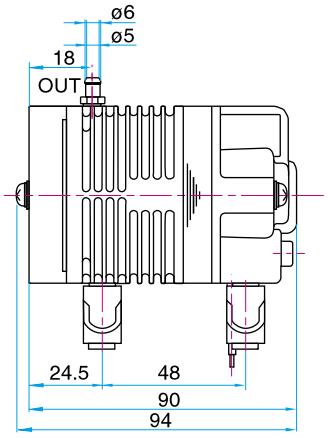
Endoscope

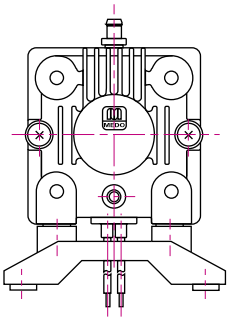


Blood Pressure Tester

Sketch Drawing and Mounting Dimensions Diagram (mm)







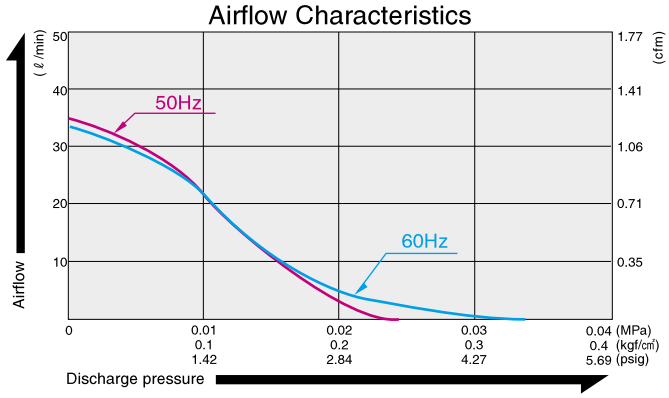
LINEAR

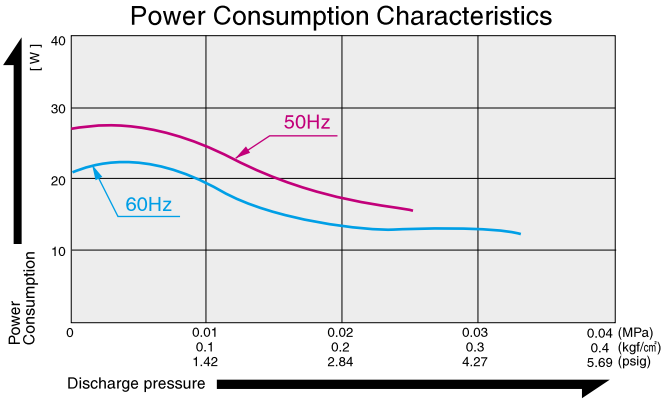
Compressor LOW pressure

MOTOR FREE
PISTON SYSTEM

ACO201A

Airflow & Power Consumption



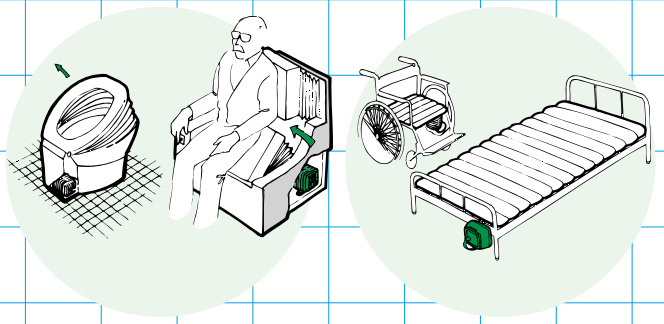


Specifications

	(SI)	(EURO)	(U.S.A.)
Rated Pressure	0.01 MPa {0.1 kgf/cm²}	0.1 bar	1.42 psig
Rated Airflow	20 ℓ /min		0.71 cfm
Rated Voltage	115 V AC or 230 V AC		
Maximum Pressure	0.02 MPa {0.2 kgf/cm²}	0.2 bar	2.84 psig
Power Consumption	19 W or 23 W		
Rated Frequency	60 Hz or 50 Hz		
Life Expectancy	6,000 hours		
Outlet	ISO Rc 1/4 (female threaded)		
Duty Cycle	Continuous		
Coil Insulation Class	E or its equivalent (JETL) and B for UL		
Mounting Dimensions	73 (L) x 88 (W) mm		2-7/8"(L) x 3-15/32"(W)
Gross Weight	1.5 kg		3.3 Lbs.
Leadwire Length	200 mm		7-7/8"

Please read the page of "How to Use This Catalog" first for correct use of compressors and pumps.

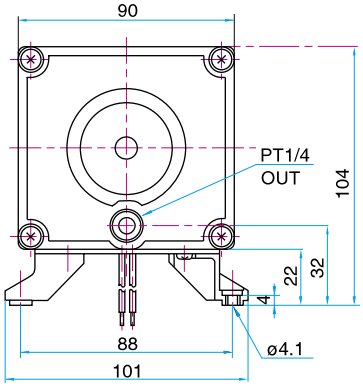
Application Examples

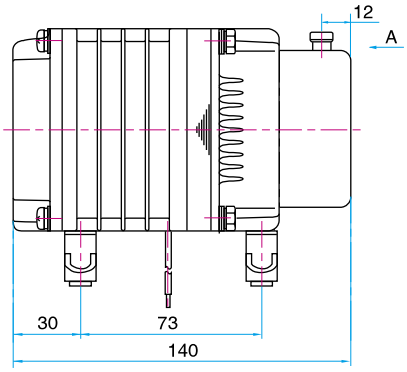


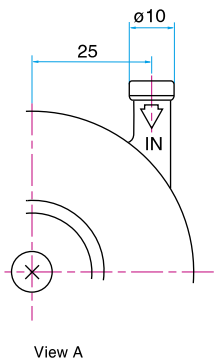
Seat Lifter

Bed Sore Prevention Mattress

Sketch Drawing and Mounting Dimensions Diagram (mm)







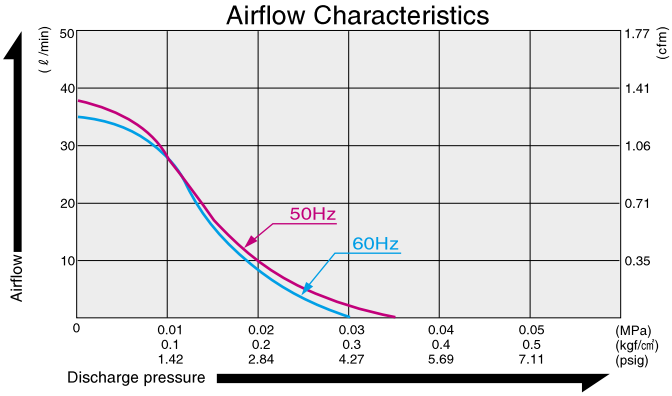
LINEAR

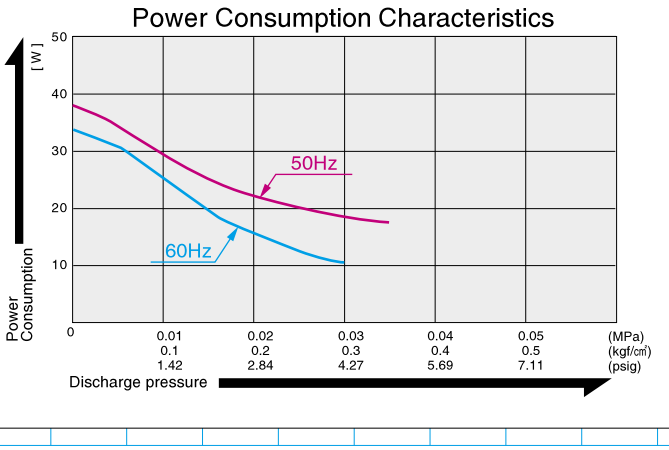
Compressor LOW pressure

MOTOR FREE
PISTON SYSTEM

ACO301A

Airflow & Power Consumption



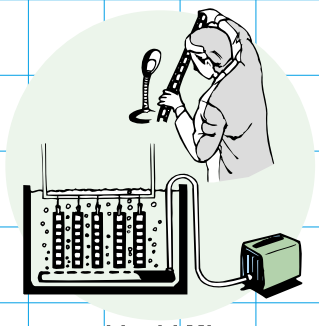


Specifications

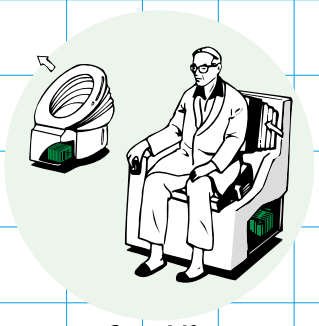
	(SI)	(EURO)	(U.S.A.)
Rated Pressure	0.01 MPa {0.1 kgf/cm²}	0.1 bar	1.42 psig
Rated Airflow	28 ℓ /min		0.99 cfm
Rated Voltage	115 V AC or 230 V AC		
Maximum Pressure	0.03 MPa {0.3 kgf/cm²}	0.3 bar	4.27 psig
Power Consumption	25 W or 29 W		
Rated Frequency	60 Hz or 50 Hz		
Life Expectancy	10,000 hours		
Outlet	ISO Rc 1/4 (female threaded)		
Duty Cycle	Continuous		
Coil Insulation Class	E or its equivalent (JETL) or B for UL		
Mounting Dimensions	68 (L) x 84 (W) mm		2-11/16"(L) x 3-5/16"(W)
Gross Weight	1.9 kg		4.2 Lbs.
Leadwire Length	200 mm		7-7/8"

Please read the page of "How to Use This Catalog" first for correct use of compressors and pumps.

Application Examples

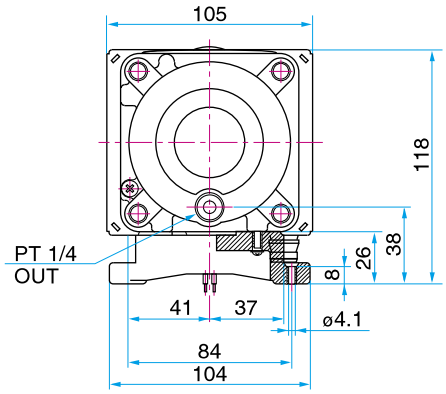


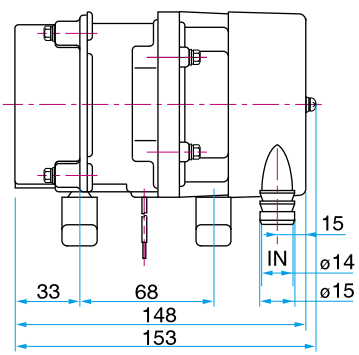
Liquid Mixer



Seat Lifter

Sketch Drawing and Mounting Dimensions Diagram (mm)





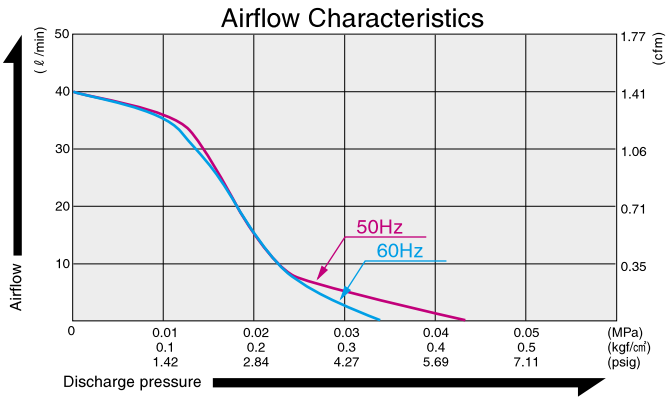
LINEAR

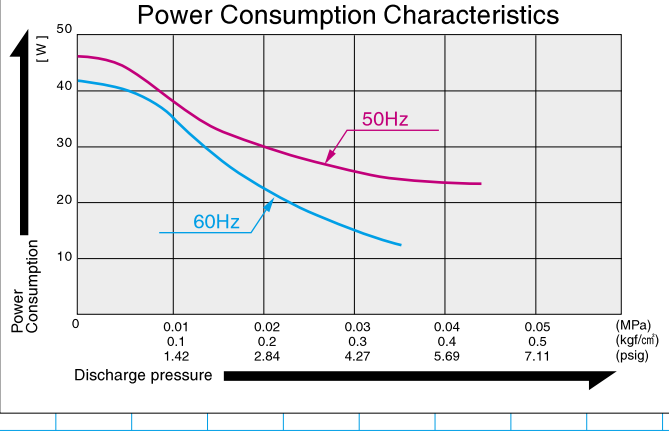
Compressor LOW pressure

MOTOR FREE
PISTON SYSTEM

ACO401A

Airflow & Power Consumption



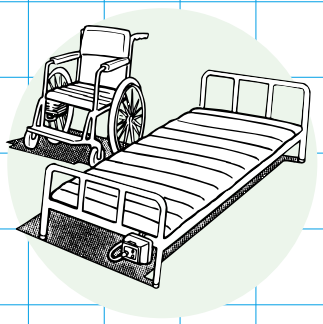


Specifications

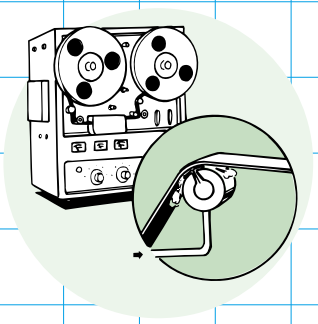
	(SI)	(EURO)	(U.S.A.)
Rated Pressure	0.01 MPa {0.1 kgf/cm²}	0.1 bar	1.42 psig
Rated Airflow	35 ℓ /min		1.24 cfm
Rated Voltage	120 V AC or 230 V AC		
Maximum Pressure	0.035 MPa {0.35 kgf/cm²}	0.35 bar	4.98 psig
Power Consumption	35 W or 38 W		
Rated Frequency	60 Hz or 50 Hz		
Life Expectancy	10,000 hours		
Outlet	ISO Rc 1/4 (female threaded)		
Duty Cycle	Continuous		
Coil Insulation Class	E or its equivalent (JETL) or B for UL		
Mounting Dimensions	68 (L) x 84 (W) mm		2-11/16"(L) x 3-5/16"(W)
Gross Weight	1.9 kg		4.2 Lbs.
Leadwire Length	200 mm		7-7/8"

Please read the page of "How to Use This Catalog" first for correct use of compressors and pumps.

Application Examples

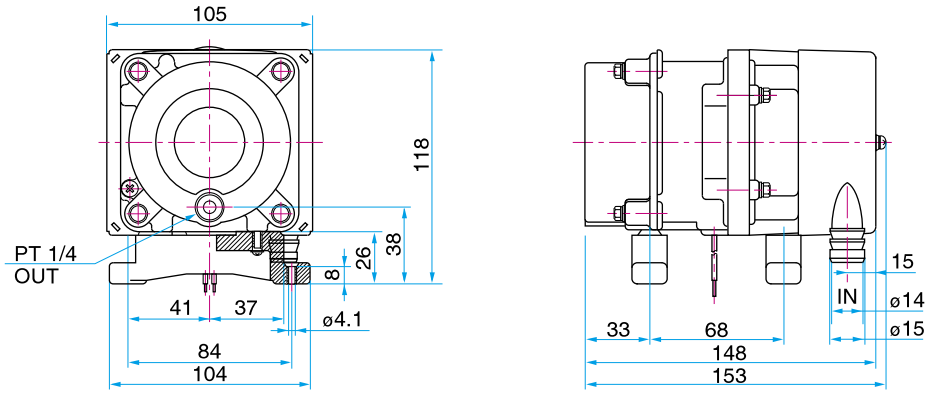


Bed Sore Prevention Mattress



Air Bearing

Sketch Drawing and Mounting Dimensions Diagram (mm)



COMPRESSOR

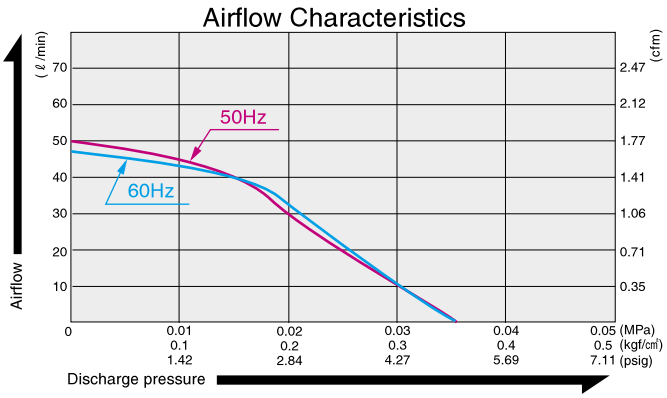
LINEAR

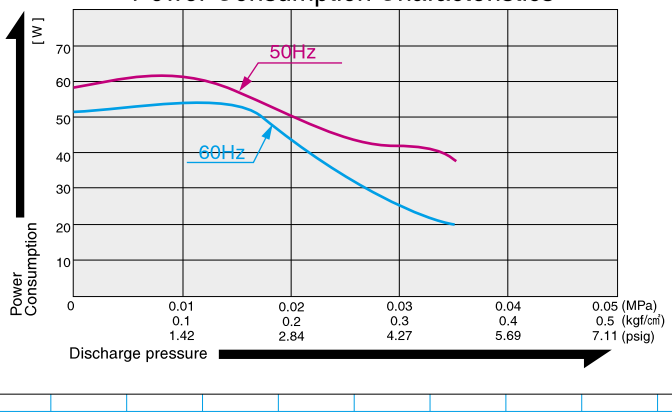
AC0602

Compressor LOW pressure

MOTOR FREE
PISTON SYSTEM

Airflow & Power Consumption



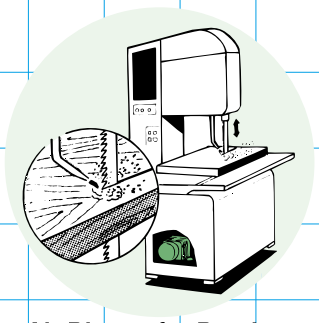


Specifications

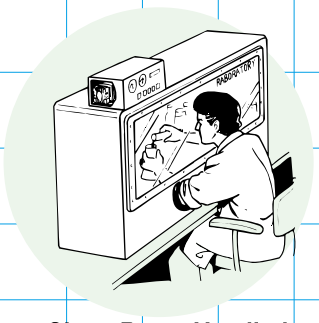
	(SI)	(EURO)	(U.S.A.)
Rated Pressure	0.015 MPa {0.15 kgf/cm²}	0.15 bar	2.13 psig
Rated Airflow	40 ℓ /min		1.41 cfm
Rated Voltage	115 V AC or 230 V AC		
Maximum Pressure	0.035 MPa {0.35 kgf/cm²}	0.35 bar	4.98 psig
Power Consumption	52 W or 58 W		
Rated Frequency	60 Hz or 50 Hz		
Life Expectancy	10,000 hours		
Outlet	ISO Rc 1/4 (female threaded)		
Duty Cycle	Continuous		
Coil Insulation Class	E or its equivalent (JETL) or B for UL		
Mounting Dimensions	68 (L) x 84 (W) mm		2-11/16"(L) x 3-5/16"(W)
Gross Weight	3 kg		6.6 Lbs.
Leadwire Length	250 mm or 350 mm		9-13/16" for 115V

Please read the page of "How to Use This Catalog" first for correct use of compressors and pumps.

Application Examples

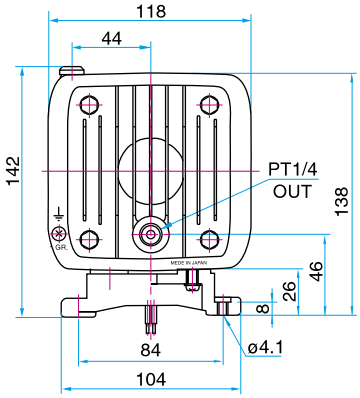


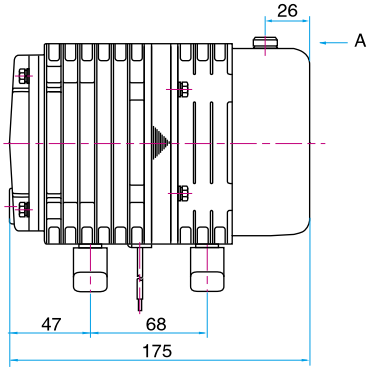
Air Blaster for Bandsaw

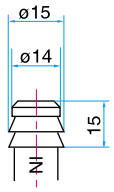


Clean Room Ventilation

Sketch Drawing and Mounting Dimensions Diagram (mm)







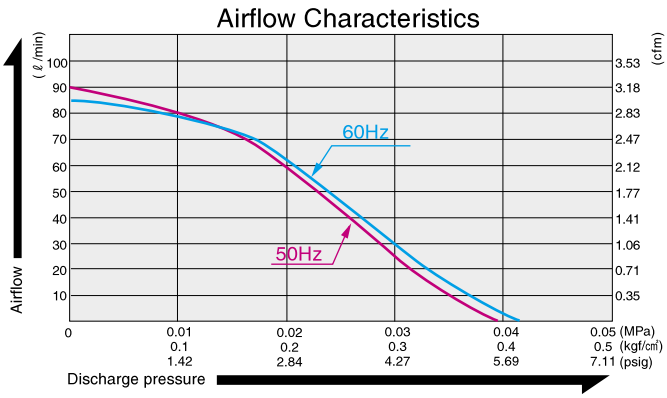
View A

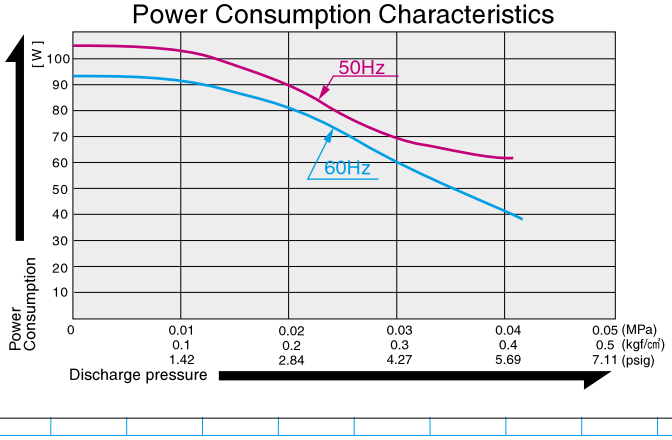
LINEAR
AC0901

Compressor LOW pressure

MOTOR FREE
PISTON SYSTEM

Airflow & Power Consumption



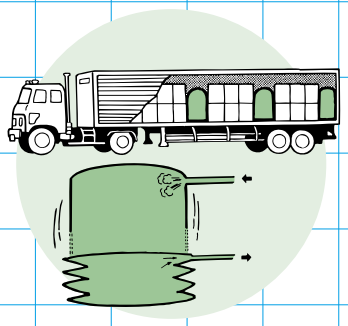


Specifications

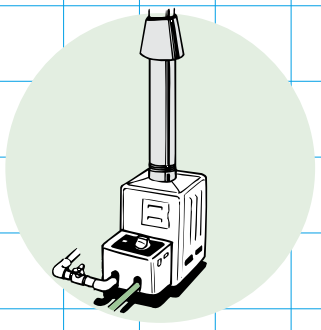
	(SI)	(EURO)	(U.S.A.)
Rated Pressure	0.01 MPa {0.1 kgf/cm²)}	0.1 bar	1.42 psig
Rated Airflow	80 ℓ /min		2.83 cfm
Rated Voltage	115 V AC or 230 V AC		
Maximum Pressure	0.04 MPa {0.4 kgf/cm²}	0.4 bar	5.69 psig
Power Consumption	88 W or 99 W		
Rated Frequency	60 Hz or 50 Hz		
Life Expectancy	10,000 hours		
Outlet	ISO Rc 3/8 (female threaded)		
Duty Cycle	Continuous		
Coil Insulation Class	E or its equivalent (JETL) or B for UL		
Mounting Dimensions	102 (L) x 130 (W) mm		4"(L) x 5-1/8"(W)
Gross Weight	4.9 kg		10.8 Lbs.
Leadwire Length	300 mm		11-13/16" for 115V

Please read the page of "How to Use This Catalog" first for correct use of compressors and pumps.

Application Examples

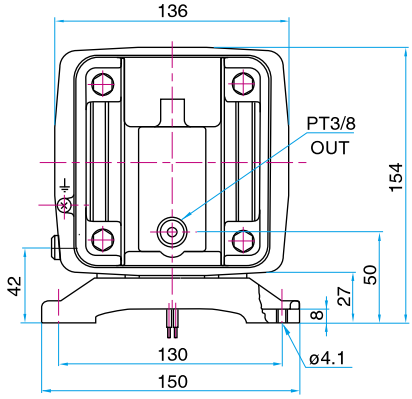


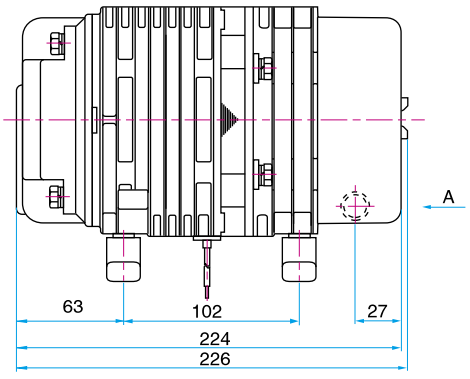
Pneumatic Jack

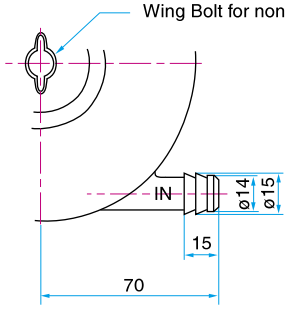


Gas Burner Booster

Sketch Drawing and Mounting Dimensions Diagram (mm)







View A

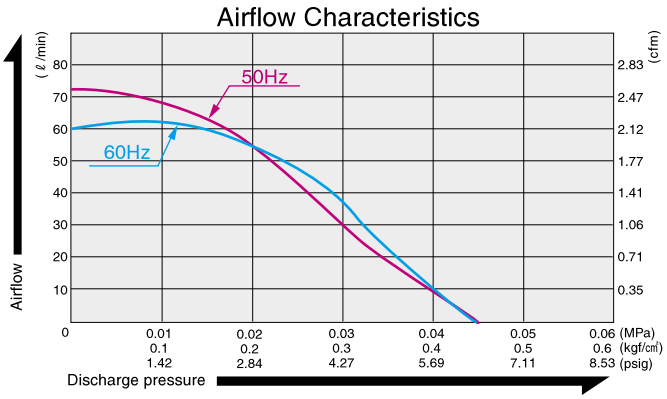
LINEAR

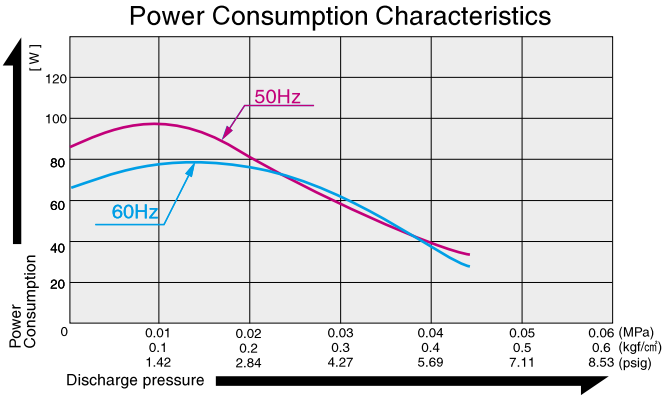
AC0902

Compressor LOW pressure

MOTOR FREE PISTON SYSTEM

Airflow & Power Consumption



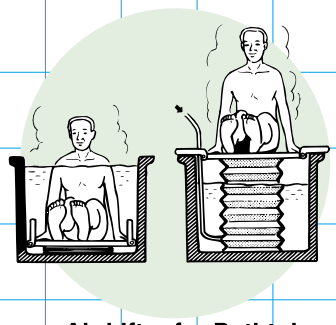


Specifications

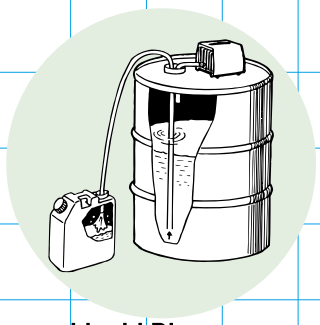
	(SI)	(EURO)	(U.S.A.)
Rated Pressure	0.02 MPa {0.2 kgf/cm²}	0.2 bar	2.84 psig
Rated Airflow	55 ℓ /min		1.94 cfm
Rated Voltage	115 V AC or 230 V AC		
Maximum Pressure	0.045 MPa {0.45 kgf/cm²}	0.45 bar	6.4 psig
Power Consumption	75 W or 85 W		
Rated Frequency	60 Hz or 50 Hz		
Life Expectancy	10,000 hours		
Outlet	ISO Rc 3/8 (female threaded)		
Duty Cycle	Continuous		
Coil Insulation Class	E or its equivalent (JETL) and B for UL		
Mounting Dimensions	102 (L) x 130 (W) mm		4"(L) x 5-1/8"(W)
Gross Weight	4.9 kg		10.8 Lbs.
Leadwire Length	300 mm		11-13/16" for 115V

Please read the page of "How to Use This Catalog" first for correct use of compressors and pumps.

Application Examples

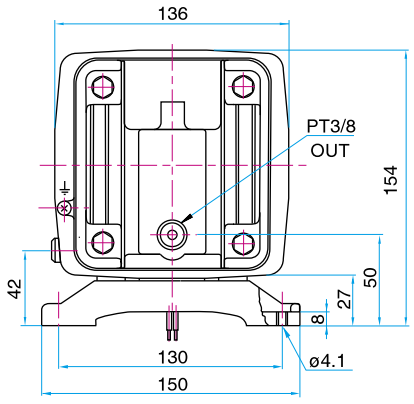


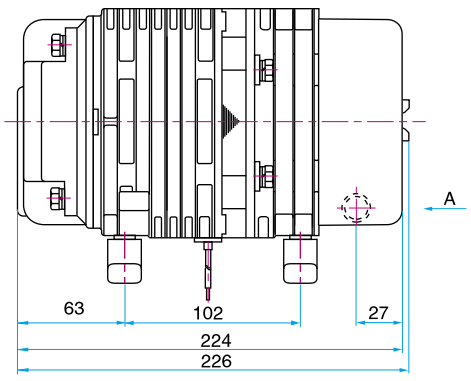
Air Lifter for Bathtub

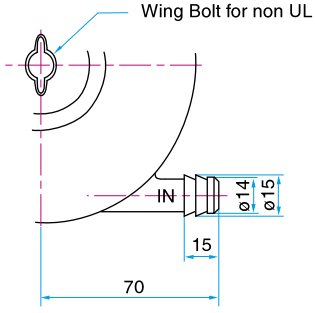


Liquid Dispenser

Sketch Drawing and Mounting Dimensions Diagram (mm)







View A

AIR COMPRESSOR

AC LINEAR

Intermediate Pressure Series

Piston Compressor

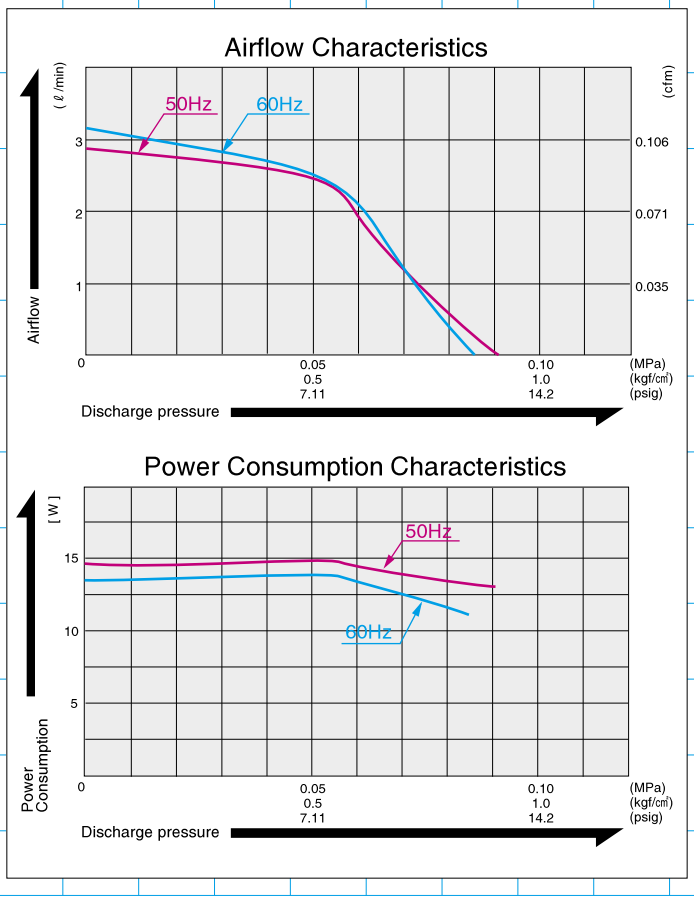
COMPRESSOR

LINEAR
AC0105

Compressor | Intermediate

MOTOR FREE PISTON SYSTEM

Airflow & Power Consumption

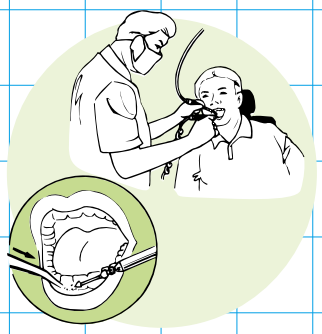


Specifications

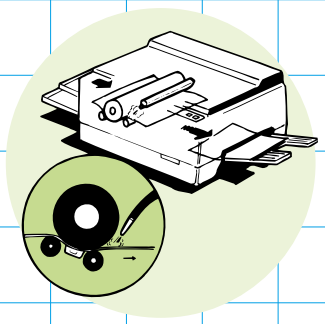
	(SI)	(EURO)	(U.S.A.)
Rated Pressure	0.05 MPa {0.5 kgf/cm²}	0.5 bar	7.1 psig
Rated Airflow	2.5 ℓ /min		0.088 cfm
Rated Voltage	115 V AC or 230 V AC		
Maximum Pressure	0.08 MPa {0.8 kgf/cm²}	0.8 bar	11.4 psig
Power Consumption	14 W or 15 W		
Rated Frequency	60 Hz or 50 Hz		
Life Expectancy	3,000 hours		
Outlet	6 mm O.D. hose nipple		
Duty Cycle	60 minutes		
Coil Insulation Class	E or its equivalent (JETL) or B for UL		
Mounting Dimensions	48 (L) x 62 (W) mm		1-7/8"(L) x 2-7/16"(W)
Gross Weight	0.7 kg		1.54 Lbs.
Leadwire Length	200 mm		7-7/8"

Please read the page of "How to Use This Catalog" first for correct use of compressors and pumps.

Application Examples

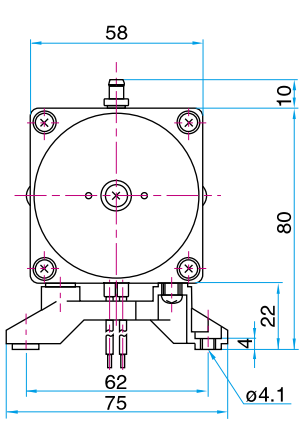


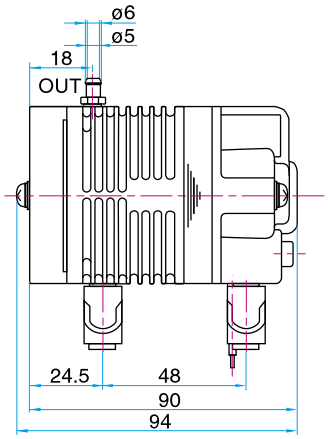
Saline Water Splasher

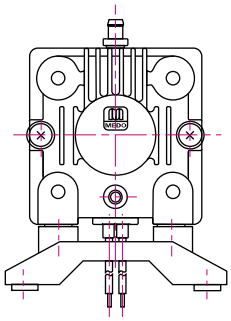


Copy Paper Separator

Sketch Drawing and Mounting Dimensions Diagram (mm)







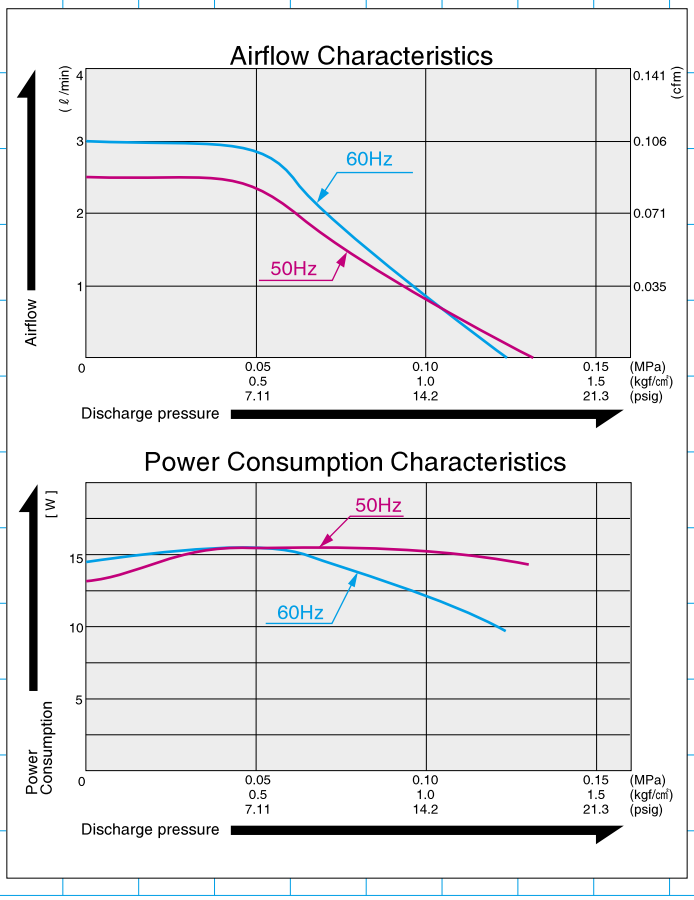
LINEAR

AC0110

Compressor | Intermediate

MOTOR FREE PISTON SYSTEM

Airflow & Power Consumption

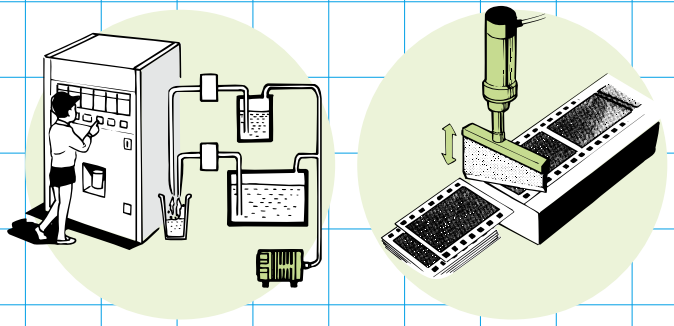


Specifications

	(SI)	(EURO)	(U.S.A.)
Rated Pressure	0.1 MPa {1.0 kgf/cm²}	1.0 bar	14.2 psig
Rated Airflow	0.8 ℓ /min		0.028 cfm
Rated Voltage	115 V AC or 230 V AC		
Maximum Pressure	0.12 MPa {1.2 kgf/cm²}	1.2 bar	17.1 psig
Power Consumption	12 W or 15 W		
Rated Frequency	60 Hz or 50 Hz		
Life Expectancy	3,000 hours		
Outlet	6 mm O.D. hose nipple		
Duty Cycle	30 minutes		
Coil Insulation Class	E or its equivalent (JETL) and B for UL		
Mounting Dimensions	48 (L) x 62 (W) mm		$1\text{-}^{7}/_{8}$"(L) x $2\text{-}^{7}/_{16}$"(W)
Gross Weight	0.7 kg		1.54 Lbs.
Leadwire Length	200 mm		7-7/8"

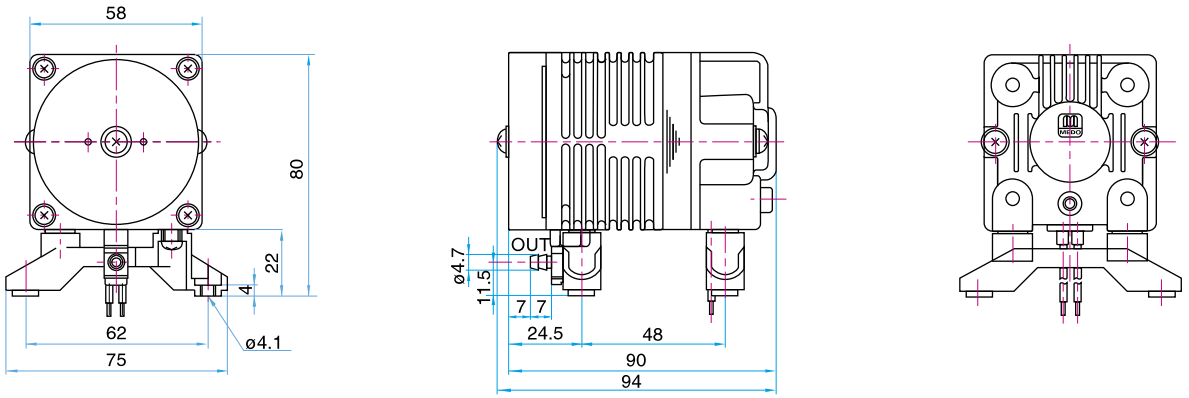
Please read the page of "How to Use This Catalog" first for correct use of compressors and pumps.

Application Examples



Automatic Dispenser **Film Cutter**

Sketch Drawing and Mounting Dimensions Diagram (mm)



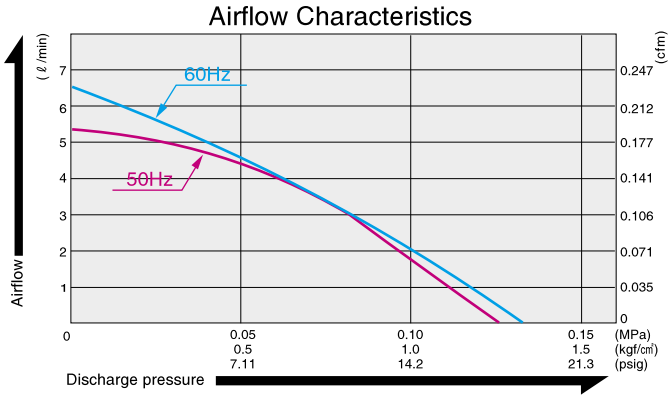
LINEAR

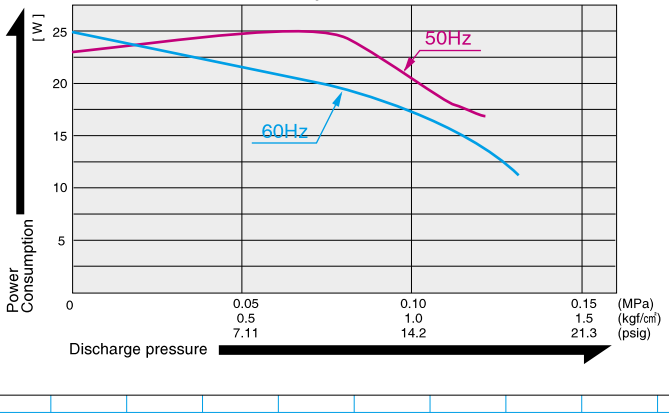
Compressor Intermediate

MOTOR FREE
PISTON SYSTEM

AcO207

Airflow & Power Consumption



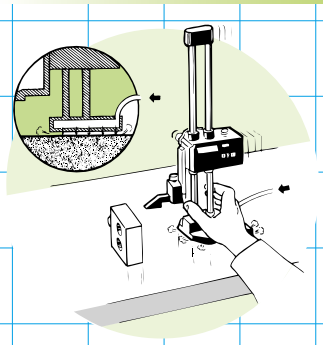


Specifications

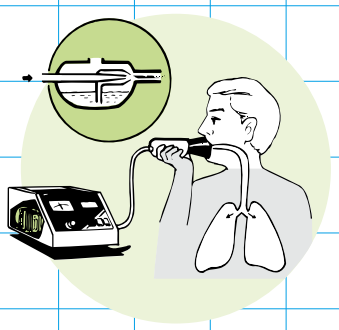
	(SI)	(EURO)	(U.S.A.)
Rated Pressure	0.07 MPa {0.7 kgf/cm²}	0.7 bar	9.96 psig
Rated Airflow	3.5 ℓ /min		0.124 cfm
Rated Voltage	115 V AC or 230 V AC		
Maximum Pressure	0.1 MPa {1.0 kgf/cm²}	1.0 bar	14.2 psig
Power Consumption	20 W or 25 W		
Rated Frequency	60 Hz or 50 Hz		
Life Expectancy	3,000 hours		
Outlet	4.7 mm O.D. hose nipple		
Duty Cycle	Continuous		
Coil Insulation Class	E or its equivalent (JETL) or B for UL		
Mounting Dimensions	75 (L) x 88 (W) mm		2-15/16"(L) x 3-15/32"(W)
Gross Weight	1.7 kg		3.7 Lbs.
Leadwire Length	200 mm		7-7/8"

Please read the page of "How to Use This Catalog" first for correct use of compressors and pumps.

Application Examples

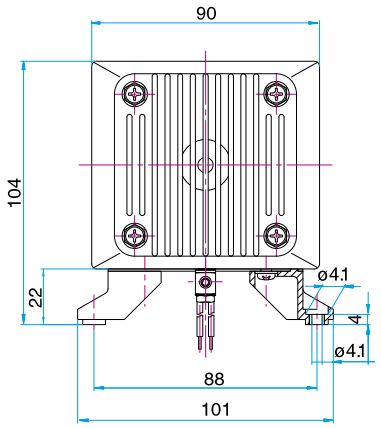


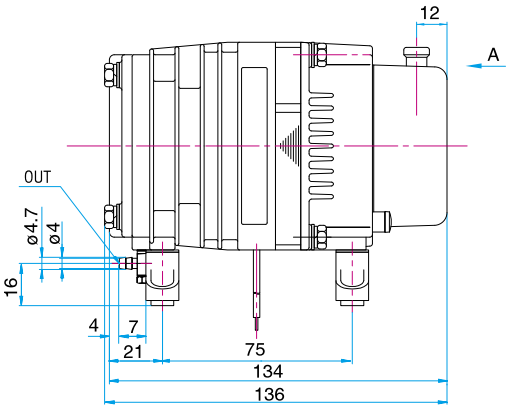
Air Bearing for Precision Machines

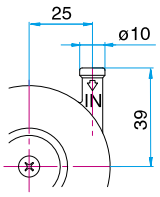


Nebulizer

Sketch Drawing and Mounting Dimensions Diagram (mm)







View A

COMPRESSOR

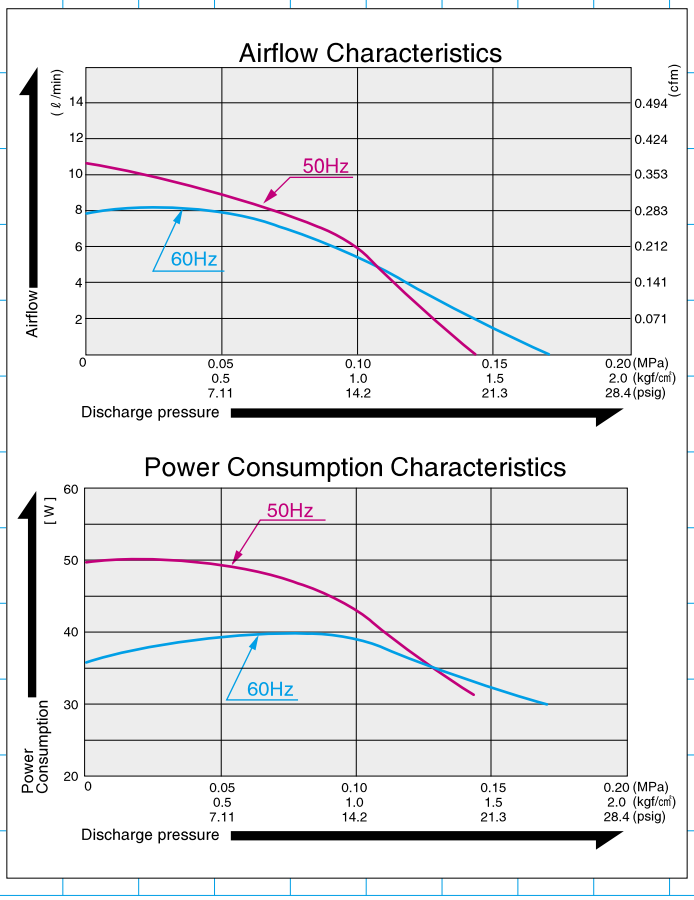
LINEAR

Compressor Intermediate

MOTOR FREE
PISTON SYSTEM

AC0410A

Airflow & Power Consumption



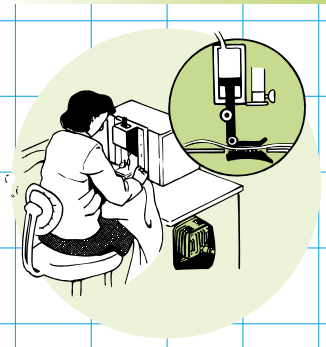
Specifications

	(SI)	(EURO)	(U.S.A.)
Rated Pressure	0.1 MPa {1.0 kgf/㎠}	1.0 bar	14.2 psig
Rated Airflow	5 ℓ /min		0.177 cfm
Rated Voltage	115 V AC or 230 V AC		
Maximum Pressure	0.13 MPa {1.3 kgf/㎠}	1.3 bar	18.5 psig
Power Consumption	39 W or 43 W		
Rated Frequency	60 Hz or 50 Hz		
Life Expectancy	3,000 hours		
Outlet	ISO Rc 1/4 (female threaded)		
Duty Cycle	Continuous		
Coil Insulation Class	E or its equivalent (JETL) or B※		
Mounting Dimensions	68 (L) x 98 (W) mm		2-11/16"(L) x 3-7/8"(W)
Gross Weight	2.1 kg		4.6 Lbs.
Leadwire Length	220 mm or 200 mm		8-5/8"

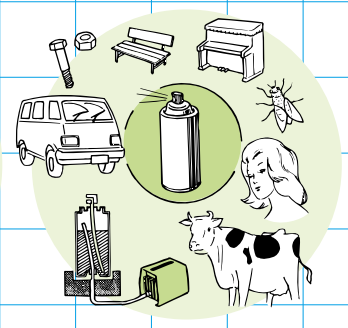
※Will apply for UL.

Please read the page of "How to Use This Catalog" first for correct use of compressors and pumps.

Application Examples

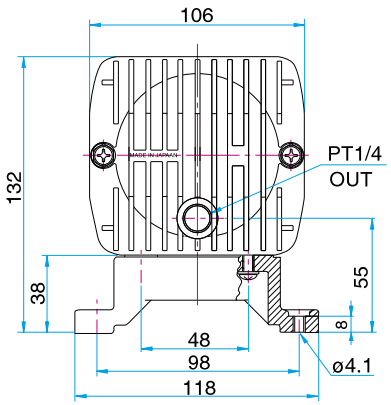


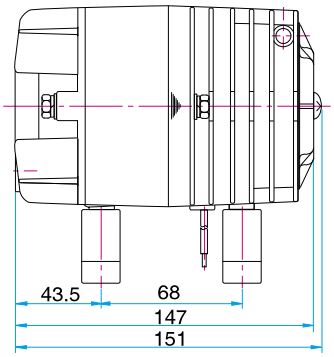
Industrial Sewing Machine



Various Aerosol Sprays

Sketch Drawing and Mounting Dimensions Diagram (mm)





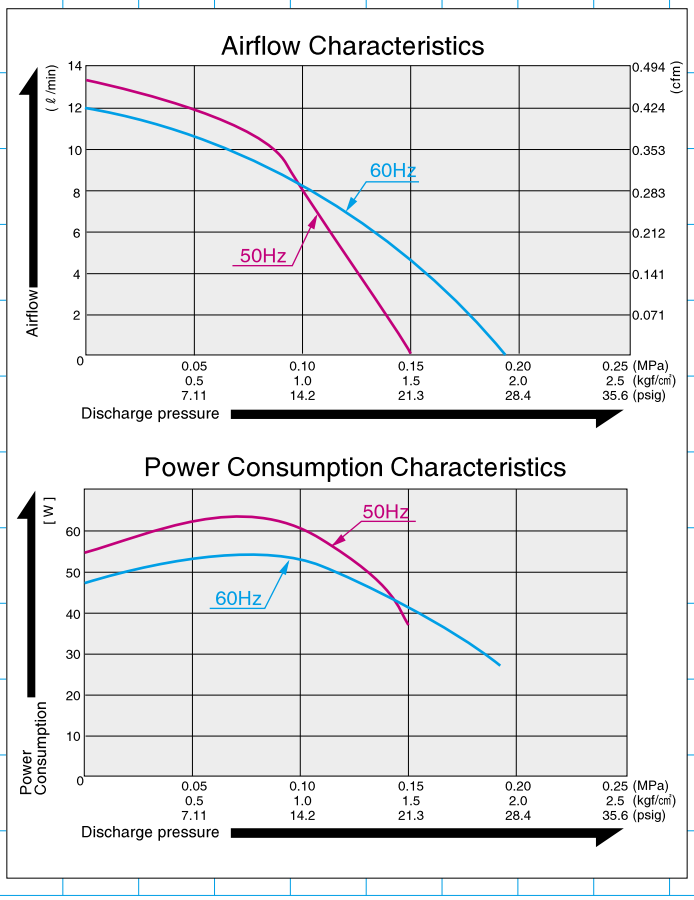
LINEAR

AC0610

Compressor Intermediate

MOTOR FREE
PISTON SYSTEM

Airflow & Power Consumption

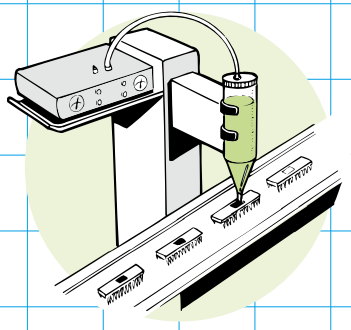


Specifications

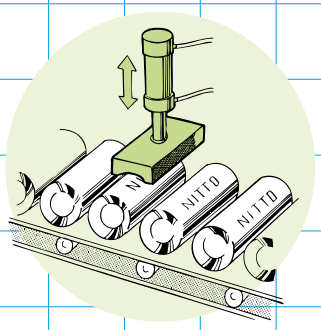
	(SI)	(EURO)	(U.S.A.)
Rated Pressure	0.1 MPa {1.0 kgf/cm²}	1.0 bar	14.2 psig
Rated Airflow	8 ℓ /min		0.283 cfm
Rated Voltage	115 V AC or 230 V AC		
Maximum Pressure	0.15 MPa {1.5 kgf/cm²}	1.5 bar	21.3 psig
Power Consumption	52 W or 60 W		
Rated Frequency	60 Hz or 50 Hz		
Life Expectancy	3,000 hours		
Outlet	ISO Rc 1/4 (female threaded)		
Duty Cycle	Continuous		
Coil Insulation Class	E or its equivalent (JETL) and B for UL		
Mounting Dimensions	68 (L) x 84 (W) mm		2-11/16"(L) x 3-5/16"(W)
Gross Weight	3.2 kg		7.1 Lbs.
Leadwire Length	270 mm or 200 mm		7-7/8" for 115 V

Please read the page of "How to Use This Catalog" first for correct use of compressors and pumps.

Application Examples

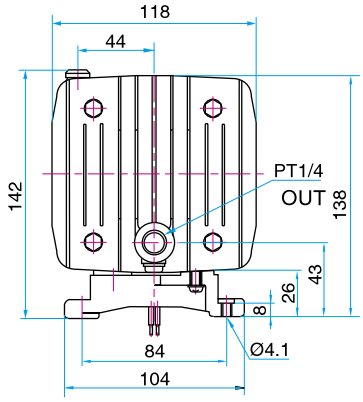


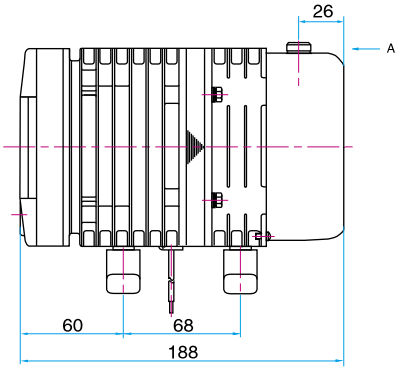
Dispenser

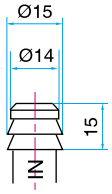


Automatic Stamper

Sketch Drawing and Mounting Dimensions Diagram (mm)







View A

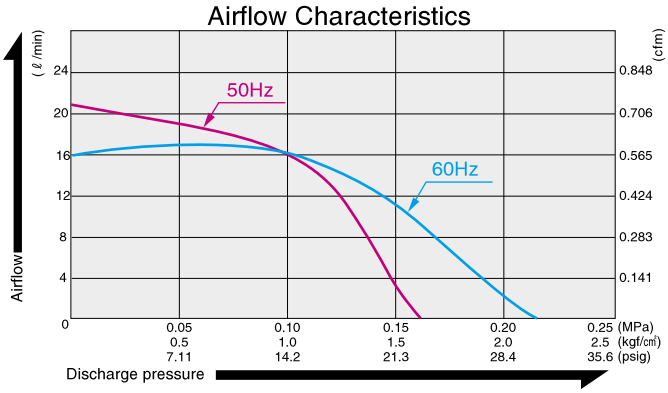
LINEAR

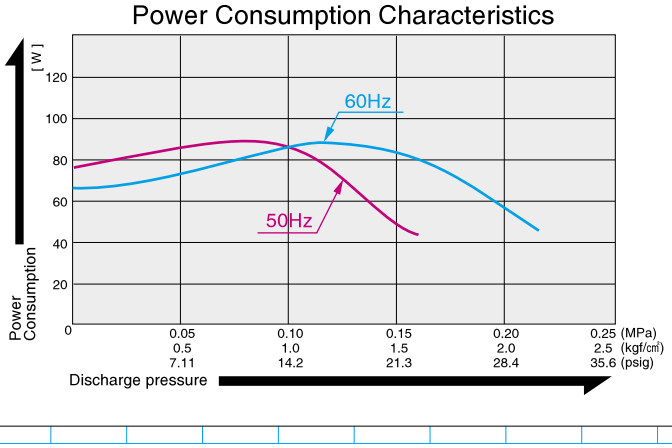
AC0910

Compressor Intermediate

MOTOR FREE
PISTON SYSTEM

Airflow & Power Consumption



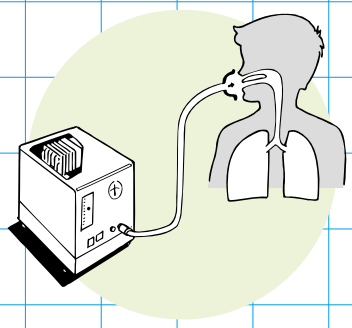


Specifications

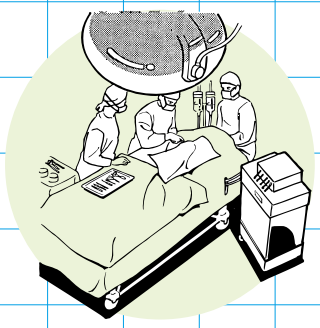
	(SI)	(EURO)	(U.S.A.)
Rated Pressure	0.1 MPa {1.0 kgf/cm²}	1.0 bar	14.2 psig
Rated Airflow	16 ℓ /min		0.565 cfm
Rated Voltage	115 V AC or 230 V AC		
Maximum Pressure	0.15 MPa {1.5 kgf/cm²}	1.5 bar	21.3 psig
Power Consumption	85 W or 90 W		
Rated Frequency	60 Hz or 50 Hz		
Life Expectancy	3,000 hours		
Outlet	ISO Rc 1/4 (female threaded)		
Duty Cycle	Continuous		
Coil Insulation Class	E or its equivalent (JETL) and B for UL		
Mounting Dimensions	102 (L) x 130 (W) mm		4"(L) x 5-1/8"(W)
Gross Weight	4.9 kg		10.8 Lbs.
Leadwire Length	150 mm or 320 mm		5-7/8" for 115 V

Please read the page of "How to Use This Catalog" first for correct use of compressors and pumps.

Application Examples

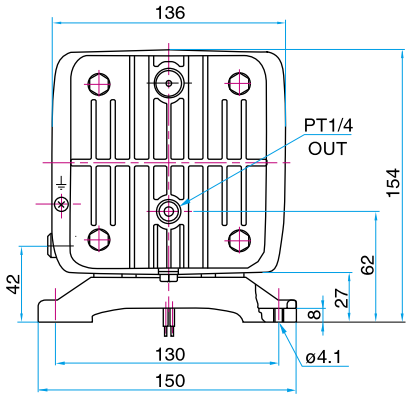


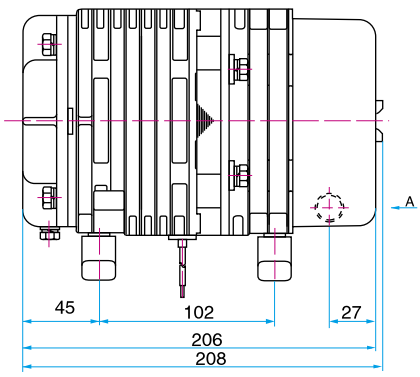
Oxygen Concentrator

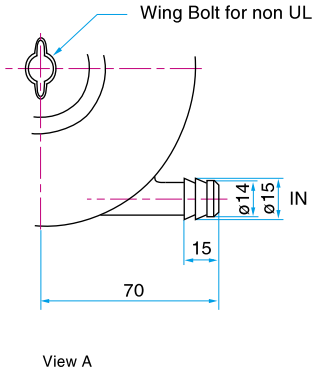


I.V. Balloon Pump

Sketch Drawing and Mounting Dimensions Diagram (mm)







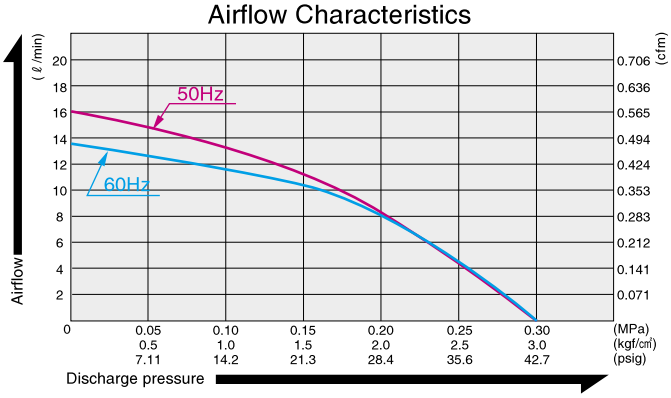
LINEAR

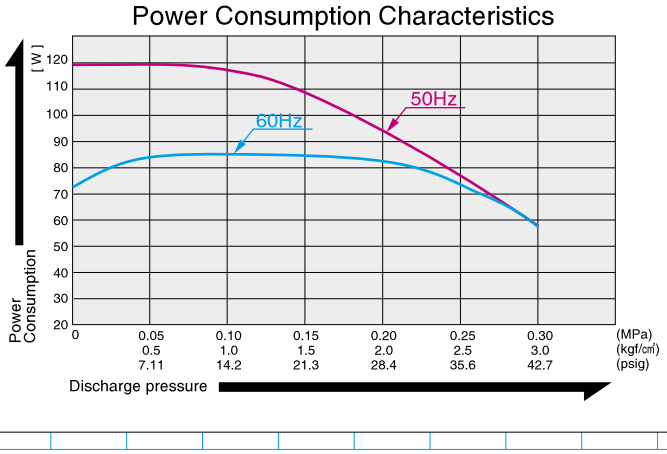
Compressor Intermediate

MOTOR FREE
PISTON SYSTEM

AC0920

Airflow & Power Consumption



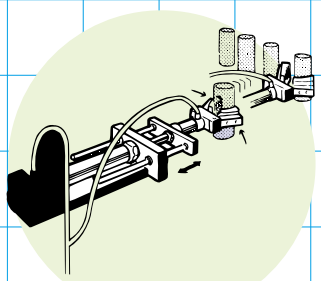


Specifications

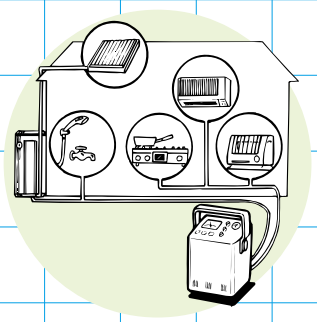
	(SI)	(EURO)	(U.S.A.)
Rated Pressure	0.2 MPa {2.0 kgf/cm²}	2.0 bar	28.4 psig
Rated Airflow	8 ℓ /min		0.283 cfm
Rated Voltage	115 V AC or 230 V AC		
Maximum Pressure	0.3 MPa {3.0 kgf/cm²}	3.0 bar	42.6 psig
Power Consumption	80 W or 100 W		
Rated Frequency	60 Hz or 50 Hz		
Life Expectancy	3,000 hours		
Outlet	ISO Rc 1/4 (female threaded)		
Duty Cycle	30 minutes		
Coil Insulation Class	E or its equivalent (JETL)		
Mounting Dimensions	102 (L) x 130 (W) mm		4"(L) x 5-1/8"(W)
Gross Weight	5 kg		11 Lbs.
Leadwire Length	150 mm		5-7/8" for 115V

Please read the page of "How to Use This Catalog" first for correct use of compressors and pumps.

Application Examples

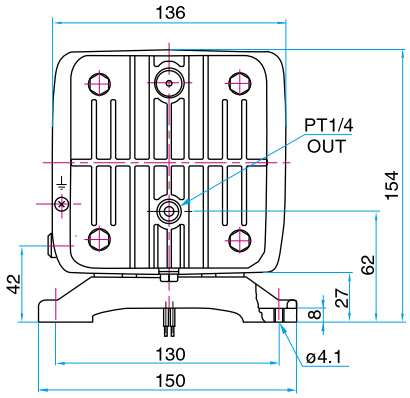


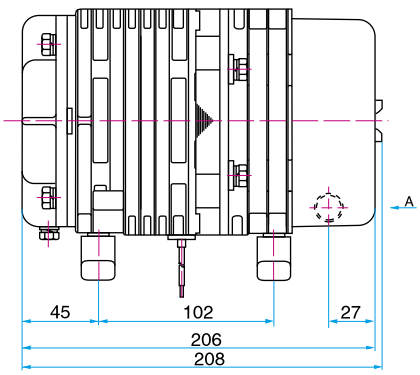
Air Cylinder/Chuck Driver

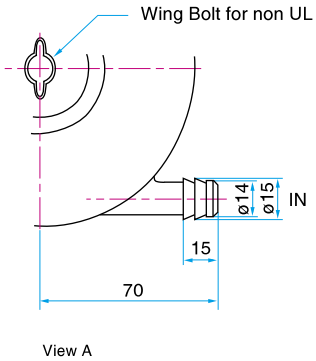


Leakage Tester

Sketch Drawing and Mounting Dimensions Diagram (mm)







AC LINEAR

Piston Vacuum Pump

Compressor

Vacuum

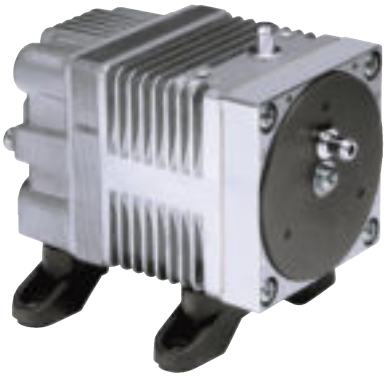
VACUUM PUMP

LINEAR

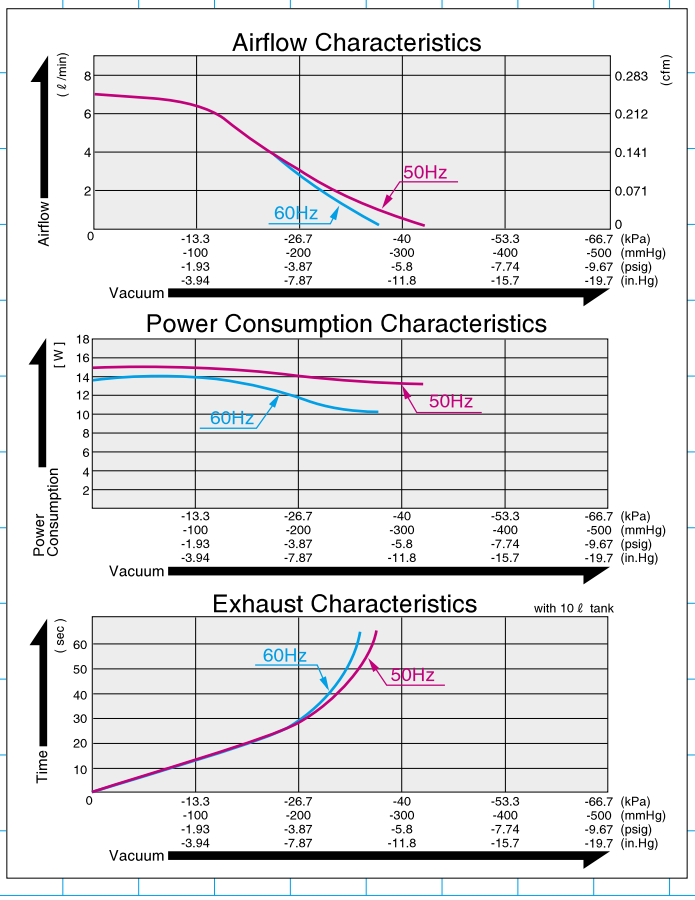
VP0125

Compressor Vacuum

MOTOR FREE
PISTON SYSTEM



Airflow & Power Consumption

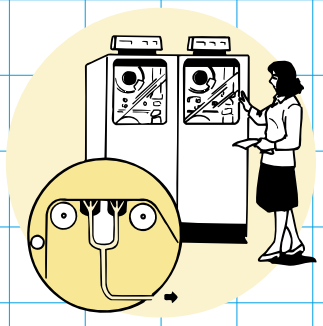


Specifications

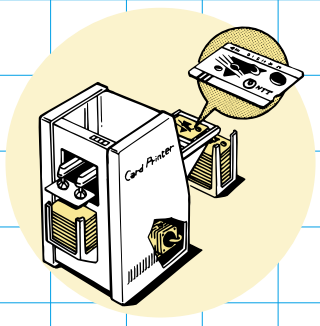
	(SI)	(EURO)	(U.S.A.)
Attainable Vacuum	-33.3 kPa {-250 mmHg}	-333 mbar	-9.84 in.Hg
Free Air Displacement	7 ℓ /min		0.247 cfm
Rated Voltage	115 V AC or 230 V AC		
Power Consumption	14 W or 15 W		
Rated Frequency	60 Hz or 50 Hz		
Life Expectancy	3,000 hours		
Inlet	6 mm O.D. hose nipple		
Outlet	6 mm O.D. hose nipple		
Duty Cycle	Continuous		
Coil Insulation Class	E or its equivalent (JETL) and B for UL		
Mounting Dimensions	48 (L) x 62 (W) mm		1-7/8"(L) x 2-7/16"(W)
Gross Weight	0.7 kg		1.54 Lbs.
Leadwire Length	200 mm		7-7/8"

Please read the page of "How to Use This Catalog" first for correct use of compressors and pumps.

Application Examples

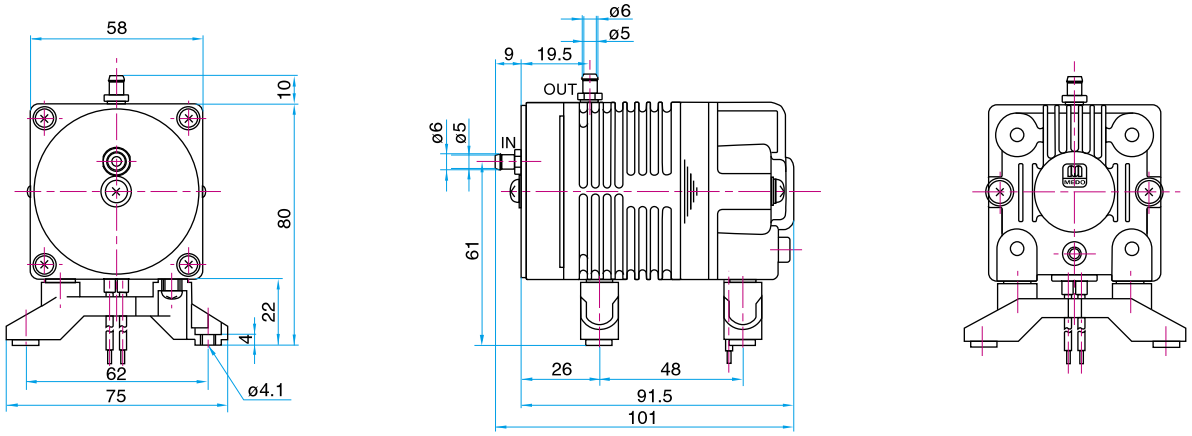


Tape Positioning



Paper Card Dispenser

Sketch Drawing and Mounting Dimensions Diagram (mm)



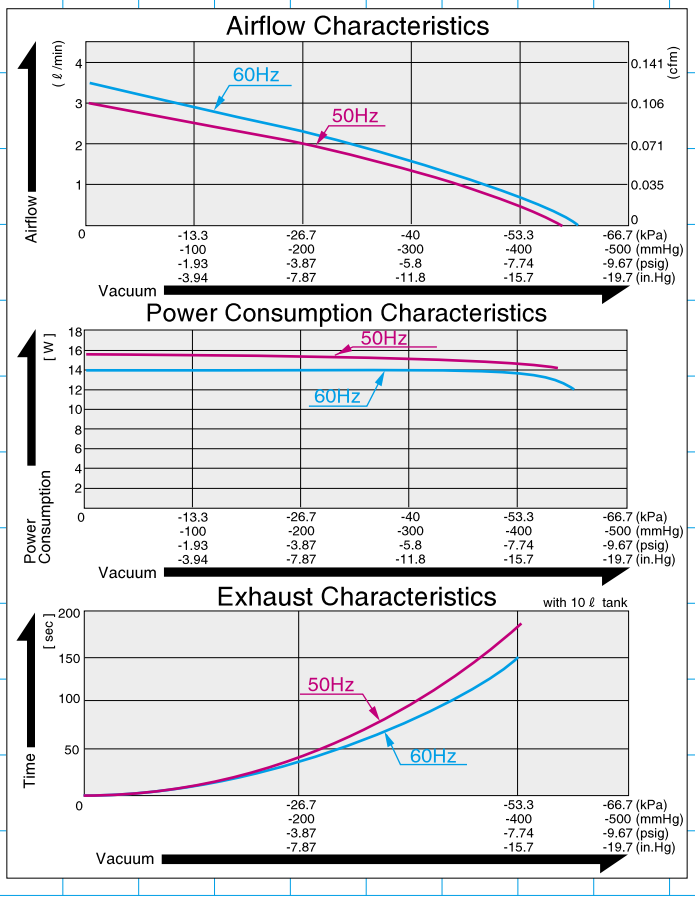
LINEAR

Compressor Vacuum

MOTOR FREE
PISTON SYSTEM

VP0140

Airflow & Power Consumption



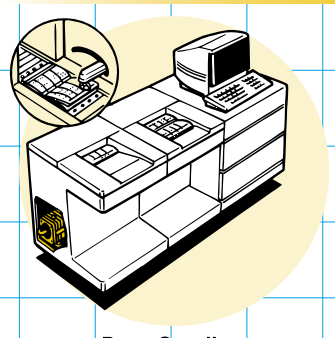
Specifications

	(SI)	(EURO)	(U.S.A.)
Attainable Vacuum	-53.3 kPa {-400 mmHg}	-533 mbar	-15.7 in.Hg
Free Air Displacement	3 ℓ /min		0.106 cfm
Rated Voltage	115 V AC or 230 V AC		
Power Consumption	14 W or 15 W		
Rated Frequency	60 Hz or 50 Hz		
Life Expectancy	3,000 hours		
Inlet	6 mm O.D. hose nipple		
Outlet	6 mm O.D. hose nipple		
Duty Cycle	60 minutes		
Coil Insulation Class	E or its equivalent (JETL) and B for UL		
Mounting Dimensions	48 (L) x 62 (W) mm		1-7/8"(L) x 2-7/16"(W)
Gross Weight	0.7 kg		1.54 Lbs.
Leadwire Length	200 mm		7-7/8"

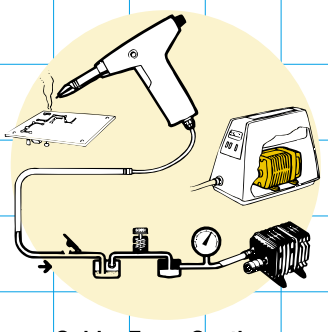
Please read the page of "How to Use This Catalog" first for correct use of compressors and pumps.

*Operations at higher than -53.5kPa need an additional leak valve or relief valve on the inlet piping.

Application Examples

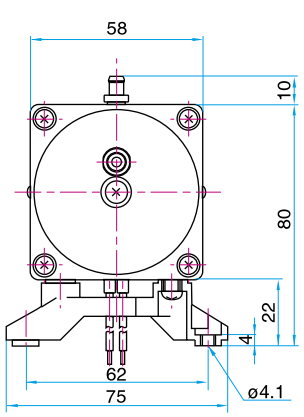


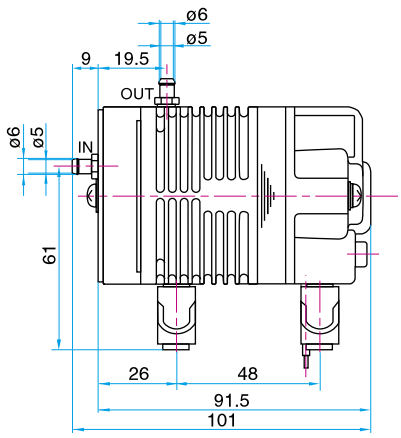
Page Scroller

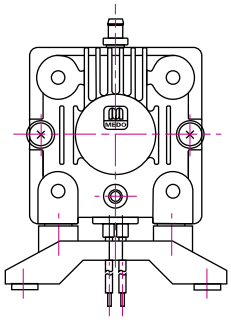


Solder Fume Suction

Sketch Drawing and Mounting Dimensions Diagram (mm)







VACUUM PUMP

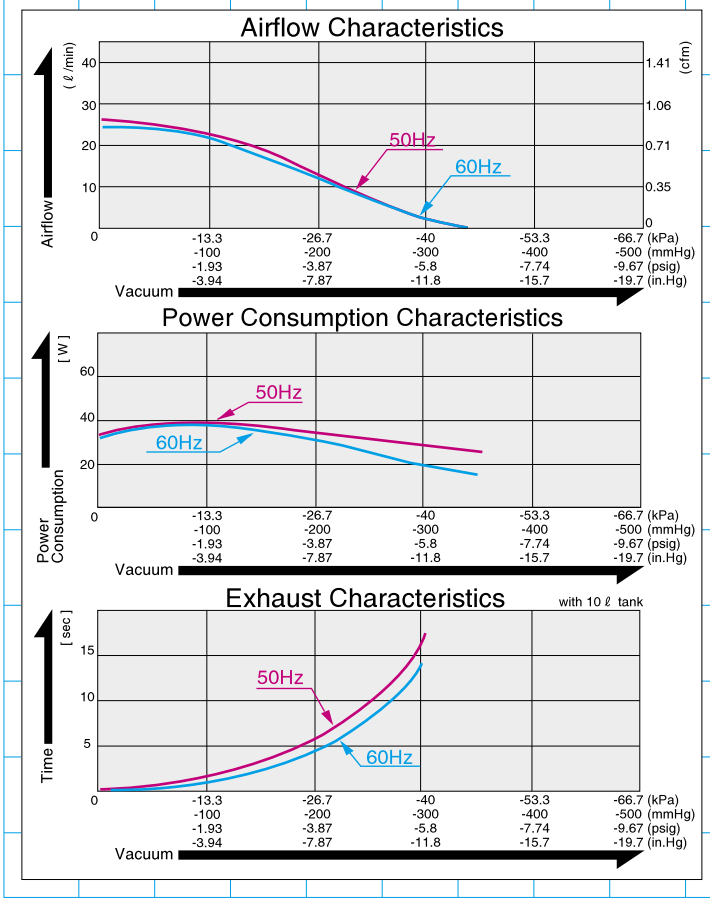
LINEAR

Compressor Vacuum

MOTOR FREE
PISTON SYSTEM

VP0435A

Airflow & Power Consumption

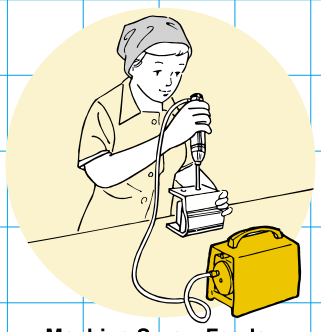


Specifications

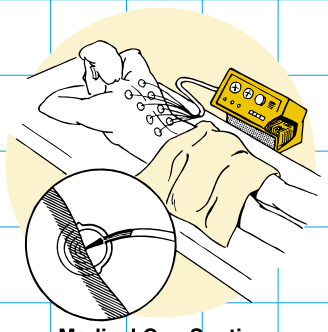
	(SI)	(EURO)	(U.S.A.)
Attainable Vacuum	-46.7 kPa {-350 mmHg}	-467 mbar	-13.78 in.Hg
Free Air Displacement	25 ℓ /min		0.88 cfm
Rated Voltage	115 V AC or 230 V AC		
Power Consumption	39 W		
Rated Frequency	60 Hz or 50 Hz		
Life Expectancy	3,000 hours		
Inlet	ISO Rc 1/4 (female threaded)		
Outlet	ISO Rc 1/4 (female threaded)		
Duty Cycle	Continuous		
Coil Insulation Class	B or its equivalent (JETL) / UL		
Mounting Dimensions	68 (L) x 84 (W) mm		$2\text{-}^{11}/_{16}$"(L) x $3\text{-}^{5}/_{16}$"(W)
Gross Weight	2.3 kg		5.1 Lbs.
Leadwire Length	200 mm		7-7/8"

Please read the page of "How to Use This Catalog" first for correct use of compressors and pumps.

Application Examples

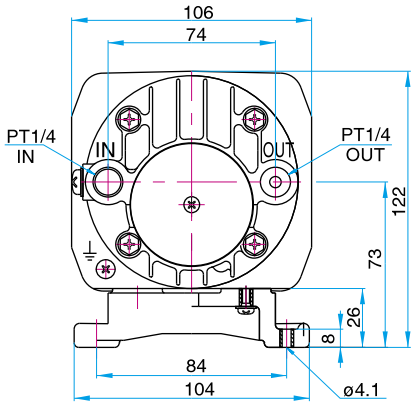


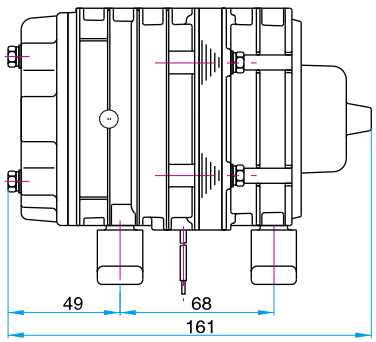
Machine Screw Feeder



Medical Cup Suction

Sketch Drawing and Mounting Dimensions Diagram (mm)





VACUUM PUMP

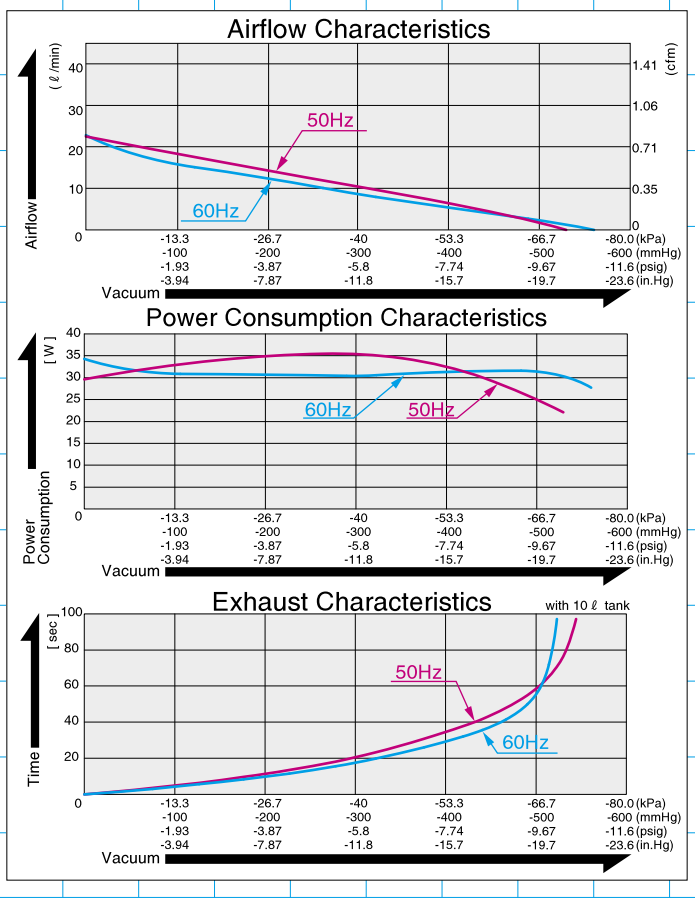
LINEAR

Compressor Vacuum

MOTOR FREE
PISTON SYSTEM

VP0450

Airflow & Power Consumption

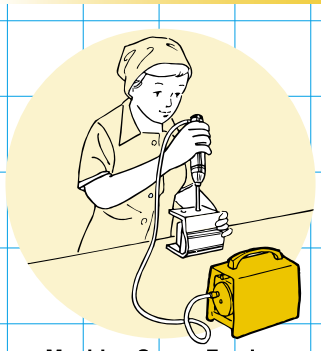


Specifications

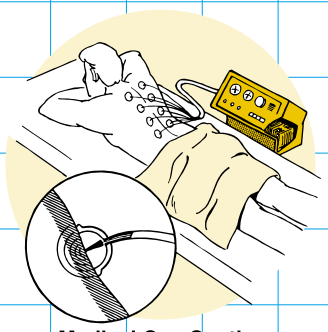
	(SI)	(EURO)	(U.S.A.)
Attainable Vacuum	-66.7 kPa {-500 mmHg}	-667 mbar	-19.7 in.Hg
Free Air Displacement	18 ℓ /min		0.64 cfm
Rated Voltage	120 V AC or 230 V AC		
Power Consumption	34 W or 35 W		
Rated Frequency	60 Hz or 50 Hz		
Life Expectancy	10,000 hours		
Inlet	ISO Rc 1/4 (female threaded)		
Outlet	ISO Rc 1/4 (female threaded)		
Duty Cycle	Continuous		
Coil Insulation Class	E or its equivalent (JETL)		
Mounting Dimensions	85 (L) x 88 (W) mm		$3\text{-}^{11}/_{32}$"(L) x $3\text{-}^{15}/_{32}$"(W)
Gross Weight	2.2 kg		4.9 Lbs.
Leadwire Length	300 mm		11-13/16"

Please read the page of "How to Use This Catalog" first for correct use of compressors and pumps.

Application Examples

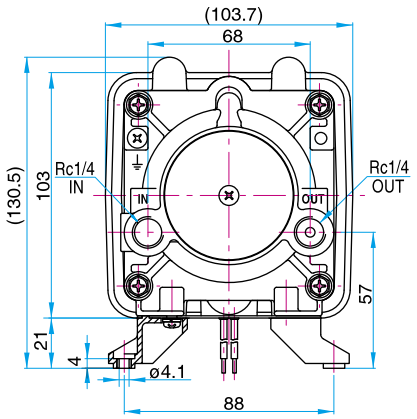


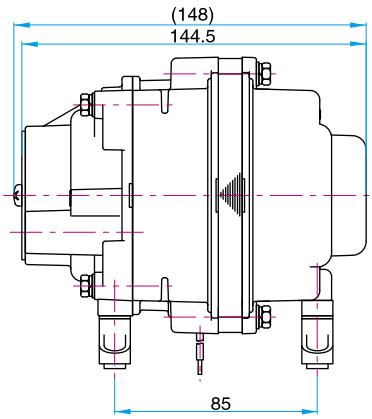
Machine Screw Feeder



Medical Cup Suction

Sketch Drawing and Mounting Dimensions Diagram (mm)





VACUUM PUMP

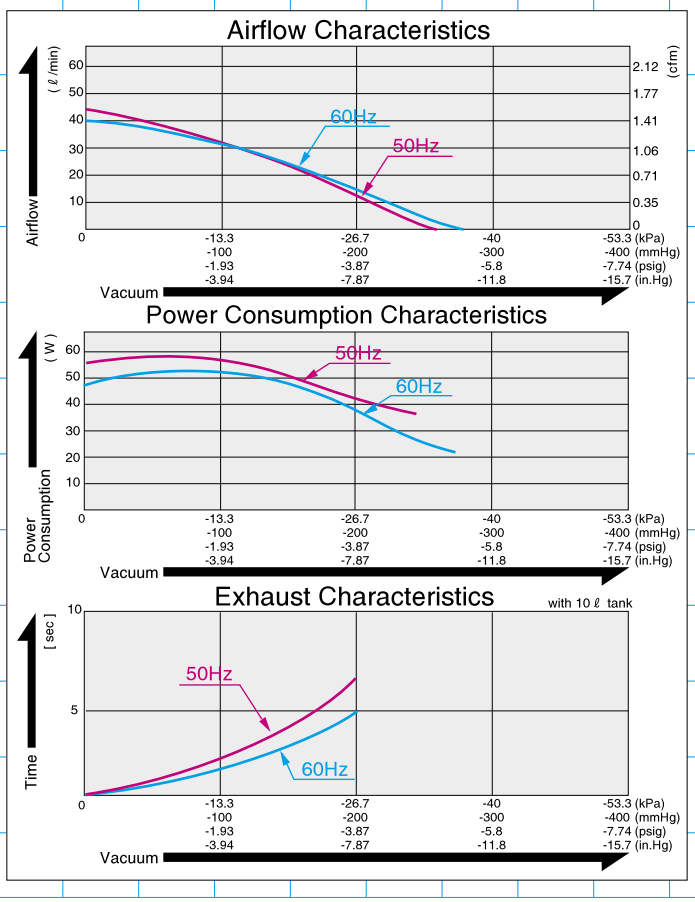
LINEAR

Compressor Vacuum

MOTOR FREE
PISTON SYSTEM

VP0625

Airflow & Power Consumption

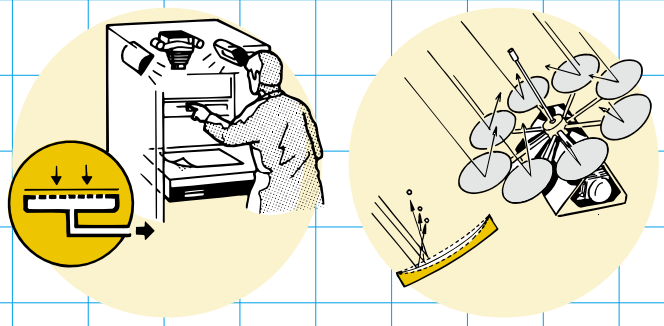


Specifications

	(SI)	(EURO)	(U.S.A.)
Attainable Vacuum	-33.3 kPa {-250 mmHg}	-333 mbar	-9.84 in.Hg
Free Air Displacement	40 ℓ /min		1.41 cfm
Rated Voltage	115 V AC or 230 V AC		
Power Consumption	56 W or 60 W		
Rated Frequency	60 Hz or 50 Hz		
Life Expectancy	10,000 hours		
Inlet	15 mm O.D. hose nipple		
Outlet	ISO Rc 1/4 (female threaded)		
Duty Cycle	Continuous		
Coil Insulation Class	E or its equivalent (JETL) or B for UL		
Mounting Dimensions	68 (L) x 84 (W) mm		2-11/16"(L) x 3-5/16"(W)
Gross Weight	3 kg		6.6 Lbs.
Leadwire Length	235 mm or 320 mm		9-13/16"

Please read the page of "How to Use This Catalog" first for correct use of compressors and pumps.

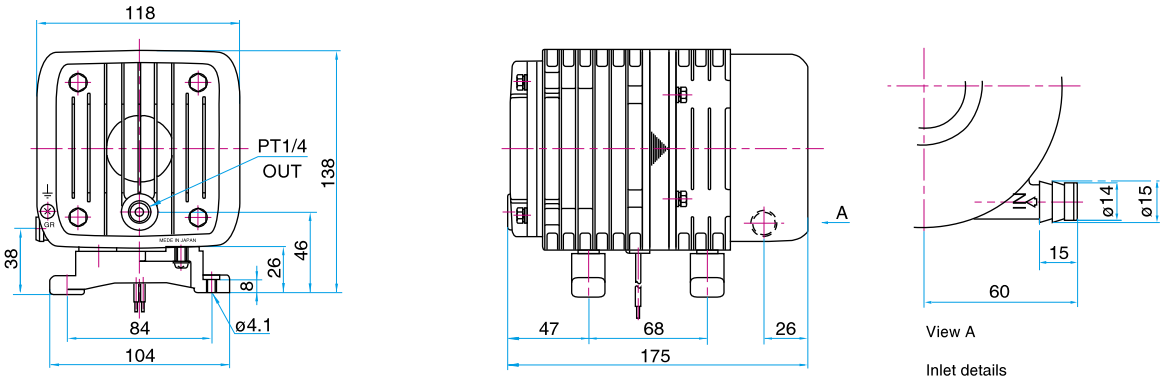
Application Examples



Microfiche Camera

Solar Collection Screen

Sketch Drawing and Mounting Dimensions Diagram (mm)



VACUUM PUMP

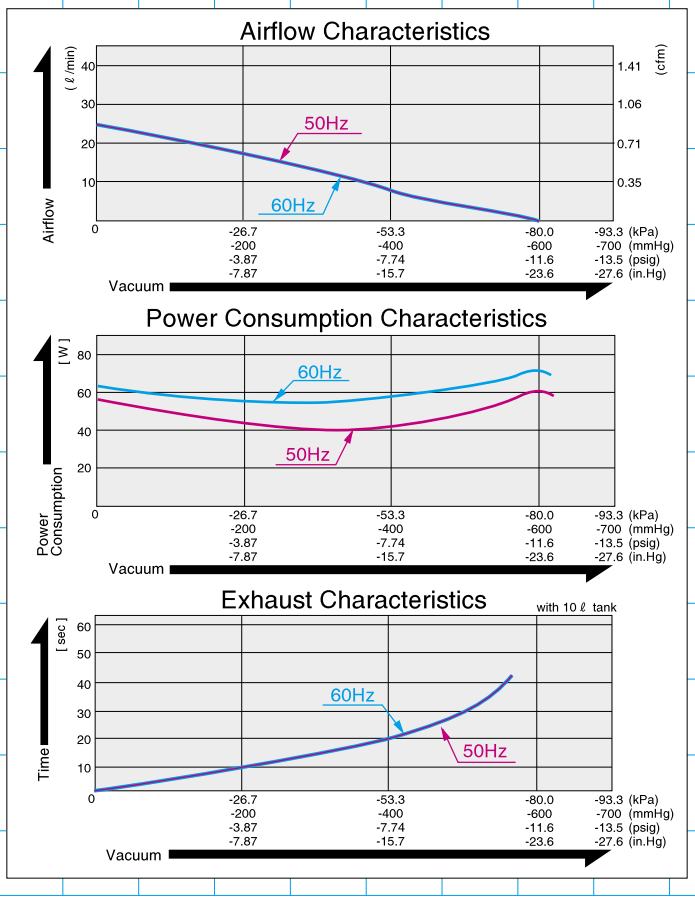
LINEAR

Compressor Vacuum

MOTOR FREE
PISTON SYSTEM

VP0660

Airflow & Power Consumption

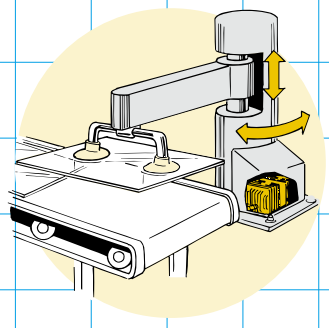


Specifications

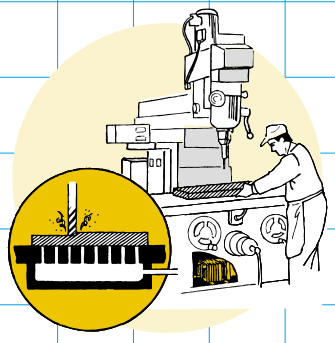
	(SI)	(EURO)	(U.S.A.)
Attainable Vacuum	-80 kPa {-600 mmHg}	-800 mbar	-23.6 in.Hg
Free Air Displacement	25 ℓ /min		0.88 cfm
Rated Voltage	115 V AC or 230 V AC		
Power Consumption	70 W or 60 W		
Rated Frequency	60 Hz or 50 Hz		
Life Expectancy	6,000 hours		
Inlet	ISO Rc 1/4 (female threaded)		
Outlet	ISO Rc 1/4 (female threaded)		
Duty Cycle	Continuous		
Coil Insulation Class	E or its equivalent (JETL) or B for UL		
Mounting Dimensions	102 (L) x 130 (W) mm		4"(L) x 5-1/8"(W)
Gross Weight	5 kg		11 Lbs.
Leadwire Length	300 mm or 600 mm		5-7/8"

Please read the page of "How to Use This Catalog" first for correct use of compressors and pumps.
*Operations at higher than -80kPa need an additional leak valve or relief valve on the inlet piping.

Application Examples

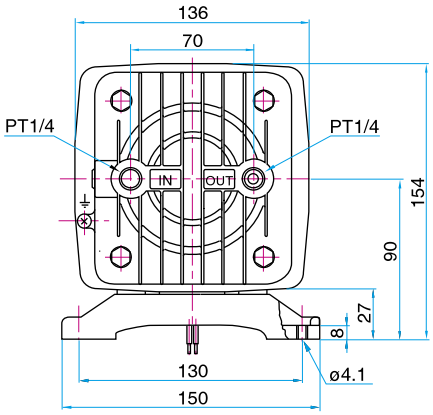


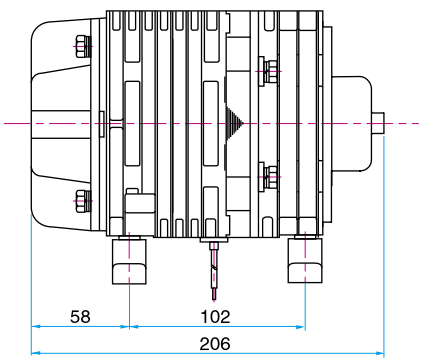
Material Handling Machine



Vacuum Chucking

Sketch Drawing and Mounting Dimensions Diagram (mm)





VACUUM PUMP

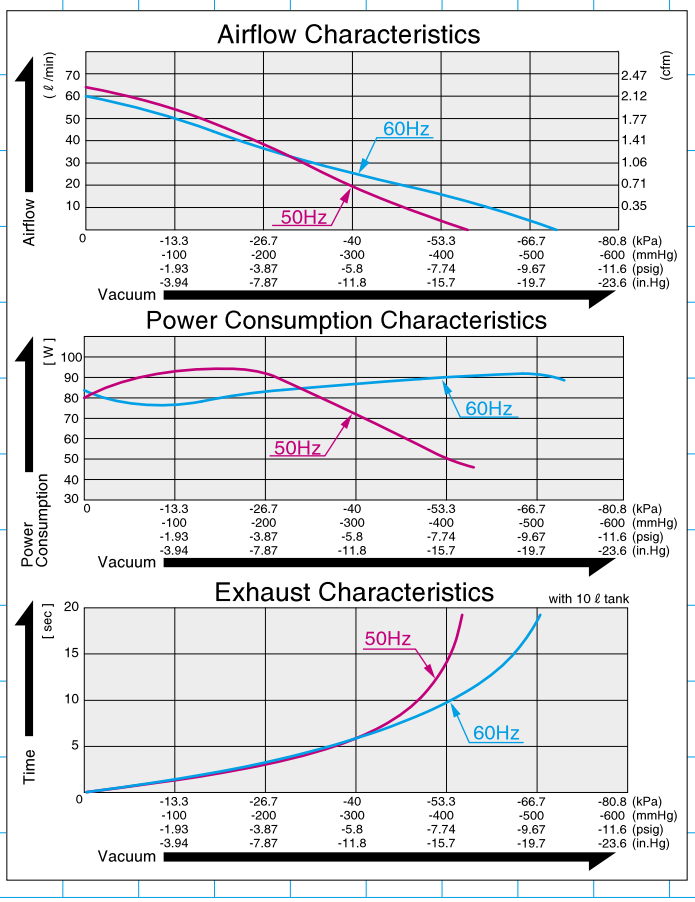
LINEAR

Compressor Vacuum

MOTOR FREE
PISTON SYSTEM

VP0940

Airflow & Power Consumption



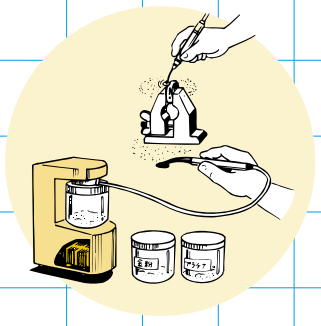
Specifications

	(SI)	(EURO)	(U.S.A.)
Attainable Vacuum	-53.3 kPa {-400 mmHg}	-533 mbar	-15.7 in.Hg
Free Air Displacement	60 ℓ /min		2.12 cfm
Rated Voltage	120 V AC or 230 V AC		
Power Consumption	95 W		
Rated Frequency	60 Hz & 50 Hz		
Life Expectancy	10,000 hours		
Inlet	ISO Rc 1/4 (female threaded)		
Outlet	ISO Rc 1/4 (female threaded)		
Duty Cycle	Continuous		
Coil Insulation Class	B or its equivalent (JETL)		
Mounting Dimensions	102 (L) x 130 (W) mm		4"(L) x 5-1/8"(W)
Gross Weight	4.55 kg		10.0 Lbs.
Leadwire Length	300 mm		11-13/16"

Please read the page of "How to Use This Catalog" first for correct use of compressors and pumps.
*Operations at higher than -53.5kPa need an additional leak valve or relief valve on the inlet piping.

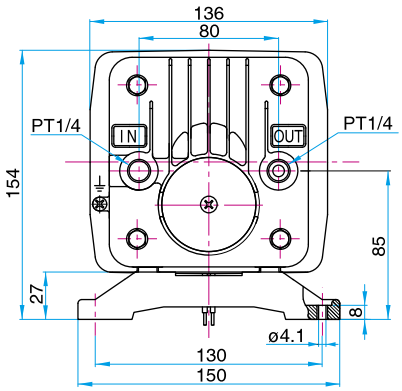
Application Examples

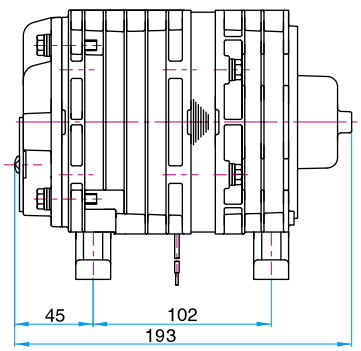
Drafter Sheet Suction



Metal Powder Recycling

Sketch Drawing and Mounting Dimensions Diagram (mm)





LA BLOWER

AC LINEAR

Piston Blower

LA-28B
LA-45B
P45

LA-60B
LA-80B
P46

LA-100
LA-120
P47

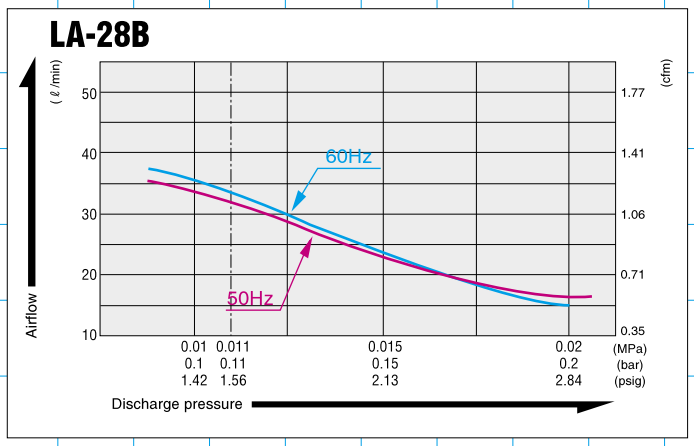
Blower

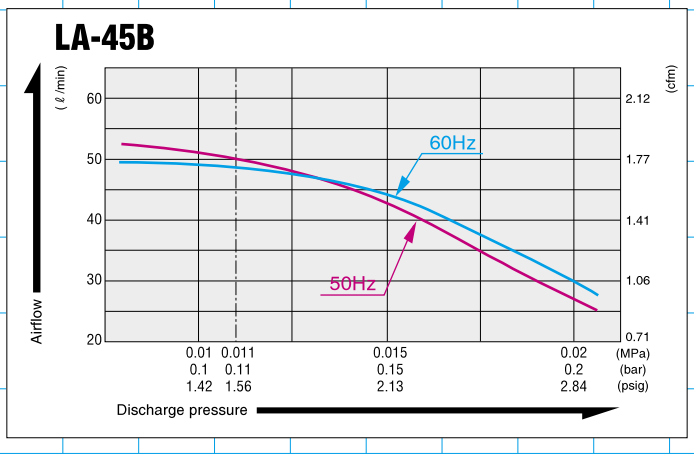
LINEAR

MOTOR FREE
PISTON SYSTEM

LA-28B LA-45B

Airflow Characteristics

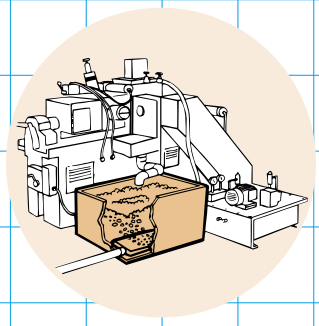




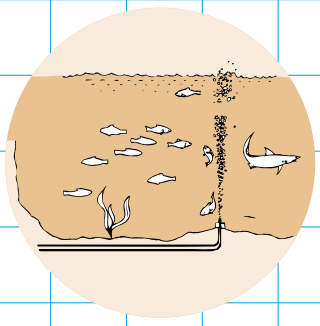
Specifications

	LA-28B	LA-45B
Power Supply	AC 120V, 220V, 230V, 240V	
Rated Frequency	50 Hz, 60 Hz	
Rated Pressure	0.011 MPa {0.11kgf/cm²}, 0.11 bar or 1.56 psig	
Rated Airflow	28 ℓ /min {0.99 cfm}	45 ℓ /min {1.59 cfm}
Power Consumption	29 W / 50 Hz	47 W / 50 Hz
	25.5 W / 60 Hz	45 W / 60 Hz
Weight	2.9 kg {6.4 lbs}	3.0 kg {6.6 lbs}

Application Examples

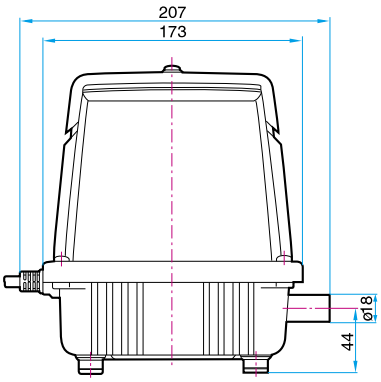


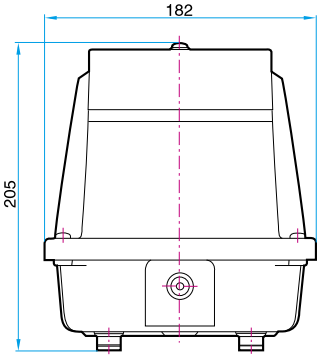
Liquid Mixer Bubbling



Fish Farm Aquatic Fence

Sketch Drawing and Mounting Dimensions Diagram (mm)





LINEAR

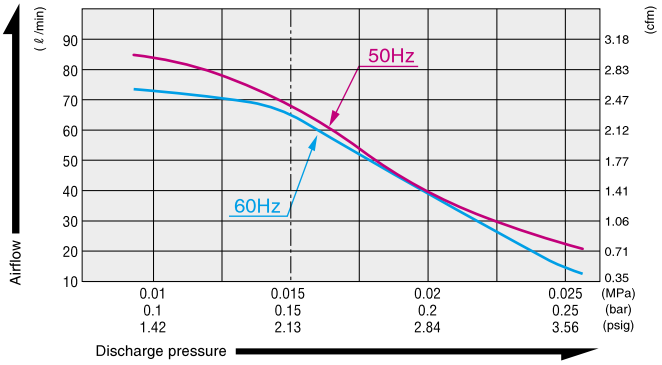
Blower

MOTOR FREE
PISTON SYSTEM

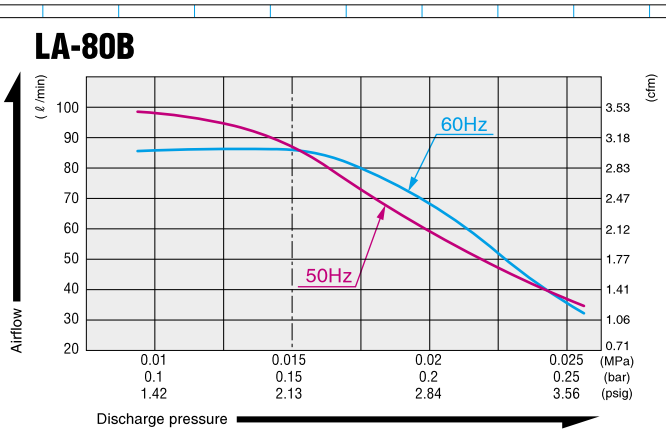
LA-60B LA-80B

Airflow Characteristics

LA-60B



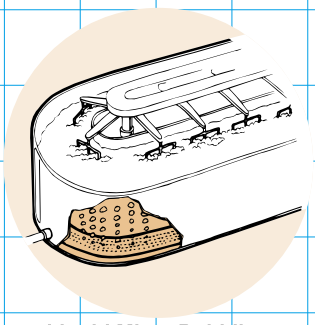
LA-80B



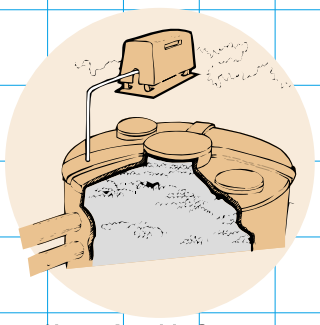
Specifications

	LA-60B	LA-80B
Power Supply	AC 120V, 220V, 230V, 240V	
Rated Frequency	50 Hz, 60 Hz	
Rated Pressure	0.015 MPa {0.15kgf/㎠}, 0.15 bar or 2.13 psig	
Rated Airflow	60 ℓ /min {2.12 cfm}	80 ℓ /min {2.83 cfm}
Power Consumption	64 W / 50 Hz	86 W / 50 Hz
	60 W / 60 Hz	86 W / 60 Hz
Weight	5.0 kg {11 lbs}	5.3 kg {11.7 lbs}

Application Examples

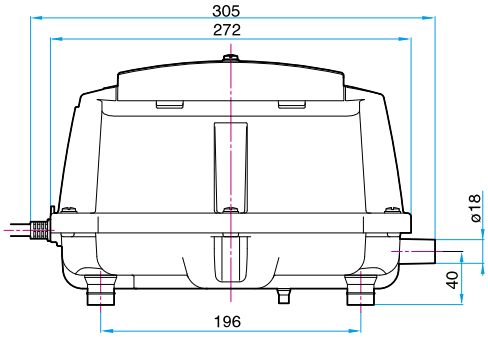


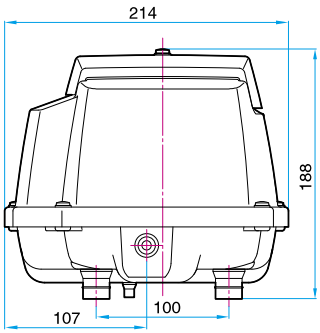
Liquid Mixer Bubbling



Home Aerobic Sewage Treatment System

Sketch Drawing and Mounting Dimensions Diagram (mm)



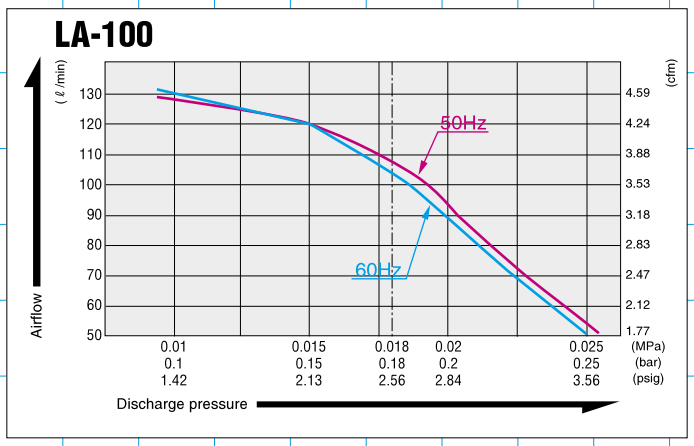


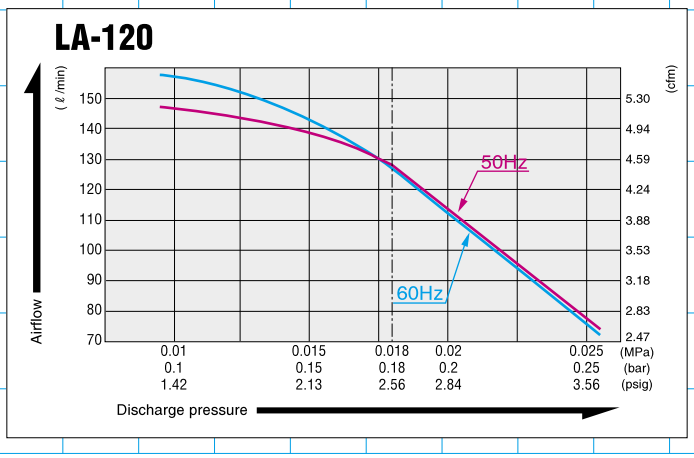
LINEAR

MOTOR FREE
PISTON SYSTEM

LA-100 LA-120

Airflow Characteristics

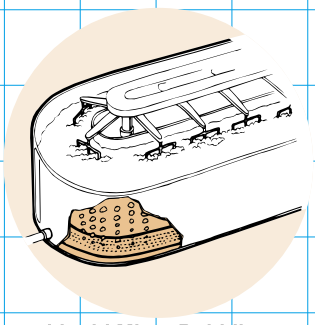




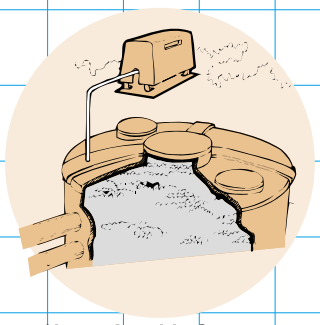
Specifications

	LA-100	LA-120
Power Supply	AC 120V, 220V, 230V, 240V	
Rated Frequency	50 Hz, 60 Hz	
Rated Pressure	0.018 MPa {0.18kgf/cm²}, 0.18 bar or 2.56 psig	
Rated Airflow	100 ℓ /m {3.53 cfm}	120 ℓ /m {4.24 cfm}
Power Consumption	100 W / 50 Hz	130 W / 50 Hz
	95 W / 60 Hz	118 W / 60 Hz
Weight	9.4 kg {20.7 lbs}	9.4 kg {20.7 lbs}

Application Examples

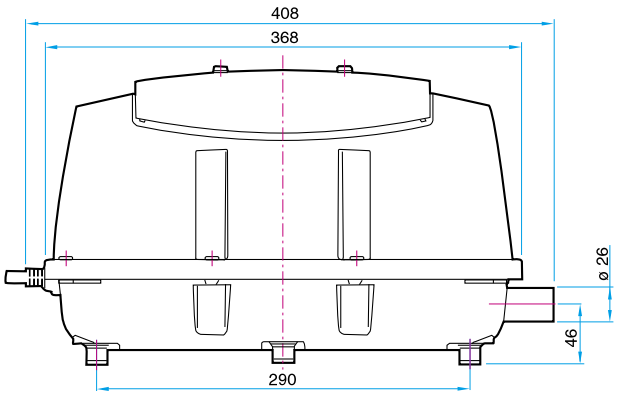


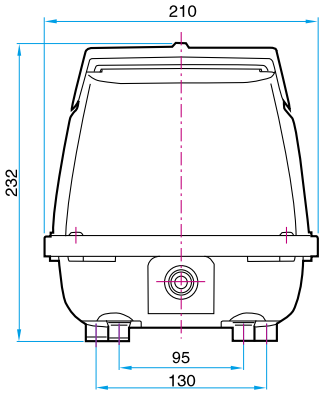
Liquid Mixer Bubbling



Home Aerobic Sewage Treatment System

Sketch Drawing and Mounting Dimensions Diagram (mm)





Made-to-order Item

AC LINEAR

Air Compressor
Vacuum Pump

AC0501 P49
VP0645 P50
VP0935A P51
VP0945 P52
VP0660x2 P53

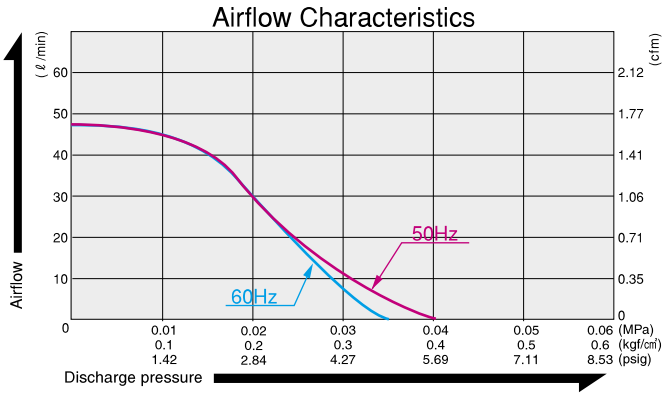
LINEAR

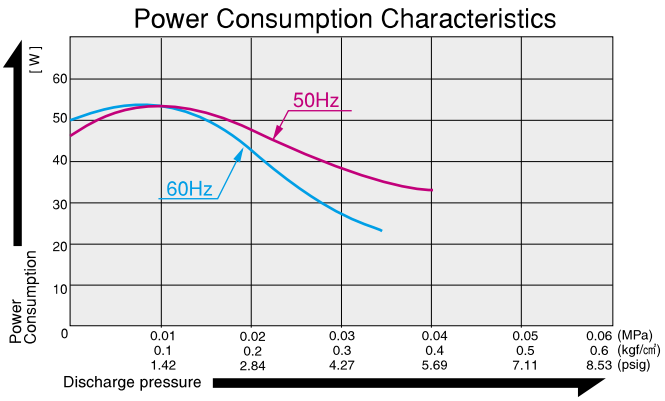
AC0501

Compressor | LOW pressure

MOTOR FREE
PISTON SYSTEM

Airflow & Power Consumption



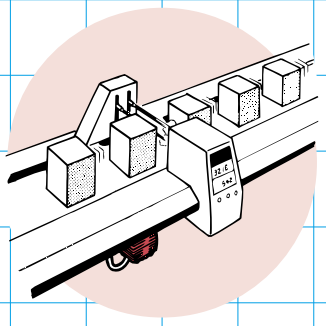


Specifications

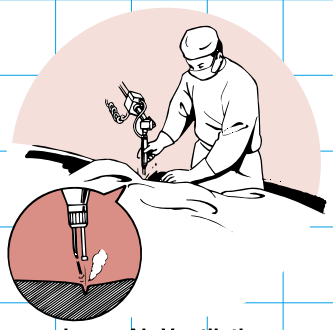
	(SI)	(EURO)	(U.S.A.)
Rated Pressure	0.01 MPa {0.1 kgf/cm²}	0.1 bar	1.42 psig
Rated Airflow	45 ℓ/min		1.59 cfm
Rated Voltage	115 V AC or 230 V AC		
Maximum Pressure	0.035 MPa {0.35 kgf/cm²}	0.35 bar	4.98 psig
Power Consumption	53 W		
Rated Frequency	60 Hz & 50 Hz		
Life Expectancy	10,000 hours		
Outlet	ISO Rc 1/4 (female threaded)		
Duty Cycle	Continuous		
Coil Insulation Class	E or its equivalent (JETL)		
Mounting Dimensions	68 (L) x 84 (W) mm		2-11/16"(L) x 3-5/16"(W)
Gross Weight	3 kg		6.6 Lbs.
Leadwire Length	200 mm		7-7/8"

Please read the page of "How to Use This Catalog" first for correct use of compressors and pumps.

Application Examples

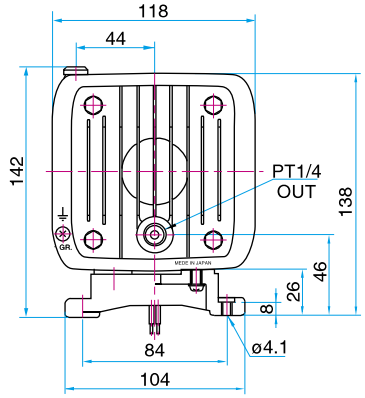


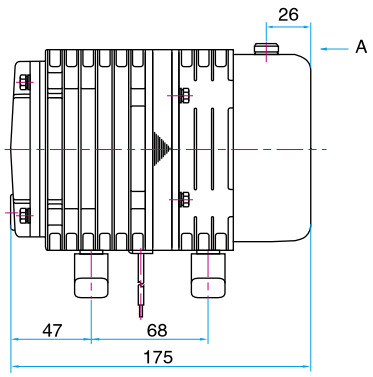
Pneumatic Sensor

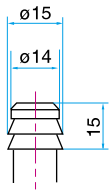


Laser Air Ventilation

Sketch Drawing and Mounting Dimensions Diagram (mm)







View A

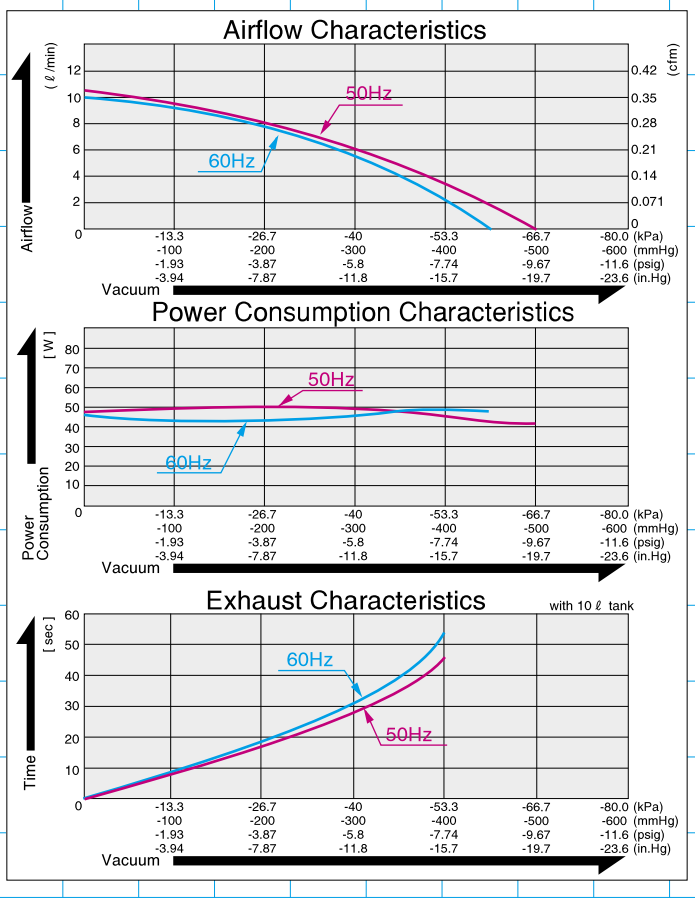
LINEAR

VP0645

Compressor Vacuum

MOTOR FREE
PISTON SYSTEM

Airflow & Power Consumption

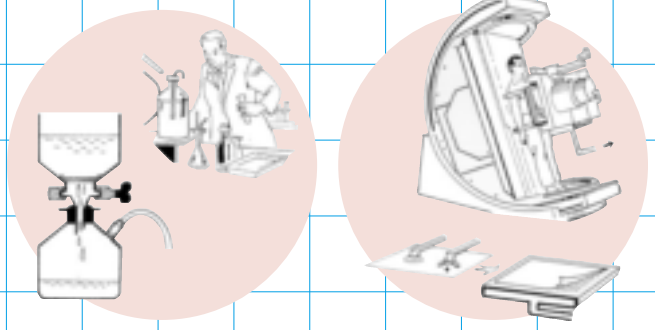


Specifications

	(SI)	(EURO)	(U.S.A.)
Attainable Vacuum	-60 kPa {-450 mmHg}	-600 mbar	-17.7 in.Hg
Free Air Displacement	10 ℓ /min		0.35 cfm
Rated Voltage	115 V AC or 230 V AC		
Power Consumption	48 W or 50 W		
Rated Frequency	60 Hz or 50 Hz		
Life Expectancy	3,000 hours		
Inlet	15 mm O.D. hose nipple		
Outlet	ISO Rc 1/4 (female threaded)		
Duty Cycle	Continuous		
Coil Insulation Class	E or its equivalent (JETL)		
Mounting Dimensions	68 (L) x 84 (W) mm		2-11/16"(L) x 3-5/16"(W)
Gross Weight	3.2 kg		7.1 Lbs.
Leadwire Length	200 mm		7-7/8"

Please read the page of "How to Use This Catalog" first for correct use of compressors and pumps.
*Operations at higher than -60kPa need an additional leak valve or relief valve on the inlet piping.

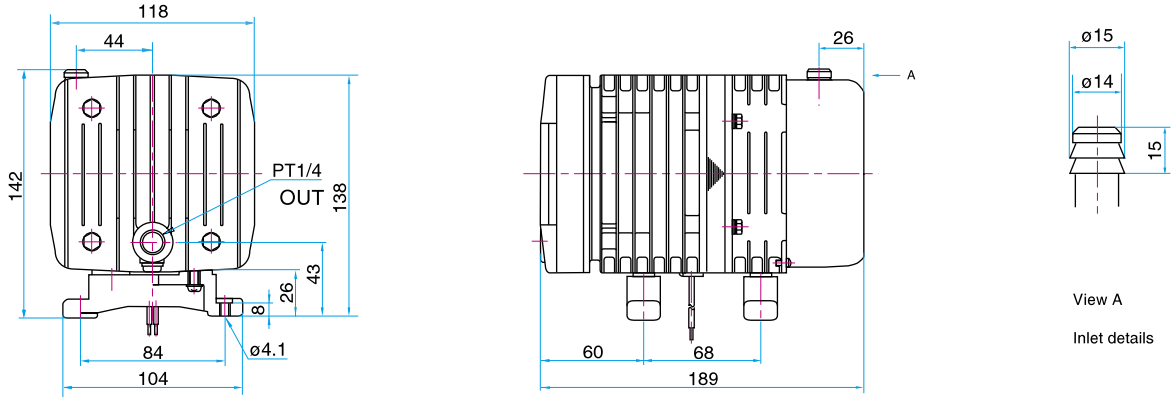
Application Examples



Liquid Purification

X-ray Film Positioning

Sketch Drawing and Mounting Dimensions Diagram (mm)



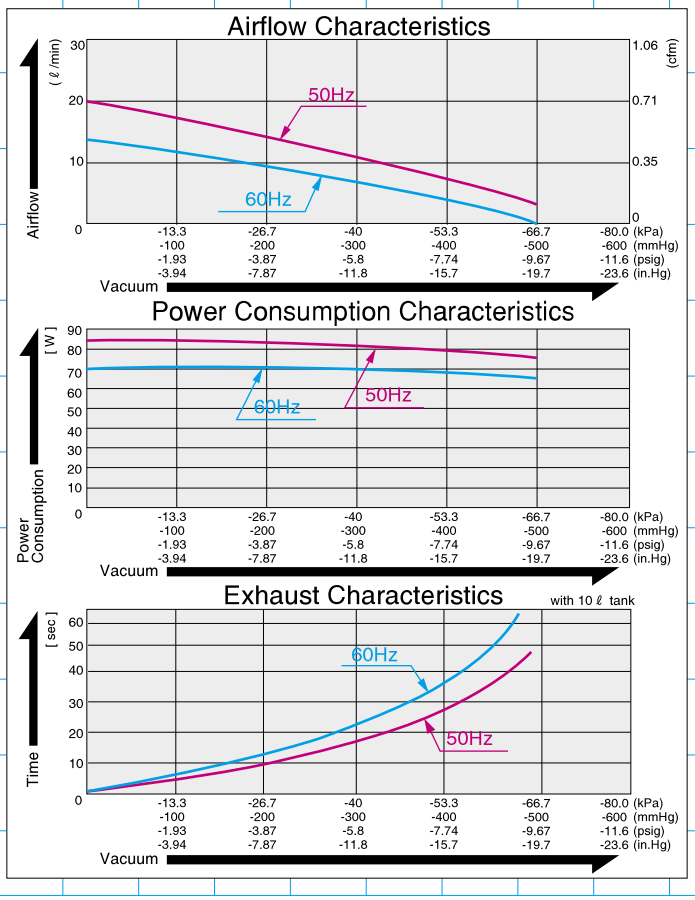
LINEAR

VP0945

Compressor Vacuum

MOTOR FREE
PISTON SYSTEM

Airflow & Power Consumption

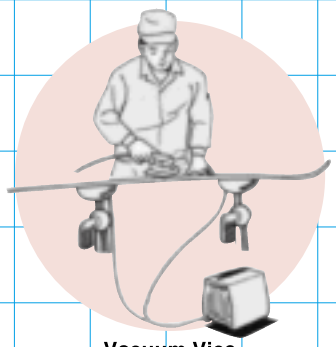


Specifications

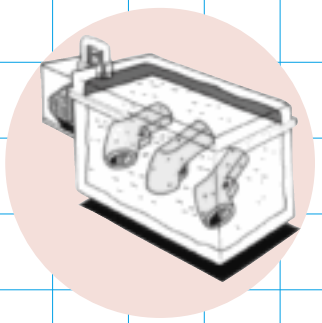
	(SI)	(EURO)	(U.S.A.)
Attainable Vacuum	-60 kPa {-450 mmHg}	-600 mbar	-17.7 in.Hg
Free Air Displacement	12 ℓ /min		0.424 cfm
Rated Voltage	115 V AC or 230 V AC		
Power Consumption	70 W or 85 W		
Rated Frequency	60 Hz or 50 Hz		
Life Expectancy	3,000 hours		
Inlet	15 mm O.D. hose nipple		
Outlet	ISO Rc 1/4 (female threaded)		
Duty Cycle	Continuous		
Coil Insulation Class	E or its equivalent (JETL)		
Mounting Dimensions	102 (L) x 130 (W) mm		4"(L) x 5-1/8"(W)
Gross Weight	4.9 kg		10.8 Lbs.
Leadwire Length	150 mm or 300 mm		5-7/8"

Please read the page of "How to Use This Catalog" first for correct use of compressors and pumps.
*Operations at higher than -60kPa need an additional leak valve or relief valve on the inlet piping.

Application Examples

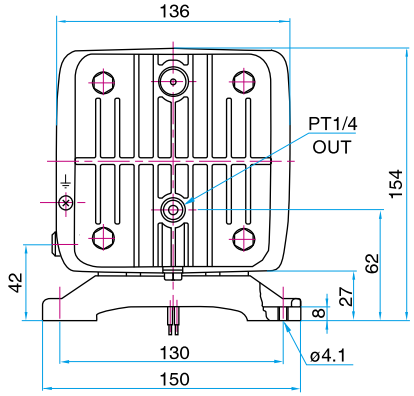


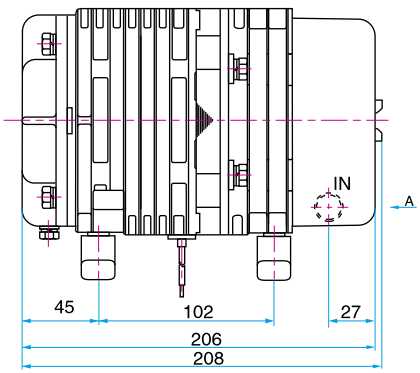
Vacuum Vice

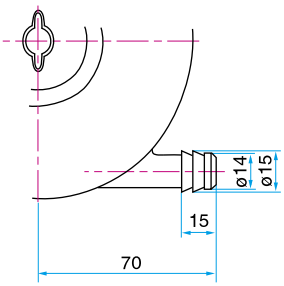


Impregnation Depressurizer

Sketch Drawing and Mounting Dimensions Diagram (mm)







View A

Inlet details

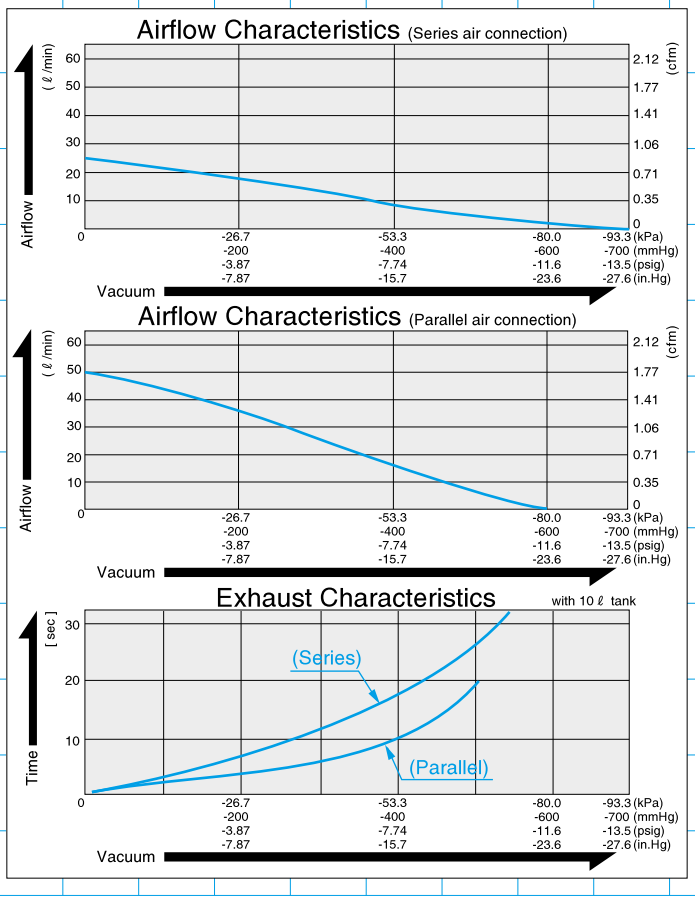
LINEAR

Compressor TWIN

MOTOR FREE
PISTON SYSTEM

VP0660x2

Airflow & Power Consumption



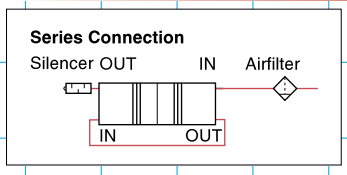
Specifications

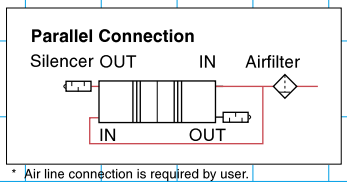
	Series Connection	Parallel Connection
Attainable Vacuum	-93.3 kPa {-700 mmHg} -933 mbar or -27.5 inHg	-80 kPa {-600 mmHg} -800 mbar or -23.6 inHg
Free Air Displacement	25 ℓ /min or 0.88 cfm	50 ℓ /min or 1.77 cfm
Rated Voltage	115 V AC or 230 V AC	
Power Consumption	125 W or 100 W	
Rated Frequency	60 Hz or 50 Hz	
Life Expectancy	6,000 hours	
Inlet	ISO Rc 1/4 (female threaded); 2 ports	
Outlet	ISO Rc 1/4 (female threaded); 2 ports	
Duty Cycle	Continuous	
Coil Insulation Class	B or its equivalent (JETL)	
Mounting Dimensions	280 (L) x 130 (W) mm { 11"(L) x 5-1/8"(W) }	
Gross Weight	10 kg (22 Lbs.)	
Leadwire Length	150 mm (5-7/8")	

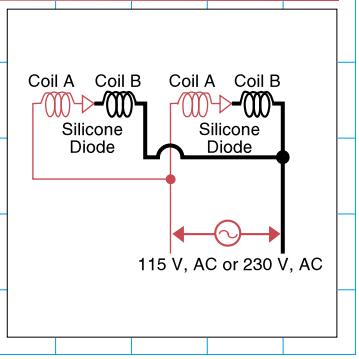
Please read the page of "How to Use This Catalog" first for correct use of compressors and pumps.

*Operations at higher than -93.3kPa in series or -80kPa in parallel need an additional leak valve or relief valve on the inlet piping.

Application Examples

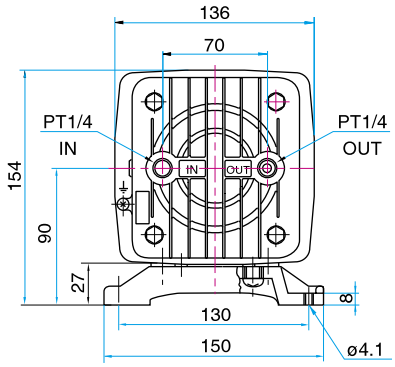


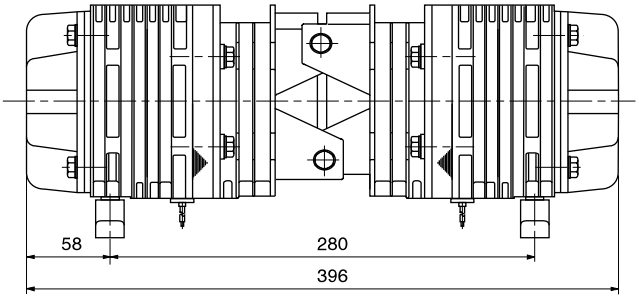




* Air line connection is required by user.

Sketch Drawing and Mounting Dimensions Diagram (mm)





AC LINEAR

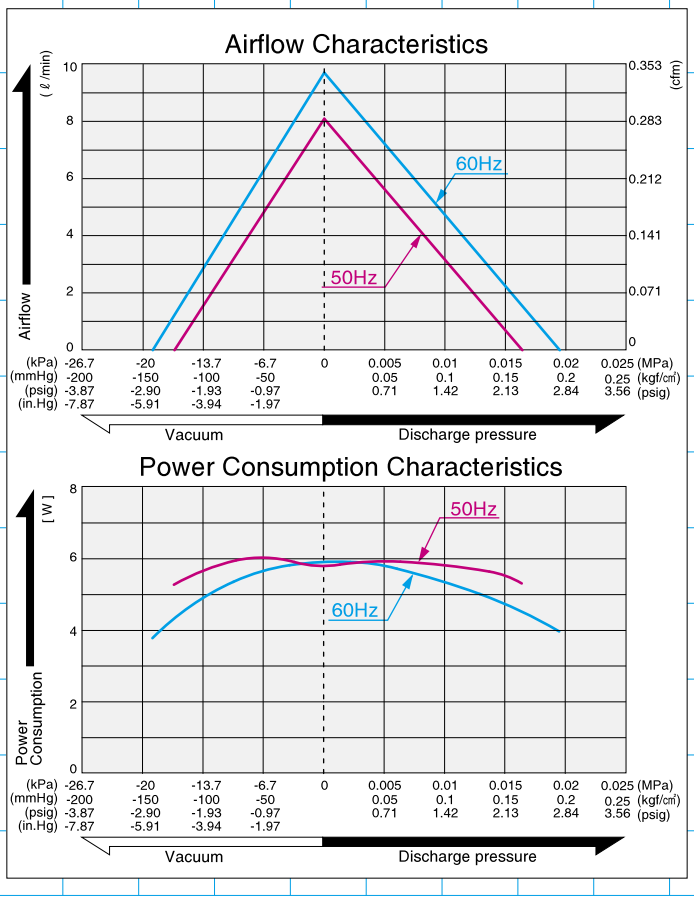
Diaphragm Pump

DIAPHRAGM PUMP

Compressor Vacuum

VC0100 Dual Type

Airflow & Power Consumption

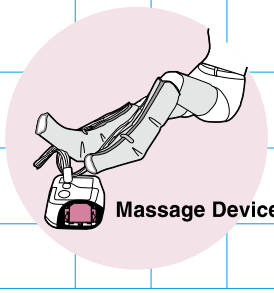


Specifications

	(SI)	(EURO)	(U.S.A.)
Rated Pressure	0.004 MPa {0.04 kgf/cm²}	0.04 bar	0.57 psig
Rated Airflow	6 ℓ /min		0.21 cfm
Rated Voltage	120 V AC or 230 V AC		
Maximum Pressure	0.016 MPa {0.16 kgf/cm²}	0.16 bar	2.28 psig
Maximum Vacuum	-14.7 kPa {-110 mmHg}	-147 mbar	-4.33 in.Hg
Power Consumption	6 W		
Rated Frequency	60 Hz or 50 Hz		
Life Expectancy	5,000 hours		
Working Pressure Range	-14.7 kPa~0.016 MPa {-110 mmHg~0.16 kgf/cm²}	-147 mbar~ 0.16 bar	-4.33 in.Hg~ 2.28 psig
Outlet (or Inlet)	6 mm O.D. hose nipple		
Duty Cycle	Continuous		
Coil Insulation Class	E for 230V & A for 120V or its equivalent		
Mounting Dimensions	70 (L) x 72 (W) mm		2-3/4"(L) x 2-27/32"(W)
Gross Weight	0.45 kg		0.99 Lbs.
Leadwire Length	300 mm		11-13/16"

Please read the page of "How to Use This Catalog" first for correct use of compressors and pumps.

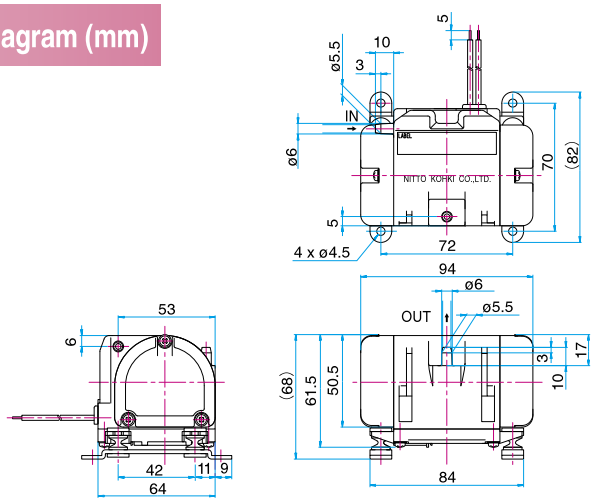
Application Examples



Massage Devices

Bedsore Prevention Mattress

Sketch Drawing and Mounting Dimensions Diagram (mm)

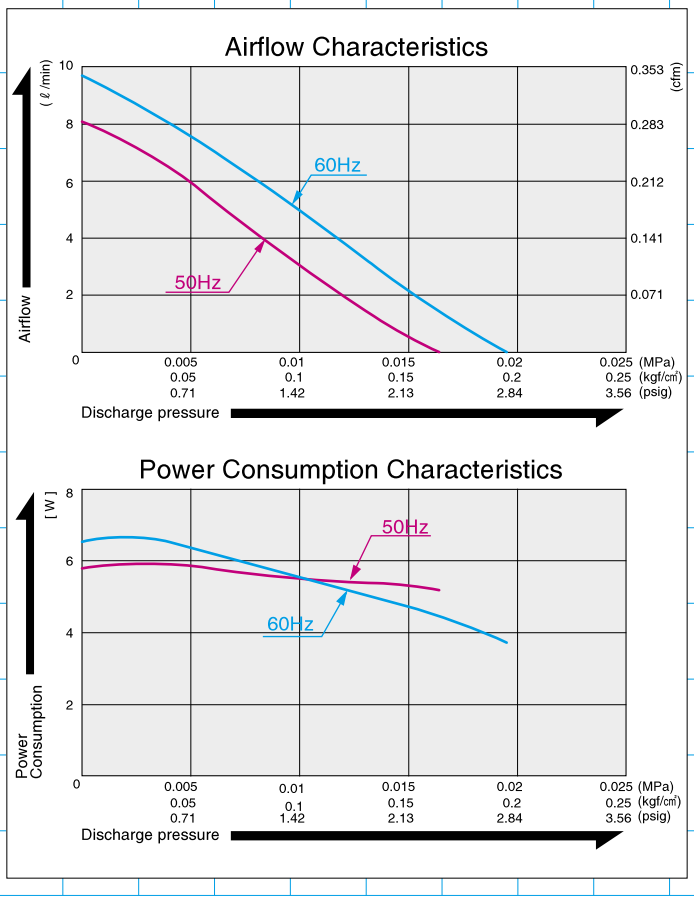


DIAPHRAGM PUMP

Compressor

VC0100 Blower Type

Airflow & Power Consumption

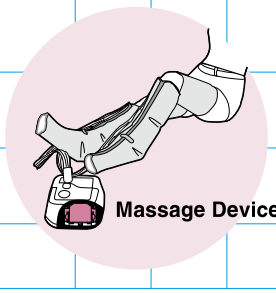


Specifications

	(SI)	(EURO)	(U.S.A.)
Rated Pressure	0.004 MPa {0.04 kgf/cm²}	0.04 bar	0.57 psig
Rated Airflow	6 ℓ /min		0.21 cfm
Rated Voltage	120 V AC or 230 V AC		
Maximum Pressure	0.016 MPa {0.16 kgf/cm²}	0.16 bar	2.28 psig
Power Consumption	6 W		
Rated Frequency	60 Hz or 50 Hz		
Life Expectancy	10,000 hours		
Working Pressure Range	0~0.016 MPa {0~0.16 kgf/cm²}	0~0.16 bar	0~2.28 psig
Outlet (or Inlet)	6 mm O.D. hose nipple		
Duty Cycle	Continuous		
Coil Insulation Class	E for 230V & A for 120V or its equivalent		
Mounting Dimensions	70 (L) x 72 (W) mm		$2\text{-}^{3}/_{4}$"(L) x $2\text{-}^{27}/_{32}$"(W)
Gross Weight	0.45 kg		0.99 Lbs.
Leadwire Length	300 mm		11-13/16"

Please read the page of "How to Use This Catalog" first for correct use of compressors and pumps.

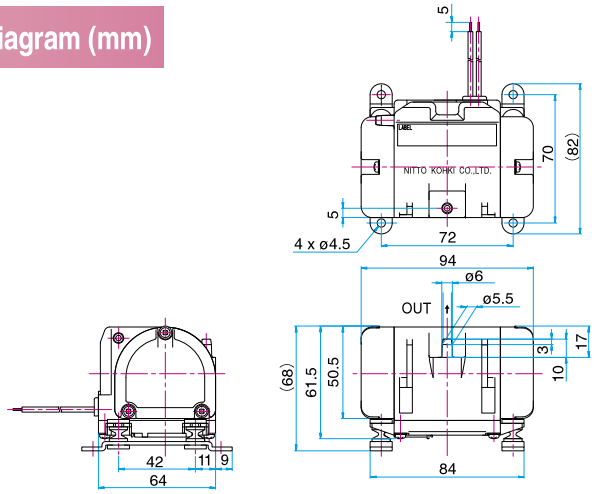
Application Examples



Massage Devices

Bedsore Prevention Mattress

Sketch Drawing and Mounting Dimensions Diagram (mm)

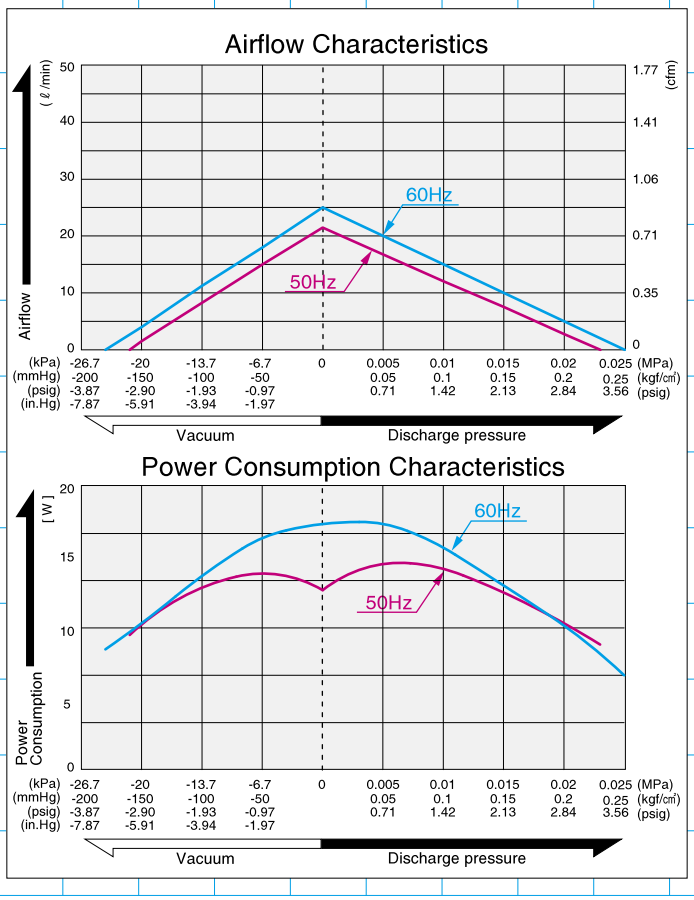


DIAPHRAGM PUMP

Compressor Vacuum

VC0101 Dual Type

Airflow & Power Consumption

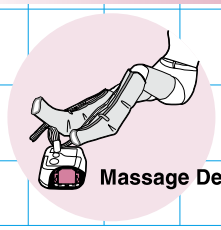


Specifications

VC0101	(SI)		(EURO)	(U.S.A.)
Rated Pressure	0.01 MPa {0.1 kgf/cm²}		0.1 bar	1.42 psig
Rated Airflow	10 ℓ /min			0.35 cfm
Rated Voltage	120 V AC or 230 V AC			
Maximum Pressure	120V	0.018 MPa {0.18 kgf/cm²}	0.18 bar	2.56 psig
Maximum Vacuum	120V	-18.7 kPa {-140mmHg}	-187 mbar	-5.51 in.Hg
Working Pressure Range	120V	-18.7 kPa~0.018 MPa {-140 mmHg~0.18 kgf/cm²}	-187 mbar~ 0.18 bar	-5.51 in.Hg~2.56 psig
Maximum Pressure	230V	0.015 MPa {0.15 kgf/cm²}	0.15 bar	2.13 psig
Maximum Vacuum	230V	-10 kPa {-76mmHg}	-100 mbar	-2.95 in.Hg
Working Pressure Range	230V	-10kPa~0.015 MPa {-76mmHg~0.15 kgf/cm²}	-100 mbar~ 0.15 bar	-2.95 in.Hg~2.13 psig
Power Consumption	11W			
Rated Frequency	60 Hz or 50 Hz			
Life Expectancy	5,000 hours			
Outlet (Inlet)	7.5 mm O.D. hose nipple			
Duty Cycle	Continuous			
Coil Insulation Class	B for 230V & A for 120V or its equivalent			
Mounting Dimensions	66 (L) x 100 (W) mm			2-19/32"(L) x 3-15/16"(W)
Gross Weight	0.82 kg			1.8 Lbs.
Leadwire Length	200 mm			7-7/8"

Please read the page of "How to Use This Catalog" first for correct use of compressors and pumps.

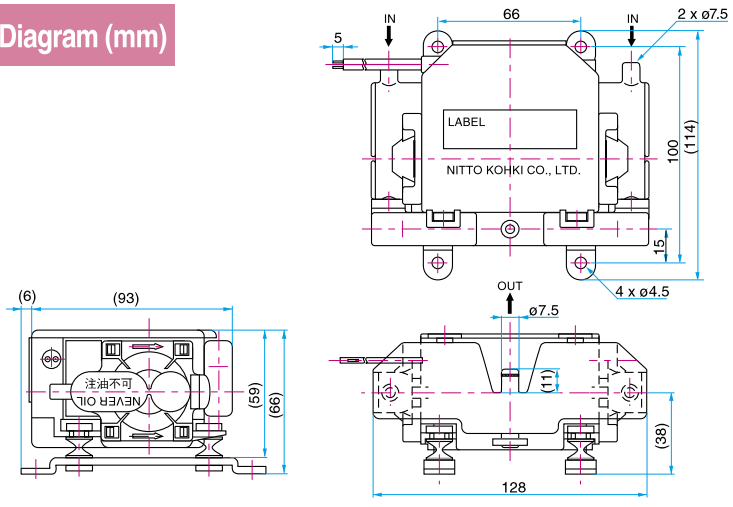
Application Examples



Massage Devices

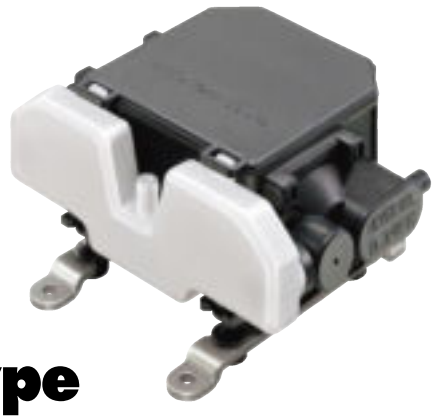
Bedsore Prevention Mattress

Sketch Drawing and Mounting Dimensions Diagram (mm)



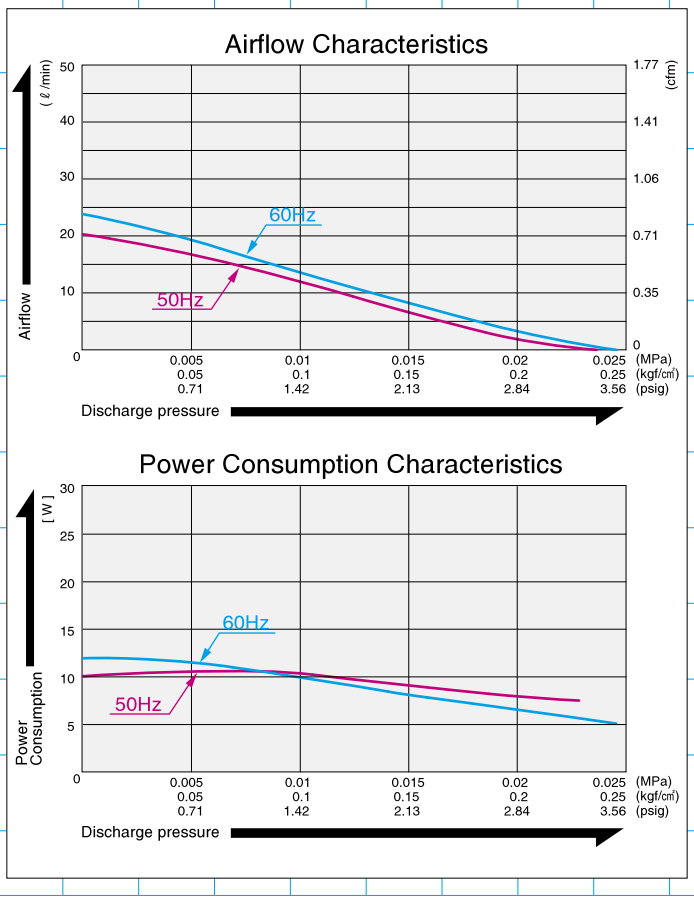
DIAPHRAGM PUMP

Compressor



VC0101 Blower Type

Airflow & Power Consumption

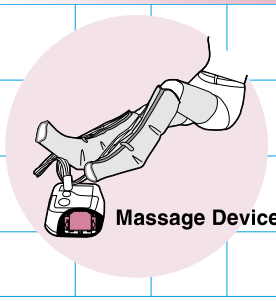


Specifications

VC0101	(SI)	(EURO)	(U.S.A.)
Rated Pressure	0.01 MPa {0.1 kgf/㎠}	0.1 bar	1.42 psig
Rated Airflow	10 ℓ /min		0.35 cfm
Rated Voltage	120 V AC or 230 V AC		
Maximum Pressure	0.02 MPa {0.2 kgf/㎠}	0.2 bar	2.84 psig
Working Pressure Range	0~0.02 MPa {0~0.2 kgf/㎠}	0~ 0.2 bar	0~2.84 psig
Power Consumption	11W		
Rated Frequency	60 Hz or 50 Hz		
Life Expectancy	10,000 hours		
Outlet (Inlet)	7.5 mm O.D. hose nipple		
Duty Cycle	Continuous		
Coil Insulation Class	B for 230V & A for 120V or its equivalent		
Mounting Dimensions	66 (L) x 100 (W) mm		$2\text{-}19/32''$(L) x $3\text{-}15/16''$(W)
Gross Weight	0.82 kg		1.8 Lbs.
Leadwire Length	200 mm		7-7/8"

Please read the page of "How to Use This Catalog" first for correct use of compressors and pumps.

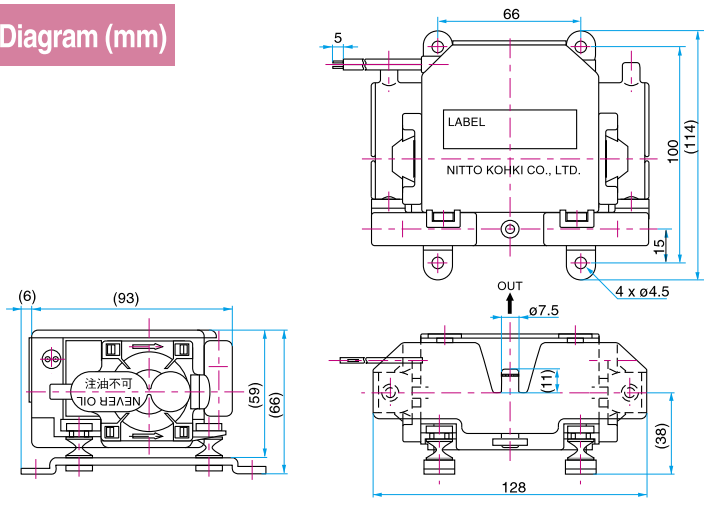
Application Examples



Massage Devices

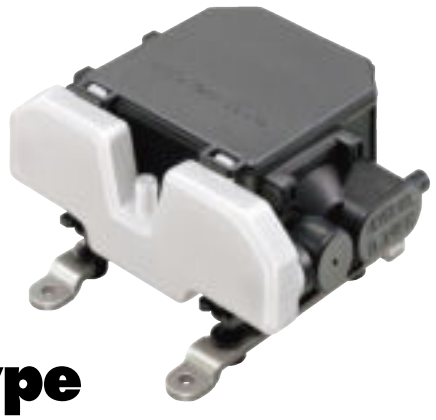
Bedsore Prevention Mattress

Sketch Drawing and Mounting Dimensions Diagram (mm)



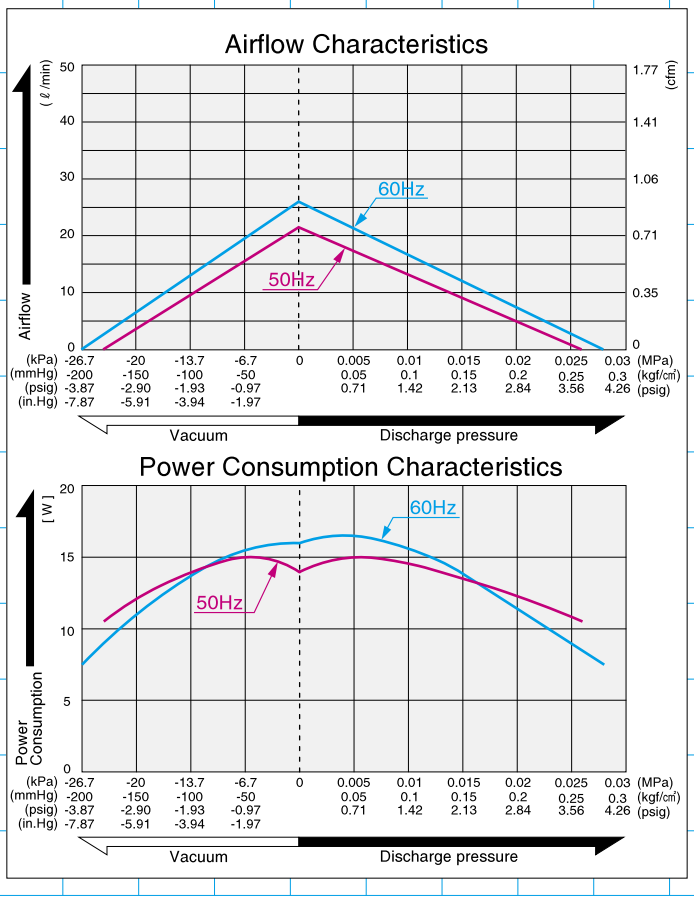
DIAPHRAGM PUMP

Compressor Vacuum



VC0101S Dual Type

Airflow & Power Consumption

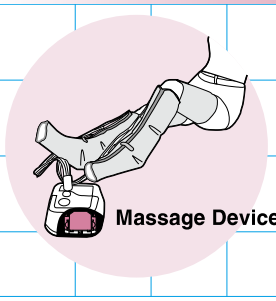


Specifications

VC0101S	(SI)	(EURO)	(U.S.A.)
Rated Pressure	0.005 MPa {0.05 kgf/cm²}	0.05 bar	0.71 psig
Rated Airflow	15 ℓ /min		0.53 cfm
Rated Voltage	120 V AC※ or 230 V AC		
Maximum Pressure	0.026 MPa {0.26 kgf/cm²}	0.26 bar	3.70 psig
Maximum Vacuum	-24 kPa {-180mmHg}	-240 mbar	-7.08 in.Hg
Power Consumption	15W		
Rated Frequency	60 Hz or 50 Hz		
Life Expectancy	5,000 hours		
Working Pressure Range	-24kPa~0.026 MPa {-180mmHg~0.26 kgf/cm²}	-240 mbar~ 0.26 bar	-7.08 in.Hg~3.70 psig
Outlet (Inlet)	7.5 mm O.D. hose nipple		
Duty Cycle	60 minutes		
Coil Insulation Class	B or its equivalent (JETL)		
Mounting Dimensions	66 (L) x 100 (W) mm		2-19/32"(L) x 3-15/16"(W)
Gross Weight	0.82 kg		1.8 Lbs.
Leadwire Length	300 mm		11-13/16"

※120V AC UL version is unavailable.
Please read the page of "How to Use This Catalog" first for correct use of compressors and pumps.

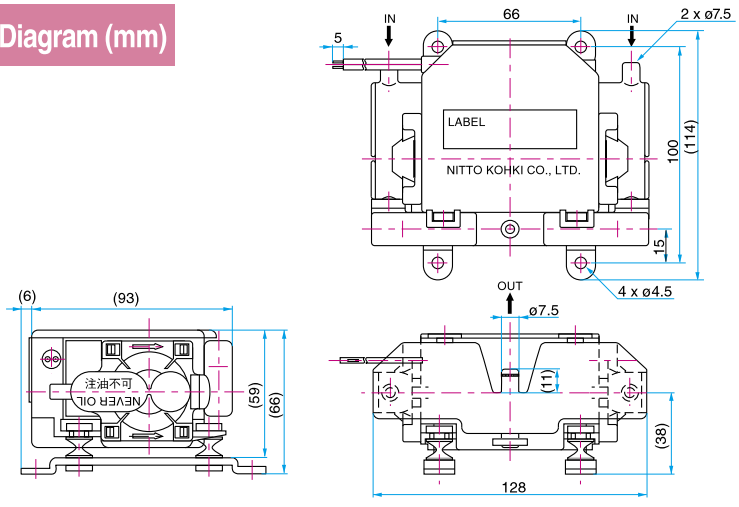
Application Examples



Massage Devices

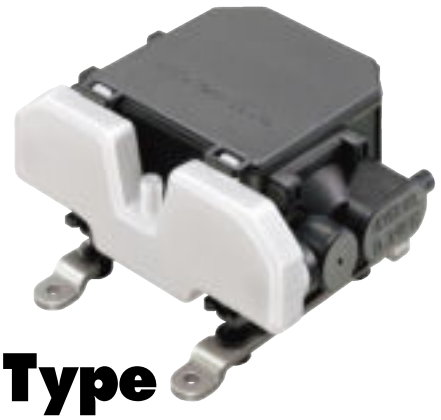
Bedsore Prevention Mattress

Sketch Drawing and Mounting Dimensions Diagram (mm)



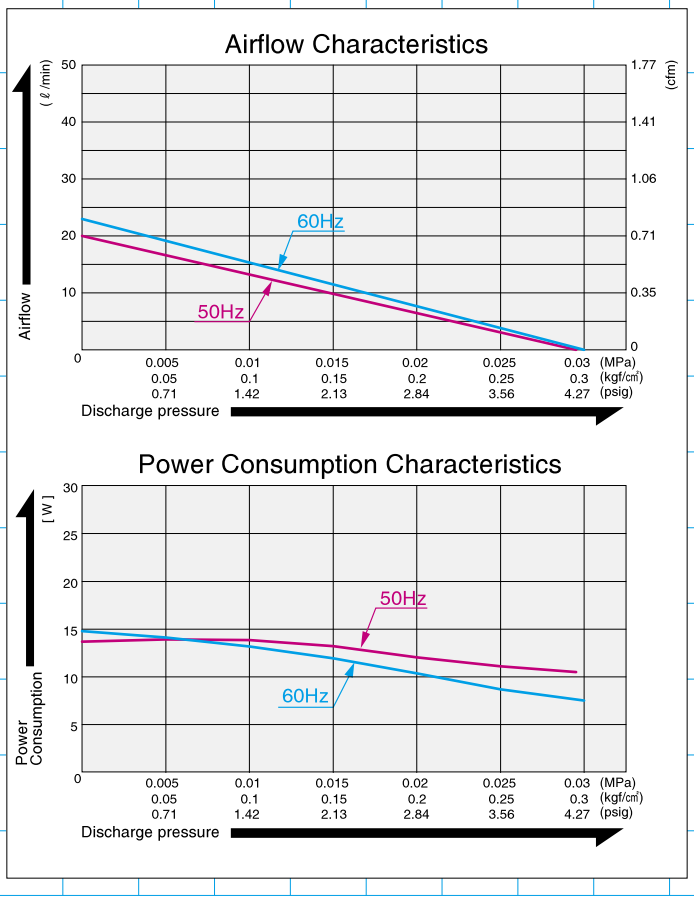
DIAPHRAGM PUMP

Compressor



VC0101S Blower Type

Airflow & Power Consumption

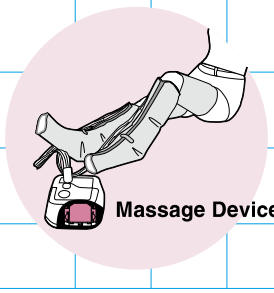


Specifications

VC0101S	(SI)	(EURO)	(U.S.A.)
Rated Pressure	0.005 MPa {0.05 kgf/cm²}	0.05 bar	0.71 psig
Rated Airflow	15 ℓ /min		0.53 cfm
Rated Voltage	120 V AC※ or 230 V AC		
Maximum Pressure	0.026 MPa {0.26 kgf/cm²}	0.26 bar	3.70 psig
Power Consumption	14W		
Rated Frequency	60 Hz or 50 Hz		
Life Expectancy	5,000 hours		
Working Pressure Range	0~0.026 MPa {0~0.26 kgf/cm²}	0~0.26 bar	0~3.70 psig
Outlet (Inlet)	7.5 mm O.D. hose nipple		
Duty Cycle	60 minutes		
Coil Insulation Class	B or its equivalent (JETL)		
Mounting Dimensions	66 mm(L) x 100 mm(W)		2-19/32"(L) x 3-15/16"(W)
Gross Weight	0.83 kg		1.8 Lbs.
Leadwire Length	300 mm		11-13/16"

※120V AC UL version is unavailable.
Please read the page of "How to Use This Catalog" first for correct use of compressors and pumps.

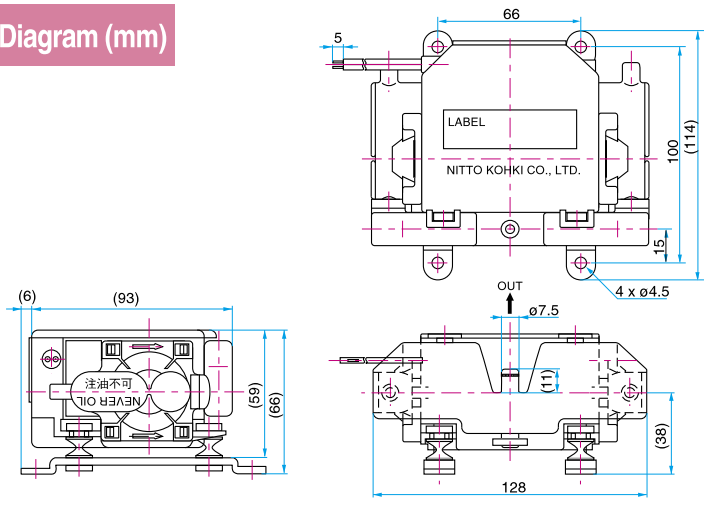
Application Examples



Massage Devices

Bedsore Prevention Mattress

Sketch Drawing and Mounting Dimensions Diagram (mm)

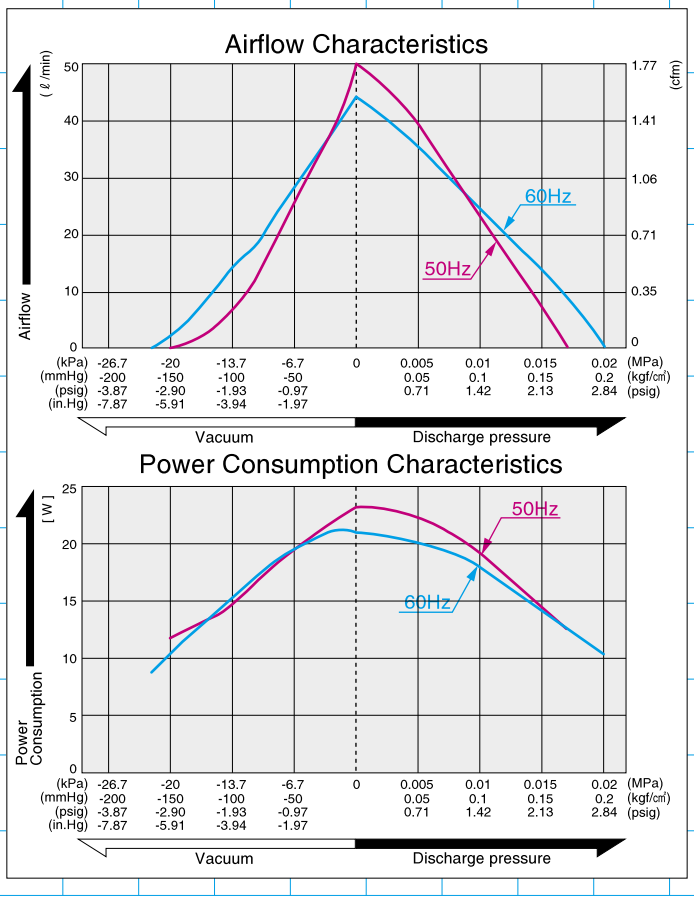


DIAPHRAGM PUMP

Compressor Vacuum

VC0201 Dual Type

Airflow & Power Consumption

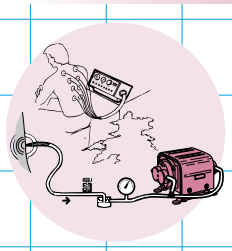


Specifications

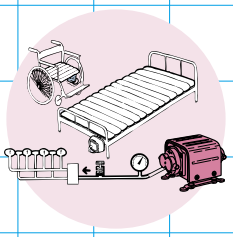
	(SI)	(EURO)	(U.S.A.)
Rated Pressure	0.01 MPa {0.1 kgf/cm²}	0.1 bar	1.42 psig
Rated Airflow	20 ℓ /min		0.71 cfm
Rated Voltage	120 V AC or 230 V AC		
Maximum Pressure	0.018 MPa {0.18 kgf/cm²}	0.18 bar	2.56 psig
Max. vacuum	-18.7 kPa {-140 mmHg}	-187 mbar	-5.5 in.Hg
Power Consumption	18 W or 19 W		
Rated Frequency	60 Hz or 50 Hz		
Working Pressure Range	-18.7kPa~0.018 MPa {-140mmHg~0.18 kgf/cm²}	-187mbar~ 0.18 bar	-5.5 in.Hg ~ 2.56 psig
Life Expectancy	10,000 hours		
Outlet (or Inlet)	8.5 mm O.D. hose nipple		
Duty Cycle	Continuous		
Coil Insulation Class	A for 120V & B for 230V or its equivalent		
Mounting Dimensions	100 (L) x 85 (W) mm		3-15/16"(L) x 3-3/8"(W)
Gross Weight	1.8 kg		4 Lbs.
Leadwire Length	200 mm		7-7/8"

Please read the page of "How to Use This Catalog" first for correct use of compressors and pumps.

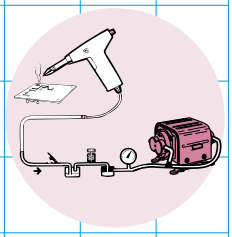
Application Examples



Medical Cup Suction

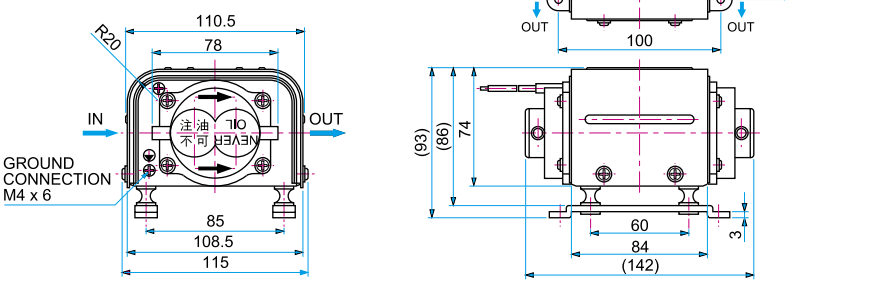


Bedsore Prevention Mattress



Solder Fume Suction

Sketch Drawing and Mounting Dimensions Diagram (mm)

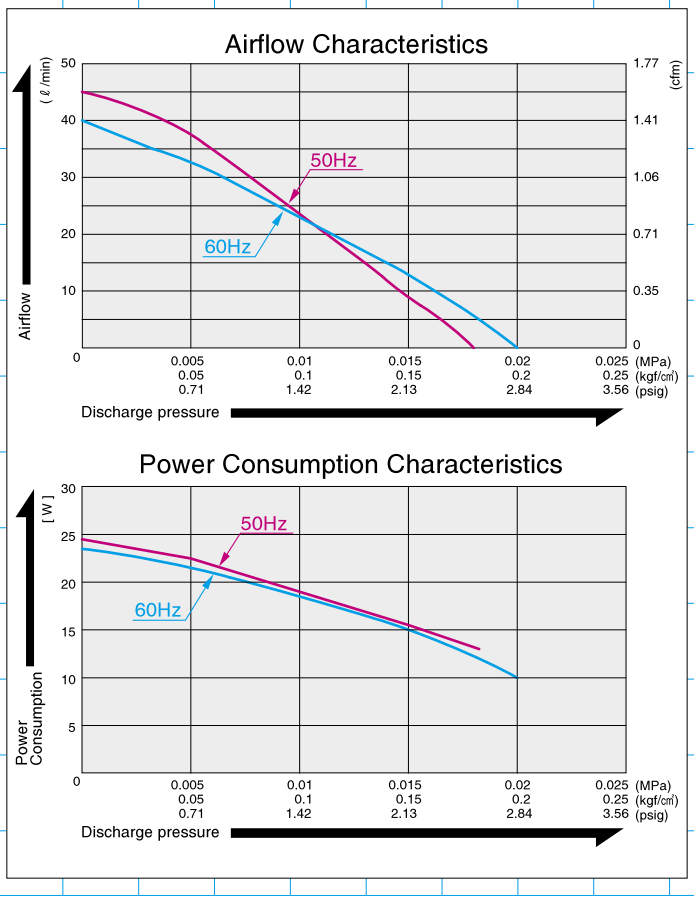


DIAPHRAGM PUMP

Compressor

VC0201 Blower Type

Airflow & Power Consumption

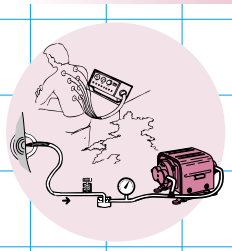


Specifications

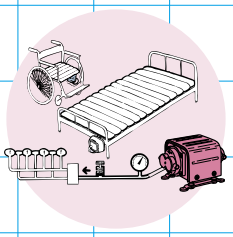
	(SI)	(EURO)	(U.S.A.)
Rated Pressure	0.01 MPa {0.1 kgf/cm²}	0.1 bar	1.42 psig
Rated Airflow	20 ℓ /min		0.71 cfm
Rated Voltage	120 V AC or 230 V AC		
Maximum Pressure	0.018 MPa {0.18 kgf/cm²}	0.18 bar	2.56 psig
Power Consumption	18 W or 19 W		
Rated Frequency	60 Hz or 50 Hz		
Working Pressure Range	0~0.018 MPa {0~0.18 kgf/cm²}	0 ~ 0.18 bar	0 ~ 2.56 psig
Life Expectancy	10,000 hours		
Outlet (or Inlet)	8.5 mm O.D. hose nipple		
Duty Cycle	Continuous		
Coil Insulation Class	A for 120V & B for 230V or its equivalent		
Mounting Dimensions	100 (L) x 85 (W) mm		3-15/16"(L) x 3-3/8"(W)
Gross Weight	1.8 kg		4 Lbs.
Leadwire Length	200 mm		7-7/8"

Please read the page of "How to Use This Catalog" first for correct use of compressors and pumps.

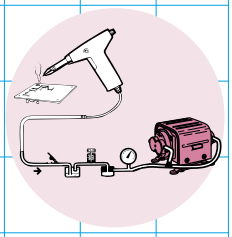
Application Examples



Medical Cup Suction

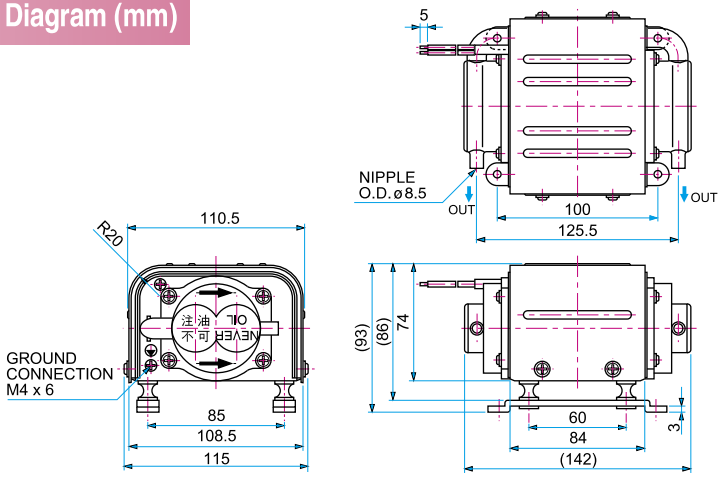


Bedsore Prevention Mattress



Solder Fume Suction

Sketch Drawing and Mounting Dimensions Diagram (mm)

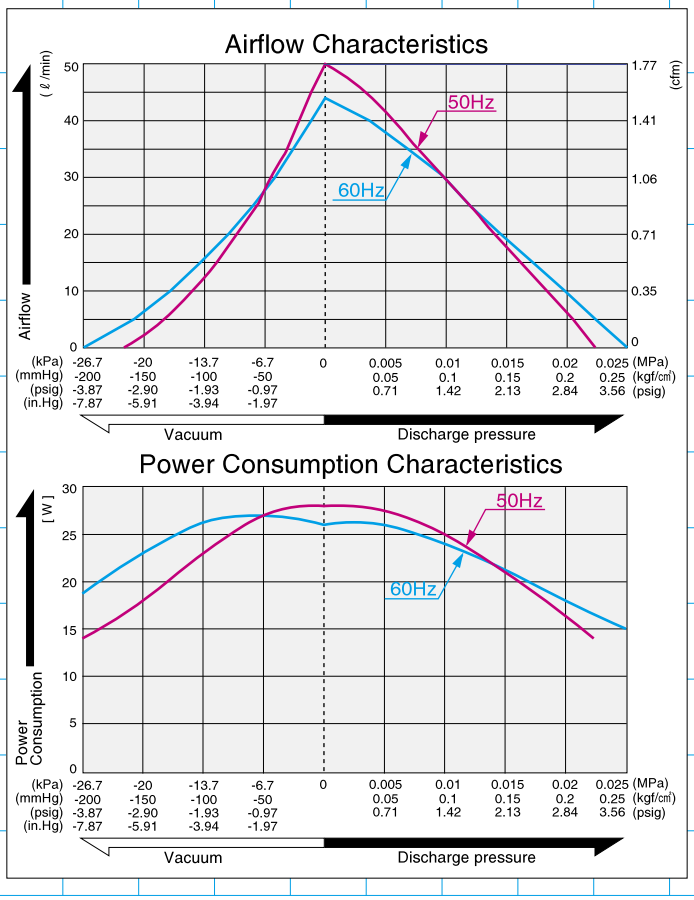


DIAPHRAGM PUMP

Compressor Vacuum

VC0301 Dual Type

Airflow & Power Consumption

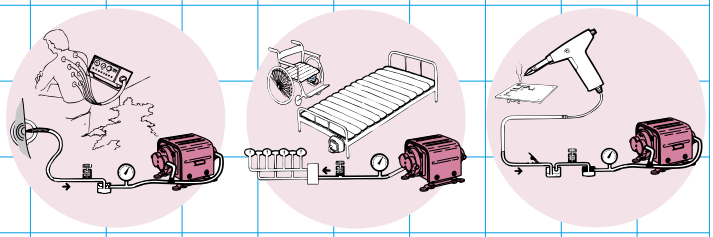


Specifications

	(SI)	(EURO)	(U.S.A.)
Rated Pressure	0.01 MPa {0.1 kgf/cm²}	0.1 bar	1.42 psig
Rated Airflow 0301	25 ℓ /min		0.88 cfm
Rated Voltage	120 V AC or 230 V AC		
Maximum Pressure	0.02 MPa {0.2 kgf/cm²}	0.2 bar	2.84 psig
Max. vacuum	-21.3 kPa {-160 mmHg}	-213 mbar	-6.3 in.Hg
Power Consumption	24 W or 25 W		
Rated Frequency	60 Hz or 50 Hz		
Working Pressure Range	-21.3kPa~0.02 MPa {-160mmHg~0.2 kgf/cm²}	-213 mbar ~ 0.2 bar	-6.3 in.Hg ~ 2.84 psig
Life Expectancy	10,000 hours		
Outlet (or Inlet)	8.5 mm O.D. hose nipple		
Duty Cycle	Continuous		
Coil Insulation Class	A for 120V & B for 230V or its equivalent		
Mounting Dimensions	100 (L) x 85 (W) mm		3-15/16"(L) x 3-3/8"(W)
Gross Weight	1.8 kg		4 Lbs.
Leadwire Length	200 mm		7-7/8"

Please read the page of "How to Use This Catalog" first for correct use of compressors and pumps.

Application Examples

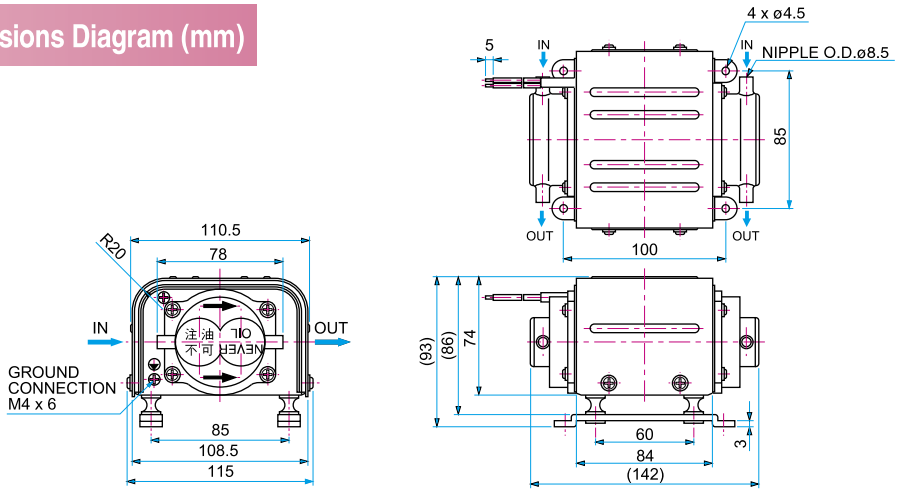


Medical Cup Suction

Bedsore Prevention Mattress

Solder Fume Suction

Sketch Drawing and Mounting Dimensions Diagram (mm)

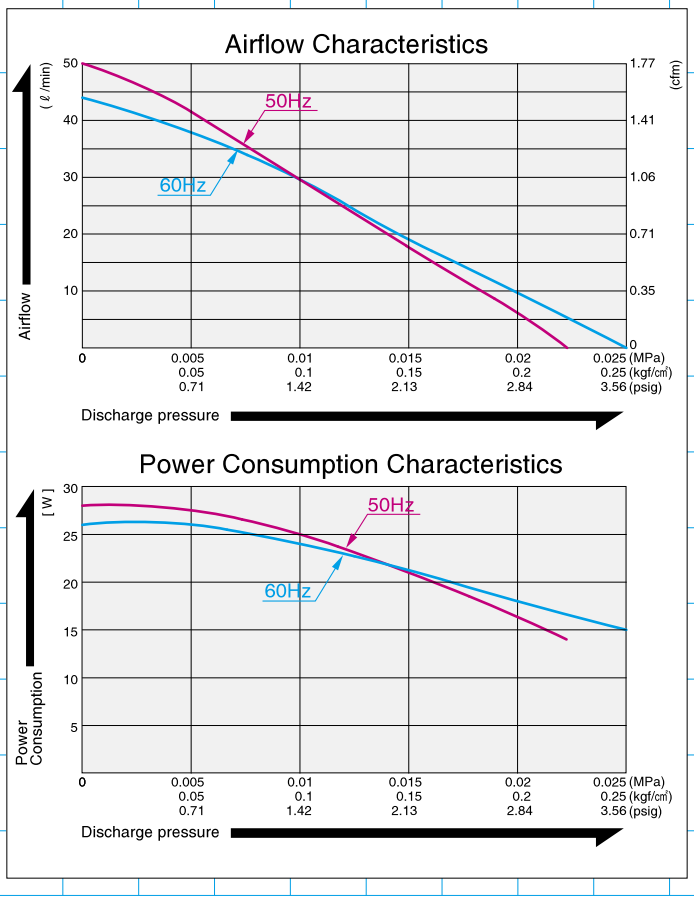


DIAPHRAGM PUMP

Compressor

VC0301 Blower Type

Airflow & Power Consumption

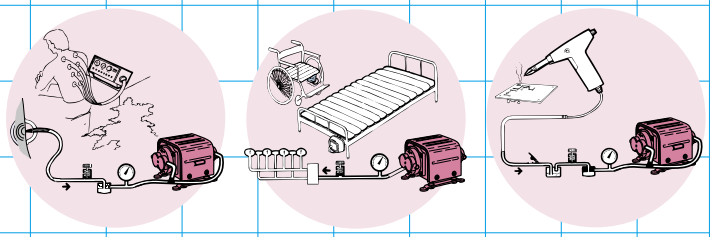


Specifications

	(SI)	(EURO)	(U.S.A.)
Rated Pressure	0.01 MPa {0.1 kgf/㎠}	0.1 bar	1.42 psig
Rated Airflow 0301	25 ℓ /min		0.88 cfm
Rated Voltage	120 V AC or 230 V AC		
Maximum Pressure	0.02 MPa {0.2 kgf/㎠}	0.2 bar	2.84 psig
Power Consumption	24 W or 25 W		
Rated Frequency	60 Hz or 50 Hz		
Working Pressure Range	-21.3kPa~0.02 MPa {-160mmHg~0.2 kgf/㎠}	-213 mbar ~ 0.2 bar	-6.3 in.Hg ~ 2.84 psig
Life Expectancy	10,000 hours		
Outlet (or Inlet)	8.5 mm O.D. hose nipple		
Duty Cycle	Continuous		
Coil Insulation Class	A for 120V & B for 230V or its equivalent		
Mounting Dimensions	100 (L) x 85 (W) mm		$3\text{-}^{15}/_{16}$"(L) x $3\text{-}^{3}/_{8}$"(W)
Gross Weight	1.8 kg		4 Lbs.
Leadwire Length	200 mm		7-7/8"

Please read the page of "How to Use This Catalog" first for correct use of compressors and pumps.

Application Examples

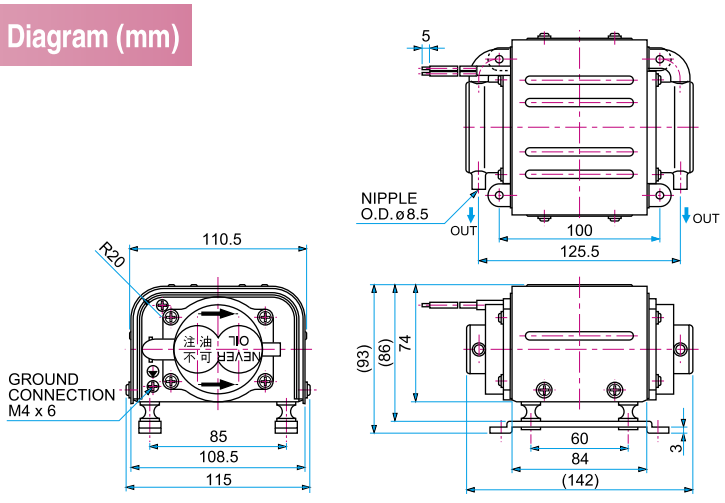


Medical Cup Suction

Bedsore Prevention Mattress

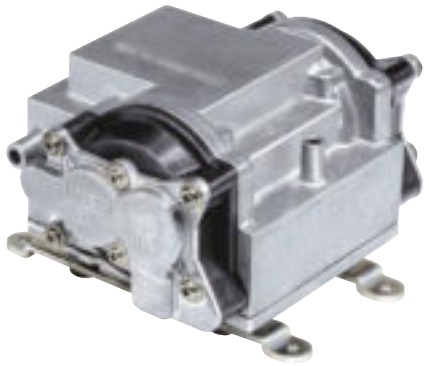
Solder Fume Suction

Sketch Drawing and Mounting Dimensions Diagram (mm)



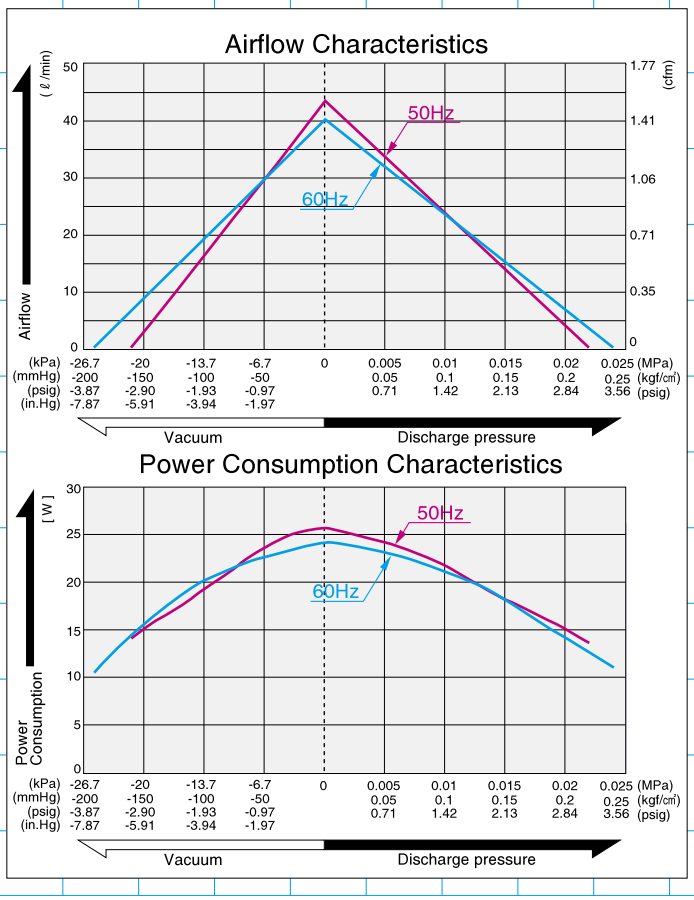
DIAPHRAGM PUMP

Compressor Vacuum



VC0201B

Airflow & Power Consumption

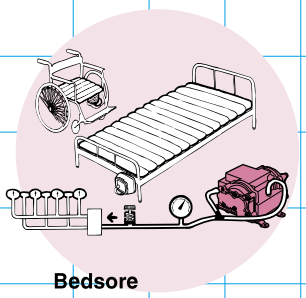


Specifications

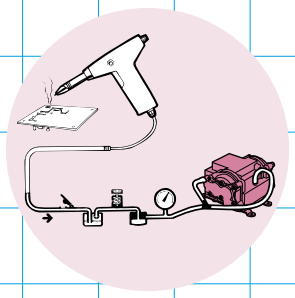
	(SI)	(EURO)	(U.S.A.)
Rated Pressure	0.01 MPa {0.1 kgf/cm²}	0.1 bar	1.42 psig
Rated Airflow	20 ℓ /min		0.71 cfm
Rated Voltage	120 V AC or 230 V AC		
Maximum Pressure	0.018 MPa {0.18 kgf/cm²}	0.18 bar	2.56 psig
Max. vacuum	-18.7 kPa {-140 mmHg}	-187 mbar	-5.5 in.Hg
Power Consumption	21 W		
Rated Frequency	60 Hz or 50 Hz		
Working Pressure Range	-18.7kPa～0.18 MPa {-140 mmHg～0.18 kgf/cm²}	-187 mbar ～ 0.18 bar	-5.5 in.Hg ～ 2.56 psig
Life Expectancy	10,000 hours		
Inlet	10.5 mm O.D. hose nipple		
Outlet	8.5 mm O.D. hose nipple		
Duty Cycle	Continuous		
Coil Insulation Class	A for 120V & B for 230V or its equivalent		
Mounting Dimensions	125 (L) x56 (W) mm		4-15/16"(L) x 2-13/64"(W)
Gross Weight	1.7 kg		3.7 Lbs.
Leadwire Length	300 mm		11-13/16"

Please read the page of "How to Use This Catalog" first for correct use of compressors and pumps.

Application Examples

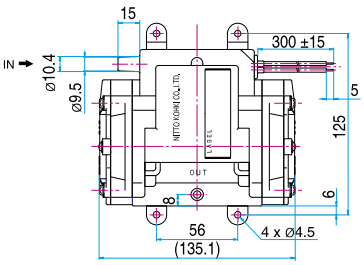


Bedsore Prevention Mattress

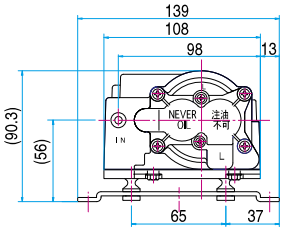


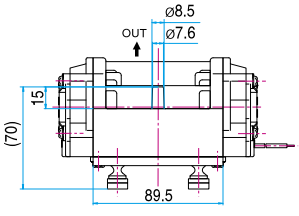
Solder Fume Suction

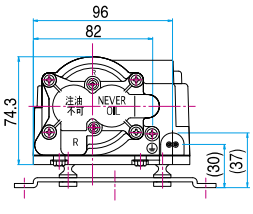
Sketch Drawing and Mounting Dimensions Diagram (mm)



Dual Type Only



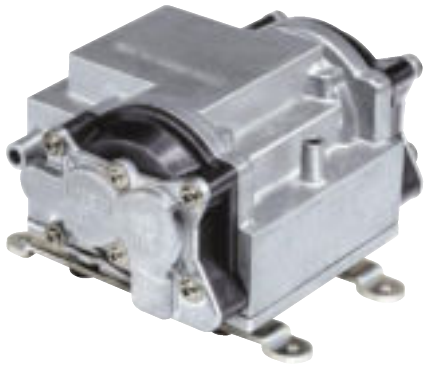




DIAPHRAGM PUMP

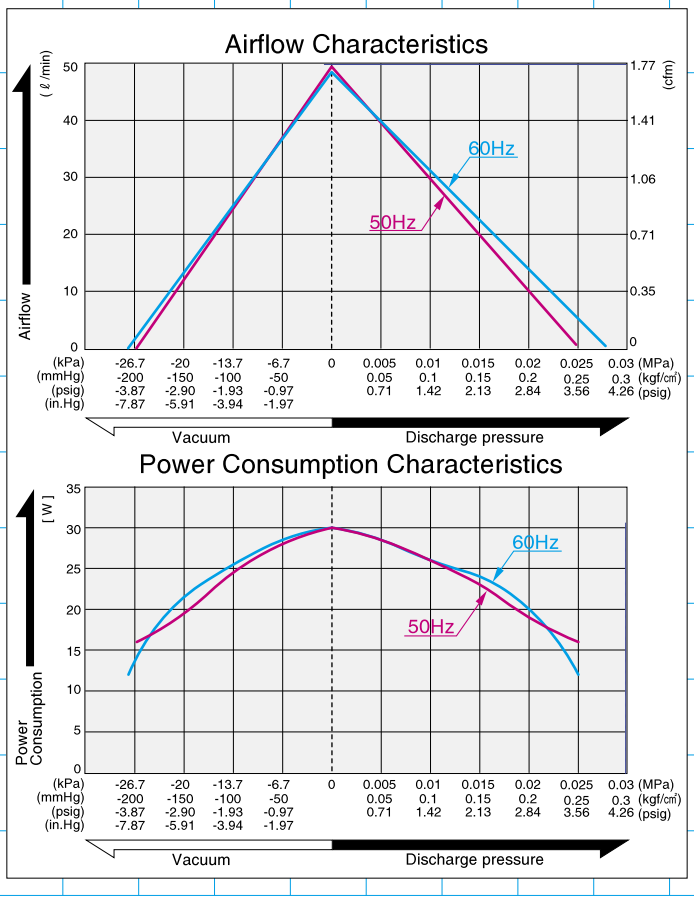
DIAPHRAGM PUMP

Compressor Vacuum



VC0301B

Airflow & Power Consumption

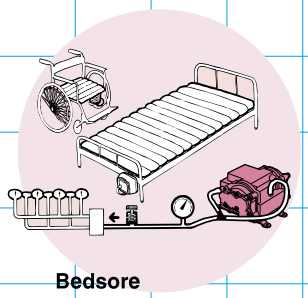


Specifications

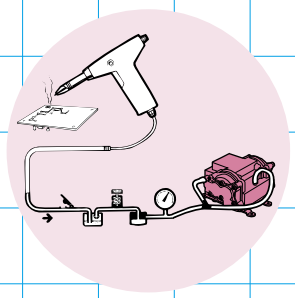
	(SI)	(EURO)	(U.S.A.)
Rated Pressure	0.01 MPa {0.1 kgf/cm²}	0.1 bar	1.42 psig
Rated Airflow	25 ℓ /min		0.88 cfm
Rated Voltage	120 V AC or 230 V AC		
Maximum Pressure	0.02 MPa {0.2 kgf/cm²}	0.2 bar	2.84 psig
Max. vacuum	-21.3 kPa {-160 mmHg}	-213 mbar	-6.3 in.Hg
Power Consumption	27 W		
Rated Frequency	60 Hz or 50 Hz		
Working Pressure Range	-21.3kPa~0.02 MPa {-160 mmHg~0.2 kgf/cm²}	-213 mbar ~ 0.2 bar	-6.3 in.Hg ~ 2.84 psig
Life Expectancy	10,000 hours		
Inlet	10.5 mm O.D. hose nipple		
Outlet	8.5 mm O.D. hose nipple		
Duty Cycle	Continuous		
Coil Insulation Class	A for 120V & B for 230V or its equivalent		
Mounting Dimensions	125 (L) x56 (W) mm		$4\text{-}^{15}/_{16}$"(L) x $2\text{-}^{13}/_{64}$"(W)
Gross Weight	1.7 kg		3.7 Lbs.
Leadwire Length	300 mm		11-13/16"

Please read the page of "How to Use This Catalog" first for correct use of compressors and pumps.

Application Examples

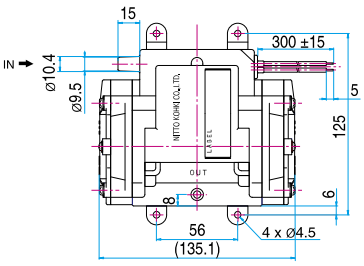


Bedsore Prevention Mattress

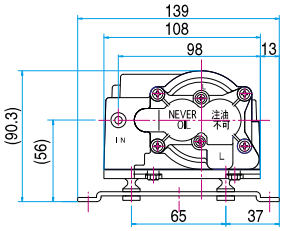


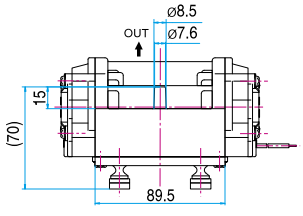
Solder Fume Suction

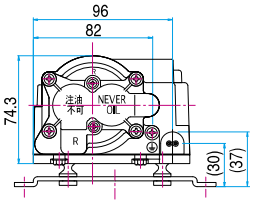
Sketch Drawing and Mounting Dimensions Diagram (mm)



Dual Type Only







DIAPHRAGM PUMP
PISTON PUMP

DC

Diaphragm Pump
Piston Pump

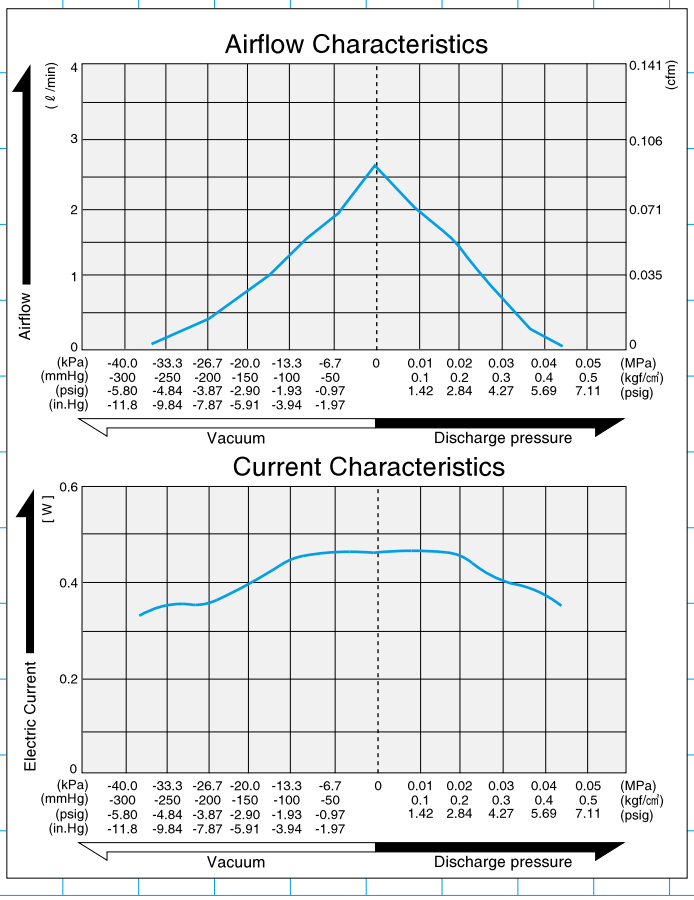
DC AIR PUMP

DIAPHRAGM PUMP

Compressor Vacuum

DP0125

Airflow & Electric Current

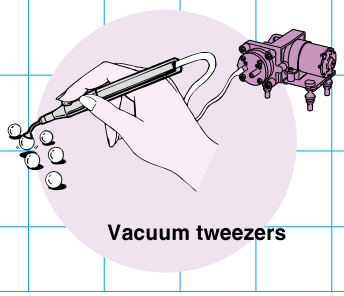


Specifications

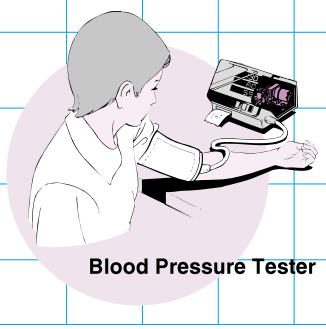
	(SI)	(EURO)	(U.S.A.)
Attainable Vacuum	-33.3 kPa {-250 mmHg}	-333 mbar	-9.84 in.Hg
Free Air Displacement	2.5 ℓ /min		0.088 cfm
Rated Voltage	12 V DC		
Maximum Pressure	0.03 MPa {0.3 kgf/cm²}	0.3 bar	4.27 psig
Maximum Current	0.5A		
Duty Cycle	Continuous		
Life Expectancy	200 hours		
Inlet (or Outlet)	3 mm O.D. straight nipple		
Coil Insulation Class	E or its equivalent (JETL)		
Mounting Dimensions	32 mm(L) x 32.5 mm(W)	$1\frac{1}{4}$"(L) x $1\frac{9}{32}$"(W)	
Gross Weight	0.08 kg	0.18 Lbs.	

Please read the page of "How to Use This Catalog" first for correct use of compressors and pumps.

Application Examples

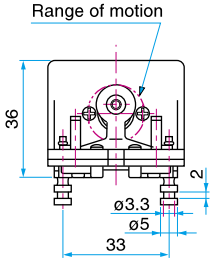


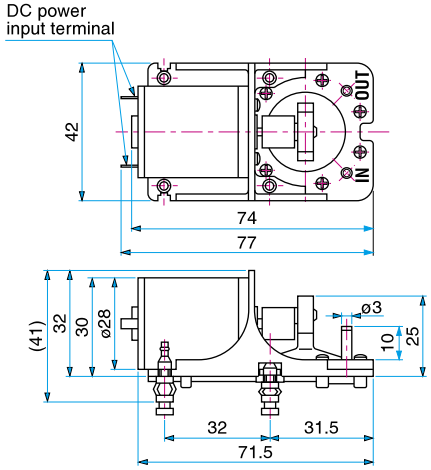
Vacuum tweezers



Blood Pressure Tester

Sketch Drawing and Mounting Dimensions Diagram (mm)





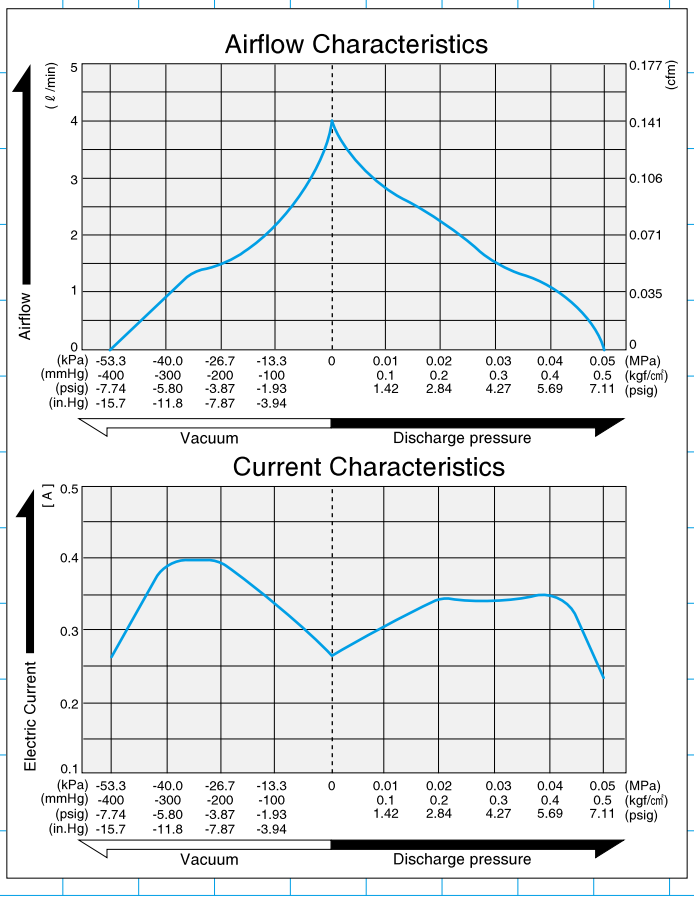
DC AIR PUMP

DIAPHRAGM PUMP

Compressor Vacuum

DP0140

Airflow & Electric Current

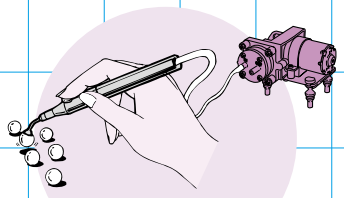


Specifications

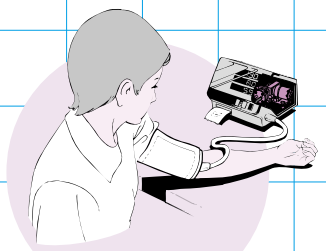
	(SI)	(EURO)	(U.S.A.)
Attainable Vacuum	-53.3 kPa {-400 mmHg}	-533 mbar	-15.7 in.Hg
Free Air Displacement	4 ℓ /min		0.141 cfm
Rated Voltage	12 V DC		
Maximum Pressure	0.05 MPa {0.5 kgf/cm²}	0.5 bar	7.1 psig
Maximum Current	0.5A		
Duty Cycle	Continuous		
Life Expectancy	500 hours		
Inlet (or Outlet)	5 mm O.D. straight nipple		
Coil Insulation Class	E or its equivalent (JETL)		
Mounting Dimensions	52 mm(L) x 36 mm(W)	2-1/16"(L) x 1-7/16"(W)	
Gross Weight	0.19 kg	0.42 Lbs.	

Please read the page of "How to Use This Catalog" first for correct use of compressors and pumps.

Application Examples

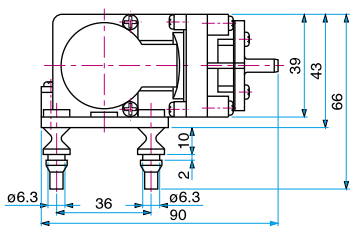


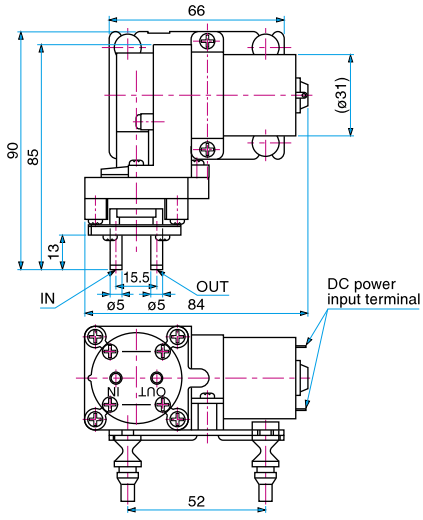
Vacuum tweezers



Blood Pressure Tester

Sketch Drawing and Mounting Dimensions Diagram (mm)





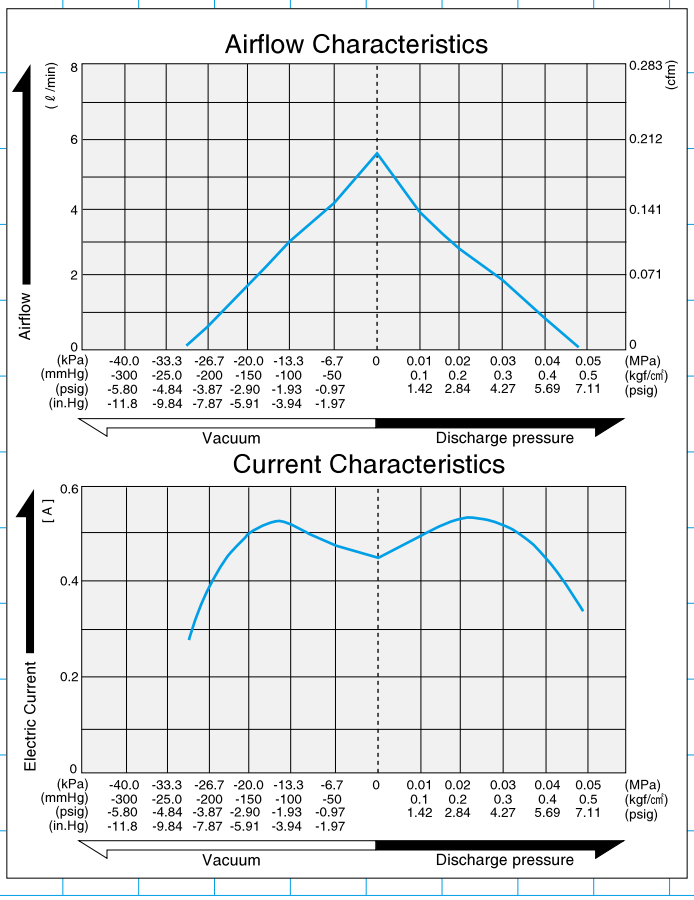
DC AIR PUMP

DIAPHRAGM PUMP

Compressor Vacuum

DP0102

Airflow & Electric Current

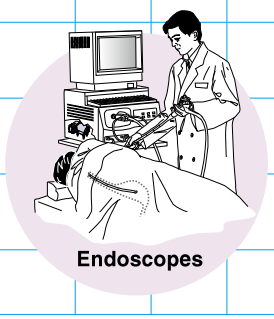


Specifications

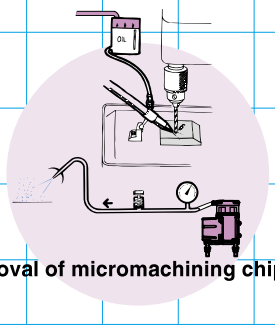
	(SI)	(EURO)	(U.S.A.)
Attainable Vacuum	-26.7 kPa {-200 mmHg}	-267 mbar	-7.87 in.Hg
Free Air Displacement	5.0 ℓ /min		0.177 cfm
Rated Voltage	12 V DC		
Maximum Pressure	0.045 MPa{0.45kg/cm²}	0.45 bar	6.4 psig
Maximum Current	0.7 A		
Rated Operating Time	Continuous		
Working Pressure Range	-26.7kPa~0.045 MPa {-200mmHg~0.45kg/cm²}	-267 mbar~ 0.45 bar	-7.87 in.Hg ~ 6.4 psig
Life Expectancy	5000 hours		
Inlet and Outlet	6 mm O.D. straight nipple		
Coil Insulation Class	E or its equivalent (JETL)		
Mounting Dimensions	50 mm(L) x 30 mm(W)	1-31/32"(L) x 1-3/16"(W)	
Gross Weight	0.25 kg	0.55 Lbs.	
Leadwire Length	400 mm	15-3/4"	

Please read the page of "How to Use This Catalog" first for correct use of compressors and pumps.

Application Examples

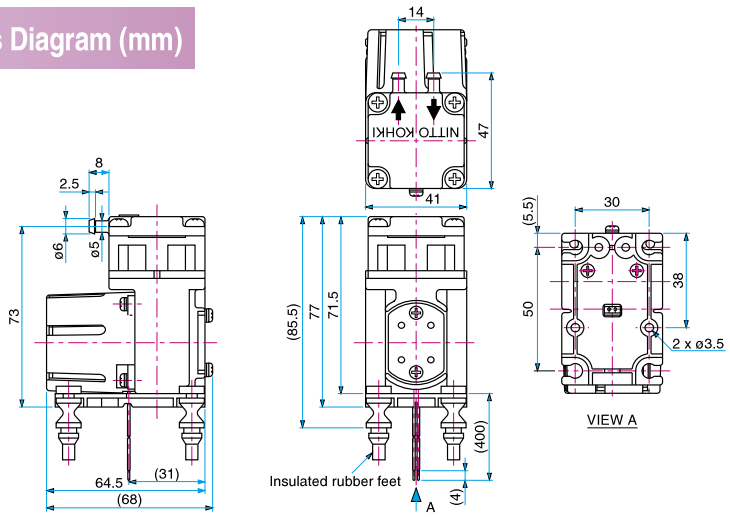


Endoscopes



Removal of micromachining chips

Sketch Drawing and Mounting Dimensions Diagram (mm)



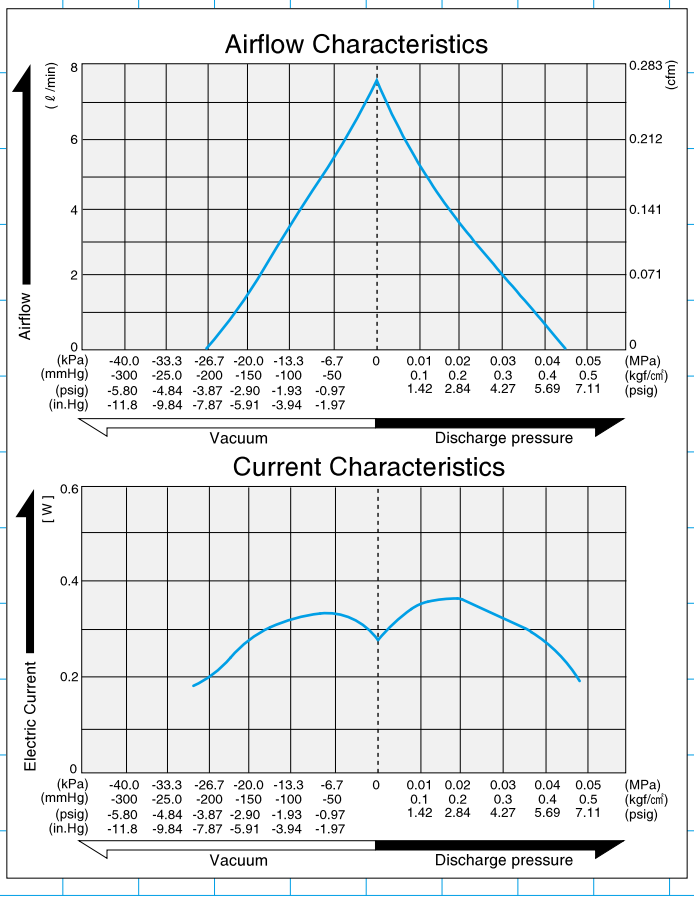
DC AIR PUMP

DIAPHRAGM PUMP

Compressor Vacuum

DP0102S

Airflow & Electric Current

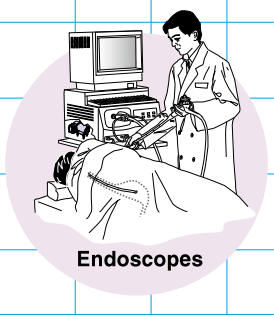


Specifications

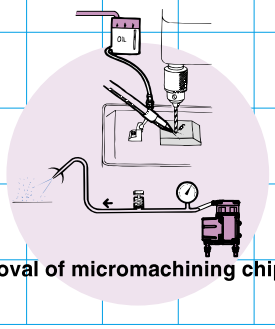
	(SI)	(EURO)	(U.S.A.)
Attainable Vacuum	-26.7 kPa {-200 mmHg}	-267 mbar	-7.87 in.Hg
Free Air Displacement	7.0 ℓ /min		0.247 cfm
Rated Voltage	24 V DC		
Maximum Pressure	0.045 MPa{0.45kg/cm²}	0.45 bar	6.4 psig
Maximum Current	0.5 A		
Rated Operating Time	Continuous		
Working Pressure Range	-26.7kPa~0.045 MPa {-200mmHg~0.45kg/cm²}	-267 mbar~ 0.45 bar	-7.87 in.Hg ~ 6.4 psig
Life Expectancy	5000 hours		
Inlet and Outlet	6 mm O.D. straight nipple		
Coil Insulation Class	E or its equivalent (JETL)		
Mounting Dimensions	50 mm(L) x 30 mm(W)	1-$^{3}/_{32}$"(L) x 1-$^{3}/_{16}$"(W) in.	
Gross Weight	0.25 kg	0.55 Lbs.	
Leadwire Length	400 mm	15-$^{3}/_{4}$"	

Please read the page of "How to Use This Catalog" first for correct use of compressors and pumps.

Application Examples

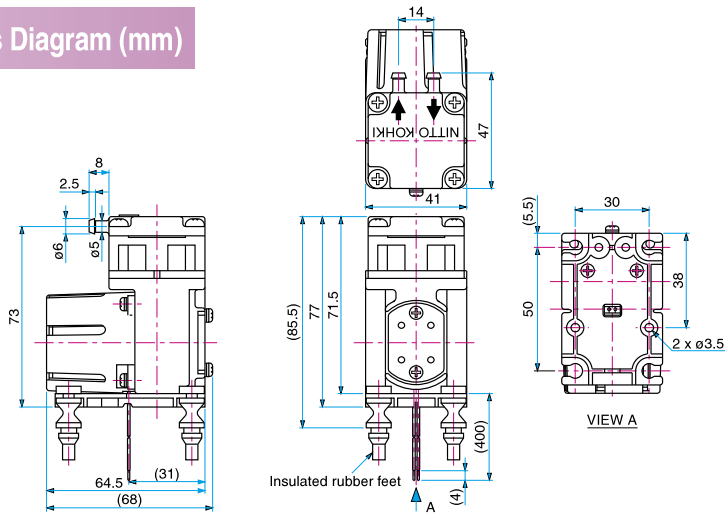


Endoscopes



Removal of micromachining chips

Sketch Drawing and Mounting Dimensions Diagram (mm)



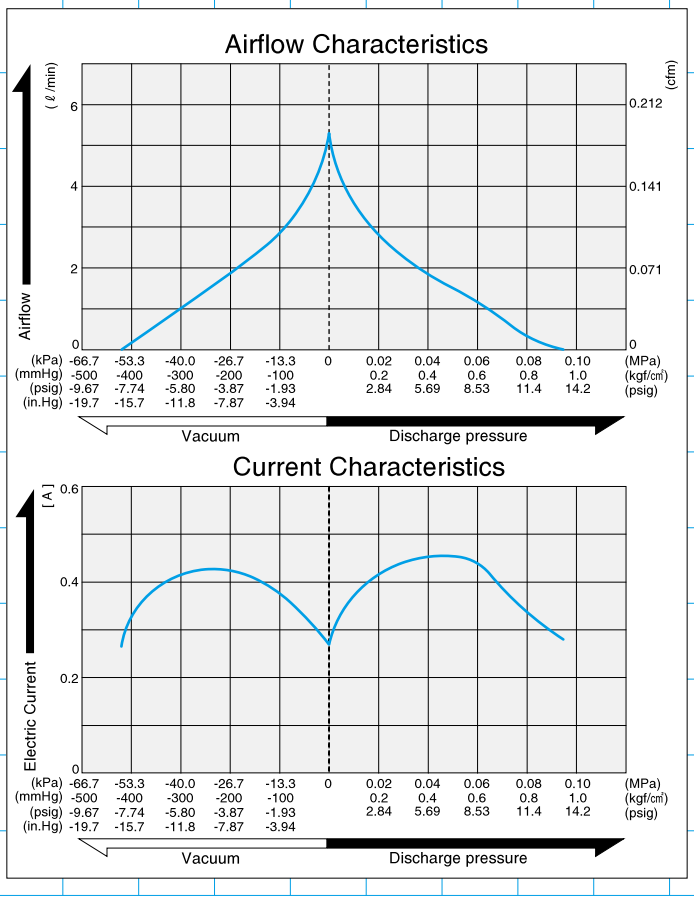
DC AIR PUMP

DIAPHRAGM PUMP

Compressor Vacuum

DP0102H-X1 (12V DC)

Airflow & Electric Current

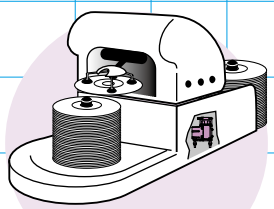


Specifications

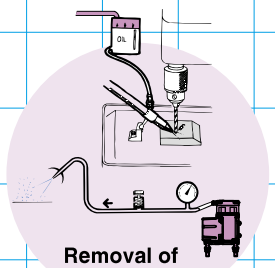
	(SI)	(EURO)	(U.S.A.)
Attainable Vacuum	-50.7 kPa {-380 mmHg}	-507 mbar	-15 in.Hg
Free Air Displacement	4.0 ℓ /min		0.141 cfm
Rated Voltage	12 V DC		
Maximum Pressure	0.08 MPa{0.8 kg/cm²}	0.8 bar	11.4 psig
Maximum Current	0.7 A		
Rated Operating Time	Continuous		
Working Pressure Range	-50.7kPa~0.08 MPa {-380 mmHg~0.8 kg/cm²}	-507 mbar~ 0.8 bar	-15 in.Hg~ 11.4 psig
Life Expectancy	3000 hours		
Inlet and Outlet	6 mm O.D. hose nipple		
Coil Insulation Class	E or its equivalent (JETL)		
Mounting Dimensions	50 mm(L) x 30 mm(W)	1-31/32"(L) x 1-3/16"(W)	
Gross Weight	0.25 kg	0.55 Lbs.	
Leadwire Length	400 mm	15-3/4"	

Please read the page of "How to Use This Catalog" first for correct use of compressors and pumps.

Application Examples

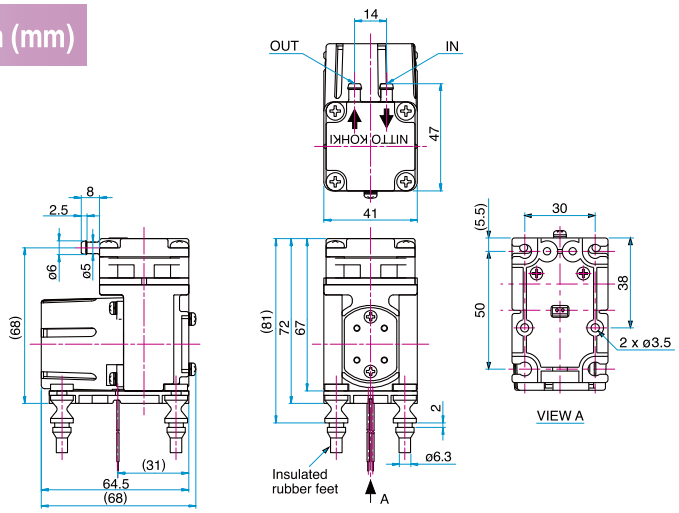


Vacuum pick up and place devices for CD & DVD



Removal of micromachining chips

Sketch Drawing and Mounting Dimensions Diagram (mm)



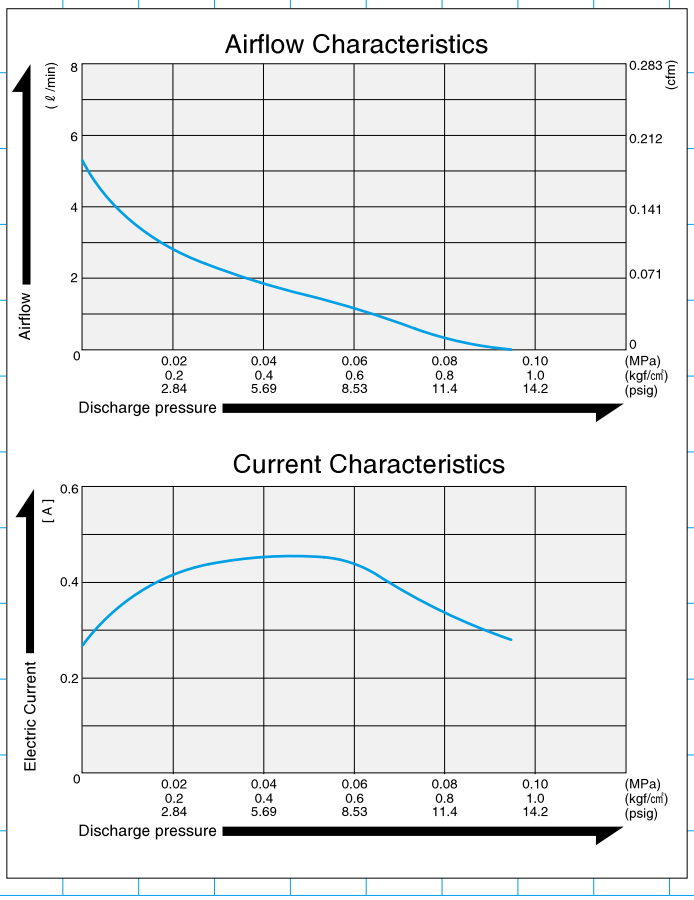
DC AIR PUMP

DIAPHRAGM PUMP

Compressor

DP0102H-X2 (12V DC)

Airflow & Electric Current

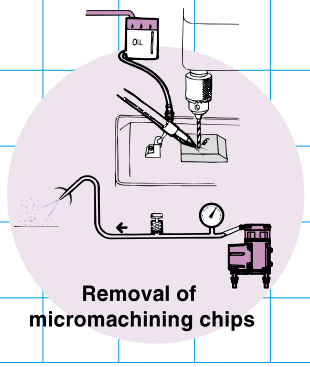


Specifications

	(SI)	(EURO)	(U.S.A.)
Free Air Displacement	4.0 ℓ /min		0.141 cfm
Rated Voltage	12 V DC		
Maximum Pressure	0.08 MPa{0.8kg/cm²}	0.8 bar	11.4 psig
Maximum Current	0.7 A		
Rated Operating Time	Continuous		
Working Pressure Range	0~0.08 MPa{0~0.8kg/cm²}	0~0.8 bar	0~11.4 psig
Life Expectancy	3000 hours		
Inlet and Outlet	6 mm O.D. hose nipple		
Coil Insulation Class	E or its equivalent (JETL)		
Mounting Dimensions	50 mm(L) x 30 mm(W)		1-31/32"(L) x 1-3/16"(W)
Gross Weight	0.25 kg		0.55 Lbs.
Leadwire Length	400 mm		15-3/4"

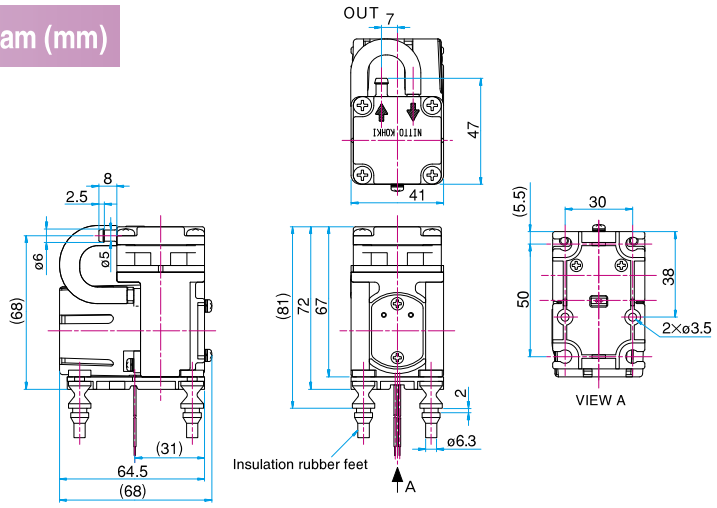
Please read the page of "How to Use This Catalog" first for correct use of compressors and pumps.

Application Examples



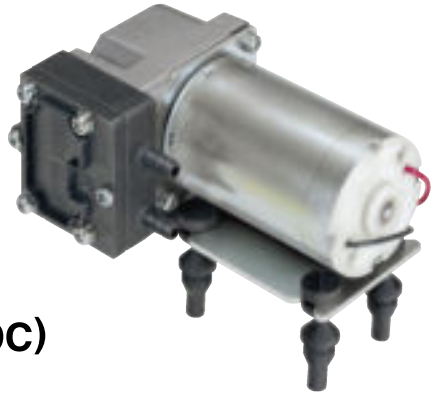
Removal of micromachining chips

Sketch Drawing and Mounting Dimensions Diagram (mm)



DC AIR PUMP

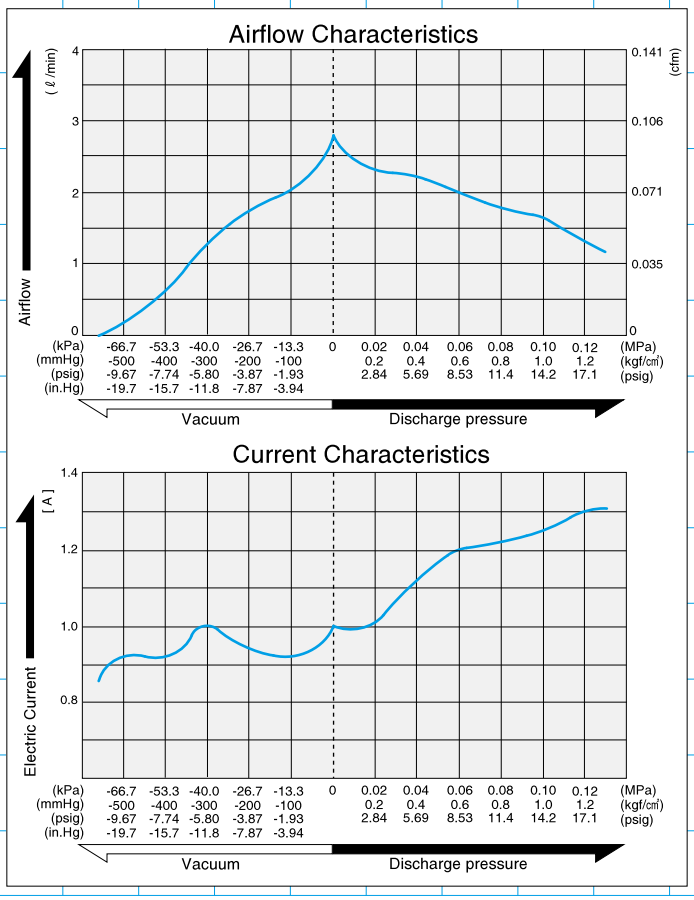
PISTON PUMP



DP0105-X1 (12V DC)

Ask your distributor for appropriate operation of both compression and vacuum in the same one pump.

Airflow & Electric Current

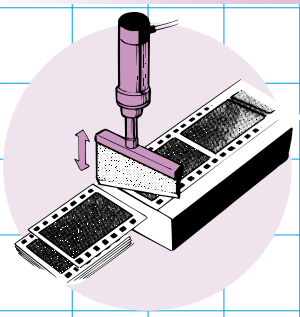


Specifications

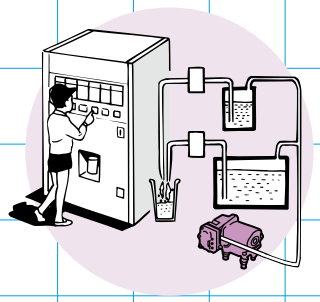
	(SI)	(EURO)	(U.S.A.)
Attainable Vacuum	-66.6 kPa {-500 mmHg}	-666 mbar	-19.7 in.Hg
Free Air Displacement	2.8 ℓ /min		0.1 cfm
Rated Voltage	12 V DC		
Maximum Pressure	0.25 MPa {2.5 kgf/cm²}	2.5 bar	35.6 psig
Maximum Current	1.9 A		
Rated Operating Time	30 minutes		
Working Pressure Range	-66.6 kPa~0.1 MPa {-500mmHg~1 kgf/cm²}	-666 mbar ~ 1 bar	-19.7 in.Hg~ 14.2 psig
Life Expectancy	1000 hours		
Inlet and Outlet	5 mm O.D. straight nipple		
Coil Insulation Class	E or its equivalent (JETL)		
Mounting Dimensions	42 mm(L) x 24.5 mm(W)	1-$^{21}/_{32}$"(L) x 1-$^{31}/_{32}$"(W)	
Gross Weight	0.36 kg	0.80 Lbs.	
Leadwire Length	360 mm	14-$^{3}/_{16}$"	

Please read the page of "How to Use This Catalog" first for correct use of compressors and pumps.

Application Examples

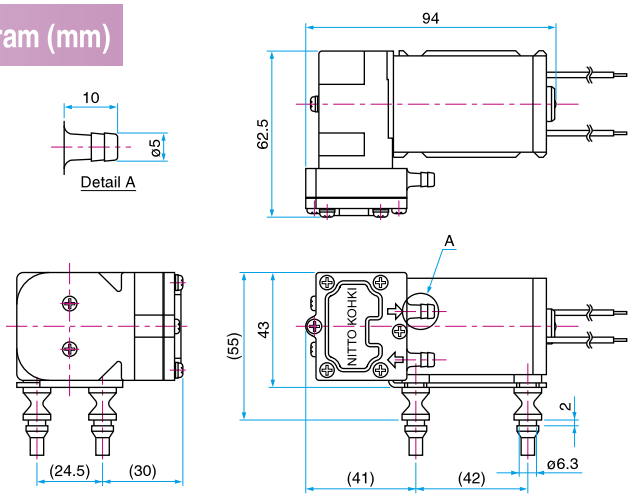


Film Cutter



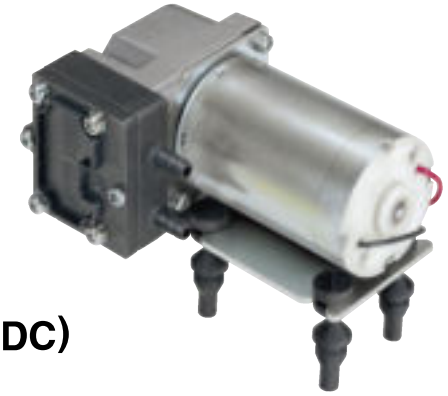
Vending Machines

Sketch Drawing and Mounting Dimensions Diagram (mm)



DC AIR PUMP

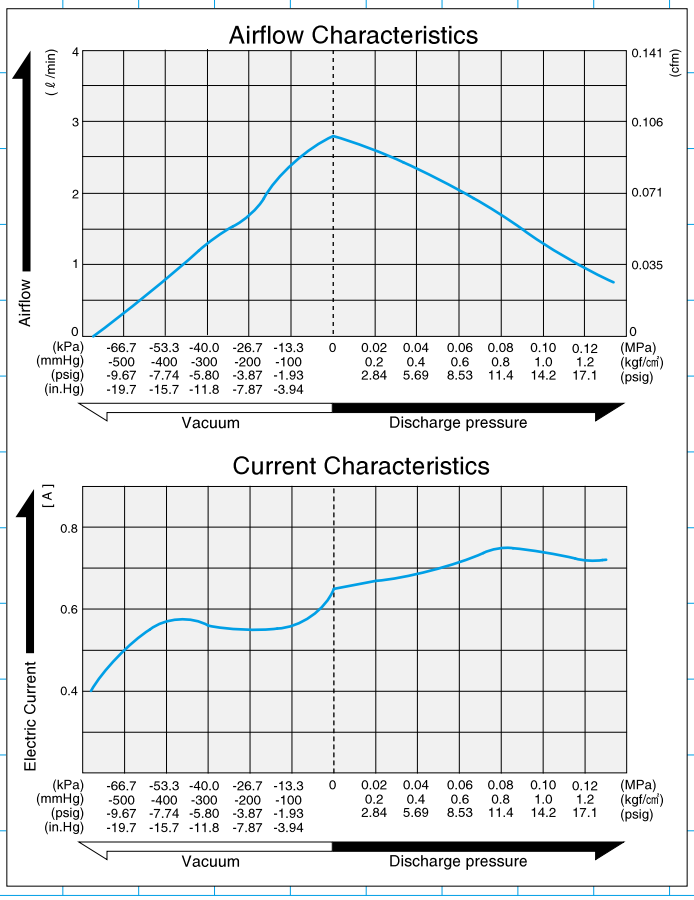
PISTON PUMP



DP0105-Y1 (24V DC)

Ask your distributor for appropriate operation of both compression and vacuum in the same one pump.

Airflow & Electric Current

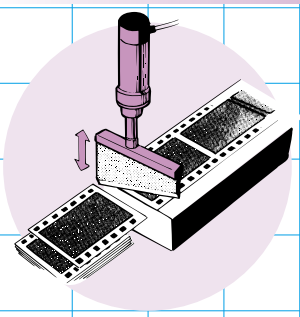


Specifications

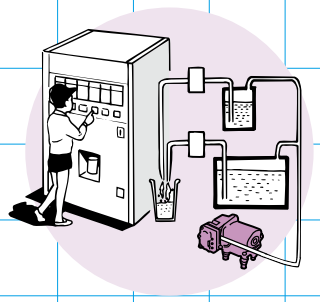
	(SI)	(EURO)	(U.S.A.)
Attainable Vacuum	-66.6 kPa {-500 mmHg}	-666 mbar	-19.7 in.Hg
Free Air Displacement	2.8 ℓ /min		0.1 cfm
Rated Voltage	24 V DC		
Maximum Pressure	0.25 MPa {2.5 kgf/cm²}	2.5 bar	35.6 psig
Maximum Current	0.95 A		
Rated Operating Time	30 minutes		
Working Pressure Range	-66.6 kPa~0.1 MPa {-500mmHg~1 kgf/cm²}	-666 mbar ~ 1 bar	-19.7 in.Hg~ 14.2 psig
Life Expectancy	1000 hours		
Inlet and Outlet	5 mm O.D. straight nipple		
Coil Insulation Class	E or its equivalent (JETL)		
Mounting Dimensions	42 mm(L) x 24.5 mm(W)	1-$^{2}/_{32}$"(L) x 1-$^{3}/_{32}$"(W)	
Gross Weight	0.36 kg	0.80 Lbs.	
Leadwire Length	360 mm	14-$^{3}/_{16}$"	

Please read the page of "How to Use This Catalog" first for correct use of compressors and pumps.

Application Examples

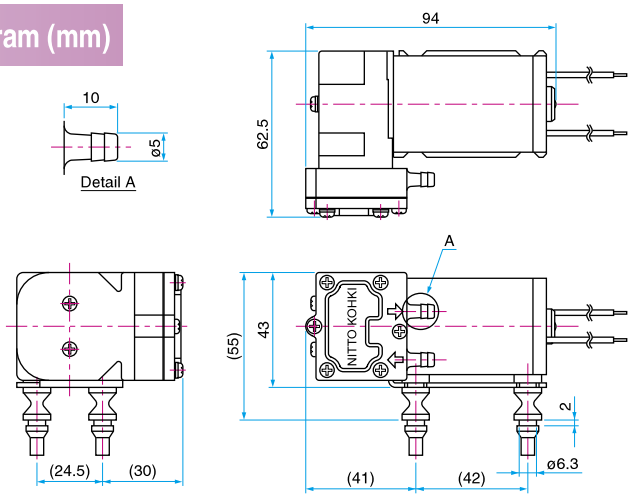


Film Cutter



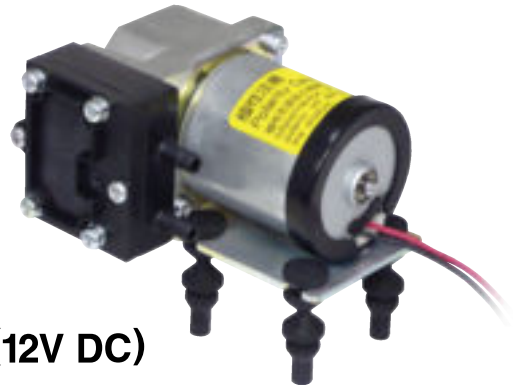
Vending Machines

Sketch Drawing and Mounting Dimensions Diagram (mm)



DC AIR PUMP

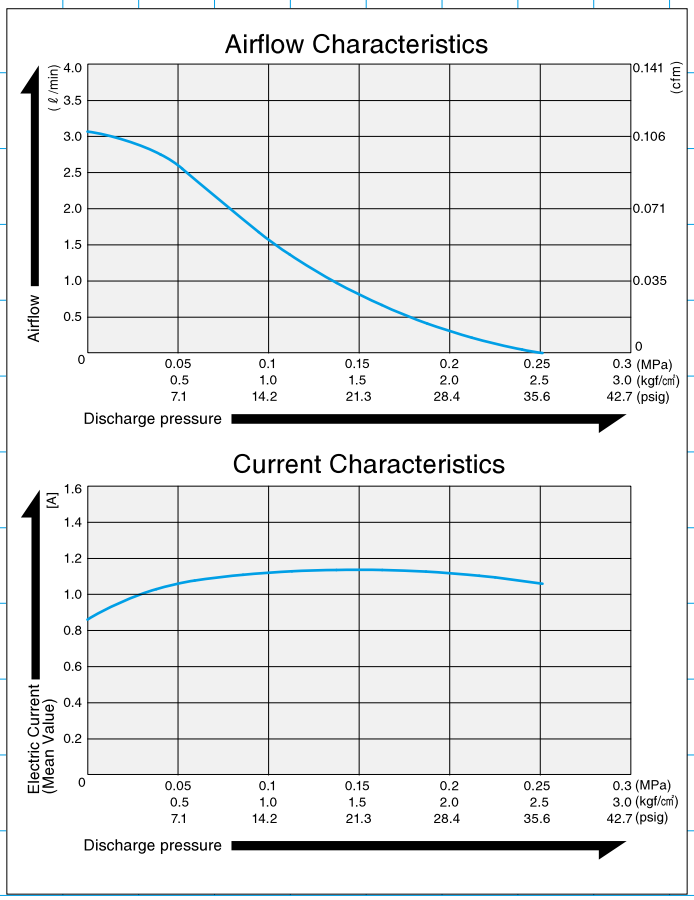
PISTON PUMP



DPA0105-X1 (12V DC)

Ask your distributor for appropriate operation of both compression and vacuum in the same one pump.

Airflow & Electric Current

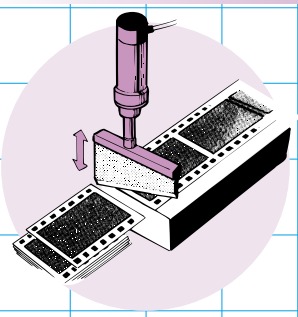


Specifications

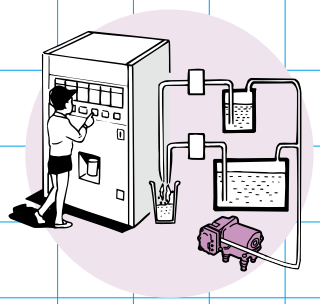
	(SI)	(EURO)	(U.S.A.)
Free Air Displacement	2.8 ℓ /min		0.1 cfm
Rated Voltage	12 V DC		
Maximum Pressure	0.22 MPa {2.2 kgf/cm²}	2.2 bar	31.3 psig
Maximum Current	1.4 A		
Rated Operating Time	Continuous		
Working Pressure Range	0 ~ 0.1 MPa {0 ~1 kgf/cm²}	0 ~ 1 bar	0 ~14.2 psig
Life Expectancy(MTTF)	5,000 hours		
Inlet and Outlet	5 mm O.D. straight nipple		
Coil Insulation Class	A or its equivalent (JETL)		
Mounting Dimensions	50 mm(L) x 30 mm(W)	1-31/32"(L) x 1-3/16"(W)	
Gross Weight	0.3 kg	0.66 Lbs.	
Leadwire Length	360 mm	14-3/16"	

Please read the page of "How to Use This Catalog" first for correct use of compressors and pumps.

Application Examples

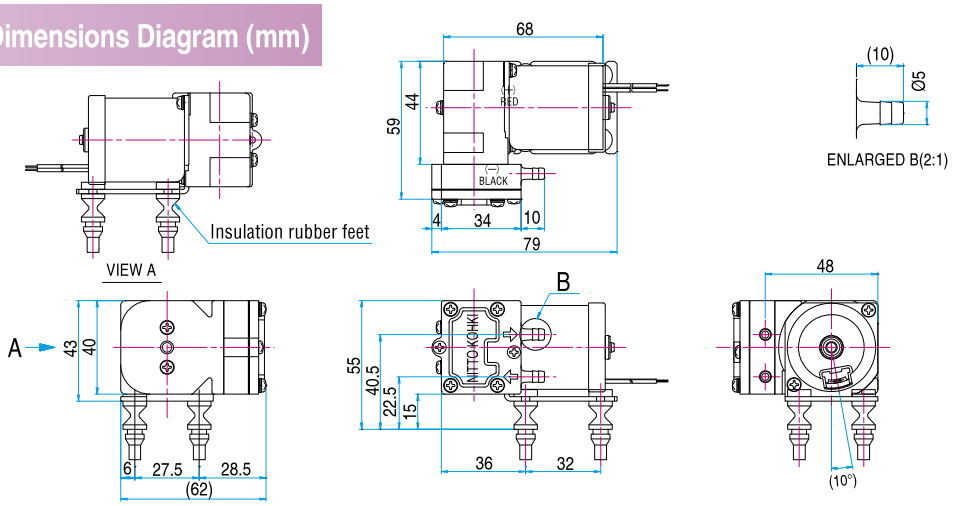


Film Cutter



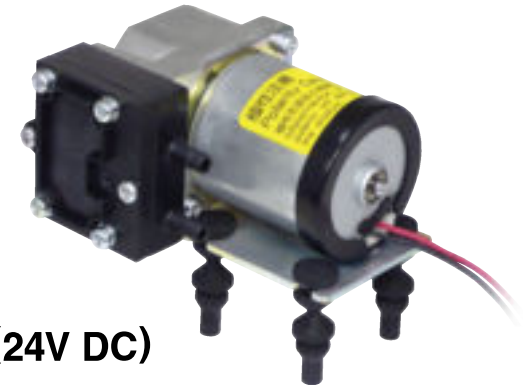
Vending Machines

Sketch Drawing and Mounting Dimensions Diagram (mm)



DC AIR PUMP

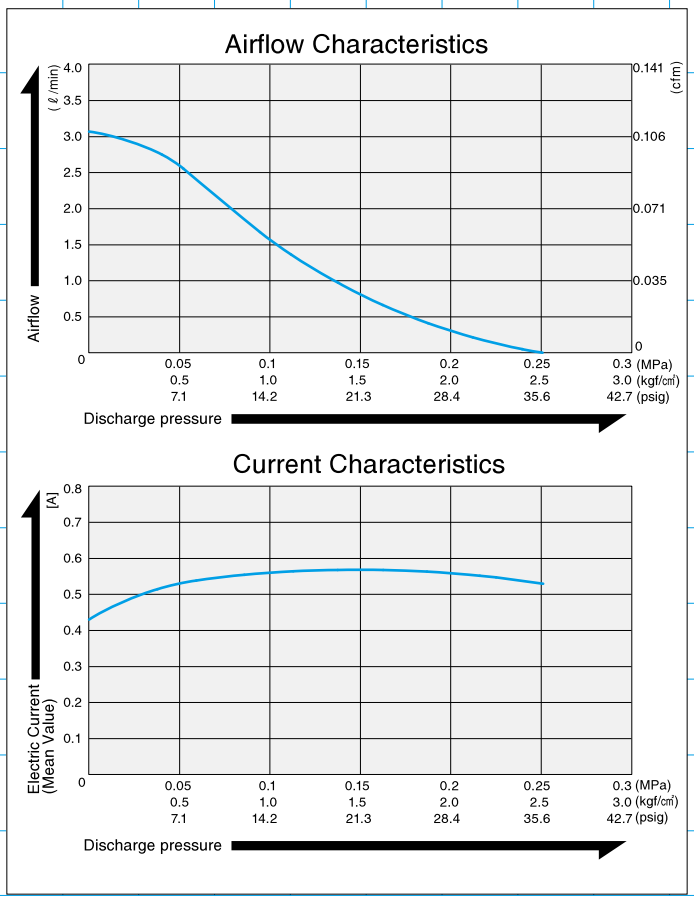
PISTON PUMP



DPA0105-Y1 (24V DC)

Ask your distributor for appropriate operation of both compression and vacuum in the same one pump.

Airflow & Electric Current

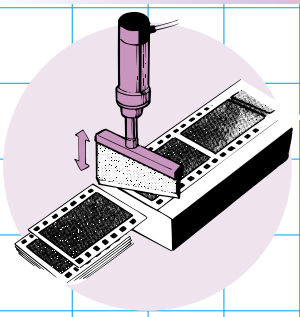


Specifications

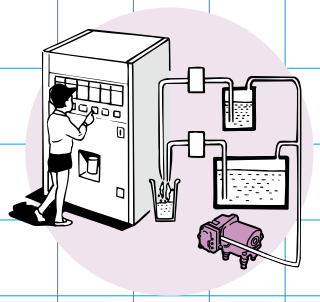
	(SI)	(EURO)	(U.S.A.)
Free Air Displacement	2.8 ℓ /min		0.1 cfm
Rated Voltage	24 V DC		
Maximum Pressure	0.22 MPa {2.2 kgf/cm²}	2.2 bar	31.3 psig
Maximum Current	0.7 A		
Rated Operating Time	Continuous		
Working Pressure Range	0 ~ 0.1 MPa {0 ~1 kgf/cm²}	0 ~ 1 bar	0 ~14.2 psig
Life Expectancy	5,000 hours		
Inlet and Outlet	5 mm O.D. straight nipple		
Coil Insulation Class	A or its equivalent (JETL)		
Mounting Dimensions	50 mm(L) x 30 mm(W)	1-31/32"(L) x 1-3/16"(W)	
Gross Weight	0.3 kg	0.66 Lbs.	
Leadwire Length	360 mm	14-3/16"	

Please read the page of "How to Use This Catalog" first for correct use of compressors and pumps.

Application Examples

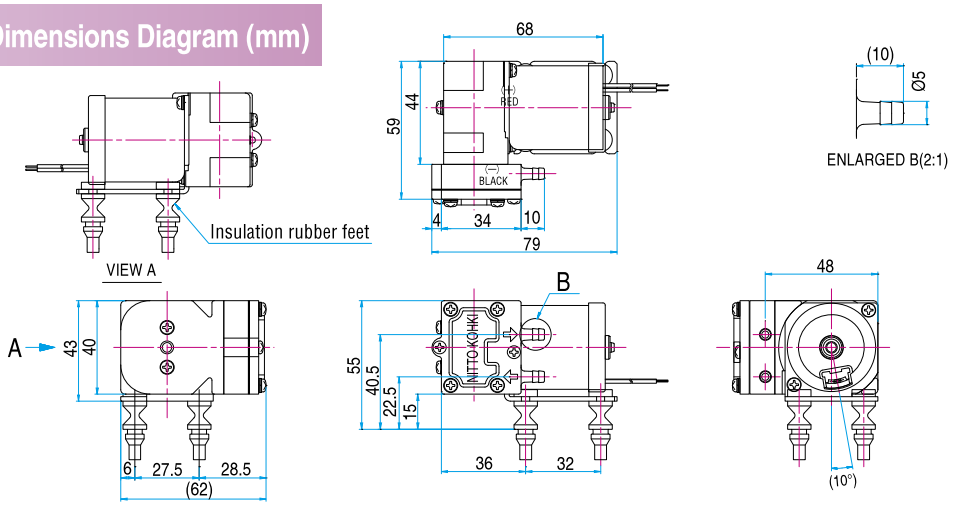


Film Cutter



Vending Machines

Sketch Drawing and Mounting Dimensions Diagram (mm)



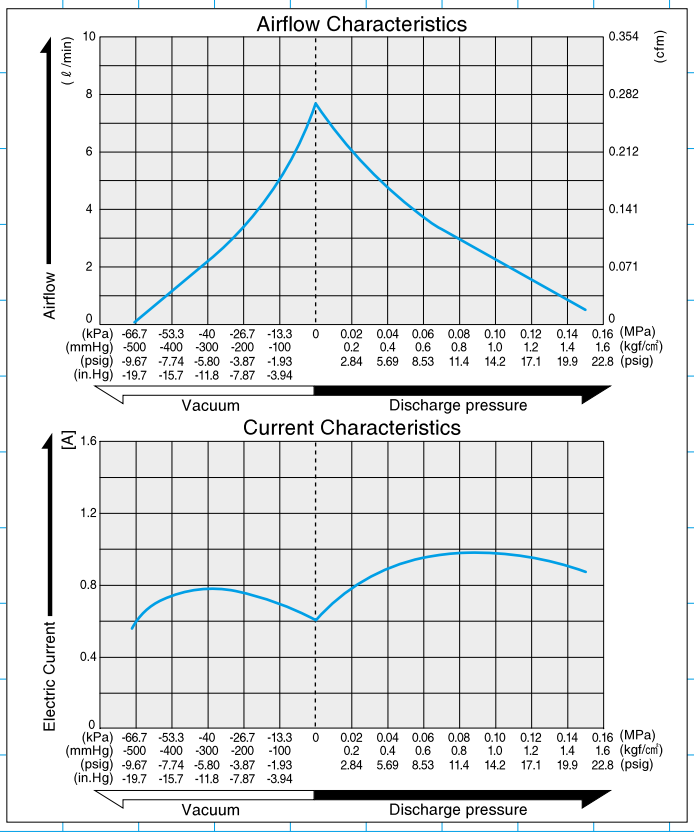
DC AIR PUMP

DIAPHRAGM PUMP

Compressor Vacuum

DP0110-X1

Airflow & Electric Current

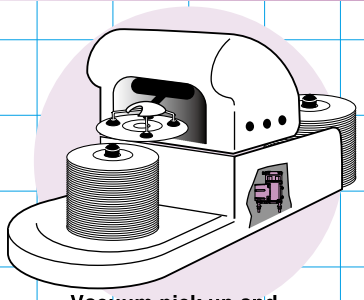


Specifications

	(SI)	(EURO)	(U.S.A.)
Free Air Displacement	7.5 ℓ /min		0.26 cfm
Rated Voltage	12 V DC		
Maximum Pressure	0.15 MPa {1.5 kgf/cm²}	1.5 bar	21.3 psig
Maximum Current	1.2A or less		
Attainable Vacuum	-66.6kPa (-500mmHg)	-666 mbar	-19.7 in.Hg
Rated Operating Time	Continuous		
Life Expectancy	5,000 hours		
Inlet and Outlet	6 mm O.D. straight nipple		
Coil Insulation Class	A or its equivalent (JTEL)		
Mounting Dimensions	50 mm(L) x 30 mm(W)	1-$^{3}/_{32}$"(L) x 1-$^{3}/_{16}$"(W)	
Gross Weight	0.30 kg	0.66 Lbs.	
Leadwire Length	360 mm	14-$^{3}/_{16}$"	

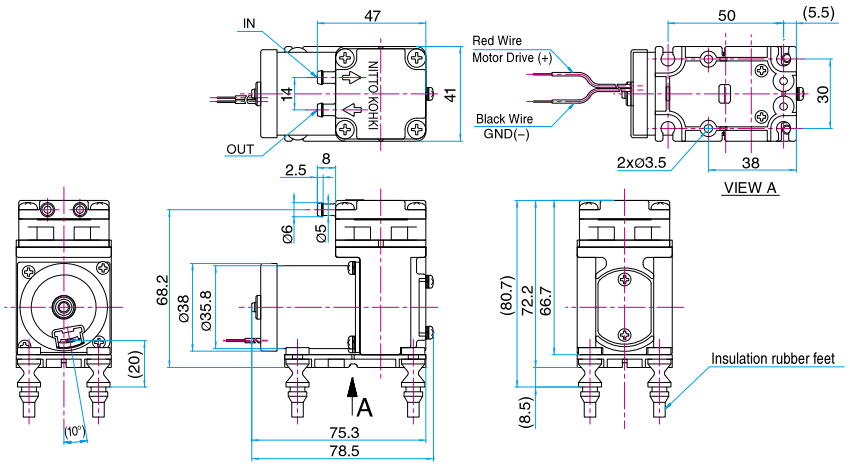
Please read the page of "How to Use This Catalog" first for correct use of compressors and pumps.

Application Examples



Vacuum pick up and place devices for CD & DVD

Sketch Drawing and Mounting Dimensions Diagram (mm)



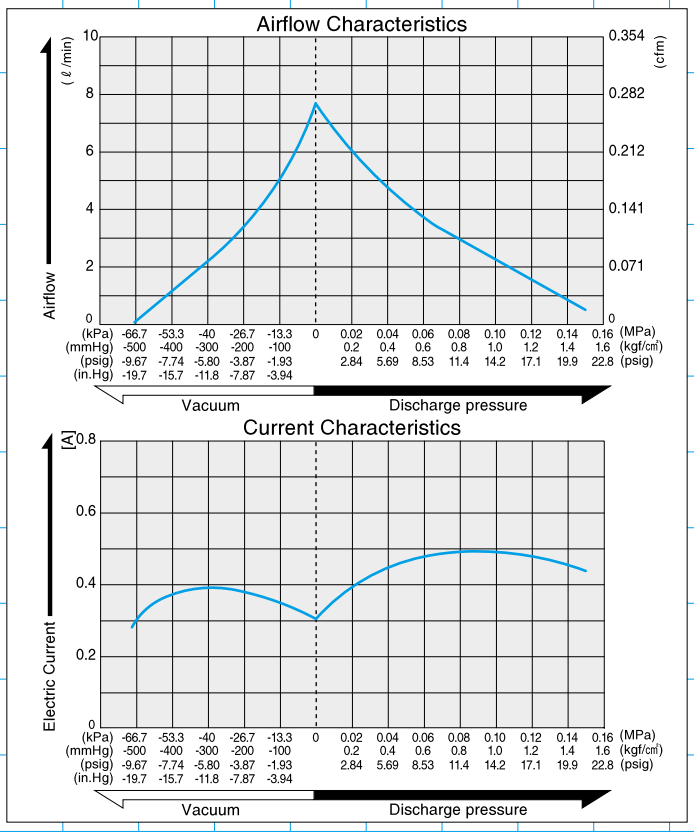
DC AIR PUMP

DIAPHRAGM PUMP

Compressor Vacuum

DP0110-Y1

Airflow & Electric Current

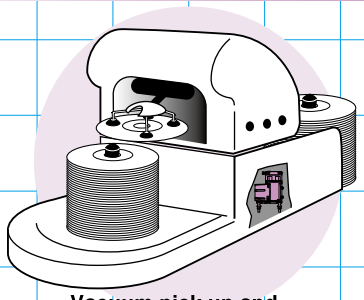


Specifications

	(SI)	(EURO)	(U.S.A.)
Free Air Displacement	7.5 ℓ /min		0.26 cfm
Rated Voltage	24 V DC		
Maximum Pressure	0.15 MPa {1.5 kgf/cm²}	1.5 bar	21.3 psig
Maximum Current	0.6 A or less		
Attainable Vacuum	-66.6kPa (-500mmHg)	-666 mbar	-19.7 in.Hg
Rated Operating Time	Continuous		
Life Expectancy	5,000 hours		
Inlet and Outlet	6 mm O.D. straight nipple		
Coil Insulation Class	A or its equivalent (JTEL)		
Mounting Dimensions	50 mm(L) x 30 mm(W)	1-$^{3}/_{32}$"(L) x 1-$^{3}/_{16}$"(W)	
Gross Weight	0.30 kg	0.66 Lbs.	
Leadwire Length	360 mm	14-$^{3}/_{16}$"	

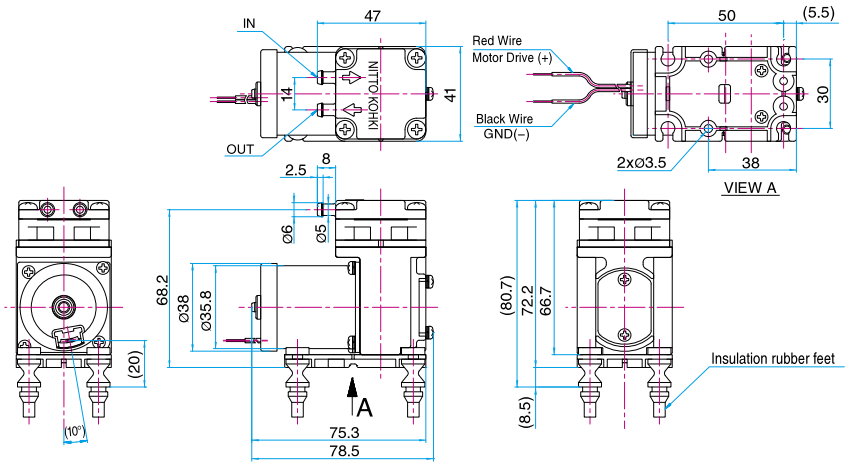
Please read the page of "How to Use This Catalog" first for correct use of compressors and pumps.

Application Examples



Vacuum pick up and place devices for CD & DVD

Sketch Drawing and Mounting Dimensions Diagram (mm)



LIQUID
PIEZOELECTRIC PUMP

BPS type
BPH type
BPF type
P83-86

LIQUID
MINIATURE DIAPHRAGM PUMP

DPE-100
P88

DPE-400
P89

PIEZOELECTRIC PUMP

BIMOR PUMP

Liquid Pump

Suitable for pumping both liquids and gases!

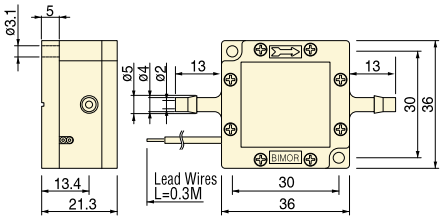
Compact, lightweight, durable & quiet

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.

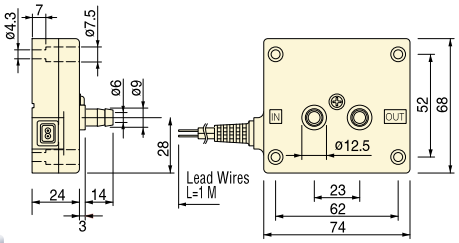
We have achieved maintenance free continuous operation for 60 months.

Specifications

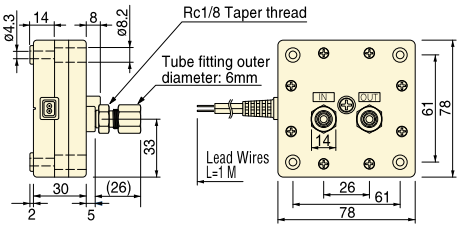
BPS type



BPH type



BPF type



Model	Voltage(AC) —120V 60Hz Current (mA)	Self-priming Pressure(kPa)	FlowRate (mℓ/min)	Discharge Pressure (kPa)
BPS-215i	3	3	30	15
BPS-235G		1.5		
BPH-214i	15	8	350	18
BPH-214D				
BPH-214E				
BPH-214G		7		17
BPH-414i	30	12	500	35
BPH-414D				
BPH-414E				
BPH-414G		10	450	32
BPH-474G			400	35
BPH-474P				
BPF-465P	30	10	400	35

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.

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.
The following "Examples of suitable chemical liquids and gases" should be used for reference only. Please confirm the suitability under any applied conditions by yourself.

Applications

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

- For pressure expansion
- For sampling (inhale)

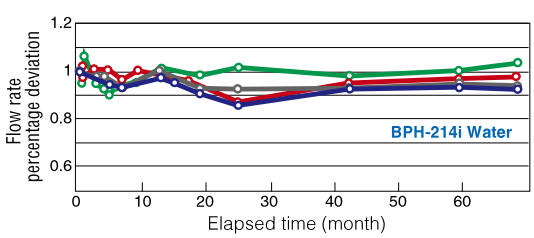
Model	Voltage(AC) — 230V 50Hz: Current (mA)	Self-priming Pressure(kPa)	FlowRate (mL/min)	Discharge Pressure (kPa)	Liquid Surface Materials: Housing	Liquid Contact Sheet	Valve/O-ring	Mass (g)	Examples of suitable chemical liquids and gases	Examples of unsuitable chemical liquids and gases	
BPS-215i	4	0.4	10	10	PP	PP	IIR	40	Ethanol, Hydrochloric acid, Sodium carbonate, Benzaldehyde, Formalin	Xylene, Mineral oil, Carbon tetrachloride, Trichloroethylene, Toluene, Benzene	BPS type
BPS-235G					POM	PTFE	FKM		Ethanol, Xylene, Silicone oil, Kerosene, Toluene, Benzene	Ammonia water, Hydrochloric acid, Hydrogen peroxide, Sodium hypochlorite, Nitric acid, Sulfuric acid	
BPH-214i	15	7	220	18	PP	PP	IIR	140	Ethanol, Hydrochloric acid, Sodium carbonate, Benzaldehyde, Formalin	Xylene, Mineral oil, Carbon tetrachloride, Trichloroethylene, Toluene, Benzene	
BPH-214D							VMQ		Ammonia water, Ethanol, Hydrogen peroxide, Sodium hypochlorite, Methanol	Caustic soda, Carbon tetrachloride, Silicone oil, Trichloroethylene, Toluene, Benzene	
BPH-214E							EPDM		Ammonia water, Ethanol, Hydrochloric acid, Caustic potash, Caustic soda, Methanol	Xylene, Mineral oil, Carbon tetrachloride Trichloroethylene, Toluene, Benzene	
BPH-214G				17		PTFE	FKM		Ethanol, Hydrogen peroxide, Mineral oil, Sodium hypochlorite	Acetone, Ammonia water, Glacial acetic acid, Hydrofluoric acid, Formalin	
						PP	IIR	140	Ethanol, Hydrochloric acid, Sodium carbonate, Benzaldehyde, Formalin	Xylene, Mineral oil, Carbon tetrachloride, Trichloroethylene, Toluene, Benzene	BPH type
							VMQ		Ammonia water, Ethanol, Hydrogen peroxide, Sodium hypochlorite, Methanol	Caustic soda, Carbon tetrachloride, Silicone oil, Trichloroethylene, Toluene, Benzene	
							EPDM		Ammonia water, Ethanol, Hydrochloric acid, Caustic potash, Caustic soda, Methanol	Xylene, Mineral oil, Carbon tetrachloride Trichloroethylene, Toluene, Benzene	
							FKM		Ethanol, Hydrogen peroxide, Mineral oil, Sodium hypochlorite	Acetone, Ammonia water, Glacial acetic acid, Hydrofluoric acid, Formalin	
BPH-274G	15	7	250	35	PPS	PTFE	FKM	170	Ethanol, Xylene, Carbon tetrachloride, Silicone oil, Trichloroethylene	Acetone, Ammonia water, Chlorosulfonic acid, Glacial acetic acid, Hydrofluoric acid, Formalin	
BPH-274P							FFKM FEP		Ethanol, Chloroform, Glacial acetic acid, Benzene, Methyl ethyl ketone	Chlorosulfonic acid, Fluorine oil, CFC 112, CFC 113	
					PFA		FFKM FEP	350	Ethanol, Aqua regia, Ozone, Carbon tetrachloride, Concentrated nitric acid, Concentrated sulfuric acid, Fuming sulfuric acid	Fluorine oil, CFC 112, CFC 113	BPF type
BPF-265P	15	7	250	35				350			

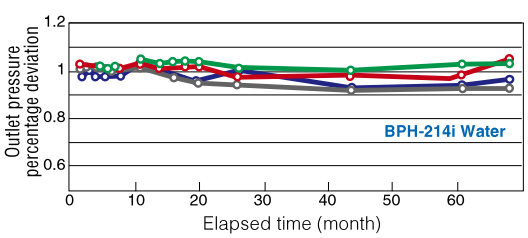
Material Description

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 ---- Tetrafluororesin (Polytetrafluoroethylene)
VMQ ---- Dimethyl Silicon Rubber

Durability

Longevity test : Sample A Sample B Sample C Sample D





BIMOR PUMP

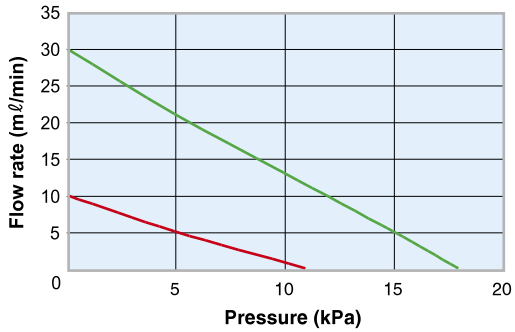
Liquid Pump

Flow Rate Characteristic

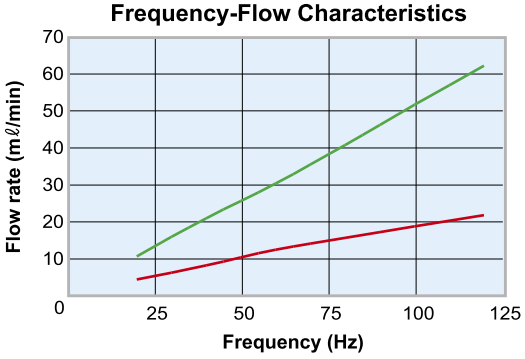
BPS series

120V 60Hz type　230V 50Hz type

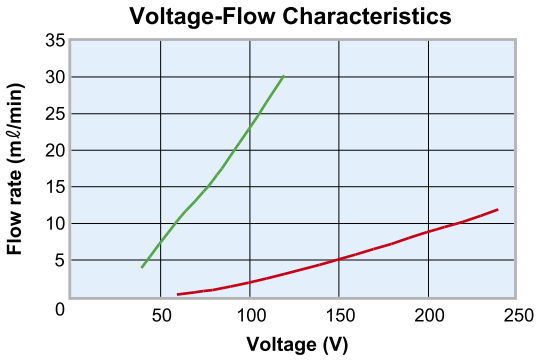
Pressure-Flow Characteristics



Frequency-Flow Characteristics



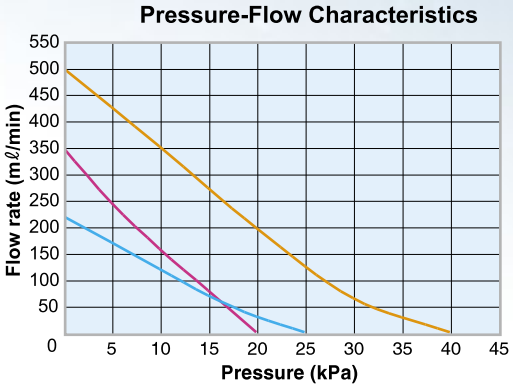
Voltage-Flow Characteristics



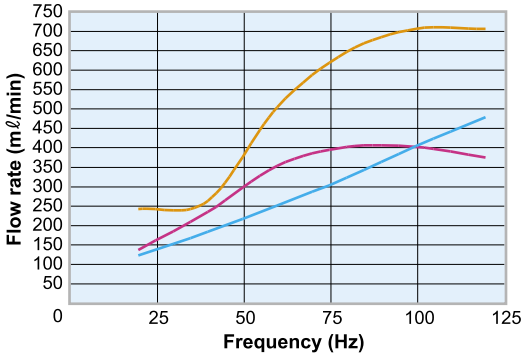
BPH series

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

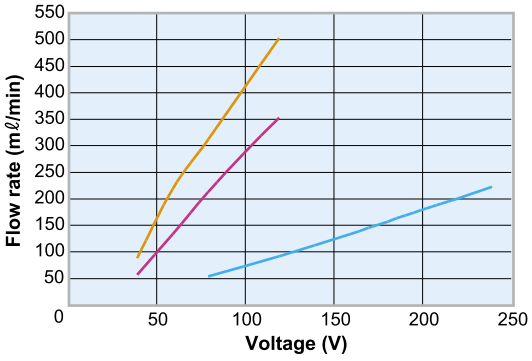
Pressure-Flow Characteristics



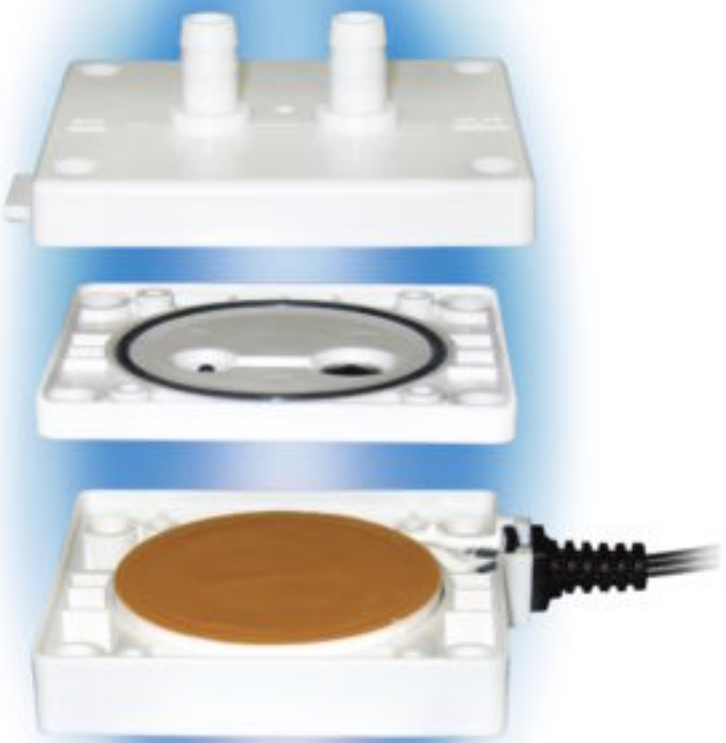
Frequency-Flow Characteristics



Voltage-Flow Characteristics



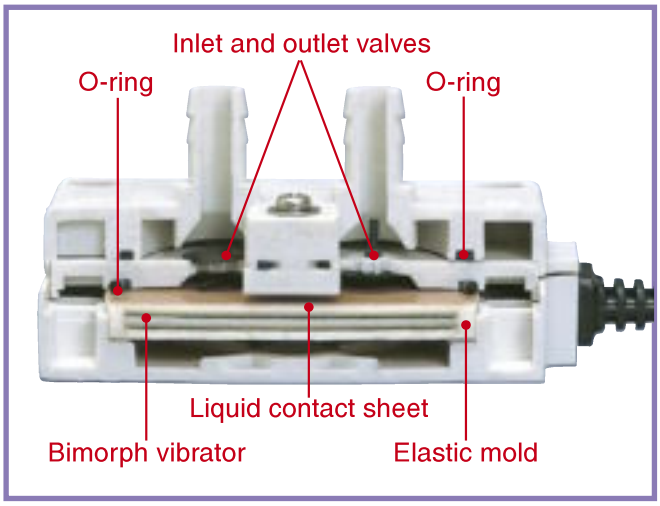
The Next Step in Pump Miniaturization



<Revolutionary piezoelectric bimorph technology>

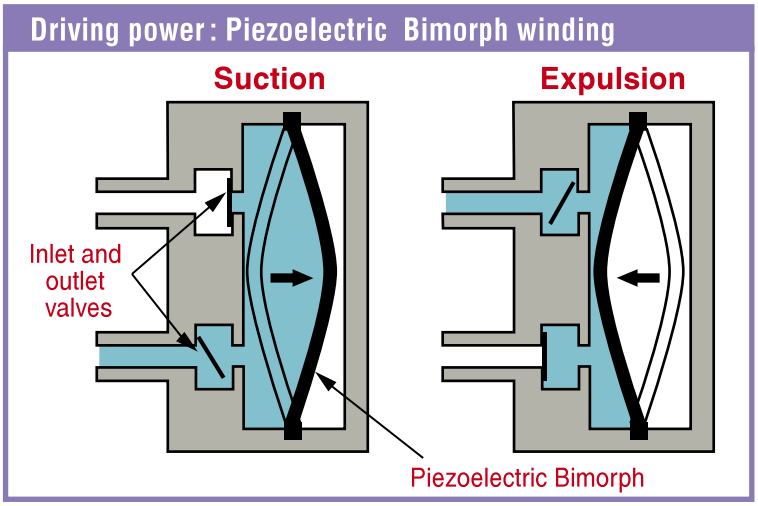
The Bimor's driving force, the bimorph, comprises two parallel piezoelectric wafers. Their nature is to expand or contract depending on the direction of the voltage. Therefore when an alternating current is applied, one wafer expands then contracts while the other contracts then expands, causing the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

Cross section



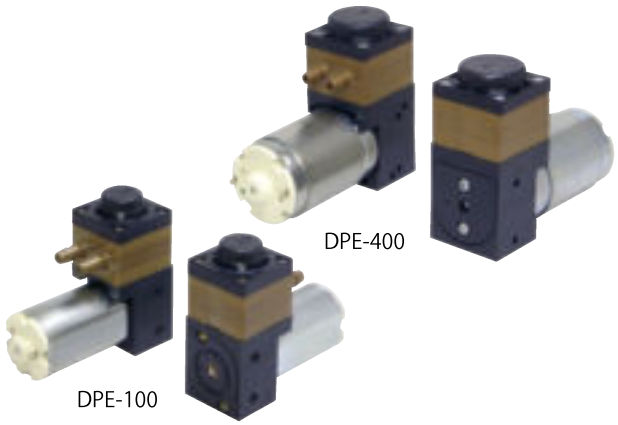
Principle / Structure

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



DC LIQUID PUMP

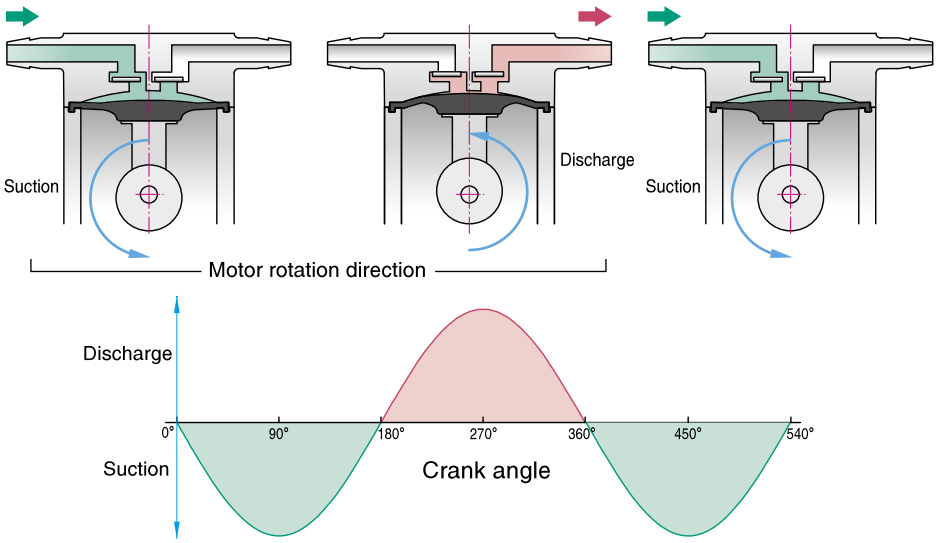
Liquid Pump



- ***Built-in Pulse Absorption Chamber***
- ***Many build material options for different liquids***
- ***Self-priming type with air suction acceptable***

Typical Conventional Pump without Pulse Absorption

As liquid is transported through the suction and discharge passages of the pump and liquid circuit, high pulsations can be created which can cause cavitation, vibration in tubing, fittings, peak pulsing noises, and added stress and wear to pump mechanisms. These negative results are often increased through the use of small pumps having relatively high rotational speeds.



Advanced design DPE Pump with Pulse Absorption

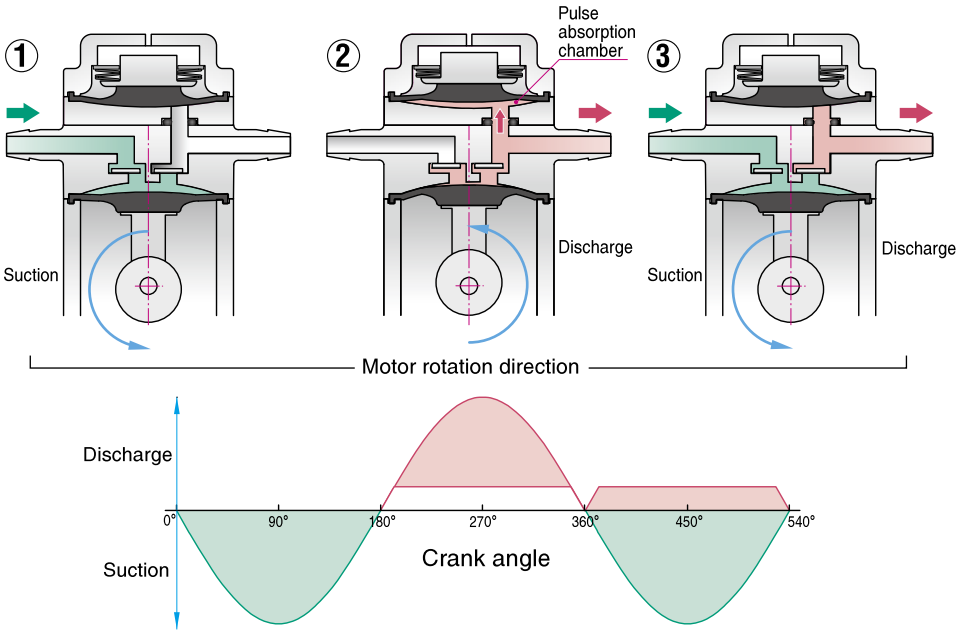
Provides pulse attenuation which helps to create steady state flow, reduced noise and vibration throughout the fluid circuit, and enhances life of the pump and other circuit components. It's designed in. . . No need for additional installation cost or space with pulsation dampers.

① Suction

② Discharge. Partial fluid delivery to pulse absorption chamber, not directly forced to outlet port.

③ Cyclical suction drawn into pump is synchronized with the discharge.

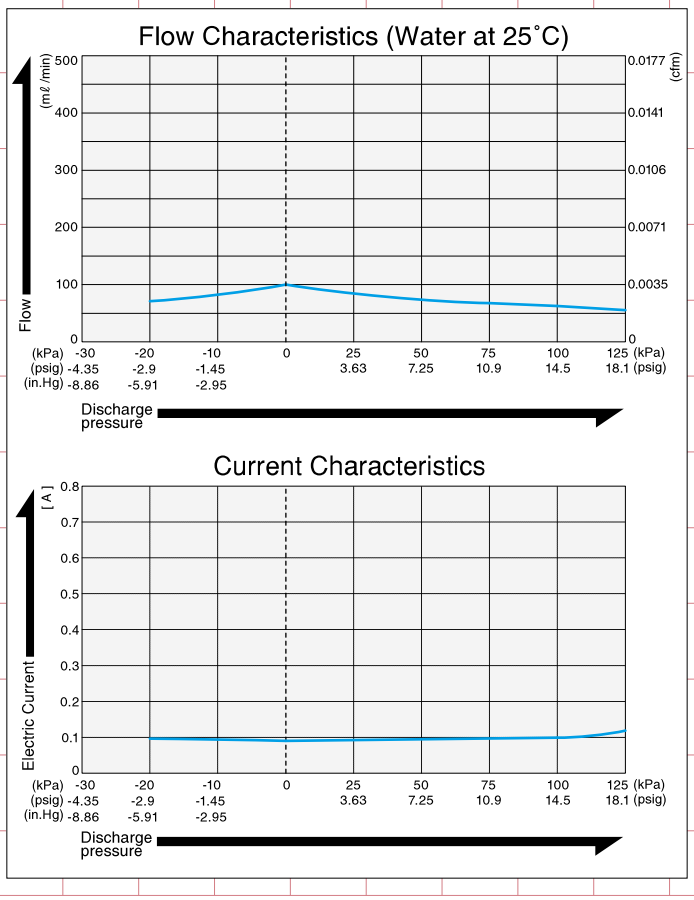
Pulses are attenuated through the process of ② and ③.



DC LIQUID PUMP

DPE-100

Flow & Electric Current



Specifications

	(SI)	(EURO)	(U.S.A.)
Rated Voltage	24 V DC		
Flow Rate	100 mℓ /min		0.0035 cfm
Working Pressure Range	0~100 kPa	0~1 bar	0~14.5 psig
Maximum Pressure ※2	300 kPa	3 bar	43.5 psig
Maximum Current	100 mA		
Rated Operating Time	Continuous		
Life Expectancy (MTTF)	500 hours		
Self-priming Pressure ※1	20 kPa		
Inlet & Outlet	4.7 mm O.D. straight nipple		
Insulation Classification	E class equivalent		
Mounting Dimensions	9.5 mm(L) x 17 mm(W)		$^{3}/_{8}$"(L) x $^{43}/_{64}$"(W)
Gross Weight	67 g		0.148 Lbs.
Motor	DC Brush Motor		

※1: When the check valve is hardened due to low liquid temperature,self-priming performance and flow rate will go down.
※2: Restarting pumps with flow passage closed is impossible.

Please read the page of "How to Use This Catalog" first for correct use of compressors and pumps.

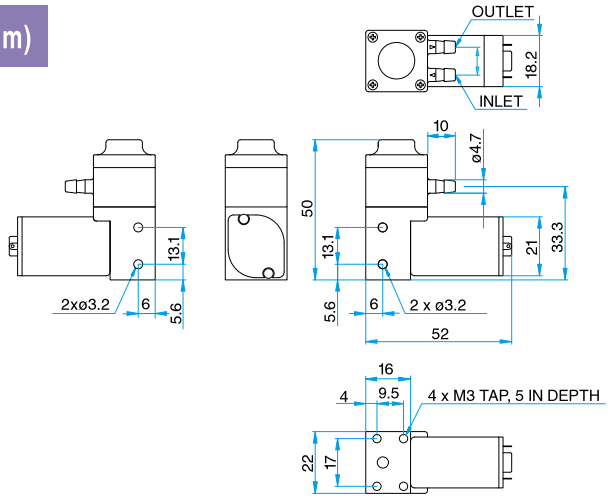
Build materials and applicable fluids

Model	Cylinder Head	Head Cover	Diaphragm	Valve	O-ring	Applicable fluids
DPE-100-2E	PA Polyamide(Nylon)		PTFE Polytetrafluoroethylene	EPDM Ethylene-propylene rubber		Sodium hydroxide, Citric acid Ammonia water, Caustic potash
DPE-100-2G				FKM Fuluoro rubber		Ethanol, Ethylene glycol Sodium carbonate, mineral oil
DPE-100-7G	PPS Polyphenylene sulfide					Xylene, Carbon tetrachloride Trichloroethylene, Silicon oils
DPE-100-7P				FFKM Perfluoroelastomer		Chloroform, Benzene Glacial acetic acid, Methyl ethyl ketone

Applications

- Liquid analytical instruments e.g. medical, food, water treatment & environmental.
- Liquid transport within filtration, sampling, sterilizers and washers.
- Ink transport within industrial ink-jet printers.

Sketch Drawing and Mounting Dimensions Diagram (mm)

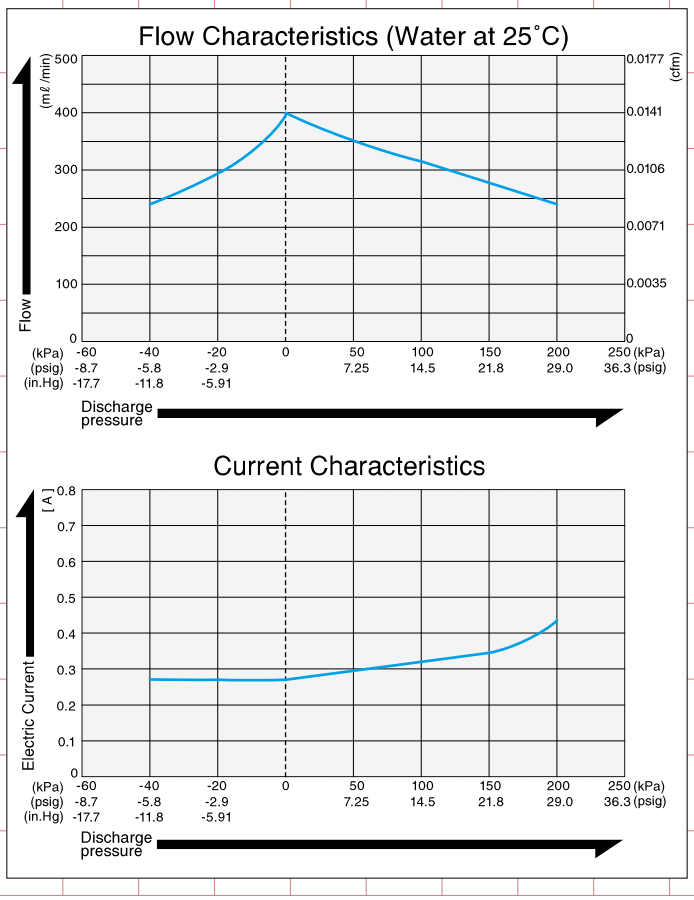


DC LIQUID PUMP

Liquid Pump

DPE-400

Flow & Electric Current



Specifications

	(SI)	(EURO)	(U.S.A.)
Rated Voltage	24 V DC		
Flow Rate	400 mℓ/min		0.0141 cfm
Working Pressure Range	0~100 kPa	0~1 bar	0~14.5 psig
Maximum Pressure ※2	300 kPa	3 bar	43.5 psig
Maximum Current	345 mA		
Rated Operating Time	Continuous		
Life Expectancy (MTTF)	500 hours		
Self-priming Pressure ※1	40 kPa		
Inlet & Outlet	5.4 mm O.D. straight nipple		
Insulation Classification	F class equivalent		
Mounting Dimensions	19 mm(L) x 26 mm(W)		3/4"(L) x 1-1/32"(W)
Gross Weight	187 g		0.412 Lbs.
Motor	DC Brush Motor		

※1: When the check valve is hardened due to low liquid temperature,self-priming performance and flow rate will go down.
※2: Restarting pumps with flow passage closed is impossible.
Please read the page of "How to Use This Catalog" first for correct use of compressors and pumps.

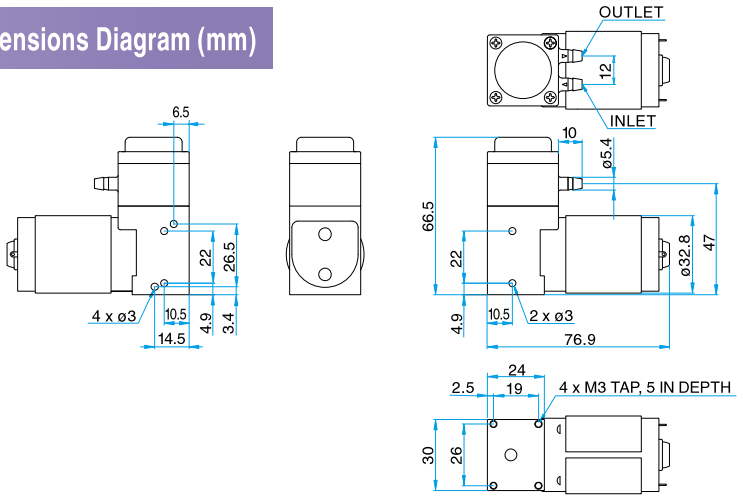
Build materials and applicable fluids

Model	Cylinder Head	Head Cover	Diaphragm	Valve	O-ring	Applicable fluids
DPE-400-2E	PA Polyamide(Nylon)		PTFE Polytetrafluoroethylene	EPDM Ethylene-propylene rubber		Sodium hydroxide, Citric acid Ammonia water, Caustic potash
DPE-400-2G				FKM Fuluoro rubber		Ethanol, Ethylene glycol Sodium carbonate, mineral oil
DPE-400-7G	PPS Polyphenylene sulfide					Xylene, Carbon tetrachloride Trichloroethylene, Silicon oils
DPE-400-7P				FFKM Perfluoroelastomer		Chloroform, Benzene Glacial acetic acid, Methyl ethyl ketone

Applications

- Liquid analytical instruments e.g. medical, food, water treatment & environmental.
- Liquid transport within filtration, sampling, sterilizers and washers.
- Ink transport within industrial ink-jet printers.

Sketch Drawing and Mounting Dimensions Diagram (mm)



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★Specifications and designs are subject to change at any time without notice.

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