



JQA-2160
Linear Products Division
JQA-EM4057
Headquarters
Research Center

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NITTO KOHKI's

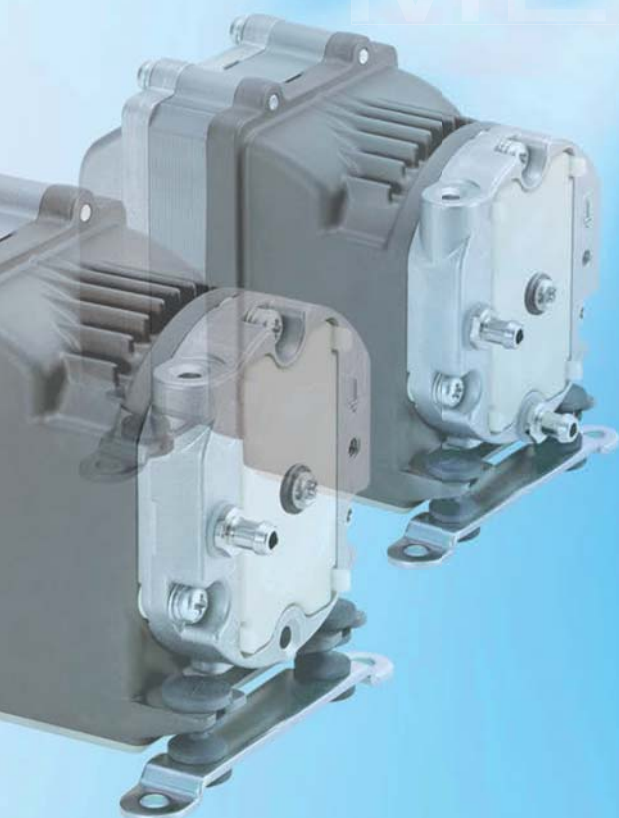
Air Compressors & Vacuum Pumps



- 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 Diaphragm Pump
- DC Diaphragm Pump
- DC Piston Pump
- AC LINEAR Air Compressor / Vacuum Pump / Diaphragm Pump (Made-to-order Item)

Liquid Pumps

- Piezoelectric Pump
- Miniature Diaphragm Pump



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Air Compressors & Vacuum Pumps

DC LINEAR Piston Compressor (Low Pressure Series)

Model	Rated Pressure			Max. Pressure			Rated Airflow		Page
	kPa (kgf/cm ²)	bar	psig	kPa (kgf/cm ²)	bar	psig	L/min	cfm	
DAH102-X1	20 {0.2}	0.2	2.84	50 {0.5}	0.5	7.11	5	0.177	9
DAH102-Y1	20 {0.2}	0.2	2.84	50 {0.5}	0.5	7.11	5	0.177	10
DAH105-X1	50 {0.5}	0.5	7.11	80 {0.8}	0.8	11.4	2.5	0.088	11
DAH105-Y1	50 {0.5}	0.5	7.11	80 {0.8}	0.8	11.4	2.5	0.088	12
DAH110-X1	100 {1.0}	1.0	14.2	120 {1.2}	1.2	17.1	1.0	0.035	13
DAH110-Y1	100 {1.0}	1.0	14.2	120 {1.2}	1.2	17.1	1.0	0.035	14

DC LINEAR Piston Vacuum Pump

Model	Attainable Vacuum			Free Air Displacement		Page
	kPa (mmHg)	mbar	in.Hg	L/min	cfm	
DVH130-X1	-40 {-300}	-400	-11.8	7	0.247	17
DVH130-Y1	-40 {-300}	-400	-11.8	7	0.247	18
DVH145-X1	-60 {-450}	-600	-17.7	3	0.106	19
DVH145-Y1	-60 {-450}	-600	-17.7	3	0.106	20

AC LINEAR Piston Compressor (Low Pressure Series)

*Mark: Made-to-order

Model	Rated Pressure			Max. Pressure			Rated Airflow		Page
	kPa (kgf/cm ²)	bar	psig	kPa (kgf/cm ²)	bar	psig	L/min	cfm	
AC0102	20 {0.2}	0.2	2.84	40 {0.4}	0.4	5.69	5	0.177	23
AC0201A	10 {0.1}	0.1	1.42	20 {0.2}	0.2	2.84	20	0.71	24
AC0301A	10 {0.1}	0.1	1.42	30 {0.3}	0.3	4.27	28	0.99	25
AC0401A	10 {0.1}	0.1	1.42	35 {0.35}	0.35	4.98	35	1.24	26
AC0602	15 {0.15}	0.15	2.13	35 {0.35}	0.35	4.98	40	1.41	27
AC0901	10 {0.1}	0.1	1.42	40 {0.4}	0.4	5.69	80	2.83	28
AC0902	20 {0.2}	0.2	2.84	45 {0.45}	0.45	6.4	55	1.94	29
AC0501 *	10 {0.1}	0.1	1.42	35 {0.35}	0.35	4.98	45	1.59	99

AC LINEAR Piston Compressor (Intermediate Pressure Series)

Model	Rated Pressure			Max. Pressure			Rated Airflow		Page
	kPa (kgf/cm ²)	bar	psig	kPa (kgf/cm ²)	bar	psig	L/min	cfm	
AC0105	50 {0.5}	0.5	7.1	80 {0.8}	0.8	11.4	2.5	0.088	31
AC0110	100 {1.0}	1.0	14.2	120 {1.2}	1.2	17.1	0.8	0.028	32
AC0207	70 {0.7}	0.7	9.96	100 {1.0}	1.0	14.2	3.5	0.124	33
AC0410A	100 {1.0}	1.0	14.2	130 {1.3}	1.3	18.5	5	0.177	34
AC0610A	100 {1.0}	1.0	14.2	150 {1.5}	1.5	21.3	8	0.283	35
AC0910	100 {1.0}	1.0	14.2	150 {1.5}	1.5	21.3	16	0.565	36
AC0920	200 {2.0}	2.0	28.4	300 {3.0}	3.0	42.6	8	0.283	37

AC LINEAR Piston Vacuum Pump

*Mark: Made-to-order

Model	Attainable Vacuum			Free Air Displacement		Page
	kPa (mmHg)	mbar	in.Hg	L/min	cfm	
VP0125	-33.3 {-250}	-333	-9.84	7	0.247	39
VP0140	-53.3 {-400}	-533	-15.7	3	0.106	40
VP0435A	-46.7 {-350}	-467	-13.78	25	0.88	41
VP0450	-66.7 {-500}	-667	-19.7	18	0.64	42
VP0625	-33.3 {-250}	-333	-9.84	40	1.41	43
VP0660	-80 {-600}	-800	-23.6	25	0.88	44
VP0940	-53.3 {-400}	-533	-15.7	60	2.12	45
VP0645 *	-60 {-450}	-600	-17.7	10	0.35	100
VP0945 *	-60 {-450}	-600	-17.7	12	0.424	101
VP0660x2 *	-93.3 {-700}	-933	-27.5	25	0.88	102
	-80 {-600}	-800	-23.6	50	1.77	

AC LINEAR Piston Blower

Model	Rated Pressure			Rated Airflow		Page
	kPa (kgf/cm ²)	bar	psig	L/min	cfm	
LA-28B	11 {0.11}	0.11	1.56	28	0.99	47
LA-45B	11 {0.11}	0.11	1.56	45	1.59	48
LA-60B	15 {0.15}	0.15	2.13	60	2.12	
LA-80B	15 {0.15}	0.15	2.13	80	2.83	
LA-100A	18 {0.18}	0.18	2.56	100	3.53	49
LA-120A	18 {0.18}	0.18	2.56	120	4.24	
LAM-200	20 {0.20}	0.20	2.84	200	7.06	50

AC LINEAR Diaphragm Pump

※Mark: Made-to-order

Model	Max. Vacuum			Rated Pressure			Max. Pressure			Rated Airflow		Page
	kPa (mmHg)	mbar	in.Hg	kPa (kgf/cm ²)	bar	psig	kPa (kgf/cm ²)	bar	psig	L/min	cfm	
VC0100 Dual	-14.7 {-110}	-147	-4.33	4 {0.04}	0.04	0.57	16 {0.16}	0.16	2.28	6	0.21	53
VC0100 Blower				4 {0.04}	0.04	0.57	16 {0.16}	0.16	2.28	6	0.21	54
VC0101 Dual 120V	-18.7 {-140}	-187	-5.51	10 {0.1}	0.1	1.42	18 {0.18}	0.18	2.56	10	0.35	55
VC0101 Dual 230V	-10 {-76}	-100	-2.95	10 {0.1}	0.1	1.42	15 {0.15}	0.15	2.13	10	0.35	56
VC0101 Blower				10 {0.1}	0.1	1.42	20 {0.2}	0.2	2.84	10	0.35	57
VC0101E Dual	-18.7 {-140}	-187	-5.51	10 {0.1}	0.1	1.42	20 {0.2}	0.2	2.84	15	0.53	58
VC0101E Blower				10 {0.1}	0.1	1.42	20 {0.2}	0.2	2.84	15	0.53	103
VC0101S Dual	-24 {-180}	-240	-7.08	5 {0.05}	0.05	0.71	26 {0.26}	0.26	3.70	15	0.53	104
VC0101S Blower				5 {0.05}	0.05	0.71	26 {0.26}	0.26	3.70	15	0.53	59
VC0201 Dual	-18.7 {-140}	-187	-5.5	10 {0.1}	0.1	1.42	18 {0.18}	0.18	2.56	20	0.71	60
VC0201 Blower				10 {0.1}	0.1	1.42	18 {0.18}	0.18	2.56	20	0.71	61
VC0301 Dual	-21.3 {-160}	-213	-6.3	10 {0.1}	0.1	1.42	20 {0.2}	0.2	2.84	25	0.88	62
VC0301 Blower				10 {0.1}	0.1	1.42	20 {0.2}	0.2	2.84	25	0.88	63
VC0201B Dual	-18.7 {-140}	-187	-5.5	10 {0.1}	0.1	1.42	18 {0.18}	0.18	2.56	20	0.71	64
VC0201B Blower				10 {0.1}	0.1	1.42	18 {0.18}	0.18	2.56	20	0.71	65
VC0301B Dual	-21.3 {-160}	-213	-6.3	10 {0.1}	0.1	1.42	20 {0.2}	0.2	2.84	25	0.88	66
VC0301B Blower				10 {0.1}	0.1	1.42	20 {0.2}	0.2	2.84	25	0.88	

DC Diaphragm Pump / DC Piston Pump

Model	Attainable Vacuum			Max. Pressure			Free Air Displacement		Page
	kPa (mmHg)	mbar	in.Hg	kPa (kgf/cm ²)	bar	psig	L/min	cfm	
DP0125	-33.3 {-250}	-333	-9.84	30 {0.3}	0.3	4.27	2.5	0.088	69
DP0140	-53.3 {-400}	-533	-15.7	50 {0.5}	0.5	7.1	4	0.141	70
DP0102	-26.7 {-200}	-267	-7.87	45 {0.45}	0.45	6.4	5	0.177	71
DP0102S	-26.7 {-200}	-267	-7.87	45 {0.45}	0.45	6.4	7	0.247	72
DP0102H-X1	-50.7 {-380}	-507	-15	80 {0.8}	0.8	11.4	4	0.141	73
DP0102H-X2				80 {0.8}	0.8	11.4	4	0.141	74
DP0105-X1	-66.6 {-500}	-666	-19.7	250 {2.5}	2.5	35.6	2.8	0.1	75
DP0105-Y1	-66.6 {-500}	-666	-19.7	250 {2.5}	2.5	35.6	2.8	0.1	76
DPA0105-X1				220 {2.2}	2.2	31.3	2.8	0.1	77
DPA0105-Y1				220 {2.2}	2.2	31.3	2.8	0.1	78
DP0110-X1	-66.6 {-500}	-666	-19.7	150 {1.5}	1.5	21.3	7.5	0.26	79
DP0110-Y1	-66.6 {-500}	-666	-19.7	150 {1.5}	1.5	21.3	7.5	0.26	80
DP0110PWM	-66.6 {-500}	-666	-19.7	150 {1.5}	1.5	21.3	7.5	0.26	81
DP0110T-X1	-60.0 {-450}	-600	-17.7	150 {1.5}	1.5	21.3	5.5	0.26	82
DP0110T-Y1	-60.0 {-450}	-600	-17.7	150 {1.5}	1.5	21.3	5.5	0.26	83
DP0410-X2				180 {1.8}	1.8	25.6	18	0.64	84
DP0410-Y2				180 {1.8}	1.8	25.6	18	0.64	85

PIEZOELECTRIC PUMP

Model	Discharge Pressure		Flow Rate		Self-priming Pressure		Page
	kPa		mL/min		kPa		
120V AC 60Hz							
BPS-215i	15	30	3	87			
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	88			
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			Flow Rate		Self-priming Pressure		Page
	kPa	bar	psig	mL/min	cfm	kPa	bar	
DPE-100	100	1	14.5	100	0.0035	20		92
DPE-400	100	1	14.5	400	0.0141	40		93
DPE-400BL	100	1	14.5	400	0.0141	40		94
DPE-800	100	1	14.5	800	0.0282	40		95

VACUUM TWEEZERS

Model	Page
MEDO HAND Model MH-100A	97

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.

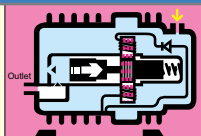
Compact integrated design

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.

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.

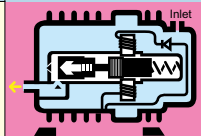


Current



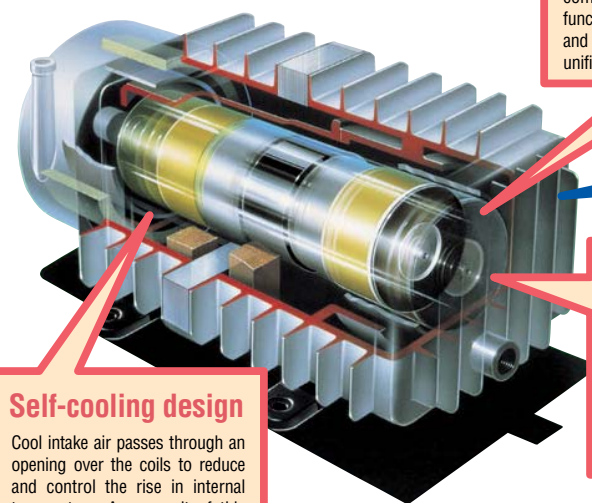
No Current

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.



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.

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.



Air Compressors & Vacuum Pumps



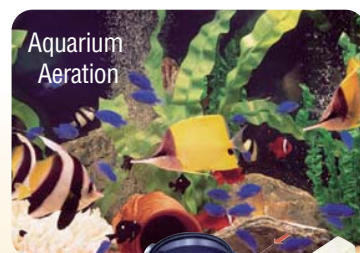
Air Brush



Soldering Fume Remover



Muscular Electro-Therapy Unit



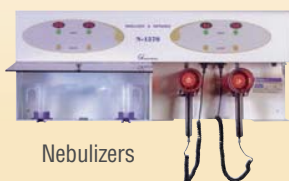
Aquarium Aeration



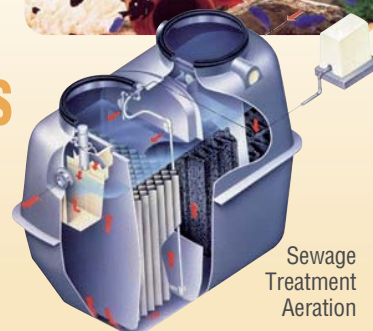
Coffee Maker



Pap smear Tester



Nebulizers



Sewage Treatment Aeration

Our Valued Customers & Applications

Experience gained in well over three 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.



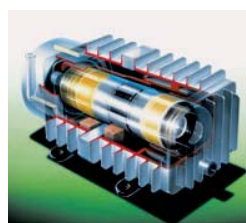
Clean Operation - Clean Air due to oil-less construction

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 our 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 class, 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.

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

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

- 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.

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 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 fasteners. 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

- 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

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.

- 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 fasteners. 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

- 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 cause an electric shock.

WARNING

Do not let the unit take in any gas other than air. There is a risk of an explosion, fire or 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 cause 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

- Please avoid any liquid that contaminated with solids such as debris 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.

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.

- 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

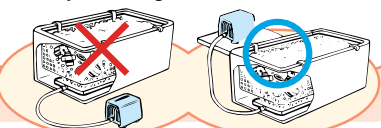
As compressors and vacuum pumps employ self-cooling system, if used at more than rated pressure, duty cycle of some of the models will be shortened.

- 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.

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

- 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.



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

kPa	kgf/cm ² (bar)	psig
300	3.0	42.7
280	2.8	39.8
250	2.5	35.6
200	2.0	28.5
180	1.8	25.6
150	1.5	21.3
120	1.2	17.1
100	1.0	14.2
80	0.8	11.4
70	0.7	9.96
50	0.5	7.11
45	0.45	6.40
40	0.4	5.69
35	0.35	4.98
34	0.34	4.84
30	0.3	4.27
20	0.2	2.84
18	0.18	2.56
15	0.15	2.13
11	0.11	1.56
10	0.1	1.42
7	0.07	1.00
5	0.05	0.71
1	0.01	0.142
* 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

from \ to	kPa	kgf/cm ²	bar	psig
kPa	1	0.01	0.01	0.142
kgf/cm ²	100	1	1	14.2
bar	100	1	1	14.2
psig	7	0.07	0.07	1

Vacuum

from \ to	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

DAH102-X1
P9

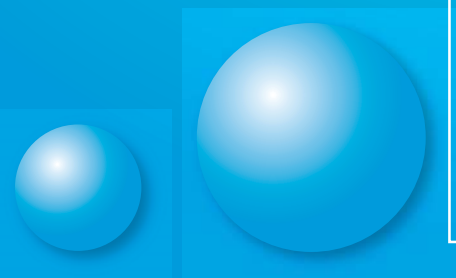
DAH102-Y1
P10

DAH105-X1
P11

DAH105-Y1
P12

DAH110-X1
P13

DAH110-Y1
P14



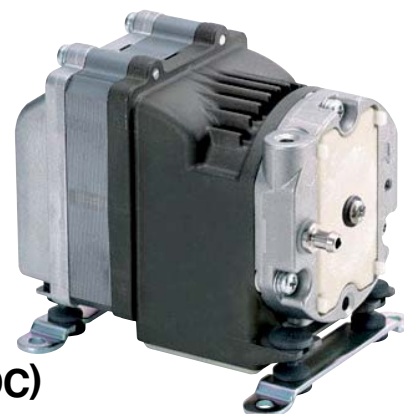
COMPRESSOR

LINEAR Piston DC



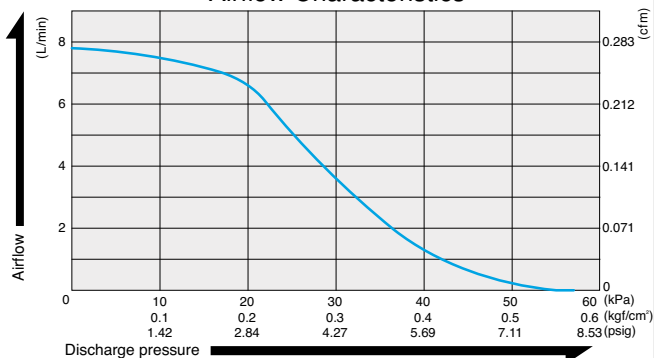
MOTOR FREE
PISTON SYSTEM

DAH102-X1 (12 V DC)

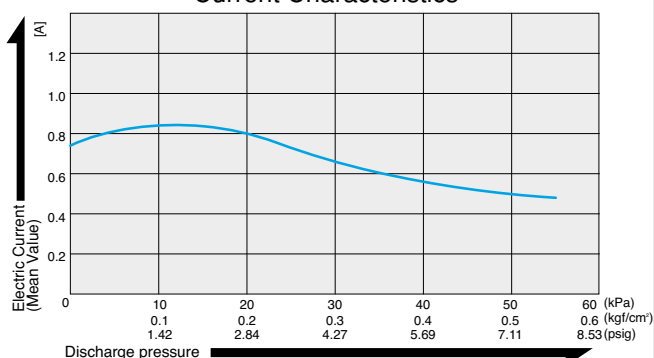


Airflow & Electric Current

Airflow Characteristics



Current Characteristics



Specifications

	(SI)	(EURO)	(U.S.A.)
Rated Pressure	20 kPa {0.2 kgf/cm²}	0.2 bar	2.84 psig
Rated Airflow	5 L/min ※1		0.177 cfm
Rated Voltage	12 V DC		
Maximum Pressure	50 kPa {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"	

※1: 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

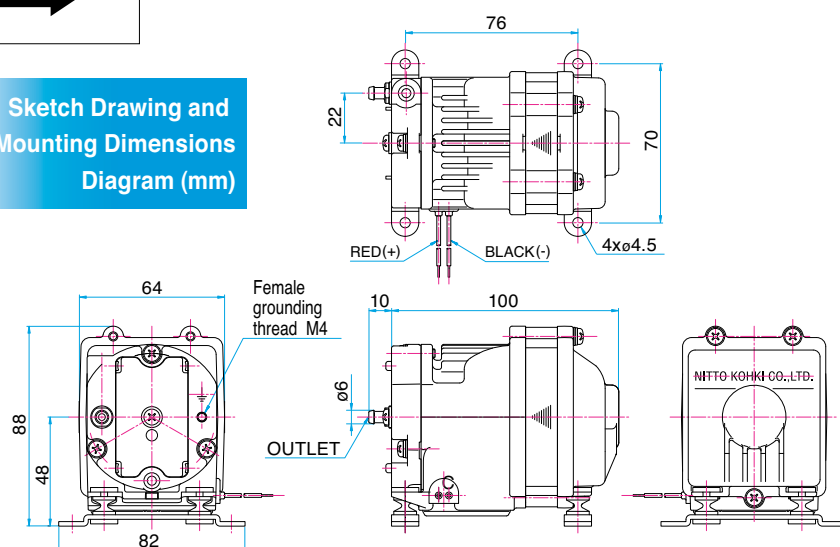
Applications

Medical equipment, analyzers, etc.

Heavy duty rubber feet available on request.
To prevent drop damage when located within portable devices.



Sketch Drawing and Mounting Dimensions Diagram (mm)



COMPRESSOR

LINEAR Piston DC



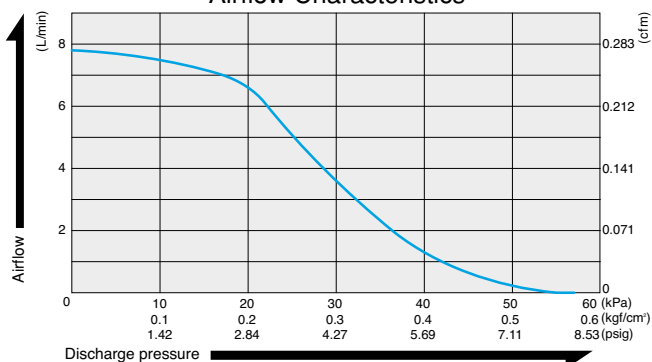
MOTOR FREE
PISTON SYSTEM

DAH102-Y1 (24 V DC)

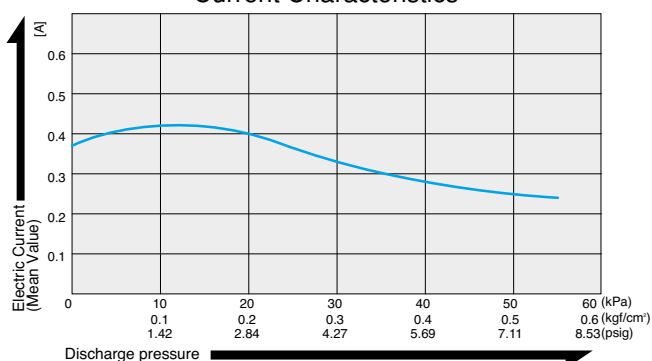


Airflow & Electric Current

Airflow Characteristics



Current Characteristics



Specifications

	(SI)	(EURO)	(U.S.A.)
Rated Pressure	20 kPa {0.2 kgf/cm²}	0.2 bar	2.84 psig
Rated Airflow	5 L/min ※1		0.177 cfm
Rated Voltage	24 V DC		
Maximum Pressure	50 kPa {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"

※1: 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

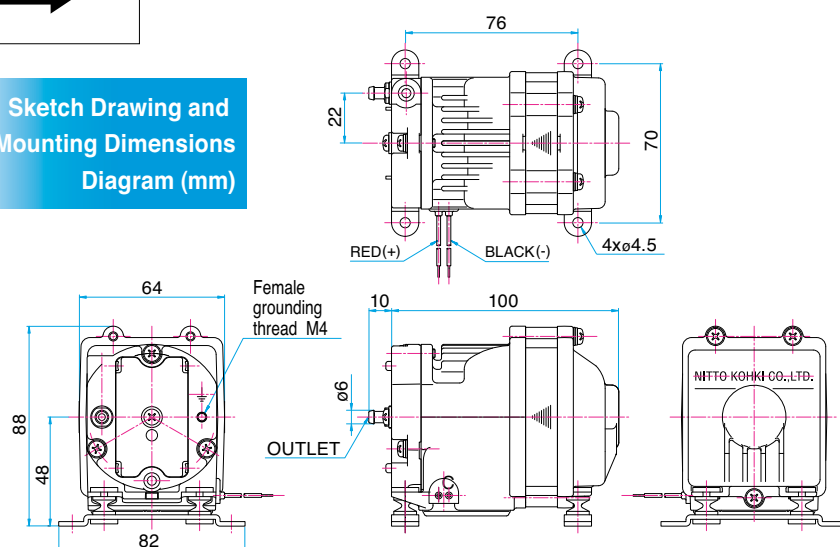
Applications

Medical equipment, analyzers, etc.

Heavy duty rubber feet available on request.
To prevent drop damage when located within portable devices.



Sketch Drawing and Mounting Dimensions Diagram (mm)



COMPRESSOR

LINEAR Piston DC



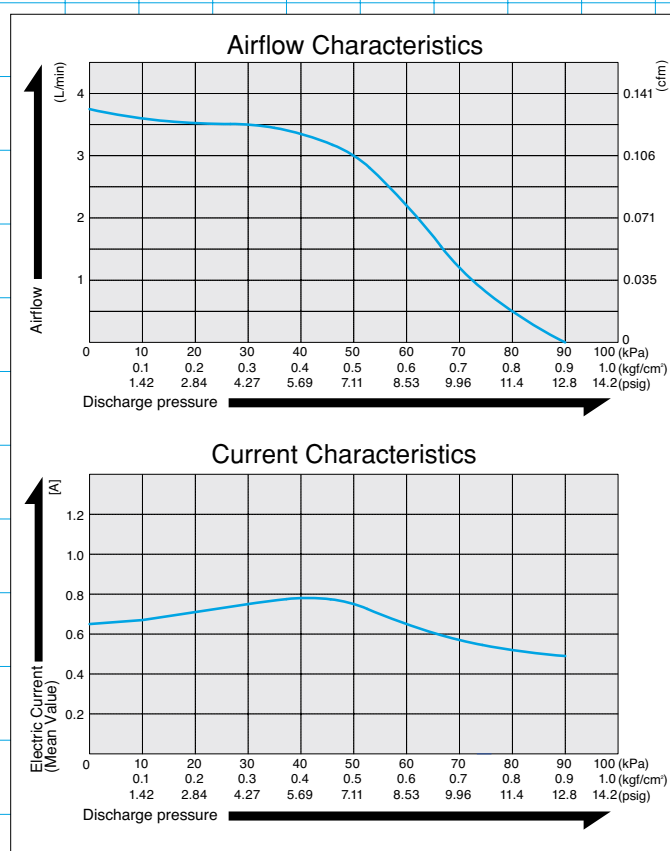
MOTOR FREE
PISTON SYSTEM

DAH105-x1 (12 V DC)



Airflow & Electric Current

Specifications



	(SI)	(EURO)	(U.S.A.)
Rated Pressure	50 kPa {0.5 kgf/cm ² }	0.5 bar	7.11 psig
Rated Airflow	2.5 L/min ^{※1}		0.088 cfm
Rated Voltage	12 V DC		
Maximum Pressure	80 kPa {0.8 kgf/cm ² }	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"

※1: 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

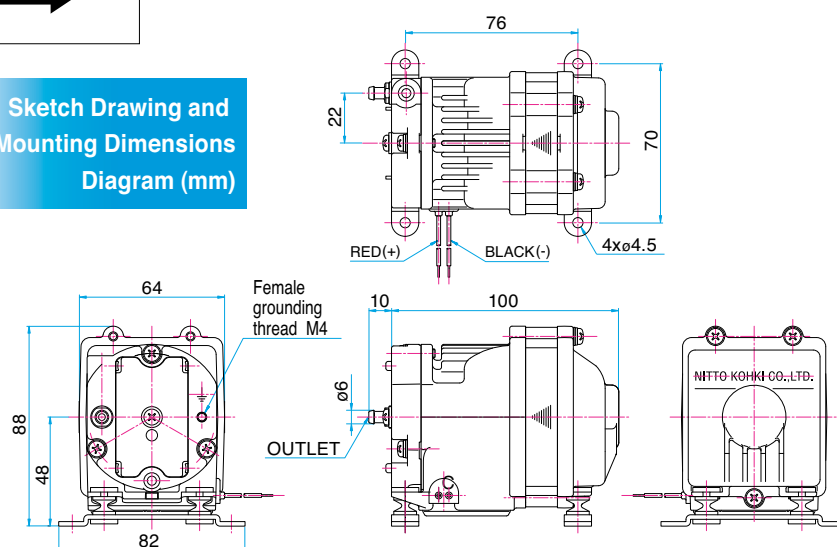
Applications

Medical equipment, analyzers, etc.

Heavy duty rubber feet available on request.
To prevent drop damage when located within portable devices.



Sketch Drawing and Mounting Dimensions Diagram (mm)



COMPRESSOR

LINEAR Piston DC



MOTOR FREE
PISTON SYSTEM

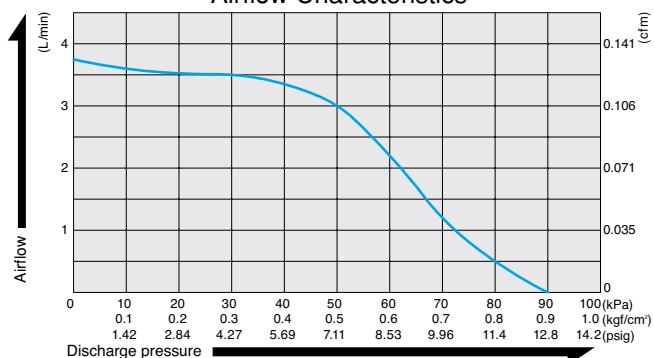
DAH105-Y1 (24 V DC)



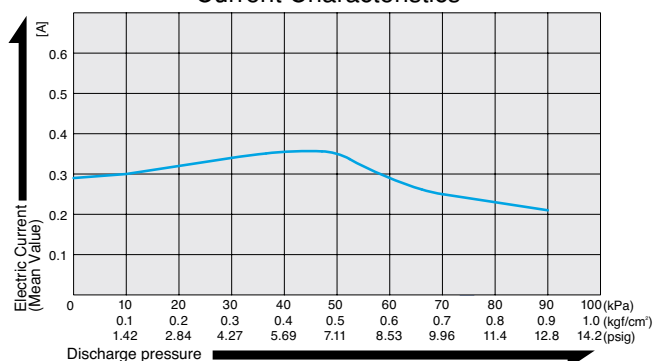
Airflow & Electric Current

Specifications

Airflow Characteristics



Current Characteristics



	(SI)	(EURO)	(U.S.A.)
Rated Pressure	50 kPa {0.5 kgf/cm²}	0.5 bar	7.11 psig
Rated Airflow	2.5 L/min ^{※1}		0.088 cfm
Rated Voltage	24 V DC		
Maximum Pressure	80 kPa {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"	

※1: 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

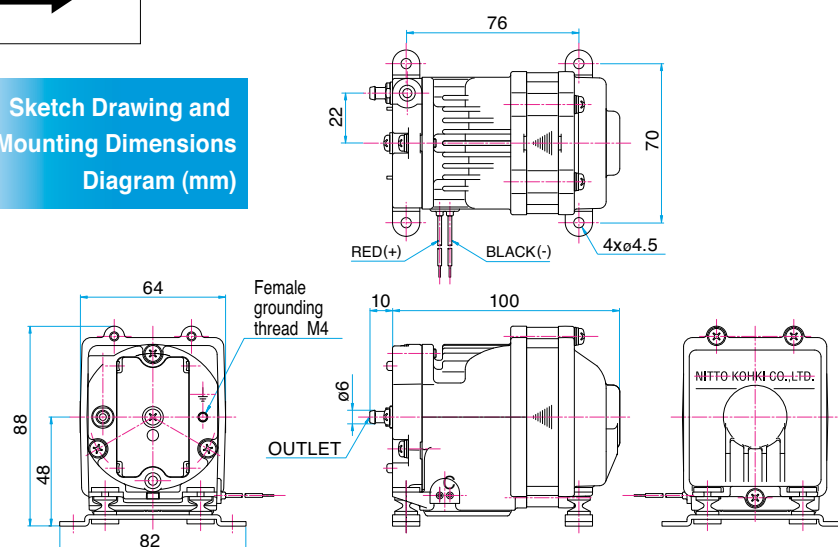
Applications

Medical equipment, analyzers, etc.

Heavy duty rubber feet available on request.
To prevent drop damage when located within portable devices.



Sketch Drawing and Mounting Dimensions Diagram (mm)



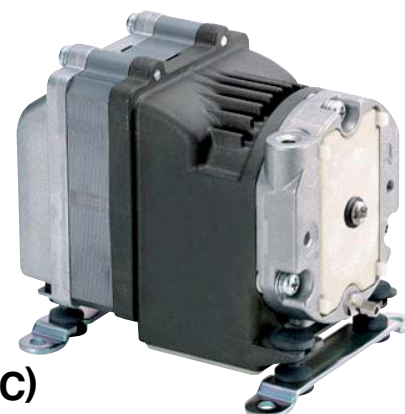
COMPRESSOR

LINEAR Piston DC



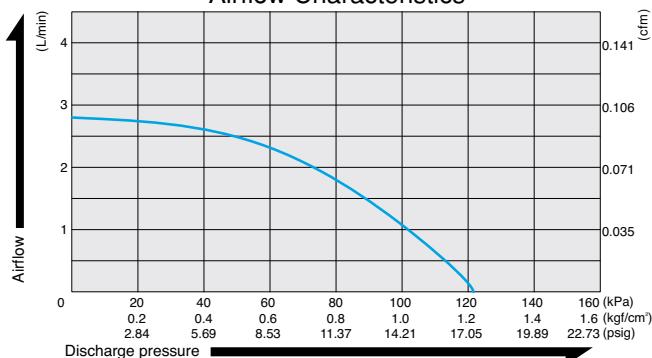
MOTOR FREE
PISTON SYSTEM

DAH110-X1 (12 V DC)

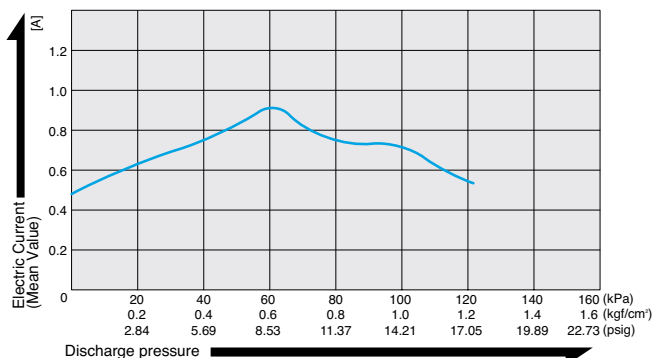


Airflow & Electric Current

Airflow Characteristics



Current Characteristics



Specifications

	(SI)	(EURO)	(U.S.A.)
Rated Pressure	100 kPa {1.0 kgf/cm²}	1.0 bar	14.2 psig
Rated Airflow	1.0 L/min ^{※1}		0.035 cfm
Rated Voltage	12 V DC		
Maximum Pressure	120 kPa {1.2 kgf/cm²}	1.2 bar	17.1 psig
Current (Mean Value)	0.74A		
Life Expectancy	5,000 hours (MTTF)		
Outlet	4.7 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"	

※1: 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

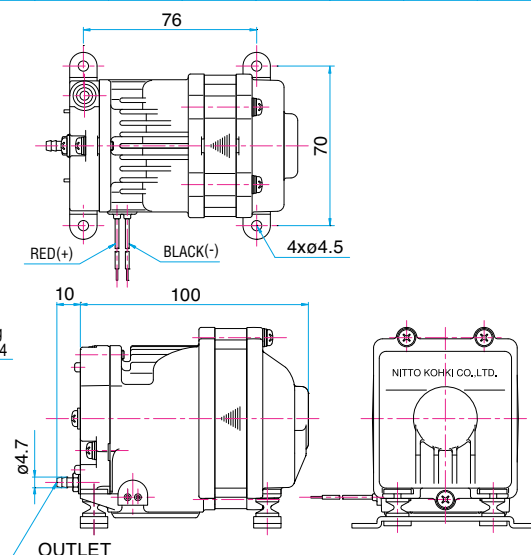
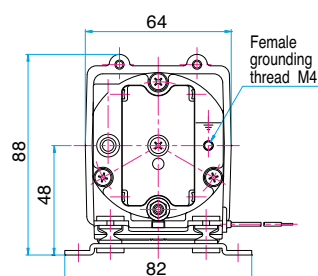
Applications

Medical equipment, analyzers, etc.

Heavy duty rubber feet available on request.
To prevent drop damage when located within portable devices.



Sketch Drawing and Mounting Dimensions Diagram (mm)



COMPRESSOR

LINEAR Piston DC



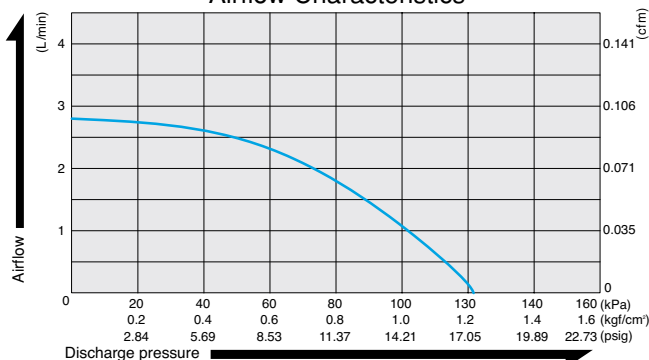
MOTOR FREE
PISTON SYSTEM

DAH110-Y1 (24 V DC)

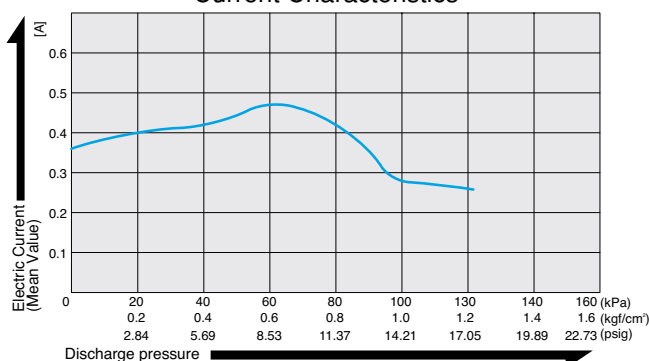


Airflow & Electric Current

Airflow Characteristics



Current Characteristics



Specifications

	(SI)	(EURO)	(U.S.A.)
Rated Pressure	100 kPa {1.0 kgf/cm ² }	1.0 bar	14.2 psig
Rated Airflow	1.0 L/min ^{*1}		0.035 cfm
Rated Voltage	24 V DC		
Maximum Pressure	120 kPa {1.2 kgf/cm ² }	1.2 bar	17.1 psig
Current (Mean Value)	0.27A		
Life Expectancy	5,000 hours (MTTF)		
Outlet	4.7 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"	

*1: 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

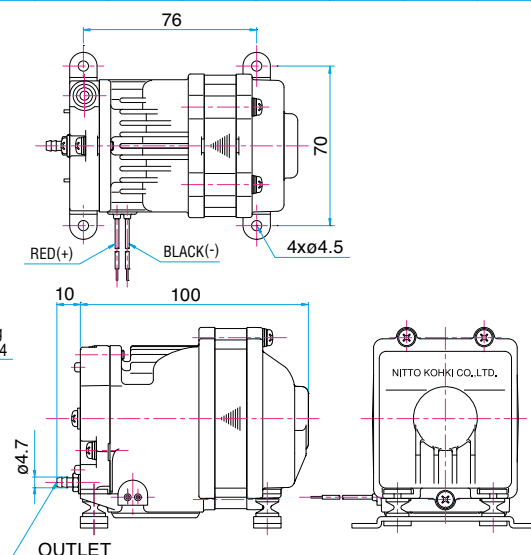
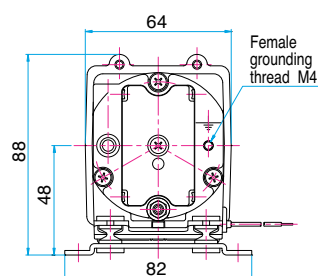
Applications

Medical equipment, analyzers, etc.

Heavy duty rubber feet available on request.
To prevent drop damage when located within portable devices.



Sketch Drawing and Mounting Dimensions Diagram (mm)





VACUUM PUMP

DC LINEAR

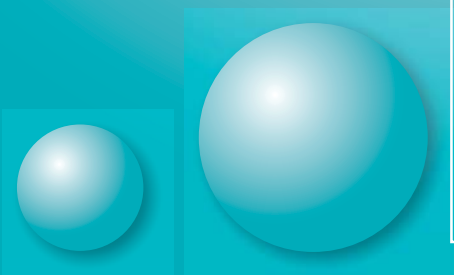
Piston Vacuum Pump

DVH130-X1
P17

DVH130-Y1
P18

DVH145-X1
P19

DVH145-Y1
P20



VACUUM PUMP

LINEAR Piston DC



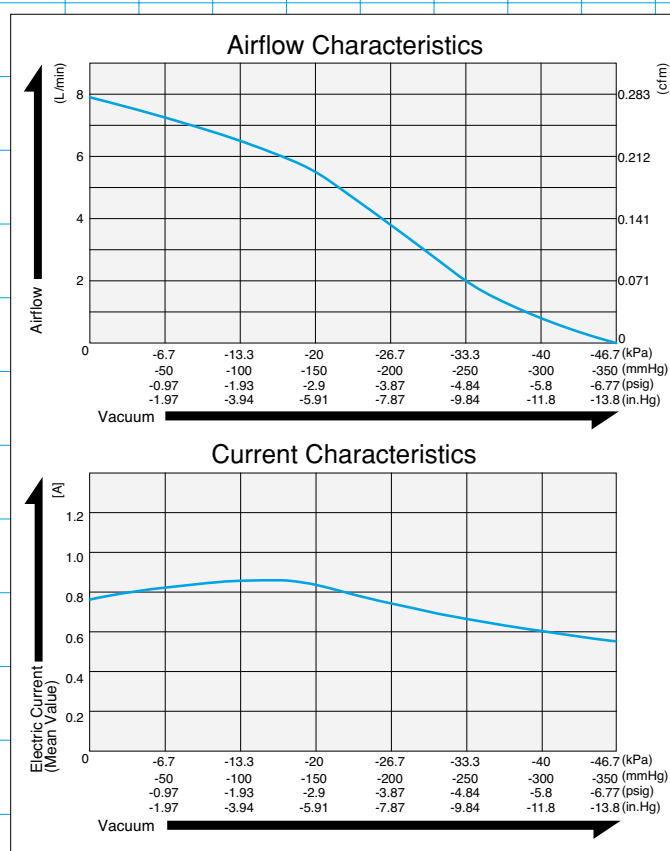
MOTOR FREE
PISTON SYSTEM

DVH130-x1 (12 V 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 ^{※1}		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"	

※1: 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

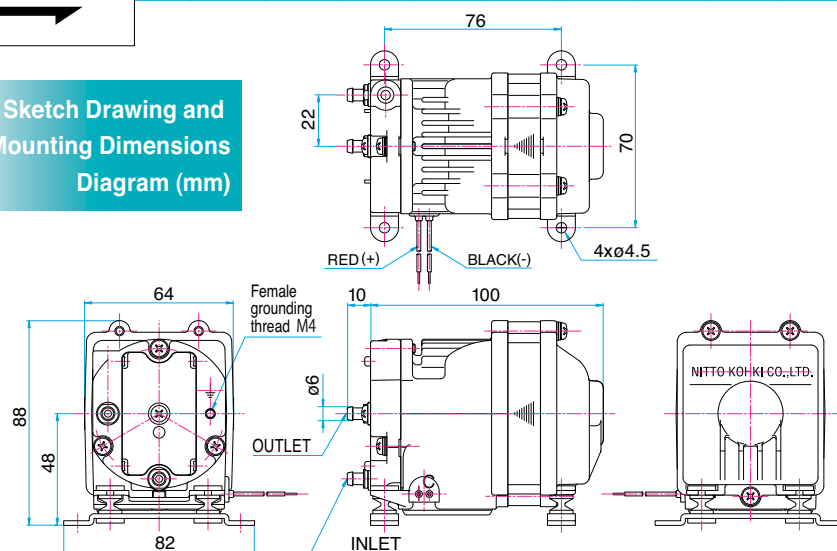
Applications

Medical equipment, analyzers, etc.

Heavy duty rubber feet available on request.
To prevent drop damage when located within portable devices.



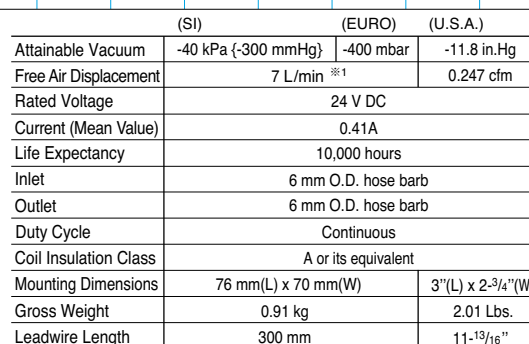
Sketch Drawing and Mounting Dimensions Diagram (mm)



DVH 130-Y1 (24 V DC)



Specifications



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

Ambient Temperature: 0 - 40°C
Ambient Humidity: 30 - 85%
Fluid: Air

Medical equipment, analyzers, etc.

Sketch Drawing and Mounting Dimensions Diagram (mm)

76

70

22

4xø4.5

RED (+)

BLACK (-)

100

10

ø6

OUTLET

INLET

64

82

48

88

Female grounding thread M4

NITTO KOHKI CO., LTD.

VACUUM PUMP

LINEAR Piston DC



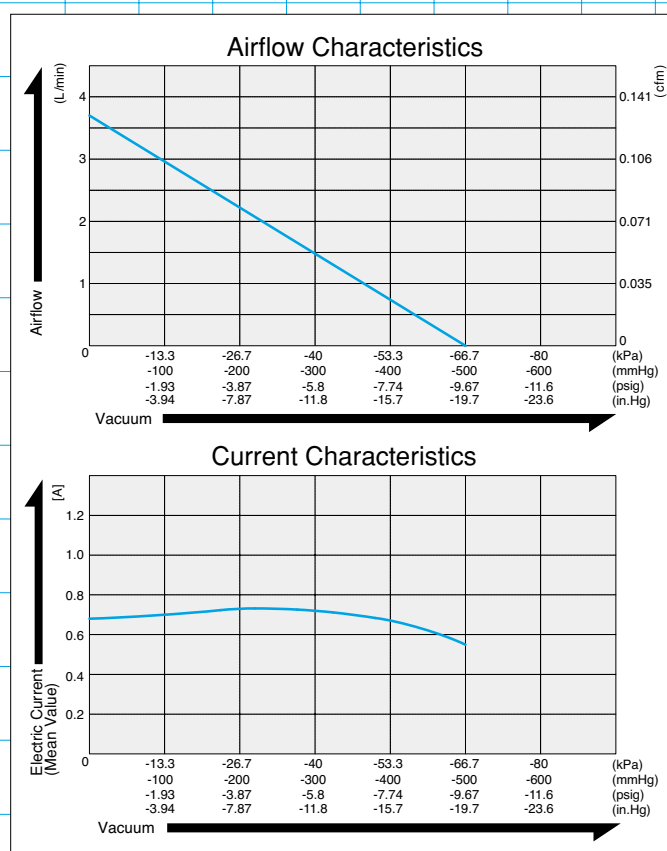
MOTOR FREE
PISTON SYSTEM

DVH145-x1 (12 V 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 ^{※1}		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"	

※1: 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

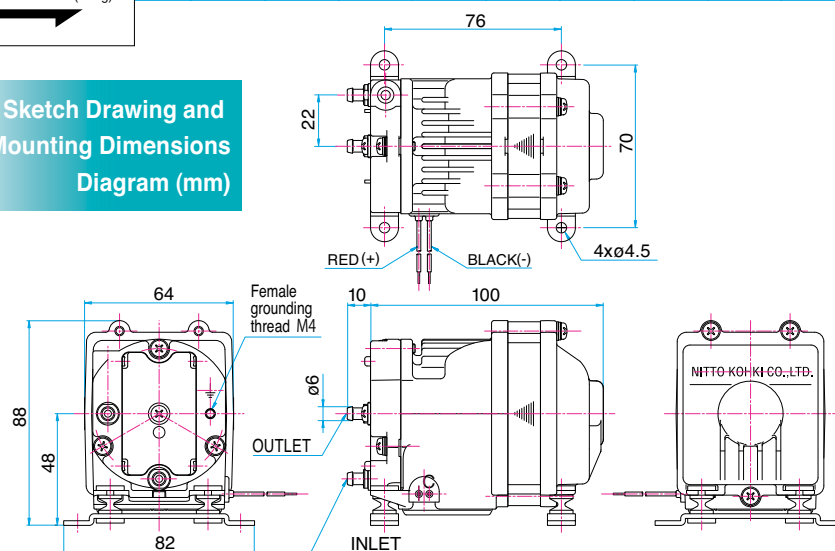
Applications

Medical equipment, analyzers, etc.

Heavy duty rubber feet available on request.
To prevent drop damage when located within portable devices.



Sketch Drawing and Mounting Dimensions Diagram (mm)



VACUUM PUMP

LINEAR Piston DC



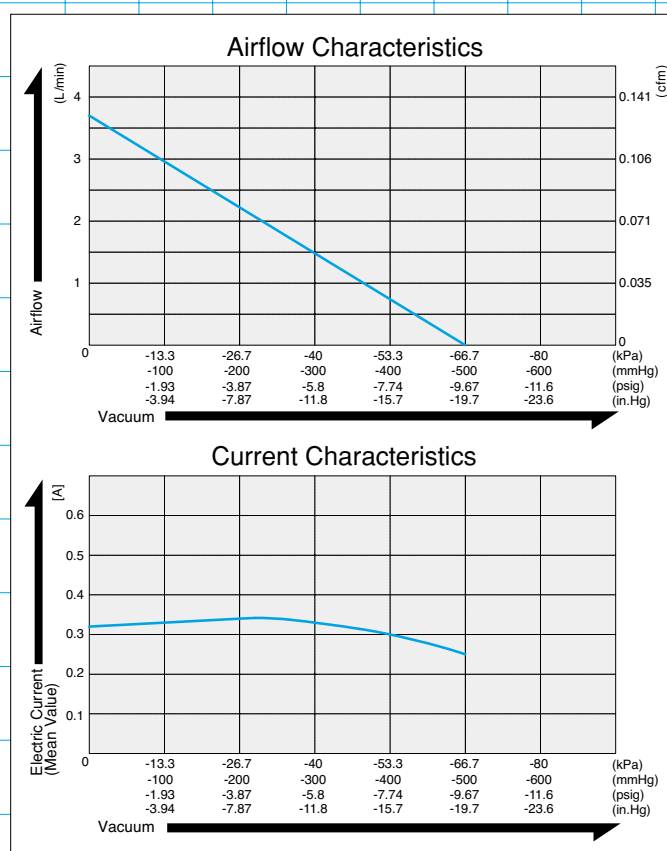
MOTOR FREE
PISTON SYSTEM

DVH145-Y1 (24 V 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 ^{※1}		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"

※1: 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

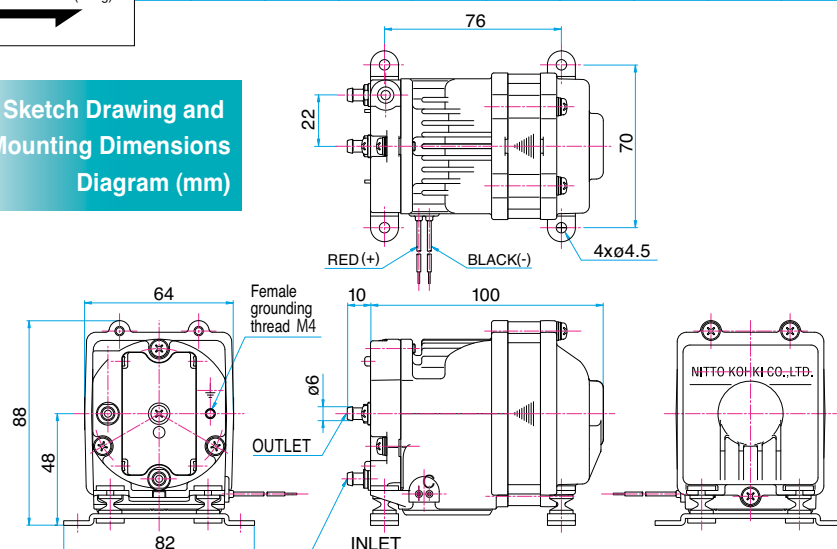
Applications

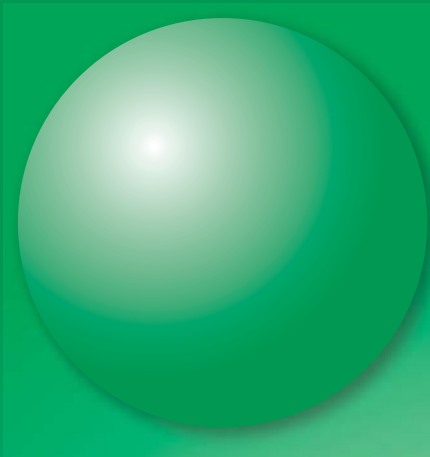
Medical equipment, analyzers, etc.

Heavy duty rubber feet available on request.
To prevent drop damage when located within portable devices.



Sketch Drawing and Mounting Dimensions Diagram (mm)





AIR COMPRESSOR

AC LINEAR

Low Pressure Series

Piston Compressor

AC0102
P23

AC0201A
P24

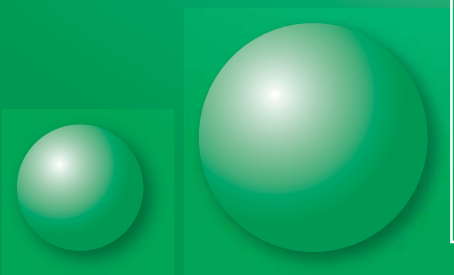
AC0301A
P25

AC0401A
P26

AC0602
P27

AC0901
P28

AC0902
P29



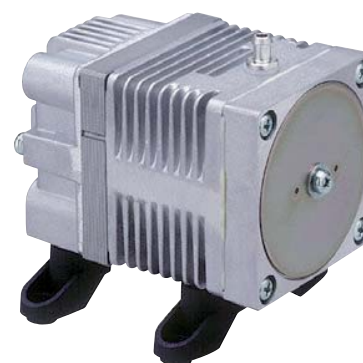
COMPRESSOR

LINEAR

Ac0102

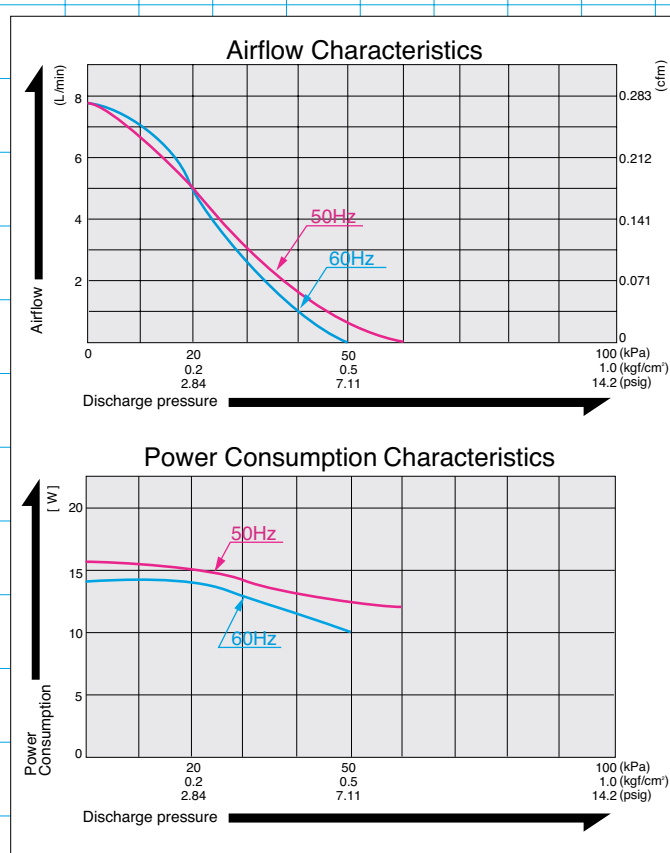


**MOTOR FREE
PISTON SYSTEM**



Airflow & Power Consumption

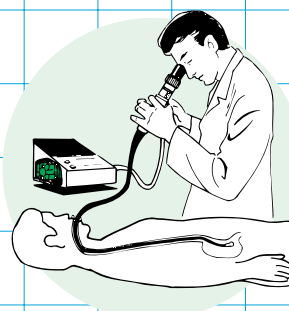
Specifications



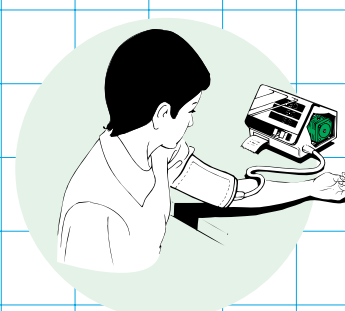
	(SI)	(EURO)	(U.S.A.)
Rated Pressure	20 kPa {0.2 kgf/cm ² }	0.2 bar	2.84 psig
Rated Airflow	5 L/min		
Rated Voltage	115 V AC or 230 V AC		
Maximum Pressure	40 kPa {0.4 kgf/cm ² }	0.4 bar	5.69 psig
Power Consumption	14 W or 15 W		
Rated Frequency	60 Hz or 50 Hz		
Life Expectancy	3,000 hours		
Outlet	6 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

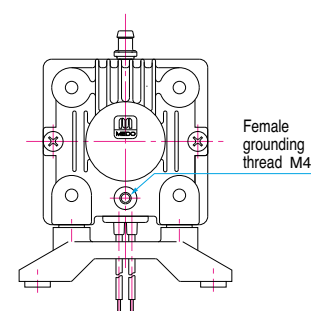
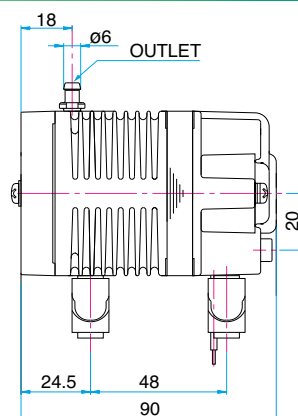
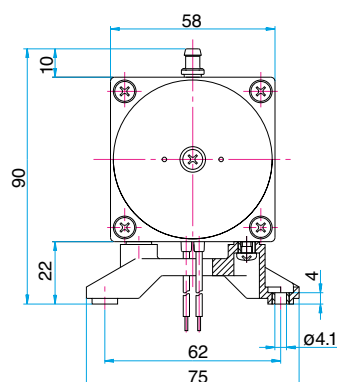


Endoscope



Blood Pressure Tester

Sketch Drawing and Mounting Dimensions Diagram (mm)



Female
grounding
thread M4

COMPRESSOR

LINEAR

Ac0201A

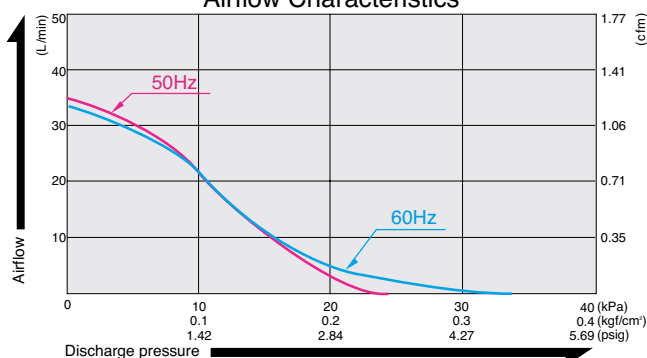


**MOTOR FREE
PISTON SYSTEM**

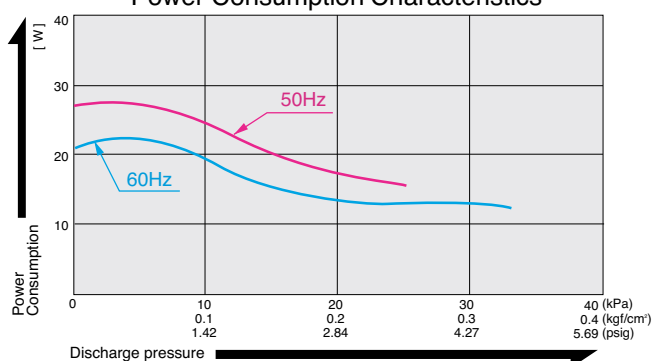


Airflow & Power Consumption

Airflow Characteristics



Power Consumption Characteristics

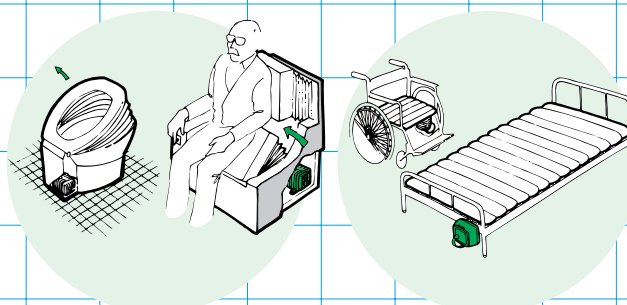


Specifications

	(SI)	(EURO)	(U.S.A.)
Rated Pressure	10 kPa {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	20 kPa {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		
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.

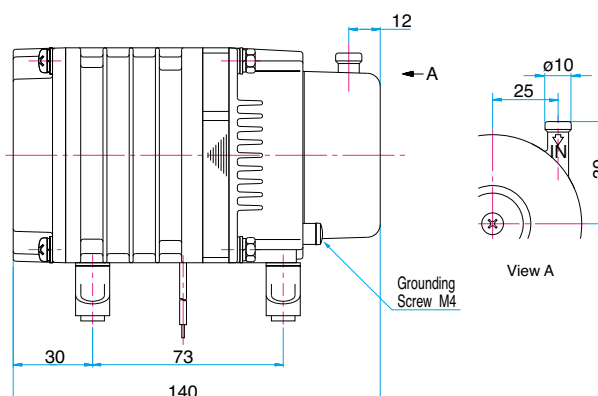
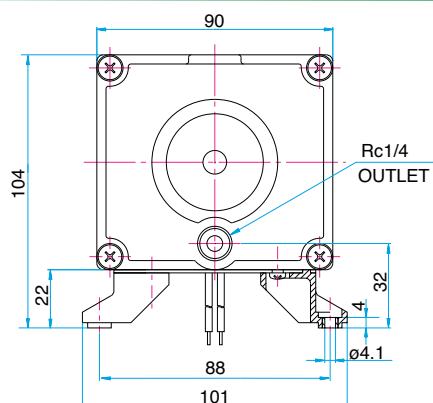
Application Examples



Seat Lifter

Bed Sore Prevention Mattress

Sketch Drawing and Mounting Dimensions Diagram (mm)



COMPRESSOR

LINEAR

Ac0301A

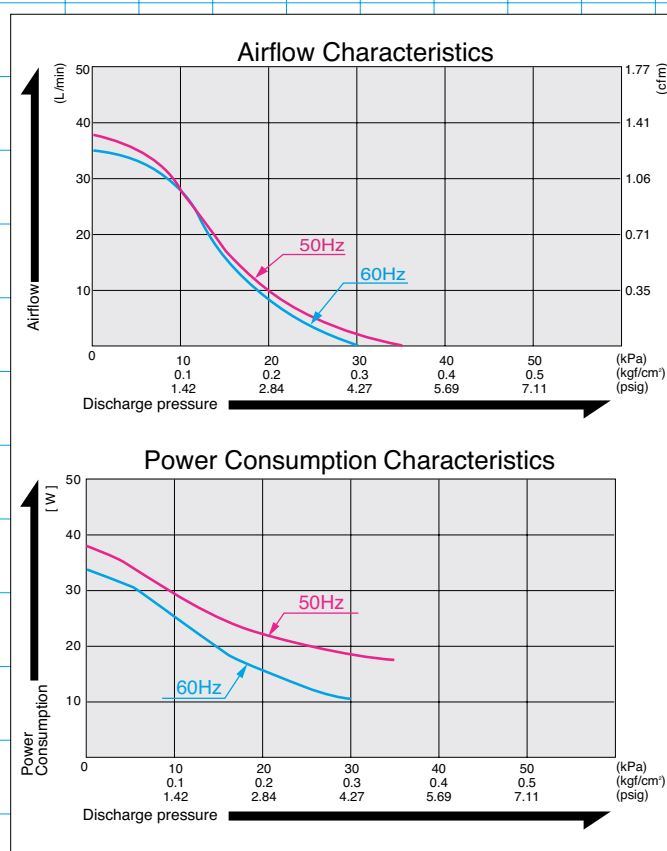


**MOTOR FREE
PISTON SYSTEM**



Airflow & Power Consumption

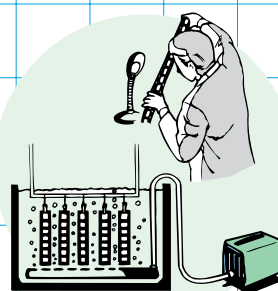
Specifications



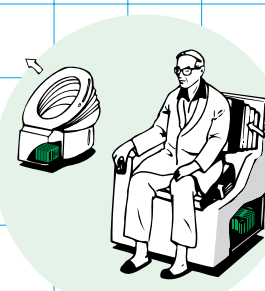
	(SI)	(EURO)	(U.S.A.)
Rated Pressure	10 kPa {0.1 kgf/cm ² }	0.1 bar	1.42 psig
Rated Airflow	28 L/min		0.99 cfm
Rated Voltage	115 V AC or 230 V AC		
Maximum Pressure	30 kPa {0.3 kgf/cm ² }	0.3 bar	4.27 psig
Power Consumption	25 W or 29 W		
Rated Frequency	60 Hz or 50 Hz		
Life Expectancy	10,000 hours		
Outlet	ISO Rc 1/4		
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

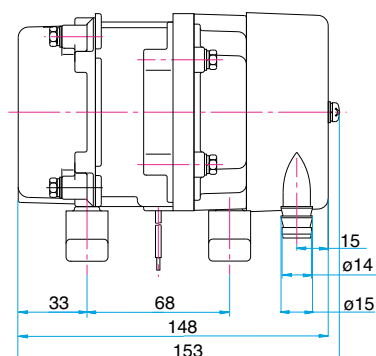
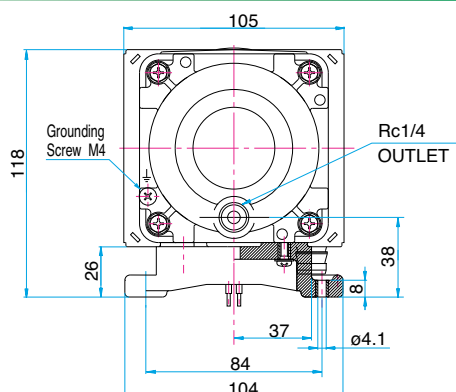


Liquid Mixer



Seat Lifter

Sketch Drawing and Mounting Dimensions Diagram (mm)



COMPRESSOR

LINEAR

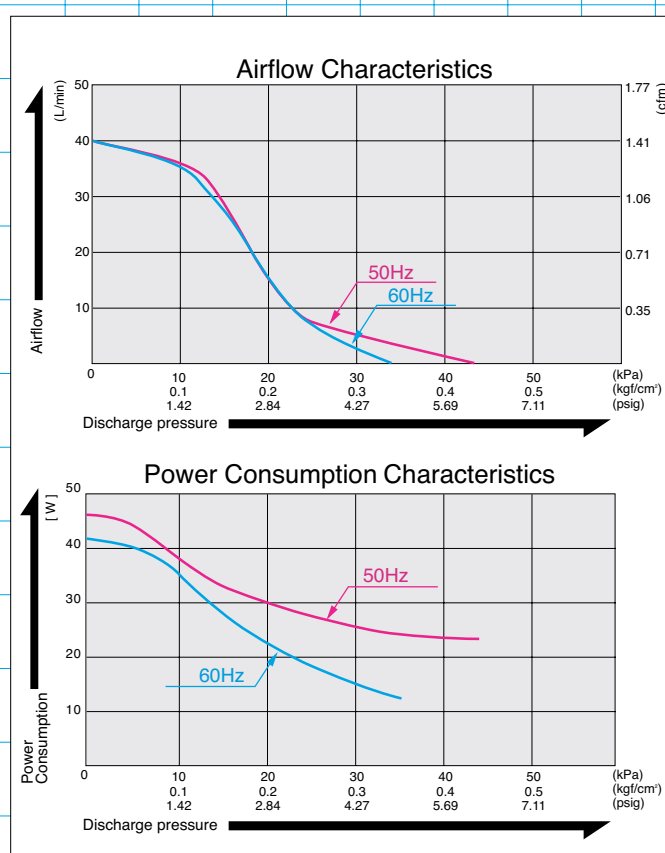
MOTOR FREE
PISTON SYSTEM

Ac0401A



Airflow & Power Consumption

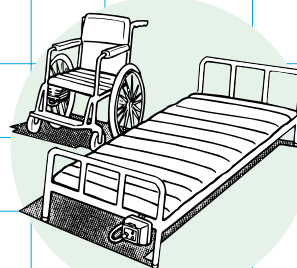
Specifications



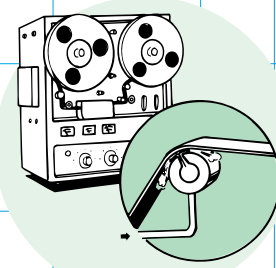
	(SI)	(EURO)	(U.S.A.)
Rated Pressure	10 kPa {0.1 kgf/cm ² }	0.1 bar	1.42 psig
Rated Airflow	35 L/min		1.24 cfm
Rated Voltage	120 V AC or 230 V AC		
Maximum Pressure	35 kPa {0.35 kgf/cm ² }	0.35 bar	4.98 psig
Power Consumption	35 W or 38 W		
Rated Frequency	60 Hz or 50 Hz		
Life Expectancy	10,000 hours		
Outlet	ISO Rc 1/4		
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

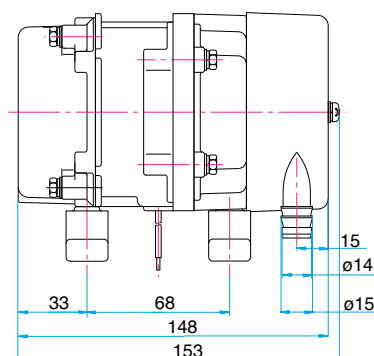
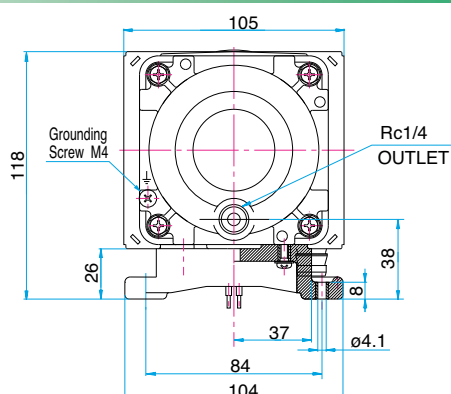


Bed Sore Prevention Mattress



Air Bearing

Sketch Drawing and Mounting Dimensions Diagram (mm)





COMPRESSOR

LINEAR

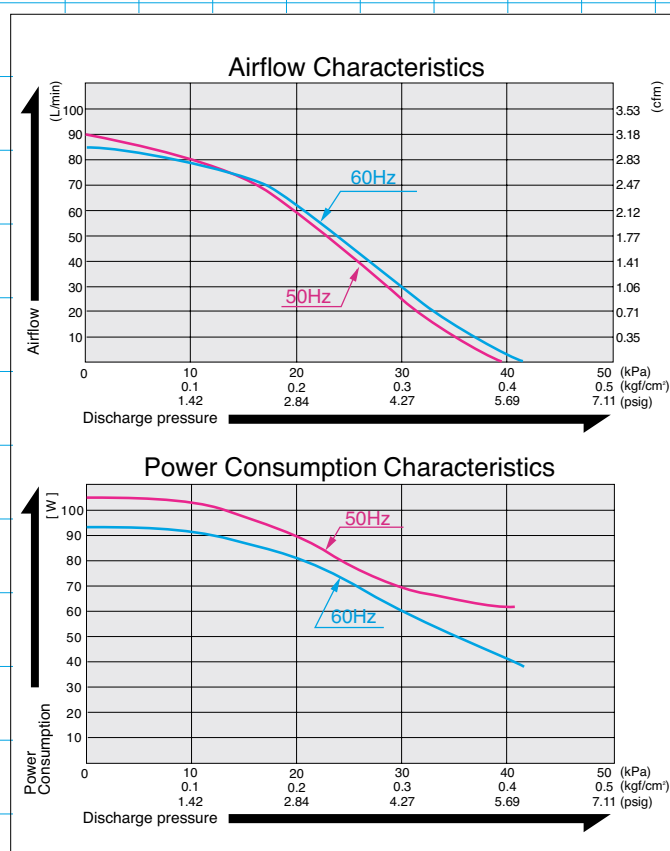
Ac0901



**MOTOR FREE
PISTON SYSTEM**



Airflow & Power Consumption

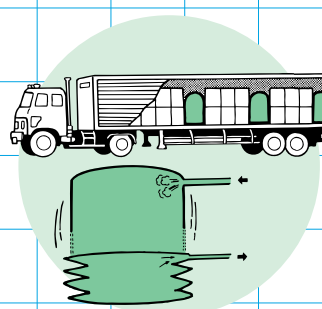


Specifications

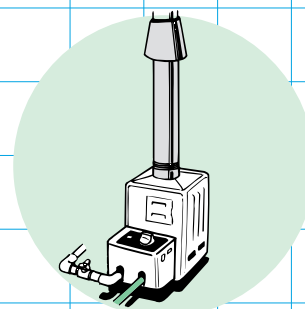
	(SI)	(EURO)	(U.S.A.)
Rated Pressure	10 kPa {0.1 kgf/cm ² }	0.1 bar	1.42 psig
Rated Airflow	80 L/min		2.83 cfm
Rated Voltage	115 V AC or 230 V AC		
Maximum Pressure	40 kPa {0.4 kgf/cm ² }	0.4 bar	5.69 psig
Power Consumption	88 W or 99 W		
Rated Frequency	60 Hz or 50 Hz		
Life Expectancy	10,000 hours		
Outlet	ISO Rc 3/8		
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

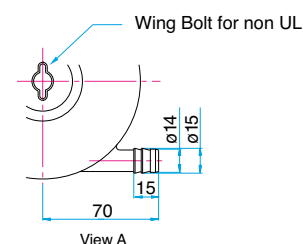
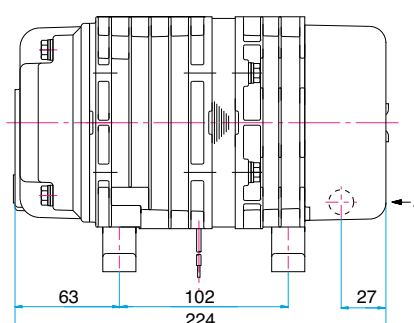
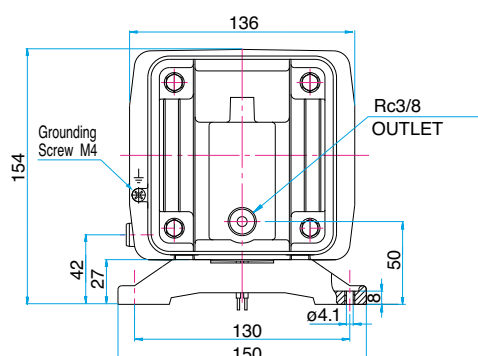


Pneumatic Jack



Gas Burner Booster

Sketch Drawing and Mounting Dimensions Diagram (mm)



LINEAR

Ac0902



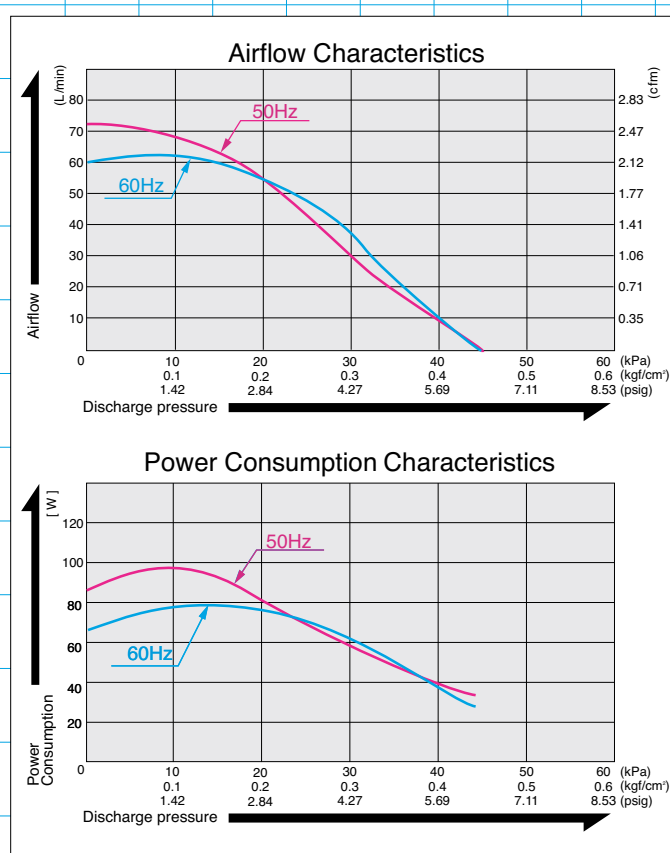
MOTOR F
PISTON SY



MOTOR FREE PISTON SYSTEM



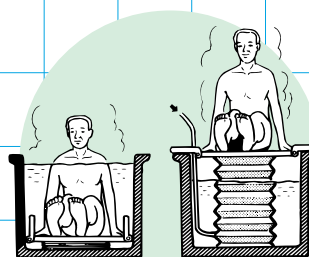
Specifications



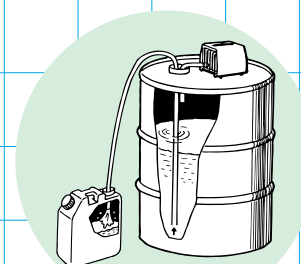
	(SI)	(EURO)	(U.S.A.)
Rated Pressure	20 kPa {0.2 kgf/cm ² }	0.2 bar	2.84 psig
Rated Airflow	55 L/min		1.94 cfm
Rated Voltage	115 V AC or 230 V AC		
Maximum Pressure	45 kPa {0.45 kgf/cm ² }	0.45 bar	6.4 psig
Power Consumption	75 W or 85 W		
Rated Frequency	60 Hz or 50 Hz		
Life Expectancy	10,000 hours		
Outlet	ISO Rc 3/8"		
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

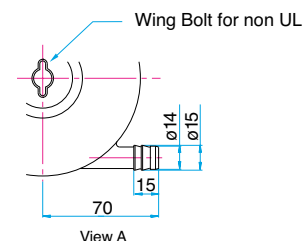
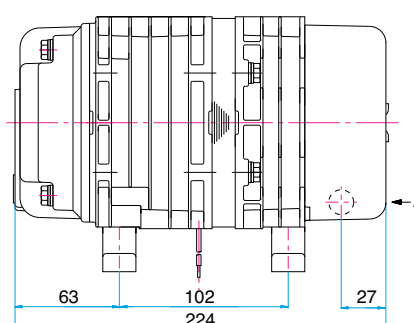
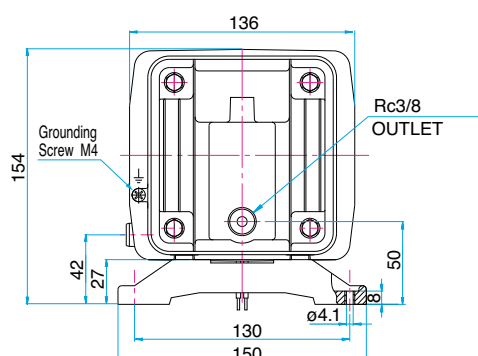


Air Lifter for Bathtub



Liquid Dispenser

Sketch Drawing and Mounting Dimensions Diagram (mm)





AIR COMPRESSOR

AC Intermediate
Pressure Series
LINEAR
Piston Compressor

AC0105
P31

AC0110
P32

AC0207
P33

AC0410A
P34

AC0610
P35

AC0910
P36

AC0920
P37



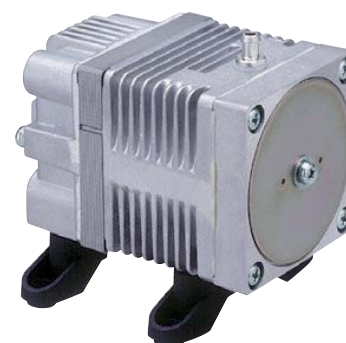
COMPRESSOR

LINEAR

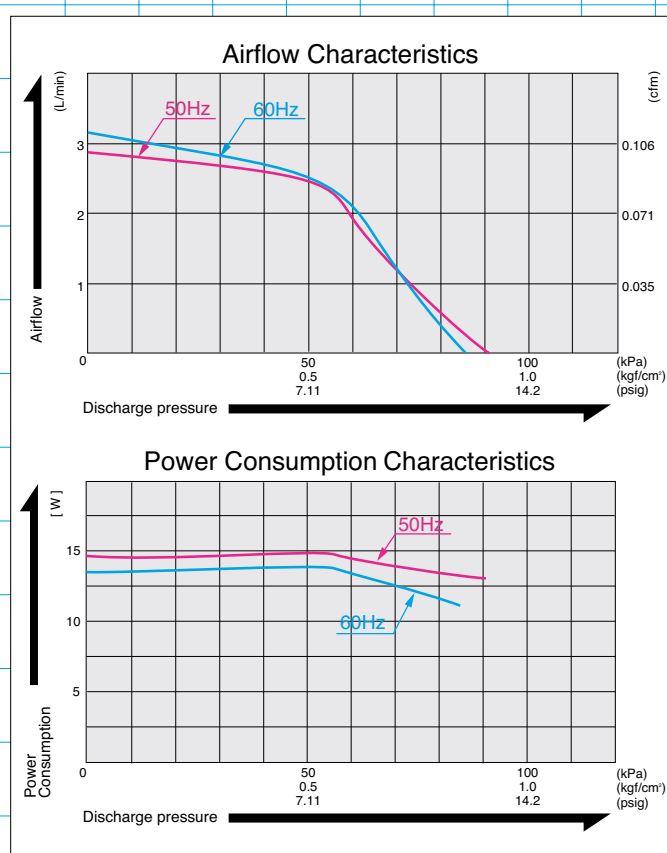
Ac0105



**MOTOR FREE
PISTON SYSTEM**



Airflow & Power Consumption

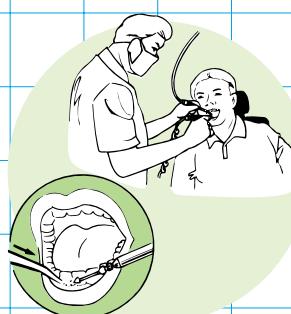


Specifications

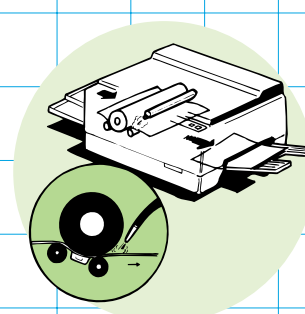
	(SI)	(EURO)	(U.S.A.)
Rated Pressure	50 kPa {0.5 kgf/cm ² }	0.5 bar	7.1 psig
Rated Airflow	2.5 L/min		0.088 cfm
Rated Voltage	115 V AC or 230 V AC		
Maximum Pressure	80 kPa {0.8 kgf/cm ² }	0.8 bar	11.4 psig
Power Consumption	14 W or 15 W		
Rated Frequency	60 Hz or 50 Hz		
Life Expectancy	3,000 hours		
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

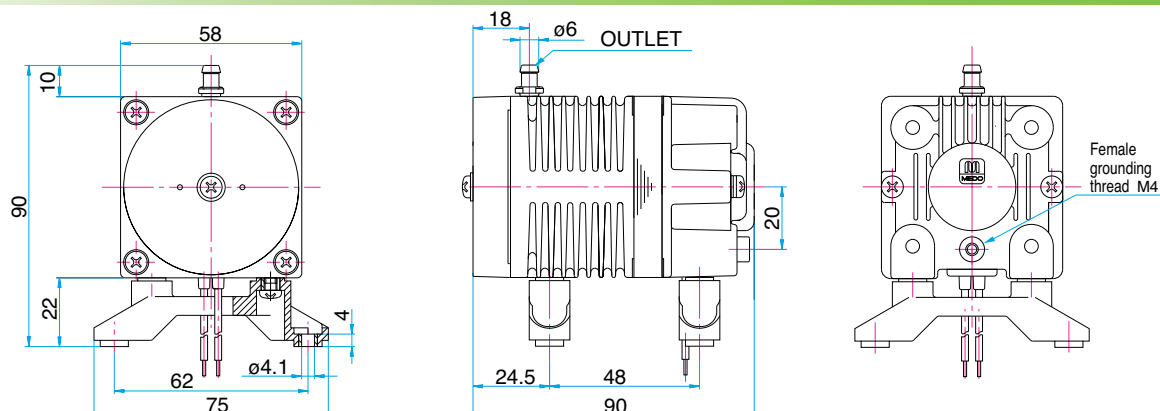


Saline Water Splasher



Copy Paper Separator

Sketch Drawing and Mounting Dimensions Diagram (mm)



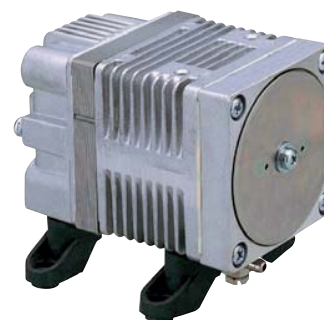
COMPRESSOR

LINEAR

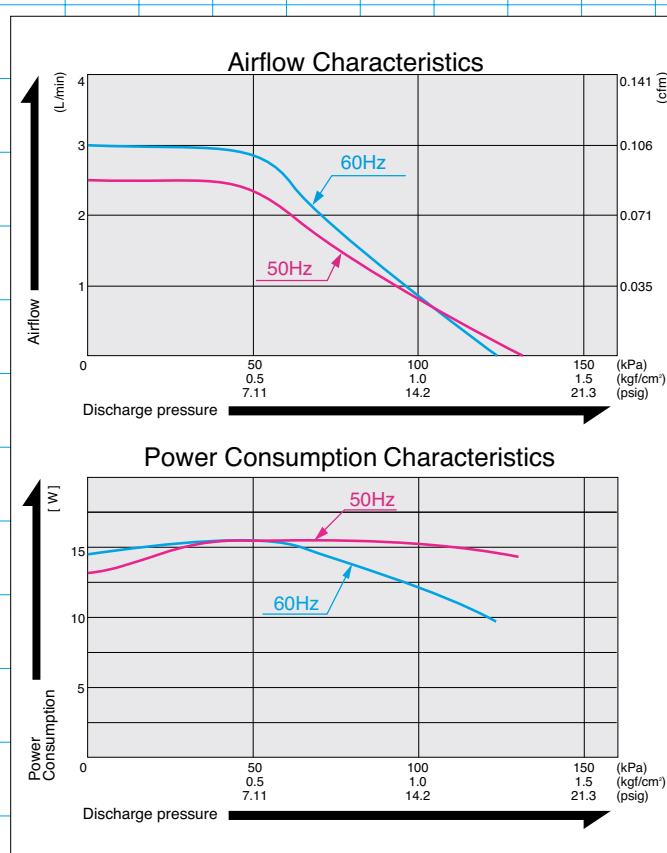
Ac0110



**MOTOR FREE
PISTON SYSTEM**



Airflow & Power Consumption

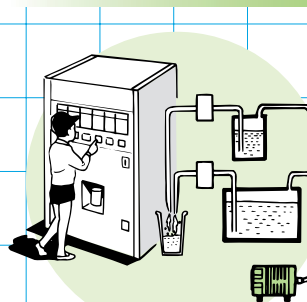


Specifications

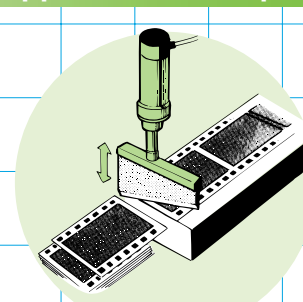
	(SI)	(EURO)	(U.S.A.)
Rated Pressure	100 kPa {1.0 kgf/cm ² }	1.0 bar	14.2 psig
Rated Airflow	0.8 L/min		0.028 cfm
Rated Voltage		115 V AC or 230 V AC	
Maximum Pressure	120 kPa {1.2 kgf/cm ² }	1.2 bar	17.1 psig
Power Consumption		12 W or 15 W	
Rated Frequency		60 Hz or 50 Hz	
Life Expectancy		3,000 hours	
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		1-7/8" (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

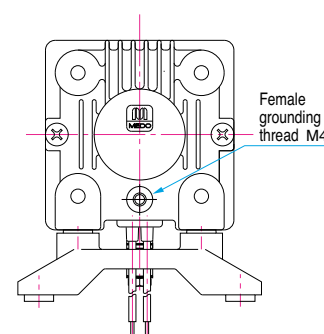
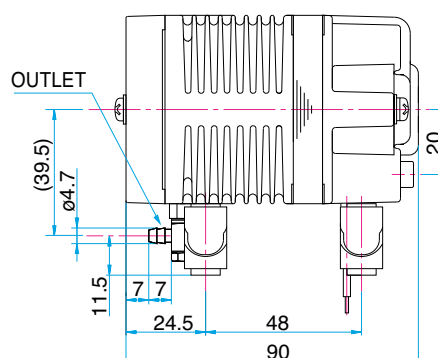
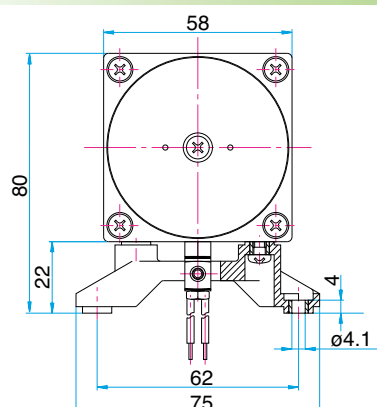


Automatic Dispenser



Film Cutter

Sketch Drawing and Mounting Dimensions Diagram (mm)



COMPRESSOR

LINEAR

Ac0207

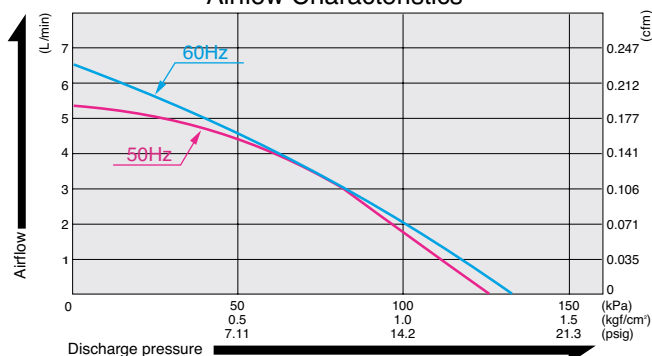


**MOTOR FREE
PISTON SYSTEM**

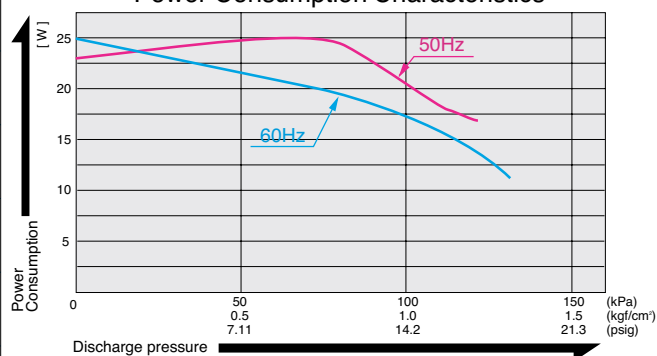


Airflow & Power Consumption

Airflow Characteristics



Power Consumption Characteristics

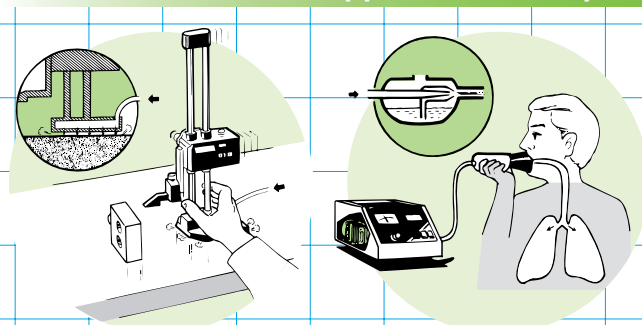


Specifications

	(SI)	(EURO)	(U.S.A.)
Rated Pressure	70 kPa {0.7 kgf/cm ² }	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	100 kPa {1.0 kgf/cm ² }	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.

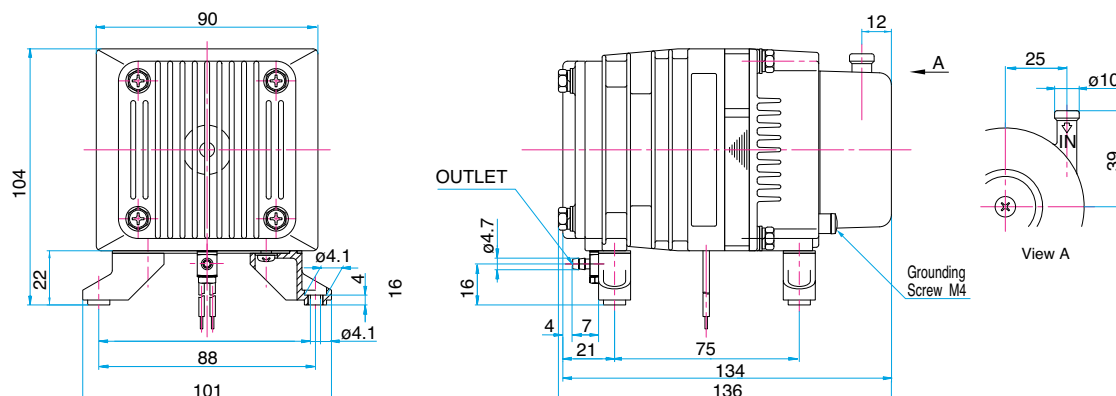
Application Examples



Air Bearing for Precision Machines

Nebulizer

Sketch Drawing and Mounting Dimensions Diagram (mm)



COMPRESSOR

LINEAR

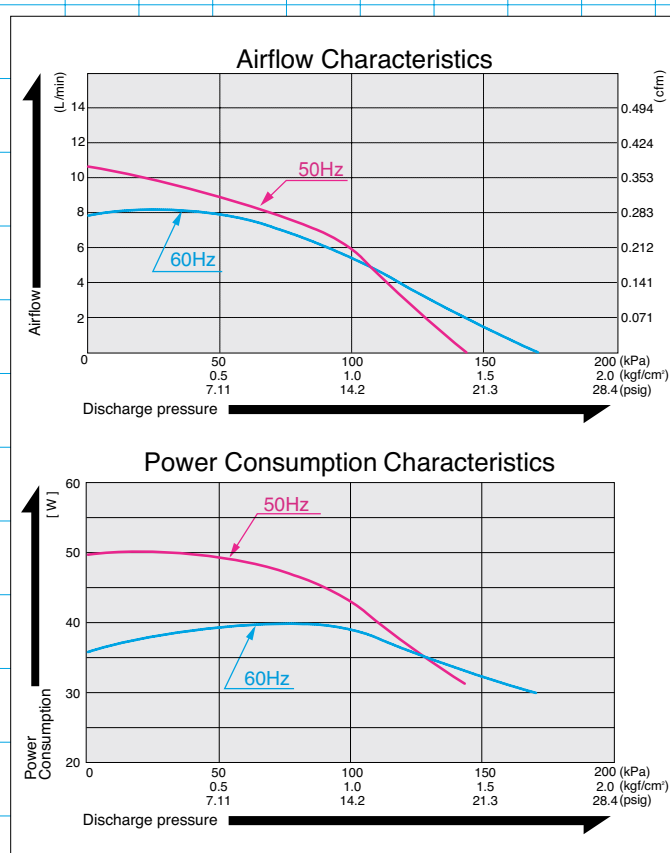
MOTOR FREE
PISTON SYSTEM

Ac0410A



Airflow & Power Consumption

Specifications

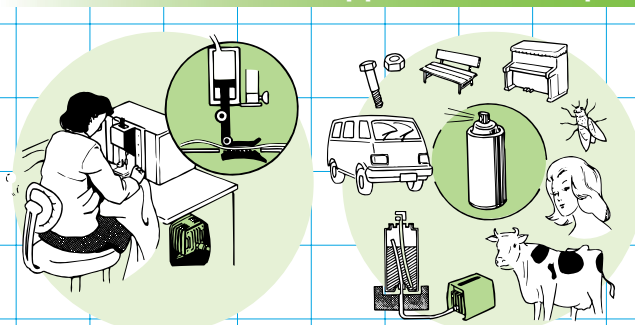


	(SI)	(EURO)	(U.S.A.)
Rated Pressure	100 kPa {1.0 kgf/cm ² }	1.0 bar	14.2 psig
Rated Airflow	5 L/min		0.177 cfm
Rated Voltage		115 V AC or 230 V AC	
Maximum Pressure	130 kPa {1.3 kgf/cm ² }	1.3 bar	18.5 psig
Power Consumption		39 W or 43 W	
Rated Frequency		60 Hz or 50 Hz	
Life Expectancy		3,000 hours	
Outlet		ISO Rc 1/4	
Duty Cycle		Continuous	
Coil Insulation Class		E or its equivalent (JETL) or B ※1	
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	170 mm		6-11/16"

※1: Will apply for UL.

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

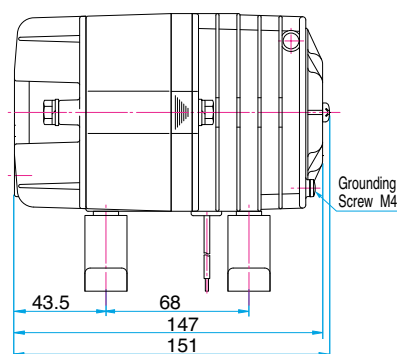
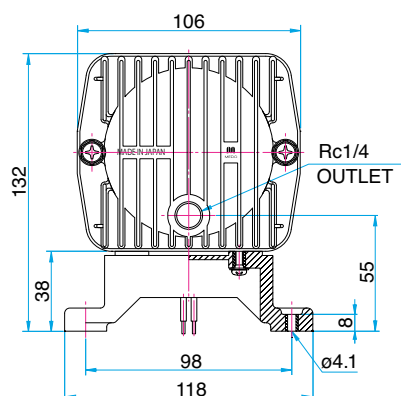
Application Examples



Industrial Sewing Machine

Various Aerosol Sprays

Sketch Drawing and Mounting Dimensions Diagram (mm)



COMPRESSOR

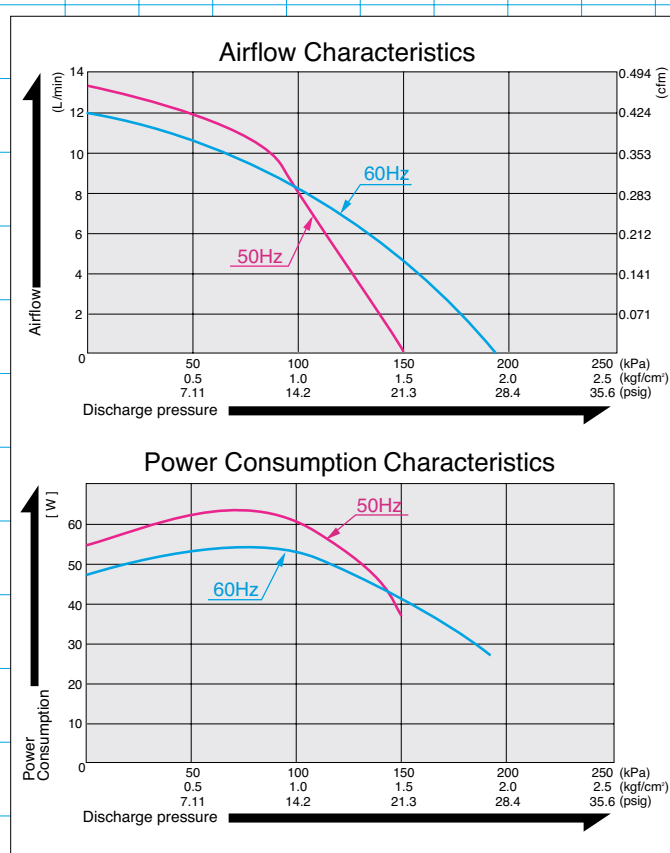
LINEAR

MOTOR FREE
PISTON SYSTEM

Ac0610A



Airflow & Power Consumption



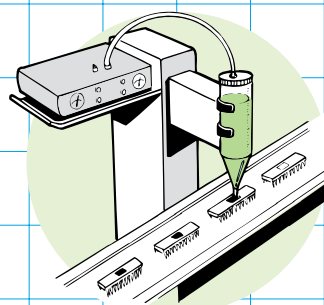
Specifications

	(SI)	(EURO)	(U.S.A.)
Rated Pressure	100 kPa {1.0 kgf/cm ² }	1.0 bar	14.2 psig
Rated Airflow	8 L/min		
Rated Voltage	115 V AC or 230 V AC		
Maximum Pressure	150 kPa {1.5 kgf/cm ² }	1.5 bar	21.3 psig
Power Consumption	52 W or 60 W		
Rated Frequency	60 Hz or 50 Hz		
Life Expectancy	10,000 hours		
Outlet	ISO Rc 1/4		
Duty Cycle	Continuous		
Coil Insulation Class	F or its equivalent (JETL) and F ^{※1}		
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"	

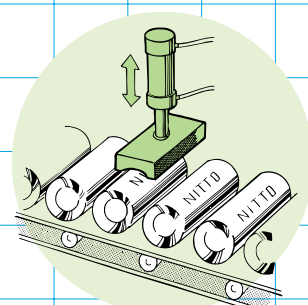
※1: Will apply for UL.

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

Application Examples

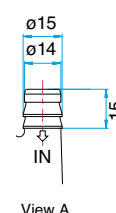
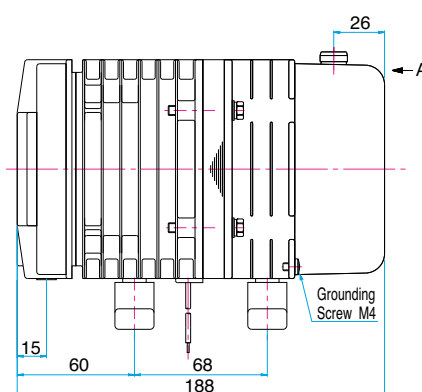
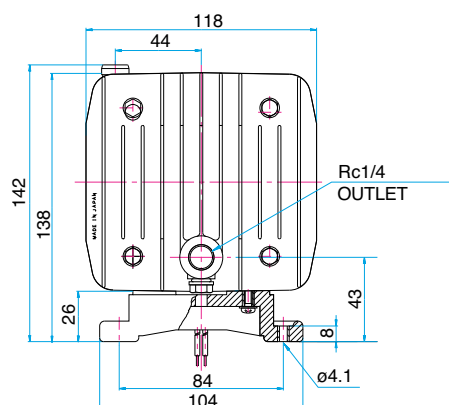


Dispenser



Automatic Stamper

Sketch Drawing and Mounting Dimensions Diagram (mm)



View A

COMPRESSOR

LINEAR

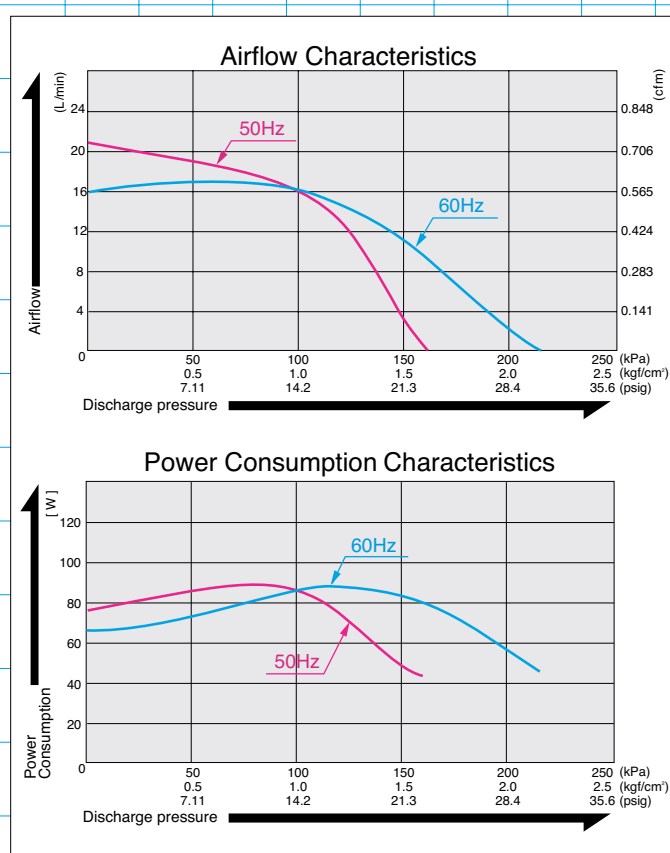
Ac0910



**MOTOR FREE
PISTON SYSTEM**



Airflow & Power Consumption

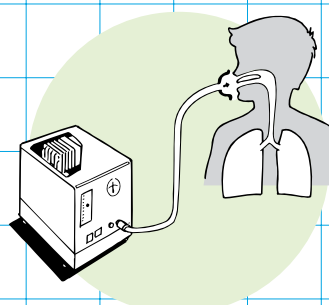


Specifications

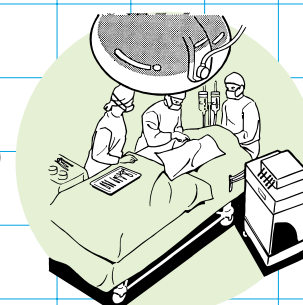
	(SI)	(EURO)	(U.S.A.)
Rated Pressure	100 kPa {1.0 kgf/cm ² }	1.0 bar	14.2 psig
Rated Airflow	16 L/min		0.565 cfm
Rated Voltage	115 V AC or 230 V AC		
Maximum Pressure	150 kPa {1.5 kgf/cm ² }	1.5 bar	21.3 psig
Power Consumption	85 W or 90 W		
Rated Frequency	60 Hz or 50 Hz		
Life Expectancy	3,000 hours		
Outlet	ISO Rc 1/4		
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

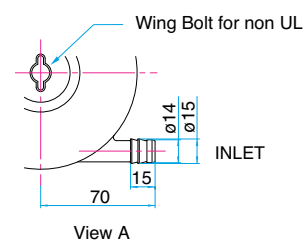
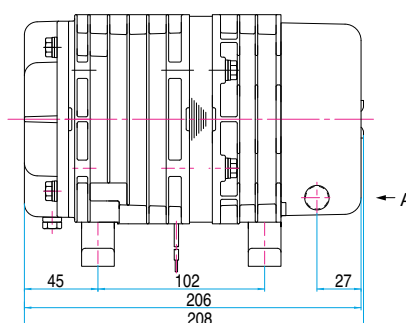
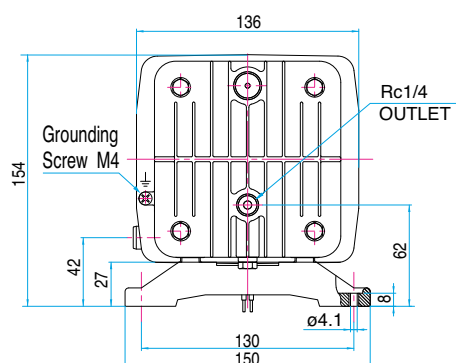


Oxygen Concentrator



I.V. Balloon Pump

Sketch Drawing and Mounting Dimensions Diagram (mm)



COMPRESSOR

LINEAR

Ac0920

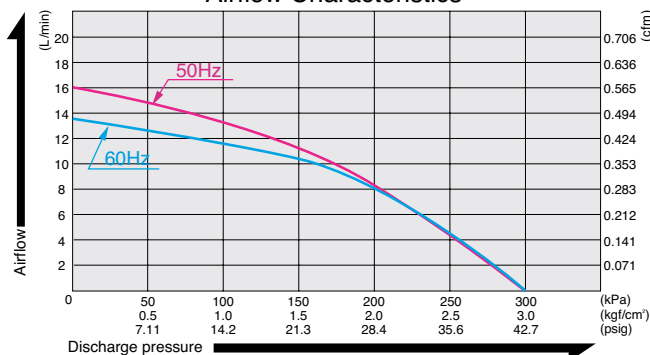


**MOTOR FREE
PISTON SYSTEM**

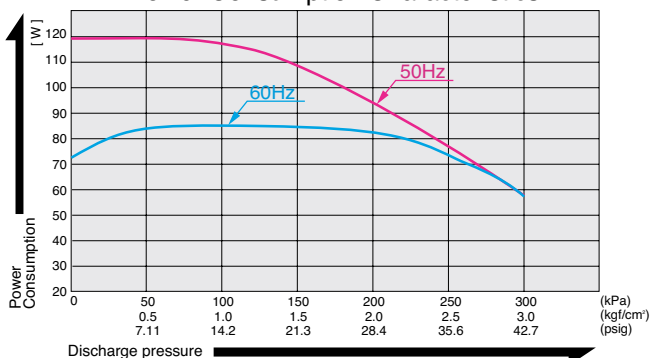


Airflow & Power Consumption

Airflow Characteristics



Power Consumption Characteristics

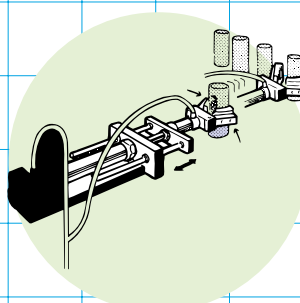


Specifications

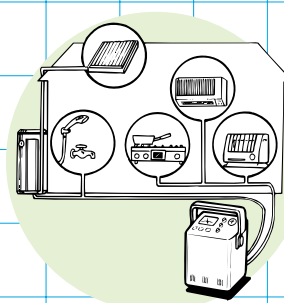
	(SI)	(EURO)	(U.S.A.)
Rated Pressure	200 kPa {2.0 kgf/cm ² }	2.0 bar	28.4 psig
Rated Airflow	8 L/min		
Rated Voltage	115 V AC or 230 V AC		
Maximum Pressure	300 kPa {3.0 kgf/cm ² }	3.0 bar	42.6 psig
Power Consumption	80 W or 100 W		
Rated Frequency	60 Hz or 50 Hz		
Life Expectancy	3,000 hours		
Outlet	ISO Rc 1/4		
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

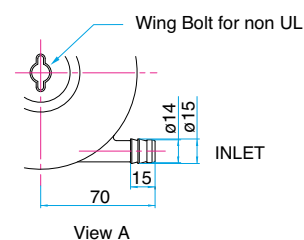
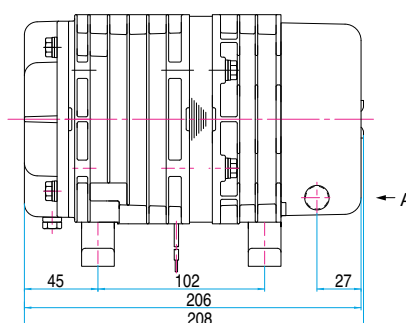
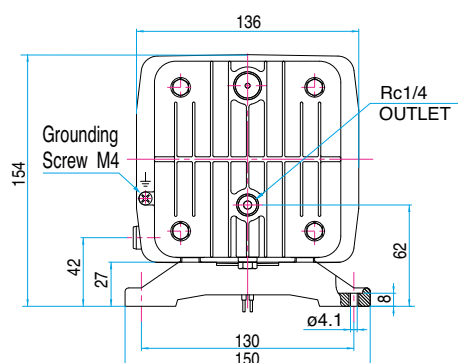


Air Cylinder/Chuck Driver



Leakage Tester

Sketch Drawing and Mounting Dimensions Diagram (mm)





VACUUM PUMP

AC LINEAR

Piston Vacuum Pump

VP0125
P39

VP0140
P40

VP0435A
P41

VP0450
P42

VP0625
P43

VP0660
P44

VP0940
P45



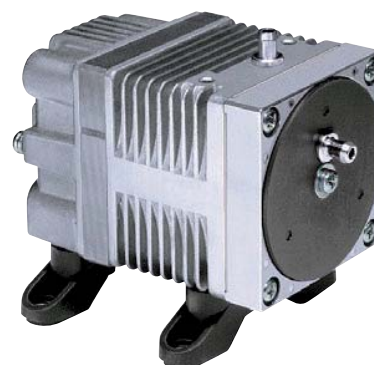
VACUUM PUMP

LINEAR

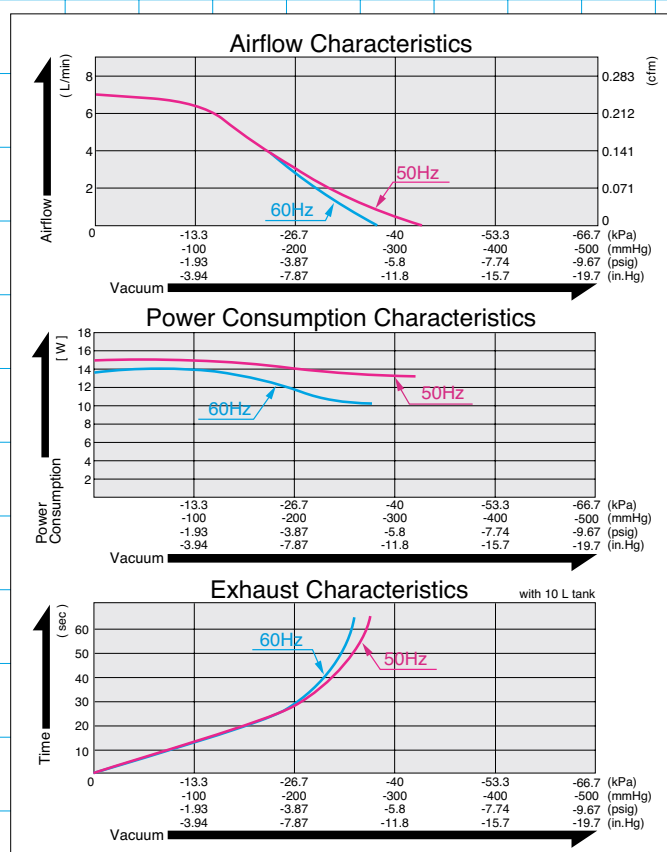
vp0125



**MOTOR FREE
PISTON SYSTEM**



Airflow & Power Consumption

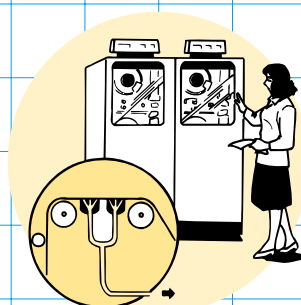


Specifications

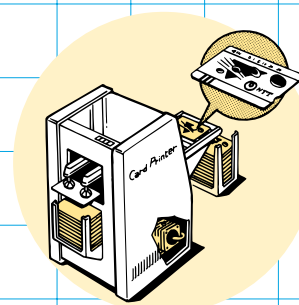
	(SI)	(EURO)	(U.S.A.)
Attainable Vacuum	-33.3 kPa (-250 mmHg)	-333 mbar	-9.84 in.Hg
Free Air Displacement	7 L/min		0.247 cfm
Rated Voltage	115 V AC or 230 V AC		
Power Consumption	14 W or 15 W		
Rated Frequency	60 Hz or 50 Hz		
Life Expectancy	3,000 hours		
Inlet	6 mm O.D. hose nipple		
Outlet	6 mm O.D. 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

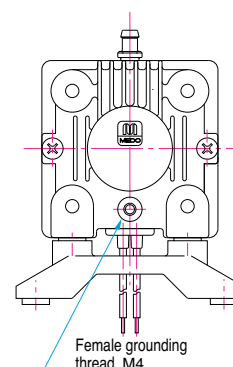
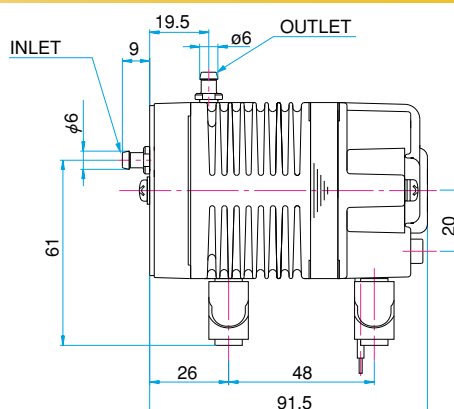
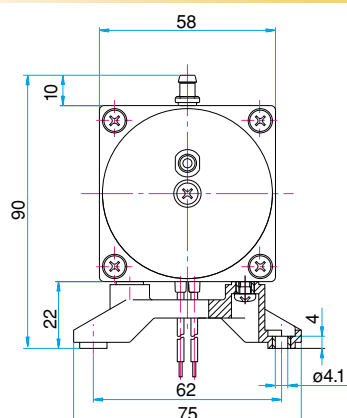


Tape Positioning



Paper Card Dispenser

Sketch Drawing and Mounting Dimensions Diagram (mm)



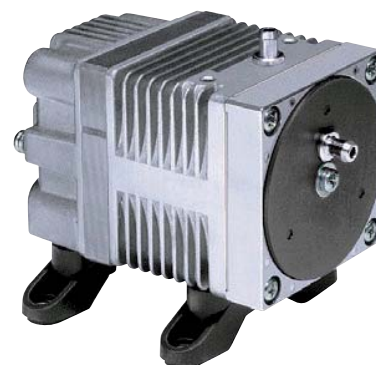
VACUUM PUMP

LINEAR

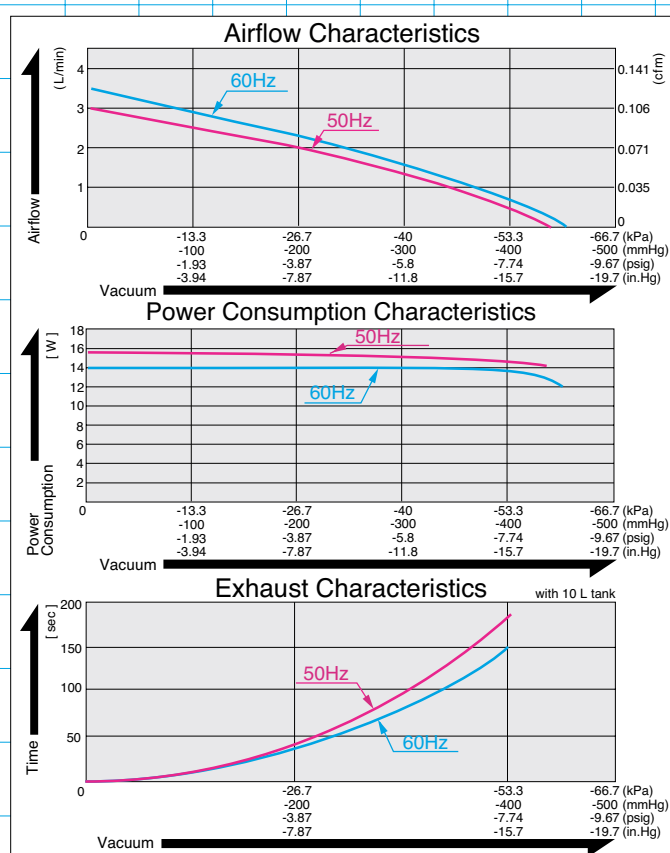
vp0140



**MOTOR FREE
PISTON SYSTEM**



Airflow & Power Consumption

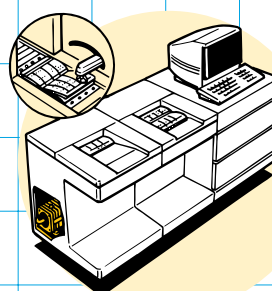


Specifications

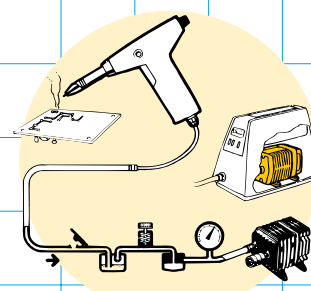
	(SI)	(EURO)	(U.S.A.)
Attainable Vacuum ^{※1}	-53.3 kPa {-400 mmHg}	-533 mbar	-15.7 in.Hg
Free Air Displacement	3 L/min		0.106 cfm
Rated Voltage	115 V AC or 230 V AC		
Power Consumption	14 W or 15 W		
Rated Frequency	60 Hz or 50 Hz		
Life Expectancy	3,000 hours		
Inlet	6 mm O.D. hose nipple		
Outlet	6 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"	

※1: Operations at higher than -53.3kPa need an additional leak valve or relief valve on the inlet piping.
Please read the page of "How to Use This Catalog" first for correct use of compressors and pumps.

Application Examples

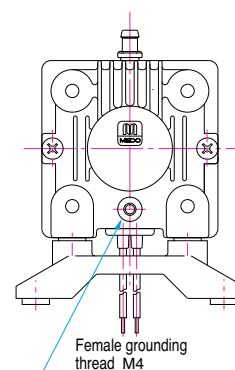
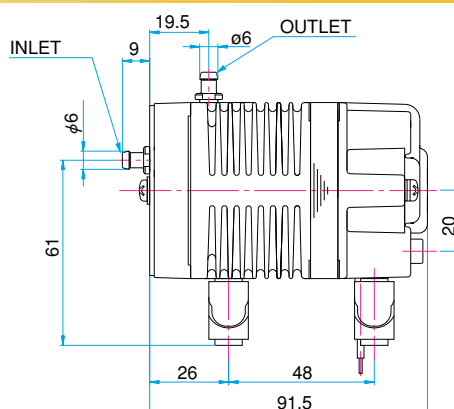
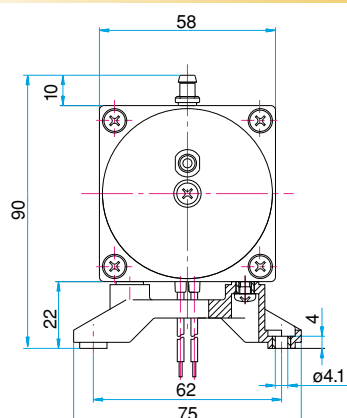


Page Scroller



Solder Fume Suction

Sketch Drawing and Mounting Dimensions Diagram (mm)



VACUUM PUMP

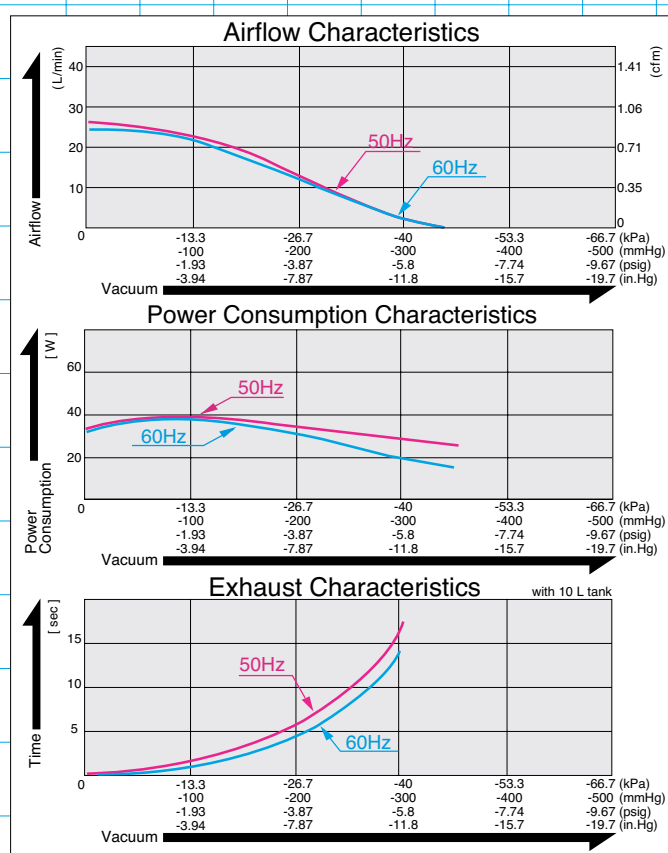
LINEAR

MOTOR FREE
PISTON SYSTEM

VP0435A



Airflow & Power Consumption

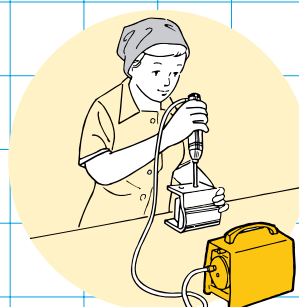


Specifications

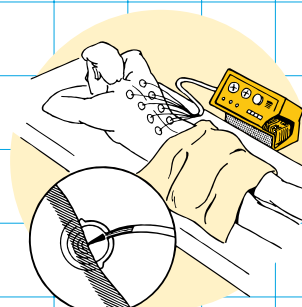
	(SI)	(EURO)	(U.S.A.)
Attainable Vacuum	-46.7 kPa (-350 mmHg)	-467 mbar	-13.78 in.Hg
Free Air Displacement	25 L/min		0.88 cfm
Rated Voltage	115 V AC or 230 V AC		
Power Consumption	39 W		
Rated Frequency	60 Hz or 50 Hz		
Life Expectancy	3,000 hours		
Inlet	ISO Rc 1/4		
Outlet	ISO Rc 1/4		
Duty Cycle	Continuous		
Coil Insulation Class	B or its equivalent (JETL) / UL		
Mounting Dimensions	68 (L) x 84 (W) mm	2-11/16" (L) x 3-5/16" (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

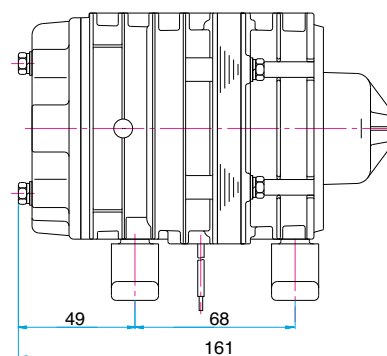
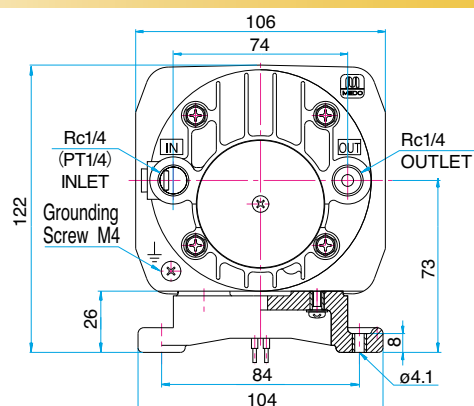


Machine Screw Feeder



Medical Cup Suction

Sketch Drawing and Mounting Dimensions Diagram (mm)



VACUUM PUMP

LINEAR

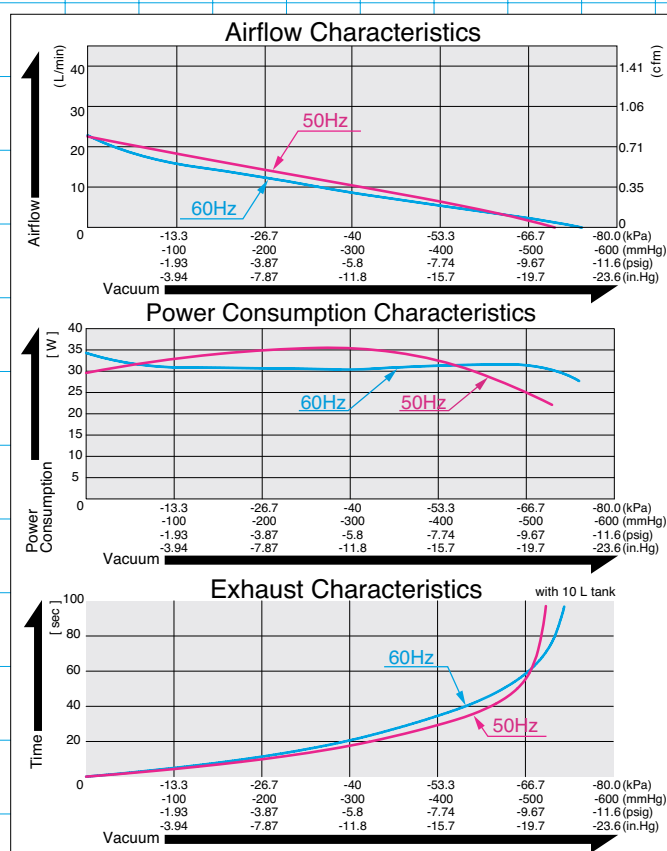
vp0450



**MOTOR FREE
PISTON SYSTEM**



Airflow & Power Consumption

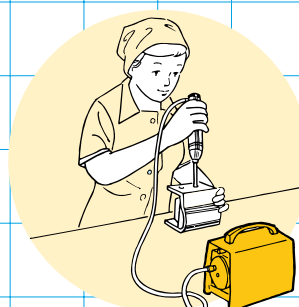


Specifications

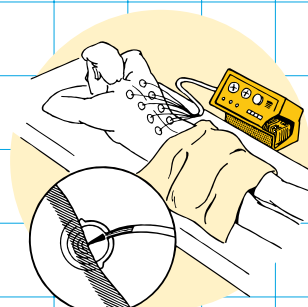
	(SI)	(EURO)	(U.S.A.)
Attainable Vacuum	-66.7 kPa (-500 mmHg)	-667 mbar	-19.7 in.Hg
Free Air Displacement	18 L/min		0.64 cfm
Rated Voltage	120 V AC or 230 V AC		
Power Consumption	34 W or 35 W		
Rated Frequency	60 Hz or 50 Hz		
Life Expectancy	10,000 hours		
Inlet	ISO Rc 1/4		
Outlet	ISO Rc 1/4		
Duty Cycle	Continuous		
Coil Insulation Class	E or its equivalent (JETL)		
Mounting Dimensions	85 (L) x 88 (W) mm	3-11/32" (L) x 3-15/32" (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

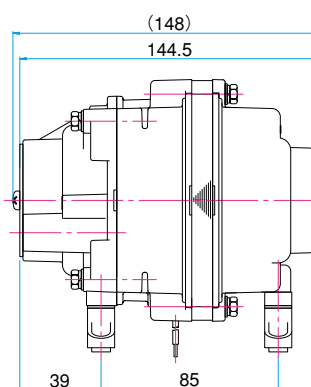
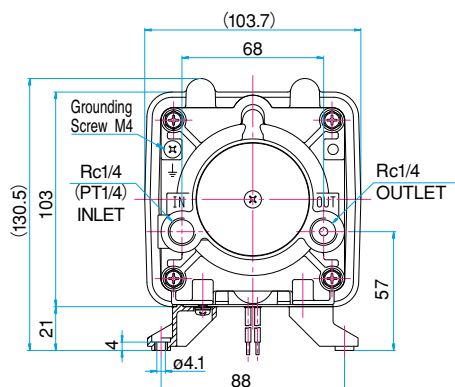


Machine Screw Feeder



Medical Cup Suction

Sketch Drawing and Mounting Dimensions Diagram (mm)



VACUUM PUMP

LINEAR

VP0625

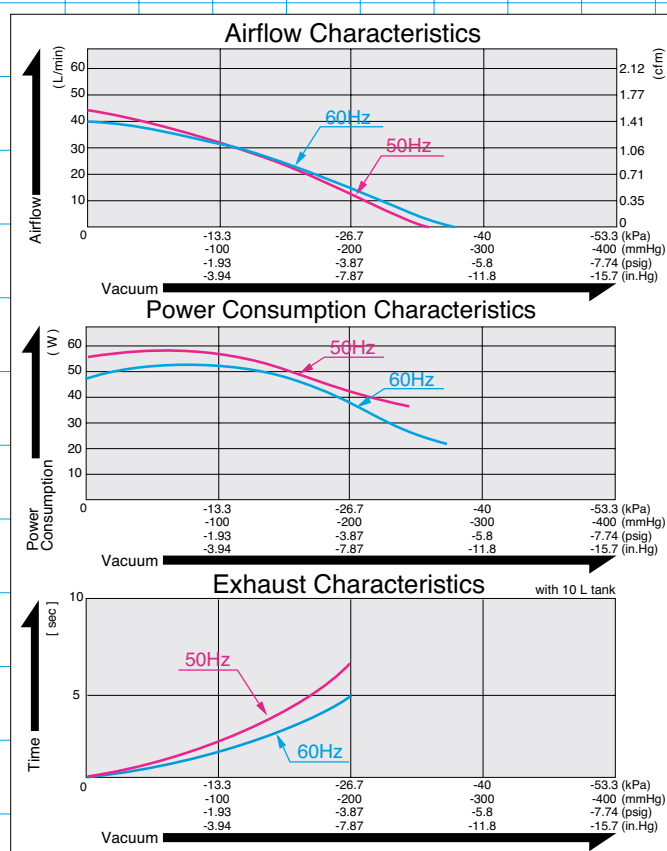


**MOTOR FREE
PISTON SYSTEM**



Airflow & Power Consumption

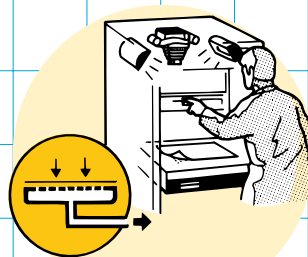
Specifications



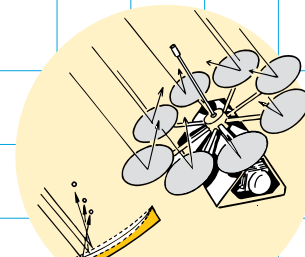
	(SI)	(EURO)	(U.S.A.)
Attainable Vacuum	-33.3 kPa (-250 mmHg)	-333 mbar	-9.84 in.Hg
Free Air Displacement	40 L/min		1.41 cfm
Rated Voltage	115 V AC or 230 V AC		
Power Consumption	56 W or 60 W		
Rated Frequency	60 Hz or 50 Hz		
Life Expectancy	10,000 hours		
Inlet	15 mm O.D. hose nipple		
Outlet	ISO Rc 1/4		
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

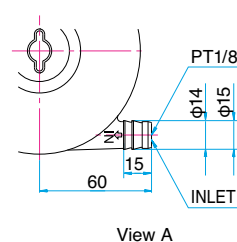
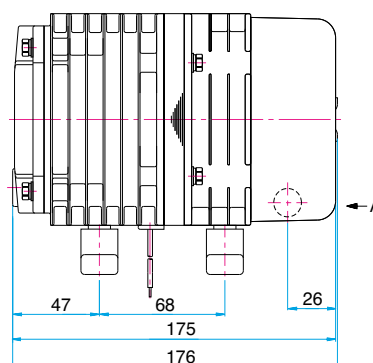
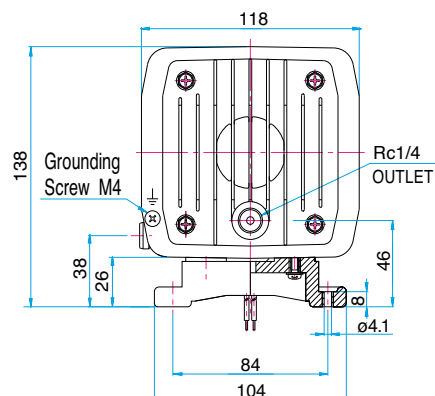


Microfiche Camera



Solar Collection Screen

Sketch Drawing and Mounting Dimensions Diagram (mm)



VACUUM PUMP

LINEAR

VP0660

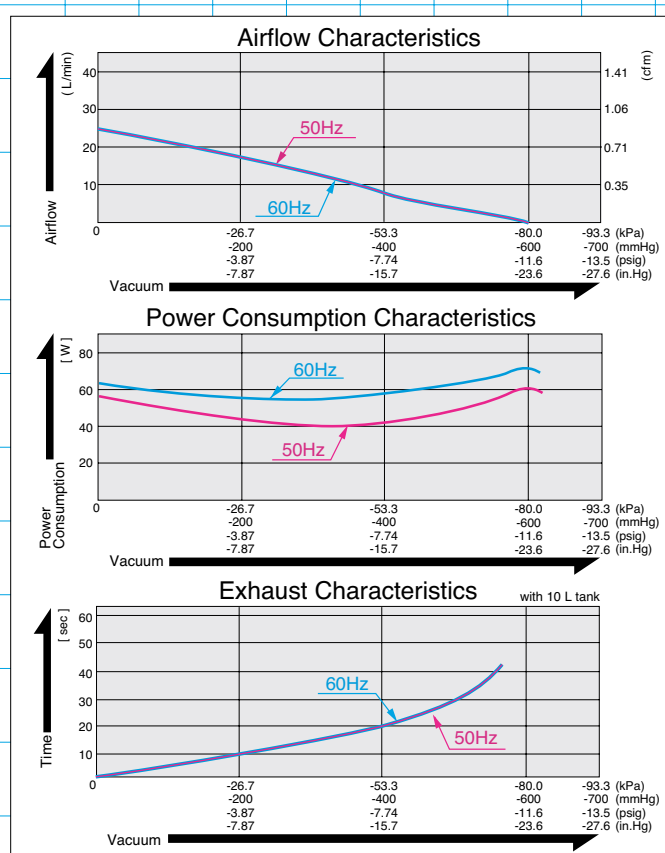


**MOTOR FREE
PISTON SYSTEM**



Airflow & Power Consumption

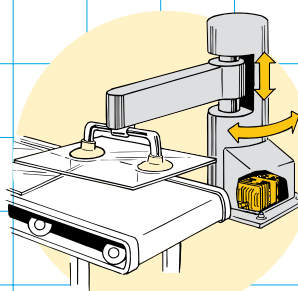
Specifications



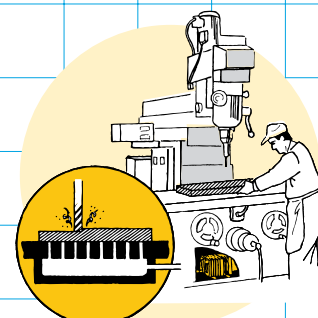
	(SI)	(EURO)	(U.S.A.)
Attainable Vacuum ^{※1}	-80 kPa (-600 mmHg)	-800 mbar	-23.6 in.Hg
Free Air Displacement	25 L/min		0.88 cfm
Rated Voltage	115 V AC or 230 V AC		
Power Consumption	70 W or 60 W		
Rated Frequency	60 Hz or 50 Hz		
Life Expectancy	6,000 hours		
Inlet	ISO Rc 1/4		
Outlet	ISO Rc 1/4		
Duty 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"	

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

Application Examples

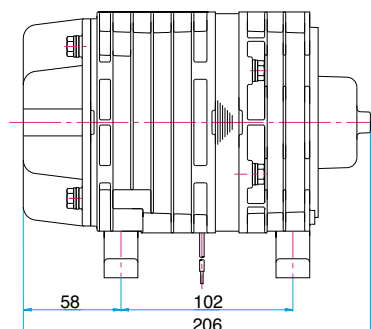
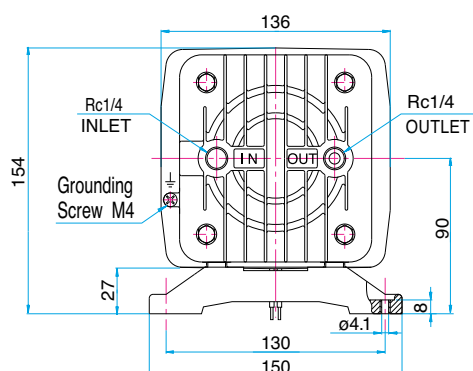


Material Handling Machine



Vacuum Chucking

Sketch Drawing and Mounting Dimensions Diagram (mm)



VACUUM PUMP

LINEAR

VP0940

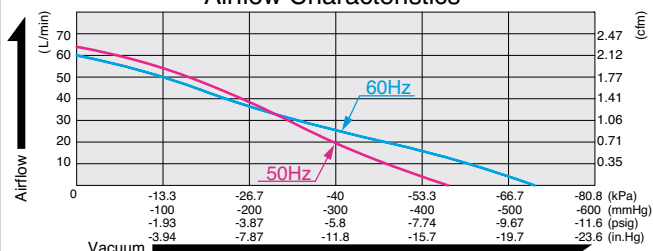


**MOTOR FREE
PISTON SYSTEM**



Airflow & Power Consumption

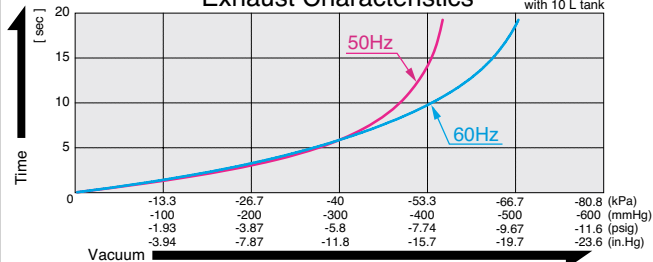
Airflow Characteristics



Power Consumption Characteristics



Exhaust Characteristics

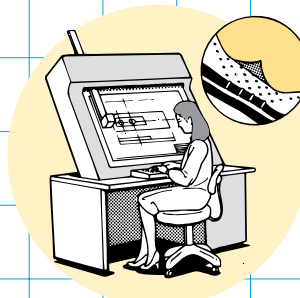


Specifications

	(SI)	(EURO)	(U.S.A.)
Attainable Vacuum ^{※1}	-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		
Outlet	ISO Rc 1/4		
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"	

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

Application Examples

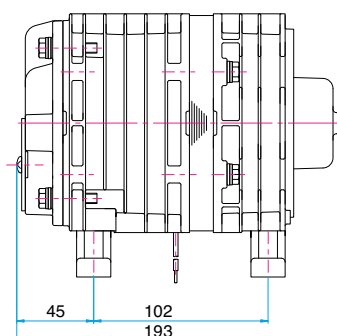
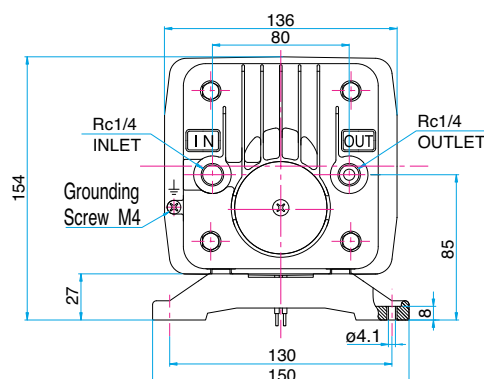


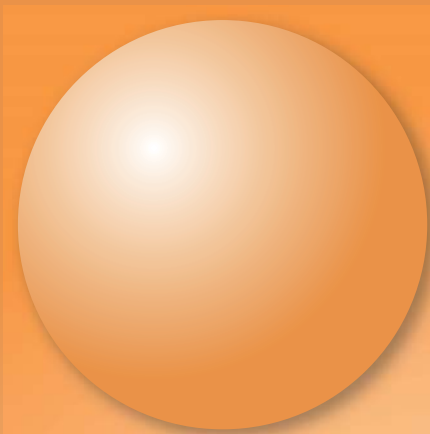
Drafter Sheet Suction



Metal Powder Recycling

Sketch Drawing and Mounting Dimensions Diagram (mm)





LA BLOWER

AC LINEAR

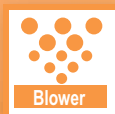
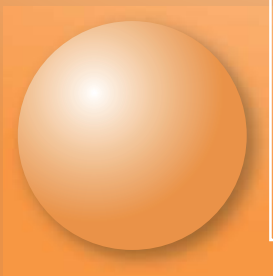
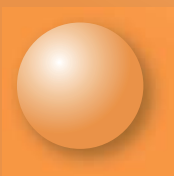
Piston Blower

LA-28B
LA-45B
P47

LA-60B
LA-80B
P48

LA-100A
LA-120A
P49

LAM-200
P50

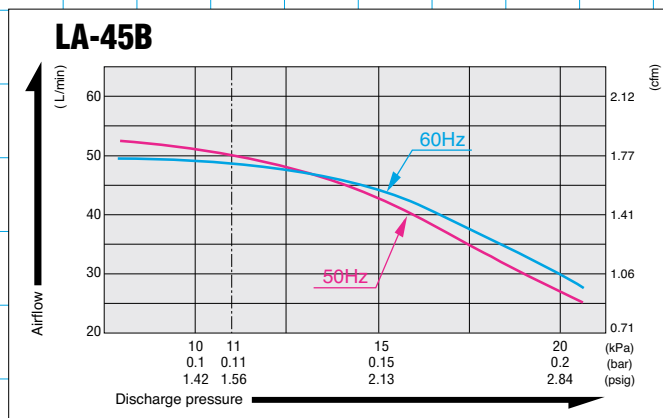
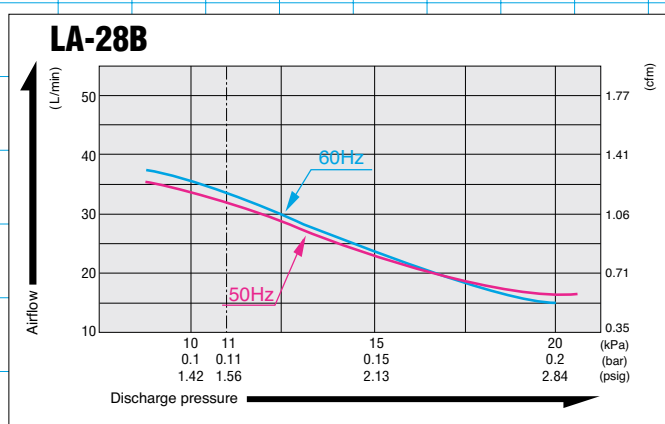


LA BLOWER

LINEAR

MOTOR FREE
PISTON SYSTEMLA-28_B LA-45_B

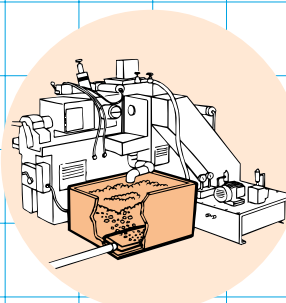
Airflow Characteristics



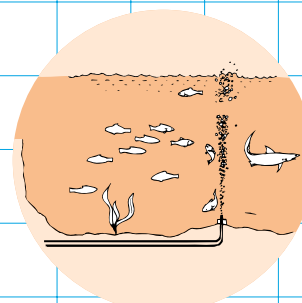
Specifications

	LA-28B	LA-45B
Power Supply	120 V, 220 V, 230 V, 240 V AC	
Rated Frequency	50 Hz, 60 Hz	
Rated Pressure	11 kPa {0.11kgf/cm ² }, 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 25.5 W / 60 Hz	47 W / 50 Hz 45 W / 60 Hz
Weight	2.9 kg {6.4 lbs}	3.0 kg {6.6 lbs}

Application Examples

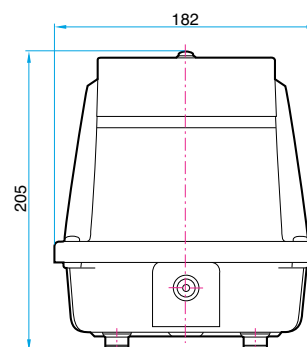
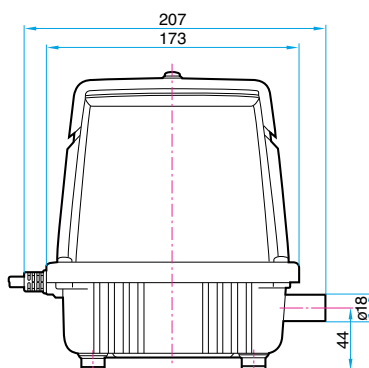


Liquid Mixer Bubbling



Fish Farm Aquatic Fence

Sketch Drawing and Mounting Dimensions Diagram (mm)



LA BLOWER

LINEAR

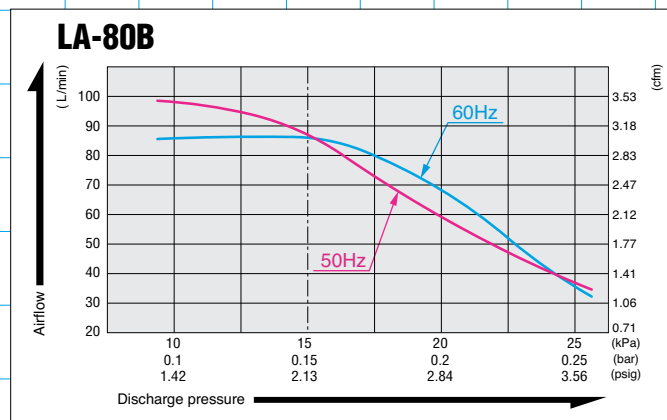
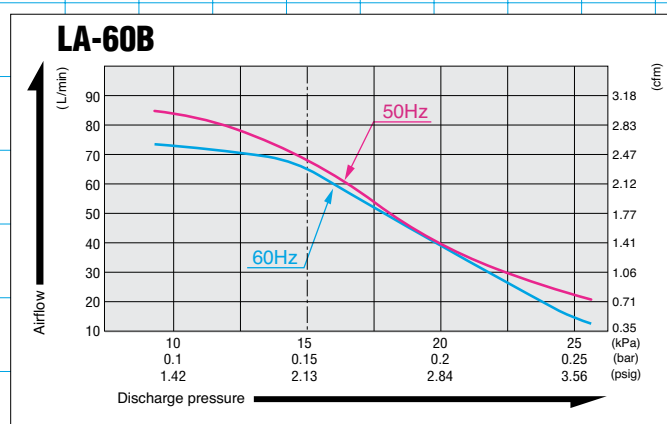


**MOTOR FREE
PISTON SYSTEM**



LA-60_B LA-80_B

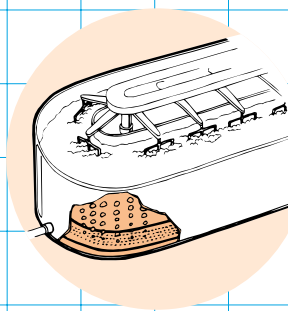
Airflow Characteristics



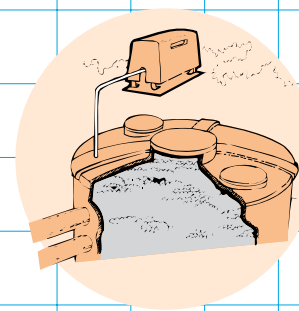
Specifications

	LA-60B	LA-80B
Power Supply	120 V, 220 V, 230 V, 240 V AC	
Rated Frequency	50 Hz, 60 Hz	
Rated Pressure	15 kPa {0.15kgf/cm ² }, 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 60 W / 60 Hz	86 W / 50 Hz 86 W / 60 Hz
Weight	5.0 kg {11 lbs}	5.3 kg {11.7 lbs}

Application Examples

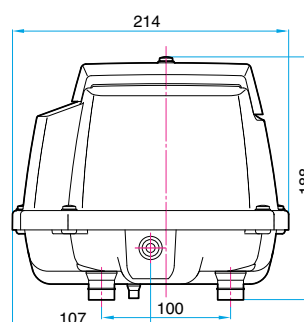
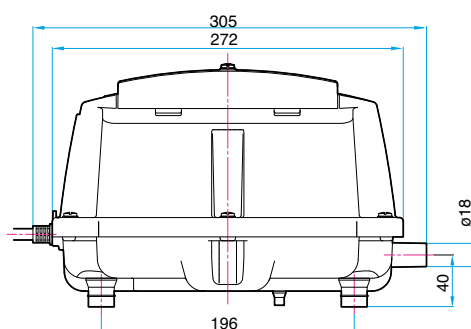


Liquid Mixer Bubbling



Home Aerobic Sewage Treatment System

Sketch Drawing and Mounting Dimensions Diagram (mm)



LA BLOWER

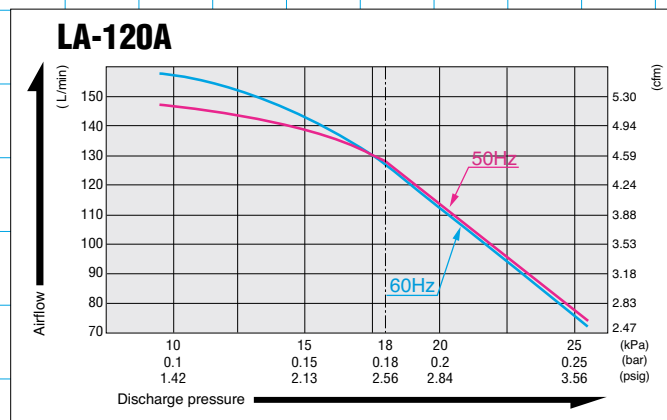
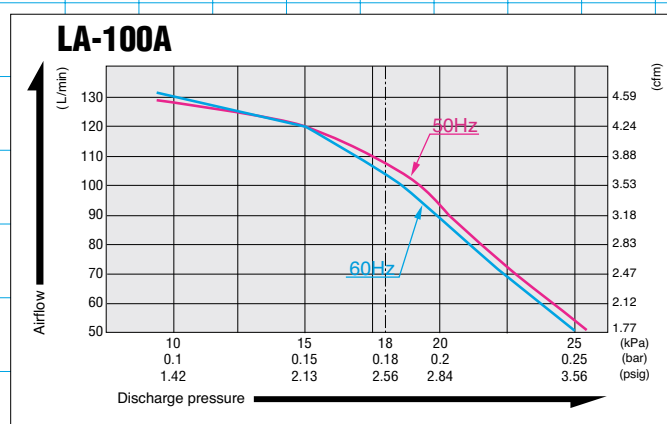
LINEAR

MOTOR FREE
PISTON SYSTEM

LA-100A LA-120A



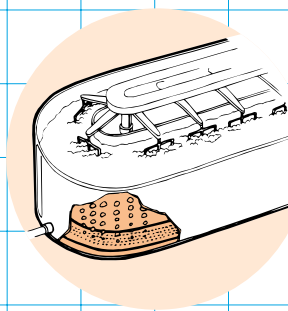
Airflow Characteristics



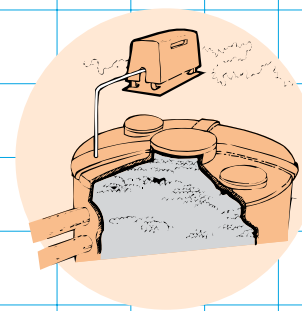
Specifications

	LA-100A	LA-120A
Power Supply	120 V, 220 V, 230 V, 240 V AC	
Rated Frequency	50 Hz, 60 Hz	
Rated Pressure	18 kPa {0.18kgf/cm ² }, 0.18 bar or 2.56 psig	
Rated Airflow	100 L/min {3.53 cfm}	120 L/min {4.24 cfm}
Power Consumption	100 W / 50 Hz 95 W / 60 Hz	130 W / 50 Hz 118 W / 60 Hz
Weight	9.7 kg {21.4 lbs}	9.7 kg {21.4 lbs}

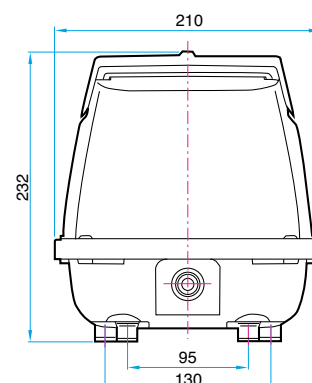
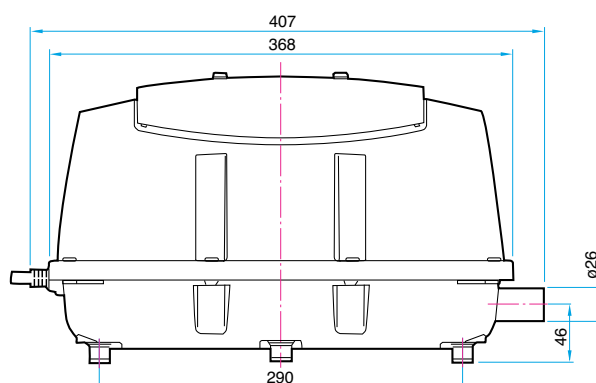
Application Examples



Liquid Mixer Bubbling

Home Aerobic Sewage
Treatment System

Sketch Drawing and Mounting Dimensions Diagram (mm)



LA BLOWER

LINEAR

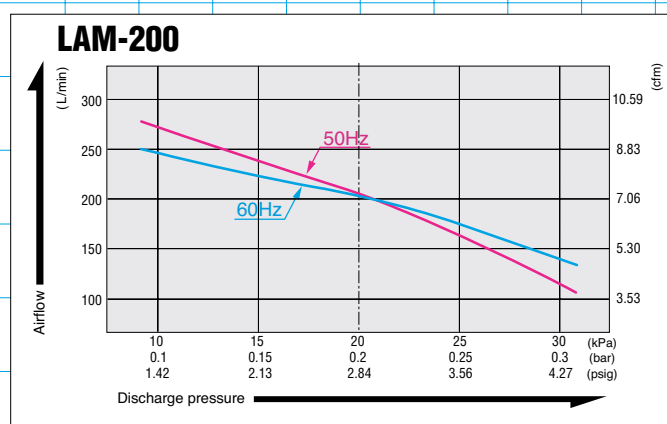
LAM-200



**MOTOR MAGNET
PISTON SYSTEM**



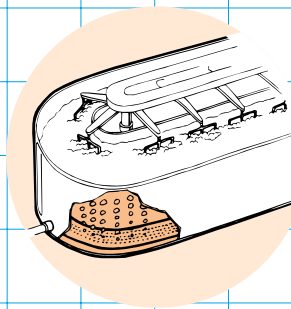
Airflow Characteristics



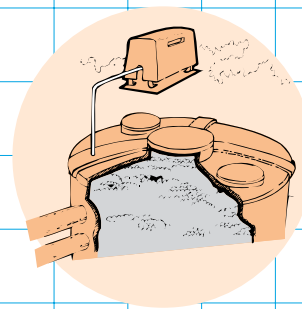
Specifications

	LAM-200
Power Supply	120 V, 220 V, 230 V, 240 V AC
Rated Frequency	50 Hz, 60Hz
Rated Pressure	20 kPa {0.20 kgf/cm ² }, 0.20 bar or 2.84 psig
Rated Airflow	200 L/min {7.06 cfm}
Power Consumption	215 W / 50 Hz 215 W / 60 Hz
Weight	12.3 kg {27.1 lbs}

Application Examples

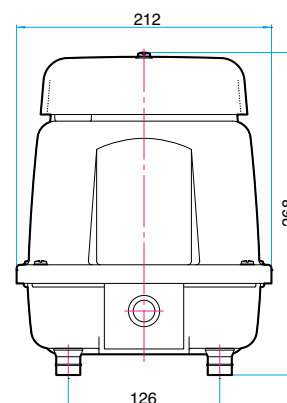
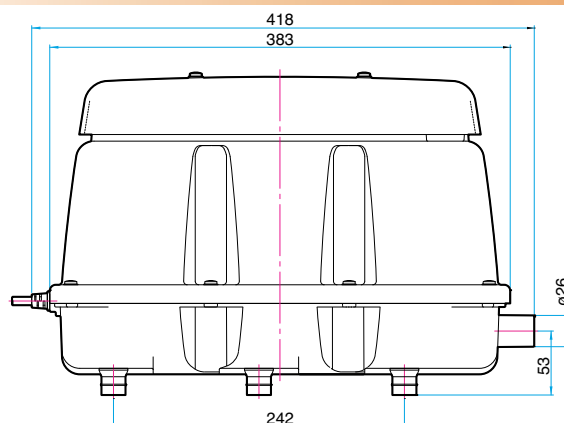


Liquid Mixer Bubbling



Home Aerobic Sewage Treatment System

Sketch Drawing and Mounting Dimensions Diagram (mm)



DIAPHRAGM PUMP

AC LINEAR

Diaphragm Pump



VC0100
Dual Type
P53

VC0100
Blower Type
P54

VC0101
Dual Type
P55

VC0101
Blower Type
P56

VC0101E
Dual Type
P57

VC0101E
Blower Type
P58

VC0201
Dual Type
P59

VC0201
Blower Type
P60

VC0301
Dual Type
P61

VC0301
Blower Type
P62

VC0201B
Dual Type
P63

VC0201B
Blower Type
P64

VC0301B
Dual Type
P65

VC0301B
Blower Type
P66

DIAPHRAGM PUMP

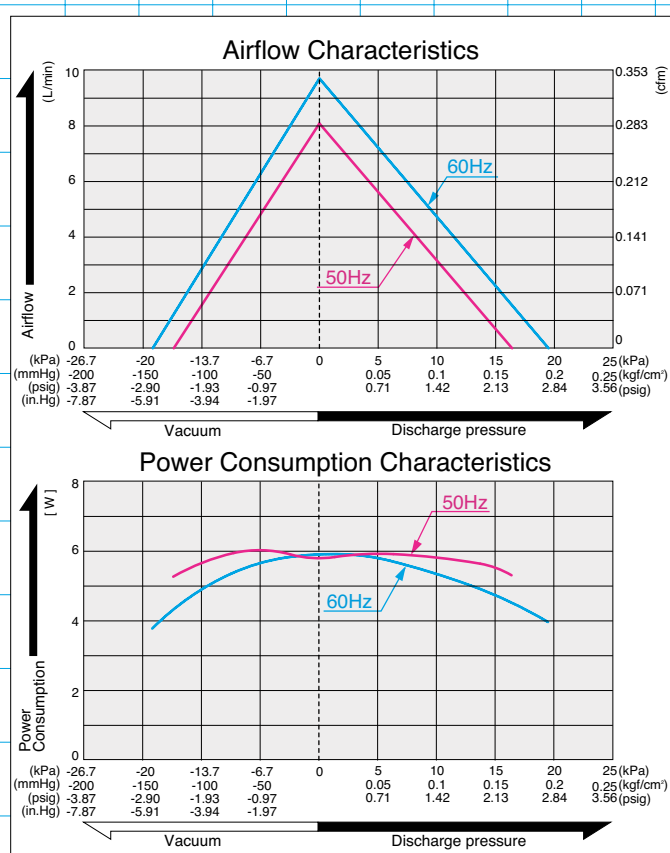


DIAPHRAGM PUMP

vc0100 Dual Type



Airflow & Power Consumption

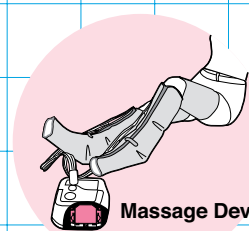


Specifications

	(SI)	(EURO)	(U.S.A.)
Rated Pressure	4 kPa {0.04 kgf/cm ² }	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	16 kPa {0.16 kgf/cm ² }	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 - 16 kPa {-110 mmHg-0.16 kgf/cm ² }	-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 2-7/32"(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

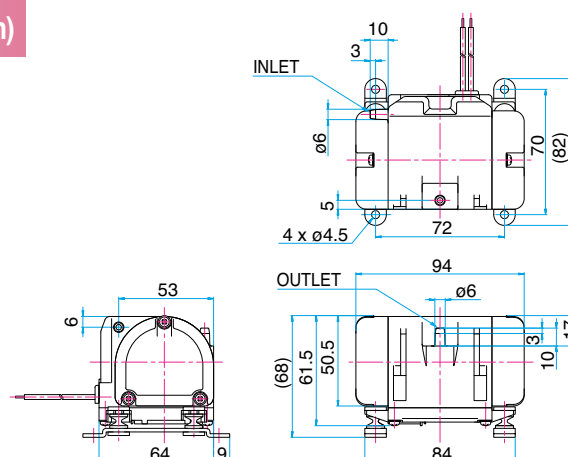


Massage Devices



Bedsores Prevention Mattress

Sketch Drawing and Mounting Dimensions Diagram (mm)



DIAPHRAGM PUMP

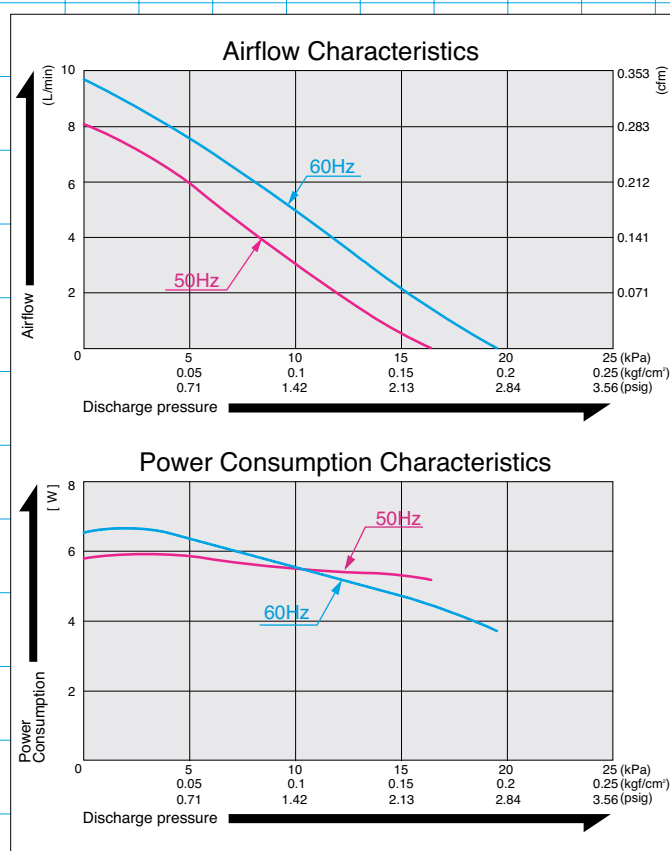


DIAPHRAGM PUMP

vc0100 Blower Type



Airflow & Power Consumption

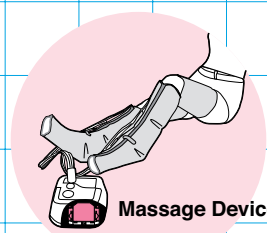


Specifications

	(SI)	(EURO)	(U.S.A.)
Rated Pressure	4 kPa {0.04 kgf/cm ² }	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	16 kPa {0.16 kgf/cm ² }	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 - 16 kPa {0 - 0.16 kgf/cm ² }	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	2-3/4" (L) x 2-7/32" (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

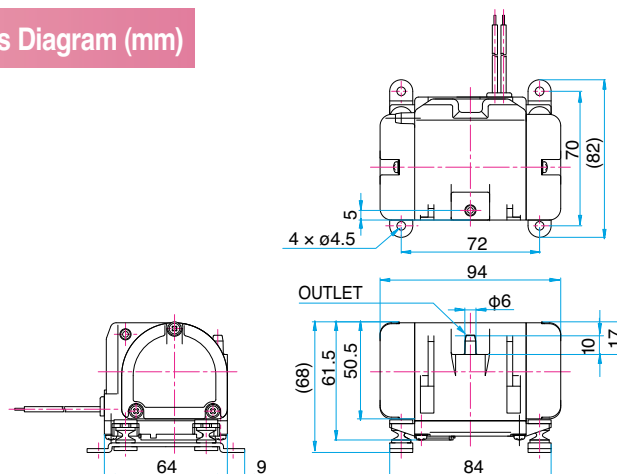


Massage Devices



Bedsores Prevention Mattress

Sketch Drawing and Mounting Dimensions Diagram (mm)



DIAPHRAGM PUMP

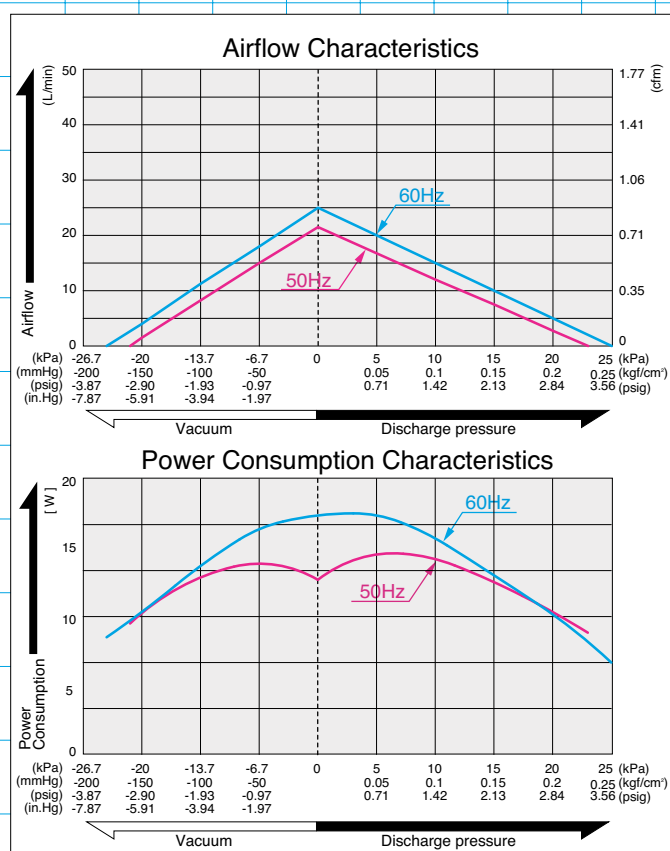


DIAPHRAGM PUMP

vc0101 Dual Type



Airflow & Power Consumption

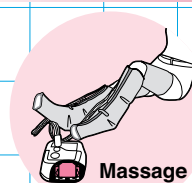


Specifications

VC0101	(SI)	(EURO)	(U.S.A.)
Rated Pressure	10 kPa {0.1 kgf/cm ² }	0.1 bar	1.42 psig
Rated Airflow	10 L/min		
Rated Voltage	120 V AC or 230 V AC		
Maximum Pressure	18 kPa {0.18 kgf/cm ² }	0.18 bar	2.56 psig
Maximum Vacuum	-18.7 kPa {-140 mmHg}	-187 mbar	-5.51 in.Hg
Working Pressure Range	-18.7 kPa - 18 kPa {-140 mmHg - 0.18 kgf/cm ² }	-187 mbar - 0.18 bar	-5.51 in.Hg - 2.56 psig
Maximum Pressure	15 kPa {0.15 kgf/cm ² }	0.15 bar	2.13 psig
Maximum Vacuum	-10 kPa {-76 mmHg}	-100 mbar	-2.95 in.Hg
Working Pressure Range	-10 kPa - 15 kPa {-76 mmHg - 0.15 kgf/cm ² }	-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

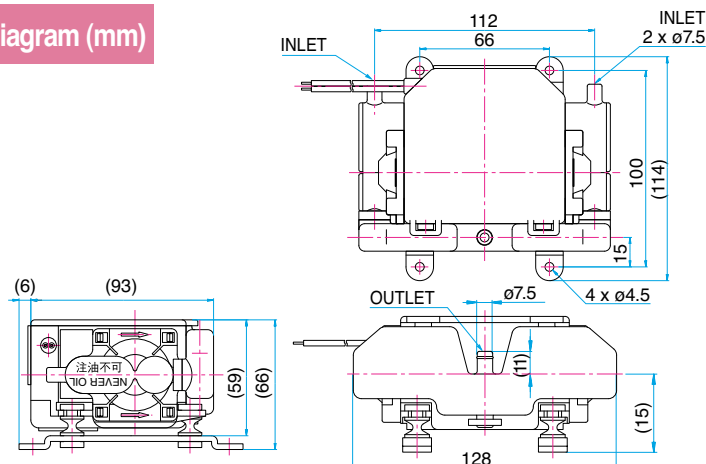


Massage Devices



Bedsores Prevention Mattress

Sketch Drawing and Mounting Dimensions Diagram (mm)



DIAPHRAGM PUMP

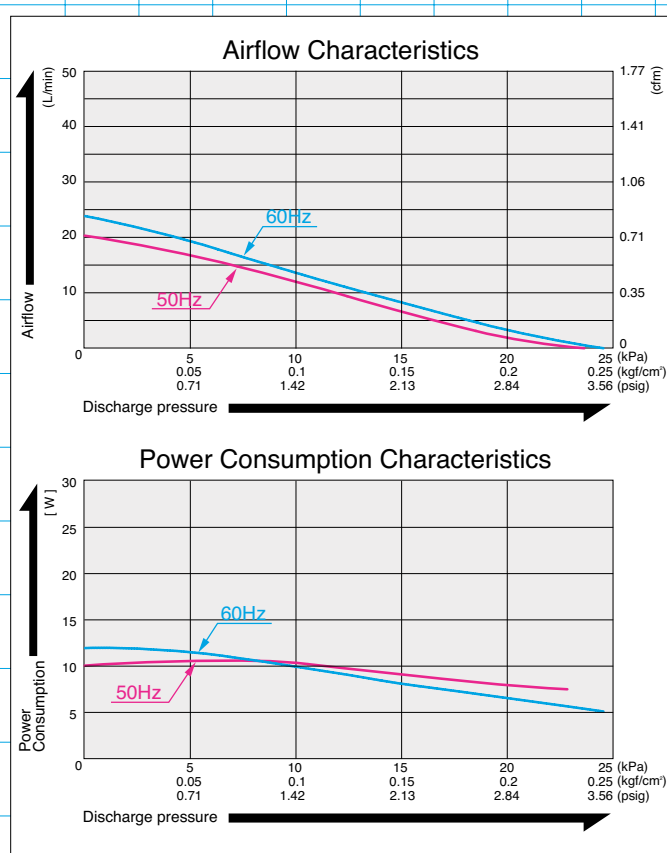


DIAPHRAGM PUMP

vc0101 Blower Type



Airflow & Power Consumption

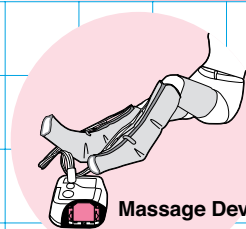


Specifications

VC0101	(SI)	(EURO)	(U.S.A.)
Rated Pressure	10 kPa {0.1 kgf/cm ² }	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	20 kPa {0.2 kgf/cm ² }	0.2 bar	2.84 psig
Working Pressure Range	0 - 20 kPa {0 - 0.2 kgf/cm ² }	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	2-19/32" (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

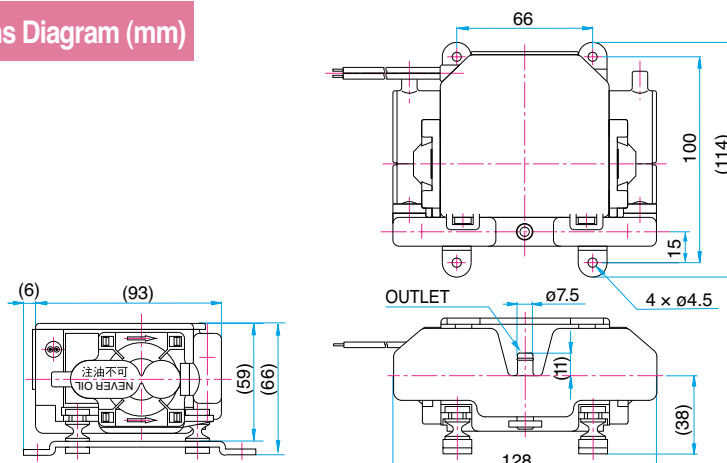


Massage Devices



Bedsore Prevention Mattress

Sketch Drawing and Mounting Dimensions Diagram (mm)



DIAPHRAGM PUMP

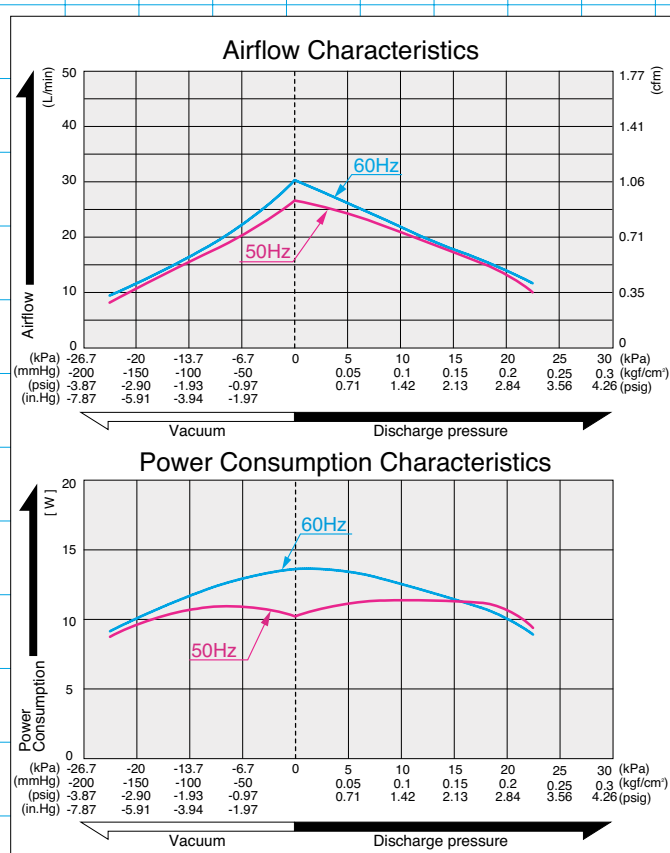


DIAPHRAGM PUMP

vc0101E Dual Type



Airflow & Power Consumption



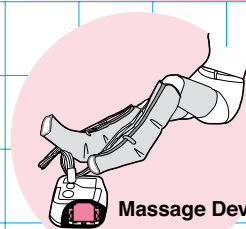
Specifications

VC0101E	(SI)	(EURO)	(U.S.A.)
Rated Pressure	10 kPa {0.1 kgf/cm ² }	0.1 bar	1.42 psig
Rated Airflow	15 L/min		0.53 cfm
Rated Voltage	120 V AC ^{※1} or 230 V AC		
Maximum Pressure	20 kPa {0.2 kgf/cm ² }	0.2 bar	2.84 psig
Maximum Vacuum	-18.7 kPa {-140mmHg}	-186 mbar	-5.51 in.Hg
Power Consumption	11.5 W		
Rated Frequency	60 Hz or 50 Hz		
Life Expectancy	5,000 hours		
Working Pressure Range	-18.7kPa - 20 kPa {-140mmHg - 0.2 kgf/cm ² }	-186 mbar - 0.2 bar	-5.51 in.Hg - 2.84 psig
Outlet (Inlet)	7.5 mm O.D. hose nipple		
Duty Cycle	Continuous		
Coil Insulation Class	E 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"

※1: 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

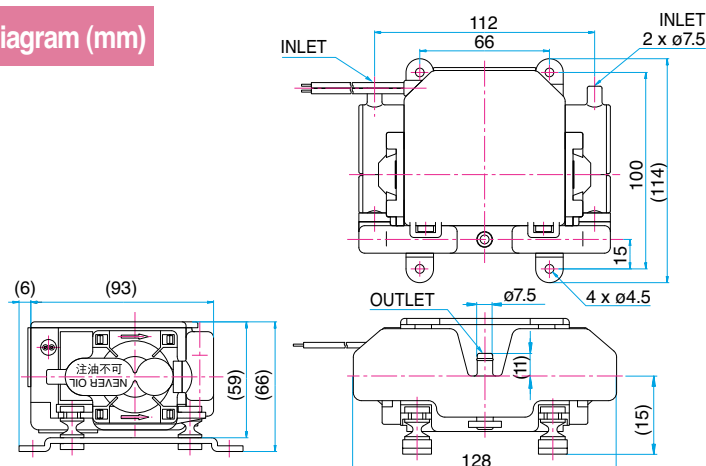


Massage Devices



Bedsores Prevention Mattress

Sketch Drawing and Mounting Dimensions Diagram (mm)



DIAPHRAGM PUMP

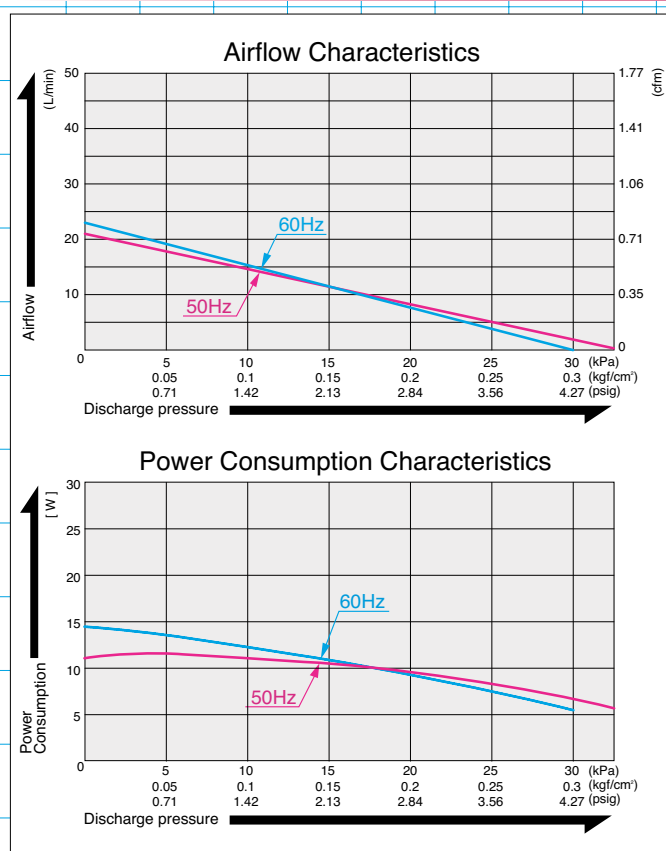


DIAPHRAGM PUMP

vc0101E Blower Type



Airflow & Power Consumption

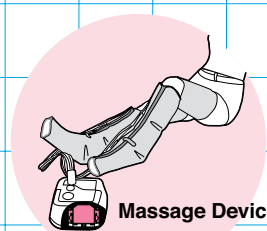


Specifications

VC0101E	(SI)	(EURO)	(U.S.A.)
Rated Pressure	10 kPa {0.1 kgf/cm ² }	0.1 bar	1.42 psig
Rated Airflow	15 L/min		0.53 cfm
Rated Voltage	120 V AC ^{※1} or 230 V AC		
Maximum Pressure	20 kPa {0.2 kgf/cm ² }	0.2 bar	2.84 psig
Power Consumption	11.5W		
Rated Frequency	60 Hz or 50 Hz		
Life Expectancy	5,000 hours		
Working Pressure Range	0 - 20 kPa {0 - 0.2 kgf/cm ² }	0 - 0.2 bar	0 - 2.84 psig
Outlet (Inlet)	7.5 mm O.D. hose nipple		
Duty Cycle	Continuous		
Coil Insulation Class	E or its equivalent (JETL)		
Mounting Dimensions	66 mm(L) x 100 mm(W)	2-19/32"(L) x 3-15/16"(W)	
Gross Weight	0.82 kg	1.8 Lbs.	
Leadwire Length	300 mm	11-13/16"	

※1: 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

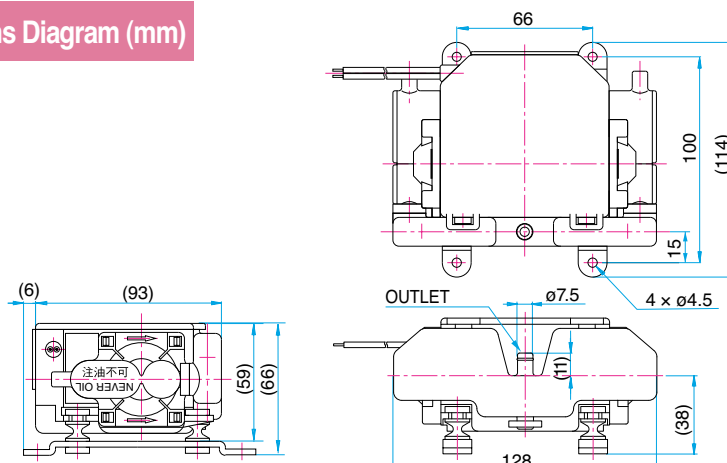


Massage Devices



Bedsore Prevention Mattress

Sketch Drawing and Mounting Dimensions Diagram (mm)



DIAPHRAGM PUMP

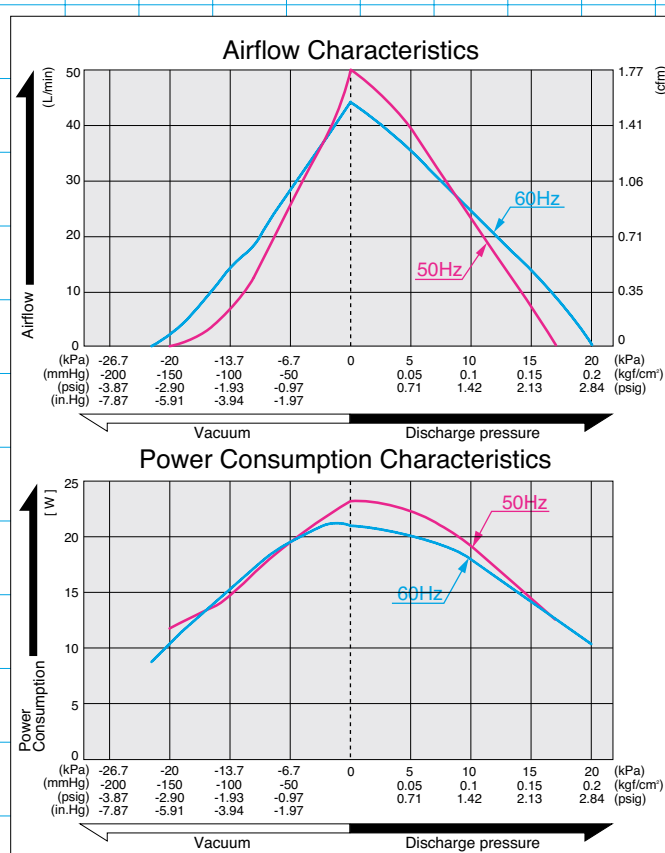


DIAPHRAGM PUMP

vc0201 Dual Type



Airflow & Power Consumption

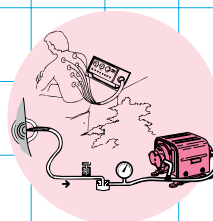


Specifications

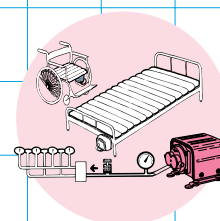
	(SI)	(EURO)	(U.S.A.)
Rated Pressure	10 kPa {0.1 kgf/cm ² }	0.1 bar	1.42 psig
Rated Airflow	20 L/min		
Rated Voltage	120 V AC or 230 V AC		
Maximum Pressure	18 kPa {0.18 kgf/cm ² }	0.18 bar	2.56 psig
Max. vacuum	-18.7 kPa {-140 mmHg}	-187 mbar	-5.5 in.Hg
Power Consumption	18 W or 19 W		
Rated Frequency	60 Hz or 50 Hz		
Working Pressure Range	-18.7kPa - 18 kPa {-140mmHg - 0.18 kgf/cm ² }	-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.

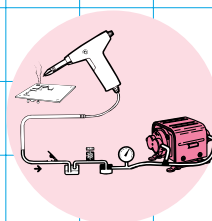
Application Examples



Medical Cup Suction

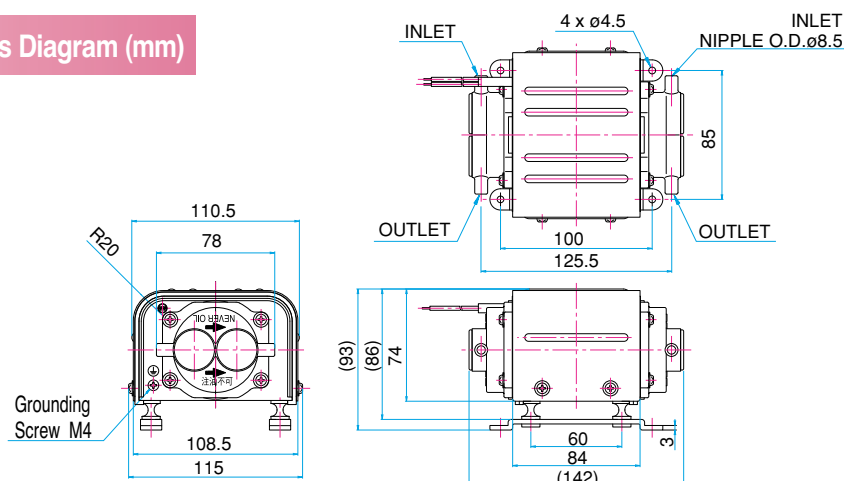


Bedsores Prevention Mattress



Solder Fume Suction

Sketch Drawing and Mounting Dimensions Diagram (mm)



DIAPHRAGM PUMP

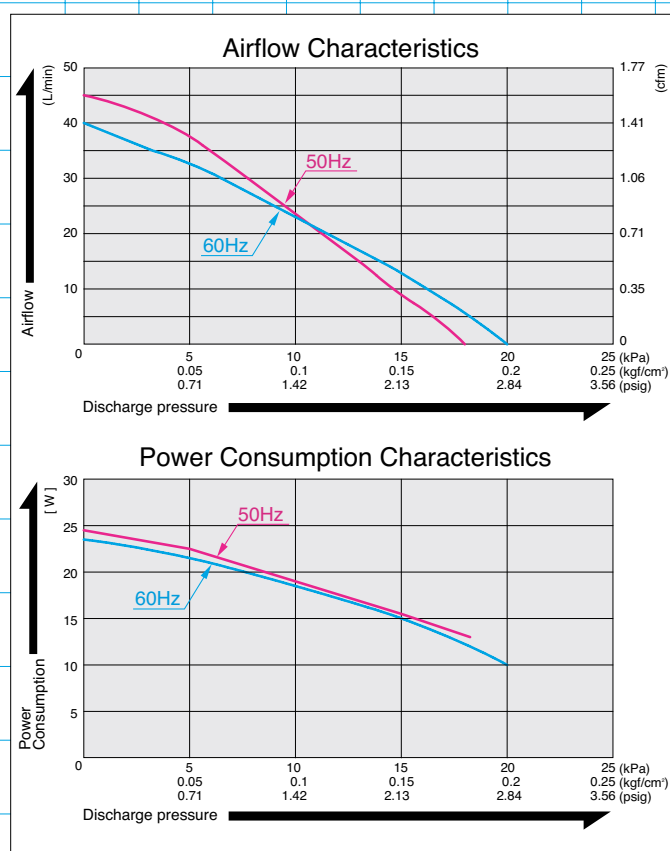


DIAPHRAGM PUMP

vc0201 Blower Type



Airflow & Power Consumption

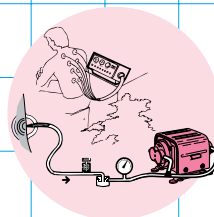


Specifications

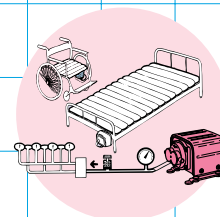
	(SI)	(EURO)	(U.S.A.)
Rated Pressure	10 kPa (0.1 kgf/cm ²)	0.1 bar	1.42 psig
Rated Airflow	20 L/min		
Rated Voltage	120 V AC or 230 V AC		
Maximum Pressure	18 kPa (0.18 kgf/cm ²)	0.18 bar	2.56 psig
Power Consumption	18 W or 19 W		
Rated Frequency	60 Hz or 50 Hz		
Working Pressure Range	0 - 18 kPa (0 - 0.18 kgf/cm ²)	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.

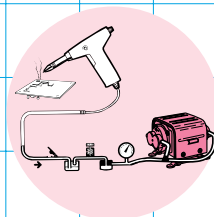
Application Examples



Medical Cup Suction

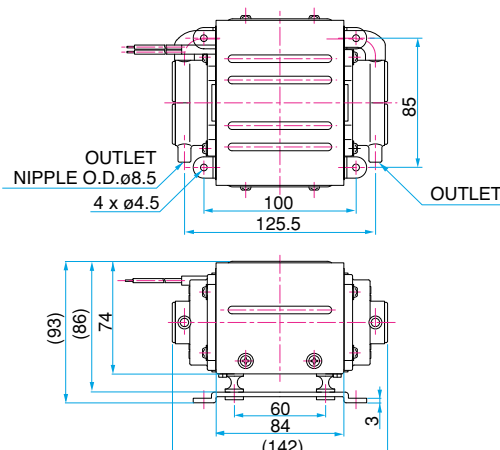
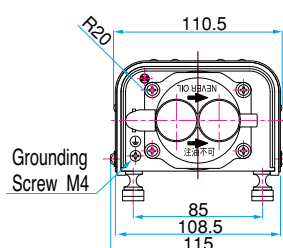


Bedsores Prevention Mattress



Solder Fume Suction

Sketch Drawing and Mounting Dimensions Diagram (mm)



DIAPHRAGM PUMP

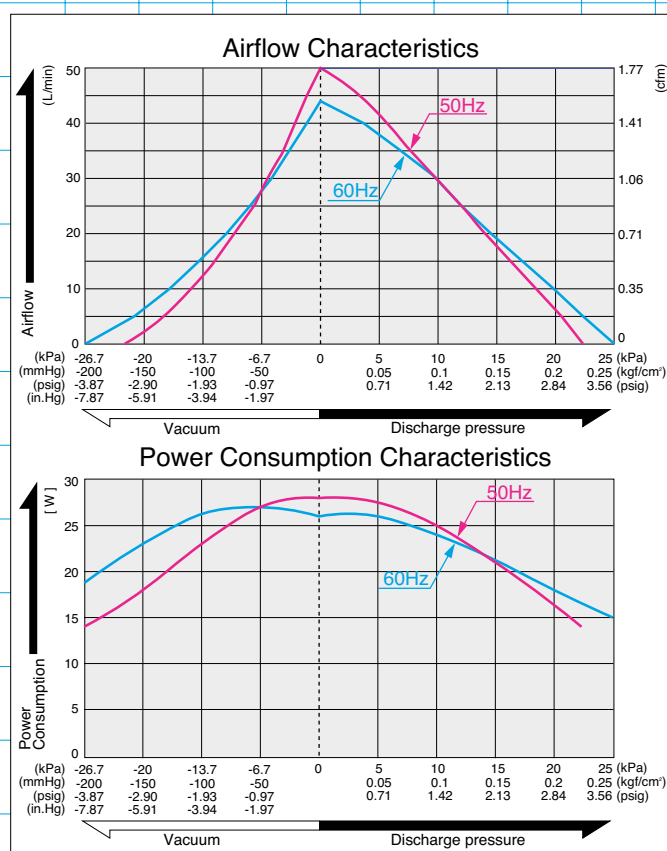


DIAPHRAGM PUMP

vc0301 Dual Type



Airflow & Power Consumption

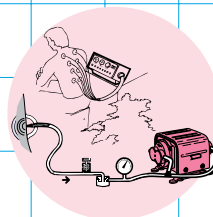


Specifications

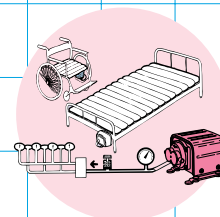
	(SI)	(EURO)	(U.S.A.)
Rated Pressure	10 kPa {0.1 kgf/cm ² }	0.1 bar	1.42 psig
Rated Airflow	25 L/min		
Rated Voltage	120 V AC or 230 V AC		
Maximum Pressure	20 kPa {0.2 kgf/cm ² }	0.2 bar	2.84 psig
Max. vacuum	-21.3 kPa {-160 mmHg}	-213 mbar	-6.3 in.Hg
Power Consumption	24 W or 25 W		
Rated Frequency	60 Hz or 50 Hz		
Working Pressure Range	-21.3kPa - 20 kPa {-160mmHg - 0.2 kgf/cm ² }	-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.

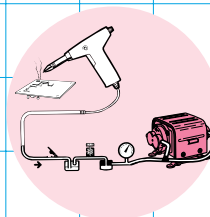
Application Examples



Medical Cup Suction

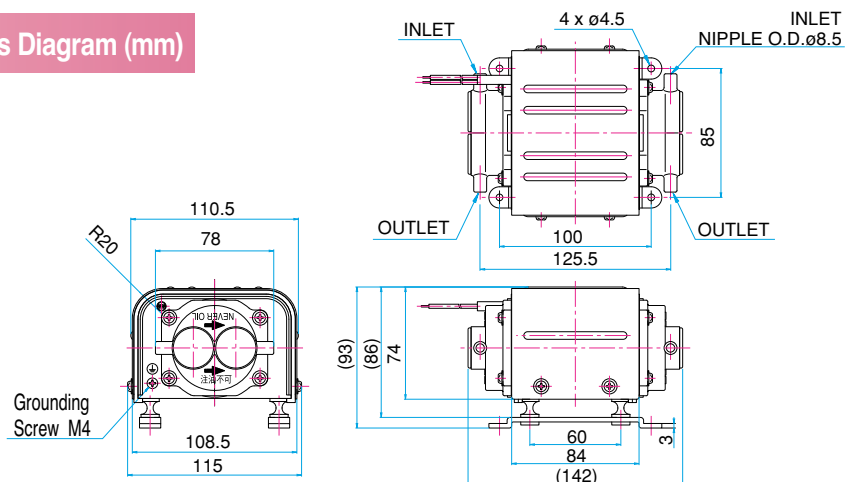


Bedsores Prevention Mattress



Solder Fume Suction

Sketch Drawing and Mounting Dimensions Diagram (mm)



DIAPHRAGM PUMP

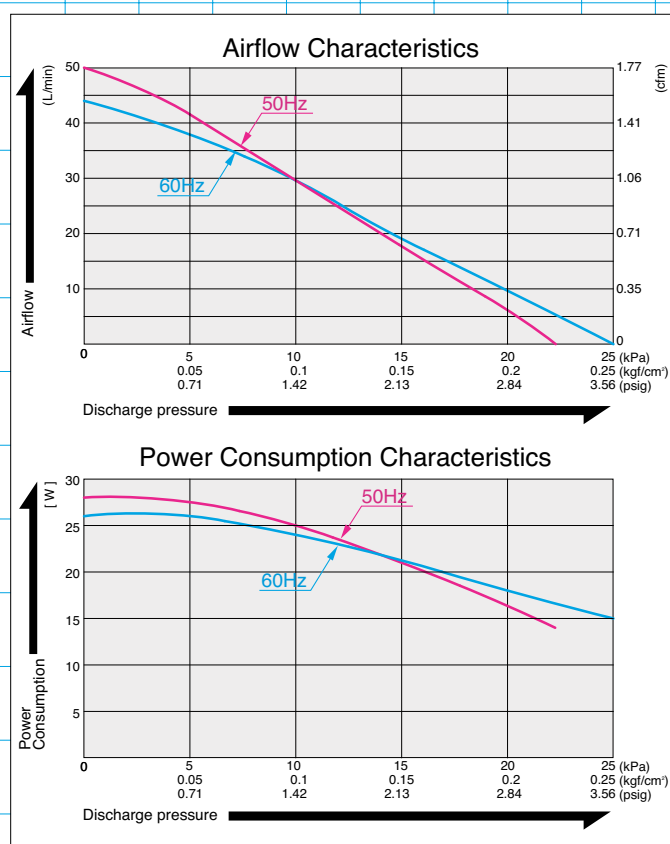


DIAPHRAGM PUMP

vc0301 Blower Type



Airflow & Power Consumption

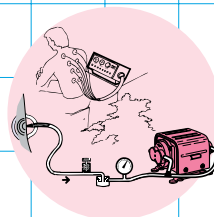


Specifications

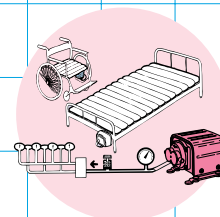
	(SI)	(EURO)	(U.S.A.)
Rated Pressure	10 kPa {0.1 kgf/cm ² }	0.1 bar	1.42 psig
Rated Airflow	25 L/min		
Rated Voltage	120 V AC or 230 V AC		
Maximum Pressure	20 kPa {0.2 kgf/cm ² }	0.2 bar	2.84 psig
Power Consumption	24 W or 25 W		
Rated Frequency	60 Hz or 50 Hz		
Working Pressure Range	-21.3kPa - 20 kPa {-160mmHg - 0.2 kgf/cm ² }	-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		
Gross Weight	1.8 kg		
Leadwire Length	200 mm		

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

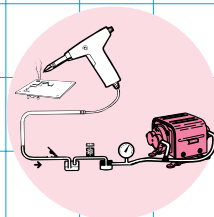
Application Examples



Medical Cup Suction

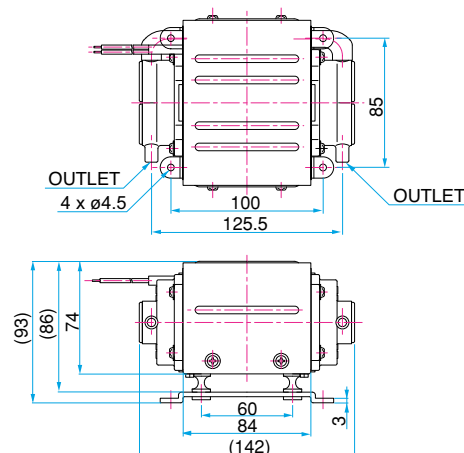
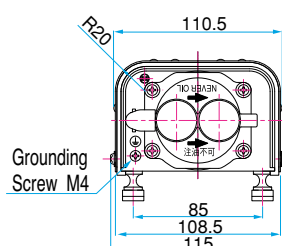


Bedsores Prevention Mattress



Solder Fume Suction

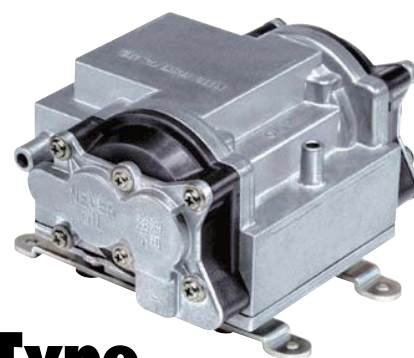
Sketch Drawing and Mounting Dimensions Diagram (mm)



DIAPHRAGM PUMP

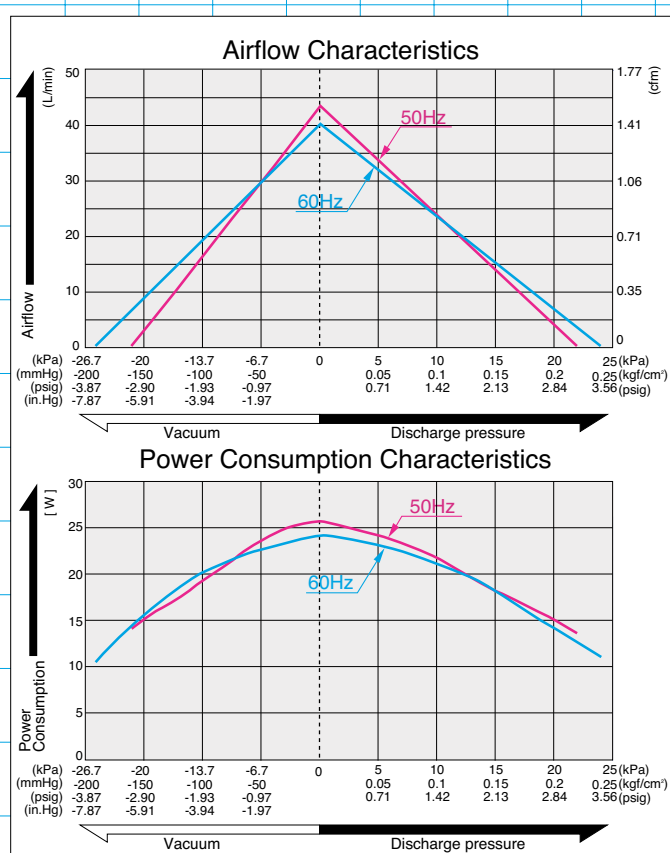


DIAPHRAGM PUMP



vc0201B Dual Type

Airflow & Power Consumption

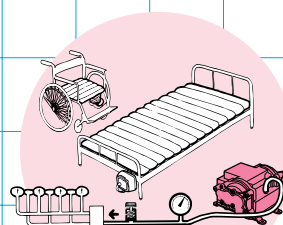


Specifications

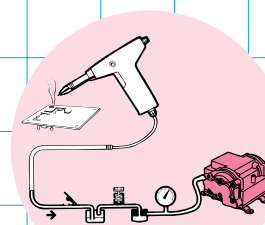
	(SI)	(EURO)	(U.S.A.)
Rated Pressure	10 kPa {0.1 kgf/cm ² }	0.1 bar	1.42 psig
Rated Airflow	20 L/min		0.71 cfm
Rated Voltage		120 V AC or 230 V AC	
Maximum Pressure	18 kPa {0.18 kgf/cm ² }	0.18 bar	2.56 psig
Max. vacuum	-18.7 kPa {-140 mmHg}	-187 mbar	-5.5 in.Hg
Power Consumption		21 W	
Rated Frequency		60 Hz or 50 Hz	
Working Pressure Range	-18.7 kPa - 18 kPa {-140 mmHg - 0.18 kgf/cm ² }	-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		E or its equivalent (JETL) and A for UL	
Mounting Dimensions	125 (L) x 56 (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

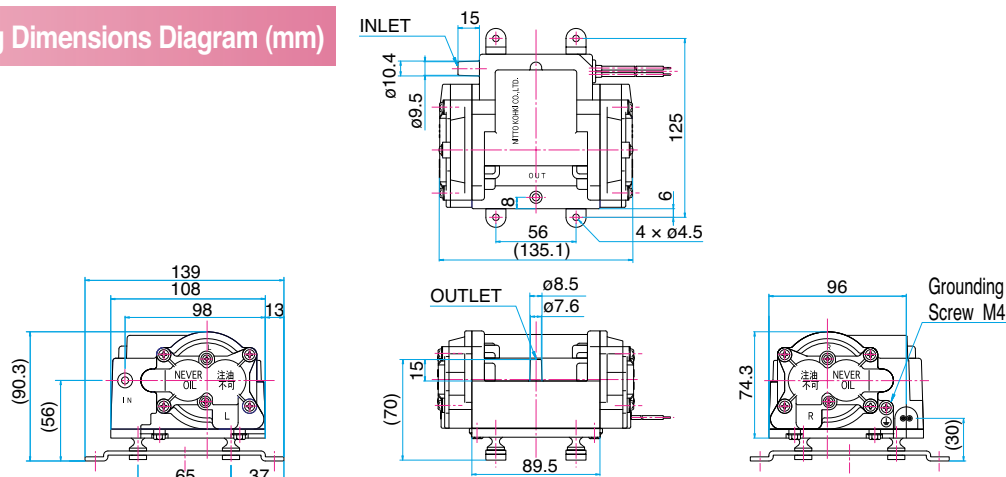


Bedsores Prevention Mattress



Solder Fume Suction

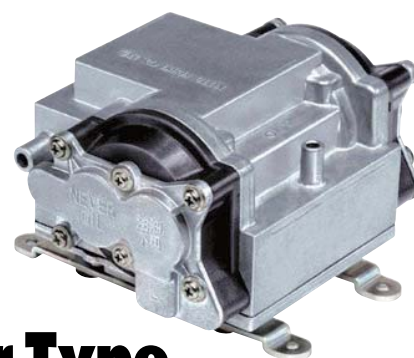
Sketch Drawing and Mounting Dimensions Diagram (mm)



DIAPHRAGM PUMP

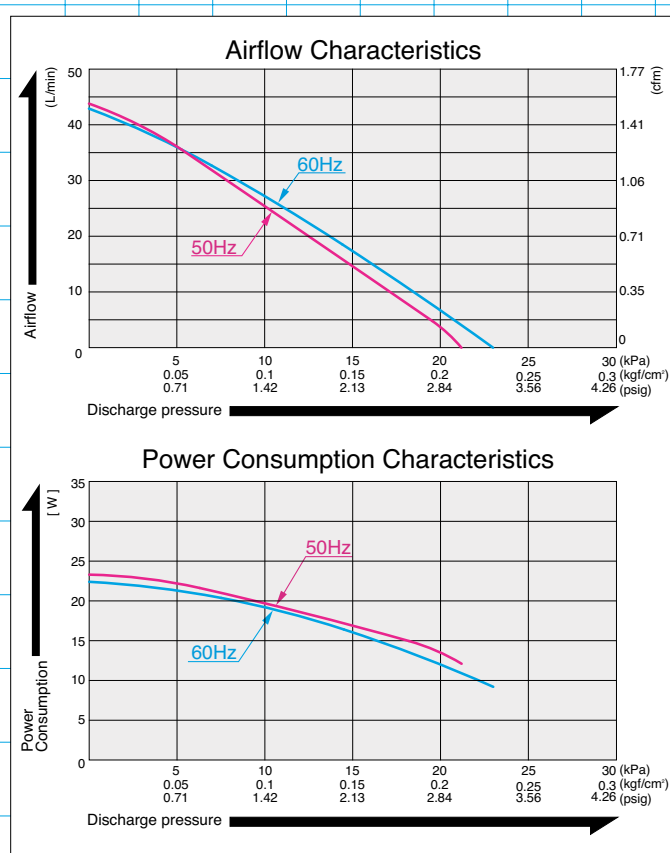


DIAPHRAGM PUMP



vc0201B Blower Type

Airflow & Power Consumption

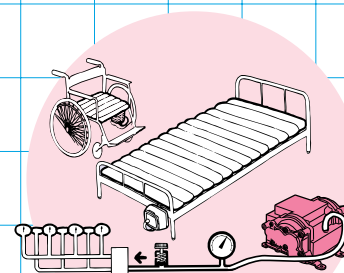


Specifications

	(SI)	(EURO)	(U.S.A.)
Rated Pressure	10 kPa (0.1 kgf/cm ²)	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	18 kPa (0.18 kgf/cm ²)	0.18 bar	2.56 psig
Power Consumption		21 W	
Rated Frequency		60 Hz or 50 Hz	
Working Pressure Range	0 - 18 kPa { 0 - 0.18 kgf/cm ² }	0 - 0.18 bar	0 - 2.56 psig
Life Expectancy		10,000 hours	
Outlet		8.5 mm O.D. hose nipple	
Duty Cycle		Continuous	
Coil Insulation Class		E or its equivalent (JETL) and A for UL	
Mounting Dimensions	125 (L) x 56 (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"

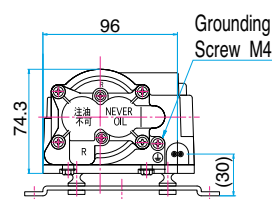
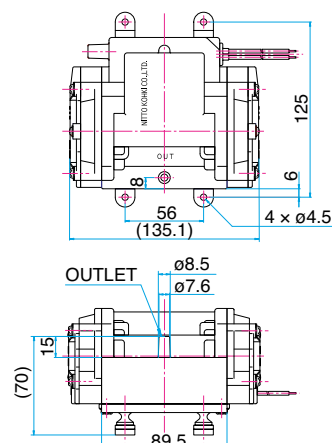
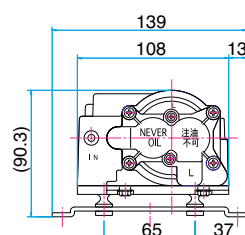
Please read the page of "How to Use This Catalog" first for correct use of compressors and pumps.

Application Examples



Bedsores Prevention Mattress

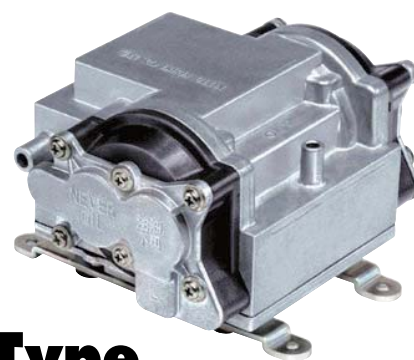
Sketch Drawing and Mounting Dimensions Diagram (mm)



DIAPHRAGM PUMP

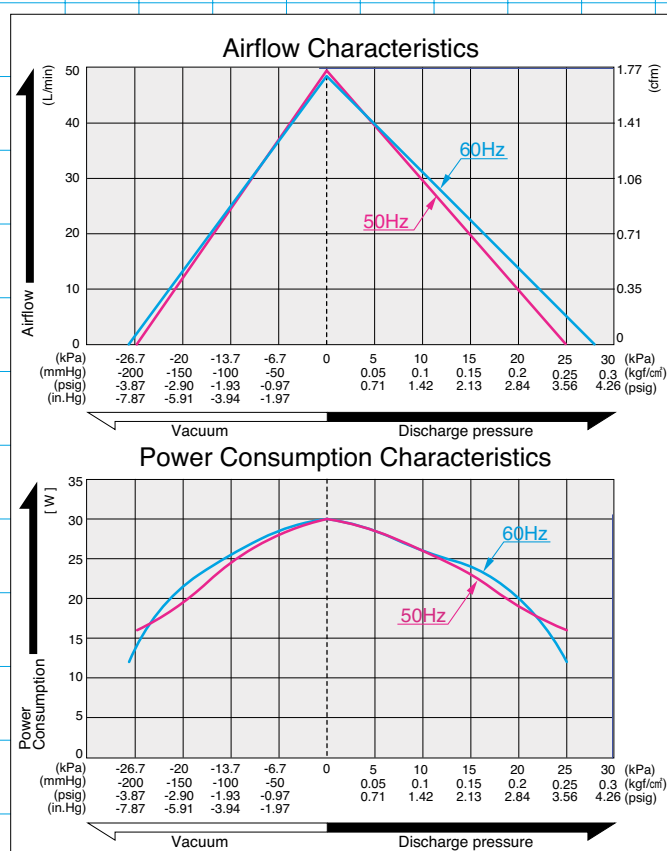


DIAPHRAGM PUMP



vc0301B Dual Type

Airflow & Power Consumption

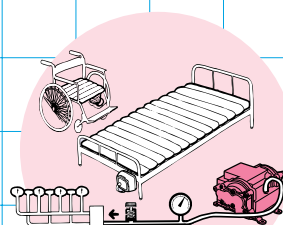


Specifications

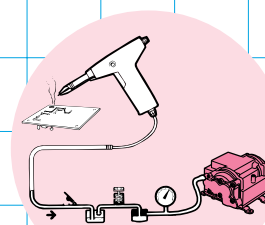
	(SI)	(EURO)	(U.S.A.)
Rated Pressure	10 kPa (0.1 kgf/cm ²)	0.1 bar	1.42 psig
Rated Airflow	25 L/min		
Rated Voltage	120 V AC or 230 V AC		
Maximum Pressure	20 kPa (0.2 kgf/cm ²)	0.2 bar	2.84 psig
Max. vacuum	-21.3 kPa (-160 mmHg)	-213 mbar	-6.3 in.Hg
Power Consumption	27 W		
Rated Frequency	60 Hz or 50 Hz		
Working Pressure Range	-21.3 kPa - 20 kPa (-160 mmHg - 0.2 kgf/cm ²)	-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	B or its equivalent		
Mounting Dimensions	125 (L) x 56 (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

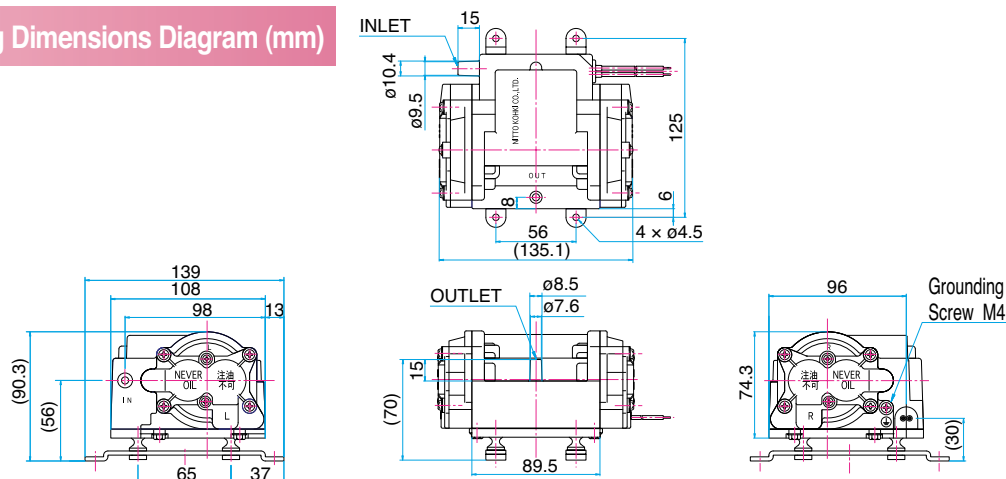


Bedsores Prevention Mattress



Solder Fume Suction

Sketch Drawing and Mounting Dimensions Diagram (mm)

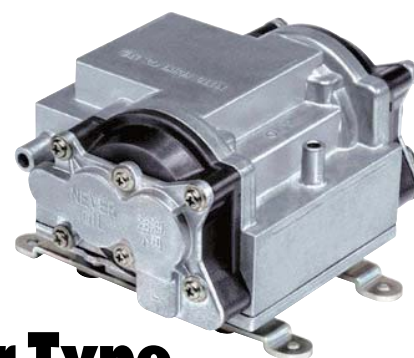


DIAPHRAGM PUMP

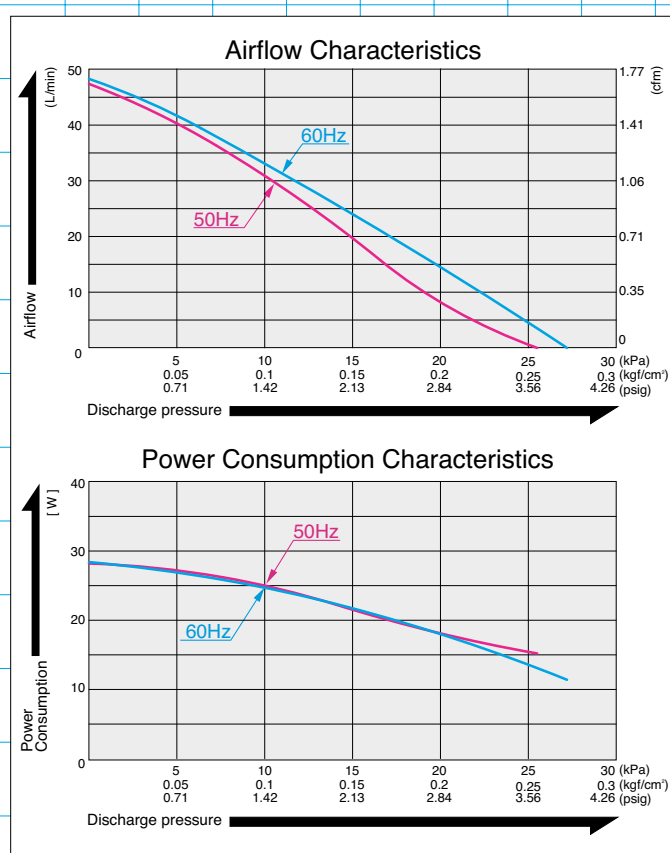


DIAPHRAGM PUMP

vc0301B Blower Type



Airflow & Power Consumption

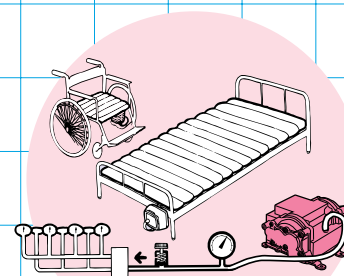


Specifications

	(SI)	(EURO)	(U.S.A.)
Rated Pressure	10 kPa {0.1 kgf/cm ² }	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	20 kPa {0.2 kgf/cm ² }	0.2 bar	2.84 psig
Power Consumption	27 W		
Rated Frequency	60 Hz or 50 Hz		
Working Pressure Range	0 - 20 kPa {0 - 0.2 kgf/cm ² }	0 - 0.2 bar	0 - 2.84 psig
Life Expectancy	10,000 hours		
Outlet	8.5 mm O.D. hose nipple		
Duty Cycle	Continuous		
Coil Insulation Class	B or its equivalent		
Mounting Dimensions	125 (L) x 56 (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"	

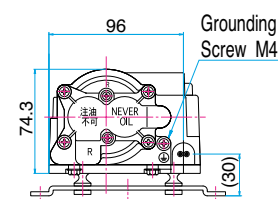
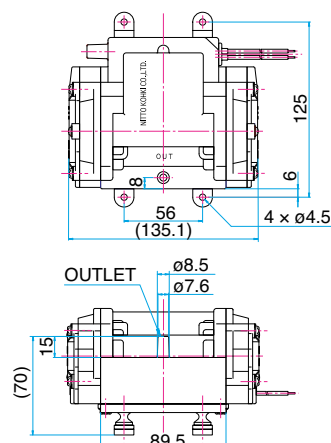
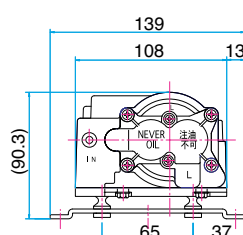
Please read the page of "How to Use This Catalog" first for correct use of compressors and pumps.

Application Examples



Bedsores Prevention Mattress

Sketch Drawing and Mounting Dimensions Diagram (mm)

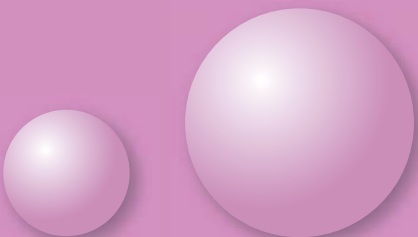




DIAPHRAGM PUMP PISTON PUMP

DC

Diaphragm Pump Piston Pump



DP0125
P69

DP0140
P70

DP0102
P71

DP0102S
P72

DP0102H-X1
P73

DP0102H-X2
P74

DP0105-X1
P75

DP0105-Y1
P76

DPA0105-X1
P77

DPA0105-Y1
P78

DP0110-X1
P79

DP0110-Y1
P80

DP0110PWM
P81

DP0110T-X1
P82

DP0110T-Y1
P83

DP0410-X2
P84

DP0410-Y2
P85

DC AIR PUMP

NITTO KOHKI CO., LTD. Rev.02

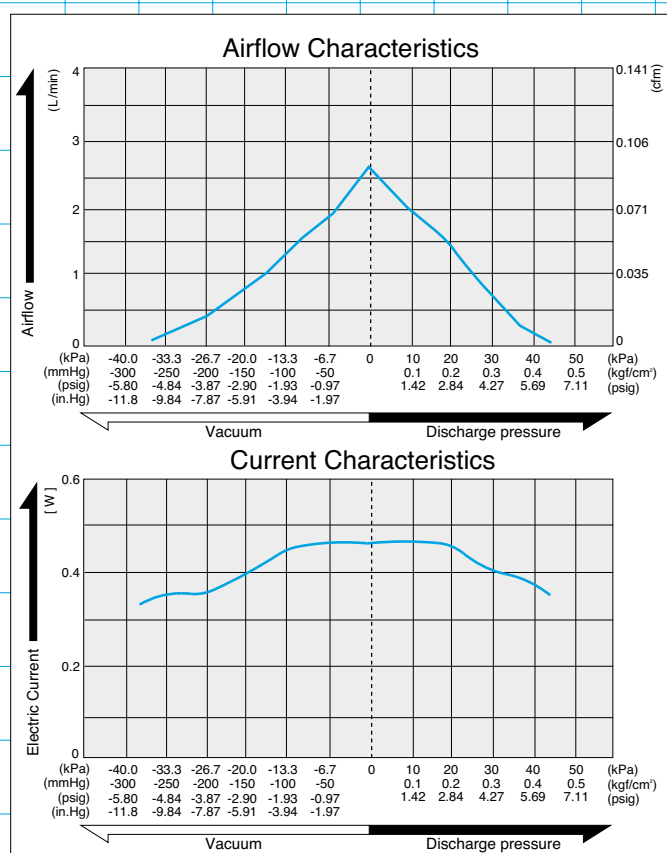
DIAPHRAGM PUMP



DP0125



Airflow & Electric Current

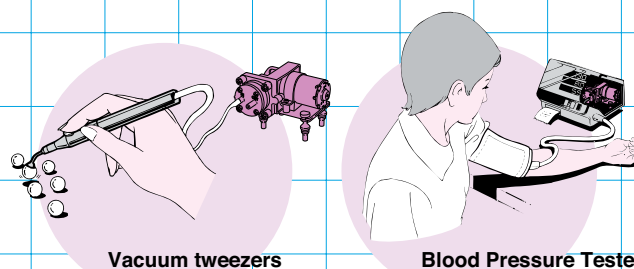


Specifications

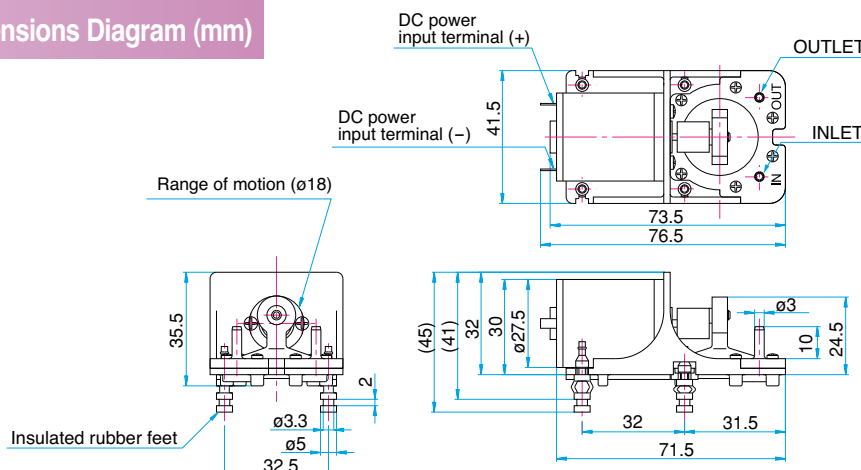
	(SI)	(EURO)	(U.S.A.)
Attainable Vacuum	-33.3 kPa {-250 mmHg}	-333 mbar	-9.84 in.Hg
Free Air Displacement	2.5 L/min		0.088 cfm
Rated Voltage	12 V DC		
Maximum Pressure	30 kPa {0.3 kgf/cm ² }	0.3 bar	4.27 psig
Maximum Current	0.5A		
Duty Cycle	Continuous		
Life Expectancy	200 hours		
Inlet (or Outlet)	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 1/4" (L) x 1 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



Sketch Drawing and Mounting Dimensions Diagram (mm)



DC AIR PUMP

NITTO KOHKI CO., LTD. Rev.02

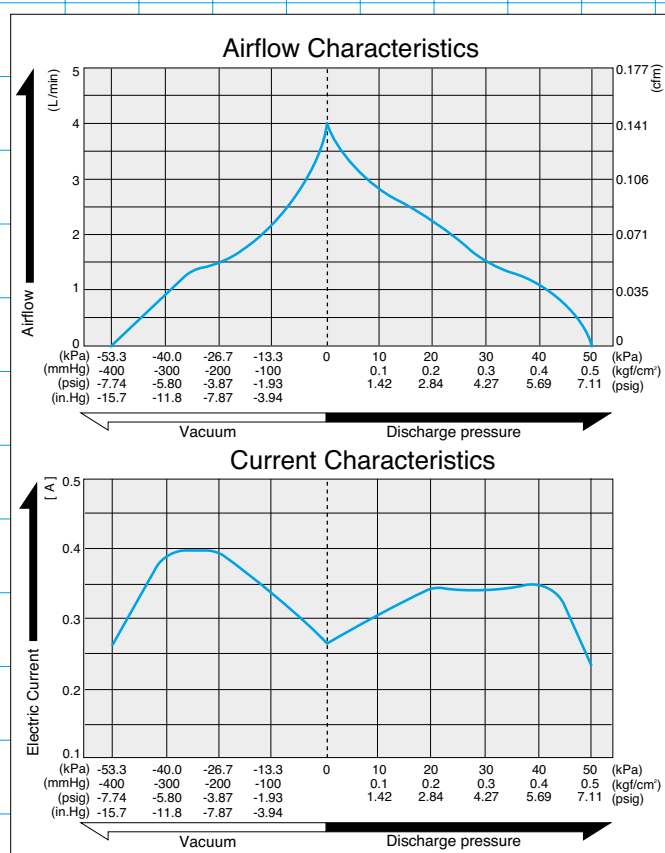
DIAPHRAGM PUMP



DP0140



Airflow & Electric Current

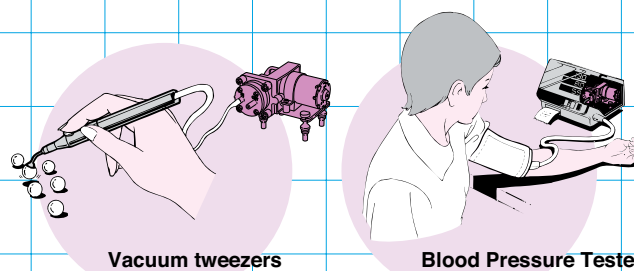


Specifications

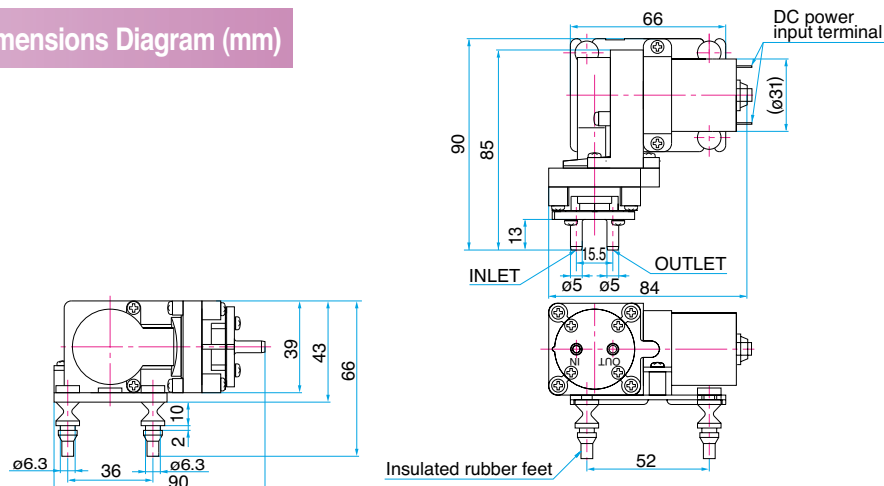
	(SI)	(EURO)	(U.S.A.)
Attainable Vacuum	-53.3 kPa (-400 mmHg)	-533 mbar	-15.7 in.Hg
Free Air Displacement	4.0 L/min		0.141 cfm
Rated Voltage	12 V DC		
Maximum Pressure	50 kPa {0.5 kgf/cm ² }	0.5 bar	7.1 psig
Maximum Current	0.5A		
Duty Cycle	Continuous		
Life Expectancy	500 hours		
Inlet (or Outlet)	5 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



Sketch Drawing and Mounting Dimensions Diagram (mm)



DC AIR PUMP

NITTO KOHKI CO., LTD. Rev.02

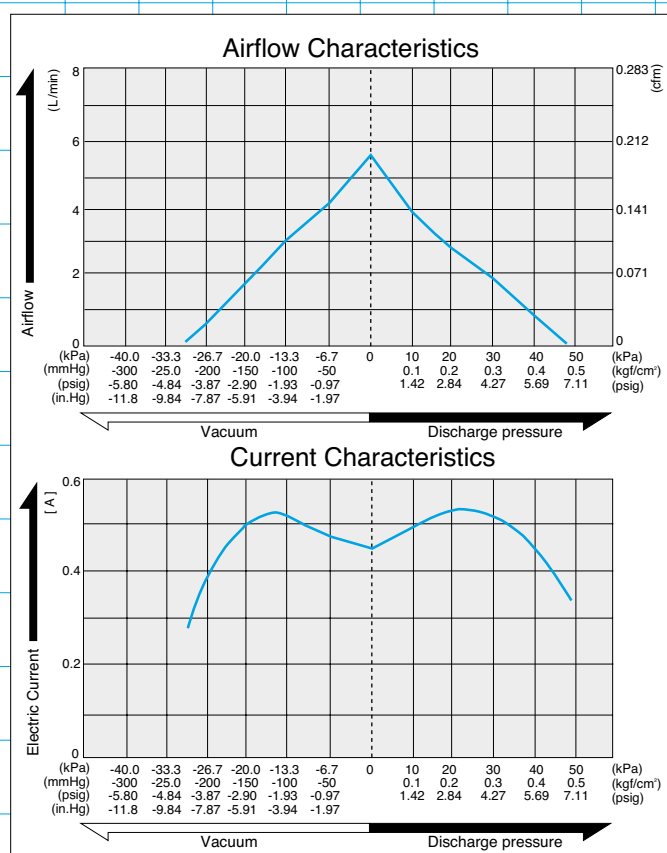
DIAPHRAGM PUMP



DP0102



Airflow & Electric Current

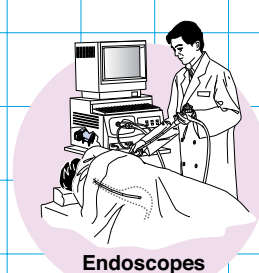


Specifications

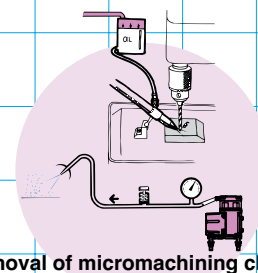
	(SI)	(EURO)	(U.S.A.)
Attainable Vacuum	-26.7 kPa {-200 mmHg}	-267 mbar	-7.87 in.Hg
Free Air Displacement	5.0 L/min		0.177 cfm
Rated Voltage	12 V DC		
Maximum Pressure	45 kPa (0.45 kg/cm ²)	0.45 bar	6.4 psig
Maximum Current	0.7 A		
Rated Operating Time	Continuous		
Working Pressure Range	-26.7kPa - 45 kPa {-200 mmHg - 0.45 kg/cm ² }	-267 mbar - 0.45 bar	-7.87 in.Hg - 6.4 psig
Life Expectancy	5,000 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

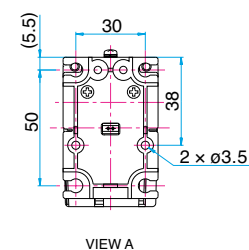
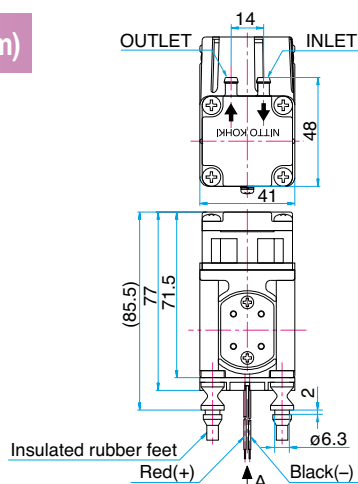
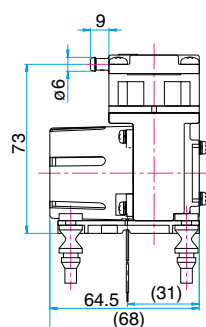


Endoscopes



Removal of micromachining chips

Sketch Drawing and Mounting Dimensions Diagram (mm)



DC AIR PUMP

NITTO KOHKI CO., LTD. Rev.02

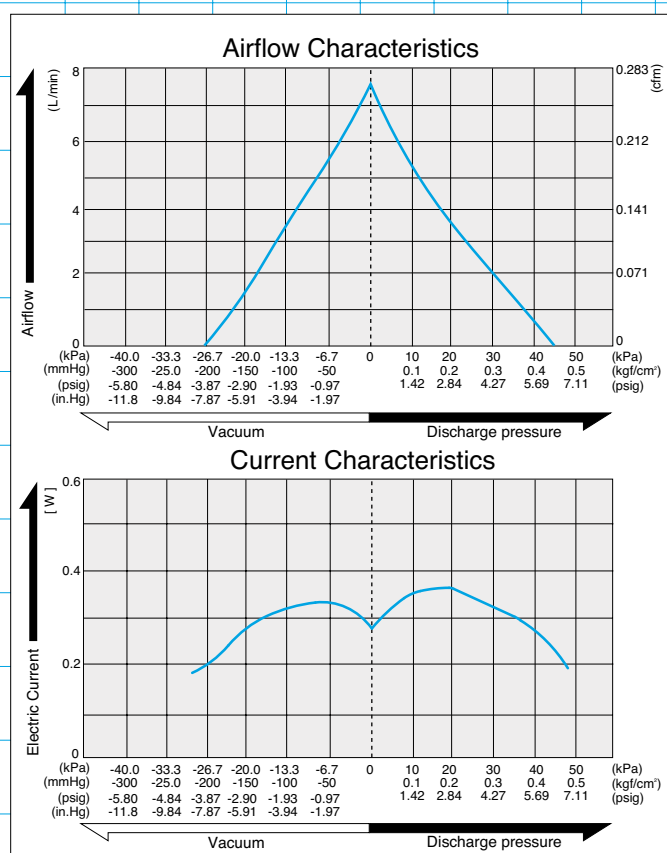
DIAPHRAGM PUMP



DP0102s



Airflow & Electric Current

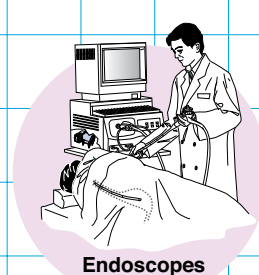


Specifications

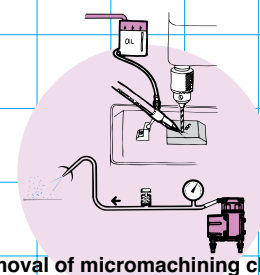
	(SI)	(EURO)	(U.S.A.)
Attainable Vacuum	-26.7 kPa {-200 mmHg}	-267 mbar	-7.87 in.Hg
Free Air Displacement	7.0 L/min		0.247 cfm
Rated Voltage	24 V DC		
Maximum Pressure	45 kPa {0.45 kg/cm ² }	0.45 bar	6.4 psig
Maximum Current	0.5 A		
Rated Operating Time	Continuous		
Working Pressure Range	-26.7 kPa - 45 kPa {-200 mmHg - 0.45 kg/cm ² }	-267 mbar - 0.45 bar	-7.87 in.Hg - 6.4 psig
Life Expectancy	5,000 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)	
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

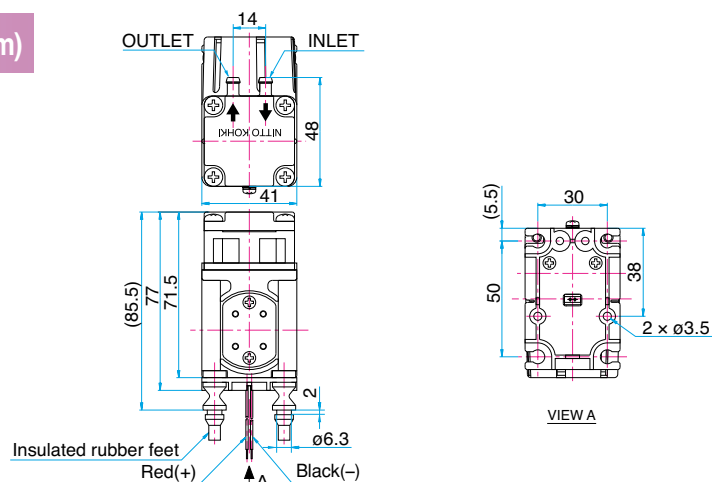
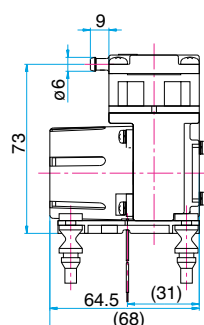


Endoscopes



Removal of micromachining chips

Sketch Drawing and Mounting Dimensions Diagram (mm)



DC AIR PUMP

NITTO KOHKI CO., LTD. Rev.02

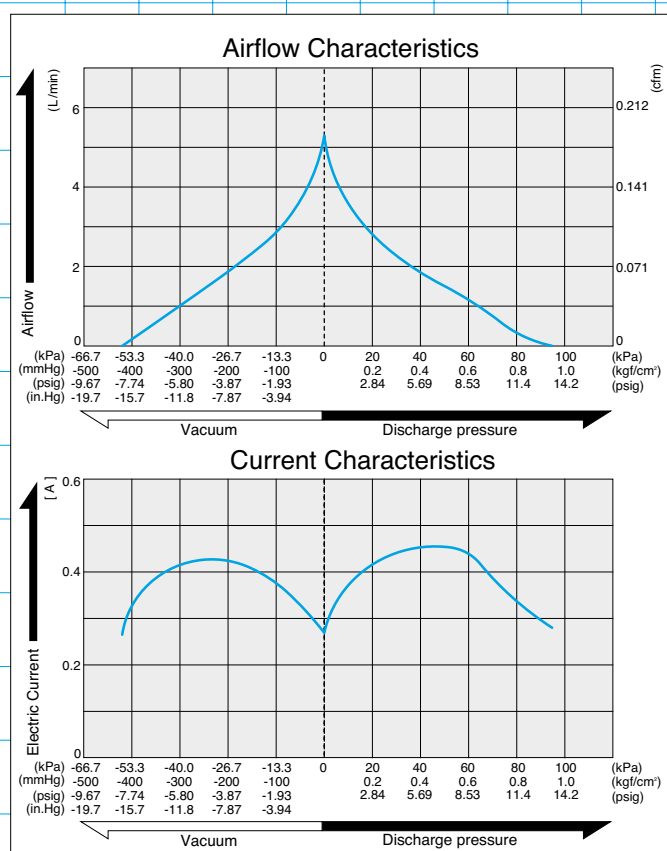
DIAPHRAGM PUMP



DP0102H-X1 (12 V DC)



Airflow & Electric Current

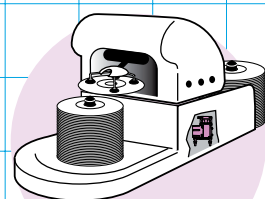


Specifications

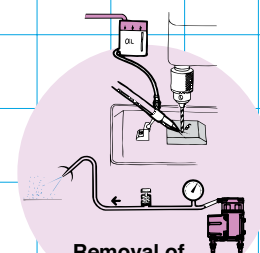
	(SI)	(EURO)	(U.S.A.)
Attainable Vacuum	-50.7 kPa {-380 mmHg}	-507 mbar	-15 in.Hg
Free Air Displacement	4.0 L/min		0.141 cfm
Rated Voltage	12 V DC		
Maximum Pressure	80 kPa {0.8 kg/cm ² }	0.8 bar	11.4 psig
Maximum Current	0.7 A		
Rated Operating Time	Continuous		
Working Pressure Range	-50.7 kPa - 80 kPa {-380 mmHg - 0.8 kg/cm ² }	-507 mbar - 0.8 bar	-15 in.Hg - 11.4 psig
Life Expectancy	3,000 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

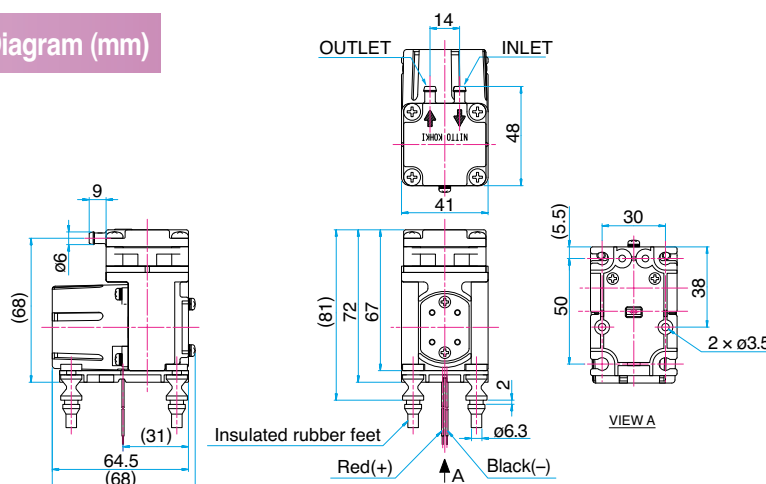


Vacuum pick up and place devices for CD & DVD



Removal of micromachining chips

Sketch Drawing and Mounting Dimensions Diagram (mm)



DC AIR PUMP

NITTO KOHKI CO., LTD. Rev.02

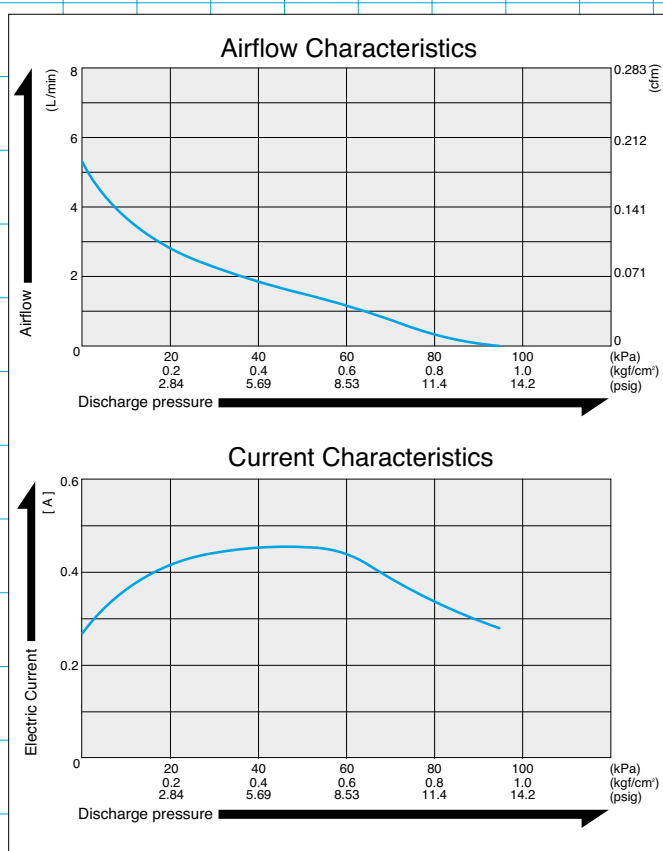
DIAPHRAGM PUMP



DP0102H-X2 (12 V DC)



Airflow & Electric Current

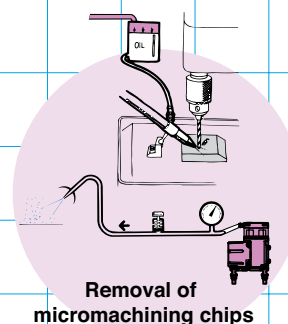


Specifications

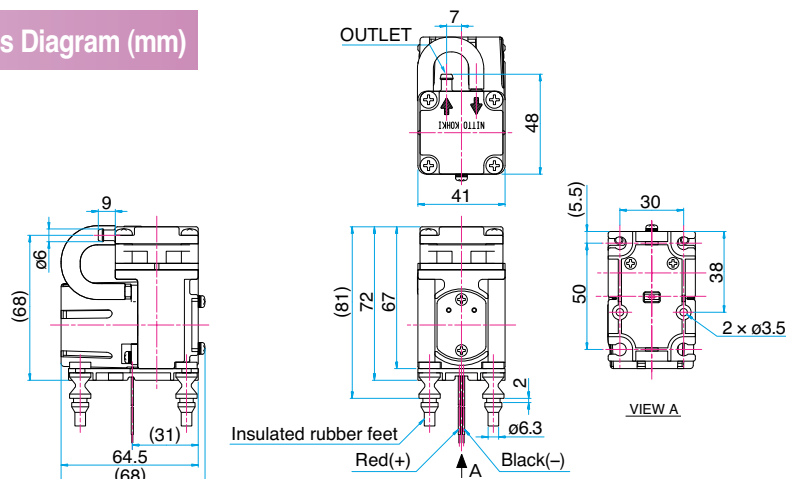
	(SI)	(EURO)	(U.S.A.)
Free Air Displacement	4.0 L/min		0.141 cfm
Rated Voltage	12 V DC		
Maximum Pressure	80 kPa {0.8 kg/cm ² }	0.8 bar	11.4 psig
Maximum Current	0.7 A		
Rated Operating Time	Continuous		
Working Pressure Range	0 - 80 kPa {0 - 0.8 kg/cm ² }	0 - 0.8 bar	0 - 11.4 psig
Life Expectancy	3,000 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



Sketch Drawing and Mounting Dimensions Diagram (mm)



DC AIR PUMP

NITTO KOHKI CO., LTD. Rev.02

PISTON PUMP

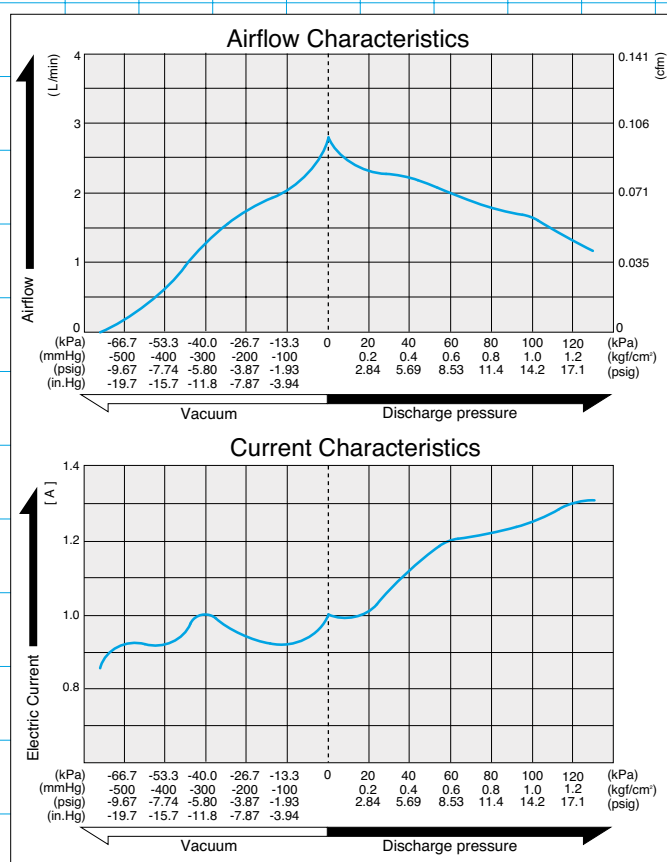


DP0105-X1 (12 V DC)



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

Airflow & Electric Current

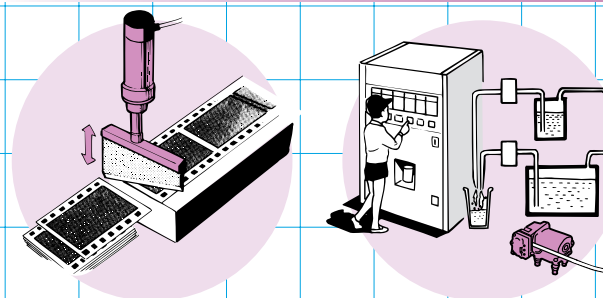


Specifications

	(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	250 kPa {2.5 kgf/cm ² }	2.5 bar	35.6 psig
Maximum Current	1.9 A		
Rated Operating Time	30 minutes		
Working Pressure Range	-66.6 kPa - 100 kPa {-500 mmHg - 1 kgf/cm ² }	-666 mbar - 1 bar	-19.7 in.Hg - 14.2 psig
Life Expectancy	1,000 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 ¹ / ₃₂ "(L) x 1-3 ¹ / ₃₂ "(W)	
Gross Weight	0.36 kg	0.80 Lbs.	
Leadwire Length	360 mm	14-3 ¹ / ₁₆ "	

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

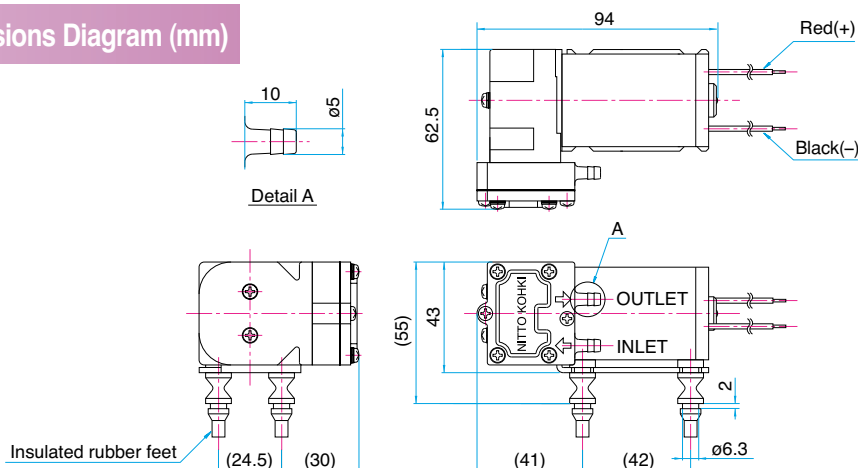
Application Examples



Film Cutter

Vending Machines

Sketch Drawing and Mounting Dimensions Diagram (mm)



DC AIR PUMP

NITTO KOHKI CO., LTD. Rev.02

PISTON PUMP

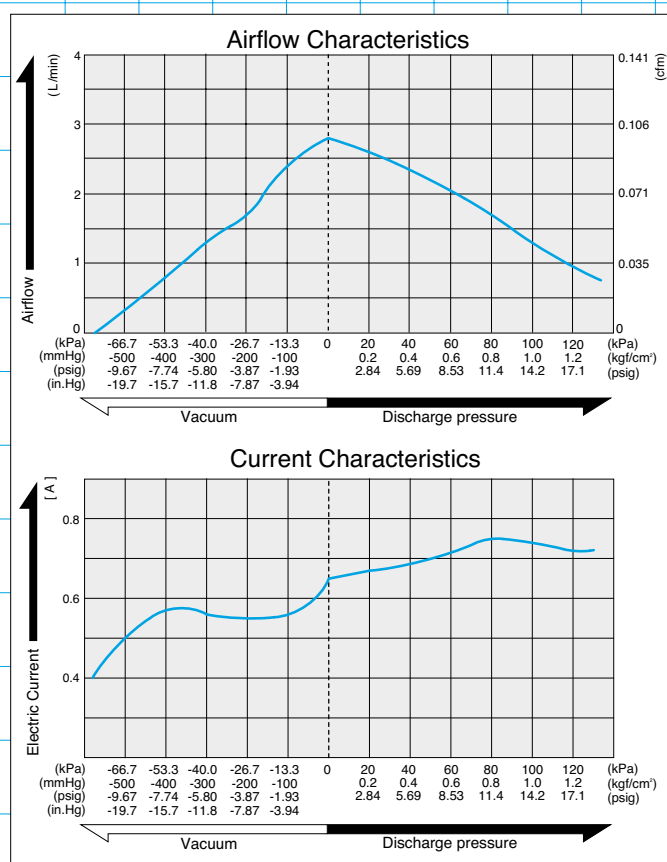


DP0105-Y1 (24 V DC)



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

Airflow & Electric Current

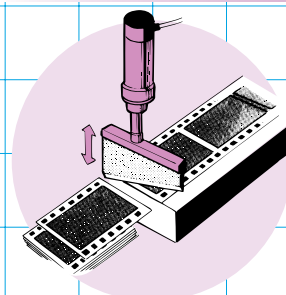


Specifications

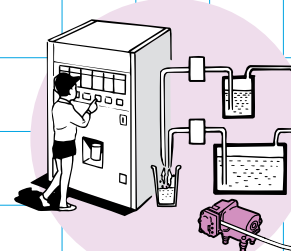
	(SI)	(EURO)	(U.S.A.)
Attainable Vacuum	-66.6 kPa (-500 mmHg)	-666 mbar	-19.7 in.Hg
Free Air Displacement	2.8 L/min		0.1 cfm
Rated Voltage	24 V DC		
Maximum Pressure	250 kPa {2.5 kgf/cm ² }	2.5 bar	35.6 psig
Maximum Current	0.95 A		
Rated Operating Time	30 minutes		
Working Pressure Range	-66.6 kPa - 100 kPa {-500 mmHg - 1 kgf/cm ² }	-666 mbar - 1 bar	-19.7 in.Hg - 14.2 psig
Life Expectancy	1,000 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

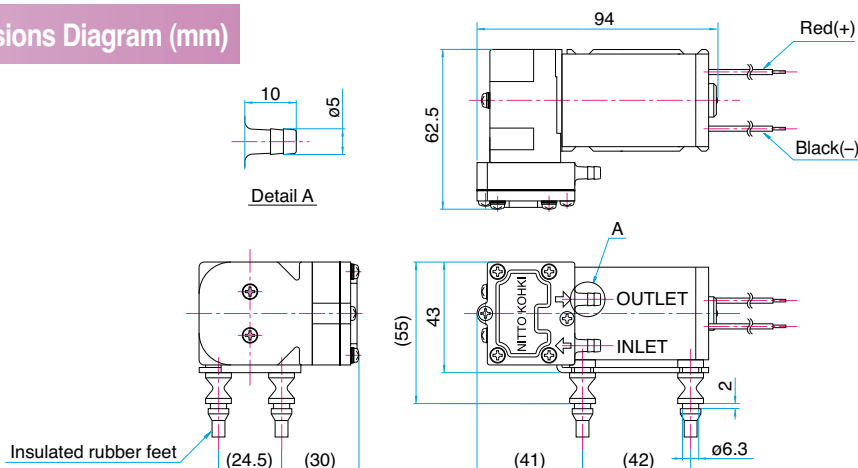


Film Cutter



Vending Machines

Sketch Drawing and Mounting Dimensions Diagram (mm)



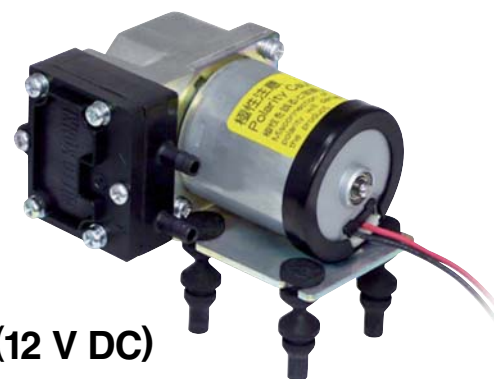
DC AIR PUMP

NITTO KOHKI CO., LTD. Rev.02

PISTON PUMP

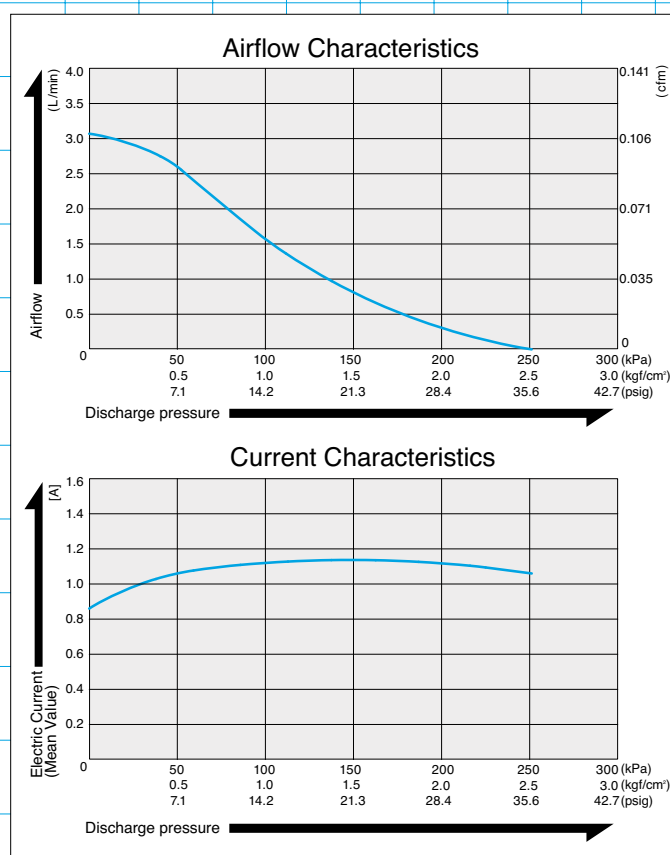


DPA0105-X1 (12 V DC)



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

Airflow & Electric Current

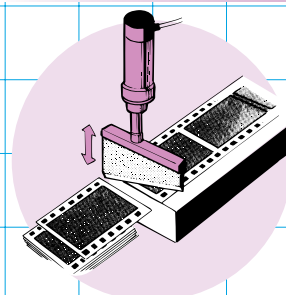


Specifications

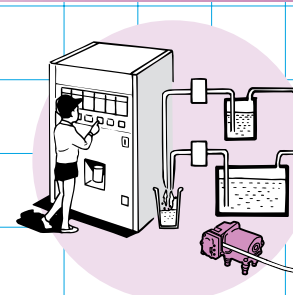
	(SI)	(EURO)	(U.S.A.)
Free Air Displacement	2.8 L/min		0.1 cfm
Rated Voltage	12 V DC		
Maximum Pressure	220 kPa {2.2 kgf/cm ² }	2.2 bar	31.3 psig
Maximum Current	1.4 A		
Rated Operating Time	Continuous		
Working Pressure Range	0 - 100 kPa {0 - 1 kgf/cm ² }	0 - 1 bar	0 - 14.2 psig
Life Expectancy(MTTF)	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

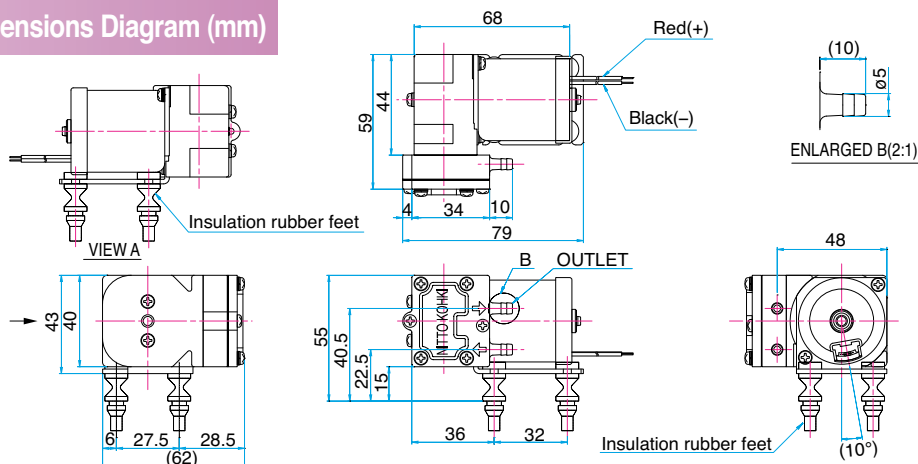


Film Cutter



Vending Machines

Sketch Drawing and Mounting Dimensions Diagram (mm)



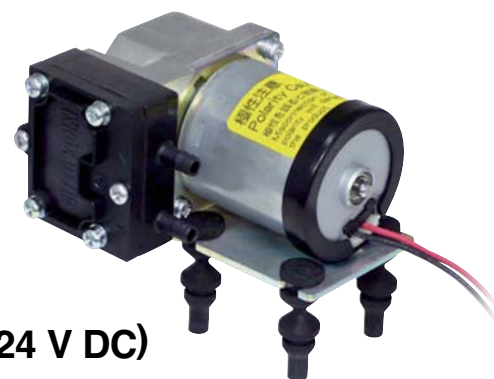
DC AIR PUMP

NITTO KOHKI CO., LTD. Rev.02

PISTON PUMP

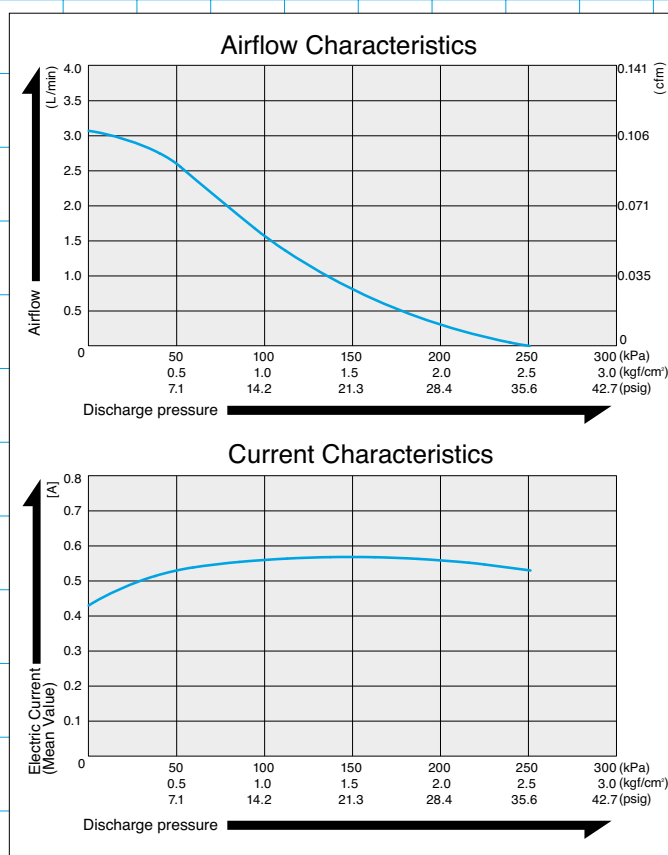


DPA0105-Y1 (24 V DC)



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

Airflow & Electric Current

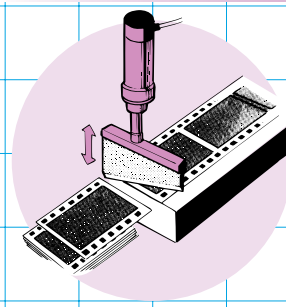


Specifications

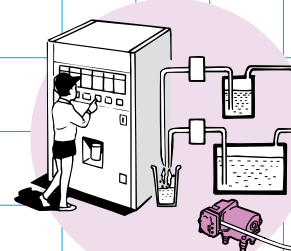
	(SI)	(EURO)	(U.S.A.)
Free Air Displacement	2.8 L/min		0.1 cfm
Rated Voltage	24 V DC		
Maximum Pressure	220 kPa {2.2 kgf/cm ² }	2.2 bar	31.3 psig
Maximum Current	0.7 A		
Rated Operating Time	Continuous		
Working Pressure Range	0 - 100 kPa {0 - 1 kgf/cm ² }	0 - 1 bar	0 - 14.2 psig
Life Expectancy	5,000 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- ³ / 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

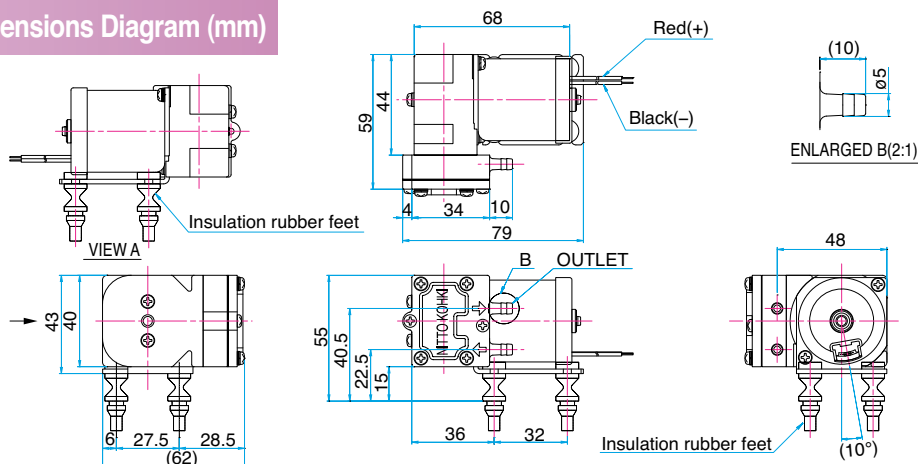


Film Cutter



Vending Machines

Sketch Drawing and Mounting Dimensions Diagram (mm)



DC AIR PUMP

NITTO KOHKI CO., LTD. Rev.02

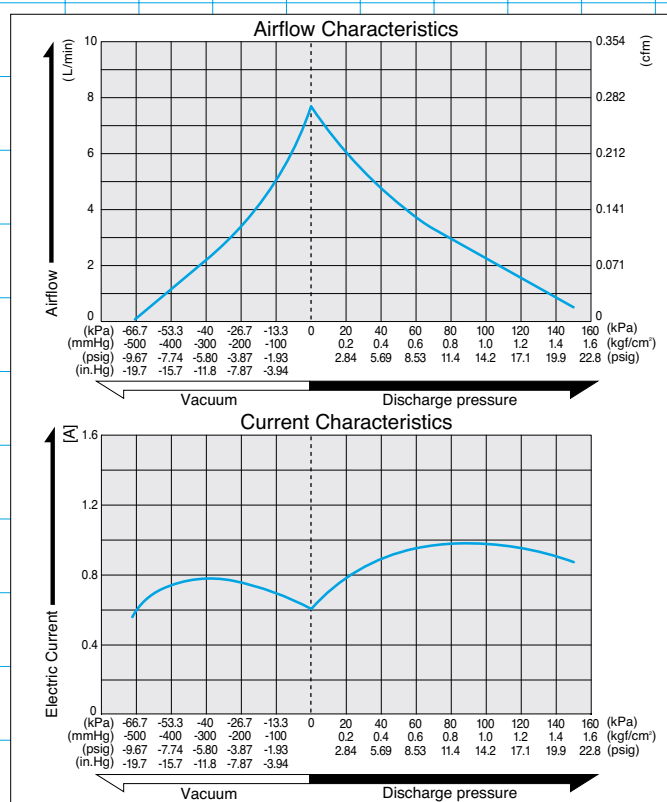
DIAPHRAGM PUMP



DP0110-X1 (12 V DC)



Airflow & Electric Current

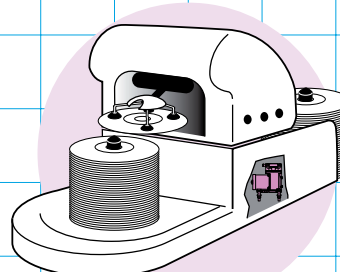


Specifications

	(SI)	(EURO)	(U.S.A.)
Attainable Vacuum	-66.6 kPa (-500 mmHg)	-666 mbar	-19.7 in.Hg
Free Air Displacement	7.5 L/min		0.26 cfm
Rated Voltage	12 V DC		
Maximum Pressure	150 kPa {1.5 kgf/cm ² }	1.5 bar	21.3 psig
Maximum Current	1.2 A or less		
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 (JTCL)		
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 "	

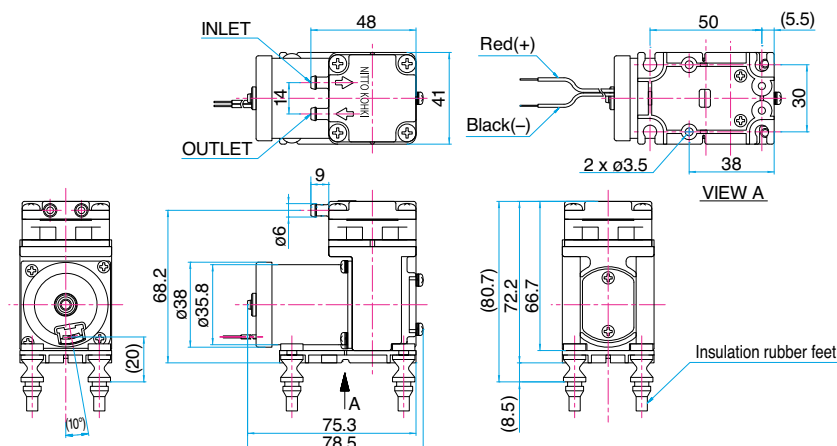
Please read the page of "How to Use This Catalog" first for correct use of compressors and pumps.

Application Examples



Vacuum pick up and place devices for CD & DVD

Sketch Drawing and Mounting Dimensions Diagram (mm)



DC AIR PUMP

NITTO KOHKI CO., LTD. Rev.02

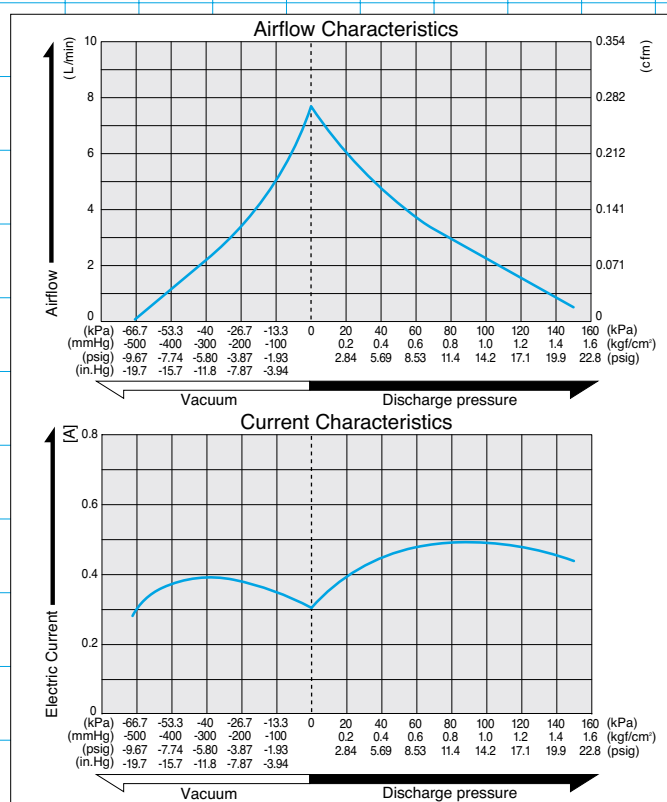
DIAPHRAGM PUMP



DP0110-Y1 (24 V DC)



Airflow & Electric Current

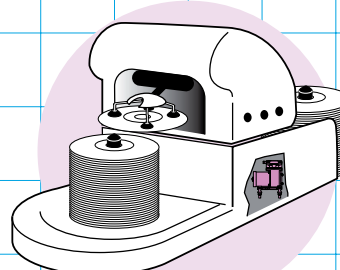


Specifications

	(SI)	(EURO)	(U.S.A.)
Attainable Vacuum	-66.6 kPa (-500 mmHg)	-666 mbar	-19.7 in.Hg
Free Air Displacement	7.5 L/min		0.26 cfm
Rated Voltage	24 V DC		
Maximum Pressure	150 kPa {1.5 kgf/cm²}	1.5 bar	21.3 psig
Maximum Current	0.6 A or less		
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 "	

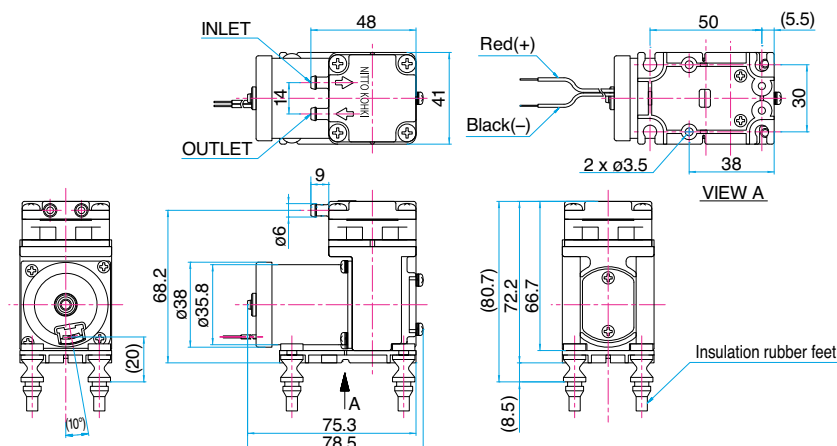
Please read the page of "How to Use This Catalog" first for correct use of compressors and pumps.

Application Examples



Vacuum pick up and place devices for CD & DVD

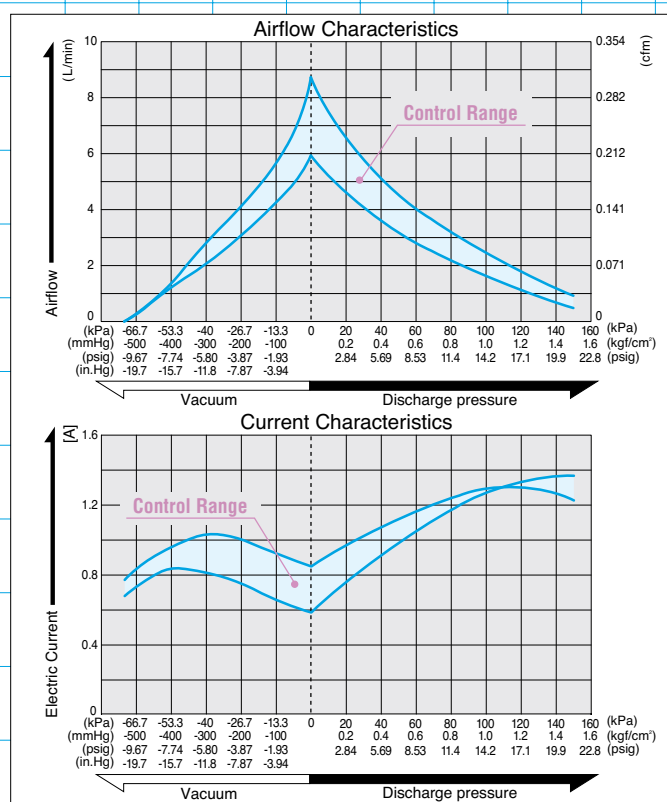
Sketch Drawing and Mounting Dimensions Diagram (mm)



DP0110 PWM



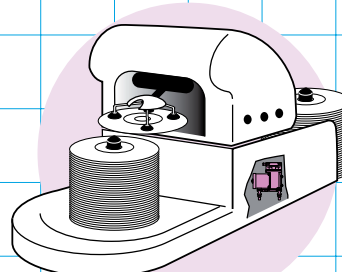
Specifications



	(SI)	(EURO)	(U.S.A.)
Attainable Vacuum	-66.6 kPa (-500 mmHg)	-666 mbar	-19.7 in.Hg
Free Air Displacement	7.5 L/min		0.26 cfm
Rated Voltage	12 V DC		
Maximum Pressure	150 kPa {1.5 kgf/cm ² }	1.5 bar	21.3 psig
Maximum Current	1.4 A or less		
Rated Operating Time	Continuous		
Life Expectancy	5,000 hours		
Control (PWM) ※1	2.5 - 5 V, 15 - 25 kHz, Duty cycle 80 - 100%		
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- ³¹ / ₃₂ "(L) x 1- ³ / ₁₆ "(W)
Gross Weight	0.30 kg		0.66 Lbs.
Leadwire Length	180 mm		7"

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

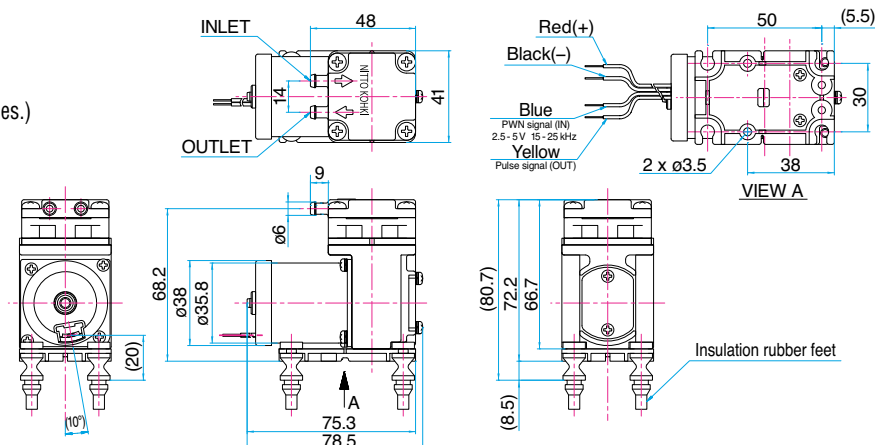
Application Examples



Vacuum pick up and place devices for CD & DVD

Sketch Drawing and Mounting Dimensions Diagram (mm)

(Rubber feet come with the product as accessories.)



DC AIR PUMP

NITTO KOHKI CO., LTD. Rev.01

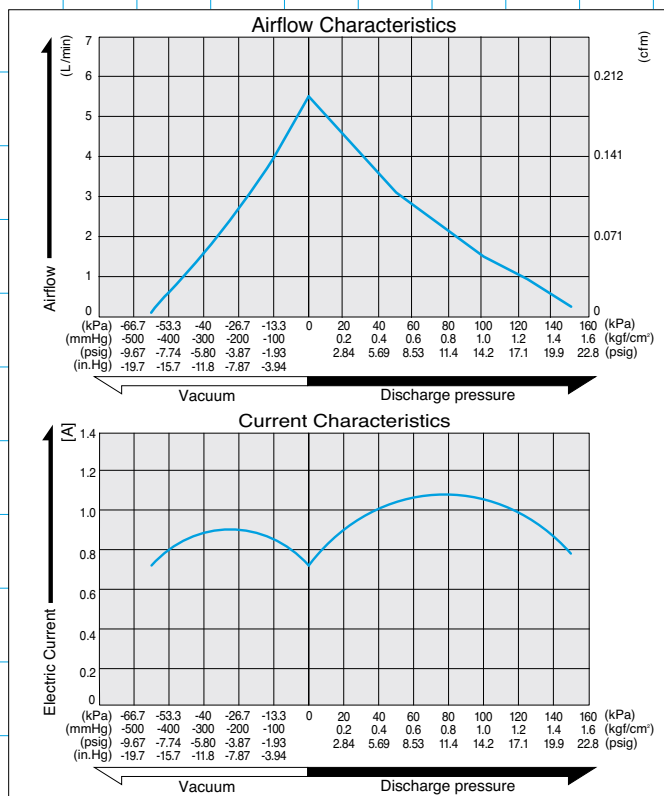
DIAPHRAGM PUMP



DP0110T-X1 (12 V DC)

Airflow & Electric Current

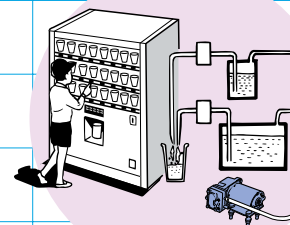
Specifications



	(SI)	(EURO)	(U.S.A.)
Attainable Vacuum	-60.0 kPa (-450 mmHg)	-600 mbar	-17.7 in.Hg
Free Air Displacement	5.5 L/min		0.26 cfm
Rated Voltage	12 V DC		
Maximum Pressure	150 kPa {1.5 kgf/cm ² }	1.5 bar	21.3 psig
Maximum Current	1.2 A or less		
Rated Operating Time	Continuous		
Life Expectancy	5,000 hours		
Inlet and Outlet	6.8 mm O.D. straight nipple		
Coil Insulation Class	A or its equivalent (JTEL)		
Mounting Dimensions	36.5 mm(L) x 37.5 mm(W)	1- ³ / ₈ "(L) x 1- ¹ / ₂ "(W)	
Gross Weight	0.27 kg	0.60 Lbs.	
Leadwire Length	360 mm	14- ³ / ₁₆ "	

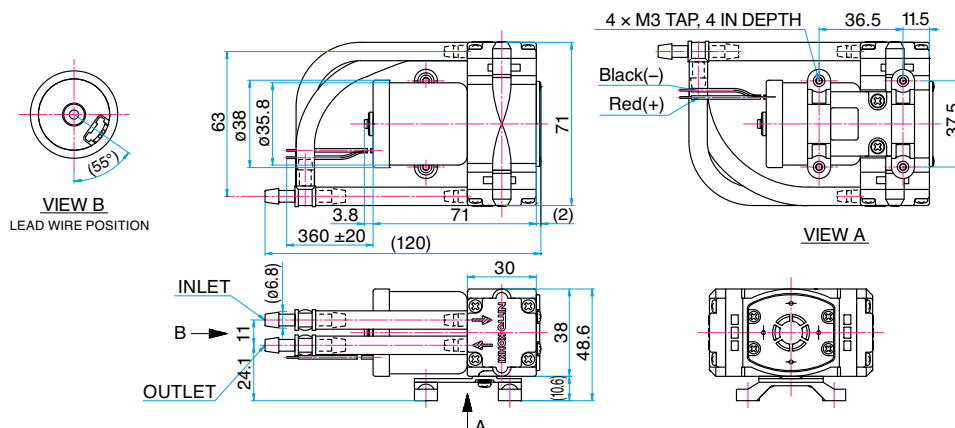
Please read the page of "How to Use This Catalog" first for correct use of compressors and pumps.

Application Examples



Vending Machines

Sketch Drawing and Mounting Dimensions Diagram (mm)



DC AIR PUMP

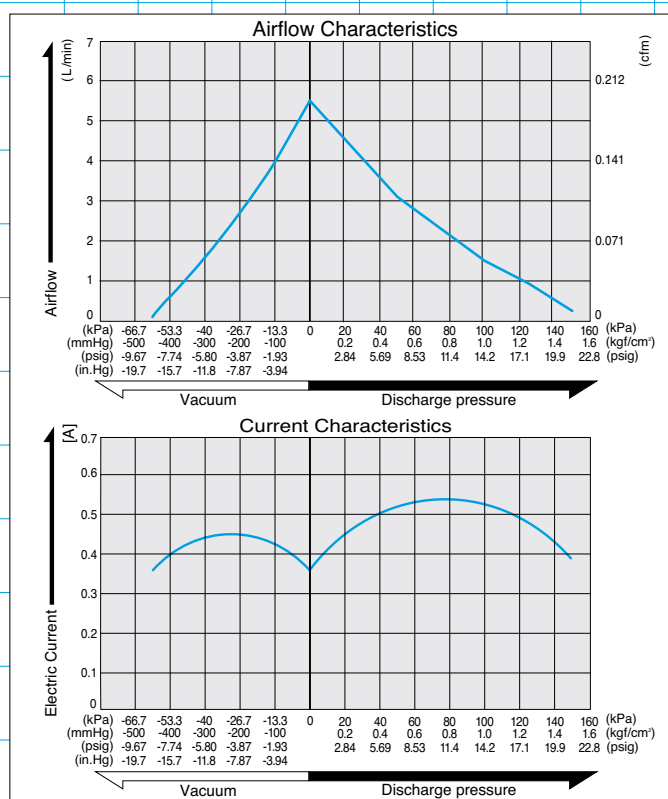
NITTO KOHKI CO., LTD. Rev.01

DIAPHRAGM PUMP



DP0110T-Y1 (24 V DC)

Airflow & Electric Current

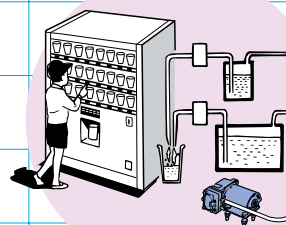


Specifications

	(SI)	(EURO)	(U.S.A.)
Attainable Vacuum	-60.0 kPa (-450 mmHg)	-600 mbar	-17.7 in.Hg
Free Air Displacement	5.5 L/min		0.26 cfm
Rated Voltage	24 V DC		
Maximum Pressure	150 kPa {1.5 kgf/cm²}	1.5 bar	21.3 psig
Maximum Current	0.6 A or less		
Rated Operating Time	Continuous		
Life Expectancy	5,000 hours		
Inlet and Outlet	6.8 mm O.D. straight nipple		
Coil Insulation Class	A or its equivalent (JTEL)		
Mounting Dimensions	36.5 mm(L) x 37.5 mm(W)	1- ³ / ₈ "(L) x 1- ¹ / ₂ "(W)	
Gross Weight	0.27 kg	0.60 Lbs.	
Leadwire Length	360 mm	14- ³ / ₁₆ "	

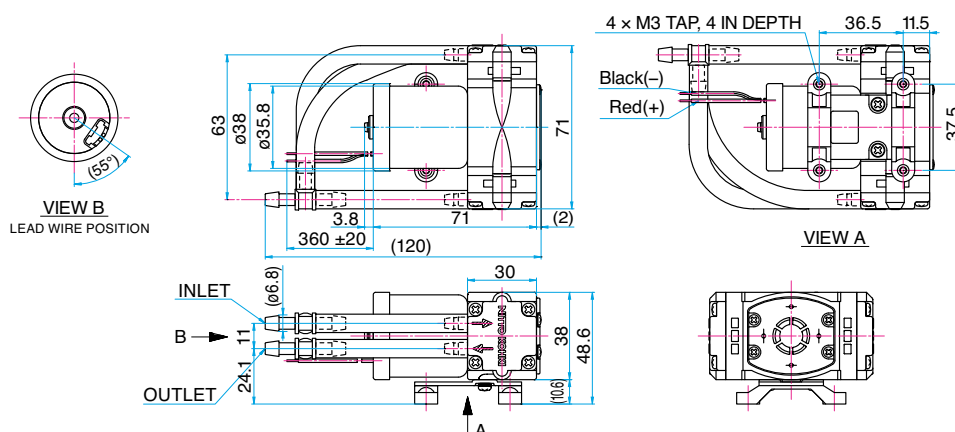
Please read the page of "How to Use This Catalog" first for correct use of compressors and pumps.

Application Examples



Vending Machines

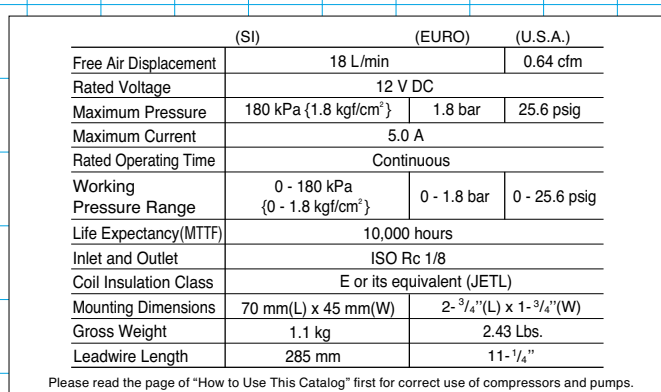
Sketch Drawing and Mounting Dimensions Diagram (mm)



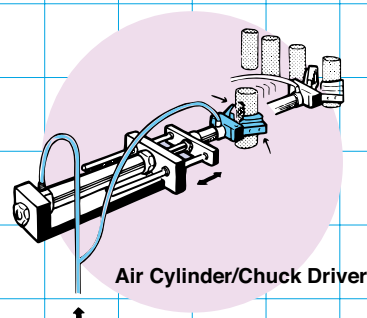


DP0410-x2 (12 V DC)

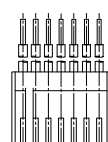
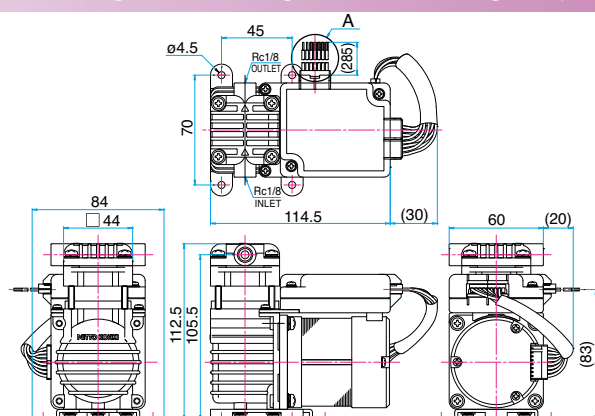
Specifications



Application Examples



Sketch Drawing and Mounting Dimensions Diagram (mm)



Circuit No. 1 2 3 4 5 6 7

VIEW A

【 Connection Table 】

		Power Source		Control Signal			
Circuit No.	1	2	3	4	5	6	7
Cord Color	Red	Black	Brown	Orange	Yellow	Green	Gray
Function	V+	V-	DRIVE /FREE	PULSE	ALARM	SPEED	SGND
Option	Function Off	ON		OFF			
	Function On	ON		ON			
Cord Size	AWG20		AWG22				
Line Type	UL1007						

84

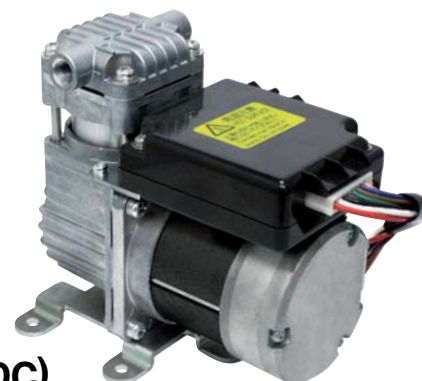
DC AIR PUMP

NITTO KOHKI CO., LTD. Rev.01

PISTON PUMP

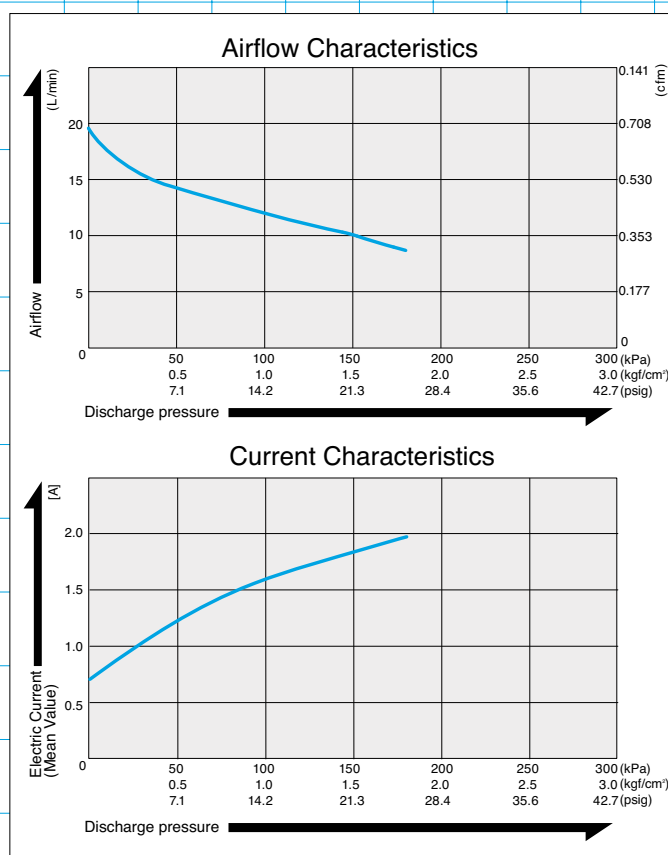


DP0410-Y2 (24 V DC)



Airflow & Electric Current

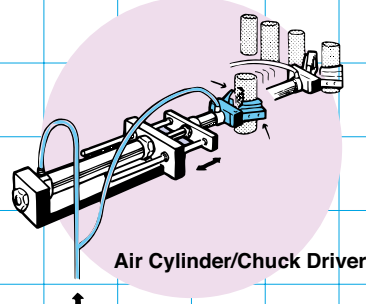
Specifications



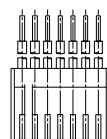
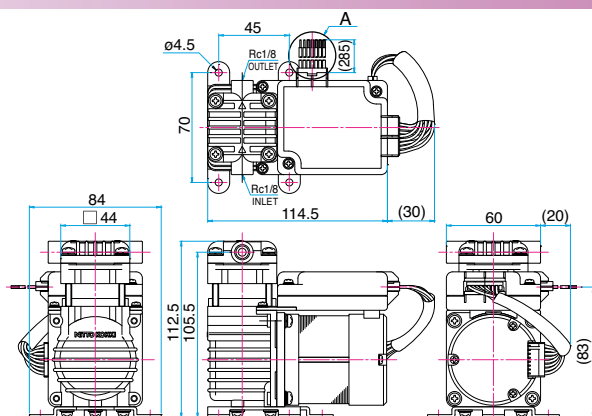
	(SI)	(EURO)	(U.S.A.)
Free Air Displacement	18 L/min		0.64 cfm
Rated Voltage	24 V DC		
Maximum Pressure	180 kPa {1.8 kgf/cm ² }	1.8 bar	25.6 psig
Maximum Current	2.7 A		
Rated Operating Time	Continuous		
Working Pressure Range	0 - 180 kPa {0 - 1.8 kgf/cm ² }	0 - 1.8 bar	0 - 25.6 psig
Life Expectancy(MTTF)	10,000 hours		
Inlet and Outlet	ISO Rc 1/8		
Coil Insulation Class	E or its equivalent (JETL)		
Mounting Dimensions	70 mm(L) x 45 mm(W)	2- ³ / ₄ "(L) x 1- ³ / ₄ "(W)	
Gross Weight	1.1 kg	2.43 Lbs.	
Leadwire Length	285 mm	11- ¹ / ₄ "	

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

Application Examples



Sketch Drawing and Mounting Dimensions Diagram (mm)



Circuit No. 1 2 3 4 5 6 7
VIEW A

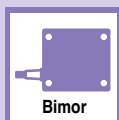
【 Connection Table 】

	Power Source		Control Signal				
Circuit No.	1	2	3	4	5	6	7
Cord Color	Red	Black	Brown	Orange	Yellow	Green	Gray
Function	V+	V-	DRIVE /FREE	PULSE	ALARM	SPEED	SGND
Option	Function Off	ON		OFF			
	Function On	ON		ON			
Cord Size	AWG20		AWG22				
Line Type	UL1007						

※ Control function is "OFF" by default.

LIQUID PIEZOELECTRIC PUMP

BPS type
BPH type
BPF type
P87-90



LIQUID MINIATURE DIAPHRAGM PUMP

DPE-100
P92

DPE-400
P93

DPE-400BL
P94

DPE-800
P95



BIMOR PUMP



PIEZOELECTRIC PUMP

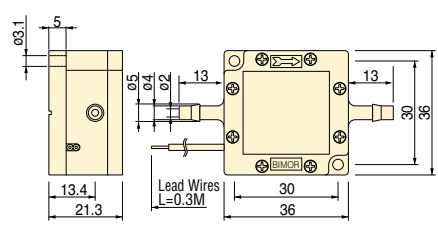
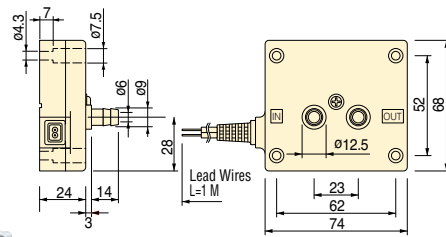
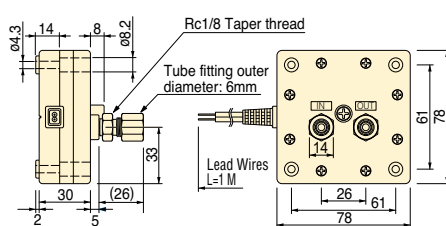
Suitable for pumping both liquids and gases!



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		Dimensions		Voltage(AC) — 120V 60Hz						
		Model	Current (mA)	Self-priming Pressure(kPa)	FlowRate (mL/min)	Discharge Pressure (kPa)				
BPS type			BPS-215i	3	3	30	15			
			BPS-235G		1.5					
BPH type			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					450	32	
			BPH-474G					10	400	35
			BPH-474P							
BPF type			BPF-465P					30	10	400

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)

Voltage(AC) — 230V 50Hz						Liquid Surface Materials			Mass (g)	Examples of suitable chemical liquids and gases	Examples of unsuitable chemical liquids and gases
Model	Current (mA)	Self-priming Pressure (kPa)	FlowRate (mL/min)	Discharge Pressure (kPa)		Housing	Liquid Contact Sheet	Valve/O-ring			
BPS-215i	4	0.4	10	10		PP	PP	IIR	40	Ethanol, Dilute hydrochloric acid, Sodium carbonate, Benzaldehyde, Formalin	Xylene, Mineral oil, Carbon tetrachloride, Trichloroethylene, Toluene, Benzene
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, Dilute hydrochloric acid, Sodium carbonate, Benzaldehyde, Formalin	Xylene, Mineral oil, Carbon tetrachloride, Trichloroethylene, Toluene, Benzene
BPH-214D								VMQ		Ammonia water, Ethanol, Dilute 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								FKM		Ethanol, Dilute hydrogen peroxide, Mineral oil, Sodium hypochlorite	Acetone, Ammonia water, Glacial acetic acid, Hydrofluoric acid, Formalin
						PP	PP	IIR	140	Ethanol, Hydrochloric acid, Sodium carbonate, Benzaldehyde, Formalin	Xylene, Mineral oil, Carbon tetrachloride, Trichloroethylene, Toluene, Benzene
								VMQ		Ammonia water, Ethanol, Dilute 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		FFKM	170	Ethanol, Xylene, Carbon tetrachloride, Silicone oil, Trichloroethylene	Acetone, Ammonia water, Chlorosulfonic acid, Glacial acetic acid, Hydrofluoric acid, Formalin
BPH-274P								FEP		Ethanol, Chloroform, Glacial acetic acid, Benzene, Methyl ethyl ketone	Chlorosulfonic acid, Fluorine oil, CFC 112, CFC 113
						PFA		FFKM	350	Ethanol, Aqua regia, Ozone, Carbon tetrachloride, Concentrated nitric acid, Concentrated sulfuric acid, Fuming sulfuric acid	Fluorine oil, CFC 112, CFC 113
BPF-265P								FEP	350		

BPS type

BPH type

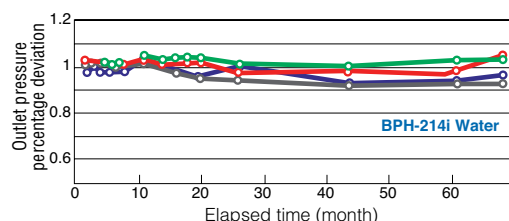
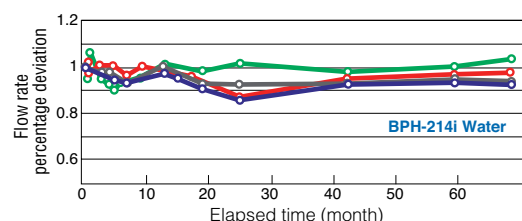
BPF type

Material Description

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

Durability

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

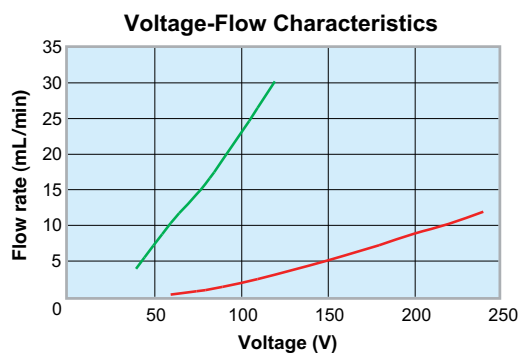
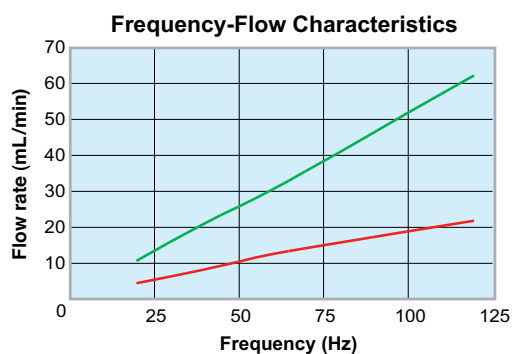
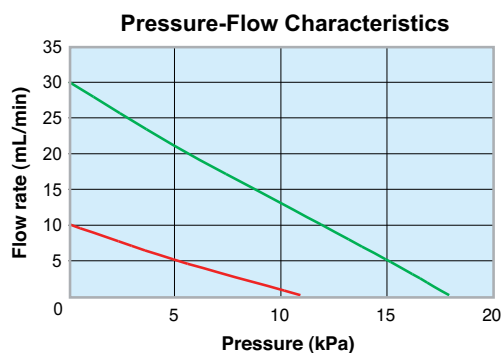




Flow Rate Characteristic

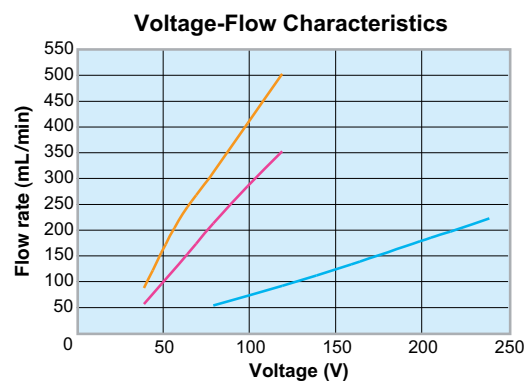
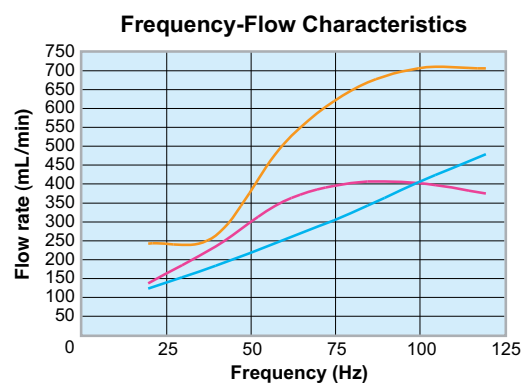
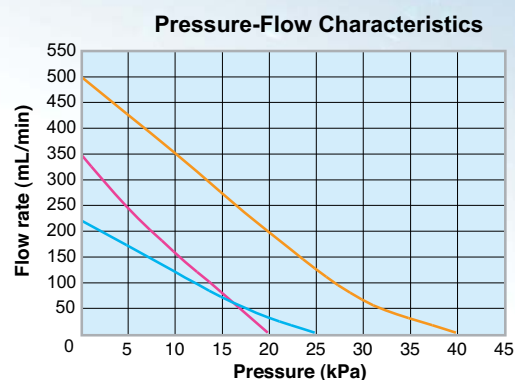
BPS series

120V 60Hz type 230V 50Hz type



BPH series

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



PIEZOELECTRIC PUMP

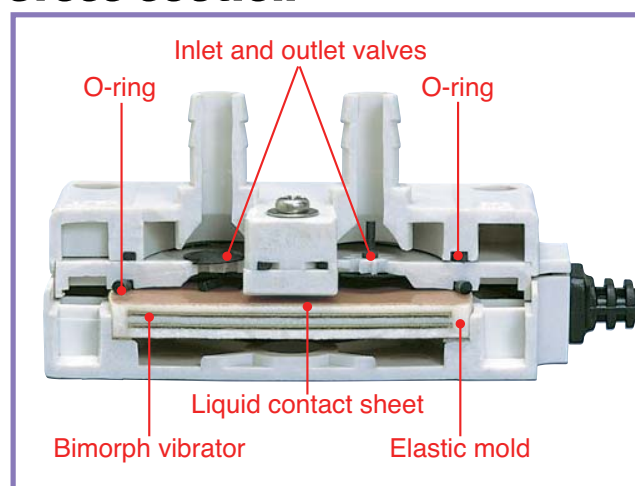
The Next Step in Pump Miniaturization

<Revolutionary piezoelectric bimorph technology>

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



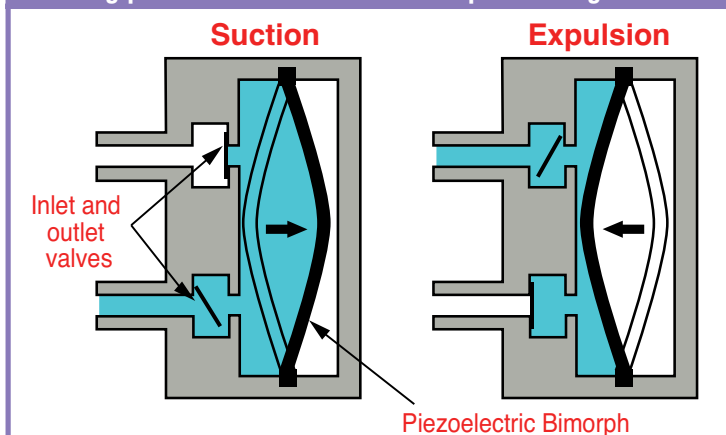
Cross section



Principle / Structure

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

Driving power : Piezoelectric Bimorph winding

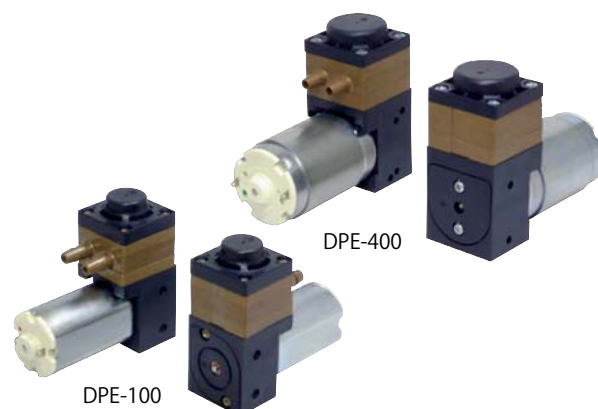


DC LIQUID PUMP

NITTO KOHKI CO., LTD. Rev.01

DIAPHRAGM PUMP

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

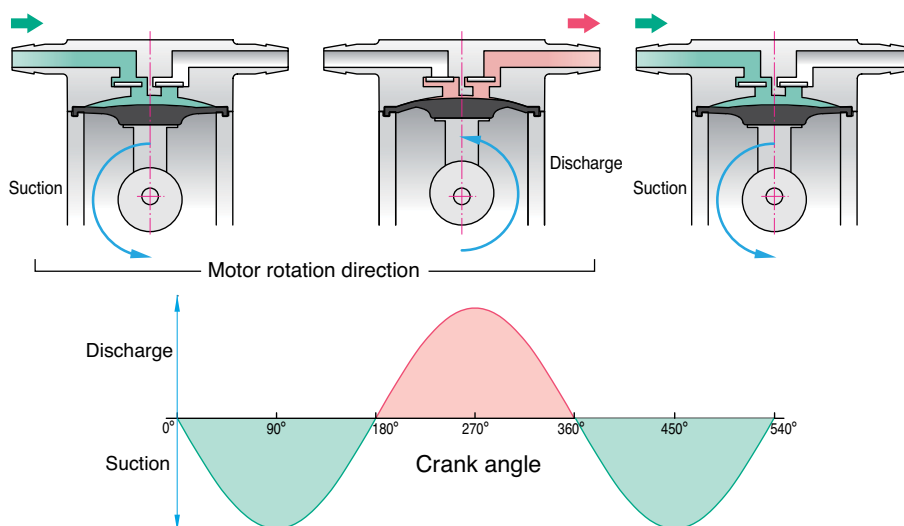


DPE-100

DPE-400

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.

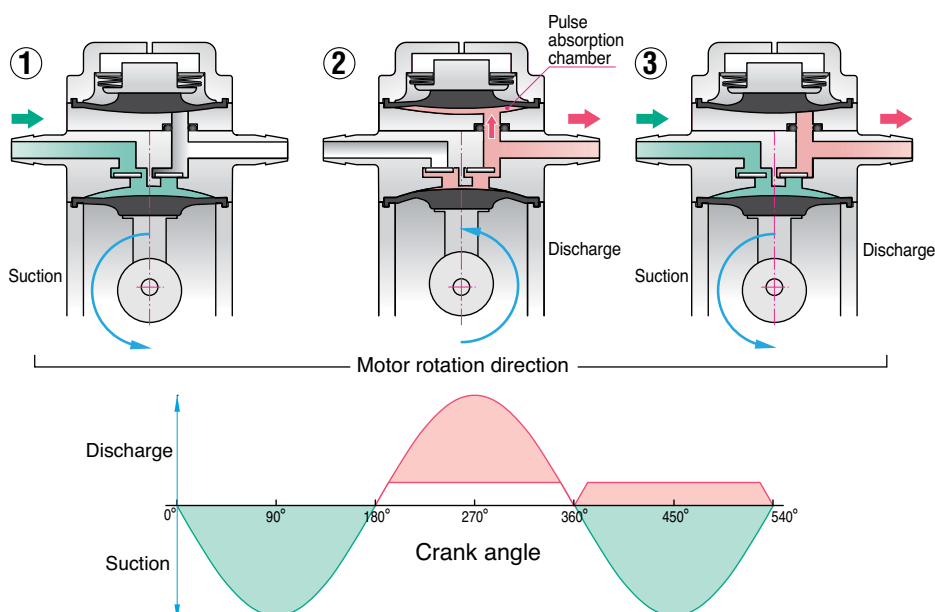


Advanced design DPE Pump with Pulse Absorption

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.

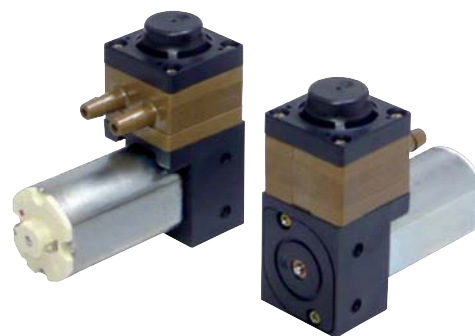


DC LIQUID PUMP

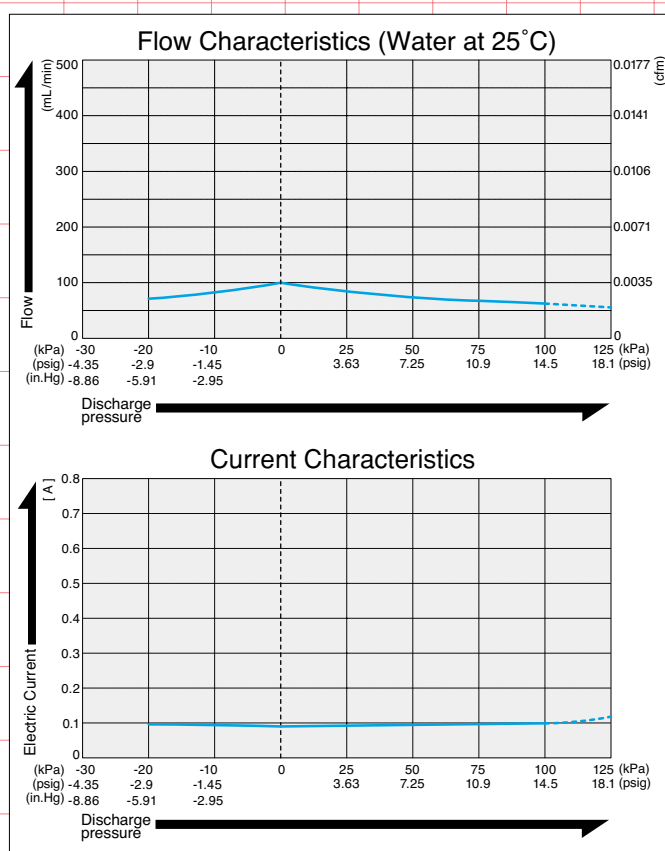
DPE-100



DIAPHRAGM PUMP



Flow & Electric Current



Specifications

	(SI)	(EURO)	(U.S.A.)
Rated Voltage	24 V DC		
Flow Rate ※ 1	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

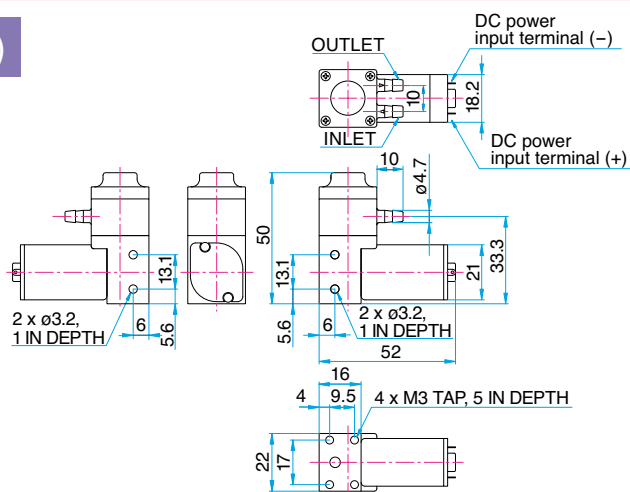
Model	Cylinder Head	Head Cover	Diaphragm	Valve	O-ring	Applicable fluids
DPE-100-2E	PA Polyamide (Nylon)		PTFE Polytetrafluoroethylene	EPDM Ethylene-propylene rubber		Sodium hydroxide, Citric acid Ammonia water, Caustic potash
DPE-100-2G				FKM Fluoro rubber		Ethanol, Ethylene glycol Sodium carbonate, 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

The chemicals shown are for reference only. Please confirm suitability of materials in each application.

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

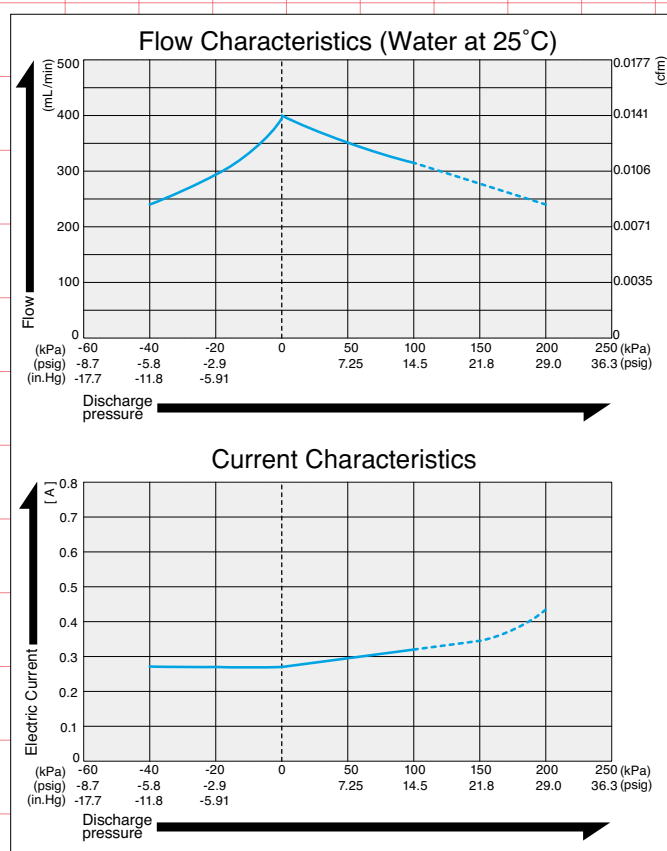
DPE-400



DIAPHRAGM PUMP



Flow & Electric Current



Specifications

	(SI)	(EURO)	(U.S.A.)
Rated Voltage	24 V DC		
Flow Rate ※ 1	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

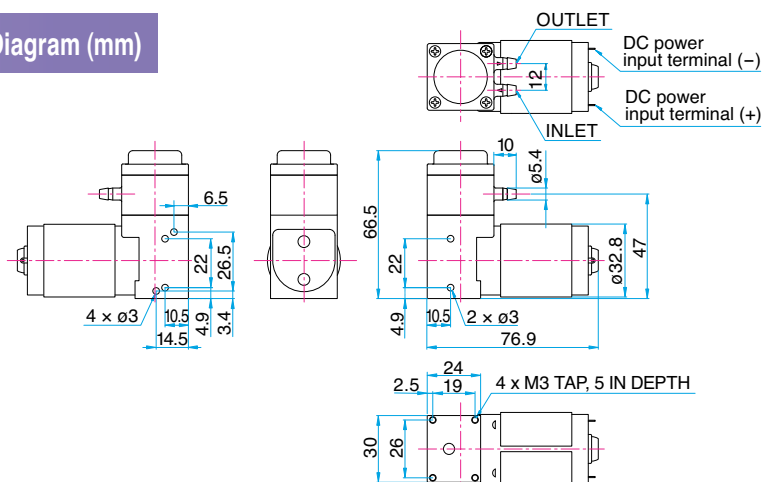
Model	Cylinder Head	Head Cover	Diaphragm	Valve	O-ring	Applicable fluids
DPE-400-2E	PA Polyamide (Nylon)		PTFE Polytetrafluoroethylene	EPDM Ethylene-propylene rubber		Sodium hydroxide, Citric acid Ammonia water, Caustic potash
DPE-400-2G				FKM Fluoro rubber		Ethanol, Ethylene glycol Sodium carbonate, 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

The chemicals shown are for reference only. Please confirm suitability of materials in each application.

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.

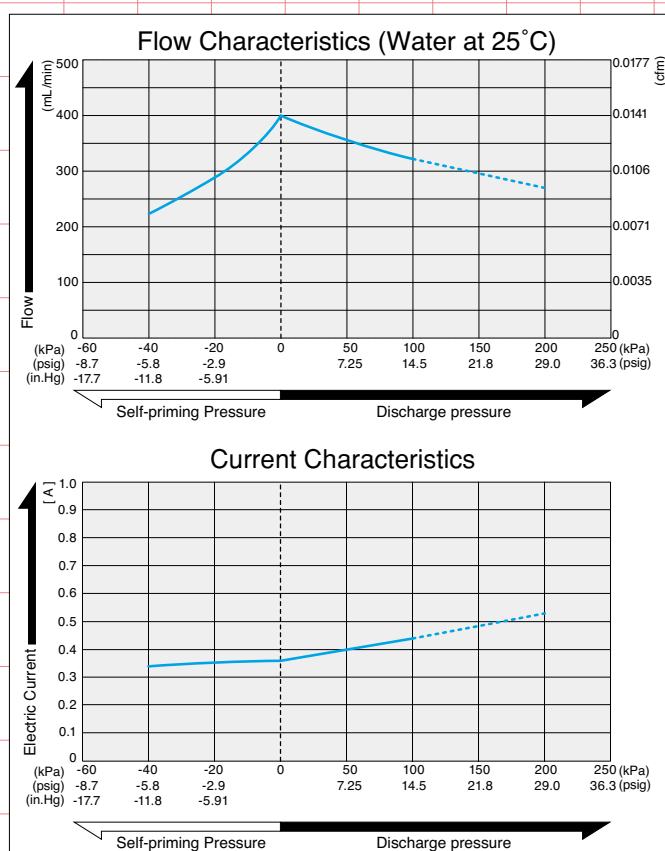
Sketch Drawing and Mounting Dimensions Diagram (mm)



Liquid Pump



Specifications



	(SI)	(EURO)	(U.S.A.)
Rated Voltage	24 V DC		
Flow Rate ※ 1	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 (Reference)	450 mA		
Rated Operating Time	Continuous		
Life Expectancy (MTTF) ※3	5,000 hours		
Self-priming Pressure ※ 1	40 kPa		
Inlet & Outlet	5.4 mm O.D. straight nipple		
Insulation Classification	A class equivalent		
Mounting Dimensions	41 mm(W)		1-19/32"(W)
Gross Weight	230 g		0.507 Lbs.
Motor	DC Brushless Motor		

※1: At low temperature, the performance may reduce.
 ※2: Pumps may not re-start against high backpressure.
 ※3: Life expectancy is based on the following conditions:
 Rated voltage: 24 V DC
 Atmospheric pressure: 0 kPa
 Fluid: water at 25°C

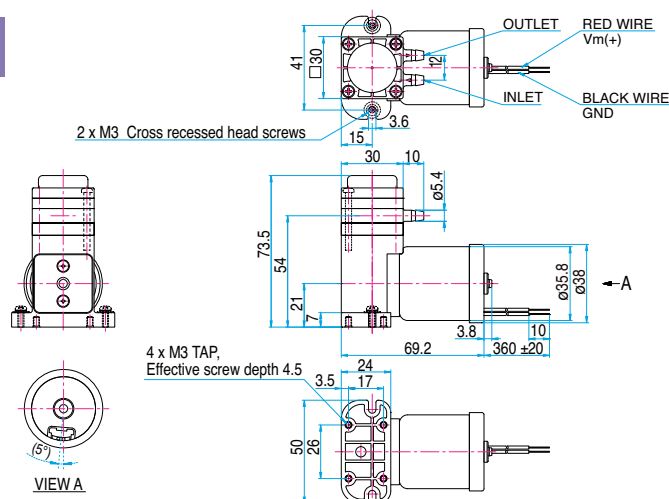
Please read the page of "How to Use This Catalog" first for correct use of compressors and pumps.

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

The chemicals shown are for reference only. Please confirm suitability of materials in each application

- 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)

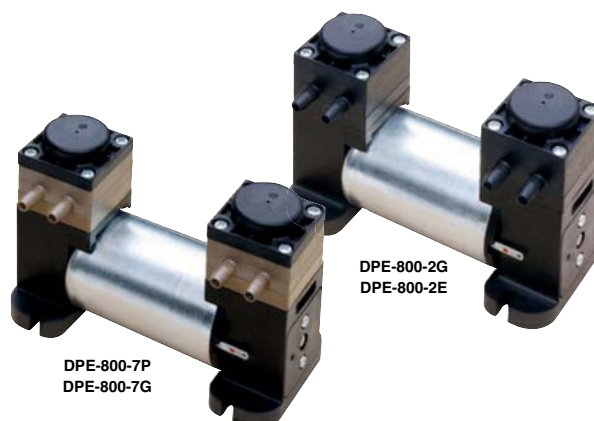


DC LIQUID PUMP

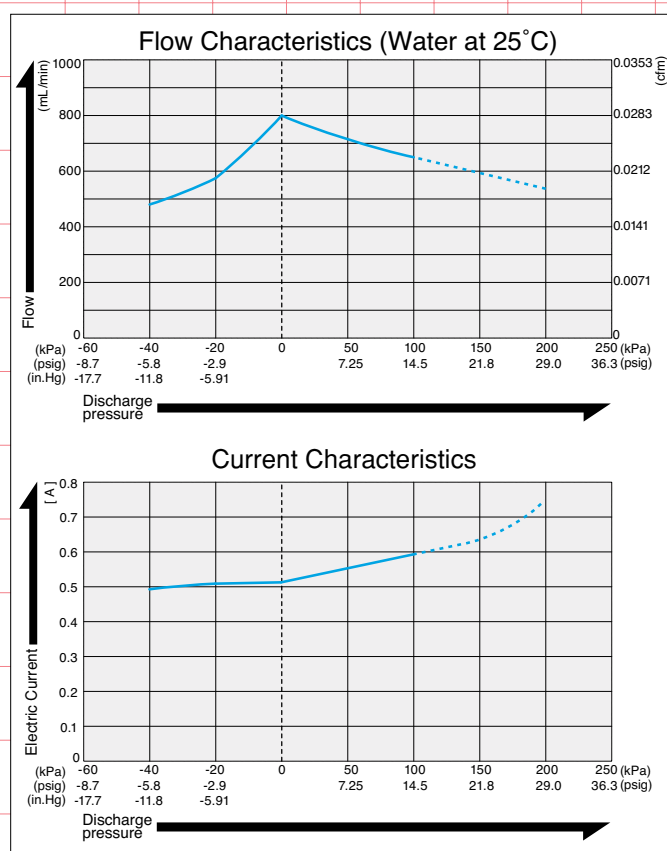
DPE-800



DIAPHRAGM PUMP



Flow & Electric Current



Specifications

	(SI)	(EURO)	(U.S.A.)
Rated Voltage	24 V DC		
Flow Rate ※ 1, ※ 3	800 mL/min		0.0282 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	600 mA		
Rated Operating Time	Continuous		
Life Expectancy (MTTF)	600 hours		
Self-priming Pressure ※ 1	40 kPa		
Inlet & Outlet	5.4 mm O.D. straight nipple		
Insulation Classification	E class equivalent		
Mounting Dimensions	74.5 mm (L) x 41 mm (W)	2-15/16" (L) x 1-19/32" (W)	
Gross Weight	350 g	0.771 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.

※ 3: Tubing between two pumping heads must be done in parallel.

Tubing in series between the two pumping heads should not be made. This may cause extreme pressure hike that will result in broken parts, liquid splash out or possible ignition.

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

Build materials and applicable fluids

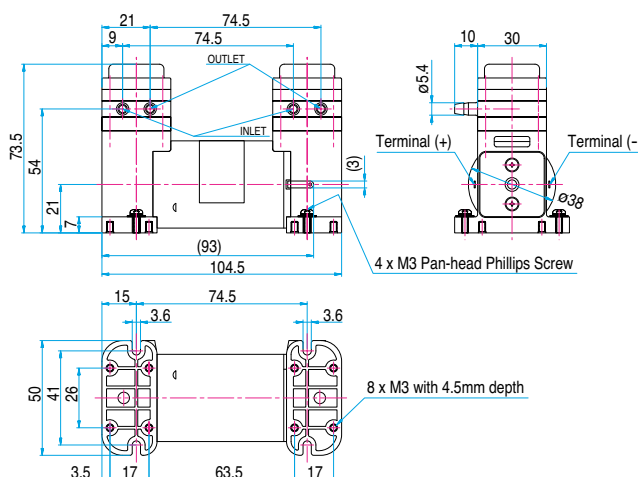
Model	Cylinder Head	Head Cover	Diaphragm	Valve	O-ring	Applicable fluids
DPE-800-2E	PA Polyamide (Nylon)		PTFE Polytetrafluoroethylene	EPDM Ethylene-propylene rubber		Sodium hydroxide, Citric acid Ammonia water, Caustic potash
DPE-800-2G				FKM Fluoro rubber		Ethanol, Ethylene glycol Sodium carbonate, mineral oil
DPE-800-7G	PPS Polyphenylene sulfide			FFKM Perfluoroelastomer		Xylene, Carbon tetrachloride Trichloroethylene, Silicon oils
DPE-800-7P						Chloroform, Benzene Glacial acetic acid, Methyl ethyl ketone

The chemicals shown are for reference only. Please confirm suitability of materials in each application.

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)





OTHER PRODUCTS

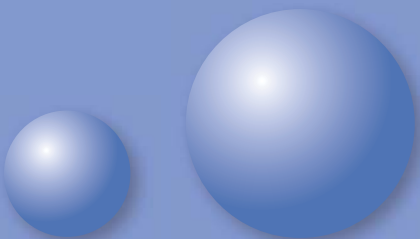
VACUUM TWEEZERS

MEDO HAND

MH-100A

Easy transfer of miniature components!

MH-100A
P97



MEDO HAND

Vacuum Tweezers

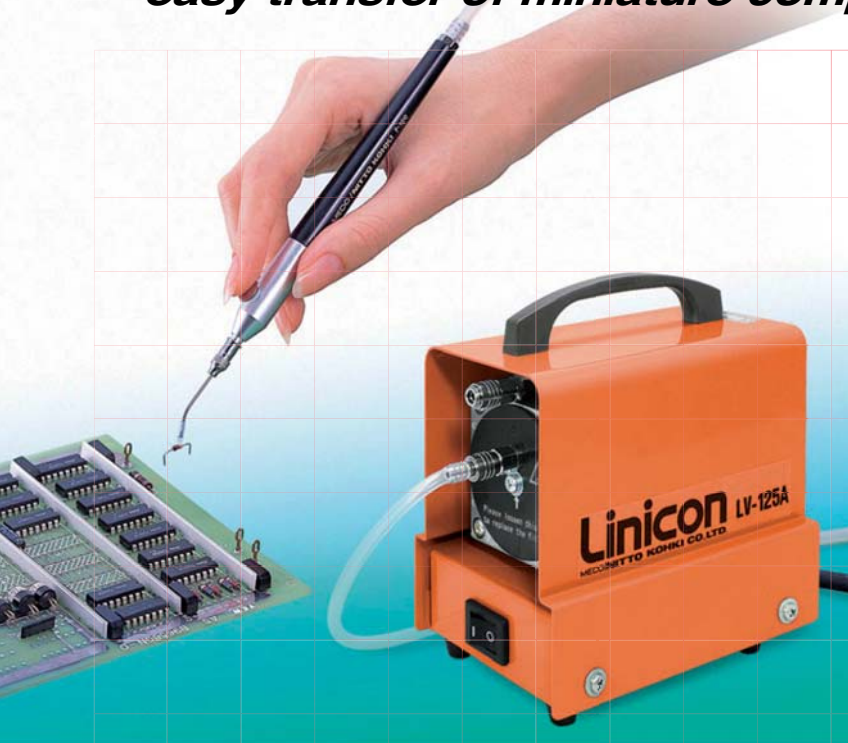
Model **MH-100A**

One touch pick and place action for easy transfer of miniature components!

NEW

Duster function is also available

Easy to handle pen type tweezers



Specifications



MH-100A is composed of:

- Vacuum Pump Unit Linicon Model LV-125A including 1 pc. of Micro Cupla MC04PH
- Tube 3 x 5 x 2000mm : 1 pc.
- Tweezer (P-100): 1set
- Stand : 1 pc.
- Needle 1 x 1.5 x 40 : 1 pc.
- Pad 6 mm dia. : 1 pc.
- Pad 4 mm dia. : 1 pc.

The needle can be bent in accordance with applications. Please read the instruction booklet on how to bend the needle.

Applications



Transferring sphere objects such as balls



Assembling precision parts



Moving tiny parts

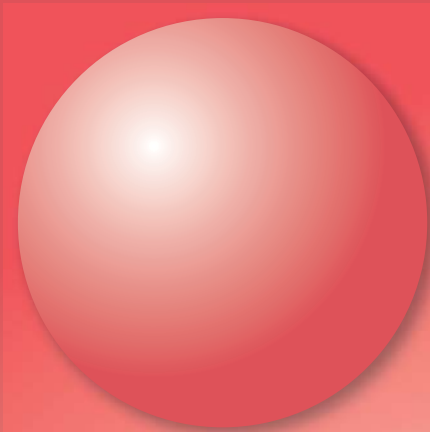


Transferring uneven parts

Most suitable for handling electronic parts such as ICs and LSIs.
Also precise micro parts such as watches, chemicals and other small parts.

Specifications of Vacuum Pump Unit Linicon Model LV-125A

Rated Voltage	115 V AC	230 V AC
Power Consumption	15/14 W	15/14 W
Rated Frequency	50/60 Hz	50/60 Hz
Maximum Vacuum	-33.3 kPa { -250 mmHg }, -333 mbar, -9.84 in.Hg }	
Dimensions	135 mm(L) x 84 mm(W) x 146 mm (H) (5-5/16" x 3-11/32" x 5-3/4")	
Duty Cycle	Continuous	
Coil Insulation Class	B or its equivalent	E or its equivalent
Weight	1.5 kg (3.3 lbs.)	



Made-to-order Item

AC LINEAR

Air Compressor

Vacuum Pump

Diaphragm Pump

AC0501
P99

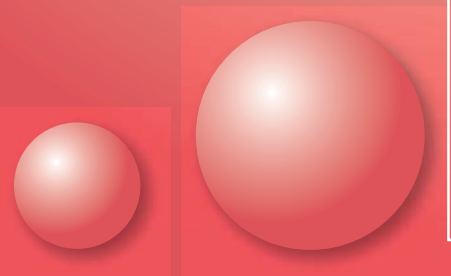
VP0645
P100

VP0945
P101

VP0660x2
P102

VC0101S
Dual Type
P103

VC0101S
Blower Type
P104



Compressor



LOW
pressure



Vacuum



TWIN

Made-to-order COMPRESSOR

LINEAR

Ac0501

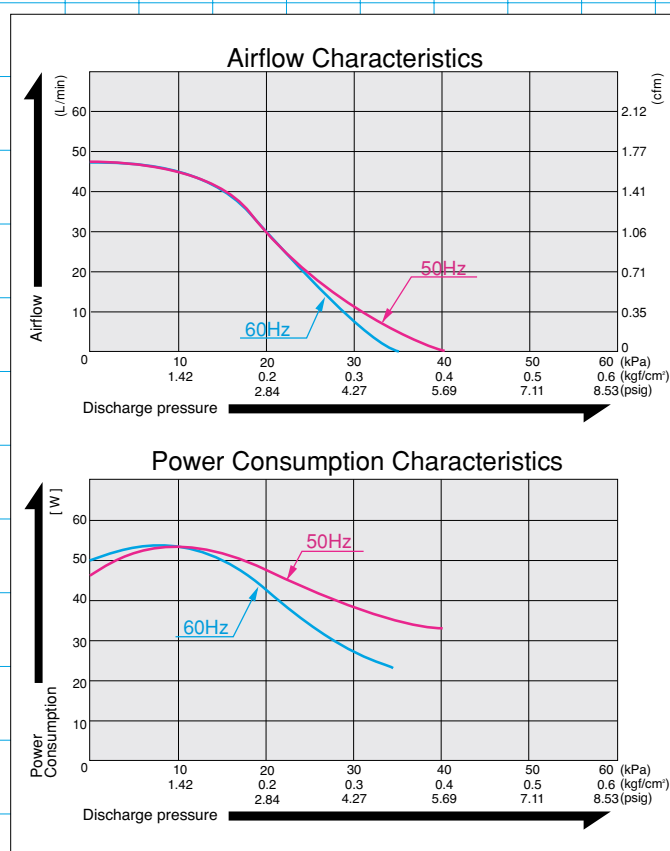


**MOTOR FREE
PISTON SYSTEM**



Airflow & Power Consumption

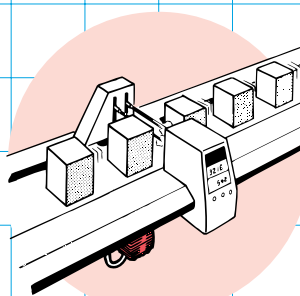
Specifications



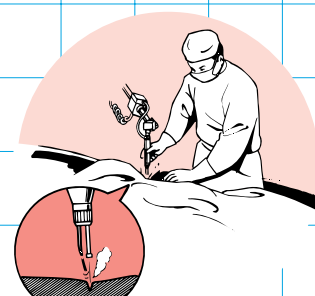
	(SI)	(EURO)	(U.S.A.)
Rated Pressure	10 kPa {0.1 kgf/cm ² }	0.1 bar	1.42 psig
Rated Airflow	45 L/min		1.59 cfm
Rated Voltage	115 V AC or 230 V AC		
Maximum Pressure	35 kPa {0.35 kgf/cm ² }	0.35 bar	4.98 psig
Power Consumption	53 W		
Rated Frequency	60 Hz & 50 Hz		
Life Expectancy	10,000 hours		
Outlet	ISO Rc 1/4		
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

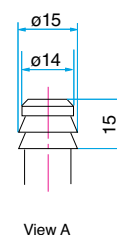
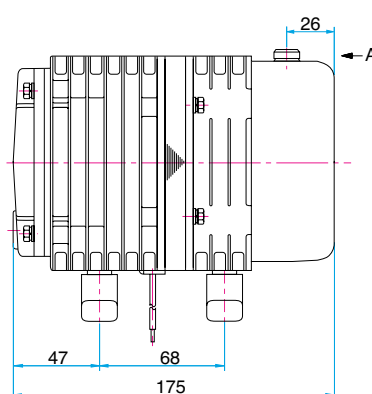
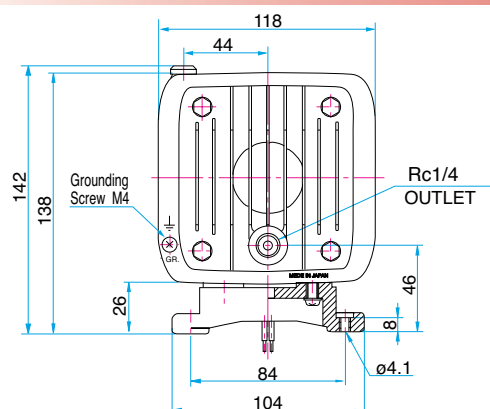


Pneumatic Sensor



Laser Air Ventilation

Sketch Drawing and Mounting Dimensions Diagram (mm)



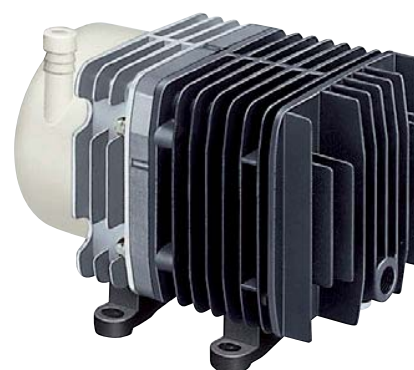
Made-to-order VACUUM PUMP

LINEAR

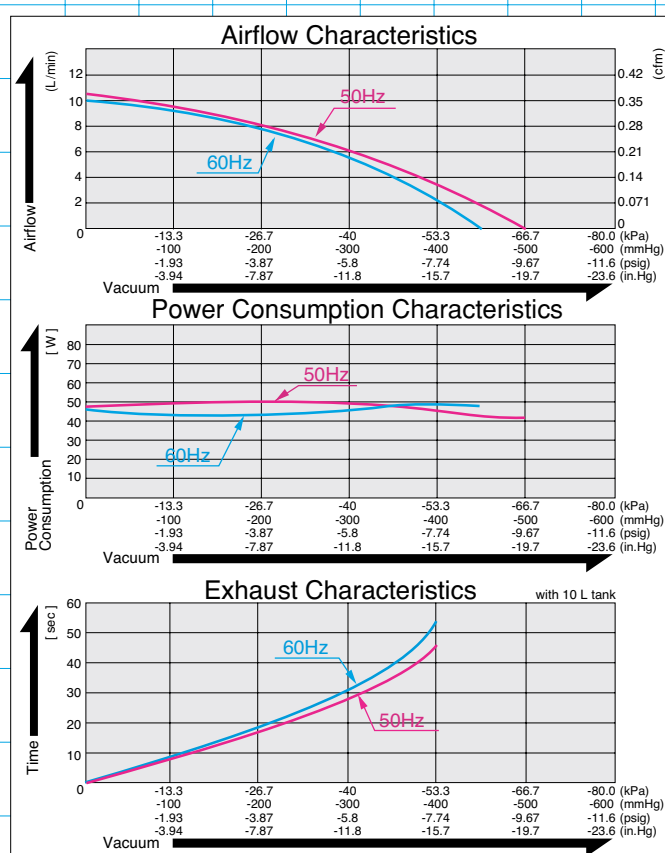
vp0645



**MOTOR FREE
PISTON SYSTEM**



Airflow & Power Consumption

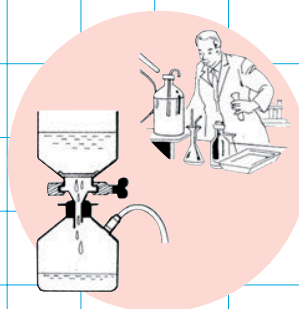


Specifications

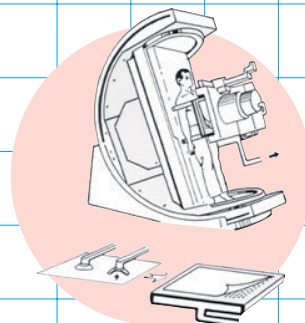
	(SI)	(EURO)	(U.S.A.)
Attainable Vacuum ^{※1}	-60 kPa (-450 mmHg)	-600 mbar	-17.7 in.Hg
Free Air Displacement	10 L/min		0.35 cfm
Rated Voltage	115 V AC or 230 V AC		
Power Consumption	48 W or 50 W		
Rated Frequency	60 Hz or 50 Hz		
Life Expectancy	3,000 hours		
Inlet	15 mm O.D. hose nipple		
Outlet	ISO Rc 1/4		
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"	

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

Application Examples

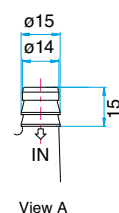
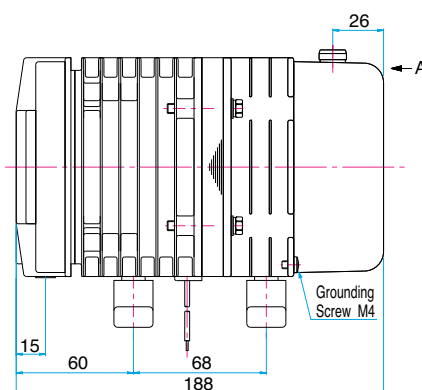
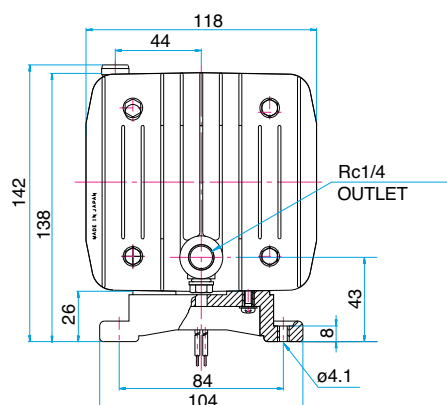


Liquid Purification



X-ray Film Positioning

Sketch Drawing and Mounting Dimensions Diagram (mm)



Made-to-order VACUUM PUMP

LINEAR

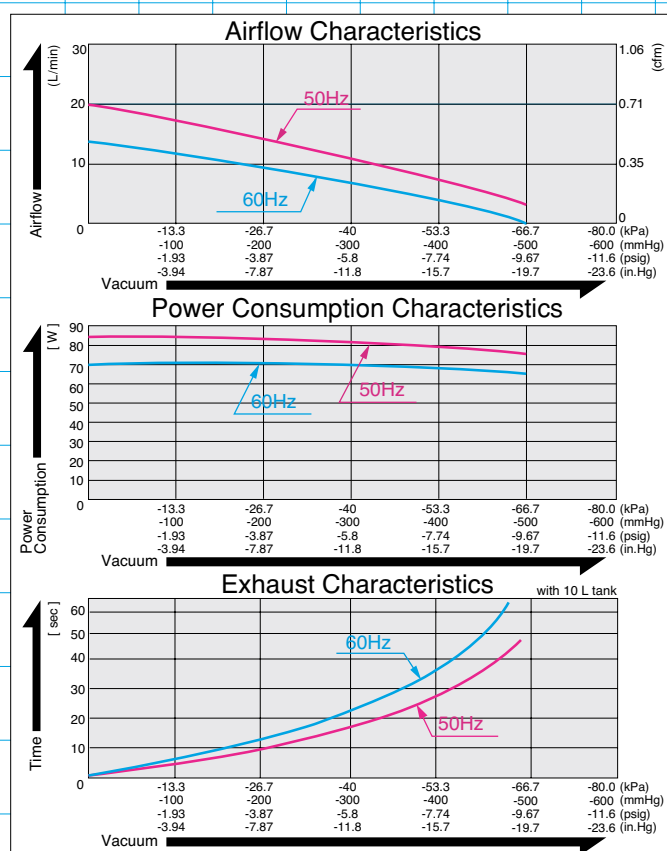
VP0945



**MOTOR FREE
PISTON SYSTEM**



Airflow & Power Consumption

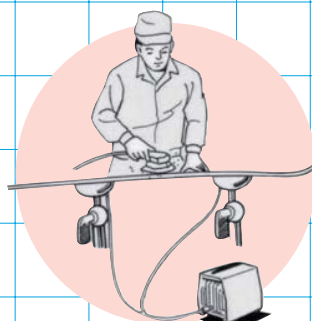


Specifications

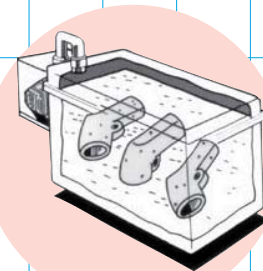
	(SI)	(EURO)	(U.S.A.)
Attainable Vacuum ^{※1}	-60 kPa (-450 mmHg)	-600 mbar	-17.7 in.Hg
Free Air Displacement	12 L/min		0.424 cfm
Rated Voltage	115 V AC or 230 V AC		
Power Consumption	70 W or 85 W		
Rated Frequency	60 Hz or 50 Hz		
Life Expectancy	3,000 hours		
Inlet	15 mm O.D. hose nipple		
Outlet	ISO Rc 1/4		
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"	

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

Application Examples

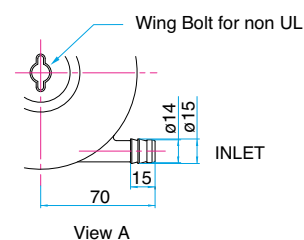
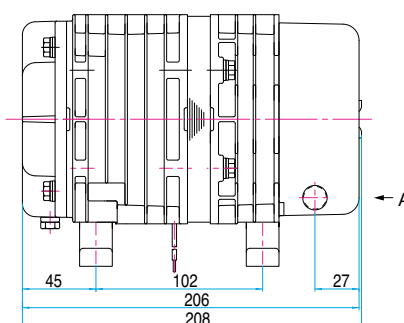
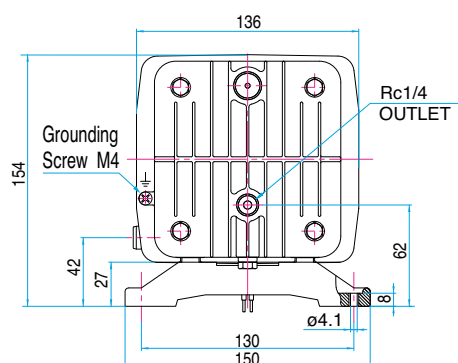


Vacuum Vice



Impregnation Depressurizer

Sketch Drawing and Mounting Dimensions Diagram (mm)



Made-to-order VACUUM PUMP

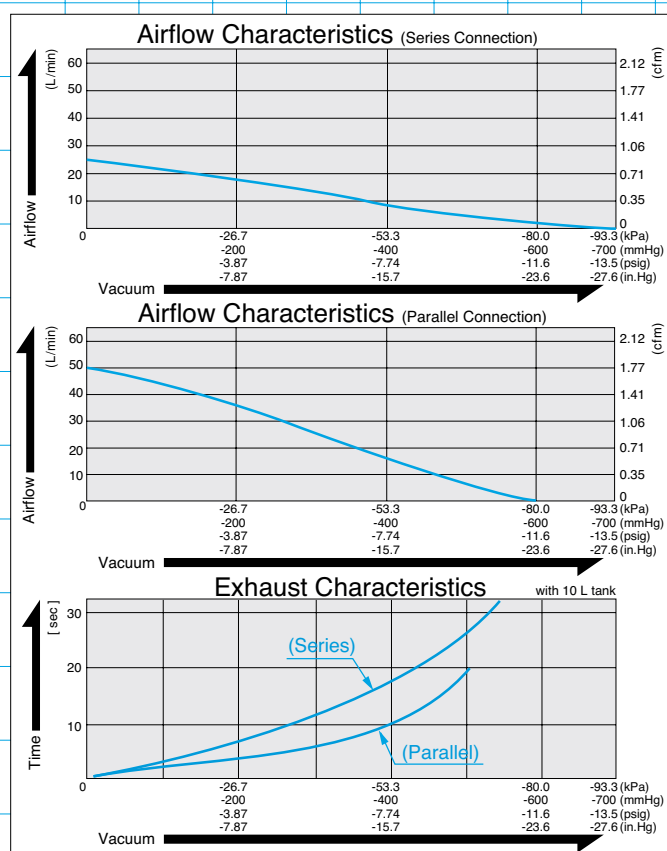
LINEAR

MOTOR FREE
PISTON SYSTEM

VP0660x2

Airflow & Power Consumption

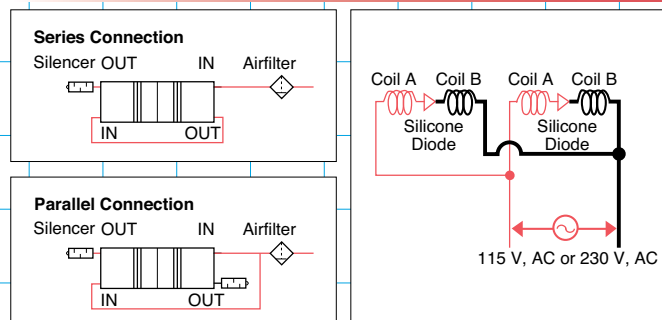
Specifications



	Series Connection	Parallel Connection
Attainable Vacuum ※1	-93.3 kPa (-700 mmHg) -933 mbar or -27.5 in.Hg	-80 kPa (-600 mmHg) -800 mbar or -23.6 in.Hg
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 ; 2 ports	
Outlet	ISO Rc 1/4 ; 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")	

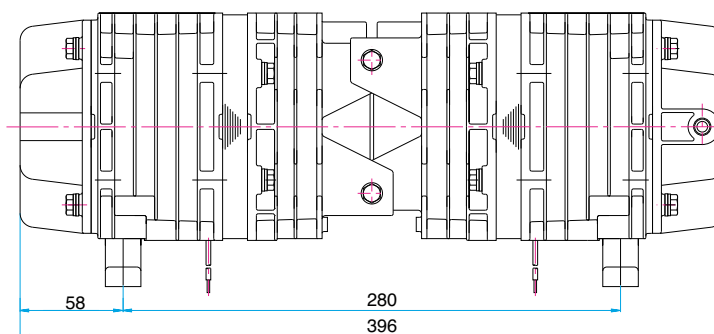
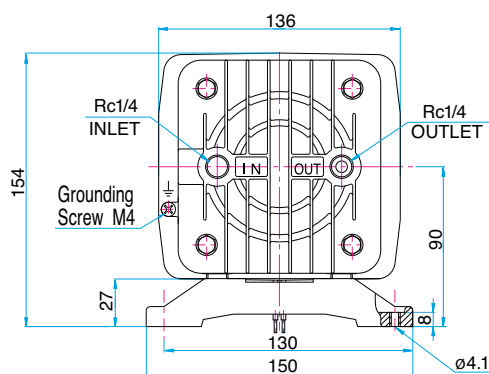
※1: Operations at higher than -93.3kPa in series or -80kPa in parallel need an additional leak valve or relief valve on the inlet piping.
Please read the page of "How to Use This Catalog" first for correct use of compressors and pumps.

Application Examples



* Air line connection is required by user.

Sketch Drawing and Mounting Dimensions Diagram (mm)



DIAPHRAGM PUMP

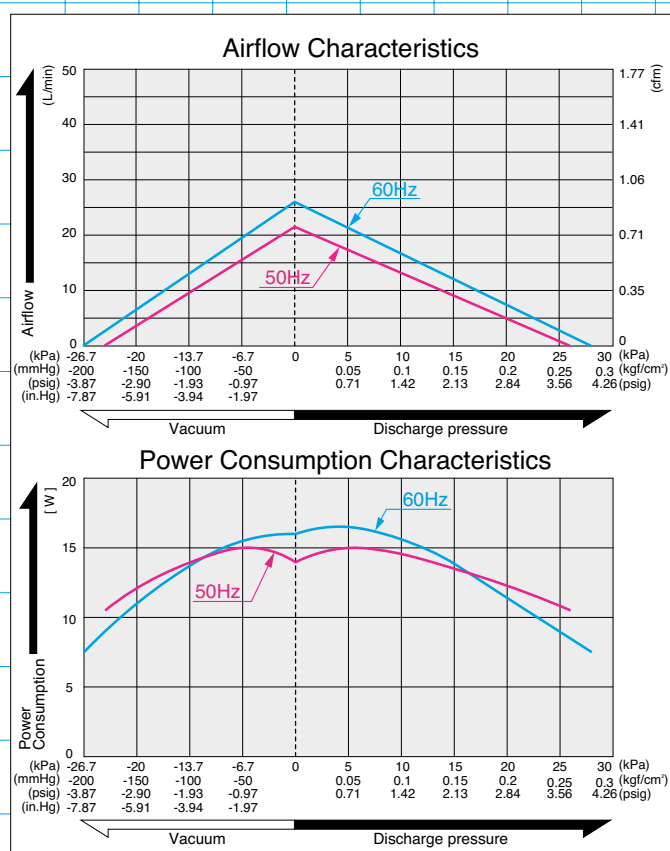


DIAPHRAGM PUMP

vc0101s Dual Type



Airflow & Power Consumption



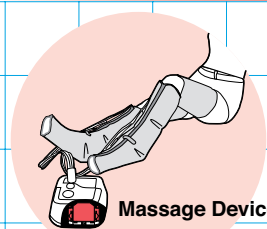
Specifications

VC0101S	(SI)	(EURO)	(U.S.A.)
Rated Pressure	5 kPa {0.05 kgf/cm ² }	0.05 bar	0.71 psig
Rated Airflow	15 L/min		0.53 cfm
Rated Voltage	120 V AC ^{※1} or 230 V AC		
Maximum Pressure	26 kPa {0.26 kgf/cm ² }	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 - 26 kPa {-180mmHg - 0.26 kgf/cm ² }	-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"

※1: 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

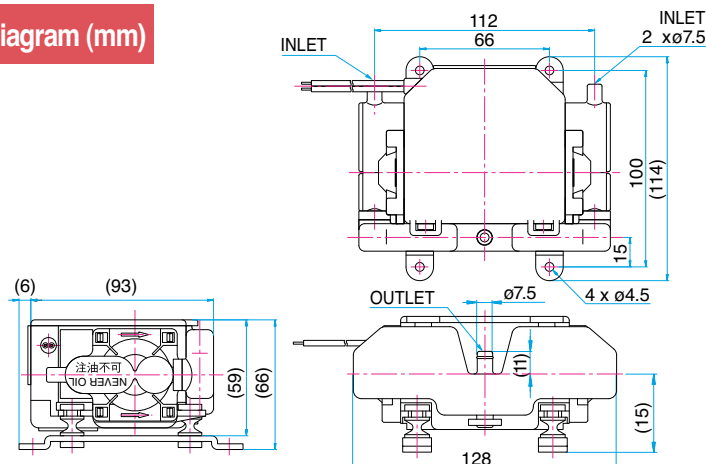


Massage Devices



Bed sore Prevention Mattress

Sketch Drawing and Mounting Dimensions Diagram (mm)



DIAPHRAGM PUMP



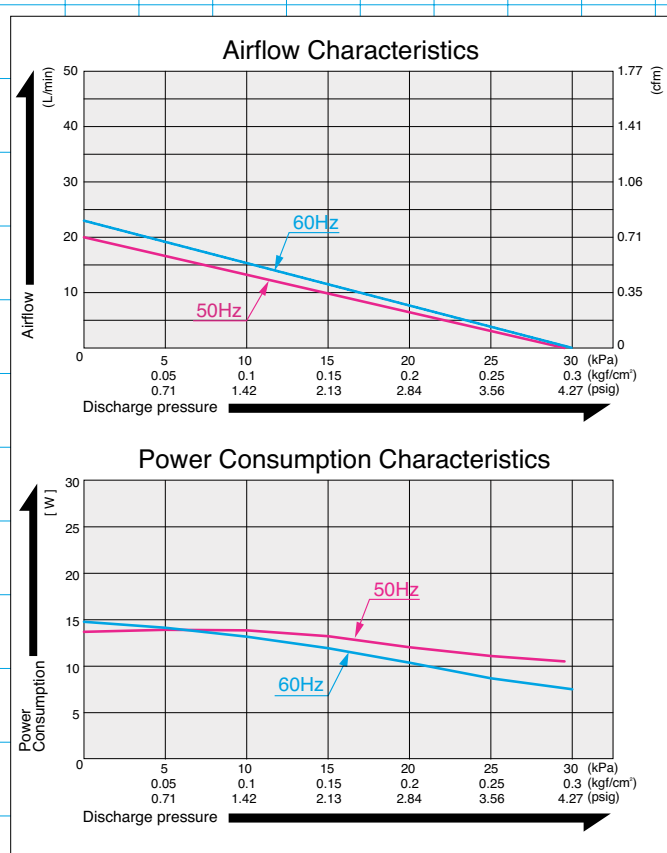
DIAPHRAGM PUMP

vc0101s Blower Type



Airflow & Power Consumption

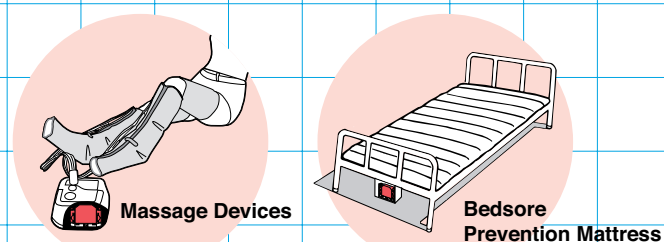
Specifications



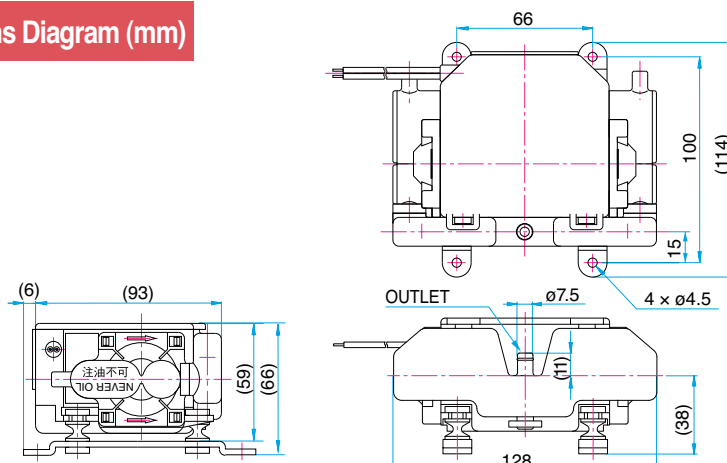
VC0101S	(SI)	(EURO)	(U.S.A.)
Rated Pressure	5 kPa {0.05 kgf/cm ² }	0.05 bar	0.71 psig
Rated Airflow	15 L/min		0.53 cfm
Rated Voltage	120 V AC ^{※1} or 230 V AC		
Maximum Pressure	26 kPa {0.26 kgf/cm ² }	0.26 bar	3.70 psig
Power Consumption	14W		
Rated Frequency	60 Hz or 50 Hz		
Life Expectancy	5,000 hours		
Working Pressure Range	0 - 26 kPa {0 - 0.26 kgf/cm ² }	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"	

※1: 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



Sketch Drawing and Mounting Dimensions Diagram (mm)





NITTO KOHKI's

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