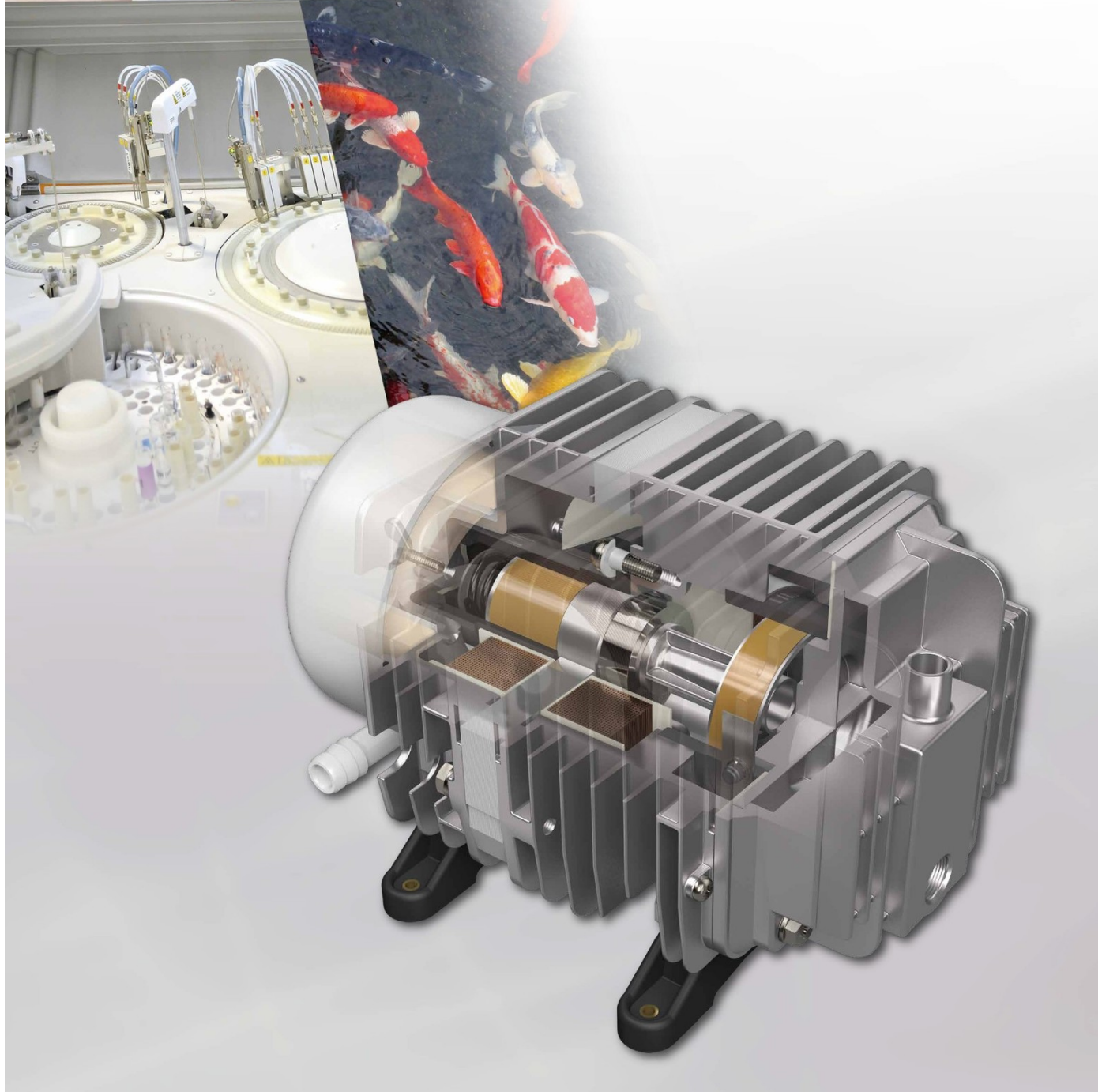




# AIR COMPRESSOR, VACUUM PUMP & LIQUID PUMP

GENERAL CATALOG



Our air compressors and vacuum pumps are unique products featuring a Linear-motor-driven Free Piston System. Nitto Kohki has made available a complete series of air compressors and vacuum pumps that incorporate this revolutionary mechanism. These are quite appropriate as air sources or vacuum units for various pneumatically operated equipment and apparatus in advanced industries.

### Linear-motor-driven Free Piston Mechanism

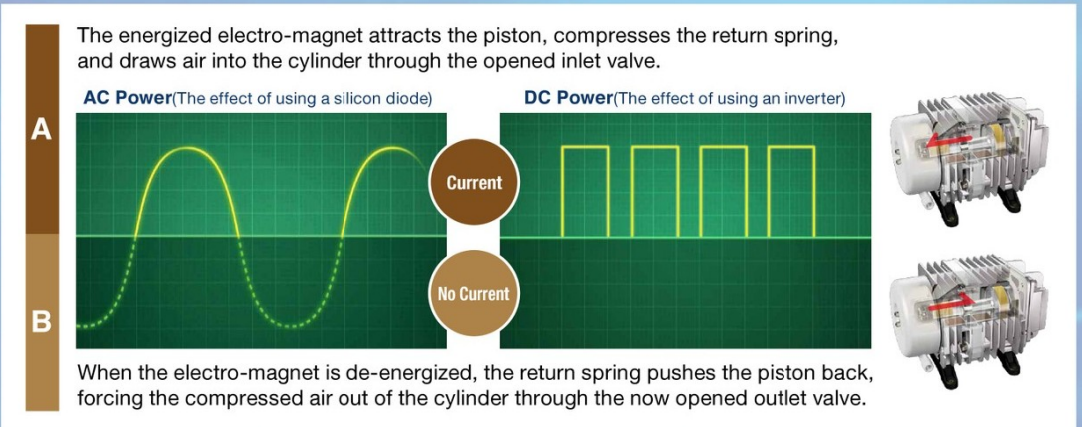
The Electro-magnet and return spring alternatively drive the piston inside the cylinder, the mechanical resonance of which is synchronized with the input current cycle. In a single mechanism, the piston combines the functions of two normally independent devices; the pump and the motor.



#### Operating Principle

\*1) Incorporated in AC models \*2) Incorporated in DC models

A silicon diode<sup>\*1</sup> in between the coils or inverter<sup>\*2</sup> 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.



Repeating the movements of A and B delivers the function of compressor or vacuum pump.





### 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.

### Self-cooling Design

Cool intake air passes over the coils to reduce and control the rise in the pump's 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.

### Overpressure Control Mechanism

Should the output pressure exceed the rated value, the piston will automatically adjust to a shorter stroke. Simultaneously, power consumption will automatically reduce to prevent the motor from failing or being burnt out.

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## Green Procurement

Nitto Kohki has made every effort in developing "Environmental Improvement Plans" through the implementation of ISO14001, to execute environmentally conscious business activities on a company-wide basis. As a part of our ongoing commitment to the environment, we are also committed to reduce and/or exclude restricted substances from our products as designated by RoHS directives, laws and regulations of chemical substances.



# Series Selection

## AC Linear Free Piston Compressor

Model	Rated Pressure		Max. Pressure		Rated Pressure & Max. Pressure		Rated Airflow		Page
	kPa	psig	kPa	psig	kPa	psig	L/min	cfm	
AC0102	20	2.84	40	5.69			5	0.177	11
AC0201A	10	1.42	20	2.84			20	0.71	12
AC0301A	10	1.42	30	4.27			28	0.99	13
AC0401A	10	1.42	35	4.98			35	1.24	14
AC0602	15	2.13	35	4.98			40	1.41	15
AC0901	10	1.42	40	5.69			80	2.83	16
AC0902	20	2.84	45	6.40			55	1.94	17
AC0105	50	7.11	80	11.4			2.5	0.088	18
AC0110	100	14.2	120	17.1			0.8	0.028	19
AC0207	70	9.96	100	14.2			3.5	0.124	20
AC0410A	100	14.2	130	18.5			5	0.177	21
AC0610/C0610A	100	14.2	150	21.3			8	0.283	22/101
AC0910	100	14.2	150	21.3			16	0.57	23
AC0920	200	28.4	300	42.7			8	0.283	24

## AC Linear Free Piston Vacuum Pump

Model	Attainable Vacuum		Attainable Vacuum		Free Air Displacement		Page	
	kPa	in.Hg	L/min	cfm	L/min	cfm		
VP0125	-33.3	-9.84	7	0.247			27	
VP0140	-53.3	-15.7	3	0.106			28	
VP0435A	-46.7	-13.8	25	0.88			29	
VP0450	-66.7	-19.7	18	0.64			30	
VP0625	-33.3	-9.84	40	1.41			31	
VP0660	-80	-23.6	25	0.88			32	
VP0925A	-33.3	-9.84	80	2.83			104	
VP0940	-53.3	-15.7	60	2.12			33	
VP0940T	-53.3	-15.7	120	4.24			34	
VP0645	-60	-17.7	10	0.35			102	
VP0945	-60	-17.7	12	0.42			103	
VP0660x2	Series	-93.3	-27.6	25	0.88			105
	Parallel	-80	-23.6	50	1.77			105

## DC Linear Free Piston Compressor

Model	Rated Pressure		Max. Pressure		Rated Pressure & Max. Pressure		Rated Airflow		Page
	kPa	psig	kPa	psig	kPa	psig	L/min	cfm	
DAH102-X1	20	2.84	50	7.11			5	0.177	37
DAH102-Y1	20	2.84	50	7.11			5	0.177	38
DAH105-X1	50	7.11	80	11.4			2.5	0.088	39
DAH105-Y1	50	7.11	80	11.4			2.5	0.088	40
DAH110-X1	100	14.2	120	17.1			1.0	0.035	41
DAH110-Y1	100	14.2	120	17.1			1.0	0.035	42

## DC Linear Free Piston Vacuum Pump

Model	Attainable Vacuum		Attainable Vacuum		Free Air Displacement		Page
	kPa	in.Hg	L/min	cfm	L/min	cfm	
DVH130-X1	-40	-11.8	7	0.247			45
DVH130-Y1	-40	-11.8	7	0.247			46
DVH145-X1	-60	-17.7	3	0.106			47
DVH145-Y1	-60	-17.7	3	0.106			48



AC Linear Diaphragm Pump (Blower Type)

Model	Rated Pressure		Max. Pressure		Rated Pressure & Max. Pressure				Rated Airflow		Page
	kPa	psig	kPa	psig	kPa	psig	kPa	psig	L/min	cfm	
VC0100	4	0.57	16	2.28	4	0.57	16	2.28	6	0.212	52
VC0101	10	1.42	20	2.84	10	1.42	20	2.84	10	0.35	54
VC0101E	10	1.42	20	2.84	10	1.42	20	2.84	15	0.53	108
VC0101S	5	0.71	26	3.70	5	0.71	26	3.70	15	0.53	55
VC0201B	10	1.42	18	2.56	10	1.42	18	2.56	20	0.71	57
VC0301B	10	1.42	20	2.84	10	1.42	20	2.84	25	0.88	59

AC Linear Diaphragm Pump (Dual Type)

Model	Attainable Vacuum	Attainable Vacuum		Rated Pressure		Max. Pressure		Rated Pressure & Max. Pressure				Rated Airflow	Page
		kPa	in.Hg	kPa	psig	kPa	psig	kPa	psig	kPa	psig		
VC0100	-14.7	-4.33	4	0.57	16	2.28	4	0.57	16	2.28	6	0.212	51
VC0101 120 V	-18.7	-5.51	10	1.42	18	2.56	10	1.42	18	2.56	10	0.35	53
VC0101 230 V	-10	-2.95	10	1.42	15	2.13	10	1.42	15	2.13	10	0.35	53
VC0101E	-18.7	-5.51	10	1.42	20	2.84	10	1.42	20	2.84	15	0.53	107
VC0101S	-24	-7.09	5	0.71	26	3.70	5	0.71	26	3.70	15	0.53	109
VC0201B	-18.7	-5.51	10	1.42	18	2.56	10	1.42	18	2.56	20	0.71	56
VC0301B	-21.3	-6.30	10	1.42	20	2.84	10	1.42	20	2.84	25	0.88	58
VCK0120 (Vacuum only)	-26.7	-7.87									18*	0.64*	106

\*Free Air Displacement

DC Liquid Pump

Model	Working Pressure Range		Working Pressure Range	Flow Rate	Flow Rate	Self-priming Pressure		Self-priming Pressure	Page
	kPa	psig				kPa	psig		
DPE-100	0 to 100	0 to 14.2	0 to 100	100	100	20	2.84	20	89
DPE-400	0 to 100	0 to 14.2	0 to 100	400	400	40	5.69	40	90
DPE-400BL	0 to 100	0 to 14.2	0 to 100	400	400	40	5.69	40	91
DPE-800	0 to 100	0 to 14.2	0 to 100	800	800	40	5.69	40	92

\*Test conditions: Water at 25 degrees C

**DC Linear Compressor and Vacuum Pump (Dual Type)**

Model	Attainable Vacuum	Attainable Vacuum		Max. Pressure		Max. Pressure	Free Air Displacement		Free Air Displacement	Page
		kPa	in.Hg	kPa	psig		L/min	cfm		
DP0125		-33.3	-9.84	30	4.27		2.5	0.088		71
DP0140		-53.3	-15.7	50	7.11		4	0.141		72
DP0102		-26.7	-7.87	45	6.40		5	0.177		73
DP0102S		-26.7	-7.87	45	6.40		7	0.247		74
DP0102H-X1		-50.7	-15.0	80	11.4		4	0.141		75
DP0110-X1		-66.7	-19.7	150	21.3		7.5	0.265		77
DP0110-Y1		-66.7	-19.7	150	21.3		7.5	0.265		78
DP0110-X3		-66.7	-19.7	150	21.3		7.5	0.265		79
DP0110T-X1		-60	-17.7	150	21.3		5.5	0.194		80
DP0110T-Y1		-60	-17.7	150	21.3		5.5	0.194		81
DP0210TA-Y1		-60	-17.7	150	21.3		10	0.35		82
DP0105-X1		-66.7	-19.7	250	35.6		2.8	0.099		61
DP0105-Y1		-66.7	-19.7	250	35.6		2.8	0.099		62

**DC Linear Compressor only**

Model	Attainable Vacuum	Attainable Vacuum		Max. Pressure		Max. Pressure	Free Air Displacement		Free Air Displacement	Page
		kPa	in.Hg	kPa	psig		L/min	cfm		
DP0102H-X2				80	11.4		4	0.141		76
DPA0105-X1				220	31.3		2.8	0.099		63
DPA0105-Y1				220	31.3		2.8	0.099		64
DP0410-X2				180	25.6		18	0.64		67
DP0410-Y2				180	25.6		18	0.64		68
DP0410T-Y2				150	21.3		34	1.2		70

**DC Vacuum Pump only**

Model	Attainable Vacuum	Attainable Vacuum		Max. Pressure		Max. Pressure	Free Air Displacement		Free Air Displacement	Page
		kPa	in.Hg	kPa	psig		L/min	cfm		
DP0410-X1		-77.3	-22.8				18	0.64		65
DP0410-Y1		-77.3	-22.8				18	0.64		66
DP0410T-X1		-77.3	-22.8				34	1.2		69



# Conversion Tables

## Pressure / Flow Rate / Vacuum

### Pressure

kPa	kgf/cm <sup>2</sup> (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
<b>100</b>	<b>1.0</b>	<b>14.2</b>
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
<b>7</b>	<b>0.07</b>	<b>1.00</b>
5	0.05	0.71
1	0.01	0.142
*	0	0

### Flow Rate

CFM	LPM	CFM	LPM
<b>0.035</b>	<b>1.00</b>	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
<b>1.00</b>	<b>28.32</b>	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
-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	-29.9

\* Gauge pressure  
 \*\* Absolute vacuum

### Pressure

from \ to	kPa	kgf/cm <sup>2</sup>	bar	psig
kPa	1	0.01	0.01	0.142
kgf/cm <sup>2</sup>	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

# Explanation of Technical Terms

Be sure to read the following "Explanation of Technical Terms" before selecting a model appropriate for your application.

## Application Examples and Applicable Fluids for Compressors and Vacuum Pumps

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

## For Compressors & Vacuum Pumps

**Rated performance:** The average total accumulated time over which the unit can be used without repair, except the maintenance of the filter. This indicates the expected time required for the rated air flow to fall to 80 % of the specification value. The actual life might vary depending on the actual operating and environmental conditions such as output pressure setting, maintenance schedule, ventilation, ambient temperature, duty cycle, etc.

**MTTF:** MTTF (Mean Time to Failure) is the average time that the product will function before it fails. However, this time is reference only and does not guarantee. Since MTTF depends on your actual operating environment and conditions, conduct performance evaluation test with an actual product prior to use.

**Rated voltage:** The two major types are 115 V AC/60 Hz and 230 V AC/50 Hz (excluding DC motors). While most models can be operated at both 50 Hz and 60 Hz with different performance characteristics, there are some models that are frequency specific.

**Duty cycle:** The period of operation under the condition that the coil temperature will not exceed the coil insulation class limit.

**Rated frequency:** In the case of AC drive pumps, the rated frequency will vary according to the model. While some are designed for only 50 Hz or for 60 Hz, some are designed for both 50 Hz and 60 Hz.

**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 "components" and are not classified as complete products or systems.

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

**Control method:** Be careful when controlling compressors and vacuum pumps with electronic components because the power factor depends upon the load.

**Outside & mounting dimensions:** Useful for assessing the required space for installation. Include sufficient space surrounding the pump when designing it into your application.

**Operating ambient temperature:** 0 to 40 °C

**Operating ambient humidity:** 30 to 85 % non-condensing

## Improvement Suggestion

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



### For Compressors

<b>Rated performance:</b>	This is the pressure point where you will get optimum capabilities for performance and service life and where the pump is designed to have almost the same airflow regardless of a rated frequency of 50 Hz or 60 Hz.
<b>Rated airflow:</b>	The discharge airflow volume at the rated pressure.
<b>Rated operation:</b>	Operating conditions regarding the rated pressure, rated voltage, and rated frequency.
<b>Maximum pressure:</b>	The highest obtainable pressure at which the pump is designed to operate while producing zero discharge airflow (not guaranteed; for reference only).
<b>Power consumption:</b>	The wattage during operation at the rated pressure.
<b>Electric current:</b>	The electric current during operation at the rated pressure (for reference only).
<b>Airflow characteristics:</b>	Discharge pressure-airflow curve (for reference only).
<b>Power consumption characteristics:</b>	Discharge pressure-power consumption curve (for reference only).

### For Vacuum Pumps

<b>Attainable vacuum :</b>	The highest vacuum the pump can attain with the pump inlet closed (except some of the exclusive models).
<b>Free air displacement:</b>	The airflow volume at zero vacuum (within three (3) minutes after starting).
<b>Power consumption:</b>	The maximum wattage on the power consumption curve when measured against vacuum levels up to the pumps attainable vacuum.
<b>Electric current:</b>	The maximum electric current on the current characteristics curve when measured against vacuum levels up to the pumps attainable vacuum. (for reference only).
<b>Airflow characteristics:</b>	Vacuum-airflow curve (for reference only).
<b>Power consumption characteristics:</b>	Vacuum-power consumption curve (for reference only).
<b>Exhaust characteristics:</b>	The time required to attain the respective vacuum in a 10 liter container (for reference only).

### For DC Pumps

<b>Operating ambient temperature:</b>	0 to 40 °C (5 to 50 °C for DP0105 only)
<b>Operating ambient humidity:</b>	30 to 85 % non-condensing

Start-up the pump at the same level as the atmospheric pressure (Similarly in the case of DPE series pumps)

### For Liquid Pumps

<b>Self-priming pressure:</b>	The power the pump requires to draw up 25 °C water. 1 kPa is equal to the power needed to draw up 25 °C water 10 cm.
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This catalog will give the guidelines needed to 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 that OEM customers confirm the required specifications in writing before placing orders.**

Experience gained in 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.

### The Key Design Features of the Linear-motor-driven Free Piston System

<p><b>Compact and Lightweight</b> With the motor and compressor combined into the single structure</p>  <p>With the piston as the only moving part, efficient space utilization 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.</p>	<p><b>Low Vibration</b> Using an ultra-lightweight piston</p>  <p>Reducing the moving parts to only the piston minimizes reactive force vibrations to the pump body. In addition, the secondary vibrations are isolated or absorbed through the anti-vibration rubber feet.</p>
<p><b>Low Noise Level</b> No transmission assemblies, means less noise</p>  <p>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.</p>	<p><b>Clean Operation – Clean Air</b> Due to oil-less construction</p>  <p>All wearing surfaces use no oil, grease or other contaminating lubricants. The combination of a precision fluoropolymer 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.</p>
<p><b>Low Power Consumption</b> Truly energy efficient through integrated design</p>  <p>Since the low mass piston is the only moving part, frictional losses are minimized, allowing lower starting and running current, and thus greater efficiency. Related benefits are realized through a lower rise in temperature, facilitating a longer operating life for the pump and the other components within your system.</p>	<p><b>Overload Protection Structure</b> Protects against burnout</p>  <p>As the pressure within the compressor increases, the piston stroke decreases. Along with this, electric current decreases. Thus a temporary overload will not cause a failure or the pump to burnout.</p>
<p><b>Minimal Pulsating Effect</b> Due to the ideal piston stroke</p>  <p>The piston's mechanical resonance speed is synchronized with the input power frequency regardless of the load, i.e., 3000 strokes at 50 Hz, and 3600 strokes at 60 Hz per minute. This high speed produces shorter pulses which translate into a smoother, more uniform and “linear” motion.</p>	<p><b>Instant Response</b> Enabling easy start-ups in frequent on-off short cycle applications</p>  <p>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.</p>
<p><b>Easy Maintenance</b> Only air filter and piston to change</p>  <p>The oil-less construction requires no lubrication. A simple mechanism containing the piston as the only moving part causes no failure or burning due to an overload and provides stable performance over a long period of time.</p>	<p><b>Longer Durability</b> Increased OEM value</p>  <p>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.</p>



**AC LINEAR**  
Free Piston Compressor

# AIR COMPRESSOR

Page

**AC series**  
Low pressure

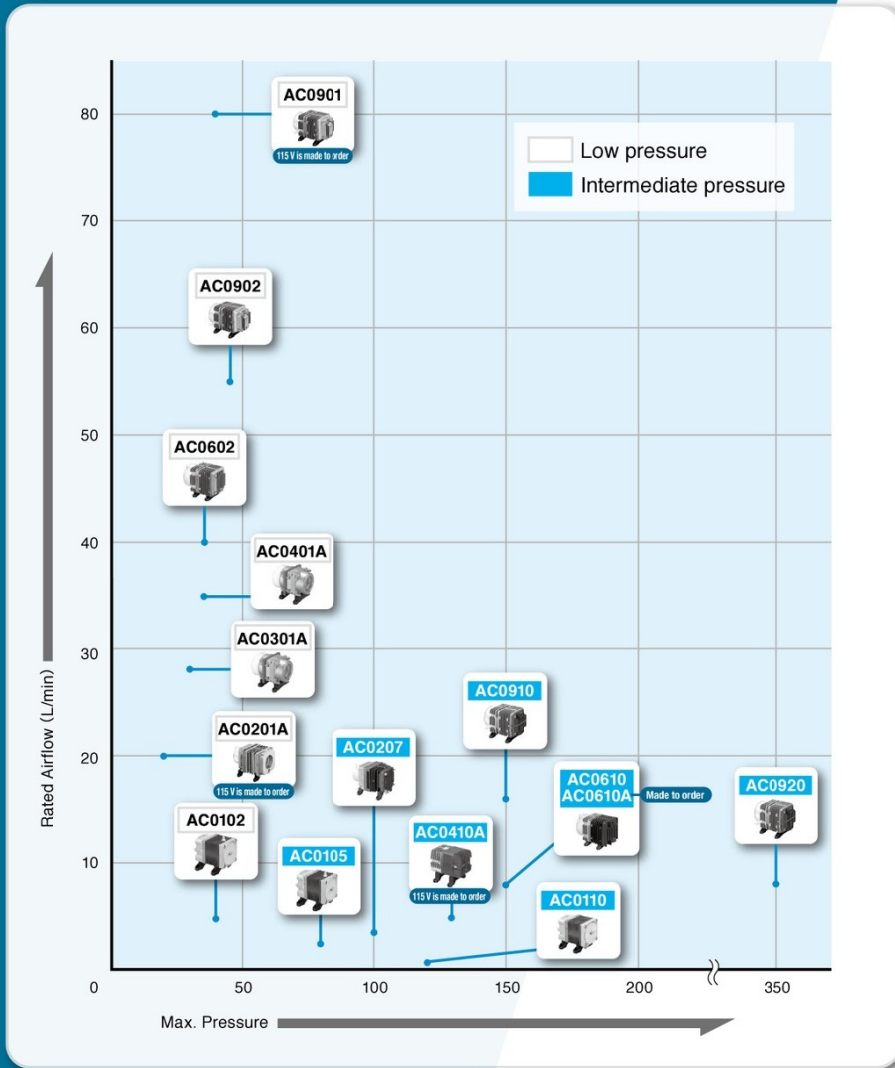
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Intermediate pressure

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- AC0110 — 19
- AC0207 — 20
- AC0410A — 21
- AC0610 — 22
- AC0910 — 23
- AC0920 — 24

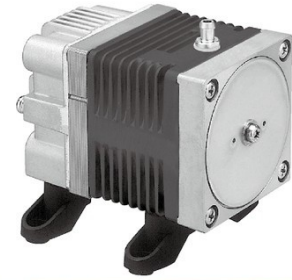
**Made to Order**

- AC0610A — 101

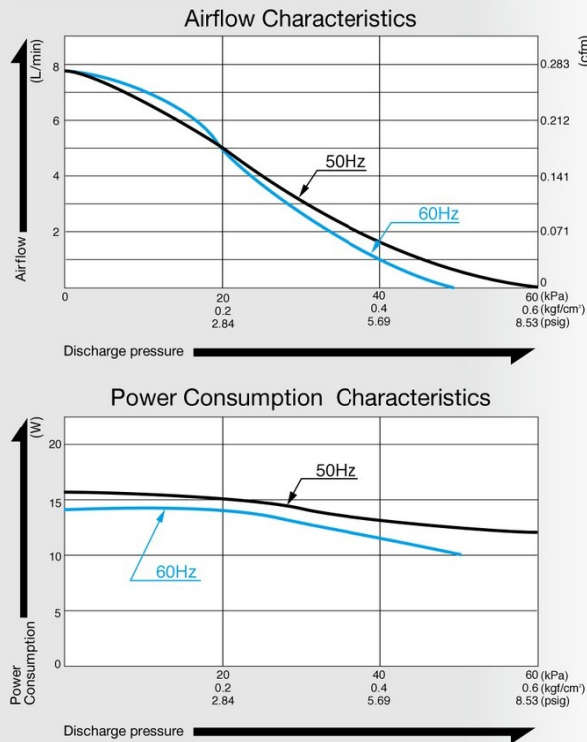


# Compressor

## Model AC0102



### Airflow & Power Consumption



### Specifications

Rated Pressure	20 kPa (0.2 kgf/cm <sup>2</sup> ) 0.2 bar 2.84 psig	
Rated Airflow	5 L/min 0.177 cfm	
Maximum Pressure	40 kPa (0.4 kgf/cm <sup>2</sup> ) 0.4 bar 5.69 psig	
Rated Voltage	115 V AC	230 V AC
Power Consumption	14 W	15 W
Rated Frequency	60 Hz	50 Hz
Rated Performance (MTTF)	10,000 hours	
Outlet	6 mm O.D. hose barb	
Duty Cycle	Continuous	
Coil Insulation Class	Class B for UL	
Mounting Dimensions	48 (L) x 62 (W) mm 1-57/64" (L) x 2-7/16" (W)	
Weight	0.7 kg 1.54 Lbs	
Leadwire Length	200 mm 7-7/8"	

### Application Examples

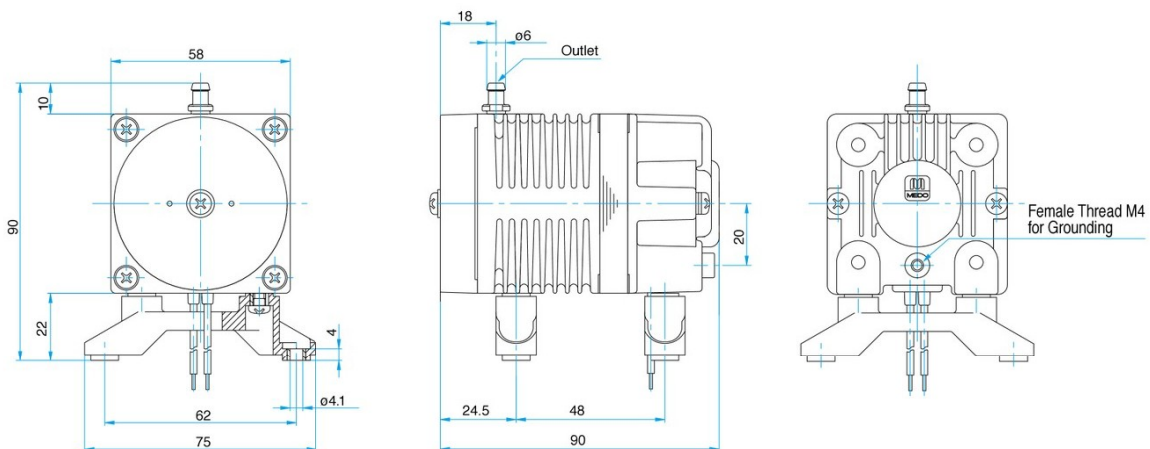
Dripping Machine



Blood Pressure Tester



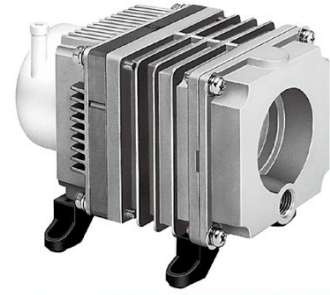
### Dimensional Outline Drawing (Unit: mm)



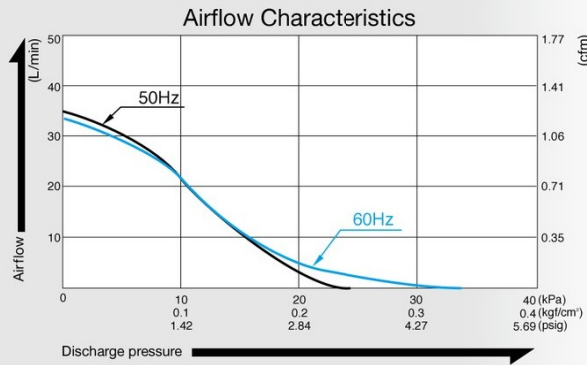
# Compressor

## Model **AC0201A**

115 V is made to order



### Airflow & Power Consumption



### Specifications

Rated Pressure	10 kPa (0.1 kgf/cm <sup>2</sup> ) 0.1 bar 1.42 psig	
Rated Airflow	20 L/min 0.71 cfm	
Maximum Pressure	20 kPa (0.2 kgf/cm <sup>2</sup> ) 0.2 bar 2.84 psig	
Rated Voltage	115 V AC	230 V AC
Power Consumption	19 W	23 W
Rated Frequency	60 Hz	50 Hz
Rated Performance	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)	
Weight	1.5 kg 3.3 Lbs	
Leadwire Length	200 mm 7-7/8"	

### Application Examples

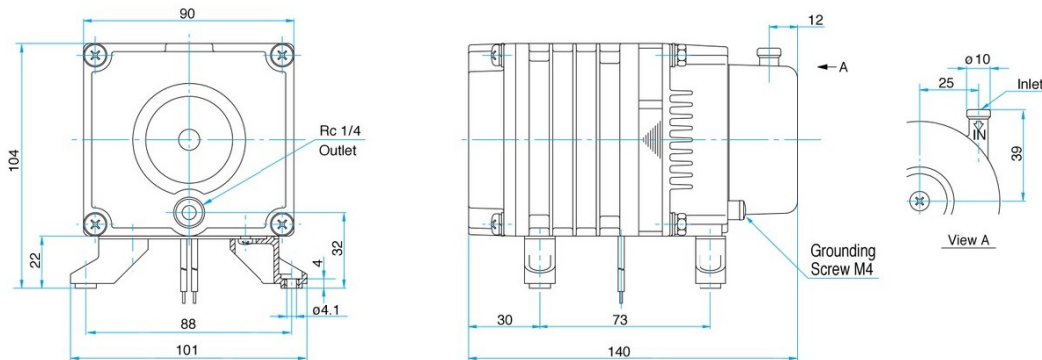
#### Seat Lifter



#### Bed Sore Prevention Mattress



### Dimensional Outline Drawing (Unit : mm)



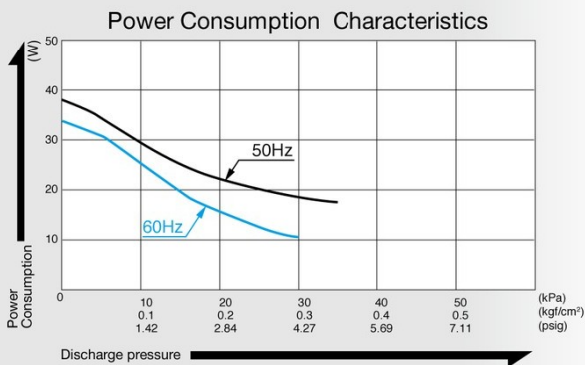
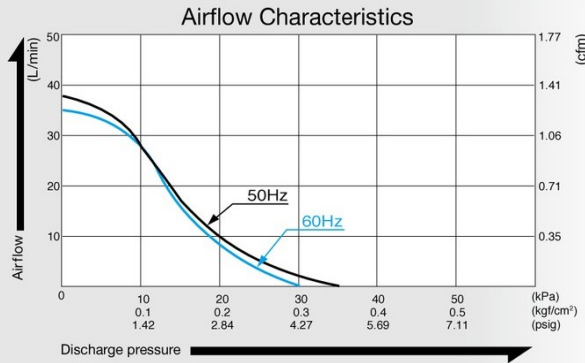


# Compressor

## Model **AC0301A**



### Airflow & Power Consumption



### Specifications

Rated Pressure	10 kPa (0.1 kgf/cm <sup>2</sup> ) 0.1 bar 1.42 psig	
Rated Airflow	28 L/min 0.99 cfm	
Maximum Pressure	30 kPa (0.3 kgf/cm <sup>2</sup> ) 0.3 bar 4.27 psig	
Rated Voltage	115 V AC	230 V AC
Power Consumption	25 W	29 W
Rated Frequency	60 Hz	50 Hz
Rated Performance	10,000 hours	
Outlet	ISO Rc 1/4	
Duty Cycle	Continuous	
Coil Insulation Class	E or its equivalent (JETL) and B for UL	
Mounting Dimensions	68 (L) x 84 (W) mm 2-43/64" (L) x 3-5/16" (W)	
Weight	1.9 kg 4.2 Lbs	
Leadwire Length	200 mm 7-7/8"	

### Application Examples

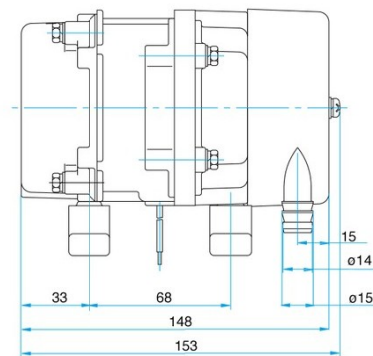
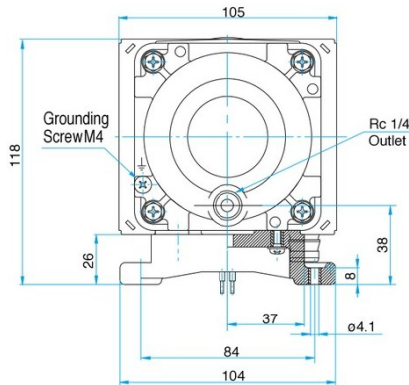
Liquid Mixer



Seat Lifter



### Dimensional Outline Drawing (Unit: mm)

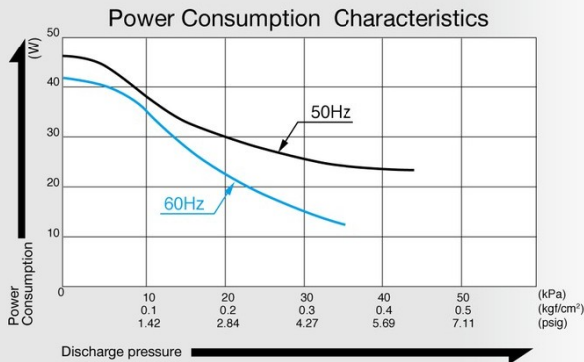
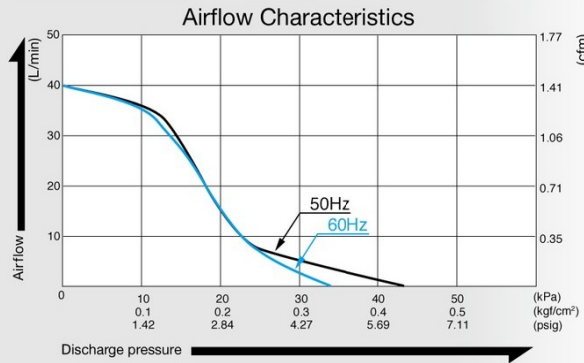


# Compressor

## Model **AC0401A**



### Airflow & Power Consumption



### Specifications

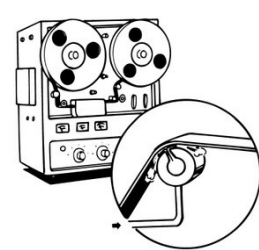
Rated Pressure	10 kPa (0.1 kgf/cm <sup>2</sup> ) 0.1 bar 1.42 psig	
Rated Airflow	35 L/min 1.24 cfm	
Maximum Pressure	35 kPa (0.35 kgf/cm <sup>2</sup> ) 0.35 bar 4.98 psig	
Rated Voltage	120 V AC	230 V AC
Power Consumption	35 W	38 W
Rated Frequency	60 Hz	50 Hz
Rated Performance	10,000 hours	
Outlet	ISO Rc 1/4	
Duty Cycle	Continuous	
Coil Insulation Class	E or its equivalent (JETL) and A for UL	
Mounting Dimensions	68 (L) x 84 (W) mm 2-43/64" (L) x 3-5/16" (W)	
Weight	1.9 kg 4.2 Lbs	
Leadwire Length	200 mm 7-7/8"	

### Application Examples

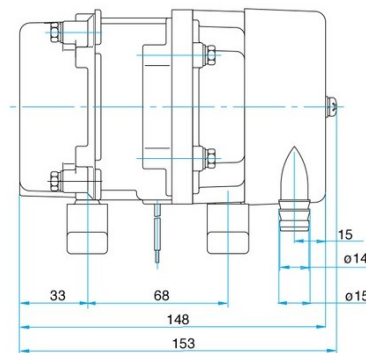
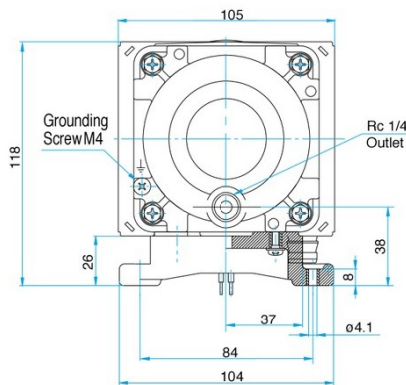
Liquid Mixer



Air Bearing



### Dimensional Outline Drawing (Unit: mm)

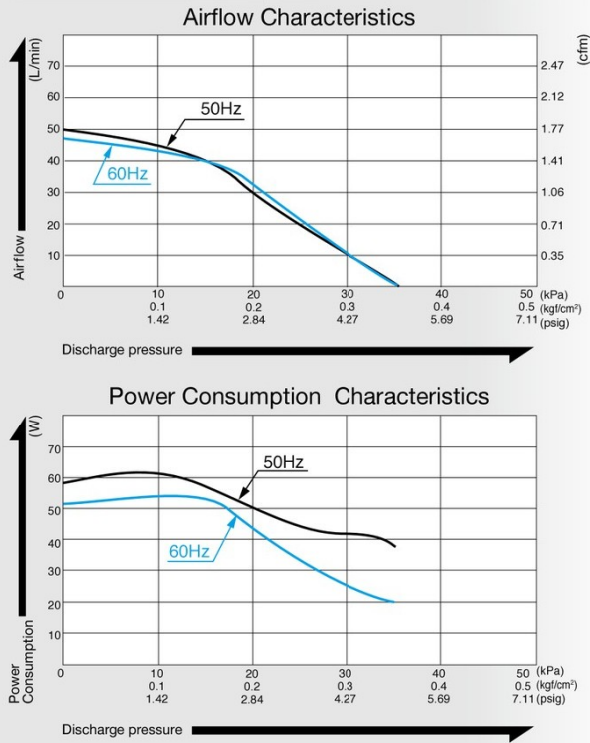


# Compressor

## Model AC0602



### Airflow & Power Consumption



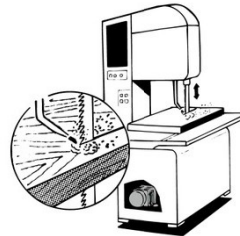
### Specifications

Rated Pressure	15 kPa (0.15 kgf/cm <sup>2</sup> ) 0.15 bar 2.13 psig	
Rated Airflow	40 L/min 1.41 cfm	
Maximum Pressure	35 kPa (0.35 kgf/cm <sup>2</sup> ) 0.35 bar 4.98 psig	
Rated Voltage	115 V AC	230 V AC
Power Consumption	52 W	58 W
Rated Frequency	60 Hz	50 Hz
Rated Performance	10,000 hours	
Outlet	ISO Rc 1/4	
Duty Cycle	Continuous	
Coil Insulation Class	E or its equivalent (JETL) and A for UL	
Mounting Dimensions	68 (L) x 84 (W) mm 2-43/64" (L) x 3-5/16" (W)	
Weight	3 kg 6.6 Lbs	
Leadwire Length	235 mm 9-1/4"	350 mm 13-25/32"

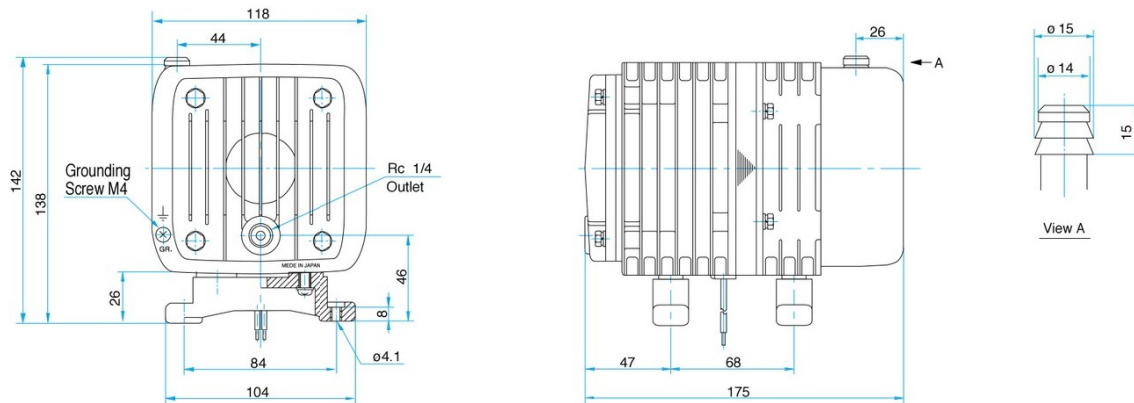
### Application Examples

Air Blaster for Bandsaw

Clean Room Ventilation



### Dimensional Outline Drawing (Unit: mm)

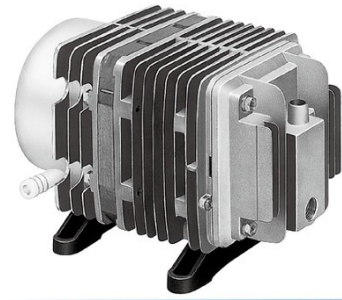




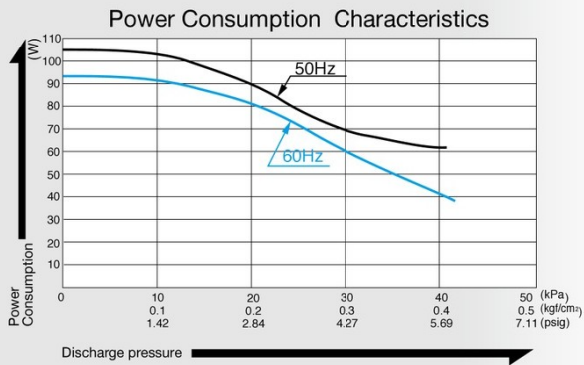
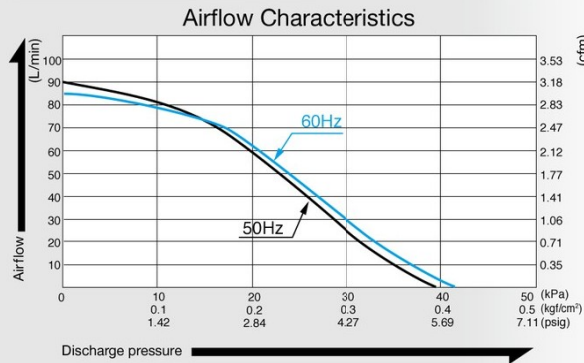
# Compressor

## Model AC0901

115 V is made to order



### Airflow & Power Consumption

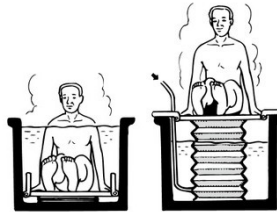


### Specifications

Rated Pressure	10 kPa (0.1 kgf/cm <sup>2</sup> ) 0.1 bar 1.42 psig	
Rated Airflow	80 L/min 2.83 cfm	
Maximum Pressure	40 kPa (0.4 kgf/cm <sup>2</sup> ) 0.4 bar 5.69 psig	
Rated Voltage	120 V AC	230 V AC
Power Consumption	88 W	99 W
Rated Frequency	60 Hz	50 Hz
Rated Performance	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 4-1/64" (L) x 5-1/8" (W)	
Weight	4.9 kg 10.8 Lbs	
Leadwire Length	300 mm 11-13/16"	

### Application Examples

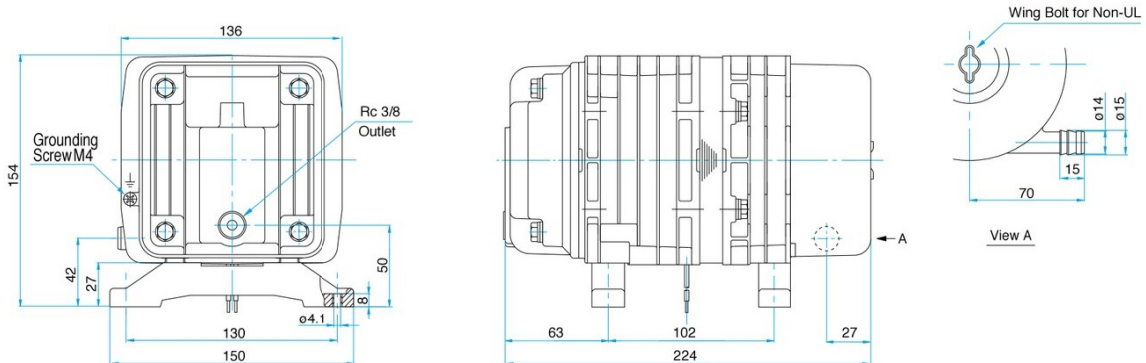
Air Lifter for Bathtub



Liquid Dispenser



### Dimensional Outline Drawing (Unit: mm)

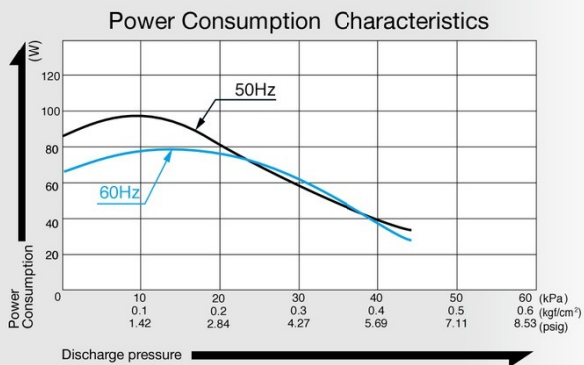
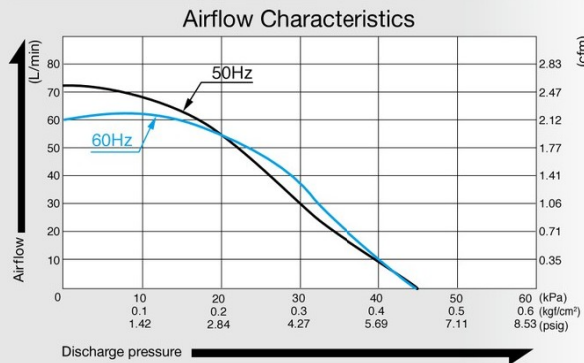


# Compressor

## Model AC0902



### Airflow & Power Consumption



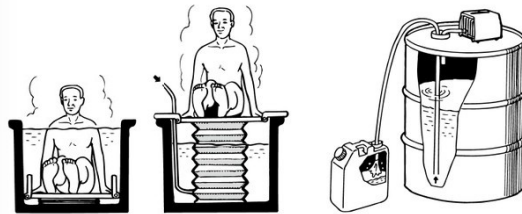
### Specifications

Rated Pressure	20 kPa (0.2 kgf/cm <sup>2</sup> ) 0.2 bar 2.84 psig	
Rated Airflow	55 L/min 1.94 cfm	
Maximum Pressure	45 kPa (0.45 kgf/cm <sup>2</sup> ) 0.45 bar 6.40 psig	
Rated Voltage	115 V AC	230 V AC
Power Consumption	75 W	85 W
Rated Frequency	60 Hz	50 Hz
Rated Performance	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 4-1/16" (L) x 5-1/8" (W)	
Weight	4.9 kg 10.8 Lbs	
Leadwire Length	300 mm 11-13/16"	320 mm 12-19/32"

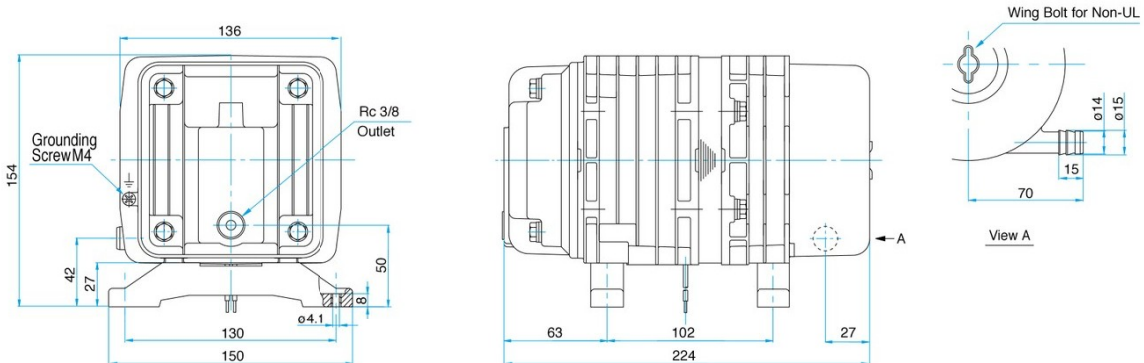
### Application Examples

Air Lifter for Bathtub

Liquid Dispenser

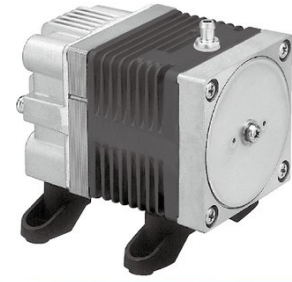


### Dimensional Outline Drawing (Unit: mm)

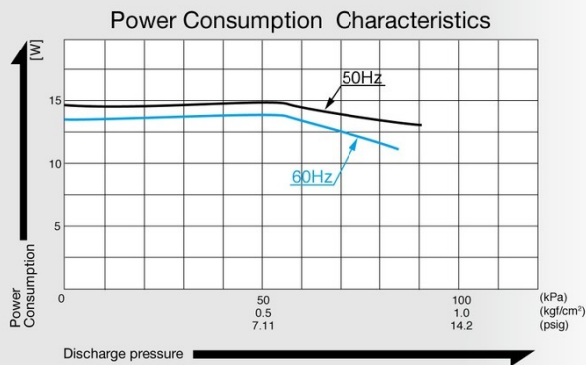
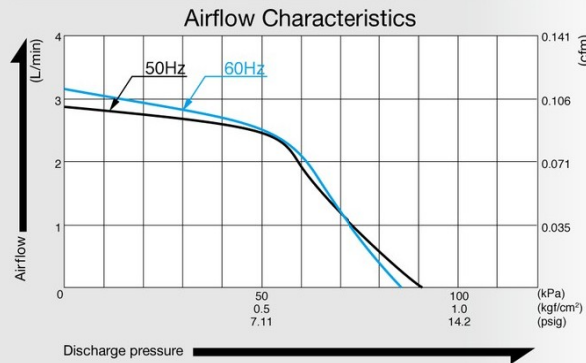


# Compressor

## Model AC0105



### Airflow & Power Consumption



### Specifications

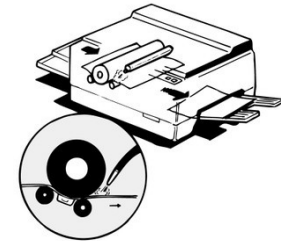
Rated Pressure	50 kPa (0.5 kgf/cm <sup>2</sup> ) 0.5 bar 7.11 psig	
Rated Airflow	2.5 L/min 0.088 cfm	
Maximum Pressure	80 kPa (0.8 kgf/cm <sup>2</sup> ) 0.8 bar 11.4 psig	
Rated Voltage	115 V AC	230 V AC
Power Consumption	14 W	15 W
Rated Frequency	60 Hz	50 Hz
Rated Performance (MTTF)	5,000 hours	
Outlet	6 mm O.D. hose barb	
Duty Cycle	60 minutes	
Coil Insulation Class	E or its equivalent (JETL) and B for UL	
Mounting Dimensions	48 (L) x 62 (W) mm 1-57/64" (L) x 2-7/16" (W)	
Weight	0.7 kg 1.54 Lbs	
Leadwire Length	200 mm 7-7/8"	

### Application Examples

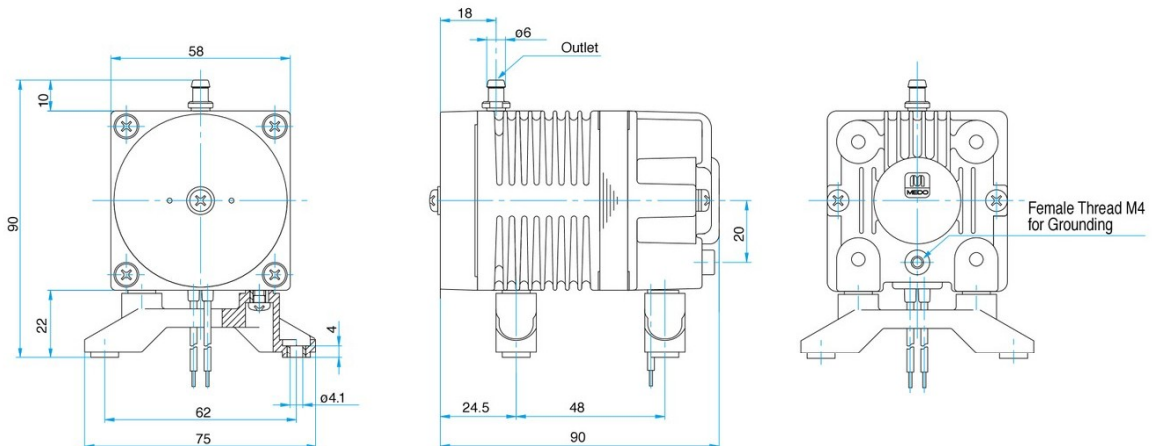
Saline Water Splasher



Copy Paper Separator



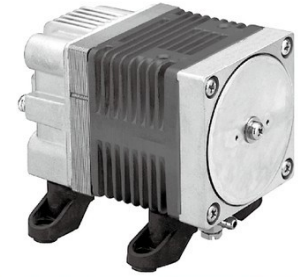
### Dimensional Outline Drawing (Unit : mm)



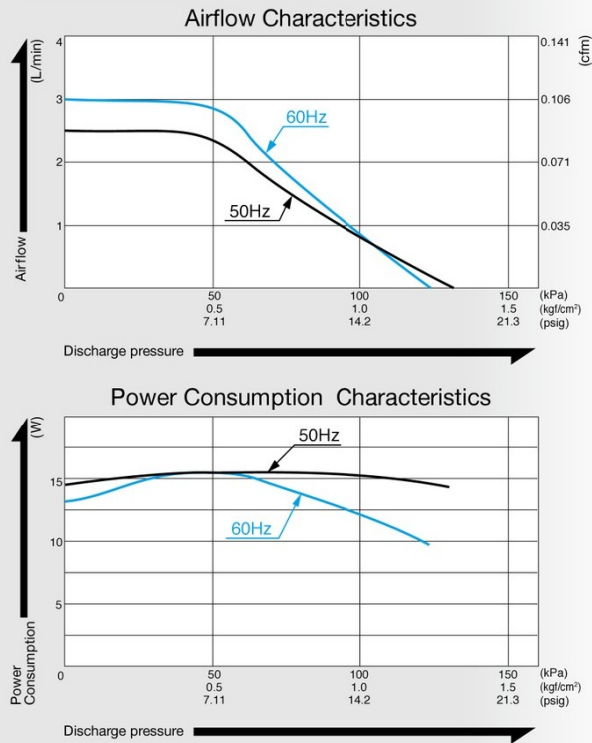


# Compressor

## Model AC0110



### Airflow & Power Consumption

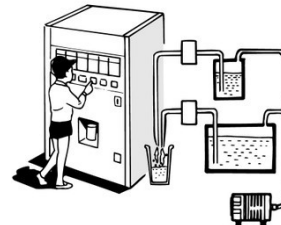


### Specifications

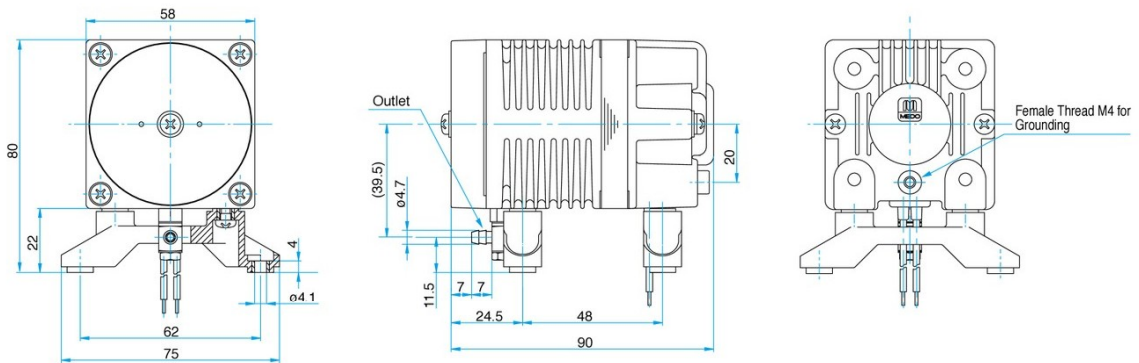
Rated Pressure	100 kPa (1.0 kgf/cm <sup>2</sup> ) 1.0 bar 14.2 psig	
Rated Airflow	0.8 L/min 0.028 cfm	
Maximum Pressure	120 kPa (1.2 kgf/cm <sup>2</sup> ) 1.2 bar 17.1 psig	
Rated Voltage	115 V AC	230 V AC
Power Consumption	12 W	15 W
Rated Frequency	60 Hz	50 Hz
Rated Performance (MTTF)	4,000 hours	
Outlet	6 mm O.D. hose barb	
Duty Cycle	30 minutes	
Coil Insulation Class	E or its equivalent (JETL) and B for UL	
Mounting Dimensions	48 (L) x 62 (W) mm 1-57/64" (L) x 2-7/16" (W)	
Weight	0.7 kg 1.54 Lbs	
Leadwire Length	200 mm 7-7/8"	

### Application Examples

#### Automatic Dispenser



### Dimensional Outline Drawing (Unit : mm)

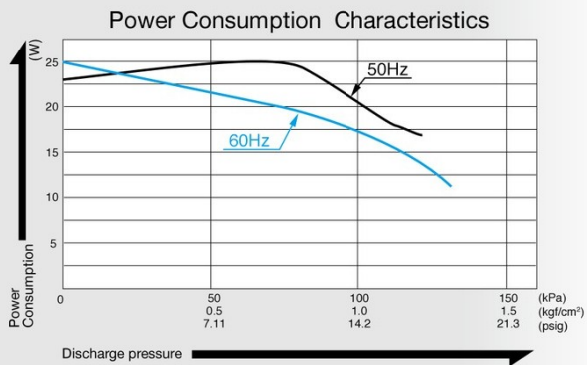
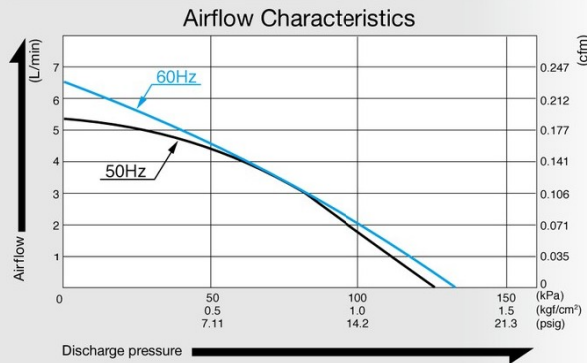


# Compressor

## Model ACO207



### Airflow & Power Consumption

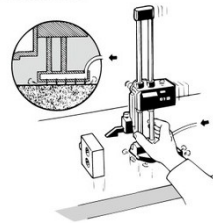


### Specifications

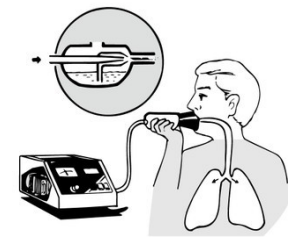
Rated Pressure	70 kPa (0.7 kgf/cm <sup>2</sup> ) 0.7 bar 9.96 psig	
Rated Airflow	3.5 L/min 0.124 cfm	
Maximum Pressure	100 kPa (1.0 kgf/cm <sup>2</sup> ) 1.0 bar 14.2 psig	
Rated Voltage	115 V AC	230 V AC
Power Consumption	20 W	25 W
Rated Frequency	60 Hz	50 Hz
Rated Performance	3,000 hours	
Outlet	4.7 mm O.D. hose barb	
Duty Cycle	Continuous	
Coil Insulation Class	E or its equivalent (JETL) and B for UL	
Mounting Dimensions	75 (L) x 88 (W) mm 2-61/64" (L) x 3-15/32" (W)	
Weight	1.7 kg 3.7 Lbs	
Leadwire Length	200 mm 7-7/8"	

### Application Examples

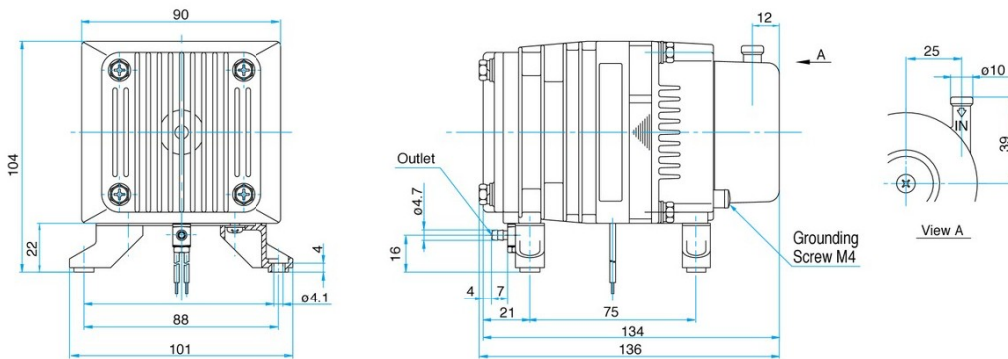
#### Air Bearing for Precision Machines



#### Nebulizer



### Dimensional Outline Drawing (Unit: mm)



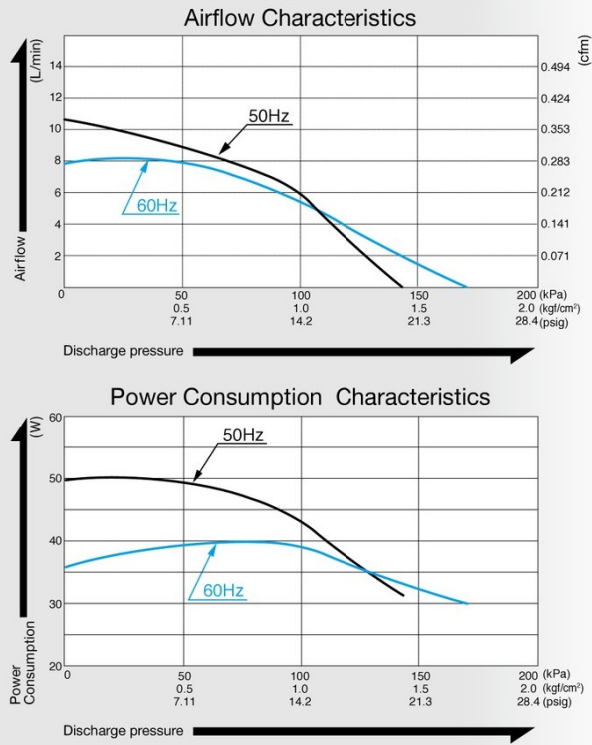
# Compressor

## Model **ACO410A**

115 V is made to order



### Airflow & Power Consumption

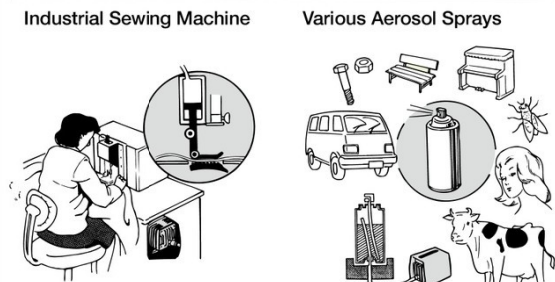


### Specifications

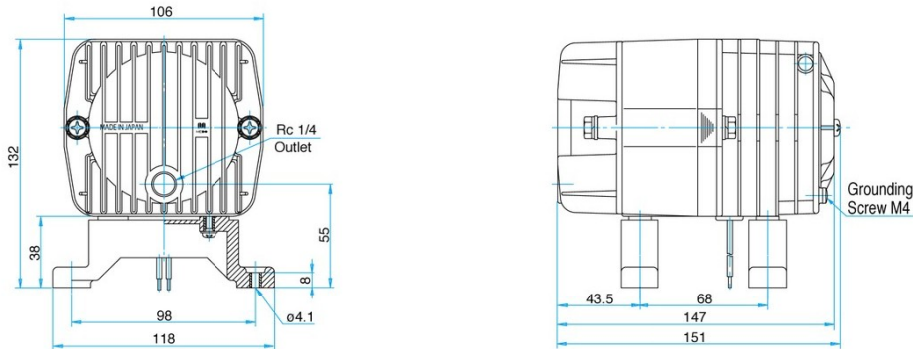
Rated Pressure	100 kPa (1.0 kgf/cm <sup>2</sup> ) 1.0 bar 14.2 psig	
Rated Airflow	5 L/min 0.177 cfm	
Maximum Pressure	130 kPa (1.3 kgf/cm <sup>2</sup> ) 1.3 bar 18.5 psig	
Rated Voltage	115 V AC *	230 V AC
Power Consumption	39 W	43 W
Rated Frequency	60 Hz	50 Hz
Rated Performance	3,000 hours	
Outlet	ISO Rc 1/4	
Duty Cycle	Continuous	
Coil Insulation Class	B or its equivalent (JETL)	
Mounting Dimensions	68 (L) x 98 (W) mm 2-43/64" (L) x 3-55/64" (W)	
Weight	2.1 kg 4.6 Lbs	
Leadwire Length	220 mm 8-21/32"	170 mm 6-11/16"

\*115 V is made to order.

### Application Examples



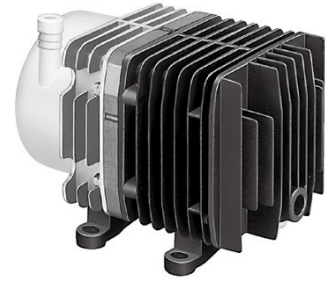
### Dimensional Outline Drawing (Unit: mm)



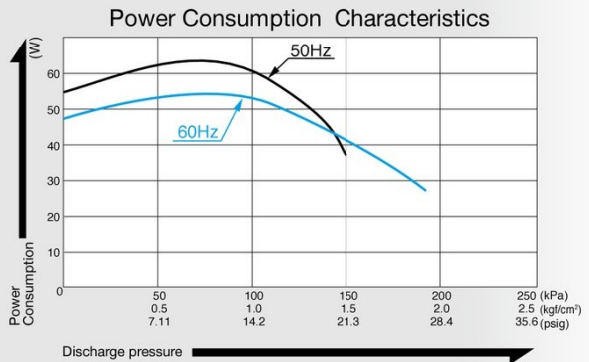
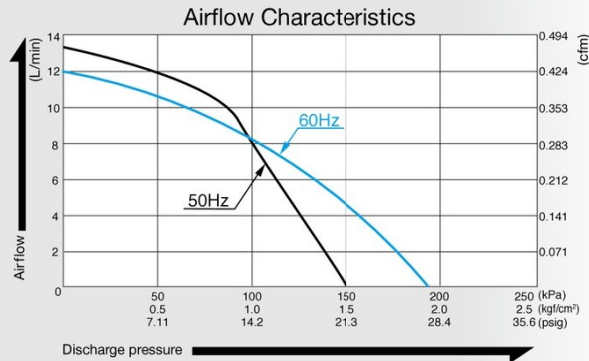


# Compressor

## Model AC0610



### Airflow & Power Consumption

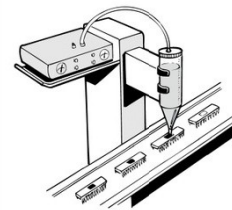


### Specifications

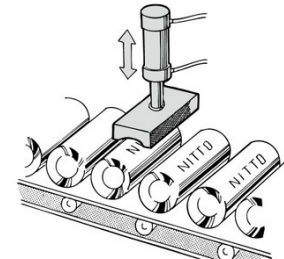
Rated Pressure	100 kPa (1.0 kgf/cm <sup>2</sup> ) 1.0 bar 14.2 psig	
Rated Airflow	8 L/min 0.283 cfm	
Maximum Pressure	150 kPa (1.5 kgf/cm <sup>2</sup> ) 1.5 bar 21.3 psig	
Rated Voltage	115 V AC	230 V AC
Power Consumption	52 W	60 W
Rated Frequency	60 Hz	50 Hz
Rated Performance	3,000 hours	
Outlet	ISO Rc 1/4	
Duty Cycle	Continuous	
Coil Insulation Class	E or its equivalent (JETL) and B for UL	
Mounting Dimensions	68 (L) x 84 (W) mm 2-43/64" (L) x 3-5/16" (W)	
Weight	3.2 kg 7.1 Lbs	
Leadwire Length	200 mm 7-7/8"	

### Application Examples

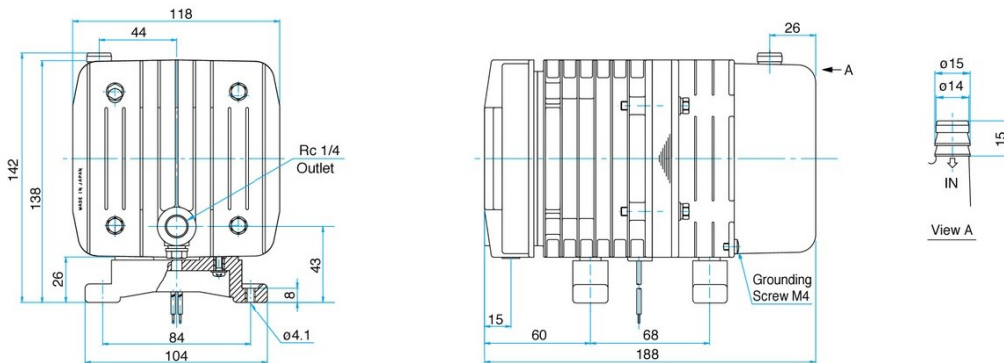
#### Dispenser



#### Automatic Stamper



### Dimensional Outline Drawing (Unit: mm)

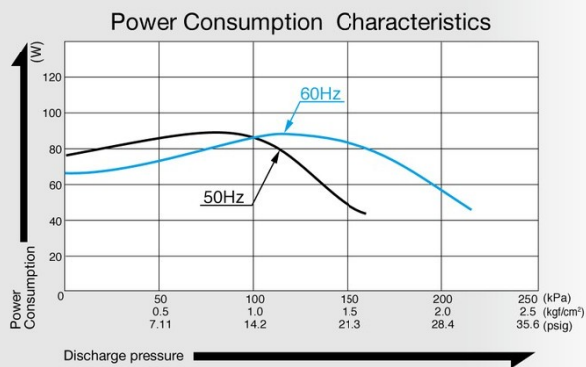
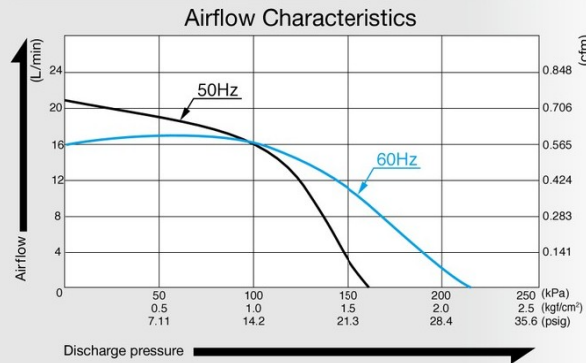


# Compressor

## Model AC0910



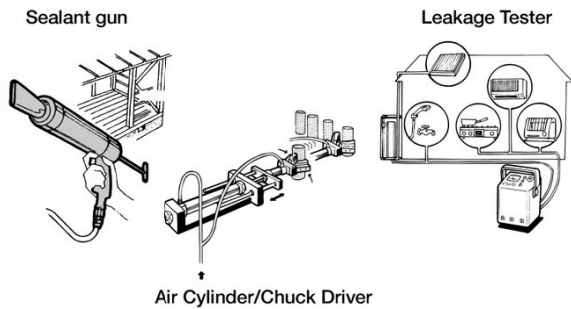
### Airflow & Power Consumption



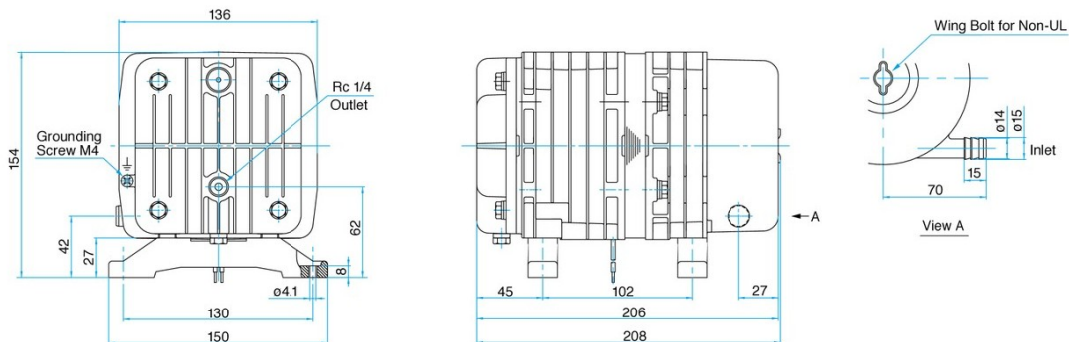
### Specifications

Rated Pressure	100 kPa (1.0 kgf/cm <sup>2</sup> ) 1.0 bar 14.2 psig	
Rated Airflow	16 L/min 0.57 cfm	
Maximum Pressure	150 kPa (1.5 kgf/cm <sup>2</sup> ) 1.5 bar 21.3 psig	
Rated Voltage	115 V AC	230 V AC
Power Consumption	85 W	90 W
Rated Frequency	60 Hz	50 Hz
Rated Performance	3,000 hours	
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 4-1/64" (L) x 5-1/8" (W)	
Weight	4.9 kg 10.8 Lbs	
Leadwire Length	300 mm 11-13/16"	320 mm 12-19/32"

### Application Examples



### Dimensional Outline Drawing (Unit: mm)

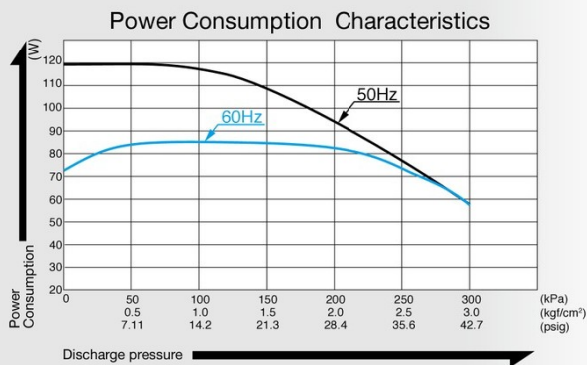
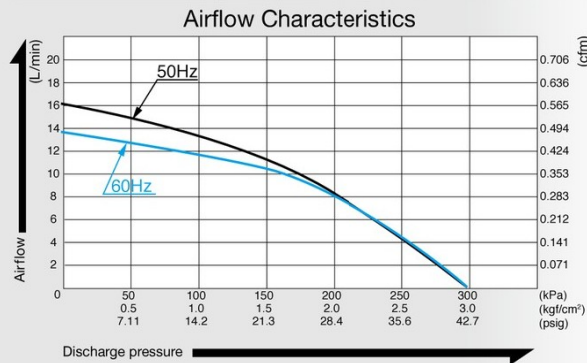


# Compressor

## Model AC0920



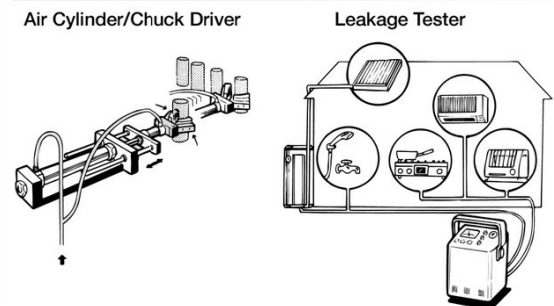
### Airflow & Power Consumption



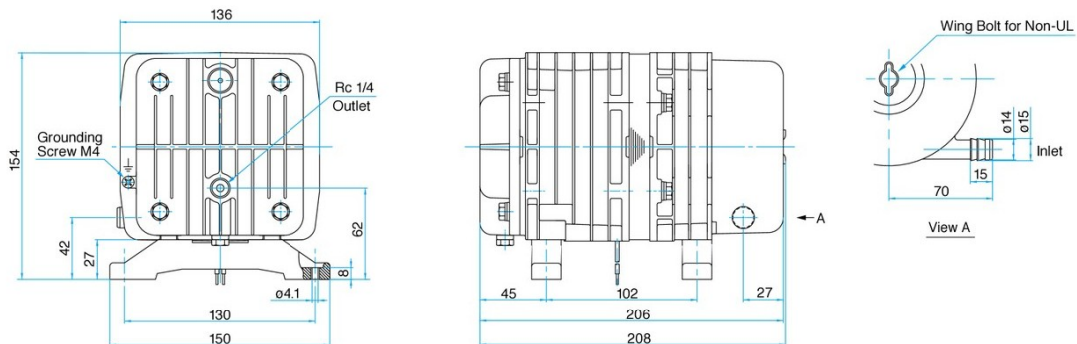
### Specifications

Rated Pressure	200 kPa (2.0 kgf/cm <sup>2</sup> ) 2.0 bar 28.4 psig	
Rated Airflow	8 L/min 0.283 cfm	
Maximum Pressure	300 kPa (3.0 kgf/cm <sup>2</sup> ) 3.0 bar 42.7 psig	
Rated Voltage	115 V AC	230 V AC
Power Consumption	81 W	100 W
Rated Frequency	60 Hz	50 Hz
Rated Performance	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 4-1/64" (L) x 5-1/8" (W)	
Weight	5 kg 11 Lbs	
Leadwire Length	300 mm 11-13/16"	150 mm 5-29/32"

### Application Examples



### Dimensional Outline Drawing (Unit: mm)







**AC LINEAR**  
Free Piston Vacuum Pump

# VACUUM PUMP

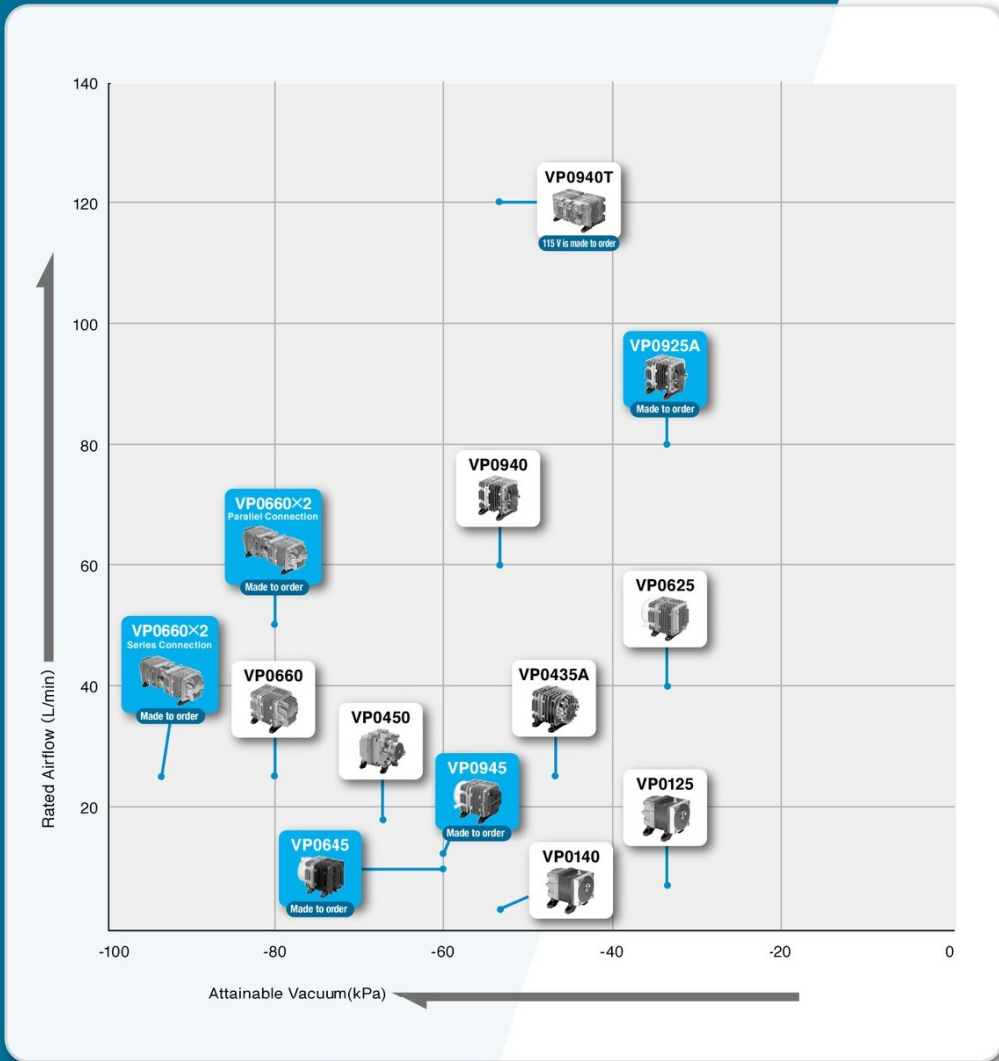
Page

**VP series**

VP0125	—	27
VP0140	—	28
VP0435A	—	29
VP0450	—	30
VP0625	—	31
VP0660	—	32
VP0940	—	33
VP0940T	—	34

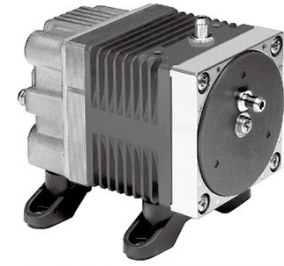
**Made to Order**

VP0645	—	102
VP0945	—	103
VP0925A	—	104
VP0660 x 2	—	105

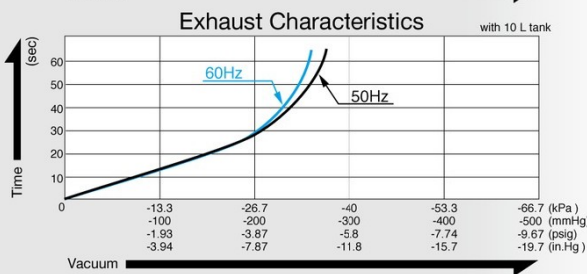
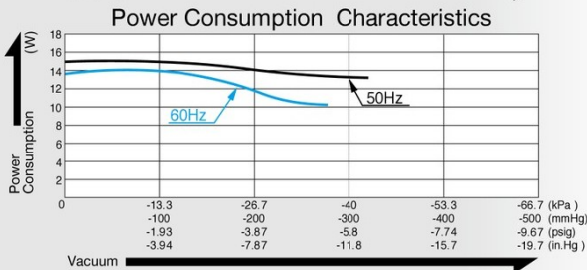
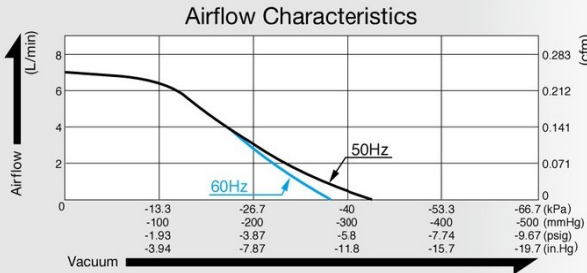


# Vacuum Pump

## Model VP0125



### Airflow & Power Consumption



### Specifications

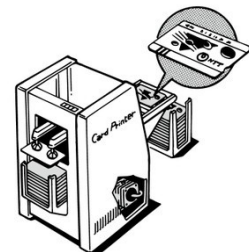
Attainable Vacuum	-33.3 kPa (-250 mmHg) -333 mbar -9.84 in. Hg	
Free Air Displacement	7 L/min 0.247 cfm	
Rated Voltage	115 V AC	230 V AC
Power Consumption	14 W	15 W
Rated Frequency	60 Hz	50 Hz
Rated Performance (MTTF)	10,000 hours	
Inlet	6 mm O.D. hose barb	
Outlet	6 mm O.D. hose barb	
Duty Cycle	Continuous	
Coil Insulation Class	Class B for UL	
Mounting Dimensions	48 (L) x 62 (W) mm 1-57/64" (L) x 2-7/16" (W)	
Weight	0.7 kg 1.54 Lbs	
Leadwire Length	200 mm 7-7/8"	

### Application Examples

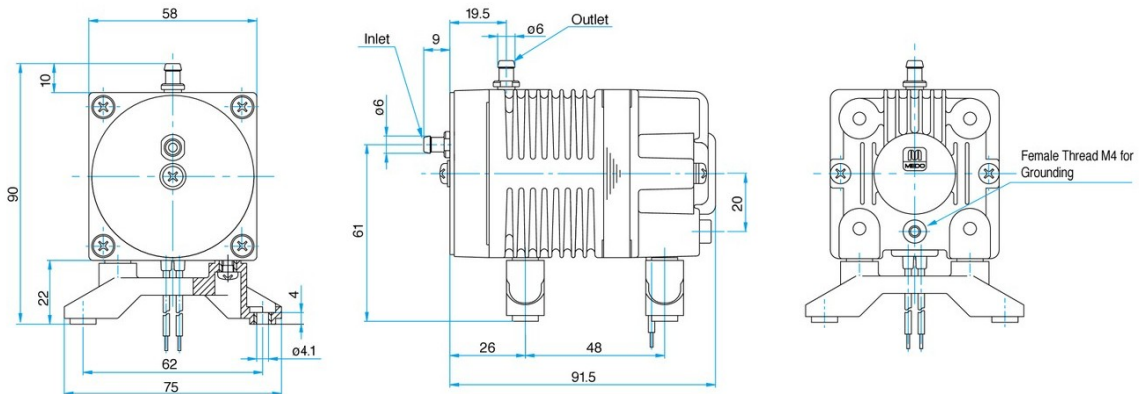
Dripping Machine



Paper Card Dispenser



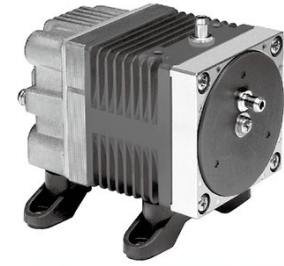
### Dimensional Outline Drawing (Unit: mm)



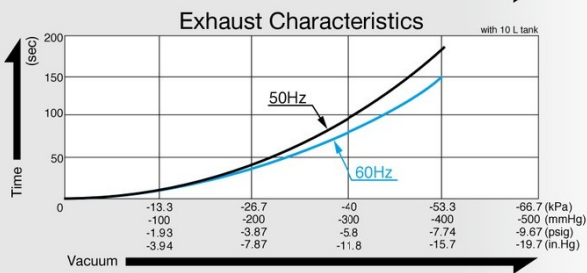
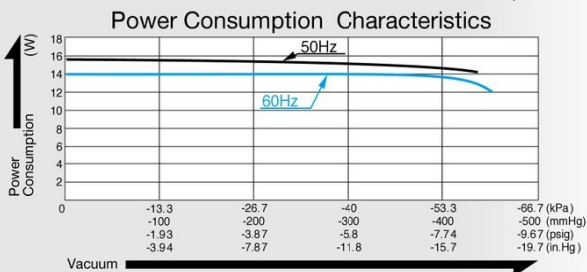
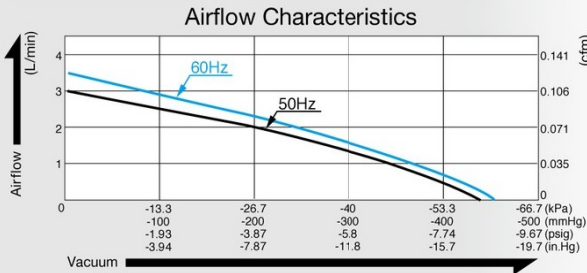


# Vacuum Pump

## Model VP0140



### Airflow & Power Consumption



### Specifications

Attainable Vacuum*	-53.3 kPa (-400 mmHg) -533 mbar -15.7 in. Hg	
Free Air Displacement	3 L/min 0.106 cfm	
Rated Voltage	115 V AC	230 V AC
Power Consumption	14 W	15 W
Rated Frequency	60 Hz	50 Hz
Rated Performance (MTTF)	5,000 hours	
Inlet	6 mm O.D. hose barb	
Outlet	6 mm O.D. hose barb	
Duty Cycle	60 minutes	
Coil Insulation Class	E or its equivalent (JETL) and B for UL	
Mounting Dimensions	48 (L) x 62 (W) mm 1-57/64" (L) x 2-7/16" (W)	
Weight	0.7 kg 1.54 Lbs	
Leadwire Length	200 mm 7-7/8"	

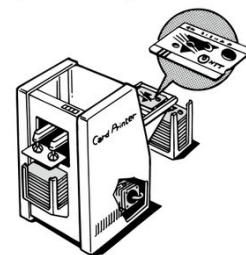
\*Operations at higher than -53.5kPa need an additional leak valve or relief valve on the inlet piping.

### Application Examples

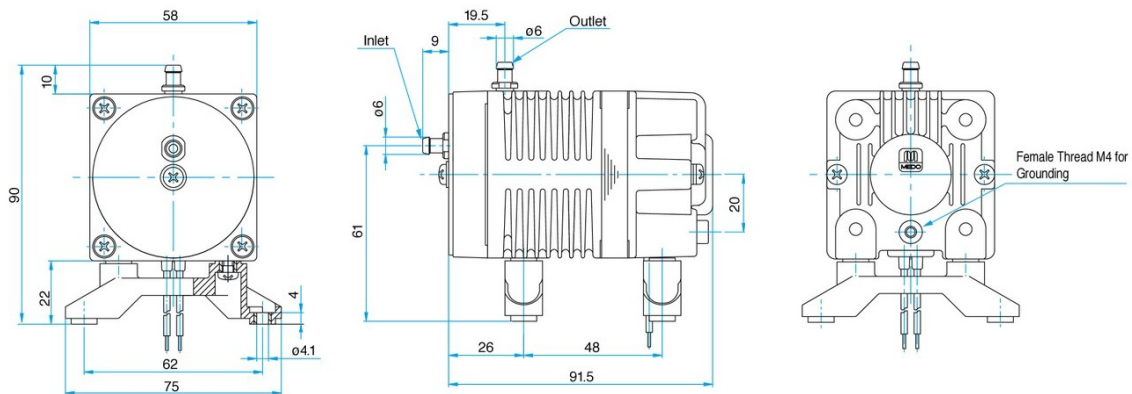
Dripping Machine



Paper Card Dispenser



### Dimensional Outline Drawing (Unit : mm)

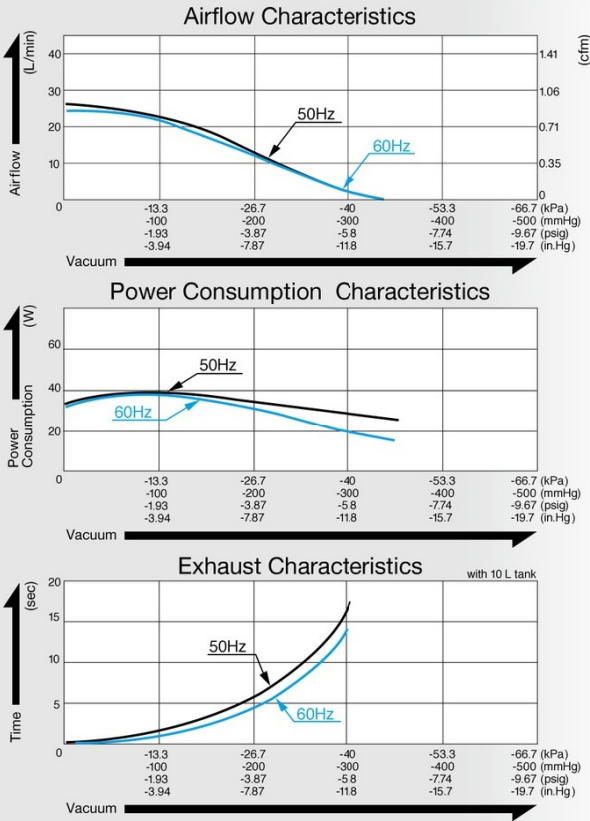


# Vacuum Pump

## Model VP0435A



### Airflow & Power Consumption



### Specifications

Attainable Vacuum	-46.7 kPa (-350 mmHg) -467 mbar -13.8 in. Hg	
Free Air Displacement	25 L/min 0.88 cfm	
Rated Voltage	115 V AC	230 V AC
Power Consumption	39 W	
Rated Frequency	60 Hz	50 Hz
Rated Performance	3,000 hours	
Inlet	15mm O.D. hose barb	
Outlet	ISO Rc 1/4	
Duty Cycle	Continuous	
Coil Insulation Class	B or its equivalent (JETL) and B for UL	
Mounting Dimensions	68 (L) x 84 (W) mm 2-43/64" (L) x 3-5/16" (W)	
Weight	2.3 kg 5.1 Lbs	
Leadwire Length	300 mm 11-13/16"	550 mm 21-21/32"

### Application Examples

#### Machine Screw Feeder



#### Air Sampler



### Dimensional Outline Drawing (Unit : mm)

