

# **AIR COMPRESSORS, VACUUM PUMPS & LIQUID PUMPS**

GENERAL CATALOG



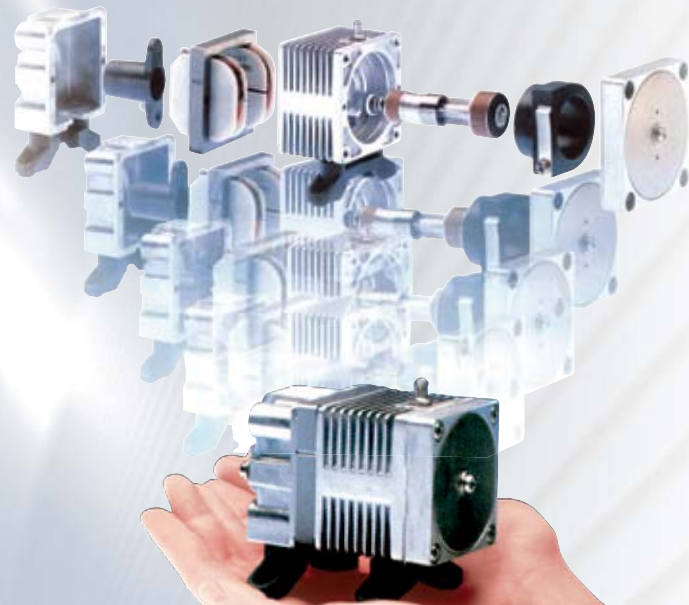
# Contents

	Page
Linear-motor-driven Free Piston Mechanism	1
The Key Design Features of the Linear-motor-driven Free Piston System	3
How to Use This Catalog	4
Series Selection	5
Conversion Tables	7
Safety Guide	111

Linear Free Piston	<b>AC Linear Free Piston Compressor</b> AC0102 / AC0201A / AC0301A / AC0401A / AC0602 / AC0901 / AC0902 AC0105 / AC0110 / AC0207 / AC0410A / AC0610A / AC0910 / AC0920	8
	<b>AC Linear Free Piston Vacuum Pump</b> VP0125 / VP0140 / VP0435A / VP0450 / VP0625 / VP0660 / VP0925A / VP0940 / VP0940T / VP0645 / VP0945 / VP0660 x 2	24
	<b>DC Linear Free Piston Compressor</b> DAH102-X1 / DAH102-Y1 / DAH105-X1 / DAH105-Y1 / DAH110-X1 / DAH110-Y1	38
	<b>DC Linear Free Piston Vacuum Pump</b> DVH130-X1 / DVH130-Y1 / DVH145-X1 / DVH145-Y1	46
Diaphragm	<b>AC Linear Diaphragm Pump</b> Dual & Blower Type: VC0100 / VC0101 / VC0101E / VC0101S / VC0201 / VC0301 / VC0201B / VC0301B Vacuum Pump: VCK0120	52
DC Motor	<b>DC Diaphragm Pump</b> <b>DC Piston Pump</b> DP0125 / DP0140 / DP0102 / DP0102S / DP0102H-X1 / DP0102H-X2 / DP0105-X1 / DP0105-Y1 / DPA0105-X1 / DPA0105-Y1 / DP0110-X1 / DP0110-Y1 / DP0110-X3 / DP0110T-X1 / DP0110T-Y1 / DP0210T-X1 / DP0210T-Y1 / DP0410-X1 / DP0410-Y1 / DP0410-X2 / DP0410-Y2	70
Liquid Pump	<b>Piezoelectric Pump</b> BPS / BPH / BPF Type	92
	<b>DC Diaphragm Liquid Pump</b> DPE-100 / DPE-400 / DPE-400BL / DPE-800	
	<b>AC Linear Free Piston Blower</b> LA-28B / LA-45C / LA-60B / LA-80B / LA-60ECO / LA-80ECO / LA-100A / LA-120A / LAM-150 / LAM-200	102
	<b>Linicon (Vacuum Pump)</b> LV-125A and Vacuum Pen Assembly	108
	<b>"Cuplas" Quick Connect Couplings</b>	110

# LINEAR MOTOR

## DRIVEN FREE PISTON



*The Linear-motor-driven Free future product designs but also systems. Compact, quiet, and Free Piston Pump will enhance extend its operating life.*



## 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.



### Performance Specifications and Suggested Control Limits

The numeric data suggested in performance charts and external dimensions in this catalog do not include tolerances allowed in mass production, but do indicate average values to serve as technical suggestions for your appropriate selection and operation of the pumps.

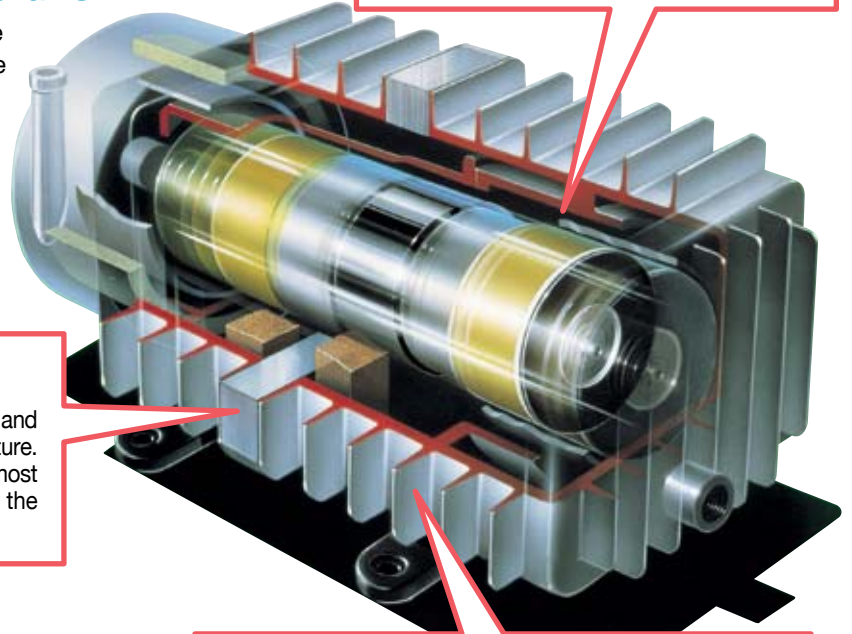
Our air compressors and vacuum pumps are unique products featuring a Linear-motor-driven Free Piston System. Nitto Kohki has made available a complete series of air compressors and vacuum pumps that incorporate this revolutionary mechanism. These are quite appropriate as air sources or vacuum units for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

## 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.

## 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.



## 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.

*Piston System is not only ideal for for upgrading next-generation vibration free, the extremely reliable your system performance and*

## Easy Maintenance

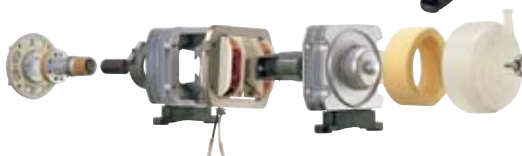
Replacement of piston can be easily performed by simply removing the screws holding the head cover in place. The completely oil-less construction is achieved by the combination of smooth Teflon seals against abrasion on sliding piston surfaces and "air bearing effect" created by the unique air path design.



\*Please receive technical guidance from Nitto Kohki before replacing the piston.

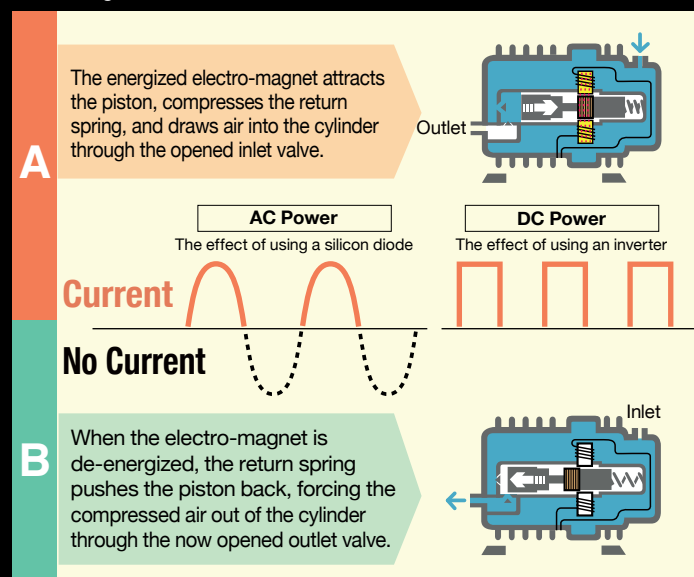
## Fewer Components

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 mean fewer problems.



## Operating Principle

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.

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

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



### Compact and Lightweight with the motor and compressor combined into the single structure

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.



### Low Vibration Using an ultra-lightweight piston

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.



### 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.



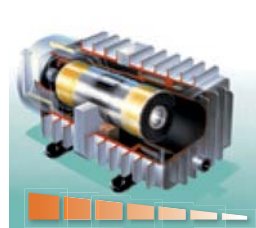
### Clean Operation – Clean Air Due to oil-less construction

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.



### Low Power Consumption Truly energy efficient through integrated design

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.



### Overload Protection Structure protects against burnout

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.



### Minimal Pulsating Effect due to the ideal piston stroke

The piston's mechanical resonance speed is synchronized 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.



### 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.



### Easy Maintenance Only air filter and piston to change

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.



### 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.

# How to Use This Catalog

This catalog is designed to help you in selecting the most appropriate product for your specific application. The INDEXES on page 1, 2, and 3 show the corresponding pages to 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. Be sure to read the following “Explanation of Technical Terms” before selecting a model appropriate for your application.

## Explanation of Technical Terms

### For Compressors

<b>Rated pressure:</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 50Hz or 60Hz.
<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>Current:</b>	The electric current during operation at the rated pressure (for reference only).
<b>Duty cycle:</b>	The period of operation under the condition that the coil temperature will not exceed the coil insulation class limit.
<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>Maximum 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>Duty cycle:</b>	The period of operation under the condition that the coil temperature will not exceed the coil insulation class limit.
<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)	

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

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

### For Compressors & Vacuum Pumps

<b>Rated performance:</b>	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.
<b>Rated voltage:</b>	The two major types are 115V AC/60Hz and 230V AC/50Hz (excluding DC motors). While most models can be operated at both 50Hz and 60Hz with different performance characteristics, there are some models that are frequency specific.
<b>Rated frequency:</b>	In the case of AC drive pumps, the rated frequency will vary according to the model. While some are designed for only 50Hz or for 60Hz, some are designed for both 50Hz and 60Hz.
<b>Coil insulations:</b>	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.
<b>Control method:</b>	Be careful when controlling compressors and vacuum pumps with electronic components because the power factor depends upon the load.

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

<b>Outside &amp; mounting dimensions:</b>	Useful for assessing the required space for installation. Include sufficient space surrounding the pump when designing it into your application.
<b>Operating ambient temperature:</b>	0 to 40°C
<b>Operating ambient humidity:</b>	30 to 85% non-condensing

### For Liquid Pumps

<b>Self-priming power:</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.
----------------------------	--

### 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.

This catalogue 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.**

# Series Selection

## AC Linear Free Piston Compressor

Model	Rated Pressure		Max. Pressure		Rated Pressure & Max. Pressure	Rated Airflow		Rated Airflow	Page
	kPa	psig	kPa	psig		L/min	cfm		
AC0102	20	2.84	40	5.69		5	0.177		9
AC0201A	10	1.42	20	2.84		20	0.71		10
AC0301A	10	1.42	30	4.27		28	0.99		11
AC0401A	10	1.42	35	4.98		35	1.24		12
AC0602	15	2.13	35	4.98		40	1.41		13
AC0901	10	1.42	40	5.69		80	2.83		14
AC0902	20	2.84	45	6.40		55	1.94		15
AC0105	50	7.11	80	11.4		2.5	0.088		16
AC0110	100	14.2	120	17.1		0.8	0.028		17
AC0207	70	9.96	100	14.2		3.5	0.124		18
AC0410A	100	14.2	130	18.5		5	0.177		19
AC0610A	100	14.2	150	21.3		8	0.283		20
AC0910	100	14.2	150	21.3		16	0.57		21
AC0920	200	28.4	300	42.7		8	0.283		22

## AC Linear Free Piston Vacuum Pump

Model	Attainable Vacuum	Attainable Vacuum		Free Air Displacement		Free Air Displacement	Page	
		kPa	in.Hg	L/min	cfm			
VP0125		-33.3	-9.84	7	0.247		25	
VP0140		-53.3	-15.7	3	0.106		26	
VP0435A		-46.7	-13.8	25	0.88		27	
VP0450		-66.7	-19.7	18	0.64		28	
VP0625		-33.3	-9.84	40	1.41		29	
VP0660		-80	-23.6	25	0.88		30	
VP0925A		-33.3	-9.84	80	2.83		31	
VP0940		-53.3	-15.7	60	2.12		32	
VP0940T		-53.3	-15.7	120	4.24		33	
VP0645		-60	-17.7	10	0.35		34	
VP0945		-60	-17.7	12	0.42		35	
VP0660x2	Series		-93.3	-27.6	25	0.88		36
	Parallel		-80	-23.6	50	1.77		36

## DC Linear Free Piston Compressor

Model	Rated Pressure		Max. Pressure		Rated Pressure & Max. Pressure	Rated Airflow		Rated Airflow	Page
	kPa	psig	kPa	psig		L/min	cfm		
DAH102-X1	20	2.84	50	7.11		5	0.177		39
DAH102-Y1	20	2.84	50	7.11		5	0.177		40
DAH105-X1	50	7.11	80	11.4		2.5	0.088		41
DAH105-Y1	50	7.11	80	11.4		2.5	0.088		42
DAH110-X1	100	14.2	120	17.1		1.0	0.035		43
DAH110-Y1	100	14.2	120	17.1		1.0	0.035		44

## DC Linear Free Piston Vacuum Pump

Model	Attainable Vacuum	Attainable Vacuum		Free Air Displacement		Free Air Displacement	Page
		kPa	in.Hg	L/min	cfm		
DVH130-X1		-40	-11.8	7	0.247		47
DVH130-Y1		-40	-11.8	7	0.247		48
DVH145-X1		-60	-17.7	3	0.106		49
DVH145-Y1		-60	-17.7	3	0.106		50

### AC Linear Diaphragm Pump (Blower Type)

Model	Rated Pressure		Max. Pressure		Rated Pressure & Max. Pressure				Rated Airflow		Page
	kPa	psig	kPa	psig					L/min	cfm	
VC0100	4	0.57	16	2.28					6	0.212	54
VC0101	10	1.42	20	2.84					10	0.35	56
VC0101E	10	1.42	20	2.84					15	0.53	58
VC0101S	5	0.71	26	3.70					15	0.53	60
VC0201	10	1.42	18	2.56					20	0.71	62
VC0301	10	1.42	20	2.84					25	0.88	64
VC0201B	10	1.42	18	2.56					20	0.71	66
VC0301B	10	1.42	20	2.84					25	0.88	68

0 50 100 150 200 250 300(kPa)      0 20 40 60 80 100 120(L/min)

### 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					L/min	cfm	
VC0100		-14.7	-4.33	4	0.57	16	2.28					6	0.212	53
VC0101		-18.7	-5.51	10	1.42	18	2.56					10	0.35	55
VC0101		-10	-2.95	10	1.42	15	2.13					10	0.35	55
VC0101E		-18.7	-5.51	10	1.42	20	2.84					15	0.53	57
VC0101S		-24	-7.09	5	0.71	26	3.70					15	0.53	59
VC0201		-18.7	-5.51	10	1.42	18	2.56					20	0.71	61
VC0201B		-18.7	-5.51	10	1.42	18	2.56					20	0.71	65
VC0301		-21.3	-6.30	10	1.42	20	2.84					25	0.88	63
VC0301B		-21.3	-6.30	10	1.42	20	2.84					25	0.88	67
VCK0120 (Vacuum only)		-26.7	-7.87									18*	0.64*	69

(kPa)-80 -60 -40 -20 0      0 50 100 150 (kPa)      0 20 40 60(L/min)

\*Free Air Displacement

### DC Compressor and Vacuum Pump

Model	Attainable Vacuum	Attainable Vacuum		Max. Pressure		Max. Pressure				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	81
DP0110-Y1		-66.7	-19.7	150	21.3					7.5	0.265	82
DP0110-X3		-66.7	-19.7	150	21.3					7.5	0.265	83
DP0110T-X1		-60	-17.7	150	21.3					5.5	0.194	84
DP0110T-Y1		-60	-17.7	150	21.3					5.5	0.194	85
DP210T-X1		-60	-17.7	150	21.3					10	0.35	86
DP210T-Y1		-60	-17.7	150	21.3					10	0.35	87
DP0105-X1		-66.7	-19.7	250	35.6					2.8	0.099	77
DP0105-Y1		-66.7	-19.7	250	35.6					2.8	0.099	78
DP0102H-X2 (Compressor only)				80	11.4					4	0.141	76
DPA0105-X1 (Compressor only)				220	31.3					2.8	0.099	79
DPA0105-Y1 (Compressor only)				220	31.3					2.8	0.099	80
DP0410-X2 (Compressor only)				180	25.6					18	0.64	90
DP0410-Y2 (Compressor only)				180	25.6					18	0.64	91
DP0410-X1 (Vacuum only)		-77.3	-22.8							18	0.64	88
DP0410-Y1 (Vacuum only)		-77.3	-22.8							18	0.64	89

(kPa)-80 -60 -40 -20 0      0 50 100 150 200 250 (kPa)      0 20 40 60(L/min)

# 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	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	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

### 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

\* Gauge pressure  
\*\* Absolute vacuum



# AIR COMPRESSOR

## AC LINEAR

Free Piston Compressor

Page

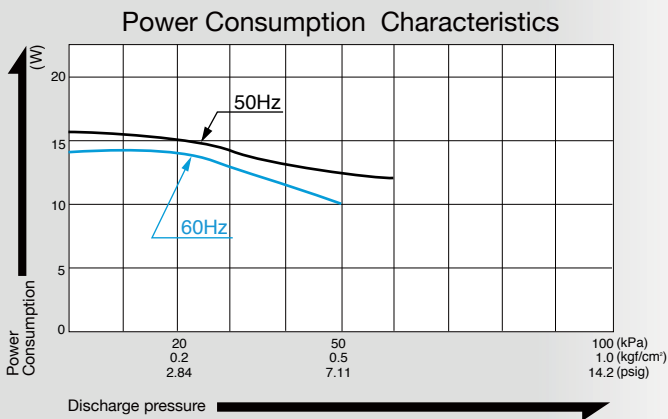
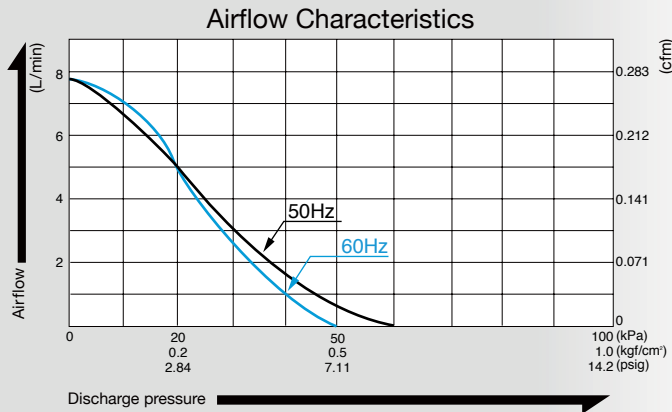
AC0102	—	9
AC0201A	—	10
AC0301A	—	11
AC0401A	—	12
AC0602	—	13
AC0901	—	14
AC0902	—	15
AC0105	—	16
AC0110	—	17
AC0207	—	18
AC0410A	—	19
AC0610A	—	20
AC0910	—	21
AC0920	—	22

# Compressor

## Model AC0102



### Airflow & Power Consumption



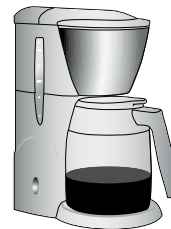
### Specifications

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	3,000 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"	

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

### Application Examples

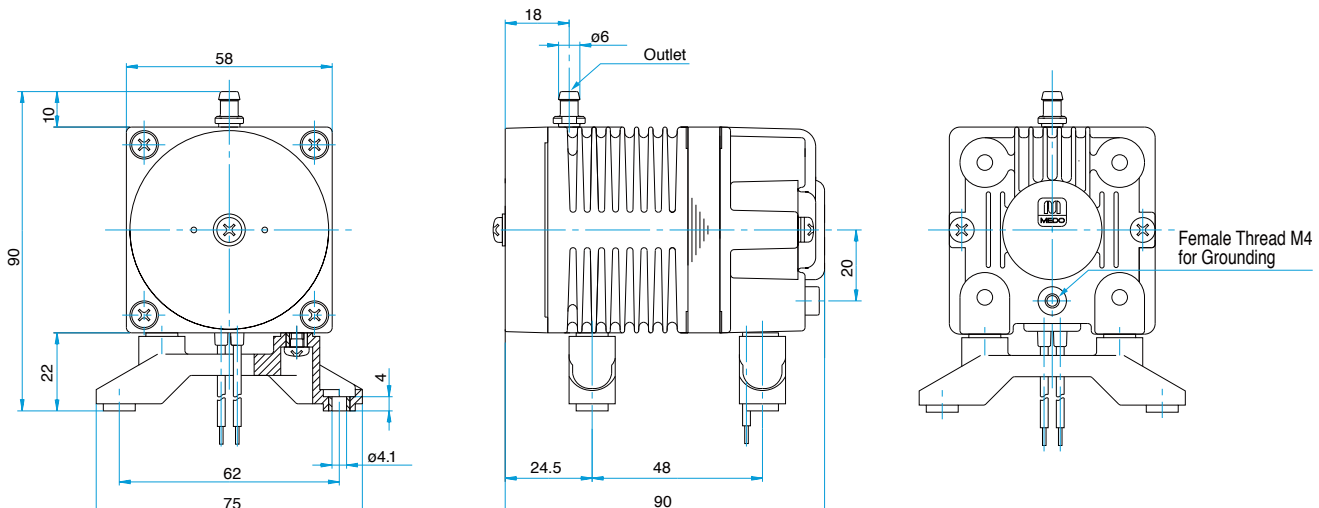
#### Dripping Machine



#### Blood Pressure Tester



### Dimensional Outline Drawing (Unit: mm)

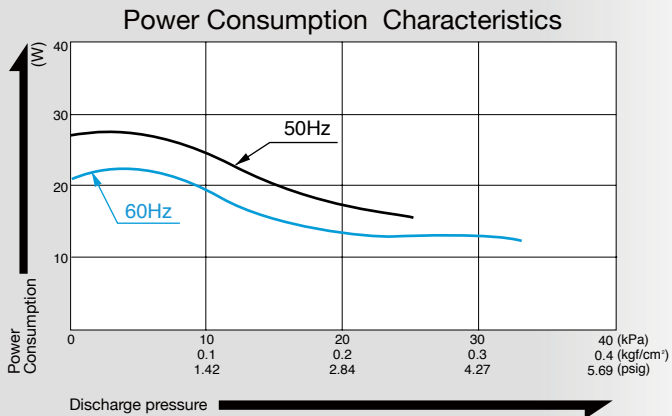
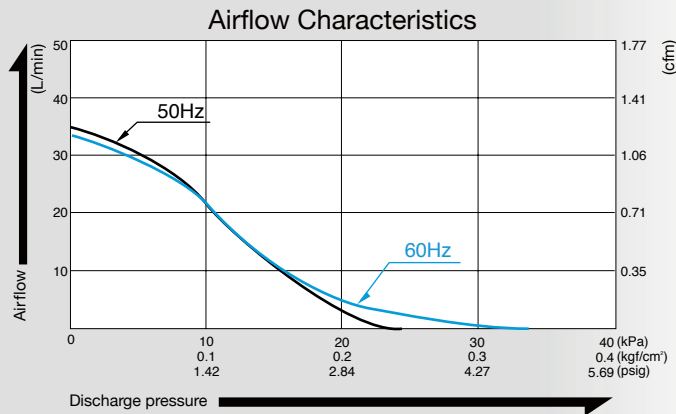


# Compressor

## Model **AC0201A**



### Airflow & Power Consumption



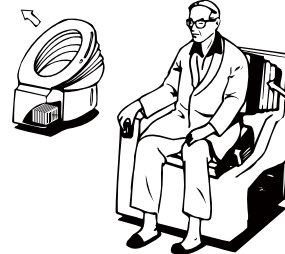
### Specifications

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"	

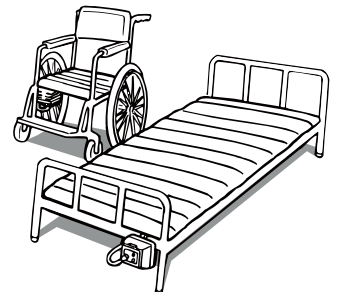
Please read the page of "How to Use This Catalog" first for correct use of compressors and pumps.

### Application Examples

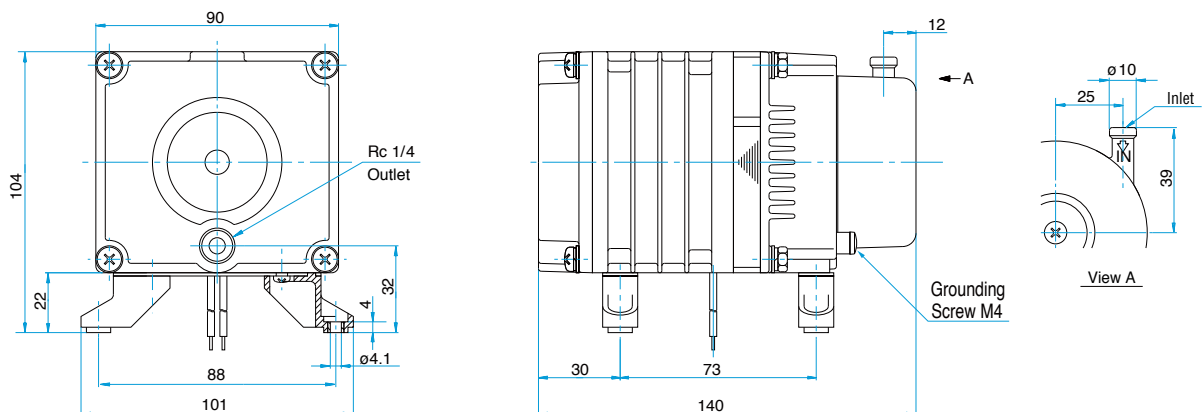
#### Seat Lifter



#### Bed Sore Prevention Mattress



### Dimensional Outline Drawing (Unit: mm)

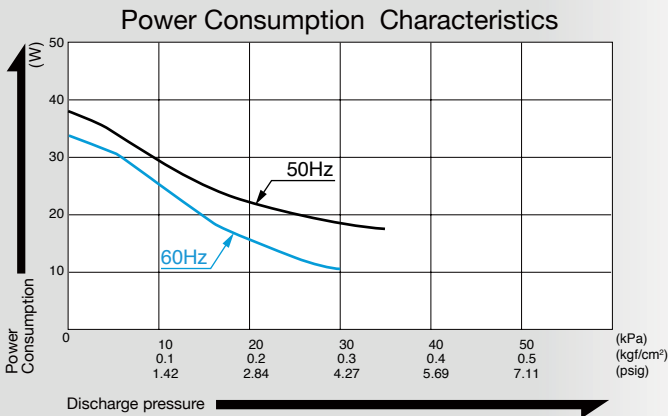
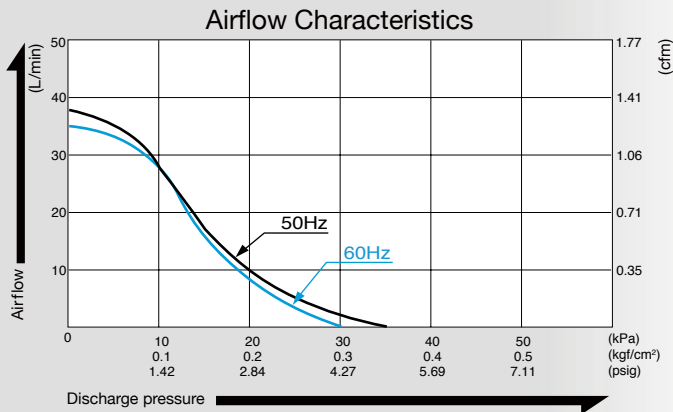


# Compressor

## 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"	

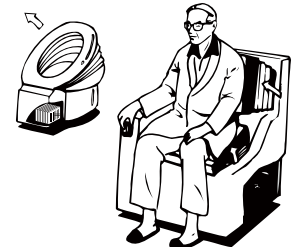
Please read the page of "How to Use This Catalog" first for correct use of compressors and pumps.

### Application Examples

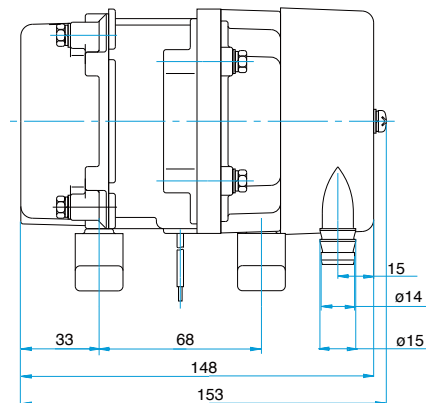
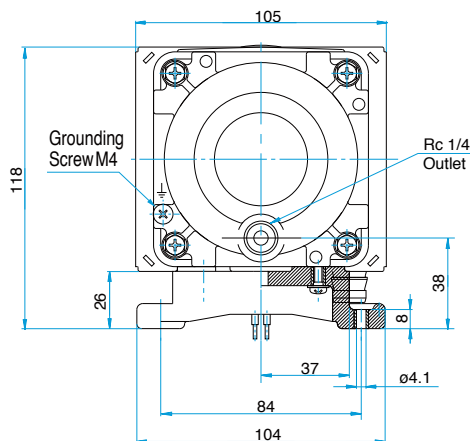
Liquid Mixer



Seat Lifter



### Dimensional Outline Drawing (Unit: mm)

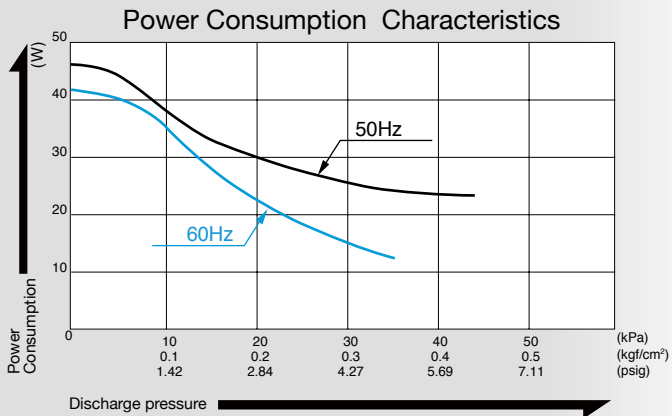
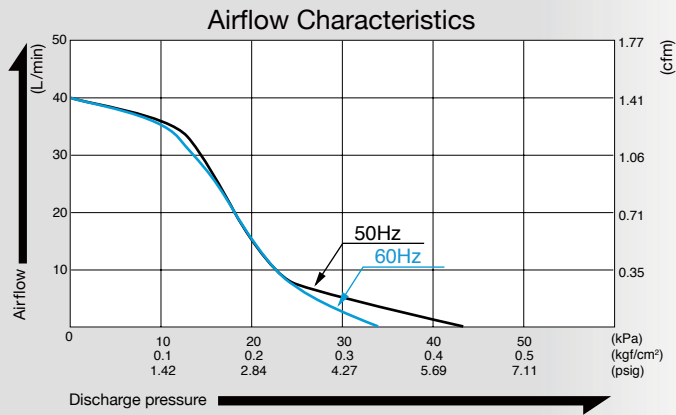


# Compressor

## 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"	

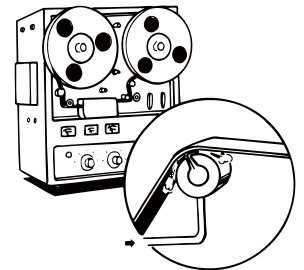
Please read the page of "How to Use This Catalog" first for correct use of compressors and pumps.

### Application Examples

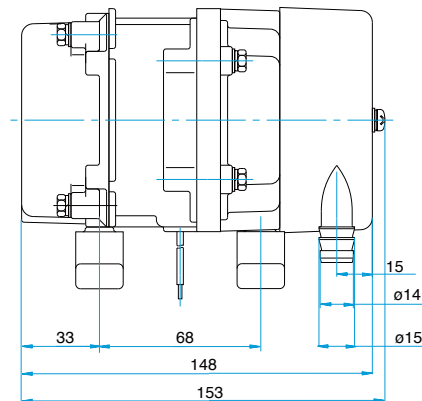
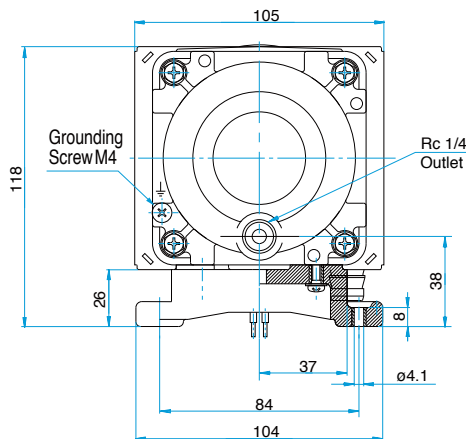
#### Liquid Mixer



#### Air Bearing



### Dimensional Outline Drawing (Unit: mm)

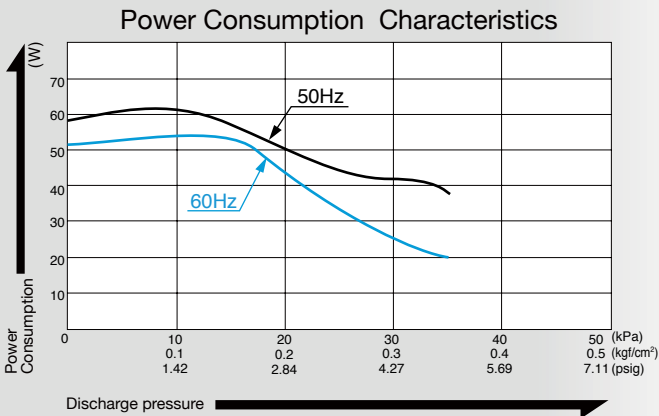
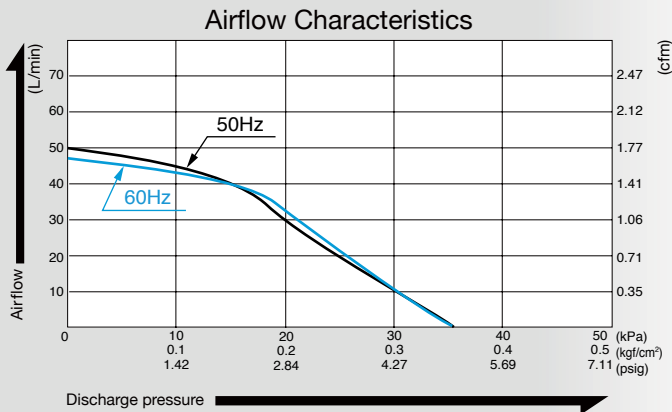


# Compressor

## Model AC0602



### Airflow & Power Consumption



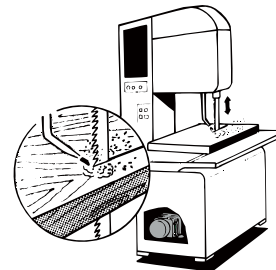
### Specifications

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"

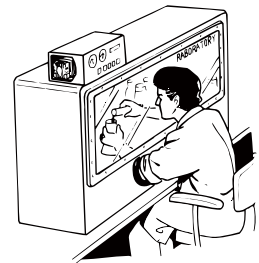
Please read the page of "How to Use This Catalog" first for correct use of compressors and pumps.

### Application Examples

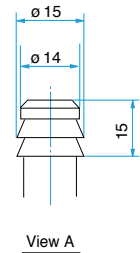
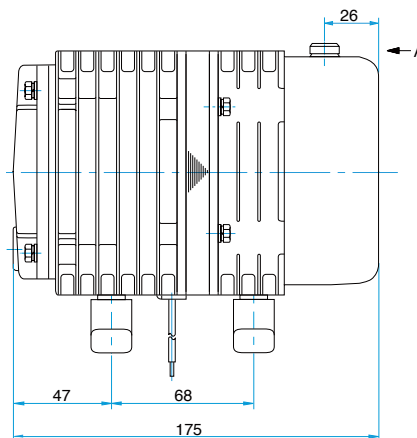
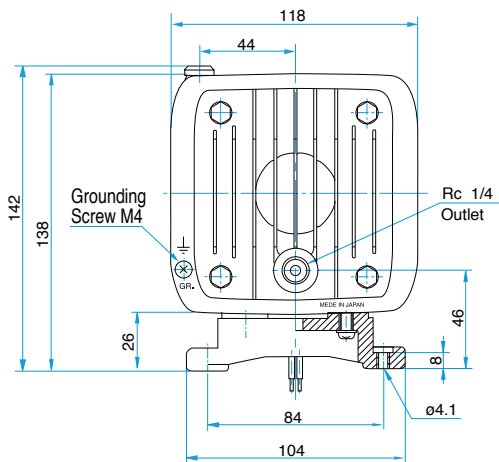
Air Blaster for Bandsaw



Clean Room Ventilation



### Dimensional Outline Drawing (Unit: mm)

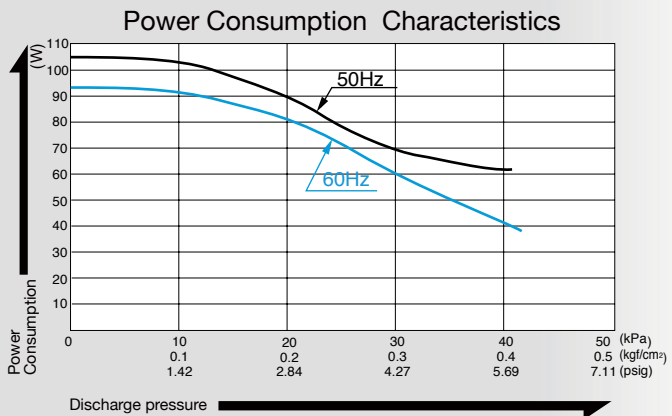
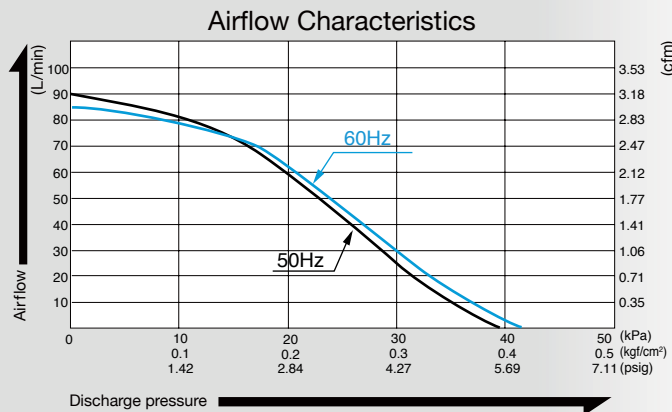


# Compressor

## Model AC0901



### Airflow & Power Consumption



### Specifications

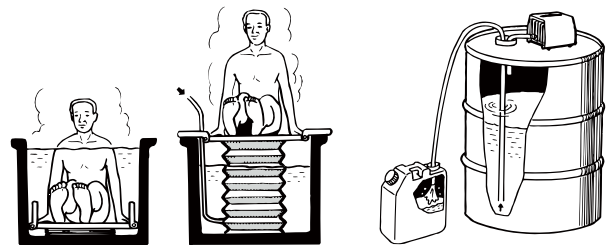
Rated Pressure	10 kPa (0.1 kgf/cm <sup>2</sup> ) 0.1 bar 1.42 psig	
Rated Airflow	80 L/min 2.83 cfm	
Maximum Pressure	40 kPa (0.4 kgf/cm <sup>2</sup> ) 0.4 bar 5.69 psig	
Rated Voltage	120 V AC	230 V AC
Power Consumption	88 W	99 W
Rated Frequency	60 Hz	50 Hz
Rated Performance	10,000 hours	
Outlet	ISO 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"	

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

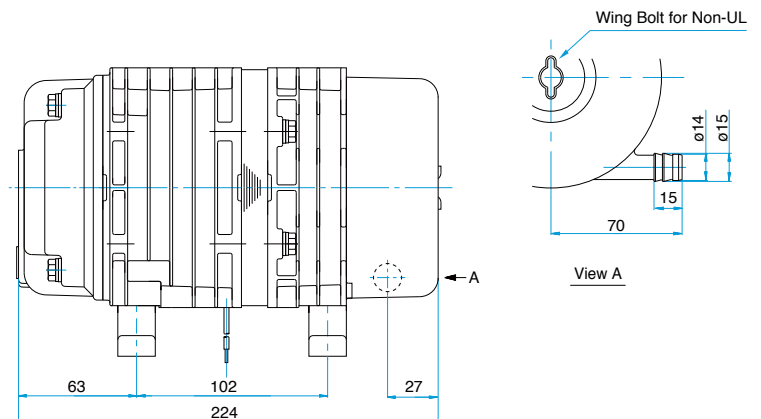
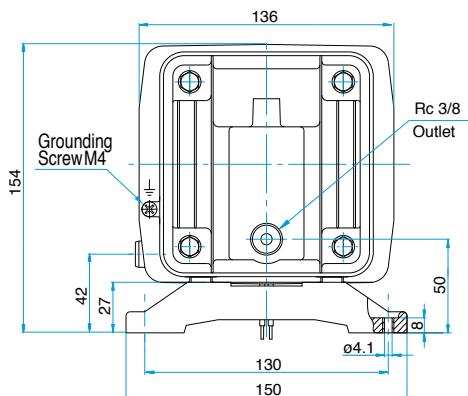
### Application Examples

Air Lifter for Bathtub

Liquid Dispenser



### Dimensional Outline Drawing (Unit: mm)

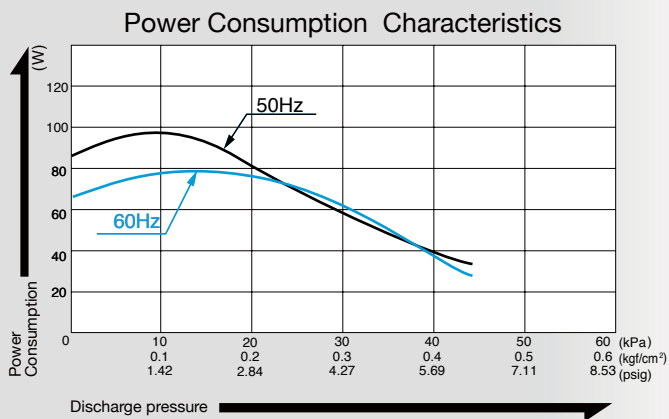
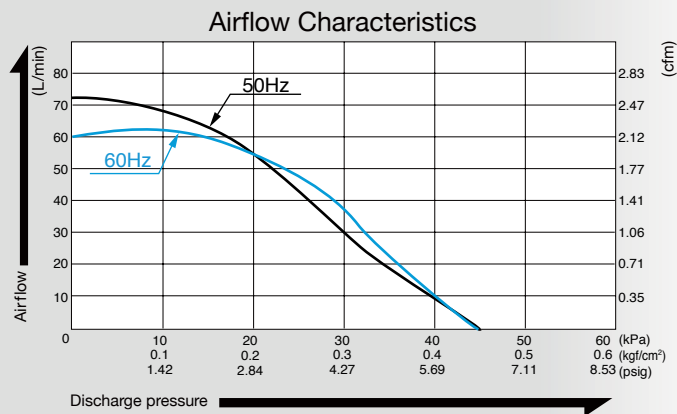


# Compressor

## Model AC0902



### Airflow & Power Consumption



### Specifications

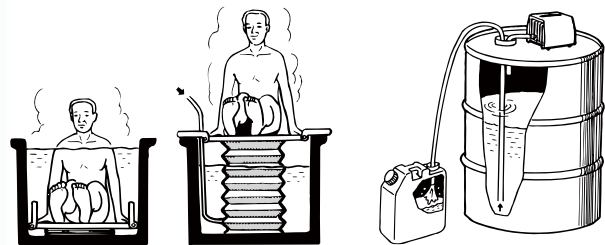
Rated Pressure	20 kPa (0.2 kgf/cm <sup>2</sup> ) 0.2 bar 2.84 psig	
Rated Airflow	55 L/min 1.94 cfm	
Maximum Pressure	45 kPa (0.45 kgf/cm <sup>2</sup> ) 0.45 bar 6.4 psig	
Rated Voltage	115 V AC	230 V AC
Power Consumption	75 W	85 W
Rated Frequency	60 Hz	50 Hz
Rated Performance	10,000 hours	
Outlet	ISO 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 4-1/8" (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"

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

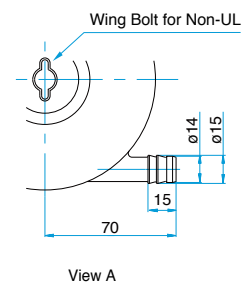
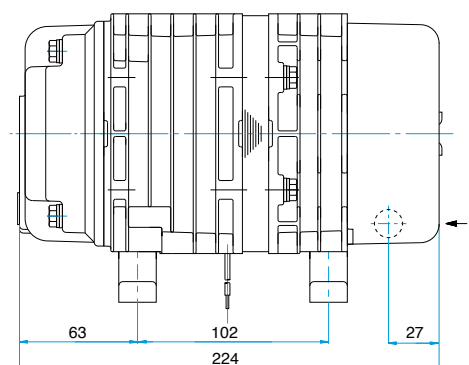
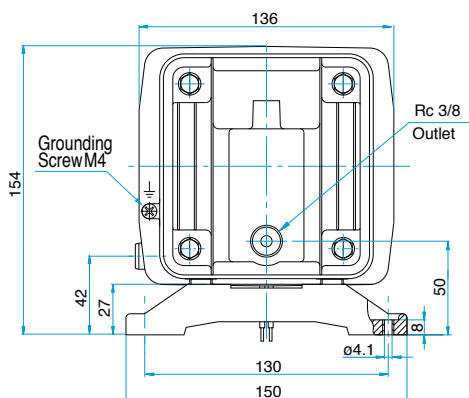
### Application Examples

Air Lifter for Bathtub

Liquid Dispenser



### Dimensional Outline Drawing (Unit: mm)



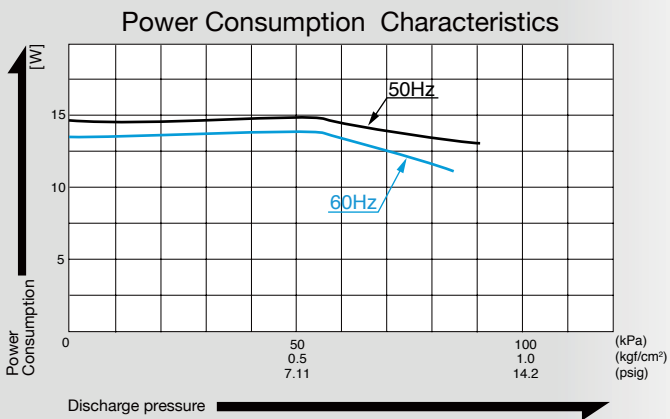
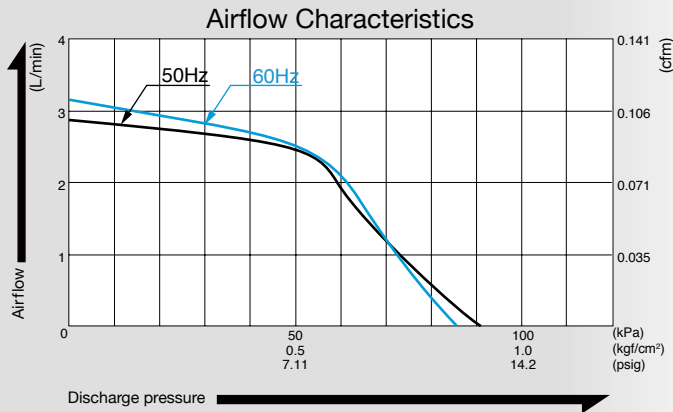


# Compressor

## Model **AC0105**



### Airflow & Power Consumption



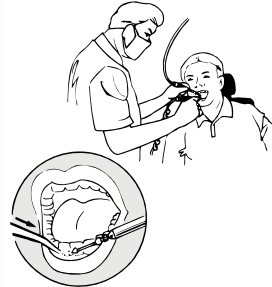
### Specifications

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	3,000 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"	

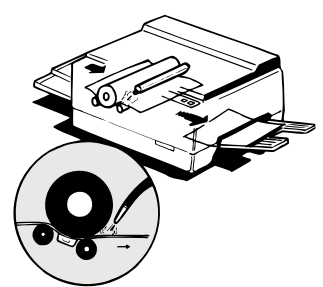
Please read the page of "How to Use This Catalog" first for correct use of compressors and pumps.

### Application Examples

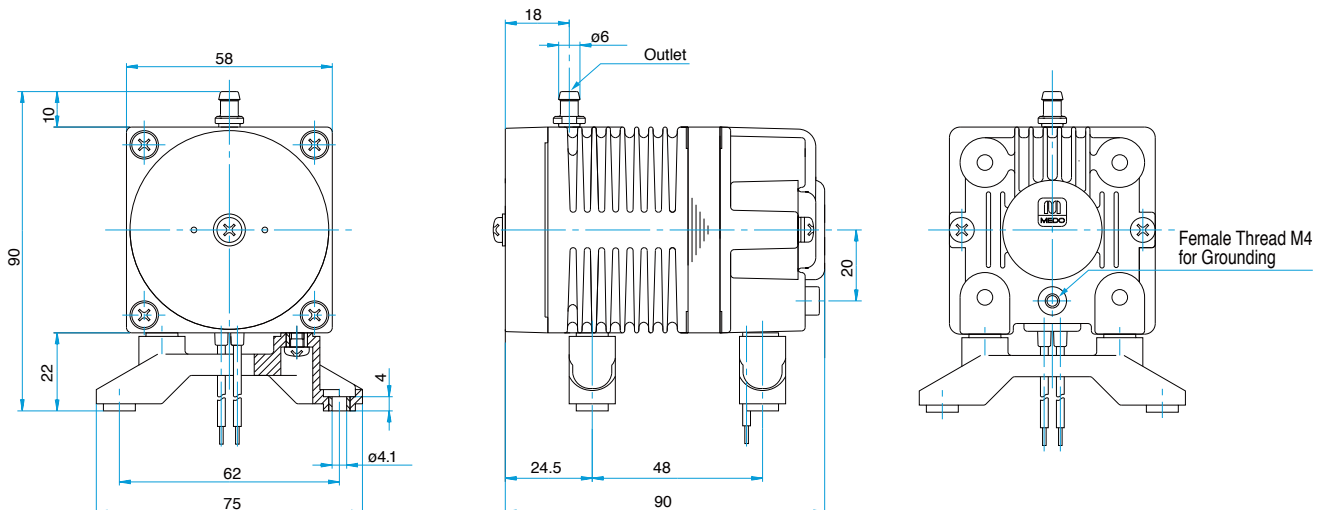
Saline Water Splasher



Copy Paper Separator



### Dimensional Outline Drawing (Unit: mm)



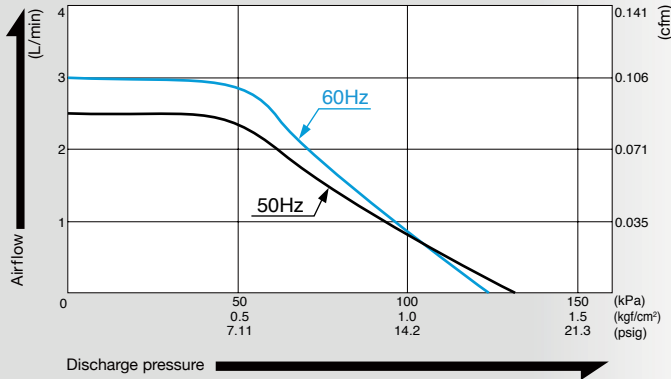
# Compressor

## Model AC0110

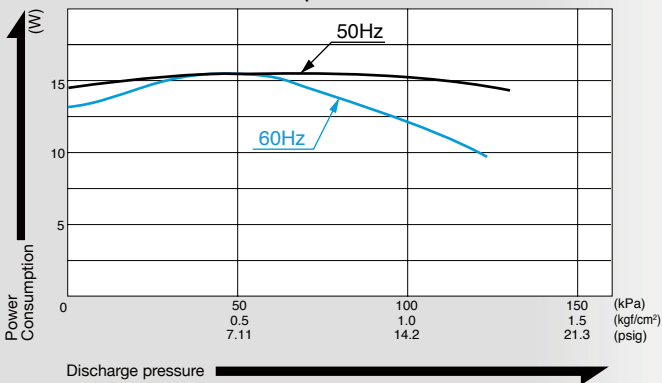


### Airflow & Power Consumption

Airflow Characteristics



Power Consumption Characteristics



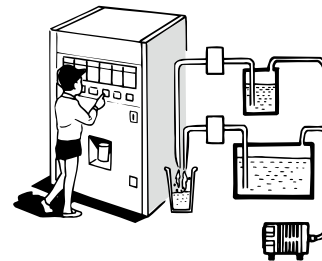
### Specifications

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	3,000 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"	

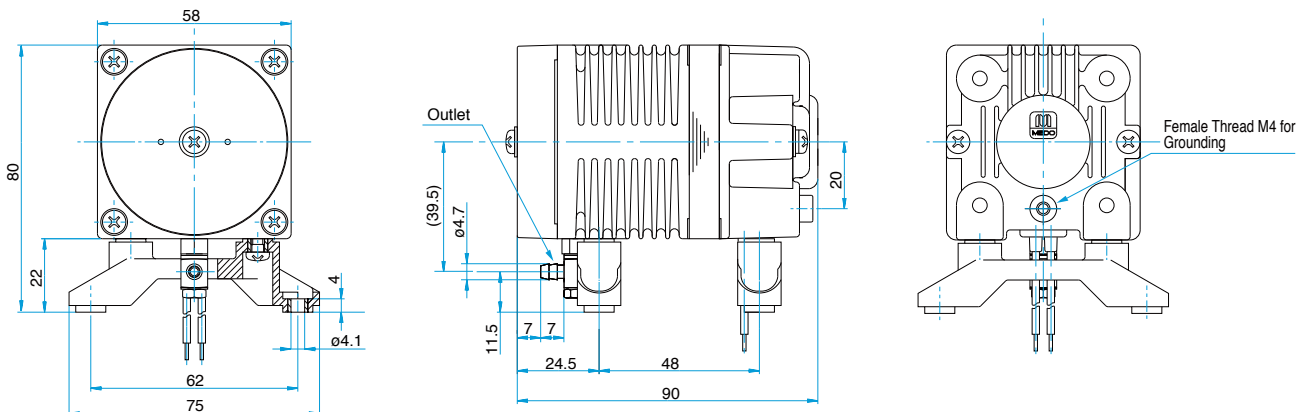
Please read the page of "How to Use This Catalog" first for correct use of compressors and pumps.

### Application Examples

#### Automatic Dispenser



### Dimensional Outline Drawing (Unit: mm)

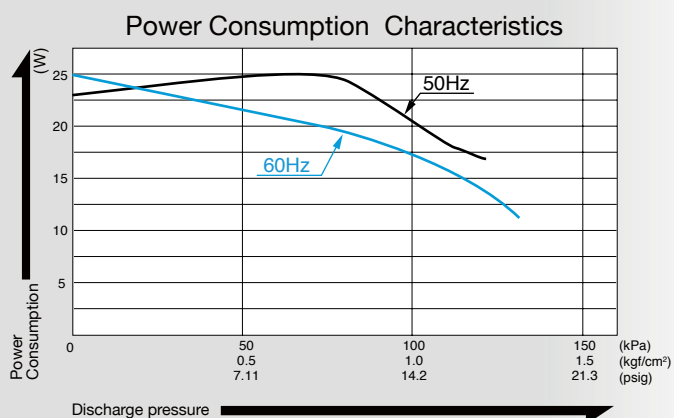
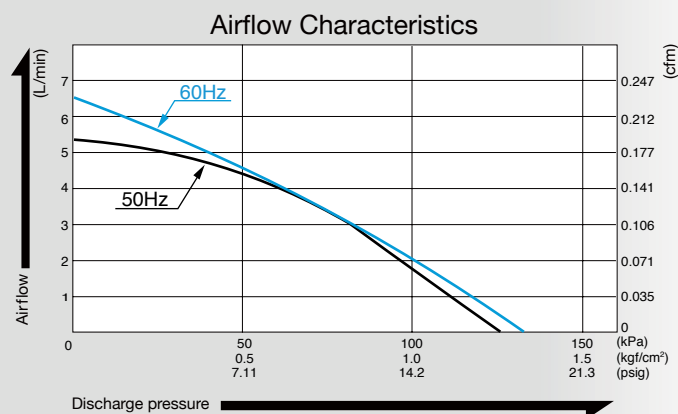


# Compressor

## Model **AC0207**



### Airflow & Power Consumption



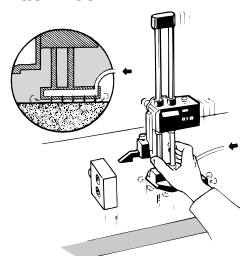
### Specifications

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"	

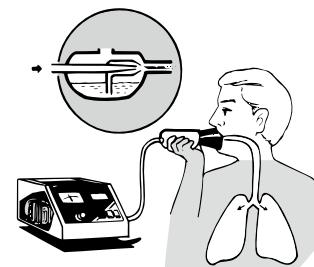
Please read the page of "How to Use This Catalog" first for correct use of compressors and pumps.

### Application Examples

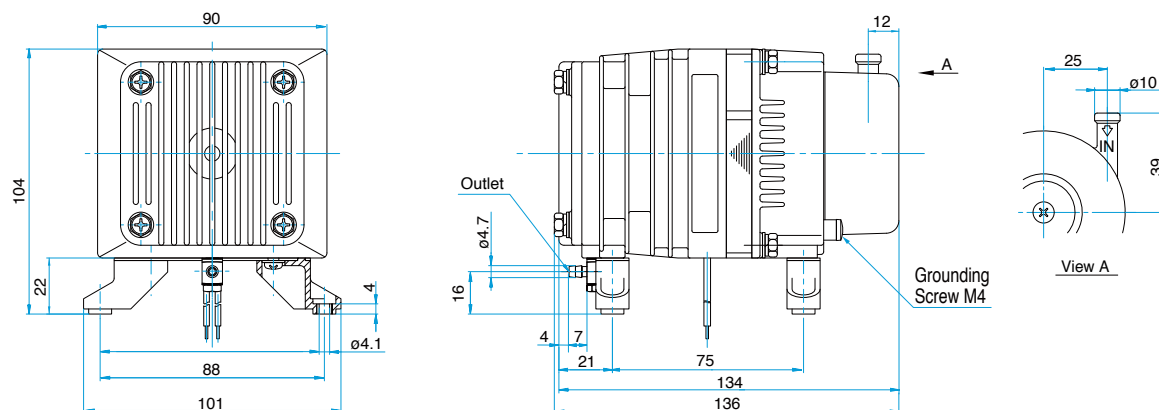
#### Air Bearing for Precision Machines



#### Nebulizer



### Dimensional Outline Drawing (Unit: mm)

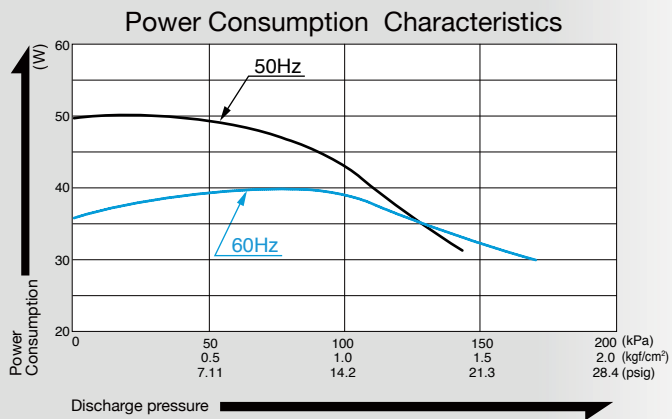
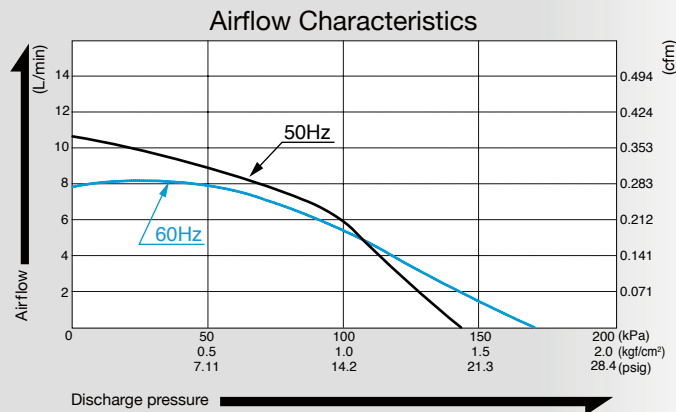


# Compressor

## Model **AC0410A**



### Airflow & Power Consumption



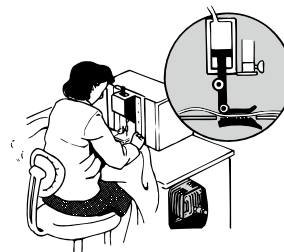
### Specifications

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"

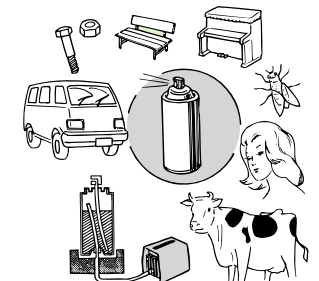
Please read the page of "How to Use This Catalog" first for correct use of compressors and pumps.

### Application Examples

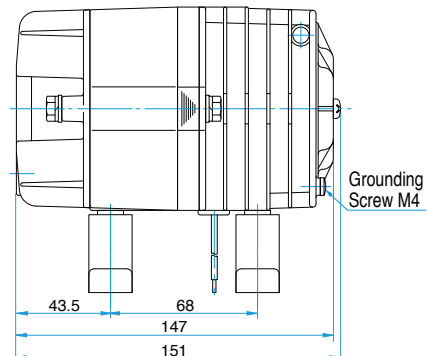
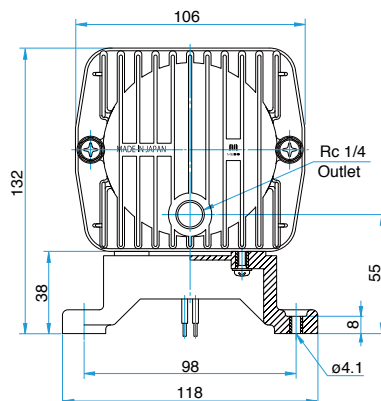
#### Industrial Sewing Machine



#### Various Aerosol Sprays



### Dimensional Outline Drawing (Unit: mm)

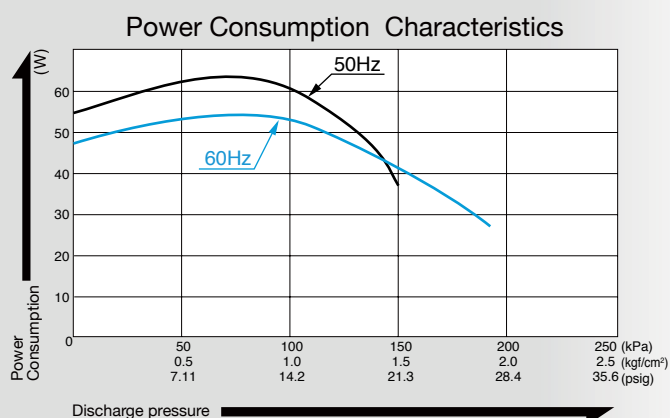
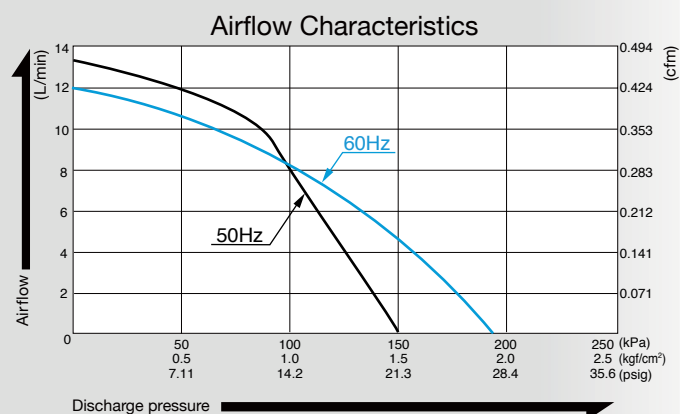


# Compressor

## Model AC0610A



### Airflow & Power Consumption



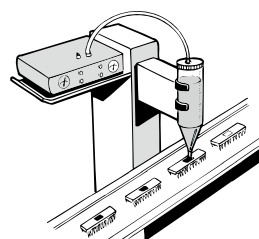
### Specifications

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	10,000 hours	
Outlet	ISO Rc 1/4	
Duty Cycle	Continuous	
Coil Insulation Class	F or its equivalent (JETL)	
Mounting Dimensions	68 (L) x 98 (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"	

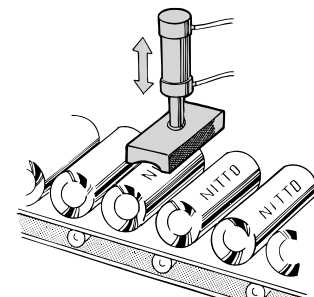
Please read the page of "How to Use This Catalog" first for correct use of compressors and pumps.

### Application Examples

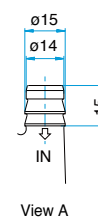
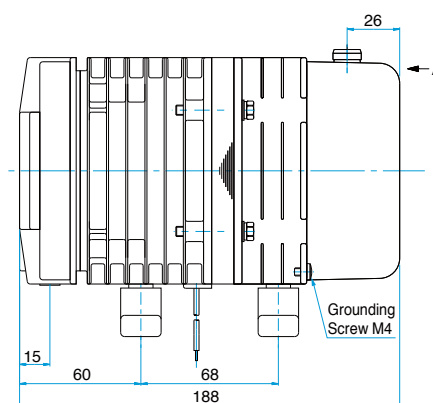
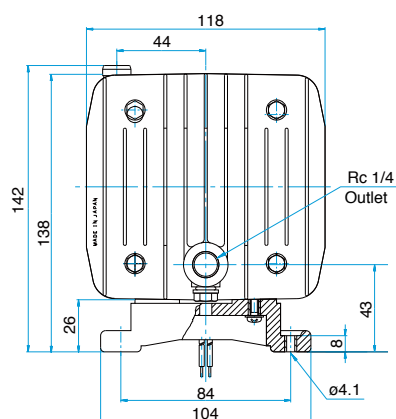
#### Dispenser



#### Automatic Stamper



### Dimensional Outline Drawing (Unit: mm)

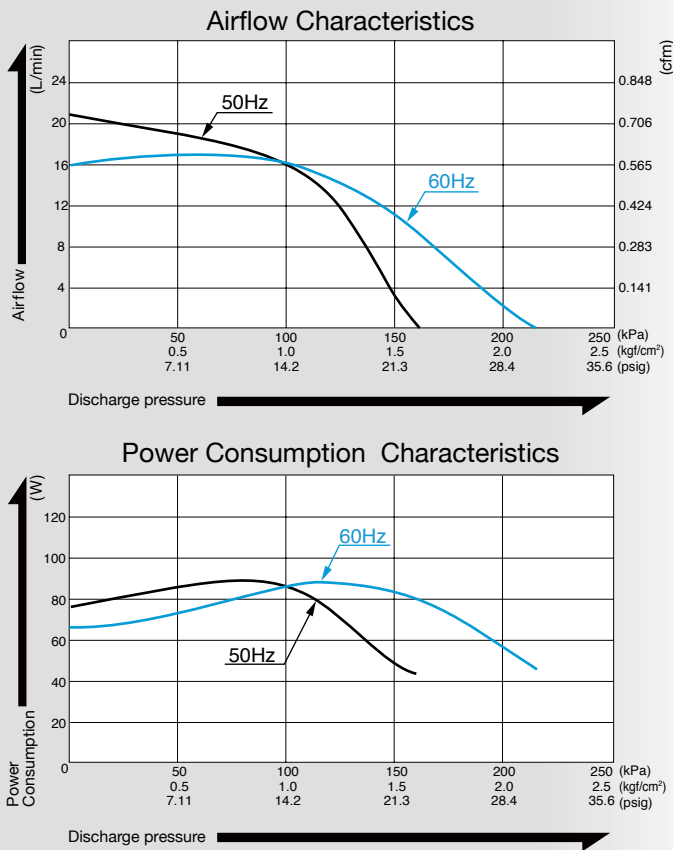


# Compressor

## Model AC0910



### Airflow & Power Consumption



### Specifications

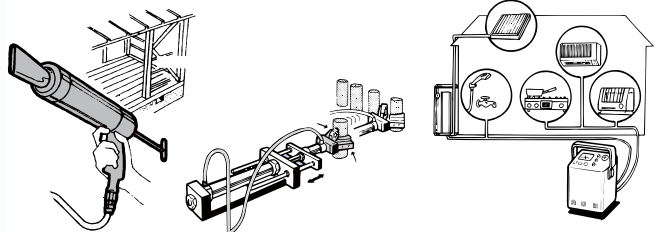
Rated Pressure	100 kPa (1.0 kgf/cm <sup>2</sup> ) 1.0 bar 14.2 psig	
Rated Airflow	16 L/min 0.57 cfm	
Maximum Pressure	150 kPa (1.5 kgf/cm <sup>2</sup> ) 1.5 bar 21.3 psig	
Rated Voltage	115 V AC	230 V AC
Power Consumption	85 W	90 W
Rated Frequency	60 Hz	50 Hz
Rated Performance	3,000 hours	
Outlet	ISO 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"

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

### Application Examples

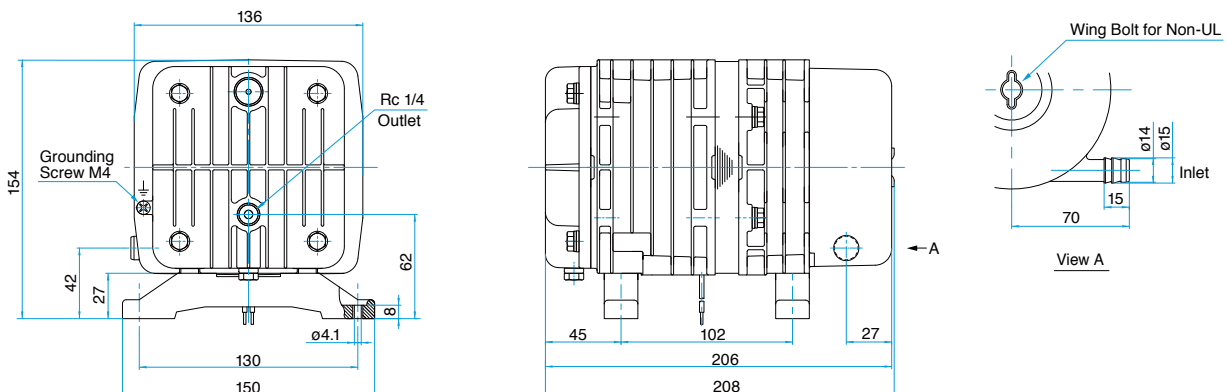
#### Sealant gun

#### Leakage Tester



Air Cylinder/Chuck Driver

### Dimensional Outline Drawing (Unit: mm)

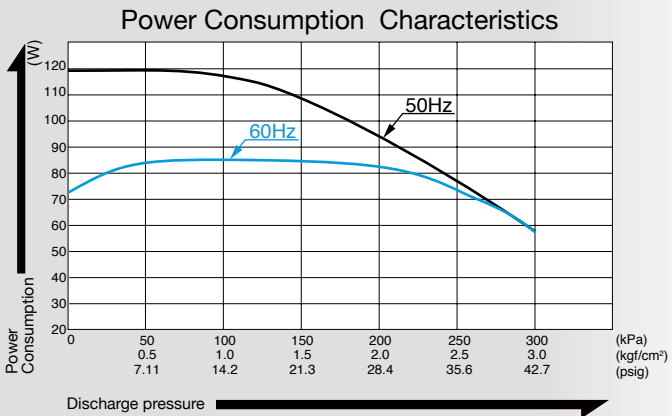
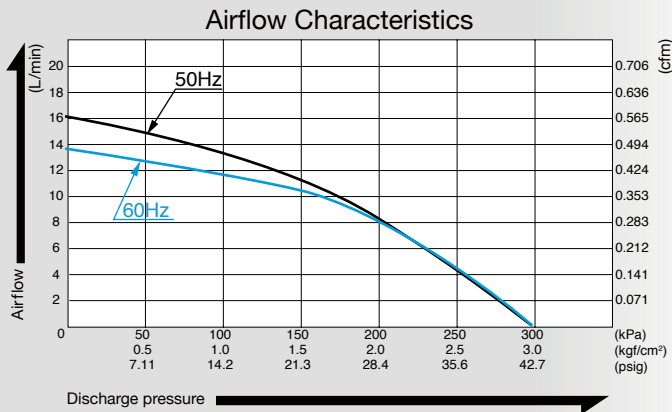


# Compressor

## Model AC0920



### Airflow & Power Consumption



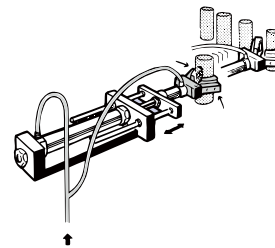
### Specifications

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"

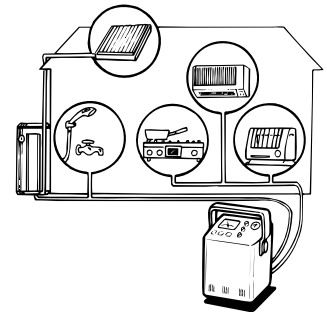
Please read the page of "How to Use This Catalog" first for correct use of compressors and pumps.

### Application Examples

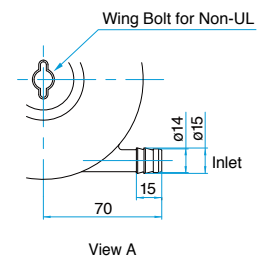
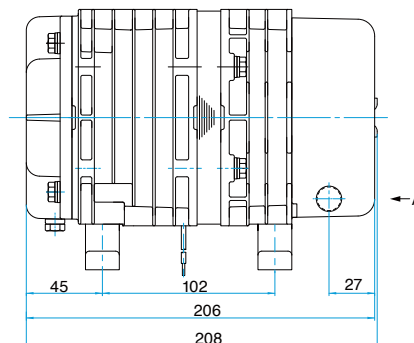
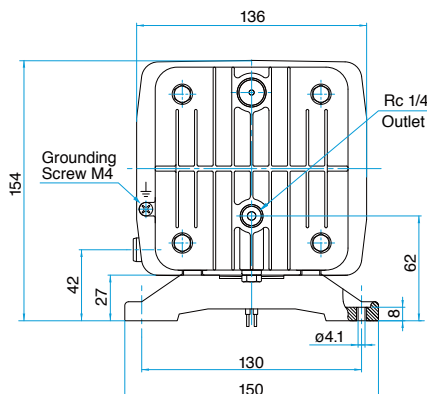
Air Cylinder/Chuck Driver



Leakage Tester



### Dimensional Outline Drawing (Unit: mm)







# VACUUM PUMP

## AC LINEAR

### Free Piston Vacuum Pump

Page

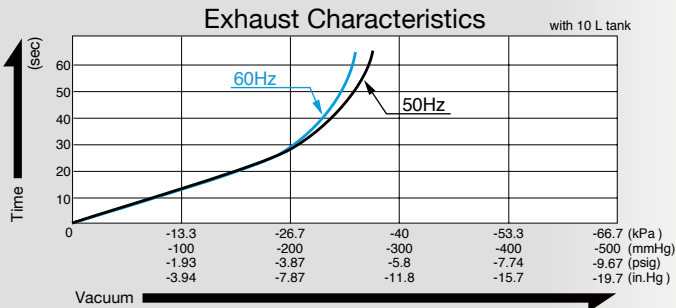
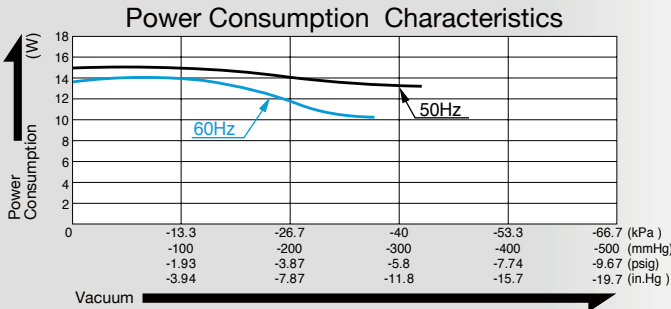
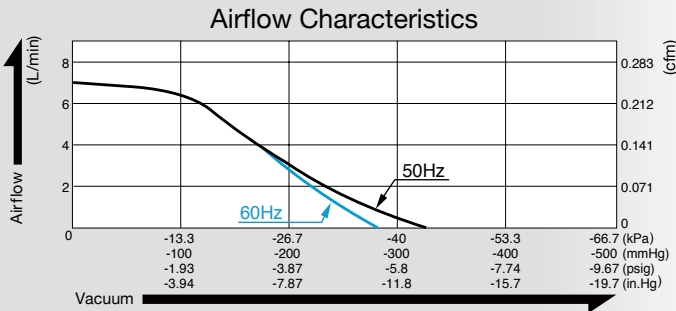
VP0125	—	25
VP0140	—	26
VP0435A	—	27
VP0450	—	28
VP0625	—	29
VP0660	—	30
VP0925A	—	31
VP0940	—	32
VP0940T	—	33
VP0645	—	34
VP0945	—	35
VP0660 x 2	—	36

# Vacuum Pump

## Model VP0125



### Airflow & Power Consumption



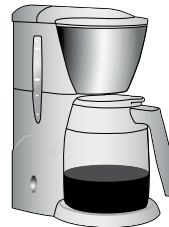
### Specifications

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	3,000 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"

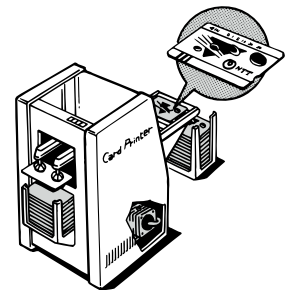
Please read the page of "How to Use This Catalog" first for correct use of compressors and pumps.

### Application Examples

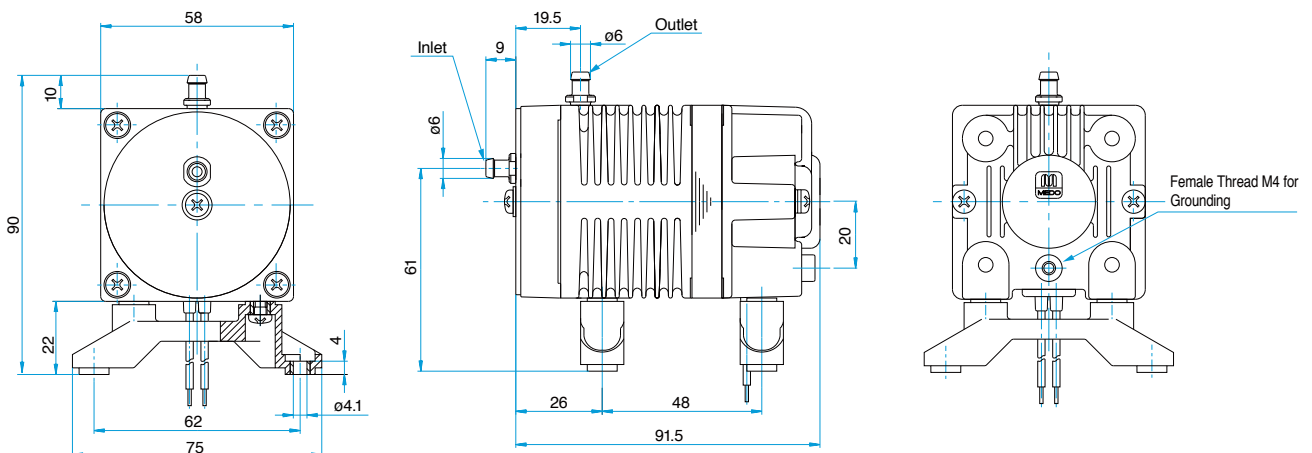
Dripping Machine



Paper Card Dispenser



### Dimensional Outline Drawing (Unit: mm)

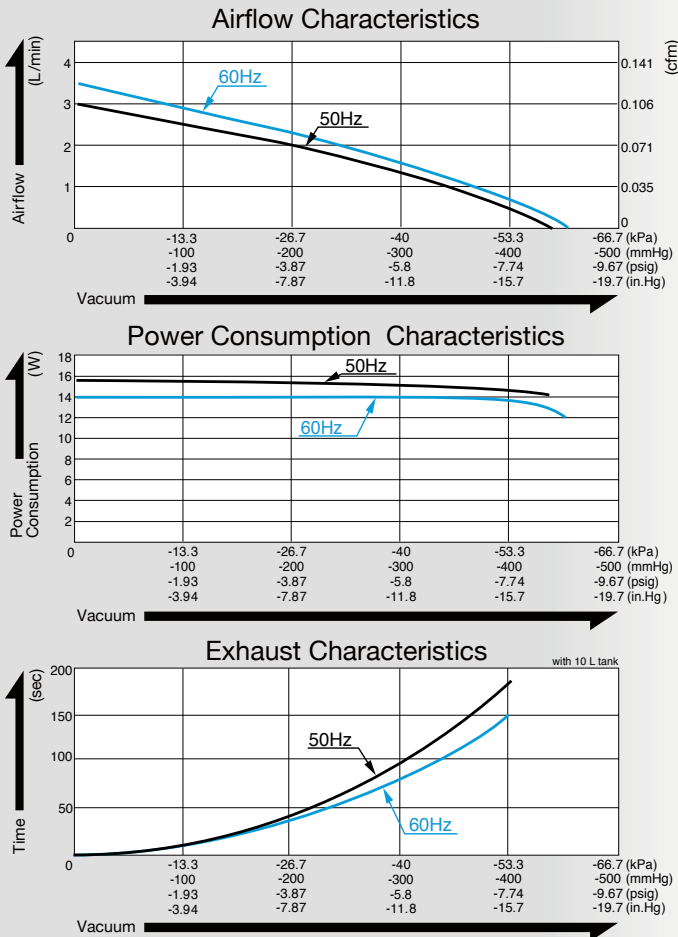


# Vacuum Pump

## 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	3,000 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"

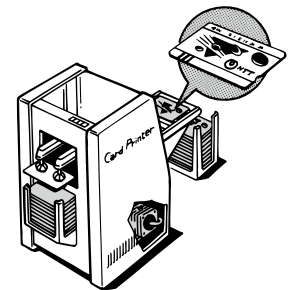
Please read the page of "How to Use This Catalog" first for correct use of compressors and pumps.

### Application Examples

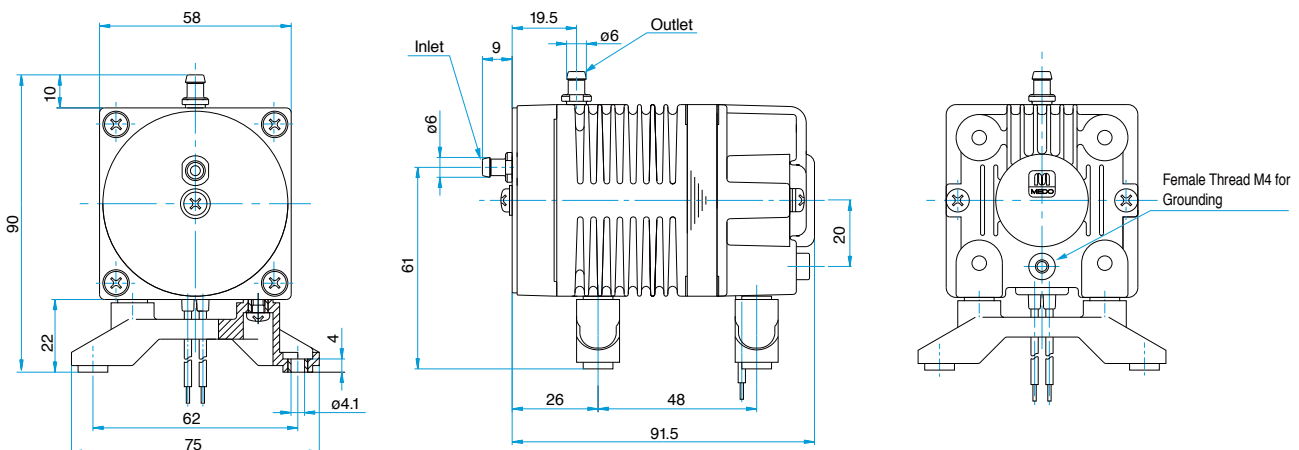
Dripping Machine



Paper Card Dispenser



### Dimensional Outline Drawing (Unit: mm)

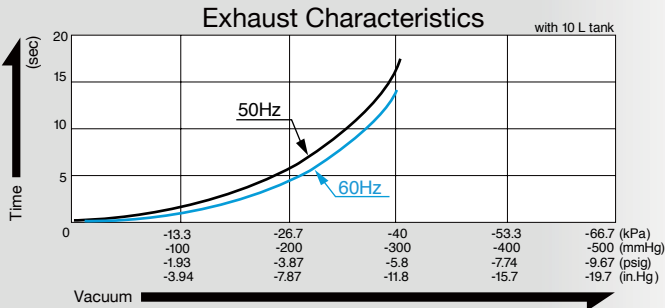
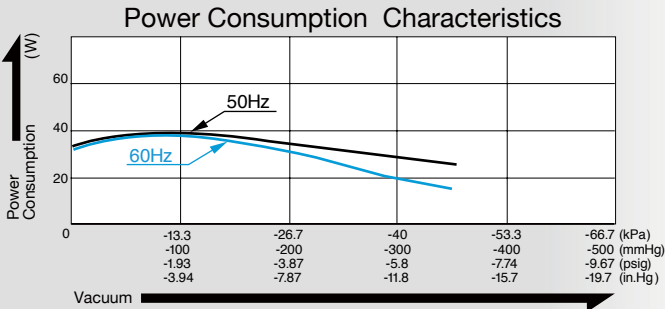
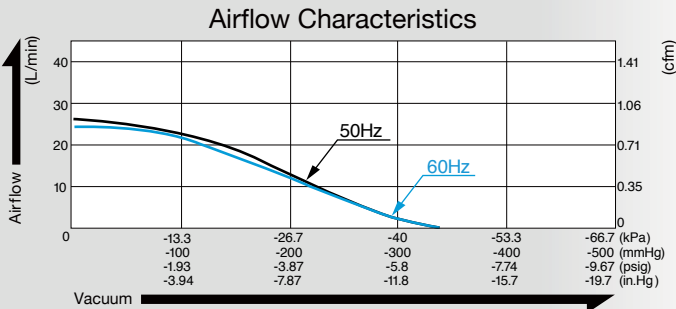


# Vacuum Pump

## Model VPO435A



### 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"

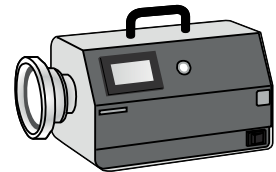
Please read the page of "How to Use This Catalog" first for correct use of compressors and pumps.

### Application Examples

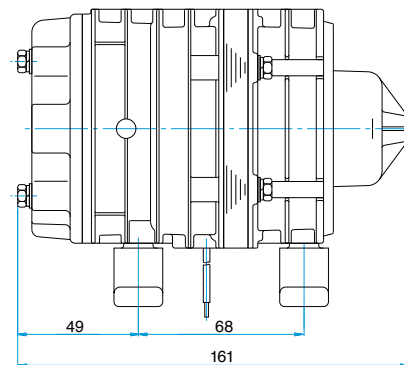
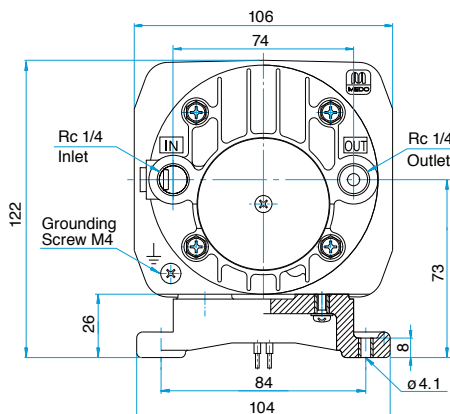
Machine Screw Feeder



Air Sampler



### Dimensional Outline Drawing (Unit: mm)

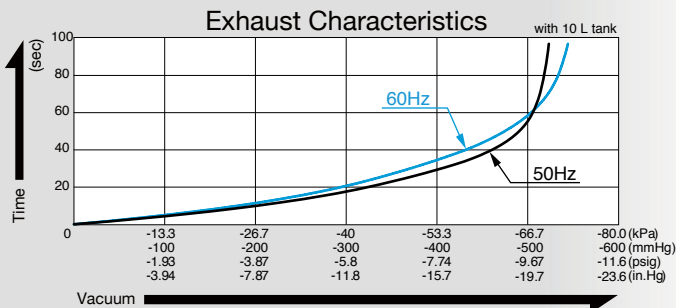
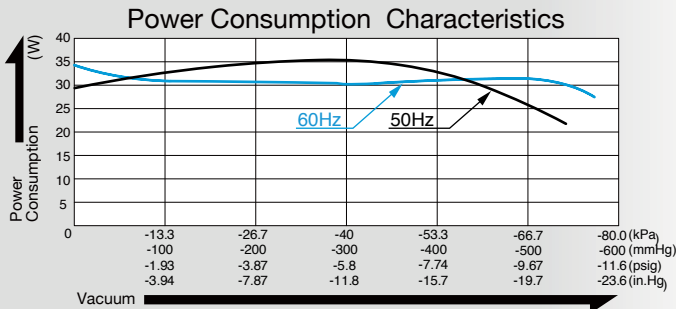
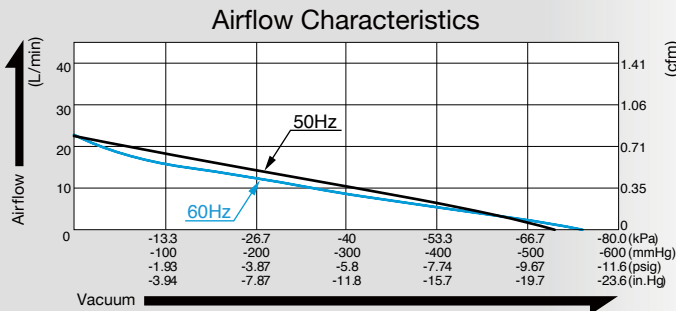


# Vacuum Pump

## Model VP0450



### Airflow & Power Consumption



### Specifications

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	230 V AC
Power Consumption	34 W	35 W
Rated Frequency	60 Hz	50 Hz
Rated Performance	10,000 hours	
Inlet	ISO Rc 1/4	
Outlet	ISO Rc 1/4	
Duty Cycle	Continuous	
Coil Insulation Class	E or its equivalent (JETL) and A for UL	
Mounting Dimensions	85 (L) x 88 (W) mm 3-11/32" (L) x 3-15/32" (W)	
Weight	2.2 kg 4.9 Lbs	
Leadwire Length	300 mm 11-13/16"	

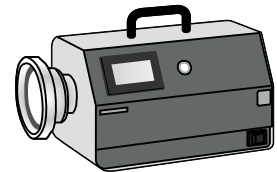
Please read the page of "How to Use This Catalog" first for correct use of compressors and pumps.

### Application Examples

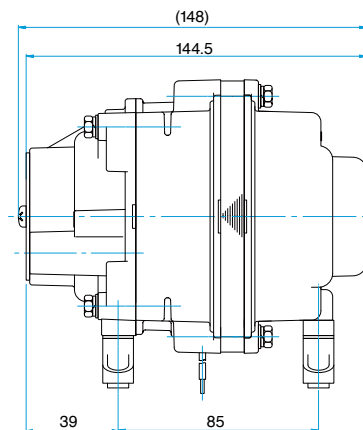
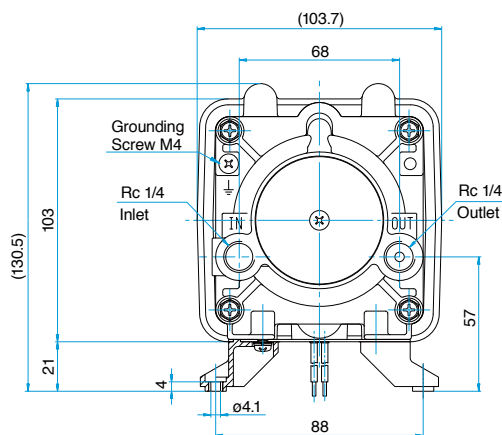
#### Machine Screw Feeder



#### Air Sampler



### Dimensional Outline Drawing (Unit: mm)

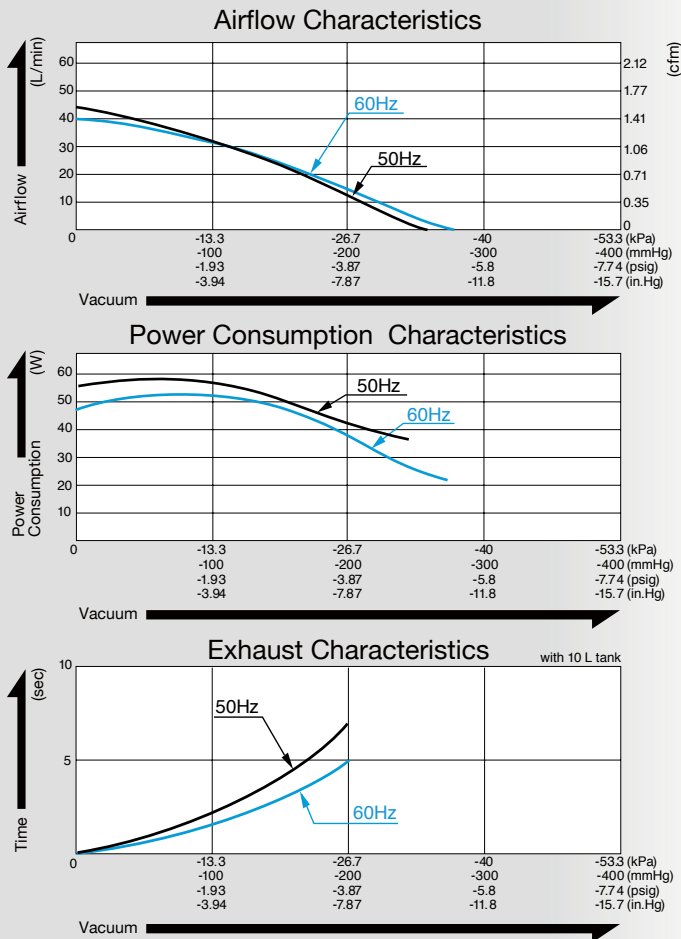


# Vacuum Pump

## Model VP0625



### Airflow & Power Consumption



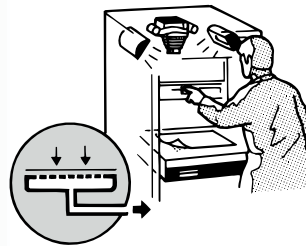
### Specifications

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	230 V AC
Power Consumption	60 W	
Rated Frequency	60 Hz	50 Hz
Rated Performance	10,000 hours	
Inlet	15mm O.D. hose barb	
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 kg 6.6 Lbs	
Leadwire Length	235 mm 9-1/4"	320 mm 12-19/32"

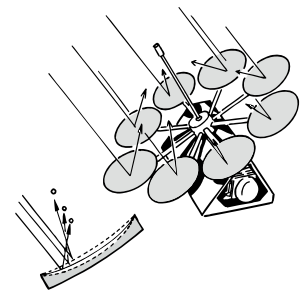
Please read the page of "How to Use This Catalog" first for correct use of compressors and pumps.

### Application Examples

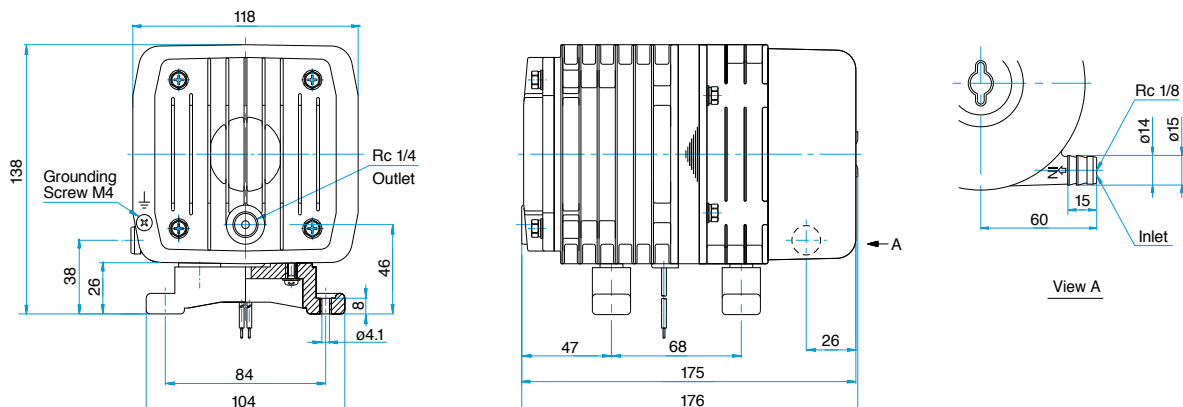
#### Microfiche Camera



#### Solar Collection Screen



### Dimensional Outline Drawing (Unit: mm)

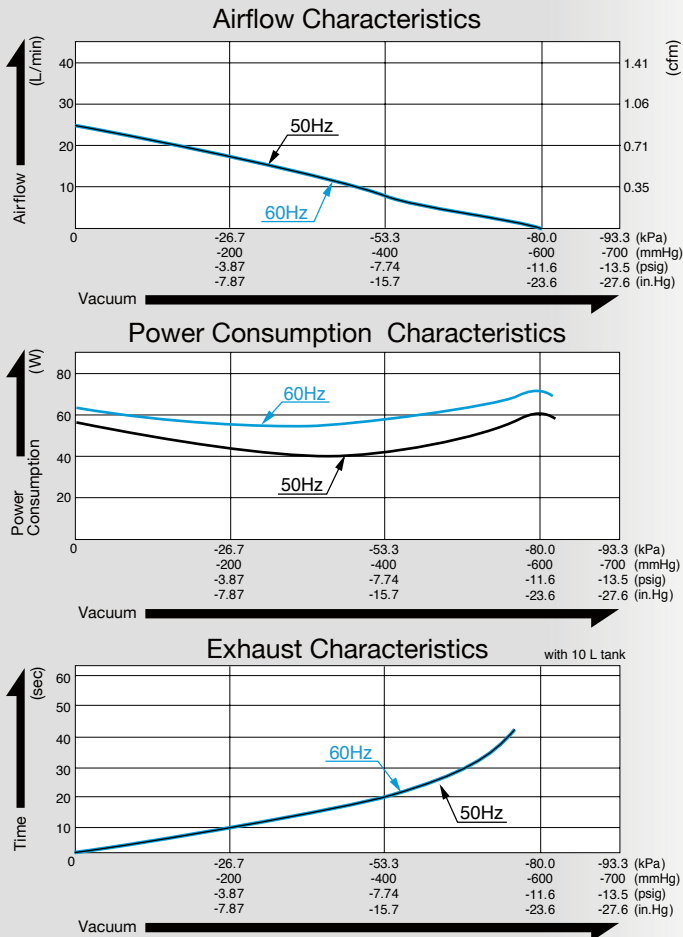


# Vacuum Pump

## Model VPO660



### Airflow & Power Consumption



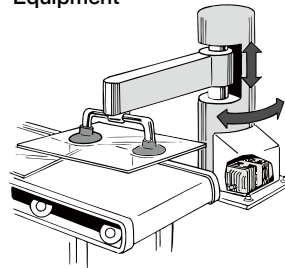
### Specifications

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	230 V AC
Power Consumption	70 W	60 W
Rated Frequency	60 Hz	50 Hz
Rated Performance	6,000 hours	
Inlet	ISO Rc 1/4	
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 4-1/64" (L) x 5-1/8" (W)	
Weight	5 kg 11 Lbs	
Leadwire Length	300 mm 11-13/16"	600 mm 23-5/8"

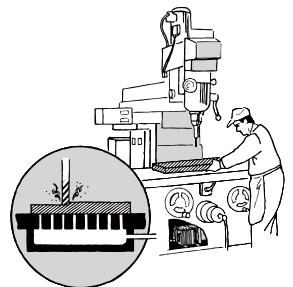
\*1: Operations at higher than -53.5kPa need an additional leak valve or relief valve on the inlet piping. Please read the page of "How to Use This Catalog" first for correct use of compressors and pumps.

### Application Examples

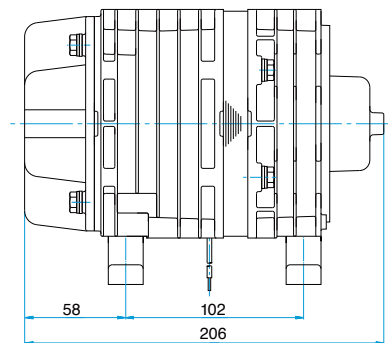
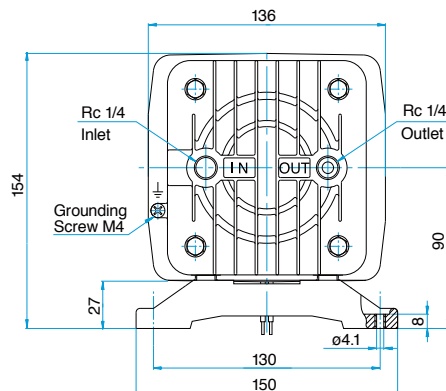
#### Vacuum Material Handling Equipment



#### Vacuum Chucking



### Dimensional Outline Drawing (Unit: mm)

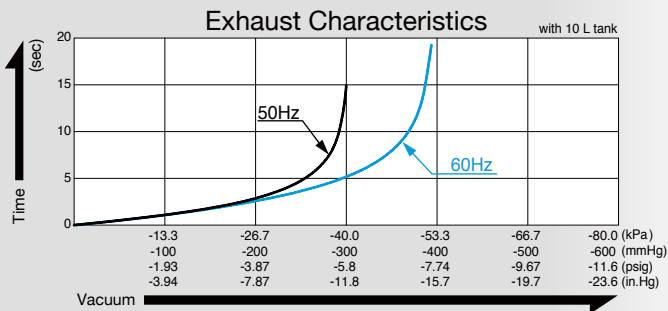
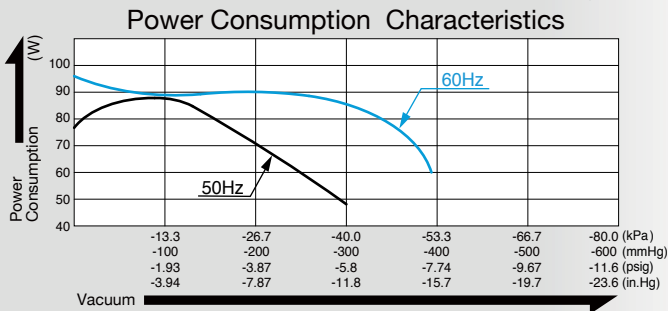
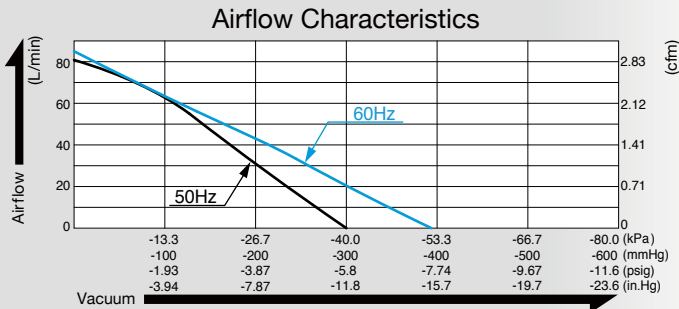


# Vacuum Pump

## Model VP0925A



### Airflow & Power Consumption



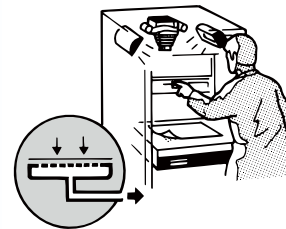
### Specifications

Attainable Vacuum *1	-33.3 kPa (-250 mmHg) -333 mbar -9.84 in. Hg	
Free Air Displacement	80 L/min 2.83 cfm	
Rated Voltage	115 V AC	230 V AC
Power Consumption	95 W	88 W
Rated Frequency	60 Hz	50 Hz
Rated Performance	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 4-1/64" (L) x 5-1/8" (W)	
Weight	4.5 kg 9.9 Lbs	
Leadwire Length	300 mm 11-13/16"	320 mm 12-19/32"

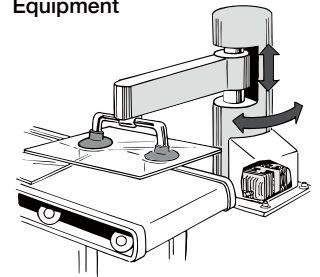
\*1: Operations at higher than -33.3kPa need an additional leak valve or relief valve on the inlet piping. Please read the page of "How to Use This Catalog" first for correct use of compressors and pumps.

### Application Examples

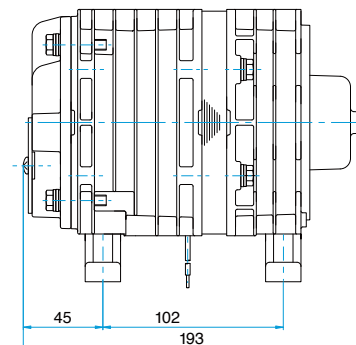
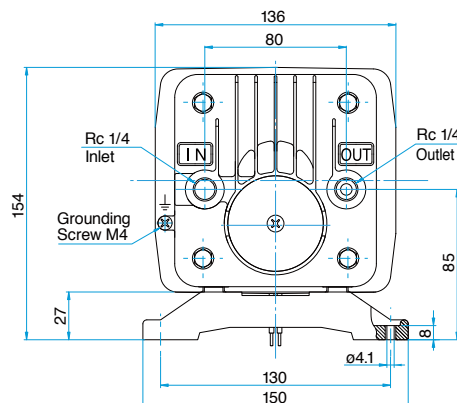
#### Microfiche Camera



#### Vacuum Material Handling Equipment



### Dimensional Outline Drawing (Unit: mm)



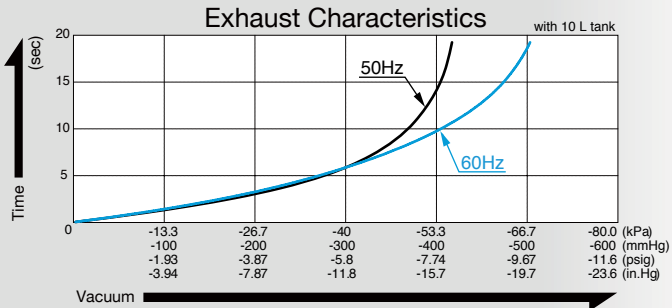
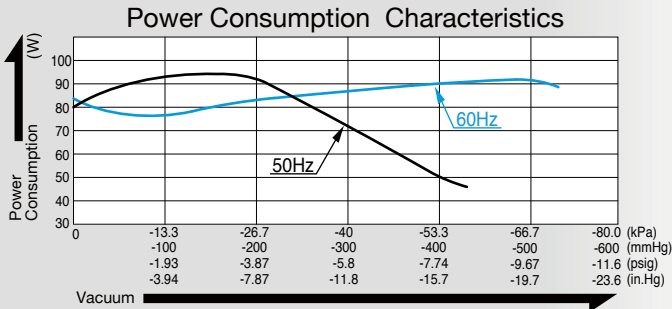
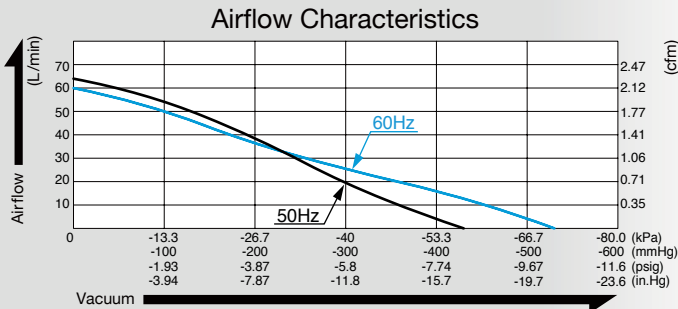


# Vacuum Pump

## Model VP0940



### Airflow & Power Consumption



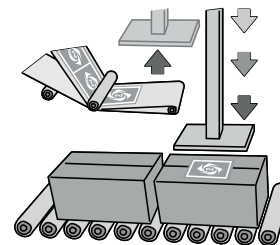
### Specifications

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	115 V AC	230 V AC
Power Consumption	95 W	
Rated Frequency	60 Hz	50 Hz
Rated Performance	10,000 hours	
Inlet	ISO Rc 1/4	
Outlet	ISO Rc 1/4	
Duty Cycle	Continuous	
Coil Insulation Class	B 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	4.55 kg 10.0 Lbs	
Leadwire Length	300 mm 11-13/16"	320 mm 12-19/32"

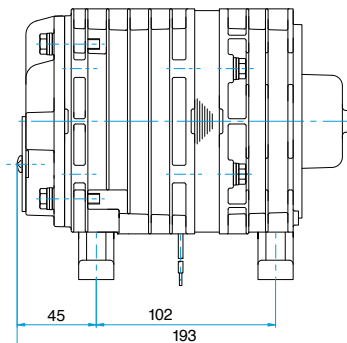
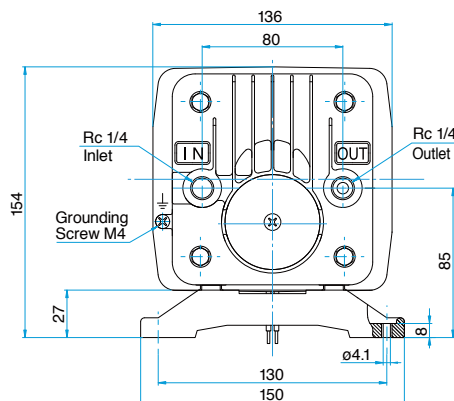
\*1: Operations at higher than -53.3kPa need an additional leak valve or relief valve on the inlet piping. Please read the page of "How to Use This Catalog" first for correct use of compressors and pumps.

### Application Examples

#### Label Sticking Machine



### Dimensional Outline Drawing (Unit: mm)

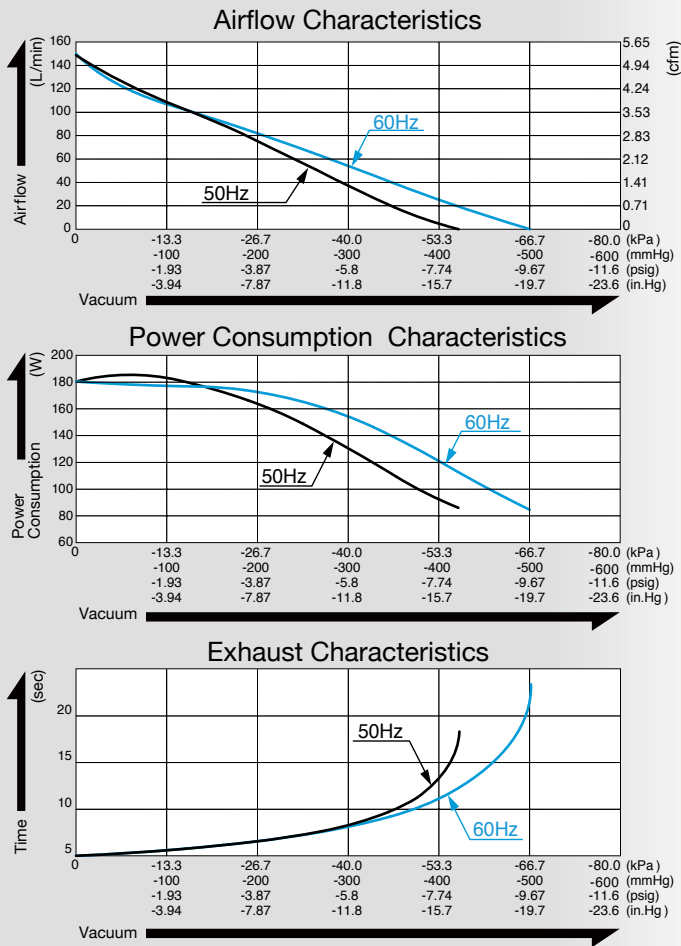


# Vacuum Pump

## Model VP0940T



### Airflow & Power Consumption

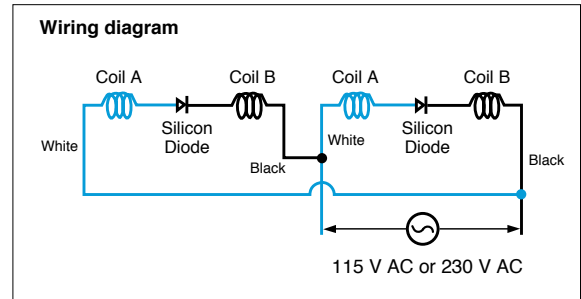


### Specifications

Attainable Vacuum *1	-53.3 kPa (-400 mmHg) -533 mbar -15.7 in. Hg	
Free Air Displacement	120 L/min 4.24 cfm	
Rated Voltage	115 V AC *2	230 V AC
Power Consumption	185 W	
Rated Frequency	60 Hz	50 Hz
Rated Performance	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	172 (L) x 211 (W) mm 6-49/64" (L) x 8-5/16" (W)	
Weight	10 kg 22 Lbs	
Leadwire Length	300 mm 11-13/16"	320 mm 12-19/32"

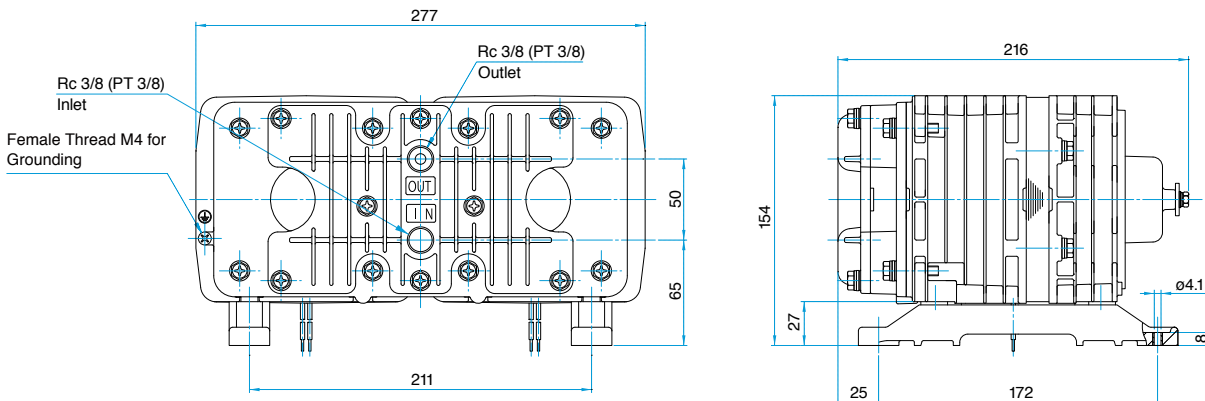
\*1: Operations at higher than -53.3kPa need an additional leak valve or relief valve on the inlet piping.  
\*2: UL Pending  
Please read the page of "How to Use This Catalog" first for correct use of compressors and pumps.

### Application Examples



\* The silencer, air filter, and pipe are not included with the product.  
\* Piping and wiring need to be done by the user.

### Dimensional Outline Drawing (Unit: mm)

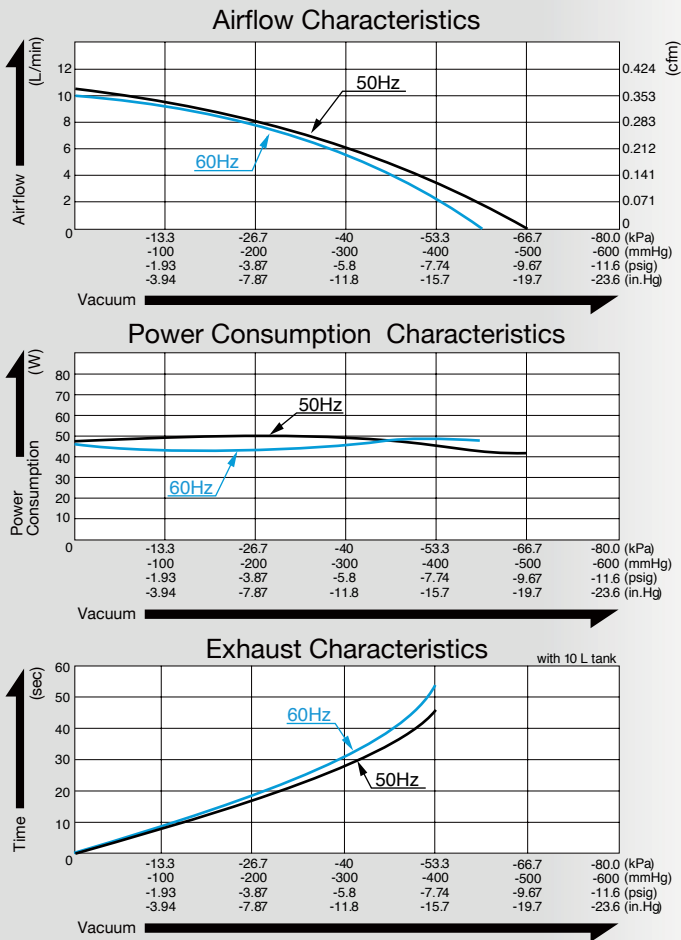


# Vacuum Pump

## Model VP0645



### Airflow & Power Consumption



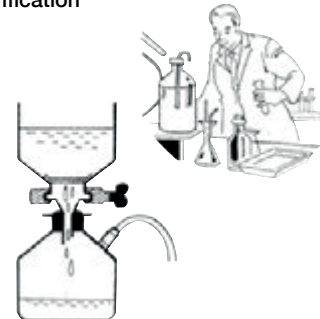
### Specifications

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	230 V AC
Power Consumption	48 W	50 W
Rated Frequency	60 Hz	50 Hz
Rated Performance	3,000 hours	
Inlet	15 mm O.D. hose barb	
Outlet	ISO Rc 1/4	
Duty Cycle	Continuous	
Coil Insulation Class	E or its equivalent (JETL)	
Mounting Dimensions	68 (L) x 84 (W) mm 2-43/64" (L) x 3-5/16" (W)	
Weight	3.2 kg 7.1 Lbs	
Leadwire Length	200 mm 7-7/8"	

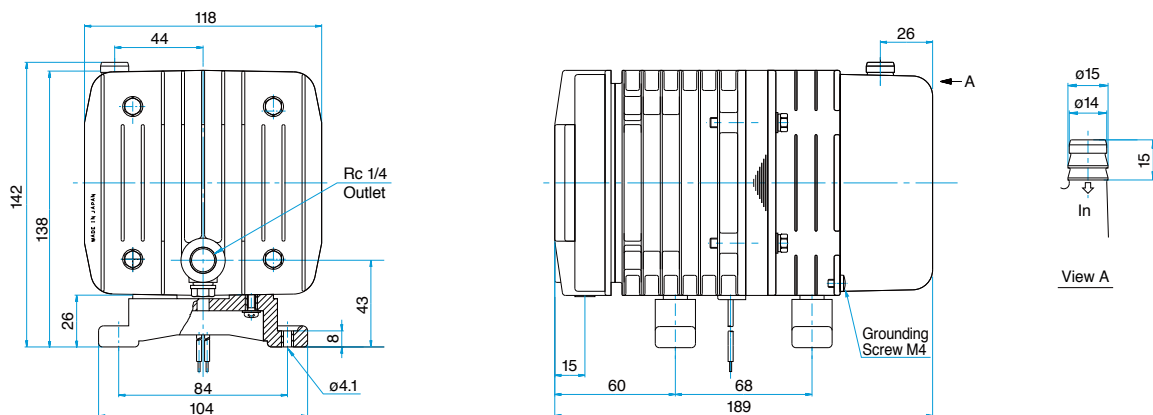
\*1: Operations at higher than -60kPa need an additional leak valve or relief valve on the inlet piping. Please read the page of "How to Use This Catalog" first for correct use of compressors and pumps.

### Application Examples

#### Liquid Purification



### Dimensional Outline Drawing (Unit: mm)

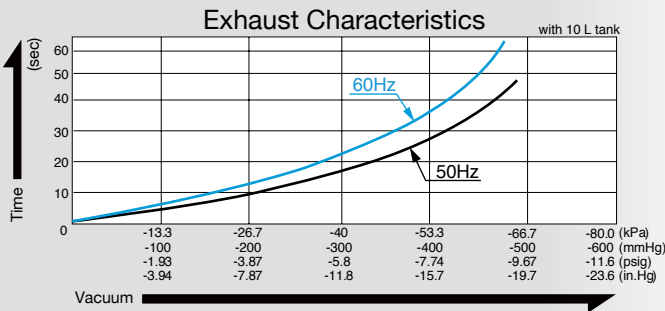
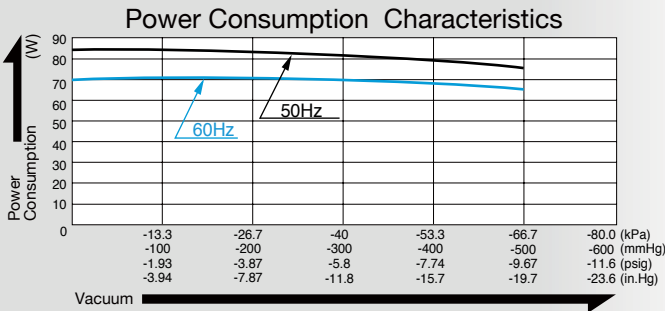
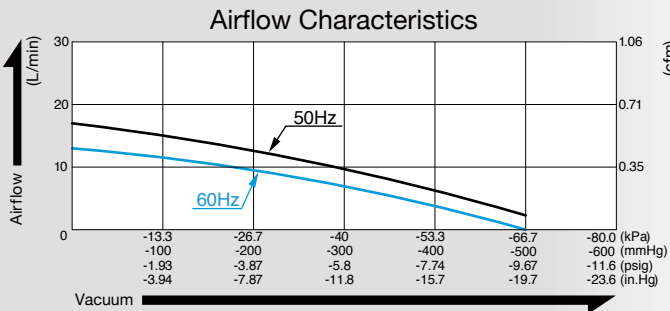


# Vacuum Pump

## Model VP0945



### Airflow & Power Consumption



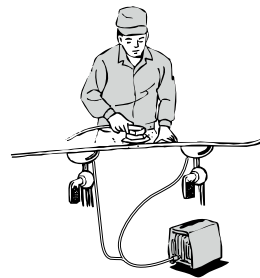
### Specifications

Attainable Vacuum *1	-60 kPa (-450 mmHg) -600 mbar -17.7 in. Hg	
Free Air Displacement	12 L/min 0.42 cfm	
Rated Voltage	115 V AC	230 V AC
Power Consumption	70 W	85 W
Rated Frequency	60 Hz	50 Hz
Rated Performance	3,000 hours	
Inlet	15 mm O.D. hose barb	
Outlet	ISO Rc 1/4	
Duty Cycle	Continuous	
Coil Insulation Class	E or its equivalent (JETL)	
Mounting Dimensions	102 (L) x 130 (W) mm 4-1/64" (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"

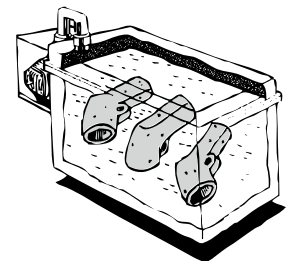
\*1: Operations at higher than -60kPa need an additional leak valve or relief valve on the inlet piping. Please read the page of "How to Use This Catalog" first for correct use of compressors and pumps.

### Application Examples

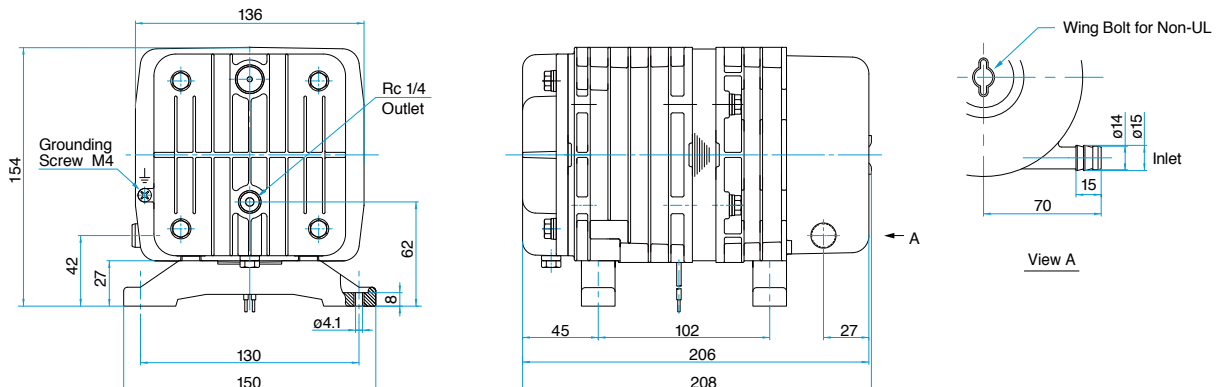
Vacuum Vice



Impregnation Depressurizer



### Dimensional Outline Drawing (Unit: mm)

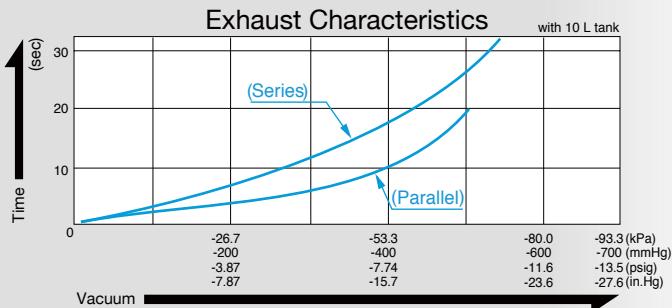
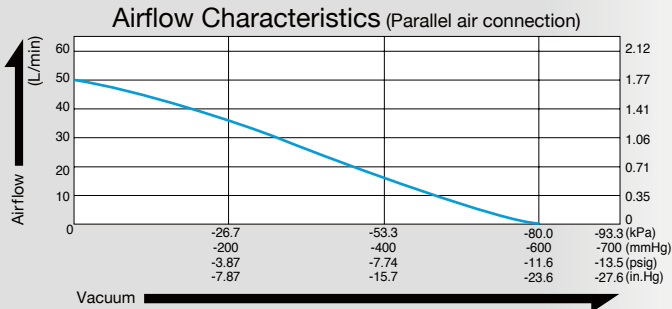
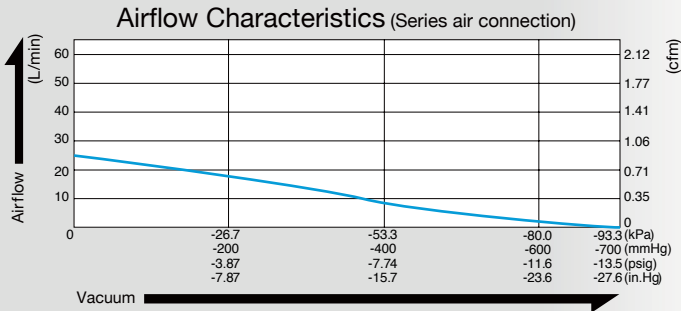


# Vacuum Pump

## Model VP0660x2



### Airflow & Power Consumption

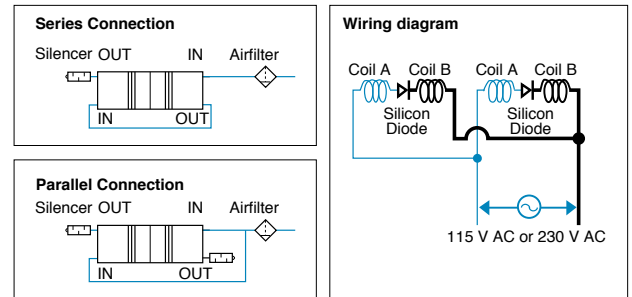


### Specifications

Attainable Vacuum *1	Series Connection	-93.3 kPa (-700 mmHg) -933 mbar -27.6 in. Hg	Parallel Connection	-80 kPa (-600 mmHg) -800 mbar -23.6 in. Hg
Free Air Displacement		25 L/min 0.88 cfm		50 L/min 1.77 cfm
Rated Performance	6,000 hours			
Rated Voltage	115 V AC		230 V AC	
Power Consumption	125 W		100 W	
Rated Frequency	60 Hz		50 Hz	
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 11-1/32" (L) x 5-1/8" (W)			
Weight	10 kg 22 Lbs			
Leadwire Length	150 mm 5-7/8"		600 mm 23-5/8"	

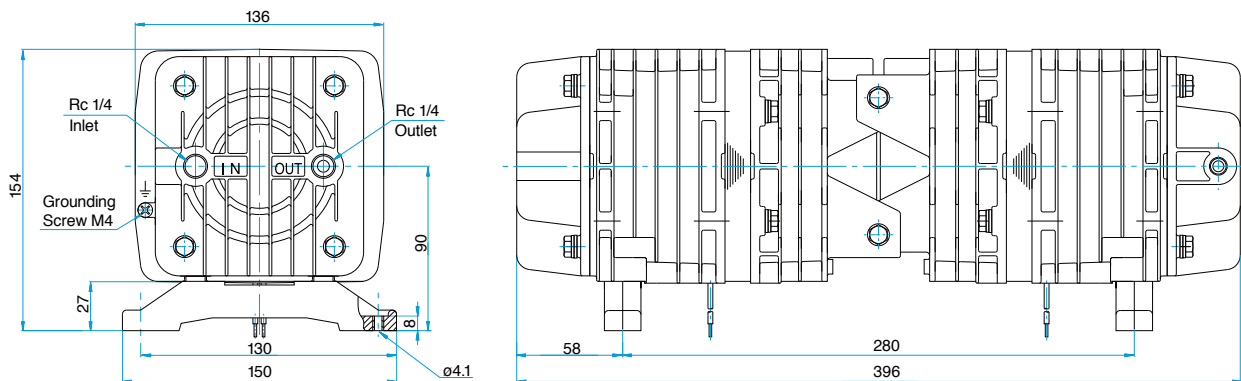
\*1: Operations at higher than -93.3kPa in series or -80kPa in parallel need an additional leak valve or relief valve on the inlet piping.  
Please read the page of "How to Use This Catalog" first for correct use of compressors and pumps.

### Application Examples



\* Air line connection is required by the user.

### Dimensional Outline Drawing (Unit: mm)





# AIR COMPRESSOR

## DC LINEAR

### Free Piston Compressor

Page

DAH102-X1 — 39

DAH102-Y1 — 40

DAH105-X1 — 41

DAH105-Y1 — 42

DAH110-X1 — 43

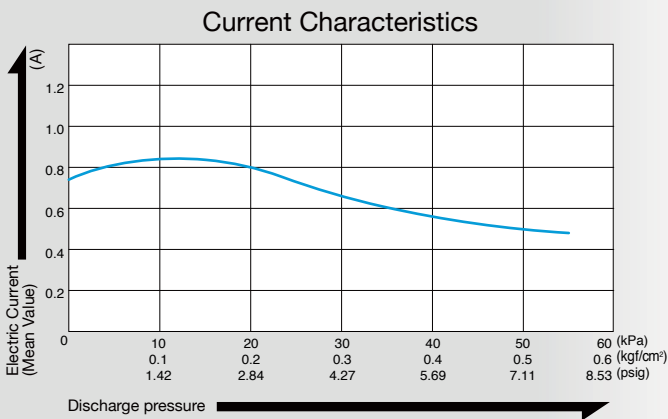
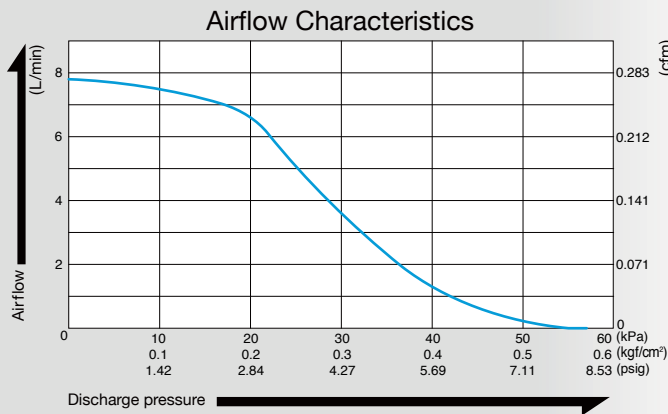
DAH110-Y1 — 44

# Compressor

## Model **DAH102-X1** 12 V DC



### Airflow & Electric Current



### Specifications

Rated Pressure	20 kPa (0.2 kgf/cm <sup>2</sup> ) 0.2 bar 2.84 psig
Rated Airflow	5 L/min *1 0.177 cfm
Maximum Pressure	50 kPa (0.5 kgf/cm <sup>2</sup> ) 0.5 bar 7.11 psig
Rated Voltage	12 V DC
Current (Mean Value)	0.81 A
Rated Performance (MTTF)	10,000 hours
Outlet	6 mm O.D. hose barb
Duty Cycle	Continuous
Coil Insulation Class	A or its equivalent
Mounting Dimensions	76 (L) x 70 (W) mm 2-63/64" (L) x 2-3/4" (W)
Weight	0.91 kg 2.01 Lbs
Leadwire Length	300 mm 11-13/16"

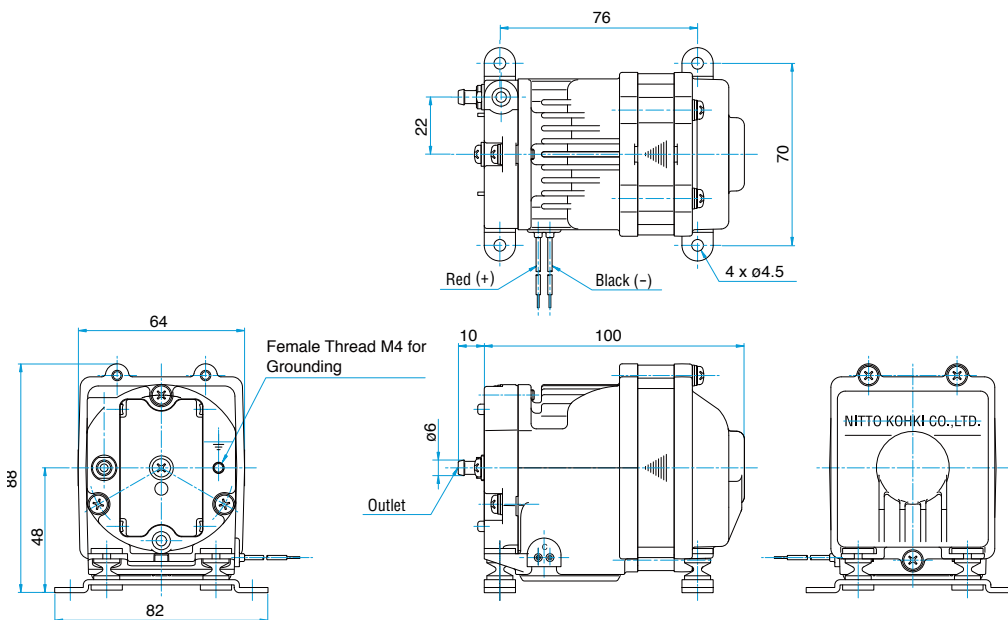
\*1: Airflow at rated pressure.

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

### Application Examples

Medical equipment, analyzers, etc.

### Dimensional Outline Drawing (Unit: mm)



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



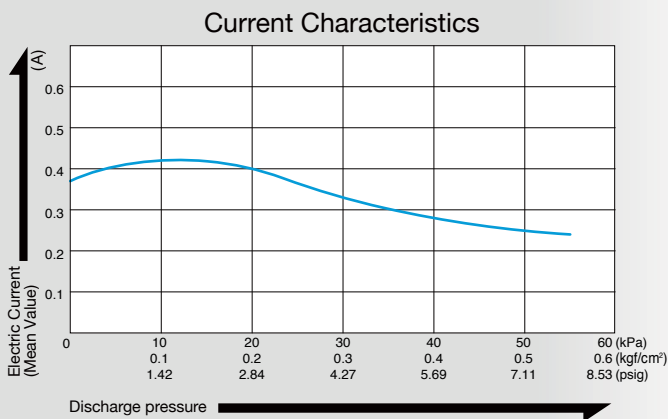
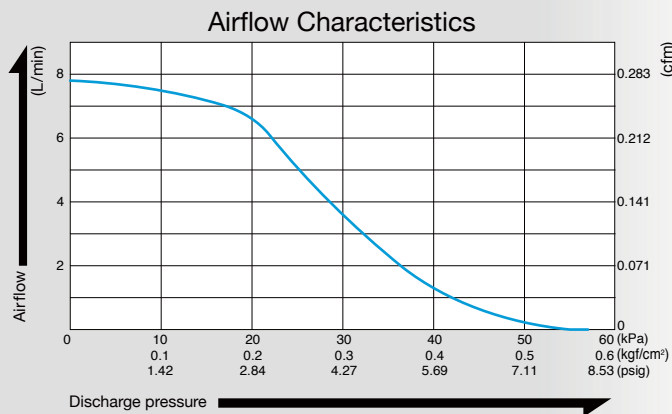


# Compressor

## Model **DAH102-Y1** 24 V DC



### Airflow & Electric Current



### Specifications

Rated Pressure	20 kPa (0.2 kgf/cm <sup>2</sup> ) 0.2 bar 2.84 psig
Rated Airflow	5 L/min *1 0.177 cfm
Maximum Pressure	50 kPa (0.5 kgf/cm <sup>2</sup> ) 0.5 bar 7.11 psig
Rated Voltage	24 V DC
Current (Mean Value)	0.40 A
Rated Performance (MTTF)	10,000 hours
Outlet	6 mm O.D. hose barb
Duty Cycle	Continuous
Coil Insulation Class	A or its equivalent
Mounting Dimensions	76 (L) x 70 (W) mm 2-63/64" (L) x 2-3/4" (W)
Weight	0.91 kg 2.01 Lbs
Leadwire Length	300 mm 11-13/16"

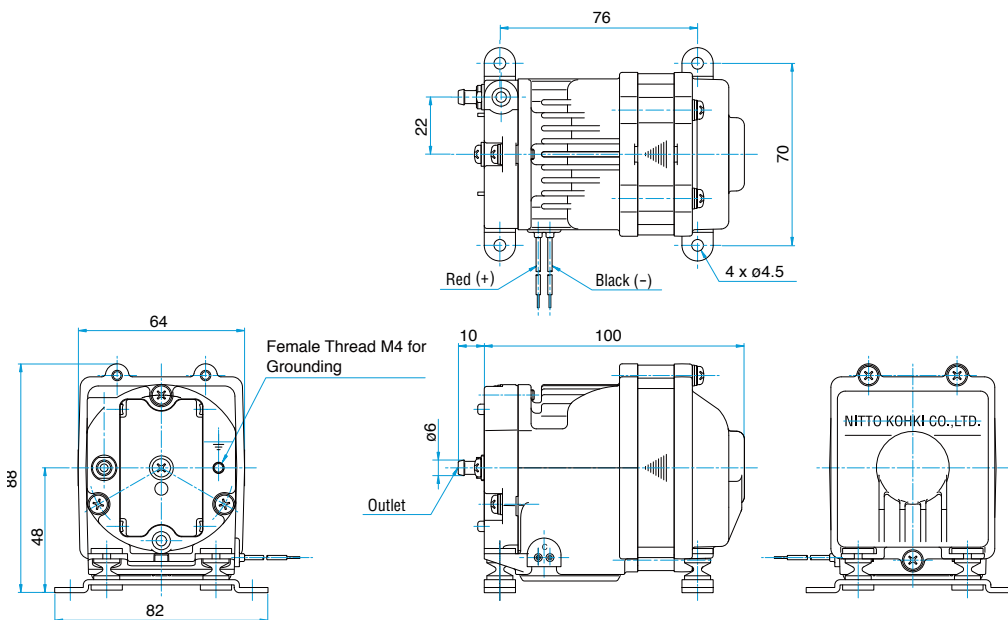
\*1: Airflow at rated pressure.

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

### Application Examples

Medical equipment, analyzers, etc.

### Dimensional Outline Drawing (Unit: mm)

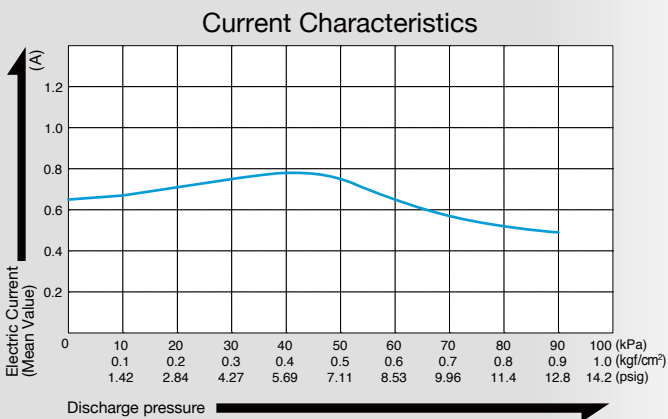
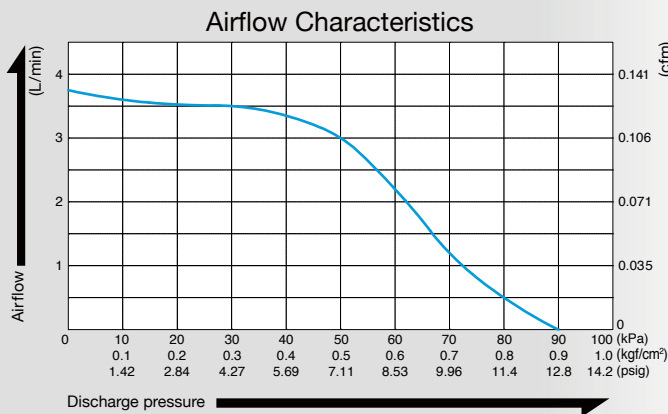


# Compressor

## Model **DAH105-X1** 12 V DC



### Airflow & Electric Current



### Specifications

Rated Pressure	50 kPa (0.5 kgf/cm <sup>2</sup> ) 0.5 bar 7.11 psig
Rated Airflow	2.5 L/min *1 0.088 cfm
Maximum Pressure	80 kPa (0.8 kgf/cm <sup>2</sup> ) 0.8 bar 11.4 psig
Rated Voltage	12 V DC
Current (Mean Value)	0.74 A
Rated Performance (MTTF)	10,000 hours
Outlet	6 mm O.D. hose barb
Duty Cycle	Continuous
Coil Insulation Class	A or its equivalent
Mounting Dimensions	76 (L) x 70 (W) mm 2-63/64" (L) x 2-3/4" (W)
Weight	0.91 kg 2.01 Lbs
Leadwire Length	300 mm 11-13/16"

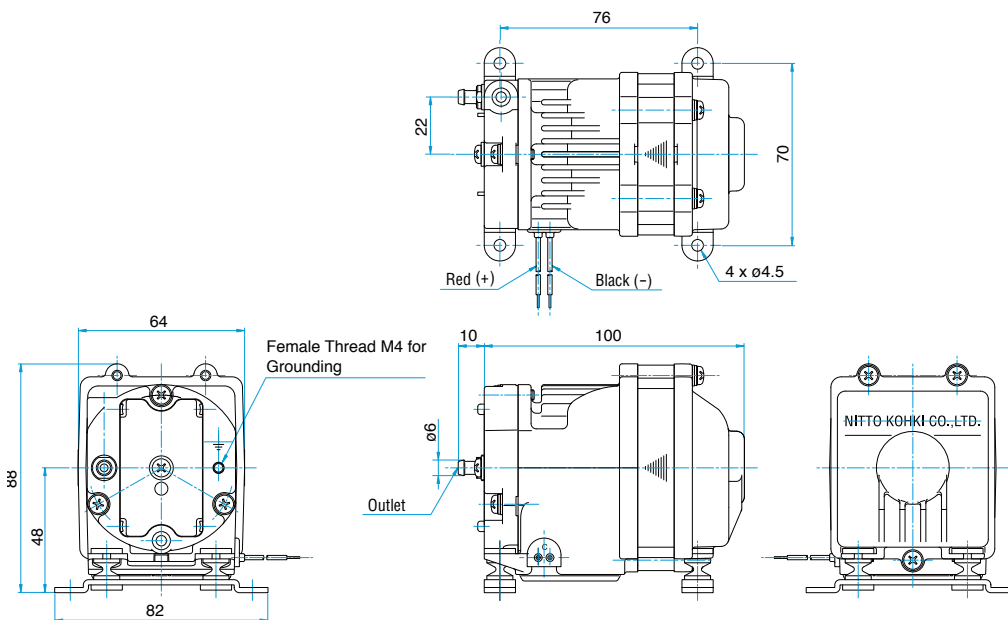
\*1: Airflow at rated pressure.

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

### Application Examples

Medical equipment, analyzers, etc.

### Dimensional Outline Drawing (Unit: mm)



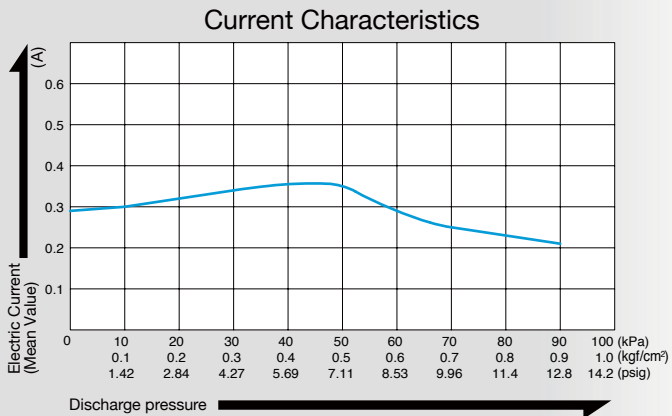
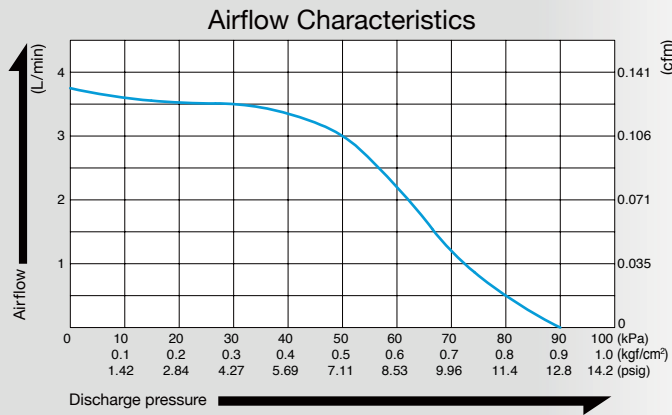
Heavy duty rubber feet available on request to prevent drop damage when located within portable devices.

# Compressor

## Model **DAH105-Y1** 24 V DC



### Airflow & Electric Current



### Specifications

Rated Pressure	50 kPa (0.5 kgf/cm <sup>2</sup> ) 0.5 bar 7.11 psig
Rated Airflow	2.5 L/min *1 0.088 cfm
Maximum Pressure	80 kPa (0.8 kgf/cm <sup>2</sup> ) 0.8 bar 11.4 psig
Rated Voltage	24 V DC
Current (Mean Value)	0.35 A
Rated Performance (MTTF)	10,000 hours
Outlet	6 mm O.D. hose barb
Duty Cycle	Continuous
Coil Insulation Class	A or its equivalent
Mounting Dimensions	76 (L) x 70 (W) mm 2-63/64" (L) x 2-3/4" (W)
Weight	0.91 kg 2.01 Lbs
Leadwire Length	300 mm 11-13/16"

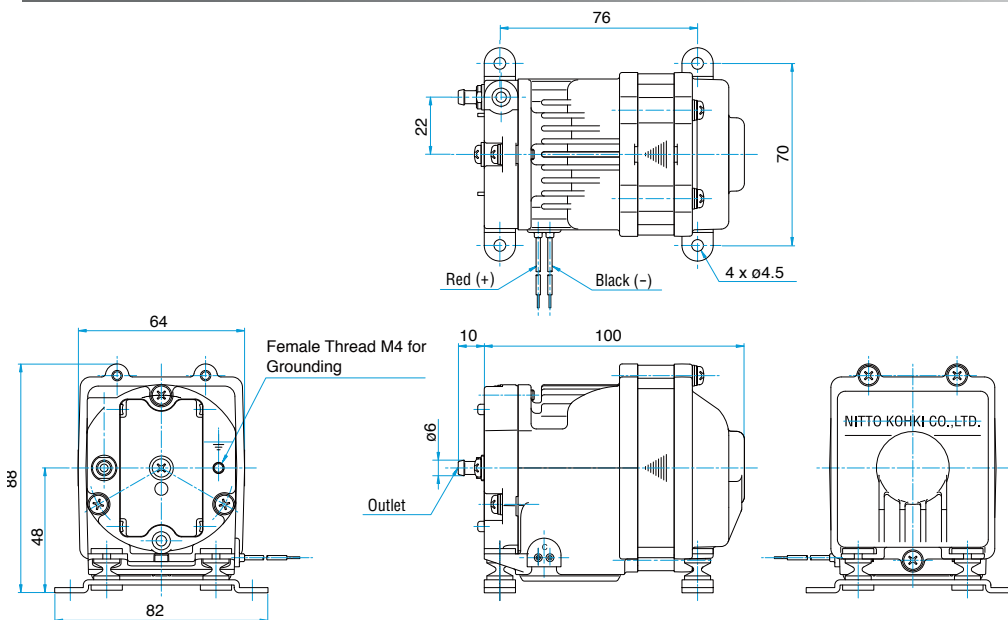
\*1: Airflow at rated pressure.

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

### Application Examples

Medical equipment, analyzers, etc.

### Dimensional Outline Drawing (Unit: mm)



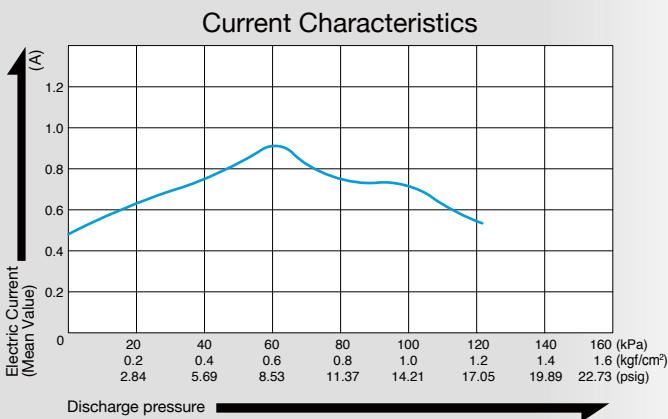
Heavy duty rubber feet available on request to prevent drop damage when located within portable devices.

# Compressor

## Model **DAH110-X1** 12 V DC



### Airflow & Electric Current



### Specifications

Rated Pressure	100 kPa (1.0 kgf/cm <sup>2</sup> ) 1.0 bar 14.2 psig
Rated Airflow	1.0 L/min *1 0.035 cfm
Maximum Pressure	120 kPa (1.2 kgf/cm <sup>2</sup> ) 1.2 bar 17.1 psig
Rated Voltage	12 V DC
Current (Mean Value)	0.74 A
Rated Performance (MTTF)	5,000 hours
Outlet	4.7 mm O.D. hose barb
Duty Cycle	Continuous
Coil Insulation Class	A or its equivalent
Mounting Dimensions	76 (L) x 70 (W) mm 2-63/64" (L) x 2-3/4" (W)
Weight	0.91 kg 2.01 Lbs
Leadwire Length	300 mm 11-13/16"

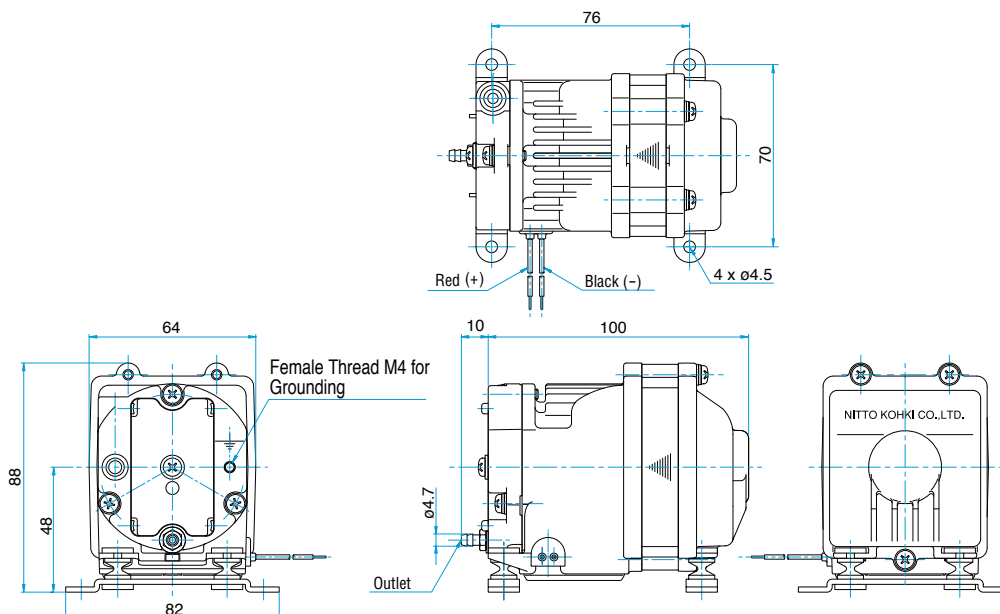
\*1: Airflow at rated pressure.

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

### Application Examples

Medical equipment, analyzers, etc.

### Dimensional Outline Drawing (Unit: mm)



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

