

ANLET

ANLET 3 LOBES BLOWER & VACUUM PUMP



ANLET CO., LTD.

2011

■ Three-Lobes Blower

Initially, nearly all blowers were of the two-lobed type, and although the design of the three-lobed type was understood to offer the advantages lower noise and vibration as well as greater efficiency, construction was difficult. Anlet alone has been able to produce high-performance yet low-cost blowers using a patented three-lobe rotor machining tool.

■ ANLET Roots Blower's Strong Point

1. The three-lobe Roots-type rotor and double helical casing radically reduce noise and vibrations. The addition of endless casing has met the goal of energy savings.
2. ANLET blowers blow clean air free from admixed oil, so there is no dispersion of oil mist to foul the environment.
3. All-in-one rotor/shaft unit is wear-free, allowing for long-term continuous operation with no deterioration in blower performance.
4. Don't be fooled by their compact size. These are highly efficient blowers that can be operated at high speed.
5. Simple structure and special bearings that allow for grease replenishment give these blowers outstanding durability.
6. Each unit is equipped with a gear oil overshooter to prevent oil leakage problems.
7. Models are numerous and varied, meaning you can choose just the right type for your purposes.

■ "Endless" Construction

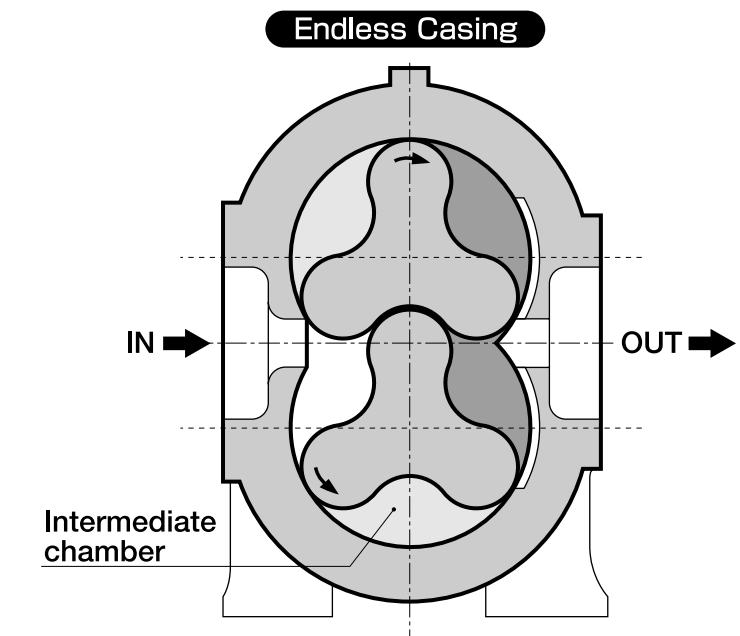
By enlarging the communicating angle between the casing's intake opening and exhaust opening, it has been possible to continuously maintain an intermediate chamber enveloped by rotor and casing in between the outlet and inlet sides of the unit. The pressure in this intermediate chamber lies between the intake and exhaust pressures, and the decrease in differential pressure between them saves energy because it makes for less leakage between rotor and casing at the same time that it improves the unit's volumetric efficiency and mechanical efficiency. This special design makes it difficult for the high-temperature air on the outlet side to return to the inlet side. The unit as a whole heats up far less than conventional blowers, allowing for operation at a higher load. As an added benefit, the smaller rise in temperature keeps the noise of bearings and timing gear to a minimum, while the low transmission of noise to the intake side makes the blower into an all-around quiet-running unit.

■ Operating Principle

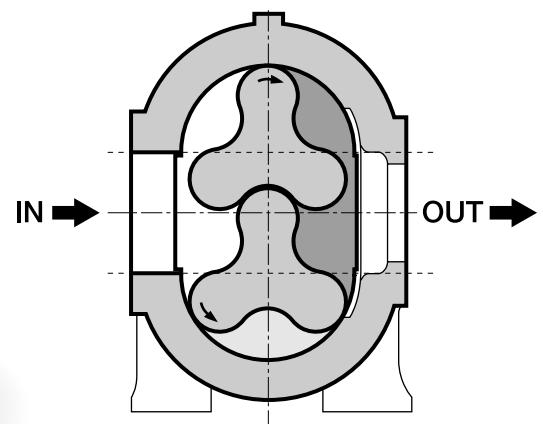
The blower is a displacement blower, and sends a fixed amount of air in proportion to its rotation speed. With the three-lobed rotors, the two rotors make six intake and exhaust cycles per revolution, and because the air has less pulses than with the two-lobed type, fluctuations in load are small, mechanical strength is high, and less noise and vibration are generated.

Figure I shows the operation principle.

While the two three-lobed rotors mounted on two parallel shafts maintain only a very small clearance between themselves and the



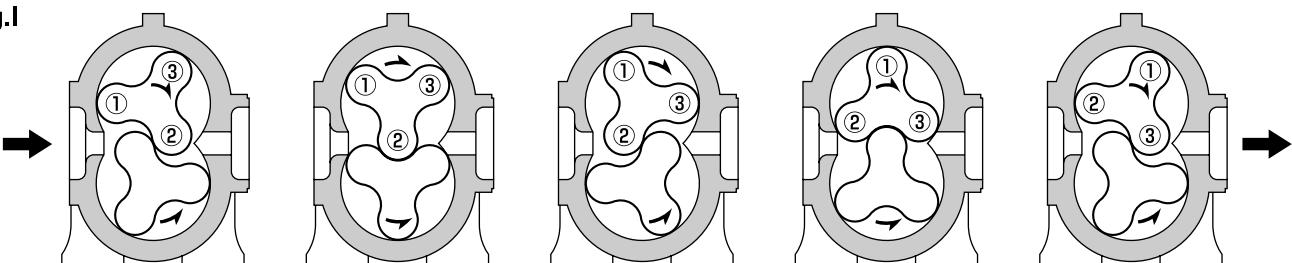
Conventional type



inner surface of the oval casing operating chamber and between each other, they are rotated in opposite directions at an equal speed, moving a fixed volume of the air enclosed by the casing and rotors from the intake side to the output side.

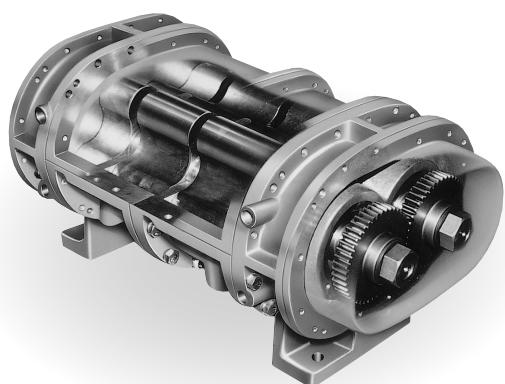
Because each rotor phase is synchronized correctly by a timing gear, there is no contact. This permits high speed and eliminates the need for internal lubrication. Moreover, the simple design, easy handling, and stable performance make possible a wide range of applications.

Fig.I



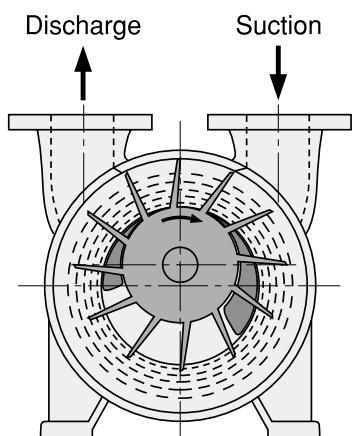
■ANLET Vacuum Pump's Strong Point

1. Endless casing, high efficiency, low noise.
2. Split casing for easier disassembly and internal inspection.
3. Integrated rotor and shaft configures three lobe rotor for low noise and low vibration.
4. No internal lubricants used eliminates oil backflow into vacuum side resulting to continues vacuum.
5. No oil mist scatter at discharge side for clean working environment and protect worker's health.
6. Can run under atmospheric pressure, stable performance over wide range of pressure <Shut off operation capable>
7. Wear free allows for long term continuous operation, simplifies maintenance management.
8. Compressed gas drain recovery possible.
9. Simple construction with exceptional durability.



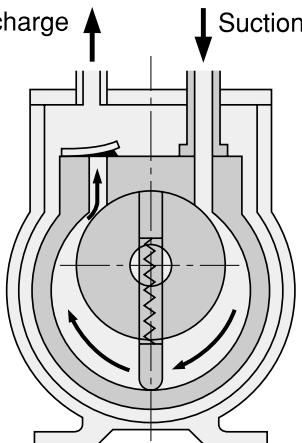
Problems with other products (But there are good points too...)

Water seal vacuum pump

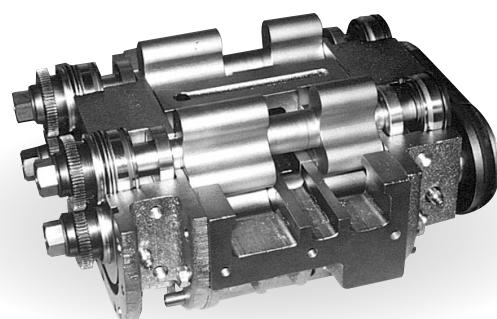
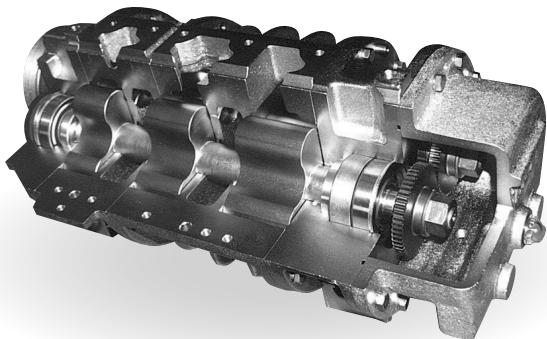


- High electric and water bills.
- Needs water treatment facility.
- Performance is affected by water temperature and water volume.

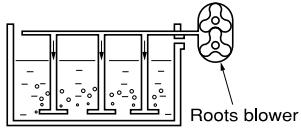
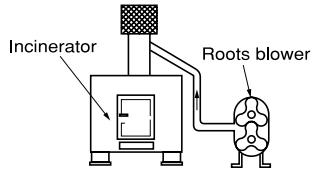
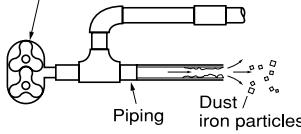
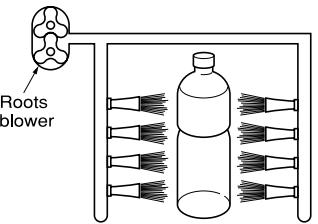
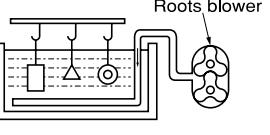
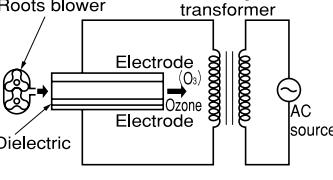
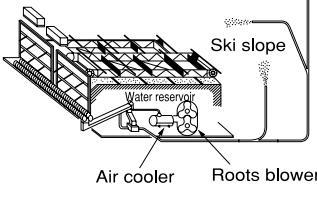
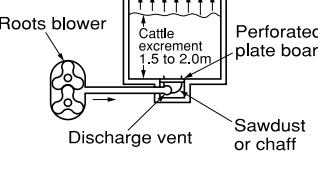
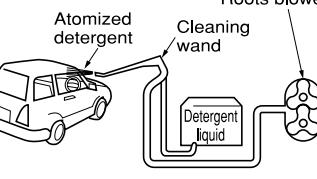
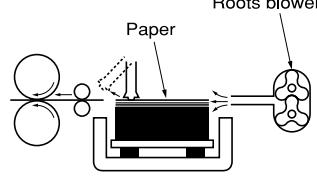
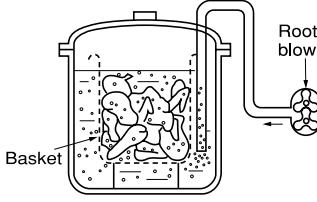
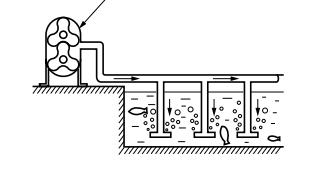
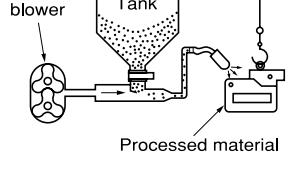
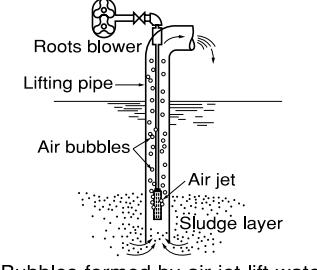
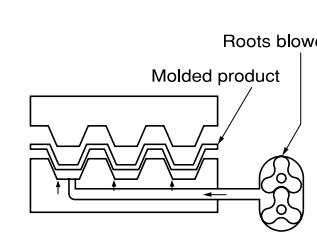
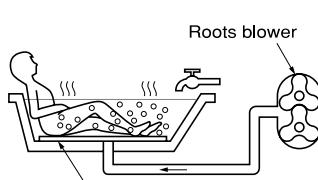
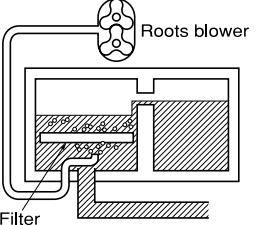
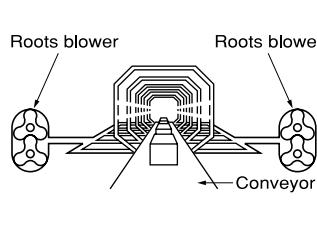
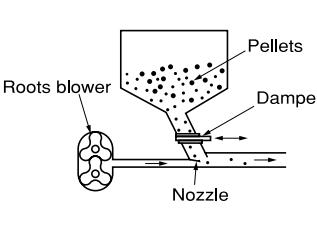
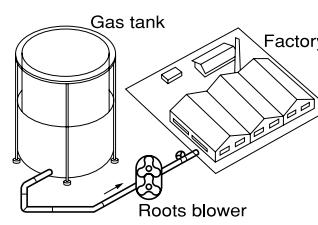
Hydraulic rotary vacuum pump



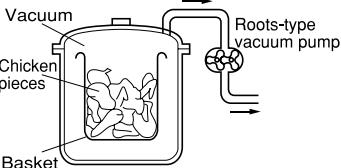
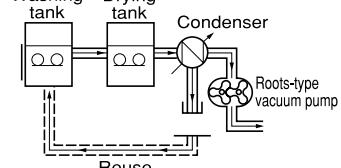
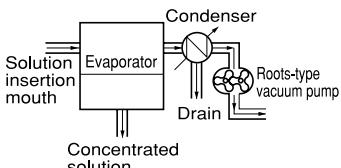
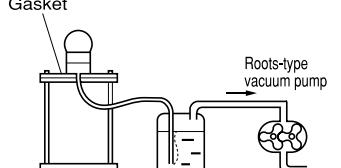
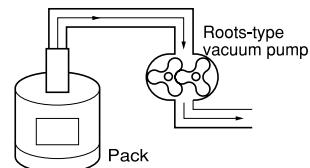
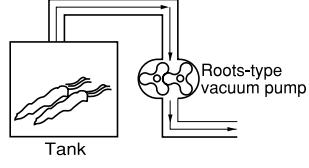
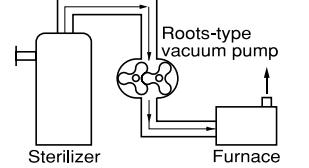
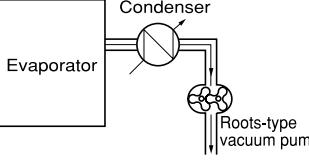
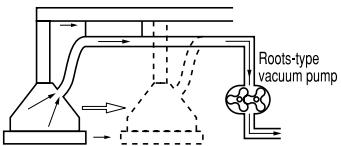
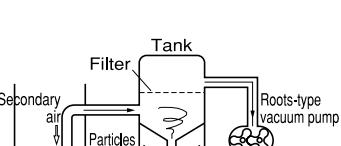
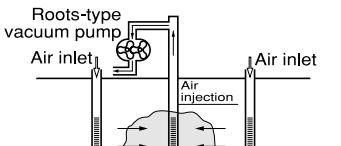
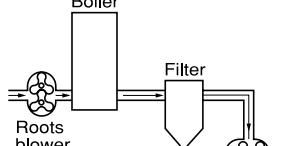
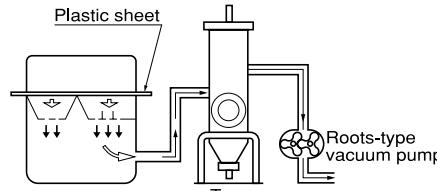
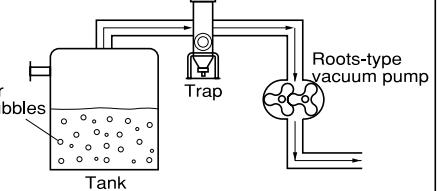
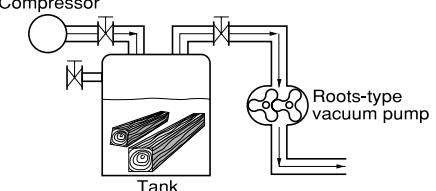
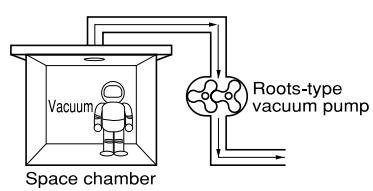
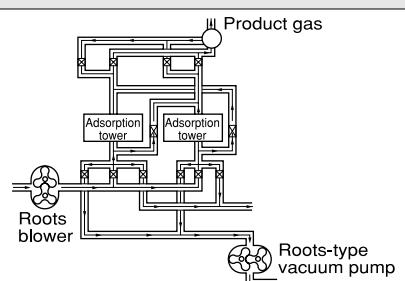
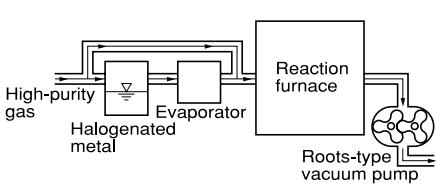
- Only smoke occurs at low pressure use.
- Does not allow mixture of steam, mist and solvents.
- Needs oil recovery facility, difficult maintenance.



Example of usage at discharging model

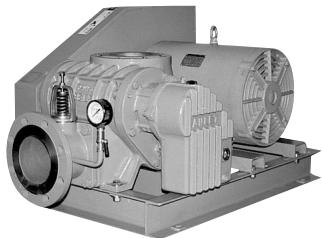
Water Treatment	Incinerators	Cleaning of Pipes	Air Blower
 <p>Blowers are used to purify water and stir up sediment at water treatment plants.</p>	 <p>Blowers enhance combustion efficiency and promote the removal of exhaust gases.</p>	 <p>Blowers can be used to remove dust and iron particles when piping is replaced or periodically checked. They can also be used to supply various kinds of coating material to the interior of pipes.</p>	 <p>Here blower is used to blow off drops of water clinging to surfaces of cans, bottles, machine parts, etc. Air blowers can also be used as sources of cooling or drying air.</p>
Plating Bath  <p>Plating quality can be enhanced by using a blower to circulate electrolytes in the plating bath to give the plating a more uniform thickness. Here blowers serve as the source of air supply.</p>	Ozonizer  <p>This blower is used as the air supply source for a high-concentration ozonizer.</p>	Snow Machine  <p>Ski resorts use blowers for pneumatic transport with artificial snow machines.</p>	Composting by Fermentation of Livestock Excrement  <p>The stream of air provided by the blower promotes the fermentation of livestock excrement, etc., for efficient composting.</p>
Atomization of Detergent  <p>Blowers conserve energy at car washes by atomizing water and detergent.</p>	Paper Feed for Printers  <p>Air discharged from blowers facilitates the separation of sheets of paper as well as their distribution in neat piles after printing.</p>	Frozen Food  <p>Blowers are useful in the stir-freezing of frozen foods in water.</p>	Oxygen Supply for Aquafarms  <p>Aquafarms producing all sorts of fish and shellfish use blowers to oxygenate and circulate the water in tanks. Blowers are also used for aquariums and live fish tanks.</p>
Sand blasting  <p>Provides a concentrated blast of air for use in sandblasting.</p>	Airlift Pump  <p>Bubbles formed by air jet lift water through the pipe by reducing the specific gravity of sewage.</p>	Press  <p>Blower is used for lift when removing molded products from the press.</p>	Medical treatment bath  <p>Blowers supply the air that creates the whirlpool in a Jacuzzi hot tub. Many health centers and other facilities have introduced whirlpool baths for their therapeutic effects.</p>
Back washing  <p>Blowers are used to optimize filter and filter material performance by backwashing.</p>	Drying Line  <p>Our blowers are used to good effect in small-scale drying lines.</p>	Particle Transportation  <p>Blower is used for the pneumatic conveyance of pelletized raw materials such as vinyl chloride and polyethylene (The vacuum method will work here as well).</p>	Special Gases  <p>Blowers serve vital functions in the supply of city gas, etc.</p>

Example of usage at vacuum model

Food Processing	Vacuum Drying for Hydrocarbon Solvent Washing Machines	Vacuum Drying for Water-based Washing Machines	Leak Tester
 <p>Vacuum conditions are useful in the seasoning of foods.</p>	 <p>Here, a Roots-type vacuum pump that can collect solvent drainage is ideal (used with drainage pot).</p>	 <p>Used to vacuum dry the moisture.</p>	 <p>Can be used in tests of airtightness.</p>
Vacuum Packing of Food  <p>Vacuum packing keeps foods such as meat and vegetables fresh.</p>	Freeze Drying  <p>Freshness and quality of vegetables and other foods can also be preserved by freezing the foods in tanks under vacuum conditions.</p>	Sterilization Apparatus  <p>Our pumps are used as vacuum sources in sterilizers.</p>	Concentration/Distillation  <p>In these processes, liquids are made more concentrated by evaporation, or the vapor produced is cooled and returned once again to liquid state.</p>
Adsorption Conveyance  <p>Adsorption conveyance by vacuum pump is well suited to heavy materials such as steel plates and easily breakable materials such as glass. Energy savings are promoted by the elimination of gripping operations.</p>	Particle Transport  <p>Used in the conveyance of rice, wheat, soybeans, resin pellets, etc.</p>	Soil Remediation  <p>Used in the decontamination of soil and groundwater.</p>	Combustion Gas Recovery  <p>Also used in the desulfurization of high-temperature combustion gas and flue gas.</p>
Vacuum Molding  <p>Roots-type vacuum pumps are used as vacuum sources for vacuum molder used with resins, etc. (trap attached).</p>	Vacuum Defoaming  <p>Product quality is improved for chemicals and pharmaceuticals by using a Roots-type vacuum pump to remove air bubbles by defoaming under vacuum.</p>	Impregnation  <p>In this setup, our pumps first produce a vacuum in the tank and then supply high pressure to facilitate the impregnation of parts with liquids or gases.</p>	
Experiments in Space Environment  <p>Dry vacuum pumps can be used to create a "space environment" on Earth by producing a vacuum state within a space chamber.</p>	PSA  <p>This configuration shows a blower used in combination with a vacuum pump.</p>	Heat Treatment  <p>Reaction furnaces for heat treatment need to be airtight so that no oil or air will become admixed with the reactants. Roots-type vacuum pumps can meet this need.</p>	

(Discharging model)

BE-H Type
P7 · 8



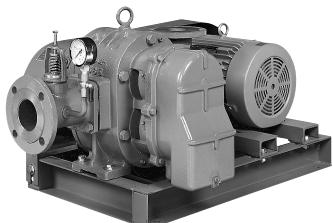
Normal pressure : 0~80kPa
Bore : 50·65·80·100·125·
150·200·250·300·
350·400mm

BH Type
P9 · 10



Normal pressure : 0~60kPa
Bore : 50·65·80·100·
125·150·200·250·
300·350mm

BS Type
P11 · 12



Normal pressure : 0~60kPa
Bore : 32·40·50·65·80·
100·125·150·
200·250·300mm

BWH Type
P13 · 14



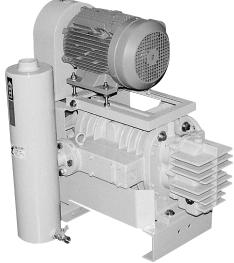
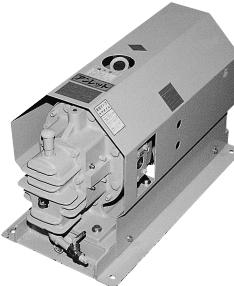
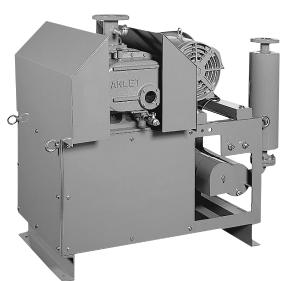
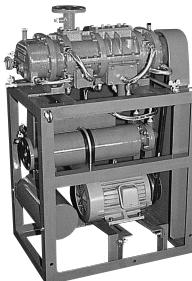
Normal pressure : 0~60kPa
Bore : 25·32·40·50·65·
80·100·125mm

BSS Type
P15



Normal pressure : 0~50kPa
Bore : 20·25·32·40mm

[Vacuum model] Air cooled type, no-discharge operation OK.

FT2 Type P16	 <p>Ultimate pressure : 2.7kPa Designed exhaust speed : 20·45·80·150m³/H</p>
FT3 Type P17	 <p>Ultimate pressure : 100Pa Designed exhaust speed : 25·40·50m³/H</p>
FT3-L Type P18	 <p>Ultimate pressure : 100Pa Designed exhaust speed : 60·100·200·350·700m³/H</p>
FT4-LE Type P19	 <p>Ultimate pressure : 10Pa Designed exhaust speed : 50·65·150·200·300·450m³/H</p>
CT4-LE Type P20	 <p>Ultimate pressure : 10Pa Designed exhaust speed : 50·65·150·200·300·450·700m³/H</p>
CT3 Type P21	 <p>Ultimate pressure : 100Pa Designed exhaust speed : 60·100·200·350·700·1000m³/H</p>

*Also available are for high pressure, high vacuum, etc. Please contact us for any inquiries.

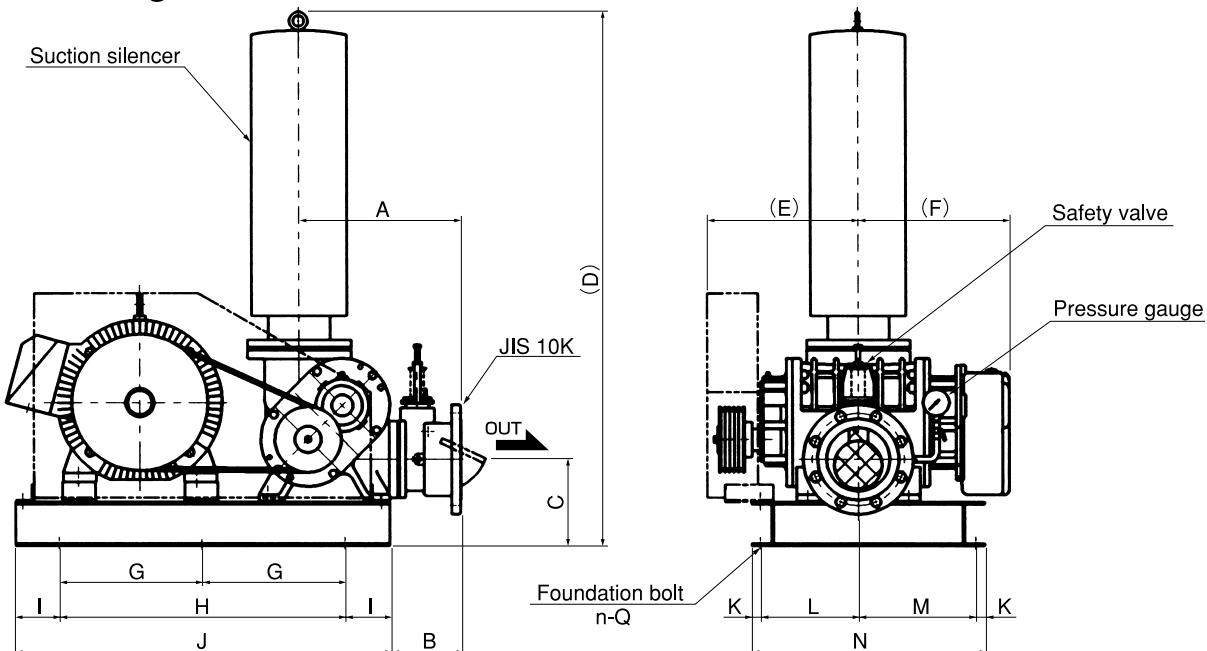
BE-H Type

Model	Bore	min ⁻¹	10kPa (1020mmAq)		20kPa (2040mmAq)		30kPa (3060mmAq)		40kPa (4080mmAq)		50kPa (5100mmAq)		60kPa (6120mmAq)		70kPa (7140mmAq)		80kPa (8160mmAq)	
			m ³ /min	kW	m ³ /min	kW	m ³ /min	kW	m ³ /min	kW	m ³ /min	kW						
BE350H	14B	1200	109	27.5	107	48.2	106	68.8	104	89.5	103	110	101	131				
		1300	119	31.0	117	53.6	116	76.2	114	98.8	113	121	111	144				
		1350	124	32.8	122	56.3	121	80.0	119	103	118	127	116	151				
		1450	134	36.3	132	61.8	131	87.4	129	113	128	138	126	164				
		1550	144	39.8	142	67.2	141	94.9	139	122	138	150	136	177				
		1650	154	43.3	152	72.6	151	102	149	132	148	161	146	190				
BE400H	16B	900	161	42	159	73	157	104	155	135	153	166	151	196				
		1050	191	51	189	87	187	123	185	159	183	195	181	232				
		1150	211	57	209	97	207	136	205	176	203	215	201	256				
		1250	230	64	228	107	226	150	224	193	222	236						
		1300	240	68	238	112	236	157	234	201	232	246						
		1350	250	72	248	118	246	165	244	211								

※Models 50 Hz type: 5BE○○H
60 Hz type: 6BE○○H

section indicates water cooled housing and gear cover
(coolant water volume: 15 to 25 L/min)

Outline Drawing



Model	Bore	A	B	C	D	E	F	G	H	I	J	K	L	M	N	n	Q	Weight(kg)
BE 50E	2B	217	100	132	631	235	230	—	450	50	550	18	156	128	320	4	M12	60
BE 65H	2½B	272	132	142	826	225	220	—	550	50	650	18	128	171	335	4	M12	85
BE 80H	3B	277	122	152	908	270	257	—	600	50	700	18	164	250	450	4	M12	115
BE100H	4B	342	153	187	1061	250	275	—	600	100	800	20	133	312	485	4	M12	155
BE125H	5B	367	163	197	1215	345	345	—	650	100	850	20	223	267	530	4	M12	195
BE150H	6B	412	178	212	1296	475	455	—	850	100	1050	20	320	220	580	4	M12	320
BE200H	8B	532	209	262	2010	495	495	475	950	150	1250	30	300	320	680	6	M12	590
BE250H	10B	667	315	297	2090	600	595	575	1150	150	1450	30	389	331	780	6	M12	880
BE300H	12B	842	421	322	2530	640	630	625	1250	150	1550	30	421	339	820	6	M16	1210
BE350H	14B	817	333	414	3120	820	764	725	1450	150	1750	35	785	425	1280	6	M16	1900
BE400H	16B	1072	510	449	3325	1000	953	925	1850	150	2150	35	965	465	1500	6	M18	2900

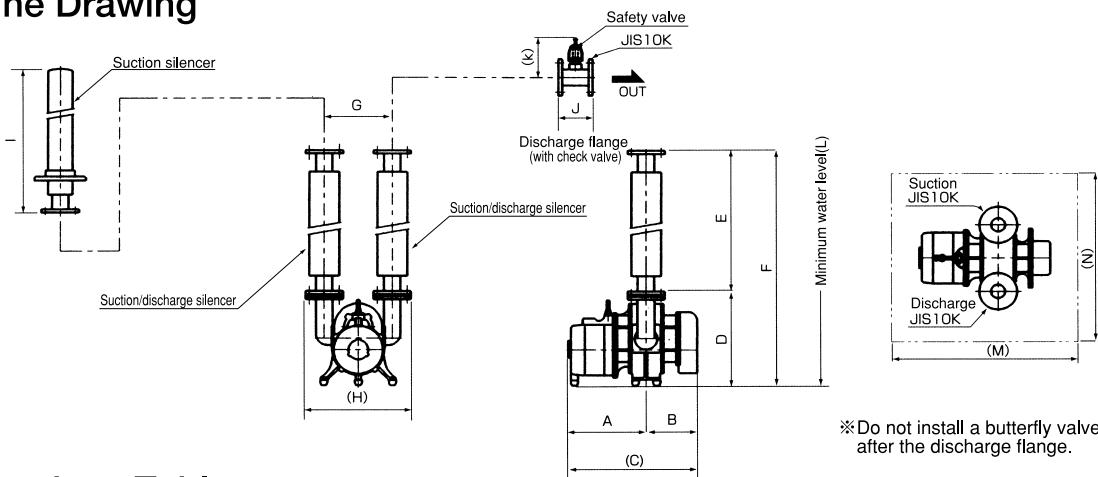
- Weight shown covers the blower with standard accessories without motor
- Standard accessories: Suction silencer・Safety valve・V-pulley・V-belt・Pressure gauge
Base・Belt cover・Check valve (BE50E～150H)

Note : Please be aware that the size of the base may differ for special motors (special-configuration motors, heteroelectric motors, motors for exclusive use in inverters, etc.) as well as motors with slide bases.

Anti-vibration mounts, rubber vibration insulators, and intake silencers with attached air filters are available as options.

BWH Type

■ Outline Drawing

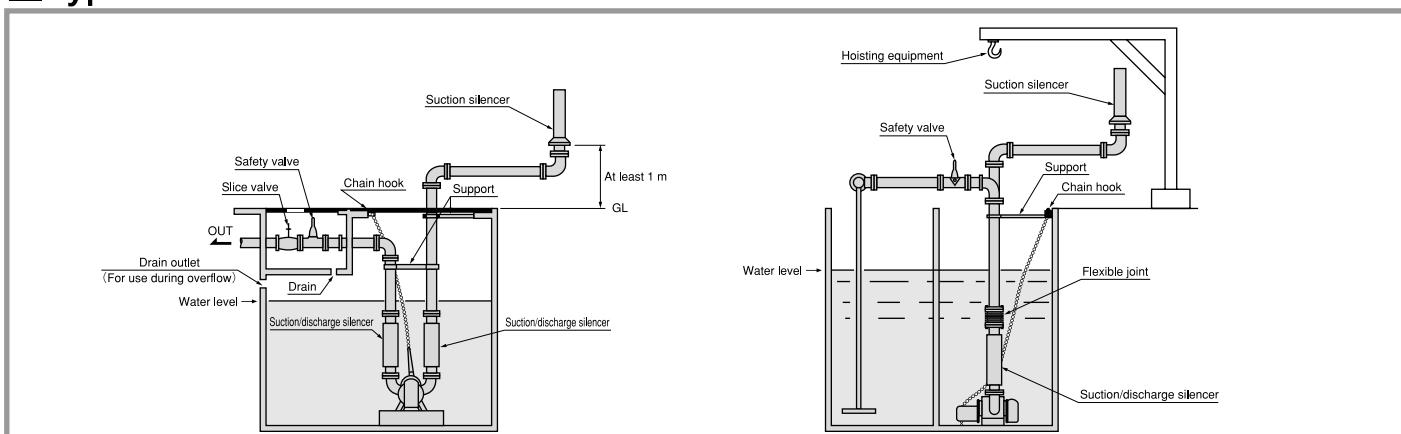


■ Dimensions Table

Model	Bore	A	B	C	D	E	F	G	H	I	J	K	L	N	Cab tire cable	Weight (kg)
BWH2504	25A	228	133	361	276	414	690	176	301	580	130	140	500	700×500 or φ600	1.25mm ² ×6m	56
BWH2504A	25A	243	148	391	276	414	690	176	301	580	130	140	500			59
BWH3208	32A	257	148	405	292	418	710	192	327	580	135	145	550			69
BWH3208A	32A	272	163	435	292	418	710	192	327	580	135	145	550			74
BWH4015	40A	296	183	479	319	578	897	240	380	650	150	145	650	700×500 or φ900	1.25mm ² ×10m	107
BWH4015D	40A	306	193	499	319	578	897	240	380	650	150	145	650			110
BWH4022	40A	343	193	536	319	578	897	240	380	650	150	145	650			113
BWH5015	50A	306	193	499	319	815	1134	240	395	870	150	150	750			126
BWH5022	50A	363	213	576	319	815	1134	240	395	870	150	150	750	900×600 or φ900	2mm ² ×10m	137
BWH5022D	50A	343	216	559	398	815	1213	312	467	870	150	150	850			166
BWH5037	50A	337	223	560	398	815	1213	298	453	870	150	150	850			161
BWH6522	65A	342	217	559	398	785	1183	312	487	870	160	160	850			174
BWH6537	65A	355	240	595	408	785	1193	317	492	870	160	160	850	900×600 or φ900	2mm ² ×10m	190
BWH6537A	65A	375	260	635	408	785	1193	317	492	870	160	160	850			196
BWH6555	65A	369	240	609	435	785	1220	317	492	870	160	160	900			205
BWH8055	80A	407	278	685	445	900	1345	332	517	1120	190	200	950	900×600	3.5mm ² ×10m	251
BWH8075	80A	459	295	754	445	900	1345	332	517	1120	190	200	950			268
BWH10075	100A	424	255	679	425	900	1325	420	630	1120	200	210	950			313
BWH10011	100A	452	255	707	445	900	1345	420	630	1120	200	210	950			363
BWH12575	125A	424	255	679	425	1000	1425	460	710	1215	200	225	1000	1200×800	5.5mm ² ×10m	363
BWH12511	125A	502	305	807	445	1000	1445	460	710	1215	200	225	1000			413
BWH12515	125A	552	305	857	445	1000	1445	460	710	1215	200	225	1000			423

- Direct startup with 7.5 kW or smaller models; star-delta startup with 11.15 kW model. (Mass value includes standard accessories.)
- Standard accessories: Suction silencer・Suction/discharge silencer・Safety valve・Pressure gauge・Discharge flange (with check valve)・Hoisting chain (6 m) (4015～12515)・Rubber cushion

■ Typical installation



- Install the suction silencer outside of the tank (at least 1 m above ground).
- The safety valve part must be above the maximum water level (at least 1 m away from the tank).
- Use steel pipe.
- Tank opening must be larger than the blower.
- Provide supports for piping.
- Provide a drain hole so that water will drain out even if the water level rises abnormally.
- If the safety valve is installed as shown in the figure, provide a drain hole so that rainwater does not accumulate.
- Make sure the hoisting chain does not contact any piping. (Prevent contact between chain and piping due to water splashing during aeration.)
- Install the suction silencer outdoors if an underground septic tank is provided.

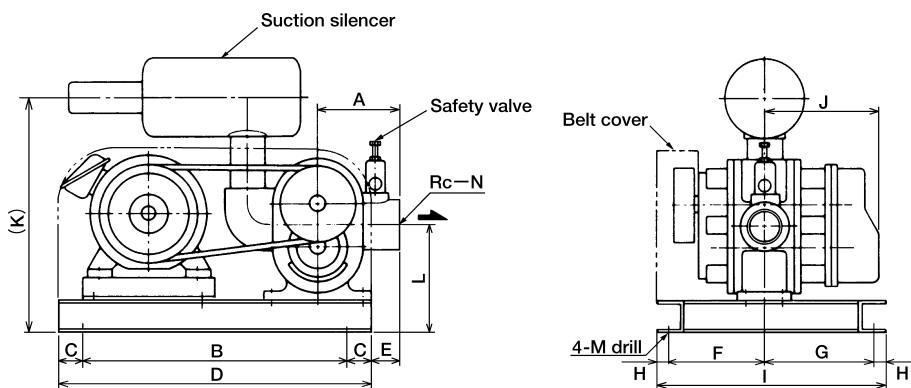
BSS Type



Performance Chart (1m³/min ≈ 35.315CFM)

Model	Bore	min⁻¹	10kPa (1020mmAq)		20kPa (2040mmAq)		30kPa (3060mmAq)		40kPa (4080mmAq)		50kPa (5100mmAq)	
			m³/min	kW								
BSS20	3/4 B	1750	0.24	0.25	0.21	0.29	0.18	0.33	0.15	0.38	0.12	0.45
		2000	0.30	0.28	0.27	0.33	0.24	0.38	0.21	0.44	0.18	0.51
BSS25	1B	2300	0.36	0.32	0.33	0.38	0.30	0.44	0.27	0.51	0.24	0.58
		2600	0.43	0.36	0.40	0.42	0.37	0.49	0.34	0.57	0.31	0.66
		3000	0.52	0.42	0.49	0.49	0.46	0.57	0.43	0.66	0.40	0.76
BSS32	1 1/4 B	2300	0.57	0.46	0.53	0.54	0.49	0.63	0.45	0.73	0.41	0.84
		2600	0.67	0.52	0.63	0.61	0.59	0.71	0.55	0.82	0.51	0.94
		3000	0.80	0.60	0.76	0.70	0.72	0.82	0.68	0.95	0.64	1.09
BSS40	1 1/2 B	2300	0.81	0.63	0.76	0.74	0.71	0.87	0.66	1.01	0.61	1.15
		2600	0.94	0.71	0.89	0.84	0.84	0.99	0.79	1.14	0.74	1.30
		3000	1.12	0.82	1.07	0.97	1.02	1.14	0.97	1.32	0.92	1.50

Outline Drawing

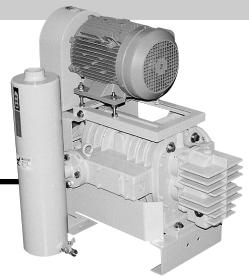


Model	Bore	unit : mm													Weight(kg)	
		A	B	C	D	E	F	G	H	I	J	K	L	M	N	
BSS20	3/4B	95	350	25	400	25	110	164	13	300	143	310	133	12	3/4"	18
BSS25	1B	95	350	25	400	25	110	164	13	300	143	310	133	12	1"	18
BSS32	1 1/4 B	95	350	25	400	25	122	152	13	300	155	325	133	12	1 1/4"	20
BSS40	1 1/2 B	95	350	25	400	25	137	137	13	300	170	350	133	12	1 1/2"	23

● Weight shown covers the blower with standard accessories without motor

● Standard accessories: Suction silencer · Safety valve · V-pulley · V-belt · Base · Belt cover

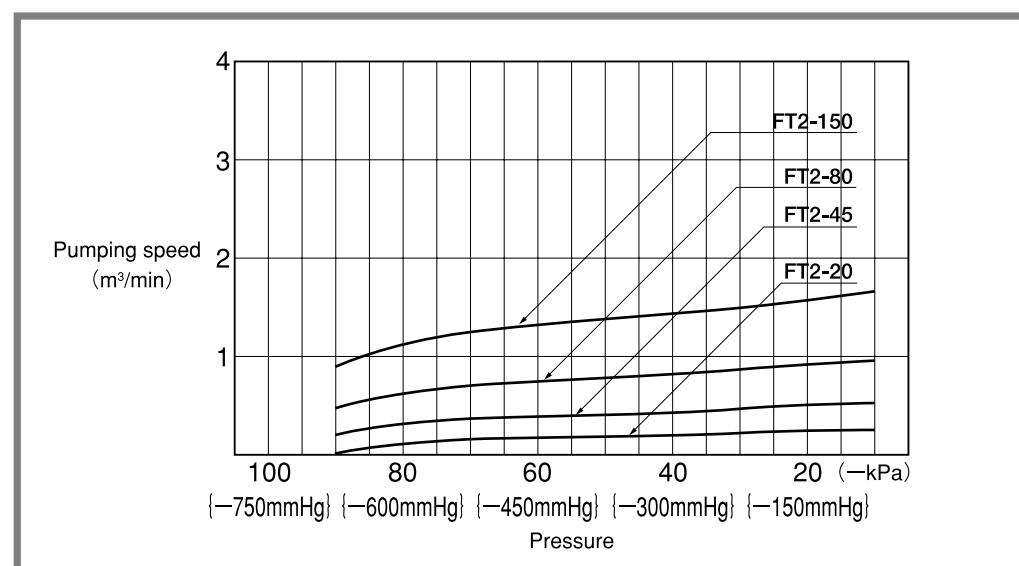
FT2 (Air cooled type) Type



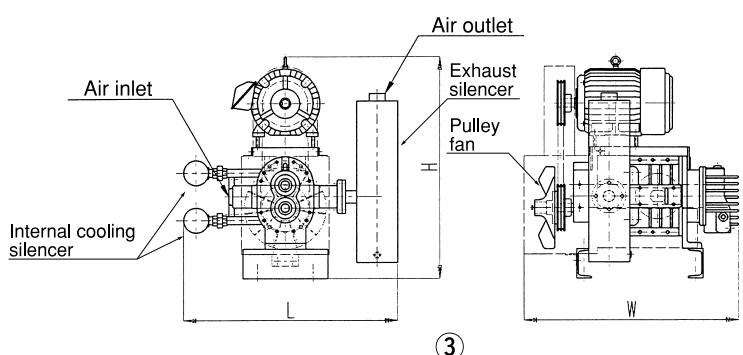
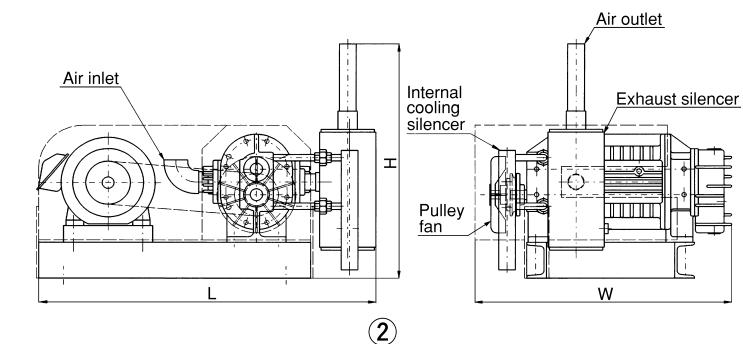
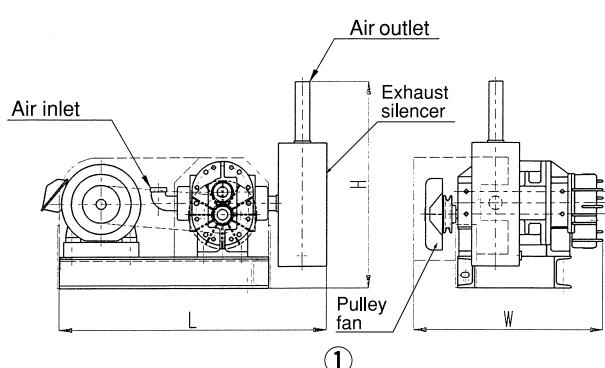
■ Performance Chart

Specification	Model	FT2-20	FT2-45	FT2-80	FT2-150
Suction bore (A)		15	25	32	50
Discharge bore (A)		15	25	25	40
Designed exhaust speed (m³/min)		0.35	0.82	1.27	2.38
Motor output (kW)		0.75×2P	1.5×2P	2.2×2P	3.7×4P
Rotation speed (min⁻¹)		2800	3000	3000	1700
Ultimate pressure (kPa)		8 {60Torr}	5.3 {40Torr}	5.3 {40Torr}	4 {30Torr}
Noise dB (A) 8kPa {60Torr} at 1m		72	74	78	80

■ Performance curve



■ Outline Drawing

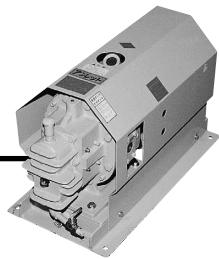


Model	L	W	H	Weight(kg)	No.
FT2-20	565	365	380	38	①
FT2-45	630	455	490	59	①
FT2-80	680	520	490	72	②
FT2-150	730	730	755	155	③

● Weight shown covers the vacuum pump with standard accessories without motor

- Standard accessories:
Base・Belt cover・Pulley fan・V-pulley・V-belt・Exhaust silencer・Internal cooling silencer (FT2-80・150)・Foundation bolt

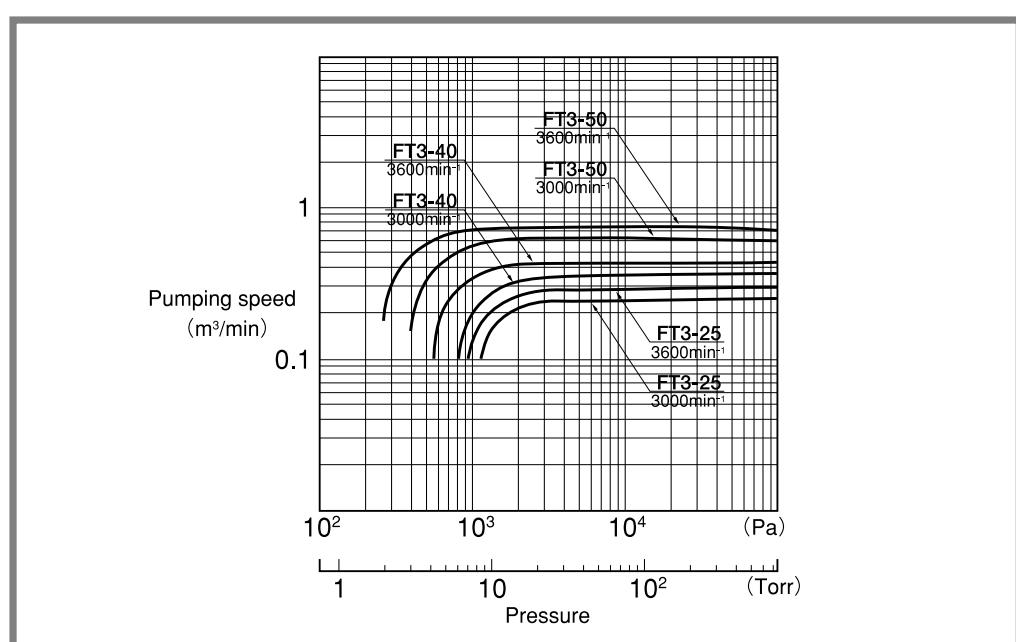
FT3 (Compact vacuum pump) Type



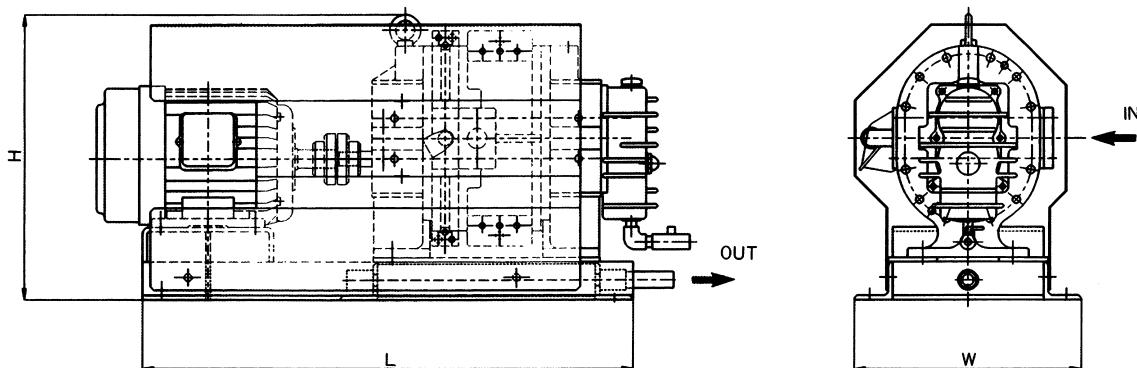
Performance Chart

Specification	Model	FT3-25	FT3-40		FT3-50	
Suction bore (A)		20		20		20
Discharge bore (A)		10		15		15
Designed exhaust speed (m³/min)		0.36	0.43	0.52	0.62	0.77
Motor output (kW)		0.75		1.5		1.5
Rotation speed (min⁻¹)		3000 / 50Hz	3600 / 60Hz	3000 / 50Hz	3600 / 60Hz	3000 / 50Hz
Noise dB (A) 1.3kPa (10Torr) at 1m		74	76	75	78	76
		* Motor: three phase, 200V, 2P totally-enclosed fan-cooled type.				

Performance curve



Outline Drawing



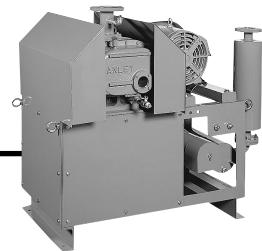
unit : mm

Model	L	W	H	Weight (kg)
FT3-25	575	300	380	90
FT3-40	650	300	380	110
FT3-50	650	300	380	120

● Weight shown covers the vacuum pump with standard accessories

- Standard accessories:
 - Motor (totally-enclosed fan-cooled type)
 - Base
 - Wind guide
 - Coupling

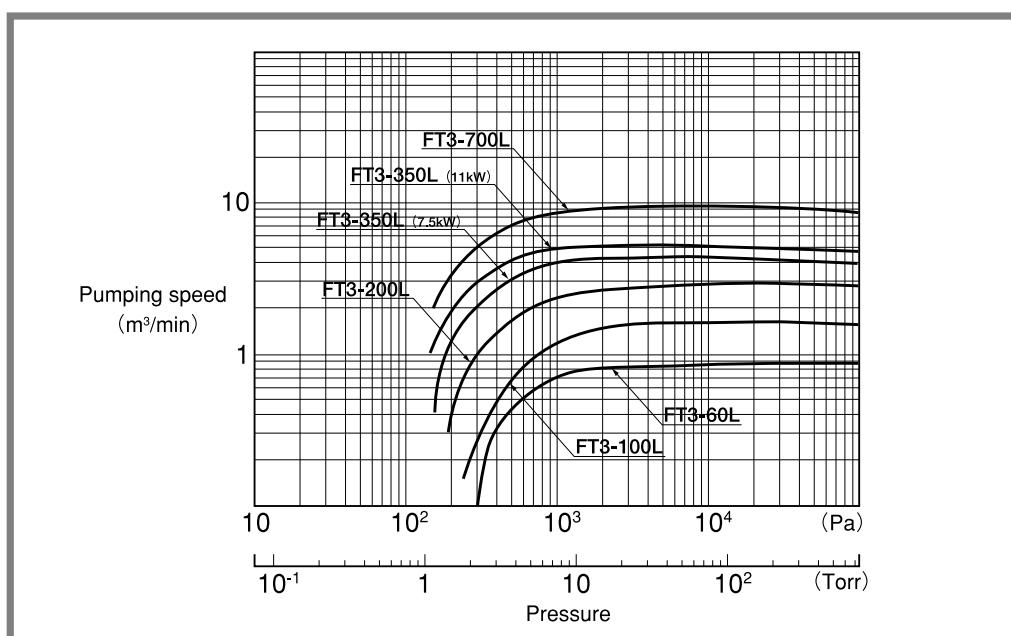
FT3-L (Air cooled type) Type



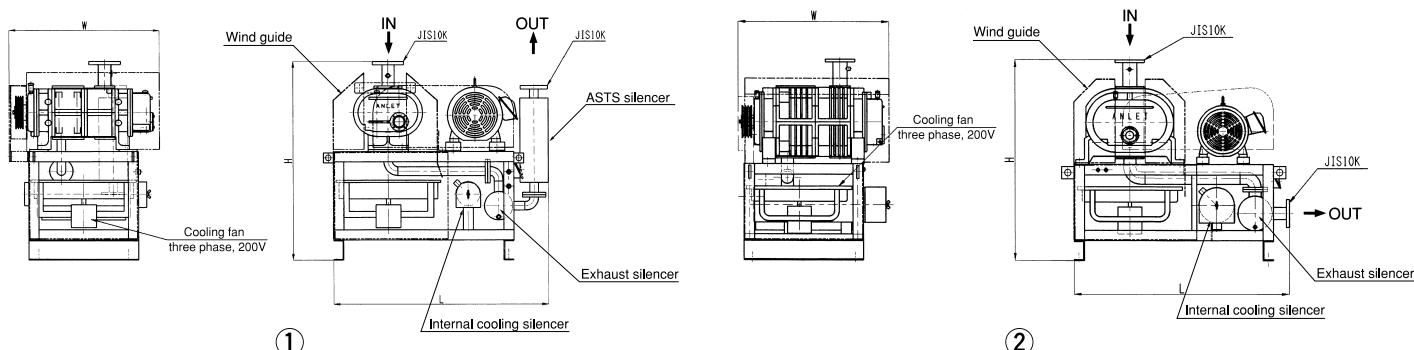
■ Performance Chart

Specification	Model	FT3-60L	FT3-100L	FT3-200L	FT3-350L	FT3-700L
Suction bore (A)		40	40	50	65	80
Discharge bore (A)		25	25	32	50	65
Designed exhaust speed (m³/min)		1.26	2.08	3.82	5.13	6.41
Motor output (kW)		2.2	3.7	5.5	7.5	11
Rotation speed (min⁻¹)		1800	2300	2000	1600	2000
Cooling fan output (W)		50	150	200	750	750
Noise dB (A) 133Pa {1Torr} at 1m		75	76	78	81	83
						85

■ Performance curve



■ Outline Drawing



Model	L	W	H	Weight(kg)	No.
FT3-60L	785	660	740	230	①
FT3-100L	860	710	830	250	①
FT3-200L	1060	750	975	380	①
FT3-350L	1400	900	1100	610	①
FT3-700L	1350	940	1250	1100	②

● Weight shown covers the vacuum pump with standard accessories without motor

- Standard accessories:
Base • Belt cover • V-pulley • V-belt • Exhaust silencer • Cooling fan • Wind guide • Internal cooling silencer • ASTS silencer (FT3-60L~350L) • Foundation bolt

FT4-LE (Air cooled type) Type

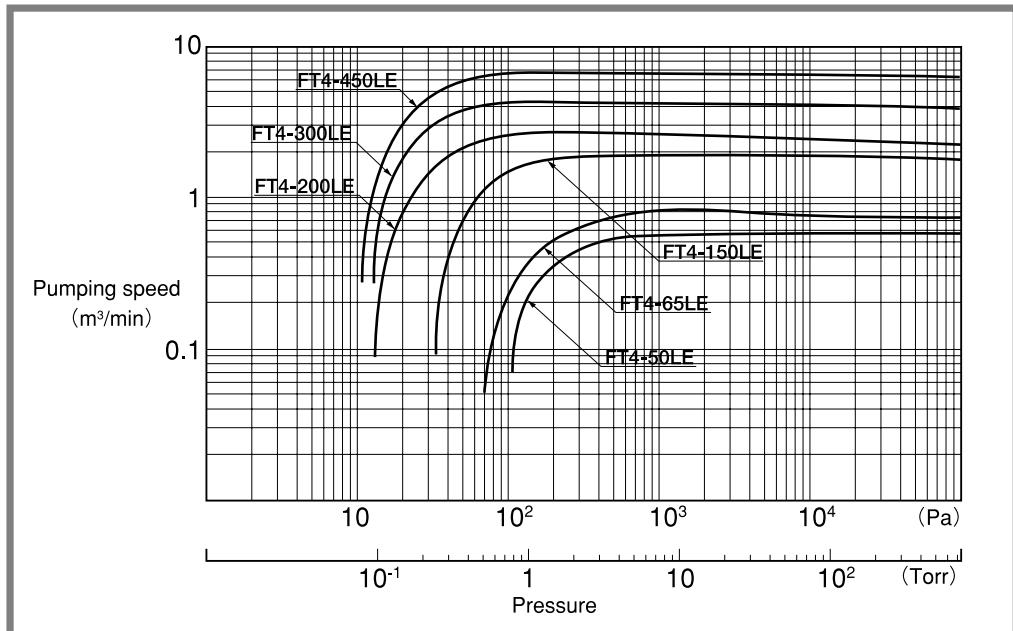


Performance Chart

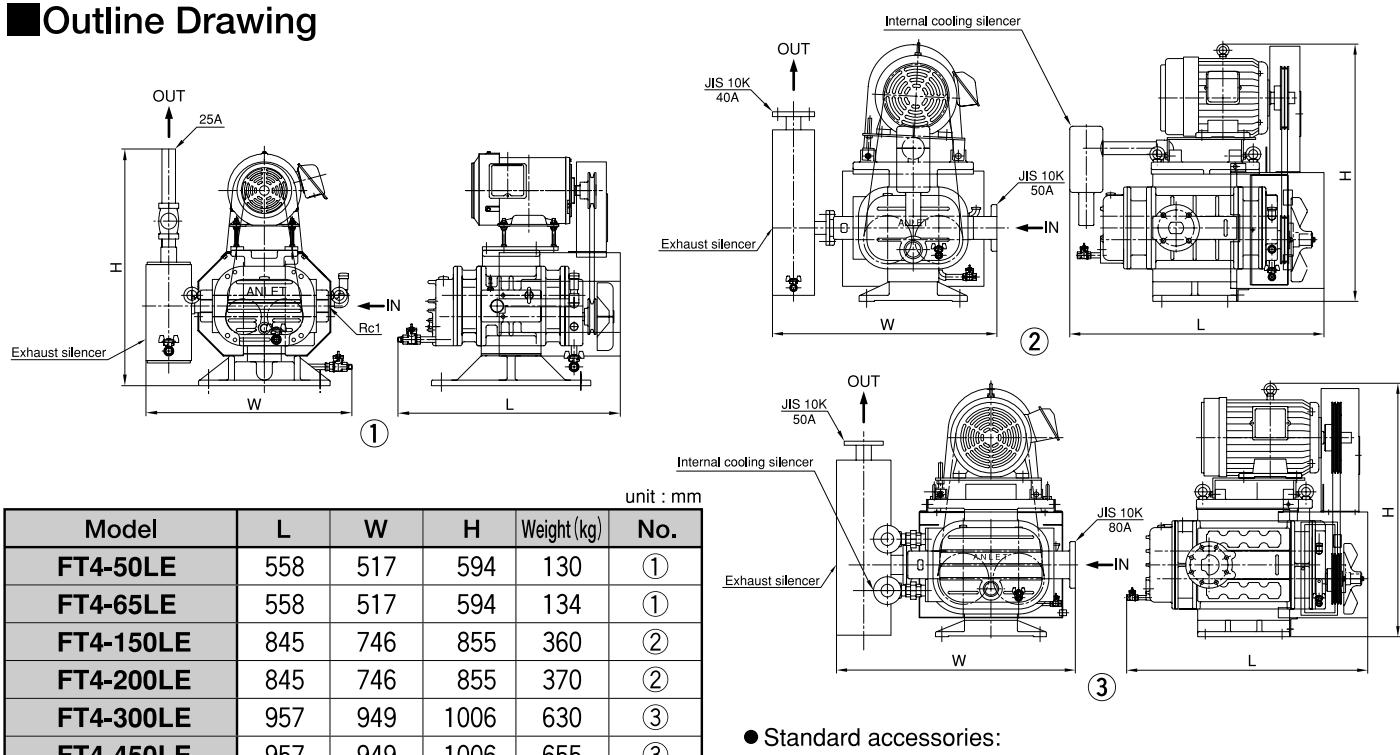
Specification	Model	FT4-50LE	FT4-65LE	FT4-150LE	FT4-200LE	FT4-300LE	FT4-450LE
Suction bore (A)		25	25	50	50	80	80
Discharge bore (A)		25	25	40	40	50	50
Designed exhaust speed (m³/min)		0.77	0.91	2.38	3.22	5.23	7.21
Motor output (kW)		1.5	2.2	3.7	5.5	7.5	11
Rotation speed (min⁻¹)		2800	3300	1700	2300	1450	2000
Noise dB (A) 133Pa {1Torr} at 1m		75	78	78	80	84	86

* FT4-50LE/65LE motors: three phase, 200V, 2P. FT4-150LE~450LE motors: three phase, 200V, 4P

Performance curve



Outline Drawing



● Weight shown covers the vacuum pump with standard accessories without motor

- Standard accessories:
Fan cover • Pulley fan • V-pulley • V-belt • Exhaust silencer • Internal cooling silencer (Over FT4-150LE) • Foundation bolt

CT4-LE (Water cooled model) Type



■ Performance Chart

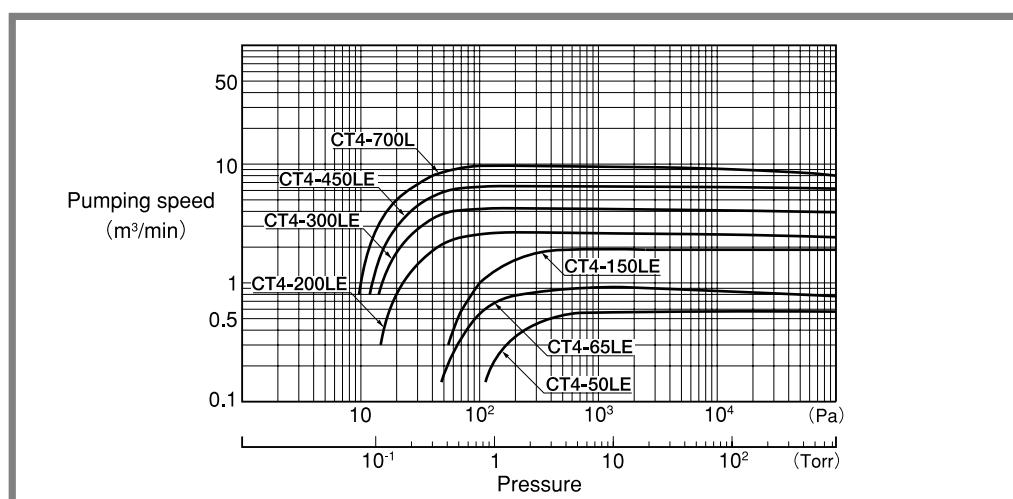
Specification	Model	CT4-50LE	CT4-65LE	CT4-150LE	CT4-200LE	CT4-300LE	CT4-450LE	CT4-700L
Suction nozzle diameter (A)		25	25	50	50	80	80	80
Discharge nozzle diameter (A)		25	25	40	40	50	50	65
Design discharge rate (m³/min)		0.77	1.00	2.38	3.22	5.23	7.21	11.5
Motor output (kW)		1.5	2.2	3.7	5.5	7.5	11	15
RPM (min⁻¹)		2800	3600	1700	2300	1450	2000	2000
Cooling water (l/min)		2	2	7	7	15	15	15
Noise dB (A) 133Pa {1Torr} at 1m		73	74	77	79	83	85	85

* CT4-50LE/65LE motor: 3-Phase, 200V, 2P. CT4-150LE~450LE/700L motor: 3-Phase, 200V 4P

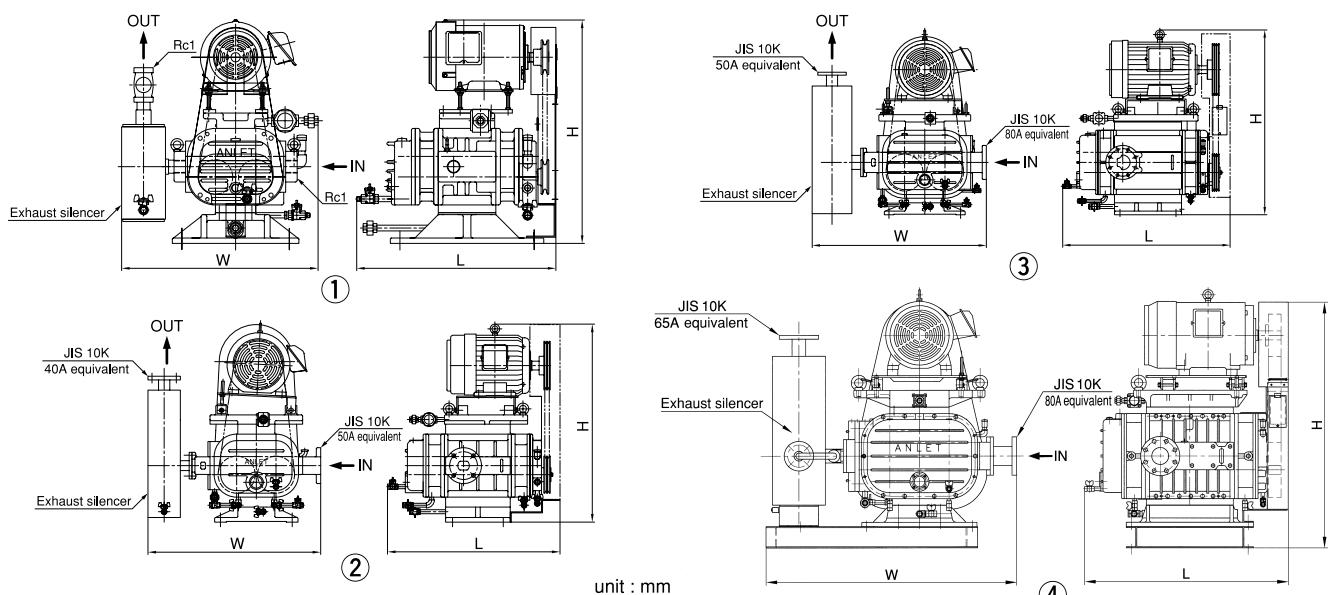
* For CT4-200L/CT4-450L, please contact us for details.

* Higher vacuum and displacement are achieved in combination with mechanical booster (ST1 Model).

■ Performance curve



■ Outline Drawing



Model	L	W	H	Weight(kg)	No.
CT4-50LE	520	513	583	130	①
CT4-65LE	520	513	583	134	①
CT4-150LE	745	746	855	360	②
CT4-200LE	745	746	855	370	②
CT4-300LE	912	949	1006	630	③
CT4-450LE	912	949	1006	655	③
CT4-700L	960	1185	1155	1100	④

● Weight is approximate value including standard auxiliary parts.

● Standard accessories:

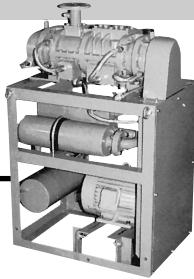
Base, belt cover, V-pulley, V-belt, exhaust silencer (CT4-150/200 is equipped with after cooler.), internal cooler (for CT4-300/450 only), cooling water piping, foundation bolts

* Standard accessories:

Characteristic curves and dimensional drawings can be also referenced at our home page (<http://www.anlet.co.jp>). Please visit our site.

★Please check the cooling water quality avoid trouble.

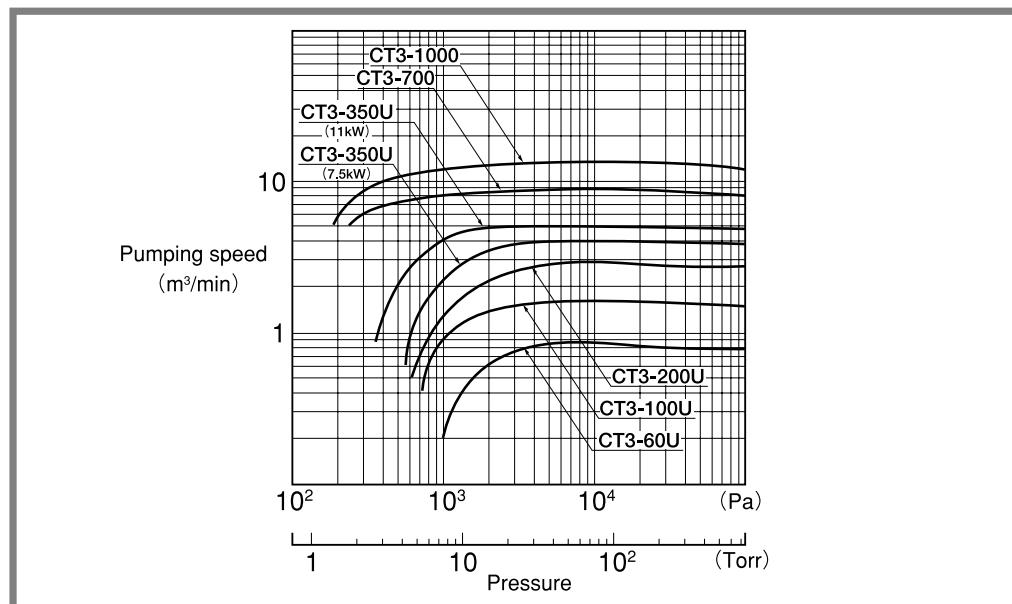
CT3 (Water cooled model) Type



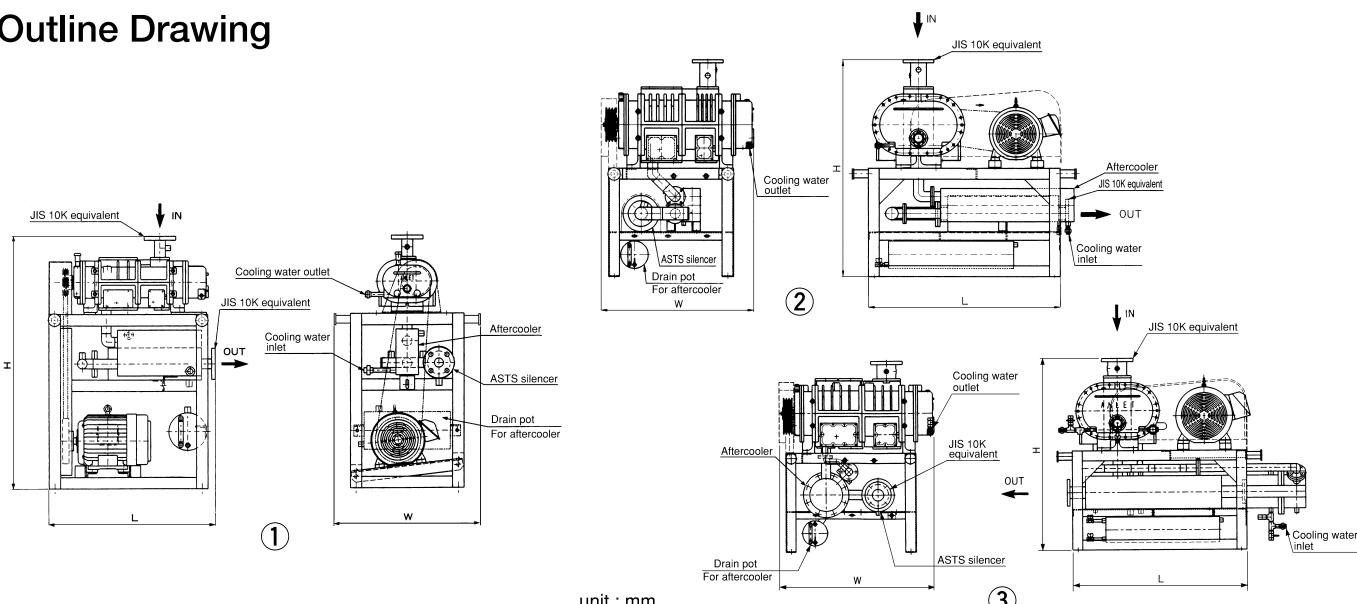
Performance Chart

Specification	Model	CT3-60U	CT3-100U	CT3-200U	CT3-350U	CT3-700	CT3-1000
Suction nozzle diameter (A)		40	40	50	65	80	100
Discharge nozzle diameter (A)		25	32	40	50	65	65
Design discharge rate (m³/min)		1.26	2.08	3.82	5.13	6.41	11.3
Motor output (kW)		2.2	3.7	5.5	7.5	11	15
RPM (min⁻¹)		1800	2300	2000	1600	2000	1700
Cooling water (l/min)		7	7	10	12	15	20
Noise dB (A) 4kPa {30Torr} at 1m		72	74	77	80	82	85
							86

Performance curve



Outline Drawing



Model	L	W	H	Weight(kg)	No.
CT3-60U	686	610	1100	170	①
CT3-100U	733	660	1100	190	①
CT3-200U	796	700	1250	270	①
CT3-350U	1060	900	1450	470	①
CT3-700	1150	915	1300	1120	②
CT3-1000	1150	1025	1255	1460	③

unit : mm

- Standard accessories:

Base, belt cover, V-pulley, V-belt, exhaust silencer (ASTS), aftercooler, cooling water piping, drain pot for aftercooler, foundation bolts

- * Standard accessories:

Characteristic curves and dimensional drawings can be also referenced at our home page (<http://www.anlet.co.jp>) . Please visit our site.

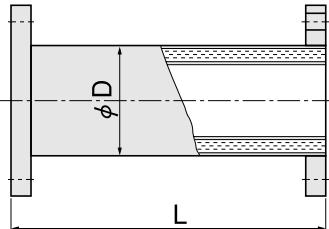
★Please check the cooling water quality avvoid trouble.

● Weight is approximate value including standard auxiliary parts.

Special Accessories

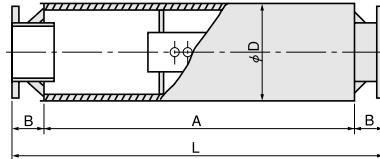
* Specially attached connecting flange is equivalent to JIS10K.

Delivery silencer ADS



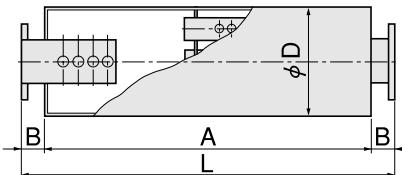
Model	D	L	Weight (kg)
ADS20A	43	525	4.0
ADS25A	43	525	4.5
ADS32A	49	525	5.3
ADS40A	61	580	6.5
ADS50A	76	815	9.1
ADS65A	76	785	11.7
ADS80A	89	900	12.6
ADS100A	114	900	17.8
ADS125A	140	1000	27.8
ADS150A	165	1000	31.2
ADS200A	216	1000	42.5
ADS250A	267	1000	72.0
ADS300A	319	1000	88.0

Delivery silencer AGOS



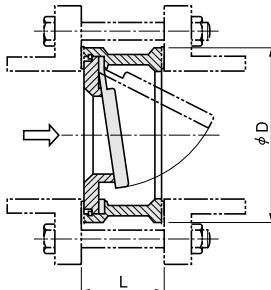
Model	A	B	D	L	Weight (kg)
AGOS25A	286	64	114	414	5.7
AGOS32A	412	60	140	532	8.8
AGOS40A	460	60	165	580	10
AGOS50A	695	60	216	815	19
AGOS65A	665	60	216	785	18
AGOS80A	770	65	216	900	22
AGOS100A	860	70	216	1000	26
AGOS125A	1040	110	267	1260	42
AGOS150A	1200	90	319	1380	56
AGOS200A	1600	90	356	1780	94
AGOS250A	1600	100	406	1800	124
AGOS300A	1800	100	457	2000	155
AGOS350A	1800	100	508	2000	195
AGOS400A	2000	150	559	2300	280

Delivery silencer ASNS



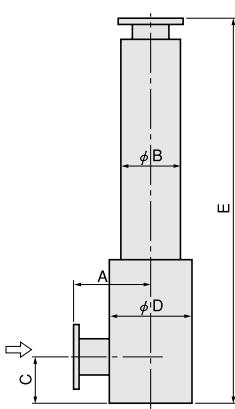
Model	A	B	D	L	Weight (kg)
ASNS40A	460	60	219	580	18
ASNS50A	695	60	219	815	21
ASNS65A	665	60	219	785	25
ASNS80A	770	65	219	900	29
ASNS100A	860	70	270	1000	39
ASNS125A	1090	85	321	1260	50
ASNS150A	1210	85	409	1380	98
ASNS200A	1600	90	460	1780	125
ASNS250A	1600	100	511	1800	178
ASNS300A	1800	100	613	2000	290
ASNS350A	1800	100	714	2000	380
ASNS400A	2000	150	816	2300	500

Check valve AC-F



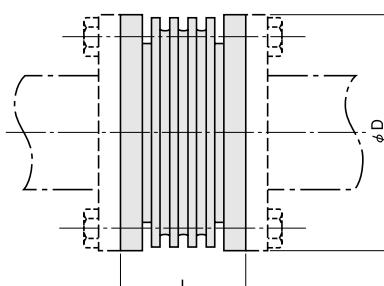
Model	D	L	Weight (kg)
AC32F	81	43	0.8
AC40F	86	43	0.9
AC50F	101	43	1.2
AC65F	121	50	1.8
AC80F	131	60	2.3
AC100F	156	70	3.5
AC125F	187	100	5.8
AC150F	217	140	9.0
AC200F	267	180	16
AC250F	330	220	20
AC300F	375	260	25

Delivery silencer AGL-V (For atmosphere relief)



Model	A	B	C	D	E	Weight (kg)
AGL40VA	150	114	100	140	770	18
AGL50VA	170	140	100	165	820	20
AGL65VA	190	165	120	216	1000	27
AGL80VA	210	165	140	216	1150	31
AGL100VA	250	202	170	319	1390	47
AGL125VA	300	255	180	406	1700	60
AGL150VA	330	319	200	457	1800	83

Flexible joint (rubber) AFD-N



Model	D	L	Weight (kg)
AFD25N	125	100	1.5
AFD32N	135	100	1.6
AFD40N	140	100	1.7
AFD50N	155	100	2.1
AFD65N	175	100	2.4
AFD80N	185	100	2.8
AFD100N	210	100	3.3
AFD125N	250	100	4.5
AFD150N	280	100	10.7
AFD200N	330	150	15.2

Trap (pump protection device)

Used to capture fine particles, oil mist, etc. Excellent for dry vacuum pumps!!
Capture efficiency is high, maintainability is good.

Model AT (D)

Common trap

※ (D) :with drain pot



●AT

Model ATE

Simple, compact trap

- Small and compact
- Easy maintenance
 - Amount of dirt and drain can be checked visually
 - Simple and easy even without removing piping



●ATE

Model HA

High corrosion resistance (SUS304 specification)



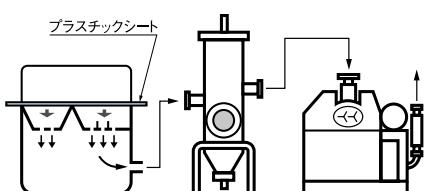
●HA



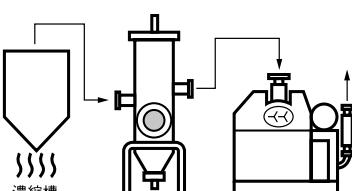
Multi-stage roots type vacuum pump (ST3)

Examples of use

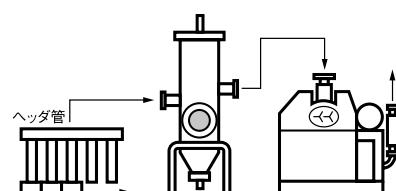
●Vacuum forming



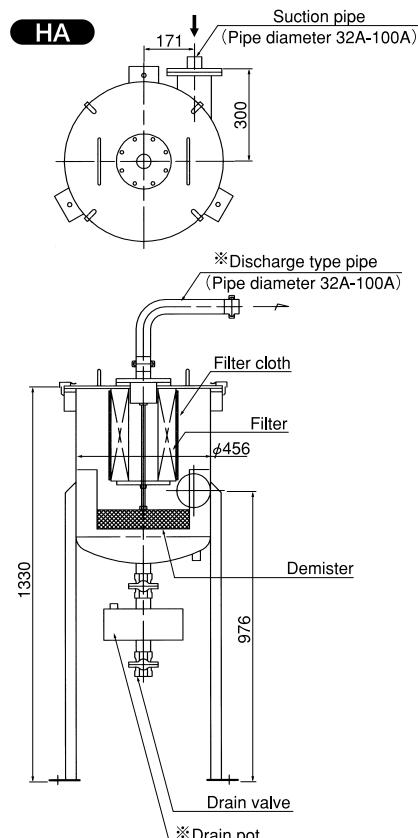
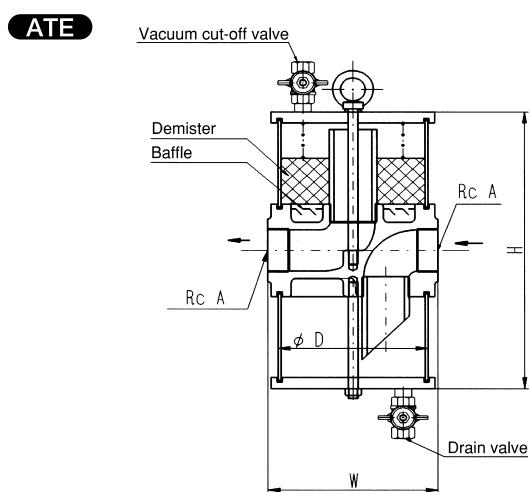
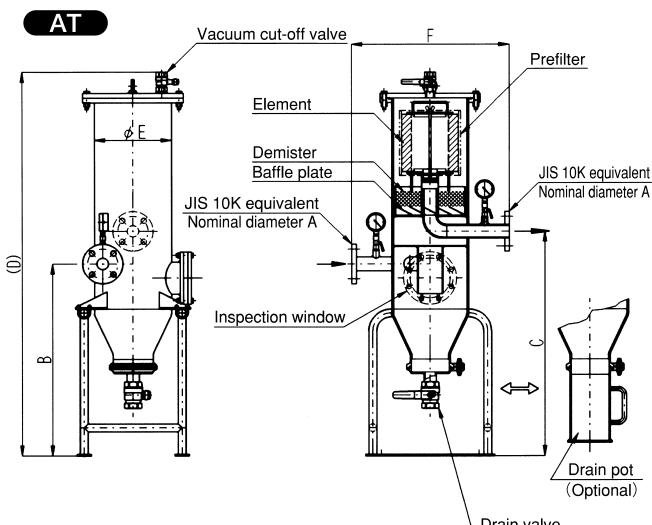
●Vacuum drying, concentration



●Suction transport



■ Dimensional Drawing



*Drain pot and discharge type piping are optional.

■ AT (Model) Dimension chart/ corresponding model unit : mm

Model	A	B	C	D	E	F	Weight (kg)
AT 40A (D)	40	680	795	1360	267.4	550	79 (83)
AT 50A (D)	50	875	1000	1560	318.5	620	120 (124)
AT 65A (D)	65	875	1000	1560	318.5	620	121 (125)
AT 80A (D)	80	875	1000	1560	318.5	620	123 (127)
AT100A (D)	100	1010	1150	1800	457.2	750	220 (230)

*Figure inside () nuder weight column refer to weight when drain pot is attached.

Model	Corresponding vacuum pump (rough standard)		
AT 40A (D)	FT3-60L	FT3-100L	CT3-60U
AT 50A (D)	FT3-200L	CT3-200U	ST3-150F
	ST3-200F	FT4-150LE	FT4-200LE
	CT4-150LE	CT4-200LE	
AT 65A (D)	FT3-350L	CT3-350U	ST3-300F
AT 80A (D)	FT3-700L	CT3-700	ST3-500F
	ST3-600F	FT4-300LE	FT4-450LE
	CT4-300LE	CT4-450LE	CT4-700L
AT100A (D)	CT3-1000	ST3-1000	

■ ATE (Model) Dimension chart/ corresponding model unit : mm

Model	A	D	W	H	Weight (kg)
ATE25	25	110	130	250	3.2
ATE40	40	150	170	300	6.0
ATE50	50	180	210	350	8.6
ATE80	80	250	290	420	20.7

Model	Corresponding vacuum pump (rough standard)		
ATE25	CT4-50LE	CT4-65LE	FT4-50LE
ATE40	CT3-60U	CT3-100U	FT3-60L
ATE50	CT3-200U	FT3-200L	CT4-150LE
	CT4-150LE	CT4-200LE	FT4-150LE
ATE80	CT3-350U	FT3-350L	CT4-300LE
	CT4-300LE	CT4-450LE	FT4-300LE

How to Determine the Evacuation Period

When air is evacuated from a system, reducing the pressure from P_1 to P_2 , the relationship of volume (V = liters (L)) and the evacuation speed of the vacuum pump (S = L/min) to time (t = min) is generally expressed by the following equation (low vacuum > 10 PA: viscous flow).

$$t=2.3K \frac{V}{S} \log \frac{P_1}{P_2}$$

Depending upon the pressure range, the correction coefficient, K, is calculated as follows.

(Pressure range)

$10^5 \sim 10^3$ Pa

$10^3 \sim 10^2$ Pa

$10^2 \sim 10^1$ Pa

(Correction coefficient)

K=1

K=1.5

K=~3

Calculation Example

The evacuation speed of the vacuum pump is as follows when a vacuum tank with interior capacity of 450 L is evacuated from a pressure of 10^2 kPa to 1 kPa within 60 seconds:

$$S=2.3 \times \frac{0.45}{1} \times \log \frac{10^2}{1}$$
$$=2.1 \text{m}^3/\text{min}$$

∴ Model FT3-200L can be selected for this application.

Conversion Rate Table

Conversion table for pressure units that present a problem due to the switch to SI units

pressure	Pa	kPa	MPa	bar	kgf/cm ²	atm	mmH ₂ O (mmAq)	mmHg or Torr
	1	1×10^{-3}	1×10^{-6}	1×10^{-5}	1.01972×10^{-5}	9.86923×10^{-6}	1.01972×10^{-1}	7.50062×10^{-3}
	1×10^3	1	1×10^{-3}	1×10^{-2}	1.01972×10^{-2}	9.86923×10^{-3}	1.01972×10^2	7.50062
	1×10^6	1×10^3	1	1×10	1.01972×10	9.86923	1.01972×10^5	7.50062×10^3
	1×10^5	1×10^2	1×10^{-1}	1	1.01972	9.86923×10^{-1}	1.01972×10^4	7.50062×10^2
	9.80665×10^4	9.80665×10	9.80665×10^{-2}	9.80665×10^{-1}	1	9.67841×10^{-1}	1×10^4	7.35559×10^2
	1.01325×10^5	1.01325×10^2	1.01325×10^{-1}	1.01325	1.03323	1	1.03323×10^4	7.60000×10^2
	9.80665	9.80665×10^{-3}	9.80665×10^{-6}	9.80665×10^{-5}	1×10^{-4}	9.67841×10^{-5}	1	7.35559×10^{-2}
	1.33322×10^2	1.33322×10^{-1}	1.33322×10^{-4}	1.33322×10^{-3}	1.35951×10^{-3}	1.31579×10^{-3}	1.35951×10	1



- Please read the Instruction Manual carefully before using, and be sure to use your equipment properly. If you need a copy of the Instruction Manual, please contact our information office. We will send you one immediately.
- Please select a product that is well suited to your specific application and the environment of use. Use of a unit for the wrong application or in an inappropriate environment could result in an accident.
- We assume no liability to indemnify for secondary damage caused by accidents involving our products.

Points to Keep in Mind When Making a Selection

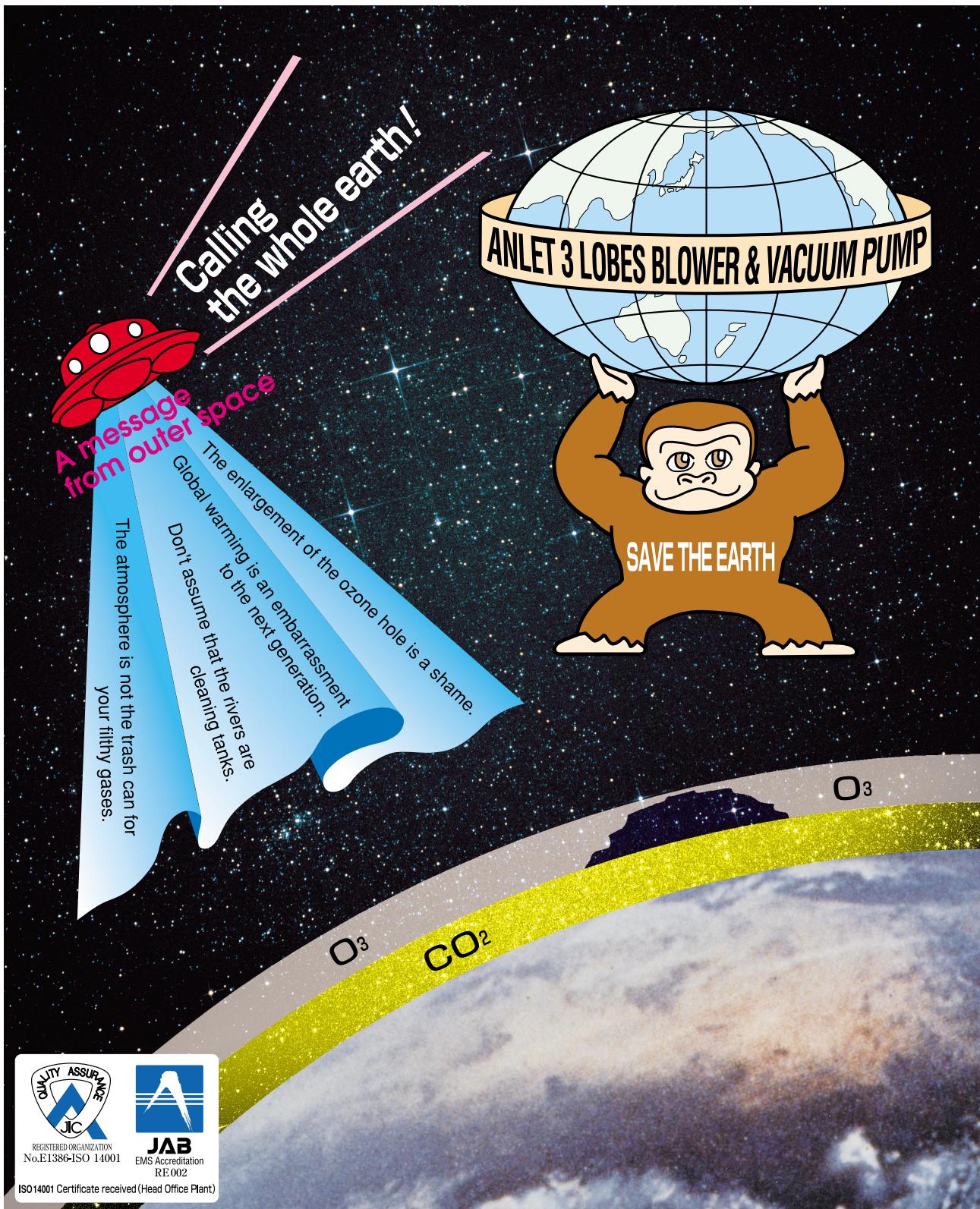
Please Fill in below From.

1	Model	
2	Application	
3	Pressure	
4	Capacity	
5	Motor	
6	For Air or Gas ?	
7	Serial Number	
8	Campany Name	
MEMO		
9	Accessoriise	
REQUEST		

● Selecting a machine model

The following information are needed for choosing the model :

- Application : 1) Vacuum or 2) Blower
- For Air or Gas ? If gas, we need more details such as :
 - Name
 - Corrosive or explosion ?
 - Gravity of mix gas
- Pressure (kPa, mmAq, mmHg, etc.....)
- Capacity (m³/min, m³/hr, l/min, etc.....)
- Installation (indoor or outdoor)
- Motor
 - Type
 - Output
 - Voltage
 - Hz
 - Pole
- Others
 - Temperature
 - Cooling water
 - Operation time
 - Accessories
 - Spare parts
 - Color



Note : Appearance and specifications are subject to change without notice.



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■ Agency