

Three Lobe Rotary Blowers

“ARJ” Series



Unozawa"ARJ"Three Lobe Positive Displacement Blower

The Unozawa"ARJ"Three Lobe Positive Displacement Blower are new series roots blowers developed by incorporating Unozawa's extensive experience and technical expertise. This series blower type ARJ employs three lobe rotor, featuring higher performance, lower noise and less vibration. It embodies the essence of Unozawa's highly sophisticated technology. The new series blower have been standardized, with a wide applicable working pressure-ranging from low to high. When used for special gas, a mechanical seal can be provided. When applying the Unozawa back-flow cooling system, single stage vacuum pumps can be used safely up to a vacuum level of-65kPa of suction pressure. Single stage blowers can also be used safely up to 120kPa of discharge pressure.



Application

1. As an air blower:

For pneumatic conveyors and the chemical industry;for humidifying and aeration to water treatment and blending and aeration of powder or granular foods,cement, or vinyl.

2. As a gas blower:

For pressurized transportation or circulation of gases in chemical processes. Hydrogen, nitrogen, acetylene,oxygen, kerosene gas, methane, sulfurous acid gas,stack flue gas, city gas, carbonic acid gas, hydrogen sulfide gas, and hydrochloric acid gas.

3. As a vacuum pump:

Filtration equipment in the chemical industry. Pneumatic conveyors. Ship unloading.

Advantages

1. Three lobe rotor blower and vacuum pump:

An ideal air handler usable to satisfy a number of work conditions, the new series low noise system can be used to satisfy wide range of user requirements. The specifications areas follows:

Blowers :	Suction size	: 50~500mm
	Suction pressure	: Atmospheric pressure
	Discharge pressure	: ~215kPa
	Capacity	: 1~480m3/min.
Vacuum pumps :	Suction size	: 50~500mm
	Suction pressure	: ~-65kPa
	Discharge pressure	: Atmospheric pressure
	Capacity	: 1~480m3/min

Low noise less vibration

Owing to ideal back-flow caused by the three lobe rotor, pulsations of air discharge from the blower have been greatly reduced. Noise and vibration have also been significantly eliminated

When the back-flow cooling system (page 9) is applied for vacuum pump, it can handle, high temperature gas up to 120℃.

This catalogue details capacities, noise characteristics. The blower model that meets your needs can be picked up.

Principle

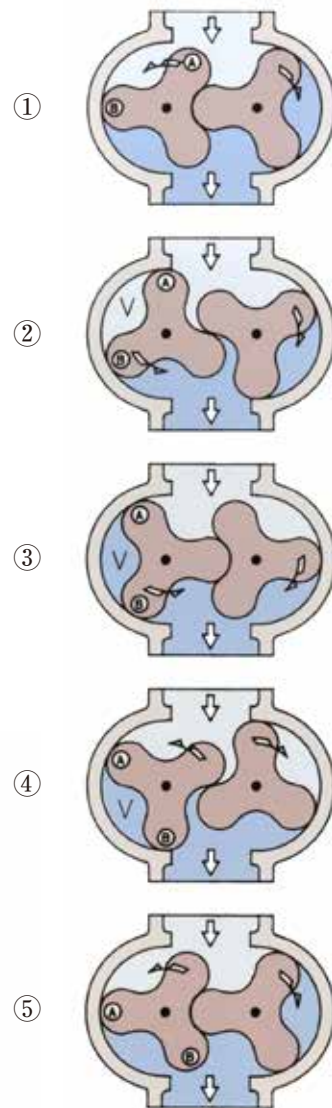
Pair of rotors turn in opposite directions inside the casing, maintaining a precision clearance between the side wall of the casing and the two rotors. Gas flows into the blower as the lobe end of each rotor passes the suction port. And gas is transferred from the suction side to the discharge side. It is then discharged, forced towards the high-pressure side. Gas at the suction side is caught in volume "V" surrounded by rotor tips (A), (B) and the casing in process as shown in illustrations (1) and (2) at right, and after step (3), (4) and (5), gas is discharged. With three lobes, this process is repeated six times per one rotation and constant volume of gas proportional to the number of revolutions are discharged.



V-belt drive rotary blower

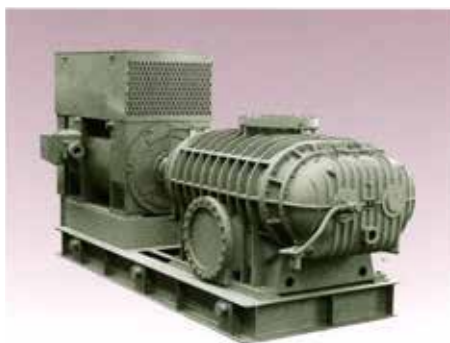


V-belt indirect drive rotary blower



Advantage of the three lobe rotor

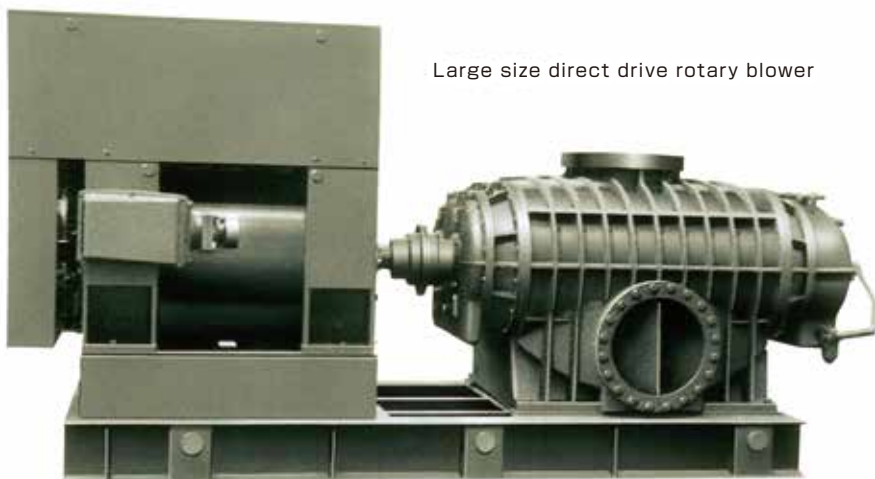
Compression takes when the rotor's lobe end faces the discharge port and high pressure gas at the discharge side flow back into the casing. The main cause of blower noise lies in this pulsation of pressure that accompanies the back-flow compression. In case of the three lobe rotor, the cycle of pulsation is $\frac{2}{3}$ that of the two lobe rotor. The pressure peak value also reduces. In addition, since the three lobe rotor is of specially designed construction so as to minimize the range of pulsation, pulsation at the discharge port have been conspicuously reduced, compared with the two lobe rotor. Consequently, the back-flow compression of blower is done smoothly noise level greatly lowered.



Large size direct drive rotary blower



Direct drive vacuum pump with back-flow cooling system



Large size direct drive rotary blower

Construction

● Casing

The casing made of cast iron, consisting of the upper suction and the lower horizontal discharge sections, ensures sufficient strength and durability.

● Rotor

The three lobe rotor made of cast iron or ductile cast iron has good quality subjected to high precision machining. The inside clearances are precision matched and optimum efficiency is guaranteed. In addition, as it is perfectly balanced by means dynamic balancing machine, noise and vibration are minimized.

● Bearing

The bearing are high precision bearings with a load capacity suited for working conditions. Stable performance and long service life are guaranteed.

● Timing gear

Special considerations have been given to the timing gear, since it is as important part of blower as the rotor. Made of chrome molybdenum steel, carbonized, quenched and ground, it is excellent in durability.



● Side cover

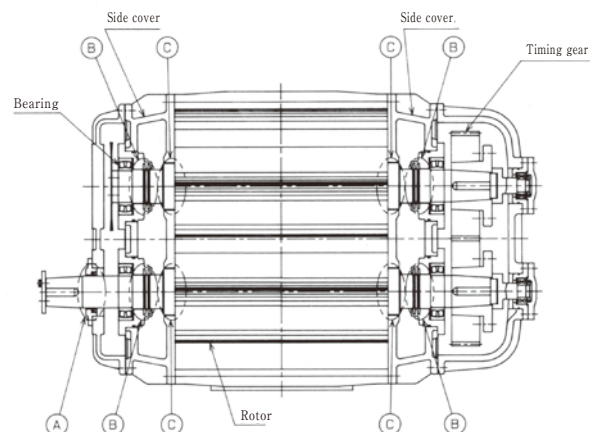
The side cover functions as an intermediate chamber between the casing and oil cavity for the bearing/gear. As the side cover has seal system, it prevents lubricating oil from leaking into the casing.

● Lubrication

The timing gear, the bearing on the gear side and the bearing on the drive side are subjected to splash lubrication by oil bath. In order to ensure ideal lubrication, oil is used for ARJ series. Depending upon service conditions, a cooling water path can be attached to each of the oil cavity on the drive and the gear sides, in order to prevent oil temperature from rising, or prevent oil itself from deterioration.

Shaft Sealing

"ARJ" blowers are available with many types of standard shaft sealing. The type of blower shaft sealing is selected according to the gas handled. When handling a special kind of gas, a mechanical seal is provided. Either single or double mechanical seal can be used. Available types of shaft sealing and their general uses are as follows:



1. Standard types:

The standard type for blower mainly suitable for blower that handles air.

Seal position A	Oil seal
Seal position B	Oil seal
Seal position C	Labyrinth seal

2. One-mechanical seal type:

Provided with one mechanical seal on the shaft. Suitable for sealing the shaft when gases that should not be leaked into atmosphere such as N₂, H₂, Ar, CO, CO₂, coke oven gas, city gas, digested gas, etc. This type is available with either single mechanical seal or double mechanical seal according to working pressure and the water content of those gas being handled.

	Type "K3"	Type "K4"
Seal position A	Single mechanical seal	Double mechanical seal
Seal position B	Oil seal	Oil seal
Seal position C	Labyrinth seal	Labyrinth seal

3. Four-mechanical seal "B" type:

Mechanical seals are provided at four points on the back of the bearing. Used for sealing the shaft when handling solvent gases. This type is available with either single mechanical seal or double mechanical seal according to the constituents of the gas being handled.

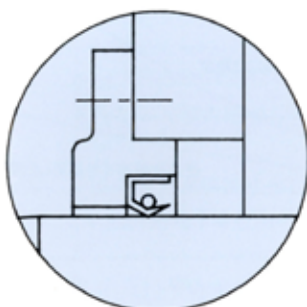
	Type "B1"	Type "B2"
Seal position A	Oil seal	Oil seal
Seal position B	Single mechanical seal	Double mechanical seal
Seal position C	Labyrinth seal	Labyrinth seal

4. Four-mechanical seal "I" type:

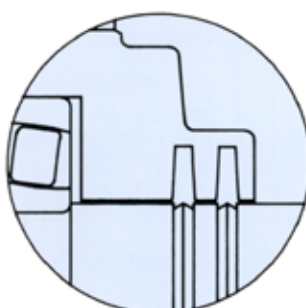
Mechanical seals are provided at four position of the rotor shaft. Handled gas is completely separated from the bearing.

	Type "I0"	Type "I4"
Seal position A	Oil seal	Oil seal
Seal position B	Oil seal	Oil seal
Seal position C	Non-contacting dry gas seal	Double mechanical seal

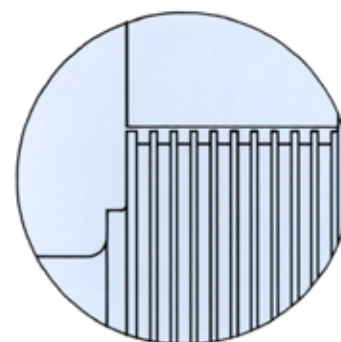
Detail of the standard shaft seal



Seal position A
(Oil seal)



Seal position B
(Labyrinth seal)



Seal position C
(Labyrinth seal)

Material construction



The Standard material construction
 Casing & covers: Cast iron(FC250)
 Rotor: Ductile cast iron(FCD450)or
 cast iron(FC250)
 Shaft: Carbon steel (S45C)
 Timing gear: Chromium Molybdenum
 steel(SCM420H)
 "O"ring·Oil seal: NBR

Special material construction
 Stainless cast steel(SCS13, SCS14)
 Ductile cast iron, Cast steel
 Nickel coating
 Blowers with the special high design
 pressure are available.

※For the performance of blower and vacuum pump,external dimensions of units and noise data, refer to the "blower data book".

Back-flow Cooling System

The Unozawa Back-flow Cooling System was developed by incorporating Unozawa's extensive experience, outstanding achievements and technical expertise in the area of rotary blower and vacuum pump and background of many years of accumulated experience. Back-flow ingeniously utilizes the working principles of a rotary vacuum pump (blower) to reduce discharge temperature, thereby providing many conspicuous advantages noted below,

1. High temperature gases can be handled:

Usually when the temperature of the suction gas is high, it is generally cooled down to approx. 40°C by using a pre-cooler. When using Unozawa back-flow cooling, however, high temperature gas can be handled without cooling it. Although allowable temperature differs depending on working conditions, even gas at 120°C can safely be handled.

2. Can be used at a higher pressure ratio:

When using a vacuum pump or blower at a high-pressure ratio, discharge gas temperatures rise due to the compression heat. When using the back-flow cooling system, however, a vacuum pump or blower can be used with a high compression ratio. Thus, the service range can be expanded greatly.

In the case of single stage vacuum pumps, safe operation can be ensured up to -65kPa of suction pressure. In the case of single stage blowers, safety can be ensured up to 120kPa discharge pressure.

3. No cooling water required for lubricant:

When employing the back-flow cooling system, no lubricating oil cooling water is required when suction temperature stands at room temperature:

No cooling water is required even when using a vacuum of up to -65kPa.

4. No seal water required:

In the case of vacuum pumps, they can be run without using any inside seal water even at a high vacuum, so they are quite convenient when water or drainage is not easily accessible.

5. Open air can be used for Back-flow cooling:

When employing the back-flow cooling for vacuum pumps, open air shall be introduced as cooling air and compression should be made with atmospheric. Simply, the open air shall be provided with a back-flow intake silencer. (Fig. 1)

6. Can be applied for the special gas handled:

When the blower or vacuum pump handles special gas, the exhaust gas shall be cooled by heat exchanger and can be used as back-flow cooling gas. (Fig. 2)

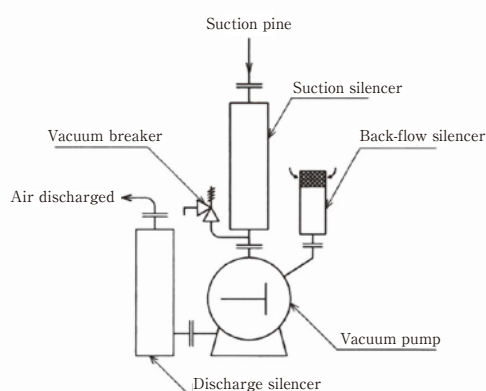
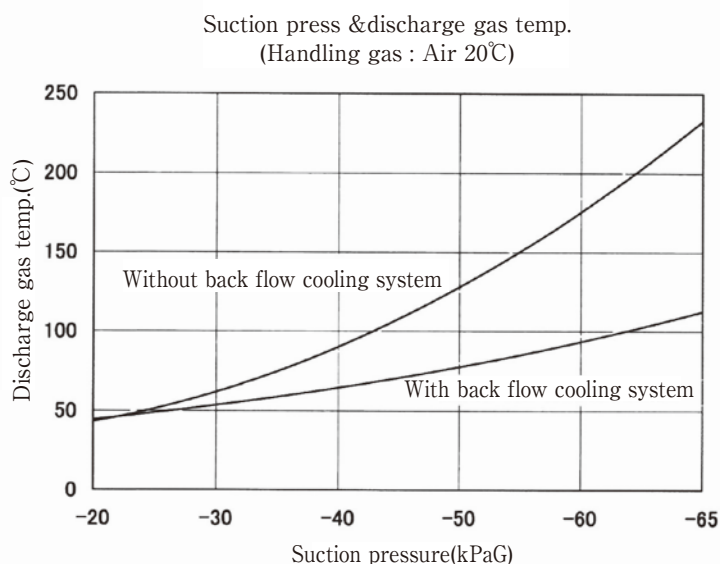


Fig.1

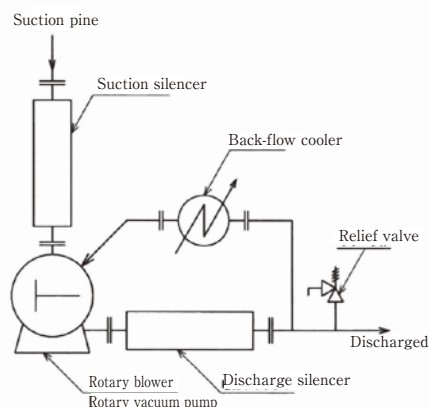


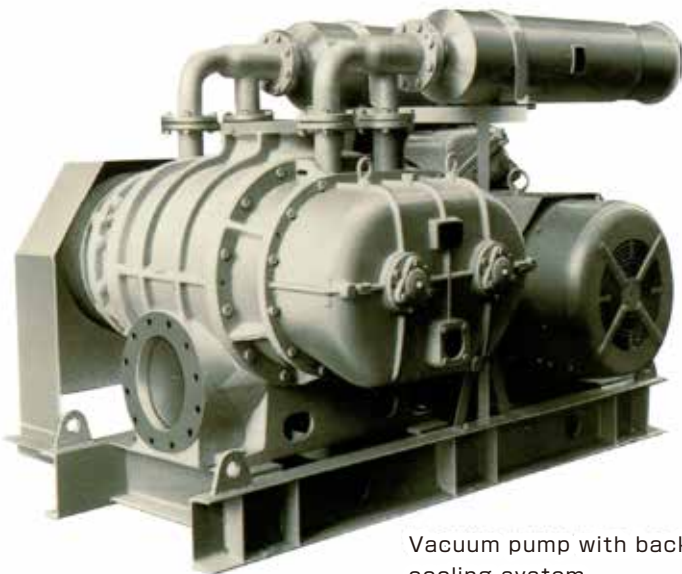
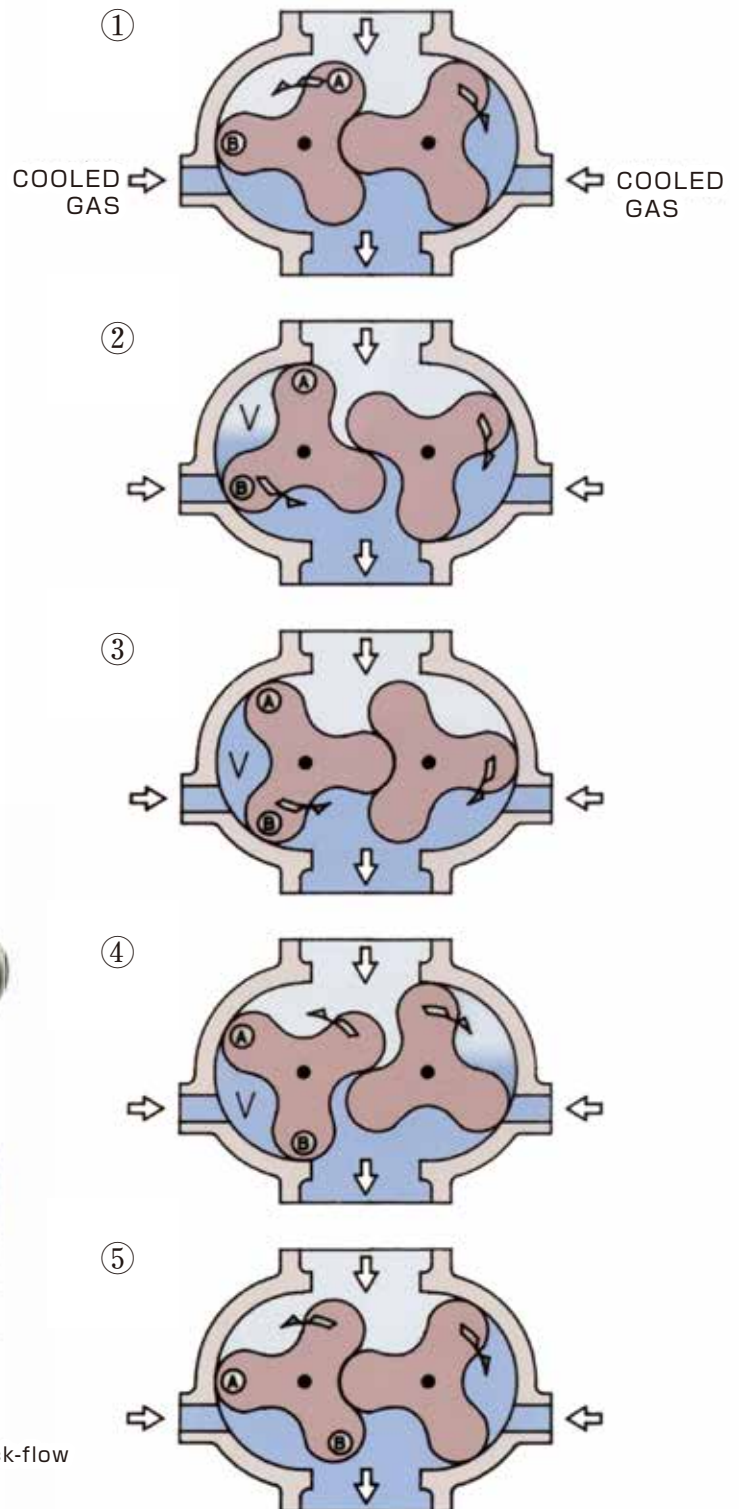
Fig.2

Principle of Operation for Back-flow Cooling System

What are operating principles of a vacuum pump with back-flow cooling system?

The rotor turns in the sequence of (1) to (5). The light section of the drawing indicates the vacuum (suction pressure), while the dark section indicates the discharge pressure. The left side rotor indicates back-flow cooling system function.

- (1) The rotor tips A and B are positioned to catch suction gas in volume "V" (moving volume).
- (2) The rotor has completely caught suction gas in volume "V" and cooled gas whose pressure is the same as the discharge pressure has to flow back.
- (3) Furthermore, as the rotor turns, the cooled gas continues to flow into volume "V", causing the pressure in volume "V" to approximate that of the discharge pressure.
- (4) The pressure in volume "V" nearly equals the discharge pressure in the discharge port.
- (5) The volume "V" comes in direct contact to discharge pressure part and the gas shall be pushed in the discharge port area.



Vacuum pump with back-flow cooling system

ロータリ・ブロワ性能表 Blower Performance Table

Model	Speed (min ⁻¹)	Capacity Qs (m3/min) & shaft power L (kW) at each discharge pressure													
		20 kPa		40 kPa		60 kPa		70 kPa		80 kPa		90 kPa		100 kPa	
		(2040mmAq)		(4080mmAq)		(6120mmAq)		(7140mmAq)		(8160mmAq)		(9180mmAq)		(10200mmAq)	
		Qs	L	Qs	L	Qs	L	Qs	L	Qs	L	Qs	L	Qs	L
ARJ 0501	1650	2.07	1.2	1.78	2.1	1.56	3.0	1.47	3.5	1.38	4.0	1.29	4.4	1.22	4.9
	1750	2.24	1.2	1.95	2.2	1.73	3.2	1.64	3.7	1.55	4.2	1.46	4.7	1.39	5.2
	1850	2.41	1.3	2.12	2.4	1.90	3.4	1.81	3.9	1.72	4.5	1.63	5.0	1.56	5.5
	1950	2.58	1.4	2.29	2.5	2.07	3.6	1.98	4.2	1.89	4.7	1.80	5.3	1.73	5.8
	2050	2.75	1.5	2.46	2.7	2.24	3.8	2.14	4.4	2.06	5.0	1.97	5.6	1.90	6.2
	2160	2.94	1.6	2.65	2.8	2.43	4.1	2.33	4.7	2.24	5.3	2.16	5.9	2.08	6.5
	2240	3.07	1.7	2.78	3.0	2.56	4.2	2.47	4.9	2.38	5.5	2.30	6.1	2.22	6.8
	2380	3.31	1.8	3.02	3.2	2.80	4.5	2.71	5.2	2.62	5.9	2.53	6.5	2.46	7.2
	2530	3.56	2.0	3.28	3.4	3.06	4.8	2.96	5.6	2.87	6.3	2.79	7.0	2.71	7.7
	2670	3.80	2.1	3.51	3.6	3.29	5.1	3.20	5.9	3.11	6.7	3.03	7.4	2.95	8.2
ARJ 0651	1650	3.30	1.8	2.91	3.2	2.60	4.7	2.47	5.4	2.35	6.1	2.24	6.8	2.13	7.5
	1750	3.57	1.9	3.17	3.4	2.87	5.0	2.73	5.7	2.61	6.5	2.50	7.2	2.39	8.0
	1850	3.83	2.0	3.43	3.7	3.13	5.3	3.00	6.1	2.87	6.9	2.76	7.7	2.65	8.5
	1950	4.09	2.2	3.69	3.9	3.39	5.6	3.26	6.4	3.14	7.3	3.02	8.1	2.91	9.0
	2050	4.35	2.3	3.95	4.1	3.65	5.9	3.52	6.8	3.40	7.7	3.28	8.6		
	2160	4.64	2.5	4.24	4.4	3.94	6.2	3.81	7.2	3.68	8.1	3.57	9.1		
	2240	4.85	2.6	4.45	4.6	4.15	6.5	4.02	7.5	3.89	8.5				
	2380	5.21	2.8	4.81	4.9	4.51	7.0	4.38	8.0	4.26	9.0				
	2530	5.60	3.0	5.21	5.2	4.90	7.5	4.77	8.6						
	2670	5.97	3.3	5.57	5.6	5.27	7.9	5.14	9.1						
ARJ 0802	1390	5.29	2.7	4.74	4.9	4.32	7.2	4.14	8.3	3.98	9.4	3.82	10.5	3.67	11.6
	1470	5.67	2.9	5.13	5.2	4.71	7.6	4.53	8.8	4.36	10.0	4.20	11.1	4.05	12.3
	1560	6.11	3.1	5.56	5.6	5.14	8.1	4.96	9.4	4.79	10.6	4.64	11.9	4.49	13.1
	1650	6.54	3.3	5.99	6.0	5.57	8.6	5.39	9.9	5.23	11.3	5.07	12.6	4.92	13.9
	1750	7.02	3.6	6.47	6.4	6.05	9.2	5.87	10.6	5.71	12.0	5.55	13.4	5.40	14.8
	1850	7.50	3.9	6.95	6.8	6.53	9.8	6.35	11.3	6.19	12.7	6.03	14.2	5.88	15.7
	1950	7.98	4.1	7.43	7.2	7.02	10.4	6.83	11.9	6.67	13.5	6.51	15.1	6.36	16.6
	2050	8.46	4.4	7.91	7.7	7.50	11.0	7.32	12.6	7.15	14.2	6.99	15.9	6.84	17.5
	2160	8.99	4.7	8.44	8.2	8.02	11.6	7.84	13.4	7.68	15.1	7.52	16.8	7.37	18.6
	2240	9.37	4.9	8.83	8.5	8.41	12.1	8.23	13.9	8.06	15.7	7.90	17.5	7.75	19.3
	2380	10.0	5.4	9.50	9.2	9.08	13.0	8.90	14.9	8.73	16.8	8.58	18.7	8.43	21
ARJ 1002	1390	8.13	4.1	7.39	7.4	6.82	10.7	6.58	12.4	6.35	14.1	6.14	15.7	5.94	17.4
	1470	8.71	4.3	7.97	7.9	7.40	11.4	7.16	13.2	6.93	14.9	6.71	16.7	6.51	18.5
	1560	9.36	4.7	8.61	8.4	8.05	12.2	7.80	14.0	7.58	15.9	7.36	17.8	7.16	19.7
	1650	10.0	5.0	9.26	9.0	8.70	12.9	8.45	14.9	8.22	16.9	8.01	18.9	7.81	21
	1750	10.7	5.4	9.98	9.6	9.42	13.8	9.17	15.9	8.95	18.0	8.73	20	8.53	22
	1850	11.4	5.8	10.7	10.2	10.1	14.7	9.89	16.9	9.67	19.1	9.45	21	9.25	24
	1950	12.2	6.2	11.4	10.9	10.9	15.6	10.6	17.9	10.4	20	10.2	23		
	2050	12.9	6.6	12.1	11.5	11.6	16.4	11.3	18.9	11.1	21	10.9	24		
	2160	13.7	7.1	12.9	12.3	12.4	17.4	12.1	20	11.9	23	11.7	25		
	2240	14.3	7.4	13.5	12.8	13.0	18.2	12.7	21	12.5	24				
	2380	15.3	8.0	14.5	13.8	14.0	19.5	13.7	22	13.5	25				
ARJ 1251	1170	11.3	5.8	10.4	10.5	9.69	15.3	9.41	17.6	9.14	20	8.90	22	8.67	25
	1240	12.2	6.2	11.2	11.2	10.5	16.3	10.3	18.8	10.0	21	9.75	24	9.52	26
	1310	13.0	6.6	12.1	11.9	11.4	17.3	11.1	20	10.8	23	10.6	25	10.4	28
	1390	14.0	7.2	13.1	12.8	12.4	18.4	12.1	21	11.8	24	11.6	27	11.3	30
	1470	15.0	7.7	14.0	13.7	13.3	19.6	13.1	23	12.8	26	12.5	29	12.3	32
	1560	16.1	8.3	15.1	14.6	14.4	21	14.2	24	13.9	27	13.6	30	13.4	34
	1650	17.1	9.0	16.2	15.6	15.5	22	15.2	26	15.0	29	14.7	32	14.5	36
	1750	18.4	9.7	17.4	16.8	16.8	24	16.5	27	16.2	31	16.0	35	15.7	38
	1850	19.6	10.5	18.6	18.0	18.0	25	17.7	29	17.4	33	17.2	37	16.9	40
	1950	20.8	11.2	19.9	19.1	19.2	27	18.9	31	18.6	35	18.4	39	18.2	43

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Model	Speed (min ⁻¹)	Capacity Qs (m3/min) & shaft power L (kW) at each discharge pressure													
		20 kPa		40 kPa		60 kPa		70 kPa		80 kPa		90 kPa		100 kPa	
		(2040mmAq)		(4080mmAq)		(6120mmAq)		(7140mmAq)		(8160mmAq)		(9180mmAq)		(10200mmAq)	
		Qs	L	Qs	L	Qs	L	Qs	L	Qs	L	Qs	L	Qs	L
ARJ 1501	1170	16.9	8.4	15.7	15.4	14.7	22	14.4	26	14.0	29	13.7	33		
	1240	18.1	9.1	16.9	16.4	16.0	24	15.6	27	15.3	31	14.9	35		
	1310	19.4	9.7	18.1	17.5	17.2	25	16.9	29	16.5	33	16.2	37		
	1390	20.8	10.5	19.6	18.7	18.7	27	18.3	31	17.9	35	17.6	39		
	1470	22.2	11.2	21.0	20	20.1	29	19.7	33	19.3	37	19.0	42		
	1560	23.8	12.1	22.6	21	21.7	31	21.3	35	20.9	40	20.6	45		
	1650	25.4	13.1	24.2	23	23.3	33	22.9	38	22.5	42	22.2	47		
	1750	27.2	14.2	26.0	25	25.1	35	24.7	40	24.3	45				
	1850	29.0	15.3	27.7	26	26.8	37	26.5	43	26.1	48				
	1950	30.8	16.4	29.5	28	28.6	40	28.2	45	27.9	51				
ARJ 1502	1170	20.7	10.2	19.2	18.6	18.2	27	17.8	31	17.3	35				
	1240	22.2	11.0	20.8	19.9	19.7	29	19.3	33	18.9	38				
	1310	23.7	11.7	22.3	21	21.2	31	20.8	35	20.4	40				
	1390	25.4	12.7	24.0	23	22.9	33	22.5	38	22.1	43				
	1470	27.1	13.6	25.7	24	24.7	35	24.2	40	23.8	45				
	1560	29.1	14.7	27.6	26	26.6	37	26.1	43	25.7	48				
	1650	31.0	15.8	29.6	28	28.5	40	28.1	45						
	1750	33.2	17.1	31.7	30	30.7	42	30.2	49						
	1850	35.3	18.5	33.9	32	32.8	45								
	1950	37.5	19.9	36.0	34	35.0	48								
ARJ 200S	980	23.8	11.1	22.2	21	21.1	30	20.6	35	20.1	40	19.7	45	19.3	49
	1040	25.5	12.0	24.0	22	22.8	32	22.3	37	21.9	42	21.5	47	21.1	53
	1100	27.3	12.8	25.7	24	24.6	34	24.1	40	23.7	45	23.2	50	22.9	56
	1170	29.3	13.8	27.8	25	26.6	37	26.1	42	25.7	48	25.3	54	24.9	59
	1240	31.4	14.9	29.8	27	28.7	39	28.2	45	27.7	51	27.3	57	27.0	63
	1310	33.4	16.0	31.9	29	30.7	41	30.2	48	29.8	54	29.4	61	29.0	67
	1390	35.8	17.2	34.2	31	33.1	44	32.6	51	32.1	58	31.7	65	31.3	71
	1470	38.1	18.5	36.5	33	35.4	47	34.9	54	34.5	62	34.1	69	33.7	76
	1560	40.7	20	39.2	35	38.0	50	37.5	58	37.1	66	36.7	73	36.3	81
	1650	43.4	22	41.8	38	40.7	54	40.2	62	39.7	70	39.3	78	38.9	86
	1750	46.3	23	44.7	41	43.6	58	43.1	66	42.7	75	42.2	83		
ARJ 200L	980	33.9	15.6	31.9	29	30.5	42	29.9	49	29.3	56	28.8	62	28.3	69
	1040	36.4	16.7	34.4	31	32.9	45	32.3	52	31.8	59	31.3	66	30.8	74
	1100	38.8	17.9	36.8	33	35.4	48	34.8	55	34.2	63	33.7	70	33.2	78
	1170	41.7	19.4	39.7	35	38.3	51	37.7	59	37.1	67	36.6	75	36.1	83
	1240	44.6	21	42.6	38	41.1	55	40.5	63	40.0	72	39.4	80		
	1310	47.4	22	45.4	40	44.0	58	43.4	67	42.8	76	42.3	85		
	1390	50.7	24	48.7	43	47.3	62	46.7	72	46.1	81				
	1470	54.0	26	52.0	46	50.6	66	49.9	76	49.4	86				
	1560	57.7	28	55.7	49	54.2	71	53.6	81						
	1650	61.3	30	59.4	53	57.9	75								
	1750	65.4	33	63.5	57	62.0	81								
ARJ 2001	930	29.7	13.4	27.9	25	26.6	37	26.1	43	25.6	49	25.1	55	24.7	60
	980	31.6	14.2	29.8	27	28.5	39	28.0	45	27.5	51	27.0	58	26.6	64
	1040	33.9	15.3	32.1	28	30.8	42	30.3	48	29.8	55	29.3	61	28.9	68
	1100	36.1	16.4	34.4	30	33.1	44	32.5	51	32.0	58	31.6	65	31.1	72
	1170	38.8	17.7	37.0	32	35.7	47	35.2	55	34.7	62	34.2	69	33.8	77
	1240	41.4	19.0	39.7	35	38.4	50	37.8	58	37.3	66	36.9	74	36.4	82
	1310	44.1	20	42.3	37	41.0	53	40.5	62	40.0	70	39.5	78	39.1	87
	1390	47.1	22	45.4	40	44.1	57	43.5	66	43.0	75	42.6	83	42.1	92
	1470	50.2	24	48.4	42	47.1	61	46.6	70	46.1	79	45.6	89	45.2	98
	1560	53.6	26	51.8	45	50.5	65	50.0	75	49.5	85	49.0	95	48.6	104

ロータリ・ブロワ性能表 Blower Performance Table

Model	Speed (min ⁻¹)	Capacity Qs (m3/min) & shaft power L (kW) at each discharge pressure													
		20 kPa		40 kPa		60 kPa		70 kPa		80 kPa		90 kPa		100 kPa	
		(2040mmAq)		(4080mmAq)		(6120mmAq)		(7140mmAq)		(8160mmAq)		(9180mmAq)		(10200mmAq)	
		Qs	L	Qs	L	Qs	L	Qs	L	Qs	L	Qs	L	Qs	L
ARJ 2002	930	37.4	16.7	35.2	31	33.7	46	33.0	53	32.4	61	31.9	68	31.3	75
	980	39.7	17.8	37.6	33	36.1	49	35.4	56	34.8	64	34.2	72	33.7	80
	1040	42.6	19.1	40.4	36	38.9	52	38.2	60	37.6	68	37.1	77	36.5	85
	1100	45.4	20	43.3	38	41.7	55	41.1	64	40.5	73	39.9	81	39.4	90
	1170	48.7	22	46.6	41	45.1	59	44.4	68	43.8	78	43.2	87	42.7	96
	1240	52.1	24	49.9	43	48.4	63	47.7	73	47.1	83	46.5	92	46.0	102
	1310	55.4	25	53.2	46	51.7	67	51.0	77	50.4	88	49.9	98	49.3	108
	1390	59.2	27	57.0	49	55.5	71	54.8	82	54.2	93	53.6	104	53.1	115
	1470	63.0	30	60.8	53	59.3	76	58.6	88	58.0	99	57.4	111	56.9	122
	1560	67.2	32	65.1	57	63.5	81	62.9	94	62.3	106	61.7	118	61.2	131
ARJ 2501	930	46.8	21	44.3	39	42.4	57	41.6	67	40.9	76	40.2	85	39.6	94
	980	49.8	22	47.2	41	45.3	61	44.6	70	43.8	80	43.2	90	42.5	99
	1040	53.3	24	50.7	44	48.9	65	48.1	75	47.4	85	46.7	95	46.1	106
	1100	56.8	25	54.3	47	52.4	69	51.6	80	50.9	90	50.2	101	49.6	112
	1170	61.0	27	58.4	50	56.5	73	55.8	85	55.0	96	54.4	108	53.7	119
	1240	65.1	30	62.5	54	60.7	78	59.9	90	59.2	103	58.5	115	57.9	127
	1310	69.2	32	66.7	57	64.8	83	64.0	96	63.3	109	62.6	122	62.0	135
	1390	73.9	34	71.4	62	69.5	89	68.7	103	68.0	116	67.3	130	66.7	143
	1470	78.7	37	76.1	66	74.2	95	73.4	109	72.7	123	72.0	138		
	1560	84.0	40	81.4	71	79.5	101	78.7	117	78.0	132	77.3	147		
ARJ 2503R	780	56.3	25	53.2	47	51.0	69	50.0	80	49.1	91	48.3	102	47.5	113
	830	60.6	27	57.5	50	55.2	74	54.2	85	53.4	97	52.5	109	51.8	121
	880	64.8	29	61.7	54	59.4	78	58.5	91	57.6	103	56.8	116	56.0	128
	930	69.0	31	65.9	57	63.7	83	62.7	96	61.8	110	61.0	123	60.2	136
	980	73.3	33	70.2	60	67.9	88	66.9	102	66.1	116	65.2	130	64.5	143
	1040	78.4	35	75.2	65	73.0	94	72.0	109	71.1	123	70.3	138	69.6	153
	1100	83.4	38	80.3	69	78.1	100	77.1	116	76.2	131	75.4	147	74.6	162
	1170	89.4	41	86.3	74	84.0	107	83.0	124	82.2	140	81.3	157	80.6	173
	1240	95.3	44	92.2	79	89.9	114	89.0	132	88.1	149	87.3	167	86.5	184
	1310	101	48	98.1	85	95.9	122	94.9	140	94.0	159	93.2	177	92.4	196
ARJ 2504R	780	73.0	32	69.2	60	66.4	89	65.2	103	64.1	117	63.1	131	62.2	145
	830	78.4	34	74.6	65	71.8	95	70.7	110	69.6	125	68.6	140	67.6	155
	880	83.9	37	80.1	69	77.3	101	76.1	117	75.0	133	74.0	149	73.1	165
	930	89.3	39	85.5	73	82.7	107	81.6	124	80.5	141	79.5	158	78.5	175
	980	94.8	42	91.0	78	88.2	113	87.0	131	85.9	149	84.9	167	84.0	184
	1040	101	45	97.5	83	94.7	121	93.5	140	92.5	159	91.5	178	90.5	196
	1100	108	49	104	89	101	129	100	149	99.0	169	98.0	189	97.0	209
	1170	115	53	112	95	109	138	108	159	107	180	106	202	105	223
	1240	123	57	119	102	117	147	115	170	114	192	113	215		
	1310	131	61	127	109	124	157	123	180	122	204	121	228		
ARJ 3001R	780	92.0	40	87.4	75	84.1	111	82.7	128	81.4	146	80.2	164		
	830	98.8	43	94.2	81	90.9	118	89.5	137	88.2	156	87.0	175		
	880	106	46	101	86	97.7	126	96.3	146	95.0	166	93.8	186		
	930	112	49	108	92	105	134	103	155	102	176	101	197		
	980	119	53	115	97	111	142	110	164	109	186	107	208		
	1040	127	57	123	104	120	151	118	175	117	198	116	222		
	1100	136	61	131	111	128	161	126	186	125	211				
	1170	145	66	141	119	137	172	136	199	135	225				
	1240	155	71	150	128	147	184	145	212						
	1310	164	77	160	136	156	196	155	225						

ロータリ・ブロワ性能表 Blower Performance Table

Model	Speed (min ⁻¹)	Capacity Qs (m3/min) & shaft power L (kW) at each discharge pressure													
		20 kPa		40 kPa		60 kPa		70 kPa		80 kPa		90 kPa		100 kPa	
		(2040mmAq)		(4080mmAq)		(6120mmAq)		(7140mmAq)		(8160mmAq)		(9180mmAq)		(10200mmAq)	
		Qs	L	Qs	L	Qs	L	Qs	L	Qs	L	Qs	L	Qs	L
ARJ 3001	740	86.4	38	82.6	71	79.9	103	78.7	120	77.6	136	76.6	152	75.7	169
	780	91.7	40	87.9	75	85.2	109	84.0	127	82.9	144	82.0	161	81.0	178
	930	98.3	44	94.5	80	91.8	117	90.6	135	89.6	154	88.6	172	87.7	190
	880	105	47	101	86	98.4	125	97.3	144	96.2	164	95.2	183	94.3	203
	930	112	51	108	92	105	133	104	153	103	174	102	195	101	215
	980	118	54	114	98	112	141	111	163	109	184	108	206	108	228
	1040	126	59	122	105	120	151	119	174	117	197	116	220	116	243
	1100	134	63	130	112	128	161	126	185	125	209	124	234	123	258
ARJ 3002	740	109	47	104	88	101	129	100	150	99	170	97	190	96	211
	780	115	50	111	94	108	137	106	158	105	180	104	201	103	223
	930	124	55	119	100	116	146	115	169	113	192	112	215	111	238
	880	132	59	128	107	124	156	123	180	122	205	121	229	120	253
	930	140	63	136	115	133	166	131	192	130	217	129	243	128	269
	980	149	68	144	122	141	176	140	203	138	230	137	257	136	284
	1040	159	73	154	131	151	188	150	217	148	246	147	275		
	1100	169	79	164	140	161	201	160	231	158	262	157	292		
ARJ 3501	740	134	58	128	108	124	159	123	184	121	209	120	234		
	780	142	62	136	115	132	168	131	194	129	221	128	247		
	830	152	67	147	123	143	180	141	208	139	236	138	264		
	880	162	72	157	132	153	192	151	222	150	252	148	281		
	930	172	78	167	141	163	204	161	236	160	267	158	299		
	980	183	83	177	150	173	216	172	250	170	283				
	1040	195	90	189	161	185	231	184	267						
	1100	207	97	200	172	198	247	196	284						
ARJ 3501S	660	130	55	125	104	121	153	119	177	118	201	116	226	115	250
	700	139	59	133	111	130	163	128	188	127	214	125	240	124	266
	740	148	64	142	118	139	173	137	200	136	227	134	255	133	282
	780	156	68	151	125	147	183	146	212	144	240	143	269	142	298
	830	167	74	162	135	158	196	157	227	155	257	154	288	153	318
	880	178	79	173	144	170	209	168	242	166	274	165	307	164	339
	930	190	85	184	154	181	223	179	257	178	291	176	325	175	360
	980	201	92	195	164	192	236	190	272	189	309	187	345	186	281
ARJ 3502S	660	167	71	161	133	157	195	155	226	153	257	152	288	150	319
	700	179	76	173	142	168	208	166	241	164	274	163	307	161	340
	740	190	81	184	151	179	221	177	256	176	290	174	325	173	360
	780	201	87	195	160	191	234	189	271	187	307	185	344	184	381
	830	215	94	209	172	205	250	203	290	201	329	200	368		
	880	230	101	223	184	219	267	217	309	215	350	214	392		
	930	244	109	238	197	233	284	231	328	229	372				
	980	258	117	252	210	247	302	245	348	244	394				
ARJ 4001S	660	213	89	206	167	201	246	198	285	196	324	194	363		
	700	227	96	220	179	215	262	213	304	211	345	209	387		
	740	241	102	234	190	229	278	227	322	225	366				
	780	256	109	248	202	243	295	241	341	239	387				
	830	273	118	266	217	261	316	259	365						
	880	291	128	284	232	279	337	277	389						
	930	309	138	302	248	297	359								
	980	327	148	320	264	315	381								

ロータリ・ブロワ性能表 Blower Performance Table

Model	Speed (min ⁻¹)	Capacity Qs (m ³ /min) & shaft power L (kW) at each discharge pressure													
		20 kPa		40 kPa		60 kPa		70 kPa		80 kPa		90 kPa		100 kPa	
		(2040mmAq)		(4080mmAq)		(6120mmAq)		(7140mmAq)		(8160mmAq)		(9180mmAq)		(10200mmAq)	
		Qs	L	Qs	L	Qs	L	Qs	L	Qs	L	Qs	L	Qs	L
ARJ 4002	620	225	95	217	179	211	262	209	304	206	346				
	660	241	103	233	192	227	281	225	325	223	370				
	700	258	111	249	205	244	300	241	347	239	394				
	740	274	119	266	219	260	319	257	369	255	418				
	780	290	128	282	233	276	338	273	391	271	443				
	830	310	139	302	251	296	363	294	419	291	475				
ARJ 4502	620	284	119	275	224	268	328	265	380	263	433				
	660	304	129	295	240	288	351	285	407	283	462				
	700	325	139	315	257	309	375	306	434	303	493				
	740	345	149	335	274	329	398	326	461						
	780	365	160	356	291	349	423	346	488						
	830	390	174	381	314	374	453								
ARJ 5002	620	350	147	339	276	331	405	327	469						
	660	375	159	364	296	356	433								
	700	400	171	389	317	381	462								
	740	425	184	414	338	405	491								
	780	450	197	439	359										
	830	481	214	470	387										

Blower model and Capacity range

Model	Capacity range (Approximate)											
	10	20	30	40	50	60	70	80	90	100	m ³ /min	
ARJ0501	■	1-4										
ARJ0651	■	2-6										
ARJ0802	■	4-10										
ARJ1002	■	6-15										
ARJ1251	■	8-20										
ARJ1501	■	14-30										
ARJ1502	■	17-38										
ARJ200S	■	19-46										
ARJ200L	■	28-65										
ARJ2001	■	25-53										
ARJ2002	■	30-67										
ARJ2501	■	40-85										
ARJ2503R	■	47-100										

Model	Capacity range (Approximate)									
	50	100	150	200	250	300	350	400	450	500
ARJ2504R	■	60-130								
ARJ3001R	■	80-165								
ARJ3001	■	75-135								
ARJ3002	■	95-170								
ARJ3501	■	120-210								
ARJ3501S	■	115-200								
ARJ3502S	■	150-260								
ARJ4001S	■	195-330								
ARJ4002	■	210-310								
ARJ4502	■	260-390								
ARJ5002	■	330-480								

真空ポンプ性能表

Vacuum Pump Performance Table

Model	Speed (min ⁻¹)	Capacity Qs (m3/min) & shaft power L (kW) at each vacuum													
		-20 kPa		-30 kPa		-40 kPa		-50 kPa		-55 kPa		-60 kPa		-65 kPa	
		(-2040mmAq)		(-3060mmAq)		(-4080mmAq)		(-5100mmAq)		(-5610mmAq)		(-6120mmAq)		(-6630mmAq)	
		Qs	L	Qs	L	Qs	L	Qs	L	Qs	L	Qs	L	Qs	L
ARJ 0501	1650	1.99	1.2	1.75	1.6	1.50	2.1	1.23	2.6	1.07	2.8	0.89	3.0		
	1750	2.16	1.2	1.92	1.7	1.67	2.2	1.40	2.7	1.24	3.0	1.06	3.2		
	1850	2.33	1.3	2.09	1.9	1.84	2.4	1.57	2.9	1.41	3.2	1.23	3.4		
	1950	2.50	1.4	2.26	2.0	2.01	2.5	1.74	3.1	1.58	3.4	1.40	3.6		
	2050	2.67	1.5	2.43	2.1	2.18	2.7	1.90	3.3	1.75	3.5	1.57	3.8		
	2160	2.85	1.6	2.62	2.2	2.37	2.8	2.09	3.5	1.93	3.8	1.76	4.1		
	2240	2.99	1.7	2.75	2.3	2.50	3.0	2.23	3.6	2.07	3.9	1.89	4.2		
	2380	3.23	1.8	2.99	2.5	2.74	3.2	2.47	3.8	2.31	4.2	2.13	4.5		
	2530	3.48	2.0	3.24	2.7	3.00	3.4	2.72	4.1	2.56	4.5	2.39	4.8		
ARJ 0651	1650	3.19	1.8	2.86	2.5	2.52	3.2	2.14	3.9	1.93	4.3	1.69	4.7		
	1750	3.45	1.9	3.12	2.7	2.78	3.4	2.40	4.2	2.19	4.6	1.95	5.0		
	1850	3.71	2.0	3.39	2.9	3.05	3.7	2.67	4.5	2.45	4.9	2.21	5.3		
	1950	3.98	2.2	3.65	3.0	3.31	3.9	2.93	4.7	2.71	5.2	2.47	5.6		
	2050	4.24	2.3	3.91	3.2	3.57	4.1	3.19	5.0	2.97	5.5	2.73	5.9		
	2160	4.52	2.5	4.20	3.4	3.86	4.4	3.48	5.3	3.26	5.8	3.02	6.2		
	2240	4.73	2.6	4.40	3.6	4.07	4.6	3.69	5.5	3.47	6.0	3.23	6.5		
	2380	5.10	2.8	4.77	3.8	4.43	4.9	4.05	5.9	3.84	6.4	3.59	7.0		
	2530	5.49	3.0	5.16	4.1	4.82	5.2	4.44	6.4	4.23	6.9	3.99	7.5		
ARJ 0802	2670	5.86	3.3	5.53	4.4	5.19	5.6	4.81	6.8	4.59	7.3	4.35	7.9		
	1390	5.13	2.7	4.68	3.8	4.21	4.9	3.69	6.0	3.39	6.6	3.06	7.2	2.68	7.7
	1470	5.52	2.9	5.07	4.1	4.60	5.2	4.07	6.4	3.78	7.0	3.44	7.6	3.06	8.2
	1560	5.95	3.1	5.50	4.4	5.03	5.6	4.51	6.9	4.21	7.5	3.87	8.1	3.49	8.7
	1650	6.38	3.3	5.93	4.7	5.46	6.0	4.94	7.3	4.64	8.0	4.31	8.6	3.92	9.3
	1750	6.86	3.6	6.41	5.0	5.94	6.4	5.42	7.8	5.12	8.5	4.79	9.2	4.40	9.9
	1850	7.35	3.9	6.89	5.3	6.42	6.8	5.90	8.3	5.60	9.0	5.27	9.8	4.89	10.5
	1950	7.83	4.1	7.37	5.7	6.90	7.2	6.38	8.8	6.08	9.6	5.75	10.4	5.37	11.1
	2050	8.31	4.4	7.85	6.0	7.38	7.7	6.86	9.3	6.56	10.1	6.23	11.0	5.85	11.8
	2160	8.83	4.7	8.38	6.4	7.91	8.2	7.39	9.9	7.09	10.8	6.76	11.6	6.37	12.5
	2240	9.22	4.9	8.77	6.7	8.30	8.5	7.77	10.3	7.48	11.2	7.14	12.1	6.76	13.0
ARJ 1002	2380	9.89	5.4	9.44	7.3	8.97	9.2	8.45	11.1	8.15	12.0	7.81	13.0	7.43	13.9
	1390	7.92	4.1	7.31	5.7	6.67	7.4	5.96	9.1	5.56	9.9	5.10	10.7	4.58	11.6
	1470	8.50	4.3	7.88	6.1	7.25	7.9	6.54	9.6	6.13	10.5	5.68	11.4	5.16	12.3
	1560	9.15	4.7	8.53	6.5	7.90	8.4	7.19	10.3	6.78	11.2	6.33	12.2	5.81	13.1
	1650	9.80	5.0	9.18	7.0	8.55	9.0	7.83	10.9	7.43	11.9	6.98	12.9	6.46	13.9
	1750	10.5	5.4	9.90	7.5	9.27	9.6	8.56	11.7	8.15	12.7	7.70	13.8	7.18	14.8
	1850	11.2	5.8	10.6	8.0	10.0	10.2	9.28	12.4	8.87	13.6	8.42	14.7	7.90	15.8
	1950	12.0	6.2	11.3	8.5	10.7	10.9	10.0	13.2	9.59	14.4	9.14	15.6	8.62	16.7
	2050	12.7	6.6	12.1	9.1	11.4	11.5	10.7	14.0	10.3	15.2	9.86	16.4	9.34	17.7
	2160	13.5	7.1	12.9	9.7	12.2	12.3	11.5	14.9	11.1	16.1	10.7	17.4	10.1	18.7
	2240	14.1	7.4	13.4	10.1	12.8	12.8	12.1	15.5	11.7	16.8	11.2	18.2	10.7	20
ARJ 1251	2380	15.1	8.0	14.4	10.9	13.8	13.8	13.1	16.6	12.7	18.0	12.2	19.5	11.7	21
	1170	11.0	5.8	10.3	8.1	9.52	10.5	8.69	12.9	8.24	14.1	7.74	15.3	7.17	16.4
	1240	11.9	6.2	11.1	8.7	10.4	11.2	9.55	13.7	9.09	15.0	8.59	16.3	8.02	17.5
	1310	12.7	6.6	12.0	9.3	11.2	11.9	10.4	14.6	9.94	15.9	9.44	17.3	8.87	18.6
	1390	13.7	7.2	13.0	10.0	12.2	12.8	11.4	15.6	10.9	17.0	10.4	18.4	9.84	20
	1470	14.7	7.7	13.9	10.7	13.2	13.7	12.3	16.6	11.9	18.1	11.4	19.6	10.8	21
	1560	15.8	8.3	15.0	11.5	14.3	14.6	13.4	17.8	13.0	19.4	12.5	21	11.9	23
	1650	16.9	9.0	16.1	12.3	15.4	15.6	14.5	19.0	14.1	21	13.6	22	13.0	24
	1750	18.1	9.7	17.3	13.2	16.6	16.8	15.8	20	15.3	22	14.8	24	14.2	26
	1850	19.3	10.5	18.5	14.2	17.8	18.0	17.0	22	16.5	24	16.0	25	15.4	27
	1950	20.5	11.2	19.8	15.2	19.0	19.1	18.2	23	17.7	25	17.2	27	16.7	29

真空ポンプ性能表

Vacuum Pump Performance Table

Model	Speed (min ⁻¹)	Capacity Qs (m3/min) & shaft power L (kW) at each vacuum													
		-20 kPa		-30 kPa		-40 kPa		-50 kPa		-55 kPa		-60 kPa		-65 kPa	
		(-2040mmAq)		(-3060mmAq)		(-4080mmAq)		(-5100mmAq)		(-5610mmAq)		(-6120mmAq)		(-6630mmAq)	
		Qs	L	Qs	L	Qs	L	Qs	L	Qs	L	Qs	L	Qs	L
ARJ 1501	1170	16.5	8.4	15.5	11.9	14.5	15.4	13.4	18.8	12.8	21	12.1	22	11.4	24
	1240	17.8	9.1	16.8	12.7	15.8	16.4	14.7	20	14.0	22	13.4	24	12.6	26
	1310	19.0	9.7	18.0	13.6	17.0	17.5	15.9	21	15.3	23	14.6	25	13.9	27
	1390	20.5	10.5	19.4	14.6	18.4	18.7	17.3	23	16.7	25	16.0	27	15.3	29
	1470	21.9	11.2	20.9	15.6	19.8	20	18.7	24	18.1	26	17.5	29	16.7	31
	1560	23.5	12.1	22.5	16.8	21.4	21	20.3	26	19.7	28	19.1	31	18.3	33
	1650	25.1	13.1	24.1	18.0	23.0	23	21.9	28	21.3	30	20.7	33	19.9	35
	1750	26.9	14.2	25.8	19.3	24.8	25	23.7	30	23.1	32	22.4	35	21.7	38
	1850	28.6	15.3	27.6	21	26.6	26	25.5	32	24.9	34	24.2	37	23.5	40
	1950	30.4	16.4	29.4	22	28.4	28	27.3	34	26.7	37	26.0	40	25.2	42
ARJ 1502	1170	20.3	10.2	19.1	14.4	17.9	18.6	16.7	23	16.0	25	15.2	27	14.3	29
	1240	21.8	11.0	20.6	15.4	19.4	19.9	18.2	24	17.5	27	16.7	29	15.8	31
	1310	23.3	11.7	22.1	16.4	20.9	21	19.7	26	19.0	28	18.2	31	17.3	33
	1390	25.0	12.7	23.8	17.6	22.7	23	21.4	28	20.7	30	19.9	33	19.0	35
	1470	26.7	13.6	25.5	18.9	24.4	24	23.1	29	22.4	32	21.6	35	20.8	37
	1560	28.7	14.7	27.5	20	26.3	26	25.1	31	24.4	34	23.6	37	22.7	40
	1650	30.6	15.8	29.4	22	28.3	28	27.0	34	26.3	37	25.5	40	24.6	42
	1750	32.8	17.1	31.6	23	30.4	30	29.1	36	28.4	39	27.7	42	26.8	45
	1850	34.9	18.5	33.7	25	32.6	32	31.3	38	30.6	42	29.8	45	28.9	48
	1950	37.1	19.9	35.9	27	34.7	34	33.4	41	32.7	44	32.0	48	31.1	51
ARJ 200S	980	23.3	11.1	22.0	15.9	20.8	21	19.4	25	18.6	28	17.8	30	16.8	33
	1040	25.1	12.0	23.8	17.0	22.5	22	21.2	27	20.4	30	19.5	32	18.6	35
	1100	26.8	12.8	25.5	18.2	24.3	24	22.9	29	22.1	32	21.3	34	20.4	37
	1170	28.9	13.8	27.6	20	26.3	25	25.0	31	24.2	34	23.3	37	22.4	39
	1240	30.9	14.9	29.6	21	28.4	27	27.0	33	26.2	36	25.4	39	24.4	42
	1310	33.0	16.0	31.7	22	30.4	29	29.0	35	28.3	38	27.4	41	26.5	45
	1390	35.3	17.2	34.0	24	32.8	31	31.4	38	30.6	41	29.8	44	28.8	48
	1470	37.6	18.5	36.4	26	35.1	33	33.7	40	33.0	44	32.1	47	31.2	51
	1560	40.3	20	39.0	28	37.7	35	36.4	43	35.6	47	34.8	50	33.8	54
	1650	42.9	22	41.6	30	40.4	38	39.0	46	38.2	50	37.4	54	36.4	58
	1750	45.8	23	44.6	32	43.3	41	41.9	49	41.2	53	40.3	58	39.4	62
ARJ 200L	980	33.3	15.6	31.7	22	30.1	29	28.4	36	27.4	39	26.3	42	25.1	46
	1040	35.8	16.7	34.2	24	32.6	31	30.8	38	29.9	42	28.8	45	27.6	49
	1100	38.3	17.9	36.6	25	35.0	33	33.3	40	32.3	44	31.2	48	30.0	52
	1170	41.1	19.4	39.5	27	37.9	35	36.1	43	35.2	47	34.1	51	32.9	55
	1240	44.0	21	42.4	29	40.8	38	39.0	46	38.0	50	37.0	55	35.8	59
	1310	46.9	22	45.2	31	43.6	40	41.9	49	40.9	54	39.8	58	38.6	63
	1390	50.1	24	48.5	34	46.9	43	45.2	53	44.2	57	43.1	62	41.9	67
	1470	53.4	26	51.8	36	50.2	46	48.4	56	47.5	61	46.4	66	45.2	71
	1560	57.1	28	55.5	39	53.9	49	52.1	60	51.1	65	50.1	71	48.9	76
	1650	60.8	30	59.2	42	57.5	53	55.8	64	54.8	70	53.8	75	52.6	81
	1750	64.9	33	63.2	45	61.6	57	59.9	69	58.9	75	57.9	81		
ARJ 2001	930	29.2	13.4	27.7	19.3	26.3	25	24.7	31	23.9	34	22.9	37	21.8	40
	980	31.1	14.2	29.6	20	28.2	27	26.6	33	25.8	36	24.8	39	23.7	42
	1040	33.4	15.3	31.9	22	30.5	28	28.9	35	28.0	38	27.1	42	26.0	45
	1100	35.6	16.4	34.2	23	32.7	30	31.2	37	30.3	41	29.4	44	28.3	48
	1170	38.3	17.7	36.8	25	35.4	32	33.8	40	33.0	44	32.0	47	30.9	51
	1240	40.9	19.0	39.5	27	38.0	35	36.5	43	35.6	46	34.7	50	33.6	54
	1310	43.6	20	42.1	29	40.7	37	39.1	45	38.3	49	37.3	53	36.3	58
	1390	46.6	22	45.2	31	43.7	40	42.2	48	41.3	53	40.4	57	39.3	62
	1470	49.7	24	48.2	33	46.8	42	45.2	52	44.3	56	43.4	61	42.3	65
	1560	53.1	26	51.6	35	50.2	45	48.6	55	47.8	60	46.8	65	45.7	70

真空ポンプ性能表

Vacuum Pump Performance Table

Model	Speed (min ⁻¹)	Capacity Qs (m3/min) & shaft power L (kW) at each vacuum													
		-20 kPa		-30 kPa		-40 kPa		-50 kPa		-55 kPa		-60 kPa		-65 kPa	
		(-2040mmAq)		(-3060mmAq)		(-4080mmAq)		(-5100mmAq)		(-5610mmAq)		(-6120mmAq)		(-6630mmAq)	
		Qs	L	Qs	L	Qs	L	Qs	L	Qs	L	Qs	L	Qs	L
ARJ 2002	930	36.8	16.7	35.0	24	33.3	31	31.4	39	30.4	42	29.2	46	27.9	50
	980	39.1	17.8	37.4	26	35.6	33	33.8	41	32.7	45	31.6	49	30.3	53
	1040	42.0	19.1	40.2	27	38.5	36	36.6	44	35.6	48	34.4	52	33.1	56
	1100	44.8	20	43.1	29	41.3	38	39.5	47	38.4	51	37.3	55	36.0	60
	1170	48.1	22	46.4	31	44.6	41	42.8	50	41.7	54	40.6	59	39.3	64
	1240	51.4	24	49.7	34	48.0	43	46.1	53	45.0	58	43.9	63	42.6	68
	1310	54.8	25	53.0	36	51.3	46	49.4	57	48.4	62	47.2	67	45.9	72
	1390	58.5	27	56.8	38	55.1	49	53.2	60	52.1	66	51.0	71	49.7	77
	1470	62.3	30	60.6	41	58.9	53	57.0	64	55.9	70	54.8	76	53.5	82
	1560	66.6	32	64.9	44	63.1	57	61.2	69	60.2	75	59.1	81	57.8	87
ARJ 2501	930	46.1	21	44.0	30	41.9	39	39.7	48	38.4	53	37.0	57	35.5	62
	980	49.0	22	46.9	32	44.9	41	42.6	51	41.4	56	40.0	61	38.4	65
	1040	52.6	24	50.5	34	48.4	44	46.1	54	44.9	60	43.5	65	42.0	70
	1100	56.1	25	54.0	36	51.9	47	49.7	58	48.4	63	47.1	69	45.5	74
	1170	60.2	27	58.1	39	56.1	50	53.8	62	52.6	68	51.2	73	49.6	79
	1240	64.4	30	62.3	42	60.2	54	57.9	66	56.7	72	55.3	78	53.8	84
	1310	68.5	32	66.4	45	64.3	57	62.1	70	60.8	77	59.4	83	57.9	90
	1390	73.2	34	71.1	48	69.0	62	66.8	75	65.5	82	64.1	89	62.6	96
	1470	77.9	37	75.8	51	73.7	66	71.5	80	70.2	87	68.9	95	67.3	102
	1560	83.2	40	81.1	55	79.0	71	76.8	86	75.5	94	74.2	101	72.6	109
ARJ 2503R	780	55.4	25	52.9	36	50.4	47	47.6	58	46.1	63	44.4	69	42.5	74
	830	59.7	27	57.1	38	54.6	50	51.9	62	50.3	68	48.7	74	46.8	80
	880	63.9	29	61.4	41	58.8	54	56.1	66	54.6	72	52.9	78	51.0	85
	930	68.1	31	65.6	44	63.1	57	60.3	70	58.8	77	57.1	83	55.3	90
	980	72.4	33	69.8	47	67.3	60	64.6	74	63.1	81	61.4	88	59.5	95
	1040	77.5	35	74.9	50	72.4	65	69.7	79	68.1	87	66.5	94	64.6	101
	1100	82.5	38	80.0	53	77.5	69	74.7	85	73.2	92	71.5	100	69.7	108
	1170	88.5	41	85.9	58	83.4	74	80.7	91	79.1	99	77.5	107	75.6	115
	1240	94.4	44	91.9	62	89.3	79	86.6	97	85.1	106	83.4	114	81.5	123
	1310	100	48	97.8	66	95.3	85	92.5	103	91.0	113	89.3	122	87.4	131
ARJ 2504R	780	71.9	32	68.8	46	65.7	60	62.3	74	60.4	82	58.4	89	56.1	96
	830	77.3	34	74.2	49	71.1	65	67.8	80	65.9	87	63.8	95	61.5	102
	880	82.8	37	79.7	53	76.6	69	73.2	85	71.3	93	69.3	101	67.0	109
	930	88.2	39	85.1	56	82.0	73	78.7	90	76.8	99	74.7	107	72.4	115
	980	93.7	42	90.6	60	87.5	78	84.1	96	82.2	104	80.2	113	77.9	122
	1040	100	45	97.1	64	94.0	83	90.6	102	88.8	111	86.7	121	84.4	130
	1100	107	49	104	69	101	89	97.2	109	95.3	119	93.2	129	90.9	139
	1170	114	53	111	74	108	95	105	117	103	127	101	138	98.6	148
	1240	122	57	119	80	116	102	112	125	111	136	108	147	106	158
	1310	130	61	126	85	123	109	120	133	118	145	116	157	114	168
ARJ 3001R	780	90.7	40	86.9	58	83.2	75	79.2	93	77.0	102	74.6	111	71.8	120
	830	97.5	43	93.7	62	90.0	81	86.0	100	83.8	109	81.4	118	78.6	128
	880	104	46	101	66	96.8	86	92.9	106	90.6	116	88.2	126	85.4	136
	930	111	49	107	70	104	92	100	113	97.4	123	95.0	134	92.2	144
	980	118	53	114	75	110	97	106	119	104	131	102	142	99.0	153
	1040	126	57	122	80	119	104	115	128	112	139	110	151	107	163
	1100	134	61	130	86	127	111	123	136	121	148	118	161	115	173
	1170	144	66	140	93	136	119	132	146	130	159	128	172	125	186
	1240	153	71	150	99	146	128	142	156	140	170	137	184	134	198
	1310	163	77	159	107	155	136	151	166	149	181	147	196	144	211

真空ポンプ性能表

Vacuum Pump Performance Table

Model	Speed (min ⁻¹)	Capacity Qs (m3/min) & shaft power L (kW) at each vacuum													
		-20 kPa		-30 kPa		-40 kPa		-50 kPa		-55 kPa		-60 kPa		-65 kPa	
		(-2040mmAq)	(-3060mmAq)	(-4080mmAq)	(-5100mmAq)	(-5610mmAq)	(-6120mmAq)	(-6630mmAq)							
		Qs	L	Qs	L	Qs	L	Qs	L	Qs	L	Qs	L	Qs	L
ARJ 3001	740	85.3	38	82.2	54	79.1	71	75.8	87	74.0	95	72.0	103	69.7	111
	780	90.6	40	87.5	58	84.5	75	81.1	92	79.3	101	77.3	109	75.0	118
	830	97.2	44	94.1	62	91.1	80	87.8	99	85.9	108	83.9	117	81.6	126
	880	104	47	101	67	97.7	86	94.4	105	92.6	115	90.5	125	88.3	135
	930	110	51	107	71	104	92	101	112	99.2	123	97.2	133	94.9	143
	980	117	54	114	76	111	98	108	119	106	130	104	141	102	152
	1040	125	59	122	82	119	105	116	128	114	139	112	151	109	162
	1100	133	63	130	88	127	112	124	136	122	149	120	161	117	173
ARJ 3002	740	108	47	104	68	100	88	96.4	109	94.3	119	91.9	129	89.2	139
	780	114	50	111	72	107	94	103	115	101	126	98.5	137	95.8	147
	830	122	55	119	78	115	100	111	123	109	135	107	146	104	158
	880	131	59	127	83	124	107	120	132	117	144	115	156	112	168
	930	139	63	135	89	132	115	128	140	126	153	123	166	121	179
	980	147	68	144	95	140	122	136	149	134	163	132	176	129	190
	1040	157	73	154	102	150	131	146	160	144	174	142	188	139	203
	1100	167	79	164	110	160	140	156	171	154	186	152	201	149	216
ARJ 3501	740	132	58	128	83	123	108	118	133	116	146	113	159	110	171
	780	140	62	136	88	131	115	127	141	124	155	121	168	118	181
	830	150	67	146	95	142	123	137	152	134	166	131	180	128	194
	880	161	72	156	102	152	132	147	162	144	177	141	192	138	207
	930	171	78	166	109	162	141	157	172	155	188	152	204	148	220
	980	181	83	177	116	172	150	167	183	165	200	162	216	158	233
	1040	193	90	189	125	184	161	180	196	177	214	174	231	171	249
	1100	205	97	201	135	197	172	192	209	189	228	186	247	183	266
ARJ 3501S	660	128	55	124	80	120	104	115	128	113	140	110	153	107	165
	700	137	59	133	85	129	111	124	137	122	150	119	163	116	175
	740	146	64	142	91	138	118	133	145	131	159	128	173	125	186
	780	155	68	151	97	146	125	142	154	139	169	137	183	133	197
	830	166	74	162	104	157	135	153	165	150	181	148	196	145	211
	880	177	79	173	112	169	144	164	177	161	193	159	209	156	225
	930	188	85	184	120	180	154	175	188	173	205	170	223	167	240
	980	199	92	195	128	191	164	186	200	184	218	181	236	178	254
ARJ 3502S	660	166	71	161	102	156	133	150	164	147	179	144	195	140	211
	700	177	76	172	109	167	142	161	175	158	191	155	208	151	224
	740	188	81	183	116	178	151	173	186	170	203	166	221	163	238
	780	200	87	194	124	189	160	184	197	181	215	178	234	174	252
	830	214	94	209	133	204	172	198	211	195	231	192	250	188	270
	880	228	101	223	143	218	184	212	226	209	247	206	267	202	288
	930	242	109	237	153	232	197	226	241	224	263	220	284	216	306
	980	256	117	251	163	246	210	241	256	238	279	234	302	231	325
ARJ 4001S	660	211	89	205	128	199	167	193	207	189	226	186	246	181	265
	700	225	96	219	137	213	179	207	220	204	241	200	262	195	283
	740	239	102	233	146	228	190	221	234	218	256	214	278	210	300
	780	254	109	248	156	242	202	236	248	232	272	228	295	224	318
	830	271	118	266	168	260	217	253	266	250	291	246	316	242	340
	880	289	128	283	180	278	232	271	285	268	311	264	337	260	363
	930	307	138	301	193	295	248	289	303	286	331	282	359	277	386
	980	325	148	319	206	313	264	307	322	303	352	300	381		

真空ポンプ性能表

Vacuum Pump Performance Table

Model	Speed (min ⁻¹)	Capacity Qs (m3/min) & shaft power L (kW) at each vacuum													
		-20 kPa		-30 kPa		-40 kPa		-50 kPa		-55 kPa		-60 kPa		-65 kPa	
		(-2040mmAq)		(-3060mmAq)		(-4080mmAq)		(-5100mmAq)		(-5610mmAq)		(-6120mmAq)		(-6630mmAq)	
		Qs	L	Qs	L	Qs	L	Qs	L	Qs	L	Qs	L	Qs	L
ARJ 4002	620	223	95	216	137	210	179	203	221	199	242	194	262	189	283
	660	239	103	232	148	226	192	219	237	215	259	210	281	205	303
	700	255	111	249	158	242	205	235	253	231	276	227	300	222	323
	740	271	119	265	169	258	219	251	269	247	294	243	319	238	344
	780	288	128	281	180	274	233	267	286	263	312	259	338	254	364
	830	308	139	301	195	295	251	287	307	283	335	279	363	274	391
ARJ 4502	620	281	119	274	171	266	224	258	276	254	302	249	328	243	354
	660	302	129	294	184	287	240	278	296	274	323	269	351	263	379
	700	322	139	314	198	307	257	299	316	294	345	289	375	283	404
	740	342	149	334	211	327	274	319	336	314	367	309	398	304	430
	780	362	160	355	226	347	291	339	357	334	390	329	423	324	455
	830	388	174	380	244	372	314	364	383	360	418	355	453	349	488
ARJ 5002	620	347	147	338	212	328	276	318	340	313	372	307	405	300	437
	660	372	159	363	228	353	296	343	365	338	399	332	433	325	467
	700	397	171	388	244	378	317	368	389	363	426	357	462		
	740	422	184	413	261	403	338	393	415	388	453	381	491		
	780	447	197	437	278	428	359	418	440	413	481				
	830	478	214	469	301	459	387	449	473						

Vacuum pump model and Capacity range

Model	Capacity range (Approximate)										
	10	20	30	40	50	60	70	80	90	100	m3/min
ARJ0501	■	1-4									
ARJ0651	■	2-6									
ARJ0802	■		3-10								
ARJ1002	■		5-15								
ARJ1251	■		7-20								
ARJ1501	■			11-30							
ARJ1502	■				14-37						
ARJ200S	■					17-46					
ARJ200L	■						25-65				
ARJ2001	■						22-53				
ARJ2002	■							28-67			
ARJ2501	■								36-84		
ARJ2503R	■		42-100								

Model	Capacity range (Approximate)									
	50	100	150	200	250	300	350	400	450	500m3/min
ARJ2504R	■	56-130								
ARJ3001R	■	72-163								
ARJ3001	■	70-133								
ARJ3002	■	90-167								
ARJ3501	■	110-205								
ARJ3501S	■	107-200								
ARJ3502S	■	140-260								
ARJ4001S	■	180-330								
ARJ4002	■	190-310								
ARJ4502	■	240-390								
ARJ5002	■	300-480								

2段式ブロワ性能表 Two-Stage blower performance table

Model	Piping size (mm) Suc. Dis.	Speed (min ⁻¹)	Capacity Qs (m ³ /min) & shaft power L (kW) at each discharge pressure													
			100 kPa		120 kPa		140 kPa		160 kPa		180 kPa		200 kPa		215 kPa	
			(1.02 kg/cm ²)		(1.22 kg/cm ²)		(1.43 kg/cm ²)		(1.63 kg/cm ²)		(1.84 kg/cm ²)		(2.04 kg/cm ²)		(2.19 kg/cm ²)	
			Qs	L	Qs	L	Qs	L	Qs	L	Qs	L	Qs	L	Qs	L
ARL 0651	65/40	1750	2.90	7.3	2.85	8.4	2.75	9.5	2.70	10.6	2.65	11.7	2.61	12.8		
		1950	3.40	8.2	3.35	9.5	3.25	10.7	3.20	12.0	3.18	13.2	3.14	14.4		
		2160	3.95	9.3	3.88	10.7	3.84	12.0	3.75	13.4	3.74	14.7	3.70	16.1		
ARL 0802	80/50	1470	4.86	11.6	4.77	13.4	4.69	15.2	4.62	17.0	4.55	18.8	4.48	21	4.44	22
		1750	6.20	14.3	6.12	16.4	6.05	18.5	5.98	21	5.92	23	5.86	25	5.82	26
		1950	7.16	16.3	7.08	18.7	7.01	21	6.95	23	6.89	26	6.84	28	6.80	30
ARL 1002	100/65	1470	7.51	17.3	7.39	19.9	7.29	23	7.19	25	7.11	28	7.02	30		
		1750	9.50	21	9.40	24	9.31	27	9.22	31	9.15	34	9.07	37		
		1950	10.9	24	10.8	28	10.8	31	10.7	35	10.6	38				
ARL 1251	125/80	1170	9.92	24	9.78	28	9.66	31	9.55	35	9.45	38	9.36	42	9.30	44
		1470	13.6	32	13.5	36	13.4	41	13.3	45	13.2	49	13.1	54	13.0	57
		1750	17.0	40	16.9	45	16.8	50	16.7	55	16.6	61	16.6	66	16.5	70
ARL 1501	150/100	1170	15.0	35	14.9	40	14.7	45	14.6	51	14.5	56	14.3	61		
		1470	20.4	46	20.2	53	20.1	59	20.0	65	19.9	72	19.8	78		
		1750	25.3	58	25.2	65	25.1	73	25.0	80	24.9	88				
ARL 200S	200/125	980	21.2	47	21.0	53	20.9	60	20.7	67	20.6	74	20.4	81	20.3	86
		1170	26.8	57	26.6	65	26.4	73	26.3	81	26.2	89	26.1	97	26.0	103
		1470	35.5	75	35.4	86	35.2	96	35.1	106	35.0	115	34.9	125	34.9	133
ARL 2001	200/150	980	28.4	58	28.2	67	28.0	76	27.8	85	27.7	93	27.5	102	27.4	108
		1170	35.7	70	35.3	82	35.2	92	35.0	102	34.9	112	34.8	122	34.7	130
		1310	40.8	81	40.7	82	40.5	104	40.4	115	40.3	127	40.1	138	40.1	146
ARL 2002	200/150	980	35.9	73	35.8	83	35.4	95	35.2	105	35.1	116	34.9	126	34.8	134
		1170	44.8	89	44.6	102	44.4	115	44.3	127	44.1	139	44.0	152	43.9	161
		1310	51.4	102	51.2	116	51.1	130	50.9	144	50.8	157	50.6	171	50.6	181
ARL 2501	250/200	980	45.9	90	45.3	105	45.1	118	44.8	132	44.7	145				
		1170	56.7	111	56.3	128	56.3	143	55.9	160	55.9	175				
		1310	65.0	126	64.8	144	64.6	162	64.4	179	64.2	197				
ARL 2502	250/200	980	57.8	114	57.5	131	57.2	148	57.0	164						
		1170	71.7	139	71.5	159	71.2	179	71.0	198						
		1310	82.0	158	81.8	180	81.6	202	81.4	224						
ARL 3001	300/250	740	79.4	156	79.0	179	78.6	202	78.3	225	78.1	247	77.8	269	77.6	286
		880	97.9	190	97.5	217	97.2	244	96.8	271	96.8	297	96.5	323	96.4	343
		980	111	214	111	244	111	274	110	304	110	333	110	362	110	384
ARL 3002	300/250	740	100	195	100	224	99.6	252	99.3	281	99.0	309	98.7	337		
		880	124	237	123	272	123	304	123	338	122	371	122	404		
		980	140	269	140	305	140	343	139	380	139	416	139	453		
ARL 3501	350/300	740	125	240	125	275	124	310	124	345	123	380				
		880	153	291	153	333	153	374	152	416	152	456				
		980	173	334	173	376	173	422	173	467	173	512				

Note for the performance table 性能表について

Capacity on the performance tables represent at the standard state (temperature at 20°C, absolute pressure 101.3 kPa, relative humidity 65%) . For the vacuum pump, capacity is shown at suction pressure and temperature 20°C

Capacity is generally shown under the condition of following three states and capacity can be converted with following formula.

- 1.Capacity at suction state** : Capacity is shown at the suction state of pressure, temperature and humidity.
- 2.Capacity at standard condition** : Capacity is shown at the temperature 20°C, absolute pressure 101.3 kPa. and relative humidity 65 %.
- 3.Capacity at normal condition** : Capacity is shown at the temperature 0°C, absolute pressure 101.3 kPa. of dry air.

Q1 to Q2

$$Q_2 = Q_1 \times \frac{P_1}{P_2} \times \frac{T_2}{T_1}$$

Where

- Q1: Air volume (m3/min) at absolute pressure of P1 (kPa) and absolute temperature of T1 (K)
Q2: Air volume (m3/min) at absolute pressure of P2 (kPa) and absolute temperature of T2 (K)

カタログ表示の空気量は、ロータリブロワについては標準状態で示してあり、温度20°C、絶対圧力101.3kPa、相対湿度65%の状態を言います。真空ポンプの場合は吸込状態(20°C)の風量で示してあります。

一般に風品の表示は次の3種類で、それぞれは換算することが出来ます。

- 1. 吸込状態風量** —— 吸込の圧力、温度、湿度の状態に表示された値です。
- 2. 標準状態風量** —— 温度 20°C、絶対圧力 101.3kPa、相対湿度 65 % の状態風量です。
- 3. 基準状態風量** —— 温度 0°C、絶対圧力 101.3kPa での乾燥気体の状態の風量です。

それぞれの状態の風量を換算する場合は、次の式によります。

Q₁ を Q₂ に換算する場合

$$Q_2 = Q_1 \times \frac{P_1}{P_2} \times \frac{T_2}{T_1}$$

ここに

- Q₁ : 絶対圧力P1 (kPa)、絶対温度T1 (K) の状態の風量 (m3/min)
Q₂ : 絶対圧力P2 (kPa)、絶対温度T2 (K) の状態の風量 (m3/min)

Note for Two-stage blower performance Table

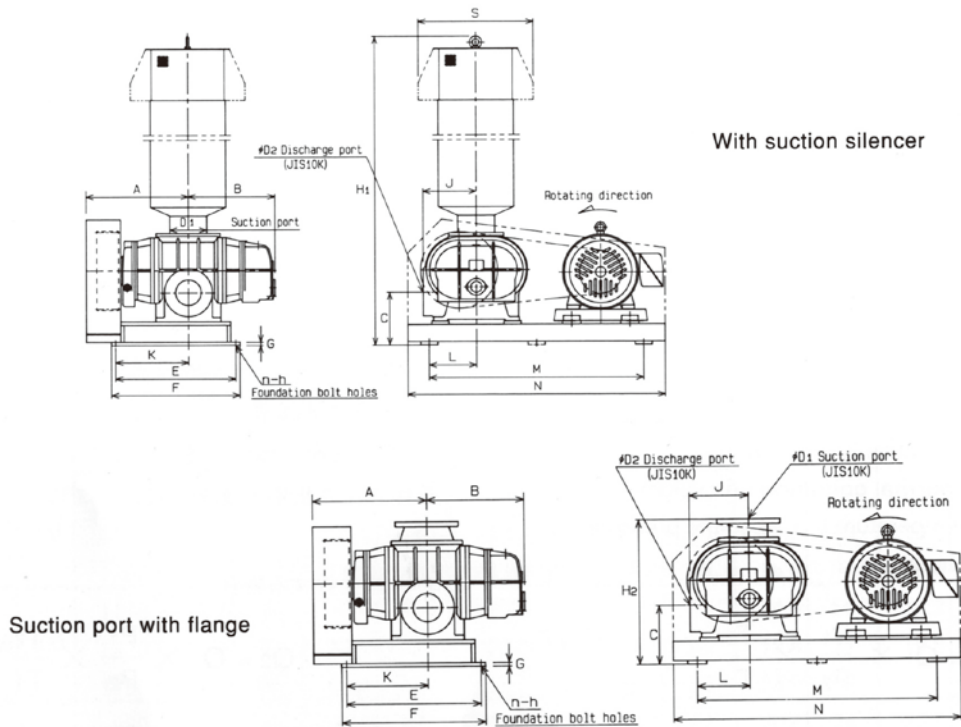
- Air volume and shaft power of these two stage blowers on this performance table show the values providing inter-cooler between the first stage and the second stage. The intake air temperature of the second stage shall be lower than 40°C.
- The representative blower speeds are shown on the performance table. The speed can be changed to suit your request.
- For high discharge pressure blower, Unozawa back-flow cooling system may be provided. All blowers on this table require cooling water for lubricant.

2段式ブロワ性能表について

- この2段式ブロワの風量と軸動力は、1段側ロータリブロワと2段側ロータリブロワとの間にインタークーラーを設け、2段入口の空気温度が40°Cの場合を示してあります。
- この性能表は各ブロワ呼びに対して、代表回転速度についての性能を示してあります。1段式ブロワと同様、回転速度は幅広く選定いただけますのでお問合せ下さい。
- 上記性能表の中には一部逆流冷却方式を採用する箇所があります。吐出し圧力が200kPaG以上のもので空欄になっているご仕様についても製作できますので合せてお問合せ下さい。なお表記全範囲についてギヤ側油槽と駆動側油槽に冷却水が必要です。

外形寸法 Outline dimensions

ARJ 0501~ARJ200L



Unit:(mm)

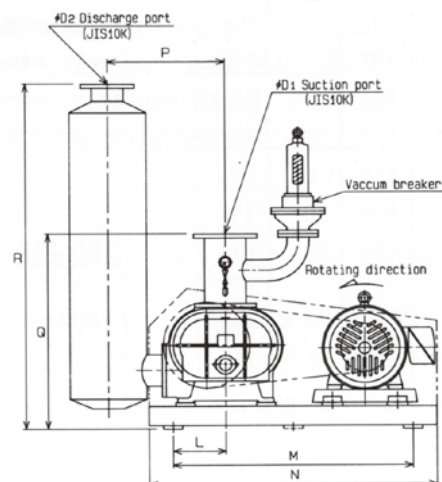
Model	A	B	C	D1	D2	E	F	G	H1	H2	J	K	L	M	N	P	Q	R	S	n	h
ARJ0501	330	260	190	50	40	430	470	12	1340	470	150	240	60	520	800	300	580	840	300	4	16
ARJ0651	365	295	190	65	50	430	470		1400	470		275			800	310	600	950	325		
ARJ0802	410	315	217	80	65	560	600	16	1580	530	185	290	100	650	1000	365	680	1120	350	4	16
ARJ1002	460	365	217	100	80	560	600		1680	530		340			1000	395	700	1240	375		
ARJ1251	500	425	245	125	100	650	690	16	1930	650	250	330	100	850	1300	480	840	1390	520	4	16
ARJ1501	560	485	245	150	125	650	690		1960	650		390			1300	530	880	1580	520		
ARJ1502	600	525	260	150	150	750	790		1980	670		430			1350	550	900	1760	520		
ARJ200S	595	525	308	200	150	800	850	19	2320	760	310	425	275	1500/2	1750	610	1020	1810	670	6	21
ARJ200L	675	605	308	200	200	850	900		2340	760		505			1850	630	1020	1970	670		

GD₂ & Mass

Model	Blower shaft GD ₂ (kg·m ²)	Approx. mass (kg)	Motor used
ARJ0501	0.2	160	Under 11kW
ARJ0651	0.8	170	
ARJ0802	1.1	270	
ARJ1002	1.3	300	Under 30kW
ARJ1251	3.2	450	
ARJ1501	3.6	500	Under 55kW
ARJ1502	4.8	600	
ARJ200S	7.0	760	Under 90kW
ARJ200L	8.0	840	

- 注) 1. GD₂はブロワ軸における値を示します。
 2. 質量にはモータ質量は含んでいません。
 3. 本寸法は変更することがありますのでご了承ください。

Note: 1. GD₂ represents the value blower shaft.
 2. Approx. mass does not include motor mass.
 3. Specification may be subject to change without prior notice.



配置例 Installation examples

Fig.1

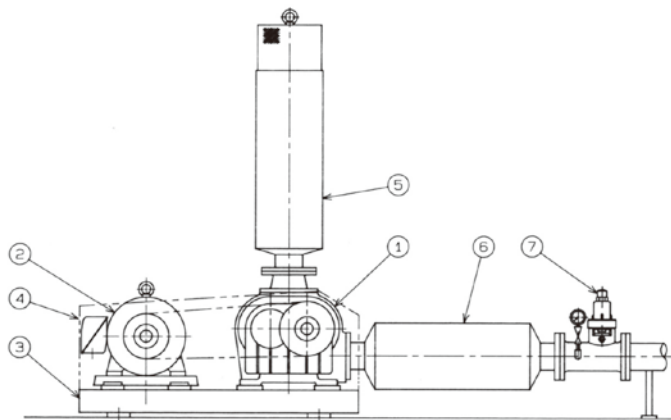
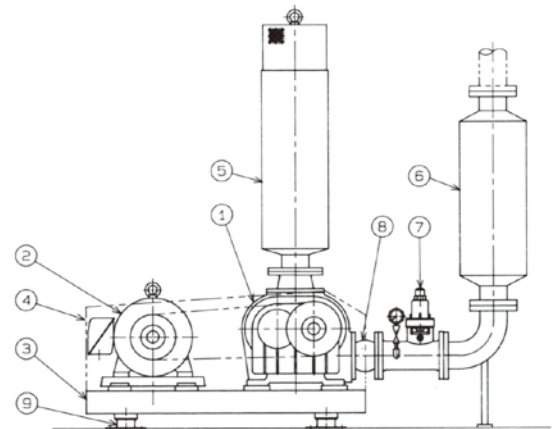


Fig.2



No.	品 名	Part name
1	ロータリブロワ	Rotary blower
2	モータ	Motor
3	共通ベース	Common base
4	ベルトガード	Belt guard
5	吸込サイレンサ	Suction Silencer
6	吐出サイレンサ	Discharge silencer
7	リリーフ弁	Relief valve
8	伸縮継手	Flexible joint
9	防振ゴム台	Vibration isolator

伸縮継手を使用する場合は、吐出サイレンサに必ずサポートをとってください (Fig2)

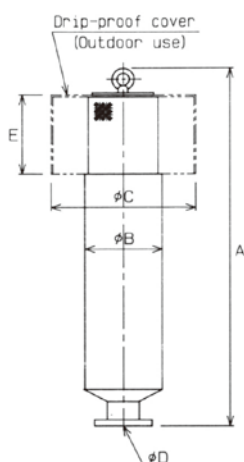
When using a flexible joint, be sure to provide a support under the discharge silencer (fig2)

付属品組合せ表 Combination of accessories

Model	Piping size Suc./Dish.	Suc.silencer GLT, GLN Type	Dish. Silencer GLI, GLL Type	Relief valve GFB, GFM, GFT Type	Vacuum breaker GQA Type	Vibration isolator EMB Type
ARJ0501	50A/40A	GLT0501	GLI 40	GFB0200/GFT0404	GQA0500	EMB0500
ARJ0651	65A/50A	GLT0651	GLI 50	GFB0250/GFT0505	GQA0500	EMB0500
ARJ0802	80A/65A	GLT0802	GLI 65	GFB0320/GFT0606	GQA0500	EMB0600
ARJ1002	100A/80A	GLT1002	GLI 80	GFB0400/GFT0808	GQA0500	EMB0600
ARJ1251	125A/100A	GLT 12	GLI 100	GFB0500/GFT1010	GQA0650	EMB0601
ARJ1501	150A/125A	GLT 15	GLI 125	GFB0650/GFT1212	GQA0800	EMB0800
ARJ1502	150A/150A	GLT 16	GLI 150	GFB0650/GFT1515	GQA0800	EMB0800
ARJ200S	200A/150A	GLT 20	GLI 150	GFB0800/GFT1515	GQA1000	EMB0800
ARJ200L	200A/200A	GLT 21	GLI 200	GFM1000/GFT2020	GQA1000	EMB0800
ARJ2001	200A/200A	GLN2000	GLI2000	GFM1000/GFT2020	GQA1000	EMB1000
ARJ2002	200A/200A	GLN2000	GLI2000	GFM1000/GFT2020	GQA1000	EMB1000
ARJ2501	250A/250A	GLN2500	GLI2500	GFM1250/GFT2525	GQA1250	EMB1000
ARJ2503R	250A/250A	GLN2500	GLI2500	GFM1250/GFT2525	GQA1250	EMB1000
ARJ2504R	250A/250A	GLN2500	GLI2500	GFM1250/GFT2525	GQA1250	EMB1000
ARJ3001R	300A/300A	GLN3000	GLI3000	GFM1500	GQA1500	EMB1000
ARJ3001	300A/300A	GLN3000	GLI3000	GFM1500	GQA1500	EMB1000
ARJ3002	300A/300A	GLN3000	GLI3000	GFM1500	GQA1500	EMB1000
ARJ3501	350A/350A	GLN3500	GLI3500	GFM2000	GQA2000	EMB1000

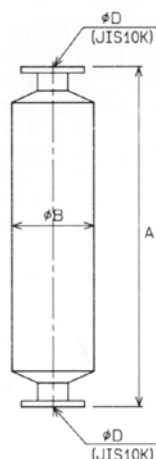
付属品 Accessories

Suction Silencer Type GLT/GLN



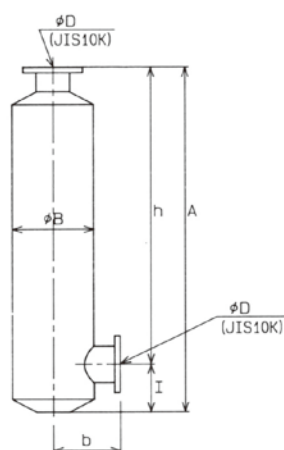
Model	D	A	B	Approx. mass (kg)	Unit:(mm) Cover size	
					C	E
GLT0501	50	975	140	9	270	180
GLT0651	65	1030	165	12	270	180
GLT0802	80	1155	190	19	340	240
GLT1002	100	1255	215	28	340	240
GLT 12	125	1400	330	42	520	310
GLT 15	150	1430	380	55	520	310
GLT 16	150	1430	380	58	520	310
GLT 20	200	1670	470	78	670	380
GLT 21	200	1700	520	86	670	380
GLN2000	200	1790	610	215	950	400
GLN2500	250	1960	710	310	1150	460
GLN3000	300	2710	810	420	1450	530
GLN3500	350	2990	910	535	1650	600

Discharge Silencer Type GLI



Model	D	A	B	Approx. mass (kg)	Unit:(mm)	
					C	E
GLI 40	40	500	140	8		
GLI 50	50	550	160	10		
GLI 65	65	630	190	14		
GLI 80	80	710	220	16		
GLI 100	100	810	250	22		
GLI 125	125	900	280	28		
GLI 150	150	1100	330	45		
GLI 200	200	1620	400	102		
GLI 2000	200	1700	610	200		
GLI 2500	250	1900	710	270		
GLI 3000	300	2450	810	370		
GLI 3500	350	2750	910	540		

Discharge Silencer Type GLL



For Blower discharge

Model	D	A	B	b	h	I	Approx. mass (kg)	Unit:(mm)	
								C	E
GLL 40	40	580	140	160	500	80	12		
GLL 50	50	640	160	180	550	90	14		
GLL 65	65	770	190	190	670	100	20		
GLL 80	80	900	220	210	770	130	24		
GLL 100	100	1020	250	230	880	140	36		
GLL 125	125	1150	280	250	980	170	42		
GLL 150	150	1420	330	280	1220	200	68		
GLL 200	200	1900	470	320	1660	240	150		

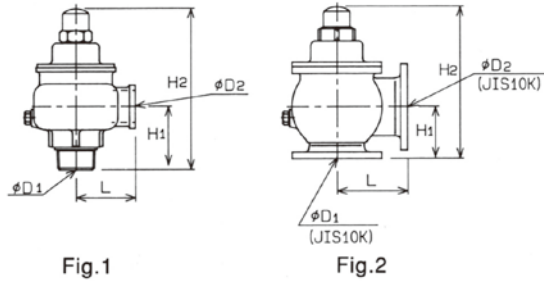
For Vacuum pump discharge

Model	D	A	B	b	h	I	Approx. mass (kg)	Unit:(mm)	
								C	E
GLL 0400	40	730	140	150	650	80	11		
GLL 0500	50	850	165	160	760	90	15		
GLL 0650	65	1000	190	180	900	100	25		
GLL 0800	80	1150	215	210	1020	130	30		
GLL 1000	100	1280	280	230	1140	140	45		
GLL 1250	125	1500	330	280	1330	170	75		
GLL 1500	150	1700	400	300	1500	200	110		
GLL 2000	200	1900	470	320	1660	240	150		

Note: Above dimensions are subject to change without prior notice.

付属品 Accessories

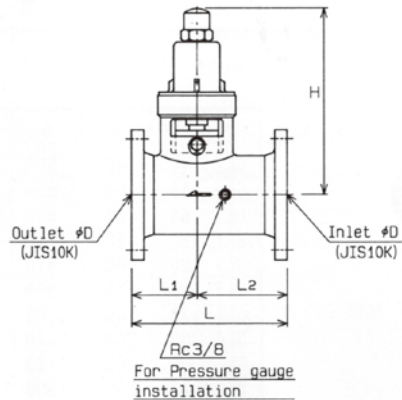
Relief valve(with exhaust connecting port)



Unit:(mm)

Model	D1	D2	L	H1	H2	Approx. mass (kg)	Fig.No.
GFB 0200	3/4B	3/4B	45	60	163	2	Fig.1
GFB 0250	1 B	1 B	50	70	190	3	
GFB 0320	1 1/4B	1 1/4B	60	75	213	4	
GFB 0400	1 1/2B	1 1/2B	70	85	230	5	
GFB 0500	2 B	2 B	80	100	255	7	
GFB 0650	2 1/2B	2 1/2B	85	105	295	10	
GFB 0800	3 B	3 B	95	115	320	11	Fig.2
GFM 1000	100	125	200	150	395	46	
GFM 1250	125	150	210	180	455	69	
GFM 1500	150	200	220	200	545	92	
GFM 2000	200	250	280	275	655	120	

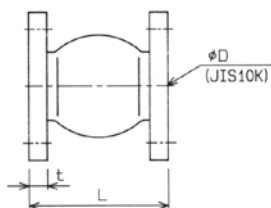
Relief valve(for air exhaust)



Unit:(mm)

Model	D	L1	L2	L	H	Approx. mass (kg)
GFT 0404	40	75	105	180	170	7
GFT 0505	50	75	105	180	175	8
GFT 0606	65	80	110	190	205	10
GFT 0808	80	85	120	205	240	12
GFT 1010	100	90	125	215	265	17
GFT 1212	125	105	145	250	295	25
GFT 1515	150	115	155	270	355	33
GFT 2020	200	130	170	300	425	46
GFT 2525	250	130	170	300	450	59

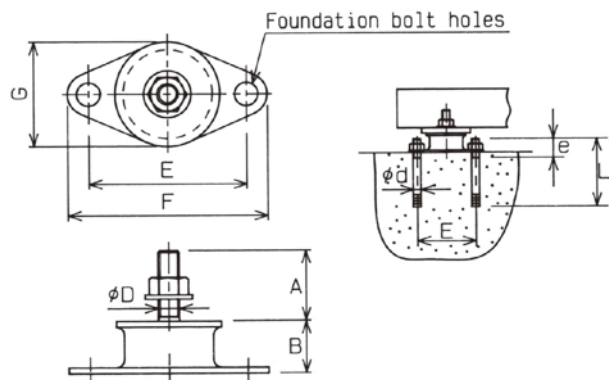
Flexible joint



Unit:(mm)

Model	D	L	t	Approx. mass (kg)
EJA 40	40	93	16	3
EJA 50	50	99	16	4
EJA 65	65	108	18	5
EJA 80	80	116	18	5
EJA 100	100	129	18	6
EJA 125	125	142	20	10
EJA 150	150	156	22	12
EJA 200	200	177	22	15
EJA 250	250	206	24	23
EJA 300	300	217	24	26
EJA 350	350	266	26	36

Vibration isolator



Unit:(mm)

Model	A	B	D	E	F	G	d	e	L
EMB 0500	30	27	M10	73	93	50	M10	25	80
EMB 0600	35	30	M12	84	104	60	M10	25	80
EMB 0601	35	34	M12	84	104	60	M10	25	80
EMB 0800	45	40	M12	108	136	80	M12	30	90
EMB 1000	55	50	M16	134	166	100	M12	30	90

Noise emissions from the rotary blower fluctuate depending upon blower size, discharge pressure and number of revolutions. The blower noise level is measured according to JIS B 8346 "Noise Level Measuring Method for Blower and Compressors". Noise is measured at 4~6 spots which are 1m apart from the blower depending on its size. Based on the measurement, a typical noise value is calculated according to the following formula.

$$\bar{L} = 10 \log_{10} \left(10^{\frac{L_1}{10}} + 10^{\frac{L_2}{10}} + \dots + 10^{\frac{L_n}{10}} \right) - 10 \log_{10} n$$

Where $\bar{L}$: typical noise level [dB(A)]
 $L_1, L_2, \dots, L_n$: measured value [dB(A)]
 n : number of measured values

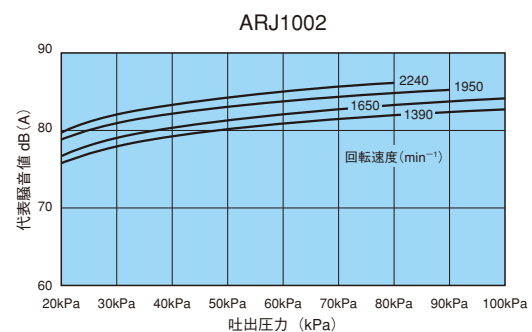
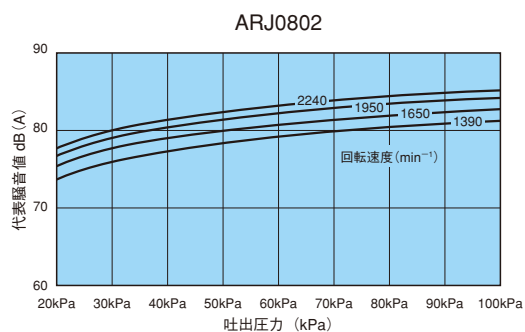
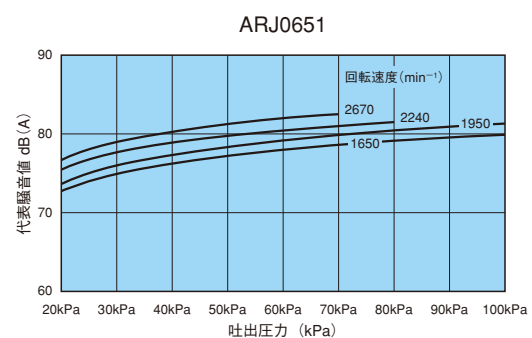
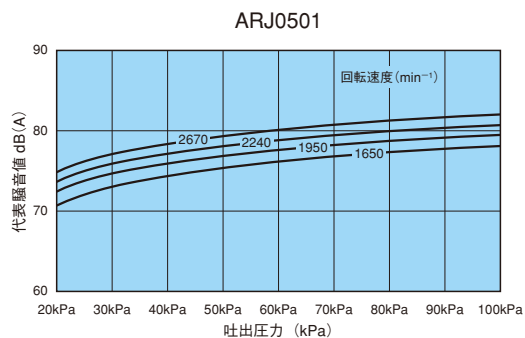
Typical noise values shown below are estimated values that will be obtained when measured according to the JIS mode above.

ロータリブロワの騒音は、ブロワサイズ、吐出し圧力、回転速度により変化します。またそのブロワ騒音の測定は JIS B 8436「送風機・圧縮機の騒音レベル測定方法」により行います。騒音測定位置はブロワから1m離れた所で、ブロワの大きさによりその周囲4~6個所で測定します。その騒音値から次の式によって代表騒音値を算出します。

$$\bar{L} = 10 \log_{10} \left(10^{\frac{L_1}{10}} + 10^{\frac{L_2}{10}} + \dots + 10^{\frac{L_n}{10}} \right) - 10 \log_{10} n$$

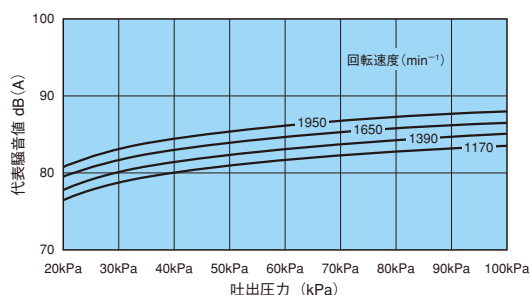
ここに $\bar{L}$: 代表騒音レベル [dB(A)]
 $L_1, L_2, \dots, L_n$: 測定値 [dB(A)]
 n : 測定値の数

以下に示しました代表騒音値は上記 JIS に従って測定した場合の騒音を予測したものです。

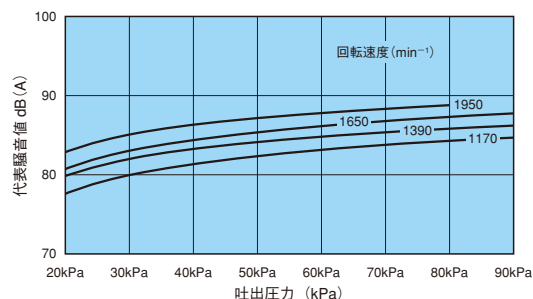


騒音データ Noise Data

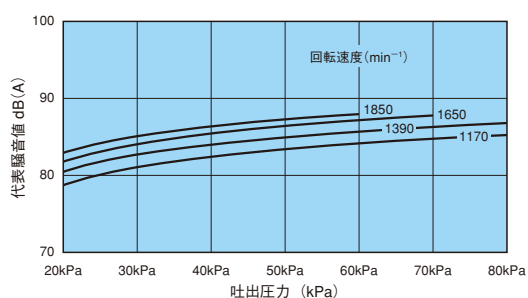
ARJ1251



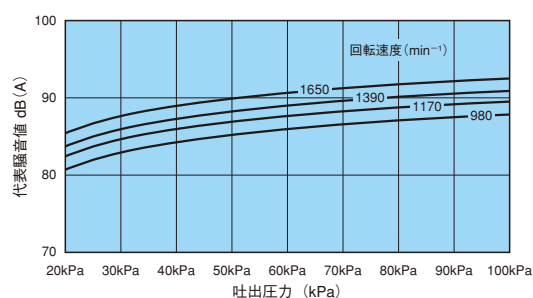
ARJ1501



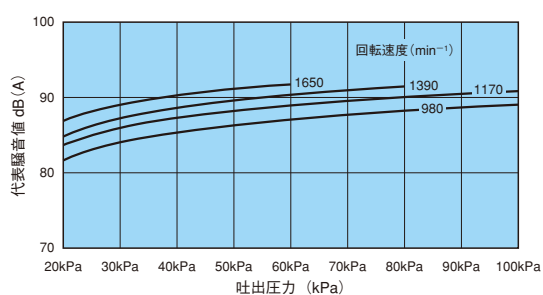
ARJ1502



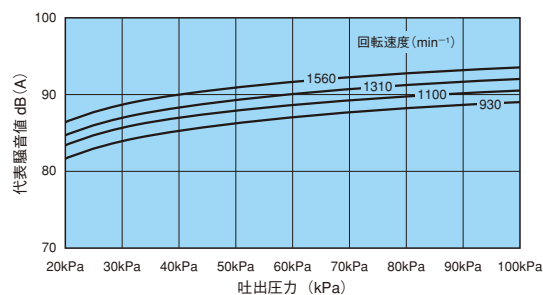
ARJ200S



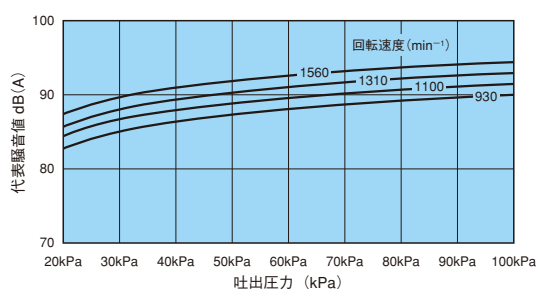
ARJ200L



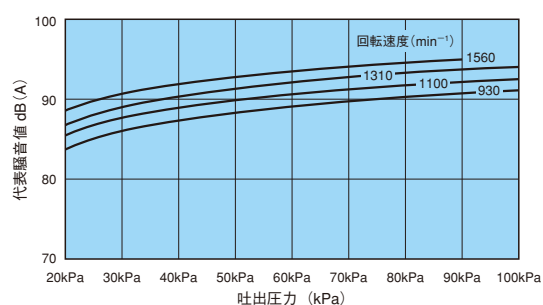
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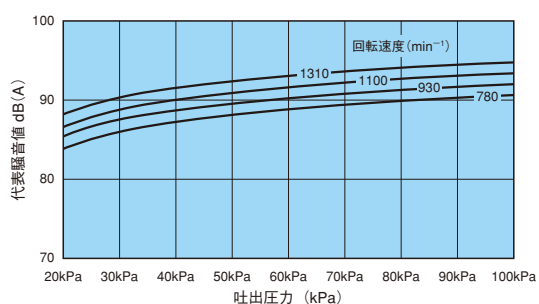
ARJ2002



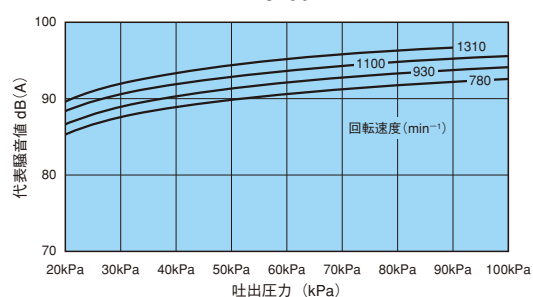
ARJ2501



ARJ2503R

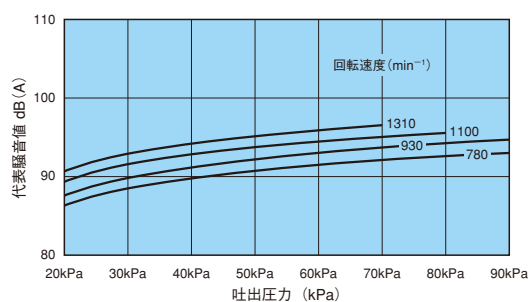


ARJ2504R

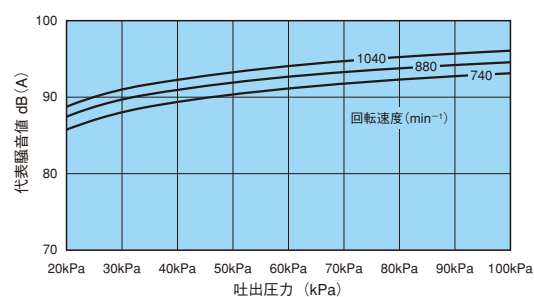


騒音データ Noise Data

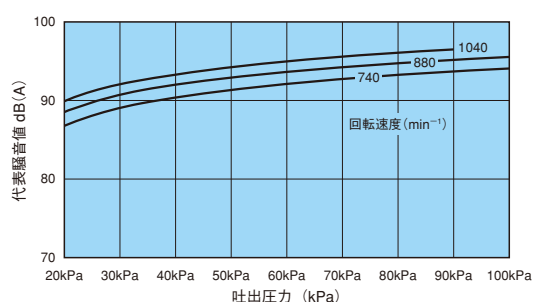
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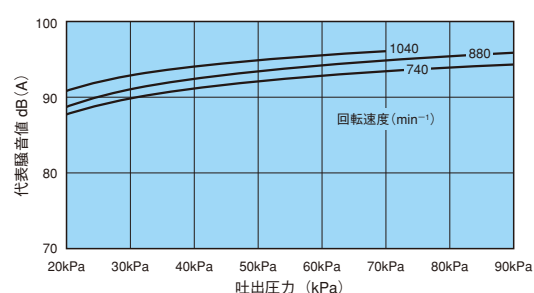
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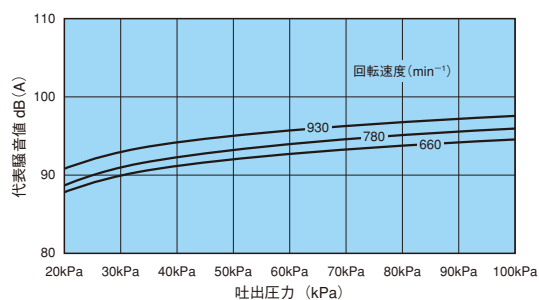
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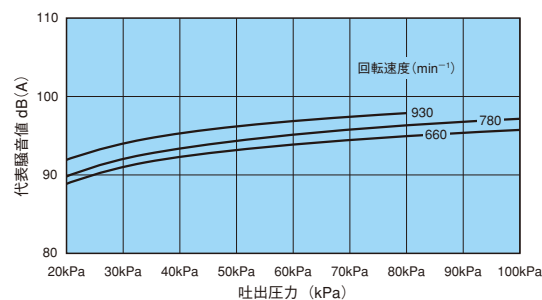
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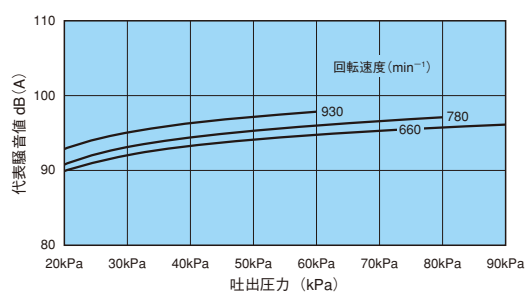
ARJ3501S



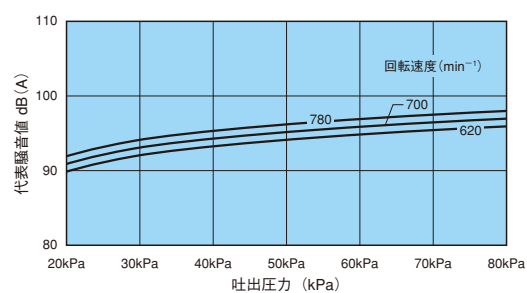
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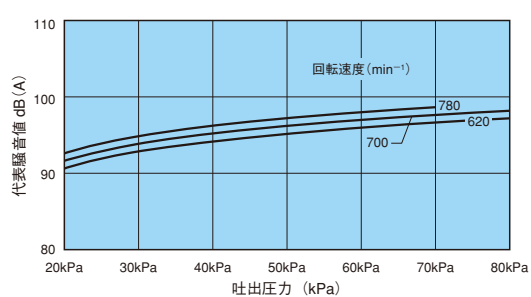
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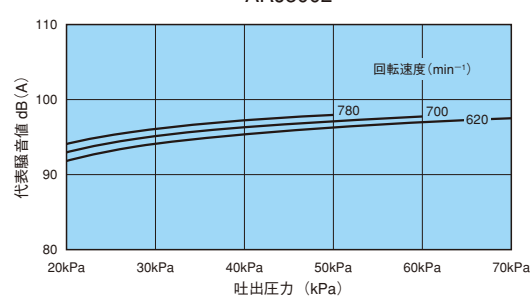
ARJ4002



ARJ4502



ARJ5002



Unozawa Products

1. Rotary blower(Roots type)
2. Rotary vacuum pump(Roots type)
3. Dry Vacuum pump
4. Mechanical booster
5. Water ring Vacuum pump

Inquiries

When inquiring about Unozawa three lobe rotary blowers,
please furnish the following information

1. Application: Water aeration, pneumatic conveying
filter, intra-furnace air blowing, etc...
2. Specification: Capacity, suction and discharge
conditions(Temperature, pressure)
3. Type of gas: Name of gas, gas constant,
corrosiveness, character and quantity
of liquid contained
4. Condition for installation: Whether Indoors or outdoors, ambient
temperature, condition of dust, etc...
5. Driver: Type, rpm and frequency of motor to be used
6. Accessories, spare parts: Required or not
7. Color of paint: (Unozawa standard color is munsell 5B-4/1.5)

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Kita-ku, Osaka 530-0001 Japan
Tel. +81-6-6344-0747 Fax. +81-6-6344-2405

<http://www.unozawa.co.jp>

While every care has been taken in the preparation of data and dimensional drawings,
we reserve the right to change specifications without notice.

