

ShinMaywa



WWW.PROWINNERBANGKOK.CO.TH

Land-Type Blower

(Roots-Type) **ARS Series**

Patent pending

New!

The Right Choice for Energy Efficiency
and Low Maintenance



ARS50



ARS125



ARS250

ARS Series

Introducing ShinMaywa's New Energy-Efficient, Low-Maintenance Blowers

Inspired by the Innovative Cooling Silencer



ARS Series

50 ~ 250 mm outlet diameter
1.5 ~ 132 kW output

The ARS Series of high-efficiency blowers feature innovations such as the Cooling Silencer (patent pending) and spur-type rotors. The result is enhanced energy efficiency, low maintenance and improved durability across a wide range of applications.

Now featuring a Pulse Eraser (pressure pulsation reduction mechanism) to reduce noise and pressure pulsation.

Spur-type rotors, which discharge air rhythmically, tend to generate more noise and pressure pulsations than do helical rotors. Our new ARS Series features specially designed nozzle-shaped grooves on the inner wall of the casing. They absorb the abrupt backflow of compressed air, resulting in less noise and reduced pressure pulsations (patent pending).

Pulse Eraser (pressure pulsation reduction mechanism)

ARS80 Casing (sectional view)

Model ARS80 is available with an optional rubber vibration isolator that absorbs 97% of mechanical vibrations and prevents their propagation.

The Benefits of the Cooling Silencer (patent pending)

The ARS Series incorporates our innovative Cooling Silencer. Air is drawn in over the gear-side bearing to significantly cool the bearing, resulting in improved durability and higher-speed operation. This feature is effectively integrated into a compact, low-profile body.

With a significant bearing-cooling effect

Higher-speed operation

Greatly improved isentropic efficiency

Advanced spur-type rotors—a recent innovation—contribute to high-speed operation for greatly improved isentropic efficiency.

Estimated annual energy savings:		
	Conventional model	New model
Air flow rate (m³/min)	5.74	5.74
Discharge pressure (kPa)	50	50
Power requirement (kW)	8.5	7.1
Isentropic efficiency (%)	48.5	58.1
Motor output (kW)	11	7.5
Energy cost (¥)	1,266,000	1,057,000

(Operating period: 24 hrs/day (8,760 hrs/year) ¥17/kWh)
The energy savings are estimated as follows:
Difference in electricity cost:
1,266,000 - 1,057,000 = ¥209,000/year

Extended air flow range

The bearing-cooling effect allows for high-speed operation, resulting in an extended air flow range. This allows you to use the next-size-smaller diameter for your application.

Standard models develop pressure up to 80 kPa. An Industry First

It's an industry first. The bearing cooling effect requires no forced cooling, making it possible to achieve pressures as high as 80 kPa. Our new standard models exceed 60 kPa, a pressure at which conventional models require a water-cooled system or air cooling fan. (Discharge pressures exceeding 70 kPa require a totally enclosed fan-cooled motor.)

This blower requires no cooling water or air cooling fan.

Extended maintenance interval

The combination of an enhanced-efficiency blower with the bearing-cooling function of the suction silencer significantly lowers the bearing temperature. The result is improved bearing reliability for greatly extended grease and oil maintenance intervals. (The grease and oil maintenance interval is three months when the discharge pressure exceeds 60 kPa.)

Double the grease and oil maintenance interval to six months.

Compact rotors

The high-speed capability allows for smaller rotors. Compact rotors reduce the load on the bearings, resulting in equal or better reliability.

Count on improved durability through extended bearing life.

Lower maintenance and reduced energy costs

Greater Selection & Enhanced Space Efficiency

Our new models cover a wide range of needs. They offer highly compact designs, outlet diameters ranging from 50 to 250 mm, and outputs from 1.5 to 132 kW. (Model ARS50/65 is equivalent to our previous Model ARH50S. Model ARS80/100 is equivalent to our previous Model ARH65S-80S.)

Specifications

Specifications				Discharge pressure: kPa [kgf/cm ²]																				Q : Air flow rate (m ³ /min)										P : Power requirements (kW)										Motor output at standard setting (kW)
Outlet dia. mm	Model	Pulley No.	Rotor speed (min ⁻¹)	10kPa		15kPa		20kPa		25kPa		30kPa		35kPa		40kPa		45kPa		50kPa		55kPa		60kPa		65kPa		70kPa		75kPa		80kPa												
				0.10kgf/cm ²		0.15kgf/cm ²		0.20kgf/cm ²		0.26kgf/cm ²		0.31kgf/cm ²		0.36kgf/cm ²		0.41kgf/cm ²		0.46kgf/cm ²		0.51kgf/cm ²		0.56kgf/cm ²		0.61kgf/cm ²		0.66kgf/cm ²		0.71kgf/cm ²		0.77kgf/cm ²		0.82kgf/cm ²												
				Q	P	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P	Q	P									
50	ARS50	1	1,900	1.30	0.60	1.26	0.71	1.23	0.8	1.20	0.94	1.17	1.1	1.14	1.2	1.11	1.3	1.08	1.5	1.05	1.6	1.02	1.8	1.00	1.9	0.97	2.1	0.94	2.2	0.91	2.3	0.88	2.5	1.5										
		2	2,400	1.69	0.72	1.65	0.88	1.61	1.0	1.58	1.2	1.54	1.4	1.51	1.6	1.48	1.8	1.44	2.0	1.41	2.1	1.39	2.3	1.36	2.5	1.33	2.7	1.31	2.9	1.29	3.0	1.27	3.2											
		3	2,710	1.92	0.80	1.88	0.98	1.84	1.2	1.80	1.4	1.77	1.6	1.73	1.8	1.70	2.0	1.67	2.2	1.64	2.4	1.61	2.6	1.58	2.8	1.56	3.0	1.54	3.2	1.51	3.4	1.49	3.6	2.2										
		4	2,940	2.07	0.86	2.04	1.1	2.00	1.3	1.96	1.5	1.92	1.7	1.89	1.9	1.87	2.1	1.84	2.4	1.81	2.6	1.78	2.8	1.76	3.0	1.74	3.2	1.72	3.4	1.69	3.6	1.67	3.8											
		5	3,290	2.35	1.0	2.31	1.2	2.27	1.4	2.23	1.7	2.19	1.9	2.16	2.1	2.13	2.4	2.10	2.6	2.06	2.9	2.04	3.1	2.02	3.3	1.99	3.6	1.97	3.8	1.94	4.0	1.91	4.3	3.7										
		6	3,660	2.60	1.1	2.57	1.4	2.54	1.7	2.51	1.9	2.47	2.2	2.44	2.4	2.41	2.7	2.38	3.0	2.35	3.3	2.33	3.5	2.31	3.8	2.29	4.1	2.27	4.4	2.25	4.6	2.22	4.9											
		7	3,880	2.86	1.2	2.82	1.5	2.78	1.8	2.75	2.1	2.71	2.4	2.68	2.7	2.65	2.9	2.63	3.2	2.61	3.5	2.57	3.8	2.54	4.1	2.52	4.4	2.50	4.7	2.49	5.0	2.47	5.3	5.5										
		8	4,330	3.04	1.3	3.01	1.6	2.98	1.9	2.95	2.2	2.92	2.6	2.89	2.9	2.87	3.2	2.84	3.5	2.81	3.8	2.78	4.2	2.75	4.5	2.72	4.8	2.70	5.1	2.67	5.4	—	—											
65	ARS65	1	2,580	2.98	1.1	2.92	1.4	2.86	1.7	2.82	1.9	2.77	2.2	2.72	2.5	2.67	2.8	2.62	3.1	2.57	3.4	2.52	3.6	2.47	4.0	2.42	4.3	2.37	4.6	2.31	4.9	2.25	5.2	2.2										
		2	2,740	3.16	1.3	3.11	1.5	3.05	1.8	3.01	2.0	2.97	2.3	2.92	2.6	2.88	2.9	2.83	3.2	2.78	3.6	2.74	3.9	2.69	4.2	2.64	4.5	2.60	4.9	2.54	5.2	2.49	5.5											
		3	2,920	3.40	1.4	3.36	1.6	3.31	1.9	3.27	2.1	3.24	2.4	3.20	2.8	3.16	3.1	3.12	3.4	3.07	3.8	3.03	4.2	3.00	4.5	2.95	4.9	2.90	5.2	2.85	5.5	2.80	5.8	3.7										
		4	3,100	3.62	1.5	3.57	1.7	3.53	2.0	3.49	2.2	3.45	2.5	3.42	2.9	3.39	3.3	3.35	3.6	3.31	3.9	3.27	4.4	3.23	4.7	3.18	5.1	3.14	5.4	3.09	5.8	3.04	6.1											
		5	3,280	3.91	1.6	3.86	1.8	3.82	2.1	3.78	2.3	3.74	2.7	3.72	3.1	3.69	3.4	3.66	3.8	3.63	4.2	3.58	4.6	3.54	5.0	3.50	5.3	3.46	5.7	3.41	6.1	3.37	6.5	5.5										
		6	3,670	4.38	1.7	4.34	1.9	4.30	2.2	4.26	2.6	4.21	3.0	4.17	3.4	4.13	3.9	4.11	4.2	4.08	4.6	4.05	5.1	4.02	5.5	3.99	6.0	3.96	6.4	3.93	6.8	3.89	7.2											
		7	4,100	4.86	1.8	4.83	2.2	4.79	2.6	4.74	3.1	4.70	3.5	4.66	4.0	4.62	4.5	4.59	4.9	4.55	5.4	4.52	5.8	4.50	6.3	4.47	6.8	4.44	7.2	—	—	—	—											
80	ARS80	1	2,790	4.51	1.5	4.46	1.9	4.41	2.3	4.37	2.7	4.34	3.1	4.30	3.6	4.26	4.0	4.23	4.5	4.21	4.9	4.17	5.4	4.13	5.8	4.09	6.3	4.05	6.7	4.01	7.2	3.97	7.6	3.7										
		2	2,940	4.84	1.7	4.80	2.1	4.76	2.5	4.73	3.0	4.70	3.4	4.67	3.9	4.63	4.4	4.61	4.9	4.59	5.3	4.55	5.8	4.52	6.3	4.48	6.8	4.44	7.3	4.40	7.8	4.37	8.3											
		3	3,100	5.23	1.9	5.18	2.3	5.13	2.7	5.09	3.2	5.06	3.7	5.03	4.3	4.99	4.8	4.97	5.3	4.94	5.8	4.91	6.3	4.88	6.8	4.85	7.3	4.83	7.9	4.80	8.4	4.76	8.9	5.5										
		4	3,480	5.79	2.1	5.72	2.6	5.66	3.1	5.61	3.7	5.57	4.3	5.53	4.8	5.49	5.4	5.46	6.0	5.43	6.5	5.40	7.1	5.37	7.7	5.34	8.2	5.32	8.8	5.30	9.4	5.27	9.9											
		5	3,670	6.14	2.3	6.07	2.8	6.01	3.3	5.95	4.0	5.90	4.6	5.85	5.2	5.81	5.8	5.77	6.4	5.74	7.1	5.70	7.7	5.67	8.3	5.64	8.9	5.62	9.4	5.60	10.0	5.58	10.7	7.5										
		6	3,910	6.52	2.4	6.44	3.0	6.36	3.6	6.30	4.2	6.24	4.8	6.18	5.5	6.13	6.2	6.10	6.8	6.06	7.5	6.02	8.1	5.97	8.7	5.94	9.3	5.91	9.9	5.89	10.5	—	—											
		7	4,120	6.87	2.6	6.78	3.3	6.70	3.9	6.64	4.5	6.59	5.2	6.53	5.9	6.48	6.6	6.45	7.3	6.41	8.0	6.37	8.6	6.33	9.2	6.29	9.9	6.25	10.5	—	—	—	—											
100	ARS100	1	2,840	7.01	2.4	6.91	3.0	6.82	3.6	6.74	4.2	6.65	4.9	6.60	5.6	6.54	6.3	6.48	7.0	6.42	7.7	6.37	8.4	6.31	9.0	6.27	9.7	6.22	10.3	6.18	11.1	6.15	11.8	5.5										
		2	3,170	8.01	2.5	7.92	3.2	7.83	3.9	7.73	4.7	7.63	5.4	7.56	6.2	7.49	7.1	7.43	7.8	7.37	8.6	7.31	9.4	7.24	10.1	7.19	10.9	7.14	11.7	7.08	12.5	7.01	13.3											
		3	3,350	8.46	2.6	8.36	3.3	8.27	4.0	8.17	4.8	8.08	5.6	8.00	6.5	7.92	7.4	7.87	8.2	7.81	9.0	7.75	9.8	7.68	10.6	7.62	11.5	7.57	12.3	7.49	13.1	7.42	14.0	7.5										
		4	3,530	8.95	2.8	8.85	3.5	8.76	4.3	8.66	5.1	8.57	6.0	8.49	6.9	8.40	7.8	8.34	8.7	8.27	9.5	8.21	10.4	8.15	11.3	8.09	12.1	8.03	13.0	7.97	13.9	7.90	14.9											
		5	3,770	9.44	2.9	9.34	3.6	9.25	4.5	9.15	5.4	9.06	6.4	8.97	7.3	8.88	8.2	8.80	9.2	8.73	10.1	8.68	11.0	8.63	11.9	8.56	12.8	8.49	13.7	8.44	14.7	—	—	15										
		6	3,970	10.0	3.1	9.94	4.0	9.84	4.9	9.73	5.9	9.62	6.9	9.53	7.9	9.45	8.9	9.37	9.9	9.30	10.9	9.23	11.9	9.16	12.9	9.09	13.9	9.02	14.8	—	—	—	—											
125	ARS125	1	2,150	10.6	4.0	10.5	4.8	10.4	5.6	10.3	6.5	10.2	7.3	10.1	8.2	10.0	9.1	9.92	10.1	9.84	11.2	9.77	12.2	9.69	13.3	9.62	14.3	9.55	15.3	9.45	16.3	9.35	17.3	11										
		2	2,390	12.2	4.6	12.0	5.5	11.9	6.4	11.9	7.4	11.8	8.4	11.7	9.5	11.6	10.7	11.5	11.8	11.5	13.0	11.4	14.2	11.3	15.4	11.3	16.5	11.2	17.6	11.1	18.9	11.0	20.1											
		3	2,710	13.9	5.1	13.8	6.2	13.8	7.2	13.7	8.5	13.7	9.8	13.6	11.1	13.5	12.5	13.4	13.8	13.4	15.2	13.3	16.5	13.2	17.8	13.2	19.2	13.1	20.6	13.0	22.0	12.9	23.4	15										
		4	2,960	15.0	5.4	14.9	6.6	14.9	7.8	14.8	9.2	14.7	10.7	14.6	12.1	14.6	13.5	14.5	15.0	14.4	16.5	14.3	17.9	14.3	19.3	14.2	20.8	14.1	22.3	14.0	23.8	13.9	25.3											
		5	3,280	16.9	6.2	16.8	7.6	16.7	9.1	16.6	10.7	16.5	12.3	16.5	13.9	16.4	15.5	16.3	17.2	16.3	18.9	16.2	20.5	16.1	22.2	16.0	23.8	16.0	25.5	15.9	27.2	15.8	28.9	22										
		6	3,510	17.9	6.6	17.8	8.2	17.7	9.9	17.6	11.5	17.6	13.2	17.5	14.9	17.4	16.7	17.4	18.5	17.3	20.2	17.3	22.0	17.2	23.8	17.2	25.5	17.1	27.3	17.0	29.1	—	—											
		7	3,760	18.9	6.8	18.8	8.6	18.7	10.4	18.6	12.1	18.5	13.8	18.5	15.6	18.4	17.5	18.3	19.3	18.3	21.2	18.2	23.1	18.1	25.0	18.0	26.9	18.0	28.8	—	—	—	—											
150	ARS150	1	2,070	18.5	5.2	18.2	6.7	17.9	8.1	17.7	10.2	17.5	12.3	17.3	13.8	17.1	15.3	16.9	17.0	16.7	18.8	16.5	20.7	16.4	22.5	16.2	24.1	16.1	25.8	15.9	27.6	15.8	29.5	15										
		2	2,300	21.4	6.1	21.1	8.0	20.9	9.8	20.6	12.0	20.4	14.2	20.2	16.1	20.0	17.9	19.8	20.0	19.6	22.1	19.4	24.2	19.2	26.3	19.0	28.3	18.9	30.3	18.7	32.5	18.6	34.6	18.5										
		3	2,590	24.2	7.1	24.0	9.3	23.8	11																																			

Sound Levels

Model	Pulley No.	Rotor Speed (rpm)	Discharge Pressure (kPa)							
			10	20	30	40	50	60	70	80
ARS50	1	1,900	67	68	69	70	71	71	72	72
	2	2,400	69	70	71	71	72	72	73	73
	3	2,710	70	71	72	72	73	73	74	74
	4	2,940	71	72	73	73	74	74	75	75
	5	3,290	72	73	74	74	75	75	76	76
	6	3,660	73	74	75	75	76	76	77	77
	7	3,880	74	75	76	76	77	77	78	78
	8	4,330	75	76	77	77	78	78	79	—
ARS65	1	2,580	71	72	72	72	73	73	74	75
	2	2,740	72	73	73	73	74	74	75	76
	3	2,920	73	74	74	74	75	75	76	77
	4	3,100	74	75	75	75	76	76	77	78
	5	3,280	75	76	76	76	77	77	78	79
	6	3,670	76	77	78	78	79	79	80	81
	7	4,100	78	79	80	80	81	81	82	—
	8	4,330	79	80	81	81	82	82	83	84
ARS80	1	2,790	73	74	75	75	76	76	77	78
	2	2,940	74	75	76	76	77	77	78	79
	3	3,100	75	76	77	77	78	78	79	80
	4	3,480	76	77	78	78	79	79	80	81
	5	3,670	77	78	79	79	80	80	81	82
	6	3,910	78	79	80	80	81	81	82	83
	7	4,120	79	80	81	81	82	82	83	84
	8	4,330	80	81	82	82	83	83	84	85
ARS100	1	2,840	76	77	78	78	79	79	80	81
	2	3,170	77	78	79	79	80	80	81	82
	3	3,350	78	79	80	80	81	81	82	83
	4	3,530	79	80	81	81	82	82	83	84
	5	3,770	80	81	82	82	83	83	84	85
	6	3,970	81	82	83	83	84	84	85	86
	7	4,150	82	83	84	84	85	85	86	87
	8	4,330	83	84	85	85	86	86	87	88
ARS125	1	2,150	77	78	79	79	80	80	81	82
	2	2,390	78	79	80	80	81	81	82	83
	3	2,710	79	80	81	81	82	82	83	84
	4	2,960	80	81	82	82	83	83	84	85
	5	3,280	82	83	84	84	85	85	86	87
	6	3,510	83	84	85	85	86	86	87	88
	7	3,760	85	86	87	87	88	88	89	90
	8	4,070	86	87	88	88	89	89	90	91
ARS150	1	2,070	79	80	81	81	82	82	83	84
	2	2,300	80	81	82	82	83	83	84	85
	3	2,590	82	83	84	84	85	85	86	87
	4	2,840	83	84	85	85	86	86	87	88
	5	3,100	84	85	86	86	87	87	88	89
	6	3,370	85	86	87	87	88	88	89	90
	7	3,640	86	87	88	88	89	89	90	91
	8	3,910	87	88	89	89	90	90	91	92
ARS200	1	1,510	81	82	84	85	86	87	88	89
	2	1,710	82	83	85	86	87	88	89	90
	3	1,860	83	84	86	87	88	89	90	91
	4	2,020	84	85	87	88	89	90	91	92
	5	2,210	85	86	87	88	89	90	91	92
	6	2,400	86	87	88	89	90	91	92	93
	7	2,540	86	87	88	89	90	91	92	93
	8	2,710	87	88	89	90	91	92	93	94
ARS250	1	1,560	84	85	86	86	87	88	89	90
	2	1,760	85	86	87	87	88	89	90	91
	3	1,970	86	87	88	88	89	90	91	92
	4	2,220	87	88	89	89	90	91	92	93
	5	2,350	88	89	90	90	91	92	93	94
	6	2,490	89	90	91	91	92	93	94	95
	7	2,640	90	91	92	92	93	94	95	96
	8	2,790	91	92	93	93	94	95	96	97

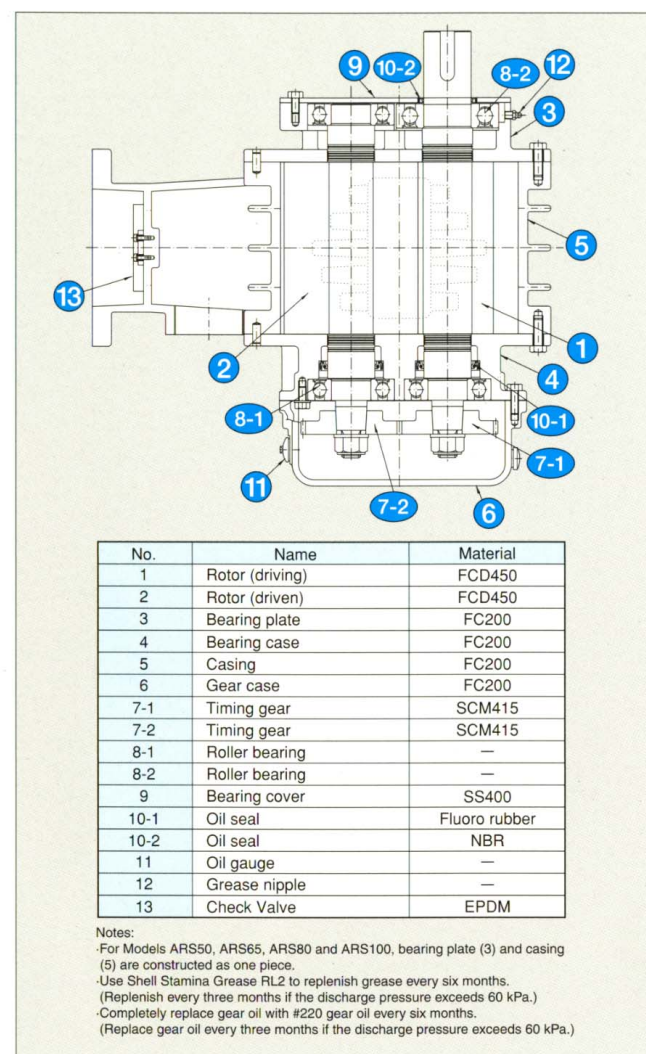
Typical sound levels [±3dB(A)] are measured at a distance of one meter from the blower side.
Provided for reference only.
Sound levels vary depending on the base (foundation) condition and piping configuration.

Standard Motors (Drip-proof)

Model	Applicable Motor Output (kW)															
	1.5	2.2	3.7	5.5	7.5	11	15	18.5	22	30	37	45	55	75	90	110
ARS50	○	○	○	○												
ARS65		○	○	○	○											
ARS80			○	○	○	○										
ARS100				○	○	○	○									
ARS125					○	○	○	○								
ARS150						○	○	○	○							
ARS200							○	○	○	○						
ARS250								○	○	○	○					
Weight (including motor and base)	17	23	33	63	78	106	120	135	178	193	239	259	308	405	430	570

*Use an IP44 totally enclosed fan-cooled motor if the discharge pressure exceeds 70 kPa. Star-delta startup is available for motors exceeding 5.5 kW.

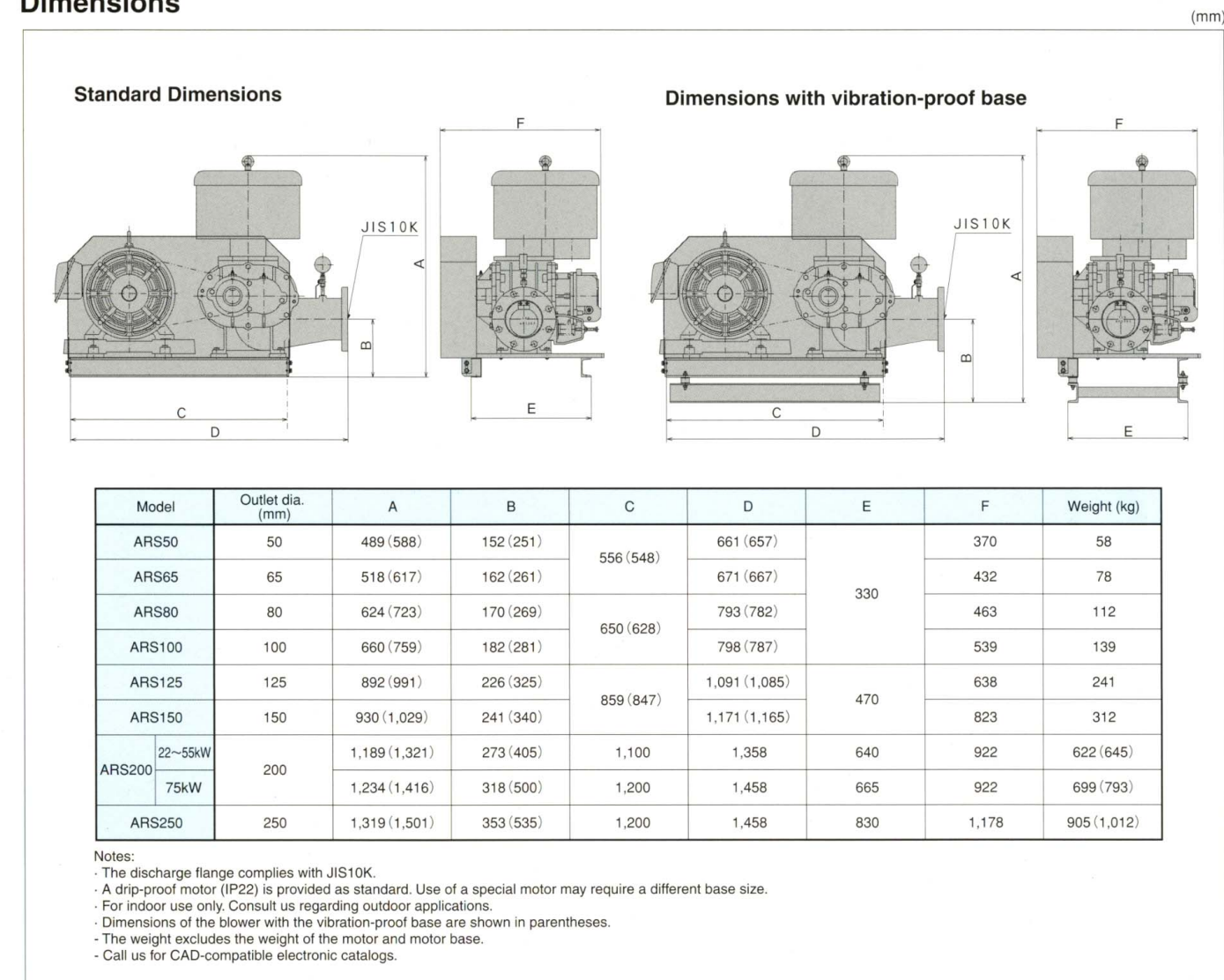
Sectional View



Standard Accessories

- Common Base 1
- V-pulley, V-belt, Belt Cover 1
- Pressure Gauge (160kPa, with gauge cock, with R1/4 setscrew) 1
- Suction Silencer (with filter) 1
- Safety Valve (with check valve) 1
- IP22-compliant* Drip-proof Motor (with base) 1

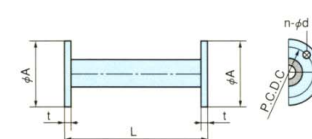
Dimensions



Optional Accessories

● Discharge Silencer

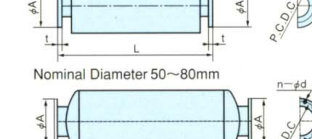
● Type AS Silencer



Nominal Diameter (mm)	L	A	C	n	d	t	Weight (kg)
50	560	155	120	4	19	16	6.5
65	610	175	140	4	19	18	9.0
80	770	185	150	8	19	18	11
100	1,060	210	175	8	19	18	18
125	1,160	250	210	8	23	20	27
150	1,110	280	240	8	23	22	36
200	1,440	330	290	12	23	22	80
250	1,800	400	355	12	25	24	147

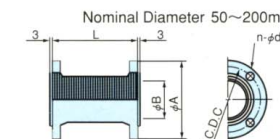
*Use the blower under discharge pressure less than 60 kPa.

● Type BS Silencer



Nominal Diameter (mm)	L	A	C	n	d	t	Weight (kg)
50	560	155	120	4	19	16	11
65	610	175	140	4	19	18	15
80	770	185	150	8	19	18	22
100	1,060	210	175	8	19	18	39
125	1,160	250	210	8	23	20	59
150	1,110	280	240	8	23	22	69
200	1,440	330	290	12	23	22	95
250	1,800	400	355	12	25	24	172

● Flexible Tube



Nominal Diameter (mm)	L	A	B	C	n	d	Weight (kg)
50	300	155	54	120	4	19	5
65	300	175	67	140	4	19	6
80	230	185	79	150	8	19	12
100	210	210	104	175	8	23	15
125	250	250	129	210	12	23	18
150	280	280	152	240	12	23	18
200	330	330	203	290	12	25	18

*Consult us for a nominal diameter of 250.

● Other Options

- Motor
 - Totally enclosed fan-cooled outdoor type
 - Tropical climate specification
 - Safety-enhanced
 - Corrosion-proof

- Belt Cover
 - V-belt inspection window

- Pressure Gauge
 - Pressure gauge stand

- Rubber Vibration Isolator

- Flexible Joint

- Gate Valve

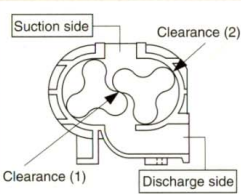
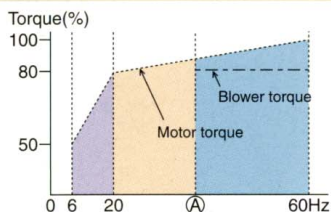
- Noise-proof Cover

- Vertical Discharge Silencer

Selecting an Inverter-Controlled Model

All models are available with inverter control. This feature allows precise control of the air flow rate to accommodate water treatment volumes that vary seasonally and over time.

Operation at excessively slow speeds with the inverter would allow high-temperature compressed air to leak into the suction side through clearances between rotors (1) and between the rotors and casing wall (2), as illustrated below. This can result in a temperature rise that exceeds the bearing temperature limit, resulting in a blower failure.



Notes: (A) indicates the lower limit of the frequency control range based on the blower temperature rise.

- 1) Blower torque remains constant when the motor speed is reduced because of the blower's constant-torque design.
- 2) When selecting an inverter, ensure the rated output of the inverter is equal to or greater than the rated output of the motor.
- 3) The control range of the inverter starts at 60 Hz regardless of the frequency of the power source. The control range depends on several factors including the application, motor output, and model.

Combination 1

General-purpose motor and inverter (V/F control)

Blower application (a) (Fig. 1)

The blower is usable within the frequency range from (A) to 60 Hz because the blower torque is less than the motor torque. The blower is not usable if the frequency falls below (A) because the blower temperature will rise.

Blower application (b) (Fig. 2)

The blower torque exceeds the motor torque when the frequency is below (B). The blower is usable within the frequency range from (B) to 60 Hz.

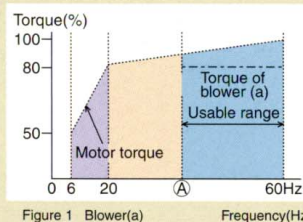


Figure 1 Blower (a) Frequency (Hz)

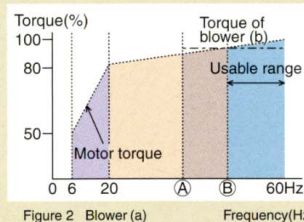


Figure 2 Blower (b) Frequency (Hz)

Combination 2

General-purpose motor and inverter (Vector control)

Both blowers (a) and (b) are usable within the range from (A) to 60 Hz. The blowers are not usable below (A) because the blower temperature will rise.

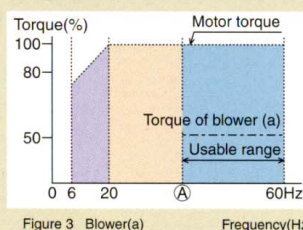


Figure 3 Blower (a) Frequency (Hz)

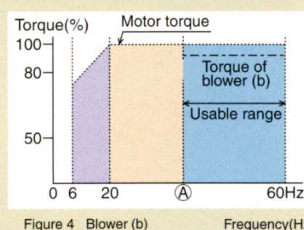


Figure 4 Blower (b) Frequency (Hz)

Combination 3

Inverter and constant-torque motor exclusively for use with inverter

Both blowers (a) and (b) are usable within the range from (A) to 60 Hz. The blowers are not usable below (A) because the blower temperature will rise.

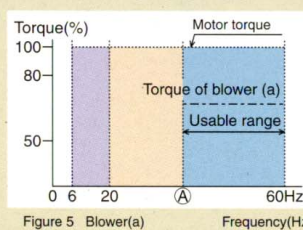


Figure 5 Blower (a) Frequency (Hz)

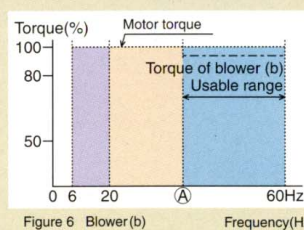


Figure 6 Blower (b) Frequency (Hz)

Consult us if you require inverter control. We can provide an inverter calculation sheet.



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