



Roots Blower

SHANDONG YINCHI ENVIRONMENTAL PROTECTION EQUIPMENT CO.,LTD

It is a roots blower manufacturer specializing in producing all kinds of blowers and a supplier of roots blower solutions.

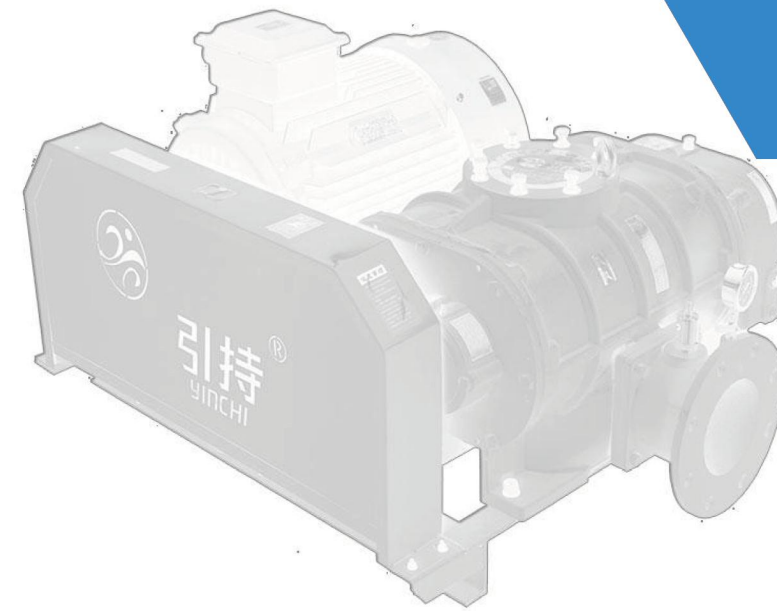
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COMPANY PROFILE

Shandong Yinchu Environmental Protection Equipment Co., Ltd. is located in Zhangqiu City, Jinan City, Shandong Province. It is a modern manufacturer that integrates design, production, and sales. In recent years, in response to national environmental policies and with the original intention of contributing to the environmental protection industry. The main products include Roots blowers, rotary valves, conveyor pumps, bag filters, and environmental protection equipment related to pneumatic conveying; The company has a professional technical design and development team and equipment production team, as well as ISO 9001 quality management system certification and ISO 14001 environmental management system certification.

At present, we have provided different types of environmental protection products, technical support, and project design for many industries such as chemical, power, steel, cement, and aquatic products; After nearly a decade of business development, the company continuously updates and iterates our products through the continuous innovation of professional technical personnel and valuable feedback from customers in practical use, providing the most quality guaranteed products for domestic and foreign customers. Therefore, high-quality products and customer satisfaction are our guidelines for action. Strive for excellence, continuously optimize products, and win the trust and support of domestic and foreign customers with every high-quality product.

ROOTS BLOWER

One-to-one technical services
& On-site guidance

- ▶ Manufacturer of environmental protection equipment in 6 years
- ▶ Designable pneumatic conveying scheme & customizable products

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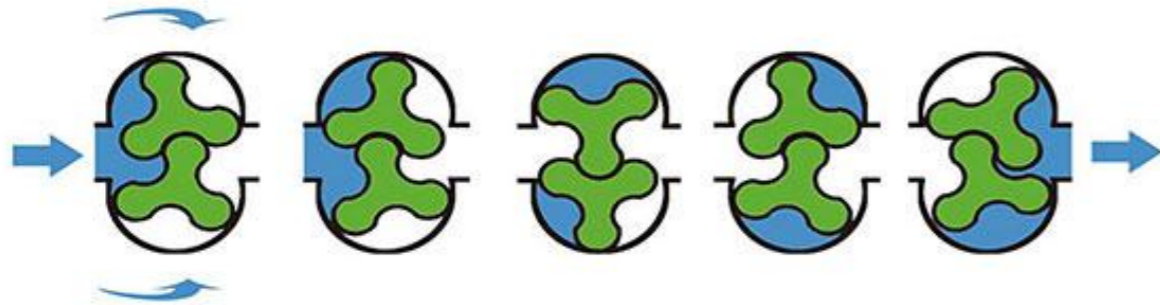


I. Working principle, classification, characteristics and application of blower

1. Working principle of roots blower

Roots blower is a double rotor compression machine, and the axes of the two rotors are parallel to each other. The rotor is composed of impeller and shaft. There are small gaps between impeller and impeller, impeller and casing and wallboard to avoid mutual contact and friction. The two groups of rotors are driven by the prime mover through a pair of synchronous gears and rotate at constant speed in opposite directions.

With the help of the mutual engagement of two gears, the inlet and outlet of the blower are not directly connected. Impeller, casing and wallboard form a closed unit volume, so as to achieve the effect of gas transmission. (As shown in the figure below)



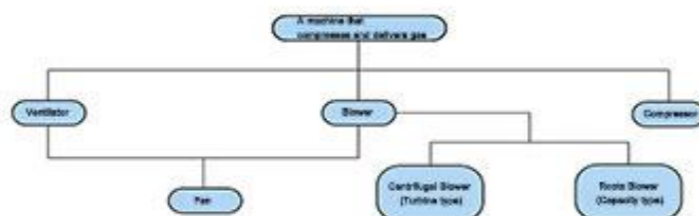
2. Classification of roots blower

The machinery for compressing and conveying gas are respectively ventilator, blower and compressor. Among them, the pressure rise of the blower is small, focusing on the purpose of transmission; The compressor has a high pressure rise, and its primary function is compression; The performance of the blower is between the above two, and it is called the blower together with the ventilator.

The blower is divided into roots blower and centrifugal blower. Roots blower was only used for positive pressure blast at first, and then developed into the vacuum field, evolved into Roots vacuum pump. When the air inlet is at normal local atmospheric pressure, the range of the exhaust meter is generally 9.8~200kPa. As a vacuum pump, the vacuum degree can reach -9.8~-80kPa when directly discharging into the atmosphere.

Roots blower and Roots vacuum pump are nominally divided into blower and vacuum pump, but they both work near atmospheric pressure, and there is no difference in pressure characteristics. Normally, Roots blower can be directly used as a vacuum pump for direct air discharge, and vice versa.

Because of different working modes, roots blower is divided into roots blower and roots vacuum pump. When the working intensity is different, Roots blower (vacuum pump) can be divided into single pole and double pole, dry type and wet type.



(1) Single pole and double pole: The blower with only one blower is called the single pole roots blower, or roots blower for short. Two single blowers are connected in series to compress the gas for two consecutive times, which is called bipolar tandem blower, or bipolar blower for short.

(2) Dry and wet: Roots blower is generally used for dry conveying. Roots vacuum pump can be divided into dry type and wet type. Wet vacuum pump is usually used for relatively high vacuum degree.

(3) Other classification methods:

- ① Classification according to impeller type: two blade blower, three blade blower.
- ② Classification according to structural layout: vertical blower, horizontal blower, dense blower, etc.
- ③ Classification according to cooling mode: air cooling blower, water cooling blower, countercurrent cooling blower, etc.
- ④ Classification according to driving mode: direct connected blower, belt connected blower.
- ⑤ Classification according to medium type: air blower, gas blower, hydrogen blower, sulfur dioxide blower, etc.
- ⑥ Classification according to use: shaft kiln blower, gasification blower, aeration blower, oxidation blower.

3. Features of blower

(1) As it is a positive displacement blower, it has the characteristics of forced air supply. Under the condition of a certain speed, the flow is also fixed. Even in the small flow area, surge will not occur like that of centrifugal blower. It has relatively stable working characteristics.

(2) As a rotary machine, there is no reciprocating structure and air valve, and there are few vulnerable parts. Therefore, it has a long service life, good dynamic balance, and can operate at a high speed. It does not need to build a heavy foundation. There are many times of suction and exhaust in a week of operation. Compared with the piston compressor, the air flow speed is uniform, so there is no need to set a storage tank.

(3) There are small gaps between impellers, between impellers and wallboards and between casings. During operation, lubricating oil is not injected like that of screw compressors and sliding vane compressors. Therefore, it can ensure that the transmitted gas is free of oil, and it does not need to use auxiliary equipment such as gas oil separators. Because there is a gap and there is no gas valve, it is safer to transport the gas containing tiny dust or liquid droplets.

(4) Except for synchronous gear and bearing, there is no other mechanical friction, so the mechanical efficiency is high. In addition, Roots blower has the advantages of simple structure, convenient operation, cheap maintenance and long maintenance cycle.

(5) Its disadvantages are:

- ① No internal compression process, low thermal insulation efficiency (especially for small models).
- ② As there is a reasonable gap between the components, which causes gas leakage, and the leakage increases with the increase of the pressure ratio, it limits the development of the blower towards high pressure.
- ③ Due to the impact of inlet and exhaust pulsation and backflow impact, the aerodynamic noise is large.

4、Application of blower:

As a typical gas pressurizing and conveying machine, Roots blower has a wide range of applicable characteristics in its specific pressure area. Its flow is generally 0.5~800 m³/min, up to 1400 m³/min, the single stage working pressure is -53.3~98kPa, and the double stage series connection can achieve -80~200kPa.

For application, Roots blower is widely used as air blower. It is widely used in building materials, power, smelting, chemical and petrochemical industries, mines, ports, textile, medicine, paper making, aquatic products and many other fields. When sealing devices with good air tightness are used, they can also be used to transport gases other than air, such as hydrogen, industrial oxygen, carbon monoxide, carbon dioxide, hydrogen sulfide, methane, acetylene, gas, etc.

II、Blower parameter conversion:

Performance parameters of Roots blower, including flow, pressure, speed, medium type, shaft power, etc. In daily customer selection, only flow, pressure and medium are required.

(1) Flow

In short, the flow refers to the air volume of the blower. The flow listed in this comprehensive sample refers to the inlet flow when the air inlet of the blower is in the standard suction state, that is, the temperature is 20 °C, the pressure is 101.325kpa, and the relative humidity is 50%. When the customer only knows the export flow, it can be directly provided to the business manager, but it needs to be noted, or it can be converted into the import flow according to the following formula:

$$Q_s = Q_d \times \frac{1.0332 + P_d}{1.0332} \times \frac{273 + t_s}{273 + t_d}$$

Qd: Exhaust status air volume (m³/min)
Pd: Discharge pressure (kgf/cm²)
ts: Inlet air temperature (°C)
td: Discharge temperature (°C)

	m³/min	m³/hr	l/min	ft³/min
1 m³/min	1	60	1000	35.31
1 m³/hr	0.017	1	16.67	0.589
1 l/min	0.001	0.06	1	0.035
1 ft³/min	0.028	1.699	28.32	1

In addition, in engineering, the state of 0 °C and 101.325kpa is usually used as the reference state to measure the gas flow. When users provide this parameter, conversion is required according to the altitude and temperature of the place of use. Users can also calculate according to the following formula:

$$Q_s = Q_N \times \frac{273 + t_s}{273} \times \frac{101.325}{P_s}$$

Qs: Standard air volume (m³/min) ts: Local temperature (°C)
QN: Air volume in reference state (Nm³/min) Ps: Local atmospheric pressure (kPa)

(2) Pressure

The gas pressure at the inlet and outlet flanges of the blower is called the inlet pressure and exhaust pressure. For Roots blowers, pressure usually refers to static pressure. The difference between the inlet and exhaust pressure of the blower is the pressure rise, also known as the pressure difference. The commonly used units are pa and kpa. Pressure conversion is shown in the following table:

	mbar	Pa	atm	lbf/in²	kgf/cm²	in-Hg	mmH₂O
1 mbar	1	10²	9.869 0 ⁻⁴	1.45 0 ⁻²	1.02 0 ⁻³	2.953 0 ⁻²	10.197
1 Pa	0.01	1	9.869 0 ⁻⁶	1.45 0 ⁻⁴	1.02 0 ⁻⁵	2.953 0 ⁻⁴	0.102
1 atm	1.013 0 ³	1.013 0 ⁵	1	14.7	1.033	29.92	1.033 0 ⁴
1 lbf/in²	68.95	6.895 0 ²	6.805 0 ⁻²	1	7.03 0 ⁻²	2.036	7.03 0 ²
1 kgf/cm²	9.807 0 ²	9.807 0 ⁴	0.968	14.22	1	28.96	10 ⁴
1 in-Hg	33.86	3.386 0 ³	3.342 0 ⁻²	0.491	3.45 0 ⁻²	1	3.45 0 ²
1 mmH₂O	9.807 0 ⁻²	9.807	9.677 0 ⁻⁵	1.42 0 ⁻³	10 ⁻⁴	2.896 0 ⁻³	1

(3) Speed

The speed at which the main shaft of the blower rotates in unit time becomes the speed of the blower. Unit: r/min or RPM.

(4) Shaft power

The power transmitted from the prime mover to the main shaft of the blower becomes the shaft power of the blower. The unit is generally w or kw. The power conversion table is shown in the following figure:

	kg-m/sec	kW	HP	PS
1kg-m/sec	1	0.01	0.013	0.013
1kW	101.97	1	1.341	1.360
1HP	76.038	0.746	1	1.014
1PS	75	0.736	0.968	1

III、Selection of blower

1. Selection steps

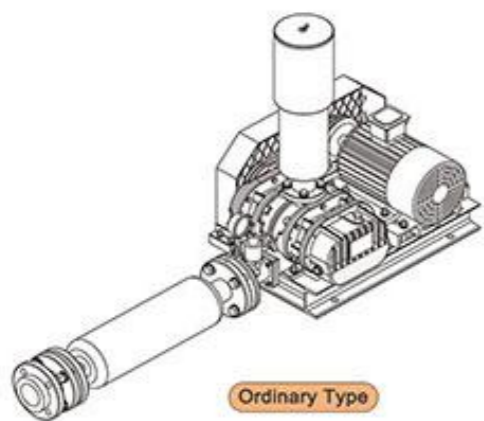
- (1) Purpose: distinguish between blower and vacuum.
- (2) Nature of gas: air, gas or other media.
- (3) Working condition parameters: air inlet temperature, air inlet pressure, pressure rise, flow, and requirements for exhaust temperature and noise value.
- (4) Environmental conditions: installation site, local atmospheric pressure, annual average temperature, etc.

For the determination of flow rate, conversion can be conducted as described in this sample. When special media are involved, such as hydrogen, nitrogen, mixed gas, etc., you can contact our technology department for coordination.

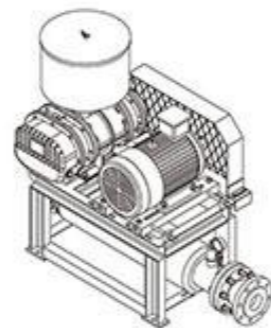
2. Model selection

The material and sealing method are preliminarily determined according to the use requirements listed above. Then, according to the parameter table listed later in this sample, determine the blower model, diameter and motor. Finally, determine whether intensive or special foundation requirements are required according to site size, pipe layout and other factors.

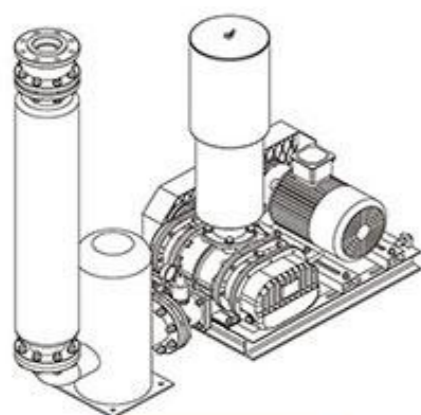
Model	Advantage	Defect
Ordinary Type	Best Buys	Covers an area of large
Dense Type	Covers an area of small	Cost is slightly higher
Vertical Export Silencer	Covers an area of small	Cost is slightly higher
Double Export Silencer	Low Noise	Cost is slightly higher



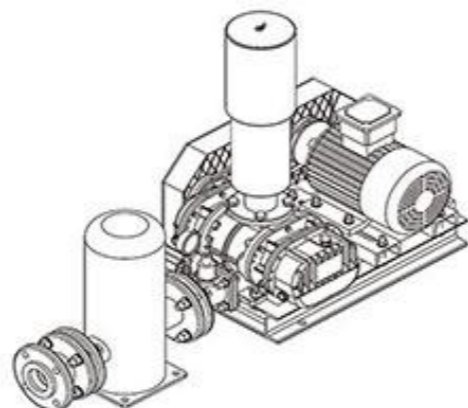
Ordinary Type



Dense Type



Double Export Silencer



Vertical Export Silencer

3. Selection of motor

(1) Selection of motor type

There are many types of motors. For blower, three-phase squirrel cage asynchronous motor is generally selected. According to the usage, it can be divided into the following categories:

- ① When used in ordinary occasions, YE3 or YX3 series high-efficiency energy-saving motors promoted by the state can be selected.
- ② For products used in petroleum, chemical, pharmaceutical and other departments, and places with certain corrosive media (such as seaside) in the environment, Y-F anti-corrosion and Y-WF outdoor anti-corrosion can be selected.
- ③ Explosion proof motors shall be used in places with explosion hazards such as petroleum, chemical industry, coal mine and smelting. YA explosion-proof safety type, YB explosion-proof type or YF explosion-proof gas filled type can be selected.

For the above explosion-proof or anti-corrosion options, there will be suffixes on the code according to the actual situation, such as WF1, YB3, etc.

(2) Selection of voltage

The selection of the rated voltage of the motor often depends on the power supply voltage on the site. In China, the rated voltages of three-phase asynchronous motors are 380V, 3000V, 6kV and 10kV. Generally, when the rated power of the motor is less than 220kw, 380v voltage can be used; When the rated power is greater than or equal to 220kw, 6kv or 10kv voltage can be used; when the rated power is greater than or equal to 100kw, 3kv voltage can be used.

The voltage level of 3kv is relatively rare. In addition, there are low-voltage and high-power motors on the market. When 380v power supply system is used, the maximum power can reach 355kw. International customers are 400V, 220V, 405V, etc. according to different regions. Our company can provide motors of different voltage levels according to different requirements to meet the requirements.

(3) Frequency selection:

The power frequency used in China is 50HZ, and 60HZ is also used for export.

(4) Selection of motor power

The motor power cannot be too large or too small. If the power is too large, the efficiency of the motor cannot be fully utilized. If the power is too small, the motor will be overloaded for a long time, which will seriously heat up, shorten its life, or even burn out.

(5) Selection of motor protection grade

As shown in the following table, the enclosure protection forms of the motor include IP23, IP44, IP55, etc

IP54					
IP	Enclosure protection grade mark				
First digit	0	Unprotected motor	The second digit	0	Unprotected motor
	1	Protect solids greater than 50mm		1	Drip proof
	2	Protect solids greater than 12mm		2	Prevent motor tilt 15 degrees inside dripping
	3	Protect solids greater than 2.5mm		3	waterproof
	4	Protect solids greater than 1mm		4	Splashproof
	5	Dust proof motor		5	Water spray prevention
				6	Guards against the ocean waves
				7	Protection against flood
		8	Submersible motors		

※ According to the current industrial situation, most motors on the market are IP54 or IP55, and there is no difference in price. Low level of protection is rare.

IV、Product Performance Parameter Table

Three-Lobe Roots Blower Performance Parameter Table (Low-pressure)

TYPE	BORE	RPM	Three Lobe Roots Blower Performance Table																																
			Inlet Flow Qs (M ³ /MIN)									Shaft Power La (kw)									Motor Power Po (kw)														
			9.8KPA			14.7KPA			19.6KPA			24.5KPA			29.4KPA			34.3KPA			39.2KPA			44.1KPA			49KPA			53.9KPA			58.8KPA		
QS	LA	PO	QS	LA	PO	QS	LA	PO	QS	LA	PO	QS	LA	PO	QS	LA	PO	QS	LA	PO	QS	LA	PO	QS	LA	PO	QS	LA	PO	QS	LA	PO	QS	LA	PO
YCSR 50	50A	1100	1.22	0.30	0.75	1.14	0.44	0.75	1.11	0.53	0.75	1.03	0.67	1.1	0.98	0.80	1.1	0.92	0.93	1.1	0.89	1.07	1.5	0.83	1.20	1.5	0.75	1.34	2.2	0.70	1.54	2.2	0.65	1.77	2.2
		1230	1.40	0.39	0.75	1.30	0.50	0.75	1.26	0.61	0.75	1.18	0.79	1.1	1.12	0.95	1.1	1.07	1.05	1.5	1.03	1.23	1.5	0.98	1.37	2.2	0.92	1.47	2.2	0.88	1.65	2.2	0.83	1.83	2.2
		1350	1.53	0.44	0.75	1.45	0.61	0.75	1.41	0.75	1.1	1.32	0.85	1.1	1.29	1.05	1.5	1.25	1.17	1.5	1.18	1.35	2.2	1.15	1.53	2.2	1.06	1.64	2.2	1.03	1.80	2.2	0.99	2.01	3
		1430	1.66	0.50	0.75	1.55	0.64	0.75	1.50	0.84	1.1	1.43	0.96	1.1	1.38	1.14	1.5	1.34	1.30	1.5	1.22	1.43	2.2	1.20	1.63	2.2	1.17	1.76	2.2	1.12	1.91	2.2	1.09	2.11	3
		1530	1.74	0.55	0.75	1.66	0.75	1.1	1.61	0.91	1.1	1.53	1.07	1.5	1.50	1.35	2.2	1.45	1.41	2.2	1.39	1.68	2.2	1.33	1.74	2.2	1.31	2.05	3	1.28	2.12	3	1.25	2.35	3
		1640	1.89	0.64	1.1	1.79	0.81	1.1	1.74	1.02	1.5	1.71	1.15	1.5	1.65	1.46	2.2	1.61	1.54	2.2	1.56	1.82	2.2	1.52	1.88	2.2	1.48	2.23	3	1.43	2.28	3	1.40	2.60	3
		1730	2.00	0.72	1.1	1.91	0.95	1.5	1.86	1.14	1.5	1.82	1.25	2.2	1.78	1.55	2.2	1.73	1.68	2.2	1.64	1.97	3	1.60	2.03	3	1.60	2.35	3	1.57	2.47	3	1.53	2.73	4
		1840	2.13	0.80	1.1	2.09	1.03	1.5	2.05	1.23	1.5	1.99	1.39	2.2	1.93	1.68	2.2	1.87	1.79	2.2	1.82	2.10	3	1.78	2.25	3	1.75	2.56	3	1.72	2.65	4	1.68	2.94	4
		1950	2.33	0.89	1.1	2.27	1.14	1.5	2.21	1.35	2.2	2.15	1.51	2.2	2.10	1.83	2.2	2.04	1.94	3	1.96	2.27	3	1.93	2.41	3	1.90	2.71	4	1.86	2.81	4	1.82	3.15	4
		2120	2.58	1.06	1.5	2.52	1.28	2.2	2.46	1.50	2.2	2.39	1.73	2.2	2.32	2.05	3	2.26	2.17	3	2.20	2.53	3	2.18	2.68	4	2.15	3.05	4	2.11	3.15	4	2.07	3.54	5.5
2300	2.75	1.13	1.5	2.71	1.38	2.2	2.67	1.63	2.2	2.62	1.87	2.2	2.58	2.31	3	2.53	2.35	3	2.48	2.85	4	2.43	2.90	4	2.40	3.33	4	2.38	3.41	4	2.35	3.83	5.5		
YCSR 65	65A	1100	1.68	0.39	0.75	1.55	0.63	1.1	1.50	0.82	1.1	1.42	1.02	1.5	1.34	1.18	1.5	1.23	1.37	2.2	1.15	1.55	2.2	1.10	1.74	2.2	1.05	1.93	3	0.99	2.12	3	0.94	2.32	3
		1240	1.94	0.48	0.75	1.84	0.72	1.1	1.75	0.94	1.5	1.63	1.14	1.5	1.55	1.35	2.2	1.50	1.55	2.2	1.45	1.76	2.2	1.35	1.94	3	1.31	2.12	3	1.25	2.40	3	1.19	2.61	3
		1360	2.16	0.56	1.1	2.08	0.83	1.1	1.95	1.06	1.5	1.87	1.26	1.5	1.81	1.50	2.2	1.75	1.73	2.2	1.68	1.96	3	1.62	2.20	3	1.56	2.33	3	1.51	2.63	4	1.45	2.87	4
		1440	2.31	0.63	1.1	2.24	0.85	1.1	2.16	1.14	1.5	2.08	1.36	2.2	2.01	1.62	2.2	1.94	1.83	2.2	1.88	2.12	3	1.82	2.12	3	1.76	2.56	3	1.70	2.78	4	1.65	3.03	4
		1530	2.44	0.70	1.1	2.35	0.98	1.5	2.28	1.22	1.5	2.23	1.47	2.2	2.15	1.70	2.2	2.09	1.95	3	2.04	2.27	3	1.97	2.52	3	1.92	2.74	4	1.86	2.96	4	1.80	3.22	4
		1640	2.66	0.80	1.1	2.59	1.05	1.5	2.51	1.35	2.2	2.44	1.62	2.2	2.38	1.85	2.2	2.32	2.15	3	2.26	2.48	3	2.20	2.75	4	2.14	2.93	4	2.08	3.24	4	2.03	3.46	4
		1740	2.88	0.89	4.5	2.78	1.20	1.5	2.71	1.45	2.2	2.64	1.76	2.2	2.58	2.02	3	2.53	2.32	3	2.48	2.66	4	2.41	2.96	4	2.34	3.18	4	2.28	3.47	4	2.23	3.72	5.5
		1820	3.00	0.96	4.5	2.93	1.25	1.5	2.85	1.54	2.2	2.78	1.88	2.2	2.72	2.15	3	2.68	2.44	3	2.62	2.75	4	2.56	3.12	4	2.50	3.35	4	2.44	3.65	5.5	2.38	3.93	5.5
		1940	3.23	1.11	1.5	3.17	1.42	2.2	3.09	1.73	2.2	3.02	2.05	3	2.96	2.33	3	2.90	2.68	4	2.83	3.04	4	2.77	3.38	4	2.71	3.57	5.5	2.66	3.92	5.5	2.61	4.22	5.5
		2130	3.66	1.33	2.2	3.57	1.63	2.2	3.48	1.93	3	3.42	2.32	3	3.35	2.67	4	3.30	3.03	4	3.25	3.38	4	3.17	3.74	5.5	3.11	4.02	5.5	3.06	4.32	5.5	3.02	4.46	5.5
2300	3.80	1.42	2.2	3.72	1.78	3	3.64	2.14	3	3.57	2.52	3	3.50	2.92	4	3.43	3.31	4	3.35	3.85	5.5	3.30	4.23	5.5	3.25	4.45	5.5	3.20	4.92	7.5	3.15	5.35	7.5		
YCSR 80	80A	1140	3.09	1.04	2.2	3.02	1.34	2.2	2.92	1.62	2.2	2.82	1.95	3	2.75	2.12	3	2.68	2.45	3	2.59	2.72	4	2.52	3.06	4	2.45	3.40	4	2.38	3.74	5.5	2.34	4.08	5.5
		1230	3.37	1.14	2.2	3.26	1.44	2.2	3.16	1.75	2.2	3.09	2.04	3	3.04	2.33	3	2.95	2.63	4	2.88	2.96	4	2.80	3.30	4	2.74	3.67	5.5	2.65	4.03	5.5	2.60	4.40	5.5
		1300	3.59	1.22	2.2	3.50	1.55	2.2	3.42	1.86	2.2	3.35	2.23	3	3.28	2.53	3	3.22	2.85	4	3.14	3.16	4	3.05	3.49	4	2.98	3.88	5.5	2.92	4.26	5.5	2.86	4.65	5.5
		1360	3.77	1.29	2.2	3.67	1.65	2.2	3.58	1.97	3	3.51	2.35	3	3.44	2.62	3	3.35	2.97	4	3.28	3.33	4	3.20	3.65	5.5	3.14	4.05	5.5	3.07	4.46	5.5	3.01	4.87	7.5
		1440	4.06	1.40	2.2	3.90	1.80	2.2	3.78	2.12	3	3.67	2.53	3	3.58	3.11	4	3.50	3.22	4	3.42	3.80	5.5	3.34	3.91	5.5	3.27	4.29	5.5	3.20	4.72	5.5	3.14	5.35	7.5
		1560	4.28	1.52	2.2	4.19	1.95	3	4.11	2.34	3	4.03	2.76	4	3.95	3.38	4	3.88	3.46	4	3.81	4.15	5.5	3.73	4.41	5.5	3.65	4.97	7.5	3.58	5.25	7.5	3.52	5.77	7.5
		1650	4.66	1.62	2.2	4.55	2.13	3	4.45	2.52	3	4.43	2.94	4	4.36	3.53	5.5	4.28	3.75	5.5	4.20	4.46	5.5	4.12	4.74	5.5	4.05	5.32	7.5	3.98	5.62	7.5	3.92	6.13	7.5
		1730	4.90	1.77	3	4.80	2.25	3	4.75	2.66	4	4.69	3.05	4	4.60	3.54	5.5	4.51	3.94	5.5	4.42	4.65	5.5	4.33	4.82	7.5	4.25	5.55	7.5	4.17	5.72	7.5	4.09	6.45	7.5
		1820	5.22	1.88	3	5.12	2.35	3	5.02	2.82	4	4.94	3.25	4	4.88	3.95	5.5	4.81	4.13	5.5	4.74	4.95	7.5	4.65	5.06	7.5	4.58	5.85	7.5	4.52	6.04	7.5	4.45	6.84	11
		1900	5.43	1.95	3	5.35	2.52	3	5.27	2.93	4	5.19	3.46	4	5.12	4.14	5.5	5.06	4.33	5.5	4.99	5.15	7.5	4.89	5.35	7.5	4.82	6.14	7.5	4.75	6.35	7.5	4.63	7.42	11
2100	6.13	2.35	3	6.04	2.80	4	5.95	3.25	4	5.86	3.80	5.5	5.78	4.65	5.5	5.71	4.79	5.5	5.63	5.87	7.5	5.54	5.91	7.5	5.46	6.26	7.5	5.39	7.01	11	5.33	7.95	11		
YCSR 100	100A	1060	4.57	1.35	3	4.42	1.83	3	4.26	2.25	3	4.07	2.72	4	3.93	3.12	4	3.84	3.55	5.5	3.72	4.02	5.5	3.57	4.47	5.5	3.46	4.97	7.5	3.35	5.46	7.5	3.25	5.96	7.5
		1140	4.98	1.53	3	4.82	2.03	3	4.67	2.44	3	4.52	2.94	4	4.38	3.43	4	4.25	3.93	5.5	4.14	4.35	5.5	4.03	4.86	7.5	3.92	5.35	7.5	3.83	5.87	7.5	3.73	6.41	7.5
		1220	5.36	1.69	3	5.15	2.22	3	5.01	2.72	4	4.87	3.23	4	4.75	3.73	5.5	4.63	4.22	5.5	4.55	7.74	5.5	4.44	5.27	7.5	4.35	5.78	7.5	4.25	6.35	7.5	4.15	6.92	11
		1310	5.75	1.88	3	5.60	2.43	3	5.46	2.94	4	5.34	3.52	5.5	5.15	4.03	5.5	5.05	4.63	5.5	4.93	5.16	7.5	4.86	5.77	7.5	4.73	6.33	7.5	4.66	6.95	11	4.53	7.45	11
		1460	6.53	2.18	3	6.38	2.75	4	6.27	3.42	4	6.13	3.95	5.5	6.02	4.64	5.5	5.87	5.22	7.5	5.75	5.85	7.5	5.66	6.54	7.5	5.56	7.13	11	5.45	7.76	11	5.36	8.43	11
		1540	6.91	2.40	3	6.79	3.04	4	6.63	3.66	5.5	6.55	4.32	5.5	6.42	4.95	7.5	6.30	5.65	7.5	6.17	6.32	7.5	6.07	6.97	11	5.97	7.64	11	5.89	8.35	11	5.78	9.02	11
		1680	7.63	2.78	4</																														

Three-Lobe Roots Blower Performance Parameter Table (Low-pressure)

Three Lobe Roots Blower Performance Table. Includes columns for TYPE, BORE, RPM, Inlet Flow Qs (M³/MIN), Shaft Power La (kw), and Motor Power Po (kw) across various pressure levels (9.8KPA to 58.8KPA).

Three-Lobe Roots Blower Performance Parameter Table (Low-pressure)

TYPE	BORE	RPM	Three Lobe Roots Blower Performance Table																																
			Inlet Flow Qs (M ³ /MIN)									Shaft Power La (kw)									Motor Power Po (kw)														
			9.8KPA			14.7KPA			19.6KPA			24.5KPA			29.4KPA			34.3KPA			39.2KPA			44.1KPA			49KPA			53.9KPA			58.8KPA		
QS	LA	PO	QS	LA	PO	QS	LA	PO	QS	LA	PO	QS	LA	PO	QS	LA	PO	QS	LA	PO	QS	LA	PO	QS	LA	PO	QS	LA	PO	QS	LA	PO	QS	LA	PO
YCSR 200	200A	740	22.73	10.15	15	22.42	10.70	15	22.13	11.25	15	21.59	13.35	15	21.05	15.46	18.5	20.69	17.85	22	20.53	19.65	22	20.30	21.97	30	20.12	23.87	30	19.86	26.17	30	19.65	28.14	37
		850	26.70	10.78	15	26.50	11.92	15	26.33	13.14	15	25.90	15.52	18.5	25.64	17.93	22	25.20	19.89	22	24.83	22.73	30	24.51	25.12	30	24.23	27.53	30	24.06	29.92	37	23.95	32.33	37
		900	28.68	11.02	15	28.50	12.25	15	28.35	13.84	18.5	27.85	16.24	18.5	27.55	18.95	22	27.12	22.35	30	26.83	24.07	30	26.56	27.89	30	26.34	29.15	37	26.10	32.08	37	25.95	34.26	45
		950	30.92	12.29	15	30.43	13.52	15	29.94	14.75	18.5	29.45	18.25	22	29.13	20.16	22	28.80	23.10	30	28.55	25.54	30	28.20	28.73	37	28.05	30.93	37	27.80	33.91	45	27.63	36.26	45
		1070	34.18	17.16	22	33.90	17.85	22	33.65	18.54	22	33.40	22.10	30	33.26	24.54	30	32.88	28.75	37	32.55	30.64	37	32.28	34.01	45	32.03	36.65	45	31.79	39.85	45	31.62	42.76	55
		1160	36.98	17.45	22	36.83	18.01	22	36.43	19.64	22	36.03	23.55	30	35.73	26.23	30	35.41	30.38	37	35.17	32.83	37	34.89	36.95	45	34.65	39.37	45	34.41	43.02	55	34.25	45.95	55
		1240	39.64	18.32	22	39.01	20.25	30	38.36	22.87	30	38.05	28.58	37	37.84	29.94	37	37.49	33.87	45	37.15	36.69	45	36.80	40.18	45	36.65	43.95	55	36.44	47.30	55	36.35	50.97	55
		1320	40.79	21.47	30	40.49	23.25	30	40.17	25.03	30	39.85	30.01	37	39.64	32.53	37	39.38	37.98	45	39.15	40.03	45	38.91	45.12	55	38.77	47.53	55	38.61	52.61	75	38.45	55.03	75
		1450	44.80	23.58	30	44.40	25.53	30	44.12	27.49	37	43.75	32.96	37	43.54	35.73	45	43.25	41.72	55	43.00	43.97	55	42.74	49.56	55	42.55	52.21	75	42.40	57.79	75	42.23	60.44	75
	200B	810	31.77	8.05	15	31.17	11.28	15	30.54	14.65	18.5	29.95	17.60	22	29.52	20.68	30	29.23	23.86	30	28.87	27.26	30	28.55	30.67	37	28.24	34.08	37	27.93	37.49	45	27.65	40.90	45
		900	35.68	10.00	15	35.01	13.48	18.5	34.41	17.12	22	34.01	20.44	30	33.62	24.22	30	33.34	27.55	30	33.03	30.95	37	32.50	34.42	45	32.36	37.87	45	32.05	41.65	45	31.73	45.44	55
		980	39.15	11.58	15	38.52	15.52	18.5	38.02	19.38	22	37.62	22.93	30	37.31	27.18	30	37.07	30.78	37	36.75	34.55	45	36.44	38.25	45	36.05	42.04	55	35.60	45.55	55	35.35	49.48	55
		1070	43.03	13.46	18.5	42.53	17.81	22	42.03	21.24	30	41.63	25.82	30	41.43	30.13	37	41.11	34.45	37	40.95	38.66	45	40.58	42.65	55	40.17	46.84	55	39.75	50.73	55	39.45	54.97	75
		1150	46.05	15.18	18.5	46.01	19.95	22	45.51	23.71	30	45.31	28.13	37	45.01	32.74	37	44.82	37.26	45	44.62	42.04	55	44.23	46.62	55	43.75	50.98	55	43.44	55.09	75	43.18	59.76	75
		1230	49.60	17.09	22	49.13	21.94	30	48.72	26.43	30	48.42	31.28	37	48.23	36.26	45	48.11	41.25	45	47.71	46.08	55	47.41	50.78	55	47.01	55.52	75	46.82	59.83	75	46.62	64.81	75
		1310	52.67	19.65	22	52.21	24.34	30	51.81	29.23	37	51.51	34.28	37	51.32	39.66	45	51.13	44.81	55	50.92	50.18	55	50.62	55.09	75	50.42	59.91	75	50.13	64.52	75	49.81	69.72	75
		1390	55.77	21.31	30	55.33	26.64	30	54.93	31.88	37	54.73	37.46	45	54.41	42.92	55	54.31	48.53	55	54.12	54.22	75	53.93	59.28	75	53.60	64.48	75	53.42	69.16	75	53.22	74.62	90
		1480	59.20	23.80	30	58.81	28.96	37	58.41	34.37	37	58.21	40.42	45	58.03	46.58	55	57.82	52.36	75	57.71	58.19	75	57.51	64.95	75	57.36	68.98	75	57.22	74.22	90	57.14	80.18	90
YCSR 250	250A	1100	57.74	19.97	30	57.26	26.94	30	56.90	32.37	37	56.65	37.84	45	56.42	43.89	55	56.22	49.65	55	55.99	55.52	75	55.65	60.95	75	55.42	66.39	75	55.13	71.50	90	54.77	77.25	90
		1160	60.89	22.96	30	60.39	28.41	37	60.01	34.14	45	59.74	39.91	45	59.51	46.29	55	59.30	52.36	75	59.05	58.55	75	58.69	64.28	75	58.46	70.02	75	58.14	75.40	90	57.76	81.47	90
		1210	63.52	23.95	30	63.00	35.62	45	62.60	35.62	45	62.32	41.64	55	62.08	48.29	55	61.86	54.62	75	61.60	61.08	75	61.23	67.06	75	60.99	73.04	90	60.65	78.65	90	60.25	84.99	90
		1260	66.15	24.94	30	65.61	30.87	37	65.19	37.10	45	64.90	43.37	55	64.65	50.29	55	64.42	56.88	75	64.15	63.61	75	63.77	69.84	75	63.52	76.06	90	63.16	81.90	90	62.75	88.51	110
		1310	68.78	25.93	30	68.22	32.10	37	67.78	38.58	45	67.48	45.15	55	67.22	52.29	75	66.98	59.14	75	66.70	66.14	75	66.31	72.62	90	66.05	79.08	90						
		1390	72.83	28.12	37	72.35	34.98	45	71.85	42.00	55	71.61	49.38	55	71.38	56.65	75	71.13	64.05	75	70.98	71.57	75	70.74	78.15	90	70.57	85.03	90						
	1480	77.55	31.41	37	77.04	38.17	45	76.51	45.30	55	76.25	53.34	75	76.01	61.40	75	75.74	69.07	75	75.60	76.70	90	75.33	83.97	90	75.14	90.97	110							
	250B	990	63.50	20.10	37	63.30	28.50	37	63.10	31.40	37	62.90	38.30	45	62.70	45.00	55	62.50	57.40	75	62.20	57.80	75	62.00	64.10	75	61.80	70.50	75	61.60	77.40	90	61.40	84.20	90
		1170	74.70	22.50	37	74.50	29.20	37	74.30	37.10	45	74.00	45.30	55	73.60	53.20	75	73.10	60.70	75	72.70	68.30	75	72.30	75.80	90	72.00	83.30	90	71.70	91.50	110	71.30	99.50	110
		1250	80.20	28.10	37	79.90	34.20	37	79.60	40.30	45	79.20	48.40	55	78.80	56.80	75	78.50	64.90	75	78.20	73.00	90	77.90	80.90	90	77.40	89.00	110	77.10	97.70	110	76.80	106.30	132
1360		89.50	35.90	45	89.10	38.20	45	88.70	46.10	55	88.50	52.60	75	88.30	61.80	75	88.10	70.60	75	87.80	79.40	90	87.50	88.10	110	87.20	96.80	110	86.90	106.30	132	86.60	115.70	132	
1480	97.52	37.10	45	97.01	40.60	45	96.50	46.90	55	96.20	57.30	75	96.10	67.30	75	95.80	76.80	90	95.50	86.40	110	95.30	95.80	110	95.00	105.40	132	94.50	115.70	132	94.10	125.90	132		
YCSR 300	300A	990	89.30	37.80	45	89.10	41.60	55	88.90	44.60	55	88.70	53.90	75	88.50	60.50	75	88.30	71.80	90	88.10	81.60	90	87.90	90.30	110	87.60	99.80	110	87.40	108.10	132	87.10	116.40	132
		1170	108.00	44.70	55	107.50	49.10	55	106.00	52.70	75	105.60	63.70	75	105.00	71.50	90	104.10	84.80	90	103.80	96.50	110	103.50	106.70	132	103.20	117.90	132	102.90	127.70	160	102.70	137.50	160
		1250	114.80	47.70	55	113.50	52.50	75	112.20	56.30	75	112.00	68.00	75	111.80	76.30	90	111.60	90.60	110	111.40	103.10	110	111.20	114.00	132	111.00	126.00	160	110.80	136.50	160	110.60	146.90	160
		1360	127.00	51.90	55	126.00	57.10	75	125.00	61.30	75	124.80	74.00	90	124.60	83.10	90	124.40	98.60	110	124.20	112.10	132	124.00	124.10	132	123.80	137.00	160	123.60	148.50	160	123.40	159.90	185
1480	138.10	56.50	75	137.00	62.10	75	135.90	66.70	75	135.80	80.60	90	135.60	90.40	110	135.30	107.30	132	135.10	122.00	132	134.90	135.00	160	134.70	149.10	160	134.50	161.60	185	134.30	174.00	185		

Three-Lobe Roots Blower Performance Parameter Table (High-pressure)

TYPE	BORE	RPM	Three Lobe Roots Blower Performance Table																										
			Inlet Flow Qs (M ³ /MIN)									Shaft Power La (kw)						Motor Power Po (kw)											
			63.7KPA			68.6KPA			73.5KPA			78.4KPA			83.3KPA			88.2KPA			93.1KPA			98KPA					
QS	LA	PO	QS	LA	PO	QS	LA	PO	QS	LA	PO	QS	LA	PO	QS	LA	PO	QS	LA	PO	QS	LA	PO	QS	LA	PO			
YCSR 50	50A	1100	0.61	2.01	3	0.56	2.25	3	0.52	2.49	3	0.49	2.73	4															
		1230	0.78	2.05	3	0.73	2.24	3	0.69	2.49	3	0.65	2.76	4	0.61	3.37	4	0.56	3.95	5.5	0.50	4.17	5.5	0.45	4.40	5.5			
		1350	0.95	2.23	3	0.90	2.48	3	0.86	2.76	4	0.81	3.06	4	0.78	3.40	4	0.69	4.01	5.5	0.65	4.32	5.5	0.61	4.65	5.5			
		1430	1.06	2.35	3	1.01	2.61	4	0.97	2.90	4	0.93	3.23	4	0.90	3.68	5.5	0.87	4.05	5.5	0.81	4.48	5.5	0.72	4.81	7.5			
		1530	1.22	2.55	4	1.19	2.83	4	1.16	3.18	4	1.13	3.57	5.5	1.08	3.88	5.5	0.96	4.20	5.5	0.90	4.61	5.5	0.85	5.10	7.5			
		1640	1.38	2.75	4	1.35	3.16	4	1.32	3.32	4	1.29	3.89	5.5	1.24	4.27	5.5	1.18	4.43	5.5	1.13	4.80	5.5	1.06	5.20	7.5			
		1730	1.50	2.93	4	1.46	3.25	4	1.42	3.54	5.5	1.39	3.91	5.5	1.31	4.38	5.5	1.26	4.70	5.5	1.22	5.12	7.5	1.14	5.50	7.5			
		1840	1.65	3.15	4	1.60	3.35	4	1.56	3.64	5.5	1.51	3.96	5.5	1.46	4.43	5.5	1.40	4.92	7.5	1.35	5.30	7.5	1.28	5.70	7.5			
		1950	1.78	3.42	4	1.75	3.65	5.5	1.71	3.97	5.5	1.68	4.31	5.5	1.62	4.60	5.5	1.57	5.10	7.5	1.50	5.53	7.5	1.45	5.92	7.5			
		2120	2.02	3.77	5.5	1.98	3.97	5.5	1.95	4.21	5.5	1.91	4.53	5.5	1.83	4.80	5.5	1.75	5.30	7.5	1.70	5.75	7.5	1.63	6.12	7.5			
2300	2.31	4.43	5.5	2.24	4.35	5.5	2.20	4.57	5.5	2.17	4.81	7.5	2.12	5.20	7.5	2.07	5.50	7.5	2.03	6.01	7.5	1.98	6.32	7.5					
YCSR 65	65A	1100	0.89	2.52	3	0.85	2.86	4	0.80	3.22	4	0.76	3.58	5.5															
		1240	1.13	2.89	4	1.08	3.17	4	1.03	3.49	4	0.98	3.84	5.5	0.93	4.20	5.5	0.88	4.56	5.5	0.83	4.92	7.5	0.78	5.28	7.5			
		1360	1.39	3.08	4	1.34	3.42	4	1.28	3.76	5.5	1.23	4.13	5.5	1.17	4.40	5.5	1.12	4.75	5.5	1.06	5.11	7.5	1.01	5.47	7.5			
		1440	1.60	3.35	4	1.55	3.68	5.5	1.51	4.05	5.5	1.46	4.45	5.5	1.41	4.85	7.5	1.35	5.20	7.5	1.29	5.56	7.5	1.23	5.92	7.5			
		1530	1.74	3.50	5.5	1.69	3.80	5.5	1.64	4.14	5.5	1.59	4.49	5.5	1.53	5.10	7.5	1.48	5.40	7.5	1.42	5.71	7.5	1.37	6.05	7.5			
		1640	1.98	3.74	5.5	1.92	4.06	5.5	1.86	4.42	5.5	1.81	4.80	5.5	1.75	5.25	7.5	1.70	5.40	7.5	1.65	7.78	7.5	1.60	6.10	7.5			
		1740	2.18	4.13	5.5	2.12	4.59	5.5	2.06	5.05	7.5	2.01	5.55	7.5	1.92	5.80	7.5	1.84	6.10	7.5	1.75	6.35	7.5	1.70	6.50	7.5			
		1820	2.34	4.36	5.5	2.27	4.75	5.5	2.20	5.15	7.5	2.13	5.74	7.5	2.10	6.10	7.5	2.08	6.40	7.5	2.03	6.63	11	2.00	6.90	11			
		1940	2.57	4.71	5.5	2.52	5.03	7.5	2.47	5.59	7.5	2.42	6.21	7.5	2.38	6.43	7.5	2.31	6.60	11	2.27	7.00	11	2.24	7.30	11			
		2130	2.96	5.22	7.5	2.89	5.54	7.5	2.84	5.86	7.5	2.78	6.30	7.5	2.70	6.62	11	2.65	6.91	11	2.60	7.20	11	2.53	7.55	11			
2300	3.09	5.72	7.5	3.05	6.14	7.5	3.01	6.58	11	2.95	6.89	11	2.88	7.10	11	2.83	7.33	11	2.77	7.67	11	2.70	8.08	11					
YCSR 80	80A	1140	2.27	4.42	5.5	2.20	4.76	5.5	2.14	5.10	7.5	2.07	5.44	7.5	2.01	5.78	7.5	1.96	6.12	7.5	1.89	6.46	7.5	1.82	6.80	11			
		1230	2.52	4.77	5.5	2.45	5.13	7.5	2.37	5.50	7.5	2.30	5.87	7.5	2.25	6.23	7.5	2.19	6.60	11	2.12	6.97	11	2.06	7.33	11			
		1300	2.77	5.04	7.5	2.69	5.43	7.5	2.61	5.81	7.5	2.53	6.20	7.5	2.48	6.59	11	2.40	6.98	11	2.34	7.36	11	2.28	7.75	11			
		1360	2.95	5.27	7.5	2.86	5.68	7.5	2.77	6.08	7.5	2.69	6.52	7.5	2.62	6.89	11	2.57	7.30	11	2.49	7.70	11	2.42	8.11	11			
		1440	3.07	5.67	7.5	3.00	6.06	7.5	2.92	6.44	7.5	2.84	6.89	11	2.78	7.30	11	2.65	7.73	11	2.60	8.16	11	2.55	8.59	11			
		1560	3.44	6.17	7.5	3.37	6.57	11	3.30	6.98	11	3.21	7.44	11	3.18	7.91	11	3.15	8.37	11	3.10	8.84	11	3.07	9.30	11			
		1650	3.73	6.55	7.5	3.65	7.02	11	3.59	7.45	11	3.48	7.87	11	3.40	8.36	11	3.32	8.85	11	3.27	9.35	11	3.21	9.84	11			
		1730	4.01	6.94	11	3.93	7.35	11	3.85	7.84	11	3.79	8.25	11	3.70	8.77	11	3.65	9.28	11	3.61	9.80	15	3.52	10.32	15			
		1820	4.29	7.27	11	4.22	7.74	11	4.15	8.25	11	4.08	8.72	11	4.00	9.22	11	3.95	9.77	11	3.89	10.31	15	3.80	10.85	15			
		1900	4.55	7.65	11	4.49	8.14	11	4.42	8.63	11	4.35	9.13	11	4.27	9.63	11	4.20	10.20	15	4.13	10.76	15	4.07	11.33	15			
2100	5.26	8.45	11	5.18	9.04	11	5.12	9.54	11	5.05	10.02	11	5.00	10.64	15	4.91	11.27	15	4.87	11.90	15	4.80	12.52	15					

Three-Lobe Roots Blower Performance Parameter Table (High-pressure)

			Three Lobe Roots Blower Performance Table																							
TYPE	BORE	RPM	Inlet Flow Qs (M ³ /MIN)									Shaft Power La (kw)						Motor Power Po (kw)								
			63.7KPA			68.6KPA			73.5KPA			78.4KPA			83.3KPA			88.2KPA			93.1KPA			98KPA		
			QS	LA	PO	QS	LA	PO	QS	LA	PO	QS	LA	PO	QS	LA	PO	QS	LA	PO	QS	LA	PO	QS	LA	PO
YCSR 100	100A	1060	3.17	6.46	7.5	3.09	6.95	11	3.01	7.51	11	2.94	8.17	11	2.87	8.53	11	2.79	8.94	11	2.72	9.44	11	2.65	9.93	15
		1140	3.65	6.94	11	3.58	7.51	11	3.51	8.15	11	3.44	8.66	11	3.65	9.08	11	3.60	9.61	11	3.54	10.15	15	3.48	10.68	15
		1220	4.06	7.52	11	3.98	8.18	11	3.90	8.88	11	3.83	9.65	11	3.75	10.10	15	3.68	10.40	15	3.61	10.86	15	3.54	11.43	15
		1310	4.43	8.15	11	4.35	8.75	11	4.26	9.62	11	4.18	10.56	15	4.10	10.82	15	4.03	11.50	15	3.96	11.71	15	3.87	12.27	15
		1460	5.28	9.23	11	5.19	9.85	15	5.10	10.44	15	4.99	10.94	15	4.92	11.63	15	4.83	12.31	15	4.74	13.00	15	4.65	13.68	15
		1540	5.70	9.75	11	5.64	10.46	15	5.55	11.12	15	5.43	11.96	15	5.38	12.27	15	5.28	12.99	15	5.17	13.71	18.5	5.06	14.43	18.5
		1680	6.44	10.77	15	6.35	11.53	15	6.25	12.21	15	6.16	12.63	15	6.08	13.38	15	6.00	14.17	18.5	5.92	14.95	18.5	5.84	15.74	18.5
		1780	6.95	11.52	15	6.87	12.34	15	6.83	13.07	15	6.75	13.44	15	6.65	14.18	18.5	6.58	15.01	18.5	6.48	15.84	18.5	6.36	16.68	18.5
		1880	7.55	12.25	15	7.45	13.05	15	7.33	13.86	18.5	7.24	14.26	18.5	7.09	14.97	18.5	6.96	15.85	18.5	6.81	16.73	18.5	6.65	17.62	22
		1980	8.06	13.05	15	7.92	13.87	18.5	7.85	14.72	18.5	7.75	15.27	18.5	7.58	15.77	18.5	7.40	16.70	18.5	7.21	17.62	22	7.03	18.55	22
2100	8.65	13.85	18.5	8.55	14.70	18.5	8.49	15.62	18.5	8.40	16.02	18.5	8.25	16.73	18.5	8.07	17.71	22	7.93	18.69	22	7.71	19.68	22		
YCSR 125	125A	980	5.24	8.92	11	5.14	9.81	11	5.04	10.89	15	4.93	12.10	15	4.86	13.20	15	4.78	14.10	18.5	4.71	15.30	18.5	4.64	16.40	18.5
		1050	5.54	9.71	11	5.43	10.78	15	5.32	11.98	15	5.21	13.01	15	5.11	14.08	18.5	5.01	15.11	18.5	4.92	16.01	18.5	4.80	17.10	22
		1200	6.83	11.05	15	6.74	11.82	15	6.66	12.55	15	6.54	13.33	15	6.43	14.61	18.5	6.32	15.58	18.5	6.23	15.58	18.5	6.15	17.90	22
		1310	7.55	12.22	15	7.45	13.13	15	7.39	13.92	18.5	7.34	14.83	18.5	7.25	15.85	18.5	7.17	16.86	22	7.09	17.87	22	6.99	18.80	22
		1390	8.14	13.14	18.5	8.06	14.04	18.5	7.92	14.91	18.5	7.85	15.82	18.5	7.75	16.20	18.5	7.63	17.21	22	7.52	18.23	22	7.41	19.25	22
		1460	8.50	13.73	18.5	8.42	14.67	18.5	8.33	15.62	18.5	8.24	16.55	18.5	8.13	17.10	22	8.02	17.72	22	7.90	18.36	22	7.81	19.80	22
		1530	9.05	14.63	18.5	8.95	15.62	18.5	8.87	16.63	18.5	8.82	17.62	22	8.73	18.01	22	8.64	18.71	22	8.53	19.40	22	8.42	20.25	22
		1630	9.75	15.65	18.5	9.65	16.73	22	9.55	17.82	22	9.45	18.95	22	9.35	19.60	22	9.25	20.30	22	9.15	20.98	30	9.02	21.60	30
		1750	10.55	16.94	22	10.45	18.06	22	10.35	19.14	22	10.25	20.25	30	10.12	21.02	30	9.99	21.80	30	9.86	22.35	30	9.73	23.16	30
		1850	11.23	18.05	22	11.13	19.24	22	11.04	20.37	30	10.94	21.45	30	10.82	22.10	30	10.70	22.98	30	10.57	23.70	30	10.45	24.48	30
2000	12.23	20.02	30	12.12	21.31	30	12.05	22.63	30	11.93	23.92	30	11.80	24.50	30	11.68	25.10	30	11.55	25.90	30	11.42	26.80	30		
YCSR 150	150A	810	10.26	17.16	22	10.16	18.86	22	10.06	20.73	30	9.96	22.78	30	9.86	24.38	30	9.75	25.98	30	9.64	27.28	37	9.53	28.58	37
		860	11.16	17.79	22	11.03	19.16	22	10.85	20.87	30	10.73	24.37	30	10.62	25.67	30	10.51	26.97	37	10.40	28.27	37	10.29	29.57	37
		970	13.12	21.45	30	12.95	22.93	30	12.86	24.34	30	12.73	25.82	30	12.51	26.50	30	12.39	29.01	37	12.25	30.36	37	12.12	33.71	37
		1110	15.55	25.07	30	15.46	26.74	30	15.33	28.45	37	15.15	30.07	37	15.00	32.60	37	14.85	35.00	45	14.70	37.21	45	14.55	39.35	45
		1180	16.86	26.34	30	16.73	28.22	37	16.55	30.15	37	16.43	31.84	37	16.27	33.54	37	16.10	35.51	45	15.89	40.10	45	15.71	44.23	55
		1240	17.92	27.73	37	17.75	29.55	37	17.66	31.43	37	17.53	33.17	37	17.38	36.21	45	17.23	39.38	45	17.08	44.45	55	16.93	47.78	55
		1400	20.76	33.34	37	20.63	35.85	45	20.45	37.97	45	20.33	40.13	45	20.18	43.00	55	20.03	46.10	55	19.88	49.80	55	19.72	52.00	75
		1470	21.92	34.57	45	21.82	36.92	45	21.69	39.12	45	21.52	41.33	45	21.40	44.80	55	21.24	47.10	55	21.08	50.90	55	20.92	54.00	75
		1620	24.12	40.07	45	24.04	43.32	55	23.85	45.83	55	23.73	48.25	55	23.58	51.10	55	23.42	54.00	75	23.26	57.80	75	23.10	60.10	75
		1730	25.76	44.85	55	25.64	47.63	55	25.45	50.27	55	25.32	52.95	75	25.17	55.95	75	25.02	58.10	75	24.86	61.00	75	24.70	65.00	75
1900	28.35	47.83	55	28.15	50.54	55	27.97	53.35	75	27.92	56.43	75	27.76	59.23	75	27.59	62.01	75	27.42	65.30	75	27.26	69.01	75		

Three-Lobe Roots Blower Performance Parameter Table (High-pressure)

TYPE	BORE	RPM	Three Lobe Roots Blower Performance Table																										
			Inlet Flow Qs (M ³ /MIN)									Shaft Power La (kw)						Motor Power Po (kw)											
			63.7KPA			68.6KPA			73.5KPA			78.4KPA			83.3KPA			88.2KPA			93.1KPA			98KPA					
QS	LA	PO	QS	LA	PO	QS	LA	PO	QS	LA	PO	QS	LA	PO	QS	LA	PO	QS	LA	PO	QS	LA	PO	QS	LA	PO			
YCSR 200	200A	740	19.44	30.14	37	19.23	32.46	37	19.02	34.78	45	18.81	37.10	45	18.60	39.42	45	18.40	41.74	55	18.19	44.06	55	17.96	46.38	55			
		850	23.84	34.74	45	23.73	37.29	45	23.62	39.95	45	23.51	42.62	55	23.36	45.28	55	23.21	47.94	55	23.05	50.61	55	22.89	53.27	75			
		900	25.80	36.66	45	25.65	39.48	45	25.50	42.30	55	25.35	45.12	55	25.20	47.94	55	25.05	50.76	55	24.90	53.58	75	24.74	56.40	75			
		950	27.46	38.70	45	27.29	41.68	55	27.12	44.65	55	26.95	47.63	55	26.78	50.61	55	26.61	53.58	75	26.44	56.56	75	26.27	59.54	75			
		1070	31.45	45.67	55	31.28	48.58	55	31.11	51.49	75	30.94	54.40	75	30.77	57.31	75	30.60	60.35	75	30.43	63.70	75	30.25	67.06	75			
		1160	34.09	48.88	55	33.93	51.81	75	33.77	54.74	75	33.61	58.16	75	33.45	61.79	75	33.29	65.43	75	33.13	69.06	75	32.96	72.70	90			
		1240	36.26	54.64	75	36.17	58.31	75	36.08	61.98	75	35.99	65.65	75	35.86	69.32	75	35.72	72.99	90	35.57	76.66	90	35.41	80.33	90			
		1320	38.29	57.45	75	38.13	59.87	75	37.97	62.29	75	37.81	66.18	75	37.65	70.32	75	37.48	74.45	90	37.31	78.59	90	37.14	82.73	90			
	1450	42.06	63.10	75	41.85	65.76	75	41.70	68.42	75	41.50	72.80	90	41.10	80.20	90	40.70	84.90	110	40.20	89.40	110	39.70	93.80	110				
	200B	810	27.26	44.31	55	26.93	47.71	55	26.62	51.12	55	26.33	54.53	75	26.12	57.94	75	25.87	61.35	75	25.61	64.75	75	25.34	68.16	75			
		900	31.45	49.23	55	31.15	53.01	75	30.85	56.80	75	30.54	60.59	75	30.21	64.37	75	29.90	68.16	75	29.58	71.95	90	29.26	75.74	90			
		980	35.05	53.60	75	34.72	57.73	75	34.38	61.85	75	34.05	65.97	75	33.80	70.10	75	33.62	74.22	90	33.27	78.34	90	32.92	82.47	90			
		1070	39.35	58.83	75	39.13	63.73	75	38.92	67.53	75	38.75	72.03	90	38.58	76.53	90	38.37	81.04	90	38.11	85.54	90	37.90	90.04	110			
		1150	43.03	64.33	75	42.74	68.63	75	42.45	73.34	90	42.25	77.66	90	42.03	82.26	90	41.81	87.10	110	41.63	91.93	110	41.45	96.77	110			
		1230	46.41	69.39	75	46.21	74.26	90	46.02	78.81	90	45.83	83.56	90	45.60	88.52	110	45.42	93.15	110	45.20	98.33	110	45.00	103.50	110			
		1310	49.72	74.81	90	49.53	79.71	90	49.32	84.72	110	49.11	89.76	110															
1390		53.03	79.65	90	52.82	84.91	90	52.71	90.24	110	52.52	95.58	110																
1480	56.92	85.65	90	56.82	91.36	110	56.71	96.78	110	56.53	102.45	110																	
YCSR 250	250B	990	61.20	88.20	110	61.00	94.60	110	59.90	101.00	110	59.80	113.70	132	59.20	121.00	132	58.80	128.30	160	58.30	134.30	160	58.00	140.30	160			
		1170	71.00	113.40	132	69.60	123.20	132	69.40	131.20	160	69.00	134.40	160	68.60	143.00	160	68.20	151.80	160	67.70	158.70	185	67.10	165.70	185			
		1250	76.40	121.10	132	76.00	131.60	160	75.60	140.20	160	75.10	143.60	160															
		1360	86.30	131.80	160	86.00	143.20	160	85.70	152.50	160	85.40	156.20	185															
		1480	93.70	143.40	160	93.40	155.80	185	93.20	166.00	185	92.60	170.00	185															
YCSR 300	300A	990	86.90	121.80	132	86.70	130.50	160	86.40	138.90	160	86.10	138.90	160	85.50	156.60	185	85.00	165.00	185									
		1170	102.50	144.00	160	102.30	154.00	185	102.10	164.00	185	101.80	174.00	185															
		1250	110.40	164.00	185	110.20	165.00	185	110.00	175.00	185																		
		1360	123.20	167.00	185	123.00	179.00	200																					
		1480	134.10	188.00	200	134.00	202.00	220																					

Vacuum blower (pump) performance parameter table

TYPE	BORE	RPM	DISCHARGE PRESSURE (KGF/M ³)																							
			Inlet Flow Qs (M ³ /MIN) Shaft Power La (kw) Motor Power Po (kw)																							
			- 9.8KPA			- 19.6KPA			- 24.5KPA			- 29.4KPA			- 34.3KPA			- 39.2KPA			- 44.1KPA			- 49KPA		
QS	LA	PO	QS	LA	PO	QS	LA	PO	QS	LA	PO	QS	LA	PO	QS	LA	PO	QS	LA	PO	QS	LA	PO	QS	LA	PO
YCSR 50V	50	850	0.99	0.41	0.75	0.82	0.80	1.5	0.72	0.98	1.5	0.61	1.16	2.2	0.51	1.34	2.2	0.36	1.51	2.2	0.27	1.67	3	0.14	1.84	3
		1000	1.31	0.48	0.75	1.14	0.94	1.5	1.04	1.16	2.2	0.93	1.37	2.2	0.83	1.57	2.2	0.69	1.77	3	0.59	1.97	3	0.46	2.16	4
		1150	1.63	0.56	1.1	1.47	1.08	2.2	1.36	1.33	2.2	1.25	1.57	3	1.15	1.81	3	1.01	2.04	4	0.91	2.27	4	0.79	2.49	4
		1300	1.95	0.63	1.1	1.79	1.22	2.2	1.69	1.50	3	1.58	1.78	3	1.48	2.05	4	1.33	2.31	4	1.24	2.56	4	1.11	2.81	5.5
		1450	2.27	0.70	1.1	2.11	1.36	2.2	2.01	1.68	3	1.90	1.98	3	1.80	2.28	4	1.65	2.57	4	1.56	2.86	5.5	1.43	3.13	5.5
		1600	2.60	0.77	1.5	2.43	1.50	3	2.33	1.85	3	2.22	2.19	4	2.12	2.52	4	1.97	2.84	5.5	1.88	3.15	5.5	1.75	3.46	5.5
		1750	2.92	0.85	1.5	2.75	1.64	3	2.65	2.02	4	2.54	2.39	4	2.44	2.75	5.5	2.29	3.11	5.5	2.20	3.45	5.5	2.07	3.78	7.5
YCSR 65V	65	850	2.09	0.66	1.1	1.91	1.28	2.2	1.80	1.58	3	1.68	1.87	3	1.55	2.15	4	1.41	2.42	4	1.26	2.69	5.5	1.09	2.95	5.5
		1000	2.60	0.78	1.5	2.43	1.51	3	1.32	1.86	3	2.19	2.20	4	2.07	2.53	4	1.92	2.85	5.5	1.77	3.16	5.5	1.60	3.47	5.5
		1150	3.12	0.89	1.5	2.95	1.73	3	2.84	2.14	4	2.71	2.53	4	2.58	2.91	5.5	2.44	3.28	5.5	2.29	3.64	5.5	2.12	3.99	7.5
		1300	3.64	1.01	2.2	3.46	1.96	3	3.35	2.41	4	3.23	2.86	5.5	3.10	3.29	5.5	2.96	3.71	7.5	2.81	4.11	7.5	2.64	4.51	7.5
		1450	4.15	1.13	2.2	3.98	2.19	4	3.87	2.69	5.5	3.74	3.19	5.5	3.62	3.67	7.5	3.47	4.13	7.5	3.32	4.59	7.5	3.15	5.03	11
		1600	4.67	1.24	2.2	4.50	2.41	4	4.39	2.97	5.5	4.26	3.52	5.5	4.13	4.05	7.5	3.99	4.56	7.5	3.84	5.06	11	3.64	5.55	11
		1750	5.19	1.36	2.2	5.01	2.64	4	4.90	3.25	5.5	4.78	3.85	7.5	4.65	4.42	7.5	4.51	4.99	7.5	4.36	5.54	11	4.19	6.08	11
YCSR 80V	80	850	3.24	1.12	1.5	2.83	2.14	3	2.60	2.62	4	2.36	3.08	5.5	2.10	3.52	5.5	1.83	3.94	7.5	1.54	4.34	7.5	1.23	4.73	7.5
		1000	4.14	1.32	1.5	3.73	2.52	4	3.50	3.08	5.5	3.26	3.62	5.5	3.00	4.14	7.5	2.73	4.63	7.5	2.44	5.11	7.5	2.13	5.57	11
		1150	5.04	1.51	2.2	4.63	2.90	5.5	4.40	3.54	5.5	4.16	4.16	7.5	3.90	4.76	7.5	3.63	5.33	11	3.34	5.88	11	3.03	6.40	11
		1300	5.94	1.71	3	5.53	3.27	5.5	5.30	4.01	7.5	5.06	4.71	7.5	4.80	5.38	11	4.53	6.02	11	4.24	6.64	11	3.93	7.26	11
		1450	6.84	1.91	3	6.43	3.65	5.5	6.20	4.47	5.5	5.96	5.25	7.5	5.70	6.00	7.5	5.43	6.72	11	5.14	7.41	11	4.83	8.08	11
		1600	7.74	2.11	3	7.33	4.03	5.5	7.10	4.93	7.5	6.86	5.79	1	6.60	6.62	11	6.33	7.41	11	6.04	8.80	11	5.73	8.91	11
		1750	8.64	2.30	4	8.23	4.41	7.5	8.00	5.39	7.5	7.76	6.33	7.5	7.50	7.24	11	7.23	8.11	11	6.94	8.94	11	6.63	9.75	15
YCSR 100V	100	850	5.79	1.57	2.2	5.19	3.00	4	4.85	3.67	5.5	4.48	4.31	5.5	4.09	4.92	7.5	3.67	5.51	7.5	3.22	6.08	7.5	2.74	6.63	11
		1000	7.05	1.84	3	6.45	3.53	5.5	6.11	4.31	5.5	5.74	5.07	7.5	5.35	5.79	7.5	4.93	6.49	7.5	4.48	7.15	11	4.00	7.80	11
		1150	8.30	2.12	3	7.71	4.05	5.5	7.37	4.96	7.5	7.00	5.83	7.5	6.61	6.66	11	6.19	7.46	11	5.74	8.23	11	5.26	8.97	11
		1300	9.57	2.40	4	8.97	4.58	5.5	8.63	5.61	7.5	8.26	6.59	11	7.87	7.53	11	7.45	8.43	11	7.00	9.30	11	6.52	10.14	15
		1450	10.83	2.67	4	10.23	5.11	7.5	9.89	6.25	11	9.52	7.35	11	9.13	8.40	11	8.71	9.41	11	8.26	10.37	15	7.78	11.31	15
		1600	12.09	2.95	4	11.49	5.64	7.5	11.15	6.90	11	10.78	8.11	11	10.39	9.27	11	9.97	10.38	15	9.52	11.45	15	9.04	12.47	15
		1750	13.35	3.23	5.5	12.75	6.17	7.5	12.41	7.55	11	12.04	8.87	11	11.65	10.14	15	11.23	11.35	15	10.78	12.52	15	10.30	13.64	18.5
YCSR 125V	125A	750	8.13	2.05	3	7.35	3.91	5.5	6.93	4.79	7.5	6.48	5.63	7.5	6.01	6.43	11	5.53	7.20	11	5.00	7.94	11	4.46	8.66	11
		900	10.02	2.46	4	9.24	4.70	7.5	8.82	5.75	7.5	8.37	6.75	11	7.90	7.72	11	7.42	8.64	11	6.89	9.53	11	6.35	10.39	15
		1050	11.91	2.86	4	11.13	5.48	7.5	10.71	6.70	11	10.26	7.88	11	9.79	9.00	11	9.31	10.08	15	8.78	11.12	15	8.26	12.12	15
		1200	13.80	3.27	5.5	13.02	6.26	7.5	12.60	7.66	11	12.15	9.00	11	11.68	10.29	15	11.20	11.52	15	10.67	12.71	15	10.13	13.85	18.5
		1350	15.69	3.68	5.5	14.91	7.04	11	14.49	8.62	11	14.04	10.13	15	13.57	11.57	15	13.09	12.96	15	12.56	14.30	18.5	12.02	15.59	18.5
		1500	17.58	4.09	5.5	16.80	7.83	11	16.38	9.58	11	15.93	11.25	15	15.46	12.86	15	14.98	14.40	18.5	14.45	15.89	18.5	13.91	17.32	22
		1650	19.47	4.50	7.5	18.69	8.61	11	18.27	10.53	15	17.82	12.38	15	17.35	14.14	18.5	16.87	15.84	18.5	16.34	17.48	22	15.80	19.05	22
	125B	750	10.29	2.59	4	9.30	4.96	7.5	8.78	6.06	11	8.20	7.13	11	7.61	8.14	11	7.01	9.12	11	6.34	10.06	15	5.65	10.97	15
		900	12.69	3.11	5.5	11.70	5.95	11	11.17	7.28	11	10.60	8.55	11	10.01	9.77	11	9.40	10.95	15	8.73	12.07	15	8.04	13.16	15
		1050	15.08	3.63	5.5	14.09	6.94	11	13.57	8.49	11	12.99	9.98	5	12.40	11.40	15	11.79	12.77	15	11.12	14.09	18.5	10.44	15.35	18.5
		1200	17.48	4.15	5.5	16.49	7.93	11	15.96	9.70	11	15.39	11.40	15	14.79	13.03	15	14.19	14.59	18.5	13.52	16.10	18.5	12.83	17.55	22
		1350	19.87	4.66	5.5	18.88	8.92	11	18.35	10.92	15	17.78	12.83	15	17.19	14.66	18.5	16.58	6.42	18.5	15.91	18.11	22	15.23	19.74	22
		1500	22.26	5.18	7.5	21.27	9.91	11	20.75	12.13	15	20.17	14.25	18.5	19.58	16.29	18.5	18.98	18.24	22	18.31	20.12	30	17.62	21.93	30
		1650	24.66	5.70	7.5	23.67	10.90	15	23.14	13.34	15	22.57	15.68	18.5	21.98	17.92	22	21.37	20.07	30	20.70	22.14	30	20.01	24.13	30

Vacuum blower (pump) performance parameter table

TYPE	BORE	RPM	DISCHARGE PRESSURE (KGF/M ³)																							
			Inlet Flow Qs (M ³ /MIN) Shaft Power La (kw) Motor Power Po (kw)																							
			- 9.8KPA			- 19.6KPA			- 24.5KPA			- 29.4KPA			- 34.3KPA			- 39.2KPA			- 44.1KPA			- 49KPA		
QS	LA	PO	QS	LA	PO	QS	LA	PO	QS	LA	PO	QS	LA	PO	QS	LA	PO	QS	LA	PO	QS	LA	PO	QS	LA	PO
YCSR 150V	150	750	13.32	3.34	4	12.55	6.39	11	12.14	7.82	11	11.69	9.19	11	11.20	10.50	15	10.68	11.76	15	10.13	12.97	15	9.55	14.14	18.5
		900	16.40	4.01	5.5	15.64	7.67	11	15.23	9.38	11	14.78	11.03	15	14.28	12.60	15	13.77	14.11	18.5	13.21	15.57	18.5	12.64	16.97	22
		1050	19.49	4.68	7.5	18.73	8.95	11	18.32	10.95	15	17.86	12.86	15	17.37	14.70	18.5	16.86	14.47	18.5	16.30	18.16	22	15.72	19.80	22
		1200	22.58	5.35	7.5	21.81	10.23	15	21.40	12.51	15	20.95	14.70	18.5	20.46	16.80	18.5	19.94	18.82	22	19.39	20.76	30	18.81	22.62	30
		1350	25.66	6.02	11	24.90	11.50	15	24.49	14.07	18.5	24.04	16.54	18.5	23.54	18.90	22	23.03	21.17	30	22.47	23.35	30	21.90	25.45	30
		1500	28.75	6.68	11	27.99	12.78	15	27.58	15.64	18.5	27.12	18.38	22	26.63	21.00	30	26.12	23.52	30	25.56	25.95	30	24.98	28.28	37
		1650	31.84	7.35	11	31.08	14.06	18.5	30.66	17.20	22	30.21	20.21	30	29.72	23.10	30	29.20	25.88	30	28.65	28.54	37	28.07	31.11	37
YCSR 200V	200	600	17.01	4.84	7.5	15.99	9.27	11	15.42	11.34	15	14.86	13.32	15	14.21	15.23	18.5	13.49	17.06	22	12.78	18.82	22	11.98	20.51	30
		750	22.68	6.05	7.5	21.66	11.58	15	21.09	14.17	18.5	20.59	16.65	18.5	19.88	19.04	22	19.16	21.32	30	18.45	23.52	30	17.65	25.64	30
		900	28.35	7.27	11	27.33	13.90	1.5	26.76	17.01	22	26.20	19.98	22	25.55	22.84	30	24.83	25.59	30	24.12	28.23	37	23.32	30.77	37
		1050	34.02	8.48	11	33.00	16.22	22	32.43	19.84	22	31.87	23.32	30	31.22	26.65	30	30.50	29.85	37	29.79	32.93	37	28.99	35.89	45
		1200	39.69	9.69	11	38.67	18.53	22	38.10	22.67	30	37.54	26.65	30	36.89	30.46	37	36.17	34.12	45	35.46	37.64	45	34.66	41.02	55
		1350	45.36	10.90	15	44.34	20.85	30	43.77	25.51	30	43.21	29.98	37	42.56	34.26	37	41.84	38.38	45	41.13	42.34	55	40.33	46.15	55
		1500	51.03	12.11	15	50.01	23.17	30	49.44	28.34	37	48.88	33.31	37	48.23	38.07	45	47.51	42.65	55	46.80	47.05	55	46.00	51.28	75
YCSR 250V	250A	600	27.72	7.40	11	26.22	14.16	18.5	25.35	17.32	22	24.43	20.35	22	23.45	23.27	30	22.35	26.06	30	21.19	28.75	37	19.98	31.34	37
		750	36.38	9.25	11	34.88	17.70	22	34.01	21.65	30	33.09	25.44	30	32.11	29.08	37	31.01	32.58	37	29.86	35.94	45	28.64	39.17	45
		900	45.05	11.10	15	43.54	21.24	30	42.68	25.98	30	41.75	30.53	37	40.77	34.90	45	39.67	39.09	45	38.52	43.13	55	37.31	47.01	55
		1050	53.71	12.95	18.5	52.21	24.77	30	51.34	30.31	37	50.42	35.62	45	49.43	40.72	45	48.34	45.61	55	47.18	50.31	55	45.97	54.84	75
		1200	62.37	14.80	18.5	60.87	28.31	37	60.00	34.64	45	59.08	40.71	45	58.10	46.53	55	57.00	52.12	75	55.84	57.50	75	54.63	62.67	75
		1350	71.03	16.65	18.5	69.53	31.85	37	68.66	38.97	45	67.74	45.80	55	66.76	52.35	75	65.66	58.64	75	64.51	64.69	75	63.29	70.51	75
		1500	79.70	18.50	22	78.19	35.39	45	77.33	43.30	55	76.40	50.89	55	75.42	58.16	75	74.32	65.16	75	73.17	71.88	90	71.96	78.34	90
	250B	600	39.31	10.34	15	37.13	17.81	22	35.63	21.47	30	34.37	25.13	30	33.01	28.89	37	31.74	32.48	37	30.37	35.83	45	28.82	39.97	45
		750	50.78	12.92	15	48.60	22.26	30	47.09	26.84	30	45.84	31.41	37	44.48	36.12	45	43.21	40.59	45	41.83	44.78	55	40.29	49.97	55
		900	62.25	15.50	22	60.07	26.72	30	58.56	32.21	37	57.31	37.70	45	55.95	43.34	55	54.68	48.71	55	53.30	53.74	75	51.76	59.96	75
		1050	73.71	18.09	22	71.53	31.17	37	70.03	37.57	45	68.77	43.98	55	67.41	50.57	55	66.14	56.83	75	64.77	62.70	75	63.22	69.95	75
		1200	85.18	20.67	30	83.00	35.62	45	81.50	42.94	55	80.24	50.26	55	78.88	57.79	75	77.61	64.95	75	76.24	71.65	90	74.69	79.95	90
		1350	96.65	23.26	30	94.47	40.07	45	92.96	48.31	55	91.71	56.55	75	90.35	65.01	75	89.08	73.07	90	87.70	80.61	90	86.16	89.94	110
		1500	108.10	25.84	30	105.90	44.53	55	104.40	53.68	75	103.20	62.83	75	101.80	72.24	90	100.50	81.19	90	99.17	89.57	110	97.63	99.93	110
YCSR 300V	300	600	58.94	14.25	18.5	56.27	27.26	30	54.82	33.35	37	53.15	39.19	45	51.49	448.00	55	49.71	50.18	55	47.70	55.36	75	45.70	60.34	75
		750	75.62	17.81	22	72.95	34.07	37	71.50	41.69	55	69.83	48.99	55	68.17	56.00	75	66.39	62.72	75	64.38	69.20	75	63.38	75.42	90
		900	92.30	21.38	30	89.63	40.89	45	88.18	50.02	55	86.51	58.79	75	84.85	67.20	75	83.07	75.27	90	81.06	83.04	90	79.06	90.51	110
		1050	109.00	24.94	30	106.30	47.70	55	104.90	58.36	75	103.20	68.58	75	101.50	78.40	90	99.75	87.81	110	97.74	96.88	110	95.74	96.88	110
		1200	125.70	28.50	37	123.00	54.52	75	121.50	66.70	75	119.90	78.38	90	118.20	89.60	110	116.40	100.40	110	114.40	110.70	132	112.40	120.70	132
		1350	142.30	32.06	37	139.70	61.33	75	138.20	75.04	90	136.60	88.18	110	134.90	100.80	110	133.10	112.90	132	131.10	124.60	132	129.10	135.80	160
		1500	159.00	35.63	45	156.30	68.15	75	154.90	83.37	90	153.20	97.98	132	151.60	112.00	132	149.80	125.40	132	147.80	138.40	160	145.80	150.80	160

Three-Lobe Roots Blower Performance Parameter Table (Direct Drive)

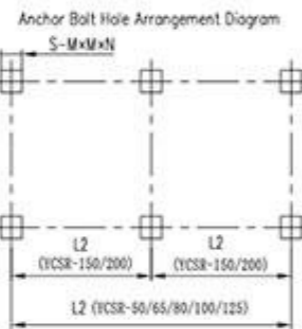
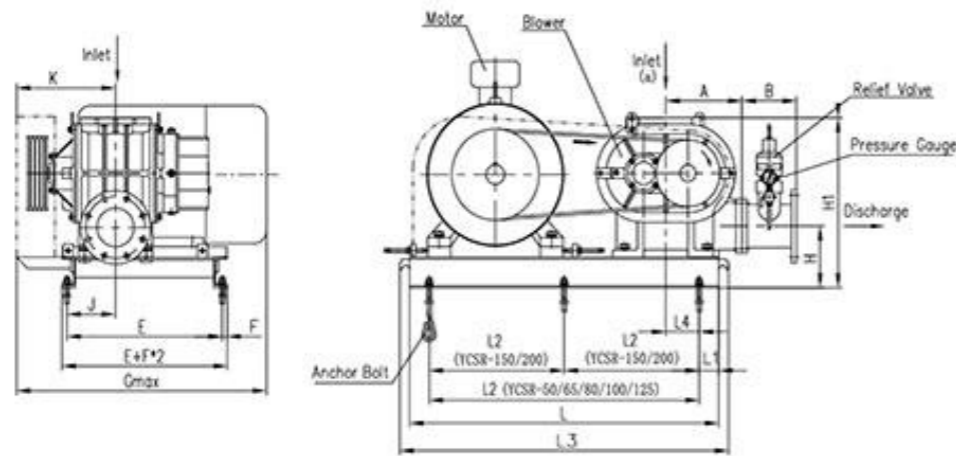
TYPE	BORE	RPM	DISCHARGE PRESSURE (KGF/M ³)																											
			Inlet Flow Qs (M ³ /MIN) Shaft Power La (kw) Motor Power Po (kw)																											
			9.8KPA			19.6KPA			29.4KPA			39.2KPA			49KPA			58.8KPA			68.6KPA			78.4KPA						
QS	LA	PO	QS	LA	PO	QS	LA	PO	QS	LA	PO	QS	LA	PO	QS	LA	PO	QS	LA	PO	QS	LA	PO	QS	LA	PO				
YCSR 50D	50	1400	1.55	0.57	0.75	1.33	0.91	1.1	1.17	1.24	1.5	1.03	1.58	2.2	0.90	1.92	2.2	0.79	2.26	3										
YCSR 65D	65A	1400	2.27	0.69	1.1	2.03	1.16	1.5	1.84	1.62	2.2	1.69	2.09	3	1.55	2.55	3	1.42	3.02	4										
	65B	1400	2.94	0.82	1.1	2.65	1.41	2.2	2.43	2.00	3	2.24	2.60	4	2.07	3.20	4	1.92	3.79	5.5	1.77	4.38	5.5							
YCSR 80D	80	1440	4.62	1.25	1.5	4.25	2.15	3	3.96	3.05	4	3.72	3.95	5.5	3.50	4.85	5.5	3.31	5.75	7.5	3.12	6.65	7.5							
YCSR 100D	100	1440	6.52	2.03	3	6.16	3.23	4	5.89	4.44	5.5	5.66	5.64	7.5	5.45	6.85	11	5.26	8.05	11	5.09	9.26	11	4.93	10.46	15				
YCSR 125D	125	1440	9.53	2.59	3	9.10	4.28	5.5	8.78	5.98	7.5	8.50	7.67	11	8.26	9.37	11	8.04	11.07	15	7.80	12.76	15	7.91	14.46	18.5				
YCSR 150D	150A	1460	19.42	5.47	7.5	18.70	8.91	11	18.15	12.34	15	17.68	15.78	18.5	17.27	19.21	22	16.89	22.64	30	16.51	26.08	30	16.28	29.51	37				
		150B	980	16.27	4.23	5.5	15.46	7.20	11	14.84	10.18	15	14.31	13.15	15	13.85	16.13	18.5	13.43	19.11	22	13.04	22.08	30	12.68	25.06	30			
			1470	25.44	7.38	11	24.65	11.84	15	24.04	16.31	18.5	23.53	20.77	30	23.08	25.24	30	22.67	29.70	37	22.29	34.17	45	21.94	38.64	45			
YCSR 200D	200A	980	21.18	4.64	7.5	20.20	8.49	11	19.45	12.33	15	18.82	16.18	22	18.26	20.02	30	17.75	23.86	30	17.24	27.70	37							
		1470	32.94	8.06	11	31.97	13.82	18.5	31.22	19.59	30	30.58	25.36	30	30.02	31.12	37	29.52	36.89	45	29.02	42.66	55							
	200B	980	32.35	8.65	11	30.79	14.63	18.5	29.73	20.58	30	28.63	26.62	30	27.87	32.66	37	26.92	38.73	45	26.04	45.18	55							
		1470	51.17	15.11	18.5	49.61	24.45	30	48.55	33.64	37	47.46	42.94	55	46.69	52.14	75	45.74	61.50	75	44.86	71.75	90							

Vacuum Blower (Pump) Performance Parameter Table (Direct Drive)

TYPE	BORE	RPM	DISCHARGE PRESSURE (KGF/M ³)																											
			Inlet Flow Qs (M ³ /MIN) Shaft Power La (kw) Motor Power Po (kw)																											
			- 9.8KPA			- 19.6KPA			- 24.5KPA			- 29.4KPA			- 34.3KPA			- 39.2KPA			- 44.1KPA			- 49KPA						
QS	LA	PO	QS	LA	PO	QS	LA	PO	QS	LA	PO	QS	LA	PO	QS	LA	PO	QS	LA	PO	QS	LA	PO	QS	LA	PO				
YCSR 50VD	50	1400	1.52	0.57	0.75	1.25	0.91	1.1	1.12	1.07	1.5	0.99	1.24	1.5	0.86	1.41	2.2													
YCSR 65VD	65A	1400	2.24	0.69	1.1	1.93	1.16	1.5	1.79	1.39	2.2	1.65	1.62	2.2	1.50	1.86	2.2	1.35	2.09	3										
	65B	1400	2.91	0.83	1.1	2.54	1.43	2.2	2.37	1.73	2.2	2.20	2.02	3	2.02	2.33	3	1.84	2.62	4										
YCSR 80VD	80	1440	4.57	1.25	1.5	4.10	2.15	3	3.88	2.60	3	3.67	3.05	4	3.45	3.50	4	3.22	3.95	5.5	2.97	4.40	5.5							
YCSR100VD	100	1440	6.52	2.03	3	6.10	3.23	4	5.90	3.83	5.5	5.70	4.44	5.5	5.49	5.04	7.5	5.28	5.64	7.5	5.05	6.24	7.5	4.80	6.85	11				
YCSR120VD	125	1440	9.40	2.59	3	8.87	4.28	5.5	8.62	5.13	7.5	8.37	5.98	7.5	8.12	6.83	11	7.86	7.67	11	7.58	8.52	11	7.28	9.37	11				
YCSR 150VD	150A	1460	19.33	5.47	7.5	18.42	8.91	11	18.00	10.62	15	17.58	12.34	15	17.15	14.06	18.5	16.71	15.78	18.5	16.24	17.49	22	15.73	19.21	22				
		150B	980	16.17	4.23	5.5	15.15	7.20	11	14.67	8.69	11	14.20	10.18	15	13.71	11.67	15	13.20	13.16	15	12.66	14.65	18.5	12.08	16.14	18.5			
			1470	25.34	7.38	11	24.34	11.84	15	23.88	14.07	18.5	23.41	16.31	18.5	22.94	18.54	22	22.45	20.77	30	21.92	23.01	30	21.35	25.24	30			
YCSR 200VD	200A	980	21.06	4.64	7.5	19.82	8.49	11	19.25	10.41	15	18.68	12.33	15	18.10	14.25	18.5	17.50	16.18	22	16.86	18.10	22	16.18	20.02	30				
		1470	32.82	8.06	11	31.59	13.82	18.5	31.02	16.71	22	30.45	19.59	30	29.87	22.47	30	29.27	25.36	30	28.63	28.24	37	27.94	31.12	37				
	200B	980	32.07	8.65	11	30.02	14.63	18.5	29.35	17.15	22	28.29	20.58	30	27.58	23.29	30	26.47	26.62	30	25.30	29.40	37							
		1470	50.89	15.11	18.5	48.84	24.45	30	48.17	28.03	37	47.11	33.64	37	46.40	37.58	45	45.29	42.94	55	44.12	46.93	55	42.49	52.14	75				

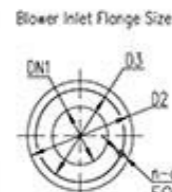
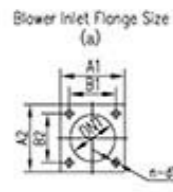
V. Product Outline Drawing

Belt Drive Three Lobe Roots Blower Outline Drawing
(Positive Pressure Application)



Anchor Bolt Type

Blower Type	Anchor Bolt Type
YCSR 50	M12×250
YCSR 65	M12×250
YCSR 80	M12×250
YCSR 100	M16×300
YCSR 125	M16×300
YCSR 150	M16×300
YCSR 200	M16×300

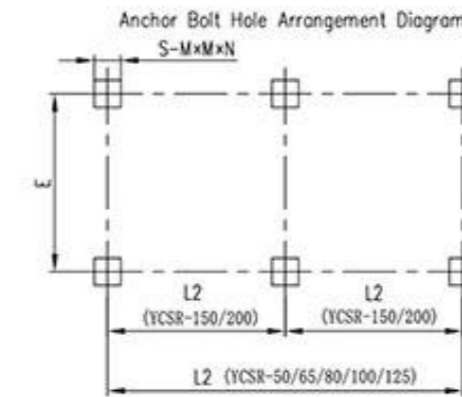
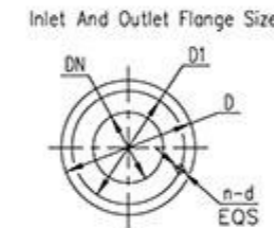
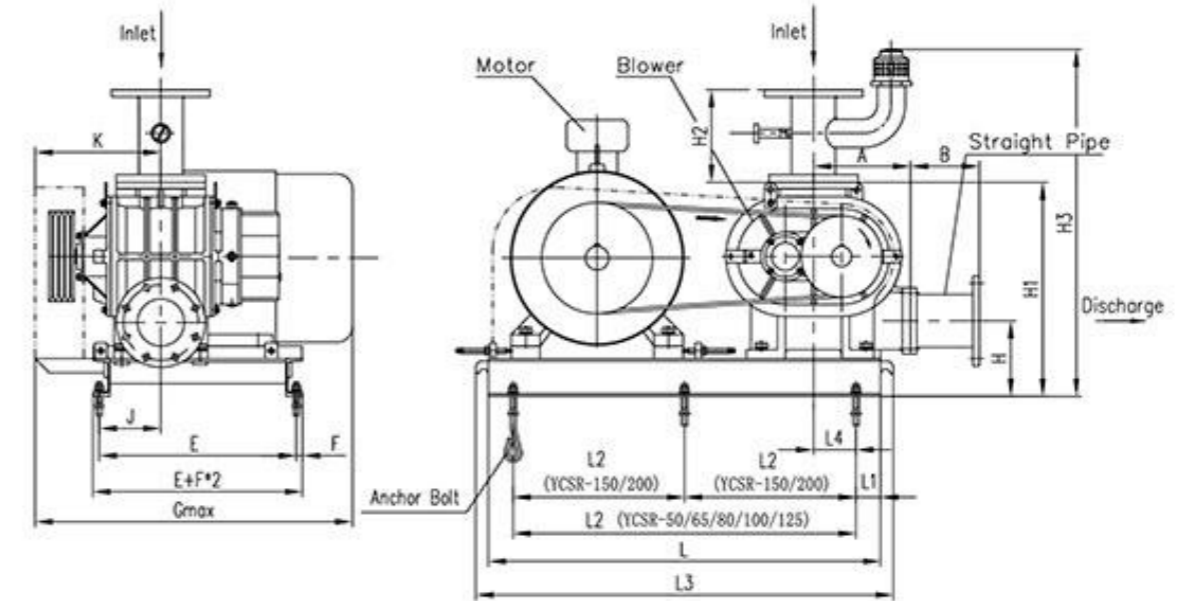


Note: The import muffler is removed in this drawing

Blower Type	A	B	E	F	Gmax	J	K	L	L1	L2	L3	L4	H	H1	n-d	DN	D1	D	S	M	N	DN1	A1	A2	B1	B2	D2	D3	n-d1	Unit Weight (kg) (Without Motor)
YCSR 50	170	140	387	14	545	102	221	730	110	510	810	0	145	350	4-φ18	50	φ125	φ165	4	120	400	50	100	80	75	60			4-M10	85
YCSR 65	170	150	387	14	550	102	221	730	110	510	810	0	150	355	4-φ18	65	φ145	φ185	4	120	400	65	110	110	80	80			4-M10	95
YCSR 80	180	180	417	14	650	111	250	795	112.5	570	875	19	165	400	8-φ18	80	φ160	φ200	4	120	400	80	152	152	100	114			4-M12	145
YCSR 100	220	180	470	20	740	125	295	910	125	660	990	39.5	190	475	8-φ18	100	φ180	φ220	4	150	500	100	180	135	130	80			4-M16	200
YCSR 125	220	220	470	20	815	125	295	910	125	660	990	39.5	190	475	8-φ18	125	φ210	φ250	4	150	500	100	180	180	130	130			4-M16	215
YCSR 150	260	220	545	20	880	215	360	1020	110	400	1100	87	225	580	8-φ22	150	φ240	φ285	6	150	500	125				250	210		8-M16	340
YCSR 200	310	250	630	20	1000	196	402	1255	127.5	500	1335	87.5	235	660	8-φ22	200	φ295	φ340	6	150	500	150				285	240		8-M20	500

Note: ① The detailed dimensions are subject to the delivered drawings
② The size of the large fan base depends on the size of the motor

Belt Drive Three Lobe Roots Blower Outline Drawing
(Vacuum Application)



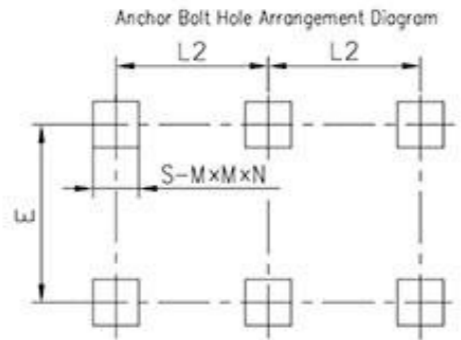
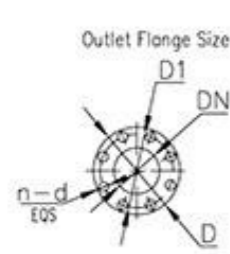
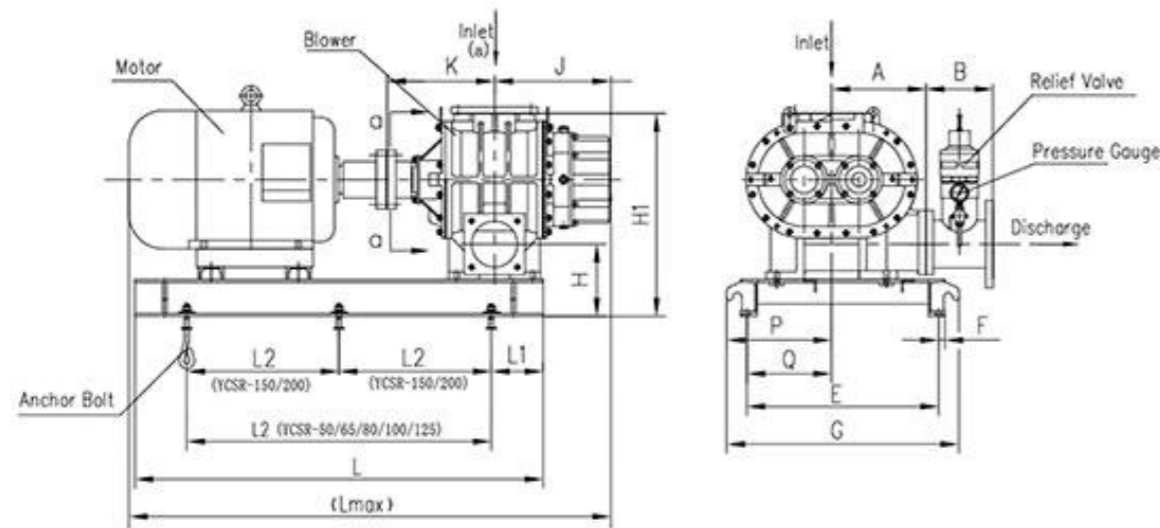
Anchor Bolt Type

Blower Type	Anchor Bolt Type
YCSR 50	M12×250
YCSR 65	M12×250
YCSR 80	M12×250
YCSR 100	M16×300
YCSR 125	M16×300
YCSR 150	M16×300
YCSR 200	M16×300

Blower Type	A	B	E	F	Gmax	J	K	L	L1	L2	L3	L4	H	H1	H2	H3	n-d	DN	D1	D	S	M	N	Unit Weight (kg) (Without Motor)
YCSR 50	170	120	387	14	545	102	221	730	110	510	810	0	145	350	160	632	4-φ18	50	φ125	φ165	4	120	400	80
YCSR 65	170	120	387	14	550	113	247	730	110	510	810	0	150	355	160	637	4-φ18	65	φ145	φ185	4	120	400	95
YCSR 80	180	120	417	14	650	111	250	795	112.5	570	875	19	165	400	180	692	8-φ18	80	φ160	φ200	4	120	400	130
YCSR 100	220	120	470	20	740	125	295	910	125	660	990	39.5	190	475	180	692	8-φ18	100	φ180	φ220	4	150	500	190
YCSR 125	220	160	470	20	815	125	295	910	125	660	990	39.5	190	475	220	877	8-φ18	125	φ210	φ250	4	150	500	200
YCSR 150	260	180	545	20	880	215	360	1020	110	400	1100	87	225	580	220	982	8-φ22	150	φ240	φ285	6	150	500	310
YCSR 200	310	180	630	20	1000	196	402	1255	127.5	500	1335	87.5	235	660	250	1077	8-φ22	200	φ295	φ340	6	150	500	480

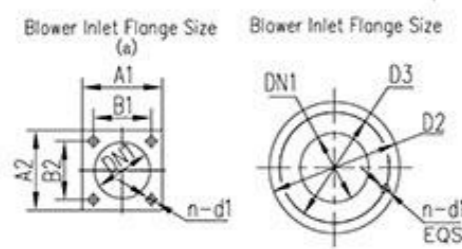
Note: ① The detailed dimensions are subject to the delivered drawings
② The size of the large fan base depends on the size of the motor

Direct Drive Three Lobe Roots Blower Outline Drawing
(Positive Pressure Application)



Anchor Bolt Type

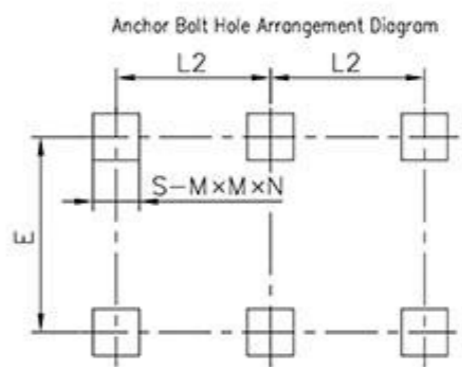
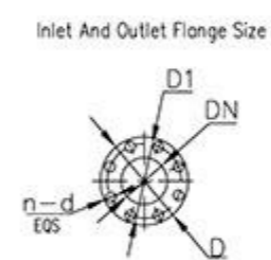
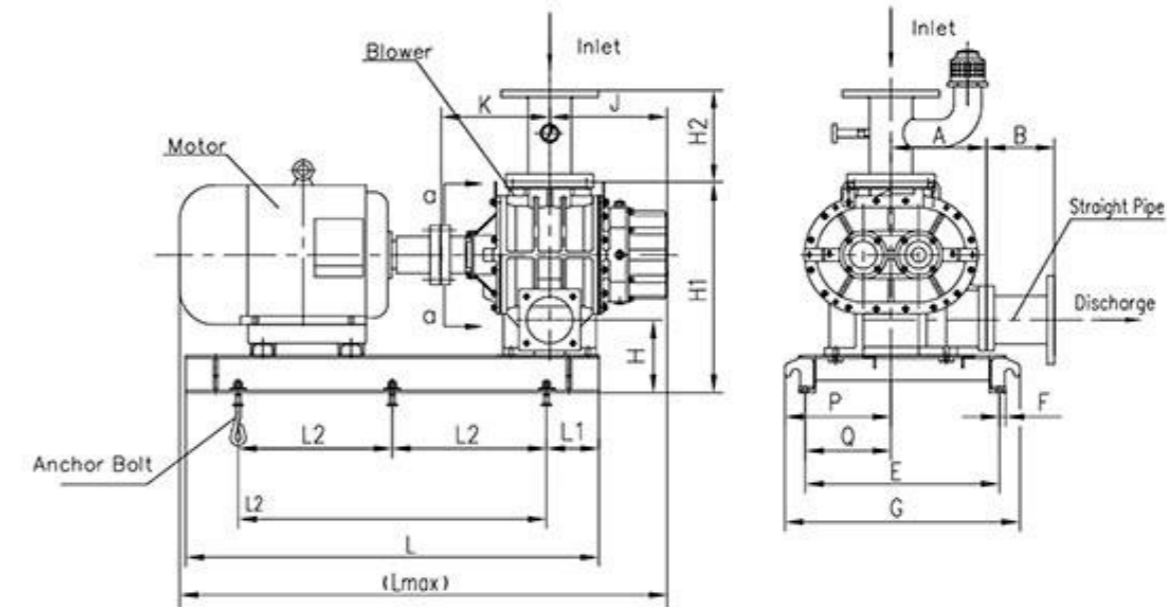
Blower Type	Anchor Bolt Type
YCSR 50	M12 x 250
YCSR 60	M12 x 250
YCSR 80	M12 x 250
YCSR 100	M16 x 300
YCSR 125	M16 x 300
YCSR 150	M16 x 300
YCSR 200	M16 x 300



Blower Type	A	B	E	F	G	J	K	L	L1	L2	Lmax	H	H1	P	Q	n-d	DN	D1	D	S	M	N	DN1	A1	A2	B1	B2	D2	D3	n-d1	Unit Weight (kg) (Without Motor)
YCSR 50	170	140	387	14	504	162	167	680	85	510	780	145	350	211.5	153.5	4-#18	50	125	116.5	4	120	400	50	80	100	60	75	4-M10	85		
YCSR 60	170	150	387	14	504	191	197	780	110	510	977	150	355	212	149.5	4-#18	65	145	118.5	4	120	400	65	110	110	80	80	4-M10	100		
YCSR 80	180	180	417	14	534	217	228	845	102.5	640	1080	165	400	216	157.5	8-#18	80	160	200	4	120	400	80	152	152	114	100	4-M12	145		
YCSR 100	220	180	470	20	590	235	250	910	85	740	1114	190	475	275	215	8-#18	100	180	220	4	150	500	100	135	180	80	130	4-M16	200		
YCSR 125	220	220	470	20	590	262	273	910	85	740	1195	190	475	275	215	8-#18	125	210	250	4	150	500	100	180	180	130	130	4-M16	215		
YCSR 150	260	220	545	20	685	332	331	1100	130	420	1465	225	580	300.5	230.5	8-#22	150	240	285	6	150	500	125	170	170	170	250	210	8-M16	335	
YCSR 200	310	250	630	20	762	377	373	1340	170	500	1667	235	660	324	258	8-#22	200	295	340	6	150	500	150	170	170	170	285	240	8-M20	470	

Note: ① The detailed dimensions are subject to the delivered drawings
② The size of the large fan base depends on the size of the motor

Direct Drive Three Lobe Roots Blower Outline Drawing
(Vacuum Application)



Anchor Bolt Type

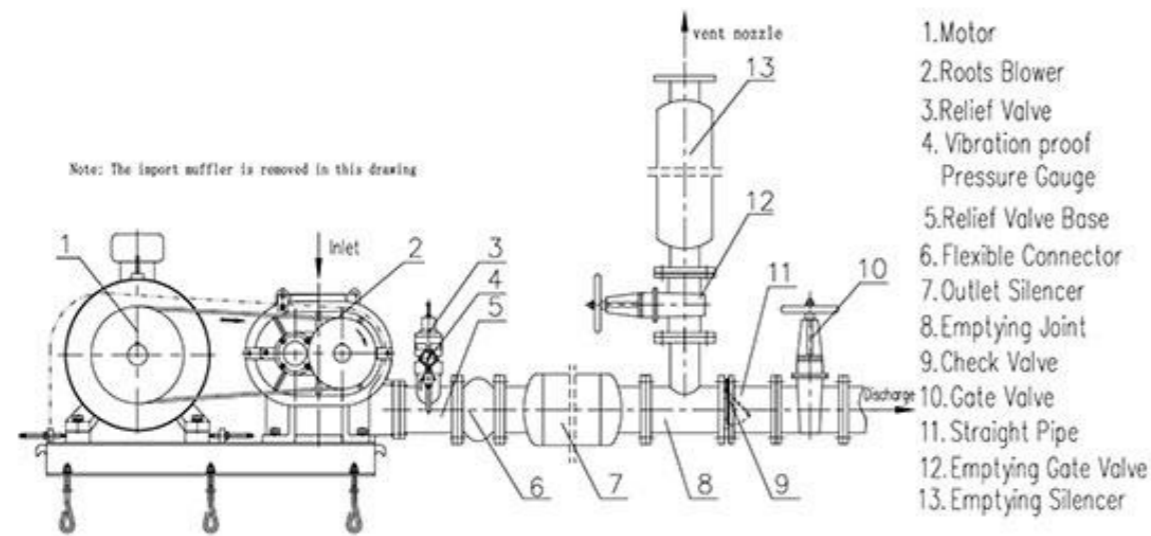
Blower Type	Anchor Bolt Type
YCSR 50	M12 x 250
YCSR 65	M12 x 250
YCSR 80	M12 x 250
YCSR 100	M16 x 300
YCSR 125	M16 x 300
YCSR 150	M16 x 300
YCSR 200	M16 x 300

Blower Type	A	B	E	F	G	J	K	L	L1	L2	Lmax	H	H1	H2	P	Q	n-d	DN	D1	D	S	M	N	Unit Weight (kg) (Without Motor)
YCSR 50	170	120	387	14	504	162	167	680	85	510	780	145	350	160	211.5	153.5	4-#18	50	125	116.5	4	120	400	80
YCSR 65	170	120	387	14	504	191	197	780	110	510	977	150	355	160	212	149.5	4-#18	65	145	118.5	4	120	400	95
YCSR 80	180	120	417	14	534	217	228	845	102.5	640	1080	165	400	180	216	157.5	8-#18	80	160	200	4	120	400	130
YCSR 100	220	120	470	20	590	235	250	910	85	740	1114	190	475	180	275	215	8-#18	100	180	220	4	150	500	190
YCSR 125	220	160	470	20	590	262	273	910	85	740	1195	190	475	220	275	215	8-#18	125	210	250	4	150	500	200
YCSR 150	260	180	545	20	685	332	331	1100	130	420	1465	225	580	220	300.5	230.5	8-#22	150	240	285	6	150	500	310
YCSR 200	310	180	630	20	762	377	373	1340	170	500	1667	235	660	250	324	258	8-#22	200	295	340	6	150	500	450

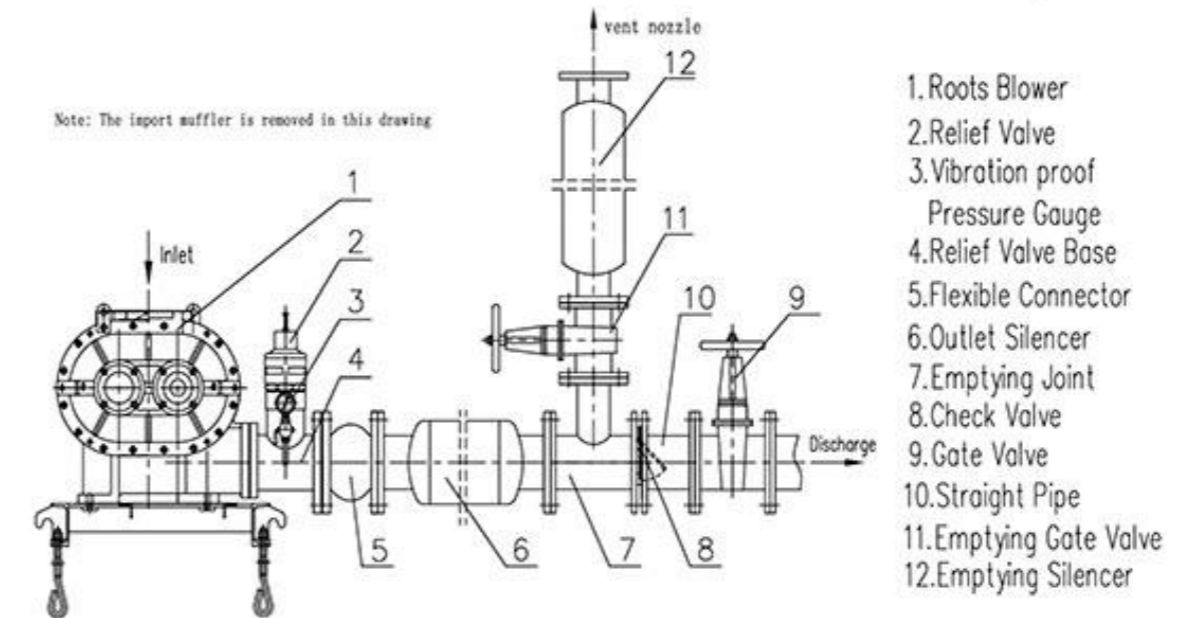
Note: ① The detailed dimensions are subject to the delivered drawings
② The size of the large fan base depends on the size of the motor

VI. Product Installation Abbreviated Drawing

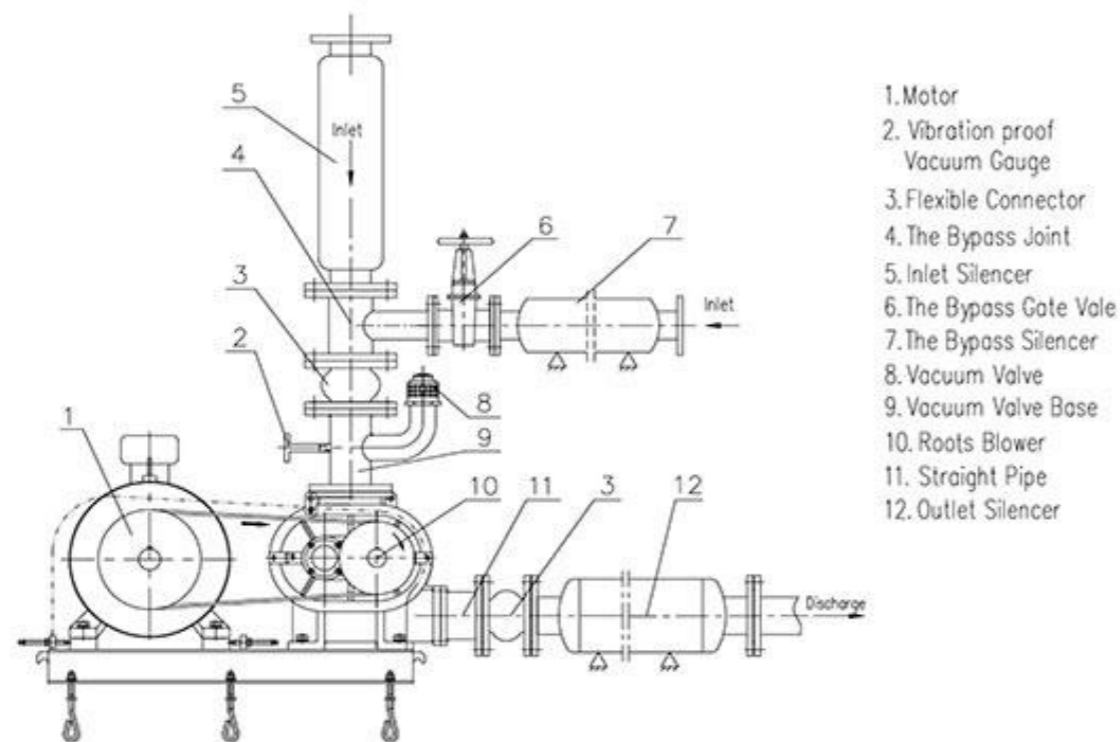
Belt Drive Roots Blower Installation Abbreviated Drawing



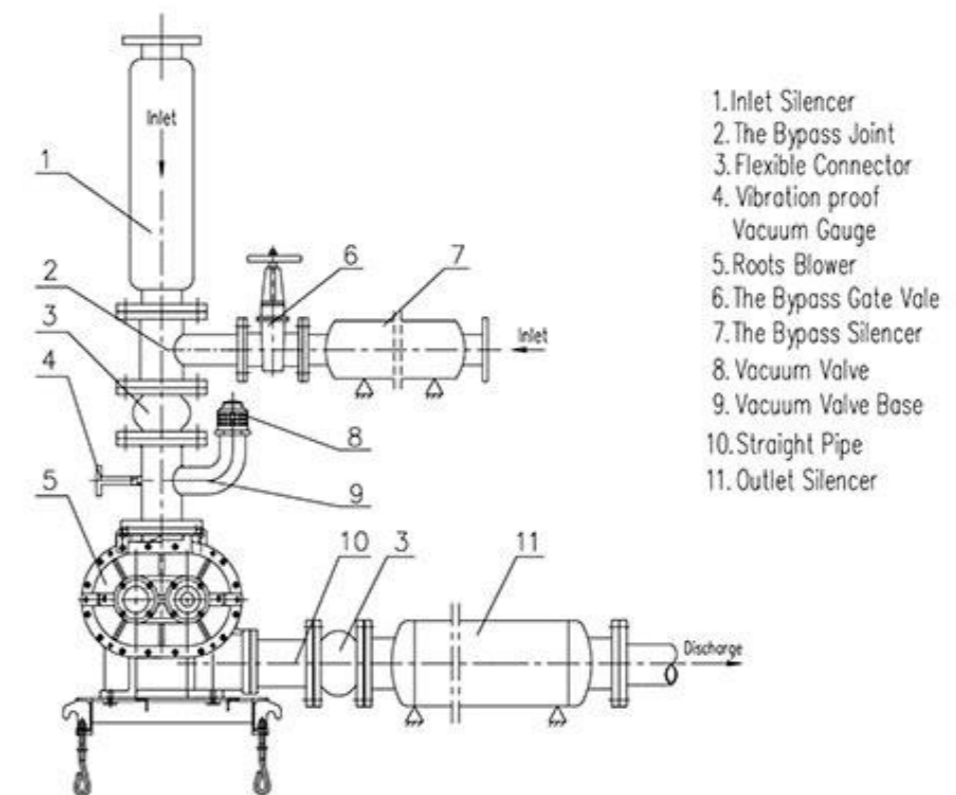
Direct Drive Roots Blower Installation Abbreviated Drawing



Belt Drive Vacuum Pump Installation Abbreviated Drawing



Direct Drive Vacuum Pump Installation Abbreviated Drawing



Corner of the company



Product instance

