RISAN

Risan Two-stage Compression Screw Air Compressor

Energy Saving, Low Noise and Reliable

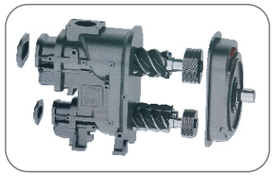
Introduction

Two-stage screw air compressor not only has the advantages of simple structure, flexible installation and high efficiency, but also highlights its own advantages of high efficiency and energy saving:

1. Can reduce the bearing load and increase the volumetric efficiency;
2. It can improve efficiency and save energy when running under partial load conditions.
   Two-stage screw air compressor can save up to 15% energy compared with double-screw air compressor. Each year, it can run for 8000 hours, saving about 28,000 usd per year in electricity costs.

Advantages of two-stage screw air compressor

1. Two stage compression to save compression work
Divide the process into two compression processes, can reduce the compression ratio of each single-stage, which can significantly reduce the power needed for compression.For ideal gas, the power required for single-stage compression is equal to the multi-stage compression. But in the actual compression process coupling transfer, bearing friction will cause useless work, Therefore, by reducing the compression ratio of each stage can reduce the useless work, so that multi-stage compression use less power than single-stage compression.
2. Intermediate oil cooling
Reduce the temperature of compressored air to next stage.When the air is compressed, the temperature will rises due to friction, temperature rise will increase the pressure of the gas and increases the compression ratio.It will need extra power to drive the device to compress the air to the desired pressure. Therefore, it provide intermediate oil cooling with the two-stage screw air compressor to reduce the temperature of compressored air to next stage.

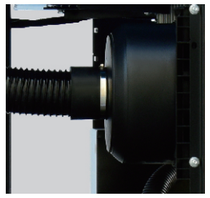


Two-stage Compression Screw Air Compressor Parameters

Parameter \ Model	RS20V-II	RS25V-II	RS30V-II	RS40V-II	RS50V-II	RS60V-II	RS75V-II	RS100V-II
Air delivery/ Discharge pressure (m^3/min)/Mpa	3/0.7	3.6/0.7	4.2/0.7	6.5/0.7	7.2/0.7	9.8/0.7	12.8/0.7	17.5/0.7
	2.9/0.8	3.5/0.8	4.1/0.8	6.4/0.8	7.1/0.8	9.7/0.8	12.5/0.8	16.5/0.8
	2.4/1.0	2.9/1.0	3.2/1.0	4.9/1.0	6.3/1.0	7.8/1.0	9.6/1.0	12.5/1.0
	2.2/1.2	2.5/1.3	3.2/1.3	4.2/1.3	5.4/1.3	6.5/1.2	8.6/1.3	11.2/1.3
Lubricating oil capacity (L)	18			30			65	
Noise dB(A)	68±2					72±2		
Driving mode	Direct link							
Power Supply	380V/50Hz Customizable							
Power (kw/hp)	15/20	18.5/25	22/30	30/40	37/50	45/60	55/75	75/100
Startup mode	Y–△ Start,Frequency conversion start							
Fan power(kw)	0.26	0.38	0.38	0.38	0.75	0.75	1.5	1.5
Fan air flow(m^3/min)	75	107	107	107	107	182	182	182
Safety Protection	Over Current Protection, Safety Valve, Relief Valve, High Discharge Temperature & Pressure Protection, Phase Loss/Phase Reverse/Phase Sequence Monitoring							
Size L mm	1480			1720			2100	
Size W mm	850			1110			1350	
Size H mm	1180			1480			1720	
Weight(kg)	780			1080			2080	
Output pipe diameter	G1–1/2			G2			G1–1/2	

Parameter \ Model	RS125V-II	RS150V-II	RS175V-II	RS200V-II	RS250V-II	RS270V-II	RS300V-II	RS350V-II
Air delivery/ Discharge pressure (m^3/min)/Mpa	20.8/0.7	24.5/0.7	30/0.7	34.5/0.7	41/0.7	44.6/0.7	48/0.7	55/0.7
	19.8/0.8	23.5/0.8	28/0.8	33.6/0.8	38.4/0.8	43/0.8	47/0.8	54/0.8
	16.9/1.0	19.7/1.0	23.5/1.0	30/1.0	32.5/1.0	38.5/1.0	41/1.0	46/1.0
	14.3/1.3	17.6/1.3	19.8/1.3	23.8/1.3	28.6/1.3	32.8/1.3	38/1.3	40/1.3
Lubricating oil capacity (L)	102	120			140	170		
Noise dB(A)	72±2			75±2			82±2	
Driving mode	Direct link							
Power Supply	380V/50Hz Customizable							
Power (kw/hp)	90/125	110/150	132/175	160/200	185/250	200/270	220/300	250/350
Startup mode	Y–△ Start,Frequency conversion start							
Fan power(kw)	2.2	0.75*2	0.75*2	Customized				
Fan air flow(m^3/min)	270	500	500	Customized				
Safety Protection	Over Current Protection, Safety Valve, Relief Valve, High Discharge Temperature & Pressure Protection, Phase Loss/Phase Reverse/Phase Sequence Monitoring							
Size L mm	2460		2900		3800			
Size W mm	1700		1800		1980			
Size H mm	1900		2020		2150			
Weight(kg)	3280	3480	3980	4280	5450	5600	6500	6600
Output pipe diameter	DN65		DN80		Dn100		Dn125	

INTERNAL IMAGE OF PRODUCT



High Efficient Oil Filtration System

The high-precision oil filter system effectively filters out impurities and oil deteriorating substances in the lubricating oil to protect reliable operation of the compressor and ensure a long lifespan.

Heavy-duty Air Intake Filter

Heavy-duty filter and high-quality filter element;

Large diameter amd low pressure drop design air-intake capacity control valve, optimizes the suction efficiency and reduces energy consumption.

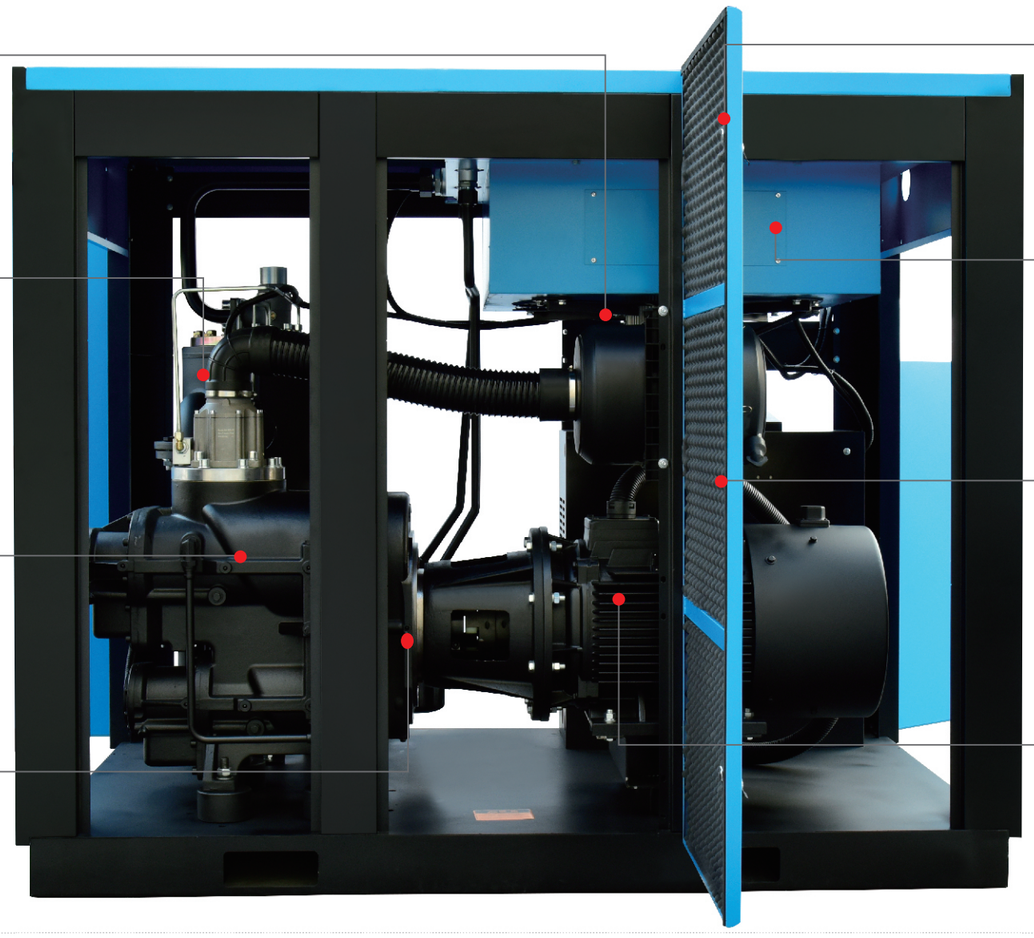
Superior Two Stage Airend

Two stage compression to save compression work.

Divide the process into two compression processes, can reduce the compression ratio of each single-stage, which can significantly reduce the power needed for compression.

Heavy-duty Oil-gas Separator

High efficiency oil and gas separation system, with large size oil air separator element and oil return device, reduce the flow velocity of the compressed air and reduce the oil content in the discharge

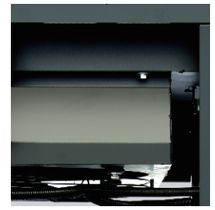


Industrial Integrated Circuit, Anti-electromagnetic Interference

User-friendly operation interface, real-time monitoring, provid important information alarm, storage, query functions. Use industrial RS485 communication interface and MODBUS protocol to communicate with the host.

Robust cooling system

Use heavy-duty low temperature difference (6-8°C) oil cooler and air cooler, unique structural design and reasonable layout, equipped with temperature control cooling fan, to achieve optimal oil temperature control, extended 30% lubricant life time. Ensures the heat dissipation of all components and electrical equipment inside the machine, making the compressor's exhaust temperature lower and perform better.

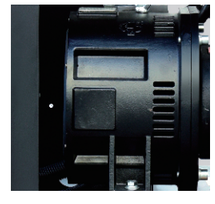


High-quality Motor And Electric Control System

Class F insulation high efficiency motor, with superior SKF bearings and world-renowned high quality electrical components, meet CE, UL and CAS standards.

Permanent Magnet Frequency Conversion Motor

Automatic power consumption control for energy-saving can significantly reduce operating costs by up to 35%



The Advantages of Permanent Magnet Variable Frequency Screw Air Compressor Compared to Ordinary Screw Air Compressor

Reduced Energy Consumption

By the variable frequency speed control technology, the air compressor can start and stop for unlimited times, achieving 0-100% stepless speed change.

The compressor's displacement can be perfectly combined with the user's air requirement (the air discharge will change by the speed of motor). Compared with common screw air compressors, it saves electricity by about 30%.

Extend the Lifespan of The Compressor

The inverter will start the compressor from idle to full load, and its starting acceleration will gradually increase (effectively reducing the peak value of the starting current to a minimum). This reduces the impact on the electrical and mechanical components of the compressor at start-up, enhances system reliability, and extends the lifespan of the compressor.

Reduce Operating Costs

The cost of a compressors consists of three parts: initial purchasing costs, maintenance costs, and energy costs. Among them, energy costs account for approximately 80% of the compressor costs, and maintenance and procurement costs account for 20%. With frequency conversion, energy costs are reduced by more than 30%. In addition, the impact on the equipment after the frequency conversion start is reduced, and the repair and maintenance amount also decrease, so the operating cost will be greatly reduced.

Reduces the Noise of The Air Compressor

The speed of motor will decrease when the air requirement reduce, can effectively reducing the noise of the air compressor by about 3 to 7 dB.

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Laser Cutting All-In-One compressor Screw Air Compressor

High efficiency, High integration; Energy saving, Space saving

Laser Cutting all-in-one compressor

-Closer to the gas point

The pressure loss of the small compressor on the pipe is very obvious, all-in-one series bid farewell to the traditional pipeline system layout, plug and play, closer to the gas point, and reduce this part of the loss. Provide continuous constant pressure air supply to improve work efficiency.

-High Efficiency

The third generation of high efficiency machine head, advanced tooth shape, five teeth of main rotor, six teeth of secondary rotor, compared with the traditional four pairs of six teeth, improve the efficiency of 10%-20%, improve the compression efficiency.Low noise, low vibration, long life.

-High Configuration

High performance air dryer with imported precision filter, stable performance, reliable operation, reduce pressure difference, reduce loss.The output of high quality compressed air, better protection of laser cutting lens and cutter head.
To provide customers with professional air solutions.

-High-Integration

Modular structure design, compact and beautiful, easy to maintain.High reliability, high efficiency and low noise.
Smaller area, easier to install, provide customers more ideal practical environment, save more space.

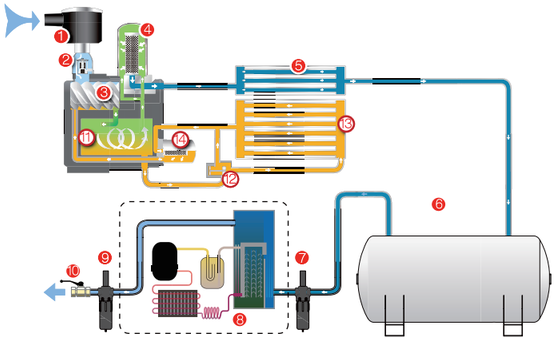
Flow Diagram

Gas system

1. air filter
2. intake valve
3.airend
4.oil gas separator
5.cooler
6. air tank (can choose)
7.precision filter (can choose)
8. air dryer(can choose)
9.rear precision filter (can choose)
10.air outlet

Oil system

11.oil gas tank
12.thermal control valve
13.oil cooler
14.oil filter



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Permanent Magnet Variable Frequency
Screw Air Compressor

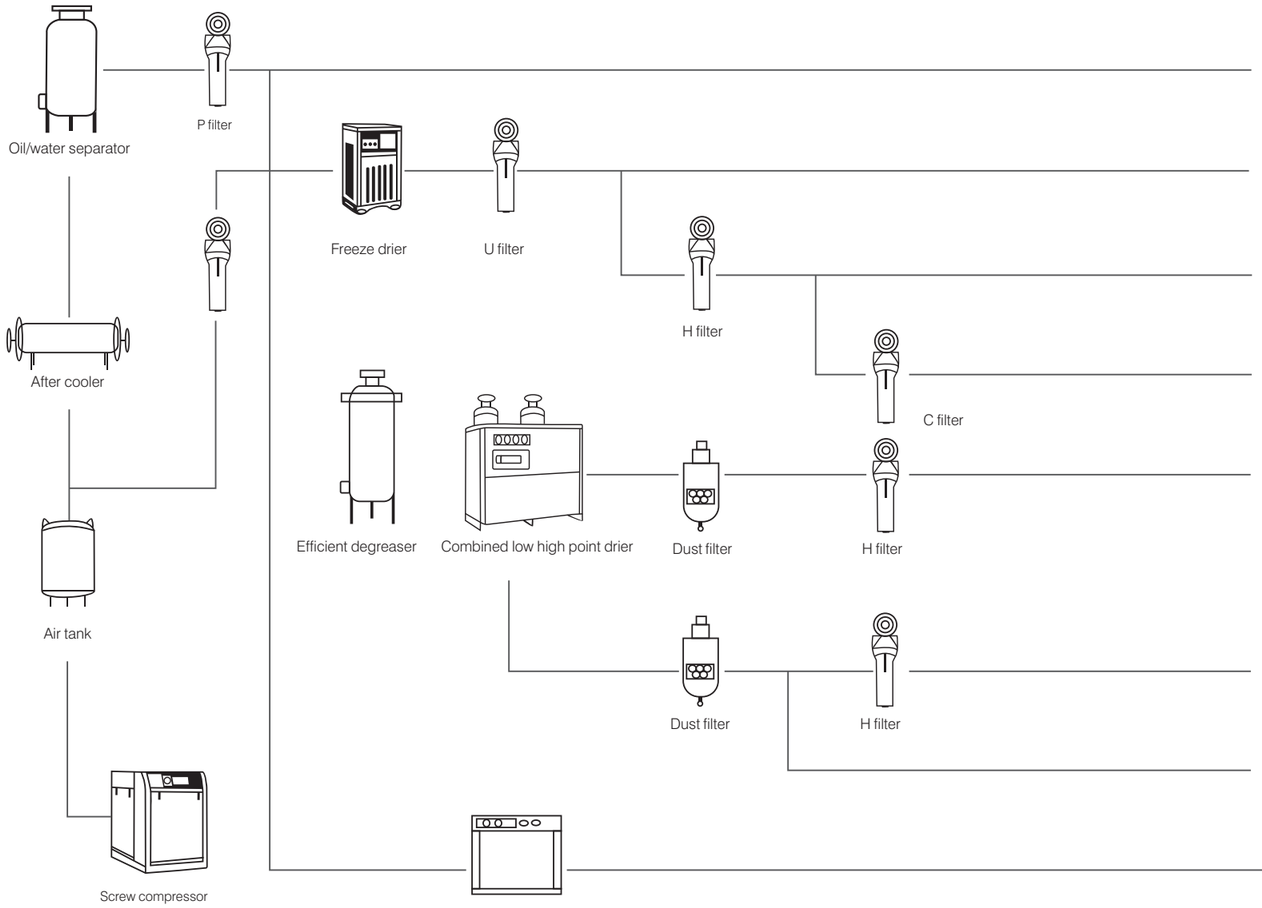
2 In 1 Screw Air Compressor Parameters

Parameter / Model	Motor Power kw	Max pressure Mpa	Air Delivery m3/min	Tank L	Outlet Pipe inch
RG10E	7.5	0.8	1.1	170	R3/4(DN20)
		1.0	0.95		
		1.2	0.8		
RG15E	11	0.8	1.5	290	R1(DN25)
		1.0	1.3		
		1.2	1.1		
RG20E	15	0.8	2.3	290	R1(DN25)
		1.0	2.1		
		1.2	1.72		
RG30E	22	0.8	3.6	380	R1(DN25)
		1.0	3.2		
		1.2	2.7		

3 In 1 Screw Air Compressor Parameters

Parameter / Model	Motor Power kw	Max Pressure Mpa	Air Delivery m3/min	Tank L	Outlet Pipe Inch
RG10EF	7.5	0.8	1.1	250	R3/4(DN20)
		1.0	0.95		
		1.2	0.8		
RHG10EF		1.6	0.5		
RG15EF	11	0.8	1.5	340	R3/4(DN20)
		1.0	1.3		
		1.2	1.1		
RHG15EF		1.6	0.85		
RG20EF	15	0.8	2.3	340	R3/4(DN20)
		1.0	2.1		
		1.2	1.72		
RHG20EF		1.6	1.35		
RG30EF	22	0.8	3.6	480	R1(DN25)
		1.0	3.2		
		1.2	2.7		
RHG30EF		1.6	1.8		

Compressed Air System Configuration



Remove 99% water, Oil content:5PPM	→	Pneumatic tools and pneumatic chuck, commom air gun for cleaning
Ordinary dew point:-23℃, Oil content:3PPM	→	Pneumatic machinery,electroplating, spray painting,and other process in need of compressed air
Ordinary dew point:-23℃, Oil content:0.01PPM	→	Advanced pneumatic transit painting, pneumatic bearing,gauge
Ordinary dew point:-23℃, Oil content:3PPM	→	Medicine,food,industry,breath,air, deodorization,degerming
Ordinary dew point:-23℃, Oil content:3PPM	→	Electrical power,chemistry,precision machinery
Ordinary dew point:-40℃~-70℃ Oil content:0.01PPM	→	Pneumatic instruments,fabric fiber, environmental protection
Ordinary dew point:-40℃~-70℃ Oil content:0.01PPM	→	Film,air drying electronic parts
Ordinary dew point:-40℃~-70℃ Oil content:0.01PPM	→	Biology engineering,advanced spray painting,electronics
	→	Oxygen and Nitrogen making industry