



Fixed Speed air compressor

Product Name: rotary screw air compressor, Fixed Speed Screw Air compressor

Gas Type: Air

Power: 5.5kw – 355kw

Air outlet diameter: DN20 – DN65

Driven method: Direct driven

Configuration: Stationary

Lubrication Style: Lubricated

Weight: 250-2500kg

Warranty: 5 years

Certification: CE/ASME/ISO

Color: Optional & customization

Local Service Location: Philippines, Mexico, Russia



1. Application:

Key Industries:

- Heavy and Light Industry
- Mining
- Hydropower
- Seaport Operations
- Engineering Construction
- Oil and Gas Fields
- Railways
- Transportation
- Shipbuilding
- Energy Sector
- Military Industry
- Spaceflight
- Additional Industries

2. Features and Advantages of the Solland Fixed Speed Screw Air Compressor:

1. Advanced High-Efficiency Air End

This compressor features an industry-leading screw air end designed for high efficiency and low rotational speed. Utilizing a third-generation rotor tooth design with cutting-edge geometric configurations, it ensures stability, reliability, energy savings, and an extended service life.

2. Flexible Coupling Direct Drive

The direct connection structure eliminates energy loss, achieving 100% transmission efficiency. This design results in low maintenance costs and facilitates easy disassembly, significantly reducing downtime. Maintenance of the air end and motor can be performed independently without disrupting overall operation.

3. Intelligent Microcomputer Control System

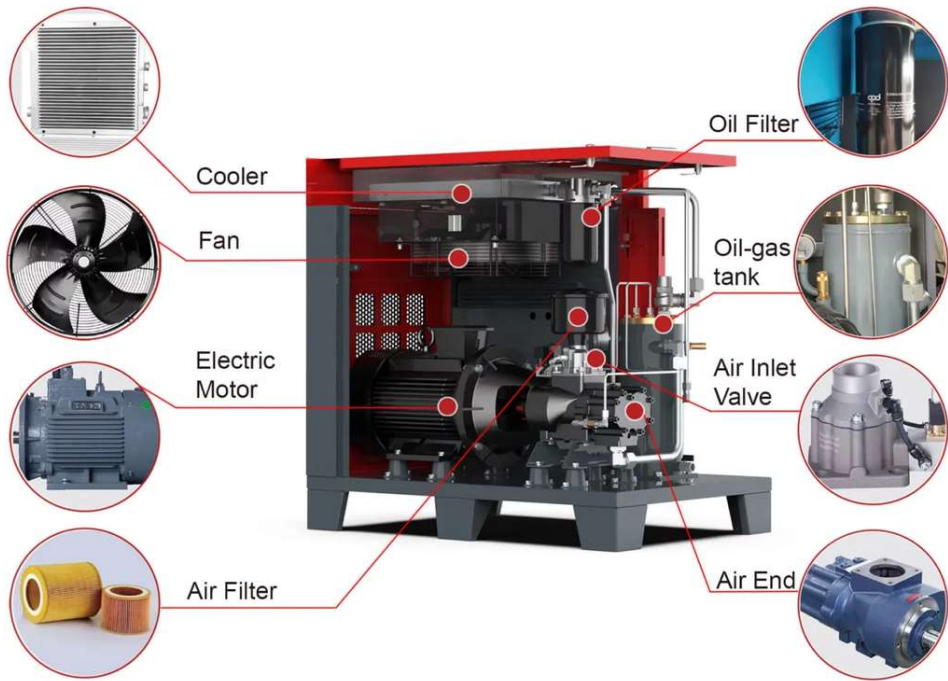
The compressor is equipped with an intelligent control system that enables fully automated operations. It monitors exhaust pressure, temperature, and other critical field data, regulating exhaust pressure through the intake valve to maintain stability within a predetermined range.

4. Safe, Reliable, and Efficient Motor

Featuring a unique low-speed motor with an IP55 protection rating and F insulation class, this compressor is engineered to function effectively in challenging working conditions. Its high precision balance ensures smooth operation at elevated speeds.

5. Unique Heat Removal and Cooling System

The advanced design incorporates a harmonica radiator that significantly enhances the heat dissipation area. This design facilitates faster and smoother operation while efficiently removing heat from the machine. The heat exchange performance of this system is 30% superior to that of traditional coolers, ensuring reliable operation even in the high temperatures and humidity typical of the Asia-Pacific region.



COOLER

1. The heat exchanger is constructed from high-quality raw materials and features a unique internal channel design, which enhances the heat exchange area and effectively dissipates heat from the air compressor.
2. The inner wall of the heat exchanger is treated with corrosion-resistant coating, extending its service life and improving heat transfer efficiency.
3. Each radiator undergoes rigorous factory testing to ensure reliability, effectively preventing overheating of the air compressor and prolonging the machinery's lifespan.

AIR-END

1. Incorporating a third-generation asymmetric wire twin-screw air end, this system adheres to superior manufacturing standards and employs an optimized high-efficiency tooth shape along with an axial air inlet design.
2. The optimized flow channel design, featuring a large rotor that operates at low speed, achieves 5% to 15% greater energy efficiency compared to the second generation.
3. Utilizes Swedish SKF heavy-duty bearings and a double-lip shaft seal for durability and reliability. The bearing design life is estimated at 80,000 to 100,000 hours, while the air end has a design life of approximately 200,000 hours.

CONTROLLER

1. Features a PLC multilanguage control system with an attractive and intuitive interface, simplifying operation for users who can quickly adjust the compressor settings.
2. Includes 14 protective functions, such as overload protection, short circuit protection, reverse protection, low-temperature protection, and high-voltage protection, ensuring comprehensive safeguarding of the unit.
3. The advanced microcomputer control drive system enables intelligent control, variable-speed air volume regulation, automatic load adjustment, and soft start capabilities. It provides dynamic monitoring of the compressor's operational status, including visual displays of pressure, temperature, and current working curves.
4. Equipped with substantial memory and a printer interface, the system supports remote monitoring via computer and facilitates interlinked control among multiple air compressors.

FAN

1. Designed with a large fan to significantly enhance heat dissipation. The motor features a specialized internal design to withstand harsh working conditions.
2. The fan motor incorporates unique winding and a high protection grade to ensure durability in challenging environments.
3. The fan operates under the control of the main controller, enabling automatic start and stop functions to maintain optimal operating temperatures for the air compressor lubricant.

MOTOR

1. Utilizes high-performance motors from reputable brands. Permanent magnet synchronous motors (PM motors) employ high-grade NdFeB permanent magnets that retain magnetism even at temperatures up to 200°C, boasting a service life of up to 15 years.

2. The stator coil is constructed from specially designed halo-proof enamelled wire for frequency converters, providing exceptional insulation and extended service life.
3. Features temperature protection functionality, a wide range of motor speed regulation, and high precision, resulting in improved reliability, compact size, reduced noise, and high overload capacity.
4. With an IP55 protection rating and F-grade insulation, the motor is effectively safeguarded, enhancing its lifespan and achieving efficiency levels 5% to 7% higher than competing products.

INTAKE VALVE

1. The intake valve serves as the essential component for regulating air intake in the air compressor.
2. Utilizing a renowned brand's air intake valve, it can automatically adjust its volume from 0% to 100% based on system air quantity requirements, ensuring minimal pressure loss, stable operation, and longevity, thereby reducing operational costs.

OIL FILTER

1. Crafted from high-density filter material with a nano-electroplated surface treatment.
2. The filter element features uniform pore size, low resistance, high flux capacity, and robust interception ability, ensuring a long service life.
3. High filtration accuracy effectively removes impurities from lubricating oil, extending equipment longevity.

AIR FILTER

Engineered with a design that boasts high dust-holding capacity and low flow resistance, this filter can capture tiny particles in the air, achieving a dust removal efficiency of 99.5% to ensure optimal operation of system components and prolong their service life.

AIR-OIL SEPARATOR CORE

The air-oil separation element and gas-liquid filter element utilize advanced three-stage separation technology, maintaining oil content below 3 ppm to ensure the delivery of high-quality compressed air.

4. Technical Parameters: *Fixed Speed Screw Air Compressor Specification

Model	Working pressure		Capacity		Power		Noise	Airajltet pipe diameter	Weight	Dimensions(mm)		
	bar	psig	m³/min	cfm	kW	hp	dB		kg	Length	Width	Height
SLT-7.5F	8	116	1.1	38.5	7.5	10	62±3	G1 1/4"	250	950	670	1030
	10	145	0.9	31.5	7.5	10	62±3	G1 1/4"	250	950	670	1030
	13	189	0.8	28.0	7.5	10	62±3	G1 1/4"	250	950	670	1030
SLT-22F	8	116	3.8	134.2	22	30	62±3	G1 1/4"	470	1310	710	1050
	10	145	3.3	116.5	22	30	62±3	G1 1/4"	470	1310	710	1050
	13	189	2.8	98.9	22	30	62±3	G1 1/4"	470	1310	710	1050
SLT-30F	8	116	5.4	190.7	30	40	65±3	G1 1/4"	680	1475	1060	1330
	10	145	4.9	173.0	30	40	65±3	G1 1/4"	680	1475	1060	1330
	13	189	3.8	134.2	30	40	65±3	G1 1/4"	680	1475	1060	1330
SLT-37F	8	116	6.6	233.1	37	50	65±3	G1 1/4"	710	1475	1060	1330
	10	145	5.9	208.4	37	50	65±3	G1 1/4"	710	1475	1060	1330
	13	189	4.3	151.9	37	50	65±3	G1 1/4"	710	1475	1060	1330
SLT-45F	8	116	8.0	282.5	45	60	68±3	G1 1/2"	820	1475	1060	1330
	10	145	7.0	247.2	45	60	68±3	G1 1/2"	820	1475	1060	1330
	13	189	5.6	197.8	45	60	68±3	G1 1/2"	820	1475	1060	1330
SLT-55F	8	116	10.2	360.2	55	75	68±3	G2"	1200	1800	1170	1400
	10	145	8.8	310.8	55	75	68±3	G2"	1200	1800	1170	1400
	13	189	7.7	271.9	55	75	68±3	G2"	1200	1800	1170	1400
SLT-75F	8	116	13.2	466.2	75	100	72±3	G2"	1750	1800	1170	1400
	10	145	12.0	423.8	75	100	72±3	G2"	1750	1800	1170	1400
	13	189	9.8	346.1	75	100	72±3	G2"	1750	1800	1170	1400
SLT-90F	8	116	16.0	565.0	90	120	72±3	G2"	1900	2200	1400	1580
	10	145	13.8	487.3	90	120	72±3	G2"	1900	2200	1400	1580
	13	189	12.5	441.4	90	120	72±3	G2"	1900	2200	1400	1580
SLT-110F	8	116	20.3	716.9	110	150	74 ±3	G1 1/2"	2300	2200	1400	1580
	10	145	17.6	621.5	110	150	74 ±3	G1 1/2"	2300	2200	1400	1580
	13	189	15.4	543.8	110	150	74 ±3	G1 1/2"	2300	2200	1400	1580
SLT-132F	8	116	23.6	833.4	132	175	74±3	G1 1/2"	2800	2200	1400	1580
	10	145	21.0	741.6	132	175	74±3	G1 1/2"	2800	2200	1400	1580
	13	189	16.7	589.8	132	175	74±3	G1 1/2"	2800	2200	1400	1580
SLT-160F	8	116	28.3	999.4	160	215	77±3	DN80	3300	2650	1488	1900
	10	145	25.0	882.9	160	215	77±3	DN80	3300	2650	1488	1900
	13	189	21.1	745.1	160	215	77±3	DN80	3300	2650	1488	1900
SLT-185F	8	116	31.9	1126.5	185	250	77±3	DN80	4000	2650	1488	1900
	10	145	28.5	1006.5	185	250	77±3	DN80	4000	2650	1488	1900
	13	189	24.8	875.8	185	250	77±3	DN80	4000	2650	1488	1900
SLT-200F	8	116	34.4	1214.8	200	270	77±3	DN80	4400	2650	1488	1900
	10	145	32.6	1151.3	200	270	77±3	DN80	4400	2650	1488	1900
	13	189	28.0	988.8	200	270	77±3	DN80	4400	2650	1488	1900
SLT-250F	8	116	44.0	1553.8	250	350	78±3	DN100	4700	3000	1740	2100
	10	145	36.3	1281.9	250	350	78±3	DN100	4700	3000	1740	2100
	13	189	33.8	1193.6	250	350	78±3	DN100	4700	3000	1740	2100
SLT-280F	8	116	48.5	1712.8	280	375	80±3	DN100	4950	3000	1740	2100
	10	145	44.6	1575.0	280	375	80±3	DN100	4950	3000	1740	2100
	13	189	38.2	1349.0	280	375	80±3	DN100	4950	3000	1740	2100
SLT-315F	8	116	54.0	1907.0	315	422	82±3	DN125	5600	3300	2200	2100
	10	145	48.5	1712.8	315	422	82±3	DN125	5600	3300	2200	2100
	13	189	44.5	1571.5	315	422	82±3	DN125	5600	3300	2200	2100
SLT-355F	8	116	61.0	2154.2	355	476	82±3	DN125	6500	3300	2200	2100
	10	145	53.9	1903.5	355	476	82±3	DN125	6500	3300	2200	2100
	13	189	48.2	1702.2	355	476	82±3	DN125	6500	3300	2200	2100

5. Fixed Speed Vs Variable Speed Air Compressor:

There are two primary types of industrial compressor machines: fixed-speed machines and variable-speed machines. Each type operates differently, exhibiting distinct operational characteristics.

***Fixed Speed Screw Air Compressors**

As its name suggests, a fixed-speed air compressor operates by delivering a consistent voltage and frequency to its motor, which drives the rotary screws at a steady speed to intake and pressurize air. If your facility operates continuously, 24/7, with minimal fluctuations in production cycles, a fixed-speed air compressor may be an appropriate choice due to its stable energy consumption.

However, if your plant experiences daily, weekly, or seasonal variations in production output that result in fluctuating air demands, a fixed-speed air compressor may lead to increased energy consumption, ultimately proving inefficient over its operational lifespan.

***Variable-Speed Air Compressors**

Unlike fixed-speed compressors, variable-speed air compressors possess the unique capability to adjust the frequency supplied to their motors, allowing for modulation in the rotational speed of their rotary screws. This adaptability enables a variable-speed air compressor to either increase or decrease its output based on the current air pressure requirements of a facility, thereby optimizing energy consumption and minimizing waste.

It is important to note, however, that the operational flexibility of variable-speed compressors makes them particularly vulnerable to inconsistencies in their power supply. With this in mind, let us synthesize our understanding and examine the broader implications.

When evaluating the differences between fixed-speed and variable-speed air compressors, it is essential to consider factors beyond the initial investment cost. For facilities that experience seasonal production peaks or daily fluctuations in air demand, assessing how quickly a variable-speed compressor can translate into energy cost savings compared to a fixed-speed model is crucial. Conversely, if your facility's power source is prone to uncontrolled surges and drops, the operational costs associated with a variable-speed compressor may outweigh its advantages.

Additionally, it is noteworthy that organizations eligible for energy savings programs and tax incentives may find further financial benefits in adopting a variable-speed compressor.

