



THE NEXT-GEN HIGH-PRESSURE

Two-Stage Screw Air Compressor
25 - 40 Bar



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1800 572 5522

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Efficiency Meets Innovation :

The Game-Changing High-Pressure Two-Stage Screw Air Compressor



It's commendable that Innovitas has taken the initiative to address the issue of energy consumption in screw air compressors. As the demand for compressed air continues to rise across various industries, it's essential to prioritize energy efficiency to mitigate the environmental impact and reduce operational costs for businesses.

By focusing on research and development efforts aimed at enhancing the energy efficiency of screw air compressors, Innovitas has not only contributed to environmental sustainability but has also positioned itself as a leader in providing cost-effective solutions for businesses.

The breakthroughs achieved by Innovitas in developing energy-saving and high-efficiency screw air compressors are indeed significant. These advancements not only benefit individual enterprises by reducing energy costs but also contribute to broader efforts aimed at achieving national energy-saving and emission reduction targets outlined in governmental plans.

As the industry continues to evolve, Innovitas' commitment to innovation and sustainability will likely play a crucial role in shaping the future of air compressor technology and promoting responsible industrial practices.

Application Field



Textile

- Long Life Guarantee
- 24 hours x 365 days of uninterrupted operation
- 5000 hours long maintenance period



Solar Panel

- Twin screw two-stage compression system
- High Efficiency Permanent Magnet
- Synchronous Motor
- Drive Exhaust volume does not decline



Food

- No oil
- No water
- No impurities
- No vibration, silent



Pharmaceutical

- Automatic start and stop function
- Automatically adjust the exhaust volume Fault self-protection function
- Remote detection and control



Drilling Engineering

- Two stage compression system
- High Efficiency Permanent Magnet
- Synchronous Motor Drive
- Exhaust volume does not decline



Chemical, Petroleum

- Long Life Guarantee
- 24 hours x 365 days of uninterrupted operation
- 5000 hours long maintenance period



Pressure Testing of Pipelines And Pressure Vessels

- No fuel
- Anhydrous
- No impurities
- No vibration, silent



PET/PP BLOWING

- Two stage compression system
- High Efficiency
- Permanent Magnet
- Synchronous Motor
- Drive Exhaust volume does not decline

Reliable Innovations



High Performance Host

Host adopts : The most advanced technology of german Famous brand host

The main engine is durable : The screw rotor is heat treated a special process and matched with SKF heavy - duty bearings

Reliable transmission of the main engine : The main engine and the motor are elastically cpnected, with low noise, high transmission efficiency, and no wearing partsv



HIGH EFFICIENCY PERMANENT MAGNET VARIABLE FREQUENCY MOTOR

Wide Speed range

Low Noise

Compact Structure, Small size and light weight

Large starting torque



01

USING METAL HARD PIPE MATERIAL

Less prone to corrosion, ensuring longer service life



02

ADOPT STAINLESS STEEL 316L PLATE COOLER

No Internal corrosion, small size, significant cooling effect



03

STAINLESS STEEL HIGH PRESSURE MANIFOLD

The one-piece combination valve independently developed, designed and produced to ensure long-term stable operation of the unit

04



FULLY INTELLIGENT COMPUTER CONTROL SYSTEM

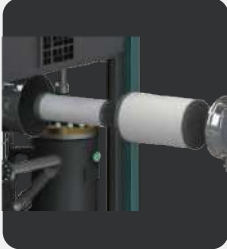
Large color touch screen, the system process and status interface are clear at a glance, easy to operate and intelligent.

The multi-point PLC control and monitoring system, combined with the PID control system of the frequency converter, provides perfect and intelligent control, protection and energy saving functions.

1. All-round protection functions such as phase sequence, short circuit, locked rotor, phase loss, overload, unbalance, etc.
2. Water cut, high temperature, overvoltage protection:
3. Filter blockage and sensor failure alarm protection: fully meet the needs of continuous and uninterrupted operation under unattended operation

The exclusively developed multi-stage speed control program automatically adapts to changes in the gas consumption of the equipment without discharging excess compressed air. Provides a balance of maximum gas production and power consumption.

485 communication protocol and remote control module, remotely know the compressor operating status and parameters at any time, and remotely control the start and stop of the compressor.



06 NEW STRUCTURE AIR FILTER

Enlarged folding structure, small pressure difference and longer service life. The sub-core design scheme can achieve 99.99% dust removal effect and reduce mechanical wear. Equipped with differential pressure monitoring to remind maintenance in time to ensure stable operation of the machine.



07 NEW STRUCTURE OIL-GAS SEPARATOR WITH BUILT-IN OIL SEPARATOR

The foldable oil separator has large processing area, small pressure difference and longer service life. The sub-core design scheme can reduce the oil content of the minimum pressure valve outlet to below 0.3PPM.



08 INDEPENDENT OIL FILTER COMBINATION VALVE

The core technology of independent research and development, design and production, the structure is simple and easy to maintain.

The filtration accuracy of 10 μ m greatly reduces mechanical wear and improves the service life.

Equipped with differential pressure monitoring to remind maintenance in time to ensure stable operation of the machine.



09 BUILT-IN WATER AND OIL REMOVAL SYSTEM

The internal integrated water and oil separation system further reduces the water content of the compressed air. The built-in precision filter reaches 0.01 μ m, which has passed the ISO8573-2:1996

certification system, providing pure compressed air.

The temperature of the air supply outlet is lower than 25 °C, and the oil content is less than 0.01PPM

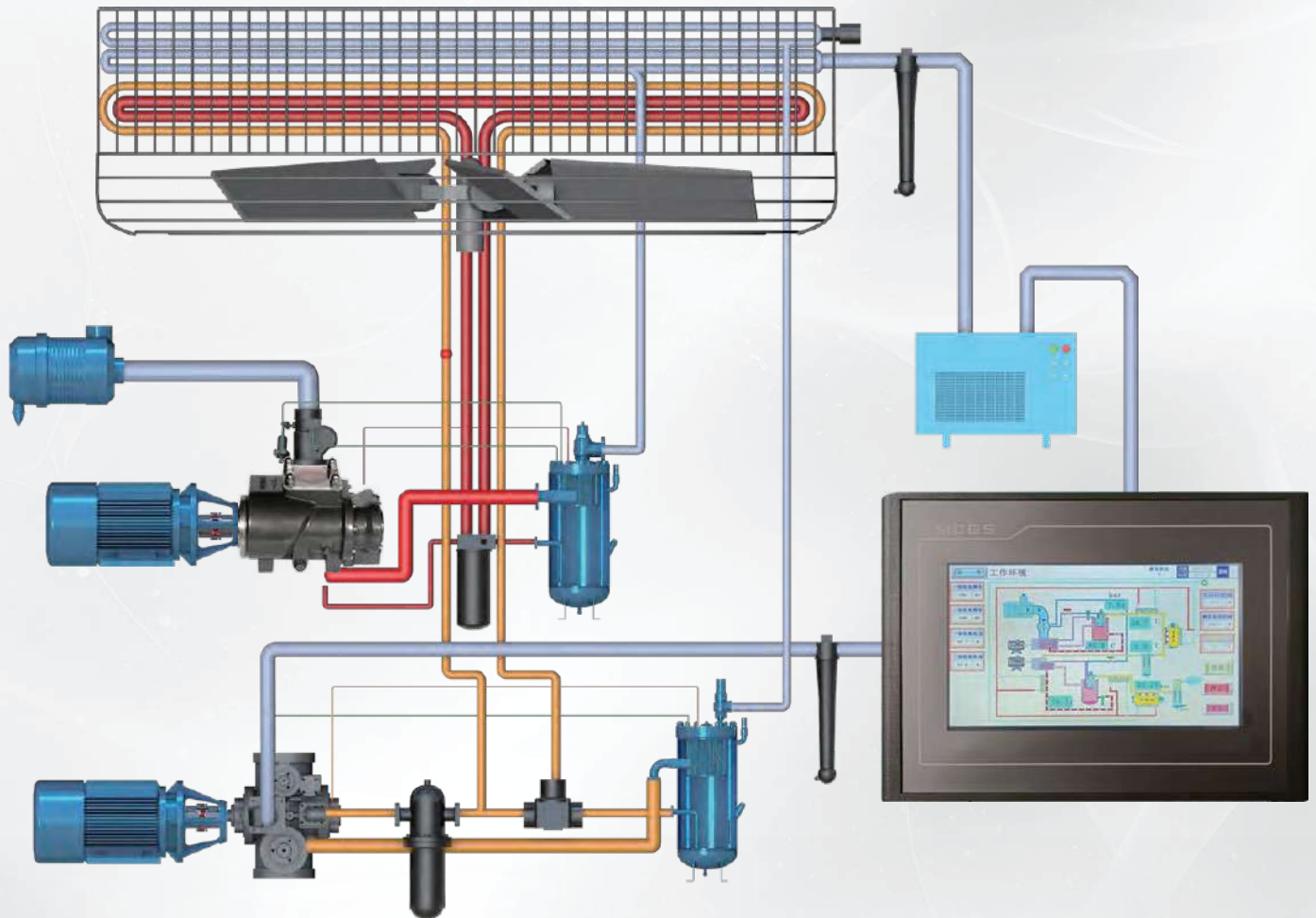
Advantages Of High Pressure Screw Air Compressor



PARAMETER	HIGH PRESSURE PISTON AIR COMPRESSOR	SCREW + PISTON SERIES AIR COMPRESSOR	HIGH PRESSURE SCREW AIR COMPRESSOR
Outline dimension	Larger	Moderate	Smaller
Installation Difficulty	Very Difficult	Moderate	Simple
Noise	Higher	Medium	Lower
Vibration	Higher	Medium	Lower
Exhaust temperature	Higher	Medium	Lower
Exhaust stability	High Turbulence	Fluctuate in general	Smooth
Vulnerable parts	Many	Middle	Few
Maintenance cost	Very high	Medium	Lower
Ease of operation	Difficult	Difficult	Simple
Reliability	Poor	Moderate	Reliable
Service life	Shorter	Medium	Longer
Automatic energy saving control	None	Partially	Higher



Two-Stage Compression System Flow Chart



Permanent Magnet Variable Frequency Control System

Permanent magnet synchronous motor drive

Advantages of permanent magnet synchronous motor and general asynchronous motor

High efficiency, high power factor: cancel the rotor excitation system loss, improves the efficiency of 2-3%, decreased to a 37KW permanent magnet motor as an example, the motor maximum efficiency of up to 96%, and with power asynchronous motor maximum efficiency can only be reached 93%, and as the load(power), efficiency difference increases; rotor without electrical excitation, the small inductance and power factor high.

Wide speed range

Rotor without electrical excitation, motor in the low-speed performance, using advanced sensorless vector control technology, the frequency range of the motor can achieve 25% - 100%, and asynchronous frequency can only achieve 50% -100%, and permanent magnet motor driving the compressor to realize the no-load operation of lower velocity, no-load energy-saving.

Low noise

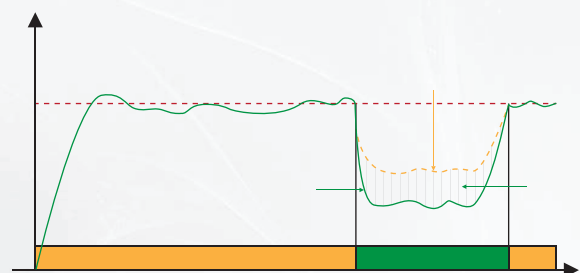
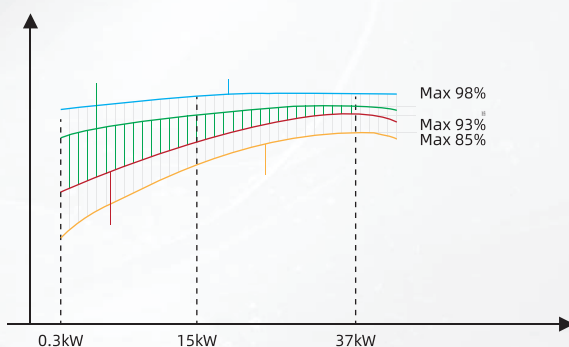
Reasonable slot, magnetic field design, work more widely, lower operating noise.

Compact in structure, small in size and light in weight

Permanent magnet rotor small size, high power (torque) density.

Large starting torque

Permanent magnet synchronous motor starting torque and overload capacity than three-phase induction motor with a power rating, maximum starting torque and rated torque ratio of up to 3 times more than the general induction motor is only 1.6 times.



Energy Saving / High Efficiency

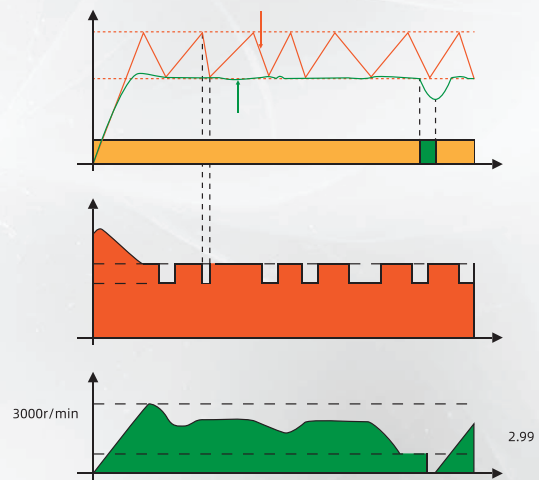
Variable frequency drive has the advantage

Constant supply pressure

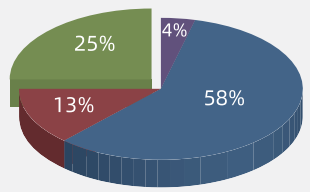
To achieve rapid pressure control control;

Start without Impact

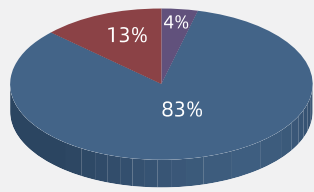
Smooth soft start, the starting current is not more than 2 times the rated current; energy saving. To a 37KW air compressor as an example, according to the average gas load rate of 70%, annual operating 6000 hours. To sum up, the permanent magnet synchronous motor drive inverter compressor prominent comprehensive advantages in comparison to ordinary power air compressor, the main advantage is energy-saving, the comprehensive energy efficiency can reach more than 40%.



Five years of cost comparison



Variable frequency air compressor



No Variable frequency air compressor

- Cost of energy consumption
- Acquisition cost
- Frequency conversion and energy saving
- Maintenance cost

WHY SHOULD WE CHOOSE

Screw Type Compressor



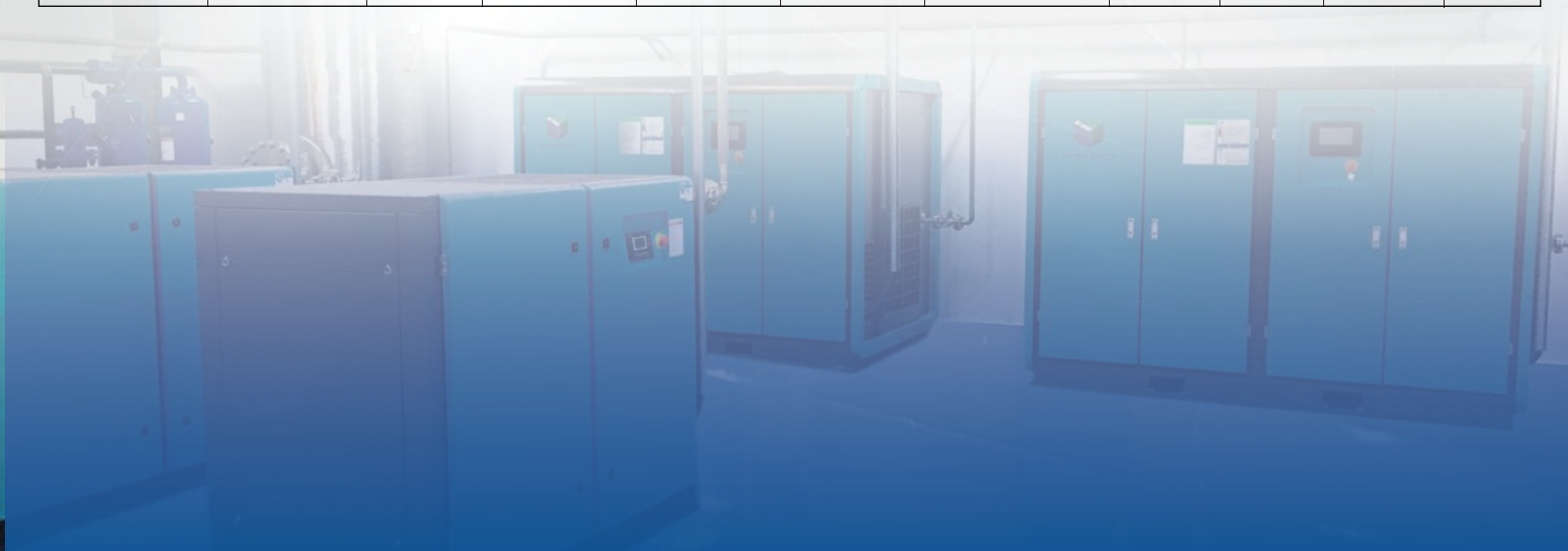
25~40bar Air Compressor: SCREW vs PISTON

	High Screw Air Compressor	High Piston Air Compressor
Duty Cycle	Continuous duty	Intermittent Duty
Compression Method	2 Stage Screw	3 Stage Piston
Lubricating Medium	Oil / Water	Oil
Temperature	Low: < 55, No need for cooling	High: 125~200, After cooling about 60
Cooling Method	Air Cooled or Water Cooled (Only one cooler for lubricating water)	Water Cooled (Two interstage cooler and one aftercooler for compressed air)
Rotate Speed	3000 r/min Ideal Speed	600~900 r/min Low Speed
Vibration and Noise	Balance and Simple structure, low vibration, and less noise	The pistons rise and fall or move back and forth causing too much vibration and Noise
Costs – Purchasing	More	Less
Costs – Foundation	No costs	Require foundation and grouting due to high unbalanced forces & high vibration.

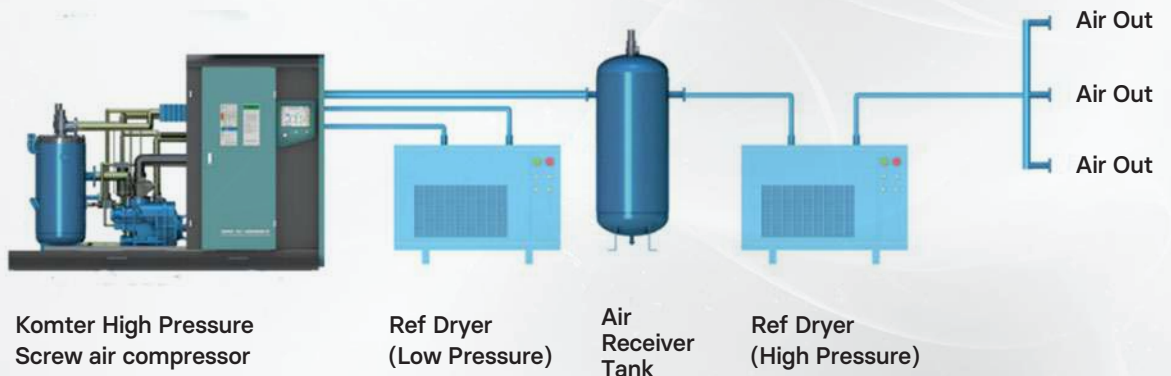
	High Screw Air Compressor	High Piston Air Compressor
Costs – Maintenance	Only filter elements & Oil if oil cooled	High wear & tear of moving parts like piston rings, valves, etc.
Costs – Energy (e.g. 40bar 10m³/min)	Motor Power: 112kW (1st stage 75kW+2nd stage 37kW)	Motor Power: 132kW
Capacity Loss	There is no loss / very minor loss in Capacity over a period.	There is De-ration in Capacity due to wear and tear in cylinder crank case, piston rings, pistons and valves.

Technical Parameters

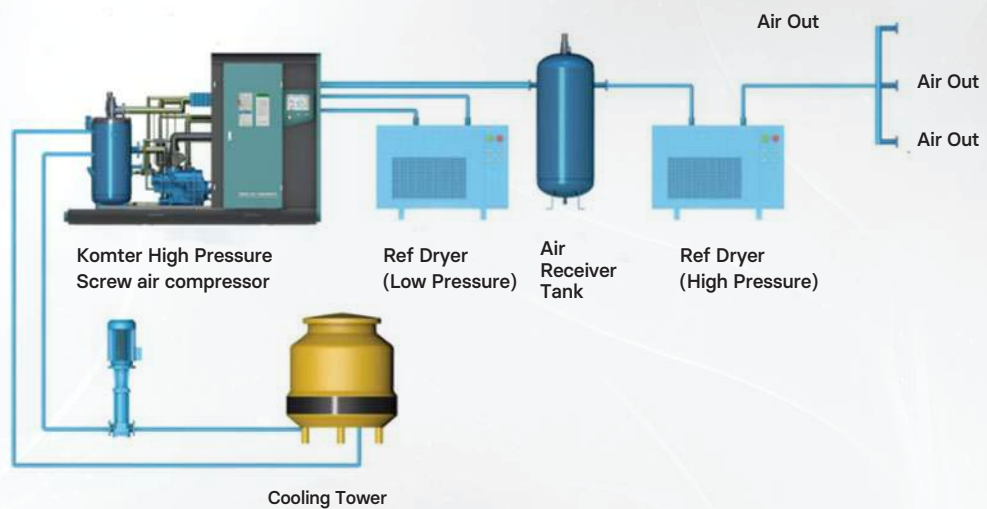
Model	Pressure	CFM	m ³ /min	KW	HP	Dimension (mm)	Weight kg	Noise db (A)	Cooling Mode	Size mm
KST 50 HP	25	124	3.5	30	40	1800x1200x1550	1180	60	Air/Water	DN25
	30			33	44					
	35			35	47					
	40			37	50					
KST 60 HP	25	160	4.5	33	44	2500x1600x2000	1180	62	Air/Water	DN25
	30			37	50					
	35			40	54					
	40			45	60					
KST 75 HP	25	176	5	40	54	2500x1600x2000	1680	65	Air/Water	DN40
	30			45	60					
	35			50	67					
	40			55	75					
KST 90 HP	25	230	6.5	50	67	2500x1600x2000	1830	68	Air/Water	DN40
	30			55	75					
	35			60	80					
	40			65	87					
KST 100 HP	25	300	8.5	65	87	2500x1600x2000	2180	69	Air/Water	DN40
	30			70	94					
	35			72	96					
	40			75	100					
KST 120 HP	25	371	10.5	74	99	3000x1800x2000	3320	70	Air/Water	DN50
	30			80	107					
	35			85	114					
	40			90	120					
KST 150 HP	25	424	12	90	120	3000x1800x2000	3680	71	Air/Water	DN50
	30			95	127					
	35			105	141					
	40			110	147					



Layout of Air Cooled Compressor



Layout of Water Cooled Compressor





Komter Equipments Pvt Ltd
Maduravoyal, Chennai



1800 572 5522



info@komter.in



www.komter.in



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