

WORLD CLASS · EFFICIENCY · RELIABILITY

kr|s|a

SINGLE STAGE ROTARY
LOW PRESSURE



- ▶ WORLD CLASS
- ▶ EFFICIENT
- ▶ RELIABLE
- ▶ SILENT



Kaishan Compressor India

WORLD WIDE SUPPORT

Globally recognized industrial presence

Over the last sixty years, Kaishan has steadily grown to become a significant and diversified engineering company developing high value machinery for industries worldwide. With modern, specialized manufacturing facilities positioned in seven strategic locations, Kaishan's group of thirty-two subsidiary companies produce over 1,00,000 rotary screw and 2,50,000 reciprocating compressors annually. Kaishan is the world's third largest manufacturer of Compressed air equipment, mining and drilling equipment and supports industries in more than 60 countries including USA, Australia, Germany, Japan, Korea, Russia, Africa and throughout Latin America.

Vertically integrated global strategy

Kaishan's global strategy of combining highly skilled engineering with highly efficient manufacturing allows us to provide performance proven and reliable equipment at a significant cost savings to our customers. Additionally, Kaishan's manufacturing processes are 85% vertically integrated ensuring full control of the material supply chain. This approach enables to supply high quality components at a lower cost and maintain agility to respond rapidly to changing market demands.



Environmental sustainability

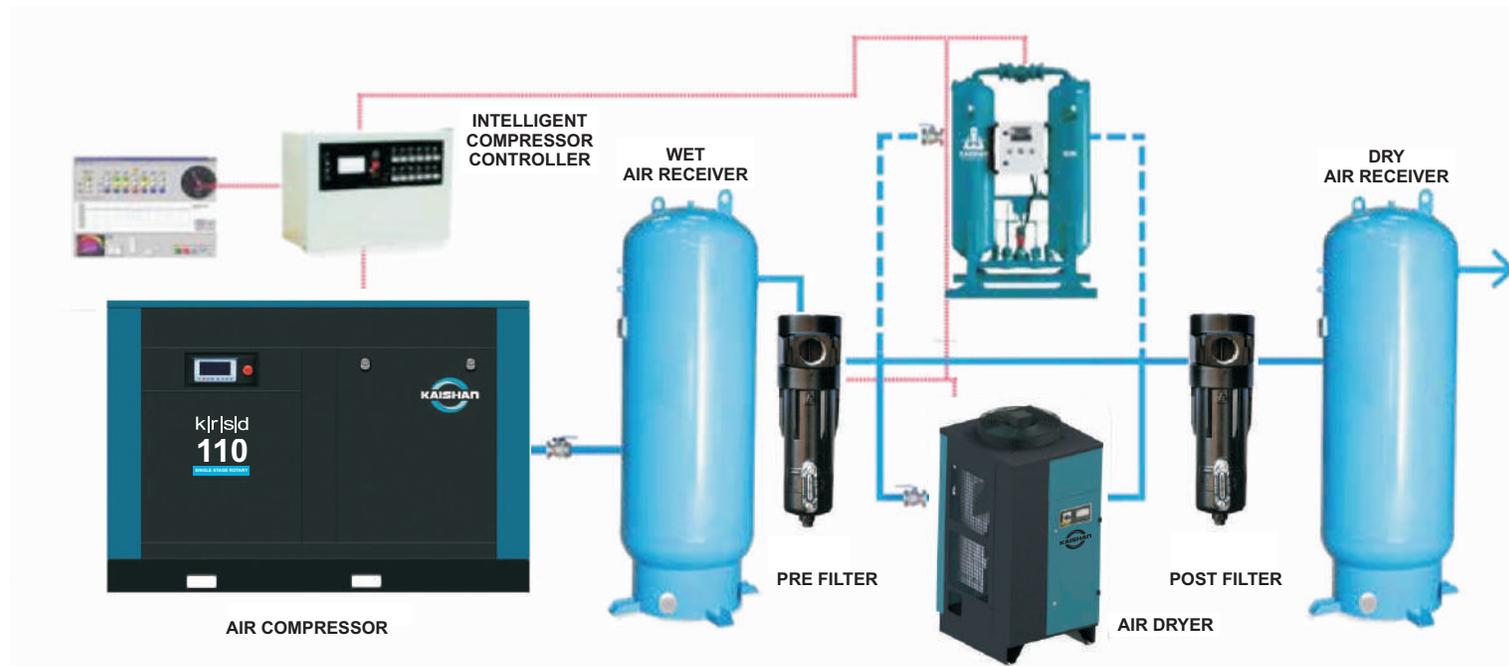
Integral to the design and manufacture of our products is outstanding energy efficiency. Kaishan's fundamental belief in environmental sustainability drives us to produce products that maximize energy efficiency and help to preserve precious energy resources. Single and two-stage compressors that produce more compressed air per unit of power input as well as expanders that utilize waste heat to produce electricity are just two of the fundamental products in our sustainable approach. Throughout our manufacturing processes, unused waste materials are recycled at every stage to maximize the use of raw materials. This approach translates to lower initial costs and lower operating costs for our customers and a smaller environmental footprint that helps us all. Kaishan's commitment to environmental responsibility ensures that we will continue to develop technologies and manufacturing solutions that provide industry with "Good and Green" products of exceptional value - now and well into the future.

Air is free, Compressed Air is Not!

Compressed Air is the Fourth Largest Utility for an Industry after Electricity, Gas and Water. Very few people understand the cost associated with compressed air production. Compressed air is the most expensive form of energy used in an industry.

Energy Cost

Consider a compressor of 500 cfm and 100 psi (g). This will use a 100 HP / 75 kW motor. Running for 24 hrs a day, 365 days a year, with a 70% load factor, it would consume approximately 600000 units annually. At Rs 7 per kWh, it would cost 42 lakhs a year. That is 3-4 times the cost of the compressor itself.



PATENTED 'SKY' SINGLE-STAGE AIREND

Larger Rotor Size

To increase the rotor throughput, the Airends of our Compressors are larger than usual. Our Air Compressors are built with 5/6 lobes and larger rotor size which reduces the specific power Consumption and runs at slow speed.

Lower inter-lobe leakage losses

Pressure differences between two neighbouring working chambers is small due to a greater number of lobes. This reduces inter-lobe leakage losses. Hence leakage to delivery ratio decreases as the number of rotor lobes increases.

Larger wrap angle & discharge port

A greater number of lobes combined with a larger wrap angle ensures multiple rotor contact. This reduces vibrations and thus minimizes noise. Larger discharge ports decrease the discharge velocity and therefore reduce the discharge pressure losses, thereby increasing the compressor's overall efficiency.



WORLD CLASS ENGINEERING

SINGLE PASS OIL & AFTER COOLERS

- Long Life / Easily Accessible
- Minimize thermal stress
- Cooler designed for 50°C ambient temperature.
- Low oil carryover increases bearing life
- Low cooling air velocity reduces dust build up



'ULTRAWEB' AIR INTAKE FILTERS

- Increased Filtration Efficiency
- Full airflow, low restriction, nanofiber technology
- Deep bed media ensures excellent dust capture
- Increased free air delivery for further savings in energy and running costs

COOLING FANS

- Increased Cooling Efficiency
- Even air flow across the cooler face.
- Cooling air bypasses main compressor compartment resulting in minimal internal dust build up

ELECTRICAL CONTROL PANEL

- Monitors and controls Key Compressor Functions.
- Current Transformer provides constant read out of operating current.
- Protection against Phase sequence changes provided.
- Provides service schedule alarm.
- External monitoring via RS 485 interface
- High current input reading triggers shutdown.

3 STAGE AIR OIL SEPARATION

- Lower Pressure Drop / Lower Absorbed Power
- Excellent mechanical pre-separation/ reduced direct oil impingement onto separator element
- Lower dust contact resulting in lower pressure drop / longer element life / lower energy consumption
- Residual oil carryover limited to 1 - 3 ppm

TRIPLE DISCHARGE BEARINGS

- Longer Bearing Life / Quieter Operation
- Longest bearing life in the industry



'SKY' SERIES AIREND

- Maximum Output with Less Energy Usage
- Asymmetric 5 / 6 rotor profile with SKF bearings
- KAPP Grinder rotor technology for tighter clearances and world class efficiency and performance
- Precision machined bell housing to maintain rigid alignment



LAMINAR FLOW INLET VALVE

- Minimum Pressure Drop / Increased Output
- Laminar flow inlet valve results in lower pressure drop through the intake, increasing output and saving energy

LUBRICANT KERRY10#

- Does not cause varnishing during operation.
- Helps remove existing varnish from Oil Circuit.
- Helps cooling of the Airend and Rotors.
- It is Biodegradable, has High Viscosity and High Flashpoint.
- Permits very low carryover.

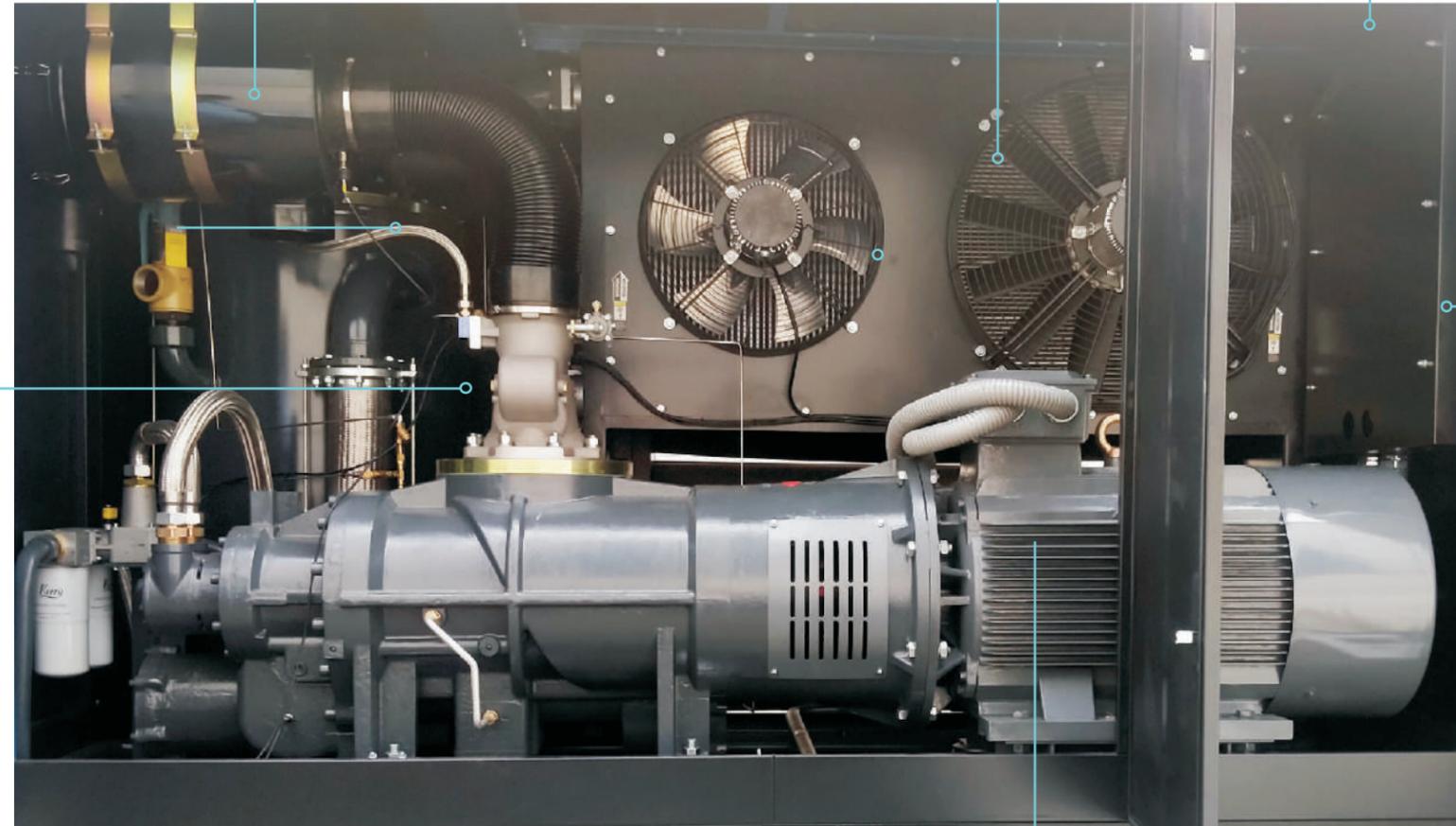
HIGH EFFICIENCY DRIVE AND MOTORS

- High Performance inbuilt VFD for load variations.
- High Efficiency, TEFC, LV induction drive motors are used in all KRSA Series compressors. These have IP55 rating and IE3 / IE4 premium efficiency rating.
- F class high temperature insulation
- Direct coupling ensures longer bearing life.
- Ease of maintenance is assured with grease refill port.
- 'No load Start' protection is provided.



MECHANICAL PUMP

- Mechanical Pump
- Ensures continuous flow of lubrication
- Reduces oil carry over to less than 3 ppm
- Maintains lubrication pressure
- Simple design and zero maintenance
- No Auxiliary power required

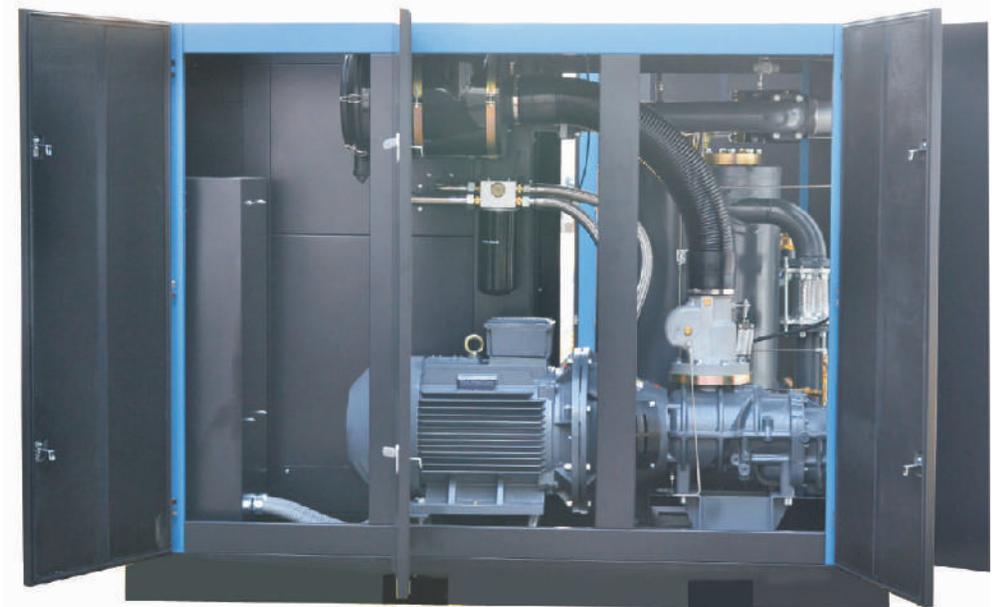


KRSA SERIES COMPRESSOR WITH VFD

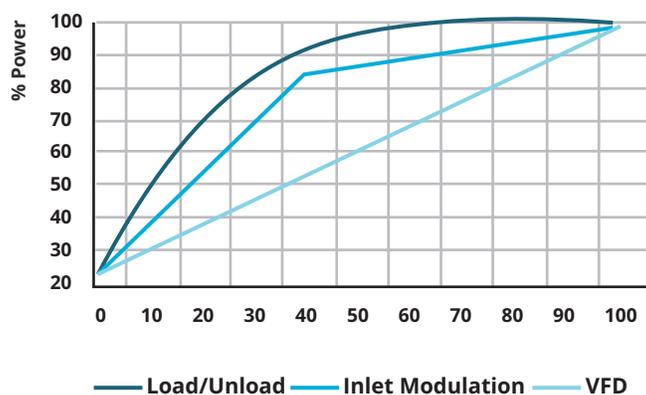
KRSA compressors are built to be compatible with optional VFD feature.

KRSA Variable Speed Air compressors provide maximum efficiency with consistent operation. Unlike the traditional “Auto-dual” and “Load/No load” control modes, KRSA VFD modulates the speed of the drive motor in response to system demand. This results in greater energy saving compared to a fixed speed compressor. The VFD feature greatly reduces the starting power surge of the motor. A constant pressure delivery extends the life of valves.

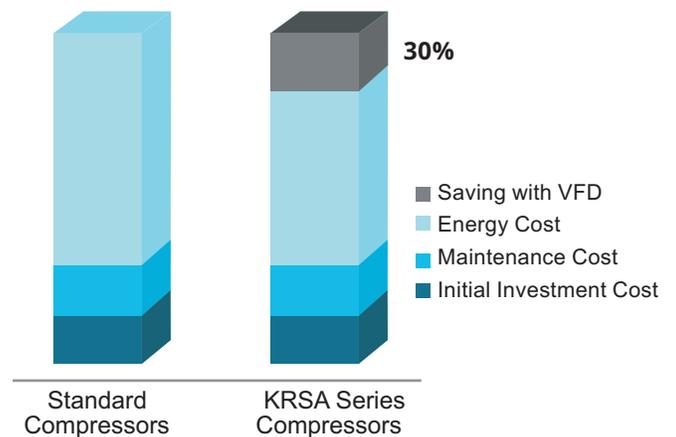
- Industry renowned VFD units are used in KRSA series compressor package
- Compact VFD design allows a smaller footprint
Monitors key function of the unit
- Maintenance free
- The VFD minimizes starting current peak loads
- Extremely low sound level



PART LOAD PERFORMANCE ASSESSMENT



ENERGY COST COMPARISON



KRSA series can also come with Permanent Magnet Variable Frequency (PMVF) drive option for best in class Part load efficiency. PMVF can be offered upto 250 kW.

KRSA SERIES SPECIFICATIONS

- Kaishan 3 bar Low Pressure Screw Air Compressors are specifically designed for Textile, Cement, Glass, Flue-gas Desulfurization and Pneumatic Conveying application.
- When a 7 bar standard air compressor is run for a plant air pressure requirement of 2 – 5 bar, it will lead to higher power consumption as compared to Kaishan Low pressure compressors. Kaishan low pressure screw air compressors with their patented low compression ratio can deliver same output flow (cfm) with 20 – 50 % lower power consumption.
- The Capacity of a screw air compressor with 132 kW motor at 7 bar will be 850 cfm. Kaishan Low pressure compressor with 132 kW motor at 3 bar will have a flow of 1547 cfm. This power saving enables you to recover your investment in less than a year.

Model No	Discharge Pressure Bar	Flow cfm	Motor Power kW	Discharge Connection	Dimension L X B X H mm	Weight Kg
KRSP-55-1.5 VSD	1.5	932	55	DN125	2960 X 2060 X 2260	4300
KRSP-110 - 1.5 VSD	1.5	1629	110	DN250	4100 X 2140 X 2370	6100
KRSP-75 -2 VSD	2	932	75	DN125	2960 X 2060 X 2260	4300
KRSP-90 - 2 VSD	2	1095	90	DN125	2960 X 2060 X 2260	4300
KRSP-132 - 2 VSD	2	1629	132	DN250	4100 X 2140 X 2370	6100
KRSP-160-2 VSD	2	2042	160	DN250	4100 X 2140 X 2370	6100
KRSA-37-3	3	378	37	DN65	1695 X 1050 X 1590	1770
KRSA-55-3	3	617	55	DN80	2510 X 1560 X 1860	2070
KRSA-55-3A	3	695	55	DN80	2510 X 1560 X 1860	2070
KRSP-90-3A	3	1050	90	DN125	2860x1760x2050	2980
KRSP-132 - 3 A	3	1556	132	DN125	3560 X 2060 X 2180	6100
KRSP-160-3A	3	1890	160	DN150	3760x2060x2240	5600
KRSP-250-3A	3	2896	250	DN250	4390 X 2200 X 2350	8400
KRSA-30 -5	5	261	30	G1 1/2	1685 X 1000 X 1490	780
KRSA-45-5	5	397	45	DN65	2450 x 1460 x 1580	2220
KRSA-55-5	5	460	55	DN65	2450 x 1460 x 1580	2220
KRSA-75-5	5	655	75	DN80	2760 x 1630 x 1735	2430
KRSA-90-5	5	765	90	DN80	2760 x 1630 x 1735	2820
KRSA-110-5	5	901	110	DN100	3160 x 1810 x 2080	3300
KRSA-132-5	5	1122	132	DN100	3160 x 1810 x 2080	4850
KRSA-160-5	5	1369	160	DN100	3310 X 1980 X 2230	4900

Note:

- Technical Specifications of compressor are subject to change without notice
- Flow as per ISO 1217 Annexure C
- Maximum Pressure can be 0.5 bar(g) higher than discharge pressure
- For any special combination of pressure & flow, kindly Consult Factory (CF)



MODEL	COMPRESSOR TYPE	FEATURES
KRSP2	Two Stage	Global leader in air compressor efficiency
KRSP	Single Stage	Patented 'SKY' air end, triple SKF bearings
KRSD	Single Stage	Direct drive, TEFC motor, low sound enclosure
KRSB	Single Stage	Belt drive, economical to own and operate
KRST	Single Stage	Belt drive, tank mounted
KRSH	Two Stage High Pressure	Pressure up to 40 Bar
KRSA	Single Stage Low Pressure	Pressure as low as 1.5 Bar
KRSV	Rotary Screw Vacuum Pump	World class vacuum efficiency



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