

WORLD CLASS · EFFICIENCY · RELIABILITY

kr|sp

SINGLE STAGE ROTARY



- ▶ 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

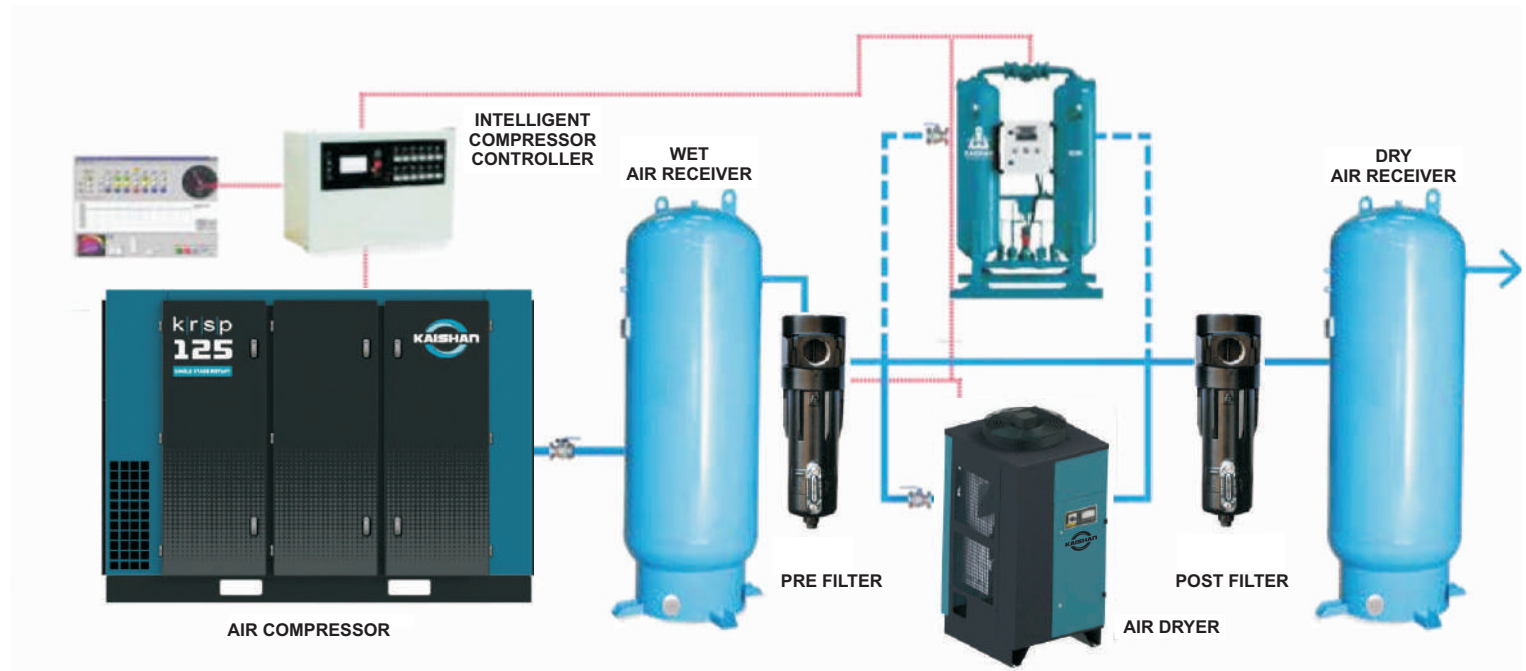
Integral to the design and manufacture of our products is outstanding energy efficiency. Kaishan's fundamental belief in environmental sustainability drives us to produce products that maximize energy efficiency and help to preserve precious energy resources. Single and two-stage compressors that produce 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

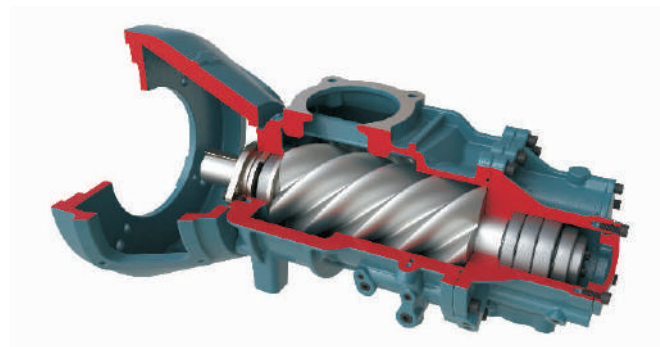
To increase the rotor throughput, the Airends of our Compressors are larger than usual. Our Air Compressors are built with 5/6 lobes and larger rotor size which reduces the specific power Consumption and runs at slow speed.

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

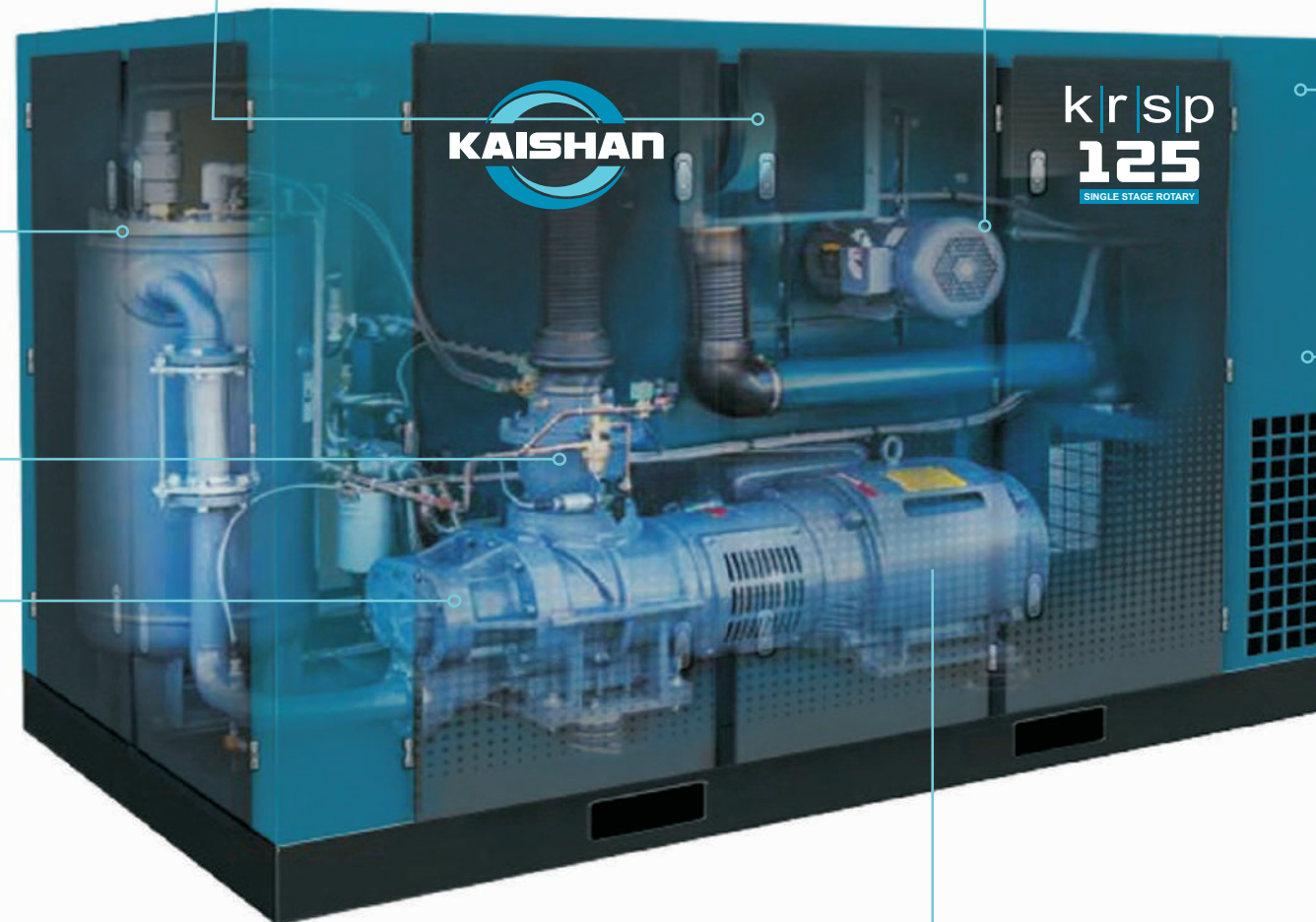
- Minimum Pressure Drop / Increased Output
- Laminar flow inlet valve results in lower pressure drop through the intake, increasing output and saving energy

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 KRSP 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.



INTEGRATED MICROPROCESSOR CONTROL FOR INDUSTRY 4.0

- Ease of use due to mimic diagram and constant pressure and temperature readout. Selective readout of operation and maintenance parameters provided. Safety Shutdown Feature included.
- Automatic Start/Stop operation over 24 hour period with Lead/Lag sequencing of multiple compressors.
- **Auto-Dual control:** If there is no air demand during the pre-set time delay, the compressor shuts down the drive motor. The Controller will restart the motor only when pressure falls below the preselected pressure levels.
- Integrated with IoT technology which allows remote monitoring and control over local or web networks.

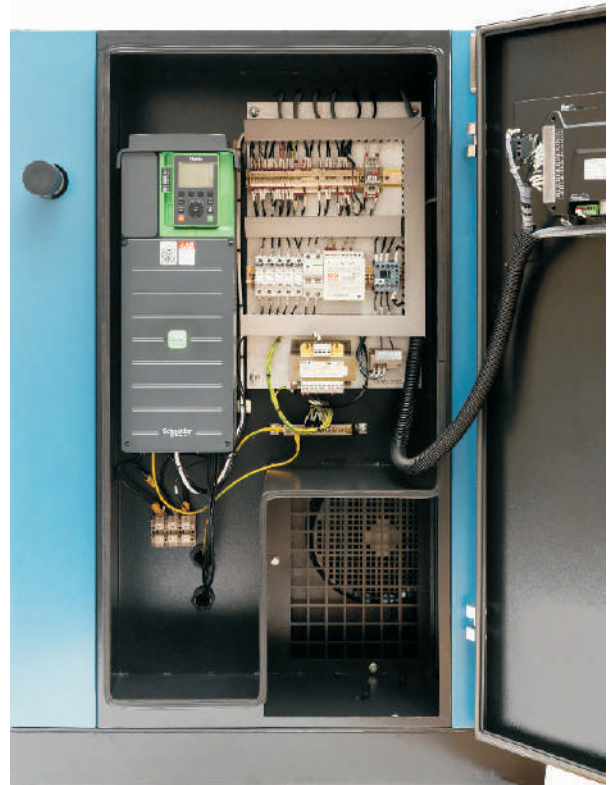
KRSP SERIES COMPRESSOR WITH VFD

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

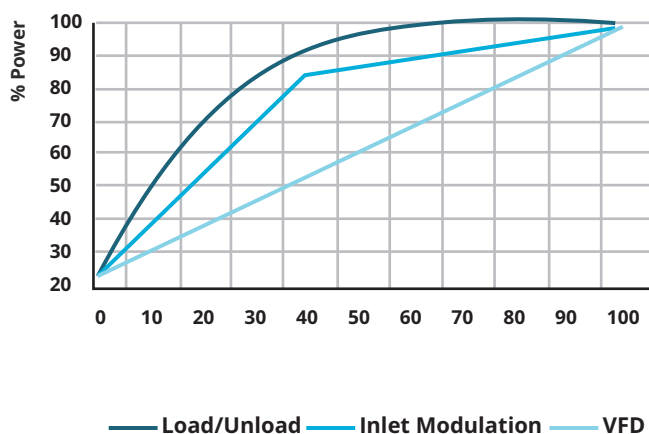
KRSP Variable Speed Air compressors provide maximum efficiency with consistent operation. Unlike the traditional “Auto-dual” and “Load/No load” control modes, KRSP VFD modulates the speed of the drive motor in response to system demand. This results in greater energy saving compared to a fixed speed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



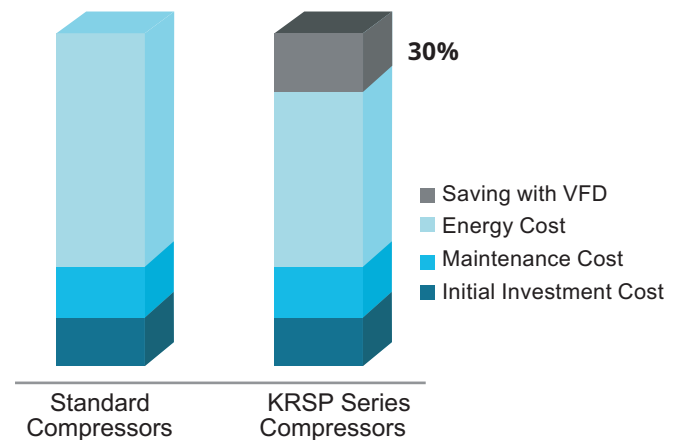
- Industry renowned VFD units are used in KRSP series compressor package
- Compact VFD design allows a smaller footprint
- Monitors key function of the unit
- Maintenance free
- The VFD minimizes starting current peak loads
- Extremely low sound level



PART LOAD PERFORMANCE ASSESSMENT



ENERGY COST COMPARISON



KRSP 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.

KRSP SERIES SPECIFICATIONS

Model No	Pressure Bar	Flow cfm	Power kW	End Connection	Dimension mm	Weight Kg
KRSP-18	8 10	120 91	18.5	G 1 -1/2"	1780 X 975 X 1278	760
KRSP- 22	8 10 13	140 120 96	22	G 1 -1/2"	1780 X 975 X 1278	790
KRSP- 30	8 10 13	201 166 130	30	G 2"	1810 X 1160 X 1370	1030
KRSP - 37	8 10 13	245 200 140	37	G 2"	1810 X 1160 X 1370	1070
KRSP - 45	8 10 13	304 235 188	45	DN 50	2260 X 1410 X 1720	1600
KRSP 55	8 10 13	382 307 237	55	DN 50	2260 X 1410 X 1720	1740
KRSP 75	8 10 13	510 410 336	75	DN 50	2480 X 1520 X 1820	2300
KRSP 90	8 10 13	608 510 421	90	DN 50	2480 X 1520 X 1820	2450
KRSP 110	8 10 13	749 602 491	110	DN 80	3100 X 1690 X 2050	3380
KRSP 132	8 10 13	871 750 600	132	DN 80	3100 X 1690 X 2050	3650
KRSP 160	8 10 13	1038 884 739	160	DN 100	3565 x 1915 x 2320	4200
KRSP 200	8 10 13	1323 1177 1028	200	DN 100	3565 x 1915 x 2320	4300
KRSP 250	8 10 13	1625 1413 1166	250	DN100	3860 X 2160 X 2270	6450
KRSP 280	8 10 13	1768 1619 1406	280	DN 125	4060 X 2060 X 2250	7400
KRSP 315	8 10 13	1978 1771 1604	315	DN 125	4060 X 2060 X 2250	7500
KRSP 355	8 10 13	2332 1944 1753	355	DN 125	4060 X 2060 X 2250	7550
KRSP 400	8 10 13	2627 2281 2054	400	DN 125	4060 X 2060 X 2250	7660

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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