Over the last sixty years, Kaishan has steadily grown to become a significant, 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 60,000 rotary screw compressors annually. Kaishan is the world’s third largest manufacturer of compressed air, mining and drilling equipment and supports industries in more than 60 countries including: USA, Australia, Germany, Japan, Korea, Russia, Africa and throughout Latin America.

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 machinery of exceptional value - now and well into the future.

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

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WORLD CLASS ENGINEERING

INTERNATIONALLY PATENTED ‘SKY’ AIR END DEVELOPED EXCLUSIVELY BY KAISHAN ENGINEERS

Continued development has increased efficiency by more than 20% over earlier models

- Direct drive (1:1 ratio) motor and air end operate at slow speed
- Low part load energy consumption
- Steady system pressure lowers system stress and overall air demand
- Slow speed rotors maximize performance and increase reliability
- Decreased energy consumption delivers environmentally friendly savings
- Quadruple SKF bearings for durability and reliability
- 5 / 6 rotor profile creates optimal performance while reducing energy consumption
- Very tight tolerances provide maximum efficiency
- Direct flow inlet valve provides reliable capacity control

KRSP SERIES COMPRESSORS PROVIDE LOW CAPITAL COST AND LOW OPERATING COST

Low cost of ownership throughout life cycle
Compressed air is often referred to as the ‘fourth utility’ and is critical to most manufacturing operations. Facility performance depends upon compressor reliability and efficiency.

Power consumption is a significant cost throughout the life cycle of a compressor. Therefore, it is important to consider the life cycle cost of a compressed air system when evaluating productivity improvements. KRSP series advanced energy saving features reduce operation costs significantly.

KRSP Series ‘best in class’ rotor assembly

KRSP Series patented air end
CENTRIFUGAL COOLING FANS
Increased Cooling Efficiency
• Higher static pressure allows for energy saving heat recovery
• Even air flow across the cooler face.
• VSD cooling fan (150 HP and above) provides energy savings as cooling airflow is reduced during periods of light load or low temperatures.
• Cooling air bypasses main compressor compartment resulting in minimal internal dust build up

DIGITAL CONTROL PANEL
Monitors & Controls Key
Compressor Functions
• Protects compressor in the event of a fault
• Provides service required alert
• Sequencing of up to 16 compressors
• External monitoring via RS 485 interface
• WYE Delta starter is standard on all models
• MODBUS capability

INDUSTRIAL GRADE ELECTRICAL COMPONENTS
Increased Reliability / Lower Servicing Cost
• Outstanding reliability
• Excellent component life
• Worldwide support
• Standard electrical parts available locally

HIGH EFFICIENCY ELECTRIC MOTORS
Long Operating Life / Lower Power Use
• Kaishan uses high efficiency motors, which comply with all international standards:
• Motors are standard TEFC to protect from dust and moisture
• Class F insulation
• Cooling air bypasses main compressor compartment resulting in lower component operating temperatures and longer life

316 STAINLESS STEEL CONTROL TUBING
Long Tubing Life / Reduced Downtime
• Increased reliability due to corrosion free material
• Material such as nylon, copper or mild steel will fail in time causing downtime
QUADRUPLE DISCHARGE BEARINGS
Longer Bearing Life / Quieter Operation
• The “SKY” series direct drive airends use four discharge bearings to absorb radial and axial loads.
• Longer bearing life under all operating conditions
• Increased load carrying capacity
• Lifetime airend warranty

‘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

‘SKY’ SERIES AIR END
Maximum Output with Less Energy Usage
• Asymmetric 5 / 6 rotor profile with 100% SKF bearings
• KAPP Grinder rotor technology for tighter clearances and world class efficiency and performance
• Precision machined bell housing to maintain rigid alignment

DIRECT DRIVE - 1:1 DRIVE RATIO NO GEARBOX
Maximum Air Output/Reduced Energy Usage
• Large, slow running airend
• Eliminates transmission energy losses
• Increases bearing life
• Flexible coupling with easily removable coupling elements

SAFETY AND THE ENVIRONMENT
Reduced OSHA Risk and Injury
• The entire Kaishan range of compressors includes full safety features such as guarded rotating components and shrouded electrical components.

SINGLE PASS OIL & AFTER COOLERS
Long Life / Easily Accessible
• Minimize thermal stress
• Cooler running temperatures / correct running temperature @ 122°F (50°C) ambient capable
• Low oil carryover increases bearing life
• Low cooling air velocity reduces dust build up

3 STAGE TANGENTIAL OIL SEPARATION
Lower Pressure Drop / Lower Absorbed Power
• Excellent oil 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 3 ppm

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

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KRSP SERIES COMPRESSORS PROVIDE ROBUST, TURN-KEY INDUSTRIAL SOLUTIONS

KRSP has low life cycle cost by providing: Low Capital Cost + Low Operating Cost + Exceptional Reliability & Efficiency

- All electrical wiring is high performance including cable and converters
- Optimum operating temperature to prevent moisture in the system
- Rugged and proven technology to ensure long operating life
- Heavy duty isolators to minimize operating vibration
- SAE fittings allow easy and low cost maintenance
- Spin-on fluid filter for quick maintenance
- VSD cooling fan on all units 150HP and up
- Premium, efficiency - IE3 TEFC Electrical motors
- Acoustic enclosure brings the sound level to industry leading level of 67 dB(A) to 80 dB(A)

KRSP SERIES VARIABLE SPEED DRIVE OPTION PROVIDES A MAJOR ENERGY SAVINGS

KRSP VSD combines a robust power platform with a state-of-the-art control scheme

The drive provides a soft start and the ability to operate efficiently through the compressor’s capacity range by matching flow to demand, while maintaining a high level of pressure control. By eliminating wasted energy, cost savings as high as 35% or more are possible. With this level of savings, the additional capital cost of the variable speed drive can be recovered in less than one year’s operation.

Variable Speed Drive

The variable speed drive used in KRSP compressors are renowned for:
- Efficient and reliable service
- Worldwide support
KRSP SERIES CONTROL SYSTEM PROVIDES TOTAL MANAGEMENT OF ALL OPERATING PARAMETERS

KRSP controller capabilities include the following features:

- Operating parameters display
- Programmed maintenance schedules
- Warning stop alarms
- Recordings of compressor history

The control panel contains a special programmed microprocessor that can safely and efficiently control all the functions of the compressor.

The touch screen display monitors line pressure, oil temperature and working conditions (running, idling and stop). Abnormal conditions will trigger a flashing LED and a flashing message indicating the cause for the alarm. Microprocessor functions are password protected, accessible only to authorized personnel.

<table>
<thead>
<tr>
<th>MODEL</th>
<th>CAPACITY</th>
<th>POWER</th>
<th>FULL LOAD</th>
<th>MAXIMUM</th>
<th>SOUND dB(A)</th>
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150, 175, 200 PSI models available, consult factory.
<table>
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<tr>
<th>MODEL</th>
<th>COMPRESSOR TYPE</th>
<th>FEATURES</th>
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<tbody>
<tr>
<td>KRSP2</td>
<td>Two Stage</td>
<td>Global leader in air compressor efficiency</td>
</tr>
<tr>
<td>KRSP</td>
<td>Single Stage</td>
<td>Patented ‘SKY’ air end, triple SKF bearings</td>
</tr>
<tr>
<td>KRSD</td>
<td>Single Stage</td>
<td>Direct drive, TEFC motor, low sound enclosure</td>
</tr>
<tr>
<td>KRSB</td>
<td>Single Stage</td>
<td>Belt drive, economical to own and operate</td>
</tr>
<tr>
<td>KRST</td>
<td>Single Stage</td>
<td>Belt drive, tank mounted</td>
</tr>
<tr>
<td>KRSH</td>
<td>Two Stage High Pressure</td>
<td>Pressure to 580 PSI</td>
</tr>
<tr>
<td>KRSL</td>
<td>Single Stage Low Pressure</td>
<td>Pressure as low as 45 PSI</td>
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<tr>
<td>KRSV</td>
<td>Rotary Screw Vacuum Pump</td>
<td>World class vacuum efficiency</td>
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