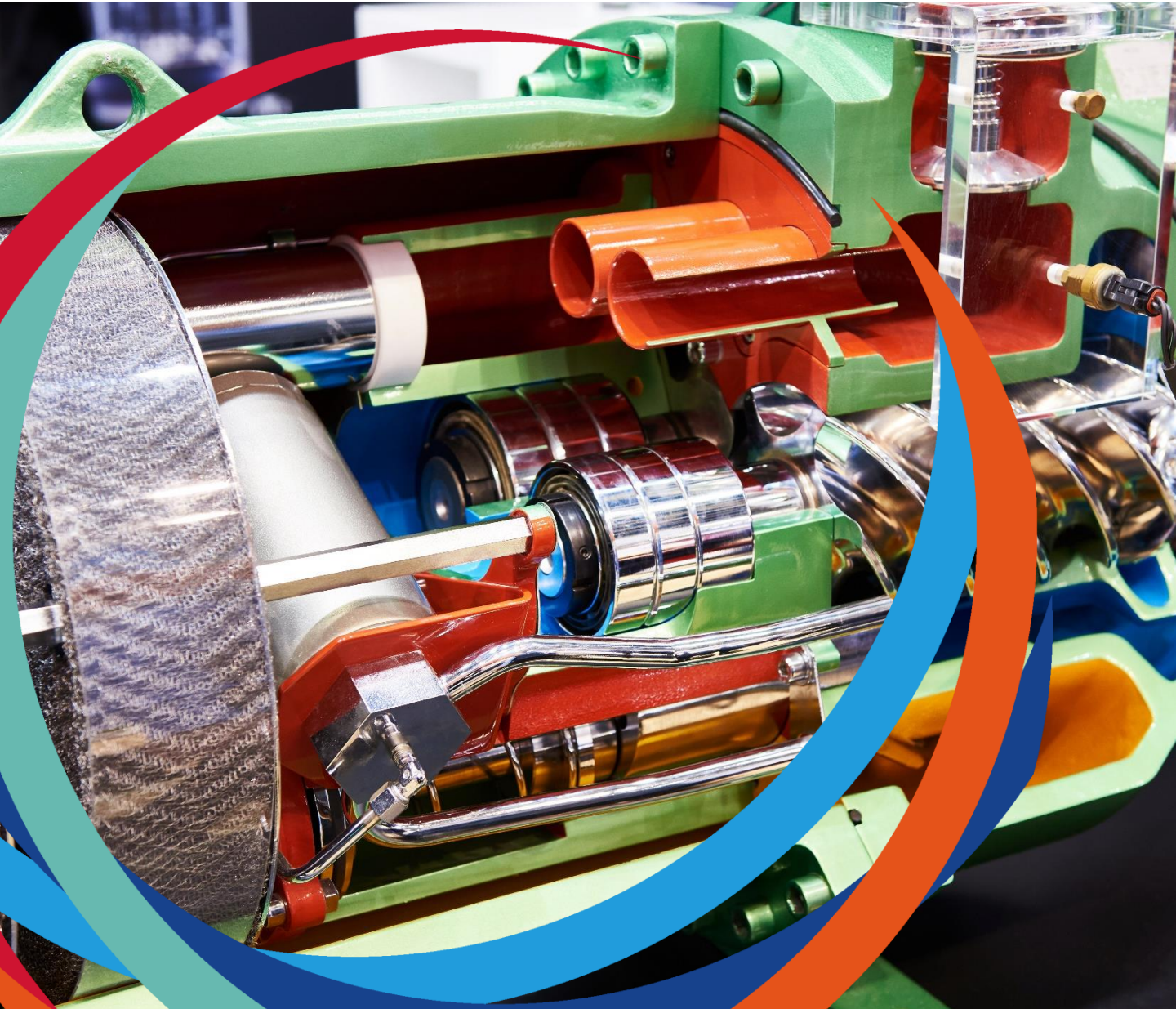




INDUSTRIAL CASE STUDY

ROTARY SCREW COMPRESSOR





OMNISEAL® ROTARY LIP SEALS

Rotary Screw Compressor

Prasad, K.R.

May 2021

INDUSTRIAL LEAKAGE CONTROL EXTENDED LIFE SELF-LUBRICATING

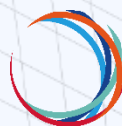
Environment

A compressor is a mechanical device that increases the pressure of air by reducing its volume. It takes air from one end, compresses this air to high pressure and then delivers it at the other end for various applications or mechanical work. Industrial air compressors are used in various industries including general industrial, chemicals, food and beverage, oil and gas, power generation and life science.

The different compressor types are rotary, reciprocating and centrifugal. Rotary compressors constitute almost 60% of the overall market. Up to 30% of industrial jobs could not be done without high-density, high-pressure air pumped by rotary screw compressors and if they malfunction, the result could be very costly.

Challenge

The compressor market is changing with new requirements requiring lip seal life of over 45,000 hours. Additionally, new operating pressure has increased two to three times the previous normal operating pressure. Leakage can no longer be tolerated.



Omniseal Solutions
SAINT-GOBAIN

Solution

Omniseal Solutions™ designed its first polymer rotary lip seal in the 1980s and was one of the first businesses to support industrial compressor customers. In the past 50 years, we have manufactured over a million lip seals. These sealing solutions offer tight leakage control and the ability to run at 1,000 to 6,000 RPM with many types of lubricants and over extended periods (15,000 hours) to reduce warranty claims. We can produce shaft seals ranging from 0.500 inch to 6.000 inch (13 mm to 150 mm) in diameter for this industry.

Lip seals are widely used in rotary screw compressors to prevent leakage of lubricating oil and working medium, i.e., air. The shaft seal leakage / failure to seal can increase energy consumption of the compressor, resulting in downtime. To help customers stay competitive, we made major changes in the lip seal design and can now offer several special designs that provide compressor manufacturers an expected 45,000 hours of life without replacement.



In the past 50 years, we have manufactured over a million lip seals ... each one saving cost, keeping maintenance low and reducing downtime.

Benefits

- Reliability and proven pedigree
- Custom design
- Self-lubricating, extended seal and shaft life
- Positive pumping and sealing control
- Reduced friction, torque and heat generation
- Increased runout capability



Omniseal Solutions
SAINT-GOBAIN

Design Expertise & Tailor-made Solutions for Your Critical Applications

Omniseal Solutions™ is a global engineering leader with over 65 years of historical legacy, relentlessly dedicated to the design and manufacture of precision sealing and material solutions that protect critical applications in the most demanding environments and passionately driven to push *Beyond the Boundaries of Possible*.



About the Author

Prasad K.R

Market Manager - Industrial

Bengaluru, India

+91 98803 43442

Prasad.KR@saint-gobain.com

Omniseal Solutions™
help@omniseal-solutions.com
www.omniseal-solutions.com