

SAINT-GOBAIN SEALS APPLICATION CASE STUDY

Life Sciences: Case of the “Balanced” Oxygen Concentrator Air Compressor



CUSTOMER CRITICAL DIFFERENCE

Our bodies cannot live without the oxygen we breathe in from the air every day. But what about those who do not get enough because of a medical condition? This is where oxygen concentrators make THE difference in enhancing a person’s quality of life and giving them freedom and flexibility. With such a critical function, this type of equipment must be reliable but also convenient. Oxygen concentrators come in two versions – stationary, which are for long-term home use, and portable, which are mobile. What makes oxygen concentrators different from other oxygen delivering systems, and also unique, is the compressing element.

[Seals play a critical part in the compressors](#) as they ensure the functionality of the oxygen system in two key ways. They not only act as a bearing to enhance the movement of the piston up and down the cylinder wall, but also as a seal to prevent air from seeping from the chamber while it is being compressed. [Rulon® cup seals](#) are often used in the application because of their ability to handle very high pressures and provide longer wear.

CONNECTED APPLICATION

Rulon® bearings: Used in [chemical analyzers](#).



**Solution Teams: Shanghai,
China Team & Saltillo,
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Critical parts
making THE difference



SEALS

SAINT-GOBAIN

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PRODUCT SOLUTION

Rulon® J and 1189

AREA

Oil-less Air Compressor in **Stationary** Oxygen Concentrator

MATERIAL

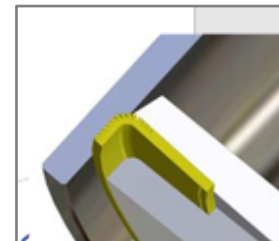
Fluoropolymer

CRITICAL PART

Piston Cup Seal

TECHNICAL DETAILS

- Media: Air
- Pressure: 2 bar (29 psi)
- Temperature: -40° F to 212° F
- Speed: 0.5 m/sec
- (-40° C to 100° C)



BENEFITS AND ADDED VALUE

- Increased durability and reliability: Wear life of 20,000 hours and low friction
- Versatile customized designs allowing manufacturers to create smaller and lighter concentrators
- Variety of material choices to match different hardware
- Decreased total costs resulting from post cost-savings in training, technical support, installation, and maintenance

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PRODUCT SOLUTION

Rulon® 1694

AREA

Oil-free Air Compressor in **Portable** Oxygen Concentrator

MATERIAL

Fluoropolymer

CRITICAL PART

Piston Cup Seal

TECHNICAL DETAILS

- Media: Air
- Speed: Reciprocating moderate to high
- Temperature: -40° F to 120° F (-40° C to 49° C)
- Counterface: Hard Anodized Aluminum



BENEFITS AND ADDED VALUE

- 25% improvement in wear life over existing piston cup seal per a key customer's requirement
- Abrasive resistance
- Substantial reduction in risk of failure

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