



The Next Generation of Shaft Sealing



CINCHSEAL ROTARY SHAFT SEALS FOR SUGAR APPLICATION

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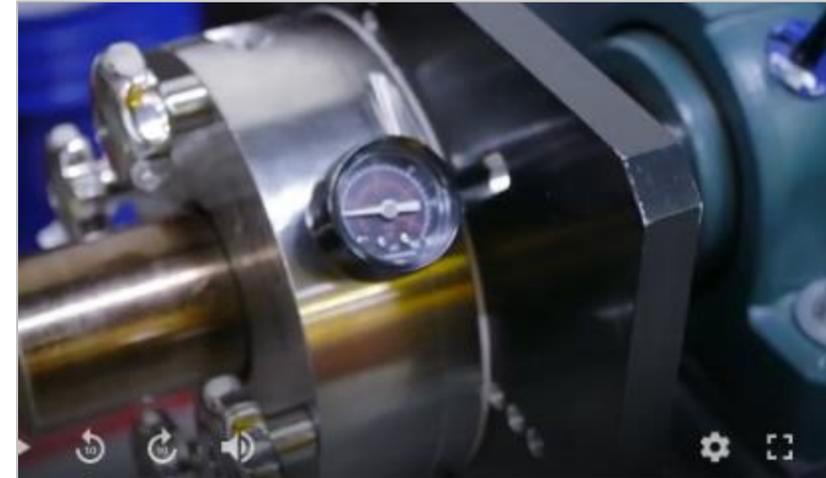
 www.cinchseal.com



The Next Generation of Shaft Sealing

CINCHSEAL OVERVIEW VIDEO

- **Leading manufacturer of rotary shaft seals:**
 - Patented, unique, problem-solving seals
 - Used with screw conveyors, mixers, blenders, and other bulk-handling equipment
 - Seals in slurries, powders and semi-liquids
- **Industries:** food processing, chocolate, bakery, pulp & paper, feed & grain, industrial, chemical, pharmaceutical, goldmine, battery, and others
- **Over 25 years in business**
 - Current Customer Base: < 4000 customers in < 50 countries
 - Located in Mount Laurel, NJ
- **Used by 2/3 of world's top food and major companies in every processing industry**
 - Standard seals for common equipment types
 - Custom seals designed for specific customers, equipment types, materials and applications





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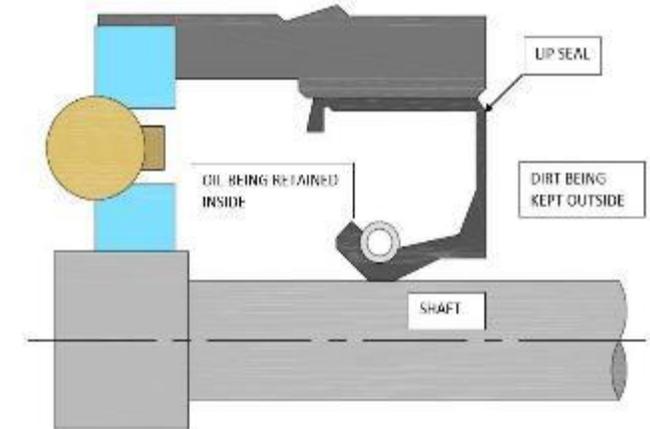
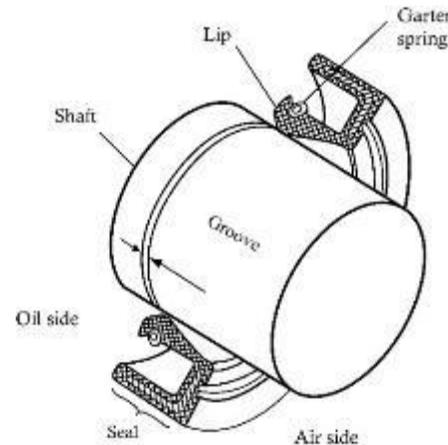
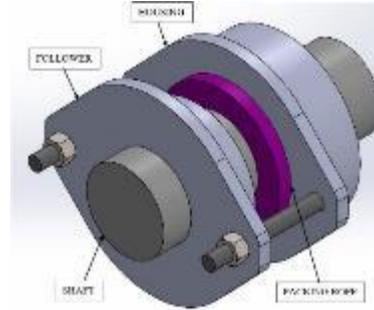
LIP & PACKING SEALS (WATCH A VIDEO)

Advantages

- Low-cost alternative
- Have been around for a long time

Disadvantages

- Unable to handle shaft run-outs
- Do not rotate with the shaft
- Allow product leakage
- Facilitate product loss
- Expensive to maintain
- Cause shaft damage
- Enable bearing failure
- Difficult to hygienically clean
- Require long installation
- Product contamination and recall risk





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CINCHSEAL VALUE PROPOSITION

Reduce Waste

- Stop process equipment from leaking valuable product
- Generate savings on material loss and clean-up costs

Lower Maintenance

- Designed to handle up to ¼" [6.35mm] shaft run-out without losing a seal on the shaft
- Protect gearboxes, bearings and shafts from damage

Ease of Installation and Hygienic Cleaning

- No need to remove bearings or drive units and do mechanical adjustments due to innovative split design
- Easily assemble/disassemble for wash-downs between batches

Increase Productivity

- Longer functional life than traditional lip or packing seals
- Avoid unplanned production downtime

Risk Management

- Prevent product recalls, cross-contamination, and foreign material migration
- USDA- and FDA-certified sealing products



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FEATURES & BENEFITS

CinchSeal's Clean-In-Place (known as CIP) seals are run-out tolerant rotary shaft seals that make the need for processing equipment replacement far less likely as they solve problems associated with traditional lip seals and mechanical packing.

One-year ROI of up to 10x – 35x

Features

Rotating Drive Elastomer and Rotors Design

Tolerance for up to 0.250" [6.35mm] Shaft Dynamic Run-out

Self-Adjusting, Abrasion-Resistant Sealing

All C.E.M.A. Standard and Metric Sizes

Innovative Split CIP Design

FDA-Certified Rebuild Kits

Custom-Tailored to Any Machinery

Available USDA-Certified Models for Dairy, Meat, and Poultry Applications

Benefits

Protects bearings, gearboxes, and shafts from damage

Prevents cross-contamination, foreign material migration, product leakage and recalls

Eliminates unscheduled downtime, maintenance, and lost productivity

Designed for C.E.M.A. standard and metric screw conveyor and bulk-handling equipment

- Requires no removal of bearings or drive units
- Allows for hygienic cleaning between batches
- Enables easy installation and maintenance

Reduces the total cost of ownership, replacing soft internal components, without compromising the seal

With custom drawings, perfectly fits on any standard or non-standard new and existing equipment

Provides a hygienic sealing solution for highly regulated industries

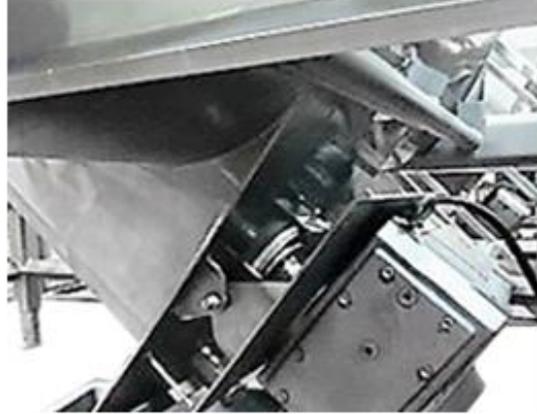




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SUGAR EQUIPMENT

- Screw Conveyors (Horizontal and Incline)
- Augers on Sugar Silos
- Paddle Mixers
- Ribbon Blenders
- Sugar Crystallizers
- Pan Crystallizers (Vertical)
- Bucket Elevators
- Rotary Airlocks





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OUR SUGAR CUSTOMERS

- American Crystal Sugar
- Western Sugar
- Florida Crystal
- US Sugar
- Evergreen Sweeteners
- Ingenio Providencia (Colombia)
- Incauca (Colombia)
- Amalgamated Sugar
- Imperial Sugar
- Spreckels Sugar
- Pfeifer & Langen (Germany)
- Hershey, Mars





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ATEX CERTIFICATION IN EUROPE

- Dry powder substances, when concentrated, such as sugar and spices, can create an explosive atmosphere
- CinchSeal is ATEX certified to prevent potential explosions for:
 - Zones 21 - When a combustible cloud of dust is likely to occur occasionally
 - Zone 22 - when combustible dust is not present frequently but can be there





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SUGAR ROI

ISSUE

- A Florida sugar manufacturer was having leakage problems on their incline screw conveyor, using a waste pack.
- They were having a product loss, shaft wear, and bearing failure.
- It was also a potential explosion hazard due to a large quantity of dust in the air.

SOLUTION

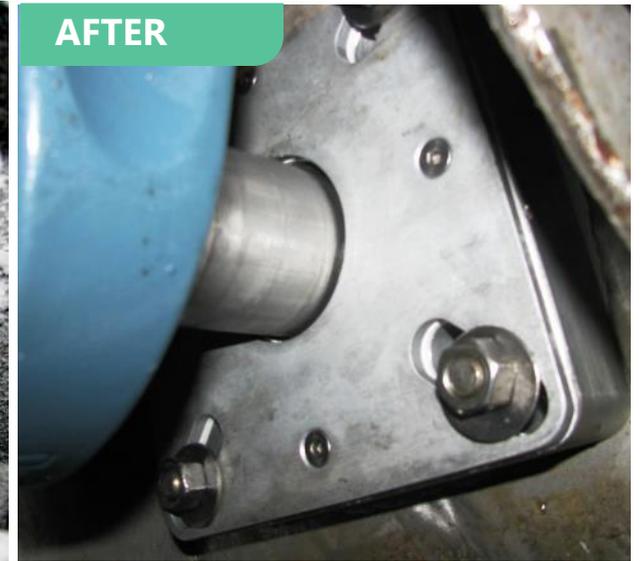
- The customer installed a solid, 7520 air-purged CinchSeal and the seal has been running without incident.

SUGAR CONVERSIONS

BEFORE



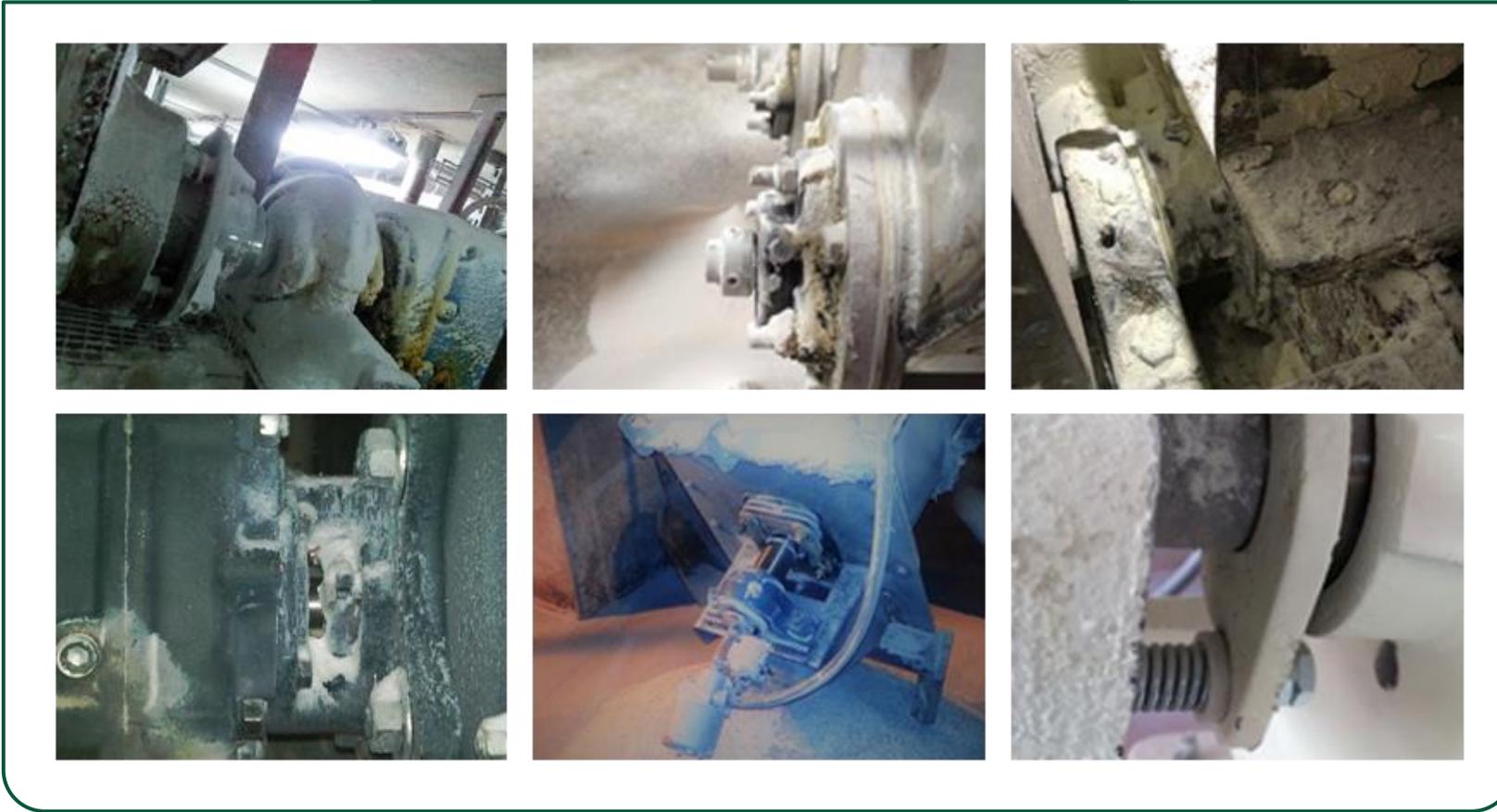
AFTER





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LEAKING SUGAR EXAMPLES





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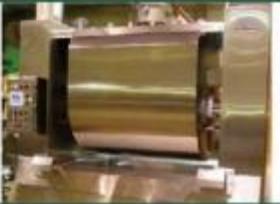
CINCHSEAL ON SUGAR EQUIPMENT





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APPLICATIONS

	<ul style="list-style-type: none">• TiO₂• Salt/Sugar• Plastics• Variety of Powders	Rotary Air Lock Seal 		<ul style="list-style-type: none">• Cement and Gypsum• Metal Powders• Grain and Ethanol• Sugar• Mining	7550 
	<ul style="list-style-type: none">• Bakery• Bread• Cookies• Crackers	9700 		<ul style="list-style-type: none">• Lime• Chemical Processing• Salt• Spices• Rendering	7800 
	<ul style="list-style-type: none">• Meat Processing• Poultry• Meat Rendering	9100 		<ul style="list-style-type: none">• Food Processing• Spices & Flavorings• Cheese & Dairy• Pet Foods• Chemical Processing• Chocolate	9700 

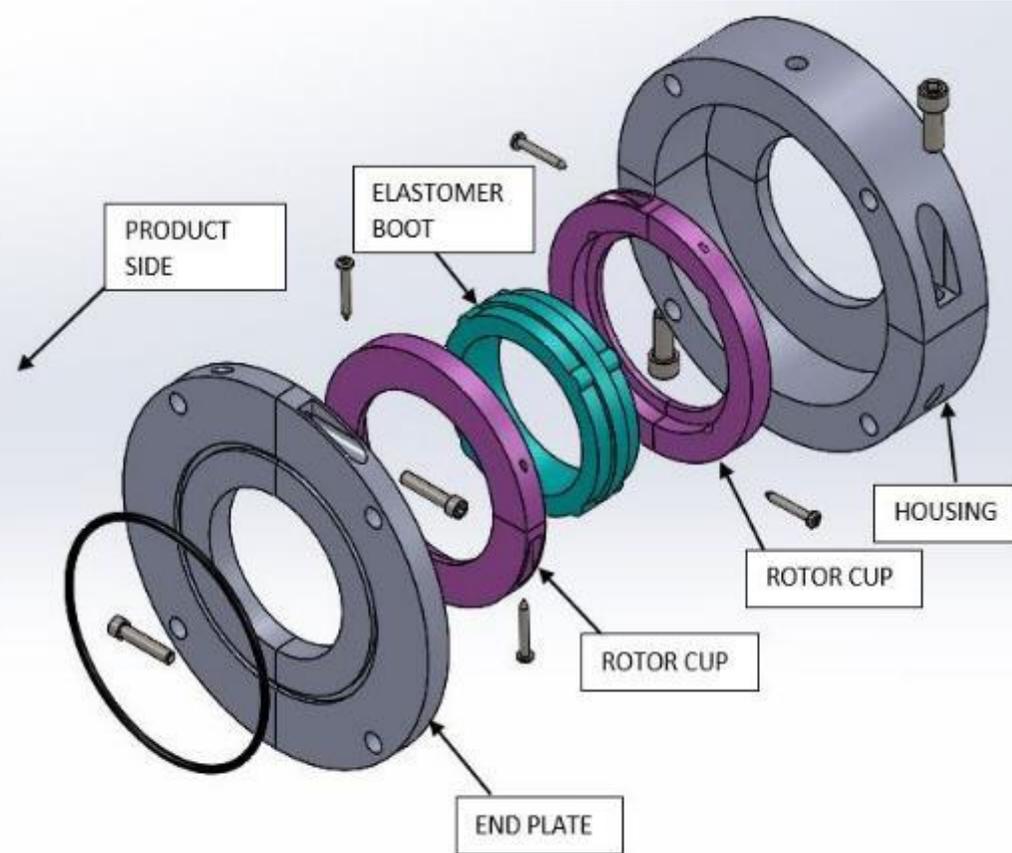


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CINCHSEAL ASSEMBLY

5 PARTS:

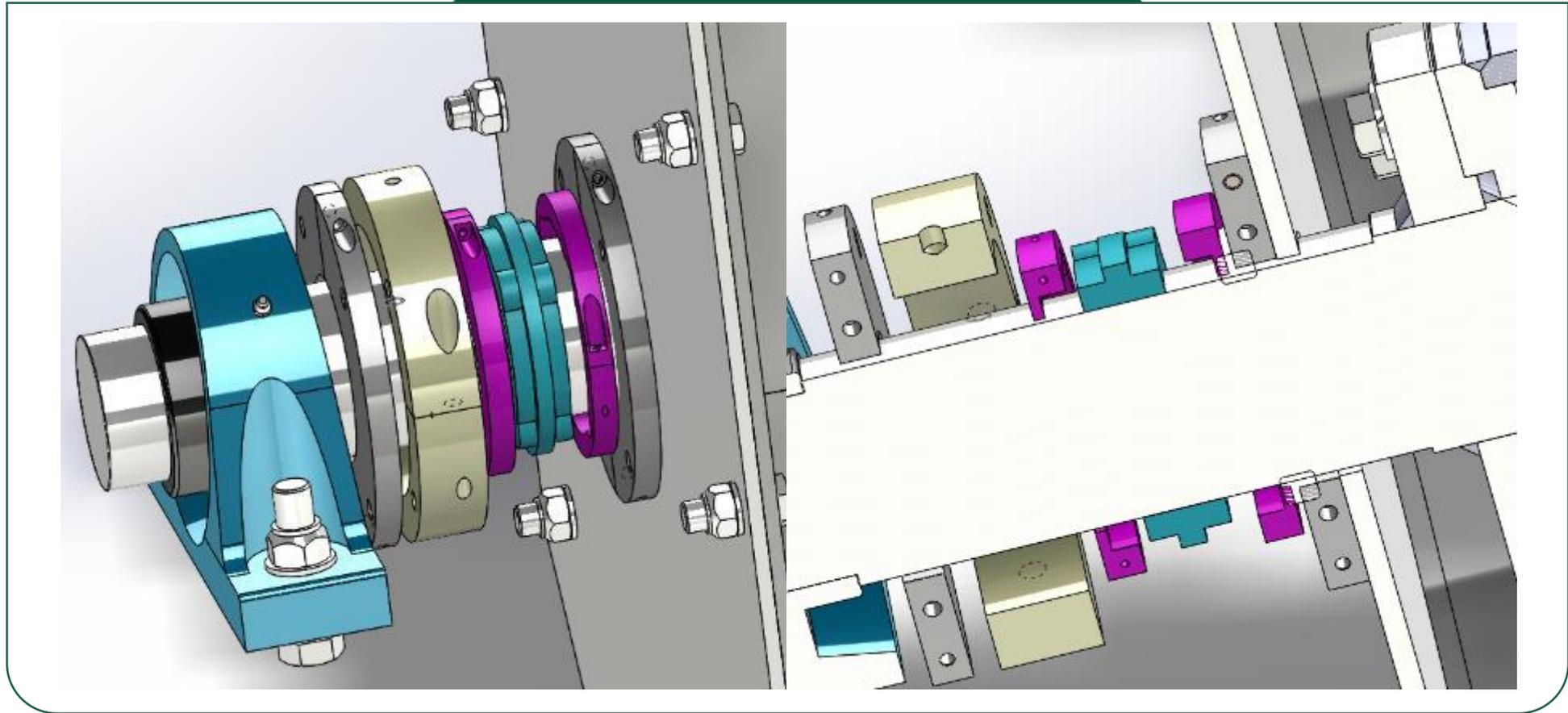
- Metal End Plate
- Metal Housing
- Elastomer Boot
- 2 PTFE Rotor Cups





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CINCHSEAL ASSEMBLY

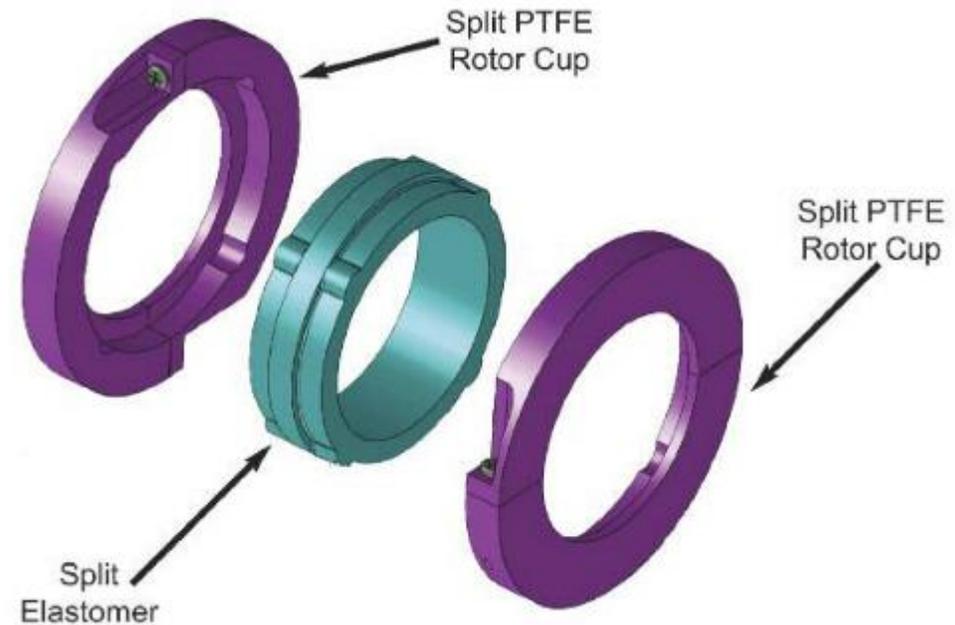




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1). SILICON ELASTOMER

- The elastomer boot grips and seals the shaft without damaging or wearing the shaft. It drives the wearable PTFE seal faces
- The silicone elastomer can withstand temperatures up to 425 degrees °F
- The standard elastomer is made from a "FDA-approved" silicone that handles 95% of industrial applications in the field
- The elastomer material can also be made from VITON, AFLAS and EPDM for harsher chemicals





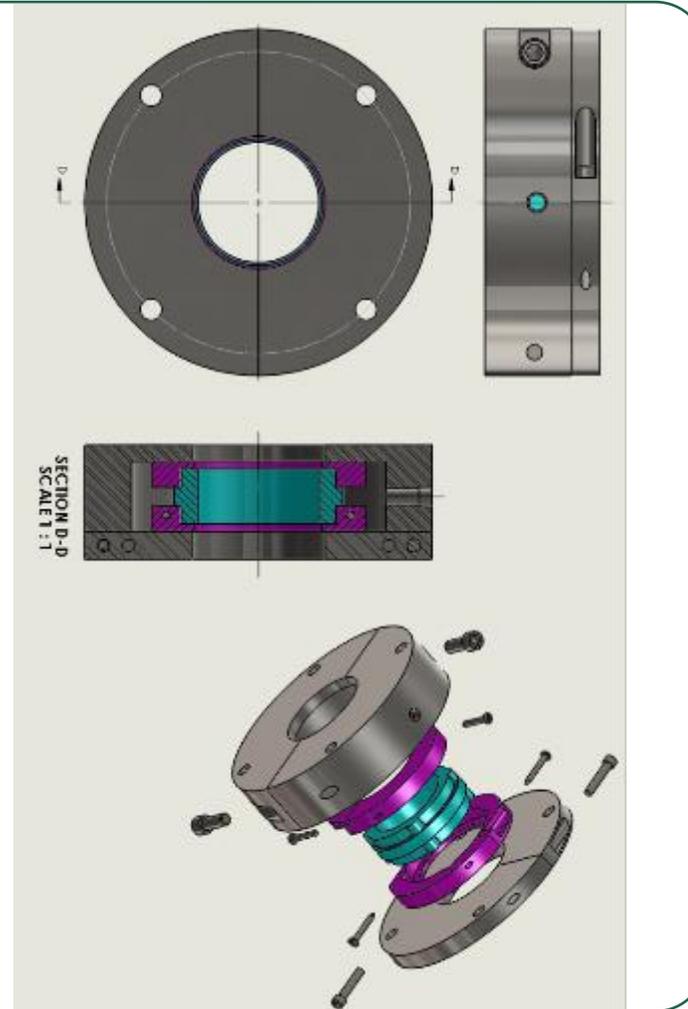
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2). PTFE ROTOR CUPS

- The PTFE stators and rotor cups are made from a mineral-filled PTFE
- Depending on the shaft rotating speeds, the PTFE can be blended with certain minerals to reduce the coefficient of friction at the PTFE-metal interface
- The rotor cups are also FDA approved for indirect food contact and can be USDA certified for sealing in meat, poultry, and dairy

3). METAL PARTS

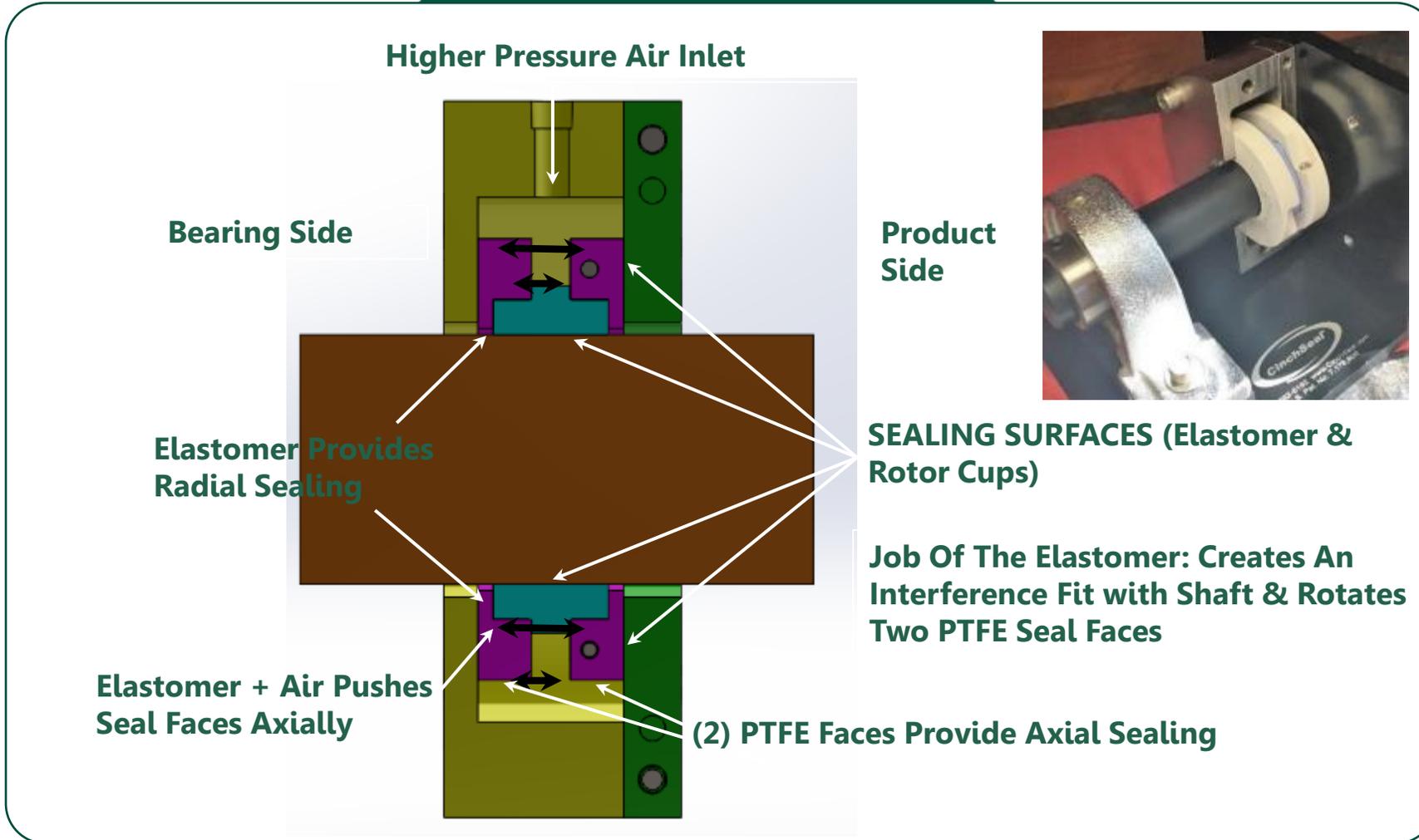
- Seal housings and end plates are available in aluminum, polypropylene, and 304ss or 316ss, depending on application requirements





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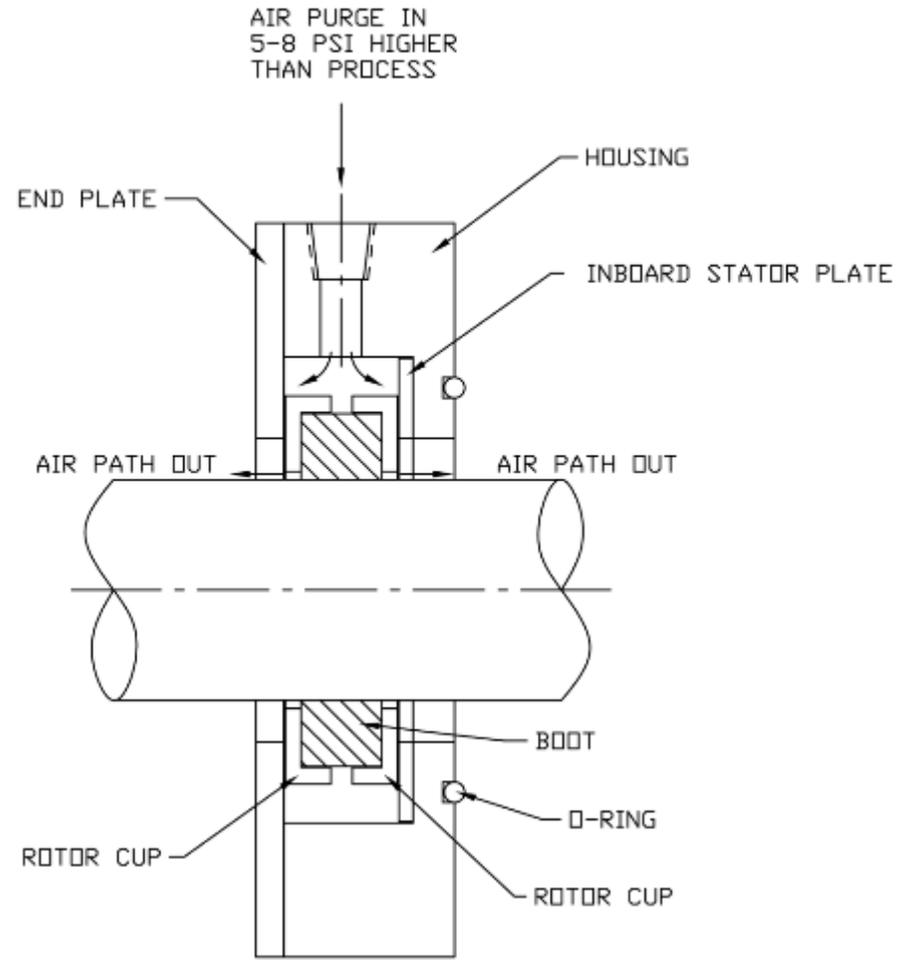
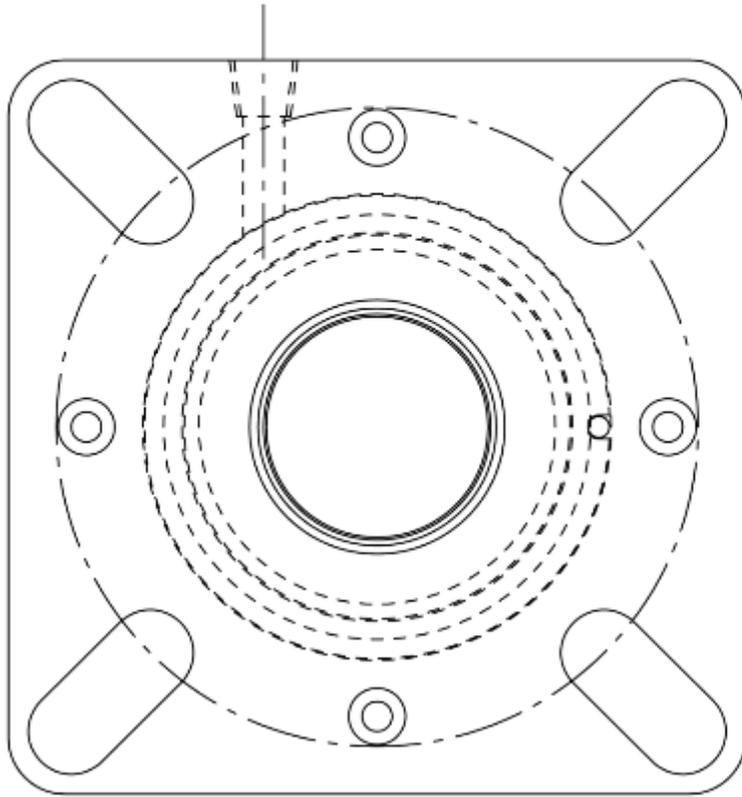
SEAL CROSS-SECTION





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AIR PURGING





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WHY WE AIR PURGE THE SEALS



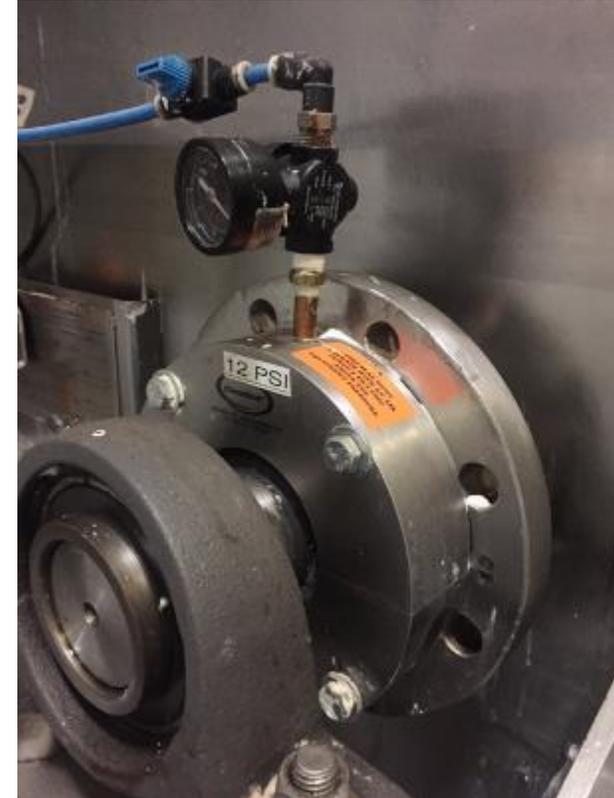
Creates a higher pressure in the seal chamber to form a natural air barrier that keeps product out of the seal



Develops a force that pushes the rotating faces outward against the stationary faces and creates a tighter seal



Cools the rotating seal faces by reducing temperature caused by friction



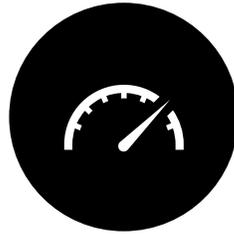


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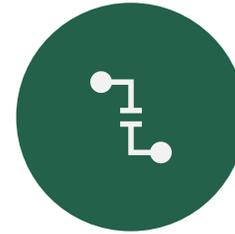
SPECIFICATIONS



Silicon And PTFE Internal Parts Are Good Up To 425 °F - Higher Temperature Applications Are Possible



- Up To 28" Of Vacuum
- Up To 45 Psi Operating Pressure
- Purge Seal With 5 To 7 Psi Of Air Above Operating Vessel Pressure For Optimum Performance



Typical Flow Rate Is Less Than 1 CFM With Air Regulator Set At 5 Psi



Maximum Surface Speed - Approximately 270 Ft/Min (5" Shaft @ 200 Rpm, Some Applications Run Up To 400 Rpm)



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HOW TO INSTALL THE SEAL VIDEO





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WHY SWITCH TO CINCHSEAL – WATCH A VIDEO



Cost Savings: Eliminates product waste, unscheduled maintenance costs and downtime, premature bearing failure, shaft damage, and reduces energy consumption



No Damage to Shafts: CinchSeal's unique design protects rotating shafts from being scored or damaged



Run-out: Can handle up to ¼" [6.35mm] shaft run-out without losing a seal on a shaft



Health and Safety: Prevents powder and dust leakages that can cause hazardous work environments and explosions



Clean-In-Place Design: Allows for hygienic clean-up between product batches



Proven ROI: One-year ROI of up to 10x – 35x