The Next Generation of Shaft Sealing





CINCHSEAL ROTARY SHAFT SEALS FOR BAKERY APPLICATION

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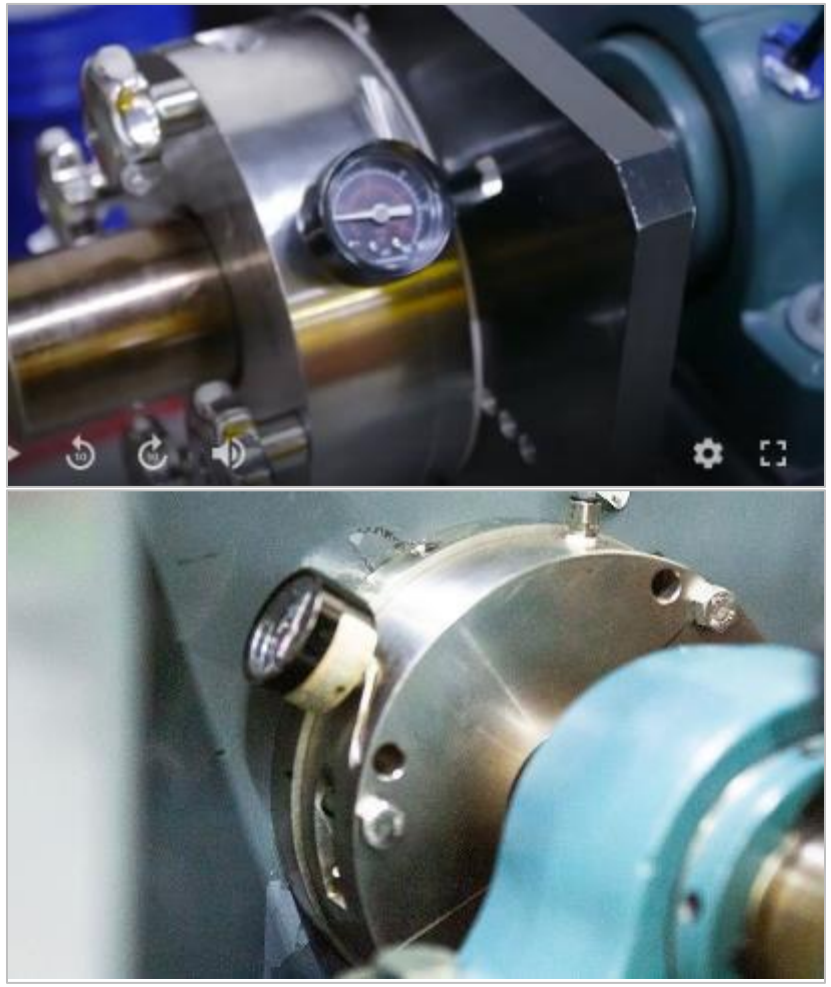
The Next Generation of Shaft Sealing

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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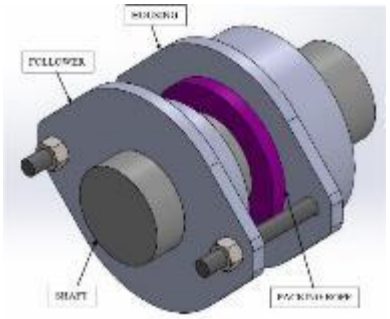
LIP & PACKING SEALS (WATCH A VIDEO)

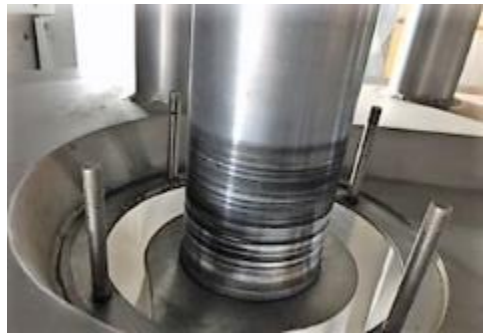
Advantages

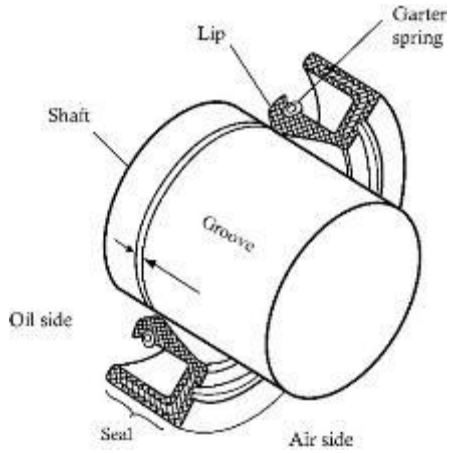
- Low-cost alternative
- Have been around for a long time

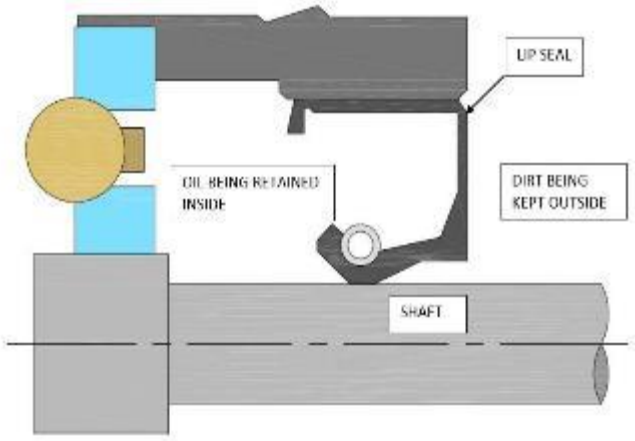
Disadvantages

- 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









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	Benefits
Rotating Drive Elastomer and Rotors Design	Protects bearings, gearboxes, and shafts from damage
Tolerance for up to 0.250" [6.35mm] Shaft Dynamic Run-out	Prevents cross-contamination, foreign material migration, product leakage and recalls
Self-Adjusting, Abrasion-Resistant Sealing	Eliminates unscheduled downtime, maintenance, and lost productivity
All C.E.M.A. Standard and Metric Sizes	Designed for C.E.M.A. standard and metric screw conveyor and bulk-handling equipment
Innovative Split CIP Design	• Requires no removal of bearings or drive units • Allows for hygienic cleaning between batches • Enables easy installation and maintenance
FDA-Certified Rebuild Kits	Reduces the total cost of ownership, replacing soft internal components, without compromising the seal
Custom-Tailored to Any Machinery	With custom drawings, perfectly fits on any standard or non-standard new and existing equipment
Available USDA-Certified Models for Dairy, Meat, and Poultry Applications	Provides a hygienic sealing solution for highly regulated industries

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BAKERY EQUIPMENT

- Tilt Bowl Dough Mixers (Peerless, AMF, Shaffer, Oshikiri, CMC)
- Vertical Slurry Mixers

Tilt-Bowl Dough Mixer

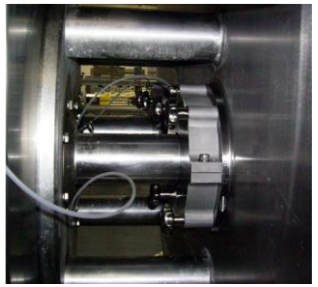
PEERLESS FOOD EQUIPMENT

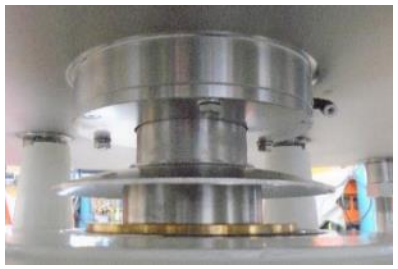
Single Sigma Arm Mixer

PEERLESS FOOD EQUIPMENT

Vertical Slurry Mixer

PEERLESS FOOD EQUIPMENT





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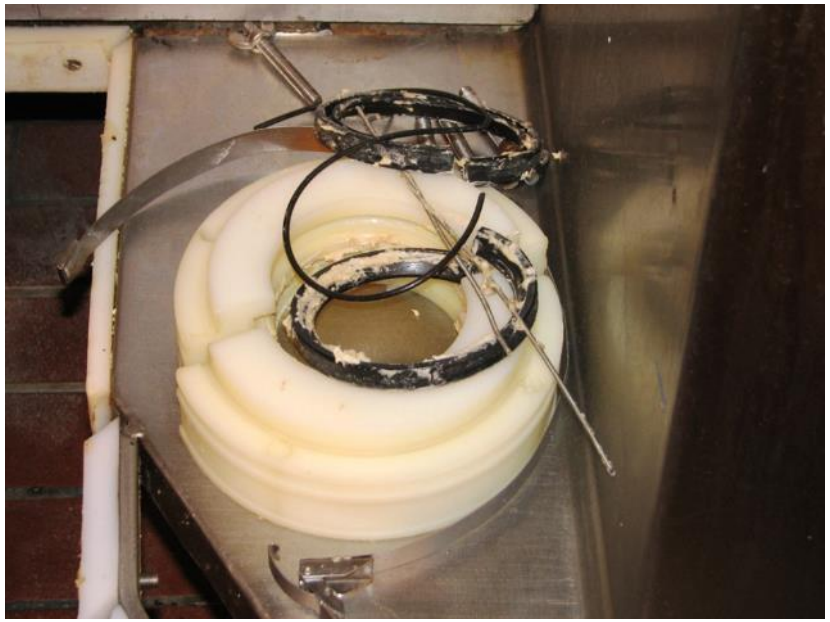
OUR BAKERY CUSTOMERS

- Flowers Foods
- Bimbo Bakeries
- ADM
- Conagra
- Hershey Foods
- General Mills
- Kellogg's
- Kraft
- Mars
- Nestle

BAKERY APPLICATION
LIP SEAL DESIGN FLAW

Traditional lip seals utilize problematic, metal "garter" springs that can migrate into batches, causing product loss and recalls. The chance of the metal clips that are around lip seals entering and contaminating the batch is eliminated when switching to CinchSeal.



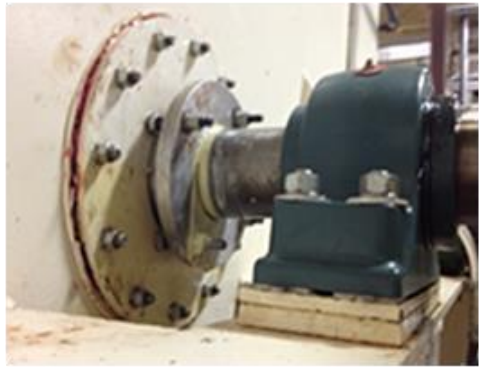
LEAKING BAKERY PRODUCTS

BAKERY APPLICATION










BAKERY ROI

ISSUE

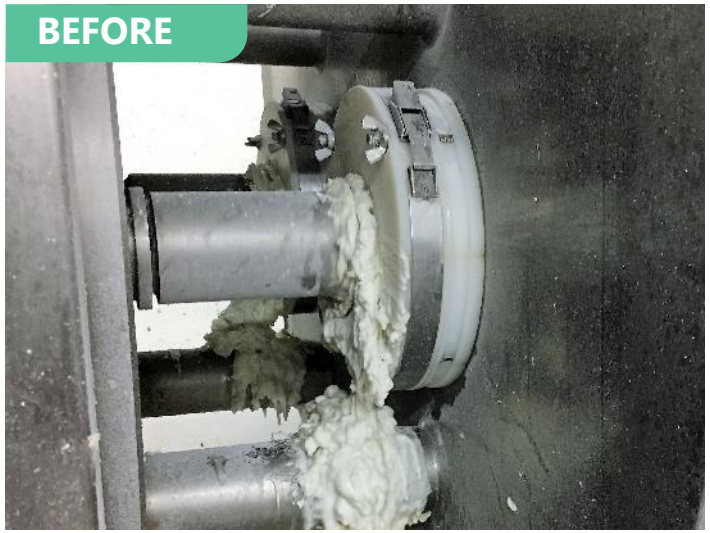
One of the world's largest food and beverage companies was experiencing **flour leakage** due to shaft penetrations on its tilt-bowl dough mixers. This leakage was resulting in the loss of material and product yield.

SOLUTION

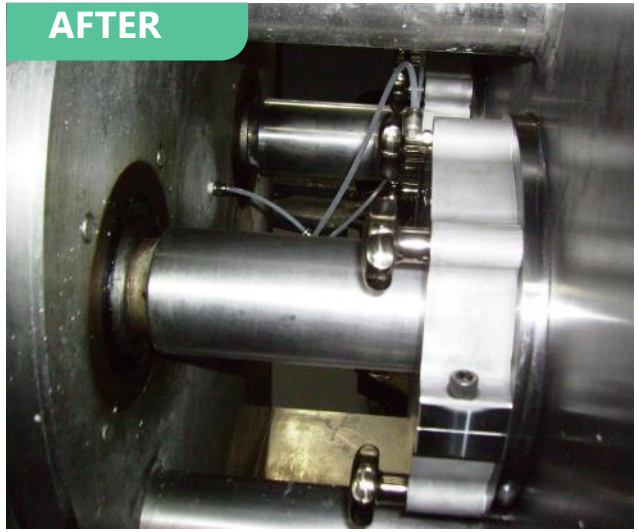
The CinchSeal 9700 seals eliminated the flour leakage and reduced downtime for the dough mixers. Their high performance and long life in this application provided a documented ROI of **$79,000 in the first year and $81,000 in the second one.**

CINCHSEAL CONVERSIONS

BEFORE



AFTER



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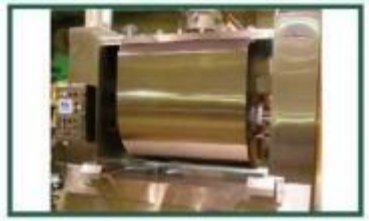
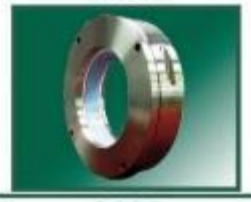
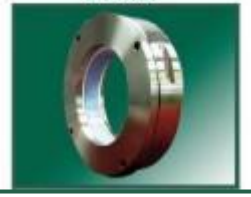
APPLICATIONS

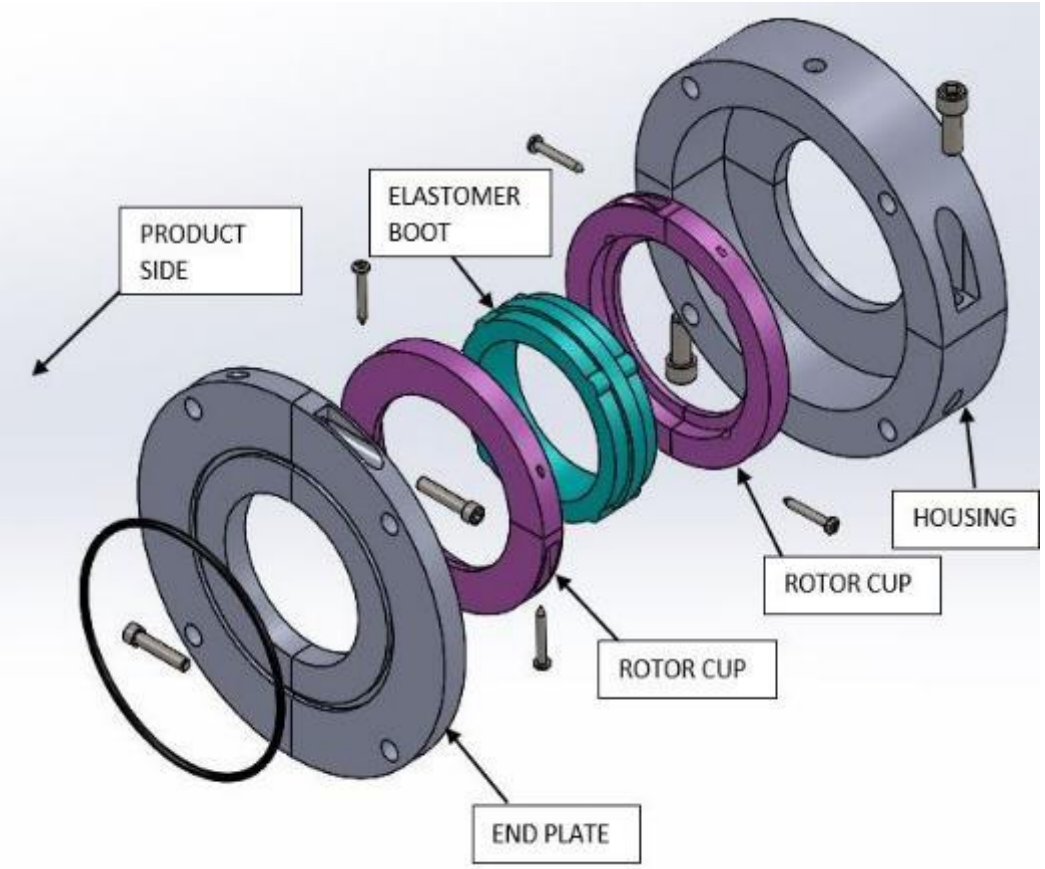
	• TIO2 • Salt/Sugar • Plastics • Variety of Powders	Rotary Air Lock Seal 
	• Bakery • Bread • Cookies • Crackers	9700 
	• Meat Processing • Poultry • Meat Rendering	9100 

	• Cement and Gypsum • Metal Powders • Grain and Ethanol • Sugar • Mining	7550 
	• Lime • Chemical Processing • Salt • Spices • Rendering	7800 
	• Food Processing • Spices & Flavorings • Cheese & Dairy • Pet Foods • Chemical Processing • Chocolate	9700 

CINCHSEAL ASSEMBLY

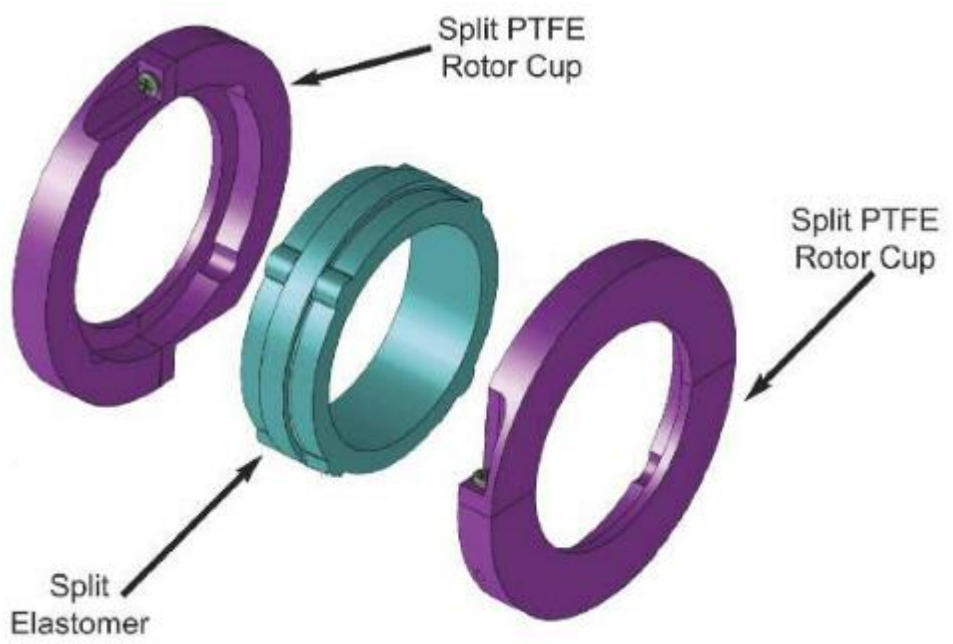
5 PARTS:

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



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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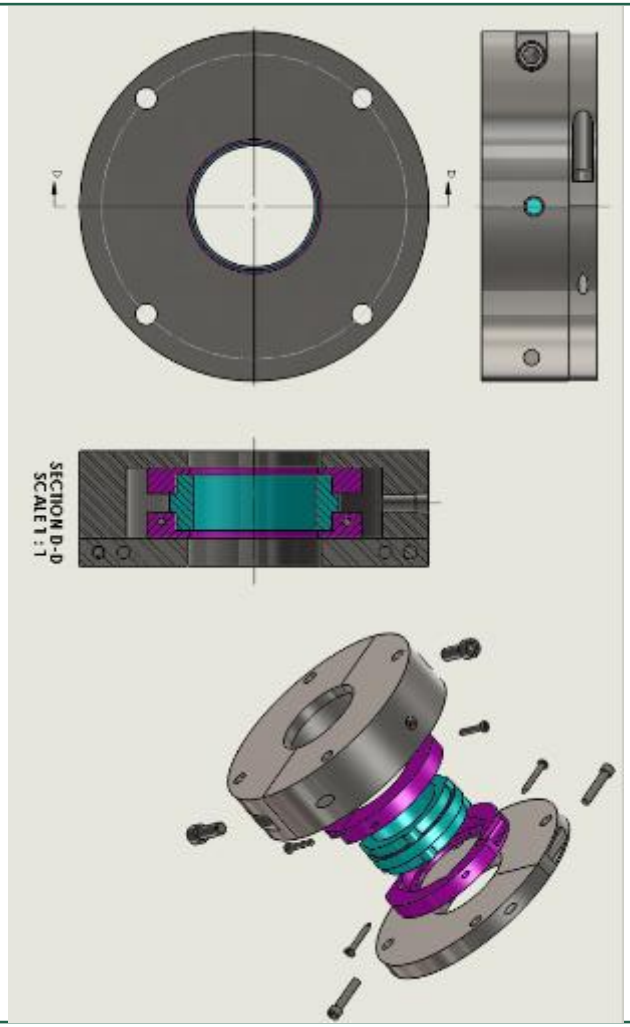
2). PTFE ROTOR CUPS

- 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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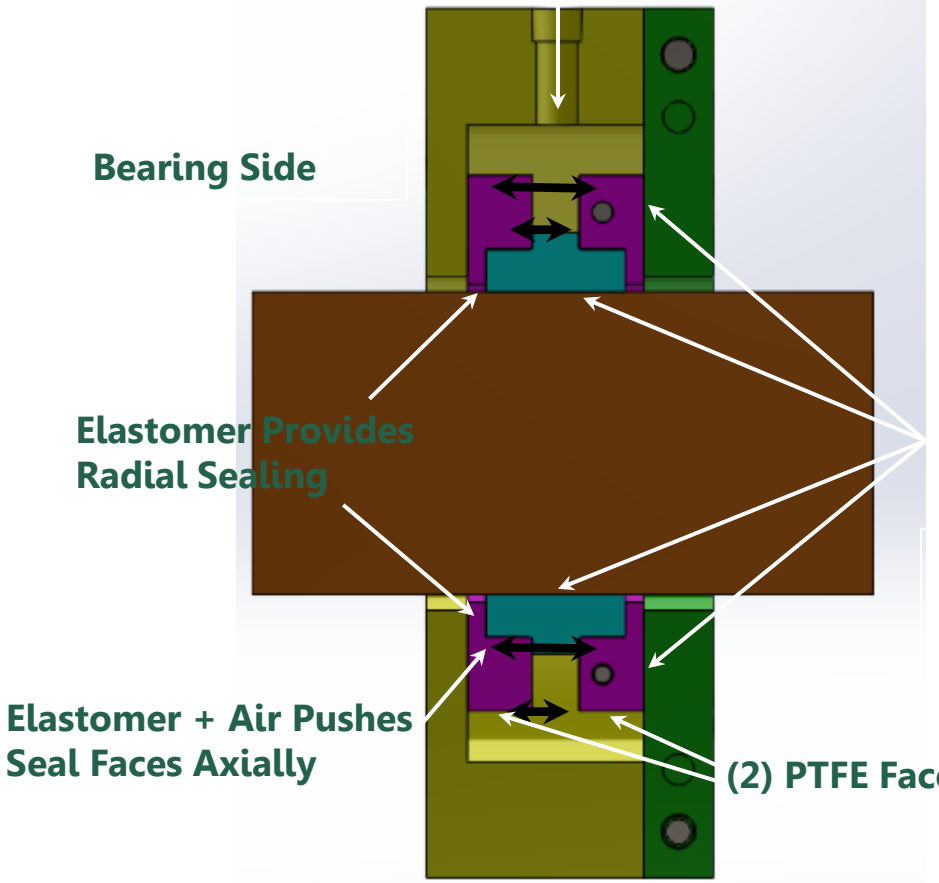
SEAL CROSS-SECTION



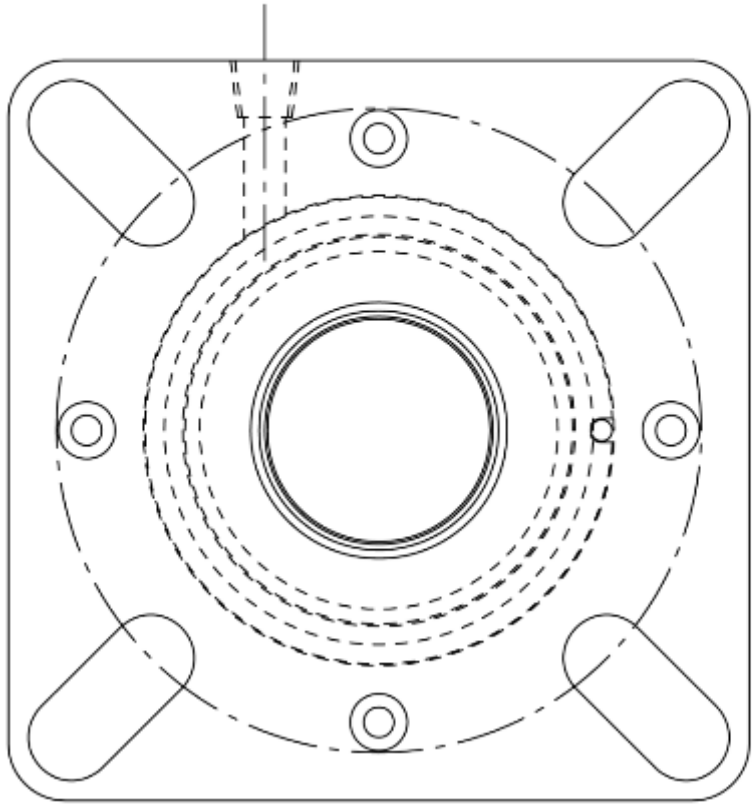
Product Side

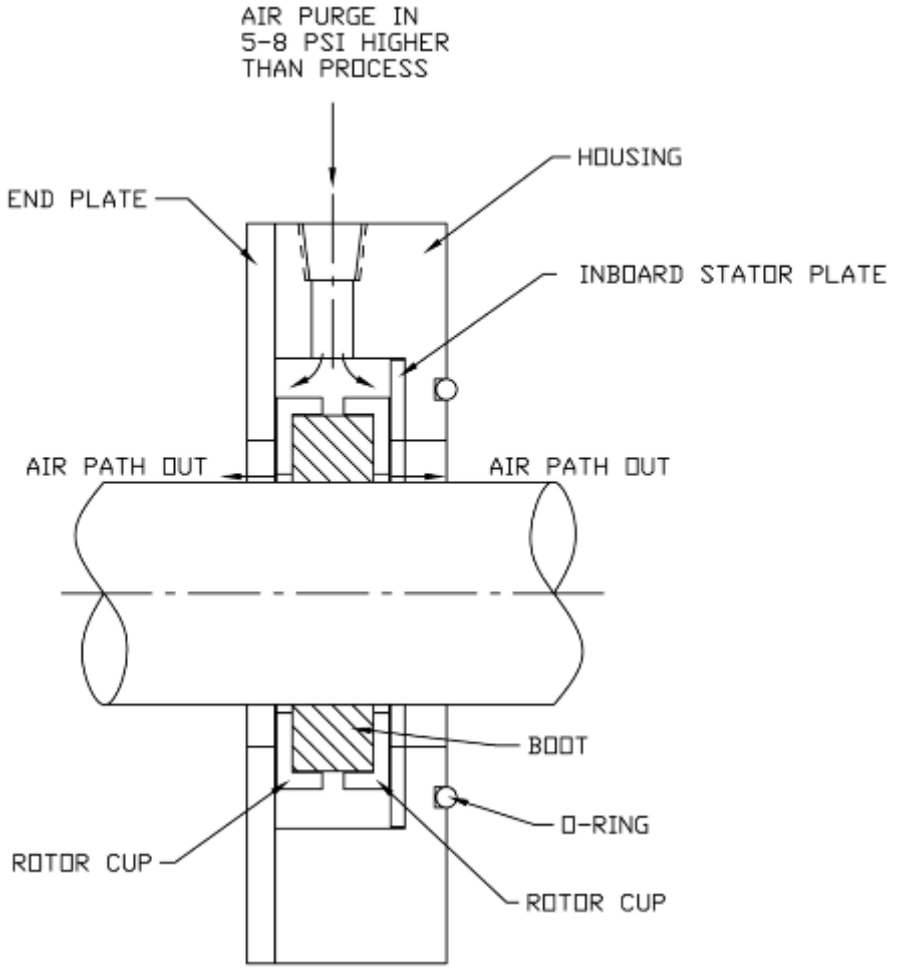
SEALING SURFACES (Elastomer & Rotor Cups)

Job Of The Elastomer: Creates An Interference Fit with Shaft & Rotates Two PTFE Seal Faces

(2) PTFE Faces Provide Axial Sealing

AIR PURGING




AIR PURGE IN
5-8 PSI HIGHER
THAN PROCESS
HOUSING
END PLATE
INBOARD STATOR PLATE
AIR PATH OUT
AIR PATH OUT
BOOT
O-RING
ROTOR CUP
ROTOR CUP

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

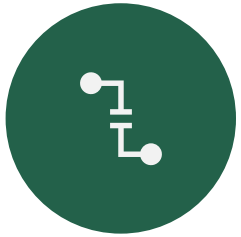
SPECIFICATIONS

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 Rpms)

HOW TO INSTALL THE SEAL VIDEO






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