



# The Next Generation of Shaft Sealing



## CINCHSEAL ROTARY SHAFT SEALS FOR PET FOOD 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





# The Next Generation of Shaft Sealing

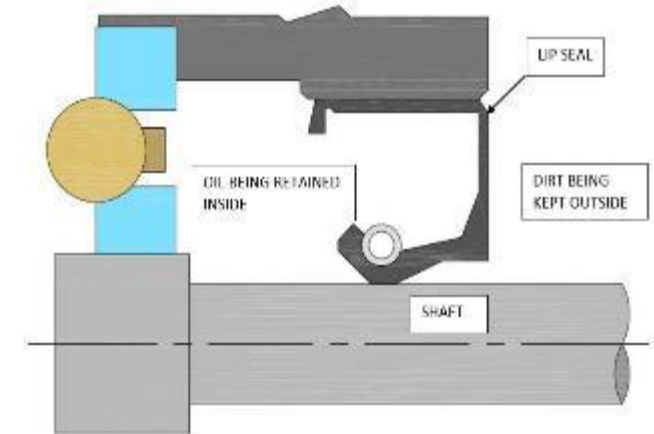
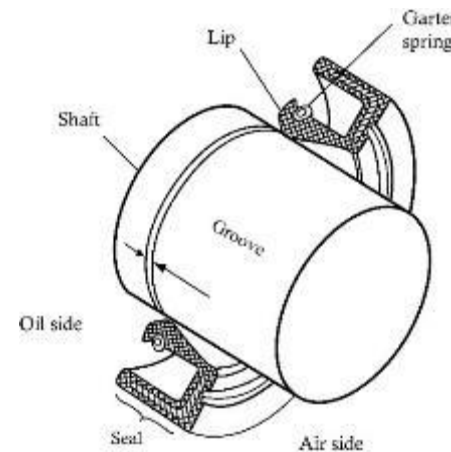
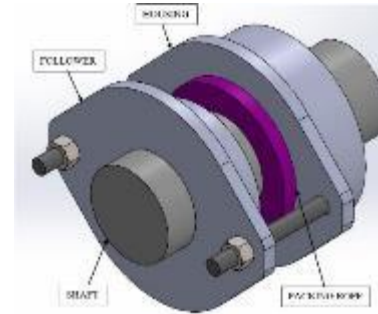
## LIP & PACKING SEALS (WATCH A VIDEO)

### 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



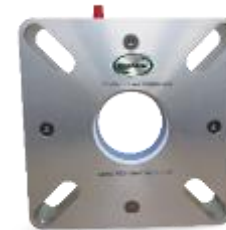
# The Next Generation of Shaft Sealing

## 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
<b>Rotating Drive Elastomer and Rotors Design</b>	Protects bearings, gearboxes, and shafts from damage
<b>Tolerance for up to 0.250" [6.35mm] Shaft Dynamic Run-out</b>	Prevents cross-contamination, foreign material migration, product leakage and recalls
<b>Self-Adjusting, Abrasion-Resistant Sealing</b>	Eliminates unscheduled downtime, maintenance, and lost productivity
<b>All C.E.M.A. Standard and Metric Sizes</b>	Designed for C.E.M.A. standard and metric screw conveyor and bulk-handling equipment
<b>Innovative Split CIP Design</b>	<ul style="list-style-type: none"><li>• Requires no removal of bearings or drive units</li><li>• Allows for hygienic cleaning between batches</li><li>• Enables easy installation and maintenance</li></ul>
<b>FDA-Certified Rebuild Kits</b>	Reduces the total cost of ownership, replacing soft internal components, without compromising the seal
<b>Custom-Tailored to Any Machinery</b>	With custom drawings, perfectly fits on any standard or non-standard new and existing equipment
<b>Available USDA-Certified Models for Dairy, Meat, and Poultry Applications</b>	Provides a hygienic sealing solution for highly regulated industries





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## PET FOOD EQUIPMENT

- Cookers
- Ribbon Blenders
- Screw conveyors  
(Horizontal and Incline)
- Augers
- Paddle Mixers
- Bucket Elevators
- Rotary Airlocks





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## OUR PET FOOD CUSTOMERS

- Cargill Animal Nutrition
- Diamond Pet Foods
- Kelly Foods
- Mars Pet Foods
- Nestle Purina Petcare
- Royal Canin
- Smithfield Foods
- Sunshine Mills
- Tyson Animal Foods





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## PET FOOD ROI

### ISSUE

- There was a product leakage at the shaft of the mixer at a major pet food manufacturing company.
- The company was losing valuable product.
- In addition, it required extra maintenance and associated expenses to fix the leakage problem on the on-going basis.

### SOLUTION

- Switching to CinchSeal's 9700 split stainless-steel rotary shaft seals not only eliminated pet food product loss but also reduced downtime.
- The 9700 series' high performance and long life have provided a documented ROI - **\$10,400 per year.**

## CINCHSEAL CONVERSIONS

BEFORE



AFTER



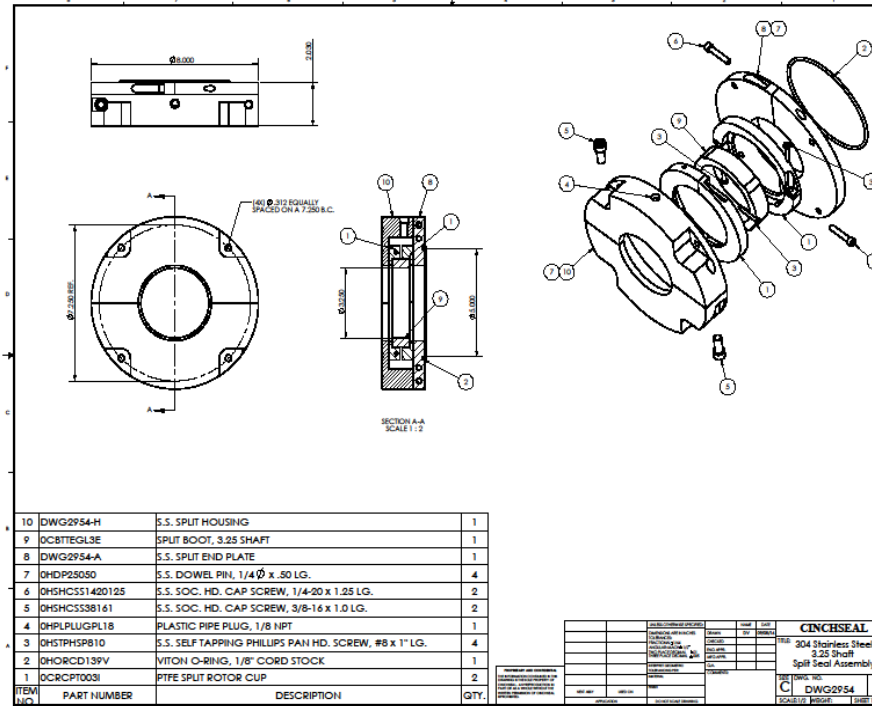




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## MEAT & POULTRY CERTIFICATE

- USDA certified for Meat and Poultry processing applications
- This Clean-In-Place split design enables fast installation - no removal of bearings or drive units and hygienic wash-downs between batches
- Result - eliminates product batch cross-contamination and product recalls





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## APPLICATIONS

	<ul style="list-style-type: none"><li>• TiO<sub>2</sub></li><li>• Salt/Sugar</li><li>• Plastics</li><li>• Variety of Powders</li></ul>	Rotary Air Lock Seal 		<ul style="list-style-type: none"><li>• Cement and Gypsum</li><li>• Metal Powders</li><li>• Grain and Ethanol</li><li>• Sugar</li><li>• Mining</li></ul>	7550 
	<ul style="list-style-type: none"><li>• Bakery</li><li>• Bread</li><li>• Cookies</li><li>• Crackers</li></ul>	9700 		<ul style="list-style-type: none"><li>• Lime</li><li>• Chemical Processing</li><li>• Salt</li><li>• Spices</li><li>• Rendering</li></ul>	7800 
	<ul style="list-style-type: none"><li>• Meat Processing</li><li>• Poultry</li><li>• Meat Rendering</li></ul>	9100 		<ul style="list-style-type: none"><li>• Food Processing</li><li>• Spices &amp; Flavorings</li><li>• Cheese &amp; Dairy</li><li>• Pet Foods</li><li>• Chemical Processing</li><li>• Chocolate</li></ul>	9700 

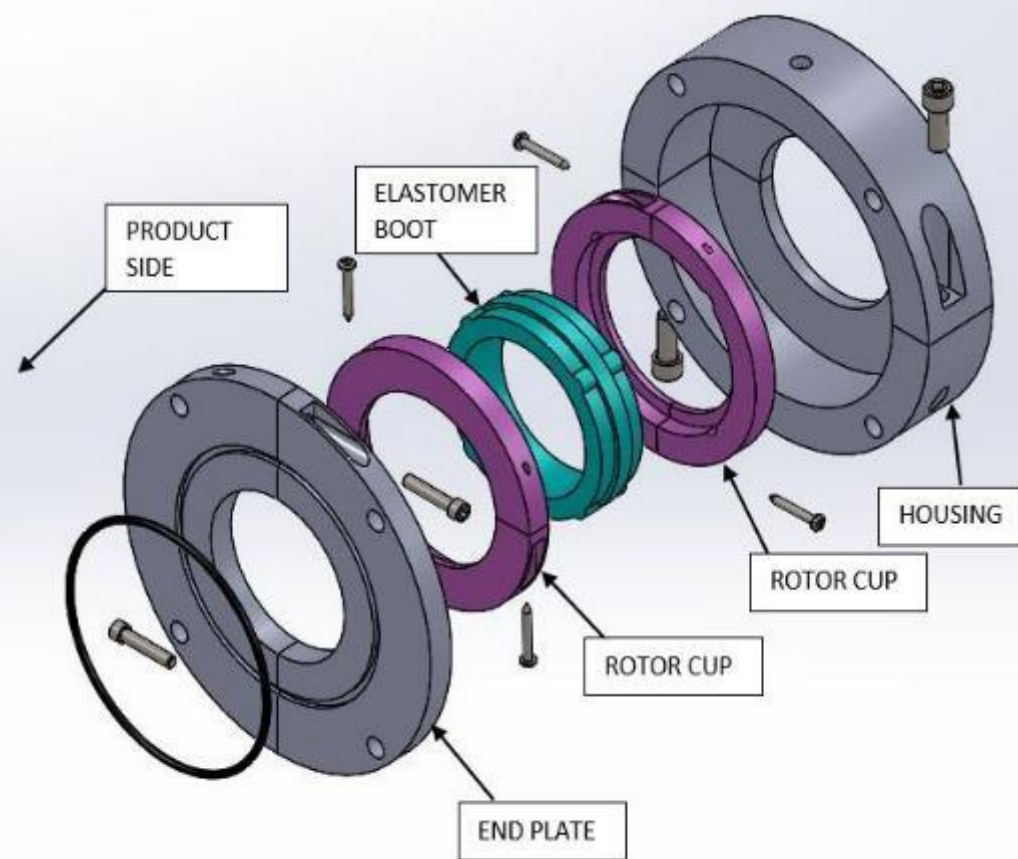


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## CINCHSEAL ASSEMBLY

### 5 PARTS:

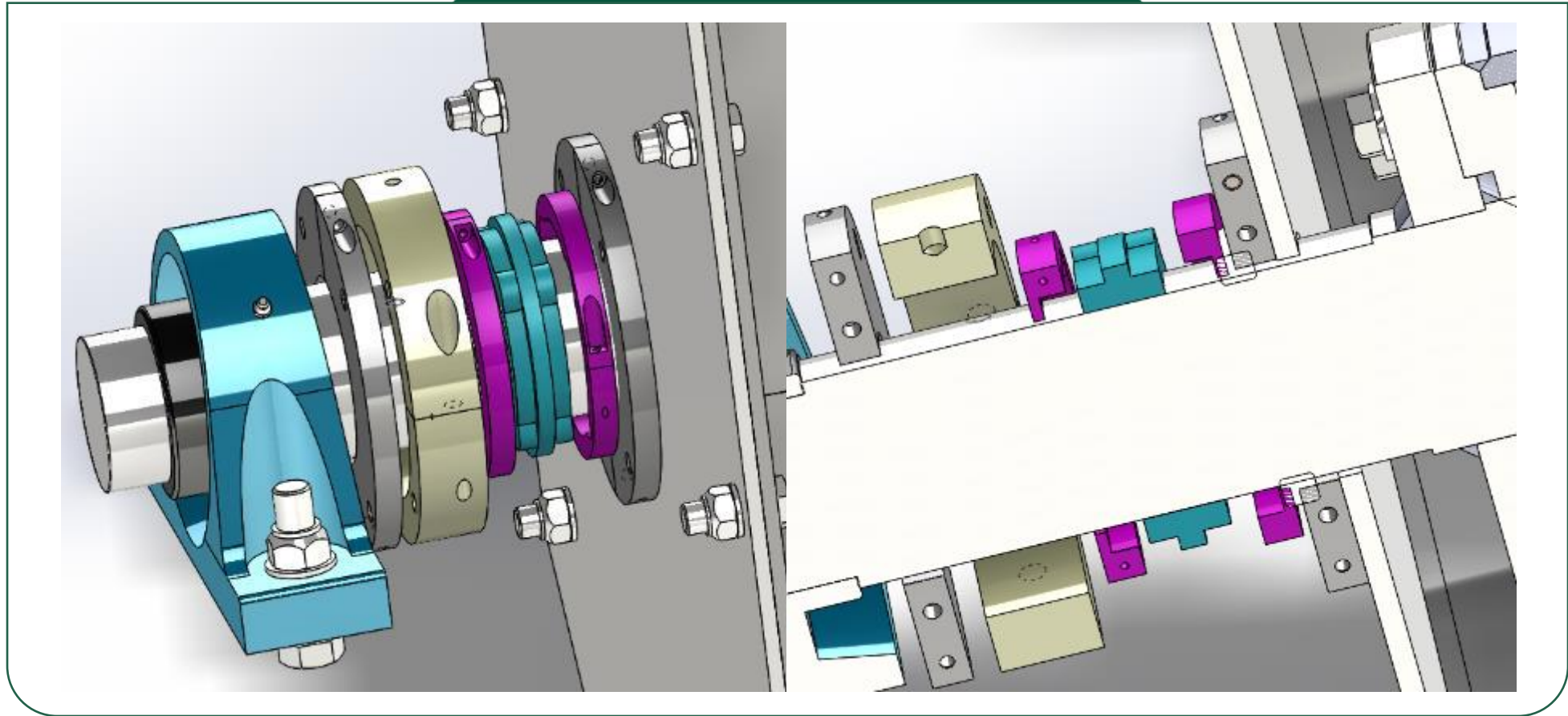
- Metal End Plate
- Metal Housing
- Elastomer Boot
- 2 PTFE Rotor Cups





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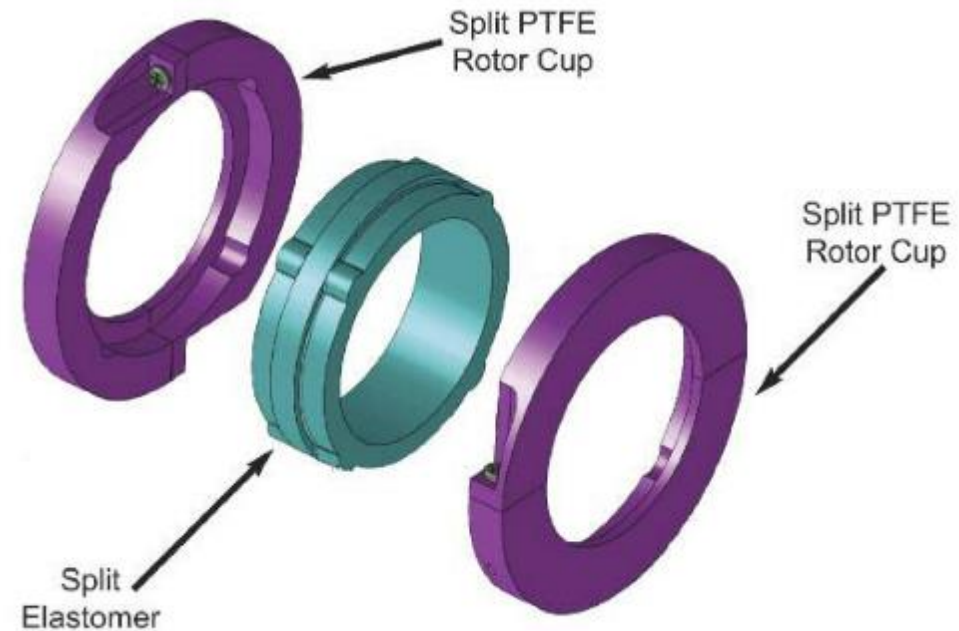




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## 1). SILICON ELASTOMER

- 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





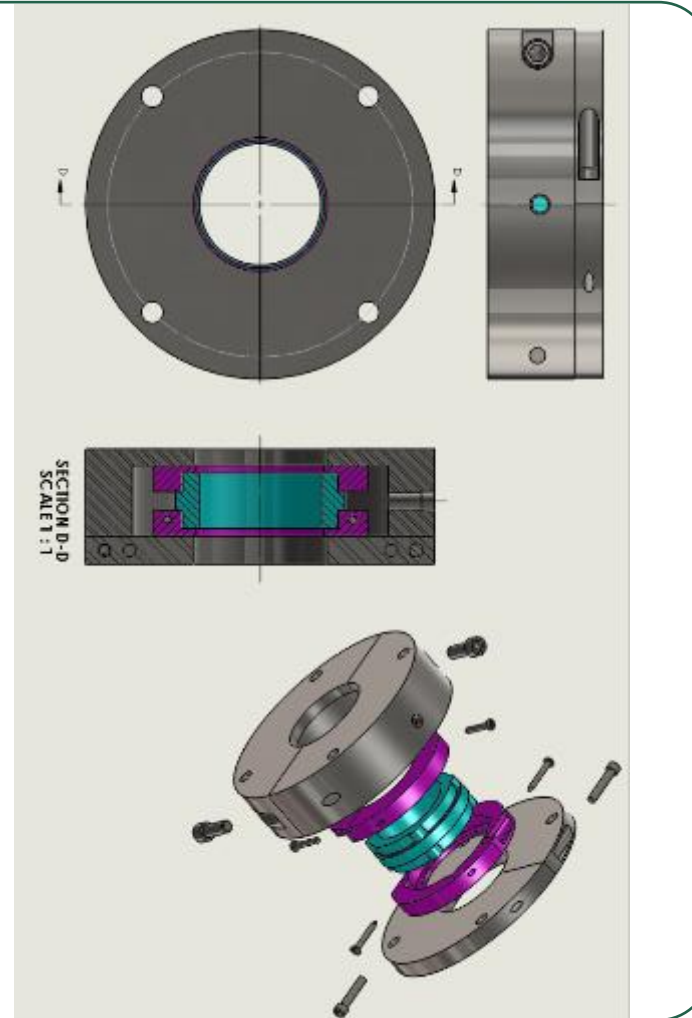
# The Next Generation of Shaft Sealing

## 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

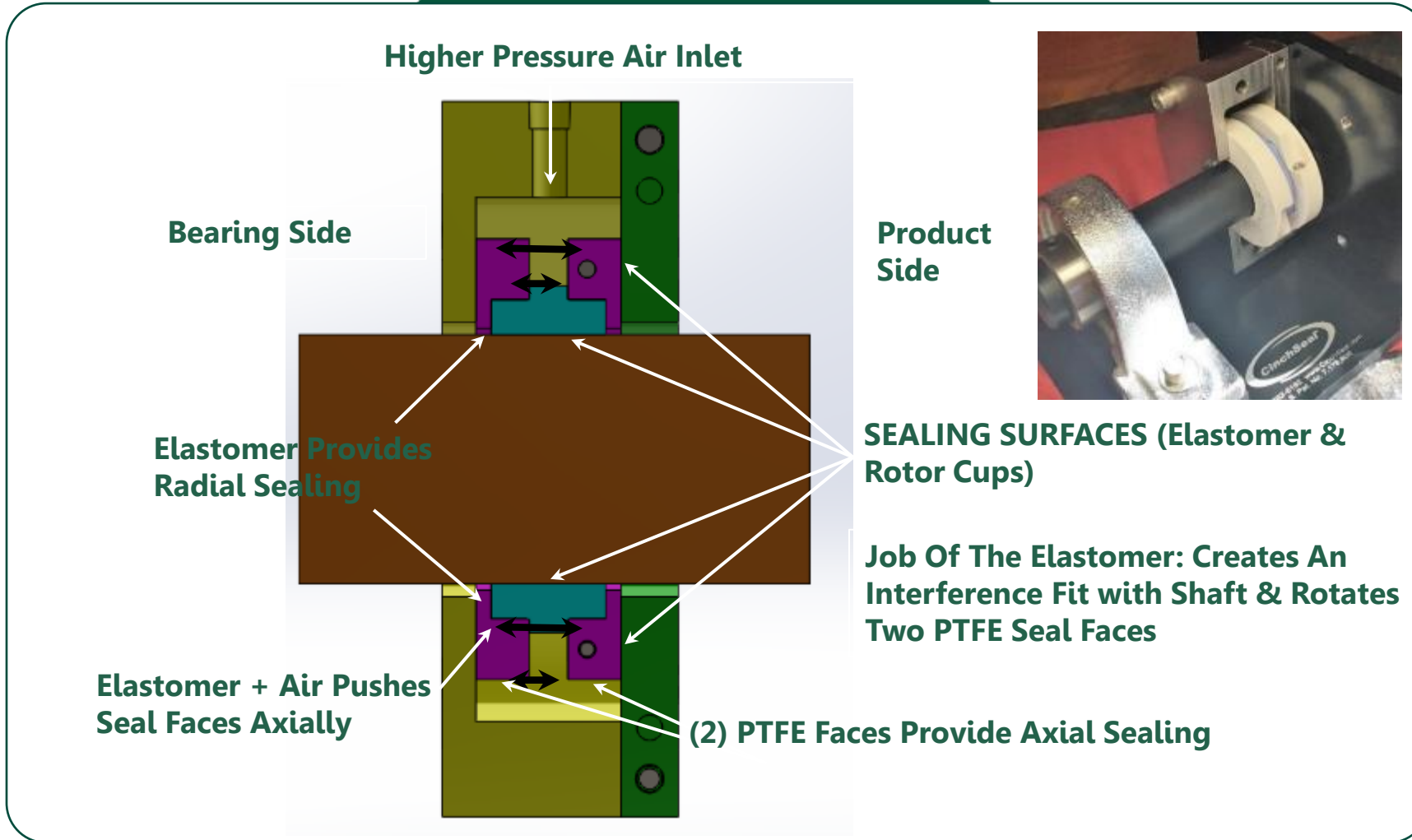
- Seal housings and end plates are available in aluminum, polypropylene, and 304ss or 316ss, depending on application requirements





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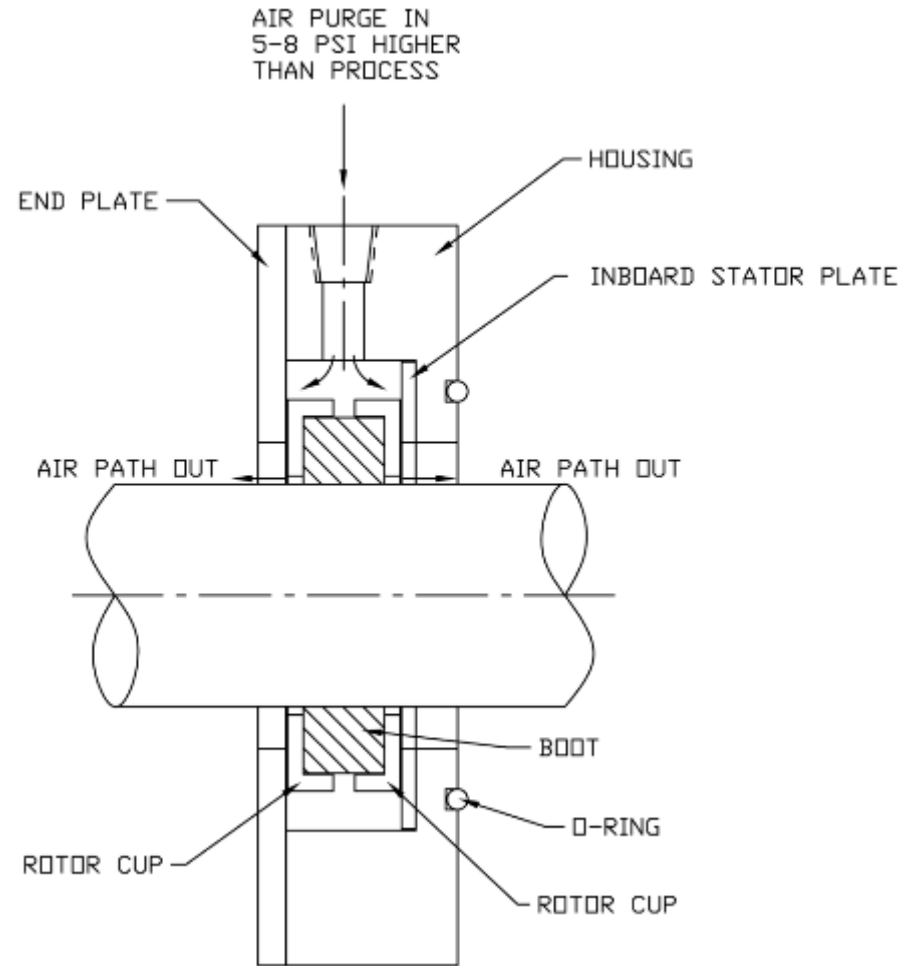
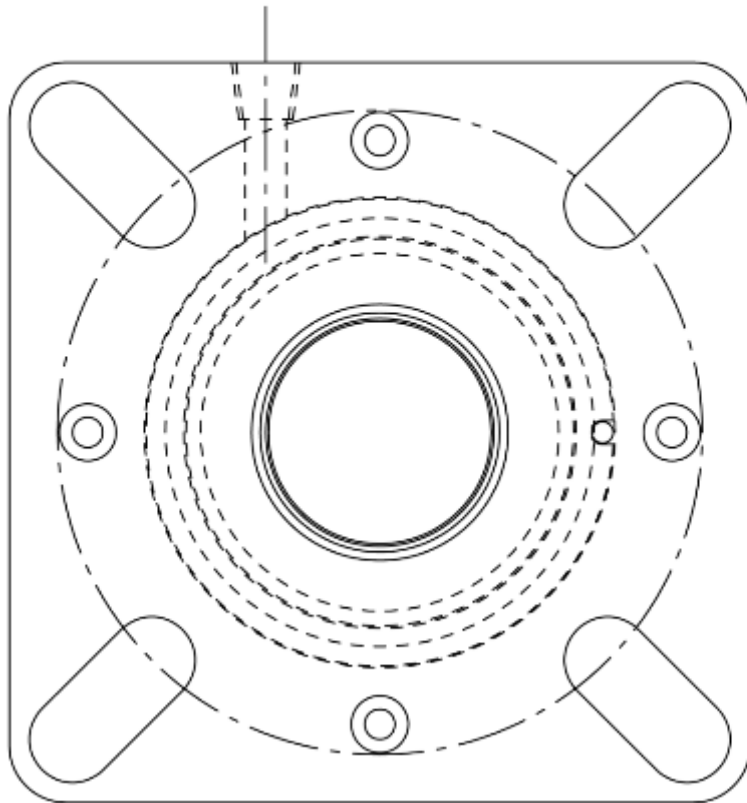
## SEAL CROSS-SECTION





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## AIR PURGING







# The Next Generation of Shaft Sealing

## 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



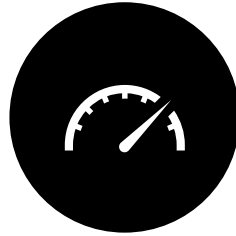


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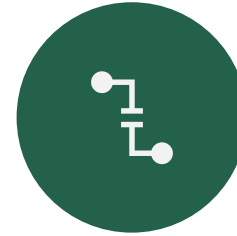
## SPECIFICATIONS



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





# The Next Generation of Shaft Sealing

## 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