



# Labyrinth Seals

## Optimize Efficiency with Thermoplastic Seals

Labyrinth seals are a critical component applied across rotating equipment to seal high pressure areas from low pressure areas and prevent contamination of the process. Designed as a non-contacting seal with a precise clearance over the rotor, labyrinth seals directly affect equipment efficiency.

### CUSTOM ENGINEERED SOLUTIONS

As with all Bearings Plus solutions, labyrinth seals are custom-engineered for each application. Design factors include seal arrangement, operating temperatures, pressures, speed, process make-up, and thermal expansion, among others.

### TIGHTER CLEARANCES, BETTER EFFICIENCY

To improve efficiency, particularly in multi-stage centrifugal compressors, Bearings Plus applies thermoplastic labyrinth seal solutions.

The abradable nature of thermoplastics allows a labyrinth seal to be designed to a tighter clearance than a metallic labyrinth seal would be.

If a metallic labyrinth seal were to experience a transient rub during machine start-up, or a hard rub during operation, the teeth of the seal could cause expensive damage to the rotor through wear or galling. A large clearance is therefore designed to avoid shaft contact.

The abradable thermoplastic labyrinth seal can experience rubs without causing rotor damage, as it is both abradable and has anti-galling properties. Smaller clearances can be designed with the thermoplastic material, reducing leakage and improving machine efficiency.

Thermoplastic labyrinth seals can be applied at the impeller eye, interstage and/or balance piston locations.

### ADVANTAGES

- Tighter seal clearances
- Reduced leakage
- Improved efficiency
- Option of straight or slanted teeth
- Corrosion resistance for operation in a variety of fluids

### MATERIAL OPTIONS

- Torlon® polyamide-imide\*
- Fluorosint® enhanced PTFE†
- PEEK

*\*Torlon® is a product and registered trademark of Solvay.*

*†Fluorosint® is a product and registered trademark of the Quadrant Group.*



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