**Brush Seals: A Proven Enhancer to Labyrinth Seal Performance**

Reduce leakage and increase efficiency with the patented* brush seal design from Waukesha Bearings®.

Used in a wide variety of industrial gas turbines, steam turbines and compressors, brush seals can **reduce leakage by up to 80%**. The seal’s flexible, densely packed bristles bend with rotor contact to follow shaft movement with little wear and low, predictable leakage over time.

For a high-quality, long-lasting seal, rely on the experience and design expertise of Waukesha Bearings. Efficiency gains coupled with a replaceable bristle pack provide valuable savings for your critical sealing needs.

*US Patent 6,231,047

**ADVANTAGES**

- Proven performance
- Low-profile design
- Replaceable bristle pack
- Easy installation
- Flexible sizing
- Modular assemblies
- Labyrinth augmentation
- Custom and reverse engineering
- Quick turnaround times
BRUSH SEAL EXPERTISE

Our brush seals originated in the aerospace industry with a major brush seal innovator. Since 2008, we have built upon that innovator’s proven, high-quality product, manufacturing methods and engineering know-how to serve the needs of industrial markets around the globe.

With a growing installation list of more than 1,600 units, our brush seals are continually chosen for demanding applications.

IDEAL APPLICATIONS

• **Industrial gas turbines**: Bearing, high pressure packing (HPP) and interstage sealing

• **Steam turbines**: Low pressure (LP), intermediate pressure (IP) and high pressure (HP) packing, interstage and tip sealing

• **Compressors**: Impeller eye, interstage and balance piston sealing

• **Turbomachinery utilizing active magnetic bearing systems**

CAPABILITIES

<table>
<thead>
<tr>
<th>Capability</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pressure</td>
<td>Up to 300 psid (20 bar) per row</td>
</tr>
<tr>
<td>Temperature</td>
<td>Up to 650°C (1,200°F)</td>
</tr>
<tr>
<td>Surface speed</td>
<td>Up to 335 m/s (1,100 ft/sec)</td>
</tr>
<tr>
<td>Environments</td>
<td>Air, steam, gas, refrigerants</td>
</tr>
<tr>
<td>Housing</td>
<td>Stainless steel, Inconel, others</td>
</tr>
<tr>
<td>Bristles</td>
<td>Haynes 25</td>
</tr>
<tr>
<td>Diameter</td>
<td>19 mm (0.75&quot;) to 3050 mm (120&quot;) and higher</td>
</tr>
<tr>
<td>Configurations</td>
<td>Solid ring, split ring, segmented, cartridge, linear strip</td>
</tr>
</tbody>
</table>

LEAKAGE COMPARISON

Brush seals can reduce leakage by up to 80%.