Mechanical Gas Seals
Market Application Publication

Background:
To reduce the volume of gases containing volatile organic compounds leaking to atmosphere, environmental agencies have instituted regulations limiting VOC emissions.

Many large pumps or compressors contain mechanical gas seals that operate as non contacting, dry running seals. These seals isolate compressed gases containing VOC’s from leaking to atmosphere. Mechanical gas seals are designed to perform with a wide variety of gases that can be harmful to workers and the environment. For example, the lubricating gas that is normally used to pressurize the seal is natural gas. A safer alternative to natural gas is dry, inert nitrogen gas which can be generated on site from standard compressed air at a very low cost.

Features and benefits:
• Continuous supply of dry N2 at selected purity
• Dependable, reliable and automatic operation
• Eliminates the need for natural gas for sealing
• Uses low pressure plant air supply and eliminates high pressure cylinders
• Built-in membrane air dryer is available
• Standard customer connections on cabinet models
• Designs available for hazardous locations
• Compact size affords easy shipping and installation

Contact Information:
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Nitrogen or inert gas was unavailable in this area of the plant, therefore the only reasonable option was generation of nitrogen on location. The only instrument air available was at 100 psig. The manufacturer needed a fail-proof system to protect against loss of plant air supply or electric power; a redundant system with back-up storage for 4 hours was specified. Only Parker could deliver on all requirements, designing and fabricating a cost-effective custom system that operated under all contingencies, giving the client total reliability and peace of mind. This customer has repeatedly specified Parker for his gas sealing needs. The quality, experience, and unmatched performance of Parker nitrogen systems makes them the perfect solution.
Custom Nitrogen features and benefits:

Parker Hannifin’s reputation for building custom N2 generators for gas seal service is unparalleled in the industry. Some of these features, all supplied by Parker in the past, include:

- Redundant generators for 100% back-up capabilities
- PSA or membrane generators, at purities from 95-99.9+% 
- Active/passive complete feed air compression systems
- Automatic N2 turndown designs for multiple gas sealing requirements
- Automatic high pressure storage vessels for back-up supply
- Integrated high pressure N2 boosters to recharge cylinders automatically
- Designed to exacting global customer specifications
Performance Charts for Standard Cabinet Models:

Specifications:

<table>
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<tr>
<th>Description</th>
<th>608-1</th>
<th>608-2</th>
<th>608-3</th>
<th>1508-1</th>
<th>1508-2</th>
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<tbody>
<tr>
<td><strong>Compressed Air Specifications</strong></td>
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<td><strong>Parker HiFluxx® Membrane Systems</strong></td>
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Data based on variable feed air pressures at 68°F (20°C)

Nitrogen Flow rates (scfm) at 95% Purity*

Consult factory for higher N2 purities and feed air requirements.

*Consult factory for higher N2 purities and feed air requirements.