The H-Seal System by Bostec Engineering, is a revolutionary metal seal developed nearly a decade ago for the extreme applications of the Semiconductor industry. During this time the H-Seal has continued to build on its reputation for 100% yields over thousands of applications and excelling in all areas of: sealing, costs, manufacturing yields, and ease of customer usability.

The benefits of the H-Seal over perfluoroelastomers:
- In Ultra High Vacuum \((10^{-13})\) services.
- It will handle pressures greater than 20,000 PSI.
- The H-Seal is impermeable to moisture.
- Nickel 200 (standard) is virtually inert to most chemicals.
- To temperatures greater than 2,000F.
- The H-Seal will not “out gas” like perfluoroelastomers.
- Eliminates concerns about “explosive decompression”.
- Being a metal seal it has virtually unlimited shelf life.

The benefits of the H-Seal over metal o-rings:
- Less compressive force needed to affect a seal; less stress on gland/flanges and bolts.
- Reduction in manufacturing costs, no polishing or extra QC needed.
- 100% manufacturing yields, they seal every time.
- Ease of handling, with the non-critical edges.
- Ease of installation.
- Critical sealing areas are protected.
- No gland damage occurs from using this seal.
- No alignment retainers needed.
- Compression and sealing increase with increased applied force.
The H-Seal System Components: The Seal and the Gland

The H-Seal:
The H-Seals are more reliable, flexible and cost effective than metal o-rings for numerous reasons. The sealing areas are protected, the seal is self-aligning, the outside diameter is non-critical (allowing for ease of handling), and standard o-rings can still be utilized for testing.

The Gland:
The H-Seal Gland is the other key element. The sixty-degree angle gives us the edge over the competition. You cannot ruin a seal by over-tightening the gland because the top and bottom of the H-Seal act as a stop to prevent over compression. In addition, the gland allows full interchangeability of o-rings, metal o-rings and H-Seals.

Specifications

<table>
<thead>
<tr>
<th>Materials</th>
<th>Pressures</th>
<th>Temperatures</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nickel 200/201</td>
<td>20,000+ PSI</td>
<td>-270°F to 2,000°F</td>
</tr>
<tr>
<td>Copper (Oxy Free)</td>
<td></td>
<td></td>
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<tr>
<td>Aluminum</td>
<td></td>
<td></td>
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<tr>
<td>Monel</td>
<td></td>
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<tr>
<td>Silver</td>
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<tr>
<td>Gold</td>
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</tbody>
</table>

Typical Services/Applications for the H-Seal System

1. Ultra High Vacuum Services (UHV) \(10^{-13}\)
2. High Pressure Services: capable of 20,000+ PSI
3. High Temperature Services: capable of 2,000°F
4. Cryogenic Services
5. Automotive: exhaust systems, turbochargers, head gaskets
6. Aerospace
7. Turbines: exhaust systems, high temperatures,
8. Compressors: High pressure sides, LNG, refining,
9. Flow Control: Flow Meters valves,
10. Containment Vessels: casks, ampoules
11. Plastics: high pressures, high temperatures
12. Semiconductor: CVD, PECVD, METAL CVD, HDPCVD, SACVD, ECP
13. Pharmaceutical: UHP, aggressive chemical services.
14. Pipelines: High pressures
15. Scientific Labs: UHV systems, aggressive chemicals
16. Nuclear: Radiation, high pressures, superheated steam, casks
17. Maintenance Repair and Operations (MRO)

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