Garlock Kammprofile Gasket

Exceptional reliability in difficult applications
Garlock Kammprofile Gasket

Superior Performance

Serrated solid metal core
- Serrations concentrate bolt load on small area for tight seals at lower stress
- Solid metal core resists cold flow, overcompression and blowout
- Rigid core provides exceptional stability, even in large sizes, and facilitates handling and installation

Soft, deformable sealing material
- Under compression, fills seating surface imperfections to form a tight, metal-to-metal connection
- Seals under low stress—ideal for weaker flanges
- Withstands extreme fluctuations in temperatures and pressures

Style Selection Guide

<table>
<thead>
<tr>
<th>Garlock Kammprofile Styles</th>
<th>Construction</th>
<th>Centering Ring</th>
<th>Flange</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Parallel Root</td>
<td>Convex Root</td>
<td>Integral</td>
</tr>
<tr>
<td>642 A</td>
<td>●</td>
<td></td>
<td></td>
</tr>
<tr>
<td>642 AR</td>
<td>●</td>
<td>●</td>
<td></td>
</tr>
<tr>
<td>642 AR2</td>
<td>●</td>
<td>●</td>
<td></td>
</tr>
<tr>
<td>642 AC</td>
<td>●</td>
<td>●</td>
<td></td>
</tr>
<tr>
<td>642 ARC</td>
<td>●</td>
<td>●</td>
<td></td>
</tr>
<tr>
<td>642 ARC2</td>
<td>●</td>
<td>●</td>
<td></td>
</tr>
</tbody>
</table>

Applications
- Accommodates standard ASME flanges as well as weaker and non-circular flanges
- Economical replacement for jacketed heat exchanger gaskets
- Seals less than perfect flanges
- Handles pressures from vacuum to Class 2500
- Withstands temperatures from cryogenics to 2000°F (1100°C)

Material Options

<table>
<thead>
<tr>
<th>Metal Core</th>
<th>Max. Temperature</th>
</tr>
</thead>
<tbody>
<tr>
<td>304 SS</td>
<td>1400°F 760°C</td>
</tr>
<tr>
<td>316 SS</td>
<td>1400°F 760°C</td>
</tr>
<tr>
<td>321 SS</td>
<td>1400°F 760°C</td>
</tr>
<tr>
<td>Aluminum</td>
<td>800°F 425°C</td>
</tr>
<tr>
<td>Copper</td>
<td>600°F 315°C</td>
</tr>
<tr>
<td>HASTELLOY®</td>
<td>2000°F 1090°C</td>
</tr>
<tr>
<td>INCONEL®</td>
<td>2000°F 1090°C</td>
</tr>
<tr>
<td>INCOLOY®</td>
<td>1600°F 870°C</td>
</tr>
<tr>
<td>MONEL®</td>
<td>1500°F 815°C</td>
</tr>
<tr>
<td>Titanium</td>
<td>2000°F 1090°C</td>
</tr>
</tbody>
</table>

Sealing Element

<table>
<thead>
<tr>
<th>Sealing Element</th>
<th>Max. Temperature</th>
</tr>
</thead>
<tbody>
<tr>
<td>ePTFE</td>
<td>500°F 260°C</td>
</tr>
<tr>
<td>Flex. graphite*</td>
<td>950°F 510°C</td>
</tr>
<tr>
<td>GYLON®</td>
<td>500°F 260°C</td>
</tr>
<tr>
<td>PTFE</td>
<td>500°F 260°C</td>
</tr>
</tbody>
</table>

* Up to 6000°F (3300°C) in reducing atmosphere

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Room Temperature Tightness Test (ROTT)

- **Purpose:**
  Determine a gasket's sealing capabilities at room temperature

- **Sample used:**
  One 4" stainless steel and flexible graphite Class 150 Garlock Kammprofile gasket

- **Procedure:**
  - Part A—Initial joint tightening:
    Gasket loaded to five incremental stress levels from 1,025 to 15,160 psi
  - Parts B1-B3—Joint relaxation and retightening: Gasket loading in Part A interrupted during last three stress levels for unload/reload sequence
  - At each stress level, the leakage of helium is measured at pressures of 400 and 800 psig
  - Test data is plotted on log-log scale

### Comparison of Seating Requirements

<table>
<thead>
<tr>
<th>Gasket Material or Style</th>
<th>Gasket Constant Gb (psi)</th>
<th>Gasket Constant 'a' (psi)</th>
<th>Gasket Constant Gs (psi)</th>
<th>Stress Req'd for Tightness of 100 (psi)</th>
<th>Stress Req'd for Tightness of 1,000 (psi)</th>
<th>Stress Req'd for Tightness of 10,000 (psi)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Garlock Kammprofile</td>
<td>368</td>
<td>0.4</td>
<td>0.28</td>
<td>2,324</td>
<td>5,838</td>
<td>14,664</td>
</tr>
<tr>
<td>Flexible graphite spiral wound</td>
<td>2,300</td>
<td>0.237</td>
<td>13</td>
<td>6,851</td>
<td>11,823</td>
<td>20,405</td>
</tr>
<tr>
<td>PTFE-filled spiral wound</td>
<td>4,500</td>
<td>0.14</td>
<td>70</td>
<td>8,575</td>
<td>11,836</td>
<td>16,339</td>
</tr>
<tr>
<td>Foil-reinforced flexible graphite</td>
<td>816</td>
<td>0.377</td>
<td>0.066</td>
<td>4,631</td>
<td>11,033</td>
<td>26,284</td>
</tr>
</tbody>
</table>

Test Conclusions

- The Kammprofile gasket effects a tight seal under lower initial seating stress than other gaskets
- The Kammprofile gasket exhibits superior tightness during stress cycling

**WARNING:**
Properties/applications shown throughout this brochure are typical. Your specific application should not be undertaken without independent study and evaluation for suitability. For specific application recommendations consult Garlock. Failure to select the proper sealing products could result in property damage and/or serious personal injury.

Performance data published in this brochure has been developed from field testing, customer field reports and/or in-house testing.

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### Thicknesses

<table>
<thead>
<tr>
<th>Core Compressed Thickness</th>
<th>Thickness*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inches</td>
<td>mm</td>
</tr>
<tr>
<td>0.093</td>
<td>2.36</td>
</tr>
<tr>
<td>0.125</td>
<td>3.18</td>
</tr>
<tr>
<td>0.187</td>
<td>4.75</td>
</tr>
<tr>
<td>0.250</td>
<td>6.35</td>
</tr>
<tr>
<td>0.375</td>
<td>9.53</td>
</tr>
<tr>
<td>0.500</td>
<td>12.70</td>
</tr>
</tbody>
</table>

* Based on a flexible graphite sealing element.

### Heat Exchanger Configurations

- R
- C-A
- C-B
- D-A
- D-B
- E-A
- E-B
- E-C
- E-D
- F-A
- F-B
- F-C
- G-A
- G-B
- G-C
- G-D
- G-E
- G-F
- G-G
- G-H
- G-I
- H-A
- H-B
- H-C
- H-D
- H-E
- H-F
- H-G
- H-H
- H-I
- H-J
- H-K
- J-A
- J-B
- J-C
- J-D
- J-E
- J-F
- J-G
- J-H
- K-A
- K-B
- K-C
- K-D

### Ordering Information

When ordering, specify:
- Style number
- Material for metal core and sealing element
- OD, ID, and thickness
- Configuration from chart, if applicable

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