TYPES OF GASKETS

- SPIRAL WOUND GASKETS
- GRAPHITE with CORRUGATED METAL CORE
- EXPANDED PTFE with CORRUGATED METAL CORE
- HIGH PRESSURE GRAPHITE SEALS
- CAMMPROFILE
- HEAT EXCHANGER GASKETS
- JACKETED
- DOUBLE JACKETED
- SOLID METAL

APPLICATIONS

- HEAT EXCHANGERS
- PRESSURE VESSELS
- MANHOLE COVERS
- HANDHOLE
- VALVE BONNETS
- PIPE FLANGES
BOILER GASKETS

- Commercial boiler gaskets
- Handhole & Manhole Gaskets
- Boiler Head Gaskets
- Boiler pipe flange gaskets
- Boiler ring gaskets
- Boiler full face gaskets
- Sight Glass Gaskets
- Topog-E Boiler Gaskets
- Spiral Wound Boiler Gaskets
- Blue-Max Boiler Gaskets
- Ceramic Boiler Gaskets
- Ceramic Fiber Strips for Boilers
- McDonnell Miller Gaskets
- Molded EPDM Boiler Gaskets
- Fiberglass Tape for Boilers
- Fiberglass Rope for Boilers
- Hi-temperature Boiler Gaskets
- Low-temperature Boiler Gaskets

Applications:
Steam pressure vessels
Hot water heaters
Demineralizers
Steam humidifiers
Dryer cans in paper mills
Refrigeration units
Filtering units
Liquid treatment vessels
Compressed air tanks
Water purifiers
Water towers
Water softeners
Deaerators
Make-up tanks
TYPES OF MATERIAL AVAILABLE

**GRAPHITE**
- DIE CUT
- DIE FORMED
- CORRUGATED

**SPIRAL WOUND**

**CERAMIC**
- ROPE
- TAPE
- TADPOLE
- DIE FORMED

**FIBERGLASS / FIBERGLASS-PTFE**
- ROPE
- TAPE
- TADPOLE
- DIE FORMED

**METAL**
- JACKETED
- CORRUGATED

**MOLDED EPDM RUBBER**

**EXPANDED PTFE**
HANDHOLE GASKETS

For Boiler Handhole and Tubecap Assemblies

- Fits most standard boilers (specify maximum operating pressure when ordering)
- Available in thicknesses of 0.125" (special), 0.175" (standard) and 0.250" (special—for pitted surfaces)

**Style HH Configurations**

![Diagram of various gasket shapes: Round, Rectangle, Oval, Diamond, Obround, Oval, Pear](image)

**Boiler Gasket Dimensions**

<table>
<thead>
<tr>
<th>Manufacturer and Model No.</th>
<th>Shape</th>
<th>Nominal I.D. Dimensions (Inches)</th>
<th>Flange Width (Inches)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Babcock and Wilcox #40 (207)</td>
<td>Diamond</td>
<td>3-3/8 x 3-3/4</td>
<td>3/16</td>
</tr>
<tr>
<td>Babcock and Wilcox #48 (208)</td>
<td>Oval</td>
<td>13/16 x 4-3/4</td>
<td>7/32</td>
</tr>
<tr>
<td>Babcock and Wilcox #24 (211)</td>
<td>Oval</td>
<td>4-1/2 x 5-1/2</td>
<td>7/32</td>
</tr>
<tr>
<td>Babcock and Wilcox #47</td>
<td>Round</td>
<td>2-1/32</td>
<td>3/16</td>
</tr>
<tr>
<td>Babcock and Wilcox #70</td>
<td>Round</td>
<td>3-9/32</td>
<td>3/16</td>
</tr>
<tr>
<td>Babcock and Wilcox #28 (212)</td>
<td>Rectangle</td>
<td>4-13/16 x 5</td>
<td>7/32</td>
</tr>
<tr>
<td>Badenhausen (See Riley Stoker)</td>
<td>Oround</td>
<td>3-9/32 x 4-17/32</td>
<td>3/8</td>
</tr>
<tr>
<td>Cleaver-Brooks</td>
<td>Oround</td>
<td>3-9/32 x 4-17/32</td>
<td>3/8</td>
</tr>
<tr>
<td>Combustion Engr. 29N-L839</td>
<td>Diamond</td>
<td>3-3/8 x 4-1/4</td>
<td>1/4</td>
</tr>
<tr>
<td>Combustion Engr. 4N-L740</td>
<td>Round</td>
<td>3-1/8</td>
<td>1/4</td>
</tr>
<tr>
<td>Combustion Engr. 5N-L902</td>
<td>Round</td>
<td>3-5/8</td>
<td>1/4</td>
</tr>
<tr>
<td>Foster Wheeler 2 3/4 (1003)</td>
<td>Oround</td>
<td>2-25/32 x 3-13/32</td>
<td>7/32</td>
</tr>
<tr>
<td>Foster Wheeler 3 15/16 (1005)</td>
<td>Oround</td>
<td>4-3/16 x 5-3/16</td>
<td>5/16</td>
</tr>
<tr>
<td>Heine</td>
<td>Round</td>
<td>3-5/8</td>
<td>3/8</td>
</tr>
<tr>
<td>Keeler</td>
<td>Oround</td>
<td>3 x 4</td>
<td>3/8</td>
</tr>
<tr>
<td>Oilfield</td>
<td>Oval</td>
<td>3 x 4</td>
<td>3/8</td>
</tr>
<tr>
<td>Oilfield</td>
<td>Oval</td>
<td>3-1/2 x 4-1/2</td>
<td>3/8</td>
</tr>
<tr>
<td>Riley Stoker W-C2</td>
<td>Oround</td>
<td>3-23/32 x 5-23/32</td>
<td>11/32</td>
</tr>
<tr>
<td>Springfield</td>
<td>Oval</td>
<td>3-17/32 x 4-17/32</td>
<td>5/16</td>
</tr>
<tr>
<td>Union</td>
<td>Oval</td>
<td>3 x 4</td>
<td>3/8</td>
</tr>
<tr>
<td>Union</td>
<td>Pear</td>
<td>4-1/4 x 5-1/4</td>
<td>3/8</td>
</tr>
<tr>
<td>Vogt</td>
<td>Oval</td>
<td>4-1/4 x 5-1/8</td>
<td>7/32 (new)</td>
</tr>
<tr>
<td>Wickes</td>
<td>Pear</td>
<td>4-1/8 x 5-1/8</td>
<td>9/32</td>
</tr>
<tr>
<td>Wickes</td>
<td>Oval</td>
<td>3 x 4</td>
<td>5/16</td>
</tr>
<tr>
<td>Wickes</td>
<td>Oval</td>
<td>3-1/2 x 4-1/2</td>
<td>5/16</td>
</tr>
</tbody>
</table>

**Ordering Information**

When ordering, specify:

- Make and model of boiler and/or equipment, if available
- Gasket style and configuration
- Dimensions of gasket (thickness, flange seating width, and shape)
- Maximum operating pressure and temperature
- Type of metal and filler materials

**WARNING:**
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MC and MCR Gaskets

For Manhole Cover Assemblies

**MC Gasket** (manhole cover)

- Spiral winding only, containing preformed metal and soft filler material

**MCR Gasket** (manhole cover with centering ring)

- Centering ring accurately locates the gasket on the flange face, provides additional radial strength, and acts as a compression limiter
- Spiral winding (sealing element) consists of pre-formed metal and soft filler material

**Ordering Information**

When ordering, specify:

- Make and model of boiler and/or equipment if available
- Gasket style and configuration
- Dimensions of gasket (thickness, flange seating width, and shape)
- Maximum operating pressure and temperature
- Type of metal and filler materials

<table>
<thead>
<tr>
<th>Style</th>
<th>Nominal I.D. Dimensions (Inches)</th>
<th>Thickness (Inches)</th>
<th>Flange Width (Inches)</th>
</tr>
</thead>
<tbody>
<tr>
<td>MC Oval</td>
<td>11 x 15</td>
<td>0.175</td>
<td>3/4</td>
</tr>
<tr>
<td>MC Oval</td>
<td>11 x 15</td>
<td>0.175</td>
<td>15/16</td>
</tr>
<tr>
<td>MC Oval</td>
<td>11 x 15</td>
<td>0.175</td>
<td>1-1/4</td>
</tr>
<tr>
<td>MC Oval</td>
<td>12 x 16</td>
<td>0.250</td>
<td>15/16</td>
</tr>
<tr>
<td>MCR Oval</td>
<td>12 x 16</td>
<td>0.250</td>
<td>13/16</td>
</tr>
<tr>
<td>MC Oval</td>
<td>12 x 16</td>
<td>0.175</td>
<td>3/4</td>
</tr>
<tr>
<td>MC Oval</td>
<td>12 x 16</td>
<td>0.175</td>
<td>15/16</td>
</tr>
<tr>
<td>MC Oval</td>
<td>12 x 16</td>
<td>0.175</td>
<td>1-1/4</td>
</tr>
<tr>
<td>MC Oval</td>
<td>12 x 16</td>
<td>0.250</td>
<td>1-1/4</td>
</tr>
<tr>
<td>MC Round</td>
<td>16-1/16</td>
<td>0.175</td>
<td>3/4</td>
</tr>
</tbody>
</table>

**Dimensions of MC and MCR Gaskets**

**Notes:**

1. For pitted and rough flange surfaces, specify a gasket thickness of 0.250".
2. Orders for special cover assemblies should be accompanied by a dimensional drawing showing the minimum width of seating surfaces and other essential dimensions.
3. Style MC oval and obround gaskets are available in 0.175" and 0.250" thickness and in varying widths as shown above.
4. Orders for non-standard gaskets should also include a sketch or drawing of the cover assembly with all dimensions shown.

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Corrugated Metal Gasket

The superior technology of gaskets ensures excellent sealing performance and reliability, even in the most difficult applications. Each of the three styles combines a corrugated metal core with a compressible sealing element of various materials, for resistance to a wide range of harsh conditions, including extreme temperature, corrosive chemicals, and thermal cycling.

Applications

- Valves
- Pumps
- Flanges
- Heat exchangers
- Vessels

CG Gasket (Style 905-FG)
With flexible graphite sealing element

- Accommodates a wide range of temperatures
- Seals effectively during thermal cycling
- Fire safe—passed API 6FB fire tests
- Chemically resistant
- Long service life

CEP Gasket (Style 905-E)
With ePTFE sealing element

- Chemically inert
- Forms a tight seal under low bolt load
- Conforms to minor sealing surface imperfections
- Withstands temperatures to 500°F (260°C)

Gasket (Style 905G-E)
With graphite and ePTFE sealing element

- Combines fire safety with chemical resistance
- Conforms to minor sealing surface imperfections
- Rigid yet compressible

Construction

Compressible Sealing Element

Metal Core

Standard Metals

- 316L Stainless
- 304 Stainless
- Carbon steel
- INCONEL® 600
- INCONEL® 625
- INCOLOY® 800
- INCOLOY® 825
- HASTELLOY® C276
- MONEL® 400

Sealing Elements

- Flexible graphite
- ePTFE
- Combination graphite and ePTFE

Engineering Data

<table>
<thead>
<tr>
<th></th>
<th>GRAPHITE</th>
<th>ePTFE and G.E.T.*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Temperature,</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Minimum:</td>
<td>-400°F (-240°C)</td>
<td>-400°F (-240°C)</td>
</tr>
<tr>
<td>Max. in atmosphere:</td>
<td>850°F (454°C)</td>
<td>500°F (260°C)</td>
</tr>
<tr>
<td>Max. in steam:</td>
<td>1,200°F (650°C)</td>
<td>500°F (260°C)</td>
</tr>
<tr>
<td>Max. continuous:</td>
<td>850°F (454°C)</td>
<td>500°F (260°C)</td>
</tr>
<tr>
<td>Pressure, max.:</td>
<td>1,000 psig (70 bar)</td>
<td></td>
</tr>
<tr>
<td>P x T, max.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1/16&quot; thickness:</td>
<td>700,000 (25,000)$</td>
<td>–</td>
</tr>
<tr>
<td>1/8&quot; thickness:</td>
<td>400,000 (13,500)$</td>
<td>250,000 (8,500)$</td>
</tr>
</tbody>
</table>

† $P \times T_{\text{max.}} = \text{psig} \times ^\circ F$ (bar $\times ^\circ C$)

INCONEL® is a registered trademark of Inco Alloys International, Inc.
INCOLOY® is a registered trademark of Inco Alloys International, Inc.
HASTELLOY® is a registered trademark of Haynes International.
MONEL® is a registered trademark of International Nickel.
CAMMPROFILE GASKET

Benefits
- Accommodates standard ASME flanges as well as weaker and non-circular flanges
- Seals less-than-perfect flanges
- Handles pressures from vacuum to Class 2500
- Performance replacement for jacketed heat exchanger gaskets
- Fire safe—passed API 6FB fire tests
- Available in heat shield configuration for high temp applications above 850°F (454°C) (see page D-6)

Serrated solid metal core
- Solid metal core resists cold flow, overcompression and blowout
- Rigid core provides exceptional stability, even in large sizes, and facilitates handling and installation
- Available in wide variety of metals

Applications
- Valves
- Pumps
- Flanges
- Heat exchangers
- Vessels

Style Selection Guide

<table>
<thead>
<tr>
<th>Cammprofile 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>942 A</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>942 AR</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>942 AR2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>942 AC</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>942 ARC</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>946ARC2</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Gasket Style</th>
<th>Gasket Factor &quot;M&quot;</th>
<th>Gasket Factor &quot;Y&quot; (psi)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cammprofile gasket</td>
<td>4.00</td>
<td>1,000*</td>
</tr>
</tbody>
</table>

Note: When designing a flange, a "Y" value of 4,000 psi is suggested.

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# Jacketed Gasket Styles

<table>
<thead>
<tr>
<th>Style</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single Jacket</td>
<td>The most basic form of jacketed gasket, with coverage on one face and both edges.</td>
</tr>
<tr>
<td>Single Jacket with Overlap</td>
<td>Where full coverage is needed and flange is narrow relative to gasket ID.</td>
</tr>
<tr>
<td>Double Jacket</td>
<td>Where full coverage is needed and flange is wide relative to gasket ID.</td>
</tr>
<tr>
<td>Double Jacket with Double Shell</td>
<td>Stronger and more rigid than double jacket gasket.</td>
</tr>
<tr>
<td>Double Gasket Corrugated</td>
<td>Corrugations create a labyrinth seal across the gasket face.</td>
</tr>
</tbody>
</table>

# Solid Gasket Styles

<table>
<thead>
<tr>
<th>Style</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flat Solid</td>
<td>Cut from sheet metal, these gaskets can be of unlimited size and shape. Mating surfaces need to be perfectly aligned and flat for metal gaskets to provide good seals.</td>
</tr>
<tr>
<td>Profiled and Serrated</td>
<td>A solid gasket with surface grooves facilitating a good seal with lower seating stresses. These styles can be jacketed to protect the flange surfaces.</td>
</tr>
<tr>
<td>Corrugated</td>
<td>Made from thin metal, these gaskets provide a seal at low seating stress. They may be surface-treated with ceramic, non-asbestos or flexible graphite, or they may be used with a PTFE envelope.</td>
</tr>
</tbody>
</table>

# Metals

- STAINLESS STEEL
- COPPER
- SOFT IRON
- BRASS
- MONEL!
- INCONEL!
- (OTHER MATERIALS ON REQUEST)

# Fillers

- NON-ASBESTOS
- FLEXIBLE GRAPHITE
- CERAMIC
- PTFE
- CORRUGATED METAL

# Standard Shapes for Heat Exchanger Gaskets