



# COMPANY PROFILE

The Garlock® family of companies are acknowledged as global leaders in high-performance fluid sealing products for the world's processing industries. Today the companies have 16 global operations employing more than 1,900 people and a distributor network that covers 75 countries. The 12 manufacturing facilities in the U.S., Canada, Europe, Asia and Latin America collectively produce the broadest range of fluid sealing products designed specifically for industrial applications. In addition, we operate the most extensive testing facilities in the industry.

Garlock® continue to develop next-generation technologies that are changing the way processing industries meet their sealing requirements. By combining the most innovative products with unparalleled service and environmental commitment, Garlock® delivers sealing solutions that improve plant productivity, reduce costs and comply with increasingly stringent environmental regulation. Continued investment in research and development, innovative new products, production facilities, customer support and environmental initiatives ensure Garlock® retain their global leadership in fluid sealing technologies.

Garlock® offers a complete range of fluid sealing solutions including:

- Compression Packing
- Diaphragms
- Gaskets
- Metallic Gaskets
- Hydraulic Components
- Rubber & Fabric Expansion Joints
- Metallic Expansion Joints
- Engineered Sheet Rubber
- Oil Seals
- Metal Seals
- Inflatable and Extrusion Seals
- Bearing Isolators

Using some of the most technologically advanced equipment available, Garlock®'s research and development teams explore new opportunities presented by new materials, constructions and applications. The Garlock® family of companies' team technicians are available for problem solving when and where you need them.



Pulp & Paper



Power Generation



Pharmaceutical



Chemical



Primary Metal  
Aluminium/Steel



Water Treatment



Mining



Food & Beverage



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Garlock® One-Up®  
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Aramid & Synthetic Fibre  
 Graphite & Carbon Fibre  
 Reinforced Compressed Graphite Flake  
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 Style 3535

Spiral Wound Gaskets  
 Solid Metal O-rings

Fluid Sensitive Load Generation  
 High compression, low load gaskets  
 Re-faceable and Re-usable, Serrated Metal Core  
 Low Load, Highly Conformable, Metallic Core

Extreme Temperature Gaskets

General Duty, Electrical Insulation  
 High Pressure, Very Critical Service  
 High Pressure, Very Critical Service, Fire Safe

PTFE, Graphite, Carbon & Synthetic Fibre Styles

Expandable Valve Stem Packing Set  
 Engineered Low Flush Packing Set

Hydrodynamic Lantern Ring  
 PTFE Lantern Ring Coil  
 Specialty Installation and Removal Products  
 Monitoring and Regulating Devices

Economical Rubber Bellows  
 Abrupt Arch Rubber Bellows (Full Vacuum)  
 Flowing Arch Rubber Bellows  
 Wide Range of Rubber and/or Textile Flue Joints

Engineered Solid & Split Seals  
 Severe Service Seals  
 Specialised GYLON® High Performance Seals

PTFE, Aggressive Labyrinth, Non-Contact Seals  
 Metallic, Non-contact, Solid or Split Seals  
 Anti-contamination Seals  
 Shaft Grounded Seals

Exclusive One Piece Advanced Industrial Design  
 FDA approved, Engineered OEM Replacement

Next Generation Shims/Spacers

Cloth, Rope & Packing

Valve and Flange Leak Indicators

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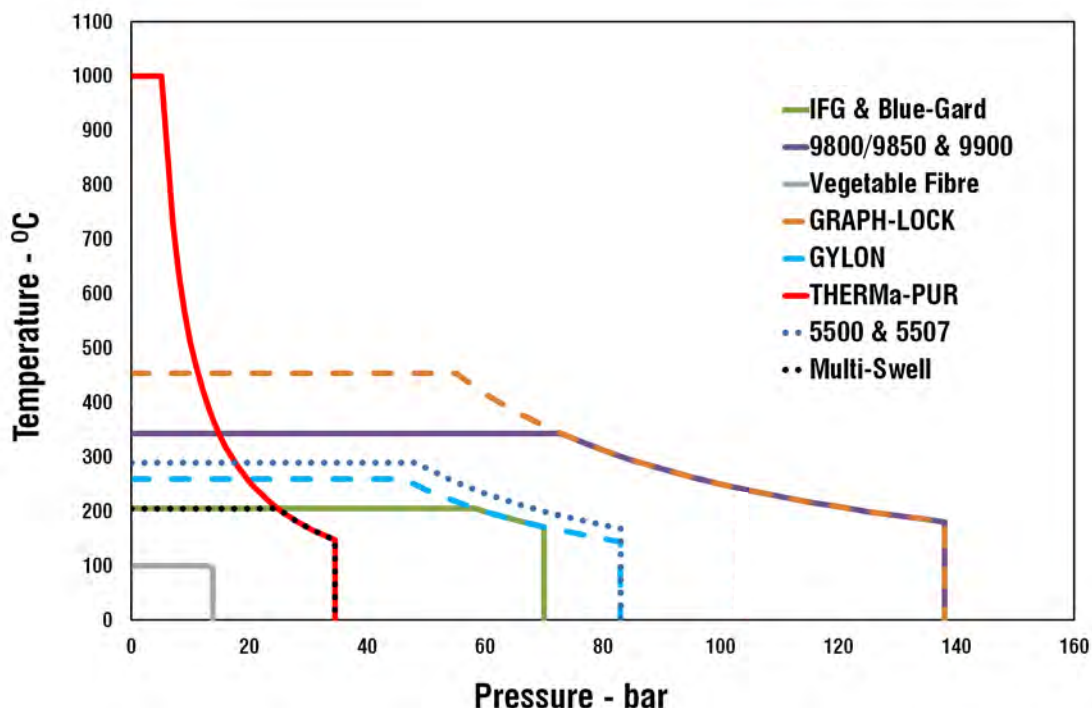
# SOFT CUT GASKETS

Garlock® offers a full range of soft cut gasket materials including cork & rubber, compressed fibres, as well as unique PTFE blends. This comprehensive range caters for any requirement from general service to demanding, critical applications. The following table gives an overview of the services covered by Garlock® popular gasket styles.



| Popular Gasket Styles  |                          | Application Examples - Specific Style dependent  |
|--|--------------------------|--|
| <b>COMPRESSED FIBRE &amp; BLUE-GARD®</b><br>2500/2950/3000/3200/3700<br>5500         |                          | Mild organic acids, mild alkalis, some saturated hydrocarbons, inert gases, most refrigerants, oils, fuels, salts, alcohols, lubricants, water, saturated and superheated steam.   |
| <b>GYLON® &amp; GYLON EPIX™</b><br>3500/3504/3510/3545<br>3500EPX/3504EPX/3510EPX    |                          | Mild to aggressive acids, caustics & alkalis, hydrocarbons, oxidizers, gases, aldehydes, ketones, ethers, refrigerants, chlorides, phenols, amines, solvents, oils, fuels, esters, salts, alcohols, lubricants, halogenated compounds, water, food, cryogenics, and saturated steam. |
| <b>GRAPHITE &amp; CARBON FIBRE</b><br>9450/9800/9900                                 |                          | Mild organic acids, mild alkalis, saturated hydrocarbons, ammonia, inert gases, most refrigerants, oils, some fuels, salts, alcohols, water and saturated steam.   |
| <b>GRAPH-LOCK®</b><br>3125SS/3125TC  |                          | Aggressive acids, caustics & alkalis, hydrocarbons, oxidizers, gases (except fluorine), aldehydes, ketones, ethers, chlorides, phenols, amines, solvents, oils, fuels, esters, salts, alcohols, lubricants, halogenated compounds, cryogenics, and saturated steam.                  |
| <b>VEGETABLE FIBRE &amp; CORK:</b><br>681/TD1120/ACN60                               |                          | Water, aliphatic hydrocarbons, oils and fuels. General use in automotive and transformer applications.   |
| <b>RUBBER</b><br>Natural/Neoprene/EPDM/Viton<br>Natural Insertion/Neoprene Insertion |                          | For low pressure gasket applications against water, air and mild chemicals (EPDM is caustic resistant). Recommended for non-metal flange applications.   |
| <b>SPECIAL CONSTRUCTIONS</b>   | <b>3760 Multi-Swell™</b> | Oil and water based media. Creates additional load when in contact with just 10% water or oil content.   |
|  | <b>4122 Therma-Pur™</b>  | Extremely high temperature and thermal cycling applications. Able to seal at 1000°C (continuous). Superior Oxidisation resistance and electrically insulating.   |
|  | <b>Stress-Saver®</b>     | Aggressive media in low load applications. Unique ribbed design helps to create a tighter seal by concentrating compressive load.  |

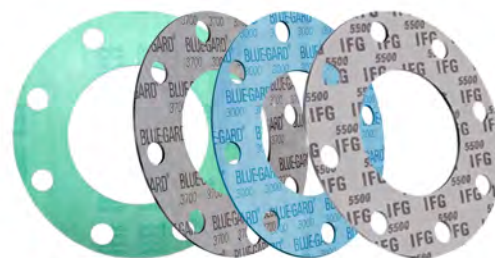
The following graph gives an overview of the temperature and pressure capabilities of the range offered by Garlock.



# SOFT CUT GASKETS

## COMPRESSED FIBRE

Garlock® offers a full range of compressed fibre gasketing materials made from aramid and synthetic fibres to meet most applications. The range includes general service gaskets, the versatile unique blends of Blue-Gard®, and medium-to-high end gaskets. The following table details the capabilities of some popular styles.



| General Information           | General               |        | Blue-Gard® |        |        | High Performance |
|-------------------------------|-----------------------|--------|------------|--------|--------|------------------|
|                               | 2500                  | 2950   | 3000       | 3200   | 3700   | 5500             |
| Fibre                         | Aramid                | Aramid | Aramid     | Aramid | Aramid | Inorganic        |
| Binder                        | NBR                   | NBR    | NBR        | SBR    | EPDM   | NBR              |
| Min Temperature °C            | -73                   | -75    | -75        | -75    | -75    | -75              |
| Max Temperature °C            | -                     | 370    | 370        | 370    | 370    | 425              |
| Max Continuous Temperature °C | 205                   | 205    | 205        | 205    | 205    | 290              |
| Max Pressure bar              | 70                    | 70     | 70         | 83     | 83     | 83               |
| P x T - 0.8 & 1.5mm<br>- 3mm  | bar x °C              | 8,600  | 12,000     | 12,000 | 12,000 | 14,000           |
|                               | bar x °C              | 5,100  | 8,600      | 8,600  | 8,600  | 9,600            |
| Compressibility (ASTM F36)    | %                     | 5-20   | 8          | 8      | 10     | 10               |
| Recovery (ASTM F36)           | %                     | 40     | 50         | 50     | 50     | 40               |
| Sealability (ASTM F37) Fuel A | ml/h                  | 1.0    | 0.25       | 0.2    | 0.1    | 0.1              |
| Gas Permeability (DIN 3535)   | cm³/min               | -      | -          | 0.05   | 0.03   | 0.04             |
| Certifications & Approvals    | Potable Water         | Yes    |            |        |        |                  |
|                               | Oxygen Service        |        |            | Yes    |        | Yes              |
|                               | Gas Storage           |        | Yes        | Yes    |        |                  |
|                               | Shipping              |        |            | Yes    |        | Yes              |
|                               | Air Emissions         |        |            | Yes    |        | Yes              |
|                               | Military<br>Fire Safe |        |            |        | Yes    | Yes              |



## GRAPHITE & CARBON FIBRE

Graphite and Carbon fibre gaskets are the most reliable gasketing options for applications where high pressures, temperatures and/or steam are encountered. These gaskets utilise high grade carbon and graphite fibres to ensure gasket integrity and safety. This unique construction ensures superior sealability and **resistance to thermal cycling**.

| General Information           | Carbon        |        | Graphite |
|-------------------------------|---------------|--------|----------|
|                               | 9800          | 9450   | 9900     |
| Fibre                         | Carbon        | Carbon | Graphite |
| Binder                        | SBR           | NBR    | NBR      |
| Min Temperature °C            | -75           | -75    | -75      |
| Max Temperature °C            | 480           | 480    | 540      |
| Max Continuous Temperature °C | 340           | 340    | 340      |
| Max Pressure bar              | 138           | 138    | 138      |
| P x T - 0.8 & 1.5mm<br>- 3mm  | bar x °C      | 25,000 | 25,000   |
|                               | bar x °C      | 12,000 | 12,000   |
| Compressibility (ASTM F36)    | %             | 8      | 9        |
| Recovery (ASTM F36)           | %             | 55     | 65       |
| Sealability (ASTM F37) Fuel A | ml/h          | 0.1    | 0.1      |
| Gas Permeability (DIN 3535)   | cm³/min       | 0.015  | 0.015    |
| Certifications & Approvals    | Potable Water | Yes    |          |
|                               | Gas Storage   | Yes    | Yes      |
|                               | Shipping      |        |          |
|                               | Military      |        | Yes      |
|                               | Fire Safe     |        | Yes      |

# SOFT CUT GASKETS

## GRAPH-LOCK®

Gaskets made out of graphite flake material excel in extreme conditions; withstanding heat, pressure and aggressive media. **Retains dimensional stability and tight seal in high temperatures and pressure fluctuations.** Available homogenous or with stainless steel wire, foil or tanged core. GRAPH-LOCK® with foil or tanged core are stocked locally.



| General Information           |           | 3125SS      | 3125TC      |
|-------------------------------|-----------|-------------|-------------|
| Graphite Construction         |           | GRAPH-LOCK® | GRAPH-LOCK® |
| 316SS Insert                  |           | Foil        | Tanged      |
| Min Temperature               | °C        | -240        | -240        |
| Max Cont. Temperature (steam) | °C        | 650         | 650         |
| Max Cont. Temperature (atm)   | °C        | 454         | 454         |
| Max Pressure                  | bar       | 140         | 140         |
| P x T - 0.8 & 1.5mm<br>- 3mm  | bar x °C  | 25,000      | 25,000      |
|                               | bar x °C  | 12,000      | 12,000      |
| Compressibility (ASTM F36)    | %         | 43          | 40          |
| Recovery (ASTM F36)           | %         | 14          | 15          |
| Sealability (ASTM F37) Fuel A | ml/h      | 1.0         | 2.0         |
| Gas Permeability (DIN 3535)   | cm³/min   | 1.5         | 1.0         |
| Certifications & Approvals    | Shipping  | Yes         | Yes         |
|                               | Fire Safe | Yes         | Yes         |



## GYLON® & GYLON® EPIX™

Restructured PTFE gasketing materials with outstanding chemical resistance across the pH range. Increased compressibility and **greatly reduced creep relaxation** of GYLON® results in **higher retention of bolt load over conventional PTFE.**

| General Information           |                       | 3500/3500EPX<br>3502 (for Oxygen) | 3504/3504EPX<br>3505 (for Oxygen) | 3510/3510EPX<br>3503 (for Oxygen) | 3545   |
|-------------------------------|-----------------------|-----------------------------------|-----------------------------------|-----------------------------------|--|
| Colour                        |                       | Fawn                              | Blue                              | Off-white                         | White  |
| Composition                   |                       | PTFE with silica                  | PTFE with glass microspheres      | PTFE with barium sulphate         | Microcellular (expanded) PTFE with solid PTFE core |
| Min Temperature               | °C                    | -268                              | -268                              | -268                              | -268   |
| Max Continuous Temperature    | °C                    | 260                               | 260                               | 260                               | 260  |
| Max Pressure                  | bar                   | 83                                | 55                                | 83                                | 83   |
| P x T - 0.8 & 1.5mm<br>- 3mm  | bar x °C              | 12,000                            | 12,000                            | 12,000                            | 12,000   |
|                               | bar x °C              | 8,600                             | 8,600                             | 8,600                             | 8,600  |
| Compressibility (ASTM F36)    | %                     | 7-12 / 47                         | 25-45 / 52                        | 4-10 / 43                         | 60-70  |
| Recovery (ASTM F36)           | %                     | 40 / 17                           | 30 / 25                           | 40 / 18                           | 15   |
| Sealability (ASTM F37) Fuel A | ml/h                  | 0.22 / 0.2                        | 0.12 / 0.2                        | 0.04 / 0.2                        | 0.15   |
| Gas Permeability (DIN 3535)   | cm³/min               | <0.015 / <0.006                   | <0.015 / <0.006                   | <0.015 / <0.006                   | <0.015   |
| Certifications & Approvals    | Oxygen Service        | Yes                               | Yes                               | Yes                               |  |
|                               | Shipping              | Yes                               | Yes                               | Yes                               | Yes  |
|                               | Air Emissions         | Yes                               | Yes                               | Yes                               |  |
|                               | Food & Pharmaceutical | Yes                               | Yes                               | Yes                               | Yes  |
|                               | Chlorine Service      | Yes                               | Yes                               | Yes                               |  |
|                               | Agriculture           | Yes                               |                                   |                                   |  |

# SOFT CUT GASKETS

## STYLE 3535 PTFE SEALANT TAPE

Style 3535 PTFE Sealant Tape is ideal for a wide range of applications in almost any media. It is chemically inert, withstands a wide range of chemicals and conforms to FDA regulations. Continuous length on spools is easily cut and formed. Strong adhesive backing aids installation on narrow or hard to reach flanges. Available in widths from 3mm to 25mm.



| General Information           |                      | 3535                              |
|-------------------------------|----------------------|-----------------------------------|
| Colour                        |                      | White                             |
| Composition                   |                      | PTFE Joint Sealant Tape           |
| Min Temperature               | °C                   | -268                              |
| Max Continuous Temperature    | °C                   | 260                               |
| Max Pressure                  | bar                  | 55                                |
| P x T - 0.8 & 1.5mm           | bar x °C             | 12,000                            |
| - 3mm                         | bar x °C             | 8,600                             |
| pH Range                      |                      | 0-14                              |
| Flammability                  |                      | Will not burn                     |
| Bacterial Growth              |                      | Will not support                  |
| Sealability (ASTM F37) Fuel A | ml/h                 | <0.1                              |
| Gas Permeability (DIN 3535)   | cm <sup>3</sup> /min | 0.05                              |
| Certifications & Approvals    |                      | Shipping<br>Food & Pharmaceutical |

### Value & Benefits:

- ✓ Excellent cost/use ratio
- ✓ Superior chemical resistance
- ✓ Excellent sealability properties
- ✓ Easy to remove from flange faces
- ✓ Unlimited shelf life
- ✓ Easy to cut and handle, flexible, durable

### Ideal for:

- ✓ Food processing
- ✓ Pharmaceutical
- ✓ Chemical process
- ✓ Brewing, distilling
- ✓ Pulp & paper
- ✓ General industrial use

## RUBBER, CORK & VEGETABLE FIBRE

Rubber, Cork and Vegetable fibre sheet suitable for low pressure general service applications.

| General Information        | Rubber  |          |        |          | Rubber Insertion |          |        |
|----------------------------|---------|----------|--------|----------|------------------|----------|--------|
|                            | Natural | Neoprene | EPDM   | Viton® A | Natural          | Neoprene |        |
| Insertion                  | -       | -        | -      | -        | Cotton           | Cotton   |        |
| Hardness                   | Shore A | 65 ± 5   | 60 ± 5 | 70 ± 5   | 75 ± 5           | 65 ± 5   | 60 ± 5 |
| Max Temperature            | °C      | 104      | 120    | 150      | 204              | 104      | 120    |
| Max Continuous Temperature | °C      | 90       | 90     | 110      | 190              | 90       | 90     |
| Elongation, minimum        | %       | 250      | 300    | 350      | 175              | 250      | 300    |
| Tensile Strength           | MPa     | 3.5      | 5.0    | 11       | 8.3              | 3.5      | 7.0    |

Vegetable Fibre & Cork gaskets are ideal for use in automotive and transformer applications.



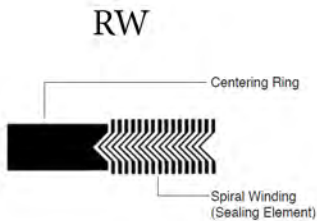
| General Information        | 681                                       | Neocork TD1120                                  | Nitrile Cork ACN60                             |
|----------------------------|---|---|--|
| Composition                | Vegetable fibre with glue-glycerin binder | High cork content material bonded with neoprene | High cork content material bonded with nitrile |
| Min Temperature            | °C  | -   | -30  |
| Max Continuous Temperature | °C  | 100   | 110  |
| Max Pressure               | bar                                       | 15  | -  |
| P x T max                  | bar x °C                                  | 1,300   | -  |
| Compressibility (ASTM F36) | %   | 25-40   | 25-35  |
| Recovery (ASTM F36)        | %   | >40   | >75  |
| Certifications & Approvals | Automotive and Aeronautical Military      |   |  |



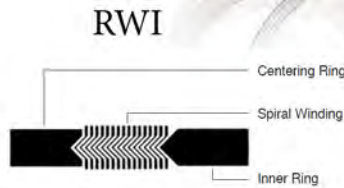
# METALLIC GASKETS

## FLEXSEAL® SPIRAL WOUND GASKETS

Garlock® manufactures spiral wound gaskets with a variety of materials and fillers to ensure that options are available for all applications. The most popular styles are RW, RWI and SW and can be constructed from the materials shown in the table below.



- » General purpose gasket suitable for flat face and raised face flanges up to Class 2500
- » 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 preformed metal and soft filler material



- » Suitable for flat face and raised face flanges up to Class 2500
- » Recommended for higher pressure applications, for use with PTFE fillers
- » Inner ring acts as compression limiter and protects sealing elements from process media attack



- » Suitable for tongue and groove, male-female, or groove-to-flat face flanges
- » Spiral winding only, containing preformed metal and soft filler material
- » Also available with inner rings—Style SWI

The most popular styles are detailed in the table below.

| Style | Inner Ring | Winding/Filler | Outer Ring |
|-------|------------|----------------|------------|
| RWI   | 316L       | 316L/FG        | 316L       |
| RWI   | CS         | 304/FG         | 304        |
| RWI   | 304        | 304/FG         | 304        |
| RWI   | 304        | 304/PTFE       | 304        |
| RWI   | 316L       | 316L/FG        | CS         |
| RW    | -          | 316L/FG        | 316L       |

### Advantages:

- ✓ Durable; easy installation and removal
- ✓ Seals pressures to flange ratings, in accordance with ASME B16.5
- ✓ Suitable for temperatures from cryogenic to 1,093°C (2,000°F)
- ✓ Guide ring simplifies centering of sealing element on the flange face
- ✓ Designed solutions accommodate a variety of conditions by combining various metals and filler materials

| Material             | Minimum |      | Maximum |       | Abbreviation |
|----------------------|---------|------|---------|-------|--------------|
|                      | °F      | °C   | °F      | °C    |              |
| 304 Stainless Steel  | -320    | -195 | 1,400   | 760   | 304          |
| 316L Stainless Steel | -150    | -100 | 1,400   | 760   | 316L         |
| 317L Stainless Steel | -150    | -100 | 1,400   | 760   | 317L         |
| 321 Stainless Steel  | -320    | -195 | 1,400   | 760   | 321          |
| 347 Stainless Steel  | -320    | -195 | 1,700   | 925   | 347          |
| Carbon Steel         | -40     | -40  | 1,000   | 540   | CS           |
| 20Cb-3 (Alloy 20)    | -300    | -185 | 1,400   | 760   | A-20         |
| HASTELLOY® B 2       | -300    | -185 | 2,000   | 1,090 | HAST B       |
| HASTELLOY® C 276     | -300    | -185 | 2,000   | 1,090 | HAST C       |
| INCOLOY® 800         | -150    | -100 | 1,600   | 870   | IN 800       |
| INCOLOY® 825         | -150    | -100 | 1,600   | 870   | IN 825       |
| INCONEL® 600         | -150    | -100 | 2,000   | 1,090 | INC 600      |
| INCONEL® 625         | -150    | -100 | 2,000   | 1,090 | INC 625      |
| INCONEL® X750        | -150    | -100 | 2,000   | 1,090 | INX          |
| MONEL® 400           | -200    | -130 | 1,500   | 820   | MON          |
| Nickel 200           | -320    | -195 | 1,400   | 760   | NI           |
| Titanium             | -320    | -195 | 2,000   | 1,090 | TI           |

| Material          | Minimum |      | Maximum COT |       | Abbreviation |
|-------------------|---------|------|-------------|-------|--------------|
|                   | °F      | °C   | °F          | °C    |              |
| Ceramic           | -350    | -212 | 2,000       | 1,090 | CER          |
| Flexible Graphite | -350    | -212 | 850         | 454   | F.G.         |
| PTFE              | -400    | -240 | 500         | 260   | PTFE         |

| Guide Ring Color Code |
|-----------------------|
| Yellow                |
| Green                 |
| Maroon                |
| Turquoise             |
| Blue                  |
| Silver                |
| Black                 |
| Brown                 |
| Beige                 |
| White                 |
| White                 |
| Gold                  |
| Gold                  |
| No Color              |
| Orange                |
| Red                   |
| Purple                |

| Stripe Color Code |
|-------------------|
| Light Green       |
| Gray              |
| White             |

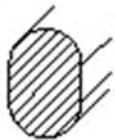


# METALLIC GASKETS



## RING TYPE JOINT GASKETS

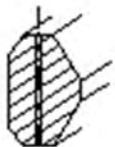
Garlock® offers a range of ring type joint (RTJ) gaskets to be used in applications that involve **extreme pressures and high temperatures**. All ring type joint gaskets are manufactured in compliance with API-6A and B16.2 specifications. Along with standard sizes, custom designs can be made to suit unique applications. These gaskets can be made from the materials table listed below and are available in the following profiles.



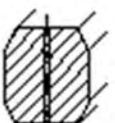
**Type R Oval.** Designed for flanges with standard ring type grooves to seal pressures up to 345 bar in accordance with API-6A. **Oval design is interchangeable** with the octagonal design. Oval design was originally designed for round bottom groove.



**Type R Octagonal.** Designed for flanges with standard ring type grooves to seal pressures up to 345 bar in accordance with API-6A. Octagonal cross-section has a higher sealing efficiency due to its shape, than the Oval cross-section.



**Type RX.** The shape of this joint is designed to be activated by the fluid pressure in order to increase sealability. The outside sealing surface makes the initial contact, and as the internal pressure rises, the contact pressure between the ring joint and the flange increases. Designed for pressures of up to 345 bar, the RX ring joint is more resistant to vibration, pressure surge and shock.



**Type BX.** Suitable only for use with API type BX flanges and grooves. Designed for pressures up to 1380 bar. The gasket has a square cross-section with bevelled corners. The average diameter of the ring type joint is slightly larger than that of the flange groove to ensure pre-compression on the outside diameter, which creates a high sealing stress.

Materials of construction and their sealing stress

| Material        | Sealing Stress (at 20 °C) (N/mm <sup>2</sup> ) |         |         |
|-----------------|--|---------|---------|
|                 | Minimum  | Optimum | Maximum |
| Soft Iron       | 235  | 350     | 525     |
| Carbon Steel    | 265  | 400     | 600     |
| Stainless Steel | 335  | 500     | 750     |

For other material requirements, please contact technical support

# HIGH PERFORMANCE GASKETS

## MULTI-SWELL™

Style 3760 MULTI-SWELL™ is a proprietary formulation that creates **additional gasket load as the gasket comes into contact with water or oil** based products to produce an ultra-tight seal. The gasket is twice as compressible as standard fibre gaskets and is **highly conformable**. MULTI-SWELL™ stops leakage in gear boxes, compressors, pumps, lube oil systems, access covers, potable water networks and waste water systems.

### Value and Benefits:

- ✓ Creates compressive stress in low load flanges in oil and water service
- ✓ Seals where standard fibre gaskets won't - Suitable for irregular surface sealing
- ✓ Wide range of applications providing consolidation opportunity
- ✓ Since MULTI-SWELL™ crush strength is many times higher than a rubber gasket, it can be safely used in applications that would typically crush elastomeric gaskets.
- ✓ Easy to cut and handle - extremely flexible, minimizes waste.
- ✓ Replaces vegetable fiber gaskets in many applications - won't weep or wick system fluids, improving plant safety.



### Ideal for:

- » Compressors
- » Generators
- » Pumps
- » Fuel Pumps
- » Gear Boxes
- » Cast Water Flanges
- » Transformers
- » Sight Glasses
- » Access Covers
- » Handhole/Manhole

### Typical Physical Properties:

|                               |          |                                |
|-------------------------------|----------|--------------------------------|
| Fibre                         |          | Proprietary                    |
| Binder                        |          | Proprietary                    |
| Min Temperature               | °C       | -75                            |
| Max Temperature               | °C       | 205                            |
| Max Pressure                  | bar      | 35                             |
| P x T - 0.8 & 1.5mm           | bar x °C | 5,100                          |
| - 3mm                         | bar x °C | 3,400                          |
| Compressibility (ASTM F36)    | %        | 15                             |
| Recovery (ASTM F36)           | %        | 40                             |
| Sealability (ASTM F37) Fuel A | ml/h     | 0.15                           |
| Certifications & Approvals    |          | Potable Water, Nuclear Service |



## STRESS-SAVER®

The Garlock® Stress Saver® series presents superior low-torque gaskets for metallic or non-metallic flanges. All gaskets in this series have unique molded raised ribs which **helps to create a tighter seal by concentrating the compressive load**. Ideal for use in **lightweight flanges** including PVC, FRP, PVDF, CPVC, polypropylene, cast iron and duct iron; within chemical, electronics, food, pharmaceutical, pulp & paper, and potable/drinking water industries.

| Physical Properties   | Style 3504 GYLON®   | Style XP  | Style 370  | Style 6800  |
|-----------------------|---|---|--|---|
| Description           | Combines unique sealing design with the performance characteristics of the industry recognised GYLON® 3504. | Single piece molded design made from high performance, proprietary blend of fluoroelastomers. | White EPDM elastomer molded with virgin PTFE envelope. Proprietary process bonds the PTFE to the elastomer without the use of adhesives. | Made with 100% white EPDM elastomer. Suitable for less critical application where a tight seal is needed. |
| Colour                | Blue  | Black   | PTFE: Sky Blue<br>EPDM: Off-white  | Off-white   |
| Composition           | 100% GYLON® PTFE with glass microspheres  | Proprietary blend of fluoroelastomer (70 durometer)   | 100% Pure PTFE bonded to EPDM  | EPDM only (65 durometer)  |
| Min Temperature       | °C  | -268  | -40  | -40   |
| Max Cont. Temperature | °C  | 260   | 150  | 150   |
| Max Pressure          | bar   | 55  | 17   | 17  |
| P x T                 | bar x °C  | 8,600   | 1,717  | 1,717   |
| Media                 | All solvents, most caustics and acids, hydrocarbons, refrigerants, cryogenics and potable water             | Potable water, steam, most hydrocarbons, gases, solvents                                      | Moderate acids, caustics, gases, water, hydrocarbons   | Water, very mild acids and caustics   |

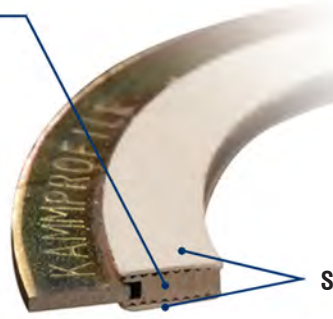
# HIGH PERFORMANCE GASKETS

## KAMMPROFILE™

A high performance metallic gasket that operates in less than perfect conditions. The gaskets consist of serrated faces with a soft, deformable material layered on either side:

### Serrated Solid Metal Core

- » Resists cold flow, overcompression and blowout
- » Provides exceptional stability, even in large sizes
- » Facilitates handling and installation
- » Available in a wide variety of metals



### Soft, Deformable Sealing Material

- » Under compression, conforms to surface imperfections to form a tight seal
- » Seals under low stress - ideal for weaker flanges
- » Withstands extreme fluctuations in temperatures and pressures



### Value & Benefits:

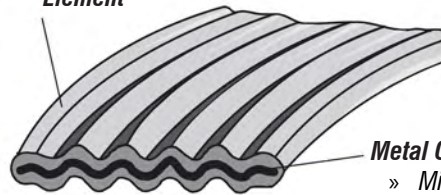
- ✓ Accommodates standard ASME flanges as well as weaker and non-circular flanges
- ✓ Seals less-than-perfect flanges
- ✓ Suits pressures from full vacuum to very high pressures (refer Garlock® Technical support)
- ✓ Performance replacement for jacketed heat exchanger gaskets
- ✓ Fire safe
- ✓ Facilitates ease of handling and installation
- ✓ Available in a wide variety of metals



## GRAPHONIC® SERIES

The superior technology of the GRAPHONIC® family 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. GRAPHONIC® gaskets provide **resistance to a wide range of harsh conditions**, including extreme temperature, corrosive chemicals, and thermal cycling.

### Compressible Sealing Element



### Graphonic® - Flexible Graphite sealing element

- » Application in wide range of temperatures
- » Seals effectively during thermal cycling
- » Fire-safe
- » Chemically resistant (refer Garlock® Technical Support)
- » Long service life
- » Withstands up to 454°C in atmosphere and 650°C in steam
- » Withstands pressures up to 70 bar

### Metal Core

- » Minimises extrusion
- » Redirects compressible sealing element into leak paths
- » Adds strength and rigidity
- » Increases sealability under low bolt stress
- » Actively assists in thermal-cycling applications

### Tephonic® - ePTFE sealing element

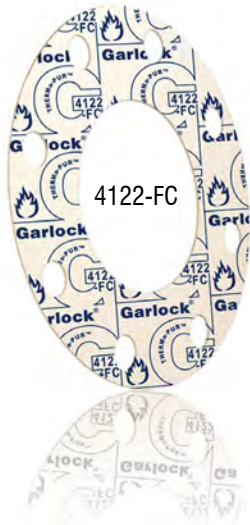
- » Chemically inert
- » Forms a tight seal under low bolt load
- » Conforms to minor sealing surface imperfections
- » Withstands up to 260°C
- » Withstands pressures up to 70 bar

### G.E.T.™ - Graphite and ePTFE sealing element

- » Combines fire safety with chemical resistance
- » Conforms to minor sealing surface imperfections
- » Rigid, yet compressible
- » Withstands up to 260°C
- » Withstands pressures up to 70 bar



# EXTREME TEMPERATURE GASKETS



## THERMa-PUR™

Style 4122 THERMa-PUR™ is a proprietary new gasketing material designed for use in extreme temperature sealing applications. It is produced using an environmentally friendly solvent-free process and combines a unique formulation with a patent-pending fiber core. THERMa-PUR™ is yet another innovative Garlock® sealing solution that provides more than just temperature resistance.

Available in the following constructions:

- » 4122-FC Sheet and Cut Gasket
- » 4122-CMG Corrugated Metal Gasket with THERMa-PUR™ coating
- » 4122-KAMM Kammprofile™ gasket with THERMa-PUR™ sealing surface



*Designed for extreme temperatures up to*  
**1000 °C**  
*continuous*

### Typical Physical Properties:

|   |                                  |   |
|---|----------------------------------|---|
| Max Continuous Temperature (°C)                   | 4122-FC<br>4122-CMG<br>4122-KAMM | 1000                                      |
| Max Pressure (bar)                                | 4122-FC<br>4122-CMG<br>4122-KAMM | 34.5<br>68.9<br>Equal to flange rating    |
| P x T (bar x °C)                                  | 4122-FC<br>4122-CMG<br>4122-KAMM | 5,100<br>21,500<br>Equal to flange rating |
| Compressibility (ASTM F36) (%)                    | 4122-FC                          | 35-45                                     |
| Recovery (ASTM F36) (%)                           | 4122-FC                          | 18  |
| Creep Relaxation (ASTM F38) (%)                   | 4122-FC                          | 25  |
| Tensile Strength (ASTM F152) (N/mm <sup>2</sup> ) | 4122-FC                          | 10.34                                     |
| Density (ASTM F1315) (g/cm <sup>3</sup> )         | 4122-FC                          | 1.52                                      |
| Dielectric Strength (V/mil)                       | 4122-FC                          | 100                                       |

### Ideal for:

- ✓ Marine and Land-based Exhaust Systems
- ✓ Biomass Gasification Process
- ✓ Oil and Gas Production
- ✓ Mineral and Fertilizer Processing
- ✓ Incineration Process
- ✓ Co-generation Systems
- ✓ Turbocharger Equipment
- ✓ Process Drying Equipment

### Value & Benefits:

- ✓ **Extreme Temperature.** Able to withstand high temperature, whether continuous or in thermal cycling conditions.
- ✓ **Oxidation Resistance.** Contains proprietary materials that provide improved weight loss characteristics over other high temperature solutions.
- ✓ **Hydrophobic & Electrically Insulating.** Resists water and provides electrical isolation thus reducing the possibility of corrosion between flanges made of dissimilar metals
- ✓ **Easy Release from Flanges.** Does not stick to flanges making removal of gaskets easy and fast.
- ✓ **Safer Handling.** Patent-pending fiber core makes gaskets safer to handle when compared to traditional high temperature gaskets with steel cores.
- ✓ **Out-performs Vermiculite.** Laboratory testing showed significantly less leakage, even in extreme thermal cycling conditions.

# GPT PIKOTEK® FLANGE ISOLATION

Pikotek® products include a wide selection of isolating/sealing gaskets along with a variety of sleeves and washers. For maximum flexibility, components may be ordered separately or as complete flange isolation kits. Flange Isolation Kits are designed to work in conjunction with isolating gaskets to effect the **complete electrical isolation of a flanged assembly**. The Isolation Kits consist of one full-length isolating sleeve, two isolating washers and two steel washers for each the bolt in the flange assembly.



## VCFS

The Pikotek® Very Critical Fire Service (VCFS) was created by taking a standard VCS configuration and adding a secondary sealing element that maintains a seal while subject to a 800° C fire (API6FB). The VCFS is suitable in all services up to and including ANSI 2500# and is offered for ring type joint (RTJ) flanges. The VCFS consists of a PTFE spring-energized primary sealing element and an E-ring secondary seal, all seated in a metal core.

## PGE

The Pikotek® PGE is a non-critical service seal kit designed for electrical flange isolation and/or general sealing applications. This seal is suitable for use in raised-face flanges up to ANSI Class 600 (or equivalent) and is excellent for isolating flanges made of dissimilar metals or where prevention of flange face corrosion is desired. Available in ring (Type F) and full-face (Type E) styles.

## VCS

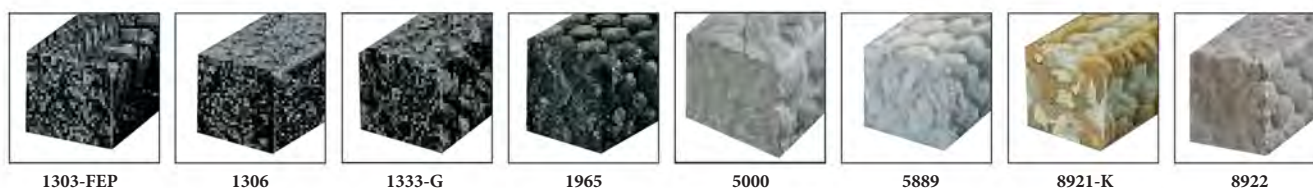
The Pikotek® Very Critical Services (VCS) gasket is a high reliability gasket used for both insulating and general sealing purposes in very critical applications. The gasket has a proven track record of integrity in aggressive sealing situations. The VCS is suitable in all services up to and including ANSI 2500# and API 15,000# classes.

| Pikotek Gasket | Kit Components and Material Options |  |                         |                           |                        |
|----------------|-------------------------------------|--|-------------------------|---------------------------|------------------------|
|                | Seal Retainer                       | Seal Element                                     | Sleeves                 | Isolating Washers         | Metal Washers          |
| <b>PGE</b>     | G-10<br>G-11                        | PTFE<br>Viton®<br>Nitrile                        | G-10<br>Mylar<br>Nomex® | X37 (HCS)<br>G-10<br>G-11 | ZPS<br>SS<br>X37 (HCS) |
| <b>VCS</b>     | G-10<br>G-11<br>G-10CR              | PTFE<br>Viton®<br>Nitrile<br>Silicone            | G-10<br>Mylar<br>Nomex® | X37 (HCS)<br>G-10<br>G-11 | ZPS<br>SS<br>X37 (HCS) |
| <b>VCFS</b>    | G-10<br>G-11                        | PTFE element with<br>secondary Inconel<br>E-ring | G-10<br>Mylar<br>Nomex® | X37 (HCS)                 | X37 (HCS)              |

| Material                | Description   | Operating (cont.) Temperature |
|-------------------------|---|-------------------------------|
| G-10                    | NEMA grade G-10 Glass-Reinforced Epoxy (GRE) laminate.  | -130 to 150                   |
| G-11                    | NEMA grade G-11 Glass-Reinforced Epoxy (GRE) laminate.  | -45 to 200                    |
| G-10CR                  | NEMA grade G-10 Glass-Reinforced Epoxy (GRE) laminate material. Produced to NIST G10CR process specification for materials used in cryogenic applications.  | -273 to 130                   |
| PTFE (Spring Energized) | Recommended for all environments. Helical wound spring provides radial load. Encapsulation in the seal groove eliminates creep or cold flow. This sealing system truly distinguishes Pikotek® gaskets from all other flange sealing to systems. | -250 to 250                   |
| Viton®                  | General-purpose oilfield elastomer. Excellent resistance to aliphatic hydrocarbons, glycols and H <sub>2</sub> S. Good resistance to aromatic hydrocarbons.   | -25 to 200                    |
| Nitrile                 | General purpose elastomer only suitable for mild chemical resistance.   | -130 to 115                   |
| Silicone                | Suitable for use in potable water applications.   | -55 to 300                    |
| Mylar                   | Spiral wound Mylar is a general-purpose insulating material.  | up to 120                     |
| Nomex®                  | Nomex is a high temperature sleeve material manufactured from a solid organic polymer.  | up to 220                     |
| X37 (HCS)               | X37 is a hardened coated steel washer system that retains bolt load when exposed to fire.   | -40 to 250                    |
| ZPS                     | Zinc-Plated Steel Washers.  | -                             |
| SS                      | Stainless Steel Washers.  | -                             |

# COMPRESSION PACKING

Garlock® has a comprehensive compression packing range to cater for general services to the most demanding conditions. Construction materials include Graphite, PTFE, Aramid and Synthetic Fibres, combined with engineered lubrication systems. Garlock® can supply **pre-cut packing ring sets** for all sizes of any combination of styles. This is a great option for minimising wastage, costs and for improving equipment management.



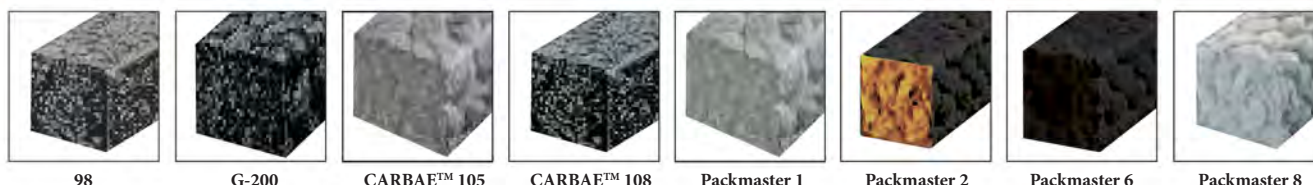
| Style    | Description  | Typical Applications   |         | Rotary                         | Recip.       | Valve                          |
|----------|--|--|---------|--------------------------------|--------------|--------------------------------|
| 1303-FEP | Graphite flakes encapsulated in a very thin non-scouring Inconel® construction to provide an innovative strand design and minimise valve stem scoring. Does not require end rings.   | Valves for power generation, chemical, steam service and hydrocarbon processes.  | pH      | -                              | -            | 0-14*                          |
|          |  |  | P (bar) | -                              | -            | 310                            |
|          |  |  | T (°C)  | -                              | -            | -200 to +455<br>(650 in steam) |
| 1306     | Braided from high purity flexible graphite yarns with carbon filament corners. This combination of materials and construction gives Style 1306 added abrasion resistance.  | Valves and rotary pumps. Graphite construction ensures stability in high temperature valves. The carbon corners ensure resistance to wear in slurry pumps.   | pH      | 0-14*                          | -            | 0-14*                          |
|          |  |  | P (bar) | 34                             | -            | 200                            |
|          |  |  | T (°C)  | -200 to +455<br>(650 in steam) | -            | -200 to +455<br>(650 in steam) |
|          |  |  | v (m/s) | 20                             | -            | -                              |
| 1333-G   | All graphite PTFE free construction maximises reliability and stability in high temperatures, provides excellent chemical resistance and also dissipates heat quickly. The reinforcement of the flexible graphite yarns provides greater tensile strength. The graphite filament yarns adds abrasion resistance. | Highly suitable for valves and pumps where minimal friction generation is a pre-requisite.   | pH      | 0-14*                          | -            | 0-14*                          |
|          |  |  | P (bar) | 35                             | -            | 275                            |
|          |  |  | T (°C)  | -200 to +455<br>(650 in steam) | -            | -200 to +455<br>(650 in steam) |
|          |  |  | v (m/s) | 23                             | -            | -                              |
| 1965     | A blend of Garlock patented fibre infused PTFE yarns with graphite & Synthepak yarns impregnated with PTFE suspensoid. Fibre infused PTFE and Synthepak yarns provide exceptional abrasive resistance and superior shaft deflection recovery.  | Rotary pumps, mixers, agitators, crystallisers and filters found in slurry applications throughout industry.   | pH      | 1-13                           | -            | -                              |
|          |  |  | P (bar) | 35                             | -            | -                              |
|          |  |  | T (°C)  | -270 to +260                   | -            | -                              |
| 5000     | Carbon filament packing impregnated with PTFE and treated with a high temperature break in lubricant. This non contaminating packing was developed for long service against strong caustics, acids, slurries and where contamination is prohibited.  | Reciprocating & centrifugal pumps, valves, plungers, slip type expansion joints, mixers, agitators, reactors, autoclaves, and hydroelectric turbines.  | pH      | 0-14*                          | 0-14*        | -                              |
|          |  |  | P (bar) | 35                             | 35           | -                              |
|          |  |  | T (°C)  | -200 to +315                   | -200 to +315 | -                              |
|          |  |  | v (m/s) | 15                             | -            | -                              |
| 5889     | Constructed from a PTFE continuous filament to produce a dimensionally stable and relatively soft and flexible packing. PTFE dispersion and silicone provide a low friction surface and prevents leakage through the body of the braid.  | High speed centrifugal and rotary services. Almost all volatile applications across industry, including pulp and paper, chemical, petrochemical, refineries, pharmaceutical, steel, power plants, marine, waste/water treatment and agriculture. | pH      | 0-14**                         | -            | -                              |
|          |  |  | P (bar) | 20                             | -            | -                              |
|          |  |  | T (°C)  | -270 to +260                   | -            | -                              |
|          |  |  | v (m/s) | 8                              | -            | -                              |
| 8921-K   | Spun Synthetic polymer fibres lattice braided with aramid diagonally braided through the packing to produce abrasion resistance at the corner wear-points. Each individual polymer fibre is PTFE saturated.  | Excellent for slurries and abrasive media within pumps, valves and plungers.   | pH      | 0-12                           | 0-12         | 0-12                           |
|          |  |  | P (bar) | 35                             | 35           | 173                            |
|          |  |  | T (°C)  | -110 to +288                   | -110 to +288 | -110 to +288                   |
|          |  |  | v (m/s) | 11                             | -            | -                              |
| 8922     | Spun Synthetic polymer fibres lattice braided. Each individual polymer fibre is PTFE saturated and the packing is coated with a proprietary silicone start-up lubricant.   | Excellent for use in pumps, valves and plungers where a wide range of chemical compatibility is required. Especially suitable for acids.   | pH      | 0-12                           | 0-12         | 0-12                           |
|          |  |  | P (bar) | 35                             | 35           | 173                            |
|          |  |  | T (°C)  | -110 to +288                   | -110 to +288 | -110 to +288                   |
|          |  |  | v (m/s) | 12                             | -            | -                              |

\*0-14 except strong oxidizers

\*\*Should not be used in chlorine



# COMPRESSION PACKING



| Style        | Description   | Typical Applications   |         | Rotary                         | Recip.                         | Valve                          |
|--------------|---|--|---------|--------------------------------|--------------------------------|--------------------------------|
| 98           | This carbon fibre packing offers premium performance and economy in most high speed chemical applications. Style 98 is also an excellent valve stem packing. Style 98 has a low coefficient of friction and high thermal conductivity.  | Centrifugal pumps, agitators and valves conducting media such as acids, strong caustics, hot oils, solvents, boiler feed and condensate water.   | pH      | 0-14*                          | 0-14*                          | 0-14*                          |
|              |   |  | P (bar) | 35                             | 35                             | 173                            |
|              |   |  | T (°C)  | -200 to +455<br>(650 in steam) | -200 to +455<br>(650 in steam) | -200 to +455<br>(650 in steam) |
|              |   |  | v (m/s) | 20                             | -                              | -                              |
| 2091         | Style 2091 consists of pure expanded flexible graphite extruded over a Stainless Steel wire core to form the yarn which is then used in braiding the packing. The finished braid is non-scoring.  | On valve stems such as forged steel and stainless steel valves handling steam, water, air, inert gases, oils, solvents, mild acids and alkalis.  | pH      | -                              | -                              | 0-14*                          |
|              |   |  | P (bar) | -                              | -                              | 310                            |
|              |   |  | T (°C)  | -                              | -                              | -200 to +455<br>(650 in steam) |
|              |   |  | v (m/s) | -                              | -                              | -                              |
| G-200        | Construction consists of flexible braided graphite lubricated with a graphite dispersion. G-200 offers the lowest friction for energy savings, the best sealability against abrasives and the best temperature and chemical resistance. G-200 is the ideal choice for high temperature rotary slurry service. | Almost all rotary pump applications.   | pH      | 0-14*                          | -                              | -                              |
|              |   |  | P (bar) | 35                             | -                              | -                              |
|              |   |  | T (°C)  | -200 to +455<br>(650 in steam) | -                              | -                              |
|              |   |  | v (m/s) | 20                             | -                              | -                              |
| CARBAE™ 105  | Construction consists of 95% carbon assay fibre with PTFE coating. CARBAE™ 105 is designed for long, reliable service where contamination is unacceptable.  | Centrifugal pumps, agitators, mixers, reactors and autoclaves conducting acids, caustics and slurries.   | pH      | 0-14*                          | -                              | -                              |
|              |   |  | P (bar) | 35                             | -                              | -                              |
|              |   |  | T (°C)  | -200 to +316<br>(650 in steam) | -                              | -                              |
|              |   |  | v (m/s) | 15                             | -                              | -                              |
| CARBAE™ 108  | Construction consists of 95% carbon assay fibre with graphite dispersion. CARBAE™ 108 is designed for long, reliable service providing a low coefficient of friction and high thermal conductivity.   | Centrifugal pumps, agitators, mixers, reactors and autoclaves conducting acids, caustics, hot oils, solvents, boiler feed and condensate water.  | pH      | 0-14*                          | 0-14*                          | 0-14*                          |
|              |   |  | P (bar) | 35                             | 35                             | 173                            |
|              |   |  | T (°C)  | -200 to +455<br>(650 in steam) | -200 to +455<br>(650 in steam) | -200 to +455<br>(650 in steam) |
|              |   |  | v (m/s) | 20                             | -                              | -                              |
| Packmaster 1 | Combination of resilient fibres and PTFE offers a true non-contaminating general service packing – ideal where a clean, reliable packing is required. White in colour.  | Rotary, centrifugal and reciprocating pumps for mild acids & alkalis, industrial gases, oils, solvents, and fluids where non-contamination is required.  | pH      | 4-10                           | 4-10                           | -                              |
|              |   |  | P (bar) | 20                             | 20                             | -                              |
|              |   |  | T (°C)  | -110 to +260                   | -110 to +260                   | -                              |
|              |   |  | v (m/s) | 8                              | -                              | -                              |
| Packmaster 2 | Combination of resilient fibres with petroleum lubricants and graphite to produce an economical general service packing. Black in colour.   | Rotary & reciprocating pumps for mild acids and alkalis, hot & cold water, alcohol, and steam (up to 150°C).   | pH      | 4-10                           | 4-10                           | -                              |
|              |   |  | P (bar) | 20                             | 20                             | -                              |
|              |   |  | T (°C)  | -110 to +260                   | -110 to +260                   | -                              |
|              |   |  | v (m/s) | 8                              | -                              | -                              |
| Packmaster 6 | Combination of fine particles of graphite within expanded PTFE and a silicone break-in lubricant. Black in colour.  | Rotary & centrifugal pumps for acids & alkalis, solvents, alcohol, esters, petroleum, oils, steam, aqueous solutions, dry industrial gases and compressed air.   | pH      | 0-14**                         | -                              | -                              |
|              |   |  | P (bar) | 20                             | -                              | -                              |
|              |   |  | T (°C)  | -130 to +288                   | -                              | -                              |
|              |   |  | v (m/s) | 15                             | -                              | -                              |
| Packmaster 8 | Constructed from PTFE continuous filament to produce a dimensionally stable, relatively soft and flexible packing. PTFE dispersion and silicone lubricant provides a low friction surface and prevents leakage through the body of the braid.   | High speed centrifugal and rotary services. Almost all volatile applications across industry, including pulp and paper, chemical, petrochemical, refineries, pharmaceutical, steel, power plants, marine, waste/water treatment and agriculture. | pH      | 0-14**                         | -                              | -                              |
|              |   |  | P (bar) | 20                             | -                              | -                              |
|              |   |  | T (°C)  | -270 to +260                   | -                              | -                              |
|              |   |  | v (m/s) | 8                              | -                              | -                              |

\*0-14 except strong oxidizers  
\*\*Should not be used in chlorine

# HIGH PERFORMANCE PACKING

## 9000 EVSP SIMPLIFIED™

Style 9000 EVSP (Emissionless Valve Stem Packing) Simplified™ is designed to provide optimum sealability in even the most severe environments. The combination of unique carbon packing rings and die-formed graphite rings structured to the patented cup-and-cone design ensures a reliable sealing system. 9000 EVSP Sets are specifically recommended for use in critical valve applications in refinery, chemical, petrochemical and power generation industries.

The 9000 EVSP Simplified™ set can be adapted to various stuffing box depths and conditions:

- » The patented design expands radially on both its ID and OD to seal in worn or altered valves.
- » Concept can be engineered to fit stuffing boxes as shallow as two cross-sections.
- » Different end ring material may be used.
- » Machined bushing can be supplied for deep stuffing boxes.

### Value & Benefits:

- ✓ Sealability - exceeds the most stringent regulations and emission standards
- ✓ Fire Safe - Passes API 607 and API 589
- ✓ Extreme chemical resistance
- ✓ High pressure capability
- ✓ Resistant to volume loss (oxidisation)
- ✓ Seals worn valves
- ✓ Reduced friction during operation



|                  |                                |
|------------------|--------------------------------|
| pH               | 0-14 (except strong oxidizers) |
| Temperature (°C) | -200 to +45 5 (+650 in steam)  |
| Pressure (bar)   | 690                            |
| Approvals        | Fire Safe - API 607, API 589   |



## HYDRA-JUST™ SYSTEM

The Hydra-JUST™ System is an engineered sealing kit that ensures maximum sealing performance, effective monitoring & maintenance, as well as reduction in product dilution & overall flush water usage. This transforms into a drastic reduction in production and post production costs, as well as reducing other process related costs.

### Value & Benefits:

- ✓ Reduction in flush water usage and costs
- ✓ Reduction or elimination of product dilution
- ✓ Reduction or elimination of water evaporation costs
- ✓ Process exclusive service - much longer seal life
- ✓ Low frictional drag on shaft - low power usage
- ✓ Leak-free service
- ✓ Reduction in maintenance costs
- ✓ Improved seal life cycle costs

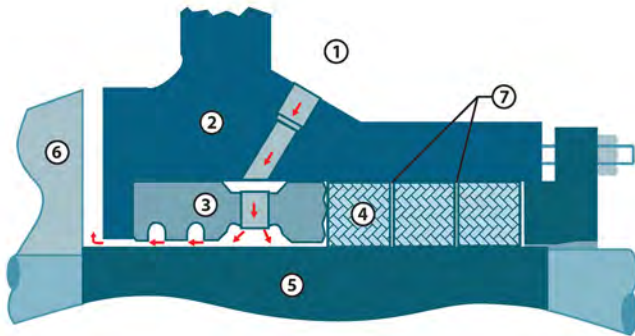
|                   |                                |
|-------------------|--------------------------------|
| pH                | 0-14 (except strong oxidizers) |
| Temperature (°C)  | up to 260                      |
| Pressure (bar)    | 35                             |
| Shaft Speed (m/s) | 20                             |

# PACKING SUPPORT PRODUCTS

## CROWN BUSH®

The Garlock® Crown Bush® is a hydrodynamic flush control device that **significantly reduces gland water consumption**. The flow control also ensures effective prevention of contaminants from coming into contact with the packing system it is used with. This **reduces shaft wear and maximises the service life of the packing**. In conjunction with Garlock's revolutionary low flush packing and GYLON® Spacers the Garlock® Crown Bush® Sealing System extends pump reliability and significantly reduces shaft/sleeve wear.

The Garlock® Crown Bush® is manufactured in either stainless steel or non-metallic. There are no modifications required to a standard gland packed pump and we also offer a split design to allow quick and easy in place installation.



The figure on the left shows a typical set-up of the Crown Bush® inside a pump stuffing box, combined with a stealth set for maximum efficiency in operation. The unique spiral design of the Crown Bush® ensures that **all contaminants are directed away from the packing arrangement**.

- 1. Flush Port
- 2. Stuffing Box
- 3. Crown Bush
- 4. Garlock Packing
- 5. Shaft/Sleeve
- 6. Impeller
- 7. Gylon Spacer

## STYLE 1004 PTFE LANTERN RING COIL

Economical and easy-to-use PTFE lantern ring providing the following benefits:

- ✓ Costs up to 50% less than original equipment supplied lantern rings
- ✓ Easily cut with knife or saw, and short lengths splice together, eliminating waste
- ✓ Easy to install and remove from stuffing box - reduces costly downtime
- ✓ Has gland water filtering capability
- ✓ High-purity PTFE offers chemical resistance in a broad range of rotary services

|                  |      |
|------------------|------|
| pH               | 0-14 |
| Temperature (°C) | 260  |



## COMPRESSION PACKING HANDLING TOOLS

- » **Packing Cutter** - Easy-to-use packing cutters are available for convenient sizing of packing.
- » **Packing Extractors** - Extractors of various sizes are available for the safe extraction of packing.
- » **Tamping Tools** - Flexible tamping tools that make packing positioning and installation easy.
- » **Run-in Lubricant** - Garlock Start-up™ lubricant eases packing ring installation.

## FLOW MONITORING & REGULATION

- » **Flow & Pressure Control Units** - Double and single flow/pressure gauges are available for monitoring flow.
- » **Constant Flow Regulators** - The regulator is designed to provide constant flow of medium volume liquid flows.
- » **Pressure Reducing Valves** - Pressure reducing valves are available for pressure reduction in flush flow.
- » **Magnetic Filters** - The magnetic filter will ensure that iron based contaminants are filtered out.





# EXPANSION JOINTS

## STYLE 10

Style 10 is a versatile rubber expansion joint with two floating flanges. The body is precision moulded from synthetic rubbers reinforced with nylon tire cord. This expansion joint has excellent vibration and sound absorption abilities as well as high pressure resisting abilities. The range of elastomer construction materials ensure resistance to chemical corrosion and ozone attacks.

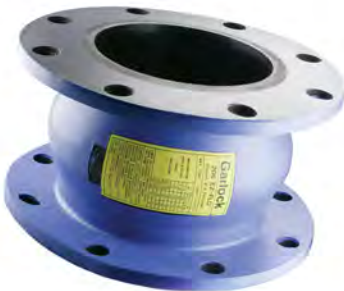
| Size (mm) | Temperature (°C) | Pressure (bar) |
|-----------|------------------|----------------|
| 32-600    | up to 110        | 10             |
| 600-1200  | up to 110        | 6              |



## STYLE 204

Style 204 is a spool-type expansion joint that is constructed with a single or multiple arch type. The expansion joint has high pressure (size dependent) and full **vacuum capability**. The body consists of a unique construction of chlorobutyl/polyester with welded, treated metal body rings for dimensional stability. A high pressure design - 204HP, is also available. Other benefits include:

- » Lab and field tested for long life and exceptional reliability
- » Seamless flange face eliminates need for gaskets
- » High pressure & vacuum resistance with a 4:1 safety factor increases safety & ensures a range of applications
- » Can be custom-designed for greater movement capability and easier installation
- » Variety of elastomer/fabric combinations meet demanding operating conditions
- » Chlorobutyl resists cracking due to high temperatures, weathering, oxidation & chemicals



| Construction Options                                   | Temperature (°C) |
|--|------------------|
| Chlorobutyl/Polyester with Natural Gum                 | 82               |
| Standard Chlorobutyl/Polyester                         | 120              |
| Chlorobutyl/Fibreglass/Kevlar with EPDM tube and cover | 150              |
| Fluoroelastomer with Fibreglass/Kevlar                 | 205              |

## STYLE 206 EZ-FLO®

EZ-FLO® expansion joints contain a single wide flowing arch, eliminating the need for filled arches on slurry services. Garlock® EZ-FLO® expansion joints have successfully served all major industries, including pulp and paper, steel, waste and water, HVAC, power generation, chemical, petrochemical and marine. The body consists of a rubber impregnated tire cord and polyester cross-wrapped in bias-ply construction. Advantages include:

- » Lab and field tested for long life and exceptional reliability
- » Self-flushing design eliminates media buildup and reduces fluid turbulence
- » High pressure & vacuum resistance increases safety & ensures a range of applications
- » Flowing arch design adds pressure resistance and reduces product buildup
- » Chlorobutyl resists cracking due to high temperatures, weathering, oxidation & chemicals

| Construction Options                                  | Temperature (°C) |
|---|------------------|
| Chlorobutyl/Nylon Tyre Cord with Natural Gum          | 82               |
| Chlorobutyl/Nylon Tyre Cord                           | 120              |
| Chlorobutyl/Kevlar Tyre Cord with EPDM tube and cover | 150              |

## Pressure and Vacuum Rating

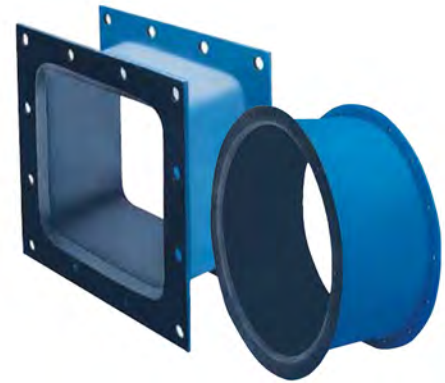
|                          | Pipe I.D. |             | Pressure Rating |     | Vacuum |       |
|--------------------------|-----------|-------------|-----------------|-----|--------|-------|
|                          | Inch      | mm          | psi             | bar | in. Hg | mm Hg |
| Style 204 <sup>†</sup>   | 1/2-4     | 13-100      | 165             | 11  | 29.9   | 750   |
|                          | 5-12      | 125-300     | 140             | 10  | 29.9   | 750   |
|                          | 14        | 350         | 85              | 6   | 29.9   | 750   |
|                          | 16-24     | 400-600     | 65              | 4.5 | 29.9   | 750   |
|                          | 26-66     | 650-1,650   | 55              | 3.8 | 29.9   | 750   |
|                          | 68-96     | 1,700-2,400 | 45              | 3   | 29.9   | 750   |
|                          | 98-108    | 2,450-2,700 | 40              | 2.8 | 29.9   | 750   |
|                          | 110-120   | 2,750-3,000 | 30              | 2   | 29.9   | 750   |
| Style 204HP <sup>†</sup> | 1/2-4     | 13-100      | 200             | 14  | 29.9   | 750   |
|                          | 5-12      | 125-300     | 190             | 13  | 29.9   | 750   |
|                          | 14        | 350         | 130             | 9   | 29.9   | 750   |
|                          | 16-20     | 400-500     | 110             | 8   | 29.9   | 750   |
|                          | 22-24     | 550-600     | 100             | 7   | 29.9   | 750   |
|                          | 26-40     | 650-1,000   | 90              | 6   | 29.9   | 750   |
|                          | 42-66     | 1,050-1,650 | 80              | 5.5 | 29.9   | 750   |
|                          | 68-96     | 1,700-2,400 | 70              | 5   | 29.9   | 750   |
| Style 206 EZ-FLO®        | 2-10      | 50-250      | 250             | 17  | 26     | 650   |
|                          | 12        | 300         | 250             | 17  | 12     | 300   |
|                          | 14        | 350         | 130             | 9   | 12     | 300   |
|                          | 16-20     | 400-500     | 110             | 8   | 12     | 300   |
|                          | 22-24     | 550-600     | 100             | 7   | 12     | 300   |
|                          | 26-40     | 650-1000    | 90              | 6   | 12     | 300   |
|                          | 42-66     | 1050-1650   | 80              | 5.5 | 12     | 300   |
|                          | 68-96     | 1700-2400   | 70              | 5   | 12     | 300   |
| 98-108                   | 2450-2700 | 60          | 4               | 12  | 300    |       |
| 110-120                  | 2750-3000 | 50          | 3.5             | 12  | 300    |       |

# EXPANSION JOINTS

## STYLE 8400

Garlock® offers a wide range of flue duct type expansion joints for a range of applications. Style 8400 flue ducts are available in round, rectangular or square configurations, as belt type (without flanges) or U-type (flanged). The belt type expansion joints can be supplied in any size, without flanges, and can be delivered open-ended, or to fit over ducting. A wide range of rubber and fabric materials are available along with insulating pillows to create **many layer combinations to suit most applications**. These flue duct style expansion joints are commonly used in gaseous media such as hot air, chemical vapours, engine exhaust, etc within many industries including:

- » Steam boiler systems
- » Gas turbine exhausts
- » Industrial furnace & chimney construction
- » Refuse incinerators
- » Ventilation & aeration systems
- » HPI, CPI emissions control
- » Pulp & Paper Industry



| Body, Cover & Liner Material Options            | Temperature (°C) |
|---|------------------|
| Neoprene with Fibreglass insertion              | 120              |
| Chlorobutyl with Fibreglass insertion           | 150              |
| Fluoroelastomer with Fibreglass insertion       | 205              |
| Fibreglass Cloth (Styles 650, 800, 1200)        | 538              |
| Thermo-safe Fibreglass Cloth (Style 110)        | 750              |
| Abrasion resistant Fibreglass Cloth (Style 115) | 1000             |
| Fluorocarbon coated Fibreglass Cloth            | 260              |
| PTFE Gas Shield                                 | 260              |
| Superwool Pillow                                | 1000             |
| Polysil   | 232              |










## METALLIC EXPANSION JOINTS

Garlock® design and manufacture metallic expansion joints of high quality and high performance, meeting the needs of the most demanding industries including LNG, desalination, chemical, power generation and polypropylene plants, as well as refineries. Garlock® can manufacture joints up to 6 metres in diameter.

# KLOZURE® RADIAL LIP SEALS

Garlock® produces an advanced range of lip seals to suit most applications. At the heart of every Garlock® KLOZURE® oil seal you will find the MILL-RIGHT® family of materials. Each of the new MILL-RIGHT® (N-NBR; ES-HNBR; V-FKM) elastomers has been specifically engineered to provide the highest abrasion resistance, lowest wear, and exceptional chemical and temperature resistance. The engineered MILL-RIGHT® materials and seal designs, together, create the most advanced sealing solutions available in the heavy industrial market. For the most demanding conditions, the specially designed, GYLON® based PS-SEAL model will provide the necessary high performance.

| Style  | Features   | Material   | Temp (°C)                             | Pressure (bar)                            | Shaft Dia. (mm) | Surface Speed (m/s)           | Spring Type  | Misalign. (mm@m/s)                       |
|--|--|--|---------------------------------------|---|-----------------|-------------------------------|--|--|
| <b>Model 23</b><br>   | <ul style="list-style-type: none"> <li>General service split seal</li> <li>Cover plate required</li> <li>Over 300,000 sizes readily available</li> </ul>   | N<br>ES<br>V   | -40 to 93<br>-40 to 150<br>-30 to 204 | N/A                                       | 76.2 and up     | 10.2                          | Moulded-in stainless steel finger                              | 0.25 @ 5.1<br>0.13 @ 10.2                |
| <b>Model 26</b><br>   | <ul style="list-style-type: none"> <li>General purpose seal</li> <li>Solid or split design</li> <li>Reverse bevel lip design</li> <li>Reinforced rubber OD</li> <li>Single &amp; dual lip available</li> <li>Cover plate for bore diameters over 10"</li> </ul>  | N<br>ES<br>V   | -40 to 93<br>-40 to 150<br>-30 to 204 | 0.4 (N/A if split)                        | 19.0 to 1524.0  | 25.4                          | Moulded-in stainless steel finger                              | 0.38 @ 5.1<br>0.25 @ 10.2<br>0.20 @ 25.4 |
| <b>Model 53</b><br> | <ul style="list-style-type: none"> <li>General purpose assembled seal</li> <li>Heavy-duty metal outer case</li> <li>Single &amp; dual lip available</li> </ul>   | N<br>ES<br>V   | -40 to 93<br>-40 to 150<br>-30 to 204 | 0.4                                       | 76.2 to 1524.0  | 15.2                          | Stainless steel finger   | 0.38 @ 5.1<br>0.25 @ 10.2<br>0.13 @ 15.2 |
| <b>Model 59</b><br> | <ul style="list-style-type: none"> <li>Severe service assembled seal</li> <li>Heavy-duty metal outer case</li> <li>Reverse bevel lip design</li> <li>Aggressive shaft-to-bore misalignment capability</li> </ul>   | N<br>ES<br>V   | -40 to 93<br>-40 to 150<br>-30 to 204 | 0.4                                       | 152.4 to 1778.0 | 25.4                          | Moulded-in stainless steel finger                              | 2.36 @ 12.7<br>1.19 @ 25.4               |
| <b>Model 63</b><br> | <ul style="list-style-type: none"> <li>General purpose assembled seal</li> <li>Heavy-duty metal outer case</li> <li>Single &amp; dual lip available</li> </ul>   | N<br>ES<br>V   | -40 to 93<br>-40 to 150<br>-30 to 204 | 0.4                                       | 6.4 to 76.2     | 15.2                          | Stainless steel finger   | 0.38 @ 5.1<br>0.25 @ 10.2<br>0.13 @ 15.2 |
| <b>Model 64</b><br> | <ul style="list-style-type: none"> <li>Severe service assembled seal</li> <li>Heavy-duty metal outer case</li> <li>Unique carrier/garter spring combination</li> <li>Industry's highest shaft-to-bore misalignment capability</li> </ul>   | N<br>ES<br>V   | -40 to 93<br>-40 to 150<br>-30 to 204 | 0.4                                       | 203.2 to 1890.0 | 35.6                          | Combination of stainless steel garter & stainless steel finger | 3.18 @ 25.4<br>2.36 @ 35.6               |
| <b>PS-SEAL</b><br>  | <ul style="list-style-type: none"> <li>Specialty seal assembled for high pressure applications</li> <li>GYLON element offers excellent chemical resistance</li> <li>Dry running up to 3.5 m/s</li> <li>Available with a dust lip</li> <li>Also available as a reverse lip, as back-to-back dual lips and as tandem dual lips.</li> </ul> | Gylon® Black<br>Gylon® B (FDA)<br>Gylon® W (FDA)<br>Gylon® F (FDA) | -40 to 204                            | up to 10 (standard)<br>up to 25 (special) | 11.1 to 508.0   | up to 15 (pressure dependent) | N/A  | 0.13 @ 10.2                              |



# KLOZURE® BEARING ISOLATORS

**The best alternative to radial lip seals.** Replacing a lip seal with a KLOZURE® Bearing Isolator will extend equipment life and add profit to your bottom line. Over 90% of bearing failures are caused by contamination where conventional lip seals fail to exclude water and other contaminants from entering into the lubricant. Lip seals also have an unpredictable life, generate frictional heat, score the shaft surface, and cause increased energy consumption due to the frictional drag on the shaft. KLOZURE® Bearing Isolators feature the following popular styles with typical applications in pump bearing frames, electric motors, gear boxes, split pillow block bearings and fans.



## Iso-GARD®

The **most aggressive labyrinth isolator** in the industry, for superior contaminant exclusion. Press-fit design allows for easy installation with no requirement for tools. The unique two-piece unitized construction of the Iso-Gard will ensure structural stability. The PTFE material provides **excellent chemical resistance** and wide temperature compatibility. The seal has a non-contact design, which **eliminates shaft scoring, drag and frictional heat, and sparking**. This also negates any lubricant requirements. Available in a broad range of configurations. Used in non-flooded applications.

## GUARDIAN™

The high performance Metallic Bearing Isolator utilizing labyrinth technology in conjunction with other dynamic features to protect bearing from contamination ingress, as well as lubrication egress. Design features include the **engineered unitizing element that ensures no internal metal-to-metal contact, eliminating any chance of sparking**. This design also ensures no wear on shaft or metallic components. The patented Cam-Lock® design allows for **easy installation**. The GUARDIAN™ also features enhanced **vapour blocking** capabilities which prevents vapour migration into the bearing housing. Available in a **Split Design**. Used in non-flooded applications.



## MICRO-TEC® II

Incorporating the proven GUARDIAN™, the MICRO-TEC® II is designed for applications that require bearing protection in highly contaminated environments. Utilizes microcellular technology to **block out airborne contamination**. Only the MICRO-TEC® II incorporates a unique **microcellular filter to block the ingress** of outside contaminants.



## SGi™

Providing the ultimate protection for your bearings, the Garlock® SGi™ incorporates the proven GUARDIAN™ technology with the only maintenance-free shaft voltage mitigation technology, the AEGIS™ SGR. The **SGi™ protects motor bearings from EDM, electronic discharge machining, caused by VFD, variable frequency drive, induced shaft voltage**. Available in split-construction (SGi™-180), and with Micro-tec filter technology (SGi™-MT). Similar to the Guardian™, the **SGi™ is non-sparking**.

| Style         | Construction   | Temp (°C)  | Pressure (bar) | Surface Speed (m/s) | Axial Motion (mm) | Shaft-to-bore Misalign. (mm) | Protection                          |
|---------------|--|------------|----------------|---------------------|-------------------|------------------------------|-------------------------------------|
| Iso-Gard®     | Both the rotor and the stator are designed from 15% glass-filled PTFE providing excellent chemical resistance. | -40 to 204 | Atmospheric    | 22.9                | 0.38              | 0.50                         | IP55, IEEE 841-2001                 |
| GUARDIAN™     | Bronze construction with patented unitizing ring eliminates metal-to-metal contact. Patented Cam-Lock® design. | -30 to 204 | Atmospheric    | 60.9                | 0.64              | 0.50                         | IP66, IEEE 841-2001                 |
| MICRO-TEC® II | Bronze construction (standard) with unitizing ring and micro-cellular filter.                                  | -30 to 204 | Atmospheric    | 22.9                | 0.64              | 0.51                         | IP66, IEEE 841-2001, NEMA MG 1-2003 |
| SGi™          | Bronze construction (standard) with unitizing ring and AEGIS™ shaft grounding ring.                            | -30 to 149 | Atmospheric    | 60.9                | 0.60              | 0.50                         | IP66                                |

# ONE-UP® PUMP DIAPHRAGMS



## ONE-UP® DIAPHRAGMS

**GARLOCK® ONE-UP®** industrial pump diaphragms, containing high performance PTFE GORE® sheet on the wetted side, are a significant advancement over conventional PTFE diaphragms. Considerably stronger, with greater flex life, they provide a dramatic improvement in service life. GARLOCK® ONE-UP® pump diaphragms have been extensively field tested in a wide variety of industries including chemical processing, paint, solvent and detergent manufacturing, and wastewater treatment. Documented case histories show that the average service life is 3.5 times longer than conventional PTFE diaphragms.

**GYLON® ONE-UP®** pump diaphragms, made using the exclusive GYLON® PTFE Diaphragm material and a proprietary EPDM rubber backing, are FDA compliant and will have the same chemical resistance and long life as the industrial ONE-UP. This allows high performance in food and regulated applications. Your solution for sanitary applications in air operated diaphragm pumps.

Chemical resistance is the property that makes ONE-UP® pump diaphragms so versatile. Suitable for use with most chemicals and in elevated temperatures and pressures, these diaphragms are ideally suited for those general service pumps that are likely to be put to one use today and another use tomorrow. You can expect **long, effective service life and reduced maintenance costs** with these durable one-piece diaphragms. Strength and chemical resistance make ONE-UP® pump diaphragms perfect for most of your pumping requirements.



### Key Features:

- ✓ Contains high performance material: PTFE GORE® (Industrial) or GYLON® (food & pharmaceutical)
- ✓ Bonded to a reinforced rubber backing
- ✓ Patented rib construction
- ✓ Chemically inert & temperature resistant
- ✓ Greater flex life
- ✓ Available for most brands of pumps & sizes

### Key Benefits:


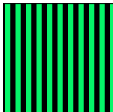

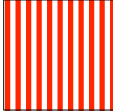
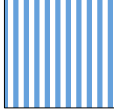

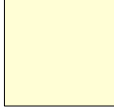
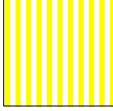
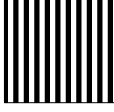

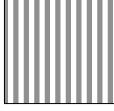
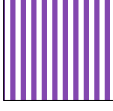

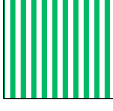

- ✓ Lasts Longer: Replace diaphragms less often
- ✓ Versatility: Diaphragms work with most chemicals
- ✓ Cost: Lowers maintenance and operating costs

| Properties                            | GARLOCK® ONE-UP®  | GYLON® ONE-UP®   |
|---------------------------------------|---|--|
| <b>Construction</b>                   | <b>One-piece composite design</b> with a proprietary 100% GORE® PTFE on wetted side fused to a Neoprene, EPDM or Viton® backing | <b>One-piece composite design</b> with a proprietary GYLON® on wetted side fused to a EPDM backing |
| <b>Chemical Resistance</b>            | Chemical resistance to all media in pH 0 – 14 range, except molten alkali metals and elemental fluorine.                        | Chemical resistance to all media in pH 0 – 14 range found in FDA compliant applications            |
| <b>Temperature Range</b>              | Neoprene backing: -10 to 93°C<br>EPDM backing: -10 to 137°C<br>Viton® backing: 0 to 176°C                                       | -10 to 149°C   |
| <b>Applications</b>                   | Industrial applications involving chemicals   | Food and pharmaceutical industries, and other applications where FDA compliance is required.       |
| <b>Certifications &amp; Approvals</b> |   | GYLON: Food & Pharmaceuticals, Potable Water, Medical, TSE Free<br>EPDM: Food & Pharmaceuticals    |

# COLOR-PLAST SHIMS

## Color-Plast Sheets, Shims and Spacers

Color-Plast is a tough, plastic material that is completely impervious to oils and grease, even in temperatures up to 121°C. It will not swell or distort after long use and will withstand high torque loads. Color-Plast has the **same compressibility as a brass shim**. Another feature of Color-Plast is its wrinkle-free structure, ensuring easy handling and installation.

|   |  |  |  |
|---|--|--|--|
|    | <b>CLEAR</b><br>.001" (0.025mm)                    |    | <b>BLACK WITH LIME STRIPES (LIME)*</b><br>.0125" (0.318mm) |
|    | <b>TAN</b><br>.0015" (0.038mm)                     |    | <b>RED STRIPED (OLIVE)*</b><br>.15" (0.381mm)              |
|    | <b>BLUE STRIPED (ORANGE)*</b><br>.002" (0.051mm)   |    | <b>CHARCOAL</b><br>.020" (0.508mm)                         |
|    | <b>CREAM</b><br>.003" (0.076mm)                    |    | <b>YELLOW STRIPED (AQUA)*</b><br>.025" (0.635mm)           |
|   | <b>BLACK STRIPED (CLEAR)*</b><br>.004" (0.102mm)   |   | <b>WHITE</b><br>.030" (0.762mm)                            |
|  | <b>SILVER STRIPED (SILVER)*</b><br>.005" (0.127mm) |  | <b>PURPLE STRIPED</b><br>.040" (1.016mm)                   |
|  | <b>KHAKI</b><br>.0075" (0.191mm)                   |  | <b>GREEN STRIPED</b><br>.050" (1.270mm)                    |
|  | <b>NAVY</b><br>.010" (0.254mm)                     |  |  |

*Sheets are colour-coded according to thickness, making shim, spacers and sheet selection very fast and easy*

Color-Plast can be supplied as:

- **Sheets** – standard sheet size is 20" x 50" (508 x 270mm)
- **Strips/Sheets** – cut to supplied widths
- **Cut shims/spacers** – to supplied dimensions
- **Shim Kits** – to suit complete shim requirements of equipment

| Construction Material         | POLYESTER  | TRI-ACETATE  | VINYL  |
|-------------------------------|--|--|--|
| <b>Thicknesses</b>            | 0.025mm (0.001") Clear<br>0.038mm (0.0015") Tan<br>0.051mm (0.002") Blue Striped (Orange)*<br>0.076mm (0.003") Cream<br>0.10mm (0.004") Black Striped (Clear)*<br>0.127mm (0.005") Silver Striped (Silver)*              | 1.02mm (0.040") Stripe Purple<br>1.27mm (0.050") Stripe Green<br>1.52mm (0.060") Stripe Orange | 0.191mm (0.0075") Khaki<br>0.254mm (0.010") Navy<br>0.318mm (0.0125") Black w/ Lime Stripes (Lime)*<br>0.381mm (0.015") Red Striped (Olive)*<br>0.508mm (0.020") Charcoal<br>0.635mm (0.025") Yellow Striped (Aqua)*<br>0.762mm (0.030") White |
| <b>Distortion Temperature</b> | 121 °C   | 93 °C  | 74 °C  |
| <b>Applications</b>           | For applications against oil, petroleum, aromatic and non-aromatic fuels. High compressibility useful when lightweight sheet metal flanges are involved. For use with gear case, crankcases and oil pans and containers. |  |  |

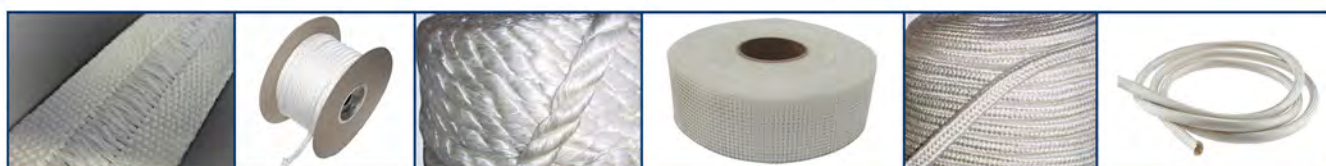
*\*Previous colour in brackets*



# HIGH TEMPERATURE TEXTILES

## HIGH TEMPERATURE CLOTH, ROPE AND PACKING

A wide range of fibreglass insulation cloth, tape, ladder tape, lattice braided packing, tubing, and rope are available for **insulation, sealing and protection against temperatures up to 1000°C**. Styles include Thermo-sure, Poly-sil, Thermo-sil, Thermo-safe and Thermo-temp.



| Style              | Description   | Max Cont Temp (°C) | Availability  | Applications  |
|--------------------|---|--------------------|---|---|
| <b>Thermo-sure</b> | Woven fibreglass cloth coated with high temperature rubber compound   | 204                | Insulation Cloth:<br>Style 6250 - with Brass wire reinforcement<br>Style 6251 - without wire  | Gaskets for manholes, handholes & flanges on boilers & air receivers.<br>Door seals for ovens and autoclaves<br>Media: Steam, air & dry gases, aqueous solutions  |
| <b>Poly-sil</b>    | Woven fibreglass cloth coated with white silicone rubber for sealability  | 230                | Insulation Cloth:<br>1-Ply (2mm)<br>2-Ply (4mm)   | Flue duct expansion joints<br>Flue duct gaskets<br>Gaskets for worn/uneven flanges<br>Media: mild acids & alkalis, oils & greases, air & some gases, salt & fresh water   |
| <b>Thermo-sil</b>  | Textile product manufactured using acid-etched e-glass fibre yarns. Finished material is treated to minimise emission and unravelling | 538                | Insulation Cloth (by weight - g/m <sup>2</sup> ):<br>Styles 650, 800, 1200, 1550<br>Plain Tape: Styles 1210 (1.5mm), 1410 (6.5mm), 1810 (3.0mm)<br>Ladder Tape: Style 1910<br>Lattice Braided Packing:<br>Style 5450 (Square, Rectangular)<br>Style 5481 (Round)<br>Tubing, Rope, Knitted Rope, Matting | Welded blankets/curtains, jacketing for insulation batts, liquid, air & gas filtration, tadpole tapes, channel seals/block packings, furnace door seals, high temperature pillows<br>Media: most acids & dilute alkalis, solvents, molten metals, sparks & slag |
| <b>Thermo-safe</b> | High tensile strength and abrasion resistant textile products manufactured using calcium silicate fibre yarns                         | 750                | Insulation Cloth:<br>Style 110 - 1100 g/m <sup>2</sup><br>Style 955 - 950 g/m <sup>2</sup><br>Lattice Braided Packing: Round, Square, Rectangular<br>Tape, Tubing, Matting  | Welded blankets/curtains, jacketing for insulation batts, liquid, air & gas filtration, tadpole tapes, channel seals/block packings, furnace door seals, high temperature pillows<br>Media: most acids & dilute alkalis, solvents, molten metals, sparks & slag |
| <b>Thermo-temp</b> | High tensile strength and abrasion resistant textile products manufactured using high purity (93.5%) silica fibre yarns               | 1000               | Insulation Cloth: Style 115<br>Tubing, Packing, Matting, Aluminised Cloth   | Welded blankets/curtains, jacketing for insulation batts, liquid, air & gas filtration, tadpole tapes, channel seals/block packings, furnace door seals, high temperature pillows<br>Media: most acids & dilute alkalis, solvents, molten metals, sparks & slag |

# SPRAY-STOP SAFETY COVERS

## SPRAY-STOP COVERS

Garlock® Spray-Stop safety covers provide a much needed early-warning, visible indication of leakage. A colour change triggered only from the inside by a leak enables even untrained employees to see that a leak has occurred. Even a single drop of acid will bleach the inside coating; an outside spray will not affect the colour. **Visible from a distance, the colour change hastens discovery and reduces damage.** Everyone, in effect, becomes an inspector.

If leakage does occur—whether drops, spray or stream—Garlock® Covers deflect it from spraying adjacent areas and personnel. All models of **valve and flange covers are fully-indicating** (meaning the actual material changes colour) except PTFE flange covers which indicate through a patch, and PTFE valve covers.



All Garlock Spray-Stop Covers are made from patented high temperature fabrics coated with special formulation of indicators and polymers that will change colour when contacted by acid or caustic. All can replace any old-fashioned made-on-the-job covers at a fraction of the cost. **Exclusive contoured shape makes a secure fit around flanges and valves;** they won't fall off under any circumstances, even in a fire! Lightweight and compact, they fold flat for shipping and storage. Covers are available in durable Vinyl or PTFE fabrics, both of which are UV, weather, chemical and fume resistant:

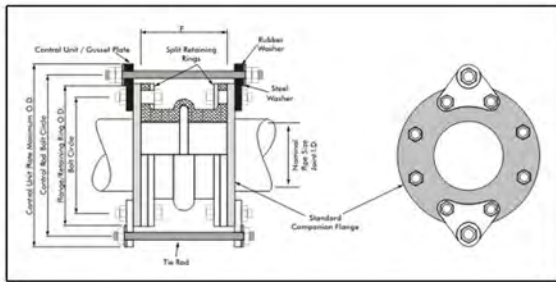
| Style | Features   |
|-------|--|
| Vinyl | Used in moderate temperatures and are fully-indicating (meaning the actual material changes colour, not just a patch) for installations where temperatures do not exceed <b>104°C</b> . You can actually see where a leak occurs by the colour change on that part of the cover! Resists acids, caustics and most other industrial chemicals. Available in most sizes for valves, and from ¼" up to 36" for flange covers.   |
| PTFE  | Used in high temperature applications for continuous protection on pipelines carrying fluids with up to <b>260°C</b> temperatures. Made from PREMIUM GRADE PTFE material, these unique covers withstand high temperatures and, like vinyl, are resistant to external acids, caustics, and most other industrial chemicals. An indicating swatch is built-in to flange cover bottoms to provide the same early-warning of leakage as the Vinyl fully-indicating models. |



### Value & Benefits:

- ✓ Obvious colour change makes spotting leaks easy
- ✓ Acts as a safety cover as the covers are impervious to most reagents
- ✓ High temperature fabric - PTFE - covers most chemical applications
- ✓ Colour change occurs for internal leakage to accurately determine leak point
- ✓ Suitable for exposed operating conditions as the covers are UV and water resistant
- ✓ Exclusive contour shape captures all leakage and cannot be easily dislodged
- ✓ Lightweight and compact - easily handled and stored
- ✓ Minimises damage, injury and downtime
- ✓ Reduction in inspection costs
- ✓ Reduction in repair costs

# CAPABILITIES AND SERVICES

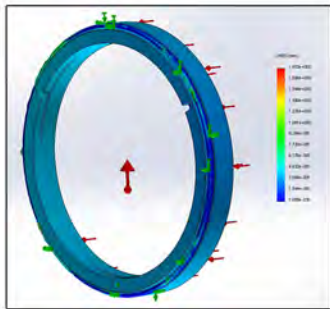
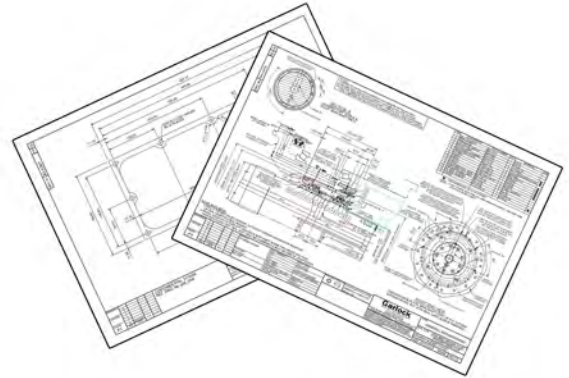


## ENGINEERING SERVICES

The Garlock® applications engineering team can provide engineering support for all sealing applications. Garlock® also specialises in providing sealing solutions for unique applications where existing products are not suitable. A worldwide applications engineering team is also available for more challenging cases.

## SURVEYS

Garlock® can conduct complete sealing and associated component site surveys to assist our clients in inventory rationalisation and plant reliability improvements. These include surveys of pumps, expansion joints and many more. A site survey provides information that can significantly improve process efficiencies by highlighting problem areas and preempting equipment failure.



## PRODUCT DEVELOPMENT AND ANALYSIS

Using some of the most technologically advanced equipment available, the Garlock® family of companies' research and development teams explore new opportunities presented by new materials, constructions and applications. Garlock® has product development and testing facilities to create new sealing solutions for unique applications. The use of modeling and analysis software such as SolidWorks® allows a comprehensive design process. A testing rig that can replicate many operating conditions is set-up to test new (and old) designs.

## CUTTING SERVICES

Garlock® utilizes Water-Jet Cutters and Blade Cutters to cut gaskets and shims to any shape that can be drawn on a CAD file. These machines can also be used for cutting variety of materials. Great for prototyping and small run jobs. Garlock® also uses travelling head and clicker presses for die cutting.

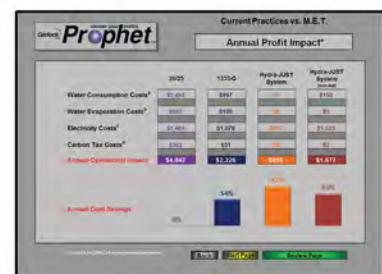


## COST SAVINGS ANALYSIS

Garlock® Prophet® is a software dedicated to analysing production costs and how they vary according to the sealing product used. This cost saving analysis can be customised to provide savings advice to all production processes. Garlock® is committed to identifying and eliminating unnecessary costs within the supply chain and within production and maintenance environments.

## TRAINING

Garlock® provides training for the packing of pumps, valves and also gasket installation. This training is carried out for both company and contract personnel. Garlock® is committed to providing product installation training to maximise the service life of our products and improve plant equipment reliability.





## Customer-Driven Innovation

We believe by centering our world around our customers, we are able to bring better solutions and services to the market. Exceptional engineering begins first with understanding your needs and providing a solution that extends beyond the norm. Today's value-proposition demands first quality and then commitment. At Garlock®, our commitment includes not only providing the most innovative solutions but also the most progressive. Our focus and the key to our success is clear and direct: To be respectfully focused on you, our customer.



## Quality Commitment

TCV is our culture of continuous, everyday improvement that focuses on Total Customer Value by eliminating waste in pursuit of perfection. The Garlock® family of companies continually monitors its progress towards perfection by measuring key performance indicators including low customer complaint & return levels, zero delivery defects, continued scrap reduction, high customer satisfaction rating and strong delivery performance.



## Safety & Environment

Garlock® is completely involved in creating an injury-free work place. The dedication to create a safe workplace free of all injuries will be absolute and clear through the policies, procedures and practices within the Garlock® family. The Garlock® family of companies is focused on improving its operations and product offerings demonstrating its commitment to a cleaner environment. We set high standards to reduce environmental impact taking care of our planet by preserving its beauty and resources.



# More than just great products...

Beyond offering you the widest available range of products for packing and sealing, Garlock® enhances the value of its products with technical services and comprehensive training programs:

- » ISO 9001:2008 registration for Industrial Gasketing, Industrial Packing, KLOZURE® Oil Seals, Bearing Protectors, Expansion Joints and Industrial Rubber Products.
- » A global network of stocking Authorised Garlock® Distributors.
- » Factory sales representatives and applications engineers available for problem solving when and where it is needed.
- » 1800 GARLOCK telephone number for immediate product information and technical support.
- » Technical field seminars on all Garlock® products.
- » The most sophisticated and most comprehensive test facilities available.
- » Factory-sponsored product training programs including hands-on seminars, to ensure that Garlock® representatives and their distributor personnel are the best in the industry.
- » Technical Bulletins to keep you up-to-date on product enhancements and changes.
- » In-plant surveys of equipment and processes, providing the customer with recommendations to identify and eliminate sealing and packing problems before they start.

Customers who specify Garlock® fluid sealing products get, at no extra cost, the high quality support needed to run a profitable operation. For more information or for technical assistance please call 1800 GARLOCK in Australia or 95745651 in New Zealand.

## Garlock®

an EnPro Industries family of companies



ISO 9001:2015



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**WARNING:** Properties/applications shown throughout this brochure are typical. Your specific application should not be undertaken without independent study and evaluation for suitability. Refer to specific product data sheets for detailed specifications and information. For specific application recommendations, consult Garlock® Engineering. Failure to select the proper sealing products could result in property damage and/or serious injury. Performance data published in this brochure has been developed from field testing, customer field reports and/or in-house testing. While the utmost care has been used in compiling this brochure, we assume no responsibility for errors. Specifications are subject to change without notice.

#### Bring Garlock® to all your sealing requirements

Pulp & Paper  
Power  
Pharmaceutical  
Chemical



Primary Metal  
Water Treatment  
Mining  
Food & Beverage

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