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The Global Leader in

# Mechanical Packings



For more information on our other locations or any of our products, please visit [www.leadergt.com](http://www.leadergt.com)

formerly **JM Clipper**



Leader Global Technologies (formerly JM Clipper) brings you product and marketplace experience as well as the most cost effective sealing solutions available in the market today. Founded over 100 years ago, Leader GT has led the industry in fluid sealing and gasket manufacturing technology.

As the original designer and developer of the compressed sheet manufacturing equipment, Leader GT has continued to develop leading edge gasket and packing technology. These technologies include the "Patented Dynagraph™ Process", Elastagraph™, Graphite and Corrugated Metal Gasket, CW 2000 High Temperature Packing and many other technology driven fluid sealing products. Leader GT continues to be the fluid sealing technology leader that you can count on.

With our extensive experience in the fluid sealing market, Leader GT is setting new standards of excellence in the manufacture and supply of fluid sealing products. We will work to lower the fluid sealing product "Total Installed Cost", which allows the end-user and their partner distributor to take complete ownership and control of their fluid sealing product spend. Leader GT will help you accomplish this through increased efficiencies, minimized downtime, on-site training and fixed equipment & piping drawing management, all the while continuing to provide "World Class" fluid sealing technologies.

The primary focus of Leader GT is to bring an attitude of excellence to the manufacturing of fluid sealing, fastener and other specialty sealing products. As your dedicated resource, we will manage your day-to-day fluid sealing applications. With our superior manufacturing capabilities, outstanding field technical support and engineering services, we will deliver demonstrable cost savings, and measurable reliability advancements.

## PRODUCTS & SERVICES

- Spiral Wound Gaskets
- Full Line of Stud Bolts and Fastener Products
- Elastagraph™ Molded Graphite and Metal Flange Gaskets
- Dynagraph™ Flexible Graphite Technology
- Dynagraph™ HE (Heat Exchanger) Gaskets
- Graftech GRAFOIL® Products including Sheet and Tape
- LeaderCam™ Camprofile Gaskets
- Double Jacketed Gaskets
- Specialty Manufactured Metallic Gaskets
- Calendared, Filled PTFE Sheet
- Compressed Sheet Gasket Materials
- Specialty Manufactured Cut Gaskets
- Dynagraph™ Mechanical Packing Materials
- Full Line of Standard Mechanical Packing Materials
- On-site Technical Training Programs
- Engineered Gasket Design
- Engineered Bolt Torque Calculations
- ASME Code Bolted Joint Analysis
- Fixed Equipment and Piping Drawing Management
- Warehouse and Zone Stores Materials Management Programs
- Turn Around Materials Management Programs

## SELECTING A PACKING

## LEADER GT SHEET MATERIALS

To help the user of this catalog select the proper compression packing for a specific purpose, Leader GT has provided the operating parameters of each style. These parameters are intended as a guide only.

## EXPLANATION OF SYMBOLS

<b>Rotating Equipment</b>	
<b>Reciprocating Equipment</b>	
<b>Valves</b>	

In addition to their most common application, most packing materials have secondary applications where they perform at an equally high level. For example, many pump packings can also be used as valve packings.

## TYPES OF BRAID

Designed for pump and valve service, Dynagraph packing styles are made using the patented Dynagraph process. Braided skeletal structures made from carbon, flexible graphite and other specialty designed yarns are infused with an extremely dense, nonporous, seamless jacket of flexible graphite along with a corrosion inhibitor for those packings designed for use in valve applications to reduce stem pitting. The Dynagraph process eliminates mylar/polyester adhesive systems traditionally used to attach graphite tape to various carriers.

### BRAID-OVER-BRAID



Designed for pump and valve service, this construction is a high strength type, braided round, then calendared square or rectangular. Sizes are created by braiding jackets over jackets (braid-over-braid). The finished product can be supplied in round, square or rectangular cross sections. It is very conformable because of the individual jacket-over-jacket construction.

### INTERLOCKED



Designed for use in pumps and valves, Interlocked uses specialty yarns braided on equipment crisscrossing the strands from the surface through the body of the packing. The strands are strongly locked by other strands to form a solid packing structure that cannot easily unravel in service. Interlocked packing has an even distribution of yarn density throughout improving lubricant retention.

### PLAITED/SQUARE



Designed for pump and valve service, this braid style uses specialty yarns braided on equipment where yarn strands pass over and under running in the same direction. These types of packings are supplied in square cross sections as a standard, but rectangular cross sections can be manufactured on special request. These packings are typically soft and can carry large percentages of lubricant. Plaited/Square braided packings are easy on equipment. The Plaited/Square construction is extremely conformable, works well on worn equipment, and have excellent strength qualities.

## CX-1



## STANDARD MECHANICAL PACKING MATERIALS

A square interlock braided packing using 100% white PTFE filament yarns, CX-1 is impregnated with a PTFE suspenoid; then treated with an inert oil. It is designed to be used in extremely corrosive conditions. It is highly conformable and requires only moderate gland pressure for a tight seal. CX-1 is used primarily in centrifugal pump applications; however, it is also an excellent choice for use in valves, agitators and other equipment.

<b>Braid Construction:</b>	Interlock
<b>Fiber Type:</b>	PTFE
<b>Lubricant Type:</b>	PTFE & Oil
<b>Temperature Limit:</b>	500°F
<b>Shaft Speed Limit:</b>	1200 fpm
<b>Pressure Limit Rotary /Valve:</b>	300 psi

## VX-1



VX-1 is made of 100% white PTFE yarns, braided square using the interlock construction. It contains no impregnant, has no lubricant, and has no finish treatment. VX-1 is designed for use in valves, but can be used in other low speed services.

<b>Braid Construction:</b>	Interlock
<b>Fiber Type:</b>	PTFE
<b>Lubricant Type:</b>	N/A
<b>Temperature Limit:</b>	500°F
<b>Shaft Speed Limit:</b>	N/A
<b>Pressure Limit Rotary /Valve:</b>	400/2000 psi

## C-17



Constructed for strength using PTFE treated, Kevlar® fiber yarns, this square braided interlock packing is treated with a high temperature break-in lubricant. Designed to be used in centrifugal pumps where tough abrasion resistant performance is required from a packing, C-17 is particularly effective in the paper, petroleum, steel, and chemical industries in pumps handling wood pulp, caustic paper stock, acids, pigments and dye stock, waste effluent, demineralized and boiler feedwaters.

<b>Braid Construction:</b>	Interlock
<b>Fiber Type:</b>	Aramid
<b>Lubricant Type:</b>	PTFE & Oil
<b>Temperature Limit:</b>	500°F
<b>Shaft Speed Limit:</b>	1900 fpm
<b>Pressure Limit Rotary /Valve:</b>	500 psi

### C-24



Manufactured with an Interlock braid style C-24 is an FDA approved pure white pump packing with thermal conductivity that is much greater than that of traditional PTFE packing materials. C-24 excels in fine paper bleaching applications and can be used in all types of equipment such as pumps, mixers and agitators while maintaining an extended service life rivaling that of other PTFE packing products.

<b>Braid Construction:</b>	Interlock
<b>Fiber Type:</b>	PTFE
<b>Lubricant Type:</b>	Oil
<b>Temperature Limit:</b>	550°F
<b>Shaft Speed Limit:</b>	3300 fpm
<b>Pressure Limit Rotary /Valve:</b>	300/2000 psi

### C-26



100% GFO fiber packing. GFO fiber, a patented nonasbestos fiber designed specifically for use in compression packing, is braided into a square interlock pump and valve packing. A low coefficient of friction, combined with good thermal conductivity, allows it to be used in a wide range of applications such as petroleum and synthetic oils, acids, alkalis, solvents, steam, water, or in air dry gas service.

<b>Braid Construction:</b>	Interlock
<b>Fiber Type:</b>	GFO
<b>Lubricant Type:</b>	Oil
<b>Temperature Limit:</b>	500°F
<b>Shaft Speed Limit:</b>	3600 fpm
<b>Pressure Limit Rotary /Valve:</b>	300/2000 psi

### C-27



Kevlar® fiber corners are added to style C-27 packing to produce a packing that dissipates heat, is easy on the shaft, and is more resistant to extruding.

<b>Braid Construction:</b>	Interlock
<b>Fiber Type:</b>	GFO & Aramid
<b>Lubricant Type:</b>	Oil
<b>Temperature Limit:</b>	500°F
<b>Shaft Speed Limit:</b>	1900 fpm
<b>Pressure Limit Rotary /Valve:</b>	300 psi

### C-28



C-28 is a PTFE yarn impregnated with graphite designed specifically for use in the manufacture of compression packing, is braided into a square interlock pump and valve packing. A low coefficient of friction, combined with good thermal conductivity, allows it to be used in a wide range of applications such as petroleum and synthetic oils, acids, alkalis, solvents, steam, water, or in air dry gas service.

<b>Braid Construction:</b>	Interlock
<b>Fiber Type:</b>	Expanded PTFE & Graphite
<b>Lubricant Type:</b>	Oil
<b>Temperature Limit:</b>	500°F
<b>Shaft Speed Limit:</b>	3600 fpm
<b>Pressure Limit Rotary /Valve:</b>	300 psi

### C-44



Carbon fiber is coated with PTFE suspenoid; braided into a strong, long wearing, interlock construction, then impregnated with PTFE. Applications for C-44 include pumps, valves, expansion joints, agitators and mixers. C-44 is recommended as a general service packing, but it can also handle corrosive service.

<b>Braid Construction:</b>	Interlock
<b>Fiber Type:</b>	Carbon
<b>Lubricant Type:</b>	PTFE
<b>Temperature Limit:</b>	500°F
<b>Shaft Speed Limit:</b>	2400 fpm
<b>Pressure Limit Rotary /Valve:</b>	300 psi

### C-45



Carbon yarns are treated with graphite lubricant, braided into a tough, interlock pattern with a final graphite treatment to create this very popular packing. C-45 is a very economically priced packing suitable for an extremely wide range of centrifugal pump applications.

<b>Braid Construction:</b>	Interlock
<b>Fiber Type:</b>	Carbon
<b>Lubricant Type:</b>	Graphite Dispersion
<b>Temperature Limit:</b>	600°F
<b>Shaft Speed Limit:</b>	3000 fpm
<b>Pressure Limit Rotary /Valve:</b>	300/2500 psi

### C-49



C-49 is a very popular, general service packing for rotating, reciprocating or valve service. It is made from a special glass yarn that is braided with the strong, interlock pattern, saturated with PTFE, then treated with a special blocking wax and break-in oil. C-49 performs extremely well in the critical performance areas of minimum gland adjustments, low shaft wear, low leak rate, and long life. C-49 is not recommended in steam service.

<b>Braid Construction:</b>	Interlock
<b>Fiber Type:</b>	Fiberglass
<b>Lubricant Type:</b>	PTFE & Wax
<b>Temperature Limit:</b>	500°F
<b>Shaft Speed Limit:</b>	1500 fpm
<b>Pressure Limit Rotary /Valve:</b>	300 psi

### C-51



C-51 is an interlock braided, synthetic-yarn packing that utilizes a special wax and graphite lubrication system, plus a proprietary blocking agent to impart exceptionally low friction and excellent sealability properties. C-51 handles a wide range of chemicals and is recommended for centrifugal pumps, reciprocating pumps, or valves handling mild acids and alkalines, hot and cold water, alcohol, brine, or petroleum.

<b>Braid Construction:</b>	Interlock
<b>Fiber Type:</b>	Acrylic
<b>Lubricant Type:</b>	Graphite & Wax
<b>Temperature Limit:</b>	400°F
<b>Shaft Speed Limit:</b>	1500 fpm
<b>Pressure Limit Rotary /Valve:</b>	500 psi

### C-68



Plaited square from unbleached, ramie fibers, C-68 is designed to be a cold water centrifugal pump packing where the economy of flax, without the characteristic swell of flax, is desired. It is impregnated with petroleum base oils and waxes and contains no tallow. C-68 is suitable for use in fresh or salt water, as well as cold oils.

<b>Braid Construction:</b>	Plaited/Square
<b>Fiber Type:</b>	Ramie/Unbleached
<b>Lubricant Type:</b>	Oil & Wax
<b>Temperature Limit:</b>	200°F
<b>Shaft Speed Limit:</b>	1200 fpm
<b>Pressure Limit Rotary /Valve:</b>	200 psi

### CW 2000



### DYNAGRAPH PRODUCTS

CW 2000 combines the qualities of braided spool stack packing with the advantages of die-formed flexible graphite tape rings. Manufactured using the Patented Dynagraph Technology, CW 2000 is made with a carbon and Inconel skeletal structure that is then infused with a seamless flexible graphite jacket that includes a corrosion inhibitor. CW 2000 is fire safe and has passed many stringent industry driven fugitive emissions testing protocols.

<b>Braid Construction:</b>	Interlock
<b>Fiber Type:</b>	Flexible Graphite & Inconel Wire
<b>Lubricant Type:</b>	Graphite
<b>Temperature Limit:</b>	850°F
<b>Shaft Speed Limit:</b>	N/A
<b>Pressure Limit Rotary /Valve:</b>	4500 psi

### ALLSTAR



Braided square using the interlock braid construction and our Patented Dynagraph process, AllStar has a low coefficient of friction, exceptional radial expansion, excels with minimal gland load, seals with less than perfect valve stem conditions, and is designed for a variety of performance applications.

<b>Braid Construction:</b>	Interlock
<b>Fiber Type:</b>	Flexible Graphite
<b>Lubricant Type:</b>	Graphite
<b>Temperature Limit:</b>	850°F
<b>Shaft Speed Limit:</b>	4500 fpm
<b>Pressure Limit Rotary /Valve:</b>	500/2500 psi

### CLIPPERFOIL



Braided square using the interlock braid construction and our Patented Dynagraph process, Clipperfoil has a low coefficient of friction, high heat dissipation, and exceptional radial expansion. Clipperfoil is designed for all pump applications offering substantial savings on lost product and reduced flush.

<b>Braid Construction:</b>	Interlock
<b>Fiber Type:</b>	Flexible Graphite w/ Carbon Corners
<b>Lubricant Type:</b>	Graphite
<b>Temperature Limit:</b>	850°F
<b>Shaft Speed Limit:</b>	4500 fpm
<b>Pressure Limit Rotary /Valve:</b>	500 psi

## CLIPPERTECH



Braided square using the interlock braid construction with an Inconel reinforced outer braid infused with our Patented Dynagraph process, Clippertech has a high temperature resistant braided core making it a natural for use in high pressure high temperature steam applications. The Inconel outer braid helps protect the inner core from crushing under high gland loads associated with high pressure sealing. Clippertech seals with less than perfect stem conditions and also works great as anti-extrusion rings.

<b>Braid Construction:</b>	Interlock
<b>Fiber Type:</b>	Flexible Graphite w/ Inconel Wire
<b>Lubricant Type:</b>	Graphite
<b>Temperature Limit:</b>	850°F
<b>Shaft Speed Limit:</b>	4500 fpm
<b>Pressure Limit Rotary /Valve:</b>	500 psi

## DYNAFLUOR



PTFE braided square using the interlock braid construction with a pure PTFE jacket then calendared square for finishing. Dynafluor prevents leakage associated with standard braided product, prevents stem damage, deforms to accommodate worn valve stems, has excellent radial expansion and is easy to install. One spiral of Dynafluor does the job of many die formed sets and end rings are not required. Dynafluor is recommended for use in valve stems; rising stem applications; compliance and control valves as well as reciprocating pumps.

<b>Braid Construction:</b>	Pure PTFE Jacket over an Interlock braided PTFE core
<b>Fiber Type:</b>	PTFE
<b>Lubricant Type:</b>	N/A
<b>Temperature Limit:</b>	550°F Steam
<b>Shaft Speed Limit:</b>	N/A
<b>Pressure Limit Rotary /Valve:</b>	2500 psi



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### LIMITED WARRANTY

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