



Style 100AL

Temperature

-1000°F / -538°C

pH

4 to 10

Speed

1800 fpm / 9m/s

Recommended shaft/sleeve hardness 500 Brinell / 60 Rockwell "C"

Pressure

Pump: 1000 psi / 68 bar

Valve: 2500 psi / 170 bar

Material: aluminum foil, fiberglass, graphite, oil

Construction: spiral wrapped

Application Media: water, steam, mild acids & caustics, gases, oils (for HF service use style 124 all aluminum packing. Contact local John Crane representative.)

Equipment: rotating & reciprocating equipment

Industry Served: Power Generation, Oil & Gas, Chemical & Pharmaceutical

Standard Sizes: 1/8" cross section through 1" in incremental increases of 1/16". Additional sizes including millimeters available upon request.

**Customer Service:**

John Crane Packing and PTFE Products
6400 West Oakton Street
Morton Grove, Illinois 60053

Phone:

1-800-MGPAKIT (1-800-647-2548)

or 1-800-221-7833

Fax: 1-847-967-3513

email: packing@johncrane.com

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For your nearest John Crane facility, please contact the locations above.

If the products featured will be used in a potentially dangerous and/or hazardous process, your John Crane representative should be consulted prior to their selection and use. In the interest of continuous development, John Crane Companies reserve the right to alter designs and specifications without prior notice. It is dangerous to smoke while handling products made from PTFE. Old and new PTFE products must not be incinerated.



Style 100M

Temperature

+450°F / +233°C

pH

4 to 10

Speed

3600 fpm / 18m/s

Pressure

Pump: 1000 psi / 68 bar

Material: babbitt foil, neoprene, graphite, oil

Construction: spiral wrapped

Application Media: water, steam, boiler feed water, mild acids & caustics, gases, oils

Equipment: rotating & reciprocating equipment

Industry Served: Power Generation, Oil & Gas, Chemical & Pharmaceutical

Standard Sizes: 1/4" cross section through 3/4" in incremental increases of 1/16". Additional sizes including millimeters available upon request.

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**JOHN CRANE INC.
STYLE 110F**

John Crane Style 110F is a flexible babbitt foil packing lubricated with oil and graphite spirally wrapped around a fiberglass graphite core.

CONSTRUCTION: Spirally wrapped, crinkled & folded layers of babbitt foil, graphite & oil around a braided flexible graphite core containing a fiberglass leader.

OPERATING CONDITIONS:

Temperature:	+450°F (+232°C)
pH Range:	3 - 11
Speed:	3600 FPM
Pressure:	1000 psi - Pump

APPLICATIONS: For rotary shaft or pump applications handling crude oil, high pressure water and hydraulic pumps, boiler feed service*, condensate and valve stems. Also excellent for use as a pressure barrier.
* Typically used with John Crane styles G57, G58 & K1761

STANDARD SIZES: 1/4" cross section through 1" in incremental increases of 1/16". Additional larger sizes plus millimeter dimensioning readily available upon request.

NOTE: For additional application or products information contact your local John Crane Inc. representative or the Packing & PTFE Products Group @ 800-647-2548

John Crane Inc. - Morton Grove, IL. U.S.A.



Style 124

Temperature

+1000°F / +538°C

pH

4 to 10

Speed

1800 fpm / 9m/s

Recommended shaft/sleeve hardness 500 Brinell / 60 Rockwell "C"

Pressure

Pump: 1000 psi / 68 bar

Valve: 2500 psi / 170 bar

Material: aluminum foil, graphite, oil

Construction: spiral wrapped

Application Media: "HF", water, steam, mild caustics, gases, oils

Equipment: rotating & reciprocating equipment

Industry Served: Power Generation, Oil & Gas, Chemical & Pharmaceutical

Standard Sizes: 1/8" cross section through 1" in incremental increases of 1/16". Additional sizes including millimeters available upon request.

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John Crane Inc.
Style 550

John Crane Style 550 is an all metallic packing made of pure dead soft annealed copper wire. Recommended for use on steel rods. (Suggested rod hardness 55 - 60 Rockwell C)

CONSTRUCTION: Annealed Copper wire

OPERATING CONDITIONS: Temperature: +1000°F (+538°C)
pH Range: 3 - 10

APPLICATIONS: Bushing rings in stuffing boxes where there is excessive clearance between the steel rod and packing gland or throat. Also good for bushing rings in steam, air water, oil and high temperature gases.

STANDARD SIZES: 1/8" cross section through 5/8" in incremental increases of 1/16".

NOTE: For additional application or product information contact your local John Crane Inc. representative or the Packing & PTFE Products Division @ 800-647-2548

John Crane Inc. - Morton Grove, IL. U.S.A.



Style 1330

Temperature

-170°F / -110°C
to 500°F / 260°C

pH

2 to 12

Speed

2250 fpm / 11m/s

Pressure

Pump: 300 psi / 20 bar
Valve: 1000 psi / 68 bar

Material: synthetic fiber, PTFE

Construction: lattice braid

Application Media: non-abrasives, water, mild acids & caustics, gases, oils steam, solvents

Equipment: rotating & reciprocating equipment, valves, expansion joints

Industry Served: General Industry, Agriculture, Marine, Pulp & Paper, Power Generation, Oil & Gas, Municipal / Wastewater

Standard Sizes: 1/8" cross section through 1" in incremental increases of 1/16". Additional sizes including millimeters available upon request.

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Style 1335

Temperature

-170°F / -110°C
to 500°F / 260°C

pH

2 to 12

Speed

2250 fpm / 11m/s

Pressure

Pump: 300 psi / 20 bar
Valve: 1000 psi / 68 bar

Material: synthetic fiber, PTFE, lubricating oil

Construction: lattice braid

Application Media: non-abrasives, water, mild acids & caustics, gases, oils steam, solvents

Equipment: rotating & reciprocating equipment, valves, expansion joints

Industry Served: General Industry, Agriculture, Marine, Pulp & Paper, Power Generation, Oil & Gas, Municipal / Wastewater

Standard Sizes: 1/8" cross section through 1" in incremental increases of 1/16". Additional sizes including millimeters available upon request.

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Style 1340

Temperature

-170°F / -110°C
to 500°F / 260°C

pH

4 to 10

Speed

2000 fpm / 10m/s

Pressure

Pump: 300 psi / 20 bar
Valve: 1000 psi / 68 bar

Material: synthetic fiber, petrilatum, graphite

Construction: lattice braid

Application Media: non-abrasives, water, mild acids & caustics, gases, oils steam, solvents

Equipment: rotating & reciprocating equipment, valves, expansion joints

Industry Served: General Industry, Agriculture, Marine, Power Generation, Oil & Gas,
Municipal / Wastewater

Standard Sizes: 1/8" cross section through 1" in incremental increases of 1/16". Additional sizes including millimeters available upon request.

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**John Crane International
Packing & PTFE Products**

**JOHN CRANE INC.
STYLE 815A**

John Crane Style 815A is a round configuration synthetic fiber packing thoroughly impregnated with petroleum based lubricants plus an exterior coat of graphite.

CONSTRUCTION: Round braided acrylic yarns with graphite and petroleum based lubricants.

OPERATING CONDITIONS:

Temperature:	+350°F (+177°C)
pH Range:	4 - 10
Pressure:	Low Valve Pressure

APPLICATIONS: Stem packing for low pressure general service valves.

STANDARD SIZES: 1/8" cross section through 3/8" in incremental increases of 1/16"

NOTE: For additional application or product information contact your local John Crane Inc. representative or the Packing & PTFE Products Division @ 800-647-2548

John Crane Inc. - Morton Grove, IL. U.S.A.



Style 1345

Temperature

-170°F / -110°C
to 550°F / 288°C

pH

0 to 12

Speed

2500 fpm / 13 m/s

Pressure

Pump: 500 psi / 34 bar

Material: polyimide, PTFE, lubricating oil

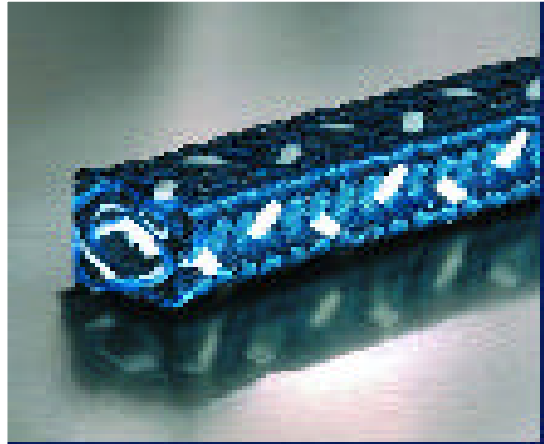
Construction: lattice braid

Application Media: abrasives, water, medium acids & medium caustics, gases, oils, steam, solvents, waste water, slurries, paper stock, liquors, asphalt, fly ash, condensate

Equipment: rotating & reciprocating equipment, valves

Industry Served: Pulp & Paper, Municipal / Wastewater, Oil & Gas, Chemical & Pharmaceutical, Mining & Minerals, Steel & Metals, Power Generation, Marine

Standard Sizes: 3/16" cross section through 1" in incremental increases of 1/16". Additional sizes including millimeters available upon request.

**Customer Service:**

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Morton Grove, Illinois 60053

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Style 1349

Temperature

-170°F / -110°C
to 550°F / 288°C

pH

0 to 12

Speed

2500 fpm / 13 m/s

Pressure

Pump: 500 psi / 34 bar

Material: polyimide, PTFE dispersion, lubricating oil

Construction: lattice braid

Application Media: abrasives, water, medium acids & medium caustics, gases, oils, steam, solvents, waste water, slurries, paper stock, liquors, asphalt, fly ash, condensate

Equipment: rotating & reciprocating equipment, valves

Industry Served: Pulp & Paper, Municipal / Wasterwater, Oil & Gas, Chemical & Pharmaceutical, Mining & Minerals, Steel & Metals, Power Generation, Marine

Standard Sizes: 1/8" cross section through 1" in incremental increases of 1/16". Additional sizes including millimeters available upon request.

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Style C1065P

Temperature

-350°F / -212°C
to 550°F / 288°C

pH

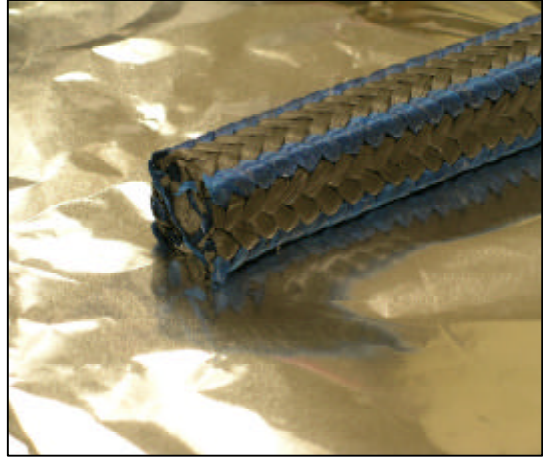
0 to 12

Speed

3000 fpm / 15 m/s

Pressure

Pump: 500 psi / 35 bar



Material: polyimide, expanded PTFE w/graphite, lubricating oil

Construction: lattice braid

Application Media: abrasives, chemicals, solvents, corrosives, gases, water, steam, air, oils, paper stock, liquor, condensate, waster water, slurries

Equipment: rotating & reciprocating equipment

Industry Served: Pulp & Paper, Oil & Gas, General Industry, Agriculture, Municipal / Wastewater
Steel & Metals, Marine, Power Generation, Mining & Minerals

Standard Sizes: 3/8" cross section through 1" in incremental increases of 1/16". Additional sizes including millimeters available upon request.

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Style 1625G

Temperature

In atmosphere: -300°F / -185°C to 850°F / 455°C

In Steam: up to 1200°F / 650°C

pH

0 to 14

Speed

4000 fpm / 20 m/s

Pressure

Pump: 500 psi / 34 bar

Valve: 2500 psi / 170 bar

Material: graphite filament, light PTFE

Construction: lattice braid

Application Media: chemicals, solvents, corrosives, gases, water, steam, ammonia, air, oils, paper stock, liquor, condensate, boiler feed water

Equipment: rotating & reciprocating equipment, valves, soot blowers, expansion joints

Industry Served: Chemical & Pharmaceutical, Power Generation, Oil & Gas, Pulp & Paper, Municipal / Wastewater, Mining & Minerals, Steel & Metals

Standard Sizes: 1/8" cross section through 1" in incremental increases of 1/16". Additional sizes including millimeters available upon request.



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Style 1626

Temperature

In atmosphere: -300°F / -185°C to 850°F / 455°C

In Steam: up to 1200°F / 650°C

pH

0 to 14

Speed

4000 fpm / 20 m/s

Pressure

Pump: 500 psi / 34 bar

Valve: 2500 psi / 170 bar

Material: graphite filament, colloidal graphite

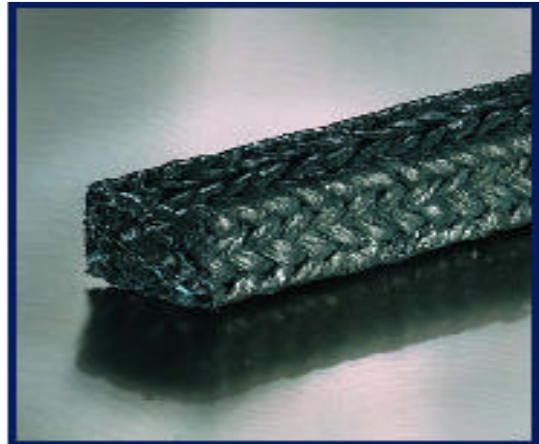
Construction: lattice braid

Application Media: chemicals, solvents, corrosives, gases, water, steam, ammonia, air, oils, paper stock, liquor, condensate, boiler feed water

Equipment: rotating & reciprocating equipment, valves, soot blowers, expansion joints

Industry Served: Chemical & Pharmaceutical, Power Generation, Oil & Gas, Pulp & Paper, Municipal / Wastewater, Mining & Minerals, Steel & Metals

Standard Sizes: 1/8" cross section through 1" in incremental increases of 1/16". Additional sizes including millimeters available upon request.



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Style 1627

Temperature

In atmosphere: -300°F / -185°C to 850°F / 455°C

In Steam: up to 1200°F / 650°C

pH

0 to 14

Speed

4000 fpm / 20 m/s

Pressure

Pump: 500 psi / 34 bar

Valve: 2500 psi / 170 bar

Material: carbon filament, colloidal graphite

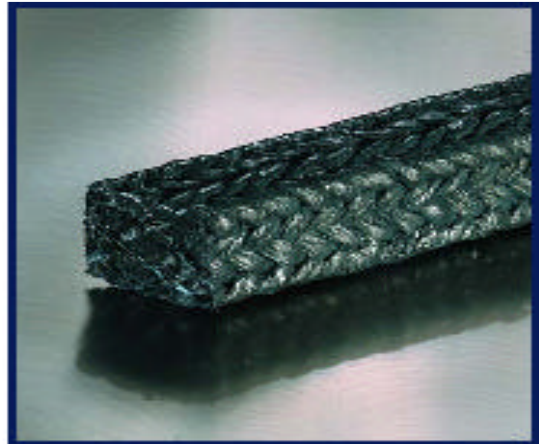
Construction: lattice braid

Application Media: chemicals, solvents, corrosives, gases, water, steam, ammonia, air, oils, paper stock, liquor, condensate, boiler feed water

Equipment: rotating & reciprocating equipment, valves, soot blowers, expansion joints

Industry Served: Chemical & Pharmaceutical, Power Generation, Oil & Gas, Pulp & Paper, Municipal / Wastewater, Mining & Minerals, Steel & Metals

Standard Sizes: 1/8" cross section through 1" in incremental increases of 1/16". Additional sizes including millimeters available upon request.



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Style 1635G

Temperature

In atmosphere: -300°F / -185°C to 850°F / 455°C

In Steam: up to 1200°F / 650°C

pH

0 to 14

Speed

2500 fpm / 13 m/s

Pressure

Pump: 300 psi / 20 bar

Valve: 2500 psi / 170 bar as end rings with Crane-foil™ center rings

Material: graphite filament

Construction: lattice braid

Application Media: chemicals, solvents, corrosives, gases, water, steam, ammonia, air, oils, paper stock, liquor, condensate, boiler feed water

Equipment: rotating & reciprocating equipment, valves, expansion joints, dryers, blowers

Industry Served: Chemical & Pharmaceutical, Power Generation, Oil & Gas, Pulp & Paper, Valve Industry

Standard Sizes: 1/8" cross section through 1" in incremental increases of 1/16". Additional sizes including millimeters available upon request.

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Style 1655C

Temperature

In atmosphere: -300°F / -184°C to 600°F / 315°C

In Steam: up to 850°F / 455°C

pH

0 to 14 (Except strong oxidizers)

Speed

3000 fpm / 15 m/s

Pressure

Pump: 500 psi / 34 bar

Valve: 2500 psi / 170 bar

Material: carbon filament, heavy PTFE impregnation

Construction: interlace braid

Application Media: chemicals, solvents, corrosives, gases, water, steam, ammonia, air, oils, paper stock, liquor, condensate, boiler feed water

Equipment: rotating & reciprocating equipment, valves, soot blowers, expansion joints

Industry Served: Chemical & Pharmaceutical, Power Generation, Oil & Gas, Pulp & Paper, Municipal / Wastewater, Mining & Minerals, Steel & Metals

Standard Sizes: 1/8" cross section through 1" in incremental increases of 1/16". Additional sizes including millimeters available upon request.



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Style 1655HC

Temperature

In atmosphere: -300°F / -184°C to 450°F / 234°C

In Steam: up to 450°F / 234°C

pH

0 to 14 (Except strong oxidizers)

Speed

3000 fpm / 15 m/s

Pressure

Pump: 500 psi / 34 bar

Valve: 2500 psi / 170 bar

Material: carbon filament, heavy PTFE impregnation, silicone rubber

Construction: interlace braid

Application Media: chemicals, solvents, corrosives, gases, water, steam, ammonia, air, oils, paper stock, liquor, condensate, boiler feed water

Equipment: rotating & reciprocating equipment, valves, soot blowers, expansion joints

Industry Served: Chemical & Pharmaceutical, Power Generation, Oil & Gas, Pulp & Paper, Municipal / Wastewater, Mining & Minerals, Steel & Metals

Standard Sizes: 3/8" cross section through 1" in incremental increases of 1/16". Additional sizes including millimeters available upon request.



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Style 387I

Temperature

In Steam: up to 1200°F / 650°C

pH

2 to 12

Speed

Not recommended for rotary service

Pressure

Valve: 4300 psi / 296 bar



Material: fiberglass, inconel wire, colloidal graphite

Construction: round braid over extruded core

Application Media: steam

Equipment: valves

Industry Served: Power Generation, Steel & Metals, Pulp & Paper, General Industry, Marine, Oil & Gas, Mining & Minerals, Chemical Pharmaceutical

Standard Sizes: 1/8" cross section through 1" in incremental increases of 1/16". Additional sizes including millimeters available upon request.

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Style 879T

Temperature
to +500°F / +288°C



Speed: Static - Gasket Seal

Material: fiberglass fiber, brass wire, rubber

Construction: woven and folded

Application Media: water, mild acids & caustics, gases, oils, steam,

Equipment: flanges, kettles, doors, tank lids, rough - warped & irregular services, etc.

Industry Served: General Industry, Agriculture, Marine, Pulp & Paper, Power Generation, Oil & Gas, Municipal / Wastewater, Steel & Metals

Standard Sizes:

Width	1/16"	1/8"	3/16"	1/4"	3/8"
1/2"	-	x	x	x	-
3/4"	-	x	x	x	-
1"	x	x	x	x	x
1-1/4"	x	x	x	x	x
1-1/2"	x	x	x	x	x
2"	x	x	x	x	x
3"	x	x	x	x	x
4"	x	x	x	x	x
5"	x	x	x	x	x

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JOHN CRANE INC.
STYLE 882SB

John Crane style 882SB is a high temperature square braided texturized dry fiberglass with excellent chemical resistance and tensile strength. This is a dense material which will not shrink or swell in service.

Construction: Square braided texturized fiberglass

Operating Conditions: Temperature: +1000° F (540° C) continuous
Pressure: 250 psi (17bar)

Applications: Excellent for static seals and gasketing.
Such as tanks, kettles, boiler, oven and furnance doors, insulation as well as expansion joints and other high temperature applications.

Standard Sizes: 3/8", 1/2", 5/8", 3/4", 7/8" 1", 1-1/4" & 1-1/2"

John Crane Inc. - Morton Grove, IL. U.S.A.



John Crane Inc.

Style 884SB

John Crane style 884SB is a high temperature square braided ceramic free rope consisting of 98% texturized silica. This material maintains excellent chemical and temperature resistance while remaining as a dense material with the ability to replace ceramic fiber ropes currently in use.

Construction: Square braided texturized 98% silica

Operating Conditions: Temperature: +2300° F continuous
with excursions to 3000° F

Applications: Excellent for static seals and gasketing.
Such as tanks, kettles, oven and furnace doors, insulation as well as expansion joints and other high temperature applications.

Standard Sizes: 3/8", 1/2", 5/8", 3/4", 7/8" 1", 1-1/4" & 1-1/2"



JOHN CRANE INC.
STYLES C1030 & C1032

John Crane Style C1030 is a soft conformable braided PTFE packing containing no lubricants.

John Crane Style C1032 is the same as style C1030 except suitable for oxygen service by the addition of a heat treat cycle to remove contaminants.

CONSTRUCTION: Interlace braided 100% PTFE filament yarn.

OPERATING CONDITIONS:

Temperature:	to +500°F (+260°C)
pH Range:	0 - 14
Speed:	1000 FPM
Pressure:	300 psi (Rotary & Centrifugal) 1500 psi (Valve)

APPLICATIONS: For use on valve stems and rotary or reciprocating services.

STANDARD SIZES: 1/8" cross section through 1" in incremental increases of 1/16".
Additional larger sizes plus millimeter dimensioning readily available upon request.

NOTE: For additional application or product information contact your local John Crane Inc. representative or the Packing & PTFE Products Division @ 800-647-2548

John Crane Inc. - Morton Grove, IL. U.S.A.



Style C1045

Temperature

-450°F / -268°C
to 500°F / 260°C

pH

0 to 14

Speed

1000 fpm / 5 m/s

Pressure

Pump: 300 psi / 20 bar
Valve: 5000 psi / 345 bar

Material: PTFE filament, PTFE dispersion

Construction: lattice braid

Application Media: chemicals, solvents, corrosives, gases, water, steam, ammonia, air, oils, paper stock, liquor

Equipment: rotating & reciprocating equipment, valves, expansion joints

Industry Served: Chemical & Pharmaceutical, Pulp & Paper, General Industry

Standard Sizes: 1/8" cross section through 1" in incremental increases of 1/16". Additional sizes including millimeters available upon request.

**Customer Service:**

John Crane Packing and PTFE Products
6400 West Oakton Street
Morton Grove, Illinois 60053

Phone:

1-800-MGPAKIT (1-800-647-2548)

or 1-800-221-7833

Fax: 1-847-967-3513

email: packing@johncrane.com

smiths

For your nearest John Crane facility, please contact the locations above.

If the products featured will be used in a potentially dangerous and/or hazardous process, your John Crane representative should be consulted prior to their selection and use. In the interest of continuous development, John Crane Companies reserve the right to alter designs and specifications without prior notice. It is dangerous to smoke while handling products made from PTFE. Old and new PTFE products must not be incinerated.



Style C1050

Temperature

-450°F / -268°C
to 500°F / 260°C

pH

0 to 14

Speed

2000 fpm / 10 m/s

Pressure

Pump: 300 psi / 20 bar
Valve: 4000 psi / 275 bar

Material: PTFE filament, PTFE dispersion, lubricating oil

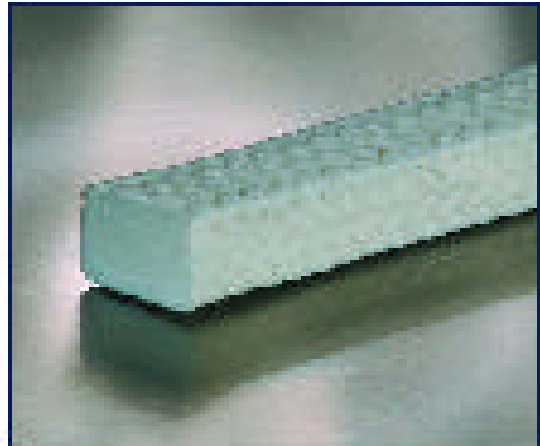
Construction: lattice braid

Application Media: chemicals, solvents, corrosives, gases, water, steam, ammonia, air, oils, paper stock, liquor

Equipment: rotating & reciprocating equipment, valves, expansion joints

Industry Served: Chemical & Pharmaceutical, Pulp & Paper, General Industry

Standard Sizes: 1/8" cross section through 1" in incremental increases of 1/16". Additional sizes including millimeters available upon request.

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Style C1050SC

Temperature

-450°F / -268°C
to 450°F / 234°C

pH

0 to 14

Speed

2000 fpm / 10 m/s

Pressure

Pump: 300 psi / 20 bar
Valve: 4000 psi / 275 bar

Material: PTFE filament, PTFE dispersion, lubricating oil, silicone rubber

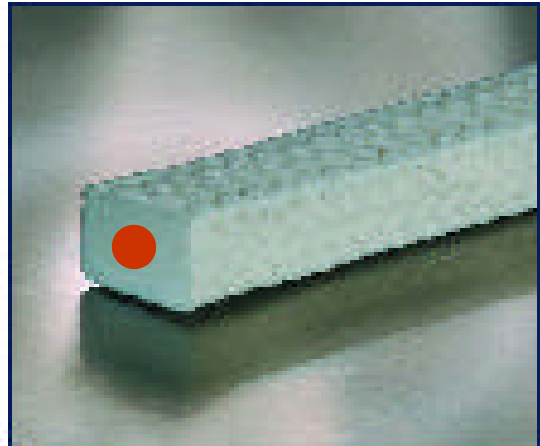
Construction: lattice braid

Application Media: chemicals, solvents, corrosives, gases, water, steam, ammonia, air, oils, paper stock, liquor

Equipment: rotating & reciprocating equipment, valves, expansion joints

Industry Served: Chemical & Pharmaceutical, Pulp & Paper, General Industry

Standard Sizes: 1/8" cross section through 1" in incremental increases of 1/16". Additional sizes including millimeters available upon request.

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Style C1056

Temperature

-450°F / -268°C
to 500°F / 260°C

pH

0 to 14

Speed

2000 fpm / 10 m/s

Pressure

Pump: 300 psi / 20 bar
Valve: 2500 psi / 170 bar

Material: FDA compliant PTFE filament, lubricating oil (Also available dry - refer to style C1057)

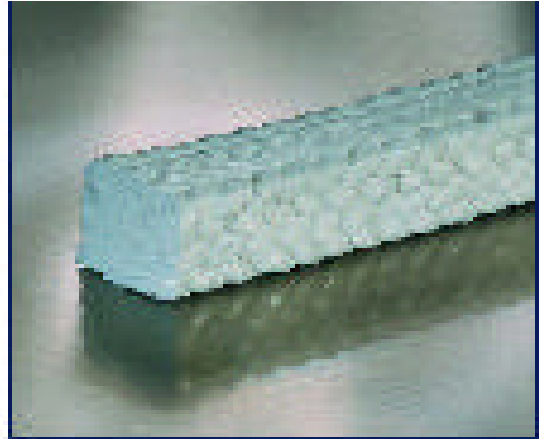
Construction: lattice braid

Application Media: food, chemicals, solvents, corrosives, gases, water, steam, oils

Equipment: rotating & reciprocating equipment, valves

Industry Served: Food & Beverage, Chemical & Pharmaceutical

Standard Sizes: 1/8" cross section through 1" in incremental increases of 1/16". Additional sizes including millimeters available upon request.

**Customer Service:**

John Crane Packing and PTFE Products
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Morton Grove, Illinois 60053

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Style C1057

Temperature

-450°F / -268°C
to 500°F / 260°C

pH

0 to 14

Speed

2000 fpm / 10 m/s

Pressure

Pump: 300 psi / 20 bar
Valve: 2500 psi / 170 bar

Material: FDA compliant PTFE filament, dry no lubricants

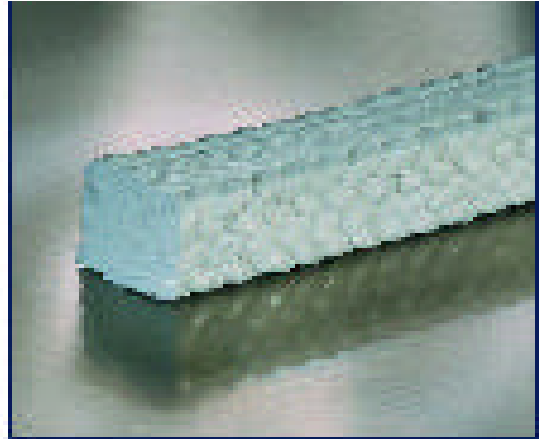
Construction: lattice braid

Application Media: food, chemicals, solvents, corrosives, gases, water, steam, oils

Equipment: rotating & reciprocating equipment, valves

Industry Served: Food & Beverage, Chemical & Pharmaceutical

Standard Sizes: 1/8" cross section through 1" in incremental increases of 1/16". Additional sizes including millimeters available upon request.

**Customer Service:**

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Morton Grove, Illinois 60053

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Style C1064

Temperature

-350°F / -212°C
to 550°F / 288°C

pH

2 to 12

Speed

2500 fpm / 12.5 m/s

Pressure

Pump: 500 psi / 34 bar

Material: expanded PTFE w/graphite, aramid, lubricating oil

Construction: lattice braid

Application Media: abrasives, water, medium acids & medium caustics, oils, steam, solvents, waste water, slurries, paper stock, liquors, asphalt, fly ash, condensate

Equipment: rotating & reciprocating equipment

Industry Served: Pulp & Paper, Municipal / Wasterwater, Oil & Gas, Chemical & Pharmaceutical, Mining & Minerals, Steel & Metals, Power Generation

Standard Sizes: 3/16" cross section through 1" in incremental increases of 1/16". Additional sizes including millimeters available upon request.

**Customer Service:**

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Morton Grove, Illinois 60053

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Style C1065

Temperature

-350°F / -212°C
to 550°F / 288°C

pH

0 to 14

Speed

4300 fpm / 22 m/s

Pressure

Pump: 300 psi / 20 bar
Valve: 4000 psi / 275 bar

Material: expanded PTFE w/graphite, lubricating oil

Construction: lattice braid

Application Media: chemicals, solvents, corrosives, gases, water, steam, ammonia, air, oils, paper stock, liquor, condensate

Equipment: rotating & reciprocating equipment, valves, expansion joints

Industry Served: Chemical & Pharmaceutical, Pulp & Paper, Oil & Gas, General Industry, Agriculture, Steel & Metals, Marine, Power Generation, Municipal / Wastewater

Standard Sizes: 1/8" cross section through 1" in incremental increases of 1/16". Additional sizes including millimeters available upon request.

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Style C1070

Temperature

-350°F / -212°C
to 550°F / 288°C

pH

0 to 14

Speed

3000 fpm / 15 m/s

Pressure

Pump: 300 psi / 20 bar
Valve: 4000 psi / 275 bar

Material: PTFE filament w/graphite, lubricating oil

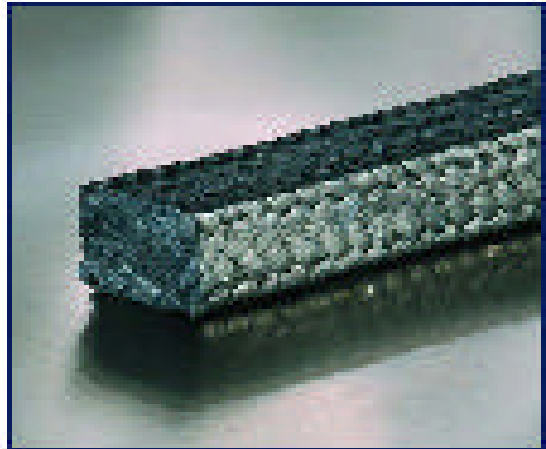
Construction: lattice braid

Application Media: chemicals, solvents, corrosives, gases, water, steam, ammonia, air, oils, paper stock, liquor, condensate

Equipment: rotating & reciprocating equipment, valves, expansion joints

Industry Served: Chemical & Pharmaceutical, Pulp & Paper, Oil & Gas, General Industry, Agriculture, Steel & Metals, Marine, Power Generation, Municipal / Wastewater

Standard Sizes: 1/8" cross section through 1" in incremental increases of 1/16". Additional sizes including millimeters available upon request.

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Styles: 1045G, 1050G & 1057G (FDA Compliant)

Temperature

-450°F / -268°C
to 500°F / 260°C

pH

0 to 14

Speed

Not Applicable

Pressure

Pump: 300 psi / 20 bar
Vacuum: 28 inches Hg

Material: PTFE filament, PTFE dispersion, lubricating oil (also available without oil style 1045G) & FDA compliant style 1057G

Construction: tubular

Application Media: chemicals, solvents, corrosives, gases, water, steam, ammonia, air, oils, paper stock, liquor, hydraulic fluids

Equipment: flanges, mixers, kettles, heat exchangers, reactors.

Industry Served: General Industry, Chemical & Pharmaceutical, Pulp & Paper, Agriculture, Marine, Power Generation, Steel & Metals, Oil & Gas, Municipal / Wastewater, Mining & Minerals

Standard Sizes: 1/4" x 1/8", 3/8" x 1/8", 1/2" x 1/8", 5/8" x 1/8", 3/4" x 1/8", 1" x 1/8", 1-1/2" x 1/8",
(width x thickness) 2" x 1/8", 1/2" x 1/4", 3/4" x 1/4", 1" x 1/4", 1-1/4" x 1/4", 1-1/2" x 1/4", 2" x 1/4",
2-1/2" x 1/4"



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Style C1072

Temperature

-450°F / -268°C
to 500°F / 260°C

pH

2 to 12

Speed

2250 fpm / 11 m/s

Pressure

Pump: 400 psi / 28 bar
Valve: 4000 psi / 275 bar

Material: PTFE filament, aramid fiber, lubricating oil

Construction: lattice braid

Application Media: abrasives, chemicals, solvents, corrosives, gases, water, steam, ammonia, air, oils, paper stock, liquor

Equipment: rotating & reciprocating equipment, valves, expansion joints

Industry Served: Chemical & Pharmaceutical, Pulp & Paper, General Industry, Waster Water, Oil & Gas, Mining & Minerals, Steel & Metals

Standard Sizes: 1/4" cross section through 1" in incremental increases of 1/16". Additional sizes including millimeters available upon request.

**Customer Service:**

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6400 West Oakton Street
Morton Grove, Illinois 60053

Phone:

1-800-MGPAKIT (1-800-647-2548)

or 1-800-221-7833

Fax: 1-847-967-3513

email: packing@johncrane.com

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Style C1064

Temperature

-350°F / -212°C
to 550°F / 288°C

pH

2 to 12

Speed

2500 fpm / 12.5 m/s

Pressure

Pump: 500 psi / 34 bar

Material: expanded PTFE w/graphite, aramid, lubricating oil

Construction: lattice braid

Application Media: abrasives, water, medium acids & medium caustics, oils, steam, solvents, waste water, slurries, paper stock, liquors, asphalt, fly ash, condensate

Equipment: rotating & reciprocating equipment

Industry Served: Pulp & Paper, Municipal / Wasterwater, Oil & Gas, Chemical & Pharmaceutical, Mining & Minerals, Steel & Metals, Power Generation

Standard Sizes: 3/16" cross section through 1" in incremental increases of 1/16". Additional sizes including millimeters available upon request.

**Customer Service:**

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Morton Grove, Illinois 60053

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Style K1730

Temperature

-400°F / -240°C
to 500°F / 260°C

pH

2 to 12

Speed

2000 fpm / 13 m/s with excursions to 2500 fpm / 13 m/s

Pressure

Pump: 500 psi / 34 bar

Material: aramid, PTFE, lubricating oil

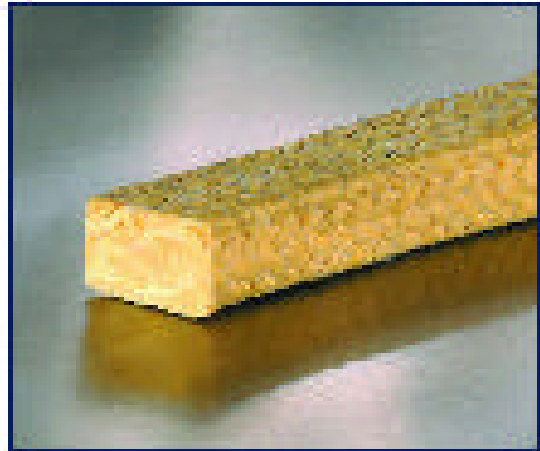
Construction: lattice braid

Application Media: abrasives, water, medium acids & medium caustics, oils, steam, solvents, waste water, slurries, paper stock, liquors, asphalt, fly ash, condensate

Equipment: rotating & reciprocating equipment

Industry Served: Pulp & Paper, Municipal / Wasterwater, Oil & Gas, Chemical & Pharmaceutical, Mining & Minerals, Steel & Metals, Power Generation

Standard Sizes: 1/8" cross section through 1" in incremental increases of 1/16". Additional sizes including millimeters available upon request.

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Style K1760

Temperature

-170°F / -110°C
to 500°F / 260°C

pH

2 to 12

Speed

2000 fpm / 10m/s

Pressure

Pump: 500 psi / 34 bar
Valve: 1000 psi / 68 bar

Material: aramid fiber, PTFE, lubricating oil

Construction: lattice braid

Application Media: abrasives, water, mild acids & caustics, gases, oils steam, solvents

Equipment: rotating & reciprocating equipment, valves

Industry Served: Mining & Minerals, Steel & Metal, Pulp & Paper, Power Generation, Oil & Gas, Municipal / Wastewater

Standard Sizes: 1/8" cross section through 1" in incremental increases of 1/16". Additional sizes including millimeters available upon request.

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Morton Grove, Illinois 60053

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Style K1761

Temperature

-170°F / -110°C
to 500°F / 260°C

pH

3 to 10

Speed

1800 fpm / 9 m/s

Pressure

Pump: 300 psi / 20 bar

Material: aramid fiber, petrolatum, graphite

Construction: lattice braid

Application Media: abrasives, water, mild acids & caustics, gases, slurry, oils steam, solvents

Equipment: rotating & reciprocating equipment, plunger & gear pumps, expansion joints

Industry Served: General Industry, Agriculture, Power Generation, Oil & Gas, Power Generation, Municipal / Wastewater, Mining & Minerals, Steel & Metals

Standard Sizes: 1/8" cross section through 1" in incremental increases of 1/16". Additional sizes including millimeters available upon request.

Customer Service:

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Morton Grove, Illinois 60053

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Style K1771

Temperature

-170°F / -110°C
to 550°F / 288°C

pH

0 to 12

Speed

2250 fpm / 11m/s

Pressure

Pump: 500 psi / 35 bar



Material: meta-aramid fiber, PTFE, lubricating oil (Silicone Free)

Construction: Interlace braid

Application Media: abrasives, water, acids & medium caustics, gases, oils steam, solvents

Equipment: rotating & reciprocating equipment, valves, expansion joints

Industry Served: Pulp & Paper, Mining & Minerals, Municipal / Wastewater, Power Generation, Oil & Gas, Steel & Metals, Chemical & Pharmaceutical.

Standard Sizes: 1/8" cross section through 1" in incremental increases of 1/16". Additional sizes including millimeters available upon request.

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Style K1771SC

Temperature

-170°F / -110°C
to 450°F / 234°C

pH

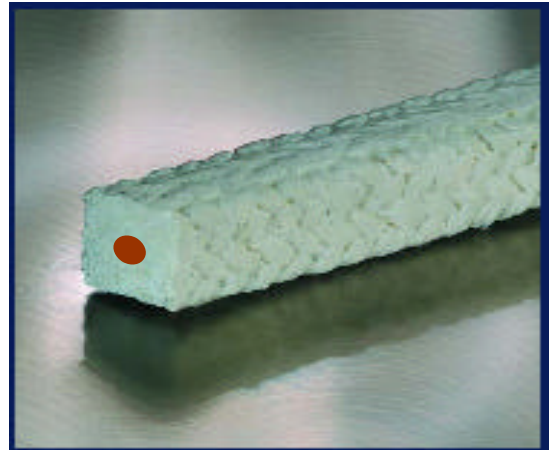
0 to 12

Speed

2250 fpm / 11m/s

Pressure

Pump: 500 psi / 35 bar



Material: meta-aramid fiber, PTFE, lubricating oil, silicone rubber

Construction: Interlace braid

Application Media: abrasives, water, acids & medium caustics, gases, oils steam, solvents

Equipment: rotating & reciprocating equipment, valves, expansion joints

Industry Served: Pulp & Paper, Mining & Minerals, Municipal / Wastewater, Power Generation, Oil & Gas, Steel & Metals, Chemical & Pharmaceutical.

Standard Sizes: 3/8" cross section through 1" in incremental increases of 1/16". Additional sizes including millimeters available upon request.

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Style G57

Temperature

In atmosphere: -400°F / -240°C to 850°F / 455°C

In Steam: up to 1200°F / 650°C

pH

0 to 14

Speed

4500 fpm / 23 m/s

Pressure

Pump: 500 psi / 34 bar

Valve: 4300 psi / 296 bar

Material: flexible graphite, carbon filament, colloidal graphite

Construction: lattice braid

Application Media: chemicals, solvents, corrosives, gases, water, steam, ammonia, air, oils, paper stock, liquor, condensate, boiler feed water

Equipment: rotating & reciprocating equipment, valves, soot blowers, expansion joints

Industry Served: Chemical & Pharmaceutical, Power Generation, Oil & Gas, Pulp & Paper, Municipal / Wastewater, Mining & Minerals, Steel & Metals

Standard Sizes: 3/16" cross section through 1" in incremental increases of 1/16". Additional sizes including millimeters available upon request.



Excellent Heat Dissipation & Dry Running Capabilities

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Style G58

Temperature

In atmosphere: -400°F / -240°C to 850°F / 455°C

In Steam: up to 1200°F / 650°C

pH

0 to 14

Speed

4000 fpm / 20 m/s

Pressure

Pump: 400 psi / 27.5 bar

Valve: 4300 psi / 296 bar

Material: flexible graphite

Construction: lattice braid

Application Media: chemicals, solvents, corrosives, gases, water, steam, ammonia, air, oils, paper stock, liquor, condensate, boiler feed water

Equipment: rotating & reciprocating equipment, valves, soot blowers, expansion joints

Industry Served: Chemical & Pharmaceutical, Power Generation, Oil & Gas, Pulp & Paper, Municipal / Wastewater, Mining & Minerals, Steel & Metals, General Industry

Standard Sizes: 1/8" cross section through 1" in incremental increases of 1/16". Additional sizes including millimeters available upon request.



Excellent Heat Dissipation & Dry Running Capabilities

Customer Service:

John Crane Packing and PTFE Products
6400 West Oakton Street
Morton Grove, Illinois 60053

Phone:

1-800-MGPAKIT (1-800-647-2548)

or 1-800-221-7833

Fax: 1-847-967-3513

email: packing@johncrane.com

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Style G58I

Temperature

In atmosphere: -400°F / -240°C to 850°F / 455°C

In Steam: up to 1200°F / 650°C

pH

0 to 14

Speed

Not recommended for rotary service

Pressure

Valve: 4300 psi / 296 bar



Material: flexible graphite, inconel wire

Construction: lattice braid

Application Media: chemicals, solvents, corrosives, gases, water, steam, ammonia, air, oils

Equipment: valves

Industry Served: Power Generation, Steel & Metals, Pulp & Paper, General Industry, Marine, Oil & Gas, Mining & Minerals, Chemical Pharmaceutical

Standard Sizes: 1/8" cross section through 1" in incremental increases of 1/16". Additional sizes including millimeters available upon request.

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Style C1051

Temperature

-400°F / -240°C
to 550°F / 288°C

pH

0 to 14

Speed

Not Applicable

Pressure

Vacuum to 3000 psi / 206 bar

Material: 100% expanded virgin PTFE

Construction: extruded w/ adhesive tape back strip

Application Media: chemicals, solvents, corrosives, gases, water, steam, ammonia, air, oils, paper stock, liquor, condensate, boiler feed water

Equipment: metal, plastic & glass lined flanges, pump casings, gear boxes, containers & lids, vessels & traps, hydraulics & pneumatic systems, water supply systems, handhole / manholes, ducts, heat exchangers, irregular services, etc.

Industry Served: General Industry, Agriculture, Marine, Pulp & Paper, Power Generation, Oil & Gas, Municipal / Wastewater, Chemical & Pharmaceutical, Food & Beverage, Mining & Minerals, Steel & Metals

Available Sizes: width - 1/8", 3/16", 1/4", 3/8", 1/2", 5/8", 3/4", 7/8", 1" available in various lengths

**Customer Service:**

John Crane Packing and PTFE Products
6400 West Oakton Street
Morton Grove, Illinois 60053

Phone:

1-800-MGPAKIT (1-800-647-2548)

or 1-800-221-7833

Fax: 1-847-967-3513

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Style C1051VS

Temperature

-400°F / -240°C
to 550°F / 288°C

pH

0 to 14

Speed

150 fpm / .075 m/s

Pressure

Valve: 500 psi / 64 bar

Material: 100% virgin PTFE

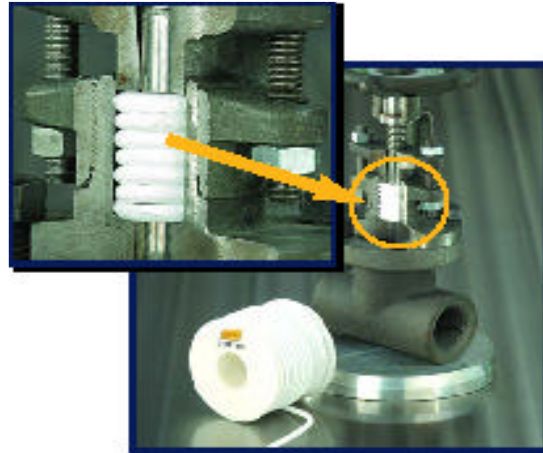
Construction: extruded round

Application Media: chemicals, solvents, corrosives, gases, water, steam, ammonia, air, oils, paper stock, liquor, condensate, boiler feed water

Equipment: faucets stems & valves

Industry Served: General Industry, Agriculture, Marine, Pulp & Paper, Power Generation, Oil & Gas, Municipal / Wastewater, Chemical & Pharmaceutical, Food & Beverage, Mining & Minerals, Steel & Metals

Available Diameters: 1/16", 3/32", 1/8", 5/32", 3/16", 7/32", 1/4", 9/32", 5/16", 11/32", 3/8", 1/2"

**Customer Service:**

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Flax Products

John Crane flax products are manufactured from the finest quality flax available. Combined with various oils and lubricants to provide maximum sealing.

Style 861

Squared braided flax thoroughly impregnated with waterproof lubricants plus a surface coat of graphite.

Operating Conditions:	Temperature:	to +150°F (+66° C)
	pH Range	6 - 8
	Pressure	200 psi (13.5 bar)
	Speed	1200 fpm (6 m/s)

Service: High pressure hydraulic services such as rams, cumulators, hydraulic pumps, elevator plungers and outside packed pumps handling cold water or cold oil.

Style 863

Squared braided flax thoroughly impregnated with a modified tallow compound.
(Compliant with Mil-P-16332, Sym 1260 and Navy Spec 33 P2 & HH-P-106.)

Operating Conditions:	Temperature:	to +150°F (+66° C)
	pH Range	6 - 8
	Pressure	200 psi (13.5 bar)
	Speed	1200 fpm (6 m/s)

Service: Medium pressure hydraulic and cold water services, elevator plungers and outside packed pumps.

Style 867

Square braided flax thoroughly lubricated and treated with PTFE to reduce friction, resistance to sea water, oils and chemicals.

Operating Conditions:	Temperature:	to +150°F (+66° C)
	pH Range	4 - 10
	Pressure	250 psi (13.5 bar)
	Speed	1800 fpm (9 m/s)

Service: Stern shaft tubes, rudder posts, large water reel shafts, general water service and many none critical commercial or industrial applications.

Note: For additional application or product information call your local John Crane Inc. representative or the Packing & PTFE Products Division @ 800-647-2548.

John Crane Inc. - Morton Grove, IL. U.S.A.



JOHN CRANE INC.

Crane-foil™ Rings



John Crane die formed Crane-foil™ flexible graphite rings provide the high quality seal demanded by today's market. Produced with state of the art technology under stringent quality control they service all facets of the sealing industry from valve stem & body seals to precision mechanical seal wedges and seat rings. Rings are furnished in a variety of densities, shapes and sizes. Sacrificial and passive inhibitors are available as well as various purity levels. Material selections for compliance to specific specifications such as Mil-P-24503B(SH) & General Electric NEDC-31735P and more are readily available.

Construction: Manufactured from 100% flexible graphite tapes containing no binders or lubricants.

Operating Conditions: Temperature: In air: -400°F(-240°C) to +850°F (+455°C)
Non-oxidizing: -400°F(-240°C) to +4500°F (+2500°C)
Functional Steam: +1200°F (650°C)

pH Range: 0 - 14

Pressures & Speeds: Dependent upon application

Applications: Widely used in conjunction with braided carbon or graphitic end/anti-extrusion rings for valves, rotary or centrifugal pumps, soot blowers and other dynamic situations. Plus various static applications such as body seals or other high temperature situations. Ideal for compliance with nuclear or emission specifications or regulations.

*NOTE: For additional application or product information contact your local John Crane Inc. representative or the Packing Division @ 800-647-2548

Available Standard Styles:

- 229 Commercial grade low density approx. 70±5lbs./cu.ft. or 229C with zinc inhibitor(sacrificial) min. carbon content 97%
- 235 Commercial grade standard density approx. 85±5lbs./cu.ft. or 237 with zinc inhibitor(sacrificial) min. carbon content 97%
- N240 Same as style 235 except rings certifiable to contain < 50 ppm leachable chlorides - min. carbon content 97%
- N241 Same as style 237 except rings certifiable to contain < 50 ppm leachable chlorides - min. carbon content 97%
- 261 Premium grade standard density approx. 85±5lbs./cu.ft. or 263 with zinc inhibitor(sacrificial) min. carbon content 99.5%
- N261 *Premium grade standard density approx. 85±5lbs./cu.ft. or N263 with zinc inhibitor(sacrificial) min. carbon content 99.5%
- 267 Commercial grade standard density approx. 85±5lbs./cu.ft. containing a passive corrosion inhibitor - min. carbon 97%
- N267 *Premium grade standard density approx. 85±5lbs./cu.ft. containing a passive corrosion inhibitor - min. carbon 99.5%

NOTE: Style Number Suffix's

"A" - Endless

"B" - Single diagonal cut (45° angle)

"C" - Double diagonal cut (45° angle)

i.e.. style 235B - Commercial grade with 85 ±5lb/cu.ft. density with a single diagonal cut

* Indicates premium grade Crane-foil™ certifiable to General Electric specification NEDC-31735P



John Crane Inc.

Condenser Rings: Styles 601E, 601EC, 602, C78K

Style 601E: Metallic rings constructed babbitt foil ribbon spirally wrapped and compressed to form an endless ring.
Temperature: + 300°F (+144°C)

Style 601EC: Metallic rings constructed copper foil ribbon spirally wrapped and compressed to form an endless ring.
Temperature: + 1000°F (+538°C)

Style 602: A high density machined fiber ring with excellent water absorption characteristics. Used as sealing rings in conjunction with styles 601E or 601EC as end or intermediate rings.

Temperature:	+ 221°F (+105°C)
Hardness	100 Rockwell "R"
Water Absorption	55% / 1/16" thk
Compressive Strength	35,000 psi / 1/16" thk
Density	1.32 grams/cc

Style C78K: Woven fiber rings constructed of an aramid fiber ribbons with PTFE dispersion compressed and to form an endless ring. Used as a sealing rings in conjunction with styles 601E or 601EC as end or intermediate rings.

Temperature: + 450°F (234°C)

Styles 601E, 601EC & C78K are designed to easily flow when compressed and expand radially against tube and tube sheet counterbore. Style 602 fiber rings are designed to swell radially once in contact with moisture (24 hr. period) creating an effective seal.

*NOTE: For additional application or product information contact your local John Crane Inc. representative or the Packing & PTFE Products Division @ 800-647-2548

John Crane Inc. - Morton Grove, IL. U.S.A.



PTFE Lantern Ring Strip

Temperature

-400°F / -240°C
to 500°F / 260°C

pH

0 to 14

Speed

not applicable

Pressure

Pump: 1000 psi / 68 bar



Material: 100% virgin PTFE

Construction: 4 foot strip

Application Media: chemicals, solvents, corrosives, gases, water, steam, ammonia, air, oils, paper stock, liquor, condensate, boiler feed water

Equipment: rotating & reciprocating equipment, valves

Industry Served: General Industry, Agriculture, Marine, Pulp & Paper, Pulp & Paper, Power Generation, Oil & Gas, Municipal / Wasterwater, Chemical & Pharmaceutical, Food & Beverage, Mining & Minerals, Steel & Metals

Standard Cross 1/4", 5/16", 3/8", 7/16", 1/2", 9/16", 5/8", 3/4", 7/8", 1"

Sections Available: furnished in various widths

Customer Service:

John Crane Packing and PTFE Products
6400 West Oakton Street
Morton Grove, Illinois 60053

Phone:

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or 1-800-221-7833

Fax: 1-847-967-3513

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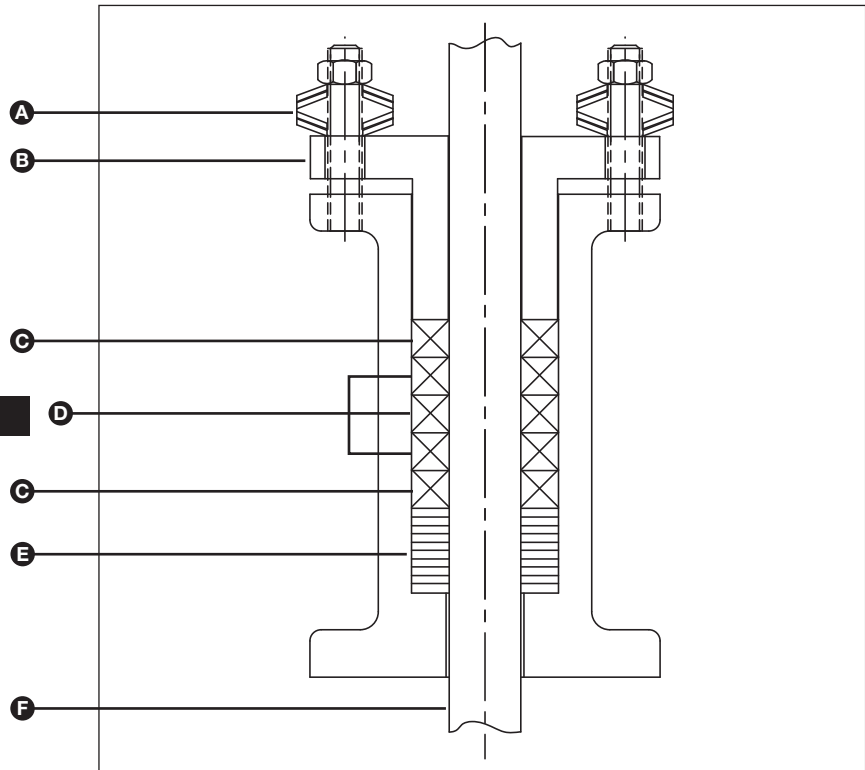


Live-Load

Valve Stem Packing

Live-Load

- A – Belleville Springs
- B – Gland Follower
- C – End Rings
- D – Sealing Rings
- E – Spacer Bushing
- F – Shaft/Stem



Industries Served

- Chemical Processing
- Fossil Fuel
- General Industry
- Nuclear Power
- Oil & Refinery
- Petrochemical
- Power Generation
- Pulp & Paper
- Utilities

Minimal Gland Adjustments Required

Benefits

- Reduce Maintenance Cost
- Control Emissions
- Self Adjusting
- Equalized Loading
- Reduced Number of Rings Required for Deep Stuffing Boxes
- Ideal for Valves in Remote or Hard to Reach Locations

Design Features

- Trained Technical Support: Sales/service engineers provide training programs, on-site surveys, and supervise installations.
- Design and Application Engineering Support
- Computerized Live-Load Program: Calculates proper load data for disc spring selection, configuration, and gland nut torque.
- Optimum Packing Materials: Utilizes die-formed Crane-foil™ packing rings for longer sealing life, resulting in less corrosion in the box and less leakage in the valve. Highest quality braided graphite or carbon fibers serve as wiper rings and anti-extrusion rings. High compressive strength graphite spacer.
- Belleville Springs: Maintain packing compression above the minimum sealing pressure as packing relaxes and wears.
- Nuclear Certifiable Materials: Materials can be certified to meet demanding nuclear service purity levels of low chloride, fluoride, halogens, sulfur and embrittled metals.



NOTE: For additional application or product information, contact your local John Crane representative or John Crane Customer Service at Tel: 800-647-2548; Email: packing@johncrane.com; Fax: 1-847-967-3513.

Crane-foil is a registered trademark of John Crane Inc.



Live-Load

Valve Stem Packing

Materials of Construction

SEAL COMPONENTS	STANDARD MATERIALS	
	Commercial	Nuclear
Belleville Springs	17-7PH Stainless Steel	17-7PH Stainless Steel
Packing Rings	Crane-foil 235 A*, B**, or C*** Crane-foil 267 A*, B**, or C*** Crane-foil 267W A*, B**, or C***	N261 A*, B**, or C*** N267 A*, B**, or C*** N267W A*, B**, or C***
Braided End Rings	1625G 1627 G58 G58I	N1625 N1635
Spacer	9004 Graphite	9005 Graphite

- *A = Endless
- **B = Single Split
- ***C = Double Split

NOTES: Refer to John Crane Datasheets S-EPS and S-VPS for additional valve packing specifics. Contact your local John Crane representative for more information concerning the Live-Loading of your rotating equipment.



North America
Morton Grove, Illinois USA

1-800-MGPAKIT (1-800-647-2548)
Tel: 1-800-221-7833
Fax: 1-847-967-3513

Europe
Slough, UK

Tel: 44-1753-224000
Fax: 44-1753-224224

Latin America
São Paulo, Brazil

Tel: 55-11-3371-2500
Fax: 55-11-3371-2599

Middle East, Africa, Asia
Dubai, United Arab Emirates

Tel: 971-4-3438940
Fax: 971-4-3438970

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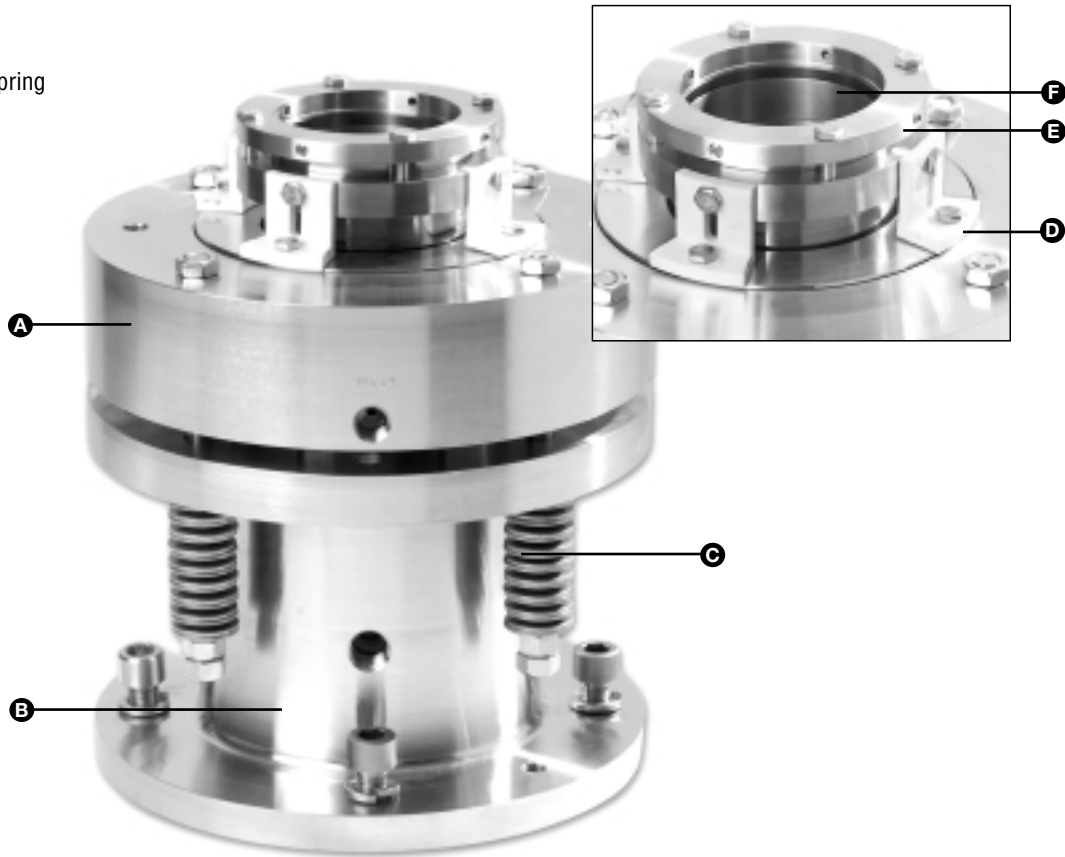


TYPE LMPC

Live-Loaded Mechanical Packing Cartridge Seal

LMPC

- A – Gland
- B – Housing
- C – Belleville Spring
- D – Spacer
- E – Collar
- F – Sleeve



Product Description

The Type LMPC is a cartridge seal designed for static or dynamic applications. This seal is mechanically loaded in the axial direction by a gland follower. All internal components of the seal are held together by PTFE spacers. The spacers also hold the smothering gland to the drive collar. The seal can be installed on new or existing equipment without any modification.

- The live loading feature allows for in-service self-adjustment of the packing load with the aid of Belleville disc springs.
- The compact design permits use in all types of process equipment such as mixers, agitators, positive displacement pumps, centrifugal pumps, hydraulic cylinders, valves and reciprocating pumps.
- The versatility of the LMPC covers a wide range of applications. These applications can range from very low to extremely high temperatures and pressures.
- The seal hardware materials of construction range from 316 Stainless Steel to exotic materials based on application conditions.

Design Features

- Low friction packing design with controlled leakage.
- Live loading packing design eliminates frequent manual gland bolt adjustment, which increases the time intervals between manual gland bolts adjustments.
- Custom designs adapt to any equipment.
- Positive mechanical drive.
- Hard coated shaft sleeve.
- Internal/external flush and lubrication capabilities.
- Cartridge design makes mounting simple, fast and accurate.
- Laboratory and field tested.
- Can be offered in a split cartridge design.

Performance Capabilities

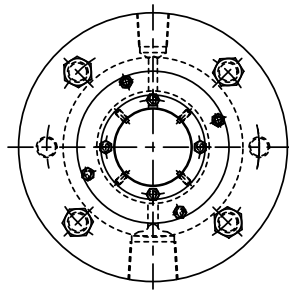
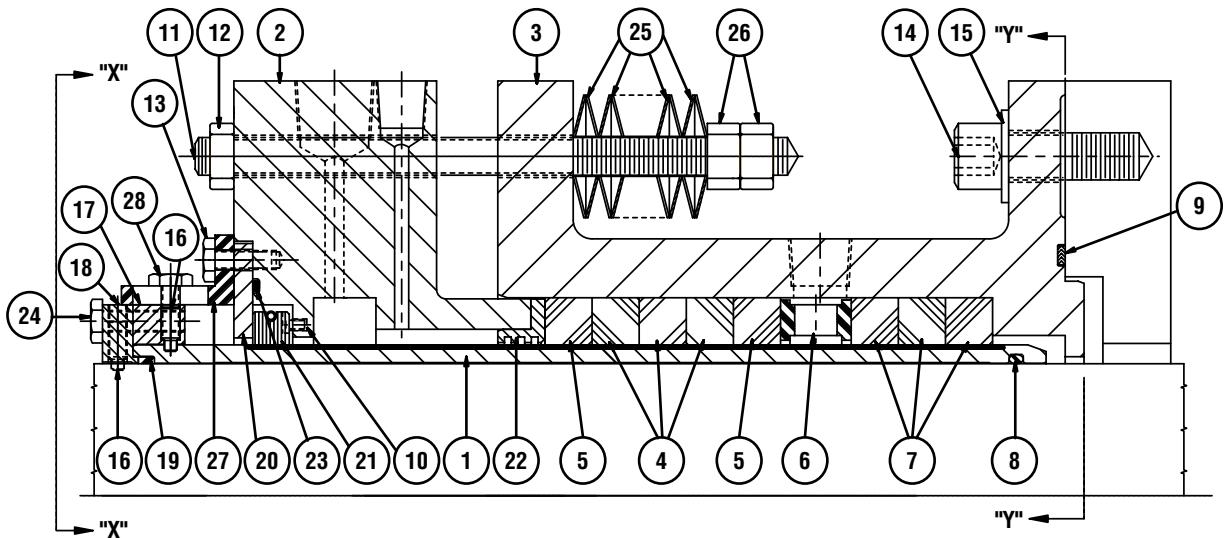
- Temperature:
-268°C to 650°C / -450°F to 1200°F
- Pressure:
Pumps: vacuum to 68 bar g/1000 psig
Valves: 410 bar or 6025 psig
- Speed:
20 m/s / 3937 fpm
- pH Range:
0 to 14 (except strong acids)



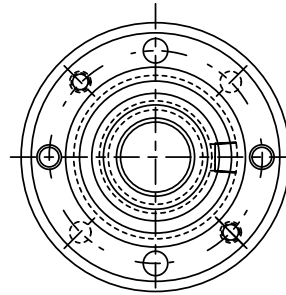
TYPE LMPC

Live-Loaded Mechanical Packing Cartridge Seal

Type LMPC Typical Arrangement/Dimensional Data



End View "X"-"X"
Gland Plate
Scale: None



End View "Y"-"Y"
Housing
Scale: None

Item	Description
1	Shaft Sleeve
2	Smothering Gland
3	Housing
4	Packing Ring
5	Packing Ring
6	Lantern Ring
7	Throat Bushing
8	O-Ring
9	Spiral Wound Gasket
10	Spring
11	Stud
12	Jam Nut
13	Cap Screw
14	Cap Screw

Item	Description
15	Lock Washer
16	Set Screw
17	Lock Collar
18	Drive Collar
19	Sleeve Packing Ring
20	Aux. Gland Plate
21	Bushing Ass'y
22	Bushing
23	Packing Ring
24	Cap Screw
25	Belleville Spring
26	Nut
27	Spacer
28	Cap Screw



TYPE LMPC

Live-Loaded Mechanical Packing Cartridge Seal

Materials of Construction

SEAL COMPONENTS	MATERIALS
Gland Plate	300 Series Stainless Steel Hastelloy® Brass Bronze
Housing	300 Series Stainless Steel Hastelloy
Sleeve	316 Stainless Steel Hastelloy (chrome oxide coating or diamalloy coating)
Belleville Spring	17-7 PH 316 Stainless Steel Hastelloy
Packing	Braided Yarn Packing Dieformed Crane Foil Rings Chevron Rings, Metallic Packing
Lantern Ring	PTFE Metal
Bushing	Carbon Bronze PTFE
Elastomer	Viton® Buna-N PTFE encapsulated elastomer PTFE EPR Kalrez®

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Viton and Kalrez are registered trademarks of Dupont.

Applications

- **Equipment:**
Mixers, agitators, centrifugal pumps, positive displacement pumps, valves, hydraulic cylinders, compressors, etc.
- **Services:**
Chemical processing, food processing, oil and refinery, petrochemical, power generation, pulp & paper, and wastewater treatment.

Optimized Packing Design

The packing rings are made from various premium materials available for specific applications. Each is suited for a particular service. Because of its unique design, the LMPC seal can handle the most demanding requirements of lubricated or dry running.



TYPE LMPC

Live-Loaded Mechanical Packing Cartridge Seal



Europe
Slough, UK

Tel: 44-1753-224000
Fax: 44-1753-224224

Latin America
São Paulo, Brazil

Tel: 55-11-3371-2500
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Middle East, Africa, Asia
Dubai, United Arab Emirates

Tel: 971-4-3438940
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North America
Morton Grove, Illinois USA

1-800-MGPAKIT
Tel: 1-847-967-2400
Fax: 1-847-967-3513

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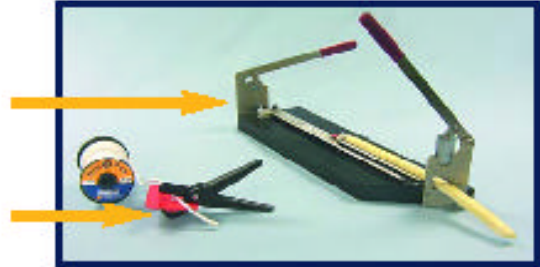
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Tools: Cutting, Installation & Kits

Guillotine Type: For precision butt or diagonal cut joints, cuts
Max. Cross Section: Butt Cut to 1", Diagonal Cut to 3/4"
Various size cutters for inside ring diameters: Small to 4"
Medium to 10", Large to 15"
*Spare component parts also available



HandType: Easily carried in your tool kit. Joint type: butt & diagonal,
Max. Cross Section: Butt cut to 3/4", Diagonal cut to 5/8"
*Spare cutting blades available

Installation Bushings & Cutting Mandrels: Ideal complement
for use with your John Crane packing tool kit. Avoid the risk of
scoring the shaft or sleeve by using a cutting mandrel. Properly seat
rings individually with John Crane installation bushings.



*Available in a wide variety of diameters and lengths

Tool Kits: Make your job easier by using the proper tools.
Available Kits:
Deluxe - 36 piece (as shown)
Medium - 17 piece (hooks, picks, tips, wrench, case only)
Small - 11 piece (hooks, picks, tips, wrench, case only)



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Plastic 
Condenser
and Heat
Exchanger
Tube
Protectors

**PREVENT
TUBE END
EROSION AND
ABRASION**



NYLON
POLYPROPYLENE
TFE

* Crane Packing Company T.M.



CRANE PACKING COMPANY

6400 OAKTON STREET, MORTON GROVE, ILLINOIS 60053 (Chicago Suburb)

In Canada: Crane Packing Company, Ltd., Box 3248, Station C, Hamilton, Ont.

In Mexico: Industrias John Crane de Mexico, S.A. • Poniente 152 #679 Industrial Vallejo, Mexico, D.F.

In Brazil: John Crane Industria E Comercio, Ltda. • Avenida Jurubatuba 600, Sao Bernardo do Campo, S.P.

In Australia: John Crane Mauri Pty., Ltd., 166 Eldridge Road, Bankstown, New South Wales, Australia

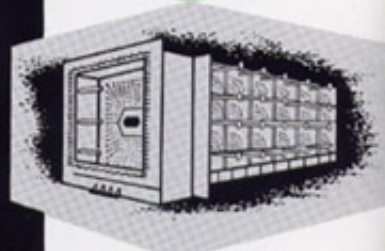
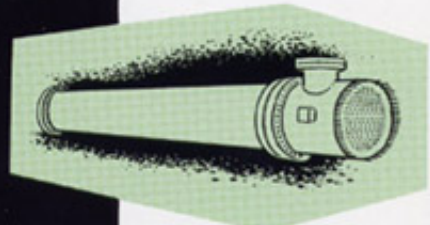
In Europe: Crane Packing Ltd., Slough, Bucks, England

In Japan: John Crane Japan, Inc., No. 5, Tenjinbashi-suji 6-chome, Oyodo-ku, Osaka 531, Japan

OFFICES, WAREHOUSES AND SERVICE THE WORLD OVER

John Crane

PLASTIC TU

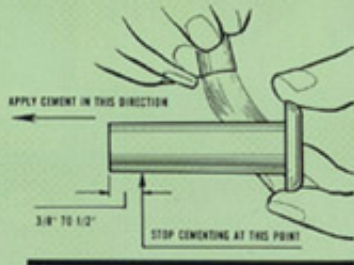


- PROTECT TUBE ENDS FOR LIFE OF TUBE
- POSITIVELY PREVENT EROSION AND ABRASION
- REDUCE COSTLY TUBE MAINTENANCE AND REPLACEMENT
- GREATLY PROLONG TUBE LIFE

EASY TO INSTALL

1. Nylon and Polypropylene Protectors:

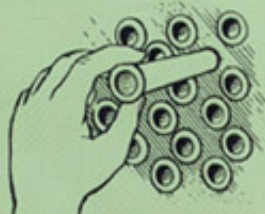
A. Clean tube and allow to dry. Lightly coat outer surface of tube protector with John Crane Tube Protector Cement (see back page). Stroke in direction of straight end to within $\frac{3}{8}$ " to $\frac{1}{2}$ " of edge.



B. Push protector into tube with light, steady pressure.

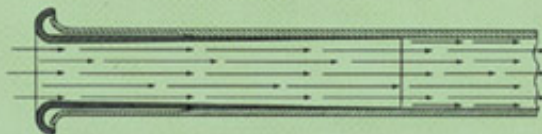
2. TFE Protectors:

John Crane TFE Tube Protectors are manufactured so as to press fit in the end of the tube. Just push into tube with light, steady pressure.



EXCLUSIVE JOHN CRANE SMOOTH FLOW DESIGN

Inner wall of protector gradually tapers toward the discharge end to provide the thinnest possible wall at that point. Also, absence of outside flash assures maximum contact with tube I.D. This provides smooth water flow, eliminating turbulence and pressure drop-off.



BE PROTECTORS

SAVE THOUSANDS OF DOLLARS ANNUALLY IN SURFACE CONDENSER AND HEAT EXCHANGER MAINTENANCE AND REPLACEMENT COSTS

WIDELY USED IN MARINE, UTILITY
and INDUSTRIAL POWER PLANTS
... EQUALLY EFFECTIVE IN
CHEMICAL PLANTS, REFINERIES
AND
GAS COMPRESSOR STATIONS

JOHN CRANE PLASTIC TUBE PROTECTORS offer permanent protection for new tubes or extended life for old tubes already pitted or thinned at the entrance section. Their low unit cost is a small price to pay for the major economies they assure through protection of the first few inches of the tube inlet. That area is very vulnerable to a number of erosive elements such as: (1) the abrasive action of sand, silt or other foreign particles entrained in the fluid, (2) air impingement caused by the release of oxygen due to turbulence when fluid enters the tube.

The flared end of the protector is designed to give a smooth venturi entrance for the fluid and the polished inner surface will not foul up or hold scale formation. Once installed they need never be replaced, since they are more resistant to abrasion and erosion than the tube metal itself.

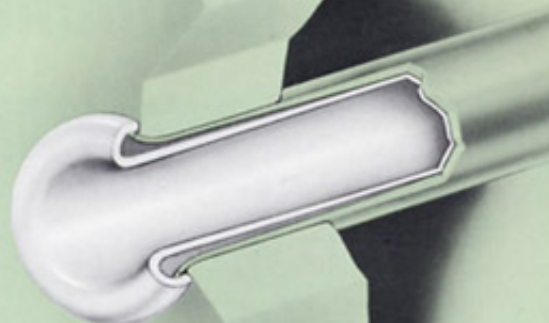
AVAILABLE IN THREE PLASTICS—John Crane Tube Protectors offer a choice of nylon, polypropylene or TFE. Nylon and polypropylene types are resistant to chemical, corrosive and fungus attack and are not affected by oils or greases. They will withstand temperatures to 250°F. TFE protectors are impervious to the most destructive chemicals, corrosives and alkalis at temperatures up to 500°F.

SIZES:

Tube Size	Protector Length		
	Nylon	Polypropylene	TFE
5/8" x 18 BWG	6"	6"	4" & 6"
5/8" x 16 "	6"	6"	6"
3/4" x 18 "	4" & 6"	4" & 6"	4" & 6"
3/4" x 16 "	6"	6"	4" & 6"
7/8" x 18 "	6"	6"	4" & 6"
1" x 18 "	6"	6"	4" & 6"
1" x 16 "	6"	6"	4" & 6"
1" x 14 "	—	—	6"
1" x 10 "	—	—	4" & 6"
2" x 8 "	4"	4"	—

Note: Other sizes can be made to order.

**NEW TUBES
STAY THAT WAY**



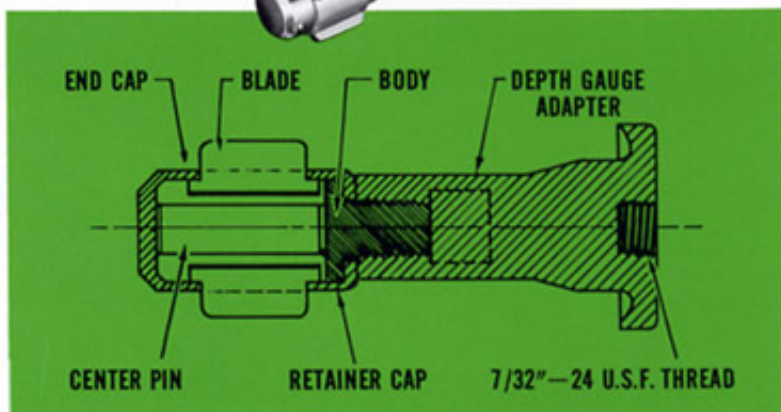
**OLD TUBES
GAIN NEW LIFE**



JOHN CRANE ROTARY EXPANDING TUBE END CLEANER

The John Crane Cleaner has been specifically developed for old tube installations. It has a special cutting blade that cleans salt deposits, scale, etc. from the portion of the tube end to be covered by the tube protector. It is designed so it cannot pass beyond this area.

The adapter end of the cleaner is threaded to 7/32"–24 U.S.F. gauge and will fit any small motor used for cleaning boiler tubes either direct or by using a flexible shaft.



JOHN CRANE PROTECTOR TUBE CEMENT



JOHN CRANE PROTECTOR TUBE EXTRACTORS



If it becomes necessary to remove a protector or protectors, this can be readily accomplished by means of John Crane Protector Tube Extractors. They are especially designed to cut the protector free without damaging the tube metal. Any cement remaining in the tube can be removed with the rotary expanding cleaner above.

Cementing of nylon and polypropylene tube protectors is recommended to prevent their working out during backwash and cleaning operations.

Cement is easily applied with a small brush (see page 2). It bonds in seconds and dries to full strength in a very short time. Available in 1/2 pint cans.

Cementing of TFE protectors is not required, as they are made to a press fit.

Crane Packing Company also manufactures a complete line of Expanding Tools and Super-Jet[®] Condenser Tube Cleaners

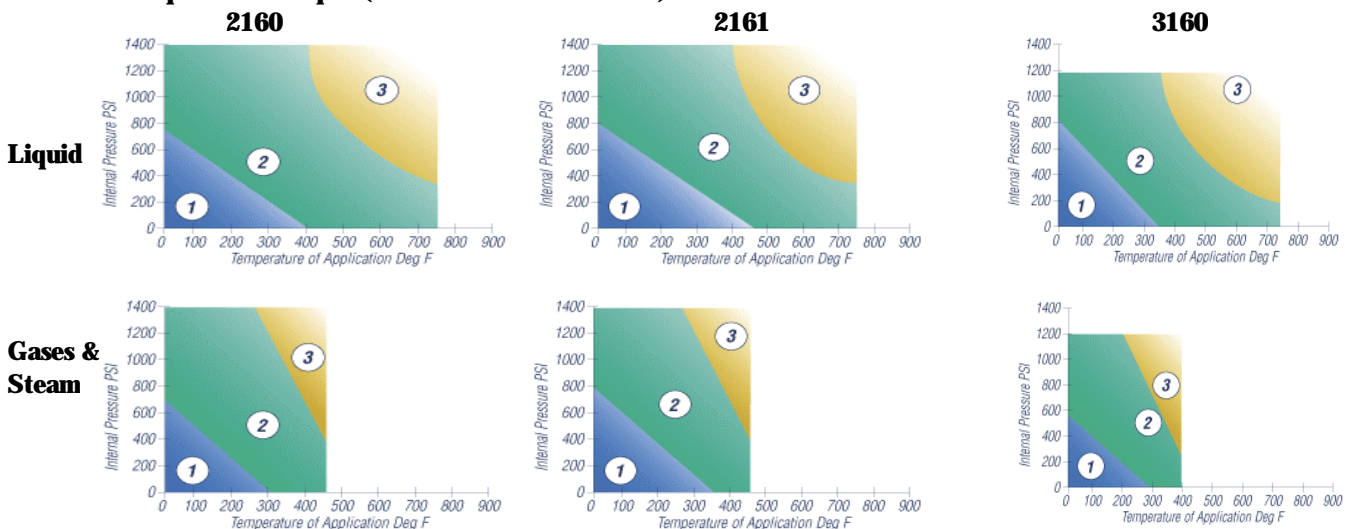


John Crane Inc.

Compressed Non-Asbestos Sheet Gasket

	2160 Synthetic w/ NBR binder	2161 Synthetic w/ NBR binder & Carbon Steel	3160 Synthetic w/ Neoprene binder
Properties			
Creep Relaxation	20%	20%	20%
Sealability	<.25 ml/hr	N/A	<.5 ml/hr
Gas Permeability	<.5 ml/min	N/A	<.5 ml/min
Compressibility	7%	8%	7%
Recovery	50% Min.	50% Min.	50% Min.
Dielectric Strength	14 KV/mm	N/A	14 KV/mm
Leachable Chloride	<100 ppm	N/A	<200 ppm
Density	112 lb/ft³	119 lb/ft³	119 lb/ft³
Color	Off White	Black	Off White

Pressure Temperature Graphs (based on 1/16" thickness)



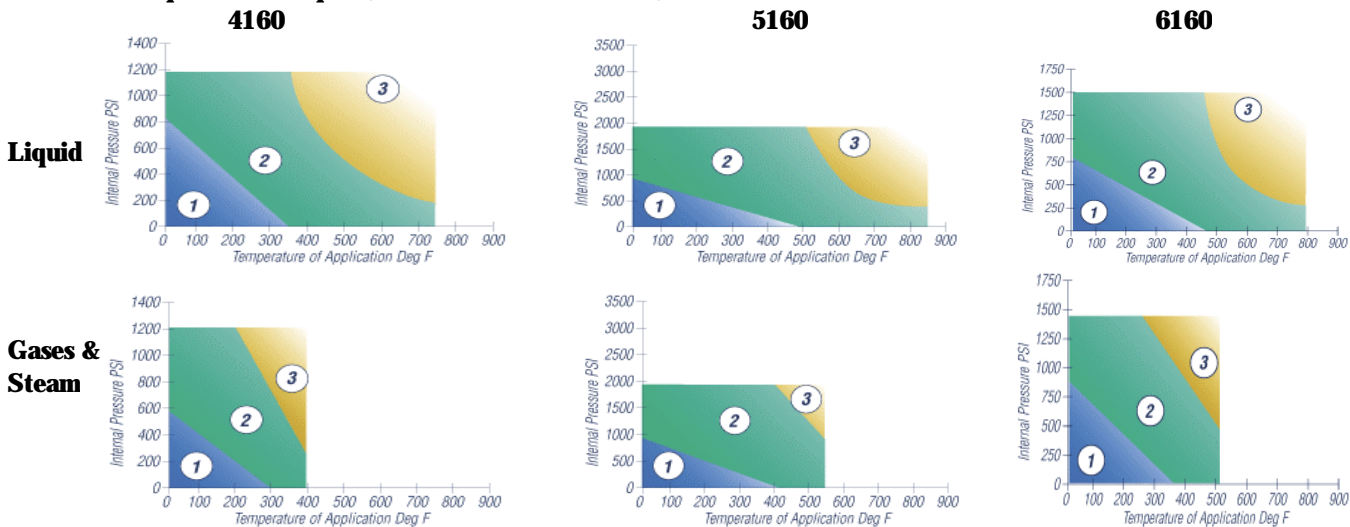
Code Key: #1 Suitable - normal installation #2 Engineering advice should be considered #3 Not Suitable



John Crane Inc. Compressed Non-Asbestos Sheet Gasket

	4160 Synthetic w/ SBR binder	5160 Carbon w/ NBR binder	6160 Fiberglass w/ NBR binder
Properties			
Creep Relaxation	20%	20%	20%
Sealability	<.20 ml/hr	<.30 ml/hr	<.5 ml/hr
Gas Permeability	<.3 ml/min	<1.0 ml/min	<.5 ml/min
Compressibility	8%	12%	9%
Recovery	50% Min.	60% Min.	50% Min.
Dielectric Strength	16 KV/mm	1.5 KV/mm	16 KV/mm
Leachable Chloride	<200 ppm	<200 ppm	<150 ppm
Density	112 lb/ft3	87 lb/ft3	96 lb/ft3
Color	Off White	Black	Green & White

Pressure Temperature Graphs (based on 1/16" thickness)



Code Key: #1 Suitable - normal installation #2 Engineering advice should be considered #3 Not Suitable



John Crane Inc.
General Selection Guide
Compressed Non-Asbestos Sheet Gasket

Style

- | | |
|-------------|---|
| 2160 | <ul style="list-style-type: none">* General Service* Excellent Chemical resistance |
| 2161 | <ul style="list-style-type: none">* General Service* Excellent Chemical resistance* Fluctuating Temperature & Pressure* Joint Vibration |
| 3160 | <ul style="list-style-type: none">* General Service* Excellent Chemical resistance* Typically more compatible with acids over NBR binber (2160) |
| 4160 | <ul style="list-style-type: none">* General Service - other than oils* Good in Steam Service |
| 5160 | <ul style="list-style-type: none">* High Temperature* High Internal Pressure* Good in Steam Service* Good in wide range of chemical services |
| 6160 | <ul style="list-style-type: none">* Excellent in Steam Service* Excellent Chemical resistance* General Service |



John Crane Inc.

Elastomer Sheet Gasket Materials

Style	Material	Color	Durometer Shore "A"	Elongation	Temperature	Max. Pressure psi / bar	ASTM
555	SBR	Red	70 - 85	150 % min.	-20°F to +200°F -29°C to +95°C	150 psi / 10 bar	D-1330 Gr. II
555S	SBR	Red	65 - 75	200 % min.	-20°F to +200°F -29°C to +95°C	150 psi / 10 bar	D 2000 M 1AA 705
570	Nitrile (NBR) (FDA Compliant)	White	55 - 65	400 % min.	-20°F to +200°F -29°C to +95°C	250 psi / 17 bar	D 2000-2BF-615-E034
777	NBR w/ polyester	Black	70 - 80	200 % min.	-20°F to +200°F -29°C to +95°C	150 psi / 10 bar	D 2000-BC-810-Z1
900	Nitrile (NBR)	Black	55 - 65	300 % min.	-20°F to +200°F -29°C to +95°C	150 psi / 10 bar	D 2000-BF-610
998	Neoprene (CR) w/polyester	Black	65 - 75	300 % min.	-20°F to +200°F -29°C to +95°C	250 psi / 17 bar	D 2000-BC-714
999	Neoprene (CR) Blend	Black	65 - 75	200 % min.	-20°F to +200°F -29°C to +95°C	150 psi / 10 bar	D 2000-BC-710

General Selection Guide:

	Positive	Negative
CR	Good for oil and petroleum based solvent, weather & ozone.	Poor resistance to degreaser solvents
NBR	Excellent resistance to oils, solvents & fuels. Broader range of resistance to aromatic hydrocarbons than neoprene (CR).	Poor product quality can adversely affect performance in oil resistance.
SBR	Excellent impact and cut & gouge resistance plus good abrasion resistance.	Not recommended for oils, fuels, solvents or hydraulic fluids.

Note: Viton*, EPDM, Silicone and other elastomeric materials also available

* (Viton fluorelastomer a registered trademark of DuPont Elastomers)

John Crane Inc. - Morton Grove, IL. U.S.A.

General Selection Guide::

Positive**Negative**

EPDM Excellent resistance to ozone, sunlight, oxygen, acids, alkalis, ketones, heat & aging.

Poor resistance to fuels & oils

Silicone Excellent at elevated temperatures to +400°F / +204°C, cold, ozone, oxygen & weathering..

Poor resistance to oils, fuels & hydrocarbons. Only fair when exposed to acids, alkalis & solvents.

Viton* Excellent resistance to heat and oil combinations and hot greases typically found in engines and compressors.

Can experience low tear strength and impact resistance.

* (Viton fluorelastomer a registered trademark of DuPont Elastomers)



John Crane Inc.

PTFE Sheet & Gasket Materials

Skived Sheet

- 68B** **100% Virgin PTFE**
 - 68C** **Commercial grade reprocessed virgin PTFE**
- * Various Glass filled and other blends available

Biaxially Calandered "Chemlon" Filled PTFE Sheet

- 7000** **Blue In Color - FDA compliant - Excellent for plastic & glass flanges**
- 7100** **Salmon in Color - FDA compliant - Excellent for sulfuric & hydrofluoric acids**
- 7200** **Off White in color - FDA compliant - Excellent for Pulp & Paper and Pharneautical Industries**

Expanded PTFE Sheet & Tape

- C1051S** **100% expanded Virgin PTFE Sheet**
- C1051T** **100% expanded Virgin PTFE Tape w/adhesive backing**
- C1051** **100% expanded Virgin PTFE Joint Sealant Tape w/adhesive backing**

Braided PTFE Gasket Tape

- 1045G** **White in color - Braided PTFE Filament with no lubricants**
- 1050G** **White in color - Braided PTFE Filament with lubricant**