

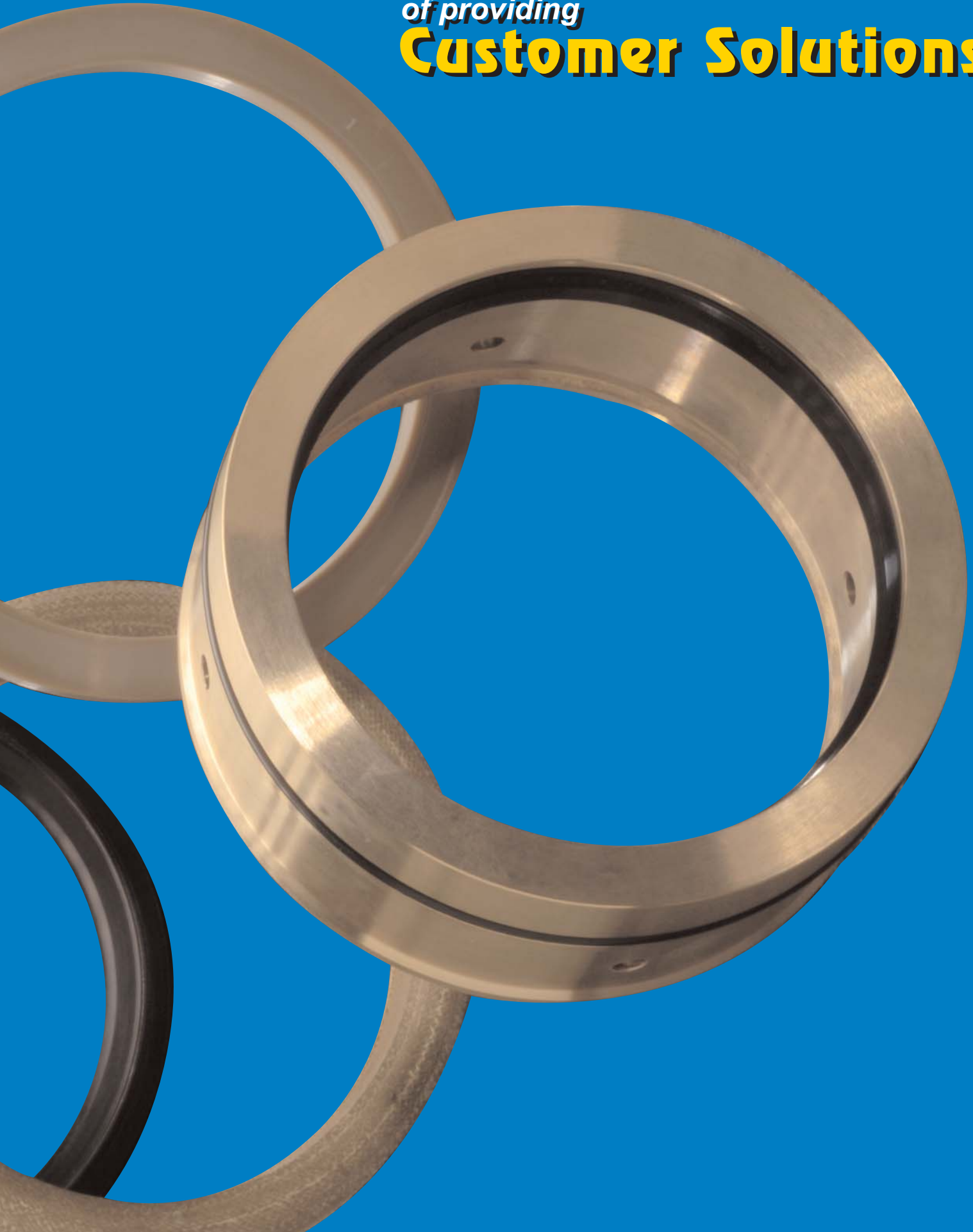


# Utex Industries, Inc.

# PLUNGER PACKING



**65 Years**  
*of providing*  
**Customer Solutions**



## Standard Geometric Styles



**SF - Single Stack Design Packing Ring**

**Page 1**



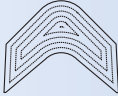
**SSF - Double Stack Design Packing Ring**

**Page 1**



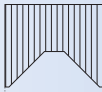
**ASF - Flat-Back Combination Design Packing Ring**

**Page 2**



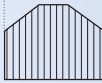
**CV - Single Stack Hingeless Design Packing Ring**

**Page 2**



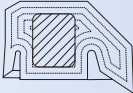
**SF, SSF Design Top Adapters**

**Page 3**



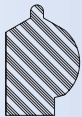
**SF, SSF, ASF Design Bottom Adapters**

**Page 3**



**JFD - Easy Adjustable Design Packing Ring**

**Page 3**



**AH Design Header Ring - Wiper/Energizer**

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**WQ Wiper/Seal Ring**

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**KFO Wiper/Seal Ring**

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**PS Wiper/Seal Ring**

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**Compression Packing**

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**U-PAK® Injectable Packing with Containment Rings**

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**Engineered Solutions - Special Assemblies**

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**Plunger Packing Guide**

Temperature, pressure range & chemical compatibility

**Page 8**

## SF Design Packing



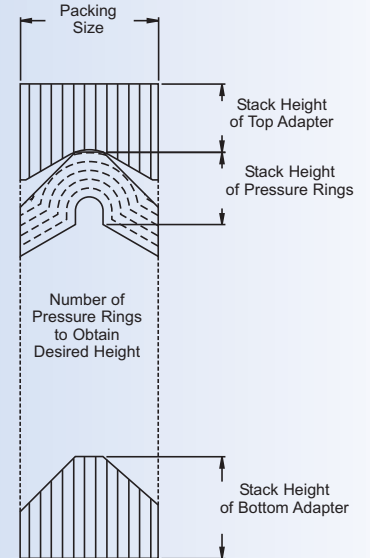
The SF Design V-Packing is one of the most versatile and popular sealing designs on the market today. The single stack SF hinge design allows the sealing lips to remain in contact with the surface being sealed without putting undue stress on the sealing ring itself. It has an initial interference so adjustment is not required for sealing. The flexibility of the design allows sealing at a wide range of pressures under almost any condition. The SF V-Ring is designed with mating surfaces that provide a void between rings, acting as a lubrication reservoir. This design helps retard nesting, allows the rings to relax between cycles and allows lubrication to reach all sealing rings.

SF Design Stack Height Chart with Standard Molded Adapters - Inch

Packing Size	Top Adapter Height	Bottom Adapter Height	Pressure Ring Stack Height
1/8"	.087	.132	.093
3/16"	.087	.132	.125
1/4"	.134	.184	.171
5/16"	.151	.223	.203
3/8"	.170	.265	.234
7/16"	.184	.306	.265
1/2"	.265	.378	.281
9/16"	.284	.420	.296
5/8"	.298	.461	.328

SM Design Stack Height Chart with Standard Molded Adapters - Metric

Packing Size	Top Adapter Height	Bottom Adapter Height	Pressure Ring Stack Height
4 mm	2.21	3.55	2.75
5 mm	3.18	3.53	3.33
5.5 mm	2.79	4.01	3.76
6 mm	3.23	4.42	4.12
6.5 mm	3.48	4.78	4.45
7.5 mm	3.63	5.36	4.88
8 mm	3.86	5.72	5.21
9 mm	4.19	6.39	5.73
10 mm	4.52	7.06	6.25
12.5 mm	6.63	9.45	7.04
15 mm	7.16	11.07	7.87



### Applications:

- General service - for low/medium/high pressures, industrial & chemical use
- Oilfield service - mixed fluids, saltwater disposal, crude transfer
- Well service - cementing, acidizing and fracturing
- High-pressure water blast

## SSF Design Packing



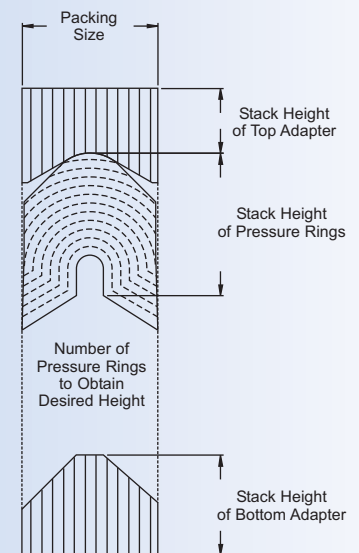
The SSF Design V-Packing combines the advantages of the SF design with the double-stack pressure sealing of the SSF design. It has an initial interference so adjustment is not required for sealing. The SSF design is able to withstand higher pressures and loads than standard V-packing. The double-stack SSF has extra material in the design that resists rollover and distortion commonly seen in standard V-packing where excessive load and/or pressures are present.

SSF Design Stack Height Chart with Standard Molded Adapters - Inch

Packing Size	Top Adapter Height	Bottom Adapter Height	Pressure Ring Stack Height
3/16"	.187	.187	.250
1/4"	.250	.250	.342
5/16"	.312	.312	.406
3/8"	.375	.375	.468
7/16"	.437	.437	.530
1/2"	.500	.500	.562
9/16"	.562	.562	.592
5/8"	.625	.625	.656

SSM Design Stack Height Chart with Standard Molded Adapters - Metric

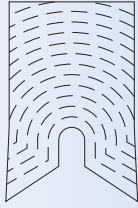
Packing Size	Top Adapter Height	Bottom Adapter Height	Pressure Ring Stack Height
4 mm	2.21	3.53	5.50
4.5 mm	2.7	3.54	6.25
5 mm	3.18	3.55	6.66
5.5 mm	2.79	4.01	7.52
6 mm	3.23	4.42	8.24
6.5 mm	3.48	4.78	8.90
8 mm	3.86	5.72	10.42
10 mm	4.52	7.06	12.50
12 mm	5.18	8.4	13.83
12.5 mm	6.63	9.45	14.08
15 mm	7.16	11.07	15.74



### Applications:

- General service - for low/medium/high pressures, industrial & chemical use
- Oilfield service - mixed fluids, saltwater disposal, crude transfer
- Well service - cementing, acidizing and fracturing
- High-pressure water blast

## ASF Flat-Back Seal



ASF Design Stack Height Chart - Inch

Packing Size	Pressure Ring Stack Height
1/8"	.186
3/16"	.250
1/4"	.342
5/16"	.406
3/8"	.468
7/16"	.530
1/2"	.562
9/16"	.609
5/8"	.656



ASFM Design Stack Height Chart - Metric

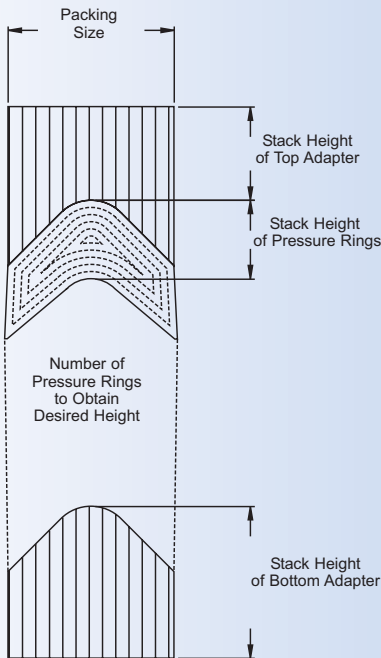
Packing Size	Pressure Ring Stack Height
5 mm	6.66
6 mm	8.24
6.5 mm	8.90
7.5 mm	9.76
8 mm	10.42
8.5 mm	11
9 mm	11.22
10 mm	12.50
12.5 mm	14.08
15 mm	16.27

### Applications:

- General service - for low/medium/high pressures, industrial & chemical use
- Oilfield service - mixed fluids, saltwater disposal, crude transfer
- Well service - cementing, acidizing and fracturing
- High-pressure water blast
- Containment rings for U-PAK® injectable packing

The ASF V-Packing is a dual-purpose design that acts as a high-pressure seal ring and also an adapter for V-packing sets. The Flat-Back ASF Pressure Ring needs no special shaped adapter to make it fit a standard stuffing box, allowing higher performance. It also eliminates the high stresses generated in standard V-shaped adapters. The ASF Design allows you to use one sealing ring in place of multiple rings. It utilizes a combination of material and engineered angles that are proven in high-pressure situations. It has an initial interference so adjustment is not required for sealing.

## CV Design Packing



CV Design Stack Height Chart with Standard Molded Adapters - Inch

Packing Size	Top Adapter Height	Bottom Adapter Height	Pressure Ring Stack Height
3/16"	.150	.175	.103
1/4"	.175	.200	.123
5/16"	.200	.225	.163
3/8"	.225	.250	.188
7/16"	.250	.275	.228
1/2"	.275	.300	.243
5/8"	.325	.300	.302

CVM Design Stack Height Chart with Standard Molded Adapters - Metric

Packing Size	Top Adapter Height	Bottom Adapter Height	Pressure Ring Stack Height
5 mm	3.00	4.00	2.65
6 mm	3.50	4.50	3.17
6.5 mm	3.50	4.50	3.38
7.5 mm	4.00	5.00	3.88
8 mm	4.00	5.00	4.12
8.5 mm	4.13	5.13	4.35
9 mm	4.25	5.25	4.50
10 mm	4.50	5.50	5.10
11 mm	4.75	5.75	5.31
12.5 mm	5.50	6.50	6.32
15 mm	7.00	8.00	7.55

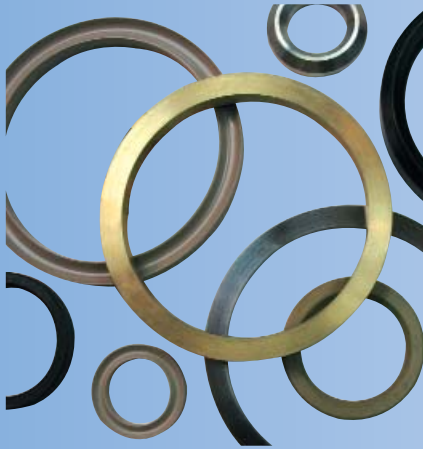


### Applications:

- Medium pressure seal ring
- Food processing industries
- Pharmaceutical

The CV Design V-Packing is a hingeless design that performs well in most standard V-packing applications and takes up less space. The hingeless design prevents buildup between seal rings from occurring and engineered angles help retard nesting. It is effective in high and low-pressure applications and has an initial interference so adjustment is not required for sealing. Little or no gland adjustment is required. The CV Design is preferred in applications where contamination is critical such as pharmaceutical, USDA and FDA regulated industries.

# Adapters



Top (female) & bottom (male) adapters are engineered for specific environments. Utex maintains an inventory of adapters for complete sets of seal configurations as well as a variety of spacers and engineered machined components.

### Typical Materials Available

**Metallic:**

Stainless steels, Alloy steels,  
Cast iron, Bronze alloys

**Molded Composites:**

Plastics, Fabric/Rubber components

**Thermoplastics:**

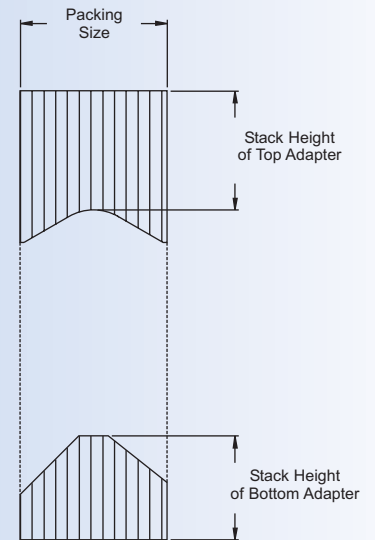
PEEK, PPS, UHMW, Nylon

SF, SSF Design Top Adapter Stack Height Chart for Standard Molded

Inch		Metric	
Packing Size	Top Adapter Height	Packing Size	Top Adapter Height
1/8"	.087	4 mm	2.21
3/16"	.087	5 mm	2.72
1/4"	.134	5.5 mm	2.79
5/16"	.151	6 mm	3.23
11/32"	.160	6.5 mm	3.48
3/8"	.170	7.5 mm	3.63
7/16"	.184	8 mm	3.86
15/32"	.224	9 mm	4.19
1/2"	.265	10 mm	4.52
9/16"	.284	12.5 mm	6.63
5/8"	.298	15 mm	7.16

SF, SSF, ASF Design Bottom Adapter Stack Height Chart for Standard Molded

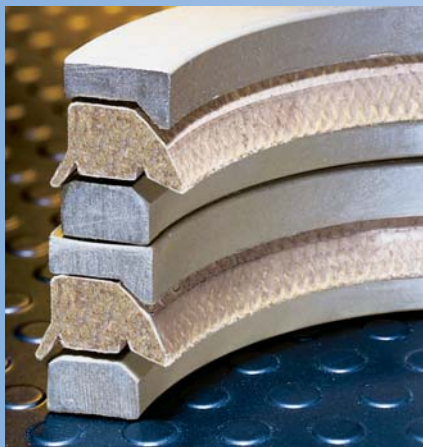
Inch		Metric	
Packing Size	Bottom Adapter Height	Packing Size	Bottom Adapter Height
1/8"	.132	4 mm	3.53
3/16"	.132	5 mm	3.55
1/4"	.184	5.5 mm	4.01
5/16"	.223	6 mm	4.42
11/32"	.244	6.5 mm	4.78
3/8"	.265	7.5 mm	5.36
7/16"	.306	8 mm	5.72
15/32"	.342	9 mm	6.39
1/2"	.378	10 mm	7.06
9/16"	.420	12.5 mm	9.45
5/8"	.461	15 mm	11.07



### Applications:

- Adapters for V-Packing
- Adapters for other configurations
- Anti-extrusion devices
- Engineered packing assembly components

# JFD Design Packing

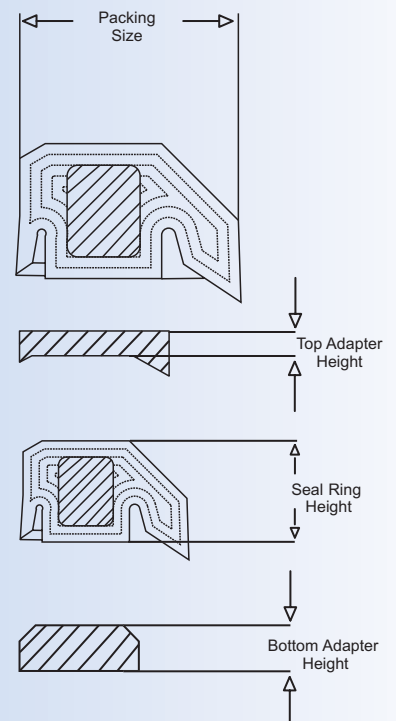


JFD Design Stack Height Chart for Standard Molded - Inch

Packing Size	Seal Ring Height	Top Adapter Height	Bottom Adapter Height
1/4"	.25	.125	To be determined for each size
5/16"	.25	.125	
3/8"	.25	.125	
7/16"	.313	.125	
1/2"	.375	.125	
9/16"	.375	.125	
5/8"	.375	.125	

JFDM Design Stack Height Chart for Standard Molded - Metric

Packing Size	Seal Ring Height	Top Adapter Height	Bottom Adapter Height
6 mm	6.35	3.18	To be determined for each size
7 mm	6.35	3.18	
9.5 mm	6.35	3.18	
10 mm	6.35	3.18	
12 mm	8.74	3.18	
12.5 mm	9.53	3.18	



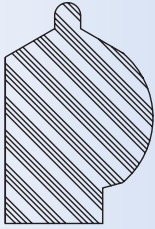
The unique, patented Utex J-Design is a seal ring solution geometrically designed to resist over-tightening, which leads to premature seal failure. The dual-design seal ring has a rigid thermoset plastic core that resists crushing, and is surrounded by tough, yet flexible sealing lips that won't tighten when the packing is adjusted. Longer packing life results in reduced maintenance cost. The J-Design has initial interference and is pressure actuated. Adjustment of the packing is only to secure the packing in the stuffing box to prevent movement. This easy-adjustable packing has gained acceptance to the point of standardization by plunger pump manufacturers.

The sealing lips are backed-up by rigid plastic or composite adapters designed especially to work with the J-Design packing assembly. This combination of construction features prevents the usual nesting and crushing that may result from excessive gland or fluid pressure.

### Applications:

- General service packing
- Slurry & abrasive service
- Water flood, Saltwater disposal

## AH Design Header Ring



AH Design Stack Height Chart - Inch

Packing Size	Pressure Ring Stack Height
1/4"	.375
5/16"	.500
3/8"	.562
7/16"	.750
1/2"	.750
9/16"	.875
5/8"	.938
11/16"	1.000
3/4"	1.125



AHM Design Stack Height Chart - Metric

Packing Size	Pressure Ring Stack Height
5 mm	7.5
6 mm	9.0
6.5 mm	9.5
7.5 mm	12.0
8 mm	12.0
10 mm	17.2
12.5 mm	18.8
15 mm	22.5
20 mm	30.0
25 mm	37.5

### Applications:

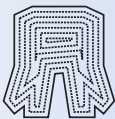
- Well servicing pumps
- General service applications
- Abrasive & slurry
- Fracturing
- Cementing
- Acidizing

Utex Header Rings are primarily designed to be used with the SF, SSF and ASF Design V-packing where slurries and other abrasive fluids are being pumped. The Utex header ring has a dual purpose in sealing systems as a wiper element and/or an elastomeric spring. The AH Design loads the V-packing assembly and restricts abrasives from the main packing. It is available in various elastomeric compounds based on media exposure.

## WQ, KFO, PS Wiper Seals

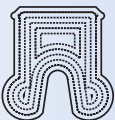
In Plunger Packing assemblies, secondary seals serve a dual purpose. They can act as secondary seals that retain lubrication pumped into the stuffing box and they also act as wiper rings.

WQ



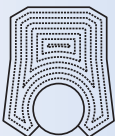
•The WQ seal is primarily a wiper ring and secondary seal in reciprocating pump applications. It can also be used as a primary seal in low-pressure applications.

KFO

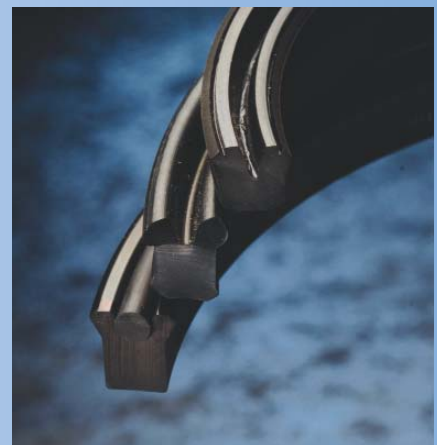


•The KFO seal is primarily a wiper ring and secondary seal in reciprocating pump applications. It can also be used as a primary seal in low-pressure applications.

PS



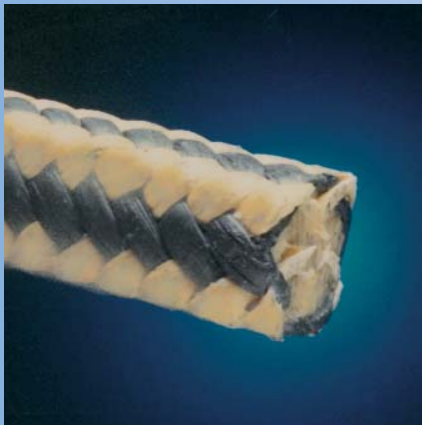
•The PS seal has a jacketed o-ring that energizes the seal lips under zero or low-pressure in hydraulic applications. It can act as a wiper seal or a primary seal. As the system pressure increases, the seal is self-energizing to increase its sealing force through the lips.



### Applications:

- Hydraulic applications
- Wiper ring
- HVOC
- Emission control

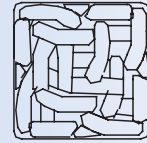
## Compression Packing



Compression Packing is available in both adjustable and non-adjustable assemblies for use in plunger pump applications. Utex can provide an extensive selection of domestically produced material options for a wide range of temperatures and chemical applications.

Available in:

- Texlok<sup>®</sup> interbraid or Square braid
- Die-formed compression packing with machined end rings
- Braided style assemblies with bearing rings
- Lubricated & non-lubricated packing assemblies
- Can be made into an endless spiral slug for use with an elastomeric spring



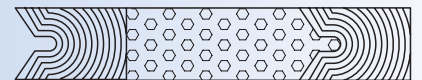
### Applications:

- Water flood, Saltwater disposal
- General industrial applications
- Pulp and paper industry
- Wastewater treatment
- Food processing
- Petrochemical

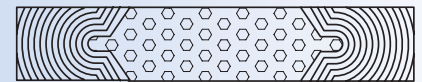
## U-PAK<sup>®</sup> Injectable Packing with Containment Rings



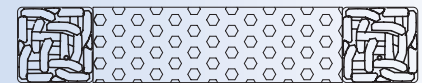
U-PAK<sup>®</sup> Injectable Pump Packing is being successfully used in plunger pump applications. U-PAK comes in a variety of styles that perform with braided or molded containment end-rings.



U-PAK Abrasive Service with ASF End Rings



U-PAK Standard Service with ASF End Rings



U-PAK Standard Service with Braided End Rings

U-PAK Injectable Pump Packing can eliminate the requirement for lubrication. ASF containment rings used in conjunction with U-PAK Injectable Packing form a sealing system that is convenient to use, low-maintenance and saves valuable operating costs. Once U-PAK is initially installed, it can be easily maintained by injection with a U-PAK Injection Gun without shutting down pump operation. It is also available as a complete cartridge design.

### Applications:

- General service
- High-performance & extreme service applications
- Water flood, Saltwater disposal



# Engineered Solutions

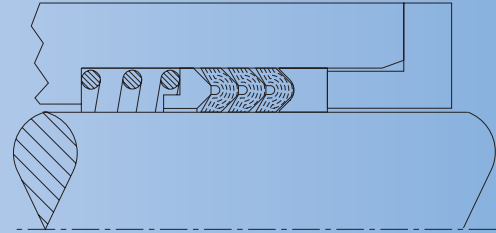
## Special Assemblies

### Spring Loaded Packing

Spring Loaded Packing Sets are comprised of one or more V-ring type designs with machined or molded adapters and an engineered spring. They have been field tested in applications with pressures up to 40,000 psi, depending on materials and the assembly.

**Applications:**

- Chemical process
- Reverse osmosis
- Fluid transfer
- Water/Saltwater disposal
- Water flood
- Water blast

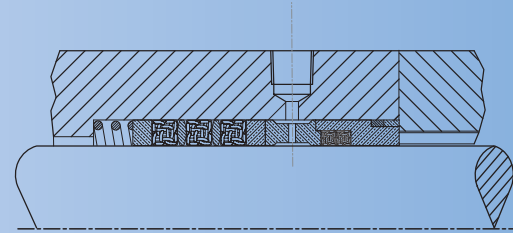


Spring Loaded Packing with SSF & ASF Pressure Rings

Spring Loaded Compression Packing is one of the most versatile products used in fluid sealing. The range of packings begins with flax yarns for economical services to pure graphite yarns able to withstand the extreme high temperatures of demanding chemical applications.

**Applications:**

- Chemical process, Refining
- Reverse osmosis
- Fluid transfer
- Water/Saltwater disposal



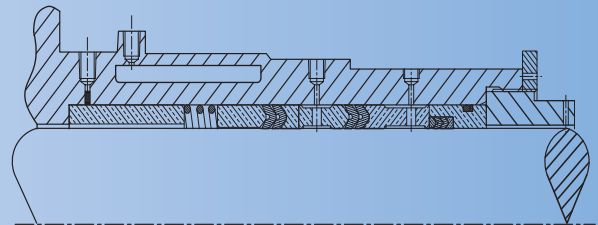
Spring Loaded Packing with Braided Rings

### Spring Loaded with Primary, Secondary & Tertiary Seal

Spring Loaded Packing Sets with Primary, Secondary and Tertiary Seals accommodate environmental requirements.

**Applications:**

- Chemical process
- Low VOC emissions with leak detection



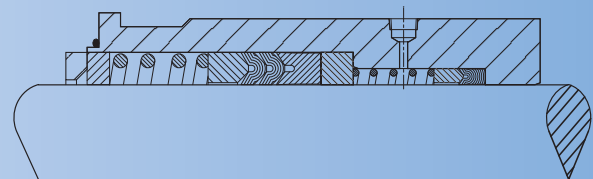
Spring Loaded Packing with SF Pressure Ring

### SF & ASF Custom Assembly

Double packed with spring loaded for self-adjusting primary and secondary packings in environmentally sensitive applications.

**Applications:**

- Chemical process
- Reverse osmosis
- Fluid transfer
- Water/Saltwater disposal

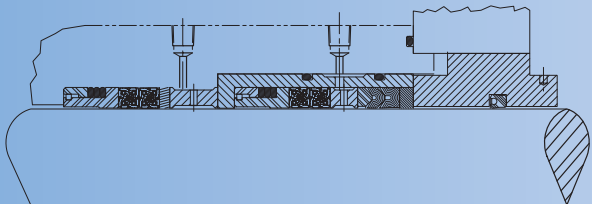


Double Box Spring With Loaded Packing Assembly

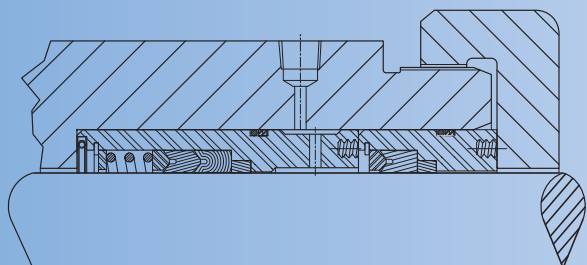
# Engineered Solutions

## Special Assemblies

### Cartridge Seals



Elastomeric Spring Loaded Packing with Cartridge Slug



Unitized Packing Cartridge Assembly

The Elastomeric Spring Assembly combines an Aramid Spiral Unitized Packing Set that is easily installed and maintained. The elastomeric spring assembly is made up from three or more o-rings which act as springs to force the retainer ring against the packing rings.



The elastomeric spring assembly is made up from three or more o-rings which act as springs to force the retainer ring against the packing rings.

- Easily installed
- Higher spring rate
- Non-clogging
- Requires minimum space
- Retards cavitation

#### Applications:

- Chemical process
- Reverse osmosis
- Fluid transfer
- Water/Saltwater disposal

The Unitized Packing Cartridge Seal is pre-assembled and unitized into a cartridge so that when it is installed in the pump body, the packing will be preset and require no further adjustment. This packing seal configuration is offered in a variety of packing and lip seal designs.

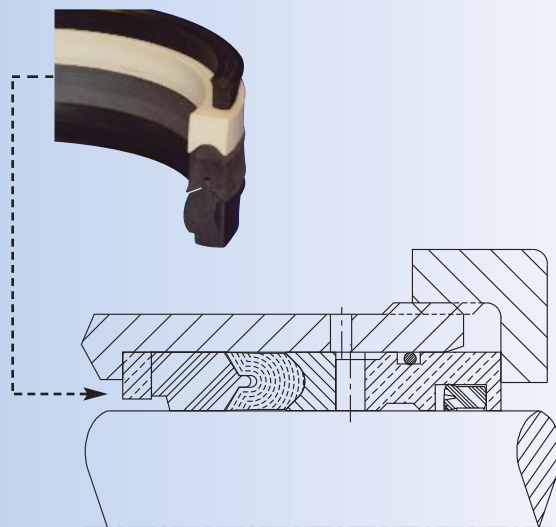
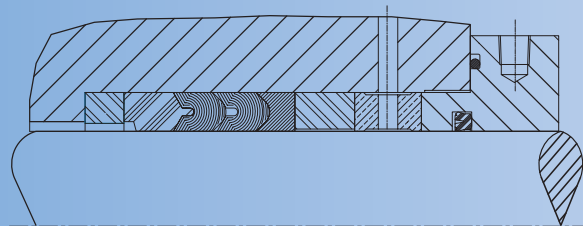
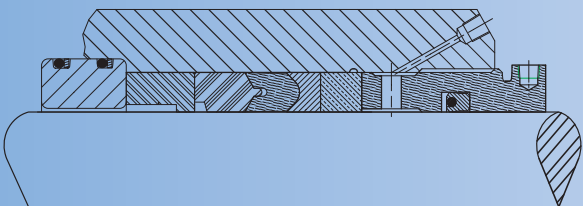


- Available in a wide range of molded rubber, reinforced rubber, thermoset plastic and molded or machined thermoplastic materials
- Tandem assembly available
- Multiples of the basic cartridge can be used for backup packing systems

#### Applications:

- Chemical process
- Chemical injection
- Fluid transfer

### Typical Well Service Packing Arrangements



Utex Engineered Solutions for Well Service Applications include packing which is designed to withstand the harsh environments encountered in Cementing, Acidizing and Fracturing. Utex can select job-specific materials which will eliminate the need to repack between jobs. This reduces downtime, increases service life in the field and reduces the need for multiple material inventory.

#### Applications:

- Well servicing pumps
- Cementing, acidizing, fracturing & CO<sub>2</sub> pumping
- Abrasive fluids, Slurries



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# Plunger Packing Guide

## Styles & Material Selection



Geometry	Style	Description	Temp.	Max PSI	Compatibility
 <b>SF</b>	0701	Nitrile with cotton fabric, Medium hard, Black	-10 to +250°F	3,500 psi*	Resistant to hydrocarbons
	0758	High-temperature HNBR with high-strength synthetic fabric, Hard, Gold	-10 to +300°F	40,000 psi*	Resistant to hydrocarbons, acids, H <sub>2</sub> S below 6%, abrasive fluids
	0805,0815	Low-friction nitrile with cotton/synthetic fabric, Medium hard, Gray	-40 to +250°F	10,000 psi*	Resistant to hydrocarbons
	0807,0809	Nitrile with cotton/synthetic fabric, Hard, Black	-10 to +250°F	10,000 psi*	Resistant to hydrocarbons, acids, abrasive fluids
	4510	Virgin PTFE, Soft, White	-110 to +500°F	4,500 psi*	Resistant to most fluids, chemically inert
	4511	Glass, Moly filled PTFE, Med hard, Light gray	-110 to +500°F	5,500 psi*	Resistant to most fluids, chemically inert
	4515	Carbon graphite filled PTFE, Hard, Gray/black	-110 to +500°F	5,500 psi*	Resistant to most fluids, chemically inert
	6618	FEPM with aramid/Glass blend, Hard, Black	+10 to +450°F	15,000 psi*	Resistant to hydrocarbons, H <sub>2</sub> S, acids
	6625	FKM with aramid/Glass blend, Hard, Black	+10 to +425°F	15,000 psi*	Resistant to hydrocarbons, aromatic solvents, strong and mild acids
	6665	EPDM with cotton and synthetic fabric, Hard, Black	-30 to +275°F	10,000 psi*	Good general service, water, steam, glycol and fire-resistant fluids (phosphate esters)
	6676	HNBR with cotton/synthetic fabric, Medium hard, Black	-40 to +275°F	7,500 psi*	Resistant to hydrocarbons, mild acids, mild caustics and water
	6677	Pure PTFE with aramid fabric reinforcement, FDA Compliant, Medium hard, Brown	-50 to +500°F	10,000 psi*	Resistant to most fluids, chemically inert, complies with FDA Requirements (CFR 177.1550 & CFR 177.1632)
	6681	Nitrile with cotton/synthetic fabric, FDA Compliant, Medium hard, Grayish/white	-10 to +250°F	5,000 psi*	Resistant to mild acids, mild caustics and water, complies with FDA Requirements (CFR 177.2600)
	6686	Neoprene® with cotton fabric, Medium hard, Black	-10 to +225°F	10,000 psi*	General service, anhydrous ammonia, water
	 <b>SSF</b>	1028,1058	High-temperature HNBR with high-strength synthetic fabric, Hard, Gold	-10 to +300°F	40,000 psi*
1043		FEPM with aramid/glass blend, Hard, Black	+10 to +450°F	15,000 psi*	Resistant to hydrocarbons, H <sub>2</sub> S, acids
1045		HNBR with cotton/synthetic fabric, Medium hard, Black	-40 to +275°F	7,500 psi*	Resistant to hydrocarbons, mild acids, mild caustics and water
1056		Low-friction nitrile with cotton/synthetic fabric, Medium hard, Gray	-10 to +250°F	20,000 psi*	Resistant to hydrocarbons
1064		Pure PTFE with aramid fabric reinforcement, FDA Compliant, Medium hard, Brown	-50 to +500°F	15,000 psi*	Resistant to most fluids, chemically inert, complies with FDA requirements (CFR 177.1550 and CFR 177.1632)
1066		Neoprene® with cotton fabric, Hard, Black	-10 to +250°F	15,000 psi*	General service elastomer, anhydrous ammonia, water
1067,1068		Nitrile with cotton/synthetic fabric, Hard, Black	-10 to +250°F	15,000 psi*	Resistant to hydrocarbons, acids, abrasive fluids
1073		FKM with aramid/glass blend, Hard, Black	+10 to +425°F	15,000 psi*	Resistant to hydrocarbons, aromatic solvents, strong and mild acids
1077		Nitrile with cotton/synthetic fabric, FDA Compliant, Medium hard, Grayish white	-10 to +250°F	15,000 psi*	Resistant to mild acids, mild caustics, water, complies with FDA requirements (CFR 177.2600)
1081		EPDM with cotton/synthetic fabric, Hard, Black	-30 to +275°F	15,000 psi*	Good general service, water, steam, glycol and fire-resistant fluids (phosphate esters)
4501,4521		Carbon/Graphite filled PTFE, Hard, Gray black	-110 to +500°F	5,500 psi*	Resistant to hydrocarbons, strong acids, strong caustics, abrasive fluids
4509		Virgin Teflon®, Soft, White	-110 to +500°F	4,500 psi*	Resistant to most fluids, chemically inert
4516		Glass, Moly filled PTFE, Med hard, Light gray	-110 to +500°F	15,000 psi*	Resistant to most fluids, chemically inert

\* May require an engineered assembly with special fit adapters to meet these elevated pressure ranges

Geometry	Style	Description	Temp.	Max PSI	Compatibility
ASF	1601	Low friction nitrile with cotton/synthetic fabric, Medium hard, Gray	-40 to +250°F	10,000 psi*	Resistant to hydrocarbons, liquids and gasses
	1605	Pure PTFE with aramid fabric reinforcement, FDA Compliant, Hard, Brown	-50 to +500°F	15,000 psi*	Resistant to most fluids, chemically inert, complies with FDA Requirements (CFR 177.1550 and CFR 177.1632)
	1606	FEPM with aramid fabric, Hard, Black	+10 to +450°F	15,000 psi*	Resistant to hydrocarbons, H <sub>2</sub> S, acids, steam, high-temperatures and pressures
	1608	FKM with aramid/glass blend reinforcement, Hard, Black	+10 to +425°F	15,000 psi*	Resistant to hydrocarbons, aromatic solvents, strong and mild acids
	1609	Nitrile with cotton/synthetic fabric reinforcement, FDA Compliant, Medium hard, Grayish white	-10 to +250°F	5,000 psi*	Resistant to hydrocarbons, liquids and gasses, complies with FDA Requirements (CFR 177.2600)
	1610	EPDM with cotton/synthetic fabric reinforcement, Hard, Black	-30 to +275°F	10,000 psi*	Compatible with water and phosphate ester hydraulic fluids. Do not use with petroleum based hydrocarbon fluids.
	1615	Nitrile with cotton/synthetic fabric reinforcement, Hard, Black	-10 to +225°F	20,000 psi*	Resistant to hydrocarbon, liquids and gasses, and mild acids
	1629	HNBR with cotton/synthetic fabric reinforcement, Medium hard, Black	-40 to +275°F	7,500 psi*	Resistant to hydrocarbons, mild acids, mild caustics, water
	1633	Chloroprene (Neoprene®) with cotton fabric, Hard, Black	-10 to +250°F	10,000 psi*	General service elastomer, anhydrous ammonia, water
	1658	High-temperature HNBR with high-strength synthetic fabric, Hard, Gold	-10 to +300°F	40,000 psi*	Resistant to hydrocarbons, mild acids and H <sub>2</sub> S below 6%
	4554	Glass/Moly filled PTFE, Medium hard, Light gray	-30 to +500°F	15,000 psi*	Resistant to most fluids, chemically inert
	4555	Carbon, graphite PTFE, Hard, Grayish black	-110 to +500°F	5,500 psi*	Resistant to most fluids, except alkali metals or elemental fluorine
	4556	Glass filled PTFE, Hard, White	-110 to +500°F	5,500 psi*	Resistant to most fluids, except alkali metals or elemental fluorine
	4557	Virgin PTFE, Soft, White	-110 to +500°F	4,500 psi*	Resistant to most fluids, except alkali metals or elemental fluorine
	CV	6910	Nitrile with cotton fabric, Medium hard, Black	-10 to +250°F	3,500 psi*
6912		Homogenous nitrile 90 Duro Shore A - for low pressure, Soft, Black	-10 to +250°F	1,500 psi*	Resistant to hydrocarbons (liquids and gasses)
6918		FEPM with aramid/glass blend, Hard, Black	+10 to +450°F	7,500 psi*	Resistant to hydrocarbons, H <sub>2</sub> S, acids, alkalis and solvents
6925		FKM with aramid glass blend, Hard, Black	+10 to +425°F	7,500 psi*	Resistant to hydrocarbons, aromatic solvents, strong and mild acids, alkalis
6926		Modified nitrile on alternating aramid and synthetic fabric, Hard, Green black	-10 to +250°F	20,000 psi*	Resistant to hydrocarbons, water, mild acids, mild caustics, good for high-pressure
6933		Nitrile with cotton/synthetic fabric, Med Hard, Black	-10 to +250°F	10,000 psi*	Resistant to hydrocarbons, acids, abrasive fluids
6956		SBR with cotton fabric, Hard, Black	-10 to +250°F	8,000 psi*	Resistant to mild acids and bases
6958		High-temperature HNBR with high-strength synthetic fabric, Hard, Gold	-10 to +300°F	10,000 psi*	Resistant to hydrocarbons, water, mild acids and mild caustics
6959		SBR with cotton synthetic fabric, FDA Compliant, Hard, Black	-10 to +250°F	5,000 psi*	Resistant to mild acids and bases, complies with FDA Requirements (CFR 177.2600)
6960		Low friction nitrile with cotton and synthetic fabric, Medium hard, Gray	-10 to +250°F	7,500 psi*	Resistant to hydrocarbons, mild acids
6973		Pure PTFE and aramid/glass fabric, FDA Compliant, Hard, Brown	-50 to +450°F	6,000 psi*	Resistant to most fluids, chemically inert, complies with FDA Requirements (CFR 177.1550 and CFR 177.1632)
4524		Glass, Moly filled PTFE, Medium hard, Light gray	-110 to +500°F	5,500 psi*	Resistant to most fluids, chemically inert
4525		Virgin PTFE, Soft, White	-110 to +500°F	4,500 psi*	Resistant to most fluids, chemically inert
4531		Aromatic filled PTFE, Medium hard, Beige	-110 to +500°F	5,500 psi*	Immune to chemical attack
4533		Mineral filled PTFE, FDA Compliant, Medium hard, Off-white	-110 to +500°F	5,500 psi*	Immune to chemical attack, complies with FDA Requirements (CFR 177.1550 and CFR 177.1632)
J	0838	Nitrile (NBR) with synthetic fabric around rigid phenolic core, Medium hard, Black	-10 to +180°F	2,500 psi*	Resistant to hydrocarbons (liquids and gasses), water and mild acids
	0842	Nitrile (NBR) with synthetic fabric and homogeneous ID lip around rigid phenolic core, Soft, Black	-10 to +180°F	1,500 psi*	Resistant to hydrocarbons (liquids and gasses), water and mild acids
	0845	Low friction nitrile (NBR) with synthetic fabric around rigid phenolic core, Medium hard, Gray	-40 to +180°F	2,500 psi*	Resistant to hydrocarbons (liquid and gasses), water, sulfur and some acids
	0858	High-temperature HNBR with high-strength synthetic fabric around rigid phenolic core, Hard, Gold	-10 to +300°F	5,000 psi*	Resistant to hydrocarbons, acids, H <sub>2</sub> S below 6%, water and abrasive fluids

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**Geometry Style Description**

**Temp. Max PSI Compatibility**

0212	Aramid IT fibers with high-temperature lubricants	-320 to +500°F	5,500 psi*	Mild chemicals and caustics, hydrocarbons, aromatic and aliphatic solvents, salt solutions, slurries and abrasive services
0217	Aramid fibers in corners with PTFE seams	-320 to +500°F	4,000 psi*	Hydrocarbon resistant, acids, water
0220	Spun aramid impregnated with PTFE	-320 to +500°F	3,500 psi*	Mild chemicals and caustics, hydrocarbons, aromatic and aliphatic solvents, salt solutions, slurries and abrasive services
0232	Pure PTFE filaments impregnated with PTFE	-400 to +550°F	3,600 psi*	Process chemicals and concentrated acids, NSF approved
0238	Synthetic yarn impregnated with PTFE	0 to +500°F	1,500 psi*	Alkalies, mild acids, solvents, steam and oils
0241	Aramid fibers in corners with synthetic filament in seams	0 to +500°F	4,000 psi*	Petrochemical and industrial applications
0242	Aramid IT fibers constructed around an aluminum core for cross-section stabilization	-320 to +500°F	5,500 psi*	Mild chemicals, oils, mild caustics, hydrocarbons, aromatic and aliphatic solvents, salt solutions, abrasive services
0249	Carbon yarns treated with PTFE	-300 to +650°F	3,200 psi*	Paper and pulp process chemicals, hydrocarbons, hot water, acids
0255	Synthetic filament impregnated, non-lubricated, PTFE spacer	-30 to +350°F	3,000 psi*	Resistant to hydrocarbons, alcohol, glycol and water
0268	Spun aramid, lead foil rings with PTFE spacer	-10 to +300°F	5,000 psi*	Resistant to hydrocarbons, acids, water
0668	(100 SG) Abrasion resistant fibers with lubricants and special binders, Gold	0 to +400°F	3,000 psi*	Water, drilling fluids, produced fluids, seawater, brine, acids, alkalis and other aqueous media (ph 2-12)
0675	(400 HP) Blend of high-performance fibers with chemical resistant lubricants and special binders, Dark gray	0 to +500°F	3,000 psi*	Brine, acids, alkalis, certain solvents, seawater (ph 0-14)
0670	(500 FG) Blend of non-toxic fibers with lubricants, NSF approved for potable water, White	0 to +500°F	1,200 psi*	Used in food, potable water and pharmaceuticals (ph 0-14)
0671	(600 BG) Blend of abrasion resistant fibers with lubricants and special binders, Brownish gray	0 to +500°F	5,000 psi*	Used with drilling fluids, produced fluids, seawater, brine, acids, alkalis and aqueous media (ph 0-13)
0679	(799 RP) Blend of high-strength abrasion resistant fibers with lubricants and special binders, Yellow	0 to +250°F	15,000 psi*	Hydrocarbon resistant, seawater, brine, acids, alkalis, other aqueous media (ph 2-12)
0678	(800 HR) Blend of high-strength fibers, hydrocarbon resistant lubricants and special binders, Dark gray	0 to +500°F	3,000 psi*	Resistant to hydrocarbons (natural gas, crude oil, lubricating oils), seawater, brine, acids, alkalis and certain solvents (ph 0-14)
0669	(1000 LT) Blend of high-strength abrasion resistant fibers with low-temperature lubricants and special binders, Gray	-50 to +350°F	3,000 psi*	Soft packing resistant to hydrocarbons, drilling fluids, produced fluids, seawater, brine, acids, alkalis and other aqueous media (ph 2-12)
0676	(2000 ES) Blend of exfoliated graphite particles with high-temperature lubricants, Dark gray	0 to +700°F	3,000 psi*	Process chemicals, steam, petroleum fuels (ph 0-14)

\* May require an engineered assembly with special fit adapters to meet these elevated pressure ranges

**LEGEND**

Abbreviation	Common Name	Chemical Name	Tradename
CR	Chloroprene	Polychloroprene	Neoprene®
EPDM	EPDM, EPR	Ethylene-Propylenediene Terpolymer	Royalene®, Nordel®
FEPM	TFEP	Tetrafluoroethylene-Propylene	Aflas®, HTCR™
FKM	Fluorocarbon	Hexafluoropropylene-Copolymer	Viton®, Fluorel®
HNBR, HSN	Hydrogenated Nitrile, Highly Saturated Nitrile	Hydrogenated Butadiene-Acrylonitrile	Zetpol®, Therban®
NBR	Nitrile	Butadiene-Acrylonitrile	Hycar®, Nipol®, Paracril®
PTFE	PTFE	Polytetrafluoroethylene	Teflon®
SBR	SBR	Styrene-Butadiene	

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