

**HIGH AND LOW PRESSURE** 



#### **HIGH PRESSURE POLYMERIC FITTINGS** ......page 24-35

High pressure polymeric fittings are useful in applications involving proteins, peptides, and other samples of biological origin where metal systems may interact with samples. Fittings made from PEEK-HT can also be used in UHPLC.



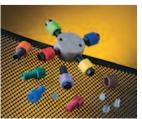
#### **ULTRA-HIGH PRESSURE STAINLESS FITTINGS** ......page 36-41

Our stainless steel fittings are typically compression fittings, in which a ferrule is compressed onto the tube as a nut is tightened. They offer the best reliability in high pressure situations.



#### NANOVOLUME® HPLC FITTINGS .. page 42-45

With bore sizes of 100 and 150 microns, (.004" -.006"), the minimal transfer volume contributed by Nanovolume® components makes them especially beneficial in applications with flow rates in the µl/ min range, when the transfer volume can be critical.



#### **LOW PRESSURE FITTINGS** ..... page 46-55

Low pressure fittings are ideally suited for flow injection analysis, low pressure liquid chromatography, and stream sampling devices. They may be safely used at pressures up to 500 psi and temperatures to 50°C.



#### MORE INFO

#### **Tools for fittings**

Ferrule removal kit103
Tweezer103
ValvTool102
Wrench103

FITTINGS

NUT NOT

INCLUDED



#### **SPECIFICATIONS**

For 1/4" hex-head nuts MATERIAL Polypropylene



#### **COLOR-IT FINGERTIGHT ADAPTERS**

- For high and low pressure
- Fit all hex-head PEEK and SS fittings for 1/16" tubing
- Available in six colors for easy solvent line identification

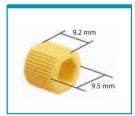
Color-It snap-on fingertight adapters are used with our 1/4" PEEK and stainless hex-head nuts, converting them into color-coded fingertight fittings in an instant. Available in six colors.

Color	Qty/pkg	Product No.
Blue	5	JR-55010-5
Yellow	5	JR-55011-5
Green	5	JR-55012-5
Black	5	JR-55013-5
White	5	JR-55014-5
Red	5	JR-55015-5
Assorted	12	JR-55016-12
	(2 each)	



#### **SPECIFICATIONS**

For 1/4" hex-head nuts MATERIAL Polypropylene



#### **COLOR-SLEEVE FINGERTIGHT ADAPTERS**

- For high and low pressure
- Designed for our PPS fittings for 1/16" tubing
- Available in twelve colors for easy solvent line identification

This adapter is useful for color coding different solvent lines, and turns VICI Jour PPS nuts into fingertight fittings in an instant.

Otrofolo Bundont No

Color		Qty/pkg	Product No.
Natural		5	JR-55080-5
6		10	JR-55080-10
	White	5	JR-55081-5
		10	JR-55081-10
	Dark grey	5	JR-55082-5
		10	JR-55082-10
	Black	5	JR-55083-5
		10	JR-55083-10
Lavender		5	JR-55084-5
		10	JR-55084-10
	Red	5	JR-55085-5
		10	JR-55085-10
	Yellow	5	JR-55086-5
		10	JR-55086-10

Color		Qty/pkg	Product No.
	Orange	5	JR-55087-5
		10	JR-55087-10
	Brown	5	JR-55088-5
		10	JR-55088-10
	Green	5	JR-55089-5
		10	JR-55089-10
	Blue	5	JR-55090-5
		10	JR-55090-10
	Purple	5	JR-55091-5
U		10	JR-55091-10
Assorted	All 12 colors	2 each	JR-5508X-24
	Blue, red, green, yellow, black, white	2 each	JR-5508X-12

Hex head nuts PEEK ..... 25, 27, 29 Stainless......37

> High pressure...25, 31 Low pressure ..... 47

# HIGH PRESSURE FITTINGS



HPLC AND UHPLC, POLYMERIC

Standard high pressure PEEK fittings are rated up to 350 bar (5000 psi) with fingertight nuts, well beyond the burst strength of most PEEK tubing. PEEK-HT™ fittings are rated at about 500 bar when finger-tightened; if they are tightened with a tool, 1,000 bar can be achieved. PEEK-HT also provides the benefit of longer life time; that is, the fittings can be tightened/loosened more often.

All our polymeric fittings for HPLC and UHPLC are manufactured from high quality inert polymers to exacting tolerances.

#### HIGH PRESSURE POLYMERIC FITTINGS INDEX

# ONE-PIECE FITTINGS PEEK hex-head Over 5,000 psi page 25 Up to 5,000 psi 25 PPS hex-head 25 PEEK fingertight Color-coded 26 Natural 26 PEEK no-twist one piece fittings 27 NUTS AND FERRULES PEEK ferrules, over 5,000 psi 28 Single ferrule connections 28 Double ferrule connections 29 1/4-28 connections 30

PEEK plugs
PEEK UNIONS Unions
PEEK TEES AND CROSSES Standard tees and crosses
PEEK ADAPTERS PEEK port and Luer adapters 35

**PLUGS AND CAPS** 

# The maximum holding pressure for any type of connections involving tubing and a ferrule varies considerably with the tubing material, the ferrule material, the clearance between tubing OD and ferrule ID, and the shape of the fitting detail.

# shape of the fitting detail. SEE ALSO ChromBox kit.........105 HPLC parts kit with PEEK and stainless fittings and tubing Fingertight adapters Color-It .........23 Color-Sleeve........23 Nanovolume® high pressure fittings ...42-45 PEEK starter kits ......104 Tools for fittings . 100-103



#### **SPECIFICATIONS**

TUBING OD / THREADS

1/32" 6-40 1/16" 10-32

MATERIAL

PEEK-HT

#### PRESSURE RATING

Fingertight, on stainless steel tubing:

1/32" 625 bar (9,000 psi)

1/16" 700 bar (10,000 psi)

#### PEEK one-piece hex-head fittings

UHPLC
 Biocompatible

- Made of special PEEK-HT<sup>™</sup> for better pressure resistance
- Handy tightening tool included
- One-piece no ferrule required

These fittings are machined from special PEEK material to reach a higher pressure rating than standard PEEK fittings.

Includes a tightening tool (page 103) for easy installation.

	Tubing OD	Thread	Hex size	Length	Product No.
(Package/10)	1/32"	6-40	3/16"	12.0 mm	JR-5525N-10
	1/16"	10-32	1/4"	17.0 mm	JR-5520N-10



10-32

#### **SPECIFICATIONS**

TUBING OD / THREADS

1/16" 10-32

MATERIAL

PEEK

**TOLERANCE** ±0.05 mm (.002")

±0.05 mm (.002

PRESSURE RATING

<350 bar (5000 psi) (Varies with tubing ID and material)

#### PEEK one-piece hex-head fittings

- Fingertight up to 350 bar (5000 psi) One-piece no ferrule required
  - Biocompatible
- Excellent chemical and mechanical properties
- For any 10-32 high pressure fitting

PEEK one-piece hex-head fittings are easy to use with the ValvTool or with the Color-It color-coded fingertight adapters. The 10-32 thread will fit virtually all

standard high pressure female connections, and will withstand pressures of up to 350 bar (5000 psi). Available in short and long versions.

JR-55110-5

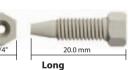
Product No.

(Package/5) Short JR-55100-5

Long



Short



#### PPS one-piece hex-head fittings

10-32

#### **SPECIFICATIONS**

**TUBING OD / THREADS** 1/16" 10-32

MATERIAL

Black PPS

(Polyphenylene sulfide)

TOLERANCE

±0.05 mm (.002")

PRESSURE RATING

<350 bar (5000 psi) (Varies with tubing ID and material)

- Economically-priced alternative to PEEK
- Excellent chemical and mechanical properties
- One-piece no ferrule required
- Slim design finger-tight with Color-Sleeve adapter

The VICI Jour PPS one-piece hex-head (fingertight with adapter) fitting offers excellent chemical and pressure resistance.

	Product No.
(Package/5)	JR-58000-5





#### MORE INFO

About PEEK ......113
About PPS ......113
Chemical resistance ...110



1/16" OD tubing for high pressure applications . . . . . 9-12 PEEK starter kit . . . . . 104





Color-Sleeve adapters for hexhead fittings . . . page 23





#### PEEK and PVDF one-piece fingertight fittings - color-coded

10-32

10-32

- PEEK: fingertight up to 350 bar (5000 psi) PVDF: fingertight to 180 bar (2600 psi)
- Excellent chemical and mechanical properties Biocompatible
- One-piece no ferrule required

Our PEEK fingertight fittings are available in six colors, for easy identification of tubing lines. They are rated to 350 bar (5000 psi) and can be used in virtually any type of 10-32 thread HPLC fitting detail on the market. PVDF fittings are chemically inert, and suitable for medium pressure applications. They will not constrict soft polymeric tubing as PEEK fingertight fittings sometimes do. Packages of 5.

	Material	Color	Product No.
(Pkg/5)	PEEK	Natural	JR-55020-5
	1	Black	JR-55021-5
		Red	JR-55022-5
	1	Yellow	JR-55023-5
-	400	Blue	JR-55024-5
		Green	JR-55025-5

	Material	Color	Product No.
(Pkg/5)	PVDF	Translucent white	JR-55020-PVDF-5 <b>NEW</b>
		0	
5/16			

22.0 mm

#### **SPECIFICATIONS**

TUBING OD / THREADS

1/16" 10-32

MATERIAL

PEEK TOLERANCE

±0.05 mm (.002")

PRESSURE RATING

Material bar PEEK <350 5000 PVDF <180 2600 (Varies with tubing ID and material)

#### **PEEK one-piece fingertight fittings**

- Two new fittings are made of reinforced glass fiber (GF) PEEK.
- Fingertight up to 350 bar (5000 psi)
- One-piece no ferrule required

12.1mm

• Biocompatible

Sold in packages of 5.

				<b>.</b>	Product No.
(Package/5)	Standard	Natural PEEK	12.0 mm	22.0 mm	JR-5502-5
	Short	Natural PEEK	12.0 mm	17.1 mm	JR-5504-5
	Long	Natural PEEK	12.0 mm	25.1 mm	JR-5507-5
	Narrow hex-head/ fingertight	Natural PEEK	1/4"	28.1 mm	JR-5508-5
	Standard	Reinforced GF PEEK	9.15 mm	20.8 mm	JR-5513-5 <b>NEW</b>
	Narrow hexhead/ fingertight	Reinforced GF PEEK	1/4"	28.1 mm	JR-5518-5 <b>NEW</b>

#### **SPECIFICATIONS**

TUBING OD / THREADS

1/16" 10-32

MATERIAL

PFFK

TOLERANCE ±0.05 mm (.002")

PRESSURE RATING

<350 bar (5000 psi) (Varies with tubing ID and material)



#### 🚺 TECH TIP

Coloration pigments are carefully chosen so as to contain no heavy metals or hazardous chemicals.



Color-It fingertight adapters may be used with 1/4" hex-head fittings, such as JR-5518, converting them into color-coded fingertight fittings..... page 23



About PEEK ......113 About PVDF.....113 Chemical resistance ...110

10-32



10-32

#### **SPECIFICATIONS**

**TUBING OD / THREADS** 1/16" 10-32

MATERIAL

PEEK-HT

TOLERANCE

±0.05 mm (.002")

**SPECIFICATIONS** 

TUBING OD / THREADS

Ferrule: PEEK

PRESSURE RATING

<350 bar (5000 psi)

10-32

PEEK

(Varies with tubing ID and

1/16"

MATERIAL Nut:

#### PRESSURE RATING

TighteningbarpsiFingertight<500</td>7250With tool<1000</td>14500(Varies with tubing ID and material)

#### PEEK-HT™ one-piece fittings NEW

When used as fingertight fittings, our PEEK-HT fittings hold pressures up to 500 bars (7250 psi). Pressures

up to 500 bars (7250 psi). Pressures up to 1000 bars (14,500 psi) can be accomplished with a tightening tool.



For tightening tool, use either a ValvTool (JR-800, page 102) or an open end wrench (JR-804, page 103.)

Sold in packages of 5.

	Product No.
(Package/5)	JR-55031-5



#### PEEK no-twist "one-piece" fittings

- Snap-in ferrule rotates freely
- Choice of ferrule materials
- Choice of fitting lengths

No-twist fittings offer the convenience of a one-piece fitting while solving a problem inherent to such designs. In other one-piece designs, the ferrule rotates against the fitting detail, creating particulates. The no twist design has a separate ferrule that snaps into the nut, so it's attached but still free to avoid rotation during tightening.

Since the ferrule is not machined onto the nut, it can be made from a different material. We offer several PEEK nuts, with ferrules of PEEK or one of the optional materials listed at left.

Sold in packages of 5.

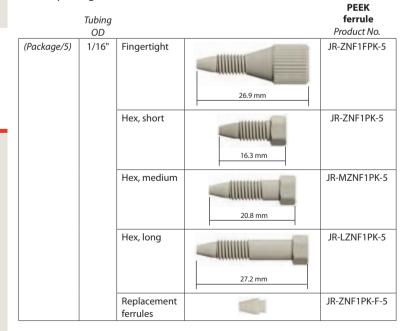


# material) OPTIONS

**OPTIONAL FERRULE MATERIALS** FEP, PFA, glass-filled PEEK, PCTFE, glass-filled PTFE, and PTFE.

Contact us for availability.

Some 1/32" versions are available. Call for details.









**PEEK ferrules** UHPLC

- Biocompatible 1/16" ferrule for ultra-high pressures
- Alternative to titanium ferrules in applications with titanium valves
- Excellent in combination with stainless nuts (see page 37)

	Product No.	
(Package/5)	JR-5010N-5	

#### **SPECIFICATIONS**

TUBING OD / THREADS

1/16" 10-32

MATERIAL

PEEK

PRESSURE RATING On SS tubing with SS nut:

650 bar (9400 psi)

#### **PEEK nuts with single ferrules**

- Reuseable nut, replaceable ferrule
- For 1/32", 1/16", and 1/8" tubing
- Suitable for pressures to 280 bar (4000 psi)

Fingertight nuts have a knurled surface designed to allow sufficient sealing force to be applied to the ferrule without wrenches. Hex style nuts allow wrench tightening; however, since they are polymeric, they can break, and are recommended for use only when space is limited and your fingers will not fit.



#### **SPECIFICATIONS**

MATERIAL PEEK

PRESSURE RATING

<280 bar (4000 psi) (Varies with tubing ID and

			Tubing OD	Thread			Product No.
(Pkg/5)	Single	ferrules	1/32"	mreaa			JR-ZF.5PK-5
			1/16"				ID 5002 5
			1/10				JR-5003-5
			1/8"				JR-ZF2PK-5
	Nuts	Fingertight	1/32"	6-40	6.4 mm (6.35 mm)	10.7 mm	JR-ZN.5FPK-5
		Fingertight	1/16"	10-32	10 mm	17.5 mm	JR-5570-5
		Hex-head	1/8"	5/16-24	9.5 mm	16 mm	JR-ZN2PK-5







#### **PEEK nuts with double ferrules**

10-32

#### **SPECIFICATIONS**

TUBING OD / THREADS 1/16" 10-32

MATERIAL

PEEK

#### PRESSURE RATING

<420 bar (6000 psi) (Varies with tubing ID and material)

• High pressure rating - up to 420 bar (6000 psi)

- Ideal for 1/16" PEEK tubing
- Fit any 10-32 fitting

These nuts are for use with VICI Jour double ferrules, which grip the tubing twice for added stability. The fingertight version may be hand-tightened for operation at up to 420 bar (6000 psi). The hex-head version can be used for connections that are difficult to reach, or are closely spaced. The fittings work in virtually any female 1/16" fitting.



		Tubing OD					Product No.
(Package/5)	Double ferrule	1/16"					JR-5004-5
	Nuts	1/16"	Hex-head	Short	1/4" 1	1.4 mm	JR-5511-5
				Long	1/4"	15.4 mm	JR-5510-5
			Fingertight		12.0 mm	17.8 mm	R-5580-5



#### Nut, ferrule, and bushing

1/4-28

- High pressure rating up to 490 bar (7000 psi) with 1/16" tubing
- For 1/4-28 connections
- Available for 1/32" and 1/16" tubing

This combination of PPS nut, PEEK ferrule, and stainless steel bushing allows a high pressure connection in a 1/4-28 flat-bottomed fitting detail.

Sold in packages of 10.

Order nuts and bushing/ferrules separately.



#### **SPECIFICATIONS**

TUBING OD / THREADS

1/32" 1/4-28 1/16" 1/4-28

MATERIALS

Nut PPS Ferrule PEEK Bushing SS

PRESSURE RATING

material)

 OD
 bar
 psi

 1/32"
 175
 2500

 1/16"
 490
 7000

 (Varies with tubing ID and

		Tubing OD		Product No.
(Package/10)	PPS hex-head nut	1/32" or 1/16"		JR-55050-10
	Bushing and ferrule	1/32"	=4	JR-FPKBSS.5-10
		1/16"	=4	JR-FPKBSS1-10



1/4-28 PPS hex-head nuts are available with three different sealing designs for flangeless and flanged fittings . . . . . . . . . . . . 47





To make up high pressure connection with nut, ferrule, and bushing, first slide the nut on the tubing, then the bushing, and then the PEEK ferrule as shown in the product photo.



#### **SPECIFICATIONS**

MATERIAL

PEEK

PRESSURE RATING <350 bar (5000 psi) (Varies with tubing material)

#### **PEEK plugs and caps**

- For plugging ports and capping solvent linesAvailable in all common thread sizes

Sold individually.

	Threads		Product No.
Plugs	6-40	6.4 mm 15.5 mm	JR-ZP.5FPK
	10-32	12.0 mm 19.7 mm	JR-408
		9.5 mm 22.2 mm	JR-ZP1FPK
		6.4 mm 22.7 mm	JR-MZP1PK
		6.4 mm 29.0 mm	JR-LZP1PK
	1/4-28	7.7 mm 17.5 mm	JR-409
	M6	7.7 mm 17.5 mm	JR-410
Caps	6-40	6.4 mm 8.4 mm	JR-ZC.5FPK
	10-32	9.5 mm 10.4 mm	JR-ZC1PK
	1/4-28	9.5 mm 10.2 mm	JR-CCPK-1



**PEEK unions** 10-32

- Easy connection of transfer/solvent lines
- Low dead volume
- Completely inert and biocompatible

VICI Jour PEEK unions are usable with most common organic and inorganic HPLC solvents without risking corrosion, metal contamination, or protein degradation that might occur with stainless steel. Small diameter bores are used to ensure low dead volume connections. These unions have the standardized Valco fitting details with smooth transition of the taper into the threaded part. Connections to these PEEK unions can be made with any 10-32 fitting that uses polymeric ferrules. PEEK unions are available in body-only versions as well as complete with our PEEK one-piece fingertight fittings ready to connect to any 1/16" OD tubing.

	Bore (mm)		Qty/pkg	Product No.
Union with fittings	0.25		1	JR-1061
	0.50		1	JR-1066
	0.75	21.8 mm	1	JR-1067
Body only	0.25		1	JR-061
	0.50	the same of the same of	1	JR-066
	0.75	21.8 mm	1	JR-067
Replacement fittings				
PEEK 1/16" one-piece fir fittings, 10-32, black	ngertight		5	JR-55021-5

#### **SPECIFICATIONS**

**TUBING OD** 1/16"

MATERIAL

**PEEK** PRESSURE RATING

<350 bar (5000 psi) (Varies with tubing ID and material)

#### PEEK bulkhead unions

- Designed for panel mounting
- Easy connection of transfer/solvent lines
- Low dead volume
- Completely inert and biocompatible

Bulkhead unions are designed to be mounted through an instrument panel or on a bracket. Typically the mounting nut goes inside the instrument, so that the long threaded portion will be out of sight.

Bulkhead unions require a minimum 10 mm panel hole, 9 mm maximum thickness.

Includes fittings.

#### Bore (mm) Qty/pkg Product No. Bulkhead union 0.25 JR-ZBU1CFPK with fittings 0.50 JR-ZBU1MFPK 0.75 JR-ZBU1FPK 22.1 mm **Replacement fittings** PEEK 1/16" one-piece fingertight JR-55021-5 fittings, 10-32, black JAM-Nut replacement mounting JR-CBN nut for bulkhead fittings

#### **SPECIFICATIONS**

TUBING OD / THREADS 1/16" 10-32

MATERIAL

PEEK

10-32

PRESSURE RATING

<350 bar (5000 psi) (Varies with tubing ID and material)



Low pressure PEEK 1/4-28 unions.....50 PEEK one-piece fingertight fittings 25-27



#### **SPECIFICATIONS**

#### TUBING OD / THREADS

1/32" 6-40 1/16" 10-32 1/8" 5/16-24

#### MATERIAL

PEEK

#### PRESSURE RATING

<350 bar (5000 psi) (Varies with tubing ID and material)

#### **PEEK reducing unions**

- Connects 1/16" to 1/32" tubing, or 1/8" to 1/16" tubing
- Easy connection of transfer/solvent lines
- Completely inert and biocompatible

VICI Jour PEEK reducing unions are usable with most common organic and inorganic HPLC solvents without risking corrosion, metal contamination, or protein degradation that might occur with stainless steel. These reducing unions have the standardized Valco fitting details with smooth transition of the taper into the threaded part.

Includes fittings.

Tub	ing OD	Bore (mm)		Qty/pkg	Product No.
1/16" to	1/32"	0.25		1	JR-ZRU1.5FPK
1/8" to	1/16"	0.75	27.6 mm	1	JR-ZRU21FPK
PEEK re	eplacemen	nt fittings			
For 1/1	6" to 1/32"	reducing uni	ions		
1/16"	One-pied black	ce fitting,		5	JR-55021-5
1/32"	Fingertig	ght nut	10.7 mm	1	JR-ZN.5FPK
1/32"	Ferrule			1	JR-ZF.5PK
For 1/8	"to 1/16" r	educing unio	ns		
1/8"	Hex-head	d PEEK nut	16 mm	5	JR-ZN2PK-5
1/8"	PEEK ferr	rule		5	JR-ZF2PK-5
1/16"	One-pied black	ce fitting,		5	JR-55021-5





#### **PEEK tees and crosses**

10-32

**SPECIFICATIONS** 

TUBING OD / THREADS

10-32

1/16"

PEEK **BODY SIZE** 

MATERIAL

25.0 mm OD

material)

12.0 mm thick PRESSURE RATING

<350 bar (5000 psi)

(Varies with tubing ID and

- Easy connection of transfer/solvent lines
- Low dead volume
- Completely inert and biocompatible

The 100% PEEK flowpath makes VICI Jour PEEK tees and crosses usable with most common organic and inorganic HPLC solvents without the risk of corrosion, metal contamination, or protein degradation that might occur with stainless steel.

Small diameter through-holes are used to ensure low dead volume connections. These unions have the standardized Valco fitting details with smooth transition of the taper into the threaded part. Connections to these PEEK tees and crosses can be made with any 10-32 fitting that uses polymeric ferrules.

PEEK tees and crosses are available in body-only versions as well as complete with our PEEK one-piece fingertight fittings ready to connect to any 1/16" OD tubing.

	Bore (mm)	Qty/pkg	With fittings  Product No.	<b>Body only</b> Product No.	
Tee	0.25	1	JR-1030	JR-2030	
INCI	0.50	1	JR-1032	JR-2032	(0)
E TO	0.75	1	JR-1033	JR-2033	
Cross	0.25	1	JR-1040	JR-1040 JR-2040	
WICH	0.50	1	JR-1042	JR-2042	0
	0.75	1	JR-1043	JR-2043	
Replacement fittings					
PEEK 1/16" one-piece fing fittings, 10-32, black	gertight	5	JR-55021-5	0	

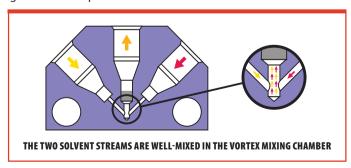
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#### Biocompatible mixing tee

- High pressure gradient mixing
- Post column reactions
- Completely biocompatible
- Built-in protein-friendly titanium filter, 10 µm

A unique, more thorough mixing results from the turbulence generated by the introduction angle of the solvents as well as by the flow through our titanium filter element. The biocompatible tee can be used for high pressure gradient mixing as well as for post column reactions.





#### **SPECIFICATIONS**

SEE ALSO

Low pressure 1/4-28
tees and crosses ..... 52
Low pressure 1/4-28
mixing tees ...... 53

TUBING OD / THREADS

1/16" 10-32

MATERIAL

PEEK

10-32

PRESSURE RATING

<350 bar (5000 psi) (Varies with tubing ID and material)



#### **SPECIFICATIONS**

#### MATERIAL

PEEK

#### BORE

0.40 mm

#### PRESSURE RATING

<70 bar (1000 psi) M6 1/4-28 < 70 bar (1000 psi) Luer <35 bar (500 psi) (Varies with tubing ID and material)

#### **PEEK adapters**

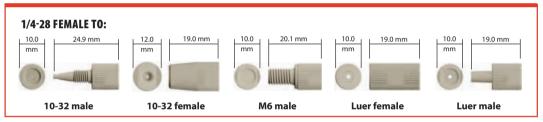
- Connect various combinations of thread types, male and female
- Includes male and female Luer adapters
- Low dead volume
- For any 10-32 high pressure fitting

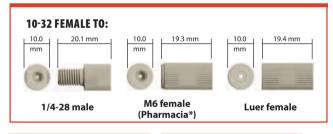
We offer male and female Luer adapters as well as adapters to connect standard LC fittings to standard LC ports. The 100% PEEK flowpath makes VICI Jour PEEK adapters usable with most common organic and inorganic HPLC solvents without risking corrosion, metal contamination, or protein degradation that might occur with stainless steel.

Sold individually.

	Product No.
10-32 male	JR-0612
10-32 female	JR-062
M6 male	JR-0622
Luer female	JR-0625
Luer male	JR-0626
1/4-28 male	JR-0617
M6 female	JR-5595
(Pharmacia*)	
Luer female	JR-0623
	10-32 female M6 male Luer female Luer male 1/4-28 male M6 female (Pharmacia*)

	Product No.
1.3 mm barbed	JR-0691 <b>NEW</b>
10-32 male	JR-0611
10-32 male	JR-5505
1/4-28	JR-CFLAPK
10-32	JR-ZUFLPK
1/4-28	JR-CMLAPK
	10-32 male 10-32 male 1/4-28 10-32

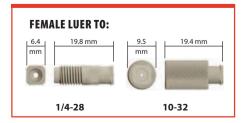














<sup>\*</sup> Pharmacia is a division of GE Healthcare.

# ULTRA-HIGH PRESSURE FITTINGS



STAINLESS STEEL

Our stainless steel fittings are typically compression fittings, in which a ferrule is compressed onto the tube as a nut is tightened. They offer the best reliability in high and ultra-high pressure situations.

#### **ULTRA-HIGH PRESSURE STAINLESS FITTINGS INDEX**

NUTS	PLUGS AND CAPS
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1/32", 1/16", and 1/8" tubing, in several lengths.	TEES AND CROSSES Tees
Rheodyne® compatible nuts 37	Crosses
These nuts are sized for 1/16" tubing, and come in three lengths.	UNIONS AND REDUCING UNIONS Unions40
FERRULES	Reducing unions Imperial40
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Rheodyne compatible 38	



#### **I** DISCLAIMER

The maximum holding pressure for any type of connections involving tubing and a ferrule varies considerably with the tubing material, the ferrule material, the clearance between tubing OD and ferrule ID, and the shape of the fitting detail.



#### MORE INFO

ChromBox kit105
HPLC parts kit with
PEEK and stainless
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#### **SPECIFICATIONS**

TUBING OD / THREADS

1/32" 6-40 1/16" 10-32 1/8" 5/16-24

MATERIAL

Type 303 SS PRESSURE RATING

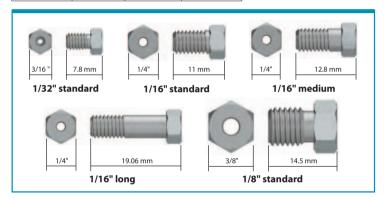
With premium SS tubing

and ZF1S6 ferrule: 1375 bar (20,000 psi) Valco® stainless nuts UHPLC

- Excellent fit to Valco fitting details
- Different lengths available
- For 1/32", 1/16", and 1/8" OD tubing

These nuts are for use with all standard Valco internal fittings and most valves. They may be used with fittings from other manufacturers as well. The medium and long types are ideal for metal Valco and Cheminert valves with more than 8 ports, or where the fitting head may be otherwise inaccessible.

	Tubing OD	Length	Product No.
(Package/5)	1/32"	Standard	JR-ZN.5-5
	1/16"	Standard	JR-ZN1-5
		Medium	JR-MZN1-5
		Long	JR-LZN1-5
	1/8"	Standard	JR-ZN2-5



#### Rheodyne® compatible stainless nuts

**UHPLC** 

**SPECIFICATIONS** 

**TUBING OD / THREADS** 1/16" 10-32

MATERIAL

Type 316 SS

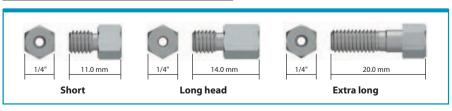
#### PRESSURE RATING

<500 bar (7,250 psi) (Varies with tubing ID and material)

- Excellent fit to Rheodyne fitting details
- Different lengths available
- For 1/16" OD tubing

These nuts are for use with metal Rheodyne valves. Three different length nuts are available, in order to accommodate any possible connecting situation. The standard nut is suitable for easily accessible connections (couplers, detectors, columns, etc.) For very tight and difficult to reach areas, we recommend the long and extra long nut.

	Tubing OD	Length	Product No.
(Package/5)	1/16"	Short	JR-56-5
		Long head	JR-57-5
		Extra long	JR-58-5





Using nuts with different lengths will create more space, for better wrench access.



About stainless steel..114





#### Valco® stainless ferrules

#### **UHPLC**

- Excellent fit to Valco fitting details
- For 1/32", 1/16", and 1/8" OD tubing

These ferrules are for use with all standard Valco internal fittings and most valves, and with those of most other manufacturers as well. Valco metal ferrules cut a ring near the end of the tube, preventing tube release at high pressures without significantly deforming and restricting the tube interior. (However, if the hardness of the tubing is equal to or greater than that of the ferrule, deformation of the tube rather than a cut ring is likely.)

	Tubing OD	Product No.
(Package/5)	1/32"	JR-ZF.5S6-5
	1/16"	JR-ZF1S6-5
	1/8"	JR-ZF2S6-5

#### **SPECIFICATIONS**

#### **TUBING OD**

For 1/32", 1/16", and 1/8" OD tubing

#### MATERIAL

Type 316 SS

#### PRESSURE RATING

1375 bar (20,000 psi) (Varies with tubing ID and material)

#### Rheodyne® compatible stainless ferrules

- Excellent fit to Rheodyne fitting details
- For 1/16" OD tubing
- For use with metal Rheodyne valves.

	Tubing OD		Product No.
(Package/5)	1/16"	Standard ferrule	JR-59-5
		2-step Rheodyne- type ferrule	JR-60-5

#### **SPECIFICATIONS**

#### TUBING OD

For 1/16" OD tubing

#### MATERIAL

Type 316 SS

#### PRESSURE RATING

<500 bar (7,250 psi) (Varies with tubing ID and material)

#### Stainless steel plugs

#### **UHPLC**

Use a plug to close off an unused port in a valve, manifold, or HPLC column. The standard stainless plug consists of a zero volume nut with a ferrule made up on a piece of solid rod.

	Tubing OD	Product No.	
ld	1/32"	JR-ZP.5	

(Sold	1/32"	JR-ZP.5
individually)	1/16"	JR-ZP1
	1/8"	JR-ZP2

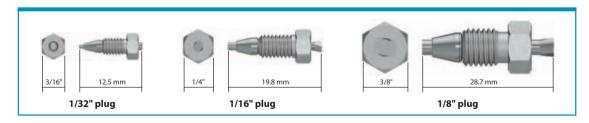
#### **SPECIFICATIONS**

#### TUBING OD / THREADS

1/32" 6-40 1/16" 10-32 1/8" 5/16-24

#### MATERIAL

1/32" Type 303 SS 1/16" Type 316 SS Type 303 SS 1/8"





UHPLC PEEK ferrules . . . 28 Open end wrench ....103 Stainless steel starter kit.....104 ValvTool for tightening hex-head fittings ...102



#### **SPECIFICATIONS**

TUBING OD / THREADS

1/32" 6-40 1/16" 10-32 1/8" 5/16-24

MATERIAL Type 303 SS

#### Stainless steel caps

**UHPLC** 

Use a cap to close off a tube with a ferrule and internal nut already made up. A cap is essentially a piece of hex stock with a zero volume fitting detail machined into it, but with no through-hole.

	Tubing OD	Product No.
(Sold	1/32"	JR-ZC.5
individually)	1/16"	JR-ZC1
	1/8"	JR-ZC2



#### **SPECIFICATIONS**

#### **TUBING OD**

For 1/16" OD tubing **BODY DIMENSIONS** 

23.4 mm OD x 12.7 mm thick

#### MATERIAL

Type 316 SS Body Type 303 SS Nuts Ferrules Type 316 SS

PRESSURE RATING

1375 bar (20,000 psi) (Varies with tubing ID and material)

#### **TEES AND CROSSES**

- Easy connection of solvent lines
- Low dead volume
- For 1/16" OD tubing

VICI stainless steel tees and crosses are for joining solvent lines. They are precision machined with a focus on the concentricity of the bore as well as on the finish of the surfaces to create leak-free connections.

These tees and crosses have internal threads, which we recommend for most applications. Internal threads make stronger connections and internal fitting details provide the lowest dead volume for high performance instrumentation.

#### Stainless tees **UHPLC**

VICI stainless steel tees join three 1/16" solvent lines.

Three nuts and ferrules are included with each tee.

	Bore (mm)	Qty/pkg	Product No.
1/16" tee	1/16" tee 0.25		JR-ZT1C
0.50		1	JR-ZT1M
	0.75		JR-ZT1
Replacement nut		5	JR-ZN1-5
Replacement	Replacement ferrule		JR-ZF1S6-5



#### **Stainless crosses**

**UHPLC** 

VICI stainless steel crosses join four 1/16" solvent lines.

Four nuts and ferrules are included with each tee.

Bore (mm)		Qty/pkg	Product No.
1/16" cross 0.25		1	JR-ZX1C
0.50		1	JR-ZX1M
	0.75	1	JR-ZX1
Replacement nut		5	JR-ZN1-5
Replacement ferrule		5	JR-ZF1S6-5





#### UNIONS AND REDUCING UNIONS

- Easy connection of solvent lines
- Low dead volume

VICI stainless steel unions and reducing unions are precision machined with a focus on the concentricity of the bore as well as on the finish of the surfaces to give an absolute leak-free connection.

These unions have internal threads, which we recommend for most applications. Internal threads make stronger connections and internal fitting details provide the lowest dead volume for high performance instrumentation.

#### Stainless unions

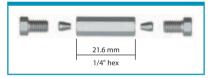
**UHPLC** 

- Choice of four bore sizes
- For 1/16" OD tubing

VICI stainless steel unions join two pieces of 1/16" OD metal tubing.

Two nuts and ferrules ship with each union.

	Bore (mm)	Qty/pkg	Product No.
1/16" union	0.15	1	JR-ZU1XCS6
	0.25	1	JR-ZU1CS6
	0.50	1	JR-ZU1MS6
	0.75	1	JR-ZU1S6
Replacement	nut	5	JR-ZN1-5
Replacement	ferrule	5	JR-ZF1S6-5



#### **SPECIFICATIONS**

#### **TUBING OD**

For 1/16" OD tubing

#### MATERIAL

Body Type 316 SS Nuts Type 303 SS Ferrules Type 316 SS

#### PRESSURE RATING

1375 bar (20,000 psi) (Varies with tubing ID and material)

#### Stainless reducing unions

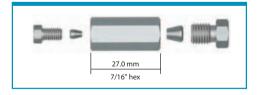
#### IMPERIAL

#### **UHPLC**

These reducing unions join 1/16" OD to 1/8" OD tubing.

Two nuts and ferrules ship with each union.

	Size	Qty/pkg	Product No.
Reducing union	1/8" to 1/16"	1	JR-ZRU21
Replacement nut	1/8"	5	JR-ZN2-5
	1/16"	5	JR-ZN1-5
Replacement ferrule	1/8"	5	JR-ZF2S6-5
	1/16"	5	JR-ZF1S6-5



#### **SPECIFICATIONS**

#### TUBING OD

For joining 1/8" to 1/16" OD tubing

#### MATERIAL

Body Type 316 SS Nuts Type 303 SS Ferrules Type 316 SS PRESSURE RATING 1375 bar (20,000 psi) (Varies with tubing ID and material)



Nanovolume® high pressure fittings ..42-45 Stainless starter kit ...104 HPLC parts kit with stainless fittings and tubing ChromBox kit......105 HPLC parts kit with PEEK and stainless fit-

tings and tubing



#### **SPECIFICATIONS**

#### TUBE REDUCING OD

1/32" to 1.0 mm 1/16" to 2.0 mm 1/8" to 3.0 mm

#### MATERIAL

Type 303 SS Body Type 303 SS Nuts Ferrules Type 316 SS

#### PRESSURE RATING

1375 bar (20,000 psi) (Varies with tubing ID and material)

#### Stainless reducing unions

**IMPERIAL TO METRIC** 

**UHPLC** 

- Ultra-high pressure
- For 1 mm, 2 mm, and 3 mm OD tubing



With these reducing unions, metric tubing can be connected to imperial fittings, valves, and chromatographic systems. The unions are manufactured from Type 303 stainless steel.

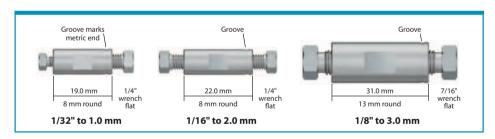
For easy identification, the metric end is marked by a groove.

Two nuts and ferrules ship with each reducing union.

	Tubing OD	Bore (mm)	Threads	Qty/pkg	Product No.
Reducing union	1/32" to 1.0 mm	0.25	6-40 to 10-32	1	JR-096
	1/16" to 2.0 mm	0.75	10-32	1	JR-082
	1/8" to 3.0 mm	0.75	5/16-24	1	JR-086

	Tubing OD	Threads	Qty/pkg	Product No.
Replacement nut	1/32"	6-40	5	JR-ZN.5-5
	1/16"	10-32	5	JR-ZN1-5
	1/8"	5/16-24	5	JR-ZN2-5
	for 1.0 mm	10-32	5	JR-ZN1-5
	for 2.0 mm	10-32	5	JR-80-5
	for 3.0 mm	5/16-24	5	JR-ZN2-5

	Tubing OD	Qty/pkg	Product No.
Replacement	1/32"	5	JR-ZF.5S6-5
ferrule	1/16"	5	JR-ZF1S6-5
	1/8"	5	JR-ZF2S6-5
	1.0 mm	5	JR-097-5
	2.0 mm	5	JR-083-5
	3.0 mm	5	JR-087-5





Wrench Reducing

1/4" 1/32" to 1.0 mm JR-096 1/4" 1/16" to 2.0 mm JR-082 7/16" 1/8" to 3.0 mm JR-086

# NANOVOLUME® FITTINGS



HIGH PRESSURE FITTINGS • FOR 360 MICRON AND 1/32" TUBING

VICI Nanovolume® fittings generally have bore sizes of 100-150  $\mu$ m (.004" - .006"), ranging down to 50  $\mu$ m (.002"). The minimal transfer volume contributed by Nanovolume® components makes them especially beneficial in applications with flow rates in the  $\mu$ l/min range, when the transfer volume can be critical.

#### HIGH PRESSURE NANOVOLUME® FITTINGS INDEX

#### 1/32" NANOVOLUME® FITTINGS

1/32" fittings, with 100 or 150 µm bore, are ideal for high resolution capillary chromatography. Rated at 5,000 psi with fingertight nuts, they will remain leak-tight well beyond the burst strength of most PEEK tubing. These fittings are machined from high quality inert polymers to the same exacting tolerances as our popular Valco zero dead volume fittings, and the taper angle and detail design conform to the industry standard established by the Valco line.

#### **360 MICRON NANOVOLUME® FITTINGS**

For PEEK or FS tubing, <10K psi..... 44

For fused silica tubing, 10K psi..... 45

#### MORE INFO

360 µm OD capillaries
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Stainless . . . . . 19
1/32" OD capillaries
Stainless . . . . . . 19-20



The maximum holding pressure for any type of connections involving tubing and a ferrule varies considerably with the tubing material, the ferrule material, the clearance between tubing OD and ferrule ID, and the shape of the fitting detail.





#### **NANOVOLUME FITTINGS FOR 1/32" TUBING**

- 100 and 150 µm bores available
- Nuts, ferrules, and unions
- For PEEK tubing

VICI Nanovolume® fittings are designed for capillary LC, used in HTS techniques, proteomics, genomics, and other newer developments in industrial research requiring small sample size for reduction of analysis time.

VICI Nanovolume connectors include our one-piece fingertight fittings for 1/32" OD tubing, featuring our patented\* collapsible ferrule. PEEK ferrules for use with our external nuts also feature the collapsible, grooved design. To avoid potential confusion. all fittings utilizing the Cheminert collapsible ferrule are made of black PEEK; fittings with a standard Valco ZDV fitting detail are natural PEEK.

\*U.S. patent no. 6,575,501.

#### Nanovolume® fittings

**FOR 1/32" TUBING** 

The internal nut includes a collapsible ferrule as an integral part of the fitting; the external nut must be used with the separate ferrule listed below.

#### Tubing OD Product No. One-piece nut/ferrule JR-C-NNFFPK 1/32" JR-C-EN.5FPKB 1/32" External nut JR-C-EN1FPKB 1/16" JR-ZGF.5PK Ferrule, collapsible 1/32" 1/16" JR-ZGF1PK M

Bore size:		100 micron	150 micron
	Tubing OD	Product No.	Product No.
Union (external to internal)	1/32"	JR-C-NEU.5XFPK	JR-C-NEU.5FPK
Reducing union	1/16" to 1/32"	_	JR-C-NERU1FPK

0					
1/4"	18.4 mm	7.6 mm	9.5 mm		
N	ut/ferrule	1/32" external nut	1/16" external nut	1/32" union	1/16" to 1/32" reducing union

#### PEEK PRESSURE RATING

**SPECIFICATIONS** 

TUBING OD / THREADS

For 1/32" OD PEEK

Nut/ferrule

External nut 1/32"

1/16"

MATERIAL

<350 bar (5,000 psi) (Varies with tubing ID and material)

8-36

10-32

**TOLERANCES** 

±0.05mm (.002")

#### Liners for 1/32" connectors

#### FOR USE WITH FUSED SILICA TUBING



360 µm Nanovolume® fittings ......42-45



 $50 \, \mu m = .002$ " 100 μm = .004" 150 μm = .006"

0.25 mm = .010"

 $0.50 \, \text{mm} = .020$ " 0.75 mm = .030" Use these natural PEEK liners to adapt 1/32" connectors to the most common sizes of fused silica tubing.

The 27 mm liners are for internal nuts with collapsible ferrules (JR-C-NNFFPK or JR-C-NNFLFPK). 10 mm liners are for use with external nuts (JR-C-EN.5FPKB).

Sold in packages of 5.

	For tubing OD (Package/5)	<b>125 - 175 μm</b> <i>Prod No</i>	<b>175 - 225 μm</b> <i>Prod No</i>	<b>225 - 275 μm</b> <i>Prod No</i>	<b>275 - 325 μm</b> <i>Prod No</i>	<b>325 - 375 μm</b> <i>Prod No</i>
27 mm liners	•	JR-C-NL.15L-5	JR-C-NL.20L-5	JR-C-NL.25L-5	JR-C-NL.30L-5	JR-C-NL.35L-5
10 mm liners		JR-C-NL.15S-5	JR-C-NL.20S-5	JR-C-NL.25S-5	JR-C-NL.30S-5	JR-C-NL.35S-5



#### HIGH PRESSURE FITTINGS • NANOVOLUME

#### NANOVOLUME FITTINGS FOR 360 MICRON TUBING

- For direct connection of 360 µm tubing
- Work with metal, fused silica, or PEEK
- Up to 20,000 psi with metal tubing
- Snap-in rotating ferrule for "one-piece" fitting with no tubing twist
- Eliminate use of troublesome liners

Our high pressure fittings permit direct connection of 360 micron OD fused silica, PEEK, stainless, or electroformed nickel tubing without the use of liners. The ferrule snaps into the nut so that the fitting is "one-piece", but the ferrule remains free to rotate as the nut is tightened so that the tube doesn't twist. Because of the compact size and fine 2-56 threads, a leak-free connection that seals at pressures in excess of 20,000 psi can be easily formed with the available manual tool.

VICI Nanovolume<sup>®</sup> 360 µm fittings are dedicated for use with either fused silica, metal, or PEEK tubing; components cannot be mixed or used with a different tubing material.

Tees and crosses offer a choice of three bore sizes, and feature a "quick-mount" base with adhesive backing to make sure that the fitting is stable and fragile tubing doesn't get broken. There is also a quick-mount PEEK union.



# For PEEK or fused silica tubing — up to 10,000 psi

FOR 360 µm TUBING

These fittings are constructed from premium grade natural PEEK material. They are intended for use with PEEK or fused silica tubing at pressures up to 10,000 psi, or the maximum pressure for which the tubing is rated, whichever is lower. Quick-mount versions have integral base with double stick tape to secure fittings to a surface.

		Product No.
Nut/ferrule	The state of the s	JR-C360NFPK
Сар	11	JR-C360CPK
Plug	Time to the same of the same o	JR-C360PPK
Tightening tool		JR-C360ET

Bore size:	50 micron	100 micron	150 micron
	Product No.	Product No.	Product No.
Union	JR-C360UPK2	JR-C360UPK4	JR-C360UPK6
Reducing union, 1/16" to 360 μm	_	_	JR-C360RU1PK6
Union, quick mount	JR-C360QUPK2	JR-C360QUPK4	JR-C360QUPK6
Tee, quick mount	JR-C360QTPK2	JR-C360QTPK4	JR-C360QTPK6
Cross, quick mount	JR-C360QXPK2	JR-C360QXPK4	JR-C360QXPK6



#### **SPECIFICATIONS**

TUBING OD / THREADS
For PEEK or FS tubing

360 μm 2-56

PFFK

PRESSURE RATING

<689.5 bar (10,000 psi) (Varies with tubing ID and material)



**TECH TIP** 

360 micron fittings are dedicated for use with either fused silica, metal, or PEEK tubing. Components cannot be mixed or used with a different tubing material.

TECH TIP

Grooves on the fitting body indicate the bore



Grooves indicate bore size
1 groove: 50 μm
2 grooves: 100 μm
no grooves: 150 μm



# For fused silica tubing — 10,000 psi and above

#### FOR 360 µm TUBING

#### **SPECIFICATIONS**

#### TUBING OD / THREADS

For FS tubing 360 µm 2-56

#### MATERIALS

Body HPLC grade SS Nut HPLC grade SS Ferrule Gold-plated nickel

#### PRESSURE RATING

≥ 689.5 bar (10,000 psi) (Varies with tubing ID and material)

These fittings are constructed from HPLC grade stainless steel, with stainless steel nut and a special ferrule which is precision machined from electroformed nickel. For optimal sealing characteristics, the ferrule is gold plated.

	Product No.
Nut/ferrule	JR-C360NFFS
Сар	JR-C360CFS

Bore size:	50 micron	100 micron	150 micron
	Product No.	Product No.	Product No.
Union	JR-C360UFS2	JR-C360UFS4	JR-C360UFS6
Reducing union,1/32" to 360 μm	JR-C360RU.5FS2	JR-C360RU.5FS4	JR-C360RU.5FS6
Reducing union,1/16" to 360 μm	_	_	JR-C360RU1FS6



# For metal tubing — up to 20,000 psi

#### FOR 360 µm TUBING

#### **SPECIFICATIONS**

#### TUBING OD / THREADS

For metal tubing 360 µm 2-56

#### MATERIAL

HPLC grade SS

#### PRESSURE RATING

<1375 bar (20,000 psi) (Varies with tubing ID and material) Our highest pressure Nanovolume  $^{\circ}$  fittings are constructed of HPLC grade stainless steel, including stainless steel nut and ferrule. These fittings are optimized for use with stainless or electroformed nickel tubing.

		Product No.
Nut/ferrule		JR-C360NFS6
Cap	===	JR-C360C

Bore size:	<b>50 micron</b> <i>Product No.</i>	<b>100 micron</b> <i>Product No.</i>	<b>150 micron</b> <i>Product No.</i>
Union	JR-C360US62	JR-C360US64	JR-C360US66
Reducing union, 1/32" to 360 μm	JR-C360RU.5S62	JR-C360RU.5S64	JR-C360RU.5S66
Reducing union, 1/16" to 360 μm	_	_	JR-C360RU1S66



#### MORE INFO

360 µm OD capillaries
Fused silica . . . . . 18
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1/32" Nanovolume®
fittings . . . . . . 43

#### **CONVERSIONS**

50 μm = .002" 100 μm = .004" 150 μm = .006"

0.25 mm = .010"

0.50 mm = .020" 0.75 mm = .030"



**POLYMERIC** 

Our low pressure fittings are ideally suited for flow injection analysis, low pressure liquid chromatography, and stream sampling devices. They may be safely used at pressures up to 500 psi and temperatures to 50°C.

#### **LOW PRESSURE POLYMERIC FITTINGS INDEX**

NUTS, FERRULES, AND WASHERS	TEES, CROSSES, AND MANIFOLDS
FOR 1/4-28 FLAT-BOTTOM FITTING DETAILS	Tees
PPS hex head nuts	Biocompatible mixing tee 53
Flangeless	Crosses
Flanged 47	Manifolds with 5 and 9 ports 52
Flangeless ferrules Collapsible	PERISTALTIC TUBING ADAPTER SET 53 Connect soft tubing to PTFE and PTFE-like tubing with this biocompatible adapter set, which works with peristaltic tubing up to 4.50 mm OD.
fingertight nuts	<b>ADAPTERS, POLYPROPYLENE</b> 54 Includes male and female Luer to barbed, 10-32, and 1/4-28 male and female, and other combinations.
Union body, polyamide 49	PLUGS, POLYPROPYLENE
PEEK unions 50	10-32 and 1/4-2855
PEEK bulkhead unions	MICRO VALVES FOR LC AND GC 55 Simplify your liquid or gas handling application. The unique design of the fitting detail allows a leak-free seal with no potential for rotor damage from overtightening.

#### **FITTING DESIGNS**

VICI Jour offers two types of low pressure fittings for 1/4-28 flat-bottomed fitting details:

- Flangeless connections utilize several ferrule designs. The ferrule grips the tubing as the fitting is tightened, without significantly reducing the tubing ID.
- Flanged tube end fittings are retained on polymeric tubing by a flange formed around a polypropylene washer. The washer never comes in contact with the mobile phase.



#### **DISCLAIMER**

The maximum holding pressure for any type of connections involving tubing and a ferrule varies considerably with the tubing material the ferrule material, the clearance between tubing OD and ferrule ID, and the shape of the fitting detail.



#### **NUTS AND FERRULES**

- Economic alternative to PEEK
- Excellent chemical resistance

• For 1/16" or 1/8" OD tubing

oing 24.0 mm

Our PPS 1/4-28 fitting series offers excellent chemical and pressure resistance. Three different sealing options are available. PPS nuts are fingertight when used with Color-Sleeve adapters.

#### PPS hex-head nuts and collapsible ferrules (flangeless)

1/4-28

#### **SPECIFICATIONS**

TUBING OD / THREADS

1/16" 1/4-28 1/8" 1/4-28

Pressure rating:

 OD
 Bar
 Psi

 1/16"
 105
 1500

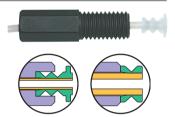
 1/8"
 35
 500

 (Varies with tubing ID and material)

\*Patent No. 6,575,501

\* Patent No. 6,575,501

		Material	Tubing OD		Product No.
(Package/10)	Nut for use with	PPS	1/16"		JR-55050-10
	collapsible ferrule		1/8"		JR-55051-10
	Collapsible ferrules	PCTFE	1/16"	100	JR-CFL-CB1KF
			1/8"	90	JR-CFL-CB2KF
		PEEK	1/16"	100	JR-CFL-CB1PK



#### PPS hex-head nuts and inverted ferrules (flangeless)

1/4-28

#### **SPECIFICATIONS**

TUBING OD / THREADS

1/32" 1/4-28 1/16" 1/4-28 1/8" 1/4-28

PRESSURE RATING

PRESSURE KATING						
OD	Bar	Psi				
1/16"	105	1500				
1/8"	35	500				
(Varies with tubing ID and						
materia	I)					

Ferrules are not included. Order separately.

			Material	Tubing OD	Product No.
(Package/10)	Nut for use	with	PPS	1/32"	JR-55073-10
	inverted fe	rrule		1/16"	JR-55070-10
				1/8"	JR-55071-10
				1.0 mm	JR-55073-10
				2.0 mm	JR-55072-10
	Inverted fe	rrules	ETFE	1/32"	JR-032-10
				1/16"	JR-041-10
				1/8"	JR-051-10
	(400)	A	1	1.0 mm	JR-031-10
		(13)		2.0 mm	JR-042-10
	3.0 mm	2.0 mm	1.0 mm	3.0 mm	JR-049-10



#### PPS hex-head nuts and washers (flanged connections)

1/4-28

Resistance

A/B

R

#### **SPECIFICATIONS**

**TUBING OD / THREADS** 1/16" 1/4-28

1/8" 1/4-28

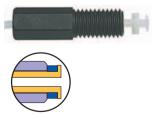
PRESSURE RATING

**OD Bar Psi** 1/16" 105 1500

1/8" 35 500 (Varies with tubing ID and material)

Washers are not included. Order separately.

		Material	Tubing OD	Product No.
(Package/10)	Nut for flange/	PP	1/16"	JR-55060-10
	washer connection		1/8"	JR-55061-10
	Washer	PP	1/16"	JR-201926-10
			1/8"	JR-201928-10
	Easy-Flange kit (see p	page 99)		JR-201540







About polymers . 113-114 Chemical resistance of PPS . . . . . . 110-112

#### CHEMICAL RESISTANCE OF PPS

 $A = suitable \qquad B = marginal \\ C = not recommended$ 

hemical class	Resistance	Chemi
cids, organic	Α	Bases
cids, inorganic	B/C*	Esters

Acids, inorganic B/C\* Esters
Aldehydes A Halogenated org.
Alcohols A Hydrocarbons
\* Concentrated halogen acids Ketones

emical class

#### Nuts and ferrules • Flangeless



LOW PRESSURE FITTINGS

#### **PEEK fingertight nuts (flangeless)**

- Compatible with all 1/4-28 flat-bottom ports
- Excellent chemical resistance
- For 1/16" or 1/8" OD tubing
- True fingertight no tools required





1/4-28

**SPECIFICATIONS** TUBING OD / THREADS 1/16"

1/4-28 1/8" 1/4-28 MATERIALS

Nut PEEK

material)

Ferrules ETFE PRESSURE RATING

OD Psi Bar 1/16" 1500 105 1/8" 35 500 (Varies with tubing ID and

PEEK flangeless nuts in combination with our inverted ferrule do not require a flanging tool. A handtightening procedure makes leak-free seals.

With this fitting system, the inert ETFE ferrule is the only part besides the tubing which comes into contact with the fluid stream – the nut is never in contact.

Ferrules are not included. Order separately.

		Material	Tubing OD	Product No.
(Package/10)	Nut for use with	PEEK	1/16"	JR-20124-10
	inverted ferrule		1/8"	JR-20116-10
	Inverted ferrules	ETFE	1/16"	JR-041-10
			1/8"	JR-051-10





#### **Color-coded fingertight nuts (flangeless)**

- Polyacetal economical alternative to PEEK
- Compatible with all 1/4-28 flat-bottom ports
- For 1/16" or 1/8" OD tubing
- True fingertight no tools required

18.8 mm



1/4-28

Polyacetal flangeless nuts in combination with the inverted ferrule do not require a flanging tool. A hand-tightening procedure makes leak-free seals. With this fitting system, the inert ETFE ferrule is the only part besides the tubing which comes into contact with the fluid stream – the nut is never in contact. Six colors are available.

1/0

				1/10	1/0
		Colo	r	Product No.	Product No.
(Package/10)	Nuts		Green	JR-040GR-10	JR-050GR-10
			Blue	JR-040BL-10	JR-050BL-10
			Yellow	JR-040YL-10	JR-050YL-10
		E PHIL	Red	JR-040RE-10	JR-050RE-10
			White	JR-040WH-10	JR-050WH-10
			Black	JR-040BK-10	JR-050BK-10
	1" long nuts		White	JR-040WL-10	JR-050WL-10
	Inverted ETFE	ferrules		JR-041-10	JR-051-10



#### **SPECIFICATIONS**

TUBING OD / THREADS

1/16" 1/4-28 1/8" 1/4-28

MATERIAL

Nut Polyacetal Ferrules ETFE

PRESSURE RATING

OD Bar Psi 1/16" 70 1000 1/8" 35 500 (Varies with tubing ID and material)



#### TECH TIP

The inert ETFE ferrule used with these nuts is the only part besides the tubing which is in contact with the fluid stream.





#### **SPECIFICATIONS**

TUBING OD / THREADS

1/16" 1/4-28 1/8" 1/4-28

#### MATERIAL

Fiberglass-reinforced polypropylene

PRESSURE RATING

<30 bar (435 psi) (Varies with tubing ID and material)

#### **Color-coded fingertight nuts (flanged connections)**

- For flanged connections
- Compatible with all 1/4-28 flat-bottom ports
- For 1/16" or 1/8" OD tubing
- Fiberglass-reinforced PP with PP washers







For those systems requiring or preferring flanged connections, use these fiberglass-reinforced fittings with our Easy-Flange flanging tool and polypropylene washers to make a clean connection. The flange on the tubing ensures that the washer never comes in contact with the mobile phase.

Six colors are available.

				1/16"	1/8"
			Color	Product No.	Product No.
(Package/10)	Nuts		Green	JR-202123-10	JR-202143-10
			Blue	JR-202122-10	JR-202142-10
			Yellow	JR-202124-10	JR-202144-10
			Red	JR-202125-10	JR-202145-10
			White	JR-201094WH-10	JR-201580WH-10
			Black	JR-201094BK-10	JR-201580BK-10
	1" long nuts		White	JR-202120-10	JR-202119-10
			Black	JR-202118-10	JR-202121-10
	Polypropylene	washer	10	JR-201926-10	JR-201928-10

#### Union body for flanged connections

- For flanged 1/4-28 flat-bottom connections
- Through bore low pressure union
- For 1/16" or 1/8" OD tubing
- Completely inert and biocompatible

Flanged fittings are not included.

Order PPS hex-head flanged nuts or color-coded fingertight flanged nuts separately.



1/4-28



**SPECIFICATIONS** 

TUBING OD / THREADS

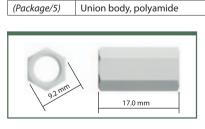
1/4-28

1/4-28

1/16"

1/8"

MATERIAL Polyamide





#### Unions and bulkhead unions • Flangeless



#### LOW PRESSURE FITTINGS

PEEK unions 1/4-28

- For easy connection of low pressure solvent lines
- Low dead volume
- For 1/16" or 1/8" OD tubing
- Flat-bottomed 1/4-28 fitting details
- Completely inert and biocompatible

These unions facilitate the quick and reliable connection of two pieces of 1/16" or 1/8" OD tubing.

Use with color-coded adapters for easy solvent line identification.

These are available either as the body only, or complete with fittings.

A union with fittings includes:

- PEEK low pressure union
- ETFE inverted ferrules
- 2 PPS flangeless hex-head nuts Color-Sleeve adapters



5/16"

wrench flat

16.7 mm

16.7 mm

9.4 mm

### Tubing OD Bore (mm) Product No.

(Sold	Union, with fittings	1/16"	0.50	JR-1064
individually)			0.75	JR-1068
		1/8"	1.30	JR-1065
	Body only	1/16"	0.50	JR-064
			0.75	JR-068
		1/8"	1.30	JR-065

Tubing OD Prod	luct	No
----------------	------	----

Replacement fittings					
(Package/10)	PPS flangeless nuts	1/16"	JR-55070-10		
		1/8"	JR-55071-10		
	Inverted ETFE	1/16"	JR-041-10		
	ferrules	1/8"	JR-051-10		

#### PEEK bulkhead unions 1/4-28

- Panel mounting (10 mm hole required, max 9 mm thick)
- Low dead volume
- For 1/16" or 1/8" OD tubing
- Completely inert and biocompatible
- For easy connection of low pressure solvent lines

Bulkhead unions are designed to be mounted through an instrument panel or on a bracket.

They are sold complete with fittings, and include:

- 2 PPS flangeless hex-head nuts
- 2 ETFE inverted ferrules
- 2 Color-Sleeve adapters

		Bore (mm)	Tubing OD	Product No.
(Sold	Bulkhead union,	0.75	1/16"	JR-CBUMPK
individually)	with fittings	1.50	1/8"	JR-CBULPK

		Tubing OD	Product No.
Replacement	fittings		
(Package/10)	PPS flangeless nuts	1/16"	JR-55070-10
		1/8"	JR-55071-10
	Inverted ETFE	1/16"	JR-041-10
	ferrules	1/8"	JR-051-10

#### SEE ALSO

17.5 mm

Color-coded fingertight flanged nuts49
Color-Sleeve adapters, in 12 colors
High pressure PEEK unions22
PPS hex-head flanged nuts47

#### TUBING OD / THREADS 1/16" 1/4-28 1/8" 1/4-28 MATERIALS Body PEEK Nut PPS Ferrules ETFE PRESSURE RATING Psi OD Bar 1/16' 105 1500 1/8" 35 500 (Varies with tubing ID and material)

**SPECIFICATIONS** 

SPECIFIC	ATIONS				
TUBING OD	/THREADS	5			
1/32"	1/4-28				
1/16"	1/4-28				
1/8"	1/4-28				
MATERIALS					
Body	PEEK				
Nut	PPS				
Ferrules	ETFE				
PRESSURE R	RATING				
OD	Bar	Psi			
1/16"	105	1500			
1/8"	35	500			
(Varies with tubing ID and					
material)					





#### **PEEK reducing unions SPECIFICATIONS**

IMPERIAL TO METRIC 1/4-28

TUBING OD / THREADS 1/32" 1/4-28

1/16" 1/4-28 1/8" 1/4-28

#### MATERIALS

Body PEEK PPS Nuts Ferrules ETFE

#### PRESSURE RATING

≤48 bar (700 psi) (Varies with tubing ID and material)

- Connects 1/16", 1/8", 1 mm, 2 mm, and 3 mm OD polymeric tubing
- Completely inert and biocompatible

With these reducing unions, metric tubing can be connected to imperial fittings on valves and LC systems.

A reducing union with fittings includes:

- PEEK low pressure reducing union
- 1 PPS flangeless hex-head nut, imperial size noted
- 1 PPS flangeless hex-head nut, metric size noted
- ETFE inverted ferrules
- Color-Sleeve adapters

		Tubing OD	Bore (mm)	Product No.
(Sold	Reducing union,	1/32" to 1 mm	0.50	JR-0640
individually)	with fittings	1/16" to 2 mm	0.75	JR-0680
		1/8" to 3 mm	1.30	JR-0650

		Material	Tubing OD	Product No.
Replacement	fittings			
(Package/10)	Nut for use with	PPS	1/32"	JR-55073-10
	inverted ferrule		1/16"	JR-55070-10
			1/8"	JR-55071-10
			1.0 mm / 1/32"	JR-55073-10
			2.0 mm	JR-55072-10
	Inverted ferrules	ETFE	1/32"	JR-032-10
			1/16"	JR-041-10
			1/8"	JR-051-10
	<b>a</b>	1	1.0 mm	JR-031-10
			2.0 mm	JR-042-10
	3.0 mm 2.0 mm	1.0 mm	3.0 mm	JR-049-10



IMPERIAL 1/2-20 to 1/4-28

22.9 mm

#### TECH TIP

While our PEEK unions are typically used with inverted ferrules, collapsible ferrules or flanged connections can also be used.



#### **SPECIFICATIONS**

TUBING OD / THREADS

1/4-28 1/8"

1/4" 1/2-20 MATERIALS

PEEK

Body Nuts

1/8" PP PPS 1/4"

Ferrules

PEEK 1/8" 1/4" **PCTFE** 

#### PRESSURE RATING

<35 bar (500 psi) (Varies with tubing ID and material)

#### **PEEK reducing unions**

• Connects 1/4" and 1/8" OD tubing

• Completely inert and biocompatible

• Low dead volume

PEEK reducing unions are sold complete with fittings, and include:

- One 1/8" flangeless nut, white polypropylene
- One 1/8" ferrule, PEEK
- One 1/4" flangeless nut, PPS
- One 1/4" ferrule, CTFE

		Bore (mm)	Tubing OD	Product No.
(Sold individually)	Reducing union with fittings	1.5	1/4" to 1/8"	JR-CU4LPK

19.1 mm

		Material	Tubing OD	Product No.
Replacement	fittings			
(Sold	Flangeless nut,	White propylene	1/8"	JR-CFL-2W-S
individually)	white propylene	PPS	1/4"	JR-CFL-4PPS
	Ferrule	PEEK	1/8"	JR-CFL-CB2PK-S
		PCTFE	1/4"	JR-CFL-CB4KF-S



#### Tees, crosses, and manifolds



LOW PRESSURE FITTINGS

#### PEEK tees, crosses, and manifolds

• For 1/16" or 1/8" OD tubing

- Flat-bottomed 1/4-28 fitting details
- Completely inert and biocompatible

These VICI Jour connectors for low pressure applications are machined from PEEK. The bodies have 1/4-28 female ports which accept any flanged or flangeless fittings for 1/8" or 1/16" OD tubing.

Choose smaller through-holes for applications where low flowrate or low dead volume is required. Fittings with 1.50 mm through-holes are preferred for high flowrate applications.

These are available as the body only, or complete with fittings.

The appropriate number of the following are included when fittings are ordered:

- PPS flangeless hex-head nuts
- ETFE inverted ferrules
- Color-Sleeve adapters

#### Sold individually.

	·		Tubing OD	Bore (mm)	With fittings Product No.	<b>Body only</b> <i>Product No.</i>
(Sold	Tees		1/16"	0.50	JR-6029	JR-6034
individually)				0.80	JR-6030	JR-6032
			1/8"	1.50	JR-6031	JR-6033
	Crosses		1/16"	0.50	JR-6039	JR-6044
				0.80	JR-6040	JR-6042
			1/8"	1.50	JR-6041	JR-6043
	Manifolds	5 ports	1/16"	0.75	JR-C5M1PK	
			1/8"	1.50	JR-C5M2PK	_
		9 ports	1/16"	0.75	JR-C9M1PK	_
			1/8"	1.50	JR-C9M2PK	_

		Tubing OD	Product No.			
Replacement fittings						
(Package/10)	PPS flangeless nuts	1/16"	JR-55070-10			
		1/8"	JR-55071-10			
	Inverted ETFE	1/16"	JR-041-10			
	ferrules	1/8"	JR-051-10			





<b>BOD</b>	YSIZES		
		Diameter	Thickness
Tees		25.0 mm	12.0 mm
Crosses		25.0 mm	12.0 mm
Manifolds	5 ports	22.2 mm	17.1 mm
	9 norts	22.2 mm	28.6 mm

#### 1/4-28

## SPECIFICATIONS TUBING OD/THREADS

1/16" 1/4-28 1/8" 1/4-28

#### MATERIALS

Body PEEK Nut PPS Ferrules ETFE

#### BODY SIZES

See chart below

#### PRESSURE RATING

 OD
 Bar
 Psi

 1/16"
 105
 1500

 1/8"
 35
 500

 (Varies with tubing ID and material)

# **1** TECH TIP

While our PEEK tees and crosses are typically used with inverted ferrules, collapsible ferrules or flanged connections can also be used.







Collapsible Flanged

#### TECH TIP

Use our impermeable tubing to avoid gas diffusion in the solvent lines



Color-Sleeve adapters,
in 12 colors 23
High pressure
PEEK tees34
PPS hex-head
flanged nuts47



#### **SPECIFICATIONS**

TUBING OD / THREADS

1/16" 1/4-28 1/8" 1/4-28

#### **MATERIALS**

Body PEEK PPS Nut Ferrules ETFE

#### PRESSURE RATING

Psi OD Bar 1/16' 105 1500 1/8" 35 500 (Varies with tubing ID and material)

#### MIXING VOLUME

Bore Volume 0.75 mm 25 µl 1.50 mm 100 µl

#### **PEEK mixing tees**

1/4-28

- For 1/16" or 1/8" OD tubing
- Mountable
- Completely inert and biocompatible

A unique mixing results from the turbulence created by the introduction angle of the solvents. The mixing is much more thorough than with a conventional tee.

Typically our inverted ferrules are used in these fittings, but the 1/4-28 flat-bottomed details will also accept collapsible ferrule or flanged fittings.

These are available as the body only, or complete with fittings. A mixing tee with fittings includes:

- 3 PPS flangeless hex-head nuts
- 3 ETFE inverted ferrules
- 3 Color-Sleeve adapters

Sold individually.

		Tubing OD	Bore (mm)	Product No
(Sold individually)	Mixing tee, with fittings	1/16"	0.75	JR-CM1XPK
		1/8"	1.50	JR-CM2XPK
	Body only	1/16"	0.75	JR-B-CM1XPK
		1/8"	1.50	JR-B-CM2XPK
		1/8"	1.50	JR-B-CM2XPK



Replacement fittings				
(Package/10)	PPS flangeless nuts	1/16"	JR-55070-10	
		1/8"	JR-55071-10	
	Inverted ETFE	1/16"	JR-041-10	
	ferrules	1/8"	JR-051-10	



#### Peristaltic tubing adapter set

- For connecting soft tubing to PTFE and PTFE-like tubing
- Works with peristaltic tubing up to 4.50 mm OD
- For 1/16" and 1/8" PTFE and PTFE-like tubing
- Biocompatible
- · Low dead volume

This "one-fits-all" set consists of everything needed to connect 1/16" or 1/8" OD PTFE and PTFE-like tubing to soft tubing (such as silicone), up to 4.5 mm in OD, minimum 0.5 mm ID.

#### The adapter includes:

- 3 different bushings (for the different soft tubing ODs)
- 2 PPS nuts (one each for 1/16" and 1/8" OD tubing)
- 2 ETFE inverted ferrules (one each for 1/16" and 1/8" OD)
- 2 Color-Sleeve adapters

Sold individually.





12 mm diameter.

**SPECIFICATIONS** 

TUBING OD / THREADS

1/16"

1/8"

Nut

BORE

1.50 mm

**BODY SIZE** 28 mm long,

MATERIALS Body

Bushings PPS PΡS

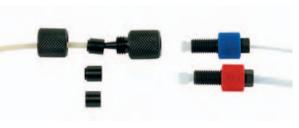
Ferrules ETFE

1/4-28

1/4-28

PEEK





1/4-28



#### Polypropylene adapters

	Inlet		Outlet			Product No.
(Package/10)	Male	Luer	Barbed	1/16"	1000	JR-070211-10
				3/32"		JR-070212-10
				1/8"		JR-070213-10
			Male	10-32		JR-070224-10
				1/4-28	AND ALL	JR-070225-10
				1/4-28 UNF BST		JR-070226-10
		1/4-28	Barbed	1/16"	600 P	JR-071123-10
				1/8"		JR-071323-10
		10-32	Barbed	1/16"		JR-071124-10
				1/8"		JR-071324-10
	Female	Luer	Barbed	1/16"		JR-070111-10
				3/32"		JR-070112-10
				1/8"		JR-070113-10
			Female	Luer		JR-070101-10
			Male	10-32		JR-070124-10
				1/4-28		JR-070123-10
	Straight through tube fitting		bugh Barbed to barbed	1/16"		JR-073210-10
				3/32"		JR-073220-10
				1/8"		JR-073230-10
(Sold individually)	Male	1/4-28 UNF BST	Barbed	1/16"		JR-075012
	Flat bottom	1/4-28 UNF BST	Barbed	1/8" ID		JR-075013

SPECIFICATIONS MATERIAL Polypropylene





#### **SPECIFICATIONS**

THREADS 10-32 or 1/4-28 MATERIAL Polypropylene

#### Polypropylene plugs

#### 1/4-28 or 10-32

			Product No.
(Package/10)	10-32 male	Date	JR-072450-10
	1/4-28 male	Tour	JR-072350-10
	1/4-28 male, flat bottom		JR-201999-10

#### Micro valves for GC and LC

1/4-28

#### **SPECIFICATIONS**

#### TUBING OD / THREADS

1/4-28 1/16" 1/8" 1/4-28

#### DIMENSIONS

Bore 1.50 mm Height 44.70 mm Diameter 27.94 (without fittings)

#### MATERIALS

Wetted parts

PEEK, PTFE POM Body Nuts PPS Ferrules PCTFE

#### PRESSURE RATING

200 psi gas Tested with helium using 1/16" OD x 0.84 mm ID PTFE tubing with PEEK collapsible ferrules

200 psi liquid Tested with isopropanol using 1/8" OD x 0.75 mm ID PTFE tubing with CTFE collapsible ferrules

#### • Compact 1" design

- Convenient panel mount, hole diameter 8 mm (0.3125"), 6 mm maximum thickness
- Biocompatible and inert
- Variety of configurations

Simplify your liquid or gas handling application with a VICI Jour sampling micro valve. The unique design of the fitting detail allows a leak-free seal with no potential for rotor damage from overtightening. Internal parts are PEEK and PTFE.

Includes flangeless PPS fittings and CTFE collapsible ferrules for 1/8" OD tubing.

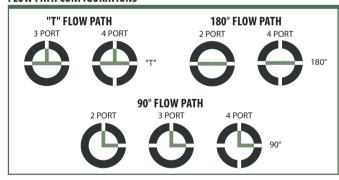
Sold individually.



"T" flow path	3 ports	JR-660100	
	4 ports	JR-660110	
180° flow path	2 ports	JR-660200	
	4 ports	JR-660210	
90° flow path	2 ports	JR-660300	
	3 ports	JR-660310	
	4 ports	JR-660320	

	Material	Tubing OD		Product No.	
Replacement fittings					
Nut for use with collapsible ferrule	PPS	1/16"	JR-55050-10		
		1/8"		JR-55051-10	
Collapsible ferrules	PEEK	1/16"	100	JR-CFL-CB1PK	
	CTFE	1/8"	10	JR-CFL-CB2KF	
0	Nut for use with collapsible ferrule	Nut for use with collapsible ferrule  Collapsible PEEK errules	Nut for use with collapsible ferrule PPS 1/16" 1/8" Collapsible PEEK 1/16" errules	Nut for use with collapsible ferrule PPS 1/16" 1/8"  Collapsible PEEK 1/16" PEEK 1/16"	

#### FLOW PATH CONFIGURATIONS



#### SEE ALSO

High pressure PEEK tees.... PPS hex-head flanged nuts......47 Color-Sleeve adapters, in 12 colors . . . . . . . . . 23



#### TECH TIP

Use our impermeable tubing to avoid gas diffusion in the solvent lines ......17

#### TECH TIP

While micro valves are typically used with collapsible ferrules, inverted ferrules or flanged connections can also be used. See page 47.



STANDARD: Collapsible ferrule



