# VICI Jour

## Products for Chromatography and Fluid/Gas Transfer

2005/06















CO.592

## INDEX



**Disclaimer:**
**The maximum holding pressure for any type of connection 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.**

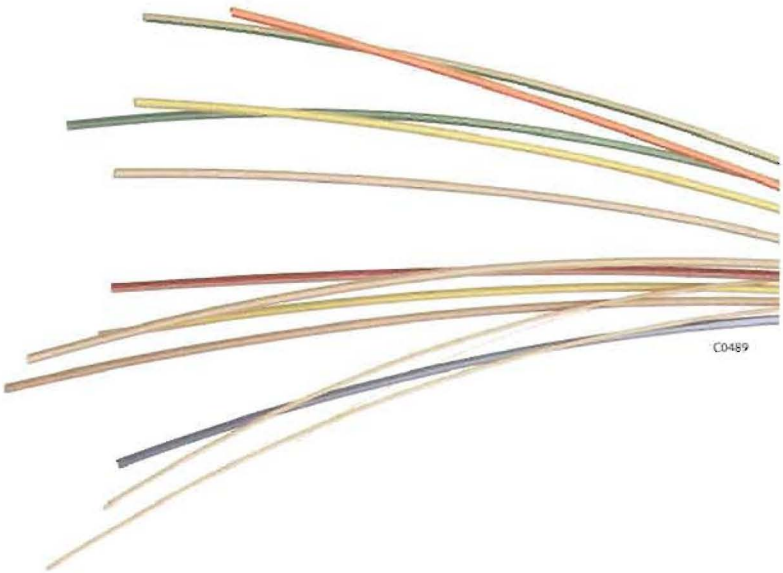
## PEEK Tubing

- 1/32", 1/16", 1/8" and 1/4" OD Tubing Available
- Premium Grade Tubing with Tighter Tolerances
- Easy to Cut
- Biocompatible

PEEK tubing has the strength required to withstand continuous use at HPLC pressure without swelling or bursting. The dense polymer structure of VICI Jour PEEK tubing eliminates the permeability to organic solvents that causes other polymer tubing, such as ETFE to "sweat".
For easy identification of ID VICI Jour tubing is color coded. VICI recommends "Striped Color-Coded" tubing. It is manufactured of virgin, natural PEEK and therefore ensures maximum chemical resistance and biocompatibility. The color dye is applied only to the outer surface and thus not in contact with the fluid stream. "Solid Color-Coded" tubing however is made of pre-dyed raw material.
Remember PEEK tubing is not affected by halide salts, high strength buffers or other aggressive mobile phases that corrode stainless steel. The polymer surface will not leach metal ions into the eluent or extract metal sensitive components from the sample. By far the most outstanding property is its excellent burst pressure.
PEEK is compatible with almost any of the solvents commonly used in HPLC. Dichloromethane, THF and DMSO may cause swelling in PEEK. Concentrated nitric and sulphuric acid will attack PEEK.

### Premium Grade PEEK Tubing – Dash-Striped Color-Coded

The new VICI Jour dash-striped premium grade PEEK tubing is the best choice for chromatography applications in which tube volume is of importance. The tighter tolerance of +/– 0.025 mm ensures a more consistent internal volume of the transfer lines.




**Premium Grade PEEK Tubing – Dash-Striped Color-Coded**

| Part No. | OD | ID (mm) | Qty/pkg | Color | bar* | psi* |
|---|---|---|---|---|---|---|
| JR-TP-5998-M3 | 1/16" | 0.064 | 3 m | Pink | 435 | 6300 |
| JR-TP-5998-M10 | 1/16" | 0.064 | 10 m | Pink | 435 | 6300 |
| JR-TP-5999-M3 | 1/16" | 0.13 | 3 m | Red | 420 | 6100 |
| JR-TP-5999-M10 | 1/16" | 0.13 | 10 m | Red | 420 | 6100 |
| JR-TP-6000-M3 | 1/16" | 0.18 | 3 m | Yellow | 400 | 5800 |
| JR-TP-6000-M10 | 1/16" | 0.18 | 10 m | Yellow | 400 | 5800 |
| JR-TP-6001-M3 | 1/16" | 0.25 | 3 m | Blue | 386 | 5600 |
| JR-TP-6001-M10 | 1/16" | 0.25 | 10 m | Blue | 386 | 5600 |

* = Recommended maximum permanent working pressure (measured with ACN/Water 1:1 at room temperature)
Other dimensions on request

**SPECS**

**Material**
PEEK

**Dimensions**
OD and ID, see chart

**Tolerances**
Premium Grade Tubing
OD: +/– 0.025 mm (.001")
ID: +/– 0.025 mm (.001")

**Pressure rating**
See chart

**Chemical resistance**
See chart on page 106

Max. recommended working temp.: < 100 °C (continuous) for 1/16" OD tubing with ID up to 0.75 mm

**Spares & Tools**
A clean burr-free perpendicular cut can be achieved with the VICI Jour Clean-Cut tubing cutter JR-797 see page 22

To bend PEEK tubing at the optimum radius, use our Tubing Elbows on page 21

We recommend PEEK finger-tight and flangeless fittings for your applications
Fingertights see pages 27–30
Flangeless see pages 49–53

VICI Jour Sample Loops for analytical applications are made of Premium Grade Tubing (see pages 96–100)

**Length Conversions**
0.064 mm ≈ .0025"
0.13 mm ≈ .005"
0.18 mm ≈ .007"
0.25 mm ≈ .010"

## SPECS

**Material**
PEEK

**Dimensions**
OD and ID, see chart

**Tolerances**
For OD 1/16" PEEK tubing
OD: +/– 0.05 mm (.002")
ID: +/– 0.05 mm (.002")

For OD 1/8" PEEK tubing
OD: +/– 0.10 mm (.004")
ID: +/– 0.10 mm (.004")

**Pressure rating**
See chart

**Chemical resistance**
See chart on page 106

Max. recommended working temp.: < 100 °C (continuous) for 1/16" OD tubing with ID up to 0.75 mm

**Spares & Tools**
A clean burr-free perpendicular cut can be achieved with the VICI Jour Clean-Cut tubing cutter JR 797 see page 22

To bend PEEK tubing at the optimum radius, use our Tubing Elbows on page 21

We recommend PEEK finger-tight and flangeless fittings for your applications
Fingertights see pages 27–30
Flangeless see pages 49–53

VICI Jour Sample Loops foranalytical applications are made of Premium Grade Tubing
(see pages 96–100)

**Length Conversions**
0.13 mm ≈ .005"
0.18 mm ≈ .007"
0.25 mm ≈ .010"
0.50 mm ≈ .020"
0.75 mm ≈ .030"
1.00 mm ≈ .039"
1.40 mm ≈ .055"

### PEEK Tubing – Striped Color-Coded

| Part No. | OD | ID (mm) | Qty/pkg | Color | bar* | psi* |
|---|---|---|---|---|---|---|
| JR-T-5999-M3 | 1/16" | 0.13 | 3 m | Red | 420 | 6100 |
| JR-T-5999-M10 | 1/16" | 0.13 | 10 m | Red | 420 | 6100 |
| JR-T-6000-M3 | 1/16" | 0.18 | 3 m | Yellow | 400 | 5800 |
| JR-T-6000-M10 | 1/16" | 0.18 | 10 m | Yellow | 400 | 5800 |
| JR-T-6001-M3 | 1/16" | 0.25 | 3 m | Blue | 386 | 5600 |
| JR-T-6001-M10 | 1/16" | 0.25 | 10 m | Blue | 386 | 5600 |
| JR-T-6002-M3 | 1/16" | 0.50 | 3 m | Orange | 350 | 4500 |
| JR-T-6002-M10 | 1/16" | 0.50 | 10 m | Orange | 350 | 4500 |
| JR-T-6003-M3 | 1/16" | 0.75 | 3 m | Green | 240 | 3500 |
| JR-T-6003-M10 | 1/16" | 0.75 | 10 m | Green | 240 | 3500 |
| JR-T-60031-M3 | 1/16" | 1.00 | 3 m | Grey | 165 | 2400 |
| JR-T-60031-M10 | 1/16" | 1.00 | 10 m | Grey | 165 | 2400 |
| JR-T-60032-M3 | 1/16" | 1.40 | 3 m | Black | 52 | 750 |
| JR-T-60032-M10 | 1/16" | 1.40 | 10 m | Black | 52 | 750 |

* = Recommended maximum permanent working pressure (measured with ACN/Water 1:1 at room temperature)
Other pack sizes and tubing lengths are available on request.
Please contact your local distributor or VICI directly.

### PEEK Tubing – Solid Color-Coded

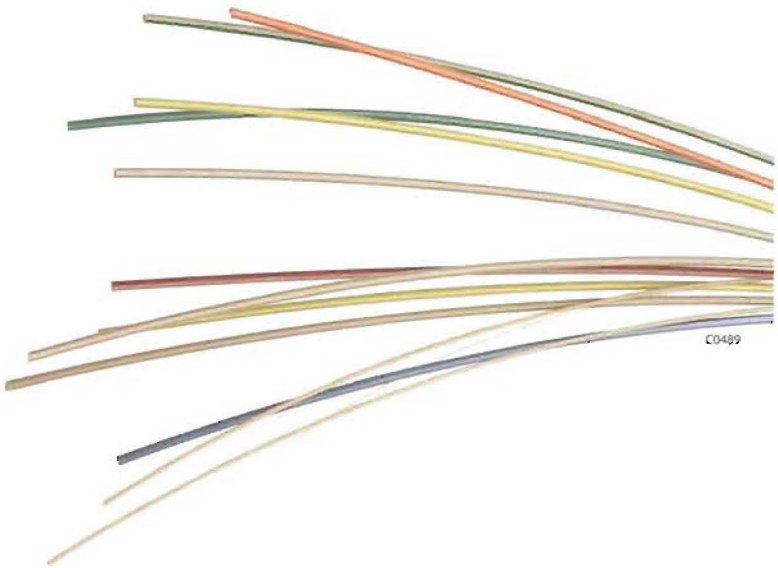
| Part No. | OD | ID (mm) | Qty/pkg | Color | bar* | psi* |
|---|---|---|---|---|---|---|
| JR-T-6007-M3 | 1/16" | 0.13 | 3 m | Red | 420 | 6100 |
| JR-T-6007-M10 | 1/16" | 0.13 | 10 m | Red | 420 | 6100 |
| JR-T-6008-M3 | 1/16" | 0.18 | 3 m | Yellow | 400 | 5800 |
| JR-T-6008-M10 | 1/16" | 0.18 | 10 m | Yellow | 400 | 5800 |
| JR-T-6009-M3 | 1/16" | 0.25 | 3 m | Blue | 386 | 5600 |
| JR-T-6009-M10 | 1/16" | 0.25 | 10 m | Blue | 386 | 5600 |
| JR-T-6010-M3 | 1/16" | 0.50 | 3 m | Orange | 350 | 4500 |
| JR-T-6010-M10 | 1/16" | 0.50 | 10 m | Orange | 350 | 4500 |
| JR-T-6011-M3 | 1/16" | 0.75 | 3 m | Green | 240 | 3500 |
| JR-T-6011-M10 | 1/16" | 0.75 | 10 m | Green | 240 | 3500 |

* = Recommended maximum permanent working pressure (measured with ACN/Water 1:1 at room temperature)
Other pack sizes and tubing lengths are available on request.
Please contact your local distributor or VICI directly.

## PEEK Tubing – Natural

| Part No. | OD | ID (mm) | Qty/pkg | bar* | psi* |
|---|---|---|---|---|---|
| JR-T-6060-M3 | 0.36 mm | 0.075 | 3 m | 358 | 5200 |
| JR-T-6060-M10 | 0.36 mm | 0.075 | 10 m | 358 | 5200 |
| JR-T-5993-M3 | 1/32" | 0.13 | 3 m | 379 | 5500 |
| JR-T-5993-M10 | 1/32" | 0.13 | 10 m | 379 | 5500 |
| JR-T-5994-M3 | 1/32" | 0.18 | 3 m | 351 | 5100 |
| JR-T-5994-M10 | 1/32" | 0.18 | 10 m | 351 | 5100 |
| JR-T-5995-M3 | 1/32" | 0.25 | 3 m | 310 | 4500 |
| JR-T-5995-M10 | 1/32" | 0.25 | 10 m | 310 | 4500 |
| JR-T-60041-M3 | 1/8" | 0.75 | 3 m | 345 | 5000 |
| JR-T-60041-M10 | 1/8" | 0.75 | 10 m | 345 | 5000 |
| JR-T-6004-M3 | 1/8" | 1.59 | 3 m | 224 | 3250 |
| JR-T-6004-M10 | 1/8" | 1.59 | 10 m | 224 | 3250 |
| JR-T-60042-M3 | 1/8" | 2.00 | 3 m | 165 | 2400 |
| JR-T-60042-M10 | 1/8" | 2.00 | 10 m | 165 | 2400 |
| JR-T-6006 | 1/4" | 3.17 | per m | 227 | 3300 |

* = Recommended maximum permanent working pressure (measured with ACN/Water 1:1 at room temperature)
Other pack sizes and tubing lengths are available on request.
Please contact your local distributor or VICI directly.




### SPECS

**Material**
PEEK

**Dimensions**
OD and ID, see chart

**Tolerances**
For OD 1/16" PEEK tubing
OD: +/– 0.05 mm (.002")
ID: +/– 0.05 mm (.002")

For OD 1/8" PEEK tubing
OD: +/– 0.10 mm (.004")
ID: +/– 0.10 mm (.004")

**Pressure rating**
See chart

**Chemical resistance**
See chart on page 106

Max. recommended working temp.: < 100 °C (continuous) for 1/16" OD tubing with ID up to 0.75 mm

**Spares & Tools**
A clean burr-free perpendicular cut can be achieved with the VICI Jour Clean-Cut tubing cutter JR-797 see page 22

To bend PEEK tubing at the optimum radius, use our Tubing Elbows on page 21

We recommend PEEK finger-tight and flangeless fittings for your applications
Fingertights see pages 27–30
Flangeless see pages 49–53

VICI Jour Sample Loops foranalytical applications are made of Premium Grade Tubing
(see pages 96–100)

**Length Conversions**
0.064 mm ≈ .0025"
0.075 mm ≈ .0030"
0.13 mm ≈ .005"
0.18 mm ≈ .007"
0.25 mm ≈ .010"
0.36 mm ≈ .014"
0.75 mm ≈ .030"
1.59 mm ≈ .062"
2.00 mm ≈ .079"
3.17 mm ≈ .125"

## SPECS

**Material**
PEEK, Fused Silica

**Dimensions**
See chart

**Tolerances**
For ID 50 µm +/– 3 µm,
For IDs 100–150 µm +/– 5 µm

**Pressure Rating**
586 bar (8500 psi)

**Spares & Tools**
PEEK fingertights 1/16"
see pages 28–30
Nanovalome® fittings 1/32"
see pages 38–39

We recommend PEEKclad-FST™ together with our Nanovalome® fittings on pages 38–39

**Tech Tip**
To ensure Zero Dead Volume connections, special cutting techniques and equipment are required. For this reason PEEKclad-FST™ is available only in a variety of pre-cut lengths.



# PEEKclad-FST™ – PEEK-Clad Fused Silica Tubing

- For Zero Dead Volume Connections
- Perfect for Capillary LC
- Inert Smooth Flow Path
- Available with 1/32" and 1/16" OD and 25 up to 300 µm ID

This product combines the inert and smooth inner surface of fused silica with very precise IDs, and the flexibility and easy handling of PEEK. Due to its mechanical strength it can be used both with polymeric or metal ferrules.

The ends are cut perfectly square with sophisticated equipment and polished for Zero Dead Volume connections in capillary LC. In contrast to a polymer sleeve/fused silica connection there is no possibility of liquid filling the gap between the sleeve and the tubing.

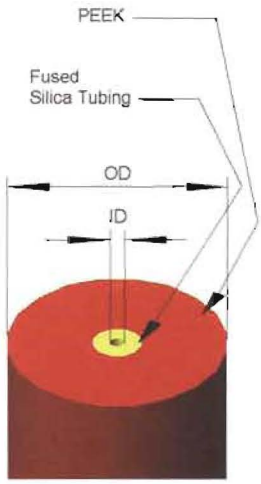
All this may result in a lower carry over or cross contamination between samples which can lead to improved reproducibility. The smooth inner wall surface gives lower band broadening and therefore higher efficiency and resolution.
PEEKclad-FST™ is compatible with most organic solvents and strong acids (pH 0–10) but not compatible with hydrofluoric acid.

In fitting details the PEEK outside surface may be wetted and thus the chemical compatibility of PEEK has to be considered.

PEEK coated fused silica tubing can be manufactured in different proprietary processes. Trade names are PEEKclad-FST™ by Valco International Co. Inc. and VICI International and PEEKsil™ by SGE International Pty. Ltd.

### PEEKclad-FST™ – PEEK-Clad Fused Silica Tubing

| Part No. | OD | ID | Length/mm | Color | Qty/pkg |
|---|---|---|---|---|---|
| JR-TS-3215 | 1/32" | 25 µm | 50 | Orange | 2 |
| JR-TS-32110 | 1/32" | 25 µm | 100 | Orange | 2 |
| JR-TS-32115 | 1/32" | 25 µm | 150 | Orange | 2 |
| JR-TS-32125 | 1/32" | 25 µm | 250 | Orange | 2 |
| JR-TS-32150 | 1/32" | 25 µm | 500 | Orange | 2 |
| JR-TS-3225 | 1/32" | 50 µm | 50 | Natural | 2 |
| JR-TS-32210 | 1/32" | 50 µm | 100 | Natural | 2 |
| JR-TS-32215 | 1/32" | 50 µm | 150 | Natural | 2 |
| JR-TS-32225 | 1/32" | 50 µm | 250 | Natural | 2 |
| JR-TS-32250 | 1/32" | 50 µm | 500 | Natural | 2 |
| JR-TS-3235 | 1/32" | 75 µm | 50 | Black | 2 |
| JR-TS-32310 | 1/32" | 75 µm | 100 | Black | 2 |
| JR-TS-32315 | 1/32" | 75 µm | 150 | Black | 2 |
| JR-TS-32325 | 1/32" | 75 µm | 250 | Black | 2 |
| JR-TS-32350 | 1/32" | 75 µm | 500 | Black | 2 |
| JR-TS-3245 | 1/32" | 100 µm | 50 | Red | 2 |
| JR-TS-32410 | 1/32" | 100 µm | 100 | Red | 2 |
| JR-TS-32415 | 1/32" | 100 µm | 150 | Red | 2 |
| JR-TS-32425 | 1/32" | 100 µm | 250 | Red | 2 |
| JR-TS-32450 | 1/32" | 100 µm | 500 | Red | 2 |
| JR-TS-3265 | 1/32" | 150 µm | 50 | Purple | 2 |
| JR-TS-32610 | 1/32" | 150 µm | 100 | Purple | 2 |
| JR-TS-32615 | 1/32" | 150 µm | 150 | Purple | 2 |
| JR-TS-32625 | 1/32" | 150 µm | 250 | Purple | 2 |
| JR-TS-32650 | 1/32" | 150 µm | 500 | Purple | 2 |



| Part No. | OD | ID | Length/mm | Color | Qty/pkg |
|---|---|---|---|---|---|
| JR-TS-1615 | 1/16" | 25 µm | 50 | Orange | 5 |
| JR-TS-16110 | 1/16" | 25 µm | 100 | Orange | 5 |
| JR-TS-16115 | 1/16" | 25 µm | 150 | Orange | 5 |
| JR-TS-16120 | 1/16" | 25 µm | 200 | Orange | 5 |
| JR-TS-16150 | 1/16" | 25 µm | 500 | Orange | 2 |
| JR-TS-1625 | 1/16" | 50 µm | 50 | Natural | 5 |
| JR-TS-16210 | 1/16" | 50 µm | 100 | Natural | 5 |
| JR-TS-16215 | 1/16" | 50 µm | 150 | Natural | 5 |
| JR-TS-16220 | 1/16" | 50 µm | 200 | Natural | 5 |
| JR-TS-16250 | 1/16" | 50 µm | 500 | Natural | 2 |
| JR-TS-1635 | 1/16" | 75 µm | 50 | Black | 5 |
| JR-TS-16310 | 1/16" | 75 µm | 100 | Black | 5 |
| JR-TS-16315 | 1/16" | 75 µm | 150 | Black | 5 |
| JR-TS-16320 | 1/16" | 75 µm | 200 | Black | 5 |
| JR-TS-16350 | 1/16" | 75 µm | 500 | Black | 2 |
| JR-TS-1645 | 1/16" | 100 µm | 50 | Red | 5 |
| JR-TS-16410 | 1/16" | 100 µm | 100 | Red | 5 |
| JR-TS-16415 | 1/16" | 100 µm | 150 | Red | 5 |
| JR-TS-16420 | 1/16" | 100 µm | 200 | Red | 5 |
| JR-TS-16450 | 1/16" | 100 µm | 500 | Red | 2 |
| JR-TS-1665 | 1/16" | 150 µm | 50 | Purple | 5 |
| JR-TS-16610 | 1/16" | 150 µm | 100 | Purple | 5 |
| JR-TS-16615 | 1/16" | 150 µm | 150 | Purple | 5 |
| JR-TS-16620 | 1/16" | 150 µm | 200 | Purple | 5 |
| JR-TS-16650 | 1/16" | 150 µm | 500 | Purple | 2 |

Other inner diameters on request.

## SPECS

**Material**
PEEK, Fused Silica

**Dimensions**
See chart

**Tolerances**
For ID 50 µm +/– 3 µm,
For IDs 100–150 µm +/– 5 µm

**Pressure Rating**
586 bar (8500 psi)

**Spares & Tools**
PEEK fingertights 1/16"
see pages 28–30
Nanovalome® fittings 1/32"
see pages 38–39

We recommend PEEKclad-FST™ together with our Nanovalome® fittings on pages 38–39

**Tech Tip**
To ensure Zero Dead Volume connections, special cutting techniques and equipment are required. For this reason PEEKclad-FST™ is available only in a variety of pre-cut lengths.

## SPECS

**Material**
SS316
seamless

**Dimensions**
See chart

**Tolerances**
OD: +/- 0.05 mm (.002")
ID: +/- 0.025 mm (.001")

**Pressure rating**
For 1/16" OD tubing:
varies with ID, min. 365 bar (5300 psi)

For 1/8" OD tubing:
varies with ID, min. 315 bar (4600 psi)

**Tech Tip**
We recommend Pre-Cut Stainless Steel Tubing for Zero-Dead Volume Connections (see page 13)

**Note**
ID dimensions in mm are

**Length Conversions**
0.13 mm ≈ .005"
0.18 mm ≈ .007"
0.25 mm ≈ .010"
0.38 mm ≈ .015"
0.50 mm ≈ .020"
0.75 mm ≈ .030"
1.00 mm ≈ .039"
1.52mm ≈ .060"
1.78 mm ≈ .070"
2.16 mm ≈ .085"

# Premium Grade Stainless Steel Tubing

- Premium Grade – Seamless
- Variety of Sizes for HPLC and GC Applications
- Smooth Internal Surface
- Soft Annealed OD for Easy Ferrule Connections

### Premium Grade Stainless Steel Tubing

| Part No. | OD | ID (mm) | Qty/pkg |
|---|---|---|---|
| JR-TSS.505-M3 | 1/32" | 0.13 | 3 m |
| JR-TSS.505-M10 | 1/32" | 0.13 | 10 m |
| JR-TSS.507-M3 | 1/32" | 0.18 | 3 m |
| JR-TSS.507-M10 | 1/32" | 0.18 | 10 m |
| JR-TSS.510-M3 | 1/32" | 0.25 | 3 m |
| JR-TSS.510-M10 | 1/32" | 0.25 | 10 m |
| JR-TSS.520-M3 | 1/32" | 0.50 | 3 m |
| JR-TSS.520-M10 | 1/32" | 0.50 | 10 m |
| JR-TSS105-M3 | 1/16" | 0.13 | 3 m |
| JR-TSS105-M10 | 1/16" | 0.13 | 10 m |
| JR-TSS110-M3 | 1/16" | 0.25 | 3 m |
| JR-TSS110-M10 | 1/16" | 0.25 | 10 m |
| JR-TSS115-M3 | 1/16" | 0.38 | 3 m |
| JR-TSS115-M10 | 1/16" | 0.38 | 10 m |
| JR-TSS120-M3 | 1/16" | 0.50 | 3 m |
| JR-TSS120-M10 | 1/16" | 0.50 | 10 m |
| JR-TSS130-M3 | 1/16" | 0.75 | 3 m |
| JR-TSS130-M10 | 1/16" | 0.75 | 10 m |
| JR-TSS140-M3 | 1/16" | 1.00 | 3 m |
| JR-TSS140-M10 | 1/16" | 1.00 | 10 m |
| JR-TSS230-M3 | 1/8" | 0.75 | 3 m |
| JR-TSS230-M10 | 1/8" | 0.75 | 10 m |
| JR-TSS240-M3 | 1/8" | 1.00 | 3 m |
| JR-TSS240-M10 | 1/8" | 1.00 | 10 m |
| JR-TSS260-M3 | 1/8" | 1.52 | 3 m |
| JR-TSS260-M10 | 1/8" | 1.52 | 10 m |
| JR-TSS267-M3 | 1/8" | 1.78 | 3 m |
| JR-TSS267-M10 | 1/8" | 1.78 | 10 m |
| JR-TSS285-M3 | 1/8" | 2.16 | 3 m |
| JR-TSS285-M10 | 1/8" | 2.16 | 10 m |

## Stainless Steel Tubing

- Variety of Sizes for HPLC and GC Applications
- Smooth Internal Surface
- Soft Annealed OD for Easy Ferrule Connections

### Stainless Steel Tubing

| Part No. | OD | ID (mm) | Qty/pkg |
|---|---|---|---|
| JR-T-625-04-M3 | 1/16" | 0.13 | 3 m |
| JR-T-625-04-M10 | 1/16" | 0.13 | 10 m |
| JR-T-625-05-M3 | 1/16" | 0.18 | 3 m |
| JR-T-625-05-M10 | 1/16" | 0.18 | 10 m |
| JR-T-625-10-M3 | 1/16" | 0.25 | 3 m |
| JR-T-625-10-M10 | 1/16" | 0.25 | 10 m |
| JR-T-625-20-M3 | 1/16" | 0.50 | 3 m |
| JR-T-625-20-M10 | 1/16" | 0.50 | 10 m |
| JR-T-625-30-M3 | 1/16" | 0.75 | 3 m |
| JR-T-625-30-M10 | 1/16" | 0.75 | 10 m |
| JR-T-625-40-M3 | 1/16" | 1.00 | 3 m |
| JR-T-625-40-M10 | 1/16" | 1.00 | 10 m |
| JR-T-626-00-M3 | 1/8" | 2.10 | 3 m |
| JR-T-626-00-M10 | 1/8" | 2.10 | 10 m |
| JR-T-628-00 | 1/4" | 4.65 | per m |

**SPECS**

**Material**
SS316
welded under inert gas

**Dimensions**
See chart

**Tolerances**
OD: +/– 0.05 mm (.002")
ID: +/– 0.05 mm (.002")

**Pressure rating**
For 1/16" and 1/8" OD tubing: varies with ID, min. 315 bar (4600 psi)

**Tech Tip**
We recommend Pre-Cut Stainless Steel Tubing for Zero-Dead Volume Connections
(see page 13)

**Length Conversions**
0.13 mm ≈ .005"
0.18 mm ≈ .007"
0.25 mm ≈ .010"
0.50 mm ≈ .020"
0.75 mm ≈ .030"
1.00 mm ≈ .039"
2.10 mm ≈ .083"
4.65 mm ≈ .183"

**SPECS**

**Material**
Electroformed Nickel (EFNI)

**Dimensions**
See chart

**Tolerances**
OD: +/– 0.025 mm
ID: +/– 0.025 mm

**Note**
ID dimensions in mm are converted from nominal inch dimensions

## Electroformed Nickel Tubing

- Variety of Sizes for HPLC and GC Applications
- Extremely Smooth Internal Surface
- Ideal for Transfer Lines, Loops and Columns

This small bore tubing is made by electroplating nickel over a diamond drawn mandrel in a continuous process. When the mandrel is removed from the tubing, what's left is in an extremely inert and smooth interior surface – an incredible 1–2 microinch finish. The mirrorlike interior means that EFNI can be used instead of fused silica glass-lined tubing, or silica-lined tubing.
The highly inactive, non-adsorptive surface makes EFNI tubing ideal for transfer lines, sample loops, or columns, or any application which requires minimum carryover potential.

The ID of commercial drawn tubing is typically +/– 10% of the nominal size. This variance added to the voids, pits, and striations in the wall leads to a large uncertainty in calculated volumes. Our EFNI tubing is held to +/– 0.025 mm of the nominal size, and its microsmooth surface means that the absolute volume can be calculated very accurately.
Electroformed nickel tubing is electrolytically cut, electropolished, and steam cleaned, ready for use.

### Electroformed Nickel Tubing

| Part No. | OD | ID (mm) | Qty/pkg |
|---|---|---|---|
| JR-TEFNI.502-M1 | 1/32" | 0.05 | 1 m |
| JR-TEFNI.504-M1 | 1/32" | 0.10 | 1 m |
| JR-TEFNI.505-M1 | 1/32" | 0.13 | 1 m |
| JR-TEFNI.510-M3 | 1/32" | 0.25 | 3 m |
| JR-TEFNI.510-M10 | 1/32" | 0.25 | 10 m |
| JR-TEFNI.515-M3 | 1/32" | 0.38 | 3 m |
| JR-TEFNI.515-M10 | 1/32" | 0.38 | 10 m |
| JR-TEFNI.520-M3 | 1/32" | 0.50 | 3 m |
| JR-TEFNI.520-M10 | 1/32" | 0.50 | 10 m |
| JR-TEFNI130-M3 | 1/16" | 0.75 | 3 m |
| JR-TEFNI130-M10 | 1/16" | 0.75 | 10 m |
| JR-TEFNI140-M3 | 1/16" | 1.00 | 3 m |
| JR-TEFNI140-M10 | 1/16" | 1.00 | 10 m |

**Length Conversions**
0.05 mm ≈ .0020"
0.10 mm ≈ .0040"
0.13 mm ≈ .005"
0.25 mm ≈ .010"
0.38 mm ≈ .015"
0.50 mm ≈ .020"
0.75 mm ≈ .030"
1.00 mm ≈ .040"

## Pre-Cut Premium Stainless Steel Tubing

- Zero Dead Volume Connections
- Ready to Use
- Cleaned
- Soft Annealed OD for Easy Ferrule Connections

VICI offers pre-cut stainless steel tubing in lengths most commonly required in HPLC systems. These tubes are cut to square, burr-free ends for Zero Dead Volume connections.

VICI pre-cut tubing is electrolytically cut and specially steam cleaned to remove both organic and inorganic contaminants. Softener-free Polyethylene caps are used to avoid contamination of the tubing.

### Pre-cut Stainless Steel Tubing

| Part No. | OD | ID (mm) | Color | Length (mm) |
|---|---|---|---|---|
| JR-T-97005 | 1/16" | 0.13 | Red | 50 |
| JR-T-97010 | 1/16" | 0.13 | Red | 100 |
| JR-T-97015 | 1/16" | 0.13 | Red | 200 |
| JR-T-97020 | 1/16" | 0.13 | Red | 300 |
| JR-T-97025 | 1/16" | 0.18 | Yellow | 50 |
| JR-T-97030 | 1/16" | 0.18 | Yellow | 100 |
| JR-T-97035 | 1/16" | 0.18 | Yellow | 200 |
| JR-T-97040 | 1/16" | 0.18 | Yellow | 300 |
| JR-T-97045 | 1/16" | 0.25 | Blue | 50 |
| JR-T-97055 | 1/16" | 0.25 | Blue | 100 |
| JR-T-97060 | 1/16" | 0.25 | Blue | 200 |
| JR-T-97065 | 1/16" | 0.25 | Blue | 300 |
| JR-T-97075 | 1/16" | 0.50 | Orange | 50 |
| JR-T-97080 | 1/16" | 0.50 | Orange | 100 |
| JR-T-97085 | 1/16" | 0.50 | Orange | 200 |
| JR-T-97090 | 1/16" | 0.50 | Orange | 300 |
| JR-T-97095 | 1/16" | 0.75 | Green | 50 |
| JR-T-97100 | 1/16" | 0.75 | Green | 100 |
| JR-T-97105 | 1/16" | 0.75 | Green | 200 |
| JR-T-97110 | 1/16" | 0.75 | Green | 300 |



### SPECS

**Material**
Tubing: SS316L, seamless
Caps: Polyethylene

**Dimensions**
OD: 1/16", ID see chart

**Tolerances**
OD: +/– 0.05 mm (.002")
ID: +/– 0.025 mm (.001")

**Pressure rating**
For 1/16" OD tubing: varies with ID, min. 365 bar (5300 psi)

For 1/8" OD tubing: varies with ID, min. 315 bar (4600 psi)

**Spares & Tools**
We recommand our Valco Stainless Steel Fittings on page 40.

**Length Conversions**
0.13 mm ≈ .005"
0.18 mm ≈ .007"
0.25 mm ≈ .010"
0.50 mm ≈ .020"
0.75 mm ≈ .030"

## PTFE & PTFE-Like Tubing

- Low and Mid Pressure Applications
- Biocompatible

### PTFE Tubing

PTFE tubing (PolyTetraFluoroEthylene) is chemically inert and suitable for lower pressure applications. Typically 1/16" OD tubing holds up to 62 bar (900 psi) and 1/8" up to 35 bar (500 psi).
For easy identification of the ID and to differentiate the transfer lines, PTFE tubing is available in a color-coded version.

### Black PTFE Tubing

PTFE is too translucent and for certain light sensitive applications the use of black PTFE tubing is recommended. Typical applications:
- Light sensitive enzymatic reactions
- Luminescent reactions
- Connections to the flow-cell
- Radioactive HPLC

### PFA Tubing

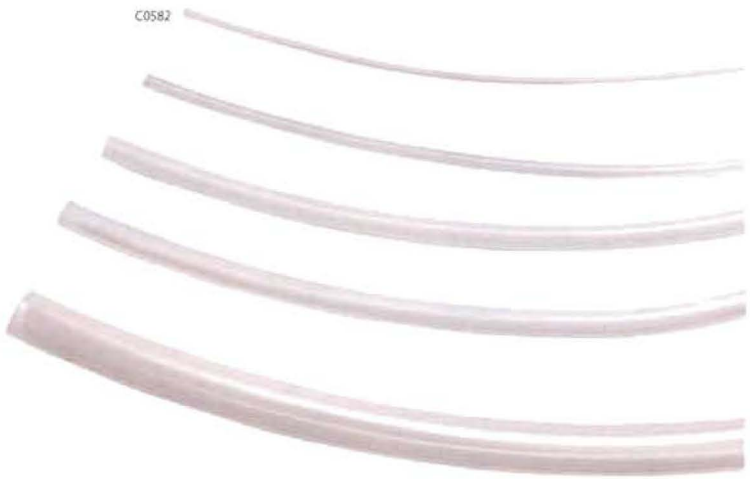
PFA tubing (PerFluoroAlkoxy) has excellent chemical stability and mechanical strength. Always use PFA instead of PTFE if gas permeability is an issue. 1/16" OD high purity tubing has a maximum pressure rating of up to 100 bar (1450 psi), while 1/8" OD maximum 72 bar (1050 psi).

### FEP Tubing

FEP (FluorinatedEthylenePropylene) is chemically inert to most HPLC solvents and is recommended for low pressure applications. Typically 1/16" OD holds up to 117 bar (1700 psi) and 1/8" holds up to 70 bar (1000 psi). We recommend FEP for ion chromatography applications. Max. operating temperature for FEP is 80 °C.

### ETFE Tubing

ETFE tubing has some outstanding properties which make it particularly suitable for HPLC since it has a higher burst pressure when compared to PTFE. The most common dimension is 1/16" x 0.25 mm which will withstand up to 186 bar (2700 psi) using water as mobile phase. It is important, however, to note that when using ETFE with organic solvents it may swell and will reduce the max. pressure to 70 bar (1000 psi). It is the ideal polymer for applications with chloride salts, which typically corrode stainless steel.



## PTFE Tubing – Natural

| Part No. | OD | ID (mm) | Qty/pkg | bar* | psi* |
|---|---|---|---|---|---|
| JR-T-6805-M3 | 1/16" | 0.18 | 3 m | 62 | 900 |
| JR-T-6805-M10 | 1/16" | 0.18 | 10 m | 62 | 900 |
| JR-T-6805-M25 | 1/16" | 0.18 | 25 m | 62 | 900 |
| JR-T-4011-M3 | 1/16" | 0.25 | 3 m | 55 | 800 |
| JR-T-4011-M10 | 1/16" | 0.25 | 10 m | 55 | 800 |
| JR-T-4011-M25 | 1/16" | 0.25 | 25 m | 55 | 800 |
| JR-T-4183-M3 | 1/16" | 0.50 | 3 m | 50 | 700 |
| JR-T-4183-M10 | 1/16" | 0.50 | 10 m | 50 | 700 |
| JR-T-4183-M25 | 1/16" | 0.50 | 25 m | 50 | 700 |
| JR-T-4036-M3 | 1/16" | 0.75 | 3 m | 37 | 550 |
| JR-T-4036-M10 | 1/16" | 0.75 | 10 m | 37 | 550 |
| JR-T-4036-M25 | 1/16" | 0.75 | 25 m | 37 | 550 |
| JR-T-6807-M3 | 1/16" | 1.00 | 3 m | 25 | 350 |
| JR-T-6807-M10 | 1/16" | 1.00 | 10 m | 25 | 350 |
| JR-T-6807-M25 | 1/16" | 1.00 | 25 m | 25 | 350 |
| JR-T-6800-M3 | 1/8" | 1.59 | 3 m | 35 | 500 |
| JR-T-6800-M10 | 1/8" | 1.59 | 10 m | 35 | 500 |
| JR-T-6800-M25 | 1/8" | 1.59 | 25 m | 35 | 500 |
| JR-T-4037-M3 | 1/8" | 2.40 | 3 m | 18 | 250 |
| JR-T-4037-M10 | 1/8" | 2.40 | 10 m | 18 | 250 |
| JR-T-4037-M25 | 1/8" | 2.40 | 25 m | 18 | 250 |
| JR-T-6801-M3 | 2.00 mm | 1.70 | 3 m | 10 | 150 |
| JR-T-6801-M10 | 2.00 mm | 1.70 | 10 m | 10 | 150 |
| JR-T-6801-M25 | 2.00 mm | 1.70 | 25 m | 10 | 150 |
| JR-T-4039 | 4.00 mm | 3.00 | per m | 17 | 250 |
| JR-T-4041 | 4.76 mm | 3.76 | per m | 14 | 200 |
| JR-T-6810 | 1/4" | 4.75 | per m | 17 | 250 |

C0583

### SPECS

**Material**
PTFE

**Dimensions**
See chart

**Tolerances**
For OD 1/16" tubing
OD: +/– 0.05 mm (.002")
ID: +/– 0.05 mm (.002")

For OD 1/8" tubing
OD: +/– 0.10 mm (.004")
ID: +/– 0.10 mm (.004")

**Pressure rating**
See chart on page 106

**Chemical resistance**
See chart on page 22

**Special Info**
Low pressure applications: Check carefully for gas permeability

**Spares & Tools**
The VICI Jour Clean-Cut tubing cutter gives you burr-free perpendicular cuts JR-797 page 21

We recommend PEEK fingertight and flangeless fittings for your applications
Fingertights pages 27–30
Flangeless pages 49–53

**Length Conversions**
0.18 mm ≈ .007"
0.25 mm ≈ .010"
0.50 mm ≈ .020"
0.75 mm ≈ .030"
1.00 mm ≈ .039"
1.59 mm ≈ .062"
2.00 mm ≈ .079"
2.40 mm ≈ .094"
3.00 mm ≈ .118"
3.76 mm ≈ .148"
4.00 mm ≈ .157"
4.75 mm ≈ .187"

## SPECS

**Material**
PTFE, PFA

**Dimensions**
See chart

**Tolerances**
For OD 1/16" tubing
OD: +/– 0.05 mm (.002")
ID: +/– 0.05 mm (.002")

For OD 1/8" tubing
OD: +/– 0.10 mm (.004")
ID: +/– 0.10 mm (.004")

**Pressure rating**
See chart on page 106

**Chemical resistance**
See chart on page 22

**Special Info**
Low pressure applications: Check carefully for gas permeability

**Spares & Tools**
The VICI Jour Clean-Cut tubing cutter gives you burr-free perpendicular cuts JR-797 page 21

We recommend PEEK finger-tight and flangeless fittings for your applications
Fingertights pages 27– 30
Flangeless pages 49–53

**Length Conversions**
0.25 mm ≈ .010"
0.36 mm ≈ .014"
0.50 mm ≈ .020"
0.75 mm ≈ .030"
1.00 mm ≈ .039"
1.59 mm ≈ .062"

### PTFE Tubing – Solid Color Coded

| Part No. | OD | ID (mm) | Qty/pkg | Color | bar* | psi* |
|---|---|---|---|---|---|---|
| JR-T-4011C-M3 | 1/16" | 0.25 | 3 m | Blue | 55 | 800 |
| JR-T-4011C-M10 | 1/16" | 0.25 | 10 m | Blue | 55 | 800 |
| JR-T-4011C-M25 | 1/16" | 0.25 | 25 m | Blue | 55 | 800 |
| JR-T-4183C-M3 | 1/16" | 0.50 | 3 m | Orange | 50 | 700 |
| JR-T-4183C-M10 | 1/16" | 0.50 | 10 m | Orange | 50 | 700 |
| JR-T-4183C-M25 | 1/16" | 0.50 | 25 m | Orange | 50 | 700 |
| JR-T-4036C-M3 | 1/16" | 0.75 | 3 m | Green | 38 | 550 |
| JR-T-4036C-M10 | 1/16" | 0.75 | 10 m | Green | 38 | 550 |
| JR-T-4036C-M25 | 1/16" | 0.75 | 25 m | Green | 38 | 550 |
| JR-T-6808-M3 | 1/16" | 0.25 | 3 m | Black | 55 | 800 |
| JR-T-6808-M10 | 1/16" | 0.25 | 10 m | Black | 55 | 800 |
| JR-T-6808-M25 | 1/16" | 0.25 | 25 m | Black | 55 | 800 |
| JR-T-6811-M3 | 1/16" | 0.50 | 3 m | Black | 50 | 700 |
| JR-T-6811-M10 | 1/16" | 0.50 | 10 m | Black | 50 | 700 |
| JR-T-6811-M25 | 1/16" | 0.50 | 25 m | Black | 50 | 700 |

* = Recommended maximum permanent working pressure
Other pack sizes and tubing lengths are available on request. Please contact your local distributor or VICI directly.

### PFA Tubing

| Part No. | OD | ID (mm) | Qty/qty | bar* | psi* |
|---|---|---|---|---|---|
| JR-T-4001-M3 | 1/16" | 0.50 | 3 m | 100 | 1450 |
| JR-T-4001-M10 | 1/16" | 0.50 | 10 m | 100 | 1450 |
| JR-T-4001-M25 | 1/16" | 0.50 | 25 m | 100 | 1450 |
| JR-T-4002-M3 | 1/16" | 0.75 | 3 m | 76 | 1100 |
| JR-T-4002-M10 | 1/16" | 0.75 | 10 m | 76 | 1100 |
| JR-T-4002-M25 | 1/16" | 0.75 | 25 m | 76 | 1100 |
| JR-T-4007-M3 | 1/16" | 1.00 | 3 m | 55 | 800 |
| JR-T-4007-M10 | 1/16" | 1.00 | 10 m | 55 | 800 |
| JR-T-4007-M25 | 1/16" | 1.00 | 25 m | 55 | 800 |
| JR-T-4003-M3 | 1/8" | 1.59 | 3 m | 72 | 1050 |
| JR-T-4003-M10 | 1/8" | 1.59 | 10 m | 72 | 1050 |
| JR-T-4003-M25 | 1/8" | 1.59 | 25 m | 72 | 1050 |

* = Recommended maximum permanent working pressure
Other pack sizes and tubing lengths are available on request. Please contact your local distributor or VICI directly.

## FEP Tubing

| Part No. | OD | ID (mm) | Qty/pkg | bar* | psi* |
|---|---|---|---|---|---|
| JR-T-6812-M3 | 1/16" | 0.25 | 3 m | 117 | 1700 |
| JR-T-6812-M10 | 1/16" | 0.25 | 10 m | 117 | 1700 |
| JR-T-6812-M25 | 1/16" | 0.25 | 25 m | 117 | 1700 |
| JR-T-6802-M3 | 1/16" | 0.50 | 3 m | 96 | 1400 |
| JR-T-6802-M10 | 1/16" | 0.50 | 10 m | 96 | 1400 |
| JR-T-6802-M25 | 1/16" | 0.50 | 25 m | 96 | 1400 |
| JR-T-6803-M3 | 1/16" | 0.75 | 3 m | 76 | 1100 |
| JR-T-6803-M10 | 1/16" | 0.75 | 10 m | 76 | 1100 |
| JR-T-6803-M25 | 1/16" | 0.75 | 25 m | 76 | 1100 |
| JR-T-6806-M3 | 1/16" | 1.00 | 3 m | 52 | 750 |
| JR-T-6806-M10 | 1/16" | 1.00 | 10 m | 52 | 750 |
| JR-T-6806-M25 | 1/16" | 1.00 | 25 m | 52 | 750 |
| JR-T-6804-M3 | 1/8" | 1.59 | 3 m | 69 | 1000 |
| JR-T-6804-M10 | 1/8" | 1.59 | 10 m | 69 | 1000 |
| JR-T-6804-M25 | 1/8" | 1.59 | 25 m | 69 | 1000 |
| JR-T-6809 | 1/4" | 4.35 | per m | 45 | 650 |

* = Recommended maximum permanent working pressure
Other pack sizes and tubing lengths are available on request. Please contact your local distributor or VICI directly.

## ETFE Tubing

| Part No. | OD | ID (mm) | Qty/pkg | bar* | psi* |
|---|---|---|---|---|---|
| JR-T-084-M3 | 1/32" | 0.25 | 3 m | 152 | 2200 |
| JR-T-084-M10 | 1/32" | 0.25 | 10 m | 152 | 2200 |
| JR-T-084-M25 | 1/32" | 0.25 | 25 m | 152 | 2200 |
| JR-T-078-M3 | 1/16" | 0.17 | 3 m | 200 | 2900 |
| JR-T-078-M10 | 1/16" | 0.17 | 10 m | 200 | 2900 |
| JR-T-078-M25 | 1/16" | 0.17 | 25 m | 200 | 2900 |
| JR-T-080-M3 | 1/16" | 0.25 | 3 m | 186 | 2700 |
| JR-T-080-M10 | 1/16" | 0.25 | 10 m | 186 | 2700 |
| JR-T-080-M25 | 1/16" | 0.25 | 25 m | 186 | 2700 |
| JR-T-082-M3 | 1/16" | 0.50 | 3 m | 152 | 2200 |
| JR-T-082-M10 | 1/16" | 0.50 | 10 m | 152 | 2200 |
| JR-T-082-M25 | 1/16" | 0.50 | 25 m152 | | 2200 |
| JR-T-083-M3 | 1/16" | 0.75 | 3 m | 117 | 1700 |
| JR-T-083-M10 | 1/16" | 0.75 | 10 m | 117 | 1700 |
| JR-T-083-M25 | 1/16" | 0.75 | 25 m | 117 | 1700 |
| JR-T-085-M3 | 1/16" | 1.00 | 3 m | 83 | 1200 |
| JR-T-085-M25 | 1/16" | 1.00 | 10 m | 83 | 1200 |
| JR-T-085-M10 | 1/16" | 1.00 | 25 m | 83 | 1200 |
| JR-T-086-M3 | 1/8" | 1.59 | 3 m | 110 | 1600 |
| JR-T-086-M10 | 1/8" | 1.59 | 10 m | 110 | 1600 |
| JR-T-086-M25 | 1/8" | 1.59 | 25 m | 110 | 1600 |

* = Recommended maximum permanent working pressure
Other pack sizes and tubing lengths are available on request. Please contact your local distributor or VICI directly.

### SPECS

**Material**
FEP, ETFE

**Dimensions**
See chart

**Tolerances**
For OD 1/16" tubing
OD: +/- 0.05 mm (.002")
ID: +/- 0.05 mm (.002")

For OD 1/8" tubing
OD: +/- 0.10 mm (.004")
ID: +/- 0.10 mm (.004")

**Pressure rating**
See chart on page 106

**Chemical resistance**
See chart on page 22

**Special Info**
Low pressure applications: Check carefully for gas permeability

**Spares & Tools**
The VICI Jour Clean-Cut tubing cutter gives you burr-free perpendicular cuts JR-797 page 21

We recommend PEEK finger-tight and flangeless fittings for your applications
Fingertights pages 27–30
Flangeless pages 49–53

**Length Conversions**
0.17 mm ≈ .0067"
0.25 mm ≈ .010"
0.50 mm ≈ .020"
0.75 mm ≈ .030"
1.00 mm ≈ .039"
1.59 mm ≈ .062"
4.35 mm ≈ .171"

## SPECS

**Material**
Tubing: FEP + PVDF
Insert: KEL-F
Ferrule: ETFE
Fitting: PEEK

**Dimensions**
OD: 1/8"
ID: 1.65 mm

**Tolerances**
OD: +/– 0.05 mm (.002")
ID: +/– 0.05 mm (.002")

**Pressure rating**
Low pressure only

**Special info**
Use the special designed KEL-F insert (P/N JR-6141-10) to prevent solvent contact of the PVDF layer

Due to the limited chemical resistance of the outer PVDF layer, the No-Ox tubing should not be used inside a solvent reservoir.

# No-Ox Tubing

- Prevents 'Re-gassing'
- Excellent Chemical Resistance

Most HPLC installations use PTFE tubing as internal low-pressure transfer lines. PTFE is easy to use and chemically extremely inert. But most PTFE and PTFE like polymers have micro pores which allow gases to diffuse freely.
Most solvent degassers are based on this effect. Gases dissolved in solvents are removed by diffusion in applying a vacuum on the outside of the tubing.
A contrary effect can be observed when degassed solvent will pass through PTFE tubing with standard air pressure on the outside. A 're-gassing' will be observed, gases will diffuse through the PTFE tubing back into the newly and costly degassed solvent.
We therefore created the No-Ox tubing. A FEP (PTFE like) tubing is coated on the outside with PVDF tubing. FEP has excellent chemical resistance, but micro pores are present in the tubing wall. PVDF on the other hand is a very tight polymer, no micro pores can be observed, but it lacks chemical resistance.
Co-extruded No-Ox tubing will combine the two features of FEP and PVDF in the most positive manner, ensuring that degassed solvent will stay degassed until it reaches the HPLC pump. The PVDF-layer can easily be removed (using e.g. VICI Jour P/N 797 Clean-Cutter or a razor blade) and stripped from the FEP so only PTFE will be immersed by solvent i.e. in the solvent reservoir.
The No-Ox tubing is connected with a special KEL-F tubing insert (P/N 6141) to prevent solvent contact of the PVDF layer at the tubing end. The ferrule fits into the ID of the tubing and seals against the bottom of the port.


### No-Ox Tubing

| Part No. | Description | Qty/pkg |
|---|---|---|
| JR-T-6130-M3 | Tubing, No-Ox 1/8" x 1.65 mm ID | 3 m |
| JR-T-6130-M10 | Tubing, No-Ox 1/8" x 1.65 mm ID | 10 m |
| JR-6140 | No-Ox fitting Kit | 1 |
| | contains: 2 pcs KEL-F inserts, | |
| | 2 pcs PEEK nuts and 2 pcs ETFE Ferrules | |

### Spare Parts

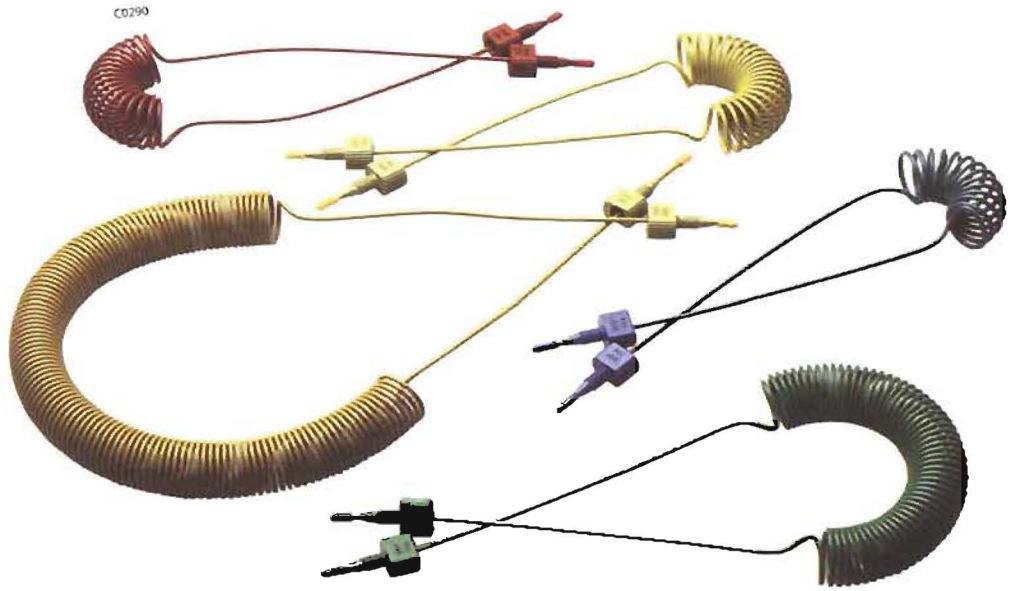
| Part No. | Description | Qty/pkg |
|---|---|---|
| JR-6141-10 | Insert, KEL-F, for No-Ox fitting | 10 |
| JR-55071-10 | Nut, PPS, flangeless 1/8", 1/4"-28 | 10 |
| JR-55083-10 | Adapter, PP, fingertight sleeve, black | 10 |
| JR-051-10 | Ferrule, ETFE, 1/8" | 10 |

## Thermo-Formed Polymeric Tubing

- Various Polymeric Tubing
- Telephone Cables and Customer Specific Items
- Axial Flexibility

VICI offers thermo-formed tubing in various of geometric shapes. Straight tubing, spirals or even more complex forms, just define the form and material on a drawing.

Contact you local distributor or VICI directly for a quotation.

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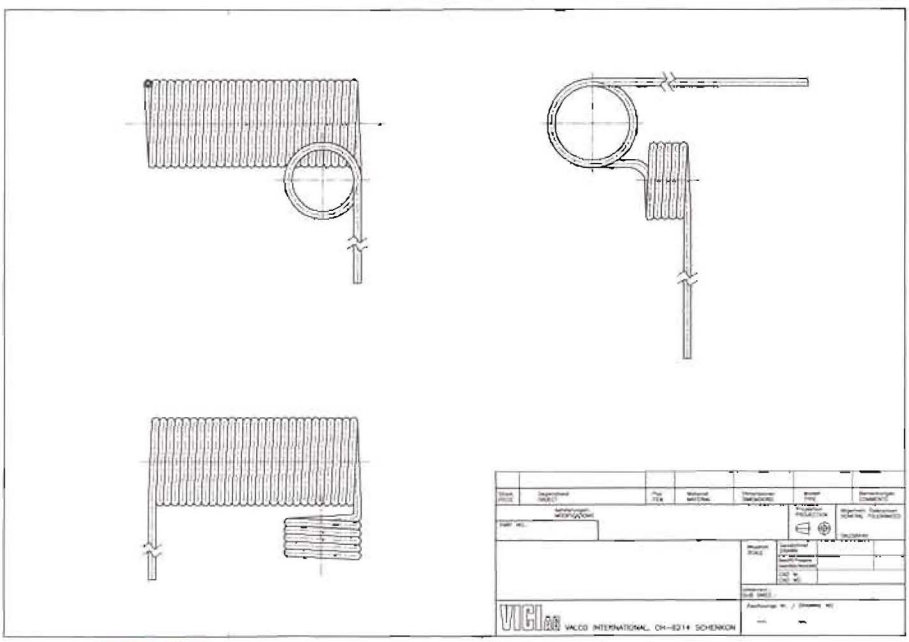


## SPECS

**Material**
PTFE

**Dimensions**
OD: 1/16"
ID: see chart

**Tolerances**
OD: +/- 0.05 mm (.002")
ID: +/- 0.05 mm (.002")

**Pressure rating**
< 55 bar (< 800 psi)

Recommended Volumetric Flow Rate:

| ID | Lin. Velocity | Vol. Flow |
|---|---|---|
| mm | cm/s | ml/min |
| 0.25 | 10 | 0.29 |
| 0.50 | 10 | 1.2 |
| 0.75 | 10 | 2.7 |

**Special Info**
Low pressure applications: Check carefully for gas permeability

**Length Conversions**
0.25 mm ≈ .010"
0.50 mm ≈ .020"
0.75 mm ≈ .030"

# Knitted PTFE Reaction Coils

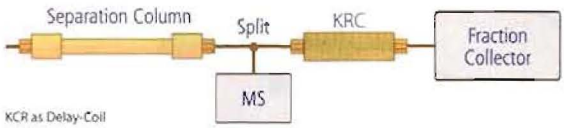
- Tortuous Flow Path of Optimal Flow Dynamic Design made from Inert PTFE
- Minimized Axial Dispersion combined with Efficient Radial Mixing
- Available in Different Lengths and IDs

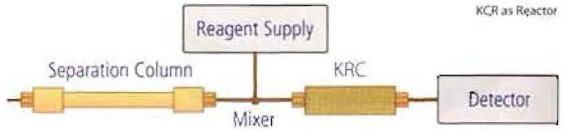
### Preserved chromotographic peak shape

The Knitted PTFE Reaction coils (KRC) are made from tubing which has been knitted into a tortuous path to force the fast moving centre of the liquid stream to mix radially with the slower moving boundary liquid layer, thereby minimizing the axial dispersion. The shape of a chromatographic peak entering the reactor is thus preserved very efficiently. To ensure a stable radial mixing within the KRC, a linear flow rate of 10 cm/s or more is recommended. The KRC is usually the most optimal delay element for use in analytical flow systems, and is typically inserted in the flow path to create a delay line, so that a reaction or other event that requires a certain time can take place. Different delay or reaction times are accomplished by changing the inner diameter and length of the KRC, taking the flow rate through the KRC into consideration.

### Example application areas

KRC can be applied as a delay line in chromatographic separations. One example is the parallel coupling of a MS detector and a fraction collector in preparative separations (see left figure below). The delay time induced by the KRC allows time for detection and therefore an intelligent decision between fraction collection or waste without loss of chromatographic efficiency.
The KRC reactors can also be used in post-column reaction detection in HPLC (see right figure below). In this set-up the KRC also ensures thorough mixing between the column effluent and the added reagents.



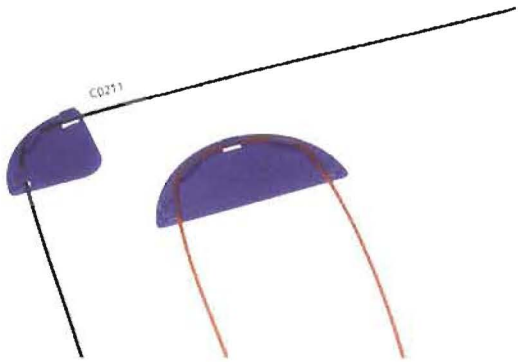




### Knitted PTFE Reaction coils

| Part No. | ID (mm) | Tubing length |
|---|---|---|
| JR-T-3000-123 | 0.25 | 1 m |
| JR-T-3000-223 | 0.25 | 2 m |
| JR-T-3000-423 | 0.25 | 4 m |
| JR-T-3000-133 | 0.25 | 10 m |
| JR-T-3000-233 | 0.25 | 20 m |
| JR-T-3000-125 | 0.50 | 1 m |
| JR-T-3000-225 | 0.50 | 2 m |
| JR-T-3000-425 | 0.50 | 4 m |
| JR-T-3000-135 | 0.50 | 10 m |
| JR-T-3000-235 | 0.50 | 20 m |
| JR-T-3000-128 | 0.75 | 1 m |
| JR-T-3000-228 | 0.75 | 2 m |
| JR-T-3000-428 | 0.75 | 4 m |
| JR-T-3000-138 | 0.75 | 10 m |
| JR-T-3000-238 | 0.75 | 20 m |

## PEEK Tubing Elbows

- Ideal for Routing 1/16" OD PEEK Tubing
- Optimum Radius, Prevents Kinking
- 90° and 180° Elbows




PEEK Tubing Elbows

| Part No. | Description |
|---|---|
| JR-357090 | Tubing Elbow 90° |
| JR-357180 | Tubing Elbow 180° |

**SPECS**

**Material**
Polypropylene

**Dimension**
For OD 1/16" PEEK Tubing

## Tubing Clip – The LC Tubing Organizer

- Fixes 1/16" and 1/8" to Beakers, Flasks or Bottles

Here is a convenient small device for the busy chromatographer. The Tubing Clip, which holds both your 1/16" and 1/8" polymer tubing precisely where they should be in your beakers, flasks and bottles etc. up to 4 mm wall thickness.
The stainless steel spring helps to keep your Tubing Clip working for a long period of time and helps to keep your solvent line in the solvent.


**Tubing Clip**

| Part No. | Description |
|---|---|
| JR-9001 | Tubing Clip |

**SPECS**

**Material**
Polypropylene
Stainless Steel spring

**Dimensions**
For OD 1/16" and 1/8" tubing

**Special Info**
Clip fitted with a SS spring suitable for glassware up to 4 mm thickness

SPECS

**Note**
The VICI Jour Clean-Cut Tubing Cutter Part No. JR-797 is not for sale in Japan.
For an alternative please see part No. JR-794 Guillotine Cutter.

## Clean-Cut Polymer Tubing Cutter

- Cuts PEEK, PTFE, ETFE and other Polymeric Tubing
- No Distortion of OD or Closing of ID
- Safety Lock Secures the Blade

It is difficult to obtain burr-free perpendicular cuts on polymeric tubing, but right angles and clean cuts are essential in LC to avoid leaks.The Clean-Cut is a tool for the most demanding LC applications which will do the job without distorting the outside diameter and/or closing the inside diameter of the tubing.

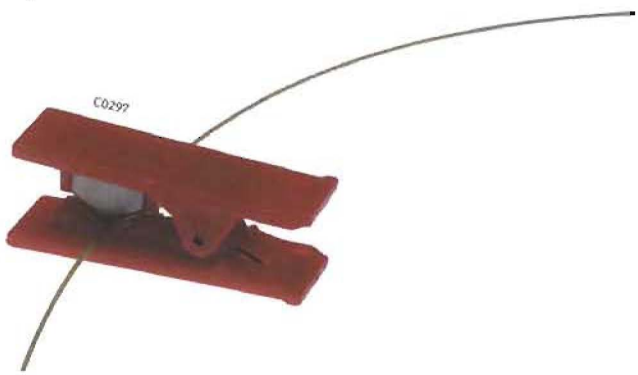
It is designed to cut PTFE, ETFE and polymer tubing in general and PEEK capillary tubing in particular. The compact design allows every chromatographer to have it in his pocket. A unique safety locking mechanism secures the blade when not in use.


**Clean-Cut Polymer Tubing Cutter**

| Part No. | Description |
|---|---|
| JR-797 | Clean-Cut Tubing Cutter |
| JR-798 | Replacement blade for JR-797 |

## Guillotine Polymer Tubing Cutter

- Cuts PEEK, PTFE, ETFE and other Polymeric Tubing



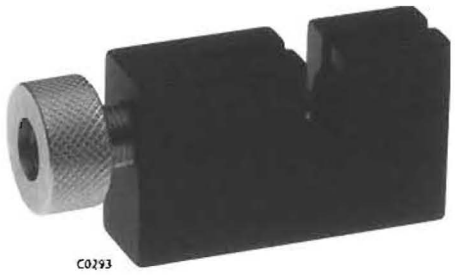

**Guillotine Polymer Tubing Cutter**

| Part No. | Description |
|---|---|
| JR-794 | Guillotine Cutter for polymer tubing |
| JR-795 | Replacement blade for JR-794 |

## Stainless Steel Tubing Cutter (for non-critical connections)

- For 1/16" an 1/8" SS Tubing
- Leaves Smooth, Uniform Cuts
- Minimum Deburring and/or Reaming Required
- Easy Replacement of the Cutting Wheel

This is the ideal tool for cutting 1/16" and 1/8" stainless steel tubing, with an ID > 0.5 mm, leaving smooth, uniform cuts with a minimum of deburring and/or reaming for non-critical connections. The easily replaced cutting wheel scores tubing.




| Part No. | Description |
|---|---|
| JR-792 | Tubing Cutter for metal tubing |
| JR-793 | Replacement cutting wheel for JR-792 |

## Stainless Steel Tubing Pliers (for non-critical connections)

- For Easy Cutting 1/16" OD SS Tubing off a Coil
- Reaches "Hard-To-Get" places in a HPLC System

The plier type of cutter can be used for quick cuts for non-critical applications or at 'hard to get' places. However for scientific equipment the use of Pre-Cut and cleaned tubing is strongly recommended.


| Part No. | Description |
|---|---|
| JR-796 | Tubing Pliers for metal tubing |

**SPECS**

**Tech Tip**
Between sample injector, column and detector electrolytically cut and steam cleaned SS tubing should be used

SS Pre-Cut tubing (see page 13)

SPECS

**Spares & Tools**
Flanged Fittings
see pages 50 and 54
Polymeric Tubing
see pages 5–9 and 14–18

## Easy-Flange & Easy-Flange Combi-Kits

- Handy Tool for Perfect Flanges
- No Heat or Electricity Required
- No Contamination

The Easy-Flange flange-rolling tool has been developed for fittings requiring a flange and is suitable for PTFE and PTFE like tubes with OD between 1/16" and 1/8".
The tool forms the flange just by applying a mechanical force and does not require electrical power. The quality of the flange is considerably improved since the flanges are formed without stressing the tubing by heat and because the specially designed negative conical profile of the flange forming part gives a shape ideal for maximum sealing properties. The Easy-Flange-Combi Kit is an upgraded version of our standard Easy-Flange Kit, which comes complete with PTFE tubing, PPS nuts and Polypropylene O-rings.


### Easy-Flange Kit

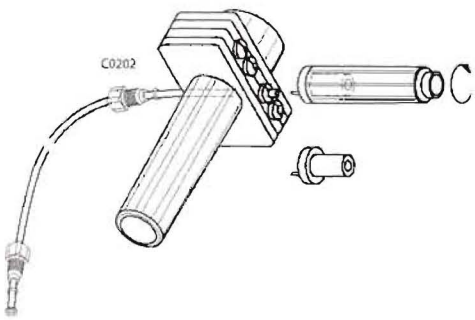
| Part No. | Description | Qty |
|---|---|---|
| JR-201540 | Easy-Flange, kit in plastic case, complete with the following parts: | |
| JR-202235 | Flanging disc with 0.5 mm SS pin for PEEK tubing | 1 pc |
| JR- 201541 | Flanging disc with 0.8 mm polymer pin | 1 pc |
| JR-201554 | Flanging disc with 0.8 mm Titanium pin | 1 pc |
| JR-201536 | Flanging disc with 1.3 mm polymer pin | 1 pc |
| JR-201537 | Flanging disc with 1.3 mm Titanium pin | 1 pc |
| JR-797 | Tool, Clean-Cut tubing Cutter | 1 pc |
| JR-T-4036-M3 | Tubing, PTFE, 1/16" x 0.75 mm ID, 3m/pkg | 1 pkg |

## Easy-Flange Combi-Kit

| Part No. | Description | Qty |
|---|---|---|
| JR-201539 | Easy-Flange, combi kit in plastic case, complete with the following parts: | |
| JR-202235 | Flanging disc with 0.5 mm SS pin for PEEK tubing | 1 pc |
| JR-201541 | Flanging disc with 0.8 mm polymer pin | 1 pc |
| JR-201554 | Flanging disc with 0.8 mm Titanium pin | 1 pc |
| JR-201536 | Flanging disc with 1.3 mm polymer pin | 1 pc |
| JR-201537 | Flanging disc with 1.3 mm Titanium pin | 1 pc |
| JR-797 | Tool, Clean-Cut tubing Cutter | 1 pc |
| JR-55060-10 | Nut, PPS, flanged 1/16", 1/4"-28, 10/pkg | 1 pkg |
| JR-201926-10 | Ring, PP, flanged 1/16", 10/pkg | 1 pkg |
| JR-55061-10 | Nut, PPS, flanged 1/8", 1/4"-28, 10/pkg | 1 pkg |
| JR-201928-10 | Ring, PP, flanged 1/8", 10/pkg | 1 pkg |
| JR-5508X-24 | Adapter, PP, fingertight sleeve, assorted 2 pcs. per color, 24/pkg | 1 pkg |
| JR-T-4036-M3 | Tubing, PTFE, 1/16" x 0.75 mm ID, 3m/pkg | 1 pkg |
| JR-T-6800-M3 | Tubing, PTFE, 1/8" x 1/16" ID, 3m/pkg | 1 pkg |

## Easy-Flange Spare Parts & Options

| Part No. | Description |
|---|---|
| JR-201541 | Flanging disc with 0.8 mm polymer pin |
| JR-201554 | Flanging disc with 0.8 mm Titanium pin |
| JR-201662 | Flanging disc with 1.0 mm polymer pin |
| JR-202235 | Flanging disc with 0.5 mm SS pin for PEEK tubing |
| JR-201536 | Flanging disc with 1.3 mm polymer pin |
| JR-201537 | Flanging disc with 1.3 mm Titanium pin |
| JR-201663 | Flanging disc with 1.5 mm polymer pin |
| JR-201531 | Flanging clamp pair |
| JR-797 | Tool, Clean-Cut tubing Cutter |

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## INDEX



**Disclaimer:**
**The maximum holding pressure for any type of connection 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.**

## PPS One-Piece Hex-Head/Fingertight Fitting

- Economically Priced Alternative to PEEK
- Excellent Chemical Resistance
- One-Piece – No Ferrule required
- Slim Design – Fingertight with Adapter

The new VICI Jour PPS One-Piece Hex-Head/Fingertight Fitting offers excellent chemical and pressure resistance.





### PPS One-Piece Hexhead/Fingertight Fitting

| Part No. | Description | Qty/pkg |
|---|---|---|
| JR-58000-5 | Fitting, PPS, hexhead one-piece, black, 10-32 | 5 |

**Color-Sleeve – fingertight adapter**
This adapter is useful to color code different solvent lines and it turns the new VICI Jour low pressure nut into a fingertight fitting in an instant. The Color-Sleeve is available in 12 colors.

### Color-Sleeve – fingertight adapter

| Part No. | Description | Qty/pkg |
|---|---|---|
| JR-55080-5 | Adapter, PP, fingertight sleeve, natural | 5 |
| JR-55081-5 | Adapter, PP, fingertight sleeve, white | 5 |
| JR-55082-5 | Adapter, PP, fingertight sleeve, dark grey | 5 |
| JR-55083-5 | Adapter, PP, fingertight sleeve, black | 5 |
| JR-55084-5 | Adapter, PP, fingertight sleeve, lavender | 5 |
| JR-55085-5 | Adapter, PP, fingertight sleeve, red | 5 |
| JR-55086-5 | Adapter, PP, fingertight sleeve, yellow | 5 |
| JR-55087-5 | Adapter, PP, fingertight sleeve, orange | 5 |
| JR-55088-5 | Adapter, PP, fingertight sleeve, brown | 5 |
| JR-55089-5 | Adapter, PP, fingertight sleeve, green | 5 |
| JR-55090-5 | Adapter, PP, fingertight sleeve, blue | 5 |
| JR-55091-5 | Adapter, PP, fingertight sleeve, purple | 5 |
| JR-5508X-24 | Adapter, PP, fingertight sleeve, assorted 2 pcs. per color | 24 |
| JR-5508X-12 | Adapter, PP, fingertight sleeve, assorted 2 pcs. each blue, red, green, yellow, black, white | 12 |


### SPECS

**Material**
PPS – PolyPhenylene Sulphide, black

Adapter: Polypropylene

| Chemical Resistance PPS | |
|---|---|
| **Chemical Class** | **Resistance** |
| Acids, organic | A |
| Acids, inorganic | A/C* |
| Aldehydes | A |
| Alcohols | A |
| Bases | A/B |
| Esters | A |
| Halogenated Org. | A/B |
| Hydrocarbons | A |
| Ketones | A |

*conc. Halogen Acids
A = suitable
B = Marginal – dependant on application
C = Not recommended

Detailed chemical resistance chart see page 106

**Dimensions**
For 1/16" OD Tubing

**Threads**
10-32

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

**Spares & Tools**
We offer 1/16" OD tubing for High Pressure applications in various materials
(see pages 5–13)

## SPECS

**Material**
PEEK

**Dimensions**
For OD 1/16" Tubing

**Threads**
10-32

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

**Special Info**
Fingertight Fittings – works with all 1/16" OD tubing and female 10-32 ports

Color Coded – six colors to identify tubing lines

Biocompatible

The coloration pigments are carefully chosen not to contain any heavy metals and hazardous chemicals.

**Spares & Tools**
We offer 1/16" OD tubing for High Pressure applications in various materials
(see pages 5–13)

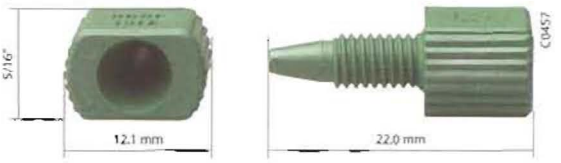
# PEEK Color Coded & Natural One-Piece Fingertight Fittings

- Fingertight up to 350 bar (5000 psi)
- Excellent Chemical Resistance
- Biocompatible

To identify various tubing lines the PEEK fingertight fittings are available in six colors. PEEK fingertights are rated to 350 bar (5000 psi) and can be used in virtually any type of HPLC fitting detail on the market with 10-32 thread.


## PEEK Color Coded One-Piece Fingertight Fittings Molded Version

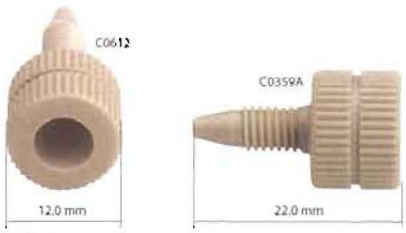
| Part No. | Description | Qty/pkg |
|---|---|---|
| JR-55020-5 | Fitting, PEEK, one-piece natural, 10-32 | 5 |
| JR-55021-5 | Fitting, PEEK, one-piece black, 10-32 | 5 |
| JR-55022-5 | Fitting, PEEK, one-piece red, 10-32 | 5 |
| JR-55023-5 | Fitting, PEEK, one-piece yellow, 10-32 | 5 |
| JR-55024-5 | Fitting, PEEK, one-piece blue, 10-32 | 5 |
| JR-55025-5 | Fitting, PEEK, one-piece green, 10-32 | 5 |




Part No. JR-55025-5

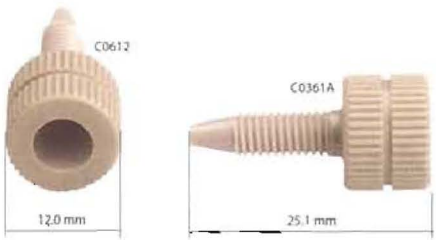
## PEEK Natural One-Piece Fingertight Fittings – Machined Versions

| Part No. | Description | Qty/pkg |
|---|---|---|
| JR-5502-5 | Fitting, PEEK, one-piece, 10-32 | 5 |
| JR-5504-5 | Fitting, PEEK, one-piece fingertight short head, 10-32 | 5 |
| JR-5507-5 | Fitting, PEEK, one-piece fingertight long, 10-32 | 5 |
| JR-5508-5 | Fitting, PEEK, one-piece fingertight narrow hex-head, 10-32 | 5 |




JR-5502-5


JR-5504-5




JR-5507-5


JR-5508-5

### SPECS

**Material**
PEEK

**Dimensions**
For OD 1/16" Tubing

**Threads**
10-32

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

**Special Info**
Fingertight Fittings – works with all 1/16" OD tubing and female 10-32 ports

**Spares & Tools**
We offer 1/16" OD tubing for High Pressure applications in various materials
(see pages 5–13)

## SPECS

**Material**
PEEK

**Dimensions**
For OD 1/16" Tubing

**Threads**
10-32

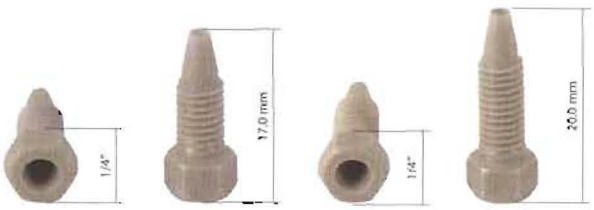
**Pressure rating**
< 350 bar (< 5000 psi)
Varies with tubing material and ID

**Tech Tip**
For tightening hex-head fittings, we recommend our ValvTool JR-800 (see pages 46 and 95)

# PEEK One-Piece Hex-Head Fittings

- Ideal for use with PEEK Tubing
- Withstand Pressures up to 350 bar (5000 psi)
- For any High Pressure Fittings

PEEK one-piece hex-head fittings are convenient with their integrated ferrule and easy to use with the Valv-Tool and the Color-It Color-Coded Fingertight Adapters. The 10-32 thread will fit virtually all standard high-pressure female connections. Connections with the reusable PEEK one-piece hex-head will withstand pressures of up to 350 bar (5000 psi). PEEK one-piece hex-head fittings are available both in a short and long version.




1/4" = 6.35 mm

### PEEK One-Piece Hex-Head Fittings

| Part No. | Description | Qty/pkg |
|---|---|---|
| JR-55100-5 | Fitting, PEEK, one-piece hex-head short, 10-32 | 5 |
| JR-55110-5 | Fitting, PEEK, one-piece hex-head long, 10-32 | 5 |

## SPECS

**Material**
PEEK

**Dimensions**
For OD 1/16" Tubing

**Threads**
10-32

**Tolerances**
+/– 0.05 mm (.002")

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

**Special Info**
Double-Ferrule grips Tubing twice

Works with all 1/16" OD Tubing

Fits any 10-32 Fitting

Fits all Female compression Fittings Ideal for use with PEEK Tubing

# PEEK Nuts for use with Double Ferrule

- High-Pressure Rating up to 420 bar (6000 psi)
- Ideal for use with 1/16" PEEK Tubing
- Fits any 10-32 Port

These hex-head nuts are for use with VICI Jour Double Ferrules. 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 closely spaced. These fittings fit virtually any female 1/16" fitting.


Part No. JR-5503-5



Part No. JR-5580-5


Part No. JR-5511-5




### PEEK Nuts with Double Ferrule

| Part No. | Description | Qty/pkg |
|---|---|---|
| JR-5511-5 | Nut, PEEK, hex-head short, 10-32 | 5 |
| JR-5510-5 | Nut, PEEK, hex-head long, 10-32 | 5 |
| JR-5580-5 | Nut, PEEK, fingertight, 10-32 | 5 |
| JR-5503-5 | Nut, PEEK, universal fingertight, 10-32 | 5 |
| JR-5004-5 | Ferrule, PEEK, double 1/16" | 5 |


Part No. JR-5510-5

## PEEK Nuts with Single Ferrule

- Reuseable Nut, Replaceable Ferrule
- For 1/16" and 1/8" OD Tubing
- Suitable for High Pressure 10-32 and 5/16"-24 Ports

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 fingers will not fit.


Part No. JR-5570-5


Part No. JR-5003-5


Part No. JR-ZN2PK-5


Part No. JR- ZF2PK-5

### Two-Piece Fingertight Nuts

| Part No. | Description | Qty/pkg |
|---|---|---|
| JR-5570-5 | Nut, PEEK, fingertight, 1/16", 10-32 | 5 |
| JR-5003-5 | Ferrule, Single, PEEK, 1/16" | 5 |
| JR-ZN2PK-5 | Nut, PEEK, hex-head, 1/8", 5/16"-24 | 5 |
| JR-ZF2PK-5 | Ferrule, PEEK, 1/8" | 5 |

### SPECS

**Material**
PEEK

**Dimensions**
For 1/16", 1/8" Tubing

**Threads**
See Chart

**Pressure rating**
< 280 bar (< 4000 psi)
Varies with tubing material and ID

**SPECS**

**Material**
Polypropylene

**Dimensions**
For 1/4" Hex-head nuts

## Color-It Fingertight Adapters

- Easy Solvent Line Identification
- Fits All Hex-Head PEEK and SS Fittings for 1/16" OD Tubing
- Six Different Colors Available

We recommend the Color-It Snap-On fingertight-extension for color coding our 1/4" hex-head nuts. Color-It is useful to color code different solvent lines and it turns your hex-head nuts into a fingertight fitting in an instant. Color-It knobs are available in six different colors (blue, yellow, green, black, white and red). They can be used in connection with our PEEK and Stainless Steel hex-head nuts for 1/16" OD tubing (see pages 30 and 40–41)



### Color-It Fingertight Adapters

| Part No. | Description | Qty/pkg |
|---|---|---|
| JR-55010-5 | Color-It blue | 5 |
| JR-55011-5 | Color-It yellow | 5 |
| JR-55012-5 | Color-It green | 5 |
| JR-55013-5 | Color-It black | 5 |
| JR-55014-5 | Color-It white | 5 |
| JR-55015-5 | Color-It red | 5 |
| JR-55016-12 | Color-It assorted, 2 pcs. each color | 12 |

## PEEK Unions

- Easy Connection of Transfer/Solvent Lines
- Low Dead Volume
- Completely Inert and Biocompatible

VICI Jour PEEK unions are usable with most common HPLC solvents (organic and inorganic) without risking corrosion, metal contamination, or protein degradation that might occur with stainless steel. Small diameter bores are used to insure low dead volume connections. 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 (PEEK, stainless steel, PTFE, ETFE, etc.).

Part No. JR-1061

Part No. JR-ZBU1FPK

Part No. JR-ZRU21FPK

### PEEK Unions

| Part No. | Description |
|---|---|
| JR-1061 | Union, PEEK, 0.25 mm bore, complete |
| JR-1066 | Union, PEEK, 0.50 mm bore, complete |
| JR-1067 | Union, PEEK, 0.75 mm bore, complete |
| JR-061 | Union, PEEK, 0.25 mm bore, body only |
| JR-066 | Union, PEEK, 0.50 mm bore, body only |
| JR-067 | Union, PEEK, 0.75 mm bore, body only |

### PEEK Bulkhead Unions

| Part No. | Description |
|---|---|
| JR-ZBU1CFPK | Bulkhead Union, PEEK, 0.25 mm bore, complete |
| JR-ZBU1MFPK | Bulkhead Union, PEEK, 0.50 mm bore, complete |
| JR-ZBU1FPK | Bulkhead Union, PEEK, 0.75 mm bore, complete |

### PEEK Reducing Unions

| Part No. | Description |
|---|---|
| JR-ZRU21FPK | Union, PEEK, reducing, 1/8" to 1/16", 0.75 mm bore, complete |

### Spare Parts

| Part No. | Description | Qty/pkg |
|---|---|---|
| JR-55021-5 | Fitting, PEEK, one-piece black, 10-32 replacement for all JR-106X | 5 |
| JR-ZN2PK-5 | Nut, PEEK, hex-head, 1/8", 5/16"-24, replacement for JR-ZRU21FPK | 5 |
| JR-ZF2PK-5 | Ferrule, PEEK, 1/8", replacement for JR-ZRU21FPK | 5 |

### SPECS

**Material**
PEEK

**Dimensions**
For 1/16" OD Tubing and 1/16" to 1/8"
Others: see illustrations

**Threads**
10-32 for 1/16" OD tubing
5/16"-24 for 1/8" OD tubing

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

**Note**
Complete unions will be supplied with PEEK one-piece fittings.

PEEK unions have the standardized Valco fitting details with smooth transition of the taper into the threaded part.

**Tech Tip**
Bulkhead Unions require a min. 10 mm panel hole.

## SPECS

**Material**
PEEK

**Dimensions**
Tees and Crosses
Diameter (body): 25.0 mm
Thickness: 12.0 mm

**Threads**
10-32
For OD 1/16" Tubing

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

**Special Info**
100% PEEK flowpath for inertness and biocompatibility

**Tech Tip**
Use our color coded one-piece fingertight fittings for easy solvent line identification (see pages 27–28)

**Note**
Complete Tees and Crosses will be supplied with PEEK one-piece fittings.

PEEK unions have the standardized Valco fitting details with smooth transition of the taper into the threaded part.

# PEEK Tees, Crosses and Manifolds High Pressure

- Easy Connection of Solvent Lines
- Low Dead Volume
- Completely Inert and Biocompatible

VICI Jour PEEK tees, crosses and manifolds are usable with most common HPLC solvents (organic and inorganic) without risking corrosion, metal contamination, or protein degradation that might occur with stainless steel. Small diameter thru-holes are used to insure low dead volume connections. Connections to these PEEK tees, crosses and manifolds can be made with any 10-32 fitting that uses polymeric ferrules. PEEK tees, crosses and manifolds 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 (PEEK, stainless steel, PTFE, ETFE, etc.).


C048S

## PEEK Tees High Pressure

| Part No. | Description |
|---|---|
| JR-1030 | Tee, PEEK, HP, 0.25 mm bore, complete with one-piece fittings |
| JR-1032 | Tee, PEEK, HP, 0.50 mm bore, complete with one-piece fittings |
| JR-1033 | Tee, PEEK, HP, 0.75 mm bore, complete with one-piece fittings |
| JR-2030 | Tee, PEEK, HP, 0.25 mm bore, body only |
| JR-2032 | Tee, PEEK, HP, 0.50 mm bore, body only |
| JR-2033 | Tee, PEEK, HP, 0.75 mm bore, body only |

## PEEK Crosses High Pressure

| Part No. | Description |
|---|---|
| JR-1040 | Cross, PEEK, HP, 0.25 mm bore, complete with one-piece fittings |
| JR-1042 | Cross, PEEK, HP, 0.50 mm bore, complete with one-piece fittings |
| JR-1043 | Cross, PEEK, HP, 0.75 mm bore, complete with one-piece fittings |
| JR-2040 | Cross, PEEK, HP, 0.25 mm bore body only |
| JR-2042 | Cross, PEEK, HP, 0.50 mm bore body only |
| JR-2043 | Cross, PEEK, HP, 0.75 mm bore body only |

### PEEK Manifolds High Pressure

| Part No. | Description |
|---|---|
| JR-Z6M1PK | Manifold, PEEK, 6 inlets to 1 outlet, 0.25 mm bore complete with one-piece fittings |
| JR-B-Z6M1PK | Manifold, PEEK, 6 inlets to 1 outlet, 0.25 mm bore, body only |

### Spare Parts

| Part No. | Description | Qty/pkg |
|---|---|---|
| JR-55021-5 | Fitting, PEEK, one-piece black, 10-32 | 5 |

**SPECS**

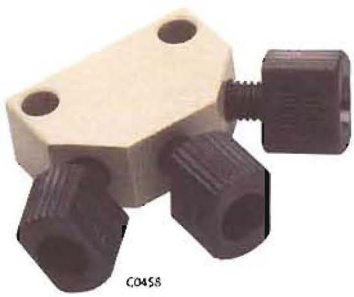
**Dimensions**
Diameter (body): 25.4 mm
Thickness (body): 22.9 mm

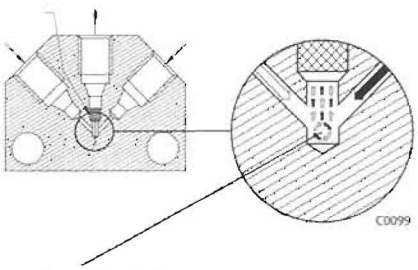
## PEEK Biocompatible Mixing Tee

- High-Pressure Gradient Mixing
- Post Column Reactions
- Completely Biocompatible

A unique mixing is the result of the turbulence generated by the introduction angle of the solvents as well as the flow through our PAT filter element – the two solvent streams mix more thoroughly than with a conventional tee.

The biocompatible tee can be used for high-pressure gradient mixing as well as for post column reactions.




The two solvent streams are perfectly mixed in the vortex mixing chamber

**SPECS**

**Material**
PEEK, PAT

**Dimensions**
Width (body): 25.4 mm
Thickness: 9.5 mm

**Tolerances**
+/– 0.05 mm (.002")

**Threads**
10-32
For OD 1/16" Tubing

**Pressure rating**
< 350 bar (< 5000 psi)

**Special Info**
Metal-free for analytical gradient HPLC

Built-in protein friendly PAT filter (PEEK Alloyed with Teflon)

Porosity 5 µm

Internal volume incl. frit = 4 µL

### PEEK Biocompatible Mixing Tee

| Part No. | Description |
|---|---|
| JR-9000-0665 | Tee, PEEK, mixing, complete with one-piece fittings |

## SPECS

**Material**
PEEK

**Dimensions**
See chart

**Pressure rating**
M6 - 1/4"-28:
< 70 bar (< 1000 psi)
Male and female luer:
< 3.5 bar (< 50 psi)
Varies with tubing material and ID

**Special Info**
**PEEK Port Adapters**
These adapters connect standard LC fittings to standard LC ports

They are available with 1/4"-28, M6 or 10-32 threads (configured for VALCO)

**PEEK Luer Adapters**
Male and female luer adapters connect luer fittings, 10-32, 1/4"-28 and M6 threaded fittings

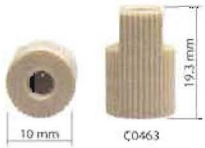
Luer Adapters not available as luer lock

Thru-hole = 0.40 mm

# PEEK Adapters

- Easy Connection of Solvent Lines
- Low Dead Volume
- Completely Inert and Biocompatible

Part No. JR-062



Part No. JR-5595

Part No. JR-5505

## PEEK Adapters

| Part No. | Description |
|---|---|
| JR-062 | Adapter, PEEK, 10-32 to 1/4"-28 |
| JR-5595 | Pharmacia Adapter M6 to 10-32 |
| JR-5505 | Adapter, PEEK, M6 to 10-32 |

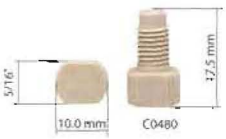
## PEEK Port and Luer Adapters

| Part No. | Inlet | | Outlet |
|---|---|---|---|
| JR-0611 | Waters Female |  | 10-32 Male |
| JR-0612 | 1/4"-28 Female |  | 10-32 Male |
| JR-0622 | 1/4"-28 Female |  | M6 Male |
| JR-0625 | 1/4"-28 Female |  | Female Luer |
| JR-0626 | 1/4"-28 Female |  | Male Luer |
| JR-0613 | M6 Female |  | 10-32 Male |
| JR-0619 | M6 Female |  | 1/4"-28 Male |
| JR-0617 | 10-32 Female |  | 1/4-28 Male |
| JR-0623 | 10-32 Female |  | Female Luer |

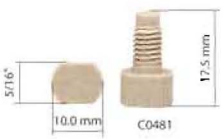
## PEEK Plugs & Caps

- Plugging Ports – Capping Solvent Lines
- All Common Thread Sizes Available


Part No. JR-408

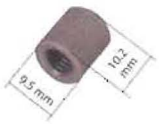



Part No. JR-409




Part No. JR-410


Part No. JR-ZC1PK




Part No. JR-CCPK-1

### PEEK Plugs & Caps

| Part No. | Description |
|---|---|
| JR-408 | Plug, PEEK, 10-32 |
| JR-409 | Plug, PEEK, 1/4"-28 |
| JR-410 | Plug, PEEK, M6 |
| JR-ZC1PK | Cap, PEEK, female 10-32 |
| JR-CCPK-1 | Cap, PEEK, female 1/4"-28 |

## PEEK Starter Kit

- All Parts Biocompatible
- Ideal Kit for All HPLC Users

For a number of interesting LC applications involving proteins, peptides, nucleic acids or other samples of biological origin metal systems may interact with samples or release transition metals that will deactivate columns.
By replacing stainless steel parts, such as tubing, fittings, ferrules, mobile phase filters, in-line filters etc. a biocompatible and metal-free environment is created for samples and mobile phase.

The PEEK Starter Kit is a collection of items, which is a good start for everybody working in the field of biochromatography.
The Kit consists of fittings, ferrules, tubing and solvent filters as well as a union, our Clean-Cut Tubing Cutter and other useful tools like our Tubing Elbows. All together for a very competitive price!


PEEK Starter Kit

| Part No. | Description |
|---|---|
| JR-35P | PEEK Starter Kit |

**SPECS**

**Material**
PEEK

**Threads**
See chart

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

## SPECS

**Material**
PEEK

**Dimensions**
See illustrations

**Threads**
Nuts: 6-40
Ext. Nuts 1/16": 10-32
Ext. Nuts 1/32": 8-36

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

**Note**
Nanovolume® Unions will be supplied with PEEK one-piece fingertight fittings, ext. nuts and ferrules for 1/32" OD tubing (see chart Nanovolume® Nuts & Ferrules).

The Nanovolume® Reducing Union will additionally be supplied with a PEEK ext. nut and ferrule for 1/16" OD tubing (see chart Nanovolume® Nuts & Ferrules).

*patents pending

# Nanovolume® Fittings

- 100 and 150 µm Bores Available
- Nuts, Ferrules, Unions, Tees, Crosses and Ys
- For PEEK, PEEKclad-FST™ and Electro Formed Nickel Tubing

VICI Nanovolume® Fittings are designed for Capillary LC used in HTS techniques, Proteomics, Genomics and other newer developments in industrial routine research. Small sample size, reduction of analysis time and higher expectations on instrumentation as well as on accessories are required. VICI Nanovolume® connectors include our new one-piece fingertight fittings for 1/32 OD tubing with a patented* collapsible ferrule.
The VICI Nanovolume® Fittings are as easy to handle as our standard analytical fittings and unions. The only difference is their size.

Part No. JR-C-NNFFPK

Part No. JR-C-EN.5FPKB

Part No. JR-ZGF.5PK

Part No. JR-EN1FPKB

Part No. JR-ZGF1PK

## Nanovolume® Nuts & Ferrules

| Part No. | Description |
|---|---|
| JR-C-NNFFPK | Fitting, PEEK, one-piece, grooved ferrule, 1/32" |
| JR-C-EN.5FPKB | Nut, PEEK, External, 1/32" |
| JR-ZGF.5PK | Ferrule, PEEK, grooved, 1/32" |
| JR-EN1FPKB | Nut, PEEK, External, 1/16" |
| JR-ZGF1PK | Ferrule, PEEK, grooved, 1/16" |
| JR-C-NPFPK | Plug, PEEK, 1/32" |

Part No.
JR-C-NEU.5XFPK, JR-C-NEU.5FPK

## Nanovolume® Unions

| Part No. | Description |
|---|---|
| JR-C-NEU.5XFPK | Union, PEEK, 100 µm bore, Int. 1/32" – Ext. 1/32" ZDVF |
| JR-C-NEU.5FPK | Union, PEEK, 150 µm bore, Int. 1/32" – Ext. 1/32" ZDVF |

Part No. JR-C-NERU1FPK

## Nanovolume® Reducing Union

| Part No. | Description |
|---|---|
| JR-C-NERU1FPK | Union, PEEK, 150 µm bore, Reducing, Ext.1/16" – Int. 1/32" |

### Nanovolume® Tees

| Part No. | Description |
|---|---|
| JR-C-NTXFPK | Tee, PEEK, 100 µm bore, 1/32", complete |
| JR-C-NTFPK | Tee, PEEK, 150 µm bore, 1/32", complete |

Part No.
JR-C-NTXFPK, JR-C-NTFPK

### Nanovolume® Crosses

| Part No. | Description |
|---|---|
| JR-C-NXXFPK | Cross, PEEK, 100 µm bore ID, 1/32", complete |
| JR-C-NXFPK | Cross, PEEK, 150 µm bore, 1/32", complete |

Part No.
JR-C-NXXFPK, JR-C-NXFPK

### Nanovolume® Ys

| Part No. | Description |
|---|---|
| JR-C-NYXFPK | Y, PEEK, 100 µm bore, 1/32", complete |
| JR-C-NYFPK | Y, PEEK, 150 µm bore, 1/32", complete |

Part No.
JR-C-NYXFPK, JR-C-NYFPK

**SPECS**

**Material**
PEEK

**Dimensions**
Diameter (body): 21.6 mm
Thickness: 9.5 mm

**Threads**
6-40

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

**Note**
Nanovolume® Tees, Crosses and Ys will be supplied with PEEK one-piece fingertight fittings for 1/32" OD tubing (see chart Nanovolume® Nuts & Ferrules).

## PEEK Liners for Fused Silica Tubing Connections

- Available for the Most Common Fused Silica Tubing Sizes
- Two Different Lengths
- Liners with 1µm Screen

### PEEK Liners

| Part No. | OD | for Fused Silica OD | Length (mm) | Qty/pkg |
|---|---|---|---|---|
| JR-C-NL.15L-5 | 1/32" | 125–175 µm | 27 | 5 |
| JR-C-NL.15S-5 | 1/32" | 125–175 µm | 10 | 5 |
| JR-C-NL.20L-5 | 1/32" | 175–225 µm | 27 | 5 |
| JR-C-NL.20S-5 | 1/32" | 175–225 µm | 10 | 5 |
| JR-C-NL.25L-5 | 1/32" | 225–275 µm | 27 | 5 |
| JR-C-NL.25S-5 | 1/32" | 225–275 µm | 10 | 5 |
| JR-C-NL.30L-5 | 1/32" | 275–325 µm | 27 | 5 |
| JR-C-NL.30S-5 | 1/32" | 275–325 µm | 10 | 5 |
| JR-C-NL.35L-5 | 1/32" | 325–375 µm | 27 | 5 |
| JR-C-NL.35S-5 | 1/32" | 325–375 µm | 10 | 5 |

### PEEK Liners with 1µm Screen

| Part No. | OD | for Fused Silica OD | Length (mm) |
|---|---|---|---|
| JR-C-NLS1.15 | 1/32" | 125–175 µm | 28 |
| JR-C-NLS1.20 | 1/32" | 175–225 µm | 28 |
| JR-C-NLS1.25 | 1/32" | 225–275 µm | 28 |
| JR-C-NLS1.30 | 1/32" | 275–325 µm | 28 |
| JR-C-NLS1.35 | 1/32" | 325–375 µm | 28 |

**SPECS**

**Material**
Liners: PEEK
Screens: SS316L

**Dimensions**
See chart

**Tech Tip**
Use 10 mm Liners with External nut JR-C-EN.SFPKB
Use 27/28 mm Liners with One-Piece PEEK Fitting JR-C-NNFPK.

## SPECS

**Material**
Nuts: SS303
Ferrules: SS316

**Dimensions**
OD 1/32", 1/16", 1/8"

**Threads**
See chart

**Pressure rating**
< 500 bar (< 7250 psi)
Varies with tubing material and ID

**Spares & Tools**
We recommend our ValvTool and wrenches for tightening SS Nuts (see page 46).

Stainless Steel Tubing
see pages 10–13

# Valco Stainless Steel Nuts and Ferrules

- 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 Chemiert valves with more than 8 ports. In using nuts with different length more space is created for easier access with a wrench.

Part No. JR-ZN.5-5

Part No. JR-ZF.5S6-5

Part No. JR-ZN1-5

Part No. JR-MZN1-5

Part No. JR-LZN1-5

Part No. ZF1S6

Part No. JR-ZN2-5

Part No. JR-ZF2S6-5

### Valco Stainless Steel Nuts and Ferrules

| Part No. | Description | Qty/pkg |
|---|---|---|
| JR-ZN.5-5 | Nut, SS, 1/32", 6-40 | 5 |
| JR-ZF.5S6-5 | Ferrule, SS, 1/32" | 5 |
| JR-ZN1-5 | Nut, SS, 1/16", 10-32 | 5 |
| JR-MZN1-5 | Nut, SS, 1/16" Medium, 10-32 | 5 |
| JR-LZN1-5 | Nut, SS, 1/16" Long, 10-32 | 5 |
| JR-ZF1S6-5 | Ferrule, SS, 1/16" | 5 |
| JR-ZN2-5 | Nut, SS, 1/8", 5/16"-24 | 5 |
| JR-ZF2S6-5 | Ferrule, SS, 1/8" | 5 |

## Stainless Steel Nuts and Ferrules Rheodyne® Type

- Excellent Fit to Rheodyne® Fitting Details
- Different Lengths Available
- For 1/16" OD Tubing

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

Part No. JR-56-5

Part No. JR-57-5

Part No. JR-58-5

Part No. JR-59-5

Part No. JR-60-5

### Stainless Steel Nuts and Ferrules Rheodyne® Type

| Part No. | Description | Qty/pkg |
|---|---|---|
| JR-56-5 | Nut, SS, short, Rheodyne® type, 10-32 | 5 |
| JR-57-5 | Nut, SS, long head, Rheodyne® type, 10-32 | 5 |
| JR-58-5 | Nut, SS, x-long, Rheodyne® type, 10-32 | 5 |
| | | |
| JR-59-5 | Ferrule, SS, 1/16" | 5 |
| JR-60-5 | Ferrule, SS, 1/16", 2-step Rheodyne® type | 5 |

### SPECS

**Material**
SS316

**Dimensions**
For OD 1/16" Tubing

**Threads**
See chart

**Pressure rating**
< 500 bar (< 7250 psi)
Varies with tubing material and ID

**Spares & Tools**
We recommend our ValvTool and wrenches for tightening SS Nuts (see page 46).

Stainless Steel Tubing
see pages 10–13

**SPECS**

**Material**
Body: SS 316
Nuts: SS303
Ferrules: SS316

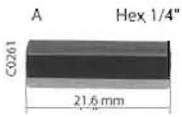
**Dimensions**
See illustrations

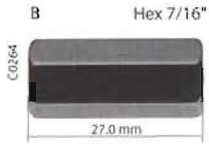
**Pressure rating**
< 500 bar (< 7250 psi)
Varies with tubing material and ID

## Stainless Steel Unions

- Easy Connection of Solvent Lines
- Low Dead Volume
- Different Bores Available
- For 1/16" and 1/8" OD SS Tubing

VICI Stainless Steel Unions are made for joining two pieces of 1/16" OD tubing or 1/8" with 1/16" OD tubing. They 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.
VICI SS 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 Steel Unions

| Part No. | Description | Drawing |
|---|---|---|
| JR-ZU1XCS6 | Union, SS, bore 0.15 mm, 1/16", 10-32, complete | A |
| JR-ZU1CS6 | Union, SS, bore 0.25 mm, 1/16", 10-32, complete | A |
| JR-ZU1MS6 | Union, SS, bore 0.50 mm, 1/16", 10-32, complete | A |
| JR-ZU1S6 | Union, SS, bore 0.75 mm, 1/16", 10-32, complete | A |
| JR-ZRU21 | Union, SS, reducing 0.75 mm bore, 1/8" (5/16"-24) to 1/16" (10-32) complete | B |

(All above SS Unions are complete with nuts and ferrules.)

### Spare Parts

| Part No. | Description | Qty/pkg |
|---|---|---|
| JR-ZN1-S | Nut, SS, 1/16", 10-32, repl. for JR-ZU1x series + JR-ZRU21, 1/16" nut | 5 |
| JR-ZF1S6-5 | Ferrule, SS, 1/16", repl. for JR-ZU1 series + JR-ZRU21, 1/16" ferrule | 5 |
| JR-ZN2-S | Nut, SS, 1/8", 5/16"-24, repl. for JR-ZRU21, 1/8" nut | 5 |
| JR-ZF2S6-5 | Ferrule, SS, 1/8", repl. for JR-ZRU21, 1/8" ferrule | 5 |

## Stainless Steel Tees & Crosses

- Easy Connection of Solvent Lines
- Low Dead Volume
- Different Bores Available
- For 1/16" OD Tubing

VICI Stainless Steel Tees & Crosses are suitable for connecting 3 or 4 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 give an absolute leak free connection.

VICI SS Tees & 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 Steel Tees

| Part No. | Description |
|---|---|
| JR-ZT1C | Tee , SS, 0.25 mm bore, 1/16", 10-32, complete |
| JR-ZT1M | Tee, SS, 0.50 mm bore, 1/16", 10-32, complete |
| JR-ZT1 | Tee, SS, 0.75 mm bore, 1/16", 10-32, complete |

(All above SS Tees are complete with nuts and ferrules.)

### Stainless Steel Crosses

| Part No. | Description |
|---|---|
| JR-ZX1C | Cross, SS, 0.25 mm bore, 1/16", 10-32, complete |
| JR-ZX1M | Cross, SS, 0.50 mm bore, 1/16", 10-32, complete |
| JR-ZX1 | Cross, SS, 0.75 mm bore, 1/16", 10-32, complete |

(All above SS Crosses are complete with nuts and ferrules.)

### Spare Parts

| Part No. | Description | Qty/pkg |
|---|---|---|
| JR-ZN1-5 | Nut, SS, 1/16", 10-32 | 5 |
| JR-ZF1S6-5 | Ferrule, SS, 1/16" | 5 |

### SPECS

**Material**
Bodies: SS316
Nuts: SS303
Ferrules: SS316

**Dimensions**
Diameter (body): 23.4 mm
Thickness: 12.7 mm

**Threads**
See chart

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

**SPECS**

**Material**
Plug 1/16": SS316
Plug 1/8": SS303
Caps; SS303

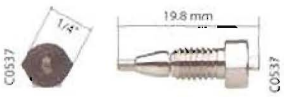
**Dimensions**
See illustration

**Thread size**
Plug & Cap 1/16": 10-32
Plug & Cap 1/8": 5/16"-24

**Spares & Tools**
We recommend our ValvTool and wrenches for tightening SS Plugs & Caps
(see page 46).

## Stainless Steel Plugs & Caps

- Plugging Ports – Capping Solvent Lines
- For 1/16" and 1/8" OD Tubing



Part No. JR-ZP1

Part No. JR-ZP2

Part No. JR-ZC1

Part No. JR-ZC2

### Stainless Steel Plugs & Caps

| Part No. | Description |
|---|---|
| JR-ZP1 | Plug, SS, 1/16" |
| JR-ZP2 | Plug, SS, 1/8" |
| JR-ZC1 | Cap, SS, female 1/16" |
| JR-ZC2 | Cap, SS, female 1/8" |

## Stainless Steel Starter Kit

- Ideal Kit for HPLC Users
- For High Pressure Applications

The Kit consists of fittings, ferrules, tubing and solvent filters as well as a union, our Stainless Steel Tubing Cutter and other useful tools like our Valvtool. All together for a very competitive price!

### Stainless Steel Starter Kit

| Part No. | Description |
|---|---|
| JR-35S | Stainless Steel Starter Kit |

## ChromBox Kit

– For Start-Up and Standard Use in all HPLC Systems

The ChromBox is an all-purpose analytical spare part kit for all our customers using HPLC. It contains the most often used spare parts made both of high quality SS 316L as well as PEEK and Teflon. All together for a very competitive price!

### ChromBox Kit

| Part No. | Description |
|---|---|
| JR-34N | ChromBox Kit |

## ValvTool

- For making connections in 'Hard-to-Reach' areas
- Ideal for Nuts with 1/4" Hex and 5/16" Heads

The new ValvTool is a time-saving device, which will provide easy access to many hard-to-reach areas. The unique design with its slotted wrench allows access to nuts where a loop or a capillary may otherwise make it difficult. The ValvTool is the ideal for Rheodyne® and Valco valves and fittings as well as for most of the HPLC and PEEK fittings on the market with 1/4" and 5/16" heads.

### ValvTool

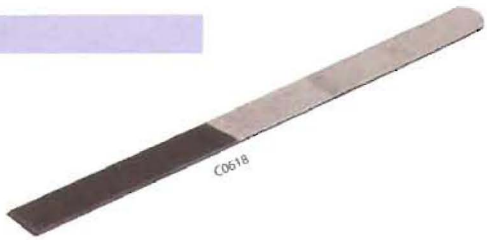
| Part No. | Description |
|---|---|
| JR-800 | Tool, ValvTool 1/4" and 5/16" wrench |


## File

Standard file

### File

| Part No. | Description |
|---|---|
| JR-802 | Tool, File |




## Wrench

- Open wrenches for nuts with 1/4", 5/16", 3/8" or 7/16" heads

### Wrench

| Part No. | Description |
|---|---|
| JR-804 | Tool, Wrench 1/4" and 5/16" open wrench |
| JR-805 | Tool, Wrench 3/8" and 7/16" open wrench |

## Tweezer

– Ideal for picking small Fittings etc.

### Tweezers

| Part No. | Description |
|---|---|
| JR-806 | Tool, Tweezers |

## Ferrule Removal Kit

- Removes Sticking Polymeric Ferrules out of Fitting Details
- Two Tools For Different Ferrule Sizes

### Ferrule Removal Kit

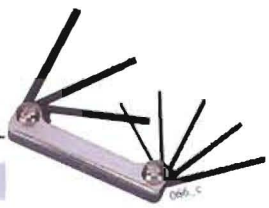
| Part No. | Description |
|---|---|
| JR-FRK1 | Ferrule Removal Kit |


## Hex Key Set

- Fits Any Socket Head Screw on Any VICI Valve or/Actuator
- Key Sizes: 0.050", 1/16", 5/64", 3/32", 7/64", 1/8", 9/64", 5/32"

### Hex Key Set

| Part No. | Description |
|---|---|
| JR-HKS | Hex Key Set |

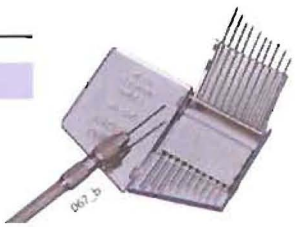


## Drill Set

- To Enlarge the ID of Fused Silica Adapters
- Useful Tool when Fused Silica Breaks in an Adapter
- 20 Drills Sized from 0.34 to 1 mm (0.0135" to 0.039")

### Drill Set

| Part No. | Description |
|---|---|
| JR-PV | Drill set, incl. Pin Vise |



CQ102

## INDEX

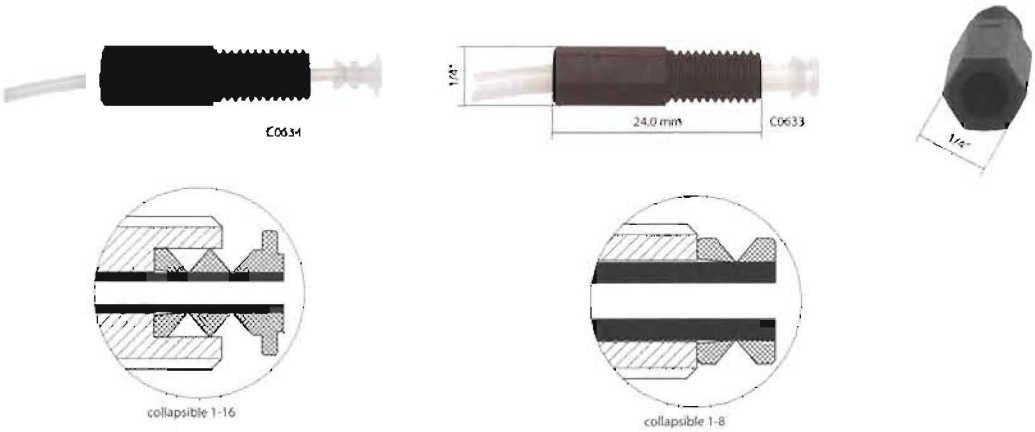


**Disclaimer:**
**The maximum holding pressure for any type of connection involving tubing and a ferrule, varies considerably with the tubing material, the ferrule material, the clearance between tubing OD and ferrule ID and the shape of the fitting detail.**

## Low Pressure PPS Nuts for 1/4"-28 Flat Bottom Fitting Detail

- Economically Priced Alternative to PEEK
- Excellent Chemical Resistance
- Fits 1/16" or 1/8" OD Tubing
- Slim Design – Fingertight with Adapter

The new VICI Jour PPS 1/4"-28 Fitting series offers excellent chemical and pressure resistance. There is a choice of three different sealing options: collapsible ferrule, inverted ferrule or flanged with washer.




**Flangeless type: Collapsible ferrule* connection**
Very effective sealing on narrow areas with no distortion of the tubing
No flanging tools required.

| Part No. | Description | Qty/pkg |
|---|---|---|
| JR-55050-10 | Nut, PPS, for collapsible ferrule 1/16", 1/4"-28 | 10 |
| JR-55051-10 | Nut, PPS, for collapsible ferrule 1/8", 1/4"-28 | 10 |
| JR-CFL-CB1KF | Ferrule, CTFE, collapsible, 1/16" | 10 |
| JR-CFL-CB2KF | Ferrule, CTFE, collapsible, 1/8" | 10 |

### SPECS

**Material**
Nuts: PPS – PolyPhenylene Sulphide, black

Collapsible Ferrules: CTFE
Inverted Ferrules: ETFE
Washers: Polypropylene
Adapters: Polypropylene

| Chemical Resistance PPS | |
|---|---|
| **Chemical Class** | **Resistance** |
| Acids, organic | A |
| Acids, inorganic | A/C* |
| Aldehydes | A |
| Alcohols | A |
| Bases | A/B |
| Esters | A |
| Halogenated Org. | A/B |
| Hydrocarbons | A |
| Ketones | A |

*conc. Halogen Acids
A = suitable
B = Marginal – dependant on application
C = Not recommended

Detailed chemical resistance chart see page 106

**Dimensions**
For 1/16" and 1/8" OD Tubing
Others: see illustration

**Threads**
1/4"-28

**Pressure Rating**
1/16" up to 105 bar (1500 psi)
1/8" up to 35 bar (500 psi)
Varies with tubing material and ID

**Tech Tip**
For flanging tubing we recommend the VICI Jour Easy Flange Kit (see page 24)

* Collapsible Ferrule (see Glossary):
Patent No. 6,575,501

## Low Pressure PPS nuts for 1/4"-28 Flat Bottom Fitting Detail

### SPECS

**Material**
Nuts: PPS – PolyPhenylene Sulphide, black

Collapsible Ferrules: CTFE
Inverted Ferrules: ETFE
Washers: Polypropylene
Adapters: Polypropylene

| Chemical Resistance PPS | |
|---|---|
| **Chemical Class** | **Resistance** |
| Acids, organic | A |
| Acids, inorganic | A/C* |
| Aldehydes | A |
| Alcohols | A |
| Bases | A/B |
| Esters | A |
| Halogenated Org. | A/B |
| Hydrocarbons | A |
| Ketones | A |

*conc. Halogen Acids
A = suitable
B = Marginal – dependant on application
C = Not recommended

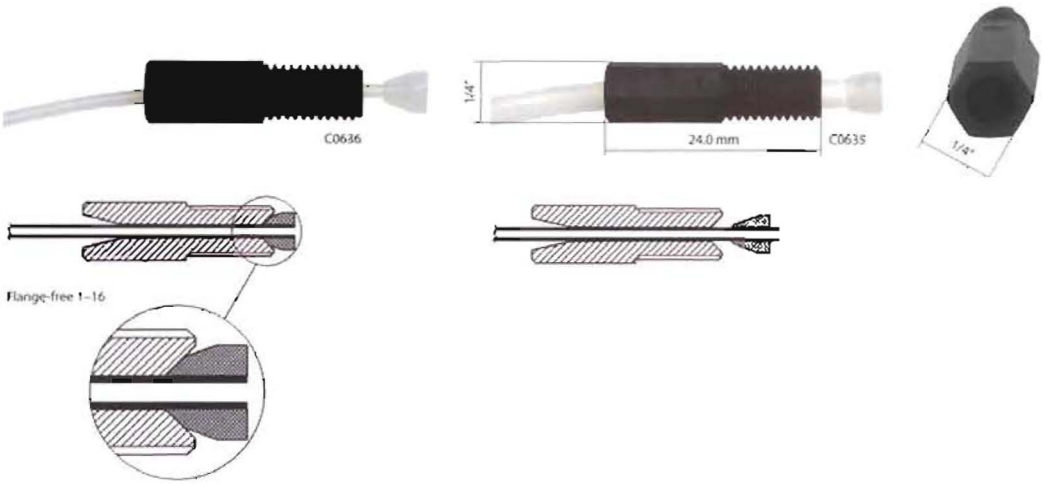
Detailed chemical resistance chart see page 106

**Dimensions**
For 1/16" and 1/8" OD Tubing
Others: see illustration

**Threads**
1/4"-28

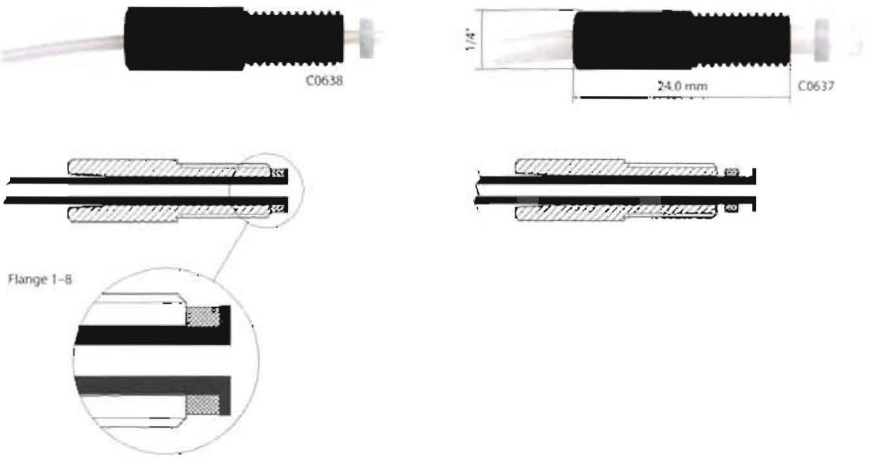
**Pressure Rating**
1/16" up to 105 bar (1500 psi)
1/8" up to 35 bar (500 psi)
Flanged with Washer: 30bar (435psi)
Varies with tubing material and ID

**Tech Tip**
For flanging tubing we recommend the VICI Jour Easy Flange Kit (see page 24)



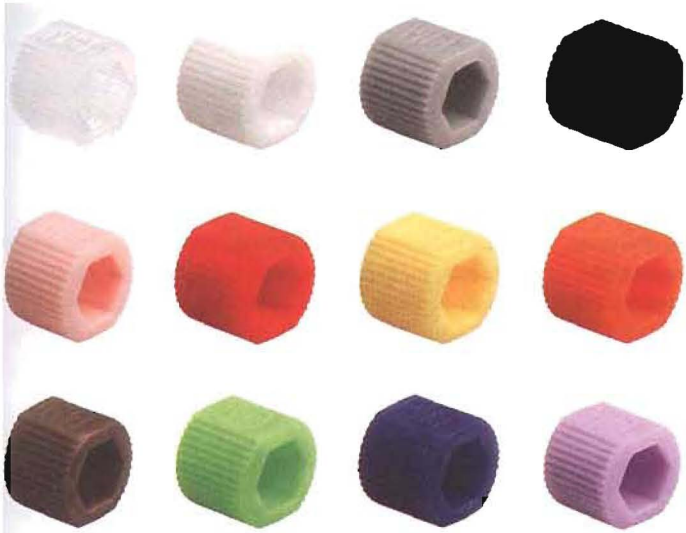

**Flangeless type: Inverted ferrule connection**
No flanging tools required.

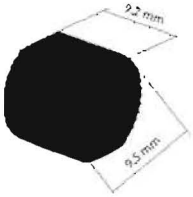
| Part No. | Description | Qty/pkg |
|---|---|---|
| JR-55070-10 | Nut, PPS, flangeless 1/16", 1/4"-28 | 10 |
| JR-55071-10 | Nut, PPS, flangeless 1/8", 1/4"-28 | 10 |
| JR-041-10 | Ferrule, ETFE, 1/16" | 10 |
| JR-051-10 | Ferrule, ETFE, 1/8" | 10 |




**Flanged type: Flange/washer connection**
Solvent comes only into contact with the tubing.

| Part No. | Description | Qty/pkg |
|---|---|---|
| JR-55060-10 | Nut, PPS, flanged 1/16", 1/4"-28 | 10 |
| JR-55061-10 | Nut, PPS, flanged 1/8", 1/4"-28 | 10 |
| JR-201926-10 | Washer, PP, flanged, 1/16" | 10 |
| JR-201928-10 | Washer, PP, flanged, 1/8" | 10 |






**Color-Sleeve – fingertight adapter**
This sleeve is useful to color code different solvent lines and it turns the new VICI Jour low pressure nut into a fingertight fitting in an instant. The Color-Sleeve is available in 12 colors.

| Part No. | Description | Qty/pkg |
|---|---|---|
| JR-55080-10 | Adapter, PP, fingertight sleeve, natural | 10 |
| JR-55081-10 | Adapter, PP, fingertight sleeve, white | 10 |
| JR-55082-10 | Adapter, PP, fingertight sleeve, dark grey | 10 |
| JR-55083-10 | Adapter, PP, fingertight sleeve, black | 10 |
| JR-55084-10 | Adapter, PP, fingertight sleeve, lavender | 10 |
| JR-55085-10 | Adapter, PP, fingertight sleeve, red | 10 |
| JR-55086-10 | Adapter, PP, fingertight sleeve, yellow | 10 |
| JR-55087-10 | Adapter, PP, fingertight sleeve, orange | 10 |
| JR-55088-10 | Adapter, PP, fingertight sleeve, brown | 10 |
| JR-55089-10 | Adapter, PP, fingertight sleeve, green | 10 |
| JR-55090-10 | Adapter, PP, fingertight sleeve, blue | 10 |
| JR-55091-10 | Adapter, PP, fingertight sleeve, purple | 10 |
| JR-5508X-24 | Adapter, PP, fingertight sleeve, assorted 2 pcs. per color | 24 |
| JR-5508X-12 | Adapter, PP, fingertight sleeve, assorted 2 pcs. each blue, red, green, yellow, black, white | 12 |

**SPECS**

**Material**
Adapters: Polypropylene

**SPECS**

**Material**
Nuts: PEEK
Ferrules: ETFE

**Dimensions**
For 1/16" and 1/8" OD tubing
Others: see illustration

**Threads**
1/4"-28

**Pressure rating**
1/16" up to 105 bar (1500 psi)
1/8" up to 35 bar (500 psi)
Varies with tubing material and ID

# PEEK Color Coded Flangeless Nuts

- Flange-Free – Compatible with All 1/4"-28 Flat Bottom Ports
- Excellent Chemical Resistance
- Fits 1/16" or 1/8" OD Tubing
- True Fingertight – No Tools Required

PEEK Flangeless Nuts in combination with the inverted ferrule do not require flanging tools. A hand tightening procedure makes leak free seals. The inert ETFE ferrule is the only part, besides the tubing, which is in contact with the fluid – the nut is not in direct contact with the fluid stream (see illustration) Six colors are available.



Part No. JR-041-10



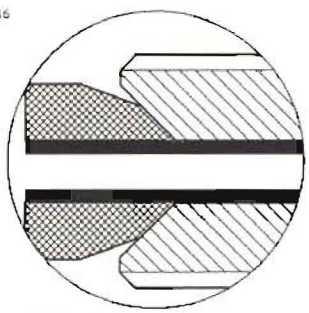
Part No. JR-051-10


## PEEK Color Coded Flangeless Nuts 1/16"

| Part No. | Description | Color | Qty/pkg |
|---|---|---|---|
| JR-20124-10 | Nut, PEEK, flangeless | Natural | 10 |
| JR-20125-10 | Nut, PEEK, flangeless | Yellow | 10 |
| JR-20126-10 | Nut, PEEK, flangeless | Red | 10 |
| JR-20127-10 | Nut, PEEK, flangeless | Blue | 10 |
| JR-20128-10 | Nut, PEEK, flangeless | Green | 10 |
| JR-20129-10 | Nut, PEEK, flangeless | Black | 10 |
| JR-041-10 | Ferrule, ETFE, 1/16" | | 10 |



Part No. JR-20112-10




## PEEK Color Coded Flangeless Nuts 1/8"

| Part No. | Description | Color | Qty/pkg |
|---|---|---|---|
| JR-20112-10 | Nut, PEEK, flangeless | Green | 10 |
| JR-20113-10 | Nut, PEEK, flangeless | Blue | 10 |
| JR-20114-10 | Nut, PEEK, flangeless | Yellow | 10 |
| JR-20115-10 | Nut, PEEK, flangeless | Red | 10 |
| JR-20116-10 | Nut, PEEK, flangeless | Natural | 10 |
| JR-20117-10 | Nut, PEEK, flangeless | Black | 10 |
| JR-051-10 | Ferrule, ETFE, 1/8" | | 10 |

## Polyacetal Color Coded Flangeless Nuts

- Value for Money Alternative to PEEK
- Flange-Free – Compatible with All 1/4"-28 Flat Bottom Ports
- Fits 1/16" or 1/8" OD Tubing
- True Fingertight – No Tools Required

Polyacetal Flangeless Nuts in combination with the inverted ferrule do not require flanging tools. A hand tightening procedure makes leak free seals. The inert ETFE ferrule is the only part, besides the tubing, which is in contact with the fluid – the nut is not in direct contact with the fluid stream (see illustration) Six colors are available.

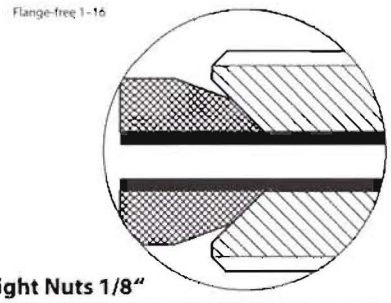
Part No. JR-041-10



Part No. JR-051-10


### Polyacetal Color Coded Flangeless fingertight Nuts 1/16"

| Part No. | Description | Color | Qty/pkg |
|---|---|---|---|
| JR-040GR-10 | Nut, Polyacetal, flangeless 1/16" | green | 10 |
| JR-040BL-10 | Nut, Polyacetal, flangeless 1/16" | blue | 10 |
| JR-040YL-10 | Nut, Polyacetal, flangeless 1/16" | yellow | 10 |
| JR-040RE-10 | Nut, Polyacetal, flangeless 1/16" | red | 10 |
| JR-040WH-10 | Nut, Polyacetal, flangeless 1/16" | white | 10 |
| JR-040BK-10 | Nut, Polyacetal, flangeless 1/16" | black | 10 |
| JR-040WL-10 | Nut, Polyacetal, flangeless 1/16", 1" long | white | 10 |
| JR-041-10 | Ferrule, ETFE, 1/16" | | 10 |


### Polyacetal Color Coded Flangeless fingertight Nuts 1/8"

| Part No. | Description | Color | Qty/pkg |
|---|---|---|---|
| JR-050GR-10 | Nut, Polyacetal, flangeless 1/8" | green | 10 |
| JR-050BL-10 | Nut, Polyacetal, flangeless 1/8" | blue | 10 |
| JR-050YL-10 | Nut, Polyacetal, flangeless 1/8" | yellow | 10 |
| JR-050RE-10 | Nut, Polyacetal, flangeless 1/8" | red | 10 |
| JR-050WH-10 | Nut, Polyacetal, flangeless 1/8" | white | 10 |
| JR-050BK-10 | Nut, Polyacetal, flangeless 1/8" | black | 10 |
| JR-050WL-10 | Nut, Polyacetal, flangeless 1/8", 1" long | white | 10 |
| JR-051-10 | Ferrule, ETFE, 1/8" | | 10 |


**SPECS**

**Material**
Nuts: Polyacetal
Ferrules: ETFE

**Dimensions**
For 1/16" and 1/8" OD Tubing
Others: see illustration

**Threads**
1/4"-28

**Pressure rating**
1/16" up to 70 bar (1000 psi)
1/8" up to 35 bar (500 psi)
Varies with tubing material and ID

**Note**
Flangeless Fittings for 1/4" OD tubing available: see spare parts for Unions on page 56

**SPECS**

**Material**
Nuts: Fiber Glass reinforced Polypropylene
Washers: Polypropylene

**Dimensions**
For OD 1/16", 1/8" Tubing
Others: see illustration

**Threads**
1/4"-28

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

**Tech Tip**
We recommend our Easy Flange Kit for flanging tubing (see page 24).

# Polypropylene Flanged Fingertight Nuts

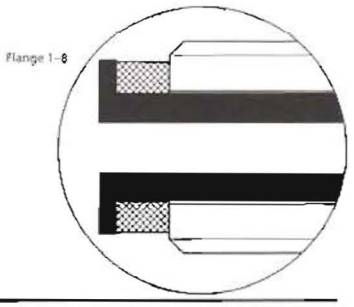
- For Flanged Connections
- Compatible to All 1/4"-28 Flat Bottom Ports
- For 1/16" or 1/8"OD Tubing
- Fiber Glass Reinforced PP with PP Washers

A number of chromatography systems still require, or prefer flanged connections. Consequently, we offer a series of such nuts. By flanging the tubing, the washer never comes in contact with the mobile phase.


## Flanged Fingertight Nuts 1/16"



| Part No. | Description | Color | Qty/pkg |
|---|---|---|---|
| JR-201094BK-10 | Nut, PP, flanged | black | 10 |
| JR-201094WH-10 | Nut, PP, flanged | white | 10 |
| JR-202118-10 | Nut, PP, flanged, x-long 1" | black | 10 |
| JR-202120-10 | Nut, PP, flanged, x-long 1" | white | 10 |
| JR-202122-10 | Nut, PP, flanged | blue | 10 |
| JR-202123-10 | Nut, PP, flanged | green | 10 |
| JR-202124-10 | Nut, PP, flanged | yellow | 10 |
| JR-202125-10 | Nut, PP, flanged | red | 10 |
| JR-201926-10 | Washer, PP, flanged 1/16" | | 10 |




## Flanged Fingertight Nuts 1/8"

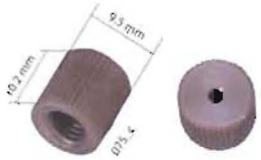


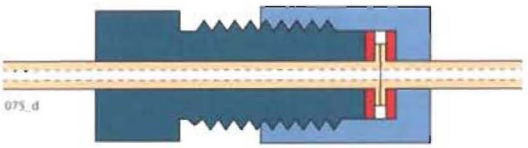
| Part No. | Description | Color | Qty/pkg |
|---|---|---|---|
| JR-201580BK-10 | Nut, PP, flanged | black | 10 |
| JR-201580WH-10 | Nut, PP, flanged | white | 10 |
| JR-202119-10 | Nut, PP, flanged, x-long 1" | white | 10 |
| JR-202121-10 | Nut, PP, flanged, x-long 1" | black | 10 |
| JR-202142-10 | Nut, PP, flanged | blue | 10 |
| JR-202143-10 | Nut, PP, flanged | green | 10 |
| JR-202144-10 | Nut, PP, flanged | yellow | 10 |
| JR-202145-10 | Nut, PP, flanged | red | 10 |
| JR-201928-10 | Washer, PP, flanged 1/8" | 10 | |

## Flanged Tubing Connector

- For Easy Connection of Flanged Tubing
- For 1/16" and 1/8" Tubing
- Zero Dead Volume

The VICI Flanged Tubing Connector fits all of our flanged fittings. With its female 1/4"-28 thread it is designed for use on tubing with a flanged end. We recommend them instead of a union to make a Zero Dead Volume connection.




### Flanged Tubing Union

| Part No. | Description |
|---|---|
| JR-CEN1PK | Flanged Tubing Connector, 1/16" |
| JR-CEN2PK | Flanged Tubing Connector, 1/8" |

**SPECS**

**Material**
PEEK

**Threads**
1/4"-28

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

**Tech Tip**
We recommend our Easy Flange Kit for flanging tubing (see page 24).

## SPECS

**Materials**
Unions: PEEK, Polyamid
Nuts: PEEK, Polyacetal
Ferrules: ETFE, CTFE

**Dimensions**
See illustrations

**Threads**
Unions: 1/4"-28
Reducing Union: 1/2"-20 to 1/4"-28

**Pressure Rating of PEEK Unions**
1/16" up to 105 bar (1500 psi)
1/8" up to 35 bar (500 psi)
Varies with tubing material and ID

**Note**
Complete versions with 0.50 and 0.75 bore are supplied with PPS flangeless nuts and ETFE ferrules for 1/16" OD tubing (see page 50).

Complete versions with 1.30 mm bore are supplied with PEEK flangeless nuts and ETFE ferrules for 1/8" OD tubing (see page 50).

The Reducing Union is supplied with Polyacetal flangeless nuts and ferrules (ETFE/CTFE) for 1/8" and 1/4" OD tubing

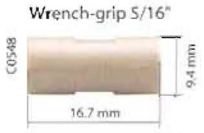
**Tech Tip**
VICI Unions have 1/4"-28 flat bottom ports. All of our three different sealing options (collapsible ferrule, inverted ferrule or flanged with washer) can be used (see pages 49–54).

To avoid diffusion of gases in your solvent line use our No-Ox tubing on page 18.

# Unions

- For Easy Connection of Low Pressure Solvent Lines
- Low Dead Volume
- Completely Inert and Biocompatible

These unions allow the connection of two pieces of 1/16", 1/8" or 1/8" to 1/4" OD tubing quickly and reliably. The unions are inert and biocompatible.

Part No. JR-064 + JR-065

Part No. JR-060-S

## Unions

| Part No. | Description | Qty/pkg |
|---|---|---|
| JR-060-5 | Union, Polyamid, through bore LP body only, 1/4"-28, for flanged tubing only | 5 |
| JR-1064 | Union, PEEK, LP 0.5 mm bore, complete | 1 |
| JR-1068 | Union, PEEK, LP 0.75 mm bore, complete | 1 |
| JR-1065 | Union, PEEK, LP 1.3 mm bore, complete | 1 |
| JR-064 | Union, PEEK, LP 0.5 mm bore, body only | 1 |
| JR-068 | Union, PEEK, LP 0.75 mm bore, body only | 1 |
| JR-065 | Union, PEEK, LP 1.3 mm bore, body only | 1 |


## Reducing Union

| Part No. | Description |
|---|---|
| JR-CU4LPK | Reducing Union, PEEK, LP 1.5 mm bore 1/4" to 1/8", complete |

## Spare Parts

| Part No. | Description | Qty/pkg |
|---|---|---|
| JR-20129-10 | Nut, Peek, flangeless 1/16", black | 10 |
| JR-20117-10 | Nut, Peek, flangeless 1/8", black | 10 |
| JR-041-10 | Ferrule, ETFE, 1/16" | 10 |
| JR-051-10 | Ferrule, ETFE, 1/8" | 10 |
| R-050WH-10 | Nut, Polyacetal, flangeless 1/8", white | 10 |
| JR-CFL-4D | Nut, Polyacetal, flangeless 1/4" | 1 |
| JR-CFL-CB4KF-S | Ferrule, CTFE, 1/4" | 1 |

## Bulkhead Unions

- Panel mounting
- For Easy Connection of Low Pressure Solvent Lines
- Low Dead Volume
- Completely Inert and Biocompatible


### Bulkhead Unions

| Part No. | Description |
|---|---|
| JR-CBUMPK | Bulkhead Union, PEEK, LP 0.75 mm bore, complete |
| JR-CBULPK | Bulkhead Union, PEEK, LP 1.50 mm bore, complete |

### Spare Parts

| Part No. | Description | Qty/pkg |
|---|---|---|
| JR-55070-10 | Nut, PPS, flangeless 1/16" | 10 |
| JR-55071-10 | Nut, PPS, flangeless 1/8" | 10 |
| JR-041-10 | Ferrule, ETFE, 1/16" | 10 |
| JR-051-10 | Ferrule, ETFE, 1/8" | 10 |
| JR-55086-10 | Adapter, PP, fingertight sleeve, yellow | 10 |
| JR-55090-10 | Adapter, PP, fingertight sleeve, blue | 10 |

Adapters available in different colors (see page 51)

### SPECS

**Material**
Unions: PEEK
Nuts: PPS
Ferrules: ETFE
Sleeves: Polypropylene

**Dimensions**
See illustration

**Threads**
Unions: 1/4"-28

**Pressure Rating**
1/16" up to 105 bar (1500 psi)
1/8" up to 35 bar (500 psi)
Varies with tubing material and ID

**Note**
0.75 mm bore version is supplied with PPS flangeless fittings and ETFE ferrules for 1/16" OD tubing (see page 50).

1.50 mm bore version is supplied with PPS flangeless fittings and ETFE ferrules for 1/8" OD tubing (see page 50).

**Tech Tip**
Bulkhead Unions require a min. 10 mm panel hole.

## SPECS

**Material**
Body: PEEK
Fittings: PPS
Ferrules: ETFE
Sleeves: Polypropylene

**Dimensions**
Tees and Crosses
Diameter (body): 25.0 mm
Thickness: 12.0 mm

Manifolds 5 ports
Diameter (body): 22.2 mm
Thickness (body): 17.1 mm

Manifolds 9 ports
Diameter (body): 22.2 mm
Thickness (body): 28.6 mm

**Threads**
1/4"-28

**Pressure Rating**
1/16" up to 105 bar (1500 psi)
1/8" up to 35 bar (500 psi)
Varies with tubing material and ID

**Note**
Complete versions with 0.50, 0.75 and 0.80 mm bore are supplied with PPS flangeless nuts and ETFE ferrules for 1/16" OD tubing (see page 50).

Complete versions with 1.50 mm bore are supplied with PPS flangeless nuts and ETFE ferrules for 1/8" OD tubing (see page 50).

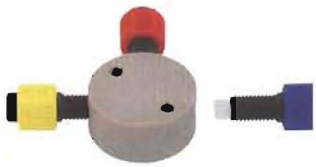
**Tech Tip**
VICI PEEK Tees, Crosses & Manifolds have 1/4"-28 flat bottom ports. All of our three different sealing options (collapsible ferrule, inverted ferrule or flanged with washer) can be used (see pages 49–54).

To avoid diffusion of gases in your solvent line use our No-Ox tubing on page 18

# PEEK Tees, Crosses and Manifolds Low Pressure

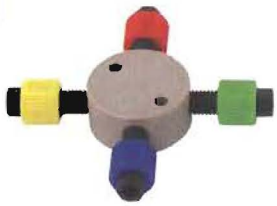
- Biocompatible
- Different Bore Sizes Available
- For 1/16" and 1/8" OD Tubing
- 1/4"-28 Ports

VICI Tees, Crosses and Manifolds for low pressure applications are machined from PEEK. The bodies have 1/4"-28 female ports which accept any flanged or flangeless fitting for 1/16" and 1/8" OD tubing. Choose 0.80 mm and smaller thru-holes for applications where low flow rate or low dead volume is required. Tees, Crosses and Manifolds with 1.50 mm thru-holes are preferred for high-flow rate applications.



## PEEK Tees

| Part No. | Description |
|---|---|
| JR-6029 | Tee, PEEK, LP bore 0.50 mm, complete |
| JR-6030 | Tee, PEEK, LP bore 0.8 mm, complete |
| JR-6031 | Tee, PEEK, LP bore 1.5 mm, complete |
| JR-6034 | Tee, PEEK, LP bore 0.50 mm, body only |
| JR-6032 | Tee, PEEK, LP bore 0.8 mm, body only |
| JR-6033 | Tee, PEEK, LP bore 1.5 mm, body only |



## PEEK Crosses

| Part No. | Description |
|---|---|
| JR-6039 | Cross, PEEK, LP bore 0.50 mm, complete |
| JR-6040 | Cross, PEEK, LP bore 0.8 mm, complete |
| JR-6041 | Cross, PEEK, LP bore 1.5 mm, complete |
| JR-6044 | Cross, PEEK, LP bore 0.50 mm, body only |
| JR-6042 | Cross, PEEK, LP bore 0.8 mm, body only |
| JR-6043 | Cross, PEEK, LP bore 1.5 mm, body only |

## PEEK Manifolds

| Part No. | Description |
|---|---|
| JR-C5M1PK | Manifold, PEEK, 5 ports LP 0.75 mm, complete |
| JR-C5M2PK | Manifold, PEEK, 5 ports LP 1.50 mm, complete |
| JR-C9M1PK | Manifold, PEEK, 9 ports LP 0.75 mm, complete |
| JR-C9M2PK | Manifold, PEEK, 9 ports LP 1.50 mm, complete |

## Spare Parts

| Part No. | Description | Qty/pkg |
|---|---|---|
| JR-55070-10 | Nut, PPS, flangeless 1/16", 1/4"-28 | 10 |
| JR-55071-10 | Nut, PPS, flangeless 1/8", 1/4"-28 | 10 |
| JR-041-10 | Ferrule, ETFE, 1/16" | 10 |
| JR-051-10 | Ferrule, ETFE, 1/8" | 10 |

Color-Sleeves – fingertight adapters: see page 51

## PEEK Biocompatible Mixing Tees – Low Pressure

- For Low Pressure Mixing
- Completely Biocompatible
- Mountable

A unique mixing is the result of the turbulence generated by the introduction angle of the solvents. The streams mix more thoroughly than with a conventional tee.

### PEEK Biocompatible Mixing Tees – Low Pressure

| Part No. | Description |
|---|---|
| JR-CM1XPK | Mixing Tee, PEEK, 0.75 mm bore, complete |
| JR-CM2XPK | Mixing Tee, PEEK, 1.50 mm bore, complete |

### Spare Parts

| Part No. | Description | Qty/pkg |
|---|---|---|
| JR-55070-10 | Nut, PPS, flangeless 1/16", 1/4"-28 | 10 |
| JR-55071-10 | Nut, PPS, flangeless 1/8", 1/4"-28 | 10 |
| JR-041-10 | Ferrule, ETFE, 1/16" | 10 |
| JR-051-10 | Ferrule, ETFE, 1/8" | 10 |

Color-Sleeves – fingertight adapters: see page 51

### SPECS

**Material**
Body: PEEK
Fittings: PPS
Ferrules: ETFE

**Dimensions**
Length (body): 44.5 mm
Thickness: 22.2 mm

**Threads**
1/4"-28

**Pressure rating**
1/16" up to 105 bar (1500 psi)
1/8" up to 35 bar (500 psi)
Varies with tubing material and ID

**Note**
0.75 bore version is supplied with PPS flangeless fittings and ferrules for 1/16" OD tubing (see page 50).

1.50 mm bore version is supplied with PPS flangeless fittings and ferrules for 1/8" OD tubing (see page 50).

## SPECS

**Material**
Wetted parts: PTFE, CTFE
Body: Polyacetal
Fittings: PPS
Ferrule: ETFE
Rotor bar: SS

**Dimensions**
Bore: 0.8 mm
Others: see illustration

**Threads**
1/4"-28

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

**Note**
Complete versions are supplied with PPS flangeless nuts and ETFE ferrules for 1/16" OD tubing.

Valves can also be used with 1/8" OD tubing. 1/8" nuts and ferrules: see spare parts.

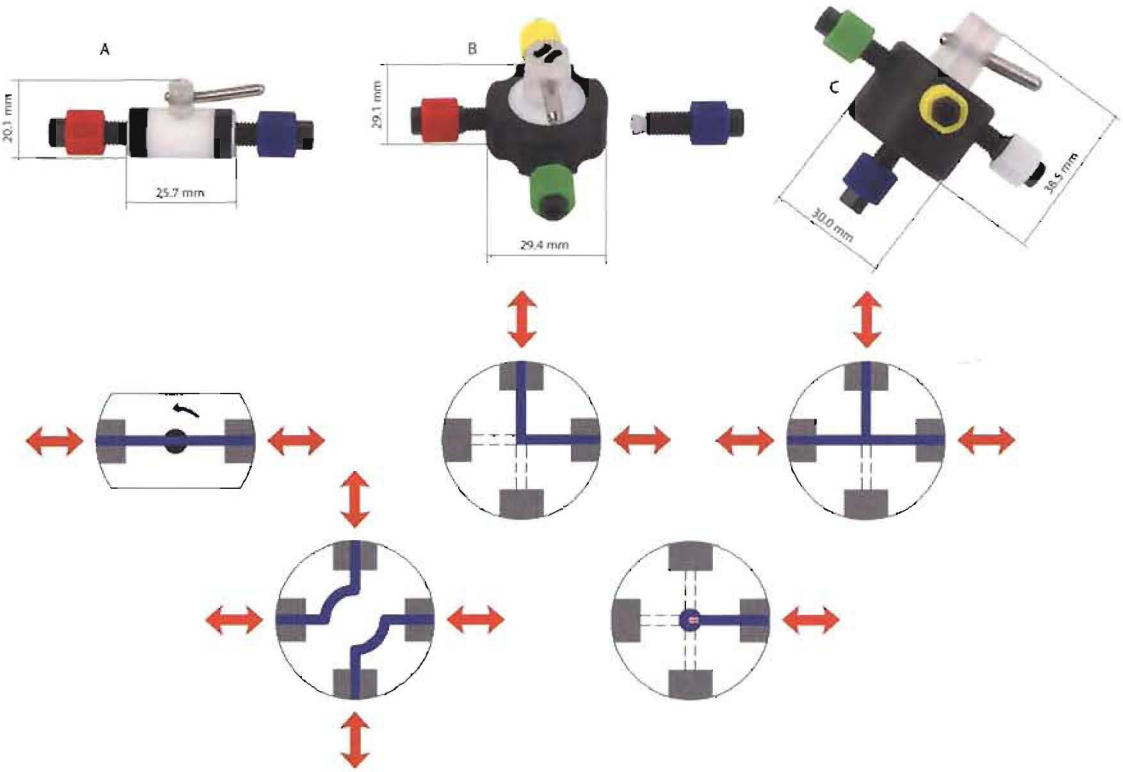
**Tech Tip**
VICI Manual Flow Selection Valves have 1/4"-28 flat bottom ports. All of our three different sealing options (collapsible ferrule, inverted ferrule or flanged with washer) can be used (see pages 49–54).

To avoid diffusion of gases in your solvent line use our No-Ox tubing on page 18.

# Manual Flow Selection Valves

- Several Flow Patterns Available
- Biocompatible and Inert
- Pressure Resistant up to 35 bar (500 psi)
- Low Dead Volume

VICI Jour Manual Valves are the ideal tools for liquid flow selection. The valves are mountable and are pre-fitted with the new VICI Jour PPS 1/4"-28 Fittings and ETFE Ferrules for 1/16" OD tubing.




## Manual Flow Selection Valves

| Part No. | Description | |
|---|---|---|
| JR-MSV2S | Valve, 2-port, manual, on/off, complete | A |
| JR-MSV4L | Valve, 4-port, manual, L-flow, complete | B |
| JR-MSV4T | Valve, 4-port, manual, T-flow, complete | B |
| JR-MSV4P | Valve, 4-port, manual, 2 pairs, complete | B |
| JR-MSV5D | Valve, 5-port, manual, distribution 1 inlet to 4 outlets, complete | C |

## Spare Parts

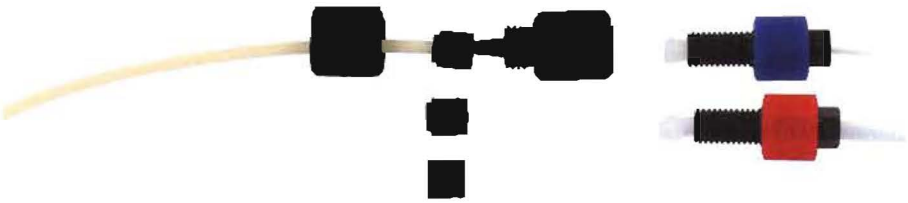
| Part No. | Description | Qty/pkg |
|---|---|---|
| JR-55070-10 | Nut, PPS, flangeless 1/16", 1/4"-28 | 10 |
| JR-55071-10 | Nut, PPS, flangeless 1/8", 1/4"-28 | 10 |
| JR-041-10 | Ferrule, ETFE, 1/16" | 10 |
| JR-051-10 | Ferrule, ETFE, 1/8" | 10 |

Color-Sleeves – fingertight adapters: see page 51

## Peristaltic Tubing Adapter Set

- For Connecting Soft Tubing to PTFE & PTFE Like Tubing
- Works With Peristaltic Tubing up to 4.50 mm OD
- For 1/16" and 1/8" PTFE & PTFE Like Tubing
- Biocompatible
- Low Dead Volume

The "One-Fits-All" set consists of everything to connect 1/16" and 1/8" OD PTFE & PTFE like tubing to soft tubing like silicone up to 4.50 mm OD. The adapter comes with three different bushings (for the different soft tubing ODs) and two Fittings/Ferrules (one each for 1/16" and 1/8" OD tubing).



### Peristaltic Tubing Adapter Set

| Part No. | Description |
|---|---|
| JR-PTAS | Adapter, PEEK, for Peristaltic to PTFE tubing connections, complete |

**SPECS**

**Material**
Body and Bushings: PEEK
Fittings: PPS
Ferrules: ETFE

**Dimensions**
Bore: 0.50 mm
Length: 28 mm
(without Fitting)
Diameter: 12 mm

**Threads**
Barbed to 1/4"-28

**Tech Tip**
The set is equipped with fittings and ferrules for inverted ferrule connections.
The adapter also works with our other sealing options
(see pages 49-54)

SPECS

**Material**
Polypropylene

# Low Pressure Polypropylene Adapters

## Low Pressures Polypropylene Adapters

| Part No. | Description | | Qty/pkg |
|---|---|---|---|
| JR-070211-10 | Adapter, PP, male Luer to 1/16" barbed |  | 10 |
| JR-070212-10 | Adapter, PP, male Luer to 3/32" barbed |  | 10 |
| JR-070213-10 | Adapter, PP, male Luer to 1/8" barbed |  | 10 |
| JR-070111-10 | Adapter, PP, female Luer to 1/16" barbed |  | 10 |
| JR-070112-10 | Adapter, PP, female Luer to 3/32" barbed |  | 10 |
| JR-070113-10 | Adapter, PP, female Luer to 1/8" barbed |  | 10 |
| JR-070101-10 | Adapter, PP, female to female Luer |  | 10 |
| JR-070124-10 | Adapter, PP, female Luer to 10-32 male |  | 10 |
| JR-070123-10 | Adapter, PP, female Luer to 1/4"-28 male |  | 10 |
| JR-071123-10 | Adapter, PP, 1/4"-28 male to 1/16" barbed |  | 10 |
| JR-071323-10 | Adapter, PP, 1/4"-28 male to 1/8" barbed |  | 10 |
| JR-072350-10 | Adapter, PP, plug 1/4"-28 male |  | 10 |
| JR-071124-10 | Adapter, PP, 10-32 male to 1/16" barbed |  | 10 |
| JR-071324-10 | Adapter, PP, 10-32 male to 1/8" barbed |  | 10 |
| JR-072450-10 | Adapter, PP, plug 10-32 male |  | 10 |
| JR-070224-10 | Adapter, PP, male Luer to 10-32 male |  | 10 |
| JR-070225-10 | Adapter, PP, male Luer to 1/4"-28 female |  | 10 |

## Flanged Fittings Kit

- A complete Kit of Flanged Fittings and accessories
- All Parts Biocompatible
- Excellent chemical resistance

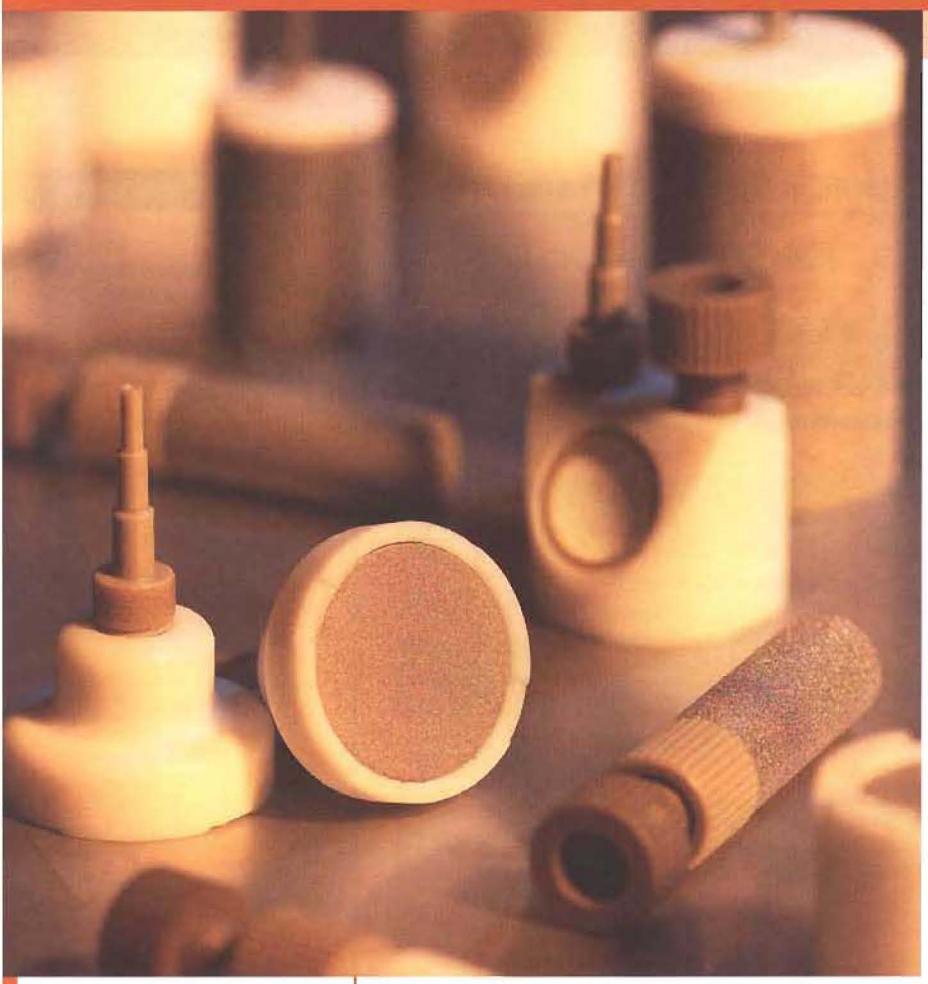
The Flanged Fittings Kit contains all the materials that are required to make flanged connections for 1/16" and 1/8" OD tubing: flanged fittings, washers, unions, 4 different tubing sizes, our Clean-Cut Tubing Cutter, and a pair of tweezers.


### Flanged Fittings Kit

| Part No. | Description |
|---|---|
| JR-201529 | Flanged Fitting Kit |

SPECS

**Tech Tip**
Use our Easy Flange Kit for flanging your Tubing (see Page 24)



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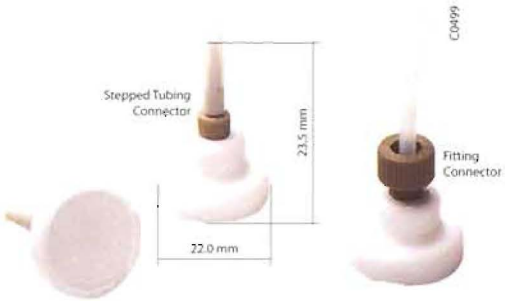
INDEX

## Last Drop Mobile Phase Filter

- No Loss of Mobile Phase
- Biocompatible PTFE Frits or SS Frits
- Three Different Porosities
- Two Connector Types

The Last Drop Mobile Phase Filter utilizes a flat filter element which sits parallel to the bottom of the reservoir. This design allows the filter to draw all but the last 2% of the mobile phase from the reservoir without drawing air into the system. Conventional cylindrical mobile phase filters begin to draw air into the system when less than 10% of the solvent remains in the reservoir. We recommend the metal free PTFE version for sensitive biochromatography applications where metal surfaces may corrode and contaminate the solvent with ions.




### Last Drop Mobile Phase Filters

| Part No. | Description |
|---|---|
| JR-9000-0520 | Filter, PTFE, Last Drop 2.5 µm, stepped tubing connector |
| JR-9000-0520F | Filter, PTFE, Last Drop 2.5 µm, fitting connector |
| JR-9000-0521 | Filter, PTFE, Last Drop 5 µm, stepped tubing connector |
| JR-9000-0521F | Filter, PTFE, Last Drop 5 µm, fitting connector |
| JR-9000-0522 | Filter, PTFE, Last Drop 10 µm, stepped tubing connector |
| JR-9000-0522F | Filter, PTFE, Last Drop 10 µm, fitting connector |
| | |
| JR-9000-0530 | Filter, SS, Last Drop 2 µm, stepped tubing connector |
| JR-9000-0530F | Filter, SS, Last Drop 2 µm, fitting connector |
| JR-9000-0531 | Filter, SS, Last Drop 5 µm, stepped tubing connector |
| JR-9000-0531F | Filter, SS, Last Drop 5 µm, fitting connector |
| JR-9000-0532 | Filter, SS, Last Drop 10 µm, stepped tubing connector |
| JR-9000-0532F | Filter, SS, Last Drop 10 µm, fitting connector |

### SPECS

**Materials**
Body: PTFE
Frits: PTFE, SS316 (see chart)
Tripod: PEEK
Fitting: PEEK
Ferrule: ETFE

**Dimensions**
Fitting: 1/4"-28 for 1/8" OD tubing
Tripod: for 1.5, 2.2 and 3.5 mm ID tubing.
Others: see illustration

**Spares & Tools**
For spare parts see chart on page 66

## SPECS

**Materials**
Body: PTFE
Frits: PTFE, SS316 (see chart)
Tripod: PEEK
Fitting: PEEK
Ferrule: ETFE

**Dimensions**
Fitting: 1/4"-28 for 1/8" OD tubing
Tripod: for 1.5, 2.2 and 3.5 mm ID tubing.
Others: see illustration

**Tech Tip**
We recommend our No-Ox tubing to prevent "regassing" of Helium degassed solvents (see page 18)

# Last Drop Filter/Spargers

- Parallel Filtering and Sparging
- Biocompatible PTFE Frits or SS Frits
- Three Different Porosities

This Filter/Sparger filter combines filtration and sparging in one single unit. The PTFE housing contains a mobile phase filter, either a stainless steel or a PTFE filter element. The stepped PEEK connector is for the solvent line, the fitting connection for the Helium line.



## Last Drop Filter/Spargers

| Part No. | Description |
|---|---|
| JR-9000-0602 | Filter/Sparger, PTFE, Last Drop 2.5 µm filter, 10 µm sparger |
| JR-9000-0603 | Filter/Sparger, PTFE, Last Drop 5 µm filter, 10 µm sparger |
| JR-9000-0604 | Filter/Sparger, PTFE, Last Drop 10 µm filter, 10 µm sparger |
| JR-9000-0640 | Filter/Sparger, SS, Last Drop 2 µm filter, 10 µm sparger |
| JR-9000-0641 | Filter/Sparger, SS, Last Drop 5 µm filter, 10 µm sparger |
| JR-9000-0642 | Filter/Sparger, SS, Last Drop 10 µm filter, 10 µm sparger |

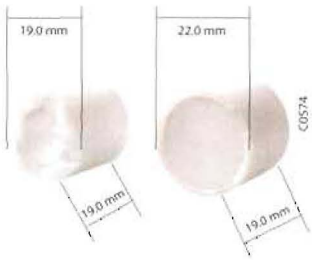
## Spare Parts

| Part No. | Description | Qty/pkg |
|---|---|---|
| JR-20116-10 | Nut, PEEK, flangeless, 1/8", natural | 10 |
| JR-051-10 | Ferrule, ETFE, 1/8" | 10 |
| JR-8000-0485 | Tripod Adapter, PEEK, universal | 1 |

## Economy Last Drop Mobile Phase Filters

- Very Competitively Priced
- Biocompatible PTFE Frits or SS Frits
- Three Different Porosities
- Two Diameters

We can offer Economy Mobile Phase Filters in 2 sizes, depending upon the dimension of the bottleneck. The filter body is made of PTFE which has been specially selected to be resistant against virtually all common mobile phases. We recommend the 2 µm porosity for flow rates less than 10 mL/min. For higher flow rates use the 10 µm filters.


### Economy Last Drop Mobile Phase Filter

| Part No. | Description |
|---|---|
| JR-4676-2.5TF | Filter, PTFE, Economy mobile phase 2,5 µm, OD 19 mm |
| JR-4676-5TF | Filter, PTFE, Economy mobile phase 5 µm, OD 19 mm |
| JR-4676-10TF | Filter, PTFE, Economy mobile phase 10 µm, OD 19 mm |
| JR-4677-2.5TF | Filter, PTFE, Economy mobilel phase 2,5 µm, OD 22 mm |
| JR-4677-5TF | Filter, PTFE, Economy mobilel phase 5 µm, OD 22 mm |
| JR-4677-10TF | Filter, PTFE, Economy mobile phase 10 µm, OD 22 mm |
| | |
| JR-4676-2 | Filter, SS, Economy mobile phase 2 µm, OD 19 mm |
| JR-4676-10 | Filter, SS, Economy mobile phase 10 µm, OD 19 mm |
| JR-4677-2 | Filter, SS, Economy mobile phase 2 µm, OD 22 mm |
| JR-4677-10 | Filter, SS, Economy mobile phase 10 µm, OD 22 mm |

### SPECS

**Material**
Body: PTFE
Frits: PTFE/SS316 (see chart)

**Dimension**
For 1/8" OD tubing
Others: see illustration

**Tech Tip**
Easy to replace – easy to clean – use ultrasound or replace with new

We recommend our tubing JR-T-6800-M3 (1/8" OD x 1.60 mm ID) for connecting the filter (see page 15)

## SPECS

**Material**
Body: Polyethylene/PTFE (see chart)
Adapter: PEEK
Fitting: PEEK
Ferrule: ETFE

**Dimension**
See illustration

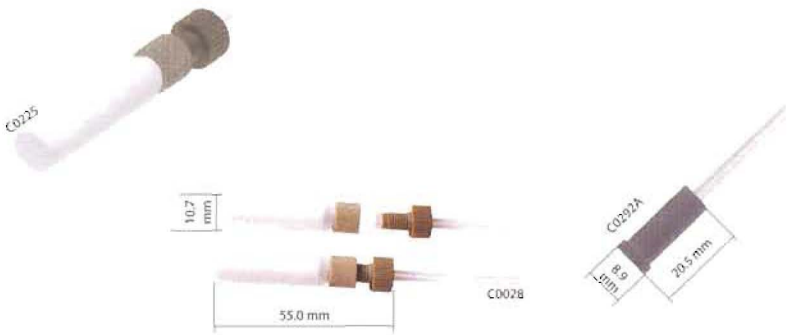
**Tech Tip**
The Polyethylene filter is hydrophobic, therefore it may initially require some priming with methanol or acetonitrile.

**Spares & Tools**
We recommend our tubing JR-T 6800-M3 (1/8" OD x 1.60 mm ID) for connecting the filter (see page 15)

# No-Met Biocompatible Mobile Phase Filter

- Very Competitively Priced
- Inert and Biocompatible
- Replacement Filters
- Also Recommended for IC

Stainless steel is not an acceptable material for a growing number of applications involving the separation of labile macro biomolecules. It is of great importance that all of the biological activity of the samples is retained and that the biological specificity remains unchanged.
High salt buffer concentrations can corrode stainless steel and the metal ions released from these filters may react with the biomolecules of interest or even contaminate the eluents in Ion chromatography.
The No-met filters are designed from inert polymeric components, which effectively eliminate metal contamination of the fluid path. The economy version can be easily slipped over 1/8" OD tubing, no fitting required.




## No-Met Mobile PhaseFilter

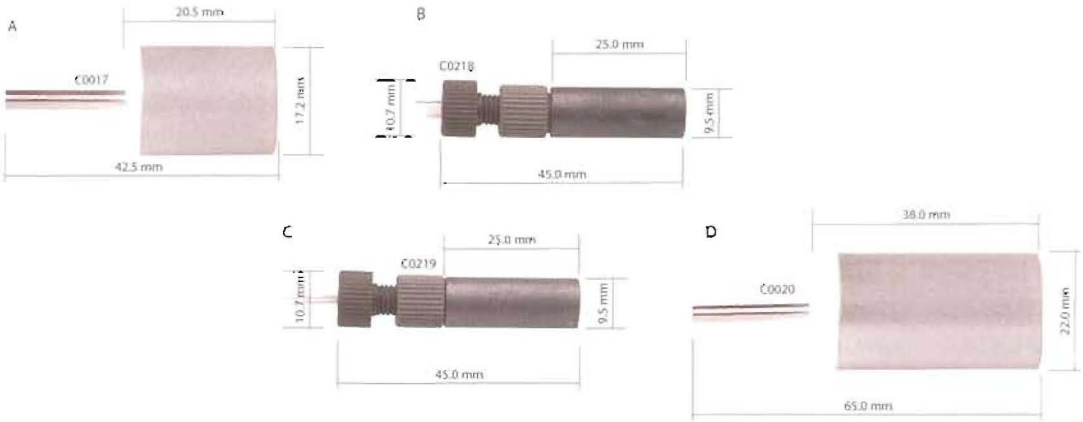
| Part No. | Description |
|---|---|
| JR-32171 | Filter, PTFE, mobile phase No-Met 5 µm, 1/8" |
| JR-32172 | Filter, PTFE, mobile phase replacement No-Met 5 µm |
| JR-32178 | Filter, PE, mobile phase No-Met < 20 µm, 1/8" |
| JR-32179 | Filter, PE, mobile phase replacement No-Met < 20 µm |
| JR-32174 | Filter, PE, Economy No-Met 5 µm, 1/8" |

## SS Mobile Phase Filters & Helium Spargers

- Ideal for Helium Sparging
- Three Different Porosities
- Fitting and Pipe Connectors

VICI Jour Mobile Phase Filters protect HPLC systems from small particles in the mobile phase. These filters are made from SS316 with PEEK or PTFE connectors and are suitable for most solvents.
The complete line has versions for both analytical and preparative applications.

VICI Jour Helium Spargers (2 µm versions) offer an inexpensive way to prepare and maintain mobile phases free of dissolved gases. Connected to a regulated supply of Helium gas (0–400 mL/min) they effectively remove dissolved oxygen, nitrogen and other atmospheric gases from the mobile phase.




### Mobile Phase Filters & Helium Spargers

| Part No. | Drawing | Porosity | Fitting/Pipe OD | Suggested Max. Flow Rate |
|---|---|---|---|---|
| JR-3675-2 | A | 2 µm | 1/8" Pipe OD | 10 mL/min |
| JR-367008-2 | B | 2 µm | 1/8" Fitting ID | 8 mL/min |
| JR-367008-10 | B | 10 µm | 1/8" Fitting ID | 20 mL/min |
| JR-367008-20 | B | 20 µm | 1/8" Fitting ID | 20 mL/min |
| JR-367016-2 | C | 2 µm | 1/16" Fitting ID | 8 mL/min |
| JR-367016-10 | C | 10 µm | 1/16" Fitting ID | 20 mL/min |
| JR-367016-20 | C | 20 µm | 1/16" Fitting ID | 20 mL/min |
| JR-3678-2 | D | 2 µm | 1/8" Pipe OD | 50 mL/min |
| JR-3678-25 | D | 25 µm | 1/8" Pipe OD | 100 mL/min |

### SPECS

**Material**
Body: SS316
Pipe: SS316
Pipe Adapter: PTFE
Fitting Adapter: PEEK
Fittings: PEEK
Ferrules: ETFE

**Dimension**
See illustration

**Tech Tip**
We recommend our No-Ox tubing to prevent "regassing" of Helium degassed solvents (see page 18)

## SPECS

**Material**
Cartridge: PTFE/CTFE
Filter Screen: SS316

**Dimensions**
For All 1/4"-28 fitting details
OD: 5.20 mm
Thickness: 2.03 mm
Bore: 0.8 mm
Filter Surface Diameter 2 mm

**Tolerances**
+/– 0.05 mm (.002")

**Tech Tip**
We recommend using these Filter Cartridges in combination with the VICI Unions on page 56.
They can be used with other LP solvent line connectors like our Tees, Crosses & Manifolds on page 58 or our VICI Manual Flow Selection Valves on page 60.

# In-Line Low Pressure Filter Cartridges

- Easy to Replace
- Compact Design
- Fits All 1/4"-28 Fitting Details
- Three Different Porosities

These filters are convenient since they can be simply dropped into any 1/4"-28 fitting detail. Therefore, all LP solvent line connectors like unions, tees, crosses etc. can be used as cartridge holder. The filter is made of a stainless steel screen pressed in an inert cartridge. The inner design of the cartridge ensures the equal distribution of the solvent to the screen. (Nut and union shown not included)

**In-Line Low/Medium Pressure Filter for LC**

| Part No. | Description | Qty/pkg |
|---|---|---|
| JR-CFE-S2-5 | In-Line Filter Cartridge, 2 µm | 5 |
| JR-CFE-S10-5 | In-Line Filter Cartridge, 10 µm | 5 |
| JR-CFE-S75-5 | In-Line Filter Cartridge, 75 µm | 5 |

## PEEK In-Line Filter Kit – High Pressure

- 100% Biocompatible
- Minimal Hold-up Volume
- Biocompatible PAT Frits or Ti Frits
- Different Porosities

The VICI Jour In-Line Filter traps fines and other particles from samples and mobile phases before they damage valuable instruments and columns.
This design is made entirely of PEEK for biocompatibility and chemical resistance. PAT (PEEK Alloyed with Teflon) filter elements are used for complete biocompatibility. The design has virtually no hold-up volume and can be used in analytical applications with virtually no band broadening or loss of efficiency.



### In-Line Filter Kit – High Pressure

| Part No. | Description | Internal Volume µL* |
|---|---|---|
| JR-68250 | Filter, PEEK, In-Line, PAT frit PEEK-encased 5 µm | 12.4 |
| JR-68251 | Filter, PEEK, In-Line, PAT frit PEEK-encased 10 µm | 12.4 |
| JR-68247 | Filter, PEEK, In-Line, Ti frit PEEK-encased 0.5 µm | 4.4 |
| JR-68253 | Filter, PEEK, In-Line, Ti frit PEEK-encased 2 µm | 5.8 |

### Spare Parts

| Part No. | Description | Frit volume µL | Qty/pkg |
|---|---|---|---|
| JR-68152-5 | Frit, PAT, PEEK-encased 5 µm | 9.77 | 5 |
| JR-9000-0460-5 | Frit, PAT, PEEK-encased 10 µm | 9.77 | 5 |
| JR-1125-05P-5 | Frit, Ti, PEEK-encased 0.5 µm | 1.77 | 5 |
| JR-1125-2P-5 | Frit, Ti, PEEK-encased 2 µm | 3.20 | 5 |

### SPECS

**Material**
Body: PEEK
Frit: see chart

**Dimensions**
Bore 0.25 mm/0.4 mm
See illustration

**Threads**
10-32 female

**Pressure rating**
< 350 bar (< 5000 psi)

**Tech Tip**
We recommend 2 µm frits for columns with 5 µm or larger particles and 0.5 µm frits for smaller particles.

* The internal volume is the total flushed volume between the ends of the connecting tubes, including the frit volume.

Calculation of frit volume: see Tech Info on page 109

## SPECS

**Material**
Body: PEEK
Frit: see chart

**Dimensions**
Bore 0.25 mm/0.4 mm
See illustration

**Threads**
10-32 female to 10-32 male

**Pressure rating**
< 350 bar (< 5000 psi)

**Tech Tip**
We recommend 2 µm frits for columns with 5 µm or larger particles and 0.5 µm frits for smaller particles.

* The internal volume is the hold-up volume between the end of the connecting tube and the filter 10-32 connector outlet, including the frit volume.

Calculation of frit volume: see Tech Info on page 109

# PEEK Pre-Column Filter Kit – High Pressure

- 100% Biocompatible
- Minimal Hold-up Volume
- Biocompatible PAT Frits or Ti Frits
- Different Porosities

The VICI Jour Pre-Column Filter Kit has a standard 10-32 fitting and fits direct to most column types without introducing an additional dead volume.

The Filter Kit protects expensive columns against fines and particles, which may otherwise accumulate on the column frit, leading to split peaks and high backpressure.


### PEEK Pre-Column Filter Kit – High Pressure

| Part No. | Description | Internal Volume µL* |
|---|---|---|
| JR-68260 | Filter, PEEK, pre-column, PAT frit PEEK-encased 5 µm | 14.4 |
| JR-68261 | Filter, PEEK, pre-column, PAT frit PEEK-encased 10 µm | 14.4 |
| JR-68258 | Filter, PEEK, pre-column, Ti frit PEEK-encased 0.5 µm | 6.4 |
| JR-68262 | Filter, PEEK, pre-column, Ti frit PEEK-encased 2 µm | 7.8 |

### Spare Parts

| Part No. | Description | Frit volume µL | Qty/pkg |
|---|---|---|---|
| JR-68152-5 | Frit, PAT, PEEK-encased 5 µm | 9.77 | 5 |
| JR-9000-0460-5 | Frit, PAT, PEEK-encased 10 µm | 9.77 | 5 |
| JR-1125-05P-5 | Frit, Ti, PEEK-encased 0.5 µm | 1.77 | 5 |
| JR-1125-2P-5 | Frit, Ti, PEEK-encased 2 µm | 3.20 | 5 |

## Sure-Guard

- Minimized Hold-up Volume
- Disposable Filter Guard
- Biocompatible Ti and SS Frits
- Two Different Porosities

The VICI Jour Sure-Guard disposable In-Line filter offers an easy and inexpensive way of protecting valuable columns against fines and particles. It is easily connected directly to any column with an inlet for 1/16" OD tubes and 10-32 threads. The VICI Jour Sure-Guard can be changed in seconds without tools.


### Sure-Guard

| Part No. | Description | Frit volume µL | Qty/pkg |
|---|---|---|---|
| JR-0611-SS05-3 | Sure-Guard, disposable In-Line Filter, SS frit 0.5 µm | 0.45 | 3 |
| JR-0611-SS2-3 | Sure-Guard, disposable In-Line filter, SS frit 2 µm | 0.61 | 3 |
| JR-0611-TI05-3 | Sure-Guard, disposable In-Line filter, Ti frit 0.5 µm | 0.45 | 3 |
| JR-0611-TI2-3 | Sure-Guard, disposable In-Line filter, Ti frit 2 µm | 0.61 | 3 |

### SPECS

**Material**
Body: PEEK
Filter: SS316, Titanium
(see chart)

**Dimensions**
Bore 0.4 mm
See illustration

**Threads**
10-32 female to 10-32 male

**Pressure rating**
< 350 bar (< 5000 psi)

**Tech Tip**
We recommend 2 µm frits for columns with 5 µm or larger particles and 0.5 µm frits for smaller particles.

**Spares & Tools**
We recommend our striped PEEK tubing for easy identification. (see pages 5–6)

Calculation of frit volume:
see Tech Info on page 109

## SPECS

**Material**
Body: SS316,
Frit: PEEK encased SS316

**Dimensions**
Bores: see chart
Others: see illustrations

**Filter Dimensions**
See page 85

**Threads**
10-32 female to 10-32 female

Tolerances
+/– 0.05 mm (.002")

**Pressure rating**
< 350 bar (< 5000 psi)

**Tech Tip**
We recommend 2 µm frits for columns with 5 µm or larger particles and 0.5 µm frits for smaller particles.

* The internal volume is the flushed volume between the ends of the connecting tubes, including the frit volume.

Calculation of frit volume:
see Tech Info on page 109



## SS High-Pressure In-Line Filter

- Minimized Hold-up Volume
- High-Pressure Applications up to 350 bar (5000 psi)
- Two Different Bores for Analytical up to Semi Prep Flow Rates
- Three Different Porosities

The VICI Jour SS In-Line Filter has virtually no hold-up volume and can be used in various applications without significant band broadening or loss of efficiency. The 0.25 mm bore versions are intended for analytical use between autosampler/injection valve and column. The 0.75 mm bore versions are suitable for higher flow rates in semi prep systems or for sol vent supply from pump to autosampler with minima dead volume. These in-line filters are the ideal columi protectors and available with frit porosities of 0.5, : or 5 µm.



### SS High-Pressure In-Line Filter

| Part No. | Description | Internal Volume µL* |
|---|---|---|
| JR-68230-05 | Filter, SS, In-Line, 0.25 mm bore, SS 0.5 µm | 0.2 |
| JR-68230-2 | Filter, SS, In-Line, 0.25 mm bore, SS 2 µm | 0.3 |
| JR-68230-5 | Filter, SS, In-Line, 0.25 mm bore, SS 5 µm | 0.3 |
| JR-68231-05 | Filter, SS, In-Line, 0.75 mm bore, SS 0.5 µm | 1.7 |
| JR-68231-2 | Filter, SS, In-Line, 0.75 mm bore, SS 2 µm | 1.9 |
| JR-68231-5 | Filter, SS, In-Line, 0.75 mm bore, SS 5 µm | 1.9 |

### Spare Parts

| Part No. | Description | Frit volume µL | Qty/pkg |
|---|---|---|---|
| JR-1110-05P-5 | Frit, SS, PEEK-encased 0.5 µm, for P/N 68230 series | 0.14 | 5 |
| JR-1110-2P-5 | Frit, SS, PEEK-encased 2 µm, for P/N 68230 series | 0.18 | 5 |
| JR-1110-5P-5 | Frit, SS, PEEK-encased 5 µm, for P/N 68230 series | 0.20 | 5 |
| JR-1111-05P-5 | Frit, SS, PEEK-encased 0.5 µm, for P/N 68231 series | 0.56 | 5 |
| JR-1111-2P-5 | Frit, SS, PEEK-encased 2 µm, for P/N 68231 series | 0.75 | 5 |
| JR-1111-5P-5 | Frit, SS, PEEK-encased 5 µm, for P/N 68231 series | 0.81 | 5 |

## INDEX

## Safety-Coated Glass Bottles

- Special Design for Helium Sparging of LC Mobile Phases
- Safety Coating to Minimize Risk of Injury

VICI Jour Safety-Coated Glass Bottles are available in 1 and 2 L volume sizes.
Schott Duran® glass bottles with GL45 screw threading are coated on the outside with a layer of sturdy polymer. This reduces the likelihood of the bottle breaking if it is dropped. Even if the bottle breaks, glass fragments will be kept within the polymer coating. Solvents will be kept within the coating for a short while.
The coating also protects solvents against UV light up to 385 nm.


### Safety-Coated Glass Bottles

| Part No. | Description |
|---|---|
| JR-9000-0005 | Bottle, Glass, safety-coated 1 L with solid cap |
| JR-9000-0010 | Bottle, Glass, safety-coated 2 L with solid cap |

### SPECS

**Material**
Bottle: Duran® glass
Cap: Polypropylene
Pouring Ring: Polypropylene

**Pressure Rating**
0.8 bar (11.6 psi)

**Special Info**
The bottles are not suitable for use with pressures above 0.8 bar (11.6 psi), use only for continuous Helium sparging.

The safety coating is not intended to replace safe working conditions and precautions in laboratories.

## SPECS

**Material**
Screw Collar: Polyethylene
Pouring Ring: Polyproylene
Opti-Cap insert: PTFE
Eco-Cap insert: ETFE
O-Rings: EPDM
Plugs: PEEK
Luer Plugs: Polypropylene
Others: see charts

**Dimensions**
For GL45 or S40 threads (see chart)

**Bores**
Opti-Cap: 2 x 1/8", 1 x 1/16"
Eco-Cap: 3 x 1/8"

**Threads**
Opti-Cap: 1/4"-28

**Special Info**
These caps are not suitable for building up a Helium atmosphere within the solvent bottle, use only for continuous Helium sparging.

**Tech Tip**
Once the mobile phase is degassed, we recommend our No-Ox tubing between bottle cap and pump to prevent "regassing" of Helium degassed solvents (see page 18)

# Opti-Cap

- Ideal to Helium Sparge and Deliver Mobile Phase
- Also Available as Bottle Kit

The VICI Jour Opti-Cap is the most economical way to Helium sparge and deliver mobile phases. The Opti-Cap (PTFE insert with polyethylene collar) is available for standard GL45 threads or S40 threads used by Merck®. It has 3 ports for tubing insertion, 2 x 1/8" and 1 x 1/16", for different options (e.g. Helium sparging). The tubing ports are made so that you push the tubing through the hole or you can use any 1/4"-28 fittings. If required, just plug the port that you do not need.

The Kit consists of all needed parts to sparge and deliver LC mobile phases like fittings, plugs and tubing. Bottle Kits incl. additionally 1L or 2L Safety Coated Glass Bottles


### Opti-Cap

| Part No. | Description |
|---|---|
| JR-9000-0001 | Opti-Cap, PTFE, GL45, incl. 1x Plug |
| JR-9000-0006 | Opti-Cap, PTFE, S40, incl. 1x Plug |

### Opti-Cap Kits

| | |
|---|---|
| JR-9000-0002 | Opti-Cap Kit |
| JR-9000-0003 | Opti-Cap Kit, incl. 1L Safety Coated Bottle |
| JR-9000-0004 | Opti-Cap Kit, incl. 2L Safety Coated Bottle |

Spare Parts see next page

# Eco-Cap

- Competitively Priced Alternative for Sparging and delivering Mobile Phases
- Also Available as Bottle Kit

The Eco-Cap is made of ETFE insert with polyethylene collar and has three holes for tubing insertion.
The Eco-Cap has no threading in the inside of the tubing ports – tubing can easily put through.


### Eco-Cap

| Part No. | Description |
|---|---|
| JR-9000-0007 | Eco-Cap, ETFE, GL45, incl. 1 x Male Luer Plug |

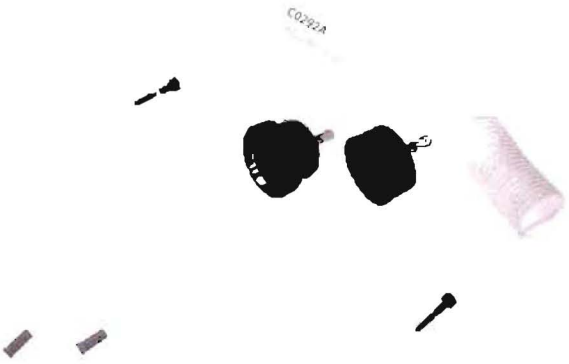
### Spare Parts

| Part No. | Description |
|---|---|
| JR-9000-0005 | Bottle, Glass, safety-coated 1L with solid cap |
| JR-9000-0010 | Bottle, Glass, safety-coated 2L with solid cap |
| JR-367008-2 | Filter, SS, 2 µm, 1/8" Fitting |
| JR-367008-10 | Filter, SS, 10 µm, 1/8" Fitting |
| JR-T-6800-M3 | Tubing, PTFE, 1/8" x 1/16" ID, 3m/pkg |
| JR-T-4037-M3 | Tubing, PTFE, 1/8" x 2.40 mm ID, 3m/pkg |
| JR-20113-10 | Nut, PEEK, flangefree blue 1/8", 1/4"-28, 10/pkg |
| JR-051-10 | Ferrule, ETFE, 1/8", 10/pkg |
| JR-409 | Plug, PEEK, 1/4"-28 |
| JR-070350-10 | Plug, PP, Male Luer, 10/pkg |

## SolviFlex

- Be 'Mobile' with Mobile Phase Bottles
- Available for GL45 and S40 Thread Sizes
- Customized Versions on Request

The SolviFlex has a flexible telephone cable like PFA tubing which expands and contracts and consequently gives the flexibility to move mobile phase bottles on the bench. All SolviFlex assemblies consist of a biocompatible mobile phase filter and all the required parts to connect it to any 1/4"-28 port.
Standard cap assemblies available for bottles with thread sizes GL45 or Merck S40.
Customized versions are available on request – the cap has to be supplied by the customer.



### SolviFlex

| Part No. | Description |
|---|---|
| JR-6120-50030 | Solviflex, assembly without cap |
| JR-6120-50031 | Solviflex, assembly with GL45 cap |
| JR-6120-50032 | Solviflex, assembly with S40 cap |
| JR-6120-50033 | Solviflex, customized version, cap by customer |

### SPECS

**Material (wetted parts)**
GL45 Cap: Polypropylene
Tubing: PFA
Filter: PE
Ferrules: ETFE

**Dimension**
1/8" Tubing OD

**Threads**
See chart

**Special Info**
Complete with fittings 1/4"-28 and PE filter 5 µm.

Color and design of S40 caps may differ from illustration

## SPECS

**Material**
Body: Polypropylene
Spring: Stainless Steel
Unions: Nylon
Adapters: Polypropylene
Nuts: POM
Ferrules: ETFE

**Dimensions**
For OD 1/16" or 1/8" Tubing

**Threads**
1/4"-28

**Cracking pressure**
0.1 bar (1.5 psi)

# Check Valve for Helium Sparging Line

- Prevents Backflow of Liquids
- Fits 1/16" or 1/8" OD Tubing

Low Pressure Check Valves are a simple and inexpensive way to prevent backflow from solvent reservoir into the sparging line. When a Helium supply is switched off, the Helium gas will diffuse through the tubing wall, allowing the solvent to be sucked into the sparging line. The Check Valve which is located just outside the bottle protects gas line components such as regulators and valves from any liquid and also eliminates cross-contamination of the mobile phase reservoir.

Low pressure Check Valve

| Part No. | Description |
|---|---|
| JR-9001-0620 | Check Valve, Anti-Backflow, fittings for 1/16" tubing |
| JR-9001-0621 | Check Valve, Anti-Backflow, fittings for 1/8" tubing |

C0079

## INDEX

## PAT Frits

- PAT – PEEK Alloyed with Teflon®
- Superior Chemical Resistance
- Excellent Mechanical Strength

PAT stands for PEEK Alloyed with Teflon®, a porous material for frits and filters in HPLC. This material is made by compressing PEEK and Teflon® particles under rigidly controlled conditions to form PAT porous sheets. PAT frits are suitable for use with all HPLC and IC mobile phases, including strong buffers and chloride salts which corrode common stainless steel frits. Compared with other porous polymer frits (Polyethylene, Polypropylene, PTFE), PAT frits exhibit superior chemical resistance and mechanical strength. PAT frits may be used with any HPLC column or filter but they are particularly well suited for separations involving proteins, peptides, nucleic acids or other samples of biological origin. PAT frits are also ideal for IC systems where metal frits may interact with ionic samples or release transition metals that will deactivate ion exchange columns.

PAT Frits have a superior mechanical strength. The strength is derived from the thermally bonded structure of the PEEK and Teflon® alloy. Therefore, very thin PAT Filters are strong enough to be used without support rings and can easily be pressed into column ends.

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C0327

### PAT Frits

| Part No. | Diameter in Inches | Diameter in mm | Thickness in Inches | Thickness in mm | Porosity in µm | Frit volume in µL | Qty/pkg |
|---|---|---|---|---|---|---|---|
| JR-6145-3062-5 | 0.062 | 1.59 | 0.031 | 0.78 | 5 | 0.54 | 5 |
| JR-6145-3125-5 | 0.125 | 3.17 | 0.031 | 0.78 | 5 | 2.18 | 5 |
| JR-6145-6188-5 | 0.188 | 4.77 | 0.062 | 1.59 | 5 | 9.87 | 5 |
| JR-6145-3500-5 | 0.500 | 12.70 | 0.031 | 0.78 | 5 | 34.91 | 5 |
| JR-6146-3250-5 | 0.250 | 6.35 | 0.031 | 0.78 | 10 | 8.73 | 5 |
| JR-6146-3500-5 | 0.500 | 12.70 | 0.031 | 0.78 | 10 | 34.91 | 5 |

### PAT Frits PEEK encased

| Part No. | Ring OD in Inches | Ring OD in mm | Frit OD in Inches | Frit OD in mm | Thickness in Inches | Thickness in mm | Porosity in µm | Frit volume in µL | Qty/pkg |
|---|---|---|---|---|---|---|---|---|---|
| JR-9000-0477-5 | 0.2 | 5.08 | 0.102 | 2.59 | 0.062 | 1.59 | 5 | 2.91 | 5 |
| JR-68152-5 | 0.25 | 6.35 | 0.187 | 4.77 | 0.062 | 1.59 | 5 | 9.77 | 5 |
| JR-9000-0460-5 | 0.25 | 6.35 | 0.187 | 4.77 | 0.062 | 1.59 | 10 | 9.77 | 5 |
| JR-67152-5 | 0.375 | 9.52 | 0.312 | 7.92 | 0.062 | 1.59 | 5 | 27.19 | 5 |

Other dimensions and porosities are available on request. Minimum order quantity: 100 pcs. Please contact your local distributor or VICI directly.

### SPECS

**Material**
PAT (PEEK Alloyed with Teflon®)
PAT + PEEK ring

**Dimensions**
See chart

**Tolerances**
+/– 0.05 mm (.002")

**Pressure rating**
< 350 bar (< 5000 psi)

**Special Info**
Compatible with most HPLC and IC Mobile Phases – Even those that corrode Stainless Steel. For further reference see chemical compatibility of PEEK.

**Note**
Frit volumes are theoretical and are calculated by multiplying overall frit volume times the porosity proportion. PAT frits have a porosity proportion of 35%.

Stated frit porosities are only nominal and do not reflect the maximum pore size of a frit. The chart on page 109 will help to choose the right frit for your application.

## SPECS

Stainless Steel SS316L (sintered)

**Dimensions**
See chart

**Tolerances**
OD < 5 mm,
+/– 0.05 mm (.002")
OD 5–12.5 mm,
+/– 0.08 mm (.003")
OD 12.5–25.4 mm,
+/– 0.20 mm (.008")

**Special Info**
Standard frits are without chamfers – chamfered frits are available on request

**Note**
Stated frit porosities are only nominal and do not reflect the maximum pore size of a frit. The chart on page 109 will help to choose the right frit for your application.

# Stainless Steel Frits – Unidense Type

For both standard frits and those produced to custom specifications, the frits offer unexcelled reproducibility and precision. Proprietary manufacturing processes ensure uniformity and precise, repeatable dimensional control. VICI Stainless Steel Frits are manufactured of SS316L material which has extra low carbon content. The sintering process used results in a strong bonding of the sinter metal particles. Depending upon the grade of powder used, the porosity of the frit can be precisely controlled.

### Stainless Steel Frits – Unidense Type

| Part No. | Diameter in Inches | Diameter in mm | Thickness in Inches | Thickness in mm | Porosity in µm | Frit volume in µL | Qty/pkg |
|---|---|---|---|---|---|---|---|
| JR-.5FR1-5 | 1/16" | 1.59 | 0.030 | 0.76 | 0.5 | 0.39 | 5 |
| JR-1FR1-5 | 1/16" | 1.59 | 0.030 | 0.76 | 1 | 0.45 | 5 |
| JR-2FR1-5 | 1/16" | 1.59 | 0.030 | 0.76 | 2 | 0.53 | 5 |
| JR-10FR1-5 | 1/16" | 1.59 | 0.030 | 0.76 | 10 | 0.60 | 5 |
| JR-.5FR2-5 | 1/8" | 3.18 | 0.040 | 1.02 | 0.5 | 2.09 | 5 |
| JR-1FR2-5 | 1/8" | 3.18 | 0.040 | 1.02 | 1 | 2.41 | 5 |
| JR-2FR2-5 | 1/8" | 3.18 | 0.040 | 1.02 | 2 | 2.81 | 5 |
| JR-10FR2-5 | 1/8" | 3.18 | 0.040 | 1.02 | 10 | 3.22 | 5 |
| JR-.5FR4-5 | 1/4" | 6.35 | 0.040 | 1.02 | 0.5 | 8.37 | 5 |
| JR-2FR4-5 | 1/4" | 6.35 | 0.040 | 1.02 | 2 | 11.26 | 5 |
| JR-10FR4-5 | 1/4" | 6.35 | 0.040 | 1.02 | 10 | 12.87 | 5 |
| JR-.5FR6-5 | 3/8" | 9.53 | 0.040 | 1.02 | 0.5 | 18.82 | 5 |
| JR-2FR6-5 | 3/8" | 9.53 | 0.040 | 1.02 | 2 | 25.34 | 5 |
| JR-10FR6-5 | 3/8" | 9.53 | 0.040 | 1.02 | 10 | 28.96 | 5 |
| JR-.5FR8-5 | 1/2" | 12.70 | 0.040 | 1.02 | 0.5 | 33.46 | 5 |
| JR-2FR8-5 | 1/2" | 12.70 | 0.040 | 1.02 | 2 | 45.05 | 5 |
| JR-10FR8-5 | 1/2" | 12.70 | 0.040 | 1.02 | 10 | 51.48 | 5 |
| JR-2FR1K-5 | 1" | 25.40 | 0.060 | 1.52 | 2 | 270.28 | 5 |
| JR-10FR1K-5 | 1" | 25.40 | 0.060 | 1.52 | 10 | 308.89 | 5 |

Other dimensions and porosities are available on request. Minimum order quantity: 100 pcs.
Please contact your local distributor or VICI directly.

## Stainless Steel Frits – PEEK Encased

- For HPLC Columns or In-Line Filters
- Low Dead Volume
- Various Porosities and Dimensions Available

VICI Jour PEEK encased frits with 1/4" ring OD are intended for HPLC columns with ID's of 3.2, 3.9 and 4.6 mm. By surrounding the frit with a PEEK ring the actual porous surface is reduced to the column ID.

The compressed PEEK ring forms a seal between the bottom of the fitting and the column end prevents the mobile phase and the sample from entering the previously accessible poorly swept areas.


### SPECS

**Material**
Frits: SS316L
Ring: PEEK

**Dimensions**
See chart

**Tolerances**
+/- 0.05 mm (.002")

**Special Info**
Eliminates Poorly Swept Volume – Improves Peak Symmetry.

**Note**
Stated frit porosities are only nominal and do not reflect the maximum pore size of a frit. The chart on page 109 will help to choose the right frit for your application.

### Stainless Steel Frits – PEEK Encased

| Part No. | Ring OD in Inches | Ring OD in mm | Frit OD in Inches | Frit OD in mm | Thickness in Inches | Thickness in mm | Porosity in µm | Frit volume in µL | Qty/pkg |
|---|---|---|---|---|---|---|---|---|---|
| JR-1110-05P-5 | 0.118 | 3.00 | 0.038 | 0.97 | 0.028 | 0.70 | 0.5 | 0.14 | 5 |
| JR-1110-2P-5 | 0.118 | 3.00 | 0.038 | 0.97 | 0.028 | 0.70 | 2 | 0.18 | 5 |
| JR-1110-5P-5 | 0.118 | 3.00 | 0.038 | 0.97 | 0.028 | 0.70 | 5 | 0.2 | 5 |
| JR-1111-05P-5 | 0.118 | 3.00 | 0.077 | 1.96 | 0.028 | 0.70 | 0.5 | 0.56 | 5 |
| JR-1111-2P-5 | 0.118 | 3.00 | 0.077 | 1.96 | 0.028 | 0.70 | 2 | 0.75 | 5 |
| JR-1111-5P-5 | 0.118 | 3.00 | 0.077 | 1.96 | 0.028 | 0.70 | 5 | 0.81 | 5 |
| JR-1104-05P-5 | 1/4 | 6.35 | 0.078 | 2.00 | 0.062 | 1.59 | 0.5 | 1.26 | 5 |
| JR-1104-2P-5 | 1/4 | 6.35 | 0.078 | 2.00 | 0.062 | 1.59 | 2 | 1.7 | 5 |
| JR-1103-05P-5 | 1/4 | 6.35 | 0.181 | 4.60 | 0.032 | 0.80 | 0.5 | 3.51 | 5 |
| JR-1103-2P-5 | 1/4 | 6.35 | 0.181 | 4.60 | 0.032 | 0.80 | 2 | 4.72 | 5 |
| JR-1102-05P-5 | 1/4 | 6.35 | 0.125 | 3.20 | 0.062 | 1.59 | 0.5 | 3.24 | 5 |
| JR-1102-2P-5 | 1/4 | 6.35 | 0.125 | 3.20 | 0.062 | 1.59 | 2 | 4.36 | 5 |
| JR-1101-05P-5 | 1/4 | 6.35 | 0.153 | 3.90 | 0.062 | 1.59 | 0.5 | 4.86 | 5 |
| JR-1101-2P-5 | 1/4 | 6.35 | 0.153 | 3.90 | 0.062 | 1.59 | 2 | 6.54 | 5 |
| JR-1100-05P-5 | 1/4 | 6.35 | 0.181 | 4.60 | 0.062 | 1.59 | 0.5 | 6.8 | 5 |
| JR-1100-2P-5 | 1/4 | 6.35 | 0.181 | 4.60 | 0.062 | 1.59 | 2 | 9.15 | 5 |

Other dimensions and porosities are available on request. Minimum order quantity: 100 pcs. Please contact your local distributor or VICI directly.

## SPECS

**Material**
Titanium (sintered)

**Dimensions**
See chart

**Tolerances**
OD < 5 mm,
+/– 0.05 mm (.002")
OD 5–12.5 mm,
+/– 0.08 mm (.003")
OD 12.5–25.4 mm,
+/– 0.20 mm (.008")

**Special Info**
Standard frits are without chamfers – chamfered frits are available on request

**Note**
Stated frit porosities are only nominal and do not reflect the maximum pore size of a frit. The chart on page 109 will help to choose the right frit for your application.

# Titanium Frits – Unidense Type

- Biocompatible – Recommended for Protein Analysis
- Higher Corrosion Resistance
- Various Pore Sizes and Dimensions

Titanium is preferred over stainless steel for applications related to the analysis of particularly sensitive substances in general and large biomolecules in particular. Evidently proteins have a tendency to adsorb on the stainless steel (Iron) frit and consequently reduce recovery – or – may even decompose. Titanium also offers higher corrosion resistance and can be used with solvents containing halides.

### Titanium Frits – Unidense Type

| Part No. | Diameter in Inches | Diameter in mm | Thickness in Inches | Thickness in mm | Porosity in µm | Frit volume in µL | Qty/pkg |
|---|---|---|---|---|---|---|---|
| JR-2FR1TI-5 | 1/16" | 1.59 | 0.040 | 1.02 | 2 | 0.70 | 5 |
| JR-2FR2TI-5 | 1/8" | 3.18 | 0.040 | 1.02 | 2 | 2.81 | 5 |
| JR-2FR4TI-5 | 1/4" | 6.35 | 0.040 | 1.02 | 2 | 11.26 | 5 |
| JR-2FR6TI-5 | 3/8" | 9.53 | 0.040 | 1.02 | 2 | 25.34 | 5 |
| JR-2FR8TI-5 | 1/2" | 12.70 | 0.040 | 1.02 | 2 | 45.05 | 5 |
| JR-10FR8TI-5 | 1/2" | 12.70 | 0.040 | 1.02 | 10 | 51.48 | 5 |
| JR-2FR1KTI-5 | 1" | 25.40 | 0.040 | 1.02 | 2 | 270.28 | 5 |

Other dimensions and porosities are available on request. Minimum order quantity: 100 pcs.
Please contact your local distributor or VICI directly.

## Titanium Frits – PEEK Encased

- For HPLC Columns or In-Line Filters
- Low Dead Volume
- Biocompatible – Recommended for Protein Analysis
- Higher Corrosion Resistance
- Various Pore Sizes and Dimensions

In terms of "biocompatibility" the frit is the critical spot for contributing metal ions to the mobile phase and interaction with protein samples. VICI Jour PEEK encased frits with 1/4" ring OD are intended for HPLC columns with ID's of 3.2 and 4.6 mm. By surrounding the frit with a PEEK ring the actual porous surface is reduced to the column ID. The compressed PEEK ring forms a seal between the bottom of the fitting and the column end prevents the mobile phase and the sample from entering the previously accessible poorly swept areas.


### Titanium Frits – PEEK Encased

| Part No. | Ring OD in Inches | Ring OD in mm | Frit OD in Inches | Frit OD in mm | Thickness in Inches | Thickness in mm | Porosity in µm | Frit volume in µL | Qty/ pkg |
|---|---|---|---|---|---|---|---|---|---|
| JR-1127-05P-5 | 1/4" | 6.35 | 0.125 | 3.20 | 0.062 | 1.59 | 0.5 | 0.84 | 5 |
| JR-1127-2P-5 | 1/4" | 6.35 | 0.125 | 3.20 | 0.062 | 1.59 | 2 | 1.53 | 5 |
| JR-1125-05P-5 | 1/4" | 6.35 | 0.181 | 4.60 | 0.062 | 1.59 | 0.5 | 1.77 | 5 |
| JR-1125-2P-5 | 1/4" | 6.35 | 0.181 | 4.60 | 0.062 | 1.59 | 2 | 3.20 | 5 |

Other dimensions and porosities are available on request. Minimum order quantity: 100 pcs.
Please contact your local distributor or VICI directly.

**SPECS**

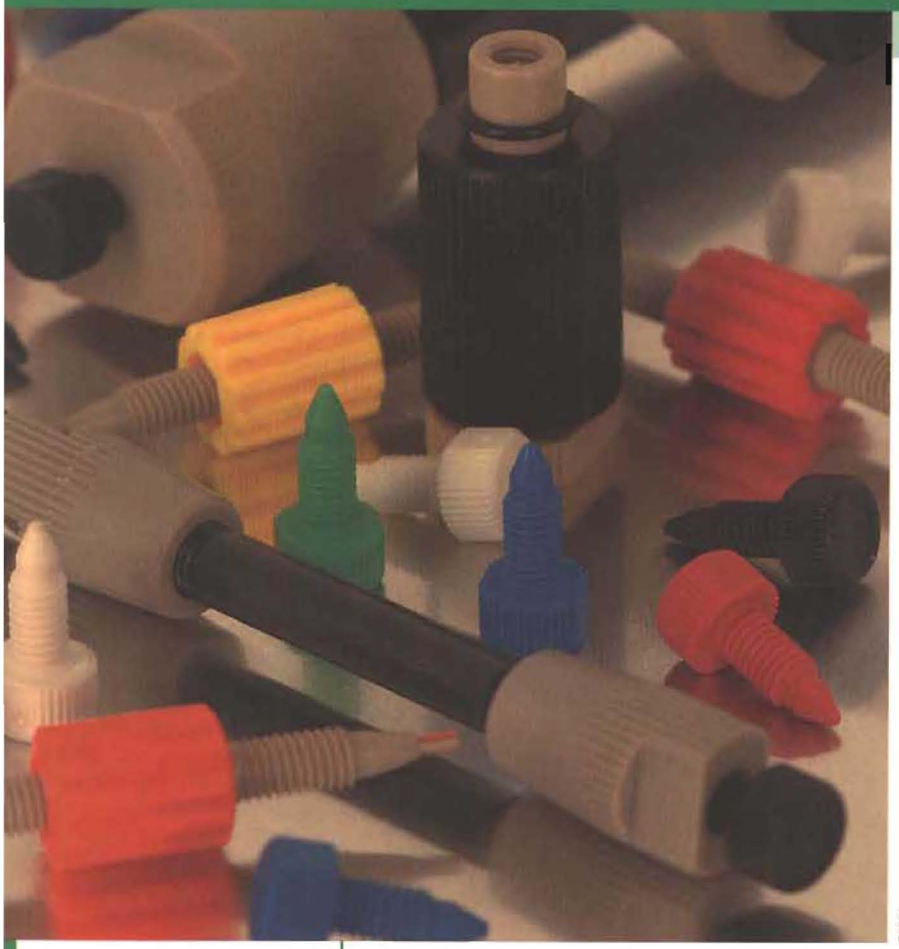
**Material**
Frit: Titanium
Ring: PEEK

**Dimensions**
See chart

**Tolerances**
+/– 0.05 mm (.002")

**Special Info**
Eliminates Poorly Swept Volume – Improves Peak Symmetry

**Note**
Stated frit porosities are only nominal and do not reflect the maximum pore size of a frit. The chart on page 109 will help to choose the right frit for your application.



C0584

## INDEX

## PEEK Columns

- Biocompatible
- High Pressure Applications
- Packing Devices Available

**PEEK Columns 2.1 mm ID**
We have designed this column for narrow-bore applications and where only limited amounts of sample are available for analysis. Because 2.1 mm ID columns operate at 1/5 of the flow rate of their 4.6 mm counterparts, the same sample mass injected on a 2.1 mm column will produce five times the detector signal. This greater mass sensitivity provides the same analysis as a 4.6 mm column with only 20% of the sample. Only PEEK and PAT contact the fluid stream.

Wetted Surfaces: PEEK and PAT frits
Pressure rating: Max. 210 bar (3000 psi)

* using the VICI Jour Packing Kit JR-67-250-4: max. pressure during packing 350 bar (5000 psi)

**PEEK Columns 4.6 mm & 4.0 mm ID**
Today's HPLC and IC applications are more demanding than ever. The limitations of traditional stainless steel pose significant problems for a growing number of important biotechnology and ion chromatography applications.

Wetted Surfaces: PEEK and PAT (PEEK Alloyed with Teflon) frits
Pressure Rating: Max. 350 bar (5000 psi) continuous. During packing Max. 560 bar (8000 psi)*

**PEEK Columns 7.5 mm ID**
Ideal for Semi-prep Biochromatography. The basic column design is shown in the figure and consists of a length of threaded PEEK tubing and two PEEK end fittings with the packed bed held in place by two PAT frits. Connections are made through PEEK inlet and outlet fittings which accept 1/16" OD tubing and standard fingertight fittings. Max operating pressure 350 bar (5000 psi). Low Protein Binding ensures high recovery and accurate quantification.

Wetted Surfaces: PEEK and PAT frits
Pressure rating: Up to 350 bar (5000 psi)

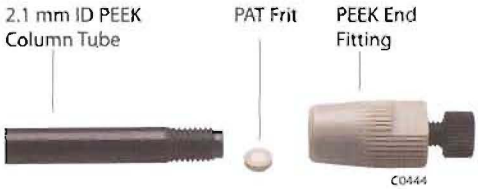
## SPECS

**Material**
PEEK, black and natural
PAT

**Dimensions**
See chart

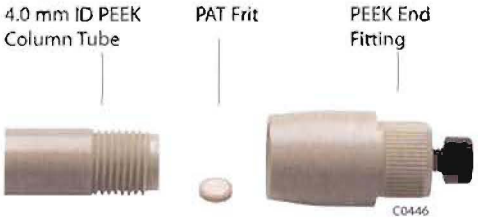
**Tolerances**
+/– 0.05 mm (.002")

**Pressure rating**
See page 89




### PEEK Columns 2.1 mm ID

| Part No. | Description |
|---|---|
| JR-65001 | Column, PEEK, 30 x 2.1 mm ID, complete |
| JR-65002 | Column, PEEK, 50 x 2.1 mm ID, complete |
| JR-65003 | Column, PEEK, 100 x 2.1 mm ID, complete |
| JR-65005 | Column, PEEK, 150 x 2.1 mm ID, complete |
| JR-65006 | Column, PEEK, 250 x 2.1 mm ID, complete |

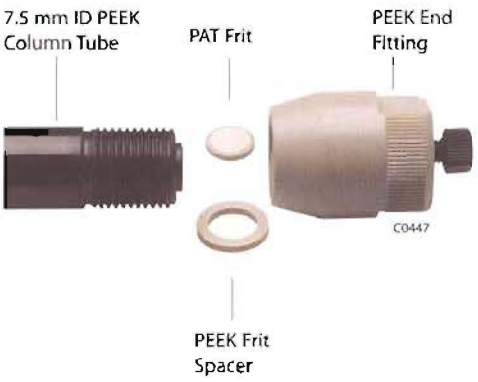



### PEEK Columns 4.0 mm ID

| Part No. | Description |
|---|---|
| JR-68181 | Column, PEEK, 50 x 4.0 mm ID, complete |
| JR-68182 | Column, PEEK, 100 x 4.0 mm ID, complete |
| JR-68183 | Column, PEEK, 125 x 4.0 mm ID, complete |
| JR-68184 | Column, PEEK, 150 x 4.0 mm ID, complete |
| JR-68185 | Column, PEEK, 250 x 4.0 mm ID, complete |
| JR-68186 | Column, PEEK, 300 x 4.0 mm ID, complete |


### PEEK Columns 4.6 mm ID

| Part No. | Description |
|---|---|
| JR-66175 | Column, PEEK, 50 x 4.6 mm ID, complete |
| JR-66176 | Column, PEEK, 100 x 4.6 mm ID, complete |
| JR-66180 | Column, PEEK, 125 x 4.6 mm ID, complete |
| JR-66177 | Column, PEEK, 150 x 4.6 mm ID, complete |
| JR-66178 | Column, PEEK, 250 x 4.6 mm ID, complete |
| JR-66179 | Column, PEEK, 300 x 4.6 mm ID, complete |




### PEEK Columns 7.5 mm ID

| Part No. | Description |
|---|---|
| JR-67202 | Column, PEEK, 50 x 7.5 mm ID, complete |
| JR-67222 | Column, PEEK, 75 x 7.5 mm ID, complete |
| JR-67204 | Column, PEEK, 100 x 7.5 mm ID, complete |
| JR-67206 | Column, PEEK, 150 x 7.5 mm ID, complete |
| JR-67208 | Column, PEEK, 250 x 7.5 mm ID, complete |
| JR-67220 | Column, PEEK, 300 x 7.5 mm ID, complete |

## Packing Devices

| Part No. | Description |
|---|---|
| JR-67-250-2 | Packing Kit, PEEK, for 2.1 mm ID columns, complete |
| JR-67-250-4 | Packing Kit, PEEK, for 4.0 and 4.6 mm ID columns, complete |
| JR-67-600 | Packing Kit, PEEK, for 7.5 mm ID columns, complete |

## Spare Parts

| Part No. | Description |
|---|---|
| JR-062 | Endfitting, PEEK, for 2.1 mm ID columns |
| JR-66140 | Endfitting, PEEK, for 4.0 and 4.6 mm ID columns |
| JR-67140 | Endfitting, PEEK, for 7.5 mm ID columns |
| JR-9000-0477 | Frit, PAT, PEEK-encased, 5 µm for 2.1 mm ID columns |
| JR-68152 | Frit, PAT, PEEK-encased, 5 µm for 4.0 and 4.6 mm ID columns |
| JR-67152 | Frit, PAT, PEEK-encased, 5 µm for 7.5 mm ID columns |
| JR-67190 | Frit spacer, PEEK, for 7.5 mm ID columns |
| JR-67140-1A | Packing adapter, PEEK, for 2.1 mm ID columns |
| JR-67140-2B | Packing adapter, PEEK, for 4.0 and 4.6 mm ID columns |
| JR-67140-3A | Packing adapter, PEEK, for 7.5 mm ID columns |
| JR-65011 | Replacement packing seal, PEEK, for 2.1 mm ID columns |
| JR-66158 | Replacement packing seal, PEEK, for 4.0 and 4.6 mm ID columns |

## SPECS

**Material**
PEEK, PAT

**Pressure rating**
For 2.1 mm ID columns: 210 bar (3000 psi)
For 4.0 to 7.5 mm ID columns: 350 bar (5000 psi)

**Special note**
Our Packing Kits are 'ready-to-use' tools to pack our PEEK columns.
Every Kit consists of the needed slurry reservoir, packing adapter, packing seals etc.

Further technical support material is available on our webpage

**SPECS**

**Material**
PEEK, PAT

**Dimensions**
See illustration

**Pressure rating**
< 350 bar (< 5000 psi)

**Special note**
Our Packing Kit is a 'ready-to-use' tool to pack our PEEK guard cartridges
Every Kit consists of the needed slurry reservoir, packing adapter, packing seals etc.

Further technical support material is available on our webpage

## In-Line Biocompatible Guard Column

- Biocompatible
- Easy to Fill
- Packing Device for Self Packing Available

VICI Jour In-Line PEEK Guard Column System extends the life of valuable analytical columns by trapping contaminants from the sample and mobile phase, thereby preventing loss of retention. Only PEEK and PAT contact the mobile phase and sample. This system is ideal for use with proteins or other biopolymers that may be contaminated or absorbed by metal surfaces. VICI Jour Guard Columns can be easily dry packed or slurry packed. Guard columns may be changed in minutes without the use of tools – all connections may be made by hand.


P/N JR-68242 Guard Cartridge
with PAT Frits JR-6145-6188 5 µm


### In-Line PEEK Guard Column

| Part No. | Description |
|---|---|
| JR-68252 | In-Line guard cartridge holder, PEEK, complete with 1 guard cartridge JR-68242 |
| JR-68242 | Column, PEEK, guard cartridge 8.0 x 3.0 mm ID, complete 2 pcs PAT-frit 5 µm |

### Packing Device

| Part No. | Description |
|---|---|
| JR-27305 | Packing Kit, PEEK, for In-Line guard cartridge system, complete |

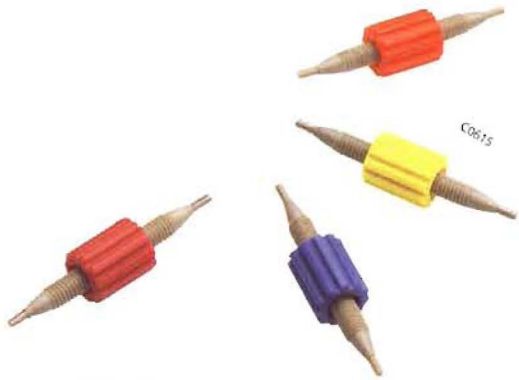
### Spare Parts

| Part No. | Description |
|---|---|
| JR-6145-6188 | Replacement Frit, PAT, 5 µm for guard cartridge |
| JR-9 | Packing seal, CTFE |

## Column Coupler One-Piece Fingertight

- Zero Dead Volume Connections
- Fits all Column Designs
- Biocompatible
- Self Adjusting
- Four Bore Sizes

The unique feature of the VICI Jour Column Coupler is that its design fits all pilot lengths, such as Valco®, Waters®, Upchurch®, Rheodyne®, etc. It adapts automatically and bottoms out in any fitting detail and consequently creates only small void volumes.





### One-Piece Fingertight Column Coupler

| Part No. | Description |
|---|---|
| JR-26501 | Coupler, PEEK, universal 0.13 mm ID, red |
| JR-26502 | Coupler, PEEK, universal 0.17 mm ID, yellow |
| JR-26503 | Coupler, PEEK, universal 0.25 mm ID, blue |
| JR-26504 | Coupler, PEEK, universal 0.50 mm ID, orange |

**SPECS**

**Material**
Tubing: PEEK
Fittings: PEEK
Sleeve: Polypropylene

**Dimensions**
See illustration

**Threads**
10-32 male to 10-32 male

**Pressure rating**
< 350 bar (< 5000 psi)

## Column End Plugs

- Seals Analytical Columns
- One Size – Fits All
- With Wrench Flats

*The column end plugs have a fingertight design. One size fits all columns with 10-32 threads. Easy handling is guaranteed by the additional 5/16" wrench flat, which allows loosening the plug with a wrench in case it should be stuck. The long design and the threading down to the ferrule ensure a safe closing of valuable columns.*

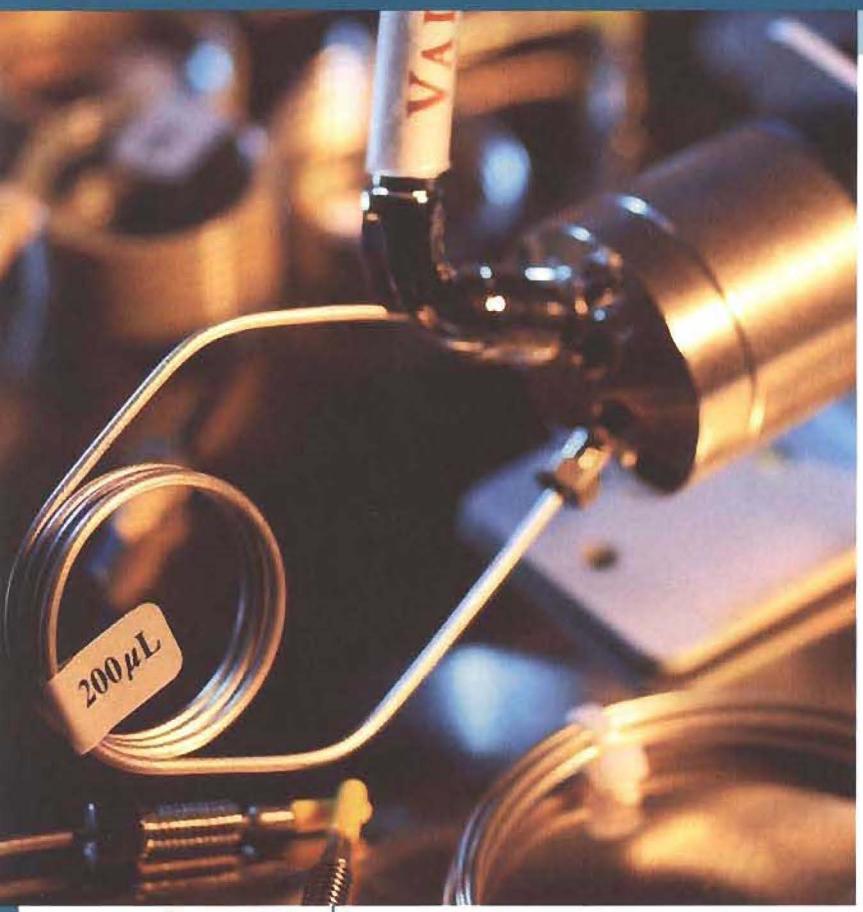

### Column End Plugs

| Part No. | Color | Qty/pkg |
|---|---|---|
| JR-4071-10 | Plug, Nylon, for HPLC columns, white, 10-32 | 10 |
| JR-4072-10 | Plug, Nylon, for HPLC columns, black, 10-32 | 10 |
| JR-4073-10 | Plug, Nylon, for HPLC columns, red, 10-32 | 10 |
| JR-4074-10 | Plug, Nylon, for HPLC columns, green, 10-32 | 10 |
| JR-4075-10 | Plug, Nylon, for HPLC columns, blue, 10-32 | 10 |

**SPECS**

**Material**
Nylon

**Dimensions**
For 10-32 fitting details




C0579

## INDEX

## ValvTool

- Handy Tool for the Lab
- Tighten Nuts with a Tube or Loop installed
- Fits Nuts with 1/4" or 5/16" Heads

The new ValvTool is a time-saving device, which will provide easy access to many hard-to-reach areas. The unique design with its slotted wrench allows tightening nuts where a loop or a capillary may otherwise make it difficult. The ValvTool is ideal for Valco, Cheminert and other valves and fittings as well as for most of the SS and PEEK fittings on the market with 1/4" and 5/16" heads.


### ValvTool

| Part No. | Description |
|---|---|
| JR-800 | ValvTool, 1/4" and 5/16" open wrench |

**SPECS**

**Dimensions**
For nuts with 1/4" and 5/16" head

## SPECS

**Material**
Loops: PEEK
Nuts: PEEK
Ferrules: PEEK
Caps: Polyethylene

**Dimensions**
See chart

Tolerances of tube ID
Premium Grade PEEK Tubing
(see page 5)
+/- 0.025 mm (.001")

**Note**
VICI Jour PEEK Sample Loops are made of Premium Grade PEEK Tubing. The tighter ID tolerance of the tubing minimizes the tolerance of the loop volume.

All PEEK sample loops will be supplied with PEEK hex-head nuts and PEEK ferrules for reliable connections.

This design avoids "twisting" of the tube.


C0619

2x JR-5005 + 1 x JR-5510

# PEEK Sample Loops for Valco Valves

- Fits All Valco W and UW Type Valves
- Wide Range of Volumes Available
- Biocompatible
- Made from Premium Grade PEEK Tubing

VICI Jour Sample Loops are made from PEEK tubing and fittings. PEEK is a mechanically strong, chemically inert polymer ideal for HPLC applications. Since VICI Jour PEEK Sample Loops contain no metals or other extractable compounds, no foreign materials will be introduced into the system. Further softener free PE caps are used to avoid contamination of the tubing.

VICI Jour PEEK Sample Loops are particularly wel suited for separations involving proteins, peptides nucleic acids or other samples of biological origin a well as in IC systems where metal traces may interac with ionic samples or release transition metals tha may deactivate ion exchange columns.


C0306

## PEEK Sample Loops for Valco Valves 1/16" OD

| Part No. | Description | bar* | psi* |
|---|---|---|---|
| JR-SLV-75-5 | 5 µL | 400 | 5800 |
| JR-SLV-75-10 | 10 µL | 400 | 5800 |
| JR-SLV-75-20 | 20 µL | 400 | 5800 |
| JR-SLV-75-50 | 50 µL | 400 | 5800 |
| JR-SLV-75-100 | 100 µL | 400 | 5800 |
| JR-SLV-75-250 | 250 µL | 240 | 3500 |
| JR-SLV-75-500 | 500 µL | 240 | 3500 |
| JR-SLV-75-1000 | 1 mL | 240 | 3500 |

Other dimensions are available on request. Please contact your local distributor or VICI directly.
* = Recommended maximum working pressure at room temperature

## Spare Parts

| Part No. | Description | Qty/pkg |
|---|---|---|
| JR-5510-5 | Fitting, PEEK, Hex-head long, 10-32, 1/16" | 5 |
| JR-5005-5 | Single Ferrule, PEEK, 1/16" | 5 |

## Stainless Steel Sample Loops for Valco Valves

- Fits Valco W Type Valves
- Wide Range of Volumes Available

VICI Jour Stainless Steel Sample Loops are made of high quality SS316 and are cut using an electrolytic cutting process followed by ultrasonic and high pressure steam cleaning to remove contaminants, dried and capped with softener free caps to avoid the re-contamination of the tubing.


### Stainless Steel Loop for Valco Valves 1/16" OD

| Part No. | Description |
|---|---|
| JR-SLV-76-5 | 5 µL |
| JR-SLV-76-10 | 10 µL |
| JR-SLV-76-20 | 20 µL |
| JR-SLV-76-50 | 50 µL |
| JR-SLV-76-100 | 100 µL |
| JR-SLV-76-250 | 250 µL |
| JR-SLV-76-500 | 500 µL |
| JR-SLV-76-1000 | 1 mL |

Other dimensions are available on request. Please contact your local distributor or VICI directly.

### Spare Parts

| Part No. | Description | Qty/pkg |
|---|---|---|
| JR-ZN1-5 | Nut, SS, 10-32, 1/16" | 5 |
| JR-ZF1S6-5 | Ferrule, SS, 1/16" | 5 |

### SPECS

**Material**
Loops: SS316
Nuts: SS303
Ferrules: SS316
Caps: Polyethylene

**Dimensions**
See chart

**Tolerances of tube ID**
Premium Grade SS Tubing
+/– 0.025 mm (.001")

**Pressure rating**
< 350 bar (5000 psi)

**Note**
All Loops will be supplied with SS Hex-Head nuts and SS ferrules for reliable connections.

Not recommended for use with halides. High pressure resistance, low permeability

**Tech Tip**
We offer nuts in three lengths to facilitate wrench access on valves. For loops frequently replaced we recommend the extra long nut – particularly when space is restricted (see page 40).

## SPECS

**Material**
Loops: PEEK
Nuts: PEEK
Ferrules: PEEK
Caps: Polyethylene

**Dimensions**
See chart

**Tolerances of tube ID**
Premium Grade PEEK Tubing
(see page 5)
+/– 0.025 mm (.001")

**Note**
VICI Jour PEEK Sample Loops are made of Premium Grade PEEK Tubing. The tighter ID tolerance of the tubing minimizes the tolerance of the loop volume.

All PEEK sample loops will be supplied with PEEK hex-head nuts and PEEK ferrules for reliable connections.

This design avoids "twisting" of the tube.


2x JR-5005 + 1 x JR-5510

# PEEK Sample Loops for Cheminert Valves

- Fits All Cheminert C1, C2, C2V and C3 Type Valves
- Wide Range of Volumes Available
- Biocompatible
- Made from Premium Grade PEEK Tubing

VICI Jour Sample Loops are made from PEEK tubing and fittings. PEEK is a mechanically strong, chemically inert polymer ideal for HPLC applications. Since VICI Jour PEEK Sample Loops contain no metals or other extractable compounds, no foreign materials will be introduced into the system. Further softener free PE caps are used to avoid contamination of the tubing.

VICI Jour PEEK Sample Loops are particularly wel suited for separations involving proteins, peptides nucleic acids or other samples of biological origin a: well as in IC systems where metal traces may interac with ionic samples or release transition metals tha may deactivate ion exchange columns.


## PEEK Sample Loops for Cheminert Valves 1/16" OD

| Part No. | Description | bar* | psi* |
|---|---|---|---|
| JR-SLC-85-5 | 5 µL | 400 | 5800 |
| JR-SLC-85-10 | 10 µL | 400 | 5800 |
| JR-SLC-85-20 | 20 µL | 400 | 5800 |
| JR-SLC-85-50 | 50 µL | 400 | 5800 |
| JR-SLC-85-100 | 100 µL | 400 | 5800 |
| JR-SLC-85-250 | 250 µL | 240 | 3500 |
| JR-SLC-85-500 | 500 µL | 240 | 3500 |
| JR-SLC-85-1000 | 1 mL | 240 | 3500 |

Other dimensions are available on request. Please contact your local distributor or VICI directly.
* = Recommended maximum working pressure at room temperature

## Spare Parts

| Part No. | Description | Qty/pkg |
|---|---|---|
| JR-5510-5 | Fitting, PEEK, Hex-head long, 10-32, 1/16" | 5 |
| JR-5005-5 | Single Ferrule, PEEK, 1/16" | 5 |

## Stainless Steel Sample Loops for Cheminert Valves

- Fits All Cheminert C1, C2, C2V and C3 Type Valves
- Wide Range of Volumes Available

VICI Jour Stainless Steel Sample Loops are made of high quality SS316 and are cut using an electrolytic cutting process followed by ultrasonic and high pressure steam cleaning to remove contaminants, dried and capped with softener free caps to avoid the re-contamination of the tubing.

### Stainless Steel Loop for Cheminert Valves 1/16" OD

| Part No. | Description |
|---|---|
| JR-SLC-86-5 | 5 µL |
| JR-SLC-86-10 | 10 µL |
| JR-SLC-86-20 | 20 µL |
| JR-SLC-86-50 | 50 µL |
| JR-SLC-86-100 | 100 µL |
| JR-SLC-86-250 | 250 µL |
| JR-SLC-86-500 | 500 µL |
| JR-SLC-86-1000 | 1 mL |

Other dimensions are available on request. Please contact your local distributor or VICI directly.

### Spare Parts

| Part No. | Description | Qty/pkg |
|---|---|---|
| JR-ZN1-5 | Nut, SS, 10-32, 1/16" | 5 |
| JR-ZF1S6-5 | Ferrule, SS, 1/16" | 5 |

### SPECS

**Material**
Loops: SS316
Nuts: SS303
Ferrules: SS316
Caps: Polyethylene

**Dimensions**
See chart

**Tolerances of tube ID**
Premium Grade SS Tubing
+/– 0.025 mm (.001")

**Pressure rating**
< 350 bar (5000 psi)

**Note**
All Loops will be supplied with SS Hex-Head nuts and SS ferrules for reliable connections.

Not recommended for use with halides. High pressure resistance, low permeability

**Tech Tip**
We offer nuts in three lengths to facilitate wrench access on valves. For loops frequently replaced we recommend the extra long nut – particularly when space is restricted (see page 40).

## SPECS

**Material**
Loops: PEEK
Nuts: PEEK
Ferrules: PEEK
Caps: Polyethylene

**Dimensions**
See chart

**Tolerances of tube ID**
Premium Grade PEEK Tubing (see page 5)
+/– 0.025 mm (.001")

**Note**
VICI Jour PEEK Sample Loops are made of Premium Grade PEEK Tubing. The tighter ID tolerance of the tubing minimizes the tolerance of the loop volume.

All PEEK sample loops will be supplied with PEEK hex-head nuts and PEEK ferrules for reliable connections.

This design avoids "twisting" of the tube.


2x JR-5005 + 1 x JR-5510

# PEEK Sample Loops for Rheodyne® Valves

- Fits All Rheodyne® Metal and Metal Free Valves
- Wide Range of Volumes Available
- Biocompatible
- Made from Premium Grade PEEK Tubing


VICI Jour Sample Loops are made from PEEK tubing and fittings. PEEK is a mechanically strong, chemically inert polymer ideal for HPLC applications. Since Our PEEK Sample Loops contain no metals or other extractable compounds, no foreign materials will be introduced into the system. Further softener free PE caps are used to avoid contamination of the tubing. Our PEEK Sample Loops are particularly well suited for separations involving proteins, peptides, nucleic acids or other samples of biological origin as well as in IC systems where metal traces may interact with ionic samples or release transition metals that may deactivate ion exchange columns.

## PEEK Sample Loops for Rheodyne® Valves 1/16" OD

| Part No. | Description | bar* | psi* |
|---|---|---|---|
| JR-SLR-2190 | 1 µL | 435 | 6300 |
| JR-SLR-2191 | 2 µL | 420 | 6100 |
| JR-SLR-2192 | 3 µL | 420 | 6100 |
| JR-SLR-2193 | 4 µL | 420 | 6100 |
| JR-SLR-2194 | 5 µL | 400 | 5800 |
| JR-SLR-2196 | 10 µL | 400 | 5800 |
| JR-SLR-2195 | 20 µL | 386 | 5600 |
| JR-SLR-2200 | 30 µL | 386 | 5600 |
| JR-SLR-2201 | 40 µL | 386 | 5600 |
| JR-SLR-2202 | 50 µL | 350 | 4500 |
| JR-SLR-2204 | 100 µL | 350 | 4500 |
| JR-SLR-2206 | 200 µL | 240 | 3500 |
| JR-SLR-2207 | 250 µL | 240 | 3500 |
| JR-SLR-2210 | 500 µL | 240 | 3500 |
| JR-SLR-2222 | 1 mL | 240 | 3500 |

Other dimensions are available on request. Please contact your local distributor or VICI directly.
* = Recommended maximum working pressure at room temperature

## Spare Parts

| Part No. | Description | Qty/pkg |
|---|---|---|
| JR-5510-5 | Fitting, PEEK, Hex-head long, 10-32, 1/16" | 5 |
| JR-5005-5 | Single Ferrule, PEEK, 1/16" | 5 |

## Stainless Steel Sample Loops for Rheodyne® Valves

- Fits All Rheodyne Valves
- Special Loops for Valve 7725
- Wide Range of Volumes Available

VICI Jour Stainless Steel Sample Loops are made of high quality SS316 and are cut using an electrolytic cutting process followed by ultrasonic and high pressure steam cleaning to remove contaminants, dried and capped with softener free caps to avoid the re-contamination of the tubing.

### Stainless Steel Loops for Rheodyne® Valves 1/16" OD

| Part No. | Description |
|---|---|
| JR-SLR-111 | 5 µL |
| JR-SLR-112 | 10 µL |
| JR-SLR-113 | 20 µL |
| JR-SLR-114 | 50 µL |
| JR-SLR-115 | 100 µL |
| JR-SLR-116 | 200 µL |
| JR-SLR-117 | 500 µL |
| JR-SLR-118 | 1 mL |

Other dimensions are available on request. Please contact your local distributor or VICI directly.

### Stainless Steel Loops for Rheodyne® Valves No 7725 1/16" OD

| Part No. | Description |
|---|---|
| JR-SLR-111-77 | 5 µL |
| JR-SLR-112-77 | 10 µL |
| JR-SLR-113-77 | 20 µL |
| JR-SLR-114-77 | 50 µL |
| JR-SLR-115-77 | 100 µL |
| JR-SLR-116-77 | 200 µL |
| JR-SLR-117-77 | 500 µL |
| JR-SLR-118-77 | 1 mL |

Other dimensions are available on request. Please contact your local distributor or VICI directly.

### Spare Parts

| Part No. | Description | Qty/pkg |
|---|---|---|
| JR-57-5 | Nut, SS, long head, Rheodyne® type, for Valve No. 7725 | 5 |
| JR-58-5 | Nut, SS, x-long, Rheodyne® type, | 5 |
| JR-59-5 | Ferrule, SS, 1/16" | 5 |
| JR-60-5 | Ferrule, SS, 1/16", 2-step Rheodyne® type | 5 |

### SPECS

**Material**
Loops: SS316
Nuts: SS316
Ferrules: SS316
Caps: Polyethylene

**Dimensions**
See chart

**Tolerances of tube ID**
Premium Grade SS Tubing
+/– 0.025 mm (.001")

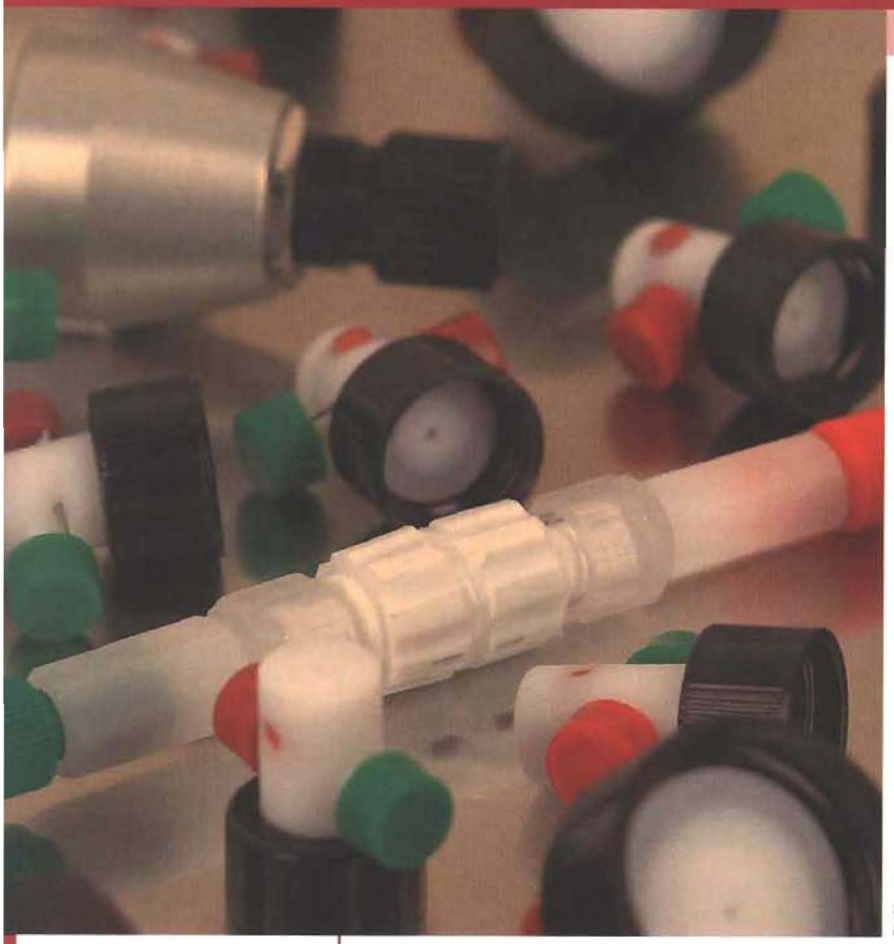
**Pressure rating**
< 350 bar (5000 psi)

**Note**
All Loops will be supplied with Rheodyne® type SS Hex-Head nuts and SS ferrules for reliable connections.

Not recommended for use with halides. High pressure resistance, low permeability

**Tech Tip**
We offer nuts in three lengths to facilitate wrench access on valves. For loops frequently replaced we recommend the extra long nut – particularly when space is restricted (see page 41).

All SS Loops for Rheodyne® are available with the 2-step SS Ferrule Rheodyne® type on request.



C0431

INDEX

## Backpressure Regulators

- Improves Baseline Stability by Preventing Bubble Formation in Flow Cell
- Adjustable Backpressure between 0–105 bar (1500 psi) without Disconnecting
- Low Dead Volume
- Biocompatible

Even properly degassed mobile phases may contain some dissolved gases that can release bubbles in the detector flow cell resulting in baseline noise and drift. The Backpressure Regulator provides a quick and convenient way to improve the stability of detector baseline by providing a constant backpressure on the flow cell which stops the release of dissolved gases from the mobile phase. A spring-loaded FFKM (Perfluorinated rubber) diaphragm provides the force that generates the backpressure. Spring tension may be adjusted using the backpressure adjustment screw on the top of the regulator to vary the backpressure without disconnecting.

Because of the unique design, the Backpressure Regulator has only 0.6 µL internal volume. Installed between two detectors in a multidetector system, or between a detector and fraction collector system, or between a detector and fraction collector it will not affect the peak shape. Typically, 90% or more of a given component's efficiency will be retained upon passing through the regulator. And the fluid path is completely biocompatible!

### Backpressure Regulators

| Part No. | Description |
|---|---|
| JR-39021 | Variable between 0–7 bar (0–100 psi) |
| JR-39022 | Variable between 7–20 bar (100–300 psi) |
| JR-39023 | Variable between 20–40 bar (300–600 psi) |
| JR-39024 | Variable between 40–105 bar (600–1500 psi) |

### SPECS

**Material**
PEEK
FFKM (Perfluorinated rubber)

**Dimensions**
For OD 1/16" Tubing

**Threads**
10-32

**Tolerances**
+/– 0.05 mm (.002")

**Pressure rating**
See Chart

**Special Info**
6 µL Internal Volume
May be used between detector and other devices without affecting the performance

## Backpressure Regulators

- Improves Baseline Stability by Preventing Bubble Formation in Flow Cell
- Adjustable Backpressure between 0–105 bar (1500 psi) without Disconnecting
- Low Dead Volume
- Biocompatible

Even properly degassed mobile phases may contain some dissolved gases that can release bubbles in the detector flow cell resulting in baseline noise and drift. The Backpressure Regulator provides a quick and convenient way to improve the stability of detector baseline by providing a constant backpressure on the flow cell which stops the release of dissolved gases from the mobile phase. A spring-loaded FFKM (Perfluorinated rubber) diaphragm provides the force that generates the backpressure. Spring tension may be adjusted using the backpressure adjustment screw on the top of the regulator to vary the backpressure without disconnecting.

Because of the unique design, the Backpressure Regulator has only 0.6 µL internal volume. Installed between two detectors in a multidetector system, or between a detector and fraction collector system, or between a detector and fraction collector it will not affect the peak shape. Typically, 90% or more of a given component's efficiency will be retained upon passing through the regulator. And the fluid path is completely biocompatible!

### Backpressure Regulators

| Part No. | Description |
|---|---|
| JR-39021 | Variable between 0–7 bar (0–100 psi) |
| JR-39022 | Variable between 7–20 bar (100–300 psi) |
| JR-39023 | Variable between 20–40 bar (300–600 psi) |
| JR-39024 | Variable between 40–105 bar (600–1500 psi) |

### SPECS

**Material**
PEEK
FFKM (Perfluorinated rubber)

**Dimensions**
For OD 1/16" Tubing

**Threads**
10-32

**Tolerances**
+/– 0.05 mm (.002")

**Pressure rating**
See Chart

**Special Info**
6 µL Internal Volume
May be used between detector and other devices without affecting the performance

## PEEK & Polymer Chemical Resistance

PEEK exhibits excellent resistance to a wide range of organic and inorganic chemicals. The compatibility of PEEK with many chemicals at 20 °C (68 °F) has been investigated and the results for unreinforced grades are given in the table below.

PEEK is compatible with almost any of the solvents used in HPLC. The only solvent which will attack PEEK are concentrated nitric acid and sulphuric acids. However, PEEK tubing can safely withstand 20–30% nitric acid when passivating a system.

Methylene Chloride, DMSO and THF may cause swelling in PEEK. The highest temperature we recommend for PEEK is 100 °C. Up to this temperature the tubing will maintain the pressure rating stated.

A = Suitable
B = Marginal-dependent on application
C = Not recommended

### PEEK and Polymer chemical resistance

| Resistance at 20 °C | PEEK | Poly-ethylene | Poly-propylene | PPS | PVDF | PTFE | ETFE |
|---|---|---|---|---|---|---|---|
| Acetaldehyde | A | | | | | | |
| Acetic acid (20%) | A | A | A | A | A | A | A |
| Acetic acid (80%) | A | A | A | A | B | A | |
| Acetic acid (glacial) | A | A | A | A | A | A | A |
| Acetone | A | B | A | A | C | A | A |
| Acetonitrile | A | | | A | | A | A |
| Acrylic acid | A | | | A | | | |
| Ammonia, anhydrous | A | | | A | | | |
| Ammonia (10%) | A | B | A | A | A | A | A |
| Ammonia (Liquid) | B | | | A | | | |
| Ammonium hydroxide | A | A | A | A | A | A | A |
| Aqua regia | C | | | C | | | |
| Aromatic hydrocarbons | A | B | C | A | | | |
| Benzene | A | B | C | A | A | A | A |
| Benzoic acid | A | | | A | | | |
| Benzaldehyde | A | | | A | | | |
| Bromine/dibromoethane | C | | | C | | | |
| Bromine (dry) | C | | | C | | | |
| Bromine (wet) | C | | | C | | | |
| Boric acid | A | | | A | | | |
| Butanol | A | A | A | A | A | A | A |
| Calcium hydroxide | A | | | A | | | |
| Carbon tetrachloride | A | | | A | | | |
| Chlorine (gas) | A | | | C | | | |
| Chlorine (liquid) | C | | | C | | | |
| Chloroacetic acid | A | B | B | A | A | A | A |
| Chlorobenzene | A | | | A | | | |
| Chloroform | A | B | B | A | A | A | A |
| Cyclohexane | A | B | C | A | A | A | A |
| Cyclohexanone | A | C | C | A | C | A | A |
| Diethylamine | A | C | A | | C | A | A |
| Diethylether | A | | | A | | | |
| Diethylformamide | A | A | A | A | C | A | A |
| Dioxane | A | | | A | | | A |
| Ethanol | A | B | A | A | | A | A |
| Ether | A | B | C | A | B | A | A |
| Ethyl acetate | A | B | A | A | C | A | A |
| Ethylene chloride | | B | B | A | A | A | A |
| Ethylene glycol | A | A | A | A | A | A | A |
| Heptane | A | B | B | A | A | A | A |
| Hexane | A | B | B | A | A | A | A |
| Hydrobromic acid (100%) | C | B | B | A | A | A | |

INDEX

## General Conversion Factors

| | |
|---|---|
| Inches to mm: | Inches x 25.4 = mm |
| Feet to Meter: | Feet x 0.3048 = Meter |
| Meter to Feet: | Meter x 3.28 = Feet |
| bar to psi: | bar x 14.5= psi |
| psi to bar: | psi x 0.069 = bar |
| psi to KPa: | psi x 6.9 = KPa |

## Pressure Conversions

| bar | psi | KPa | MPa |
|---|---|---|---|
| 0.1 | 1.5 | 10 | 0.01 |
| 0.2 | 2.9 | 20 | 0.02 |
| 0.3 | 4.4 | 30 | 0.03 |
| 0.4 | 5.8 | 40 | 0.04 |
| 0.5 | 7.3 | 50 | 0.05 |
| 0.6 | 8.7 | 60 | 0.06 |
| 0.7 | 10.2 | 70 | 0.07 |
| 0.8 | 11.6 | 80 | 0.08 |
| 0.9 | 13.1 | 90 | 0.09 |
| 1 | 14.5 | 100 | 0.1 |
| 2 | 29.0 | 200 | 0.2 |
| 3 | 43.5 | 300 | 0.3 |
| 4 | 58.0 | 400 | 0.4 |
| 5 | 72.5 | 500 | 0.5 |
| 6 | 87.0 | 600 | 0.6 |
| 7 | 101.5 | 700 | 0.7 |
| 8 | 116.0 | 800 | 0.8 |
| 9 | 130.5 | 900 | 0.9 |
| 10 | 145.0 | 1000 | 1 |
| 20 | 290.1 | 2000 | 2 |
| 30 | 435.1 | 3000 | 3 |
| 40 | 580.1 | 4000 | 4 |
| 50 | 725.2 | 5000 | 5 |
| 60 | 870.2 | 6000 | 6 |
| 70 | 1015.2 | 7000 | 7 |
| 80 | 1160.3 | 8000 | 8 |
| 90 | 1305.3 | 9000 | 9 |
| 100 | 1450.3 | 10000 | 10 |
| 200 | 2900.7 | 20000 | 20 |
| 300 | 4351.0 | 30000 | 30 |
| 400 | 5801.3 | 40000 | 40 |
| 500 | 7251.6 | 50000 | 50 |
| 600 | 8702.0 | 60000 | 60 |
| 700 | 10152.3 | 70000 | 70 |
| 800 | 11602.6 | 80000 | 80 |
| 900 | 13052.9 | 90000 | 90 |
| 1000 | 14503.3 | 100000 | 100 |

## Dimension Conversions

| mm | Inches | mm | Inches | Inches | mm |
|---|---|---|---|---|---|
| 0.064 | 0.0025" | 3.00 | 0.118" | 1/32" | 0.79 |
| 0.13 | 0.005" | 4.00 | 0.157" | 1/16" | 1.59 |
| 0.17 | 0.007" | 4.60 | 0.181" | 3/32" | 2.38 |
| 0.25 | 0.010" | 6.00 | 0.236" | 1/8" | 3.17 |
| 0.50 | 0.020" | 6.35 | 0.250" | 1/4" | 6.35 |
| 0.75 | 0.030" | 6.40 | 0.252" | 5/16" | 7.94 |
| 1.00 | 0.039" | 7.00 | 0.276" | 1/2" | 12.70 |
| 1.50 | 0.059" | 10.00 | 0.394" | 1" | 25.40 |
| 2.00 | 0.079" | 12.70 | 0.500" | 1ft | 304.8 |

## Temperature Conversions

| °C | °F | °C | °F | °C | °F |
|---|---|---|---|---|---|
| -40 | -40 | 135 | 275 | 310 | 590 |
| -35 | -31 | 140 | 284 | 315 | 599 |
| -30 | -22 | 145 | 293 | 320 | 608 |
| -25 | -13 | 150 | 302 | 325 | 617 |
| -20 | -4 | 155 | 311 | 330 | 626 |
| -15 | 5 | 160 | 320 | 335 | 635 |
| -10 | 14 | 165 | 329 | 340 | 644 |
| -5 | 23 | 170 | 338 | 345 | 653 |
| 0 | 32 | 175 | 347 | 350 | 662 |
| 5 | 41 | 180 | 356 | 375 | 707 |
| 10 | 50 | 185 | 365 | 400 | 752 |
| 15 | 59 | 190 | 374 | 425 | 797 |
| 20 | 68 | 195 | 383 | 450 | 842 |
| 25 | 77 | 200 | 392 | 475 | 887 |
| 30 | 86 | 205 | 401 | 500 | 932 |
| 35 | 95 | 210 | 410 | 525 | 977 |
| 40 | 104 | 215 | 419 | 550 | 1022 |
| 45 | 113 | 220 | 428 | 575 | 1067 |
| 50 | 122 | 225 | 437 | 600 | 1112 |
| 55 | 131 | 230 | 446 | 625 | 1157 |
| 60 | 140 | 235 | 455 | 650 | 1202 |
| 65 | 149 | 240 | 464 | 675 | 1247 |
| 70 | 158 | 245 | 473 | 700 | 1292 |
| 75 | 167 | 250 | 482 | 725 | 1337 |
| 80 | 176 | 255 | 491 | 750 | 1382 |
| 85 | 185 | 260 | 500 | 775 | 1427 |
| 90 | 194 | 265 | 509 | 800 | 1472 |
| 95 | 203 | 270 | 518 | 825 | 1517 |
| 100 | 212 | 275 | 527 | 850 | 1562 |
| 105 | 221 | 280 | 536 | 875 | 1607 |
| 110 | 230 | 285 | 545 | 900 | 1652 |
| 115 | 239 | 290 | 554 | 925 | 1697 |
| 120 | 248 | 295 | 563 | 950 | 1742 |
| 125 | 257 | 300 | 572 | 975 | 1787 |
| 130 | 266 | 305 | 581 | 1000 | 1832 |

### Length Conversions

| mm | Inches | mm | Inches | Inches | mm |
|---|---|---|---|---|---|
| 0.064 | 0.0025" | 3.00 | 0.118" | 1/32" | 0.79 |
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| 1.50 | 0.059" | 10.00 | 0.394" | 1" | 25.40 |
| 2.00 | 0.079" | 12.70 | 0.500" | | |

### Volume Chart

| ID/mm | ID/inch | µl/cm | µl/inch | ID/mm | ID | µl/cm | µl/inch |
|---|---|---|---|---|---|---|---|
| 0.050 | .002" | 0.02 | 0.05 | 1.00 | .040" | 7.85 | 20.59 |
| 0.064 | .0025" | 0.03 | 0.08 | 1.40 | .055" | 15.39 | 38.93 |
| 0.075 | .003" | 0.04 | 0.12 | 1.52 | .060" | 18.15 | 46.33 |
| 0.10 | .004" | 0.08 | 0.21 | 1.59 | .062" | 19.86 | 49.47 |
| 0.13 | .005" | 0.13 | 0.32 | 1.65 | .065" | 21.38 | 54.38 |
| 0.17 | .0067" | 0.23 | 0.58 | 1.70 | .067" | 22.70 | 57.78 |
| 0.18 | .007" | 0.25 | 0.63 | 1.78 | .070" | 24.88 | 63.06 |
| 0.25 | .010" | 0.49 | 1.29 | 2.00 | .079" | 31.42 | 80.32 |
| 0.38 | .015" | 1.13 | 2.90 | 2.10 | .083" | 34.64 | 88.66 |
| 0.50 | .020" | 1.96 | 5.15 | 2.16 | .085" | 36.64 | 92.99 |
| 0.75 | .030" | 4.42 | 11.58 | 2.40 | .094" | 45.24 | 113.72 |

This chart is only a guideline. Because of ID tolerances for our tubing (+/-0.025mm (.001") for premium grade tubing and +/- 0.050 mm (.002") for standard tubing) volumes have to be measured to get an exact result.

## Frit Volume

Internal frit volumes are theoretical and calculated by multiplying the total frit volume by the proportion of the pores in the frit (porosity proportion). Stated frit porosities are only nominal and do not reflect the maximum pore size of a frit. The chart below will help you in selecting the right frit for your application.

### SS and Titanium Frits

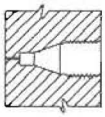
| Porosity in µm | Max. pore size in µm | Particles retained in µm | Porosity in % |
|---|---|---|---|
| 0.2 | 1 | 1.0 | 22 |
| 0.5 | 2 | 1.5 | 26 |
| 1 | 3 | 3.0 | 30 |
| 2 | 5 | 3.5-5.0 | 35 |
| 5 | 15 | 15.0 | 38 |

## Standard Threads

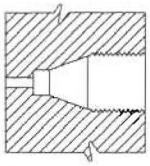
Place fitting on the fitting detail below to identify the thread size.

6-40 (for 1/32" OD tubing)

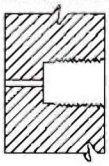
10-32 (for 1/16" OD tubing)



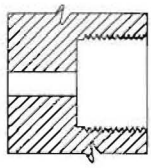
5/16"-24 (for 1/8" OD tubing)



1/4"-28 (for 1/16" and 1/8" OD tubing)



1/2"-20 (for 1/4" OD tubing)



## Properties of Metals

**Electroformed nickel (EFNI)**
We electroplate pure nickel over a diamond drawn mandrel in a continuous process. Then we carefully separate and remove the mandrel from the tubing. The result is an extremely inert and smooth interior surface - an incredible 1–2 microinch finish. It is widely used for transfer lines, since it minimizes the potential for carryover or cross contamination often found with mill drawn Nickel 200, due to its rough interior surface. Unlike glass or silica-lined stainless, EFNI can easily accept tight bends and cutting without heating, and does not release damaging glass fragments or silica particles. Electroformed nickel has more in common with fused silica than drawn nickel tubing in terms of surface inertness and smoothness.

**Stainless steel, type 316**
This is the standard tubing material for chromatography, suitable for a wide variety of applications. It is cold drawn seamless, not welded, with close tolerances held on both ID and OD. We neither recommend nor offer Type 304 stainless steel for analytical applications.

Austenitic stainless steels may be used for most chromatographic applications. Type 316 is most commonly used for HPLC because of its superior chloride ion resistance.

**Stainless steel, type 303**
Recommended for GC use and general purpose connections. It combines excellent machining characteristics with good resistance to corrosion and high temperature oxidation. However, it is susceptible to attack by chlorides, iodides, and bromides.

**Titanium**
Although it is more difficult to machine than common alloys containing aluminum and vanadium, Valco uses Grade 2 pure titanium in order to avoid possible contamination of the sample stream with these metals. Good for organic and inorganic salts except aluminum and calcium chlorides, and all alkalis except boiling concentrated potassium hydroxide.

Good with dilute, low temperature formic, lactic, sulfuric, hydrochloric, and phosphoric acids, but rapidly attacked by hydrofluoric acid. Good with dilute nitric acid at low temperatures; corrodes at high concentrations and temperatures. Can ignite with fuming nitric acid. Attacked by oxalic acid, concentrated phosphoric acid, hot trichloroacetic acid, and zinc chloride.

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## Properties of Polymers

**CTFE**
Chlorotrifluoroethylene, is the generic name for the material produced as Kel-F®. It is very resistant to all chemicals except THF and some halogenated solvents, and is resistant to all inorganic corrosive liquids, including oxidizing acids. CTFE can be used at temperatures up to 100 °C. Swells in ketones.

**EPDM**
Ethylene Propylene Diene Monomer. Ethylene-propylene synthetic rubbers offer excellent heat resistance, oxidation, ozone and weather aging due to their stable, saturated polymer backbone structure. As non-polar elastomers, they have good electrical resistivity, as well as resistance to polar solvents, such as water, acids, alkalies, phosphate esters and many ketones and alcohols.

**ETFE**
Ethyltrifluoroethylene is the generic name for the material such as Tefzel®. A fluoropolymer used for sealing surfaces, it is resistant to most chemical attack; however, some chlorinated chemicals will cause a physical swelling of ETFE tubing.

**FEP**
Fluorinated ethylene propylene is another member of the fluorocarbon family with similar chemical properties. It is generally more rigid than PTFE, with somewhat increased tensile strength. It is typically more transparent than PTFE, slightly less porous, and less permeable to oxygen. FEP is not as subject to compressive creep at room temperature as PTFE, and because of its slightly higher coefficient of friction is easier to retain in a compression fitting.

**FFKM (Perfluorinated rubber)**
FFKM (Perfluorinated rubber) is a Perfluoroelastomer. This is a class of materials such as Kalrez®. It is chemically resistant to polar solvents, organic solvents, inorganic and organic acids and bases, fuels, oils, lubricants, inorganic salts, aldehydes, metal halogen compounds, chlorine, sodium hydroxide, aromatics, alcohols, steam, and strong oxidizing agents. The normal temperature service range is -40°C to 315°C and up to 343°C in intermittent service.

**PEEK**
Considered relatively inert and biocompatible, polyetheretherketone tubing can withstand temperatures up to 100 °C. Under the right circumstances, .005" – .020" ID tubing can be used up to 5000 psi for a limited time, and .030" to 3000 psi. Larger IDs are typically good to 500 psi.

These limits will be substantially reduced at elevated temperatures and in contact with some solvents or acids.

Its mechanical properties allow PEEK to be used instead of stainless in many situations and in some environments where stainless would be too reactive. However, PEEK can be somewhat absorptive of solvents and analytes, notably methylene chloride, DMSO, THF, and high concentrations of sulfuric and nitric acid. This tubing is highly prone to "kinking", or sealing off, if held in a sharp bend over time.

**PFA**
Perfluoroalkoxy is a fluorocarbon with chemical and mechanical properties similar to FEP. More rigid than either PTFE or FEP. Commonly used for injection molded parts.

**PPS**
Polyphenylene sulphide is the generic name for the material produced as Fortron®, Ryton®, and Techtron®. It is very resistant to all solvents, acids, and bases.

**PTFE**
Polytetrafluoroethylene is the generic name for the class of materials such as Teflon®. It offers superior chemical resistance but is limited in pressure and temperature capabilities. Because it's so easy to handle, it is often used in low pressure situations where stainless steel might cause adsorption. PTFE tubing is relatively porous, and compounds of low molecular weight can diffuse through the tubing wall.

**Polyacetal**
Polyacetal or Polyoxymethylene (POM) is the generic name for the material produced as Delrin®. It is an engineering polymer with high mechanical strength and rigidity, excellent dimensional stability and excellent resistance to moisture and solvents. It has a wide useful temperature range in air of -50° C to +90°C. It is not suitable for use with acids, alkalis and oxidizing agents and has limited resistance to dichloromethane and methyl ethyl ketone.

**Polyamide**
Polyamide is a thermoplastic polymer also known as Nylon. Nylon has very good physical properties but moisture can have a significant effect. It exhibits very good heat resistance and excellent chemical and wear resistance.

**Polyethylene**
Polyethylene is a semi-crystalline material with excellent chemical resistance, and good fatigue and wear resistance. Polyethylenes provide good resistance to organic solvents, staining, and have low moisture absorption rates.

**Polypropylene**
Widely used polymer for non-wetted parts. Attacked by strong oxidizers, aromatic and chlorinated hydrocarbons.

**PVDF**
PVDF, polyvinylidene fluoride, has excellent resistance to most mineral and organic acids, aliphatic and aromatic hydrocarbons, and halogenated solvents. Poor resistance to acetone, MEK, THF, and potassium and sodium hydroxide. Often supplied as Kynar®.

# Glossary

## A

**Adapter**
A type of fitting which provides a method of joining two components of differing thread types or systems.

**Analytical column**
A long narrow tube packed or coated with one of many available chemically diverse compounds that can separate the components in a sample according to their boiling point, polarity, molecular size, or combination thereof. A column of some kind is used with most chromatographic techniques.

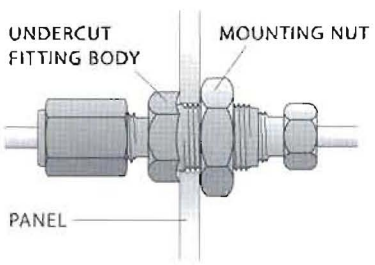
## B

**Backflush**
The use of valving to reverse the flow through a column in order to "backflush" or purge heavier components from the column. See application demonstrating backflush.

**Biocompatibility**
Defines the materials used in a system (i.e. fittings, tubing, and valves) that do not change the bioactivity of the biological substances that come into contact with the surface of these materials. Note that in chromatographic systems, the tubing and column (frits, packing material and wall) contribute over 99% of the surface area and the valves and fittings are insignificant.

**Bore**
The diameter of the orifice through the fitting. See capillary bore, through-type bore, and large bore.

**Bulkhead fitting**
A type of fitting in which the fitting body is inserted through an instrument panel or mounting bracket, to which it is affixed with a mounting nut. The Valco fitting body is uniquely undercut so that it "bites" into the panel when the mounting nut is tightened, eliminating the need for a lock washer. Illustration




**Butt connection**
A type of connection in which the two tube ends are directly and squarely in contact, usually effected with a through-type union. Typically used with fused silica connections, or small bore metal tubing.

## C

**Cap**
A cap is used to dead-end a piece of tubing with a nut and ferrule attached.

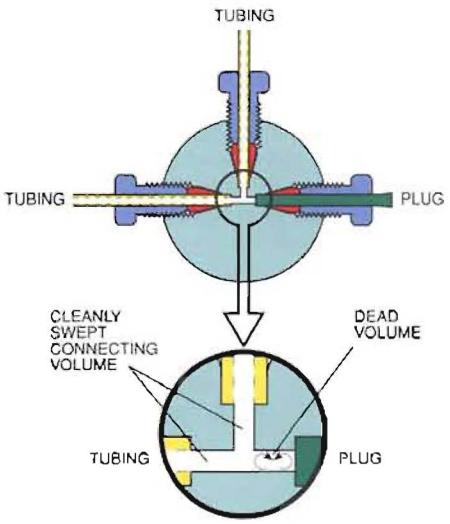
**Capillary bore**
The smallest available standard orifice in a given fitting design (usually 0.25 mm). Typically denoted by suffix "C" in the product number.

**Collapsible ferrule**
A one-piece ferrule engineered to collapse as it is tightened. The collapse takes place in two very narrow areas, and results in a very effective seal with virtually no distortion of the tubing ID and no dead volume. *Patent No. 6,575,501

**Compression fitting**
A style of fitting in which a threaded nut compresses a tapered ferrule onto tubing as the nut is tightened. Valco metal ferrules cut a ring into the tubing wall while polymer types rely on surface compression to form a seal and hold the tube by friction.

**Connecting volume**
The volume between two or more connections. This may be cleanly swept, thus not contributing to peak distortion, or may be "dead volume" such as that found in fittings with larger bores than the connecting tubing.

**Cross**
A type of distribution fitting which connects four pieces of tubing, arranging them in the pattern of a cross.




**Detail**
See fitting detail.

## Glossary, cont.

**Distribution fitting**
A generic term for tees, crosses, and manifolds, used to provide multiple access points to "distribute" a gas or liquid through a system. CAUTION! Using a distribution fitting in reverse to merge multiple streams may create dead volume. Special manifolds are available for this application.

### F

**Female Nut**
A type of compression fitting in which the nut has female threads.

**FIA**
Flow Injection Analysis. A simple and versatile analytical technique for automating wet chemical analyses based on the manipulation of a sample zone formed from the injection of the sample into a continuous stream of fluid used as a carrier.

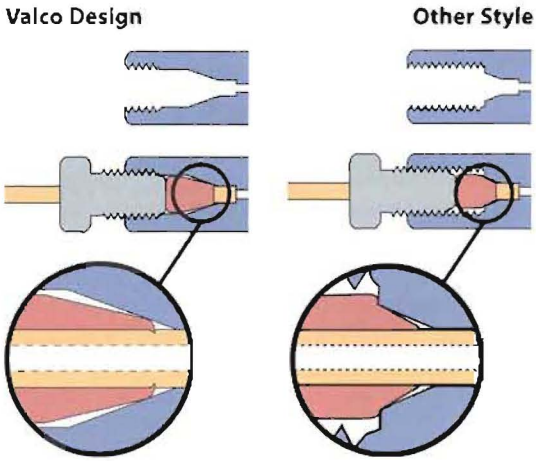
**Ferrule**
One of the components of a compression fitting; the conical piece of metal or plastic that compresses onto the tube as it is forced into a tapered seat. Valco metal ferrules are unique in that they attach to and seal at the tube by cutting a shallow ring into it, instead of by actually swaging it. This is preferable since it introduces no flow restriction.

**Filter**
A type of union or reducing union which traps the particulates in a stream. The filtering element is typically a mesh screen or sintered frit.

**Fingertight Fitting**
A fingertight fitting is a knurled or winged the nut which is hand tightened to compress the ferrule. Note: Polymer type ferrules rely on surface compression to form a seal and hold the tube by friction.

**Fitting**
A One-Piece combination of ferrule and nut with male threads.

**Fitting detail**
A fitting detail has the thread to accept the nut, a tapered ferrule seat and a pilot for the tube, thus the counterpart where the nut, ferrule and tube make the seal and are held in place. The Valco fitting details have the perfect shape, with a smooth transition from the ferrule seat into the cylindrical and threaded part. Many other fitting details are poor in design where the ferrule is forced in a too shallow ferrule seat. The result is a ‹knicked› ferrule which cannot apply its sealing force anymore to the front of the ferrule.




**Flanged fitting**
A type of fitting used with fluoropolymer tubing (PTFE, FEP) in which a flange is made at the tube end. Connections are made at the flange either by compressing the flange into a flat detail (typically 1/4"-28 threaded) or by butting two flanges together. A special flanging tool forms the flanges.

**Flangeless fitting**
Similar in application to the flanged fitting, but the flange is not required. A ferrule system (collapsible ferrule or inverted ferrule) is used which grips/compresses the tube. This fitting type can be used with virtually any polymeric tubing since the tube end does not have to be formed, but simply square cut. Typically used in 1/4"-28 threaded fittings, it is usually interchangeable with flanged fittings.

**Frit**
A filter element typically made of stainless, Hastelloy, Titanium, or polymers, usually 0.75 mm or 1 mm thick. Frits may provide better filtration than screens, but because they are thicker there is greater mixing potential, and they typically result in increased pressure drop.

### G

**GC**
Gas Chromatography. An analytical method incorporating an injection system, analytical column, controlled temperature zone, and detector. An inert carrier gas moves the sample through the column, which separates the sample components into discrete bands which are measured as they pass through the detector.

**Guard column**
A column used in series between the injector and analytical column to prevent certain types of components from entering the analytical column.

## Glossary, cont.

### H

**HPLC**
High Performance Liquid Chromatography. An analytical system consisting of an injector, pump, analytical column, and detector. Using a liquid mobile phase, the sample is pumped through the column, where it is separated into discrete sample component bands which are detected and measured as the bands elute from the column.

### I

**ID**
Internal diameter.

**Inert**
Technically, unreactive with other substances; however, in the instrumentation field, "inert" is a relative term. Often polymers are termed inert but are soluble in some fluids and can react with some compounds.

### L

**LC**
Liquid Chromatography. Any of a variety of low to medium pressure techniques which use a liquid mobile phase as the carrier to move sample. Similar to HPLC.

**Large bore**
A bore that is larger than the standard for a given fitting; a fitting ordered with a large bore will have a larger flow orifice than the standard or capillary bore fitting of the same design.

**Luer adapter**
An adapter that connects a tapered luer fitting (square nib) of a syringe to a tube or tube fitting.

### M

**Male Nut**
A type of compression fitting in which the nut has male threads.

**Make up**
The point at which a ferrule, nut, and tube are assembled in the fashion which will effect a leak-free seal. In most compression fittings, that is accomplished by compressing the tube with the small end of the ferrule. With Valco metal ferrules, the ferrule usually makes up on the tube by cutting a shallow ring in it.

**Manifold**
A type of distribution fitting in which a single source is directed to multiple outlets, or vice versa. Caution! Using a common distribution fitting in reverse to merge multiple streams may create dead volume. Special manifolds are available for this application.

**Microbore column**
A liquid chromatography column of narrow bore (typically 2 mm or less) for improved resolution.

### N

**Nanovolume**
Nanovolume fittings and valves are designed for minimum system volume, have typically bores of 100um and are used in applications with extreme low flows e.g. 200 nL/min.

**NPT**
National Pipe Thread; a standardized tapered pipe fitting. See pipe thread.

**Nut**
The tensioning component of a compression fitting. As the threaded nut is tightened into the fitting detail, it pushes the ferrule forward into the tapered ferrule seat, causing it to make up on the tube.

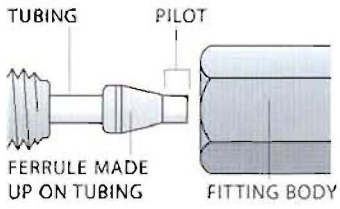
### O

**OD**
Outside diameter.

**One Piece Fingertight**
A one-piece fingertight fitting is a knurled or winged nut with integrated ferrule. It is convenient to use since the ferrule is retrieved together with the nut from a port. Note: Polymer type ferrules rely on surface compression to form a seal and hold the tube by friction.

### P

**Pilot**
The tubing which extends beyond a ferrule in a made-up fitting. See also "Pilot depth", and "Zero dead volume" below.




**Pilot depth**
The length of the tubing diameter cavity beyond the tapered ferrule seat within a fitting detail. Valco fitting pilot depths are tightly controlled which allows interchanging of components without the risk of leaks or dead volume.

**Pipe thread**
The external or internal threads of a fitting designed conical thread

## Glossary, cont.

faces. This type of fitting does not "bottom out" in the detail. Typically used with Teflon tape or other compound to lubricate the threads; however, since the diffusion rate of air components through the Teflon tape is considerable, pipe fittings should not be used in systems where leakage rates are critical.

**Plug**
A plug is used to block a fitting detail in a union, Tee, cross or valve.

### S

**Screen**
A replaceable filter element generally made of Type 316 stainless steel, usually 0.003" thick. Screens clog less frequently than frits but they are less effective filters. Because they are thinner there is less hold-up volume and thus less mixing.

**Port**
The connection, orifice, seal, or septum, etc. through which sample, mobile phase or eluents may be added or withdrawn.

### R

**Reducing ferrule**
A ferrule which allows a smaller tube to be used in a fitting detail designed for a larger tube. Caution should be taken if standard reducing ferrules without integral pilots are used, since dead volume may be created in the fitting pilot depth.

**Reducing union**
A fitting which joins two tubes of different ODs. The bore of the fitting should typically match the ID of the smaller tube.

### T

**Tee**
A type of distribution fitting which connects three pieces of tubing, arranging them in the pattern of a "T".

**Through-type bore**
A bore which is slightly larger than the OD of the tubing which is used with the given fitting. A union with a through-type bore allows the tube ends to butt directly together, or for one tube to run completely through the fitting. Denoted by suffix "T" in the product number. In order to assure correct pilot lengths, we recommend that ferrules be made up on the tubing in a standard union.

### U

**Union**
A fitting for connecting two pieces of tubing of the same OD, or different OD's (see Reducing Union).

**Female Union - A type of compression fitting in which the fitting body has female threads. Also referred to as internal union.**

**Male Union - A type of compression fitting in which the fitting body has male threads. Also referred to as external union.**

**Unswept volume**
The volume of any portion of a fitting which is in the flowpath but which is a different diameter than the primary flow orifice through the tubing/fitting assembly, or any area not directly swept by the fluid flow. This can also be known as "dead volume" if it is very poorly swept.

### W

**Wetted surfaces**
The surfaces which are contacted by the sample stream.

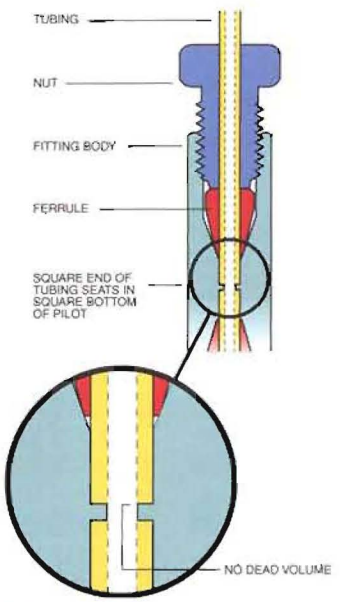
### Y

**Y**
A type of distribution fitting which connects three pieces of tubing, arranging them in the pattern of a "Y". Occasionally referred to as a "wye".

### Z

**ZDV**
Zero dead volume. See definition below.

**Zero dead volume (ZDV)**
Describes a connection which does not add volume to the system beyond what an extension of tubing would in its place.



## Part Number Index

## Part Number Index, cont.

## Part Number Index, cont.

## Part Number Index, cont.

## Part Number Index, cont.



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