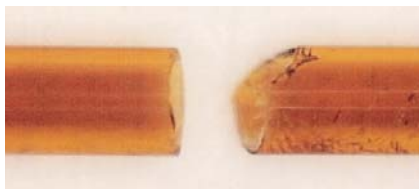


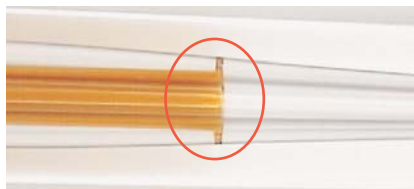
### Restek Press-Tight® Connectors

Press-Tight® connectors are lightweight, quickly installed, and easy to use. They connect fused silica tubing having outside diameters ranging from 0.33 to 0.74mm (Restek 0.1 to 0.53mm ID). Press-Tight® connectors do not cause solvent tailing, or adsorb active compounds.

Press-Tight® connectors most often are used to connect a guard column to an analytical column. They also are used to connect columns differing in polarity, for unique separations, or to repair a broken column.



Make a clean, square cut for optimum connector performance. The cut on the right will produce a poor seal.



A brown ring indicates a proper seal.

#### Obtaining a leak-tight seal:

To achieve optimum performance from these connectors, begin with a properly cut fused silica column or retention gap end. Even if you use polyimide resin (cat.# 20445, page 214) for extra insurance, a poorly cut capillary column will make an inadequate seal.

Press the cut ends into the connector, then establish a flow, and leak-check the seal with a Restek Electronic Leak Detector (cat.# 22839, page 201) before heating the system. The seal is made permanent as the polyimide resin coating on the column bonds to the inner surface of the connector after several thermal cycles to 200°C.

#### What is the maximum temperature for a Press-Tight® connector?

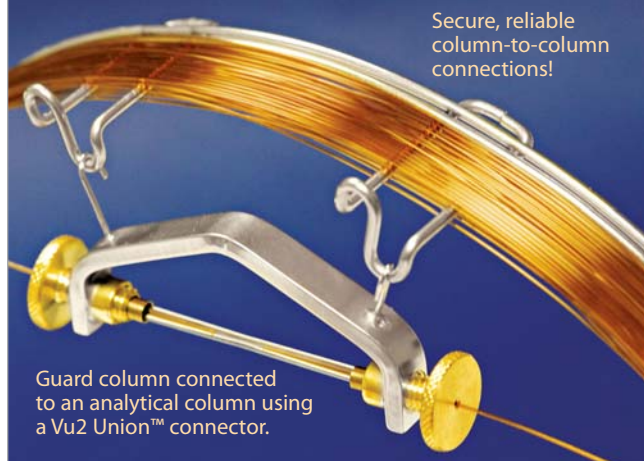
Press-Tight® connectors are effective at oven temperatures to 325°C, the temperature at which the polyimide coating on the column decomposes and the connection will begin to leak. We strongly recommend using a Vu2 Union™ (page 215) or SeCure™ “Y” Connector (page 216) connector if oven temperatures will exceed 325°C for prolonged periods of time.

#### Can Press-Tight® connectors be used with MXT® columns?

No. To achieve a leak-tight fused silica to stainless steel connection, we recommend an MXT™ connector (see page 218).



### Let Restek Make the Connection!



Secure, reliable column-to-column connections!

Guard column connected to an analytical column using a Vu2 Union™ connector.

Restek will connect a guard column/transfer line to any analytical column, using a Vu2 Union™ connector. We will leak-check the connection and confirm analytical integrity by analyzing a test mixture. To order a preconnected guard column/transfer line, add the three-digit suffix from the chart below to any analytical column catalog number. Example: A 5m, 0.32mm ID guard column connected to a 30m, 0.32mm ID, 1.0µm Rtx®-5 column is cat.# 10254-163.

5m Guard Column	cat.# suffix	Additional Cost*
0.15mm ID	-160	enquire
0.18mm ID	-161	enquire
0.25mm ID	-162	enquire
0.32mm ID	-163	enquire
0.53mm ID	-164	enquire
10m Guard Column	cat.# suffix	Additional Cost*
0.25mm ID	-165	enquire
0.32mm ID	-166	enquire
0.53mm ID	-167	enquire

Guard columns listed are intermediate polarity (IP) deactivated.

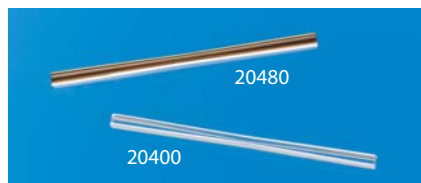
For more information about guard columns and other deactivations, see pages 29–33.

\*Additional cost will be added to the price of the column.



### Press-Tight® Connectors

- Deactivated Press-Tight® connectors assure better recovery of polar and nonpolar compounds.
- Siltek® treated connectors are ideal for organochlorine pesticides analysis.
- Fit column ODs from 0.33–0.74mm (Restek 0.1mm–0.53mm ID).
- Made from inert fused silica.



### Universal Press-Tight® Connectors

- Connect a guard column to an analytical column.
- Repair a broken column.
- Connect a column outlet to a transfer line.

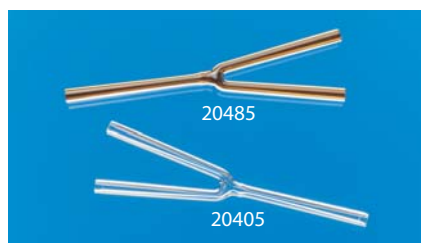
Description	5-pk./price	25-pk./price	100-pk./price
Universal Press-Tight Connectors	20400	20401	20402
Deactivated Universal Press-Tight Connectors	20429	20430	
Siltek Treated Universal Press-Tight Connectors	20480	20449	



### Universal Angled Press-Tight® Connectors

- Ideal for connecting a guard column to an analytical column.
- Angle approximates the curvature of a capillary column, reduces strain on column-end connections.

Description	5-pk./price	25-pk./price	100-pk./price
Universal Angled Press-Tight Connectors	20446	20447	20448
Deactivated Universal Angled Press-Tight Connectors	20446-261	20447-261	20448-261
Siltek Treated Universal Angled Press-Tight Connectors	20482	20483	20484



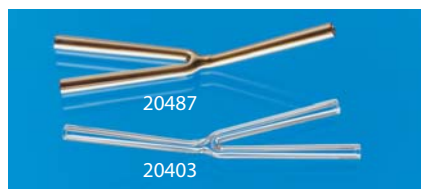
Single injection confirmational analyses!

### Universal “Y” Press-Tight® Connectors

An alternative method of performing dual-column confirmational analyses!

- Split sample flow onto two columns.
- Split a single column flow to two detectors—perform confirmation analysis with a single injection.

Description	ea./price	3-pk./price
Universal “Y” Press-Tight Connector	20405	20406
Deactivated Universal “Y” Press-Tight Connector	20405-261	20406-261
Siltek Treated Universal “Y” Press-Tight Connector	20485	20486



### Universal Angled “Y” Press-Tight® Connectors

- Perform confirmation analysis with a single injection.
- Inlet and outlet ends conform to the column curvature—alleviates column-end connection strain.

Description	ea./price	3-pk./price
Universal Angled “Y” Press-Tight Connector	20403	20404
Deactivated Universal Angled “Y” Press-Tight Connector	20403-261	20404-261
Siltek Treated Universal Angled “Y” Press-Tight Connector	20487	20469



### Polyimide Resin

- Securely connects a Press-Tight® connector to a fused silica column.

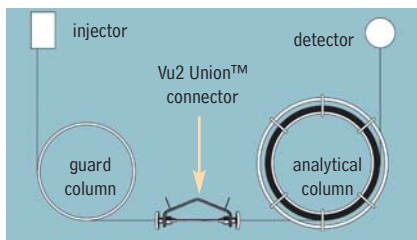
Description	Max. Temp.	qty.	cat.#	price
Polyimide Resin	350°C	5 grams	20445	

### Vu2 Union™ Connectors

- Connect a guard column to an analytical column.
- Connect a column to a transfer line.
- Connect two columns in series.
- Repair a broken column.
- New format will fit both Restek cage designs.

Restek's Vu2 Union™ connector combines the simplicity of a Press-Tight® union with the strength of a metal union.

A guard column connected to an analytical column by a Vu2 Union™ connector.



Updated to fit both Restek cage designs.



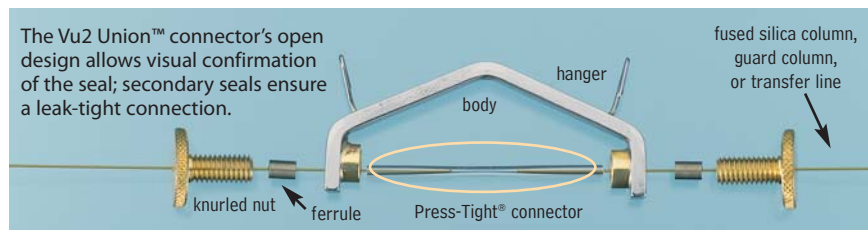
Patent pending.

### How does a Vu2 Union™ connector work?

A Press-Tight® union in the Vu2 Union™ connector joins the fused silica ends together; the ferrule and knurled nut at each end of the connector hold the tubing in place via a secondary seal between the ferrule and the Press-Tight® union. Each knurled nut applies independent pressure to each ferrule, to make a leak-tight seal with the column end. These ultra-strong connections will not unexpectedly disconnect under temperature changes, vibrations, or other stresses normally encountered in GC analyses. The open design allows visual confirmation of the seal between the column and the Press-Tight® union, to ensure confidence in the connection. Hang the connector from the column cage, to minimize stress on the connections.

### Who will benefit from using Vu2 Union™ connectors?

Any analyst using guard columns, transfer lines, or restrictor tubing, performing a dual-column analysis with columns connected in series, or seeking to repair a broken column will find Vu2 Union™ connectors the simple, reliable, easy-to-use solution to their connection needs.



The Vu2 Union™ connector's open design allows visual confirmation of the seal; secondary seals ensure a leak-tight connection.

Secure, reliable column-to-column connections!

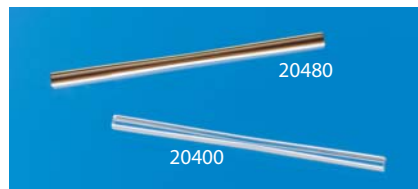
NOTE: This product is not recommended for GC column-to-MS connections—use the Vacuum Vu-Union (page 217).

Kits include: Vu2 Union™ body, 2 knurled nuts, 2 Press-Tight® unions, and 4 ferrules

Description	Ferrules Fit Column ID	qty.	cat.#	price
Vu2 Union Connector Kit	0.10/0.15mm	kit	22220	
Vu2 Union Connector Kit	0.18/0.28mm	kit	21105	
Vu2 Union Connector Kit	0.32mm	kit	21106	
Vu2 Union Connector Kit	0.45/0.53mm	kit	21107	
Knurled nut		2-pk.	21108	

### Universal Press-Tight® Connectors

Description	5-pk./price	25-pk./price	100-pk./price
Universal Press-Tight Connectors	20400	20401	20402
Deactivated, Universal Press-Tight Connectors	20429	20430	
Siltek Treated Universal Press-Tight Connectors	20480	20449	



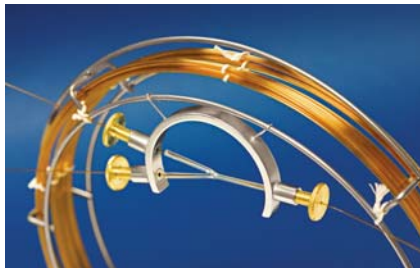
### Graphite Ferrules for Vu2 Union™ Connectors

- High-purity, high-density graphite.
- Stable to 450°C.
- No binders that can off-gas or adsorb analytes.
- Smooth surface and clean edges.

Ferrule ID	Fits Column ID	Graphite 2-pk./price	Graphite 10-pk./price
0.3mm	0.10/0.15mm	22221	22222
0.4mm	0.18/0.28mm	20280	20281
0.5mm	0.32mm	20282	20283
0.8mm	0.45/0.53mm	20284	20285



restek  
innovation!



Updated to fit both Restek cage designs.



Patent pending.

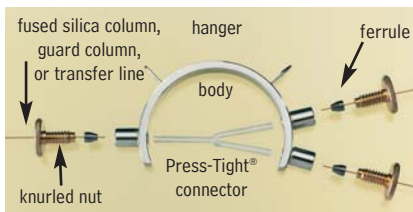
Secure, reliable  
column-to-column  
connections!

### SeCure™ “Y” Connector Kits

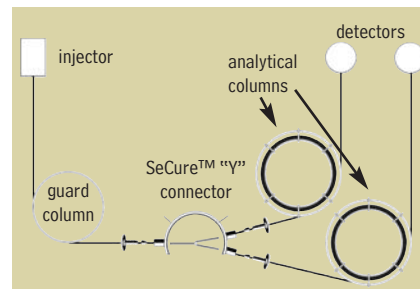
- Connect two analytical columns to a transfer line or guard column.
- Use standard “Y” Press-Tight® connectors and 1/16" graphite ferrules.
- Reliable seal integrity, will not unexpectedly disconnect during temperature-programmed analyses.
- Open design allows visual confirmation of the seal for added confidence in the connection.
- New format will fit both Restek cage designs.

Combine the simplicity of a “Y” Press-Tight® connector with the strength of a metal union. The ferrules and knurled nuts hold the fused silica tubing in place, which prevents the tubing from unexpectedly disconnecting, even at temperatures as high as 400°C.

The SeCure™ “Y” Connector’s open design allows visual confirmation of the seal.



Dual-column confirmational analysis with a single injection—one of the SeCure™ “Y” connector’s many uses.

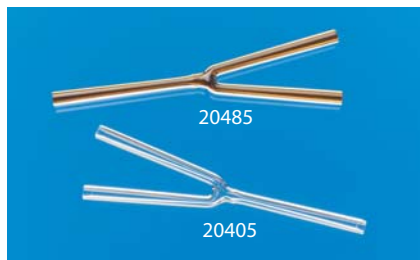


Kits include: SeCure™ “Y” connector body, 3 knurled nuts, “Y” Universal Press-Tight® union, 3 ferrules.

Description	Ferrules Fit Column ID	qty.	cat.#	price
SeCure “Y” Connector Kit	0.18/0.25/0.28mm	kit	20276	
SeCure “Y” Connector Kit	0.32mm	kit	20277	
SeCure “Y” Connector Kit	0.45/0.53mm	kit	20278	
Knurled nut		3-pk.	20279	

### Universal “Y” Press-Tight® Connectors

- Split sample flow onto two columns.
- Split a single column flow to two detectors—perform confirmation analysis with a single injection.
- Deactivated Press-Tight® connectors assure better recovery of polar and nonpolar compounds.
- Siltek® treated connectors are ideal for organochlorine pesticides analysis.
- Fit column ODs from 0.33–0.74mm (Restek 0.1mm–0.53mm ID).



Description	ea./price	3-pk./price
Universal “Y” Press-Tight Connector	20405	20406
Deactivated Universal “Y” Press-Tight Connector	20405-261	20406-261
Siltek Treated Universal “Y” Press-Tight Connector	20485	20486

### Graphite Ferrules for SeCure™ “Y” Connectors

- Preconditioned to minimize out-gassing.
- High-purity, high-density graphite.
- Stable to 450°C.
- No binders that can off-gas or adsorb analytes.
- Smooth surface and clean edges.



Ferrule ID	Fits Column ID	Graphite 10-pk./price	Graphite 50-pk./price
0.4mm	0.18/0.25/0.28mm	20200	20227
0.5mm	0.32mm	20201	20228
0.8mm	0.45/0.53mm	20202	20224



### Vacuum Vu-Union® Connector for GC/MS Applications

- Connects analytical column to MS transfer line.
- Use under vacuum conditions.
- Use only with Vu-Union® Vespel®/graphite ferrules (order ferrules separately).
- Includes metal housing body, one deactivated tapered glass insert, and Vu-Union® Helping Hand.
- Fits column ODs from 0.33–0.74mm (Restek 0.1mm–0.53mm ID).

A specifically designed Vu-Union® glass insert permits more torque to be applied to the ferrules without fear of cracking the insert. The hex end nuts enable you to use wrenches to tighten the end fittings.

### Vu-Union® Helping Hand

The Helping Hand is designed to hold in place the metal housing of the Vacuum Vu-Union® connector. This allows you to easily assemble the columns in the glass insert and tighten the nuts. The Helping Hand is included with the Vacuum Vu-Union® connector.



Description	qty.	cat.#	price
Vacuum Vu-Union Connector (with the Helping Hand)	ea.	20427	
Replacement Inserts	3-pk.	20428	



### Vu-Union® Vespel®/Graphite Ferrules

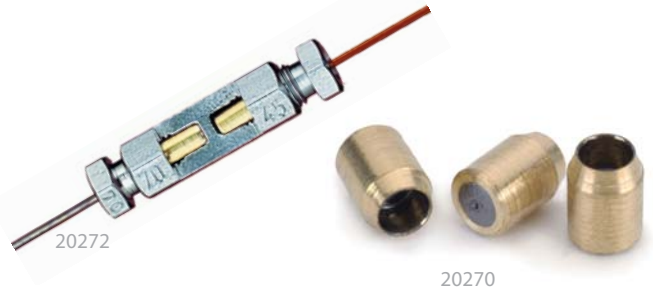
- Use with Vacuum Vu-Union® connectors.
- 60% Vespel®/40% graphite.
- 400°C maximum operating temperature.

Ferrule ID	Fits Column	qty.	cat.#	price
0.3mm	< 0.22mm ID / < 0.4mm OD	10-pk.	20423	
0.4mm	0.25mm ID / 0.4mm OD	10-pk.	20420	
0.5mm	0.32mm ID / 0.5mm OD	10-pk.	20421	
0.8mm	0.45/0.53mm ID / 0.8mm OD	10-pk.	20422	

### **i** tech tip

#### Coupling GC Columns

An MXT™ connector is a good alternative to a glass connector when coupling GC columns. This connector is constructed from stainless steel and will not break; it uses ferrules for sealing. The design ensures low dead volume, and Siltek® treatment ensures the MXT™ connector is inert—both features help minimize peak tailing. MXT™ connectors can be used to connect metal-to-metal, metal-to-fused silica, or fused silica-to-fused silica tubing. When connecting metal tubing, use 1/32-inch stainless steel ferrules; for fused silica tubing, use Valcon polyimide adaptor ferrules (see page 218).



### Gerstel GRAPHPACK® 3D/2 Connectors & Ferrules

GRAPHPACK® technology provides a complete system that quickly and reliably makes a leak-tight, low-dead-volume connection. The central component is a metal-jacketed graphite ferrule—the ideal seal for GC applications.

Description	qty.	cat.#	price	
GRAPHPACK 3D/2 Connector* (0.25mm to 0.32mm ID)	ea.	20272		
GRAPHPACK 3D/2 Connector* (0.45mm to 0.7mm ID)	ea.	20273		
Ferrule ID	Fits Column ID	qty.	cat.#	price
0.4mm	0.25mm	10-pk.	20271	
0.5mm	0.32mm	10-pk.	20270	
0.8mm	0.45/0.53mm	10-pk.	20274	

\*Use only with GRAPHPACK 3D/2 ferrules.



### Ferrule Removal Kit

The tapered tools in this kit have teeth designed to grip and remove fused silica adaptor ferrules that have become stuck in the fitting detail. Each kit has two tools: one for removing 1/32-inch adaptor ferrules and one for removing 1/16-inch adaptor ferrules.

Description	Valco #	qty.	cat.#	price
Ferrule Removal Kit	FRK1	kit	20146	



### 1/4-Inch–3/16-Inch Open-End Wrenches

High-quality miniature wrenches to use with MXT™ low-dead-volume connectors.

Description	qty.	cat.#	price
1/4"-3/16" Open-End Wrenches	2-piece set	20388	

### MXT™-Union Connector Kits for Fused Silica Columns

- Low-dead-volume, leak-tight connection.
- Reusable.
- Siltek® treatment ensures maximum inertness.
- Ideal for connecting a guard column or transfer line to an analytical column.
- Use to oven temperatures of 360°C.
- Available in union and “Y” configurations.
- Can also be used for fused silica to metal connections.

These MXT™ connectors can be used with fused silica tubing, because of a Valcon polyimide 1/32-inch one-piece fused silica adaptor. This unique graphite-reinforced composite allows a capillary column to slide into the adaptor and be locked in place simply by loosening and tightening the fitting.

#### MXT™-Union Connector Kits for Fused Silica Columns

Each kit contains the MXT™ union, two 1/32-inch nuts and two one-piece fused silica adaptors.



Description	qty.	cat.#	price
For 0.25mm ID Fused Silica Columns	kit	21386	
For 0.32mm ID Fused Silica Columns	kit	21385	
For 0.53mm ID Fused Silica Columns	kit	21384	

#### MXT™ “Y”-Union Connector Kits for Fused Silica Columns

Each kit contains the MXT™ union, three 1/32-inch nuts and three one-piece fused silica adaptors.



Description	qty.	cat.#	price
For 0.25mm ID Fused Silica Columns	kit	21389	
For 0.32mm ID Fused Silica Columns	kit	21388	
For 0.53mm ID Fused Silica Columns	kit	21387	



### Valco™ Connectors—One-Piece Valcon Polyimide Adaptor Ferrule for Fused Silica

Fused silica adaptor ferrules are Valcon polyimide, a unique graphite-reinforced composite, specially prepared to maximize mechanical stability at temperatures to 350°C. The determining factor for selecting adaptor ferrule size is the fused silica tubing OD.

#### 1/32-Inch Adaptor Ferrule (Valcon Polyimide)

Tubing OD	Tubing ID	Valco #	qty.	cat.#	price
0.25 ≤ 0.40mm	0.25mm	FS.4-5	5-pk.	20137	
0.40 ≤ 0.50mm	0.32mm	FS.5-5	5-pk.	20140	
0.50 ≤ 0.80mm	0.53mm	ZF.5V-5	5-pk.	20141	
1/32" Replacement Nut			5-pk.	20389	

### MXT™ Low-Dead-Volume Connector Kits for Metal Columns

These low-dead-volume connectors are Siltek® treated to make them inert to active compounds, just like our MXT® columns. They can be used at temperatures up to 430°C without degrading the deactivated layer. Purchase the appropriate ferrules for connecting 0.28, 0.32 or 0.53mm ID tubing.

#### MXT™ Low-Dead-Volume Connector Kits for Metal Columns

- Connect a guard column/transfer line to an MXT® stainless steel column.
- Low thermal mass tracks rapid oven temperature programming.
- Stainless steel ferrules and nuts.
- Available in “Y” and union configurations.
- Siltek® treatment ensures ultimate inertness.



Each kit contains the MXT™ union, two 1/32-inch ferrules and nuts.

Description	qty.	cat.#	price
For 0.28mm ID MXT Columns	kit	20397	
For 0.32mm ID MXT Columns	kit	20536	
For 0.53mm ID MXT Columns	kit	20394	

#### MXT™ Low-Dead-Volume “Y” Connector Kits for Metal Columns

- Connect two MXT® columns to one inlet or one MXT® column to two detectors.



Each kit contains the MXT™ union, three 1/32-inch ferrules and nuts.

Description	qty.	cat.#	price
For 0.28mm ID MXT Columns	kit	20396	
For 0.32mm ID MXT Columns	kit	20537	
For 0.53mm ID MXT Columns	kit	20395	

### 1/32-Inch Stainless Steel Replacement Ferrules for MXT™ Connectors

Ferrule ID	Fits Column ID	qty.	cat.#	price
0.59mm	0.28mm	10-pk.	20398	
0.53mm	0.32mm	10-pk.	20535	
0.79mm	0.53mm	10-pk.	20399	



### Zero-Dead-Volume Valco® Internal Union

Ends of tubing seat squarely at bottoms of fitting details. 300 series stainless steel. For 1/16" OD tubing. Stainless steel ferrules included.

Description	Union Bore	Valco #	qty.	cat.#	price
Internal Union	0.15mm	ZU1XC	ea.	20147	
Internal Union	0.25mm	ZU1C	ea.	20148	
Internal Union	0.75mm	ZU1	ea.	20149	
Internal Union	1/16"	ZUIT	ea.	20150	



### Zero-Dead-Volume Valco® Internal Reducing Union

Connect two sizes of tubing, using zero-dead-volume fittings on each end. For 1/8" to 1/16" OD tubing. Stainless steel ferrules included.

Description	Union Bore	Valco #	qty.	cat.#	price
Internal Reducing Union	0.25mm	ZRU21C	ea.	20151	
Internal Reducing Union	0.75mm	ZRU21	ea.	20152	
Internal Reducing Union	1/16"	ZRU21T	ea.	20153	



### Zero-Dead-Volume Valco® Internal Tee

Connect three lines. 300 series stainless steel; stainless steel ferrules included. For 1/16" OD tubing.

Description	Union Bore	Valco #	qty.	cat.#	price
Internal Tee	0.25mm	ZT1C	ea.	20154	
Internal Tee	0.75mm	ZT1	ea.	20155	



### Zero-Dead-Volume Valco® Internal Cross

Connect four lines. 300 series stainless steel; stainless steel ferrules included. For 1/16" OD tubing.

Description	Union Bore	Valco #	qty.	cat.#	price
Internal Cross	0.25mm	ZX1C	ea.	20156	
Internal Cross	0.75mm	ZX1	ea.	20157	



### Male Pipe to Valco® Internal Adapter

Makes a minimum volume connection from a female pipe fitting on a pressure gauge or regulator to a Valco® zero-dead-volume fitting. 300 series stainless steel; stainless steel ferrules included.

Description	Fitting Size	Bore	Valco #	qty.	cat.#	price
1/8" NPT Male						
Internal Adapter	1/16" ZDV	1.0mm	PZA21	ea.	20158	
1/4" NPT Male						
Internal Adapter	1/16" ZDV	1.0mm	PZA41	ea.	20159	



### Nuts & Ferrules for Valco® Connectors

Description	Valco #	qty.	cat.#	price
1/16" Stainless Steel Ferrules	ZF1-10	10-pk.	20286	
1/16" Stainless Steel Nuts	ZN1-10	10-pk.	20287	



### 1/16-Inch Valco® Adaptor Ferrules

Tubing OD	Tubing ID	Valco #	qty.	Valcon Polyimide		Polyimide		
				cat.#	price	qty.	cat.#	price
0.25–0.4mm	0.1–0.25mm	FS1.4-5	5-pk.	20142		2-pk.	21015	
0.4–0.5mm	0.32mm	FS1.5-5	5-pk.	20143		2-pk.	21016	
0.5–0.8mm	0.53mm	FS1.8-5	5-pk.	20144		—	—	—
0.8mm (1/32")	—	FS1.9-5	5-pk.	20145		—	—	—

### also available

#### Treated Fittings!

See pages 237-241 for our Siltek®/Sulfinert® treated and Silcosteel®-CR treated fittings, as well as many more brass and stainless steel fittings from Swagelok® and Parker.

