

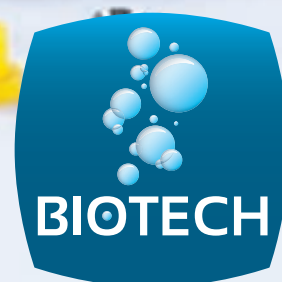
Connectors



Testing Upchurch Scientific® VHP unions in Oak Harbor, WA.

NEW!

*Eliminate tubing twist!
The new Swivel Barb
Adapters won't twist
peristaltic tubing as you
tighten the adapter into
a threaded port. See
page 58 for details!*





View from our office windows

BIOTECH

Biotech Sweden is a company highly specialized in chromatography accessories and consumables. Biotech is located on the Swedish Westcoast – south of Gothenburg – at the beautiful Onsala peninsula, covering 15.000 sq.m. land and 700 sq.m. production and office area.

A SIMPLE PHILOSOPHY...

We at Biotech believe that value is not "the lowest price" – our customers are the reason we exist – our customers always come first. We have not lost sight where we come from and therefore we try harder to be your partner, we're not satisfied unless you are satisfied.

Thank you for your business. I know we'll continue to grow and prosper together.

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mstorkamp@biotechusa.us

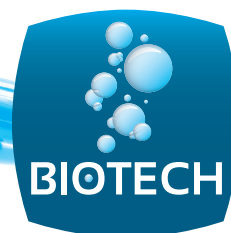
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Connectors Reference

This chart offers suggestions for connecting two pieces of inline tubing. The required product numbers are listed, with the appropriate page numbers listed below them in respective order. In most cases other options exist. For more information, please contact IDEX Health & Science or your local distributor.

TUBING SIZE (OD)	CAPILLARY (<1/32" OD)	1/32"	1 mm	1/16"	1.8–2 mm, 2.5 mm, 3 mm	1/8"	4 mm, 3/16"	1/4"	5/16"
CAPILLARY (<1/32" OD)	P-720 + MTSlv or P-882 or P-772 or P-779 + (2) NTSlv Pages: 39, 19, 53, 39, 38, 19	P-779 + (2) NTSlv Pages: 38, 19	P-779 + (2) NTSlv Pages: 38, 19	P-779 + NTSlv Pages: 38, 19	P-627-01 + NTSys + MFF + XP-335 ¹ Pages: 49, 19, 27, 26	P-627 + NTSys + XP-335 ¹ Pages: 49, 19, 26	P-135 + P-259 + NTSys + LT-115 ² + LBFF + XP-132 Pages: 49, 22, 61, 17, 22, 153, 27, 30, 30	U-665 + P-259 + NTSlv + LT-115 ² Pages: 49, 22, 61, 19, 22, 153	U-665-01 + XU-662 + P-259 + NTSlv + LT-115 ² Pages: 49, 30, 22, 61, 19, 22, 153
1/32"	P-779 + (2) NTSlv Pages: 38, 19	P-771 Page: 39	P-779 + F-247 + F-252 Pages: 38, 19, 19, 27	P-881 Page: 53	P-702-01 + P-248 + LT-115 ² + MFF + XP-335 ¹ Pages: 40, 22, 22, 153, 27, 26	P-702-01 + P-248 + LT-115 ² + XP-335 ¹ Pages: 40, 22, 22, 22, 153, 26	P-135 + P-248 + LT-115 ² + LBFF + XP-132 Pages: 49, 22, 22, 153, 37, 30, 30	U-665 + P-248 + LT-115 ² Pages: 49, 22, 22, 153	U-665-01 + XU-662 + P-248 + LT-115 ² Pages: 49, 30, 22, 22, 153
1 mm	P-779 + (2) NTSlv Pages: 38, 19	P-779 + F-247 + F-252 Pages: 38, 19, 19, 27	P-702-01 + (2) XP-235 ³ + (2) F-252 Pages: 40, 25, 19, 27	P-702 + F-252 Pages: 40, 19, 27	P-622 + P-200 + F-252 + P-247 + MFF + P-347 Pages: 40, 24, 25, 19, 27, 27, 27, 27	P-702 + F-252 + XP-335 ¹ Pages: 40, 19, 27, 26	P-135 + XP-235 ³ + F-252 + LBFF + XP-132 Pages: 49, 25, 19, 27, 30, 30	U-665 + XP-235 ³ + F-252 Pages: 49, 25, 19, 27	U-665-01 + XU-662 + XP-235 ³ + F-252 Pages: 49, 30, 25, 19, 27
1/16"	P-779 + NTSlv Pages: 38, 19	P-881 Page: 53	P-702 + F-252 Pages: 40, 19, 27	P-742 or P-702 Pages: 38, 40	P-622 + P-200 + P-247 + MFF + P-347 Pages: 40, 24, 25, 27, 27, 27	P-703 + XP-235 ³ Pages: 40, 25	P-135 + XP-235 ³ + LBFF + XP-132 Pages: 49, 25, 27, 30, 30	U-665 + XP-235 ³ Pages: 49, 25	U-665-01 + XU-662 + XP-235 ³ Pages: 49, 30, 25
1.8–2 mm, 2.5 mm, 3 mm	P-627-01 + NTSys + MFF + XP-335 ¹ Pages: 49, 17, 27, 26	P-702-01 + P-248 + LT-115 ² + MFF + XP-335 ¹ Pages: 40, 22, 22, 153, 27, 26	P-622 + P-200 + F-252 + P-247 + MFF + P-347 Pages: 40, 25, 19, 27, 27, 27, 27	P-622 + P-200 + P-247 + MFF + P-347 Pages: 40, 25, 27, 27, 27	P-622 + (2) MFF + (2) P-347 Pages: 40, 27, 27	P-622 + MFF + P-300 + (2) P-347 Pages: 40, 27, 26, 27	P-135 + MFF + P-355 + LBFF + XP-132 Pages: 49, 27, 23, 27, 30, 30	U-665 + MFF + XP-335 ¹ Pages: 49, 27, 26	U-665-01 + XU-662 + MFF + XP-335 ¹ Pages: 49, 30, 27, 26
1/8"	P-627 + NTSys + XP-335 ¹ Pages: 49, 17, 26	P-702-01 + P-248 + LT-115 ² + XP-335 ¹ Pages: 40, 22, 22, 153, 26	P-702 + F-252 + XP-335 ¹ Pages: 40, 19, 27, 26	P-703 + XP-235 ³ Pages: 40, 25	P-622 + MFF + P-300 + (2) P-347 Pages: 40, 27, 26, 27	P-703 Page: 40	P-135 + XP-335 ¹ + LBFF + XP-132 Pages: 49, 26, 27, 30, 30	U-665 + XP-335 ¹ Pages: 49, 26	U-665-01 + XU-662 + XP-335 ¹ Pages: 49, 30, 26
4 mm, 3/16"	P-135 + P-259 + NTSys + LT-115 ² + LBFF + XP-132 Pages: 49, 22, 61, 17, 22, 153, 30	P-135 + P-248 + LT-115 ² + LBFF + XP-132 Pages: 49, 22, 22, 153, 27, 30, 30	P-135 + XP-235 ³ + F-252 + LBFF + XP-132 Pages: 49, 25, 19, 27, 27, 30, 30	P-135 + XP-235 ³ + LBFF + XP-132 Pages: 49, 25, 27, 30, 30	P-135 + MFF + XP-335 ¹ + LBFF + XP-132 Pages: 49, 27, 26, 27, 30, 30	P-135 + XP-335 ¹ + LBFF + XP-132 Pages: 49, 26, 27, 30, 30	P-134 + (2) LBFF + (2) XP-132 Pages: 41, 27, 30, 30	U-659 + LBFF + XP-132 Pages: 49, 27, 30, 20	U-659-01 + XU-662 + LBFF + XP-132 Pages: 49, 30, 27, 30, 30
1/4"	U-665 + P-259 + NTSlv + LT-115 ² Pages: 49, 22, 61, 19, 22, 153	U-665 + P-248 + LT-115 ² Pages: 49, 22, 22, 153	U-665 + XP-235 ³ + F-252 Pages: 49, 25, 19, 27	U-665 + XP-235 ³ Pages: 49, 25	U-665 + MFF + XP-335 ¹ Pages: 49, 27, 26	U-665 + XP-335 ¹ Pages: 49, 26	U-659 + LBFF + XP-132 Pages: 49, 27, 30, 30	U-658 Page: 41	U-658 + XU-662 Pages: 41, 30
5/16"	U-665-01 + XU-662 + P-259 + NTSlv + LT-115 ² Pages: 49, 30, 22, 61, 19, 22, 153	U-665-01 + XU-662 + P-248 + LT-115 ² Pages: 49, 30, 22, 22, 153	U-665-01 + XU-662 + XP-235 ³ + F-252 Pages: 49, 30, 25, 19, 27	U-665-01 + XU-662 + XP-235 ³ Pages: 49, 30, 25	U-665-01 + XU-662 + MFF + XP-335 ¹ Pages: 49, 30, 27, 26	U-665-01 + XU-662 + XP-335 ¹ Pages: 49, 30, 26	U-659-01 + XU-662 + LBFF + XP-132 Pages: 49, 30, 27, 30, 30	U-658 + XU-662 Pages: 41, 30	U-664 Page: 41

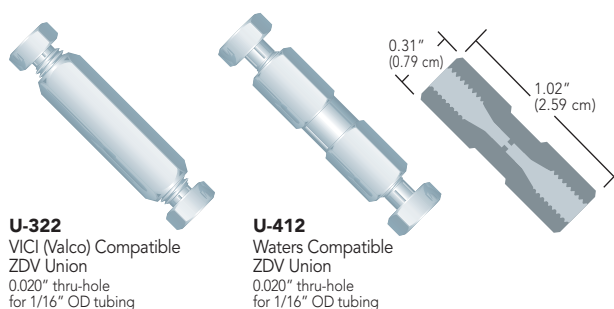
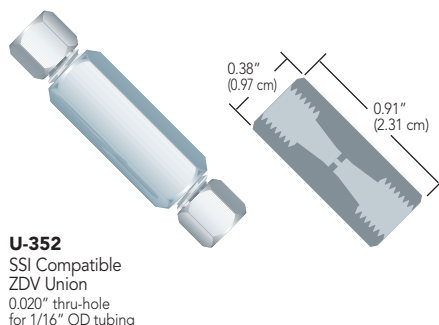
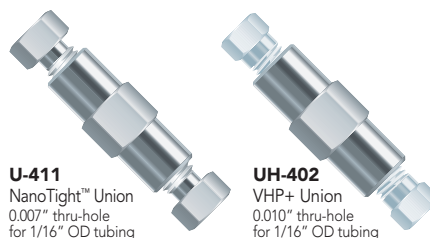
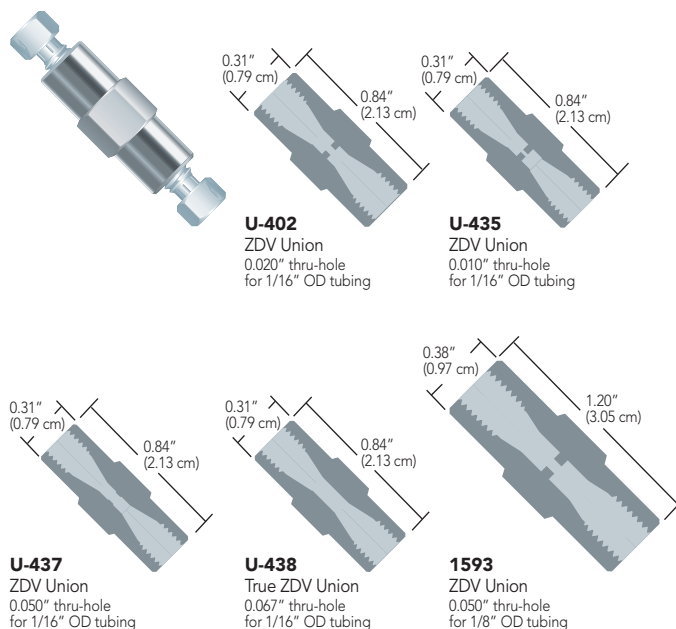
MTSlv MicroTight® Sleeves. Select the appropriate MicroTight Sleeve(s) for your tubing OD size.
NTSlv NanoTight™ System. Select the appropriate NanoTight Sleeve(s) for your tubing OD size, and NanoTight fitting(s).
NTSlv Select the appropriate NanoTight Sleeves for your tubing OD size.
MFF Select the appropriate Metric Flangeless Ferrule(s) for your tubing OD size.
 Choose from P-342, P-343 and P-353.
LBFF Select from the following Large-Bore Flangeless Ferrules: P-133 (3/16" OD) or P-139 (4.0 mm OD).

-01 Denotes a union or adapter without fittings.
 1 While XP-335 is listed, any of our Flangeless Fittings for 1/8" OD tubing from page 26 will work in this application.
 2 While LT-115 is listed, any 1/4-28 Super Flangeless™ Nut for 1/16" OD tubing from page 22 will work in this application.
 3 While XP-235 is listed, any 1/4-28 Flangeless Fitting for 1/16" OD tubing from page 25 will work in this application.

VHP Stainless Steel ZDV Unions

- Supplied with fittings for 1/16" OD or 1/8" OD tubing
- Manufactured from 316 stainless steel
- All union assemblies rated to 20,000 psi (1,380 bar) or higher

These Upchurch Scientific®, high pressure, zero-dead-volume (ZDV) unions, manufactured by IDEX Health & Science, are precision machined from 316 stainless steel, carefully passivated, then thoroughly rinsed. Each comes complete with stainless steel nuts and ferrules.



Top Seller SEE STARRED PRODUCTS

Note

It is possible to order the products on this page without the fittings. Simply use a -01 at the end of the product number to order the union body without fittings.

Part No.	Description	Threads	Includes	Thru-hole	Swept Volume	Pressure Rating
VHP STAINLESS STEEL ZDV UNIONS						
1593	Stainless Steel Union for 1/8" OD Tubing	1/4-28 Coned	(2) C-235/C-236	0.050" (1.25 mm)	1.48 µL	20,000 psi (1,380 bar)
★ U-402	Stainless Steel Union for 1/16" OD Tubing	10-32 Coned	(2) U-400/U-401	0.020" (0.50 mm)	0.13 µL	20,000 psi (1,380 bar)
★ U-411	Stainless Steel Union for 1/16" OD Tubing	10-32 Coned	(2) U-400/U-401	0.007" (178 µm)	13 nL	20,000 psi (1,380 bar)
★ U-435	Stainless Steel Union for 1/16" OD Tubing	10-32 Coned	(2) U-400/U-401	0.010" (0.25 mm)	20 nL	20,000 psi (1,380 bar)
U-437	Stainless Steel Union for 1/16" OD Tubing	10-32 Coned	(2) U-400/U-401	0.050" (1.25 mm)	0.84 µL	20,000 psi (1,380 bar)
U-438	Stainless Steel Union for 1/16" OD Tubing	10-32 Coned	(2) U-400/U-401, (1) P-554 Gauge Plug	0.067" (1.70 mm)	Near 0 µL	20,000 psi (1,380 bar)
UH-402	VHP+ Stainless Steel Union for 1/16" OD Tubing	10-32 Coned	(2) VHP-200	0.010" (0.25mm)	20 nL	30,000 psi (2,070 bar)
SSI COMPATIBLE ZDV UNION						
U-352	Stainless Steel Union for 1/16" OD Tubing	1/4-28 Coned	(2) U-350/U-351	0.020" (0.50 mm)	0.18 µL	20,000 psi (1,380 bar)
VICI® (VALCO) COMPATIBLE ZDV UNION						
★ U-322	Stainless Steel Union for 1/16" OD Tubing	10-32 Coned	(2) U-320/U-321	0.020" (0.50 mm)	0.15 µL	20,000 psi (1,380 bar)
WATERS® COMPATIBLE ZDV UNION						
U-412	Stainless Steel Union for 1/16" OD Tubing	10-32 Coned	(2) U-410/U-401	0.020" (0.50 mm)	0.10 µL	20,000 psi (1,380 bar)

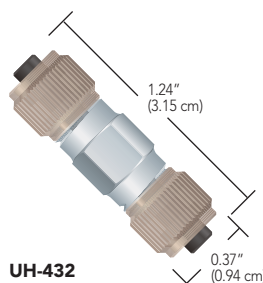
VHP Unions for Capillary Tubing

- Featuring stainless steel bodies and PK/PEEK™ fittings
- Pressure rated up to 15,000 psi (1,034 bar)
- Options to direct-connect both 1/32" OD tubing and 360 µm OD tubing

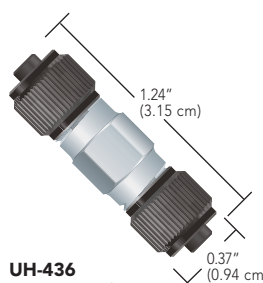
Upchurch Scientific® has expanded its line of specialized fittings and connectors for UHPLC applications to include several innovative unions and adapters.

Two of these products — the UH-432 and UH-436 — follow the design of our popular Mini MicroFilters (see page 165) and allow a convenient union between either 1/32" OD tubing or 360 µm OD tubing. Each features a stainless steel union body and a unique stainless steel union capsule, enabling both excellent chemical compatibility as well as conductivity, making these a great choice for electrical interfacing in certain LC-MS applications. Each is also coupled with direct-connect ferrules made from our proprietary PEEK polymer blend (PK), allowing tubing connections up to 15,000 psi (1,034 bar). (Please Note: While these connectors can be used at elevated pressures, they are not recommended for applications above 100 °C.)

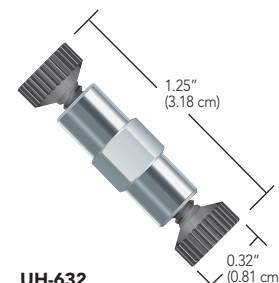
The UH-632 is a more traditionally designed connector, incorporating internally threaded ports. The union (UH-632) features a true ZDV (zero dead volume) connection between both tubes. This unique product is coupled with our one-piece Ultra-High Performance Fingertight fittings manufactured from our proprietary PEEK polymer blend, allowing them to be used in high temperature applications (up to 200 °C) at pressures up to 6,000 psi (414 bar) — or use these connectors at room temperature up to 15,000 psi (1,034 bar)!



UH-432
UHP MicroTight® Union
for 1/32" OD tubing
with fittings and capsule union included



UH-436
UHP MicroTight Union
for 360 µm OD tubing
with fittings and capsule union included



UH-632
UHP MicroTight Union
for 1/32" OD tubing
with fittings included

Related Products

- Find replacement VHP fittings on page 9
- Find Fused Silica tubing on page 65
- Find 1/32" OD Stainless Steel tubing on page 68 – 69
- To achieve 15,000 psi (1,034 bar) with these fittings, use the P-278 extender tool found on page 8

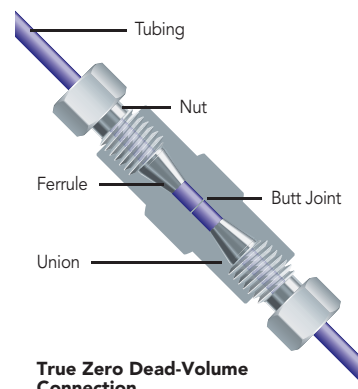
Order Online  WWW.IDEX-HS.COM

Application Note

What is a True ZDV Union?

True zero dead volume (ZDV) unions are designed so that the two joined pieces of tubing butt perfectly together as shown in the image to the right. These products have no swept volume contained within the union body. The fluid moves directly from one tube into another in this type of connector.

When using true ZDV unions, it is important to take care to ensure connecting tubing has burr-free 90 degree ends. Find tubing cutters on page 74 to assist with cleanly cutting polymer and fused silica tubing. Gauge plugs are supplied with True ZDV Unions to assist with assembly. With the gauge plug inserted into one side of the union, a hard stop is created for the tubing to bottom out against as it is connected to the opposite port. The gauge plug is removed and then the second piece of tubing is connected, using the first piece of tubing to bottom out against resulting in the two tubes joined together in the center of the union.

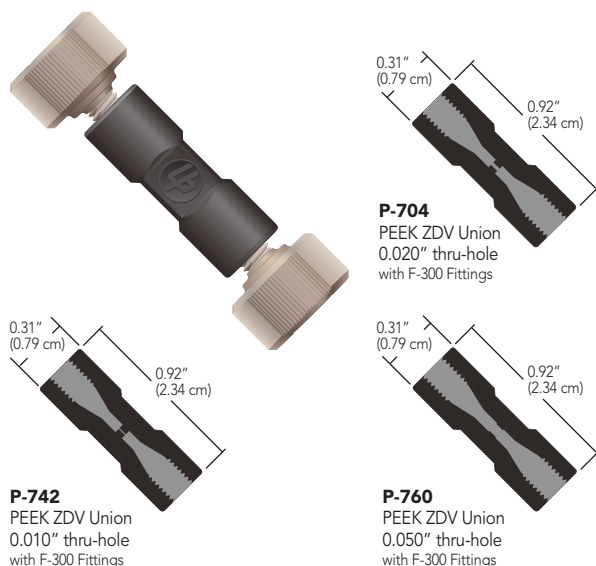


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Part No.	Description	Threads	Includes	Thru-hole	Swept Volume	Pressure Rating
VHP UNIONS FOR CAPILLARY TUBING						
★ UH-432	MicroTight Union for 1/32" OD Tubing, PEEK/SST	5/16-24 Coned	(2) PK-112, (2) P-416	0.006" (0.150 mm)	5 nL	15,000 psi (1,034 bar)
UH-436	MicroTight Union for 360 µm OD Tubing, PEEK/SST	5/16-24 Coned	(2) PK-152, (2) P-416BLK	0.006" (0.150 mm)	5 nL	15,000 psi (1,034 bar)
UH-632	MicroTight True ZDV Union for 1/32" OD Tubing, PEEK/SST	6-32 Coned	(2) PK-126, (1) P-553 Gauge Plug	N/A	N/A	15,000 psi (1,034 bar)

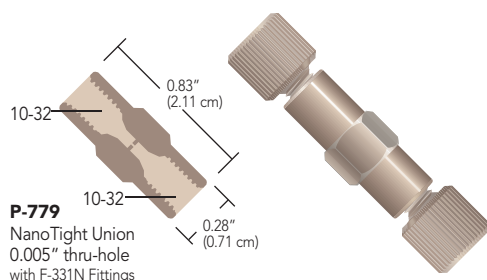
PEEK™ ZDV Unions

Upchurch Scientific® PEEK zero-dead-volume (ZDV) Unions come complete with two F-300 Fingertight Fittings for 1/16" OD tubing and are pressure rated to 5,000 psi (344 bar).



NanoTight™ Unions

Upchurch Scientific NanoTight Union improves capillary tubing connections in several ways. The internal design of the unions greatly reduces the incidence of tubing misalignment. When using 1/16" OD tubing sleeves (found on page 19) to connect capillary tubing, the webbed thru-hole minimizes breaking of fused silica while adding only miniscule swept volume. The results are fewer blockages, fewer flow rate reductions and fewer back pressure problems.

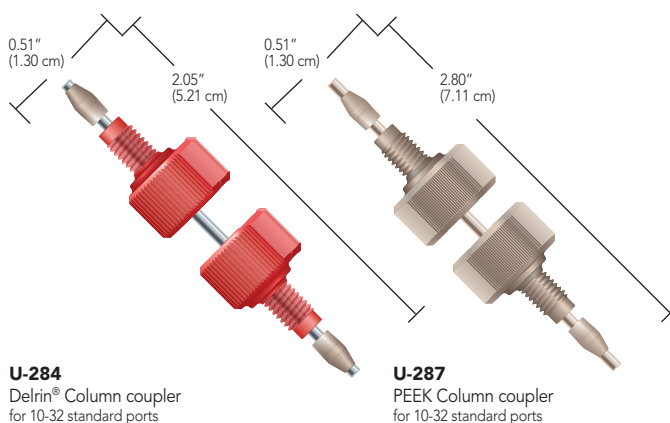
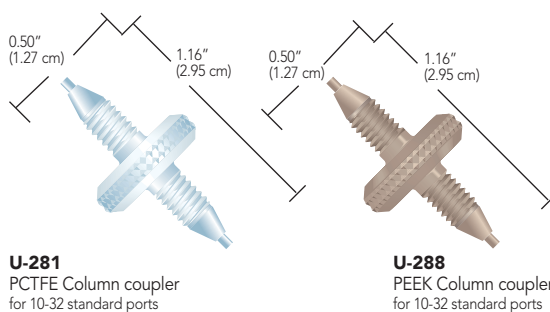


Column Couplers

► Low swept-volume connections

These universal column couplers permit a low swept-volume connection, with minimal loss in column efficiency. These couplers will connect most columns with 10-32 internal threads to a precolumn filter or guard column with the same threads. They may also be used to join two columns in series.

Upchurch Scientific manufactures two styles of column couplers. One version is a single piece that makes coupling columns to guard columns or precolumn filters easy and hassle-free. We also offer our traditional couplers that consist of two Fingertight fittings and a short length of 1/16" OD tubing—an excellent option for reducing overall flow path volume while coupling two devices together reliably.

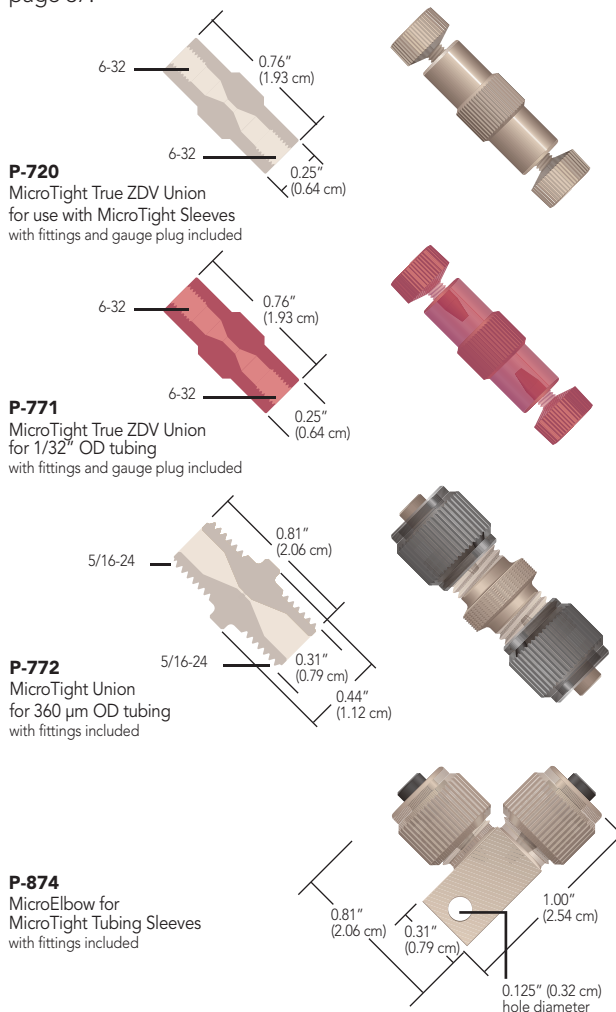


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Part No.	Description	Threads	Includes	Thru-hole	Swept Volume	Pressure Rating
PEEK ZDV UNIONS						
★ P-704	PEEK Union for 1/16" OD Tubing	10-32 Coned	(2) F-300	0.020" (0.50 mm)	0.28 µL	5,000 psi (344 bar)
★ P-742	PEEK Union for 1/16" OD Tubing	10-32 Coned	(2) F-300	0.010" (0.25 mm)	0.07 µL	5,000 psi (344 bar)
★ P-760	PEEK Union for 1/16" OD Tubing	10-32 Coned	(2) F-300	0.050" (1.25 mm)	1.2 µL	5,000 psi (344 bar)
NANOTIGHT UNION						
★ P-779	PEEK NanoTight Union for 1/16" OD Tubing and Tubing Sleeves	10-32 Coned	(2) F-331N	0.005" (125 µm)	8 nL	5,000 psi (344 bar)
COLUMN COUPLERS						
★ U-281	PCTFE Column Coupler	10-32 Coned	N/A	0.020" (0.50 mm)	6.0 µL	4,000 psi (276 bar)
U-283	PCTFE Column Coupler with 0.007" ID Stainless Steel Tubing	10-32 Coned	(2) F-100	0.007" (0.17 mm)	1.3 µL	4,000 psi (276 bar)
U-284	Delrin Column Coupler with 0.007" ID Stainless Steel Tubing	10-32 Coned	(2) F-200	0.007" (0.17 mm)	1.3 µL	5,000 psi (345 bar)
U-287	PEEK Column Coupler with 0.010" ID PEEK Tubing	10-32 Coned	(2) F-300	0.010" (0.25 mm)	3.6 µL	5,000 psi (345 bar)
U-288	PEEK Column Coupler	10-32 Coned	N/A	0.022" (0.56 mm)	7.2 µL	5,000 psi (345 bar)

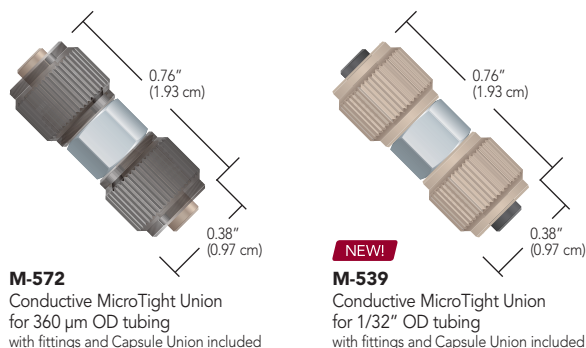
MicroTight® Connectors for Capillary Tubing

Connect two pieces of capillary tubing with these Upchurch Scientific® PEEK™ MicroTight Connectors. The True ZDV Unions allow two pieces of tubing to connect directly to each other — using the included gauge plug to ensure proper alignment. The standard union and elbow both feature a 0.006" (0.150 mm) thru-hole, adding only a small amount of additional flow-path volume to help ensure proper chromatographic results. For MicroTight unions designed for UHPLC applications, see page 37.



Conductive MicroTight Unions

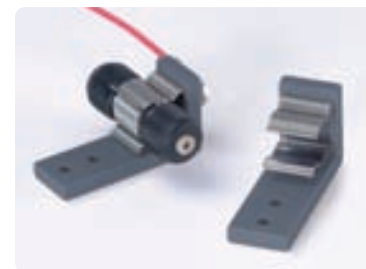
The Upchurch Scientific Conductive MicroTight Unions manufactured by IDEX Health & Science provide an excellent opportunity to introduce voltage into an electrospray or capillary electrophoresis system. With an extremely low internal volume of 16 nL or 5 nL, these unions can be placed inline with 360 µm or 1/32" OD capillary tubing. Mount and apply voltage to these unions using our Insulating Mounting Bracket below.



Insulating Mounting Bracket

Use our Insulating Mounting Bracket to easily integrate the Conductive Mini MicroFilters shown above into your system or lab.

The product snaps into place. Voltage from your lead wire is conducted through the attaching stainless steel nut and screw (included), then onto the mounted product via the stainless steel clip.



Insulating Mounting Bracket, shown with lead wire and Conductive MicroTight Union, not included.

The bracket's base includes two holes (#2 screw clearance) for easy mounting onto any lab surface. Dimensions are 1.25" L x 0.45" W x 0.63" H.

Application Note

For an example of using a conductive MicroTight Union in a pressure driven ion preconcentration application see: "Self-Sealed Vertical Polymeric Nanoporous Junctions for High Throughput Nanofluidic Applications."

Sun Jae Kim and Jong Yoon Han. *Analytical Chem.* 2008, 80: 3507-3511



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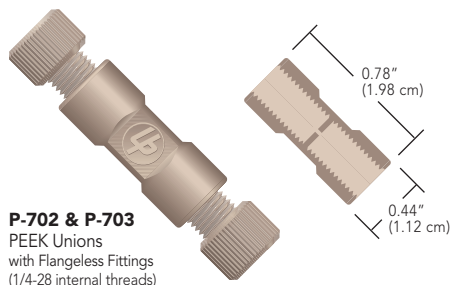
Part No.	Description	Threads	Includes	Thru-hole	Swept Volume	Pressure Rating
MICROTIGHT UNIONS						
★ P-720	PEEK True ZDV Union for MicroTight Sleeves	6-32 Coned	(2) F-125, (1) P-553	N/A	N/A	4,000 psi (276 bar)
★ P-771	PEEK True ZDV Union for 1/32" OD Tubing	6-32 Coned	(2) F-126S, (1) P-553	N/A	N/A	5,000 psi (345 bar)
★ P-772	PEEK Union for 360 µm OD Tubing	5/16-24 Coned	(2) F-152, (2) P-416BLK	0.006" (0.150 mm)	5 nL	5,000 psi (345 bar)
P-874	PEEK MicroElbow for MicroTight Sleeves	5/16-24 Coned	(2) F-172, (2) P-416	0.006" (0.150 mm)	20 nL	4,000 psi (276 bar)
REPLACEMENT GAUGE PLUGS (TO ACHIEVE TRUE ZDV CONNECTIONS WITH OUR P-720 AND P-771 UNIONS)						
P-553	Gauge Plug, Delrin®	6-32 Coned	N/A	N/A	N/A	N/A
CONDUCTIVE MICROTIGHT UNIONS						
M-539	Conductive Union for 1/32" OD tubing, PEEK/SST	5/16-24 Coned	(2) F-112, (2) P-416, (1) M-138NF	0.006" (0.150 mm)	5nL	5,000 psi (345 bar)
M-572	Conductive Union for 360 µm OD Tubing, PEEK/SST	5/16-24 Coned	(2) F-152, (2) P-416BLK, (1) M-128NF	0.011" (0.279 mm)	16 nL	5,000 psi (345 bar)
INSULATING MOUNTING BRACKET						
M-447	Insulating Mounting Bracket	N/A	N/A	N/A	N/A	N/A

Low Pressure Unions

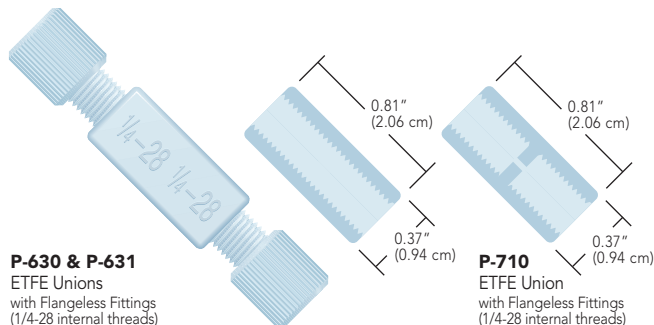
- ▶ Manufactured from PEEK™, ETFE, Delrin®, polypropylene or PCTFE
- ▶ Available with 1/4-28, M6 or 10-32 flat-bottom threads

Upchurch Scientific® Low Pressure Unions are available in a variety of polymers, providing several low-cost and chemically-resistant options. The union assemblies below include fittings as shown in the table. The unions in the right column do not include fittings, allowing for customizing the fitting selection. In some cases, a union can be configured to connect two different tubing sizes – for example, if 1/4-28 Flangeless fittings for 1/16" and 1/8" OD tubing were selected from pages 25 and 27 they can be used with the P-603 union to connect the two different tubing sizes.

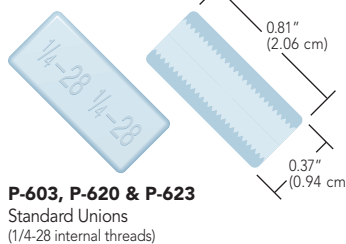
Low Pressure PEEK Union Assemblies



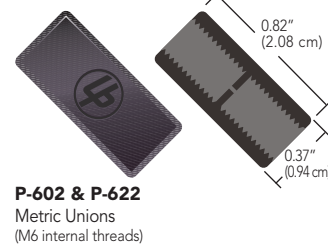
Low Pressure ETFE Union Assemblies



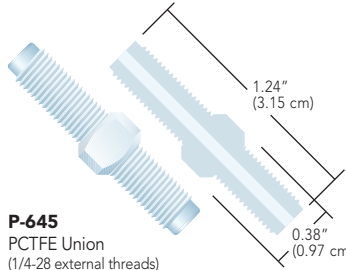
Low Pressure Standard Unions



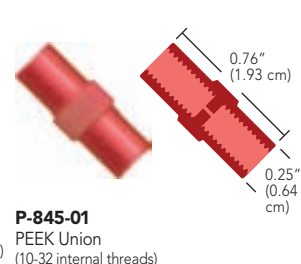
Low Pressure Metric Unions



Low Pressure Male Union



VacuTight™ Union



Related Products

- ▶ To use connectors in higher pressure applications, simply replace the provided fittings with Super Flangeless™ Nuts and Ferrules, found on pages 21 – 23.
- ▶ Use any of the 10-32 flat-bottom fittings on page 21 and 28 to make an inline connection with our VacuTight Union. This product is designed for use with 1/16" OD tubing.



Top Seller SEE STARRED PRODUCTS

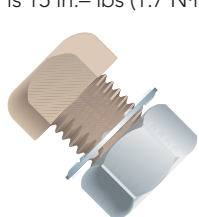
Part No.	Description	Color	Threads	Includes	Thru-hole	Swept Volume	Pressure Rating
PEEK UNION ASSEMBLIES							
★ P-702	PEEK Union for 1/16" OD Tubing	Natural	1/4-28 FB	(2) XP-235	0.020" (0.50 mm)	0.41 µL	1,000 psi (69 bar)
★ P-703	PEEK Union for 1/8" OD Tubing	Natural	1/4-28 FB	(2) XP-335	0.050" (1.25 mm)	2.57 µL	1,000 psi (69 bar)
ETFE UNION ASSEMBLIES							
P-630	ETFE True ZDV Union for 1/16" OD Tubing	Natural	1/4-28 FB	(2) P-200N/P-245	N/A	N/A	1,000 psi (69 bar)
P-631	ETFE True ZDV Union for 1/8" OD Tubing	Natural	1/4-28 FB	(2) P-300N/P-345	N/A	N/A	1,000 psi (69 bar)
P-710	ETFE Union for 1/16" OD Tubing	Natural	1/4-28 FB	(2) XP-245	0.030" (0.75 mm)	0.93 µL	1,000 psi (69 bar)
STANDARD UNIONS							
★ P-603	Delrin True ZDV Standard Union	Natural	1/4-28 FB	N/A	N/A	N/A	N/A*
★ P-620	Polypropylene True ZDV Standard Union	Natural	1/4-28 FB	N/A	N/A	N/A	N/A*
★ P-623	ETFE True ZDV Standard Union	Natural	1/4-28 FB	N/A	N/A	N/A	N/A*
METRIC UNIONS							
P-602	Delrin Metric Union	Black	M6 FB	N/A	0.020" (0.50 mm)	0.41 µL	N/A*
P-622	ETFE Metric Union	Blue	M6 FB	N/A	0.020" (0.50 mm)	0.41 µL	N/A*
MALE UNION							
★ P-645	PCTFE Male Union	Natural	1/4-28 FB	N/A	0.062" (1.60 mm)	61.3 µL	500 psi (34 bar)
VACUTIGHT UNION							
P-845-01	PEEK Union for 1/16" OD Tubing	Red	10-32 FB	N/A	0.020" (0.50 mm)	0.20 µL	N/A*

* Pressure Rating depends on Fittings selected. See pressure rating for fittings on appropriate page.
FB = Flat-Bottom

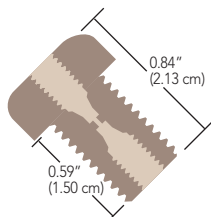
Bulkhead Unions

- Designed for plumbing tubing through equipment housing
- For use with standard 10-32 coned, 1/4-28 or M6 flat-bottom threaded fittings

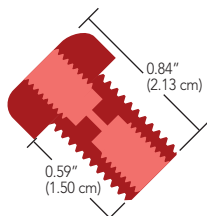
Thread Upchurch Scientific® PEEK™ Bulkhead Unions directly through your equipment housing to connect internal tubing to the outside. Each union has unique 3/8-24 external threads and comes complete with a stainless steel nut and lock washer to hold it in place. Requires a 3/8" hole to mount. The recommended torque limit for these unions is 15 in.-lbs (1.7 N-m).



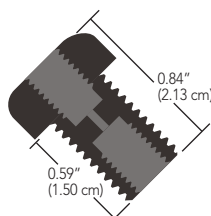
Bulkhead Union
includes stainless steel nut/lock washer



P-440
10-32 internal threads



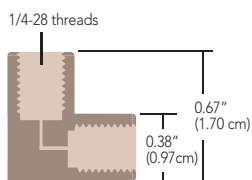
P-441
1/4-28 internal threads



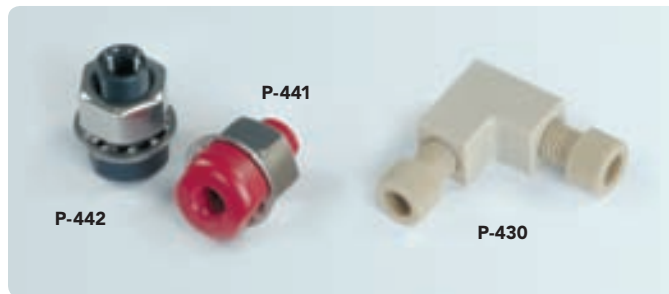
P-442
M6 internal threads

Elbow Connectors

Use these Elbow Connectors to easily navigate tight corners. One Elbow is designed for use with 1/16" OD tubing and has a 0.020" (0.50 mm) thru-hole. Use 1/8" OD tubing with the other Elbow, which has a 0.062" (1.60 mm) thru-hole. Both come complete with 1/4-28 PEEK nuts and ETFE ferrules, and are pressure rated to 1,000 psi (69 bar).



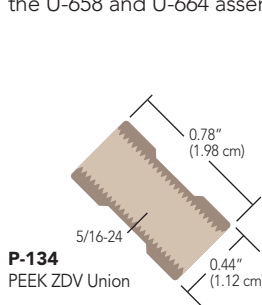
P-430
PEEK Elbow
comes with Flangeless Fittings



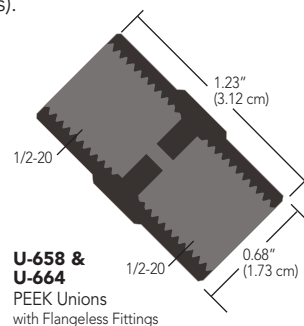
Large Bore Unions

- 5/16-24 and 1/2-20 flat-bottom threads

Use any of the 5/16-24 fittings on page 56 and the appropriate ferrule to create a true zero dead volume (ZDV) connection with the P-134 Union. Our U-658 and U-664 Unions are designed to be used with our standard 1/2-20 flat-bottom threaded nuts and ferrules (included with the U-658 and U-664 assemblies).



P-134
PEEK ZDV Union



U-658 & U-664
PEEK Unions
with Flangeless Fittings

Related Products

- Stainless Steel Bulkhead Unions are also available. Please contact us for more information.
- To use Elbows in higher pressure applications, simply replace the provided fittings with Super Flangeless™ Nuts and Ferrules, found on pages 21 – 23.

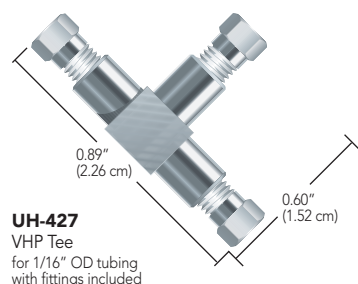


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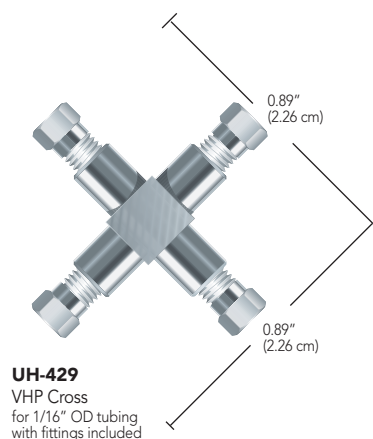
Part No.	Description	Threads	Color	Includes	Thru-hole	Swept Volume
BULKHEAD UNIONS						
★ P-440	PEEK Bulkhead Union	10-32 Coned	Natural	(1) SST Nut/Washer	0.020" (0.50 mm)	1.9 µL
★ P-441	PEEK Bulkhead Union	1/4-28 Flat-Bottom	Red	(1) SST Nut/Washer	0.040" (1.00 mm)	2.9 µL
★ P-441N	PEEK Bulkhead Union	1/4-28 Flat-Bottom	Natural	(1) SST Nut/Washer	0.040" (1.00 mm)	2.9 µL
P-442	PEEK Bulkhead Union	M6 Flat-Bottom	Black	(1) SST Nut/Washer	0.040" (1.00 mm)	2.9 µL
ELBOW CONNECTORS						
P-430	PEEK Elbow for 1/16" OD Tubing	1/4-28 Flat-Bottom	Natural	(2) XP-235	0.020" (0.50 mm)	1.4 µL
P-432	PEEK Elbow for 1/8" OD Tubing	1/4-28 Flat-Bottom	Natural	(2) XP-335	0.062" (1.60 mm)	13.6 µL
LARGE BORE UNIONS						
P-134	PEEK True ZDV Union	5/16-24 Flat-Bottom	Natural	N/A	N/A	N/A
U-658	PEEK Union for 1/4" OD Tubing	1/2-20 Flat-Bottom	Black	N/A	0.188" (4.80 mm)	57 µL
U-664	PEEK Union for 5/16" OD Tubing	1/2-20 Flat-Bottom	Black	N/A	0.188" (4.80 mm)	57 µL

VHP Tees & Crosses for 1/16" OD Tubing

IDEX Health & Science offers Very High Pressure Connectors, designed to bring three or four pieces of tubing together. The all-316 stainless steel connectors are designed for 1/16" OD tubing, and are pressure rated to 30,000 psi (2,070 bar).



UH-427
VHP Tee
for 1/16" OD tubing
with fittings included



UH-429
VHP Cross
for 1/16" OD tubing
with fittings included

Application Note

Why 1/32" OD Tubing and 360 µm OD Tubing?

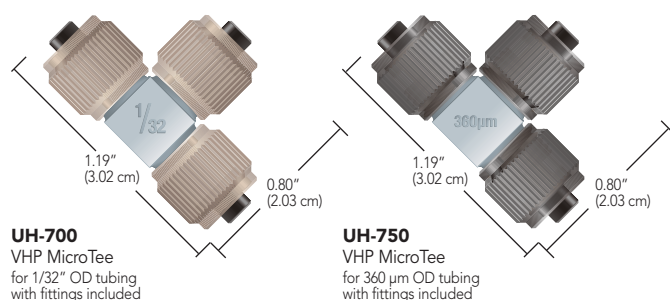
IDEX Health & Science has focused strongly on the development of a variety of connectors and accessories for 1/32" OD tubing and 360 µm OD tubing. We have focused on these specific sizes due to their overwhelming popularity in analytical instruments, especially where micro and nano-scale analyses are being performed. By creating products designed for these popular sizes, the overall connection is easier to make and generally holds to increased pressures over connections where tubing sleeves are involved.

VHP Tees & Crosses for Capillary Tubing

- ▶ Direct-connect either 360 µm or 1/32" OD tubing — no sleeves required!
- ▶ Available in both tee and cross configurations
- ▶ Pressure rated to 15,000 psi (1,034 bar)

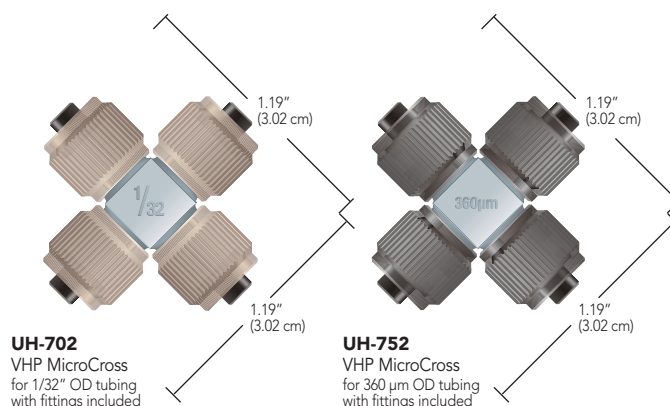
To help facilitate multi-port connections in UHPLC applications, Upchurch Scientific® has developed a line of MicroTees and MicroCrosses, manufactured from stainless steel and featuring small thru-holes and very low internal volume. Additionally, the stainless steel construction allows these products to be used in applications where electrical conductivity is desired.

Included with the MicroTees and MicroCrosses are the VHP MicroFerrules found on page 9. The P-278 Extender Tool on page 33 can be used to tighten the female nuts that are included with these connectors.



UH-700
VHP MicroTee
for 1/32" OD tubing
with fittings included

UH-750
VHP MicroTee
for 360 µm OD tubing
with fittings included



UH-702
VHP MicroCross
for 1/32" OD tubing
with fittings included

UH-752
VHP MicroCross
for 360 µm OD tubing
with fittings included

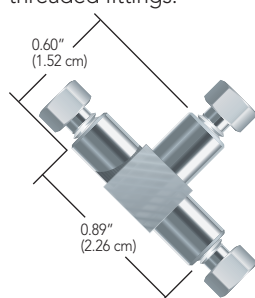


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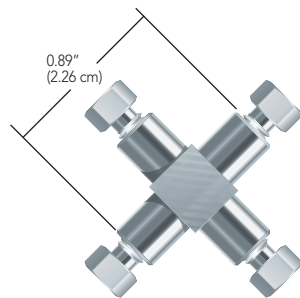
Part No.	Description	Threads	Includes	Thru-hole	Swept Volume	Pressure Rating
STAINLESS STEEL UNIONS, TEES, CROSSES						
UH-427	VHP Tee for 1/16" OD Tubing, SST	10-32 Coned	(3) VHP-200	0.020" (0.50 mm)	0.57 µL	30,000 psi (2,070 bar)
UH-429	VHP Cross for 1/16" OD Tubing, SST	10-32 Coned	(4) VHP-200	0.020" (0.50 mm)	0.72 µL	30,000 psi (2,070 bar)
VHP TEES & CROSSES FOR CAPILLARY TUBING						
★ UH-700	VHP MicroTee for 1/32" OD Tubing, PEEK/SST	5/16-24 Coned	(3) PK-112, (3) P-416	0.010" (0.25 mm)	84 nL	15,000 psi (1,034 bar)
UH-702	VHP MicroCross for 1/32" OD Tubing, PEEK/SST	5/16-24 Coned	(4) PK-112, (4) P-416	0.010" (0.25 mm)	101 nL	15,000 psi (1,034 bar)
UH-750	VHP MicroTee for 360 µm OD Tubing, PEEK/SST	5/16-24 Coned	(3) PK-152, (3) P-416BLK	0.010" (0.25 mm)	84 nL	15,000 psi (1,034 bar)
UH-752	VHP MicroCross for 360 µm OD Tubing, PEEK/SST	5/16-24 Coned	(4) PK-152, (4) P-416BLK	0.010" (0.25 mm)	101 nL	15,000 psi (1,034 bar)

Stainless Steel Tees & Crosses

These 316 stainless steel connectors come complete with 10-32 stainless steel fittings for use with 1/16" OD tubing and are rated to 20,000 psi (1,380 bar). They are compatible with any 10-32 coned threaded fittings.



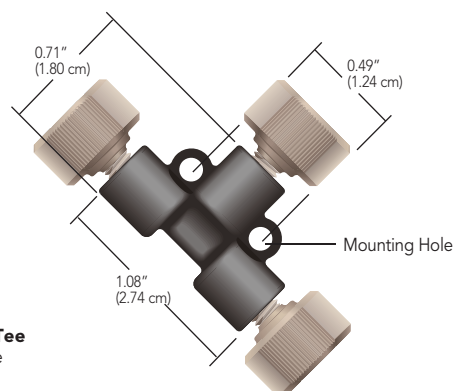
U-428 Stainless Steel Tee
0.020" thru-hole
with U-400 and U-401 Fittings



U-430 Stainless Steel Cross
0.020" thru-hole
with U-400 and U-401 Fittings

PEEK Tees & Crosses

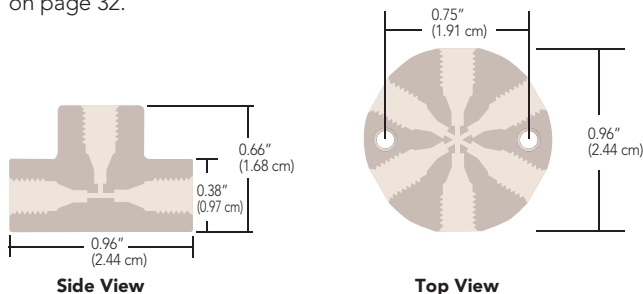
Our PEEK Tees and Crosses include high pressure F-300 PEEK Fingertight Fittings — allowing maximum operating pressures to 3,500 psi (241 bar) when used with 1/16" OD PEEK or stainless steel tubing.



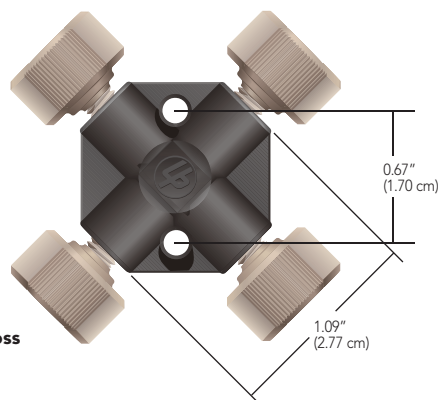
P-727 PEEK Tee
0.020" thru-hole
with F-300 Fittings

PEEK™ 7-Port Manifold

Combine several streams into one or split one fluid stream into several. This PEEK 7-Port Manifold comes complete with F-331 Fingertight Fittings for 1/16" OD tubing and offers a pressure rating of 5,000 psi (345 bar). Seal unused ports with any of our polymer 10-32 plugs on page 32.



P-170
PEEK 7-Port Manifold
0.020" thru-holes
with F-331 Fittings



P-729 PEEK Cross
0.020" thru-hole
with F-300 Fittings



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Order Online  WWW.IDEX-HS.COM

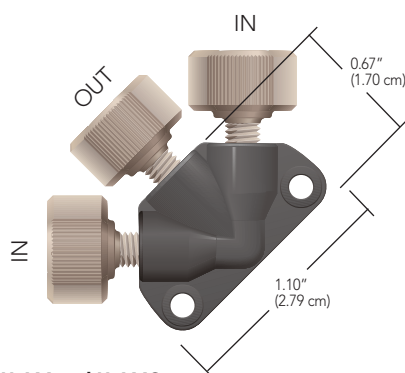
Part No.	Description	Threads	Includes	Thru-hole	Swept Volume	Pressure Rating
STAINLESS STEEL TEES AND CROSSES						
★ U-428	Stainless Steel Tee for 1/16" OD Tubing	10-32 Coned	(3) U-400, (3) U-401	0.020" (0.50 mm)	0.57 µL	20,000 psi (1,380 bar)
★ U-429	Stainless Steel Tee for 1/16" OD Tubing	10-32 Coned	(3) U-400, (3) U-401	0.040" (1.00 mm)	2.1 µL	20,000 psi (1,380 bar)
★ U-430	Stainless Steel Cross for 1/16" OD Tubing	10-32 Coned	(4) U-400, (4) U-401	0.020" (0.50 mm)	0.72 µL	20,000 psi (1,380 bar)
★ U-431	Stainless Steel Cross for 1/16" OD tubing	10-32 Coned	(4) U-400, (4) U-401	0.040" (1.00 mm)	2.5 µL	20,000 psi (1,380 bar)
PEEK MANIFOLD						
P-170	PEEK 7-Port Manifold for 1/16" OD Tubing	10-32 Coned	(7) F-331	0.020" (0.50 mm)	2.2 µL	5,000 psi (345 bar)
PEEK TEES AND CROSSES						
★ P-727	PEEK Tee for 1/16" OD Tubing	10-32 Coned	(3) F-300	0.020" (0.50 mm)	0.57 µL	3,500 psi (241 bar)
P-728	PEEK Tee for 1/16" OD Tubing	10-32 Coned	(3) F-300	0.050" (1.25 mm)	3.0 µL	3,500 psi (241 bar)
P-729	PEEK Cross for 1/16" OD Tubing	10-32 Coned	(4) F-300	0.020" (0.50 mm)	0.72 µL	3,500 psi (241 bar)
P-730	PEEK Cross for 1/16" OD Tubing	10-32 Coned	(4) F-300	0.050" (1.25 mm)	3.5 µL	3,500 psi (241 bar)

Static Mixing Tees

- ▶ PEEK™ body with two-piece fingertight fittings
- ▶ Low swept volume

Upchurch Scientific® Static Mixing Tees are ideal for microbore or analytical gradient HPLC. They have a low swept volume of 2.2 µL (includes frit volume) and are designed for flow rates of 0.5 to 3 mL/min and a maximum pressure of 5,000 psi (345 bar). The back pressure caused by the tee is typically only 10 to 20 psi (0.7 to 1.4 bar) at these flow rates. The thru-holes are 0.020" (0.50 mm) and the center port features a 10 µm UHMWPE or stainless steel frit that aids mixing.

Please Note: Turbulent mixing of solvents often increases outgassing. To maintain a bubble-free fluid pathway, we recommend solvent degassing when using this product (see the Systec® Vacuum Degassing Systems on pages 177–178).



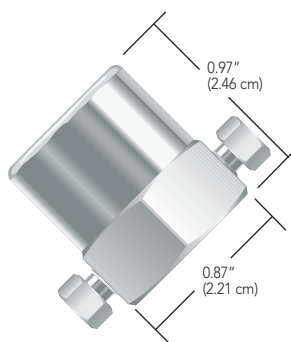
**U-466 and U-466S
Static Mixing Tees**
with F-300 Fingertight Fittings
for 1/16" OD tubing

Pressure Gauge Tee

- ▶ Complete with stainless steel fittings

Many HPLC systems have pumps that provide a digital readout of the inline system pressure. However, a number of systems do not, creating the need for a gauge along your 1/16" OD tubing pathway to monitor pressure. The Upchurch Scientific U-433 Pressure Gauge Tee is the solution. This Tee comes complete with 10-32 coned stainless steel fittings for 1/16" OD tubing and has an internal port suitable to connect to 1/4" pipe threads (NPT), standard to most gauges. *Please Note: A pressure gauge is not included with this Tee; however, they are available from a number of laboratory supply companies.*

Before installing your gauge into this Tee, simply wrap PTFE tape around the male threads of your pressure gauge four times. This will ensure a leak-free seal, even at standard HPLC operating pressures.



**U-433
Pressure Gauge Tee**
with U-400/U-401 Stainless Steel Fittings
for 1/16" OD tubing

Note

- ▶ The frit incorporated into our U-466 and U-466S Static Mixing Tees is not replaceable. If it becomes clogged, the Mixing Tee must be replaced.

Related Products

- ▶ Our Micro Static Mixing Tee can be found on the next page. It is designed for microflow applications.



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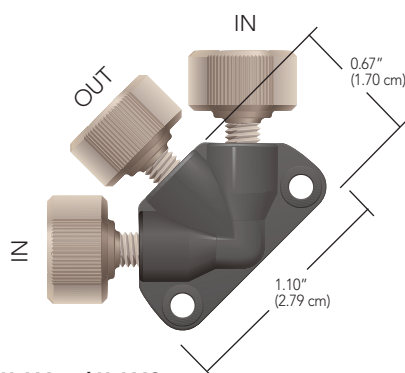
Part No.	Description	Threads	Includes	Thru-hole	Swept Volume	Pressure Rating
STATIC MIXING TEE						
★ U-466	PEEK Static Mixing Tee for 1/16" OD Tubing, 10 µm UHMWPE Frit	10-32 Coned	(3) F-300	0.020" (0.50 mm)	2.2 µL	5,000 psi (345 bar)
U-466S	PEEK Static Mixing Tee for 1/16" OD Tubing, 10 µm SST Frit	10-32 Coned	(3) F-300	0.020" (0.50 mm)	2.2 µL	5,000 psi (345 bar)
PRESSURE GAUGE TEE						
U-433	Stainless Steel Pressure Gauge Tee for 1/16" OD Tubing	10-32 Coned	(2) U-400, (2) U-401	0.040" (1.00 mm)	1.2 µL	10,000 psi (690 bar)

Static Mixing Tees

- ▶ PEEK™ body with two-piece fingertight fittings
- ▶ Low swept volume

Upchurch Scientific® Static Mixing Tees are ideal for microbore or analytical gradient HPLC. They have a low swept volume of 2.2 µL (includes frit volume) and are designed for flow rates of 0.5 to 3 mL/min and a maximum pressure of 5,000 psi (345 bar). The back pressure caused by the tee is typically only 10 to 20 psi (0.7 to 1.4 bar) at these flow rates. The thru-holes are 0.020" (0.50 mm) and the center port features a 10 µm UHMWPE or stainless steel frit that aids mixing.

Please Note: Turbulent mixing of solvents often increases outgassing. To maintain a bubble-free fluid pathway, we recommend solvent degassing when using this product (see the Systec® Vacuum Degassing Systems on pages 177–178).



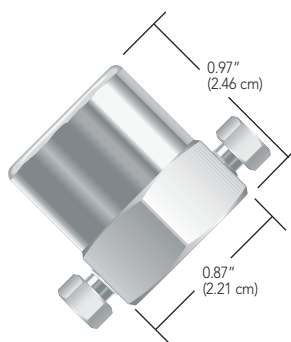
**U-466 and U-466S
Static Mixing Tees**
with F-300 Fingertight Fittings
for 1/16" OD tubing

Pressure Gauge Tee

- ▶ Complete with stainless steel fittings

Many HPLC systems have pumps that provide a digital readout of the inline system pressure. However, a number of systems do not, creating the need for a gauge along your 1/16" OD tubing pathway to monitor pressure. The Upchurch Scientific U-433 Pressure Gauge Tee is the solution. This Tee comes complete with 10-32 coned stainless steel fittings for 1/16" OD tubing and has an internal port suitable to connect to 1/4" pipe threads (NPT), standard to most gauges. *Please Note: A pressure gauge is not included with this Tee; however, they are available from a number of laboratory supply companies.*

Before installing your gauge into this Tee, simply wrap PTFE tape around the male threads of your pressure gauge four times. This will ensure a leak-free seal, even at standard HPLC operating pressures.



**U-433
Pressure Gauge Tee**
with U-400/U-401 Stainless Steel Fittings
for 1/16" OD tubing

Note

- ▶ The frit incorporated into our U-466 and U-466S Static Mixing Tees is not replaceable. If it becomes clogged, the Mixing Tee must be replaced.

Related Products

- ▶ Our Micro Static Mixing Tee can be found on the next page. It is designed for microflow applications.



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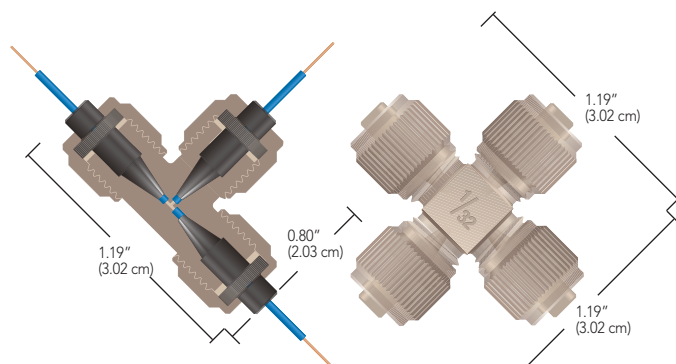
Part No.	Description	Threads	Includes	Thru-hole	Swept Volume	Pressure Rating
STATIC MIXING TEE						
★ U-466	PEEK Static Mixing Tee for 1/16" OD Tubing, 10 µm UHMWPE Frit	10-32 Coned	(3) F-300	0.020" (0.50 mm)	2.2 µL	5,000 psi (345 bar)
U-466S	PEEK Static Mixing Tee for 1/16" OD Tubing, 10 µm SST Frit	10-32 Coned	(3) F-300	0.020" (0.50 mm)	2.2 µL	5,000 psi (345 bar)
PRESSURE GAUGE TEE						
U-433	Stainless Steel Pressure Gauge Tee for 1/16" OD Tubing	10-32 Coned	(2) U-400, (2) U-401	0.040" (1.00 mm)	1.2 µL	10,000 psi (690 bar)

MicroTee and Cross for Capillary Tubing

- ▶ Direct connect 1/16", 1/32", 360 µm OD tubing, plus other capillary tubing
- ▶ Low swept volume

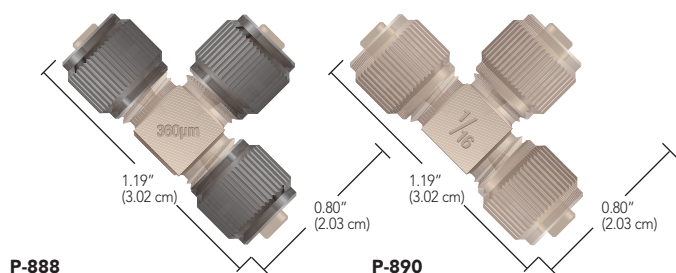
Use Upchurch Scientific® MicroTees and MicroCrosses to join capillary tubing. All of these products are made entirely of PEEK™ and have 0.006" (0.150 mm) thru-holes, with resulting swept volumes ranging from 29 to 81 nL.

Please Note: Use only the ferrules supplied with each connector — they are not interchangeable. Replacement ferrules and female nuts are available on page 18. For MicroUnions, MicroTees and MicroCrosses for UHPLC applications, see page 42.



P-775
MicroTee for MicroTight® Tubing Sleeves
0.006" thru-holes
with fittings included
(tubing sleeves not included)

P-887
MicroCross
for 1/32" OD tubing
0.006" thru-holes
with fittings included



P-888
MicroTee
for 360 µm OD tubing
0.006" thru-holes
with fittings included

P-890
MicroCross
for 1/16" OD tubing
0.006" thru-holes
with fittings included

Application Note

Several researchers use our PEEK MicroTee to introduce ionizing voltage to their fluid stream just prior to a Mass Spectrometer¹. MicroTees are well suited for this application due to advantageous internal geometry and PEEK polymer's electrical resistance. The materials required for this setup are as follows: one gold or platinum conducting wire, one P-775 or P-875 MicroTee (this page), one MicroTight Tubing Sleeve (page 19) for the conducting wire (as needed to accommodate wire diameter), and at least two more MicroTight Tubing Sleeves (page 19) to connect your capillary tubing.

Connect the wire to the center port of the MicroTee. First, thread your wire through the appropriate tubing sleeve, if necessary, with the wire extending beyond both ends of the sleeve. Slip the female nut included with the MicroTee over the wire or sleeved wire, followed by the ferrule — ensuring the wire (and its sleeve) extends well past the end of the ferrule tip. Align the tip of the wire with the thru-hole of the MicroTee and gently insert the wire until it bottoms out. Now finger tighten the female nut into place. Attach your flow path tubing to the MicroTee's two other available ports, following the instructions provided with the MicroTee.

Begin fluid flow through the tee and apply voltage to the conducting wire lead. This setup typically provides effective electrospray ionization in applications having a flow rate of 100 µL/min or greater.

¹ One such paper describing pioneering electrospray work: **Protein Identification at the Low Femtomole Level from Silver-Stained Gels Using a New Fritless Electrospray Interface for Liquid Chromatography-Microspray and Nanospray Mass Spectrometry.** Christine L. Gatlin, Gerd R. Kleemann, Lara G. Hays, Andrew J. Link, John R. Yates III (1998) *Analytical Biochemistry* 263, 93-101.

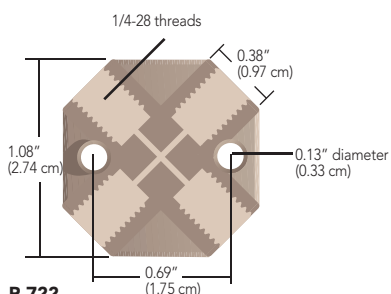
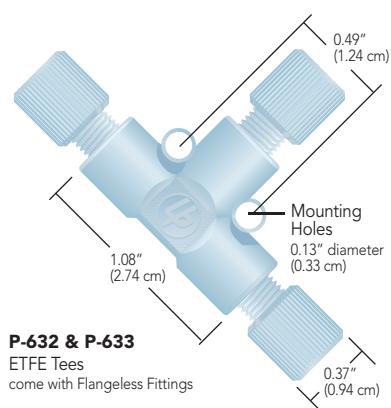


Top Seller SEE STARRED PRODUCTS

Part No.	Description	Threads	Includes	Thru-hole	Swept Volume	Pressure Rating
MICROTEE, MICROCROSS AND MICROELBOW						
★ P-775	PEEK MicroTee for MicroTight Sleeves	5/16-24 Coned	(3) F-172, (3) P-416	0.006" (0.150 mm)	29 nL	4,000 psi (276 bar)
★ P-777	PEEK MicroCross for MicroTight Sleeves	5/16-24 Coned	(4) F-172, (4) P-416	0.006" (0.150 mm)	38 nL	4,000 psi (276 bar)
P-875	PEEK MicroTee with Mounting Hole, for MicroTight Sleeves	5/16-24 Coned	(3) F-172, (3) P-416	0.006" (0.150 mm)	29 nL	4,000 psi (276 bar)
★ P-885	PEEK MicroTee for 1/32" OD Tubing	5/16-24 Coned	(3) F-112, (3) P-416	0.006" (0.150 mm)	29 nL	5,000 psi (345 bar)
P-887	PEEK MicroCross for 1/32" OD Tubing	5/16-24 Coned	(4) F-112, (4) P-416	0.006" (0.150 mm)	38 nL	5,000 psi (345 bar)
★ P-888	PEEK MicroTee for 360 µm OD Tubing	5/16-24 Coned	(3) F-152, (3) P-416BLK	0.006" (0.150 mm)	29 nL	5,000 psi (345 bar)
P-889	PEEK MicroCross for 360 µm OD Tubing	5/16-24 Coned	(4) F-152, (4) P-416BLK	0.006" (0.150 mm)	38 nL	5,000 psi (345 bar)
★ P-890	PEEK MicroTee for 1/16" OD Tubing	5/16-24 Coned	(3) F-132, (3) P-416	0.006" (0.150 mm)	58 nL	5,000 psi (345 bar)
P-891	PEEK MicroCross for 1/16" OD Tubing	5/16-24 Coned	(4) F-132, (4) P-416	0.006" (0.150 mm)	81 nL	5,000 psi (345 bar)

Tees and Crosses

Upchurch Scientific® Tees and Crosses manufactured by IDEX Health & Science are available in two inert polymers and can handle pressures to 1,000 psi (69 bar). Each is designed with handy mounting holes. All ETFE Tees and Crosses ship complete with 1/4-28 PFA Flangeless nuts and ETFE ferrules, while their PEEK™ polymer counterparts ship with 1/4-28 PEEK nuts and ETFE ferrules. Replacement fittings are located on pages 25 and 26.



P-722
PEEK Cross
comes with Flangeless Fittings



Note

- To order just the body of one of our tees and crosses without fittings, simply add a '-01' to the part number – e.g., P-632-01.

Related Products

- Seal off unused ports with any of our 1/4-28 flat-bottom plugs found on page 32.
- To use the PEEK polymer versions of our Tees and Crosses in higher pressure applications, simply replace the provided fittings with Super Flangeless™ Nuts and Ferrules, found on pages 21 – 23.
- High Pressure Tees, Crosses and a 7-Port Manifold (all with 10-32 threaded ports) are on page 43.



Top Seller SEE STARRED PRODUCTS

Part No.	Description	Threads	Includes:	Thru-hole	Swept Volume	Pressure Rating
TEES AND CROSSES						
★ P-632	ETFE Tee for 1/16" OD Tubing	1/4-28 Flat-Bottom	(3) P-245, (3) P-200N	0.020" (0.50 mm)	2.9 µL	1,000 psi (69 bar)
★ P-633	ETFE Tee for 1/8" OD Tubing	1/4-28 Flat-Bottom	(3) P-345, (3) P-300N	0.050" (1.25 mm)	17.5 µL	500 psi (34 bar)
P-634	ETFE Cross for 1/16" OD Tubing	1/4-28 Flat-Bottom	(4) P-245, (4) P-200N	0.020" (0.50 mm)	3.8 µL	1,000 psi (69 bar)
P-635	ETFE Cross for 1/8" OD Tubing	1/4-28 Flat-Bottom	(4) P-345, (4) P-300N	0.050" (1.25 mm)	22.8 µL	500 psi (34 bar)
★ P-712	PEEK Tee for 1/16" OD Tubing	1/4-28 Flat-Bottom	(3) XP-235	0.020" (0.50 mm)	2.9 µL	1,000 psi (69 bar)
★ P-713	PEEK Tee for 1/8" OD Tubing	1/4-28 Flat-Bottom	(3) XP-335	0.050" (1.25 mm)	17.5 µL	500 psi (34 bar)
★ P-714	PEEK Tee for 1/16" OD Tubing	1/4-28 Flat-Bottom	(3) XP-235	0.040" (1.00 mm)	11.4 µL	1,000 psi (69 bar)
P-722	PEEK Cross for 1/16" OD Tubing	1/4-28 Flat-Bottom	(4) XP-235	0.020" (0.50 mm)	3.8 µL	1,000 psi (69 bar)
P-723	PEEK Cross for 1/8" OD Tubing	1/4-28 Flat-Bottom	(4) XP-335	0.050" (1.25 mm)	22.8 µL	500 psi (34 bar)

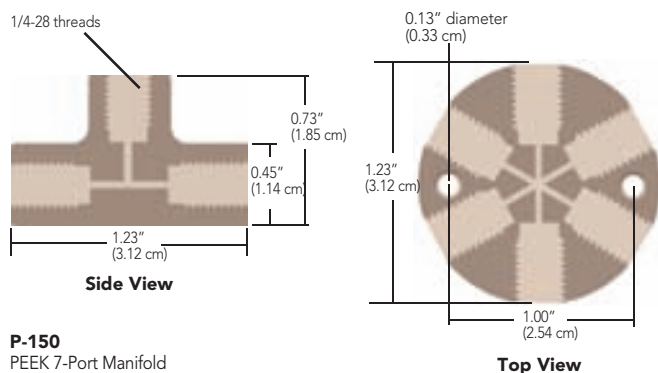
Manifolds

Choose a 5, 6, 7 or 9 Port Manifold to combine several streams into one, or split one fluid stream into several. Each PEEK™ manifold comes complete with 1/4-28 Super Flangeless™ Fittings for either 1/16" or 1/8" OD tubing, with pressure ratings of 2,000 psi (138 bar) and 500 psi (34 bar), respectively.

Bulkhead mountable 6-Port versions are available, and come with a stainless steel nut and lock washer to hold them in place. These manifolds have 1/2-20 external threads, requiring a 1/2" diameter hole to mount. The recommended torque limit while mounting these products is 15 in-lbs.

A few useful applications include:

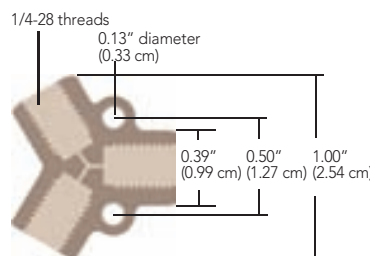
- ▶ Multiport mixing chamber
- ▶ Gas sparging splitting union
- ▶ Sample injection onto multi-well plates or a multiple direction flow path union



Y Connectors

Upchurch Scientific® PEEK Y Connectors are designed to split a stream or join two streams together, just like a tee. However, the configuration of a tee can lead to turbulent flow and solvent outgassing, which increases baseline noise and reduces sensitivity. The geometry of a Y connector creates much less turbulence and thus can improve analytical results.

All of these Y Connectors use 1/4-28 Flangeless fittings, except P-515 which uses 5/16-24 fittings.



P-512
PEEK Y
comes with Flangeless Fittings

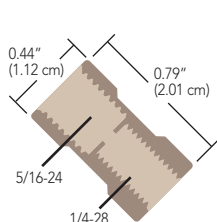


Top Seller SEE STARRED PRODUCTS

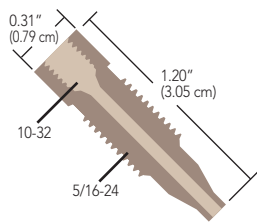
Part No.	Description	Threads	Includes	Thru-hole	Swept Volume	Pressure Rating
MANIFOLDS						
Standard						
★ P-150	PEEK 7-Port Manifold for 1/16" OD Tubing	1/4-28 FB	(7) P-255, (7) P-250	0.040" (1.00 mm)	42.0 µL	1,000 psi (69 bar)
P-151	PEEK 7-Port Manifold for 1/8" OD Tubing	1/4-28 FB	(7) P-331, (7) P-359	0.062" (1.60 mm)	83.0 µL	500 psi (34 bar)
P-152	PEEK 6-Port Manifold for 1/16" OD Tubing	1/4-28 FB	(6) P-255, (6) P-250	0.040" (1.00 mm)	26.8 µL	1,000 psi (69 bar)
P-153	PEEK 6-Port Manifold for 1/8" OD Tubing	1/4-28 FB	(6) P-331, (6) P-359	0.062" (1.60 mm)	62.3 µL	500 psi (34 bar)
P-154	PEEK 5-Port Manifold for 1/16" OD Tubing	1/4-28 FB	(5) P-255, (5) P-250	0.040" (1.00 mm)	22.3 µL	1,000 psi (69 bar)
P-155	PEEK 5-Port Manifold for 1/8" OD Tubing	1/4-28 FB	(5) P-331, (5) P-359	0.062" (1.60 mm)	53.8 µL	500 psi (34 bar)
★ P-190	PEEK 9-Port Manifold for 1/8" OD Tubing	1/4-28 FB	(9) P-331, (9) P-359	0.062" (1.60 mm)	160 µL	500 psi (34 bar)
P-191	PEEK 9-Port Manifold for 1/16" OD Tubing	1/4-28 FB	(9) P-255, (9) P-250	0.040" (1.00 mm)	139 µL	1,000 psi (69 bar)
Bulkhead						
P-156	PEEK 6-Port Manifold for 1/16" OD Tubing	1/4-28 FB	(6) P-255, (6) P-250, (1) SST Nut and Lock Washer	0.040" (1.00 mm)	31.3 µL	1,000 psi (69 bar)
P-157	PEEK 6-Port Manifold for 1/8" OD Tubing	1/4-28 FB	(6) P-331, (6) P-359, (1) SST Nut and Lock Washer	0.062" (1.60 mm)	73.2 µL	500 psi (34 bar)
Y CONNECTORS						
★ P-512	PEEK Y for 1/16" OD Tubing	1/4-28 FB	(3) XP-235	0.020" (0.50 mm)	1.7 µL	1,000 psi (69 bar)
P-513	PEEK Y for 1/8" OD Tubing	1/4-28 FB	(3) XP-335	0.040" (1.00 mm)	6.0 µL	500 psi (34 bar)
★ P-514	PEEK Y for 1/8" OD Tubing	1/4-28 FB	(3) XP-335	0.060" (1.50 mm)	13.6 µL	500 psi (34 bar)
P-515	PEEK Y for 3/16" OD Tubing	5/16-24 FB	(3) XP-132	0.125" (3.20 mm)	47.7 µL	500 psi (34 bar)

FB = Flat-Bottom

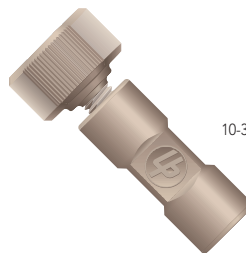
English Threaded Adapters



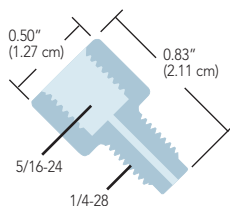
P-135
0.080" (2.05 mm) thru-hole



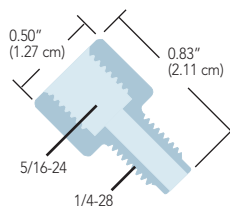
6000-076
0.066" (1.70 mm) thru-hole



P-627
0.020" (0.50 mm) thru-hole
Includes (1) F-300 for 1/16" OD tubing



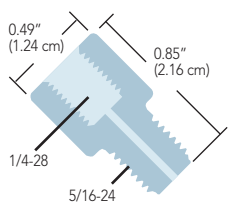
P-674
0.040" (1.00 mm) thru-hole



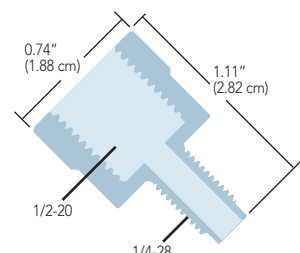
P-681
0.125" (3.20 mm) thru-hole



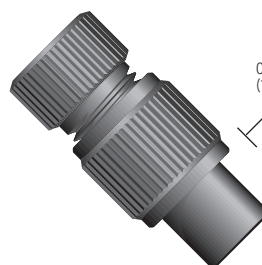
1583
0.040" (1.00 mm) thru-hole
Includes (1) U-400/U-401 for 1/16" OD tubing



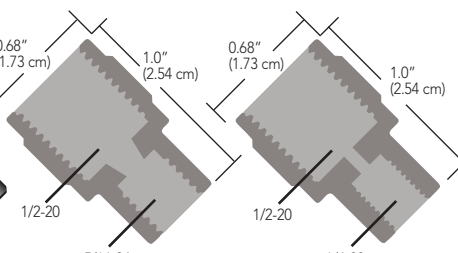
P-718
0.040" (1.00 mm) thru-hole



P-684
0.130" (3.30 mm) thru-hole



U-659
Tapered thru-hole
Includes (1) U-650/U-655 for 1/4" OD tubing



U-665
0.063" (1.60 mm) thru-hole
Includes (1) U-650/U-655 for 1/4" OD tubing



Top Seller SEE STARRED PRODUCTS

Related Products

- ▶ Please refer to our Connections Reference Chart on page 35 for assistance with choosing the right product for your needs.
- ▶ Use the Rheodyne® 6000-076 Adapter to connect 1/16" OD tubing to the Rheodyne Preparative-Scale Injector Valve (pages 131 – 133).

Part No.	Description	Includes	Thru-hole	Swept Volume	Pressure Rating
ENGLISH THREADED ADAPTERS					
1583	SST Adapter, 10-32 C, F to 1/4-28 FB, F	(1) U-400, (1) U-401	0.040" (1.00 mm)	0.60 µL	*
6000-076	PEEK™ Adapter, 5/16-24 C, M to 10-32 C, F	N/A	0.066" (1.70 mm)	49.8 µL	3,000 psi (207 bar)
P-135	PEEK Adapter, 5/16-24 FB, F to 1/4-28 F	N/A	0.080" (2.05 mm)	4.1 µL	1,000 psi (69 bar)
★ P-627	PEEK Adapter, 10-32 C, F to 1/4-28 FB, F	(1) F-300	0.020" (0.50 mm)	0.30 µL	1,000 psi (69 bar)
P-649	PCTFE Adapter, 5/16-24 FB, F to 1/4-28 FB, M	N/A	0.063" (1.60 mm)	24.5 µL	1,000 psi (69 bar)
P-674	PCTFE Adapter, 5/16-24 FB, F to 1/4-28 FB, M	N/A	0.040" (1.00 mm)	9.9 µL	1,000 psi (69 bar)
★ P-681	PCTFE Adapter, 5/16-24 FB, F to 1/4-28 FB, M	N/A	0.125" (3.20 mm)	96.6 µL	1,000 psi (69 bar)
P-684	PCTFE Adapter, 1/2-20 FB, F to 1/4-28 FB, M	N/A	0.130" (3.30 mm)	121.7 µL	250 psi (17 bar)
P-718	PCTFE Adapter, 5/16-24 FB, M to 1/4-28 FB, F	N/A	0.040" (1.00 mm)	10.3 µL	1,000 psi (69 bar)
U-659	PEEK Adapter, 5/16-24 FB, F to 1/2-20 FB, F	(1) XU-655	Tapered**	42.0 µL	250 psi (17 bar)
U-665	PEEK Adapter, 1/2-20 FB, F to 1/4-28 FB, F	(1) XU-655	0.063" (1.60 mm)	6.6 µL	250 psi (17 bar)

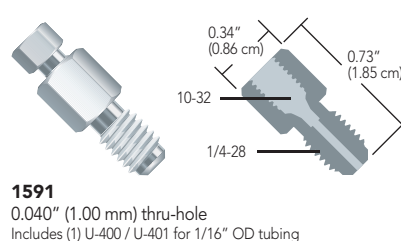
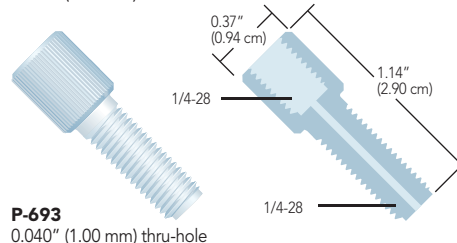
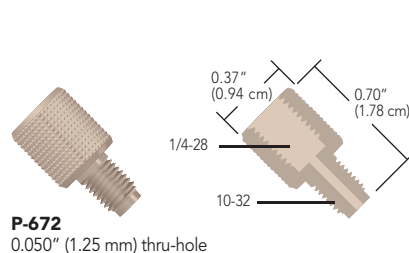
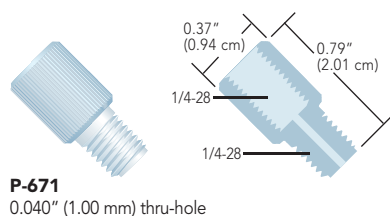
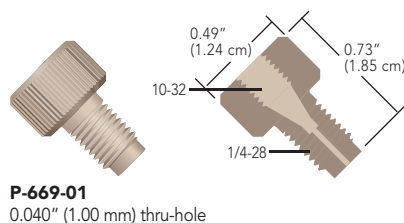
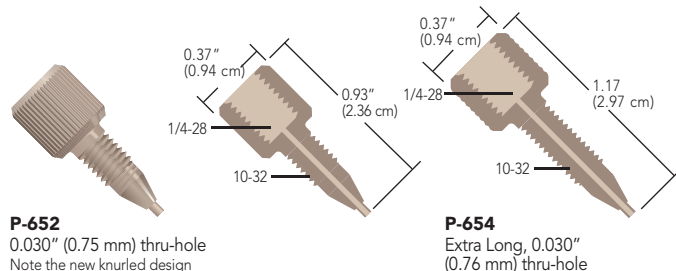
F = Female (internal) threads; M = Male (external) threads; C = Coned; FB = Flat-Bottom

*The pressure rating of this stainless steel adapter exceeds the pressure holding ability of the fittings and tubing used with it.

**Thru-hole tapers from 0.188" (4.80 mm) to 0.125" (3.20 mm)

English Threaded Adapters

Female to Male 10-32 to 1/4-28 Adapters



Note

- ▶ When using an adapter with male (external) threads, we recommend you first attach the adapter body into the receiving port, and then connect your tubing and fitting into the head of the adapter body.

Related Products

- ▶ You may not need an adapter to connect 1/16" OD tubing into your flat-bottom port. A less expensive alternative is to use a Flangeless Nut and Ferrule starting on page 24 or a Super Flangeless™ Nut and Ferrule starting on page 21. Our Connections Reference chart on page 35 is also a good resource to consult when making connections.



Top Seller SEE STARRED PRODUCTS

Application Note

Here are application ideas using two of our popular adapters:

- ▶ Many injection valves used in HPLC systems have 10-32 coned ports designed to accept 1/16" OD tubing. However, this may be a problem if large injection volumes are required (in excess of 10 mL). The most popular loops for large volume samples are made from 1/8" OD tubing, making it impossible to connect these larger volume loops to your injection valve. The solution: use our P-654 Adapter and the appropriate fittings for your sample loop. This set-up allows connection of 1/8" OD sample loop leads to your injection valve.
- ▶ Another potential application is connecting tubing to low-pressure solenoid valves with 1/4-28 flat-bottom ports. Most low-pressure valves of this type have very shallow threaded ports, which typically preclude the use of our Flangeless Fittings. However, by first threading our P-671 Adapter into the valve port(s), you can effectively use standard 1/4-28 fittings to connect your tubing into the backside of the adapter body. This also saves "wear and tear" on the threads in the valve ports.

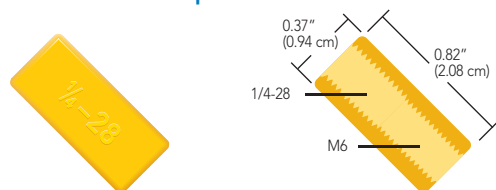
Part No.	Description	Includes	Thru-hole	Swept Volume	Pressure Rating
ENGLISH THREADED ADAPTERS					
★ P-652	PEEK™ Adapter, 1/4-28 FB, F to 10-32 C, M	N/A	0.030" (0.75 mm)	6.7 µL	1,000 psi (69 bar)
★ P-654	PEEK Adapter, 1/4-28 FB, F to 10-32 C, M, Extra Long	N/A	0.030" (0.75 mm)	9.5 µL	1,000 psi (69 bar)
★ P-669-01	PEEK Adapter, 10-32 C, F to 1/4-28 FB, M	N/A	0.040" (1.00 mm)	6.6 µL	1,000 psi (69 bar)
P-671	PTFE Adapter, 1/4-28 FB, F to 1/4-28 FB, M	N/A	0.040" (1.00 mm)	8.0 µL	1,000 psi (69 bar)
P-672	PEEK Adapter, 1/4-28 FB, F to 10-32 FB, M	N/A	0.050" (1.25 mm)	11.4 µL	1,000 psi (69 bar)
P-693	PTFE Adapter, 1/4-28 FB, F to 1/4-28 FB, M, Long	N/A	0.040" (1.00 mm)	16.27 µL	1,000 psi (69 bar)
1591	SST Adapter, 10-32 C, F to 1/4-28 FB, M	(1) U-400, (1) U-401	0.040" (1.00 mm)	6.0 µL	*

F = Female (internal) threads; M = Male (external) threads; XL = extra long; C = Coned; FB = Flat-Bottom

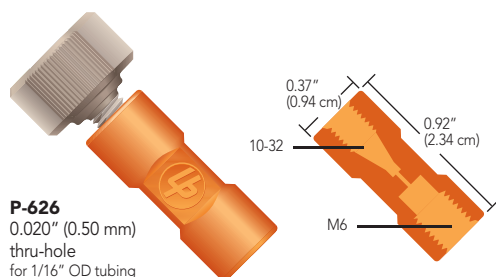
* The pressure ratings of these adapters exceed the pressure holding ability of the fittings and tubing used with them.

Metric Threaded Adapters

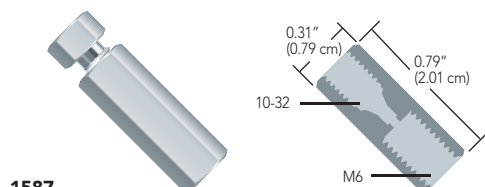
Female M6 Adapters



P-621

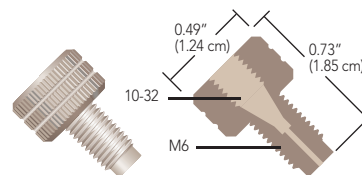


P-626
0.020" (0.50 mm) thru-hole
for 1/16" OD tubing Includes (1) F-300

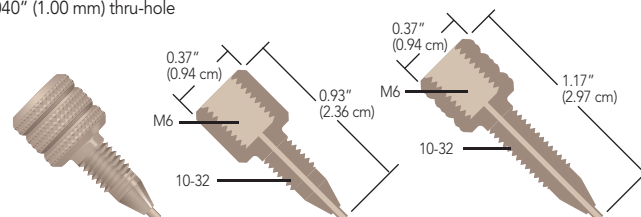


1587
0.040" (1.00 mm) thru-hole
for 1/16" OD tubing Includes (1) U-400 / U-401

Female to Male M6 Adapters

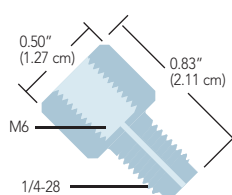


P-920-01
0.040" (1.00 mm) thru-hole

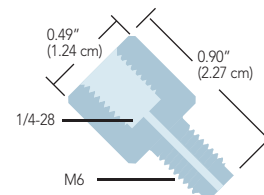


P-650
0.030" (0.75 mm) thru-hole

P-653
Extra Long
0.030" (0.75 mm) thru-hole



P-670
0.030" (0.75 mm) thru-hole



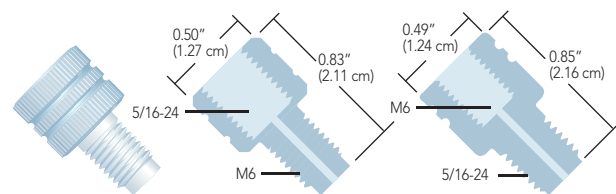
NEW!
P-694
0.040" (1.00 mm) thru-hole

Related Products

- For an alternative to the Female M6 Adapters presented in the left column of this page, try a P-602 or P-622 Low Pressure Metric Union from page 40, along with the appropriate Metric Flangeless Fittings on page 27.
- To direct connect your tubing into a flat-bottom port, find the appropriate Flangeless or Super Flangeless™ Fittings on pages 24 – 26 and 21 – 23 respectively.
- Need metric fittings for your connections? See page 27.



Top Seller SEE STARRED PRODUCTS



P-673
0.040" (1.00 mm) thru-hole

P-724
0.040" (1.00 mm) thru-hole

Part No.	Description	Includes	Thru-hole	Swept Volume	Pressure Rating
METRIC M6 THREADED ADAPTERS					
Female M6 Adapters					
P-621	ETFE Adapter, 1/4-28 FB, F to M6 FB, F	N/A	N/A	N/A	1,000 psi (69 bar)
P-626	PEEK™ Adapter, 10-32 C, F to M6 FB, F	(1) F-300	0.020" (0.50 mm)	0.3 µL	1,000 psi (69 bar)
1587	SST Adapter, 10-32 C, F to M6 FB, F	(1) U-400, (1) U-401	0.040" (1.00 mm)	0.6 µL	*
Female to Male M6 Adapters					
★ P-650	PEEK Adapter, M6 FB, F to 10-32 C, M Standard	N/A	0.030" (0.75 mm)	6.7 µL	1,000 psi (69 bar)
P-651	PEEK Adapter, M6 FB, F to 10-32 C, M Waters®-compatible	N/A	0.030" (0.75 mm)	7.2 µL	1,000 psi (69 bar)
P-653	PEEK Adapter, M6 FB, F to 10-32 C, M Extra Long	N/A	0.030" (0.75 mm)	9.5 µL	1,000 psi (69 bar)
P-670	PCTFE Adapter, M6 FB, F to 1/4-28 FB, M	N/A	0.030" (0.75 mm)	2.6 µL	1,000 psi (69 bar)
P-673	PCTFE Adapter, 5/16-24 FB, F to M6 FB, M	N/A	0.040" (1.00 mm)	9.9 µL	1,000 psi (69 bar)
NEW! P-694	PCTFE Adapter, 1/4-28 FB, F to M6 FB, M	N/A	0.040" (1.00 mm)	11.3 µL	1,000 psi (69 bar)
P-724	PCTFE Adapter, M6 FB, F to 5/16-24 FB, M	N/A	0.040" (1.00 mm)	10.3 µL	1,000 psi (69 bar)
P-920-01	PEEK Adapter, 10-32 C, F to M6 FB, M	N/A	0.040" (1.00 mm)	8.0 µL	1,000 psi (69 bar)

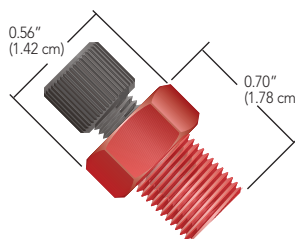
F = Female (internal) threads; M = Male (external) threads; C = Coned; FB = Flat-Bottom
* The pressure rating of this adapter exceeds the pressure holding ability of the fittings and tubing used with it.

External National Pipe Thread Adapters

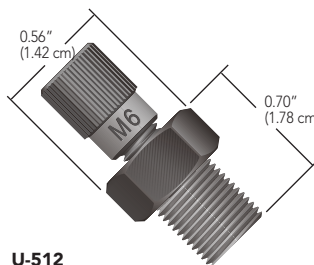
These adapters make connections to female 1/8" and 1/4" National Pipe Thread (NPT) ports.

Manufactured from PEEK™ polymer by IDEX Health & Science, Upchurch Scientific® NPT Adapters are durable and chemically resistant. We provide a variety of female threads, as well as a male threaded version, suitable for most low pressure applications.

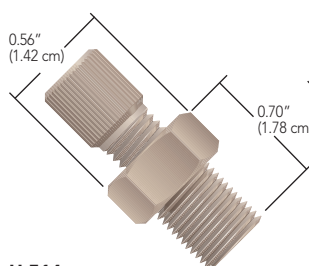
Please Note: Wrap the threads on the NPT side of these adapters with thread seal tape (plumber's tape) to ensure a leak-free seal.



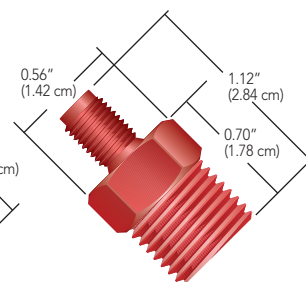
U-510
1/8" NPT to 1/4-28 Flat-Bottom
Female Adapter
for 1/8" OD tubing
Includes (1) XP-308 Fitting



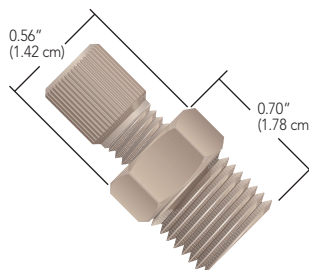
U-512
1/8" NPT to M6 Flat-Bottom
Female Adapter
for 1/8" OD tubing
Includes (1) P-300/P-307 Fittings



U-514
1/8" NPT to 5/16-24 Flat-Bottom
Female Adapter
for 3/16" OD tubing
Includes (1) XP-132 Fitting



U-501
1/4" NPT to 1/4-28 Flat-Bottom
Male Adapter



U-503
1/4" NPT to 5/16-24 Flat-Bottom
Female Adapter
for 1/8" OD tubing
Includes (1) P-360/P-131 Fittings

Application Note

Our U-500 and U-510 NPT Adapters are great for attaching 1/8" OD fluoropolymer sparging lines to sparging gas tank regulating valves. Simply thread the appropriately-sized NPT Adapter into the valve's receiving port and then attach your sparging tubing to the adapter body using the fittings provided.

Related Products

Replacement fittings for these adapters are located on the pages indicated below:

	Page(s)
1/4-28 for 1/8" OD tubing	26
M6 for 1/8" OD tubing	26, 27
5/16-24 for 1/8" OD tubing	23, 30
5/16-24 for 3/16" OD tubing	30

Other tubing/fitting combinations are available. For more information, please contact your local Distributor or IDEX Health & Science directly.



Top Seller SEE STARRED PRODUCTS

Part No.	Description	Color	Tubing OD	Includes	Thru-hole	Swept Volume	Pressure Rating
1/8" MALE NPT ADAPTERS							
★ U-510	PEEK 1/8" NPT, M to 1/4-28 FB, F Adapter	Red	1/8"	(1) XP-308	0.062" (1.60 mm)	17.3 µL	500 psi (34 bar)
U-511	PEEK 1/8" NPT, M to 1/4-28 FB, M Adapter	Red	N/A	N/A	0.062" (1.60 mm)	40.2 µL	500 psi (34 bar)
U-512	PEEK 1/8" NPT, M to M6 FB, F Adapter	Black	1/8"	(1) P-307, (1) P-300	0.062" (1.60 mm)	17.3 µL	500 psi (34 bar)
U-513	PEEK 1/8" NPT, M to 5/16-24 FB, F Adapter	Natural	1/8"	(1) P-131, (1) P-360	0.062" (1.60 mm)	17.3 µL	500 psi (34 bar)
U-514	PEEK 1/8" NPT, M to 5/16-24 FB, F Adapter	Natural	3/16"	(1) XP-132	0.125" (3.2 mm)	70.4 µL	500 psi (34 bar)
1/4" MALE NPT ADAPTERS							
U-500	PEEK 1/4" NPT, M to 1/4-28 FB, F Adapter	Red	1/8"	(1) XP-308	0.062" (1.60 mm)	17.3 µL	500 psi (34 bar)
U-501	PEEK 1/4" NPT, M to 1/4-28 FB, M Adapter	Red	N/A	N/A	0.062" (1.60 mm)	40.2 µL	500 psi (34 bar)
U-502	PEEK 1/4" NPT, M to M6 FB, F Adapter	Black	1/8"	(1) P-307, (1) P-300	0.062" (1.60 mm)	17.3 µL	500 psi (34 bar)
U-503	PEEK 1/4" NPT, M to 5/16-24 FB, F Adapter	Natural	1/8"	(1) P-131, (1) P-360	0.062" (1.60 mm)	17.3 µL	500 psi (34 bar)
U-504	PEEK 1/4" NPT, M to 5/16-24 FB, F Adapter	Natural	3/16"	(1) XP-132	0.125" (3.2 mm)	70.4 µL	500 psi (34 bar)

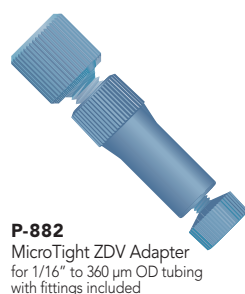
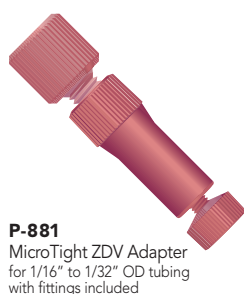
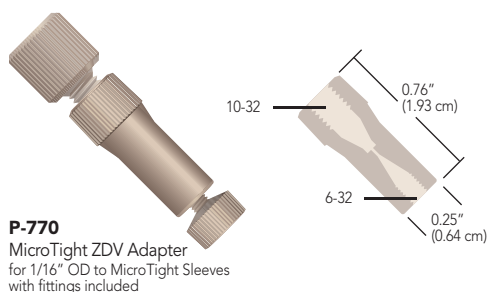
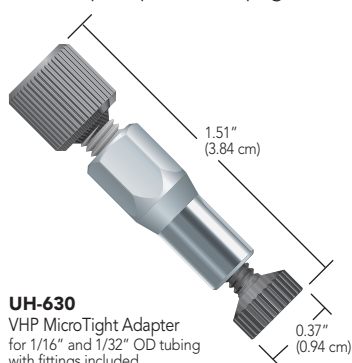
F = Female (internal) threads; M = Male (external) threads; FB = Flat-Bottom

MicroTight Adapters

- Convenient adapters for common 1/16" OD to capillary tubing
- Direct connect to 1/32" OD or 360 µm OD tubing options available
- VHP adapter pressure rated to 12,000 psi (828 bar)

Create a true zero dead volume (ZDV) connection between 1/16" OD tubing and capillary tubing with these Upchurch Scientific® MicroTight Adapters.

For Very High Pressure applications – the UH-630 will connect 1/16" OD to 1/32" OD tubing in an inline true ZDV connection with the ability to withstand 12,000 psi (828 bar)! The materials of construction also allow this product to be used up to 200 °C, which reduces the pressure rating to 8,000 psi (552 bar). For more information on the fittings used with the VHP adapter, please see page 9.



Related Products

- Replacement 6-32 fittings are on page 55.
- Replacement F-120 style nuts are on page 11 (when ordering, replace the "x" with an "R" or "B" to order either red or blue fittings).
- Use this list to find micro flow products outside this chapter.

	Page
360 µm, 510 µm (0.020") and 1/32" OD PEEK Tubing	65
360 µm OD Fused Silica Tubing	65
1/16" and 1/32" OD PEEKsil™ Tubing	66
1/32" OD FEP Tubing	71
360 µm OD High Purity PFA Tubing	72
510 µm (0.020") and 1/32" OD Stainless Steel Tubing	68
Polymer Capillary and Fused Silica Tubing Cutters	74
Rheodyne® MX Series II™ Micro-Scale Injector and Switching Valves	126
Rheodyne Manual Micro-Scale Injectors	129
Micro Injection Port Adapters	140
Micro-Splitter Valves	146
Micro-Metering Valves	147
Microbore Guard Column	184
Ultra-Low Volume Back-Pressure Regulators	154
Nonmetallic 10-32 Micro-Volume Inline Check Valve	149
Ismatec® Peristaltic Tubing Pumps	94

Note

Use only the style of 6-32 threaded fitting supplied with each adapter — they are not interchangeable.



Top Seller SEE STARRED PRODUCTS

Part No.	Description	Threads	Includes	Color	Swept Volume	Pressure Rating
MICROTIGHT ADAPTERS						
★ P-770	PEEK™ Micro Adapter, True ZDV, for 1/16" OD Tubing to MicroTight Tubing Sleeve	10-32 C to 6-32 C	(1) F-120, (1) F-125, (1) P-554	Natural	N/A	4,000 psi (276 bar)
P-881	PEEK Micro Adapter, True ZDV, for 1/16" to 1/32" OD Tubing	10-32 C to 6-32 C	(1) F-120R, (1) F-126S, (1) P-554	Red	N/A	5,000 psi (345 bar)
★ P-882	PEEK Micro Adapter, True ZDV, for 1/16" to 360 µm OD Tubing	10-32 C to 6-32 C	(1) F-120B, (1) F-124S, (1) P-554	Blue	N/A	5,000 psi (345 bar)
UH-630	Stainless Steel VHP Micro Adapter, for 1/16" to 1/32" OD Tubing	10-32 C to 6-32 C	(1) PK-120BLK, (1) PK-126, (1) P-554	SST/Black	N/A	12,000 psi (827 bar)
REPLACEMENT GAUGE PLUGS (TO ACHIEVE TRUE ZDV CONNECTIONS WITH THE ABOVE ADAPTERS)						
P-554	Delrin® Gauge Plug	10-32 C		White	N/A	N/A

C = Coned

NanoPort Assemblies

- For lab-on-a-chip applications
- Options to connect 360 µm, MicroTight® tubing sleeves, 1/32" OD or 1/16" OD tubing
- Wetted materials: PEEK™ and perfluoroelastomer

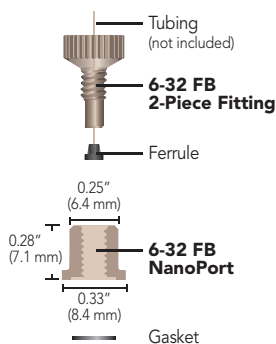
Upchurch Scientific® NanoPort Assemblies are the first commercially available products to provide consistent fluid connections for chip-based analyses. Once attached, NanoPort connections can withstand pressures to 1,000 psi (69 bar).* NanoPorts will adhere to silicon, quartz, glass and some polymers.

All NanoPort components are made of inert, biocompatible PEEK polymer (nuts and ports) and Perlast® perfluoroelastomer (ferrules and gaskets). These products bond easily to chip surfaces with the provided Preformed Adhesive Rings (see Application Note on the following page). Their unique design also prevents adhesive contamination of the fluid path. And NanoPort connections add no additional volume to the fluid path, virtually eliminating dead volume traditionally associated with chip-based fluid connections.

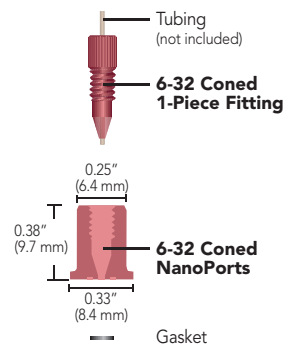
Our NanoPort Reservoir Assembly is designed for open well applications, such as CE.

**Except the N-333 NanoPort Assembly, which is rated to 500 psi (34.5 bar).*

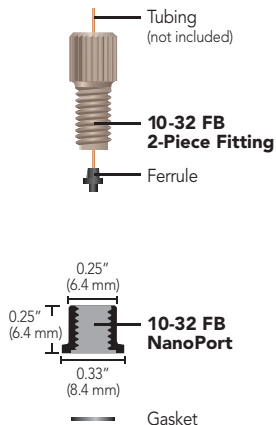
6-32 Flat-Bottom Assemblies



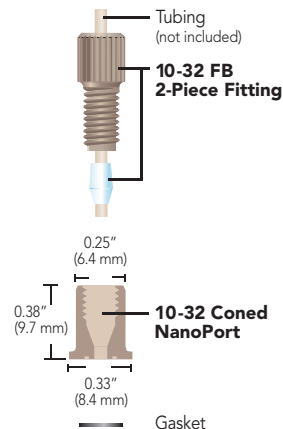
6-32 Coned Assemblies



10-32 Flat-Bottom Assemblies



10-32 Coned Assembly



Application Note

NanoPort Adhesive Cure Requirements

- Preformed Adhesive Rings (included with each order)

Cure Temperature	Cure Time
165 – 177 °C (330 – 350 °F)	1 hour

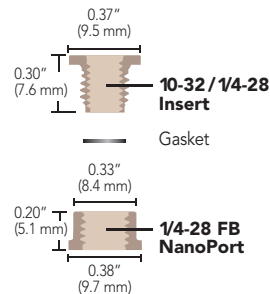
- Place clamped Ports in oven at a temperature of 165 – 177 °C (330 – 350 °F) for one hour to develop a complete bond between the Port and the substrate.
- Please contact us regarding adherence to specific polymer substrates and other adhesive options.

Please Note: For alternative epoxy adhesive options, please contact IDEX Health & Science directly.

NanoPort Reservoir Applications

- Sample reservoir
- Open wells for capillary electrophoresis
- Syringe injection or flushing/priming, using our P-604 Luer Adapter, page 56, and luer syringe (such as our B-310) on page 155

Reservoir Assembly



NanoPort Assemblies (cont.)



Note

To select the appropriate NanoPort assembly you will need to consider:

- ▶ Size of tubing you are connecting
- ▶ Dimensions of the chip hole
- ▶ Fitting style (one-piece or two-piece fittings)
- ▶ Nut head style (standard or headless nut)

Please Note: Each NanoPort Assembly includes a fitting (one- or two-piece), a NanoPort, gasket, a 2-pack of preformed adhesive rings, and a clamp for holding the port in place while the adhesive cures.



Top Seller SEE STARRED PRODUCTS

Part No.	Nut	Ferrule	For Chip Hole (dia. x depth)	For Tubing OD	Qty.
NANOPORT ASSEMBLIES					
6-32 Flat-Bottom NanoPort Assemblies					
N-121H	F-123H	N-123-04	0.04" x 0.04" (1.0 mm x 1.0 mm)	360 µm	ea.
N-121S	F-123S	N-123-04	0.04" x 0.04" (1.0 mm x 1.0 mm)	360 µm	ea.
N-122H	F-123H	N-123-05	0.04" x 0.06" (1.0 mm x 1.5 mm)	360 µm	ea.
N-122S	F-123S	N-123-05	0.04" x 0.06" (1.0 mm x 1.5 mm)	360 µm	ea.
N-123H	F-123H	N-123-03	0.04" (1.0 mm) dia. or less	360 µm	ea.
N-123S	F-123S	N-123-03	0.04" (1.0 mm) dia. or less	360 µm	ea.
6-32 Coned NanoPort Assemblies					
N-124H	F-124H	None	Up to 0.063" (1.6 mm)	360 µm	ea.
N-124S	F-124S	None	Up to 0.063" (1.6 mm)	360 µm	ea.
N-125H	F-125H	None	Up to 0.063" (1.6 mm)	70 – 520 µm ¹	ea.
N-125S	F-125	None	Up to 0.063" (1.6 mm)	70 – 520 µm ¹	ea.
N-126H	F-126H	None	Up to 0.063" (1.6 mm)	1/32"	ea.
N-126S	F-126S	None	Up to 0.063" (1.6 mm)	1/32"	ea.
10-32 Flat-Bottom NanoPort Assemblies					
N-129H	F-122H	N-123-04	0.04" x 0.04" (1.0 mm x 1.0 mm)	360 µm	ea.
10-32 Coned NanoPort Assembly					
★ N-333	F-333N	F-142N	Up to 0.063" (1.6 mm)	1/16"	ea.
NanoPort Reservoir Assembly					
N-131	80 µL Reservoir with Insert				ea.
NANOPORT REPLACEMENT PARTS					
Part No.	Description	Threads	For Chip Hole	Tubing OD	Qty.
Fittings					
F-121Hx	Headless Nuts	10-32 FB	N/A	360 µm	10-pk
F-122Hx	Headless Nuts	10-32 FB	N/A	360 µm	10-pk
F-123Hx	Headless Nuts	6-32 FB	N/A	360 µm	10-pk
F-123Sx	Standard Head Nuts	6-32 FB	N/A	360 µm	10-pk
F-124Hx	Headless Fittings	6-32 C	N/A	360 µm	10-pk
F-124Sx	Standard Head Fittings	6-32 C	N/A	360 µm	10-pk
★ F-125Hx	Headless Fittings	6-32 C	N/A	70 – 520 µm ¹	10-pk
★ F-125x	Standard Head Fittings	6-32 C	N/A	70 – 520 µm ¹	10-pk
F-126Hx	Headless Fittings	6-32 C	N/A	1/32"	10-pk
F-126Sx	Standard Head Fittings	6-32 C	N/A	1/32"	10-pk
F-333Nx	Headless Fittings	10-32 C	Up to 0.063" (1.6 mm)	1/16"	10-pk
F-142Nx	Ferrules	10-32 C	Up to 0.063" (1.6 mm)	1/16"	10-pk
★ N-123-03x	Ferrules	6-32 FB	0.04" (1.0 mm) dia. or less	360 µm	10-pk
★ N-123-04x	Ferrules	6-32, 10-32 FB	0.04" x 0.04" (1.0 mm x 1.0 mm)	360 µm	10-pk
N-123-05x	Ferrules	6-32 FB	0.04" x 0.06" (1.0 mm x 1.5 mm)	360 µm	10-pk
Gaskets					
N-123-02	Gasket, For all assemblies except 6-32 Coned Assemblies		N/A	N/A	ea.
N-124-02	Gasket, For 6-32 Coned Assemblies		N/A	N/A	ea.
Adhesives and Clamp					
N-006	Clamp		N/A	N/A	ea.
★ N-100-01	Preformed Adhesive Rings		N/A	N/A	2-pk
¹ Designed to use our MicroTight® Tubing Sleeves (page 19) to connect tubing OD sizes from 70–520 µm Abbreviation Definitions: FB = Flat-Bottom; C = Coned; N/A = Not Applicable					

¹ Designed to use our MicroTight® Tubing Sleeves (page 19) to connect tubing OD sizes from 70–520 µm
Abbreviation Definitions: FB = Flat-Bottom; C = Coned; N/A = Not Applicable

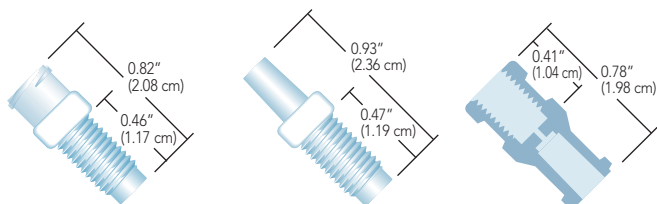
Quick Connect Luer Adapters

- Delrin®, polypropylene, ETFE or PEEK™ Versions
- Adapts luers to 1/4-28, 10-32, 5/16-24 or M6 threaded ports

These luer adapters were designed to work in a variety of applications. By connecting any male luer to any female luer, you can create your own quick connect union or adapter. Each Upchurch Scientific® Quick Connect Luer Adapter conforms to ISO requirements for medical luer taper configuration and performance (45 psi/3.1 bar).

Find fittings to connect tubing to the threaded ports of these adapters in the Fittings chapter, starting on page 4.

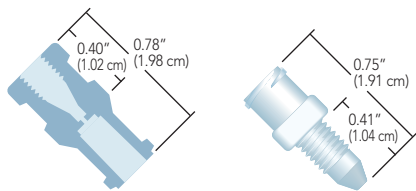
Please Note: Our Female Quick Connect Luer Adapters can be used with any of the Male Luers on this page, i.e., those with and without lock hubs.



P-604, P-618, P-624
Female Luer to 1/4-28 Male
(luer end of P-604 different than shown)

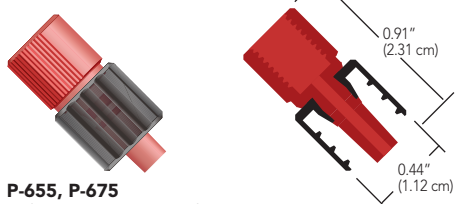
P-605, P-619, P-625
Male Luer to 1/4-28 Male

P-628
Female Luer to 1/4-28 Female

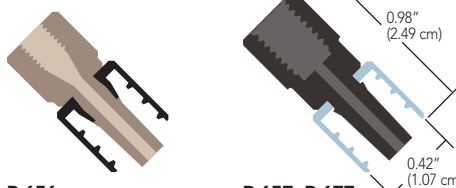


P-629, P-629BLK
Female Luer to 10-32 Female

P-642
Female Luer to 10-32 Male

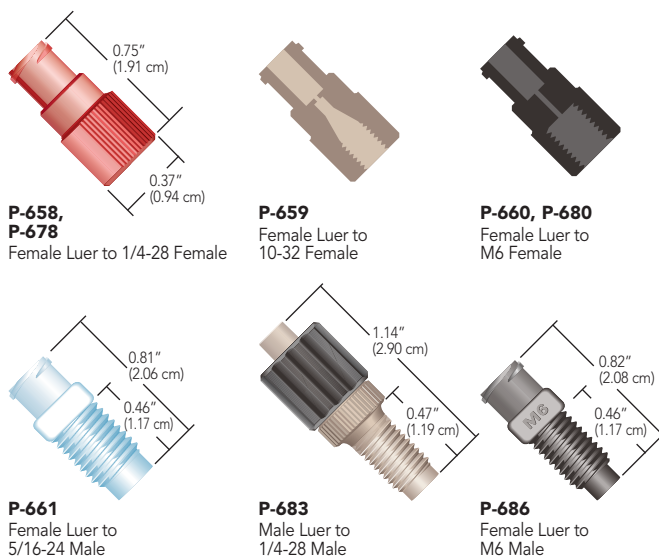


P-655, P-675
Male Luer to 1/4-28 Female



P-656
Male Luer to 10-32 Female

P-657, P-677
Male Luer to M6 Female



P-658, P-678
Female Luer to 1/4-28 Female

P-659
Female Luer to 10-32 Female

P-660, P-680
Female Luer to M6 Female

P-661
Female Luer to 5/16-24 Male

P-683
Male Luer to 1/4-28 Male

P-686
Female Luer to M6 Male

Application Note

- Our A-626 Bottle Cap Plug (page 172) can be used to plug any of the female luer adapters on this page.
- To prevent a chemical spill when disconnecting your solvent reservoir tubing from the pump, try our Quick-Stop Luer Check Valve on page 151.
- To economically prime an HPLC pump, simply remove the 10-32 fitting on the outlet check valve (standard on most models), insert a P-642 luer adapter, attach a syringe (such as our B-310) and draw the mobile phase through the pumphead.

Part No.	Description	Body Material	Lock Hub Material	Thru-hole
QUICK CONNECT LUER ADAPTERS				
P-604	F Luer to 1/4-28 FB, M	Nat. Delrin	N/A	0.05" (1.3 mm)
P-605	M Luer to 1/4-28 FB, M	Nat. Delrin	None *	0.05" (1.3 mm)
P-618	F Luer to 1/4-28 FB, M	Nat. PP	N/A	0.05" (1.3 mm)
P-619	M Luer to 1/4-28 FB, M	Nat. PP	None *	0.05" (1.3 mm)
★ P-624	F Luer to 1/4-28 FB, M	Nat. ETFE	N/A	0.05" (1.3 mm)
★ P-625	M Luer to 1/4-28 FB, M	Nat. ETFE	None *	0.05" (1.3 mm)
★ P-628	F Luer to 1/4-28 FB, F	Nat. ETFE	N/A	0.04" (1.0 mm)
P-629	F Luer to 10-32 C, F	Nat. ETFE	N/A	0.04" (1.0 mm)
P-629BLK	F Luer to 10-32 C, F	Black ETFE	N/A	0.04" (1.0 mm)
★ P-642	F Luer to 10-32 C, M	Nat. ETFE	N/A	0.05" (1.3 mm)
★ P-655	M Luer to 1/4-28 FB, F	Red PEEK	Black PEEK	0.04" (1.3 mm)
★ P-656	M Luer to 10-32 C, F	Nat. PEEK	Black PEEK	0.05" (1.3 mm)
P-657	M Luer to M6 FB, F	Black PEEK	Black PEEK	0.05" (1.3 mm)
★ P-658	F Luer to 1/4-28 FB, F	Red PEEK	N/A	0.05" (1.3 mm)
★ P-659	F Luer to 10-32 C, F	Nat. PEEK	N/A	0.05" (1.3 mm)
P-660	F Luer to M6 FB, F	Black PEEK	N/A	0.05" (1.3 mm)
P-661	F Luer to 5/16-24 FB, M	Nat. ETFE	N/A	0.05" (1.3 mm)
★ P-675	M Luer to 1/4-28 FB, F	Red ETFE	Natural PP	0.05" (1.3 mm)
P-677	M Luer to M6 FB, F	Black ETFE	Natural PP	0.05" (1.3 mm)
★ P-678	F Luer to 1/4-28 FB, F	Red ETFE	N/A	0.05" (1.3 mm)
P-680	F Luer to M6 FB, F	Black ETFE	N/A	0.05" (1.3 mm)
★ P-683	M Luer to 1/4-28 FB, M	Nat. PEEK	Black PEEK	0.04" (1.0 mm)
★ P-686	F Luer to M6 FB, M	Black ETFE	N/A	0.05" (1.3 mm)

SYRINGE WITH MALE LUER LOCK

B-310	10cc Disposable Luer-Lock Syringe For use with any Female Luer Adapter	0.05" (1.3 mm)
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F = Female (internal) threads; M = Male (external) threads; Nat. = Natural; N/A = Not Applicable; PP = Polypropylene; FB = Flat-Bottom; C = Coned
* Slip-type male luer



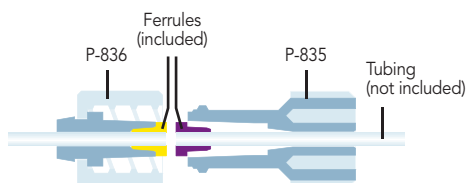
Top Seller SEE STARRED PRODUCTS

LuerTight™ Fittings

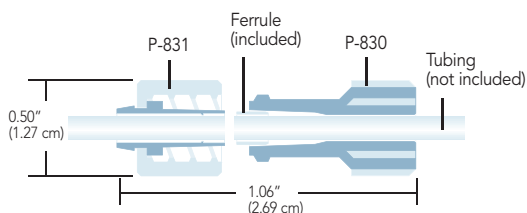
- Luer fittings for fluoropolymer tubing
- Quick disconnect and barbless
- For 1/16" and 1/8" OD tubing

Upchurch Scientific® LuerTight fittings are specifically designed to connect fluoropolymer tubing without barbs or nuts! By integrating ferrules into the luer bodies, LuerTights will reliably hold your tubing in place while giving you the convenience of a luer connection. An inline set of LuerTight fittings provides a quick and easy disconnection option. LuerTight connections are also less bulky and more economical than nut-to-luer style fittings.

The bodies of these products are manufactured from polypropylene and the ferrules, where used, are made of ETFE.



P-837
LuerTight Fittings System
for 1/16" OD tubing



P-838
LuerTight Fittings System
for 1/8" OD tubing



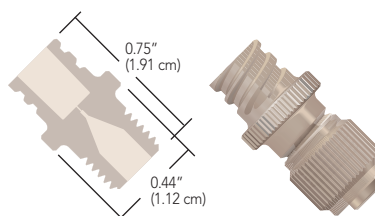
Luer-To-MicroTight® Adapter

- Easily connect 360 µm OD tubing to a syringe

The Upchurch Scientific Luer-to-Microtight Adapter is ideal for infusing sample into lab-on-a-chip devices. This product is made entirely of biocompatible PEEK™ polymer and introduces only 14 nL of additional volume to the flow path. Use it to directly connect a luer-tip syringe or other product that terminates with a standard male luer to 360 µm OD capillary tubing without tubing sleeves (see photo). MicroTight Fittings are included.



P-662 Luer-to-MicroTight Adapter, shown with a B-310 Syringe (page 155) and PEEK capillary tubing (page 65), not included.



P-662
Luer-to-MicroTight Adapter
for Luer to 360 µm OD tubing
with fittings included

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Top Seller SEE STARRED PRODUCTS

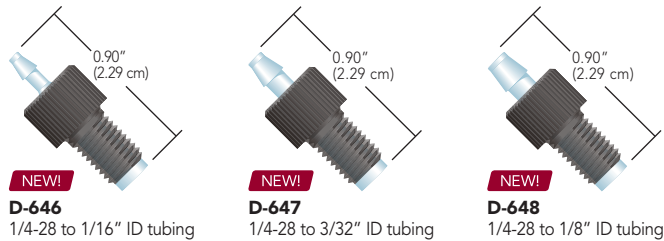
Part No.	Description	Includes	Thru-hole	Pressure Rating
LUERTIGHT FITTINGS SYSTEMS				
★ P-837	LuerTight System for 1/16" OD Tubing	(1) P-835, (1) P-836, (1) P-830T	N/A	100 psi (7 bar)
P-838	LuerTight System for 1/8" OD Tubing	(1) P-830, (1) P-831, (1) P-830T	N/A	100 psi (7 bar)
LUERTIGHT FITTING COMPONENTS				
P-830	Female Fitting for 1/8" OD Tubing	(1) Ferrule	N/A	N/A
P-830T	Set Plug to swage Ferrules into P-835 and P-830	N/A	N/A	N/A
P-831	Male Fitting for 1/8" OD Tubing	No Ferrule Required	N/A	N/A
P-835	Female Fitting for 1/16" OD Tubing	(1) Ferrule	N/A	N/A
P-836	Male Fitting for 1/16" OD Tubing	(1) Ferrule	N/A	N/A
LUER-TO-MICROTIGHT ADAPTER				
★ P-662	Luer-to-MicroTight Adapter	(1) F-152, (1) P-416	0.006" (0.150 mm)	45 psi (2.4 bar)

Female = internal receiving luer pocket; Male = external luer nose (surrounded by internally-threaded locking ring)

Swivel Barb Adapters

- ▶ Barb connection spins freely from the nut to prevent twist during installation
- ▶ Manufactured from polypropylene

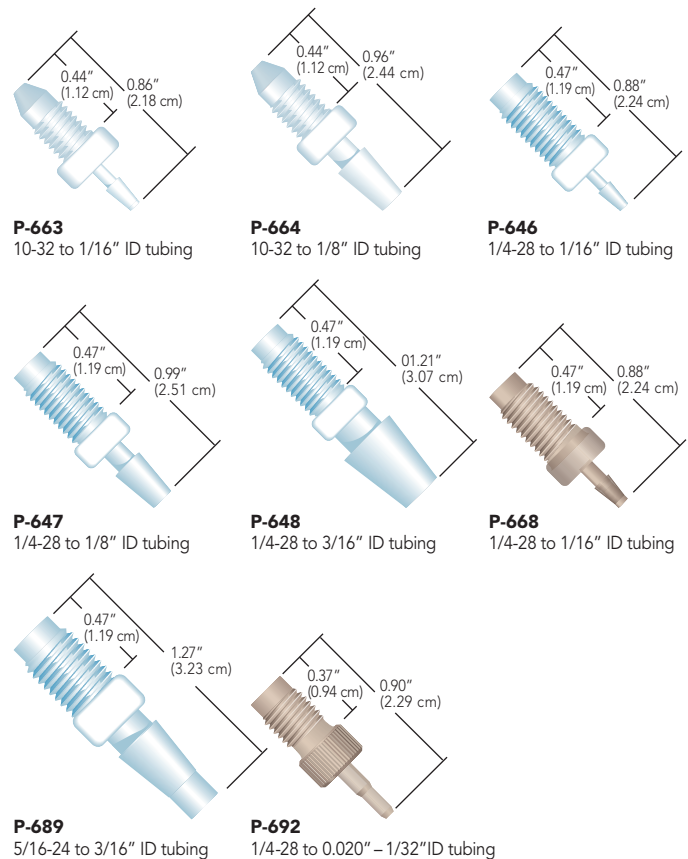
The new Swivel Barb Adapters from Upchurch Scientific® are made up of two captive pieces acting as a one-piece fitting for ease of use. Manufactured from Polypropylene and available in three barb sizes, the Swivel Barb will facilitate connection between flexible tubing to a 1/4-28 flat-bottom port. The barbed insert spins freely from the threaded nut in order to prevent the tubing from twisting during installation.



Barbed Adapters

- ▶ Three barb sizes, for 1/16", 1/8" and 3/16" ID flexible tubing
- ▶ Adapt to 1/4-28 flat-bottom, 5/16-24 flat-bottom or 10-32 coned receiving ports

These Upchurch Scientific adapters make it easy to connect flexible tubing to any standard 1/4-28 flat-bottom or 10-32 coned receiving port. Simply thread the adapter into a receiving port and slip tubing over the barbed stem to create a reliable low pressure connection.



Related Products

- ▶ To connect low pressure fluoropolymer tubing, try the LuerTight™ Adapters on page 57.
- ▶ To connect peristaltic tubing to low pressure fluoropolymer tubing, see page 61.
- ▶ For peristaltic tubing, see pages 75 – 89.



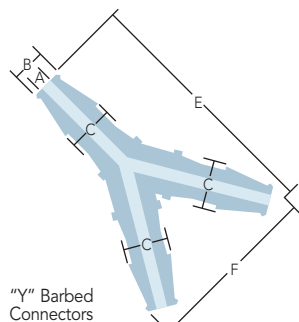
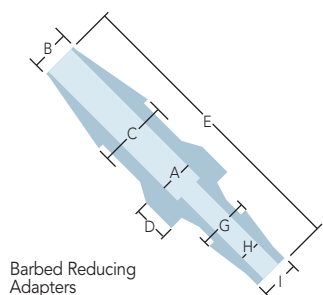
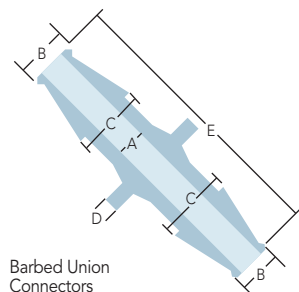
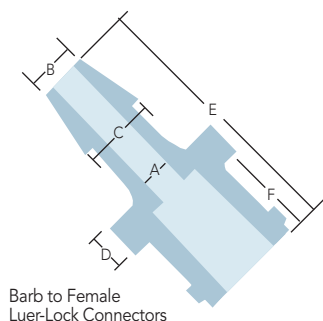
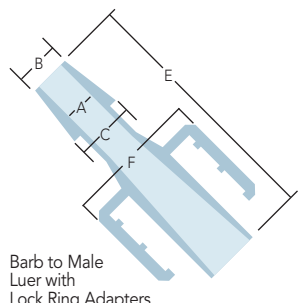
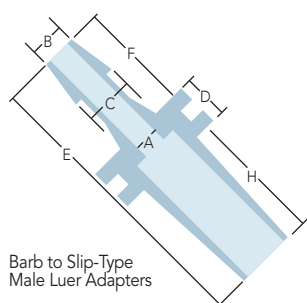
Top Seller SEE STARRED PRODUCTS

Part No.	Description	Material	Threads	Thru-hole
SWIVEL BARB ADAPTERS				
D-646	Swivel Barb Adapter, 1/16" (1.55 mm) ID Tubing	Polypropylene	1/4-28 Flat-Bottom	0.03" (0.75 mm)
D-647	Swivel Barb Adapter, 3/32" (2.40 mm) ID Tubing	Polypropylene	1/4-28 Flat-Bottom	0.06" (1.5 mm)
D-648	Swivel Barb Adapter, 1/8" (3.20 mm) ID Tubing	Polypropylene	1/4-28 Flat-Bottom	0.08" (2.0 mm)
BARBED ADAPTERS				
P-663	Barb Adapter, 1/16" (1.55 mm) ID Tubing	ETFE	10-32 Coned	0.04" (1.0 mm)
P-664	Barb Adapter, 1/8" (3.20 mm) ID Tubing	ETFE	10-32 Coned	0.04" (1.0 mm)
P-646	Barb Adapter, 1/16" (1.55 mm) ID Tubing	ETFE	1/4-28 Flat-Bottom	0.04" (1.0 mm)
P-647	Barb Adapter, 1/8" (3.20 mm) ID Tubing	ETFE	1/4-28 Flat-Bottom	0.08" (2.0 mm)
P-648	Barb Adapter, 3/16" (4.75 mm) ID Tubing	ETFE	1/4-28 Flat-Bottom	0.10" (2.5 mm)
P-668	Barb Adapter, 1/16" (1.55 mm) ID Tubing	PEEK™	1/4-28 Flat-Bottom	0.04" (1.0 mm)
P-689	Barb Adapter, 3/16" (4.75 mm) ID Tubing	ETFE	5/16-24 Flat-Bottom	0.10" (2.5 mm)
P-692	Barb Adapter, 0.020" to 1/32" (0.50 to 0.80 mm) ID Tubing	PEEK	1/4-28 Flat-Bottom	0.02" (0.5 mm)

Barbed Adapters

Use these barbed adapters to connect peristaltic-type flexible tubing for general, low pressure applications, such as plumbing Ismatec® Peristaltic Pumps (listed on pages 92 – 108).

The polypropylene used to manufacture the majority of these products is a Class VI material. Due to the low melt point of polypropylene (PP), these adapters are not autoclavable, however, they can be sterilized via gamma radiation. There are also Barb to Female Luer-Lock connectors available from ETFE, which has superior solvent resistance and a higher temperature rating (80 °C).



Top Seller SEE STARRED PRODUCTS

Part No.	Description	Material
BARB TO SLIP-TYPE MALE LUER ADAPTERS (10-pk)		
P-854x	Male Luers (Slip-type) for use with 1/16" ID (1.55 mm) Tubing A=0.046" B=0.064" C=0.090" D=0.129" E=0.711" F=0.198" H=0.384"	PP
P-855x	Male Luers (Slip-type) for use with 3/32" ID (2.40 mm) Tubing A=0.069" B=0.097" C=0.138" D=0.128" E=0.803" F=0.290" H=0.385"	PP
P-856x	Male Luers (Slip-type) for use with 1/8" ID (3.20 mm) Tubing A=0.096" B=0.129" C=0.182" D=0.129" E=0.889" F=0.383" H=0.377"	PP
<i>These slip-type male luer fittings are for use in systems for which luer lock rings are not desired.</i>		
BARB TO MALE LUER WITH LOCK RING ADAPTERS (10-pk)		
P-850x	Male Luers with Lock Ring for use with 1/16" ID (1.55 mm) Tubing A=0.049" B=0.065" C=0.090" E=0.583" F=0.434"	PP
P-851x	Male Luers with Lock Ring for use with 3/32" ID (2.40 mm) Tubing A=0.071" B=0.100" C=0.139" E=0.681" F=0.436"	PP
P-852x	Male Luers with Lock Ring for use with 1/8" ID (3.20 mm) Tubing A=0.099" B=0.132" C=0.184" E=0.777" F=0.436"	PP
P-853x	Male Luers with Lock Ring for use with 5/32" ID (4.00 mm) Tubing A=0.108" B=0.164" C=0.231" E=0.874" F=0.436"	PP
BARB TO FEMALE LUER-LOCK CONNECTORS (10-pk)		
★ P-857x	Female Luer Connectors for use with 1/16" ID (1.55 mm) Tubing A=0.030" B=0.063" C=0.106" D=0.100" E=0.598" F=0.253"	PP
P-858x	Female Luer Connectors for use with 3/32" ID (2.40 mm) Tubing A=0.056" B=0.102" C=0.145" D=0.100" E=0.648" F=0.253"	PP
P-859x	Female Luer Connectors for use with 1/8" ID (3.20 mm) Tubing A=0.080" B=0.135" C=0.187" D=0.100" E=0.733" F=0.253"	PP
P-870	For use with 1/16" (1.55 mm) ID Tubing A=0.030" B=0.063" C=0.106" D=0.100" E=0.598" F=0.253"	ETFE
P-871	For use with 3/32" (2.40 mm) ID Tubing A=0.056" B=0.102" C=0.145" D=0.100" E=0.648" F=0.253"	ETFE
P-872	For use with 1/8" (3.20 mm) ID Tubing A=0.080" B=0.137" C=0.187" D=0.100" E=0.733" F=0.253"	ETFE
BARBED UNION CONNECTORS (10-pk)		
P-801x	Barbed Connectors to connect 1/16" ID (1.55 mm) Tubing to 1/16" ID (1.55 mm) Tubing A=0.046" B=0.063" C=0.101" D=0.100" E=0.658"	PP
P-802x	Barbed Connectors to connect 1/8" ID (3.20 mm) Tubing to 1/8" ID (3.20 mm) Tubing A=0.085" B=0.126" C=0.182" D=0.098" E=0.791"	PP
P-803x	Barbed Connectors to connect 3/16" ID (4.75 mm) Tubing to 3/16" ID (4.75 mm) Tubing A=0.122" B=0.157" C=0.275" D=0.126" E=1.179"	PP
P-804x	Barbed Connectors to connect 1/4" ID (6.35 mm) Tubing to 1/4" ID (6.35 mm) Tubing A=0.185" B=0.247" C=0.342" D=0.163" E=1.279"	PP
P-805x	Barbed Connectors to connect 3/8" ID (9.55 mm) Tubing to 3/8" ID (9.55 mm) Tubing A=0.248" B=0.373" C=0.466" D=0.249" E=2.103"	PP
P-806x	Barbed Connectors to connect 1/2" ID (12.7 mm) Tubing to 1/2" ID (12.7 mm) Tubing A=0.390" B=0.496" C=0.598" D=0.249" E=2.047"	PP
BARBED REDUCING ADAPTERS (10-pk)		
P-807x	Barbed Reducing Adapters to connect 1/8" ID (3.20 mm) Tubing to 1/16" ID (1.55 mm) Tubing A=0.081" B=0.120" C=0.170" D=0.104" E=0.755" G=0.102" H=0.048" I=0.067"	PP
P-808x	Barbed Reducing Adapters to connect 3/16" ID (4.75 mm) tubing to 1/8" ID (3.20 mm) tubing A=0.126" B=0.187" C=0.285" D=0.131" E=1.245" G=0.181" H=0.085" I=0.125"	PP
P-809x	Barbed Reducing Adapters to connect 1/4" ID (6.35 mm) Tubing to 3/16" ID (4.75 mm) Tubing A=0.139" B=0.209" C=0.355" D=0.125" E=1.561" G=0.270" H=0.139" I=0.184"	PP
P-810x	Barbed Reducing Adapters to connect 3/8" ID (9.55 mm) Tubing to 1/4" ID (6.35 mm) Tubing A=0.248" B=0.371" C=0.466" D=0.249" E=2.057" G=0.345" H=0.188" I=0.249"	PP
"Y" BARBED CONNECTORS (10-pk)		
★ P-860x	"Y" Barbed Connectors for use with 1/16" ID (1.55 mm) Tubing A=0.047" B=0.066" C=0.092" E=0.508" F=0.345"	PP
P-861x	"Y" Barbed Connectors for use with 3/32" ID (2.40 mm) Tubing A=0.070" B=0.099" C=0.137" E=0.757" F=0.521"	PP
P-862x	"Y" Barbed Connectors for use with 1/8" ID (3.20 mm) Tubing A=0.095" B=0.126" C=0.183" E=1.017" F=0.70"	PP
P-863x	"Y" Barbed Connectors for use with 3/16" ID (4.75 mm) Tubing A=0.157" B=0.197" C=0.280" E=1.470" F=1.051"	PP
P-864x	"Y" Barbed Connectors for use with 1/4" ID (6.35 mm) Tubing A=0.189" B=0.266" C=0.372" E=2.040" F=1.405"	PP

An "x" in the product part number designates "10-pk."

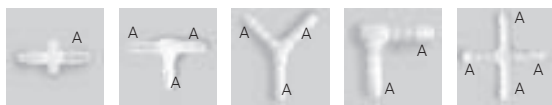
Barbed Connectors

- Specifically designed for Ismatec® pump tubing
- Wide variety of unions, adapters and multi-port connectors in multiple material choices

There are several Ismatec connectors for connecting multiple pieces of peristaltic tubing. Reference the tubing size of the barb in the tables below to select from unions (to connect same tubing size), reducers (to connect two different tubing sizes) in both straight, tee, Y, elbow and cross configurations.

For very small peristaltic tubing, steel connectors are available to couple two pieces of the same size tubing together. Match the OD of the steel tubing connector to be slightly larger than the ID of the peristaltic tubing.

Standard Tube Connectors in Plastic



Type 1

Type 2

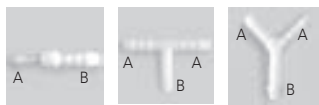
Type 3

Type 4

Type 5

Part No.	Tubing ID	Material	Qty.
STANDARD TUBE CONNECTORS IN PLASTIC			
Type 1			
ISM556A	0.06" (1.5 mm)	Acetal	10-pk
ISM557A	0.10" (2.5 mm)	Acetal	10-pk
ISM558A	0.12" (3.0 mm)	Polypropylene	10-pk
ISM559	0.16" (4.0 mm)	Polypropylene	10-pk
ISM560	0.20" (5.0 mm)	Polypropylene	10-pk
ISM561	0.24" (6.0 mm)	Polypropylene	10-pk
ISM562	0.31" (8.0 mm)	Polypropylene	10-pk
ISM563	0.40" (10.0 mm)	Polypropylene	10-pk
ISM564	0.47" (12.0 mm)	Polypropylene	10-pk
ISM565	0.51" (13.0 mm)	Polypropylene	10-pk
ISM566	0.55" (14.0 mm)	Polypropylene	10-pk
ISM567	0.63" (16.0 mm)	Polypropylene	10-pk
ISM568	0.75" (19.0 mm)	Polypropylene	10-pk
Type 2			
ISM693A	0.06" (1.5 mm)	Acetal	10-pk
ISM694	0.10" (2.5 mm)	Acetal	10-pk
ISM510	0.12" (3.0 mm)	Polypropylene	10-pk
ISM511	0.16" (4.0 mm)	Polypropylene	10-pk
ISM512	0.20" (5.0 mm)	Polypropylene	10-pk
ISM513	0.24" (6.0 mm)	Polypropylene	10-pk
ISM514	0.28" (7.0 mm)	Polypropylene	10-pk
ISM515	0.31" (8.0 mm)	Polypropylene	10-pk
ISM516	0.40" (10.0 mm)	Polypropylene	10-pk
ISM517	0.47" (12.0 mm)	Polypropylene	10-pk
ISM518	0.51" (13.0 mm)	Polypropylene	10-pk
ISM519	0.55" (14.0 mm)	Polypropylene	10-pk
ISM520	0.59" (15.0 mm)	Polypropylene	10-pk
ISM521	0.63" (16.0 mm)	Polypropylene	10-pk
ISM522	0.75" (19.0 mm)	Polypropylene	10-pk
Type 3			
ISM524	0.12" (3.0 mm)	Polypropylene	10-pk
ISM525	0.16" (4.0 mm)	Polypropylene	10-pk
ISM526	0.20" (5.0 mm)	Polypropylene	10-pk
ISM527	0.24" (6.0 mm)	Polypropylene	10-pk
ISM528	0.31" (8.0 mm)	Polypropylene	10-pk
ISM529	0.40" (10.0 mm)	Polypropylene	10-pk
ISM530	0.47" (12.0 mm)	Polypropylene	10-pk
ISM531	0.51" (13.0 mm)	Polypropylene	10-pk
ISM532	0.55" (14.0 mm)	Polypropylene	10-pk
ISM533	0.63" (16.0 mm)	Polypropylene	10-pk
ISM534	0.75" (19.0 mm)	Polypropylene	10-pk

Reducer Tube Connectors in Plastic



Type 6

Type 7

Type 8

Steel 18/8 Standard Tube Connectors

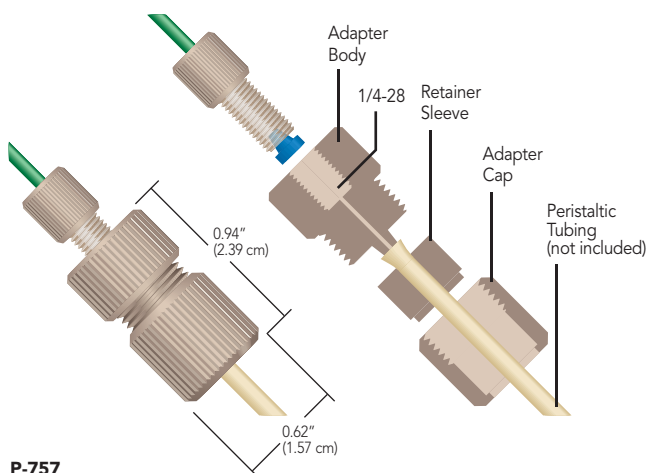


Part No.	Tubing ID	Material	Qty.		
STANDARD TUBE CONNECTORS IN PLASTIC					
Type 4					
ISM507	0.10" (2.5 mm)	Acetal	10-pk		
ISM493	0.12" (3.0 mm)	Polypropylene	10-pk		
ISM494	0.16" (4.0 mm)	Polypropylene	10-pk		
ISM495	0.20" (5.0 mm)	Polypropylene	10-pk		
ISM496	0.24" (6.0 mm)	Polypropylene	10-pk		
ISM497	0.31" (8.0 mm)	Polypropylene	10-pk		
ISM498	0.40" (10.0 mm)	Polypropylene	10-pk		
ISM499	0.47" (12.0 mm)	Polypropylene	10-pk		
ISM500	0.51" (13.0 mm)	Polypropylene	10-pk		
ISM501	0.55" (14.0 mm)	Polypropylene	10-pk		
ISM502	0.59" (15.0 mm)	Polypropylene	10-pk		
ISM503	0.63" (16.0 mm)	Polypropylene	10-pk		
ISM523	0.75" (19.0 mm)	Polypropylene	10-pk		
Type 5					
ISM535	0.16" (4.0 mm)	Polypropylene	10-pk		
ISM536	0.20" (5.0 mm)	Polypropylene	10-pk		
ISM537	0.24" (6.0 mm)	Polypropylene	10-pk		
REDUCER TUBE CONNECTORS IN PLASTIC					
Part No.	Tubing ID	Material	Qty.		
Type 6					
	A	B			
ISM569A	0.06" (1.5 mm)	0.10" (2.5 mm)	Acetal 10-pk		
ISM570A	0.06" (1.5 mm)	0.12" (3.0 mm)	Acetal 10-pk		
ISM571A	0.10" (2.5 mm)	0.12" (3.0 mm)	Acetal 10-pk		
ISM572	0.12" (3.0 mm)	0.16" (4.0 mm)	Polypropylene 10-pk		
ISM573A	0.16" (4.0 mm)	0.24" (6.0 mm)	Polypropylene 10-pk		
ISM574	0.16" (4.0 mm)	0.31" (8.0 mm)	Polypropylene 10-pk		
ISM575	0.24" (6.0 mm)	0.31" (8.0 mm)	Polypropylene 10-pk		
ISM576	0.24" (6.0 mm)	0.40" (10.0 mm)	Polypropylene 10-pk		
ISM577	0.31" (8.0 mm)	0.40" (10.0 mm)	Polypropylene 10-pk		
ISM578	0.31" (8.0 mm)	0.47" (12.0 mm)	Polypropylene 10-pk		
ISM579	0.40" (10.0 mm)	0.47" (12.0 mm)	Polypropylene 10-pk		
Type 7					
	A	B			
ISM538	0.12" (3.0 mm)	0.16" (4.0 mm)	Polypropylene 10-pk		
ISM539	0.16" (4.0 mm)	0.24" (6.0 mm)	Polypropylene 10-pk		
ISM540	0.24" (6.0 mm)	0.16" (4.0 mm)	Polypropylene 10-pk		
ISM541	0.31" (8.0 mm)	0.16" (4.0 mm)	Polypropylene 10-pk		
ISM542	0.31" (8.0 mm)	0.24" (6.0 mm)	Polypropylene 10-pk		
ISM544	0.40" (10.0 mm)	0.24" (6.0 mm)	Polypropylene 10-pk		
ISM545	0.40" (10.0 mm)	0.31" (8.0 mm)	Polypropylene 10-pk		
ISM546	0.40" (10.0 mm)	0.51" (13.0 mm)	Polypropylene 10-pk		
ISM547	0.47" (12.0 mm)	0.31" (8.0 mm)	Polypropylene 10-pk		
ISM548	0.47" (12.0 mm)	0.40" (10.0 mm)	Polypropylene 10-pk		
ISM549	0.59" (15.0 mm)	0.24" (6.0 mm)	Polypropylene 10-pk		
Type 8					
	A	B			
ISM553	0.16" (4.0 mm)	0.24" (6.0 mm)	Polypropylene 10-pk		
ISM554	0.24" (6.0 mm)	0.31" (8.0 mm)	Polypropylene 10-pk		
STEEL 18/8 STANDARD TUBE CONNECTORS					
Part No.	Tubing ID	Tubing OD	Connector Length	Material	Qty.
ISM580	0.01" (0.30 mm)	0.02" (0.63 mm)	0.59" (15.0 mm)	SST	6-pk
ISM581	0.02" (0.58 mm)	0.04" (0.90 mm)	0.59" (15.0 mm)	SST	6-pk
ISM582	0.02" (0.58 mm)	0.04" (0.90 mm)	0.43" (11 mm)	SST	6-pk
ISM583	0.03" (0.84 mm)	0.05" (1.27 mm)	0.43" (11 mm)	SST	6-pk
ISM584	0.03" (0.84 mm)	0.05" (1.27 mm)	0.63" (16.0 mm)	SST	6-pk
ISM585A	0.01" (0.30 mm)	0.02" (0.63 mm)	0.98" (25 mm)	SST	6-pk
ISM586A	0.02" (0.58 mm)	0.04" (0.90 mm)	0.98" (25 mm)	SST	6-pk
ISM587	0.02" (0.58 mm)	0.04" (0.90 mm)	0.75" (19.0 mm)	SST	6-pk

Peristaltic Tubing Adapters

These unique adapters connect peristaltic tubing to standard 1/16" or 1/8" OD tubing. A specially-designed nose allows the peristaltic tubing to simply press fit over the nose and then be held tightly in place by the retainer sleeve. Your 1/16" OD tubing may then be connected with the Flangeless Fittings supplied with the adapter. To connect your peristaltic tubing to 1/8" OD tubing, simply replace the supplied fittings with your choice of Flangeless Fittings from page 24.

One popular application for these adapters is to use them as "stops" for your peristaltic pump. By doing so, you can reduce the amount of peristaltic tubing required for your flowpath, thus reducing cost.

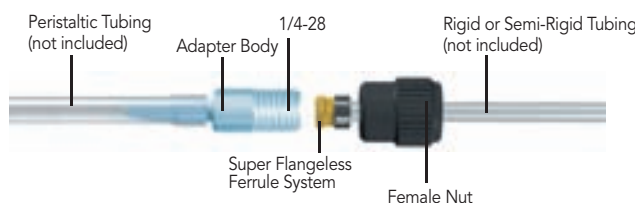
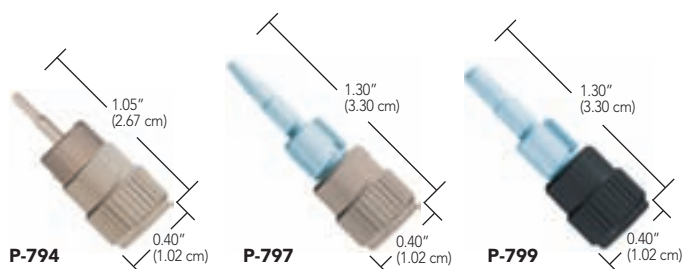


P-757
Peristaltic Tubing Adapter
includes P-200/P-235 Flangeless Fittings,
and 3 sizes of retainer sleeves

Conical Adapters

- Direct connect 1/16" and 1/8" OD rigid and semi-rigid tubing to peristaltic tubing
- Accept 0.020" – 1/8" (0.50 – 3.2 mm) ID peristaltic tubing
- Biocompatible flowpath with excellent chemical compatibility

Upchurch Scientific® Conical Adapters manufactured by IDEX Health & Science provide a reliable connection between rigid/semi-rigid tubing and peristaltic-type flexible tubing, such as Tygon® and PharMed®. These adapters are composed of a PEEK™ polymer female nut, our Super Flangeless™ ferrule system and an ETFE or PEEK conical adapter body. The narrow coned end of the adapter body allows peristaltic tubing to slide on more easily than it does onto conventional barbed adapters. Peristaltic tubing is also easier to remove from our Conical Adapters, since no cutting or excessive pulling is required.



P-798
Conical Adapter

Related Products

Use the adapters on this page to connect rigid and semi-rigid tubing (pages 63 – 69 and 70 – 73) to the peristaltic tubing on pages 75 – 89.



Top Seller SEE STARRED PRODUCTS

Application Note

To help secure peristaltic tubing more firmly to the Upchurch Scientific Conical Adapters, simply attach a cable tie to the outside of the peristaltic tubing once it has been placed onto the Adapter body.

Part No.	Description	Peristaltic Tubing OD	Peristaltic Tubing ID	Thru-Hole
PERISTALTIC TUBING ADAPTERS				
★ P-757	Standard Adapter	up to 0.180" (4.55 mm)	0.048" – 0.110" (1.20 – 2.80 mm)	0.030" (0.75 mm)
P-767	Large Bore Adapter	up to 0.250" (6.35 mm)	0.100" – 0.150" (2.55 – 3.80 mm)	0.070" (1.78 mm)
CONICAL ADAPTER ASSEMBLIES				
Part No.	Description	Rigid or Semi-Rigid Tubing OD	Peristaltic Tubing ID	Thru-Hole
★ P-794	Conical Adapter	1/16"	0.020" – 0.030" (0.50 mm – 0.75 mm)	0.020" (0.50 mm)
P-797	Conical Adapter	1/16"	1/16" – 3/32" (1.55 mm – 2.40 mm)	0.040" (1.0 mm)
P-798	Conical Adapter	1/8"	1/16" – 3/32" (1.55 mm – 2.40 mm)	0.040" (1.0 mm)
P-799	Conical Adapter	1/8"	3/32" – 1/8" (2.40 mm – 3.20 mm)	0.060" (1.5 mm)
CONICAL ADAPTER REPLACEMENT PARTS				
Part No.	Description	Material	For Use With	
F-156	Female Nut, 1/8", 1/4-28	Black PEEK	P-798, P-799	
P-420	Female Nut, 1/16", 1/4-28	Natural PEEK	P-794, P-797	
P-259	Super Flangeless Ferrule, 1/16"	Yellow ETFE/SST	P-794, P-797	
P-359	Super Flangeless Ferrule, 1/8"	Yellow ETFE/SST	P-798, P-799	
P-690	Conical Adapter Body	Natural ETFE	P-797, P-798	
P-691	Conical Adapter Body	Natural ETFE	P-799	
P-692	Conical Adapter Body	Natural PEEK	P-794	