

FITTINGS, ADAPTERS & TUBING

Optimize offers a variety of compression fittings, adapters and tubing for making low, high and ultra high pressure LC connections. OPTI-LOK LP 1/4-28 fittings are the best choice for connecting into flat-bottomed low pressure ports. For high pressure applications, OPTI-LOK 6K fittings are ideal for making solid, secure connections into any 10-32 port.

In response to evolving UHPLC technologies, Optimize delivers with the EXP Titanium PEEK Hybrid Ferrule. The ingenuity of the EXP and EXP2 Ferrule is designed to adjust to any 10-32, 6-40 or 6-32 port depth and can be removed and reused in a different port while still maintaining adjustability. The ferrule provides the necessary zero-dead-volume seal to allow connections beyond 20,000+ psi (1,400+ bar).

Our fittings and adapters are individually machined, never molded. Each fitting is individually inspected for the highest quality in the finished product. This process ensures consistent threading into fitting ports and longer thread life.

We also offer high and low pressure tubing in a number of diameters. Our stainless steel tubing is available pre-cut in a variety of lengths. Polymeric tubing can be purchased in bulk lengths and cut to size. We offer polymeric tubing in PEEK, PTFE and other materials.

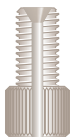


GUIDE TO OPTIMIZE FITTINGS

	OPTI-LOK™	OPTI-LOK™	OEM	OPTI-LOK™	EXP®	EXP® 2
	LP Fittings	6K Fittings	Fittings	Adapters	UHPLC Fittings	UHPLC Fittings & Adapters
Maximum Pressure	 LOW PRESSURE > 1000 PSI / > 70 BAR	 HIGH PRESSURE 6K PSI / 400 BAR	 HIGH PRESSURE 6K PSI / 400 BAR	 HIGH PRESSURE 6K PSI / 400 BAR	 ULTRA HIGH PRESSURE 20K+ PSI / 1400+ BAR	 ULTRA HIGH PRESSURE 20K+ PSI / 1400+ BAR
Thread Type(s)	1/4 - 28 M6 Metric	10 - 32 M6 Metric	1/4 - 28 10 - 32	1/4 - 28 10 - 32 Luer M6	6 - 32 6 - 40 10 - 32	6 - 32 6 - 40 10 - 32
Compatible Tubing Sizes (OD)	1/16" .100" 1/8"	1/16"	1/16"	Various	360µm 1/32" 1/16"	360µm 1/32" 1/16"
Hand-Tight	✓	✓ Wrench-Tight Options Available	✓ Wrench-Tight Options Available	✓	✓ Wrench-Tight Options Available	✓
Products	Nuts Ferrules Unions Tees Plugs	Nuts with Integral Ferrules Nuts Ferrules Couplers Unions Tees Plugs	Nuts Ferrules Unions Compression Screws	Adapters	Nuts Ferrules Couplers	Nuts with Integral Ferrules
Materials	PEEK ETFE PTFE PCTFE Acetal	PEEK PCTFE Acetal Stainless Steel	PEEK Stainless Steel	PEEK	Titanium PEEK Stainless Steel	Titanium PEEK Stainless Steel

OPTI-**LOK**™ LOW PRESSURE FITTINGS

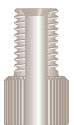
OPTI-LOK LP Fittings are an excellent choice for making low-pressure connections into 1/4-28 ports. Connections to flat-bottomed ports can be made using OPTI-LOK flat-bottomed ferrules for 1/16" or 1/8" tubing without the need for pre-flanged tubing ends. OPTI-LOK LP Fittings are precision machined to deliver leak-free, zero-dead-volume connections every time. We also offer 1/4-28 unions in various through-hole sizes for joining flat-bottom fittings.



Nut (PEEK)



Ferrule (PEEK)



Nut (PEEK)



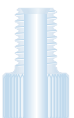
Union (PEEK)



Union (PEEK)



Plug (PTFE)

Double Tight Ferrule
(PEEK)

Nut (White Acetal)

OPTI-LOK™ LP 1/4-28 Nuts & Ferrules for 1/16" OD Tubing

10-21-00290	Nut, PEEK	10-21-00293	Nut, White Acetal
10-21-00292	Nut, ETFE	10-21-00299	Nut, PTFE
10-21-00291	Nut, Long, PEEK	10-21-00296	Ferrule, PEEK
10-21-00295	Ferrule, ETFE	10-21-00300	Ferrule, PTFE

OPTI-LOK™ LP 1/4-28 Nuts & Ferrules for .100" OD Tubing

10-21-00283	Nut, White Acetal	10-21-00284	Nut, PEEK
10-21-00281	Ferrule, ETFE		

OPTI-LOK™ LP 1/4-28 Nuts & Ferrules for 1/8" OD Tubing

10-21-00307	Nut, PEEK	10-21-00305	Nut, Black Acetal
10-21-00310	Nut, White Acetal	10-21-00306	Nut, PCTFE
10-21-00309	Nut, ETFE	10-21-00317	Nut, PTFE
10-21-00308	Nut, Long, PEEK	10-21-00313	Ferrule, PEEK
10-21-00312	Ferrule, ETFE	10-21-00318	Ferrule, PTFE

1/4-28 Unions

10-21-00323	Union, PEEK
10-21-00343	Union, Knurled with wrench-flat, .050" Thru, PEEK

1/4-28 Tee for 1/16" OD Tubing

10-21-00286	Tee, .062" Thru, PEEK
--------------------	-----------------------

OPTI-LOK™ LP 1/4-28 Plug

10-21-00326	Plug, PTFE
--------------------	------------

OPTI-LOK™ M6 METRIC NUTS & FERRULES

OPTI-LOK™ LP Metric Fittings for 1/16" OD Tubing

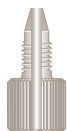
10-22-00297	Nut, White Acetal	10-22-00301	Ferrule, Short, ETFE
--------------------	-------------------	--------------------	----------------------

OPTI-LOK™ LP Metric Fittings for 1/8" OD Tubing

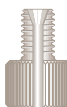
10-22-00314	Nut, White Acetal	10-22-00315	Nut, Black Acetal
10-22-00319	Ferrule, Short, ETFE		

OPTI-LOK™ HIGH PRESSURE FITTINGS

OPTI-LOK Fittings are ideal for high-pressure connections with 1/16" OD tubing. All Optimize fittings are precision machined for optimal quality and thread consistency and are designed for trouble-free operation at pressures of up to 6,000 psi.



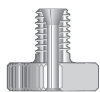
OPTI-LOK I
(PEEK)



6K Knurled
Head (PEEK)



6K Hex Head,
Short (PEEK)



6K Knurled
Head (SS)



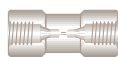
Ferrule
(PEEK)



Double Tight
Ferrule (PEEK)



Universal Nut (SS)



Union (PEEK)



Tee (PEEK)



Plug (White Acetal)

OPTI-LOK™ I 10-32 Hand-Tight Fittings with Integral Ferrule

SINGLES

10-20-00258

10 PACK

10-20-00259

OPTI-LOK I, PCTFE

10-20-00264

10-20-00265

OPTI-LOK I, PEEK

OPTI-LOK™ 6K 10-32 Nuts & Ferrules

SINGLES

Nut Only

10-20-00268

10 PACK

With Ferrules

10-20-00270

Knurled Head, PEEK

10-20-00271

10-20-00272

Hex Head, Short, PEEK

10-20-00275

10-20-00276

Hex Head, Long, PEEK

10-20-00273

10-20-00274

Knurled Head, with wrench-flat, SS

SINGLES

10-20-00269

10 PACK

10-20-00518

Double Tight Ferrule, PEEK

10-32 Couplers with 1/16" OD x .006" ID x 6cm SS Tubing

10-20-00263

Coupler, PCTFE

10-20-00266

Coupler, PEEK

Universal 10-32 Nuts & Ferrules for 1/16" OD Tubing

10-24-00367

Universal Nut, SS

10-24-00369

Universal Ferrule, SS

10-24-00370

Universal Ferrule, PEEK

10-24-00376

Universal SS Nuts with SS Ferrules, 10/Pk

10-32 Unions for 1/16" OD Tubing

10-20-00261

PEEK Union, .010" Thru

10-20-00262

PEEK Union, .020" Thru

10-24-00375

Universal Union, with Nuts & Ferrules, .010" Thru, SS

10-24-00373

Universal Union, with Nuts & Ferrules, .020" Thru, SS

10-24-00371

Universal Union, with Nuts & Ferrules, .030" Thru, SS

10-32 OPTI-LOK™ Plugs

SINGLES

10-20-00251

10 PACK

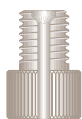
10-20-00253

Plug, White Acetal

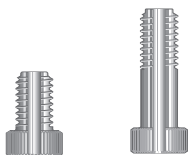
10-20-00255

10-20-00256

Plug, PEEK

6K Nut
(PEEK)Double Tight
Ferrule
(PEEK)

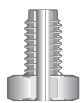
Nut (SS)

Ferrule
(PEEK)Union
(SS)Ferrule
(SS)Nut
(SS)Nut, Long
(SS)Ferrule
(SS)

Union (SS)



Ferrule (PEEK)

Ferrule
(SS)Compression
Screw (SS)Union
(SS)Ferrule
(PEEK)

OEM SPECIFIC FITTINGS

SSI-Style 1/4-28 Fittings for 1/16" OD Tubing

10-20-00330	6K Nut, PEEK
10-20-00331	6K Nut & Ferrules, PEEK, 10/Pk
10-20-00269	Double Tight Ferrule, PEEK

Parker-Style 10-32 Fittings for 1/16" OD Tubing

40-24-01275	Nut, SS
40-24-01276	Nuts & Ferrules, SS, 10/Pk
40-24-01291	Ferrule, SS
40-24-01290	Ferrule, PEEK
40-24-01271	Union with Nuts & Ferrules, SS, .010" Thru
40-24-01273	Union with Nuts & Ferrules, SS, .020" Thru

Genuine Valco 10-32 Fittings for 1/16" OD Tubing

41-24-01277	Nut, SS
41-24-01281	Nuts & Ferrules, SS, 10/Pk
41-24-01278	Nut, Long, SS
41-24-01279	Ferrule, SS
41-24-01283	Union with Nuts & Ferrules, SS, .010" Thru
41-24-01280	Union with Nuts & Ferrules, SS, .030" Thru
41-24-01282	Ferrule, PEEK

Waters-Style 10-32 Fittings for 1/16" OD Tubing

		OEM #
39-24-01090	Compression Screw, SS	WAT005070
39-24-01091	Compression Screws & Ferrules, SS, 10/Pk	WAT025604
39-24-01291	Ferrule, SS, Single	WAT005063
39-24-01290	Ferrule, PEEK	WAT021817
39-24-01088	Union with Nuts & Ferrules, SS	WAT097332

OPTI-**LOK**[™] ADAPTERS

OPTI-LOK Adapters offer maximum flexibility for making connections between mating ports and 1/4-28, M6 (Metric), Luer and 10-32 fittings. Adapters are available in a useful variety of thread-type combinations. All are precision machined from PEEK.

1/4-28 to 10-32

10-23-00350

1/4-28 Male

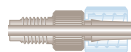


10-32 Parker Female

1/4-28 to Luer

10-23-00352

1/4-28 Male



Luer Male

10-23-00353

1/4-28 Male



Luer Female

1/4-28 to M6

10-23-00351

1/4-28 Male

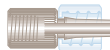


M6 (Metric) Female

1/4-28 to Luer

10-23-00347

1/4-28 Female



Luer Male

10-23-00349

1/4-28 Female



Luer Female

1/4-28 to M6

10-23-00346

1/4-28 Female



M6 Female, with Web

10-23-00335

1/4-28 Female



10-32 Parker Female

M6 to 10-32

10-23-00357

M6 (Metric) Male



10-32 Parker Female

10-23-00355

M6 (Metric) Female



10-32 Parker Female

M6 to Luer

10-23-00363

M6 (Metric) Female



Luer Female

Luer to 10-32

10-23-00358

10-32 Parker Female



Luer Female

10-23-00359

10-32 Parker Female



Luer Male

ORIGINAL EXP® FITTING SYSTEM - SS TUBING

The EXP Fitting System is the premier adjustable nut and ferrule compression fitting for extreme high-pressure connections between 1/32" or 1/16" tubing and any 6-32, 6-40 or 10-32 port. EXP Fittings are simple and versatile.

The patented Titanium Hybrid Ferrule integrates the resilience of titanium with the proven sealing ability of PEEK in a superb one-piece design. The Hybrid Ferrule provides a perfect seal with every connection. The swage can be released without tools to adjust to the different port depths of various hardware. This adjustability provides value through repeated zero-dead-volume connections with any port configuration.

EXP®2 FITTING SYSTEM - SS TUBING

Optimize introduces EXP2 - the next generation of EXP UHPLC fitting technology. Featuring a small 3/16" hex head EXP2 Nut, the new EXP2 Driver and the original Titanium Hybrid Ferrule, the EXP2 Fittings offer hand-tight connections rated to 20,000+ psi. The EXP2 nuts are available with 6-32, 6-40 and 10-32 threads and are scaled down to allow for maximum working room in cramped spaces. The EXP2 Driver is a small, easy to use knurled torque driver which snaps onto the nuts for hand-tightening and loosening. The EXP2 Driver is slotted and can be removed from the nut and tubing after use.

Both the EXP and EXP2 Fitting Systems offer products which can be reused in different ports for the best possible connections. These products eliminate the need to cut off and replace swaged ferrules.

EXP® Titanium Hybrid Replacement Ferrules

SINGLES	10 PACK	
15-24-03831	15-24-03832	1/16" Ferrule
15-19-04242	15-19-04243	1/32" Nano Ferrule

Original EXP® Hand-Tight Fittings with Titanium Hybrid Ferrules

SINGLES	10 PACK	
15-20-03888	15-20-03930	10-32 Nut & 1/16" Ferrule
15-19-04245	15-19-04246	6-40 Nut & 1/32" Nano Ferrule

Original EXP® Hand-Tight Coupler

15-20-04128	1/16" OD x 0.005" ID x 5cm Stainless Steel Tubing Includes 2 Original EXP Hand-Tight Fittings
--------------------	--

EXP® Hex Head Fittings with Titanium Hybrid Ferrules

SINGLES	10 PACK	
15-20-04120	15-20-03834	10-32 Standard Nut & 1/16" Ferrule
15-20-03839	15-20-03840	10-32 Short Nut & 1/16" Ferrule
15-20-03841	15-20-03842	10-32 Long Nut & 1/16" Ferrule

HAND-TIGHT



Original **EXP®** Hand-Tight

Hand-Tight to 8,700+ psi
Wrench-Tight to 20,000+ psi



EXP² Hand-Tight

Hand-Tight or Wrench-Tight to 20,000+ psi

EXP® Fitting
Advantages

- Available in standard (1/16") and nano (1/32") configurations
- Rated to 20,000+ psi (1,400+ bar)
- Tested to 30,000 psi
- Auto-adjusting zero-dead-volume connection
- Intended for many repeat uses
- Cost efficient with replaceable components

HEX HEAD

Wrench-Tight to 20,000+ psi

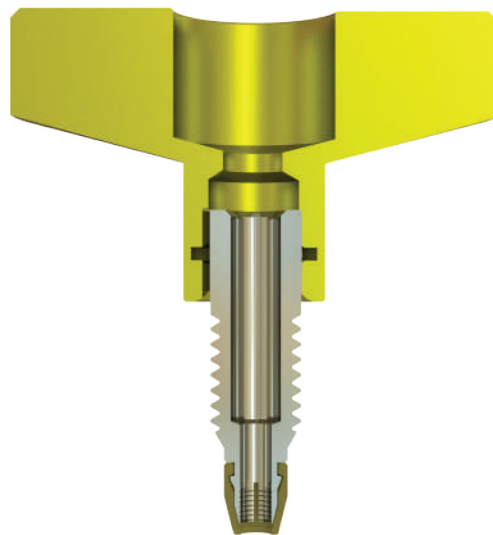


EXP² Hand-Tight Fitting Kits with Titanium Hybrid Ferrules

Each pack below includes 1 EXP2 Driver

SINGLES	10 PACK	
15-20-04933	15-20-04924	10-32 EXP2 Nut & 1/16" Ferrule
15-19-04961	15-19-04962	6-40 EXP2 Nut & 1/32" Nano Ferrule
15-19-04958	15-19-04959	6-32 EXP2 Nut & 1/32" Nano Ferrule

FINALLY, A REUSABLE
UHPLC FITTING THAT WORKS
WITH ALL TUBING MATERIALS.
HASSLE FREE, NO SEPARATE
FERRULE TO LOSE.



EXP[®]2 TI-LOK[™] FITTINGS



EXP[®]2 TI-LOK[™] FITTING

The EXP2 TI-LOK Fittings offer LC connections that can be hand-tightened to 18,000+ psi (1,250+ bar). The fittings are ideal for making HPLC and UHPLC connections that easily fit into tight spaces such as injection valves, column couplers, sample loops and column ovens.

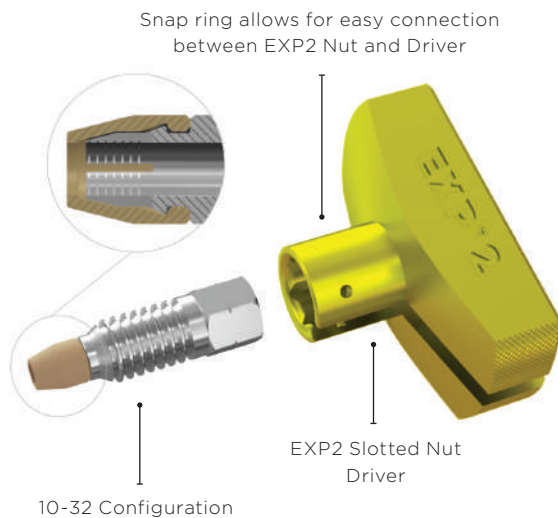
Evolving from the original Titanium Hybrid Ferrule technology, EXP2 TI-LOK Fittings feature built-in PEEK ferrules and threaded nuts precision machined from titanium. The new fittings combine the superior corrosion resistance and robustness of titanium with the sealing capability of PEEK. Utilizing a unique geometric design, the fittings firmly press tubing against the tube stop of any instrument port creating a zero-dead-volume (ZDV) connection. The ferrule does not permanently swage to the tubing, allowing for many repeat connections and the ability to adjust the tubing to different port depths. EXP2 TI-LOK Fittings are compatible with PEEK, PEEKsil, Hastelloy C and stainless steel tubing.

EXP2 TI-LOK Fittings include an EXP2 Driver – a small, easy to use knurled torque driver that snaps onto the nuts for hand-tightening and loosening. The EXP2 Driver is slotted and can be removed from the nut and tubing after use.

EXP[®]2 TI-LOK[™] ALL-IN-ONE (AIO) FITTING

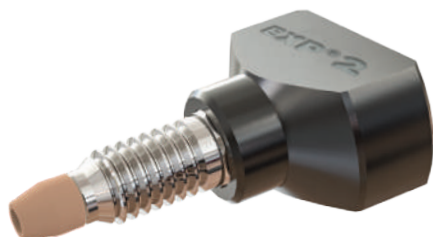
Meet the newest addition to our EXP2 Fitting line. The AIO Fitting incorporates all of the features above with one distinct difference: a permanently-fixed driver. When tight spaces are not an issue, we recommend using the AIO Fitting.

HAND-TIGHT

New **EXP[®]2** TI-LOK™

Hand-Tight to 8,700+ psi

Wrench-Tight to 18,000+ psi

New **EXP[®]2** TI-LOK™ AIO

Hand-Tight to 8,700+ psi

Wrench-Tight to 18,000+ psi

KEY FEATURES

- Rated to 18,000+ psi (1,250+ bar)
- Titanium nut with integral PEEK ferrule
- One-piece fitting (no loose ferrules)
- Robust design with superior corrosion resistance
- Auto-adjusting zero-dead-volume connection
- Intended for many repeat uses
- Releases tubing for easy repositioning into different ports
- No need to cut tubing to replace a swaged ferrule
- Simple and versatile - can be used in all LC applications
- Compatible with PEEK, PEEKsil, Hastelloy C and stainless steel tubing

EXP[®]2 TI-LOK™ Hand-Tight Fittings**15-24-05204** 10-32 TI-LOK Fitting, 2/Pk**15-24-05205** 10-32 TI-LOK Fitting, 10/Pk

Each pack above includes 1 EXP2 Driver

EXP[®]2 TI-LOK™ All-In-One (AIO) Hand-Tight Fittings**15-24-05253** 10-32 AIO Fitting, 1/Pk**15-24-05254** 10-32 AIO Fittings, 10/Pk

EXP[®]2 TI-LOK™ FITTINGS AND ADAPTERS

FOR ALL 1/32" TUBING AND 360µm OD FUSED SILICA TUBING

The EXP2 TI-LOK Fittings and Adapters offer capillary HPLC and UHPLC connections that seal to 20,000+ psi in any port and easily fit into tight spaces such as injection valves, column couplers, sample loops and column ovens.

The EXP2 TI-LOK range of fittings and adapters allows users the versatility to change out capillary tube ID, length or end fittings to create virtually any tube set configuration. The EXP2 TI-LOK Fittings are available with 6-32 and 6-40 threads for 1/32" ports. The EXP2 TI-LOK Adapters will allow users to connect 1/32" OD tubing directly to a standard 10-32 port designed for 1/16" tubing.

The EXP2 TI-LOK Fittings and Adapters combine the robustness of titanium and the sealing capability of PEEK. Utilizing a unique patented inverted geometric design, the fittings and adapters firmly compress the PEEK sleeve of the PEEKsil or fused silica tubing against the tube stop of any instrument port creating a zero-dead-volume (ZDV) connection without fracturing the fused silica. The titanium portion of the fitting does not permanently swage to the tubing, allowing for many repeat connections and the ability to adjust the tubing to different port depths.

Using the EXP2 Driver, the EXP2 TI-LOK Fittings and Adapters can be hand-tightened into any HPLC or UHPLC port. The EXP2 Driver is a small, easy to use knurled torque driver which snaps onto the fitting hex for hand-tightening and loosening. The EXP2 Driver is slotted and can be removed from the fitting and tubing after each installation. The EXP2 TI-LOK Fittings and Adapters are available as kits which include the EXP2 Driver. For use with 360µm fused silica; 10-32 Adapters have an integral sleeve. Simply cut fused silica to desired length, insert into adapter and tighten into port. To use 6-32 and 6-40 fittings with fused silica tubing, the purchase of 1/32" OD PEEK sleeves is required.

Additionally, the EXP2 TI-LOK 10-32 Adapters can be purchased with a 0.5µm frit embedded in the tip to create an integral filter or capillary column end-fitting in standard 1/16" tubing ports.

EXP[®]2 TI-LOK™ Hand-Tight Fittings

Each pack below includes 1 EXP2 Driver

2 PACK	10 PACK	
15-19-05281	15-19-05282	6-40 TI-LOK Fitting
15-19-05285	15-19-05286	6-32 TI-LOK Fitting
10-13-05320	10-13-05321	1/32" OPTI-PEEK Sleeves for Fused Silica Tubing

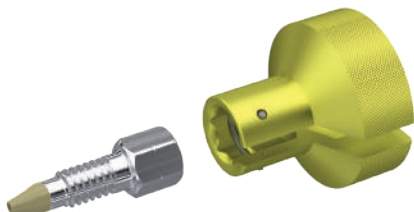
EXP[®]2 TI-LOK™ Hand-Tight Adapters (Adapts 1/32" Tubing and 360µm OD Fused Silica Tubing to 10-32 Ports)

Each pack below includes 1 EXP2 Driver

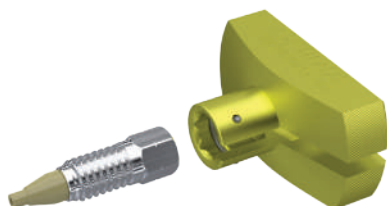
2 PACK	10 PACK	
15-24-05290	15-24-05291	10-32 Standard Parker-Style Adapter
15-24-05294	15-24-05295	10-32 Standard Parker-Style Adapter, with 0.5µm Frit
15-24-05327	15-24-05328	10-32 Standard Parker-Style Adapter for 360µm OD Fused Silica Tubing with Integral PEEK Sleeve
15-24-05298	15-24-05299	10-32 Waters-Style Port Adapter
15-24-05302	15-24-05303	10-32 Waters-Style Port Adapter, with 0.5µm Frit
15-24-05331	15-24-05332	10-32 Waters-Style Port Adapter for 360µm OD Fused Silica Tubing with Integral PEEK Sleeve

HAND-TIGHT

EXP[®]2 TI-LOK™ 6-40 Hand-Tight Fitting



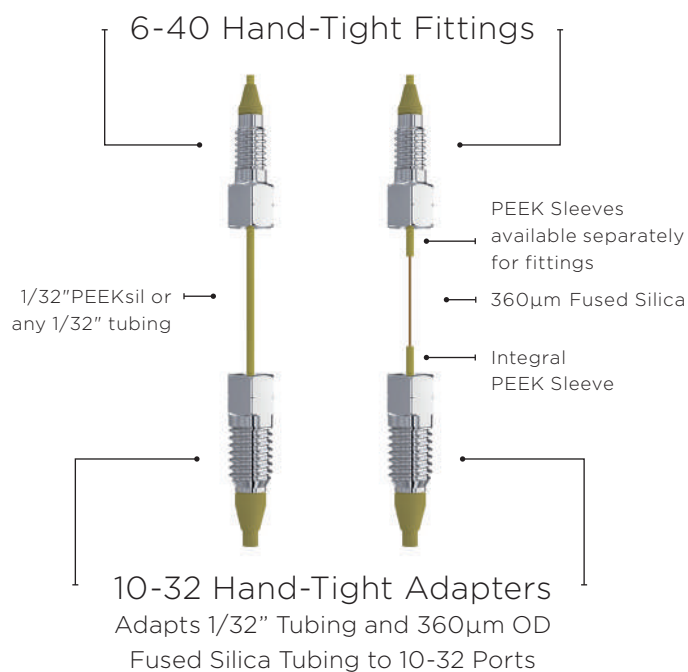
EXP[®]2 TI-LOK™ Hand-Tight Adapter



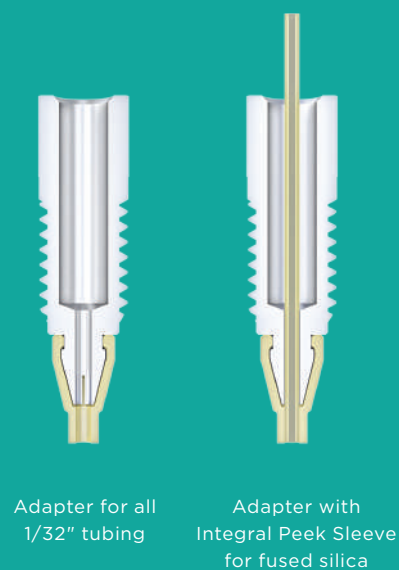
Advantages of EXP[®]2 Fittings and Adapters

- Rated hand-tight to 20,000+ psi (1,400+ bar)
- Auto-adjusting zero-dead-volume connection
- Extremely robust one-piece ferrule design
- Intended for many repeat uses
- Cost efficient with replaceable components
- Perfect for standard or nano UHPLC and UHPLC/MS

CROSS SECTIONS OF EXP2 10-32 ADAPTERS



Before purchasing 10-32 Adapters, please verify your port type.



DIY **EXP®2** TI-LOK™ FITTING & ADAPTER KITS

MAKE YOUR OWN HAND-TIGHT UHPLC CONFIGURATIONS

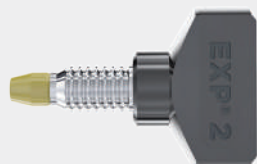
Any pressure. Any tubing. Any length. Any port. Any combination.

The possibilities are endless...

EXP®2 TI-LOK™ 10-32 FITTINGS

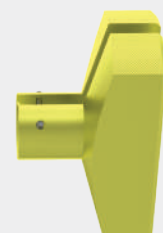


For All Tubing



For All Tubing

Any 1/16" OD Tubing



EXP®2 Driver

Any 1/16" OD Tubing

EXP®2 TI-LOK™ 6-32 & 6-40 FITTINGS



For Fused Silica Tubing

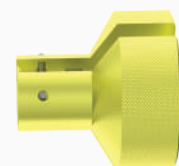
OPTI-PEEK™
Sleeve

360µm OD Fused Silica



For All Tubing

Any 1/32" OD Tubing



EXP®2 Driver

EXP®2 TI-LOK™ 10-32 ADAPTERS



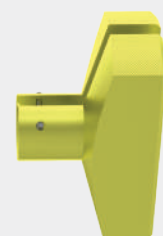
For Fused Silica Tubing

360µm OD Fused Silica



For All Tubing

Any 1/32" OD Tubing



EXP®2 Driver

For more applications such as sample loops and packed capillary columns, please contact Optimize for more information.