



ThermoFisher
S C I E N T I F I C

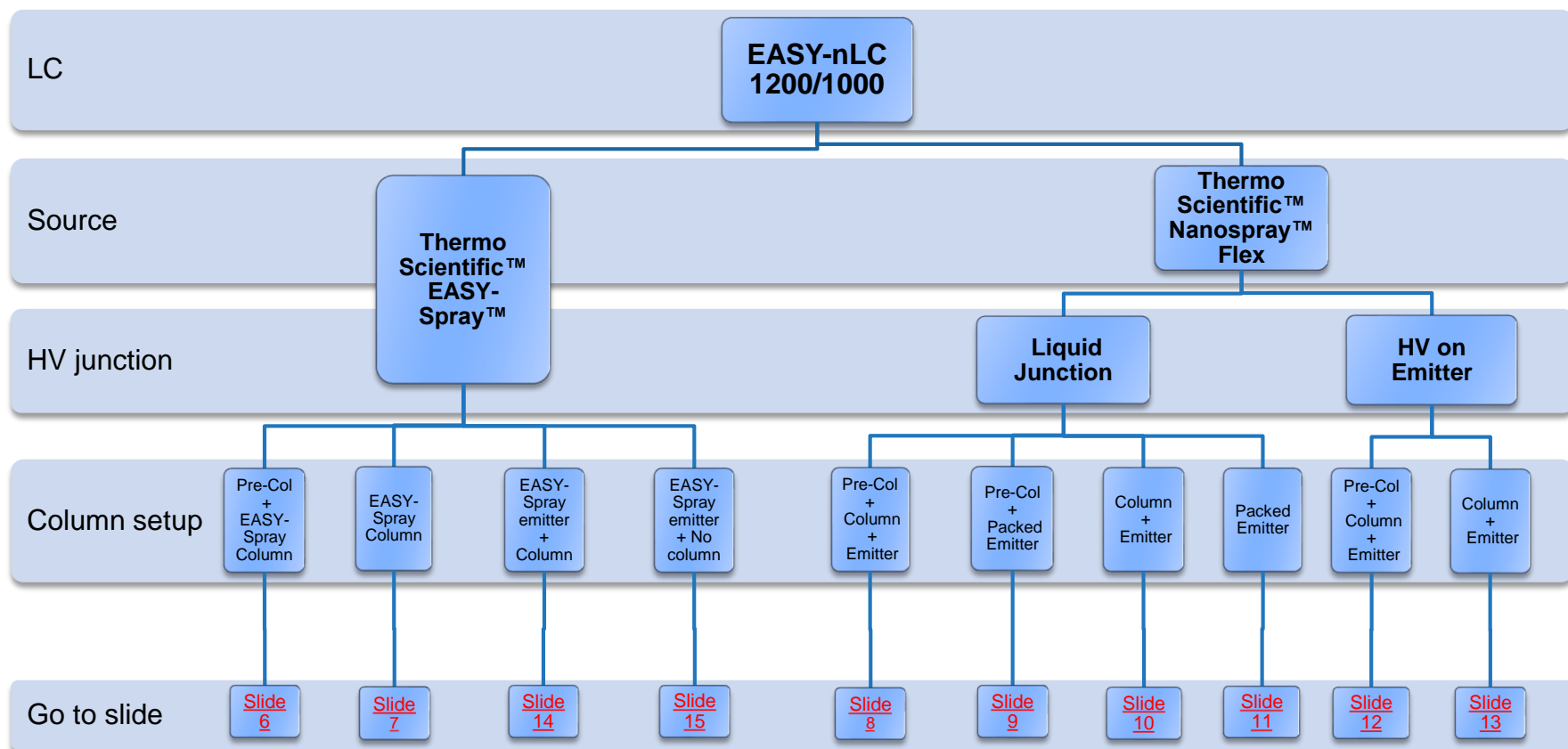
The Complete and Easy Guide to Configuring Your Thermo Scientific™ Nano LC for Mass Spectrometric Analysis

December 2015

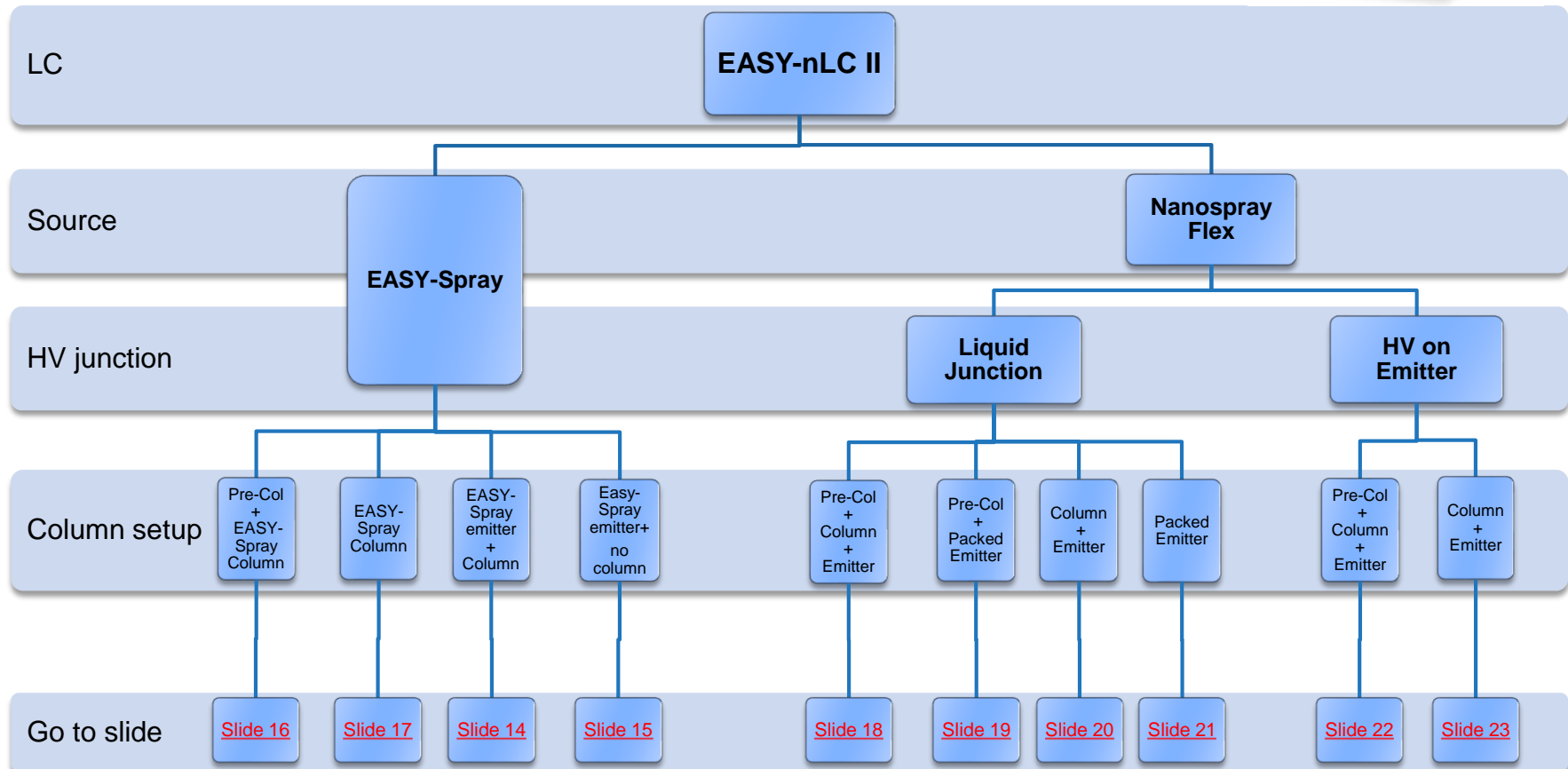
The world leader in serving science

- Thermo Scientific™ EASY-nLC™ 1200/1000 selection tree → [Slide 3](#)
- EASY-nLC II selection tree → [Slide 4](#)
- Thermo Scientific™ UltiMate™ 3000 RSLCnano selection tree → [Slide 5](#)
- 'How to' Guideline → [Slide 39](#)

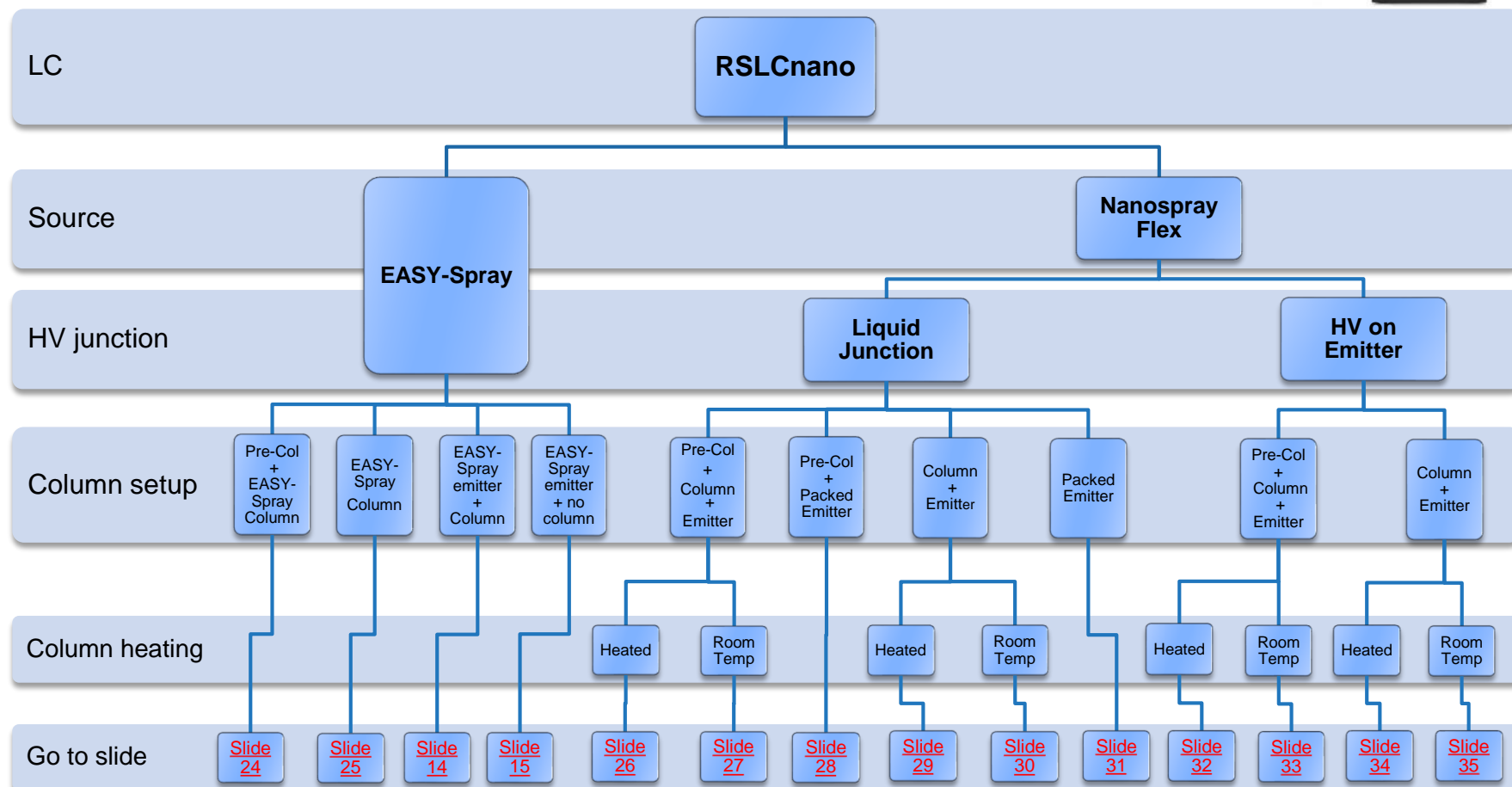
Selection Tree EASY-nLC 1200/1000



Selection Tree EASY-nLC II

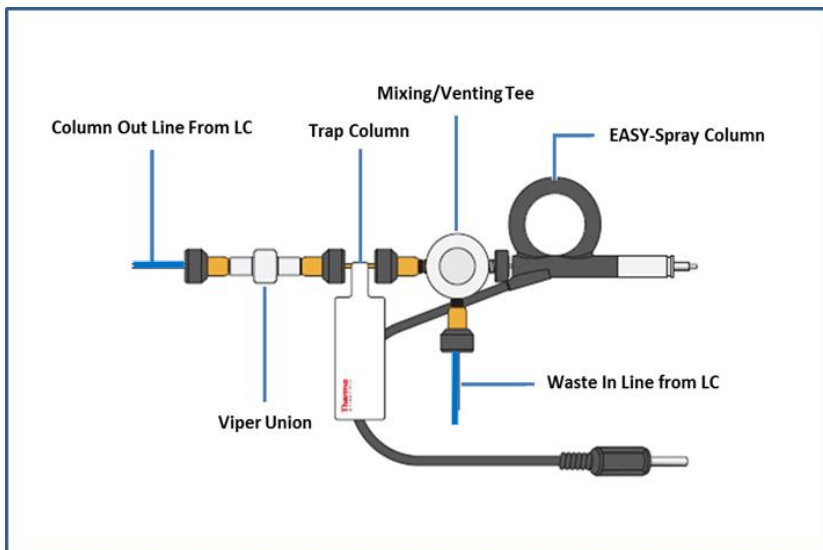


Selection Tree UltiMate 3000 RSLCnano







EASY-nLC 1200/1000 with Pre-column and EASY-Spray Column

Schematic

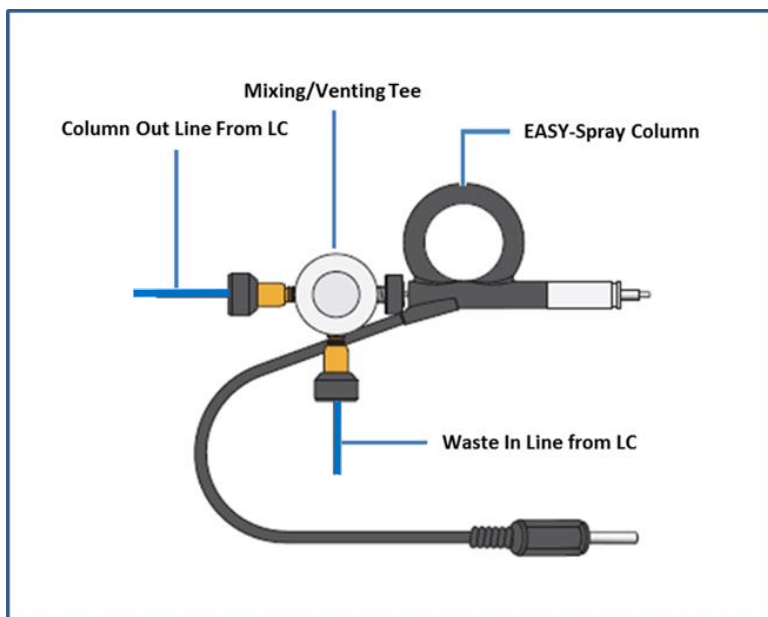


Consumables



Item	Image	P/N
HPLC-to-column connector		SC900
Thermo Scientific™ Acclaim™ PepMap™ pre-column		164705
A/B mixing tee & venting Tee		SC901
EASY-Spray column		https://www.thermoscientific.com/en/about-us/videos/thermo-scientific-easy-spray-columns.html

[Return to selection page EASY-nLC 1200/1000](#)

Schematic



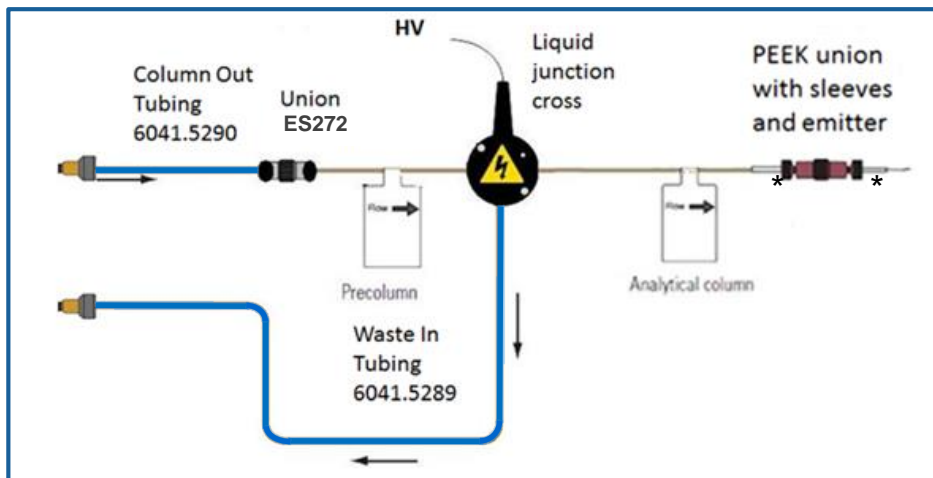
Consumables

Item	Image	P/N
A/B mixing tee & venting Tee		SC901
EASY-Spray column		https://www.thermoscientific.com/en/about-us/videos/thermo-scientific-easy-spray-columns.html

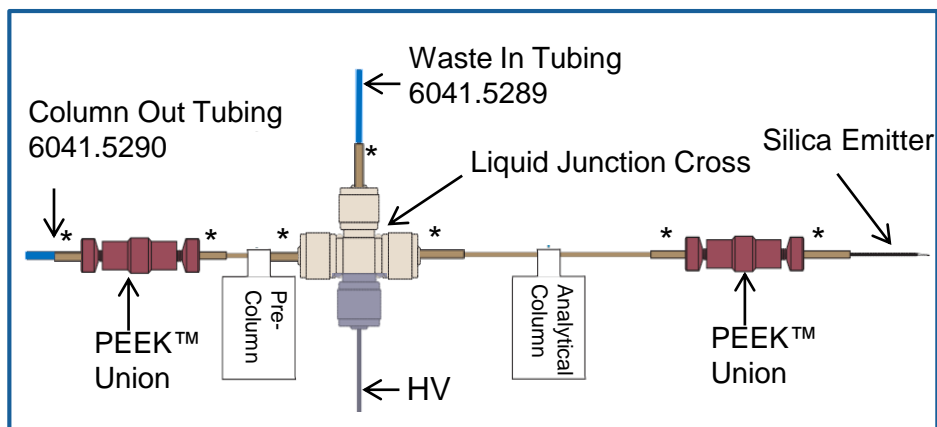
[Return to selection page EASY-nLC 1200/1000](#)

EASY-nLC 1200/1000 with Liquid Junction, Pre-column, Analytical Column and Silica Emitter

UHPLC Schematic – Preferred



HPLC Schematic – 300 bar max

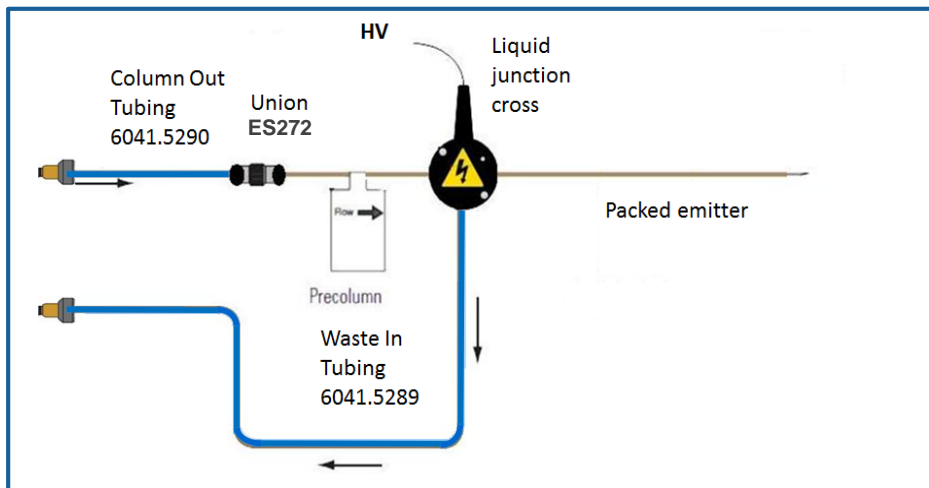


Consumables

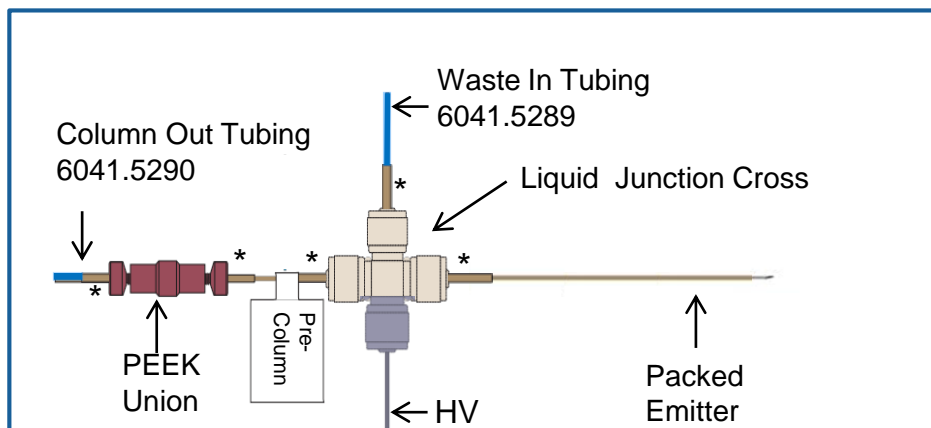
Item	Image	P/N
Column Out Tubing	Viper™ on LC side only	6041.5290
Waste In Tubing	Viper on LC side only	6041.5289
Union For 360 µm O.D.		ES272
UHPLC Liquid Junction Kit 360 µm cross		ES269
HPLC Liquid Junction Cross 1/32" + Beige Sleeves		ES257
MicroTight® Union Assembly 1/32"		G10-0035
Sleeves for connecting 360 µm O.D. capillary to unions*		SC603*
Silica Emitter		FS360-20-10-N-20 (New Objective)

EASY-nLC 1200/1000 with Liquid Junction, Pre-column and Packed Emitter




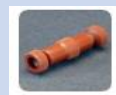
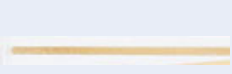
UHPLC Schematic – Preferred



HPLC Schematic – 300 bar max

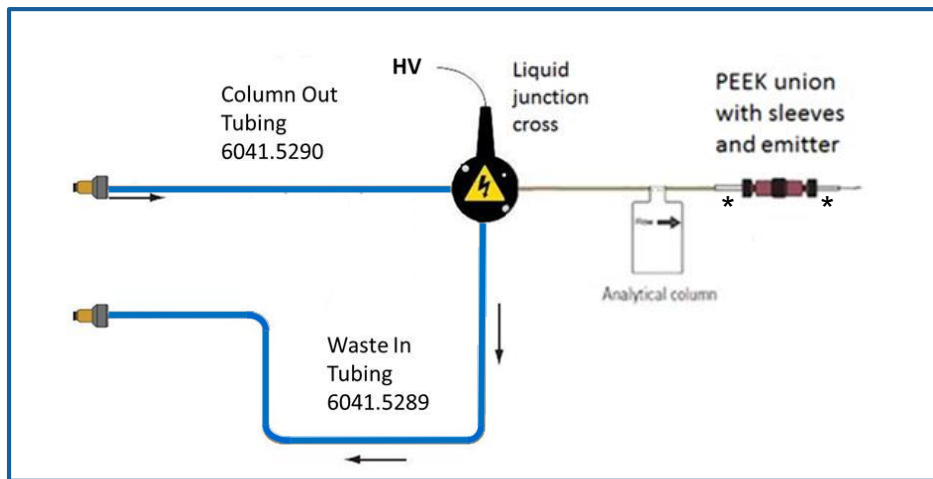


Consumables

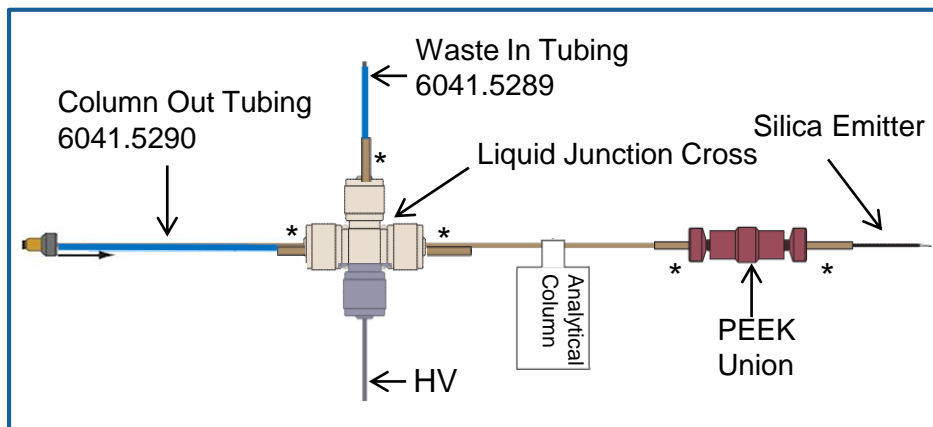
Item	Image	P/N
Column out tubing	Viper on LC Side Only	6041.5290
Waste in tubing	Viper on LC Side Only	6041.5289
Union For 360 µm O.D.		ES272
UHPLC Liquid Junction Kit 360 µm cross		ES269
HPLC Liquid Junction Cross 1/32"+ Beige Sleeves		ES257
MicroTight® Union Assembly 1/32"		G10-0035
Sleeves for connecting 360 µm O.D. capillary to unions*		SC603*

EASY-nLC 1200/1000 with Liquid Junction, Analytical Column and Silica Emitter

UHPLC Schematic – Preferred



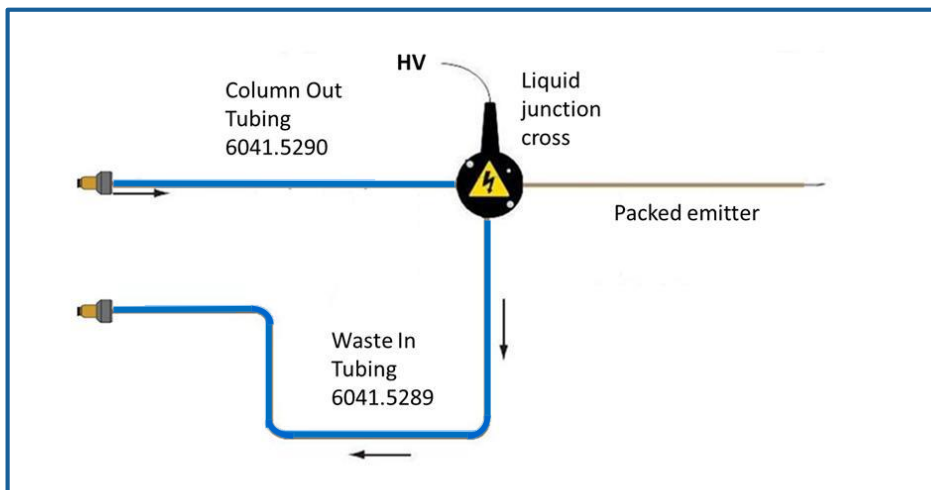
HPLC Schematic – 300 bar max



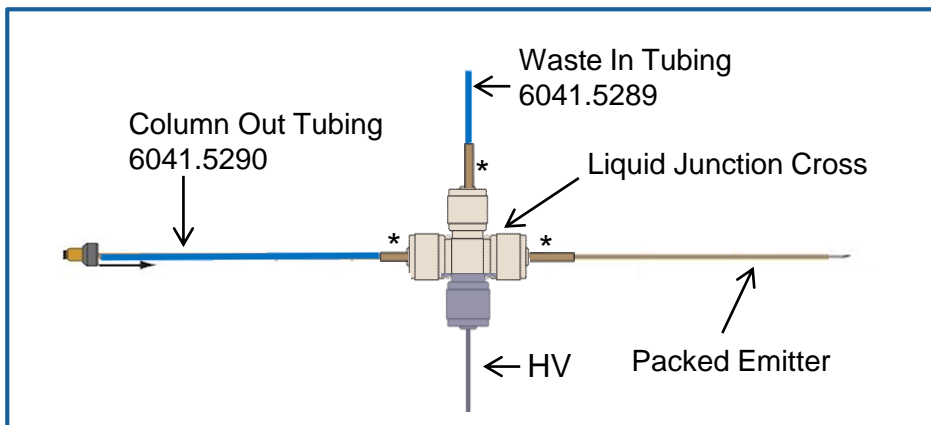
Consumables

Item	Image	P/N
Column Out Tubing	Viper on LC side only	6041.5290
Waste In Tubing	Viper on LC side only	6041.5289
UHPLC Liquid Junction Kit 360 µm cross		ES269
HPLC Liquid Junction Cross 1/32" + Beige Sleeves		ES257
MicroTight® Union Assembly 1/32"		G10-0035
Sleeves for connecting 360 µm O.D. capillary to unions*		SC603*
Silica Emitter		FS360-20-10-N-20 (New Objective)



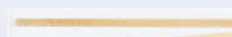
UHPLC Schematic – Preferred



HPLC Schematic – 300 bar max

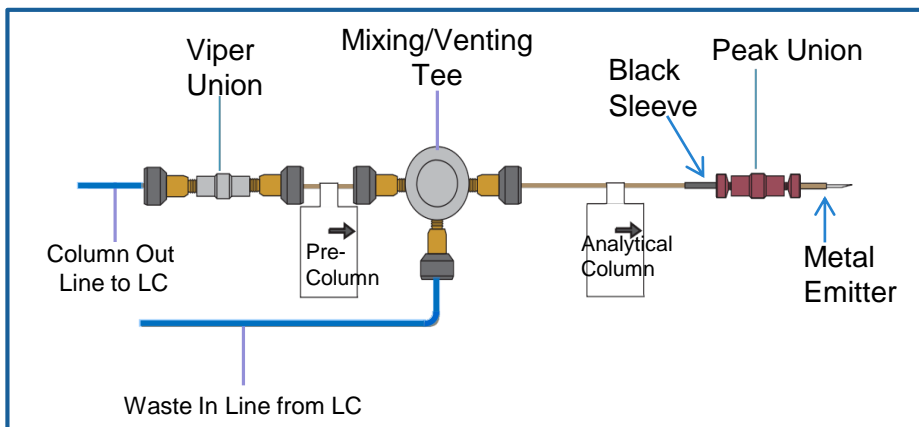


Consumables

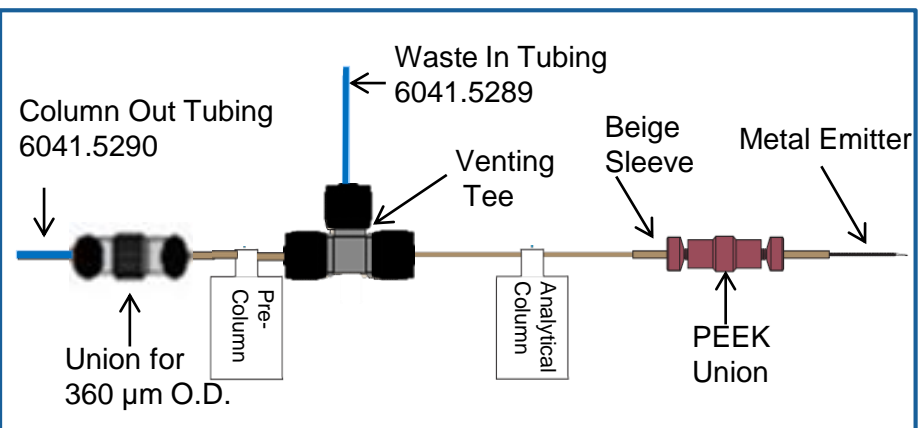
Item	Image	P/N
Column out tubing	Viper on LC Side Only	6041.5290
Waste in tubing	Viper on LC Side Only	6041.5289
UHPLC Liquid Junction Kit 360 μ m cross		ES269
HPLC Liquid Junction Cross 1/32" + Beige Sleeves		ES257
Sleeves for connecting 360 μ m O.D. capillary to union*		SC603*

EASY-nLC 1200/1000 with Pre-column, Analytical Column and Metal Emitter

Viper Column Schematic



Non-Viper Column Schematic

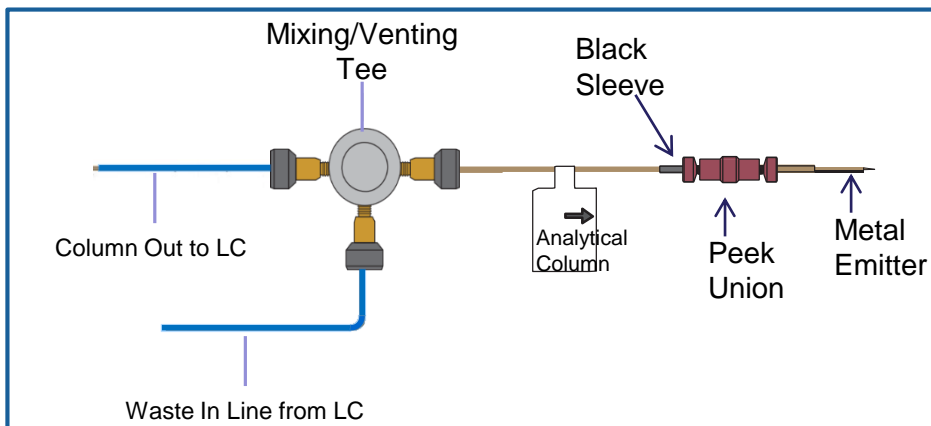


Consumables

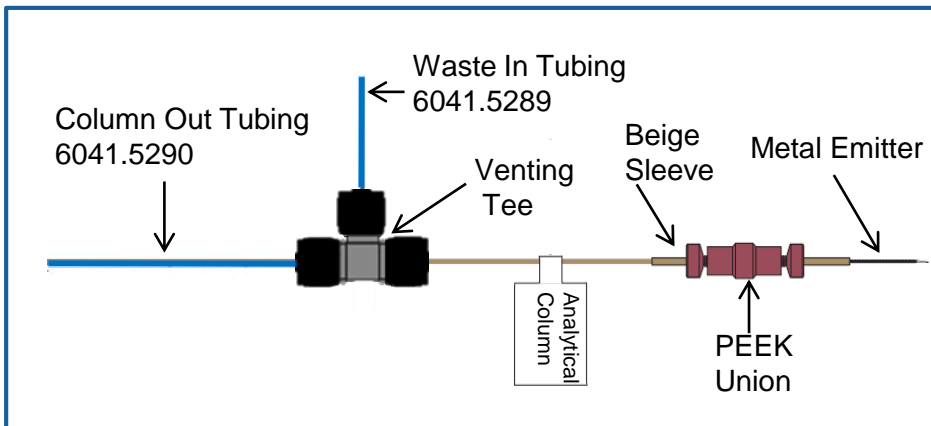
Item	Image	P/N
HPLC-to-column connector		SC900
A/B mixing tee & venting Tee		SC901
MicroTight® Union Assembly 1/32"		G10-0035
Sleeves for connecting 280 µm O.D. capillary		SC903
Metal Emitter		ES542
Column Out Tubing	Viper on LC side only	6041.5290*
Waste In Tubing	Viper on LC side only	6041.5289*
Union for 360 µm O.D.		ES272
Ultra High Pressure MicroTee for 360 µm O.D. Tubing		(IDEX) UH-750
Sleeves for connecting 360 µm O.D. capillary to unions		SC603

EASY-nLC 1200/1000 with Analytical Column and Metal Emitter

Viper Column Schematic



Non-Viper Column Schematic

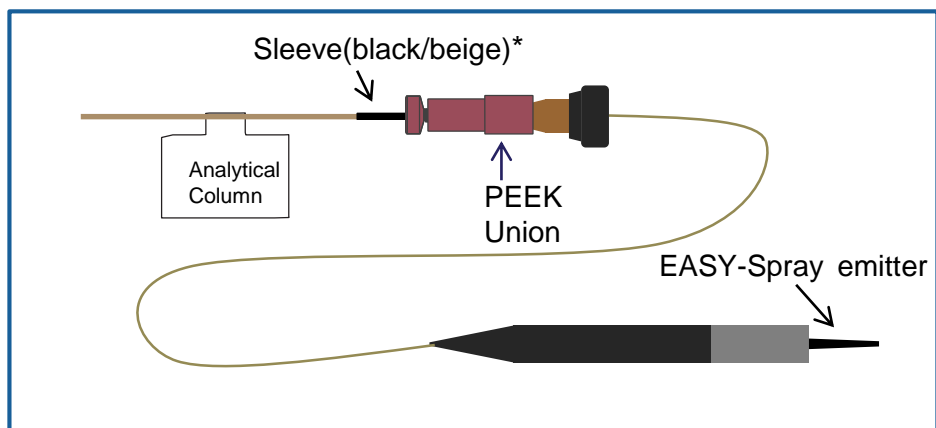


Consumables

Item	Image	P/N
A/B mixing tee & venting Tee		SC901
MicroTight® Union Assembly 1/32"		G10-0035
Sleeves for connecting 280 µm O.D. capillary to unions		SC903
Metal Emitter, I.D. 30µm, O.D. 150mm, 40mm with sleeve O.D. 1/32		ES542
Column Out Tubing	Viper on LC side only	6041.5290*
Waste In Tubing	Viper on LC side only	6041.5289*
Ultra High Pressure MicroTee for 360 µm O.D. Tubing		(IDEX) UH750
Sleeves for connecting 360 µm O.D. capillary to unions		SC603





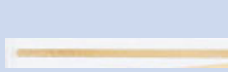
EASY-nLC II, EASY-nLC 1200/1000 and RSLCnano with Analytical Column and EASY-Spray nanoflow/microflow emitter

Schematic



*For non-Viper Column Connections:
Choice of sleeves are column O.D. dependent:
280 μm O.D. (black sleeve) and 360 μm I.D. (beige sleeve)

Consumables

Item	Image	P/N
MicroTight® adapter for 1/16" to 1/32"		00109-02-00055
EASY-Spray emitter for nanoflow. 7 μm ID emitter with a 50 cm x 20 μm ID nanoviper equipped transferline		ES791
EASY-Spray emitter for microflow. 20 μm ID emitter with 50 cm x 75 μm ID nanoviper equipped transferline		ES792
Sleeves for connecting 280 μm O.D. capillary to union		SC903
Sleeves for connecting 360 μm O.D. capillary to union		SC603

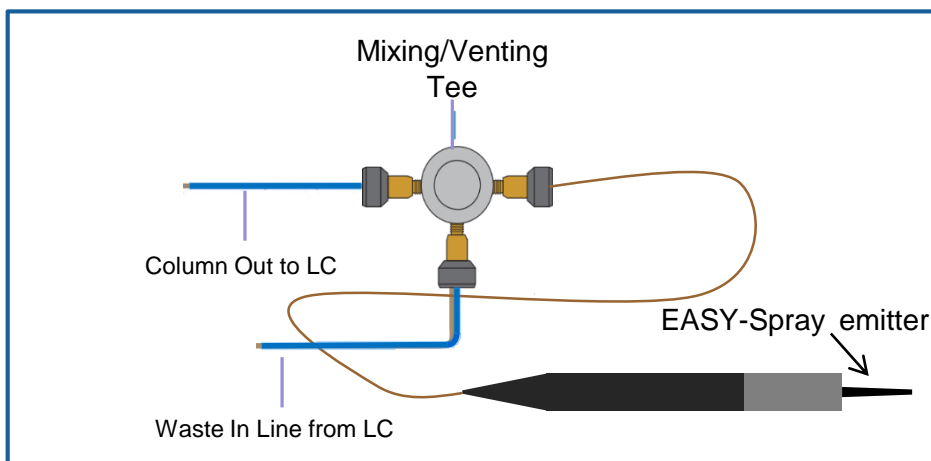
[Return to selection page EASY-nLC 1200/1000](#)

[Return to selection page EASY-nLC II](#)




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EASY-nLC II, and EASY-nLC 1200/1000 directly connected to EASY-Spray nanoflow/microflow emitter

Schematic



Consumables

Item	Image	P/N
A/B mixing tee & venting Tee		SC901
EASY-Spray emitter for nanoflow. 7µm ID emitter with a 50 cm x 20 µm ID nanoviper equipped transferline		ES791
EASY-Spray emitter for microflow. 20µm ID emitter with 50 cm x 75 µm ID nanoviper equipped transferline		ES792

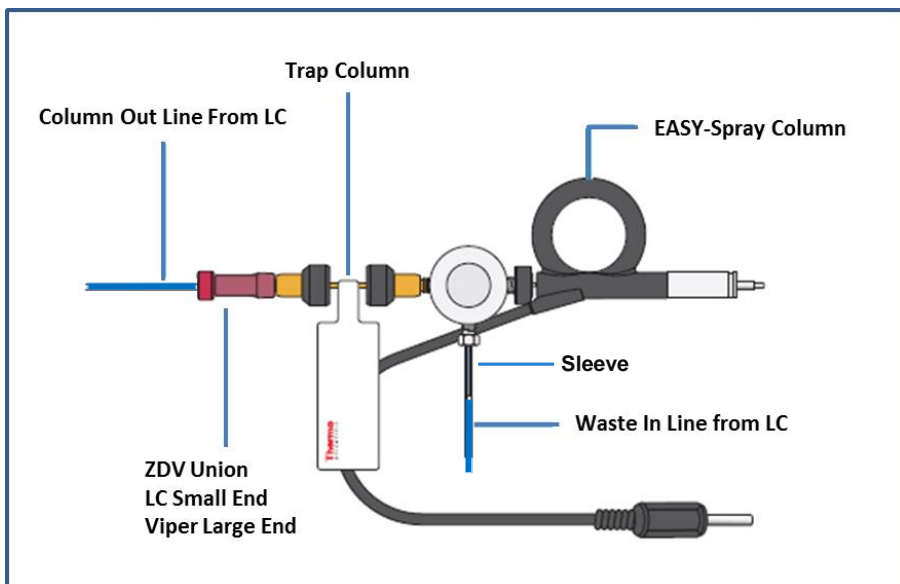
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[Return to selection page EASY-nLC II](#)

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EASY-nLC II with Precolumn and EASY-Spray Column

Schematic



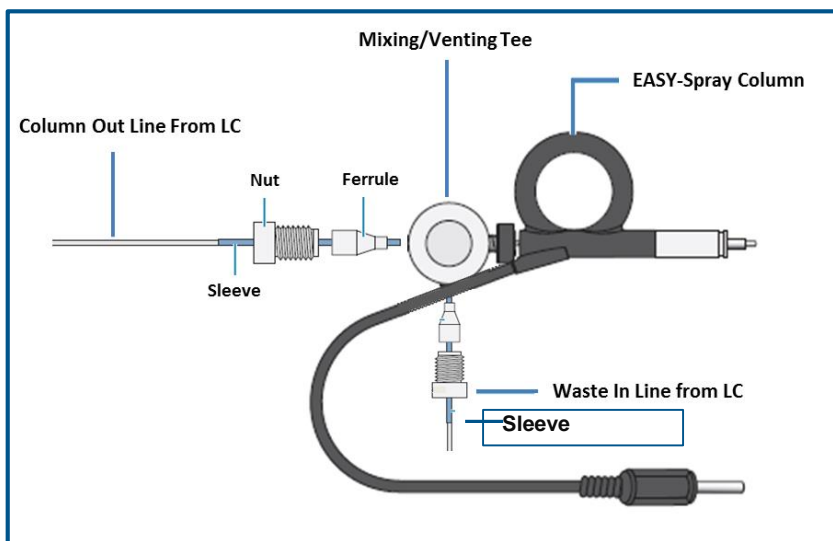
Consumables

Item	Image	P/N
MicroTight® adapter for 1/16" to 1/32"		00109-02-00055
Acclaim Pepmap 100 C18 precolumn		164705
A/B mixing & venting Tee		SC901
EASY-Spray column		https://www.thermoscientific.com/en/about-us/videos/thermoscientific-easy-spray-columns.html
Tubing Sleeve, 865 µm (0.034") ID x 1/16" O.D., PEEK™, Blue		(IDEX) F233

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EASY-nLC II with EASY-Spray Column

Schematic



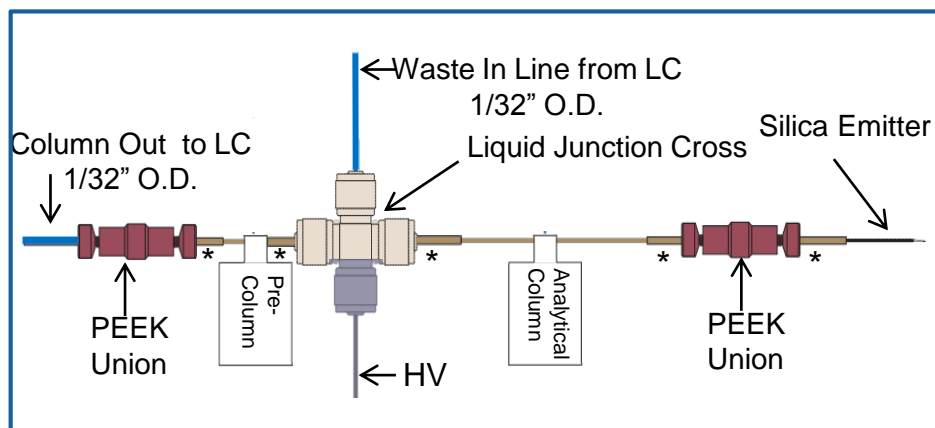
Consumables

Item	Image	P/N
A/B mixing & venting Tee		SC901
EASY-Spray column		https://www.thermoscientific.com/en/about-us/videos/thermo-scientific-easy-spray-columns.html
Tubing Sleeve, 865 μm (0.034") ID x 1/16" O.D., PEEK™, Blue		(IDEX) F233



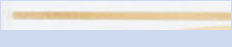
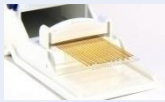
[Return to selection page EASY-nLC II](#)

EASY-nLC II with Liquid Junction, Pre-column, Analytical Column and Silica Emitter

Schematic



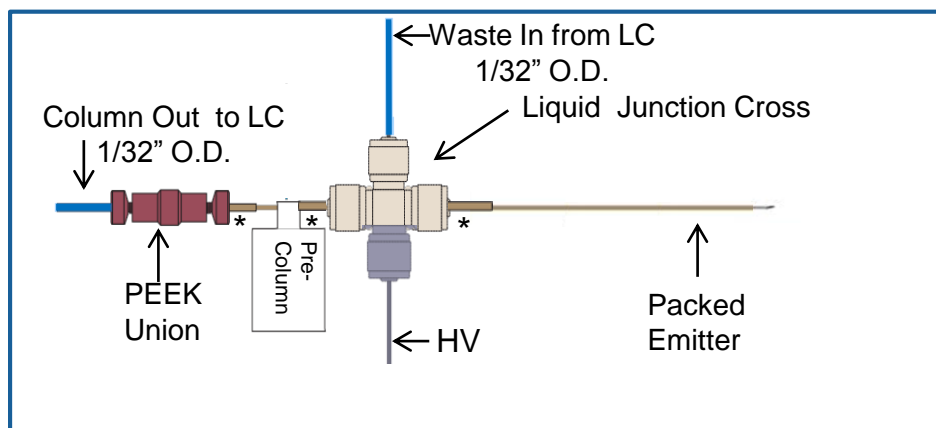
Consumables

Item	Image	P/N
HPLC Liquid Junction Cross 1/32"+ Beige Sleeves		ES257
MicroTight® Union Assembly 1/32"		G10-0035
Sleeves for connecting 360 µm O.D. capillary to Unions		SC603*
Silica Emitter		FS360-20-10-N-20 (New Objective)




[Return to selection page EASY-nLC II](#)

EASY-nLC II with Liquid Junction, Pre-column and Packed Emitter

Schematic



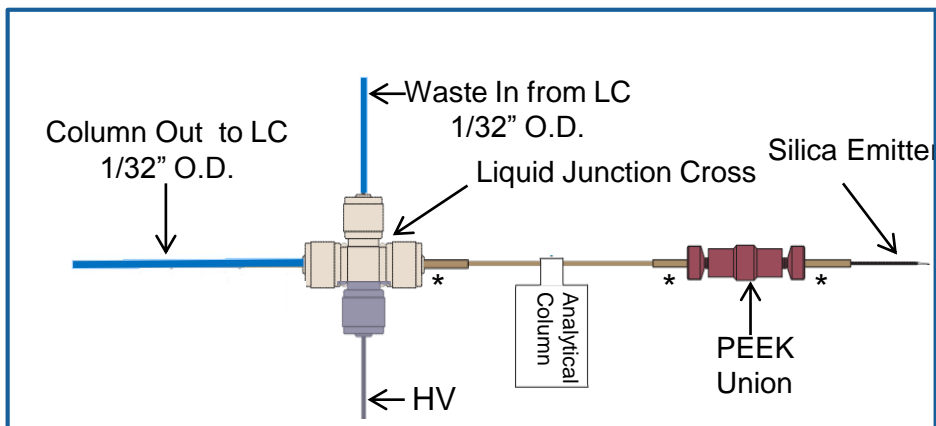
Consumables

Item	Image	P/N
HPLC Liquid Junction Cross 1/32"+ Beige Sleeves		ES257
MicroTight® Union Assembly 1/32"		G10-0035
Sleeves for connecting 360 µm O.D. capillary to Unions		SC603*



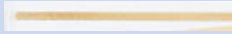
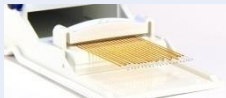
[Return to selection page EASY-nLC II](#)

EASY-nLC II with Liquid Junction, Analytical Column and Silica Emitter

Schematic

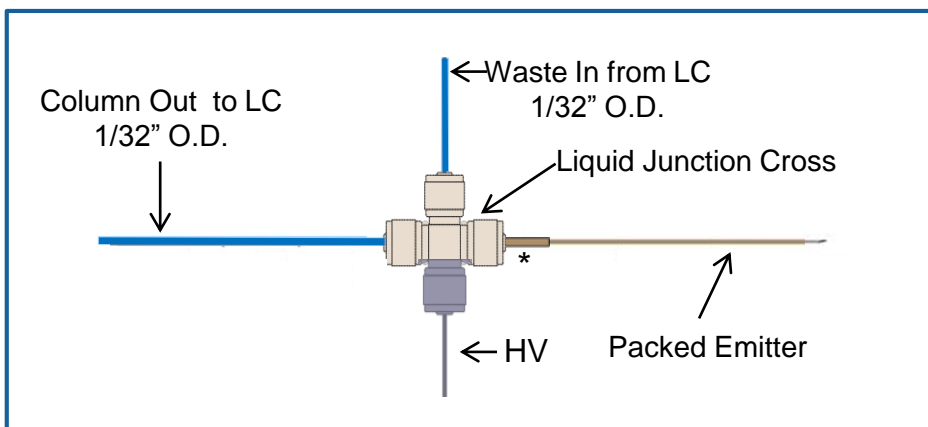


Consumables



Item	Image	P/N
HPLC Liquid Junction Cross 1/32"+ Beige Sleeves		ES257
MicroTight® Union Assembly 1/32"		G10--0035
Sleeves for connecting 360 µm O.D. capillary to Unions		SC603*
Silica Emitter		FS360-20-10-N-20 (New Objective)

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HPLC Schematic



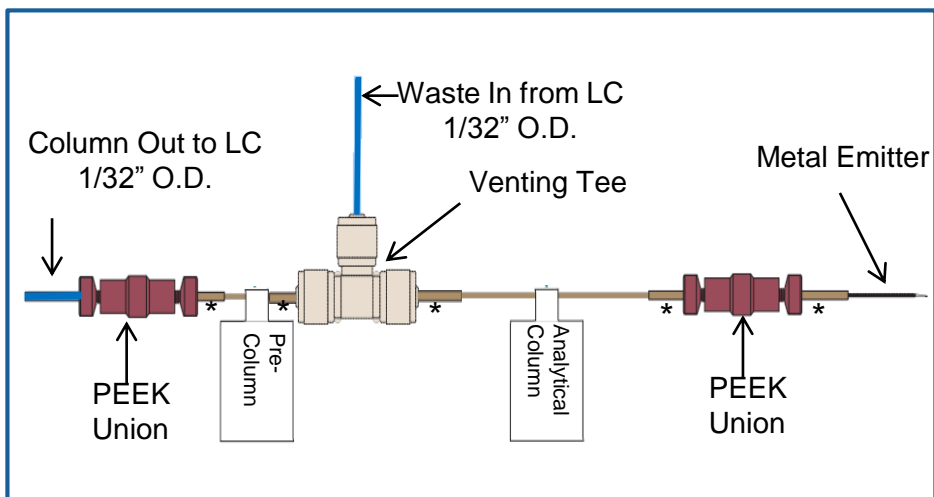
Consumables

Item	Image	P/N
HPLC Liquid Junction Cross 1/32"+ Beige Sleeves		ES257
Sleeves for connecting 360 µm O.D. Capillary to Union		SC603*

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EASY-nLC II with Pre-column, Analytical Column and Metal Emitter

Schematic



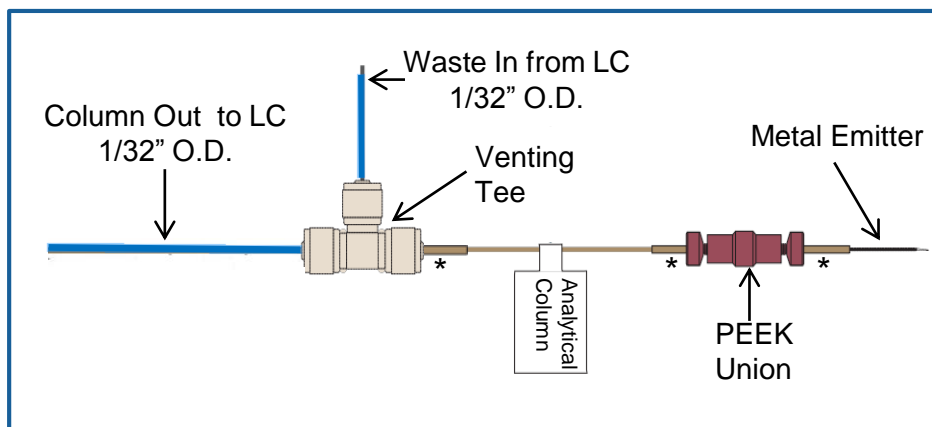
Consumables

Item	Image	P/N
MicroTight® Union Assembly 1/32"		G10--0035
Sleeves for connecting 360 µm O.D. capillary to unions		SC603*
Venting Tee + Beige Sleeves		SC601
Metal Emitter		ES542

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EASY-nLC II with Analytical Column and Metal Emitter

Schematic



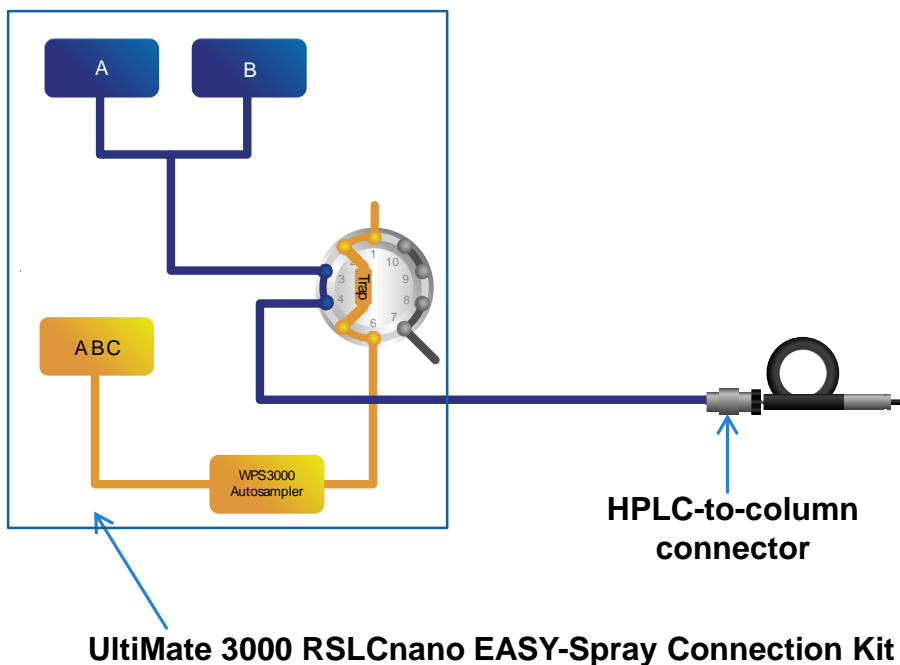
Consumables

Item	Image	P/N
MicroTight® Union Assembly 1/32"		G10-0035
Sleeves for connecting 360 µm O.D. capillary to unions		SC603*
Venting Tee + Beige Sleeves		SC601
Metal Emitter		ES542




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RSLCnano with Pre-column and EASY-Spray Column

Schematic



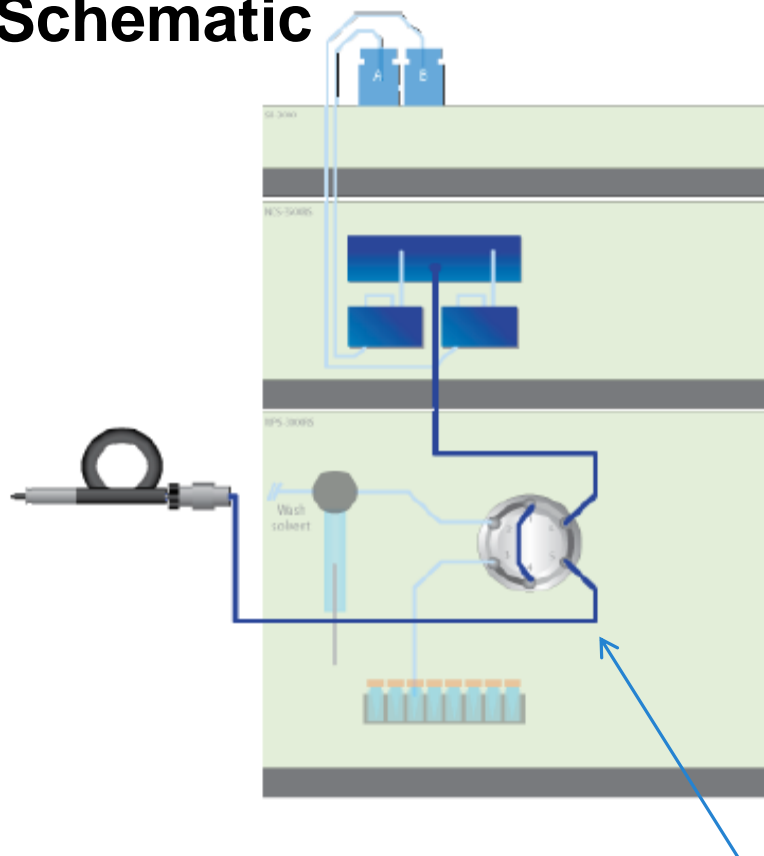
Consumables

Item	Image	P/N
UltiMate 3000 RSLCnano EASY-Spray Connection Kit	See Slide 36	6720.0395
HPLC-to-column connector		SC900
Acclaim PepMap cartridge + μ -Precolumn holder		160454 + 164649
EASY-Spray column		https://www.thermoscientific.com/en/about-us/videos/thermoscientific-easy-spray-columns.html

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RSLCnano with EASY-Spray Column

Schematic



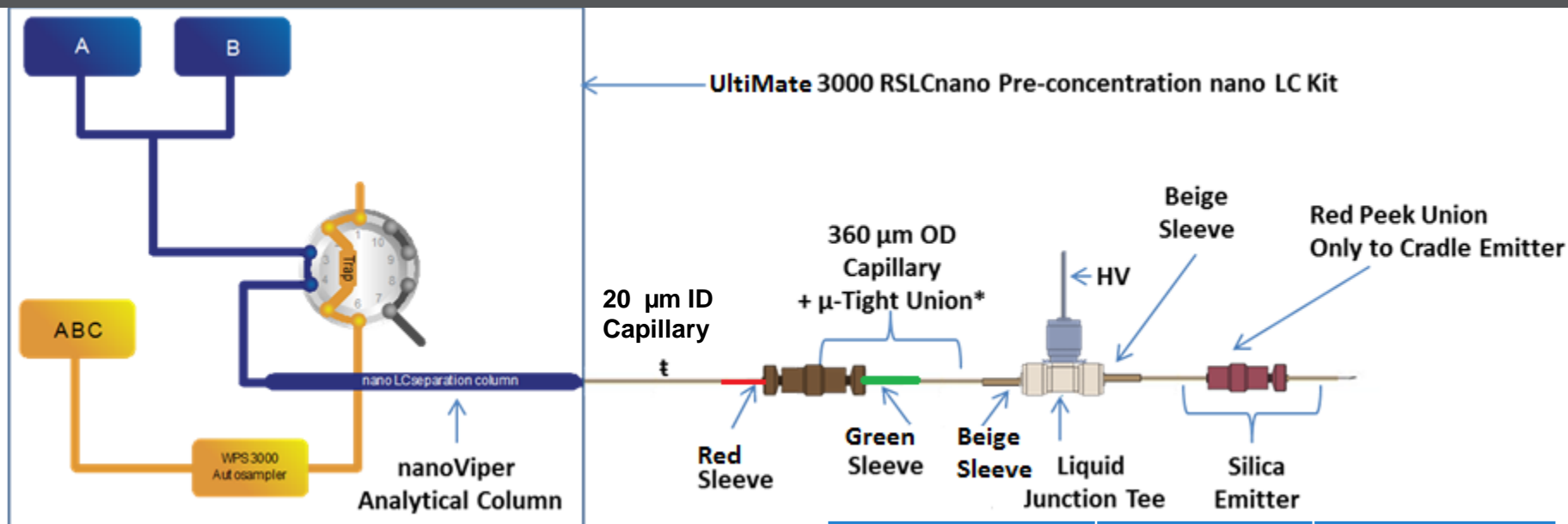
UltiMate 3000 RSLCnano EASY-Spray Connection Kit



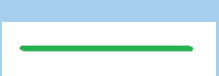
Consumables



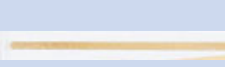
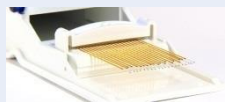
Item	Image	P/N
UltiMate 3000 RSLCnano EASY-Spray Connection Kit	See Slide 36	6720.0395
HPLC-to-column connector		SC900
EASY-Spray column		https://www.thermoscientific.com/en/about-us/videos/thermo-scientific-easy-spray-columns.html

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RSLCnano with Liquid Junction, Pre-column, Heated Analytical Column and Silica Emitter



Item	Image	P/N
UltiMate 3000 RSLCnano Pre-concentration nano LC kit	Contents Slide 37	6720.0310
MicroTight® Union 1/40**		6720.0074*
Sleeves for connecting O.D. 280µm to beige MicroTight® Union		6720.0075
Sleeves for connecting 360 µm capillary to beige MicroTight® Union		6720.0076

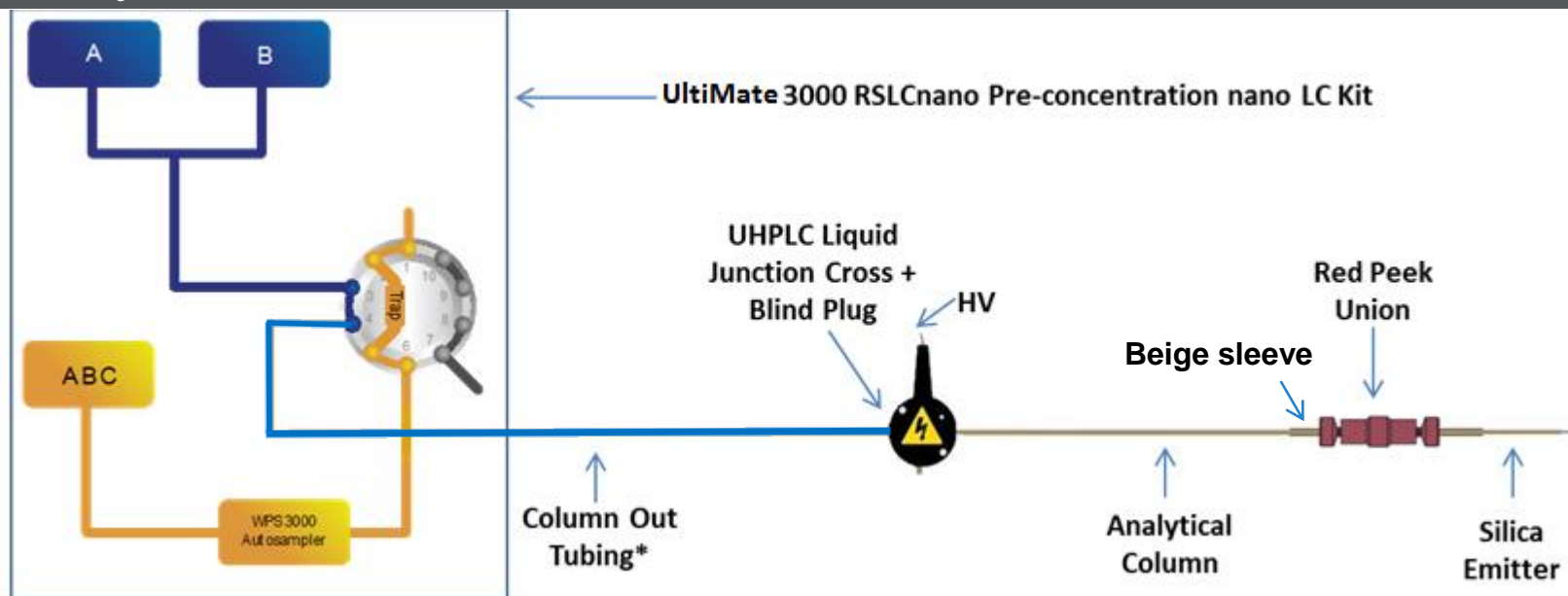
Item	Image	P/N
HPLC Liquid Junction Tee + Beige Sleeves		ES258
MicroTight® Union Assembly 1/32"		G10-0035
Beige sleeves for 360 µm O.D. capillary		SC603
Silica Emitter		FS360-20-10-N-20-C12 (New Objective)


*Only use if transfer capillary from the analytical column does not reach the liquid junction tee




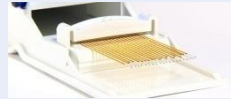
26 † Fused silica capillary with 280 µm O.D.

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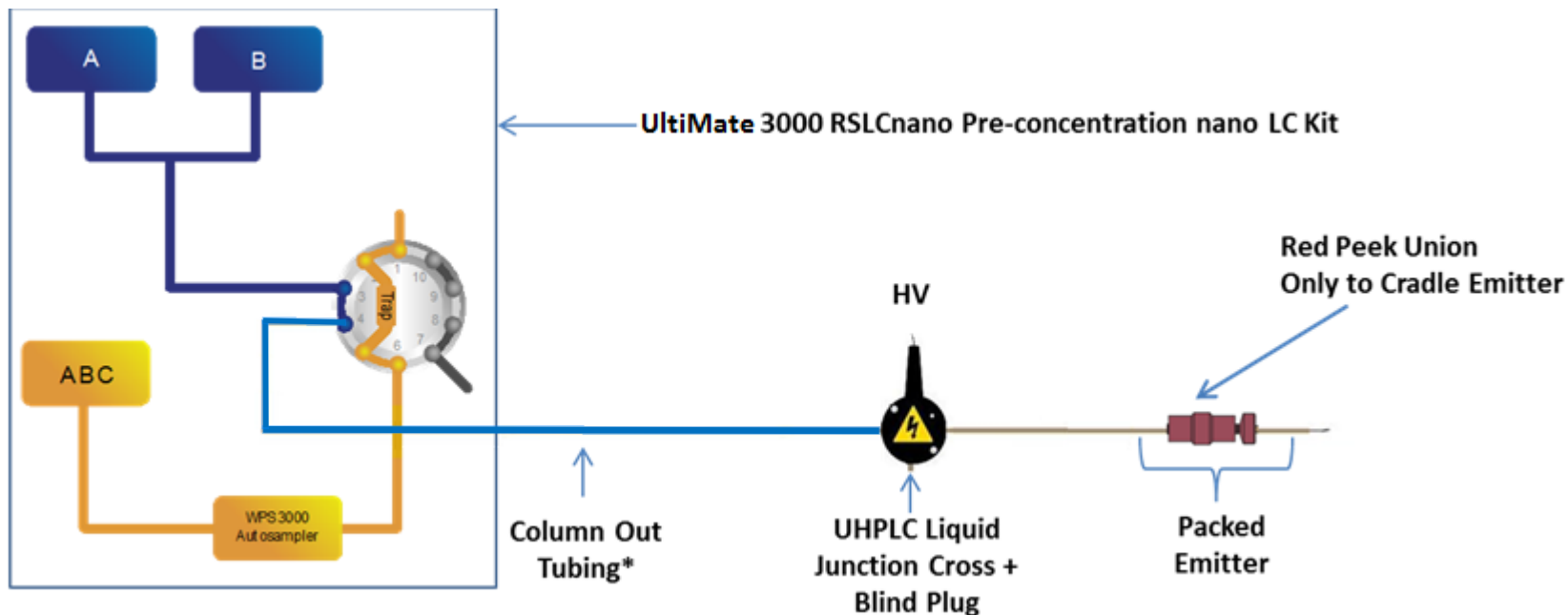
RSLCnano with Liquid Junction, Pre-column, Room Temperature Analytical Column and Silica Emitter




Item	Image	P/N
UltiMate 3000 RSLCnano Pre-concentration nano LC kit	Contents Slide 37	6720.0310
Column Out Tubing*	Viper on LC side only*	6041.5290*
UHPLC Liquid Junction Cross Kit		ES269

Item	Image	P/N
UHPLC Blind Plug		(IDEX) P-116
MicroTight® Union Assembly 1/32"		G10-0035
Beige sleeves for 360 µm O.D. capillary		SC603
Silica Emitter		FS360-20-10-N-20 (New Objective)

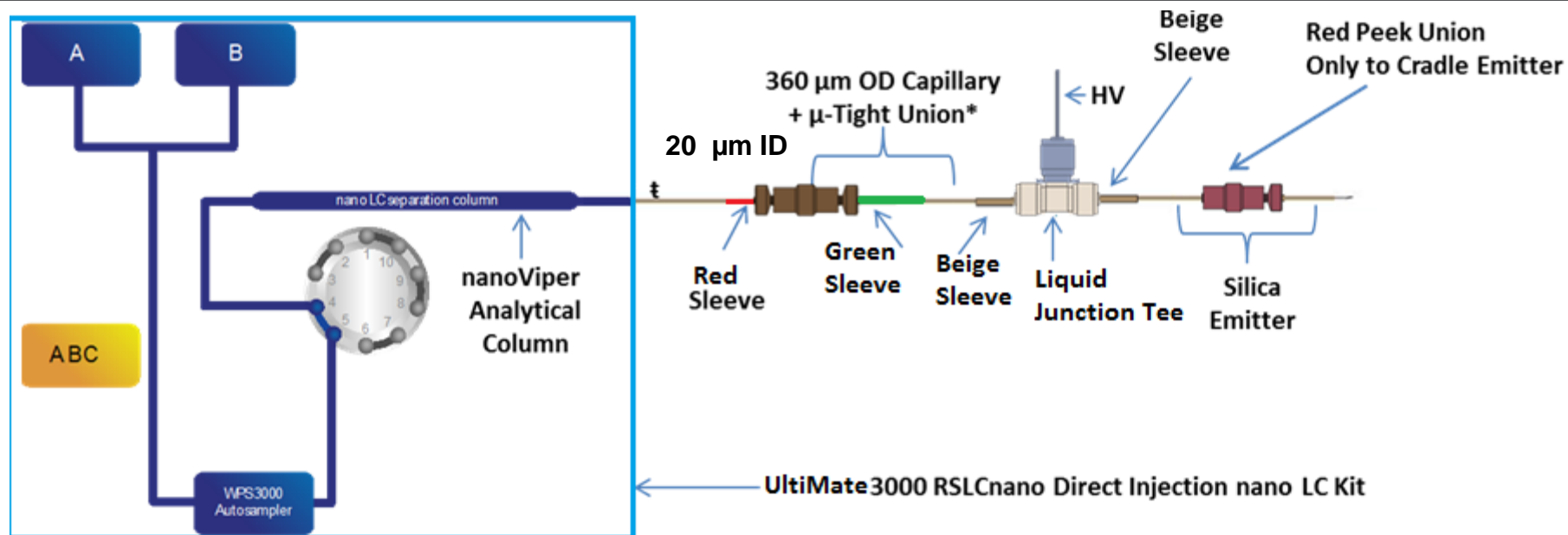
RSLCnano with Liquid Junction, Pre-column and Packed Emitter



Item	Image	P/N
UltiMate 3000 RSLCnano Pre-concentration nano LC kit	Contents Slide 37	6720.0310
Column Out Tubing*	Viper on LC side only*	6041.5290*
UHPLC Liquid Junction Cross Kit		ES269

Item	Image	P/N
UHPLC Blind Plug		(IDEX) P-116
MicroTight® Union Assembly 1/32"		G10-0035

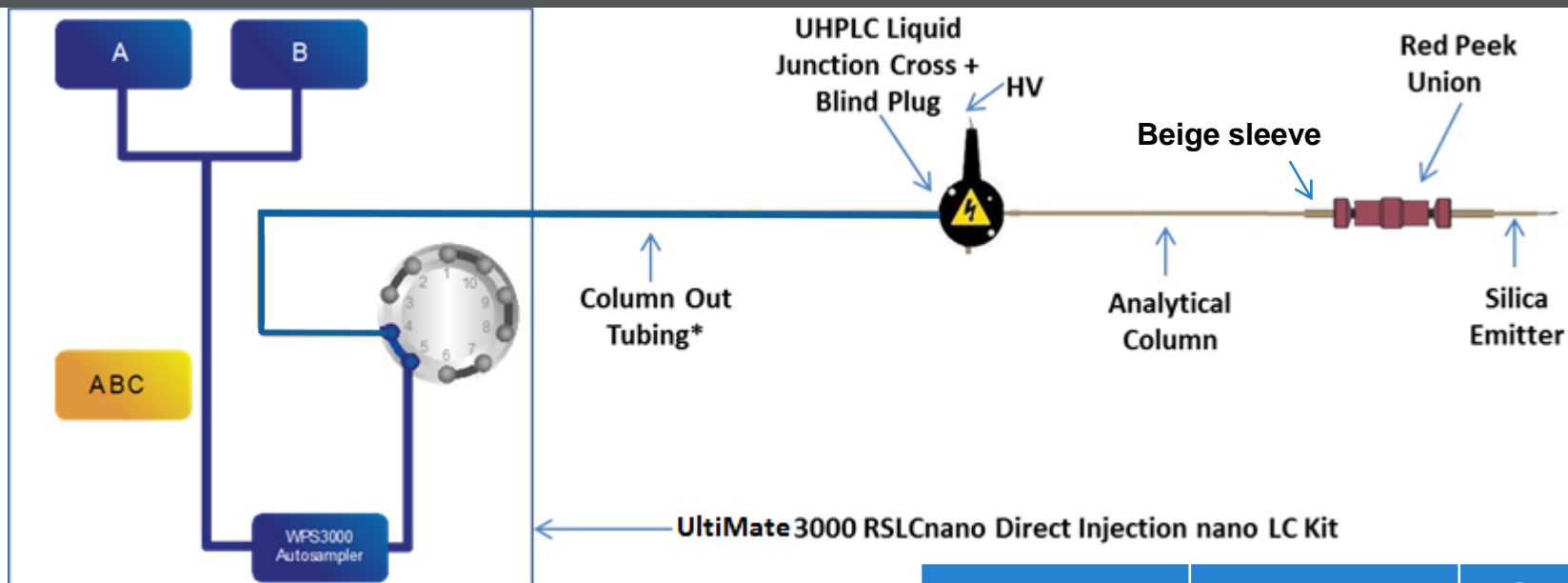
RSLCnano with Liquid Junction, Heated Analytical Column and Silica Emitter







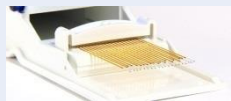
Item	Image	P/N
UltiMate 3000 RSLCnano Direct Injection nano LC kit	Contents Slide 38	6720.0300
MicroTight® Union 1/40" *		6720.0074*
Sleeves for connecting O.D. 280 µm capillary to beige MicroTight® Union		6720.0075
Sleeves for connecting O.D. 360 µm capillary to beige MicroTight® Union		6720.0076

Item	Image	P/N
HPLC Liquid Junction Tee + Beige Sleeves		ES258
MicroTight® Union Assembly 1/32"		G10-0035
Beige sleeves for O.D. 360 µm capillary		SC603
Silica Emitter		FS360-20-10-N-20-C12 (New Objective)

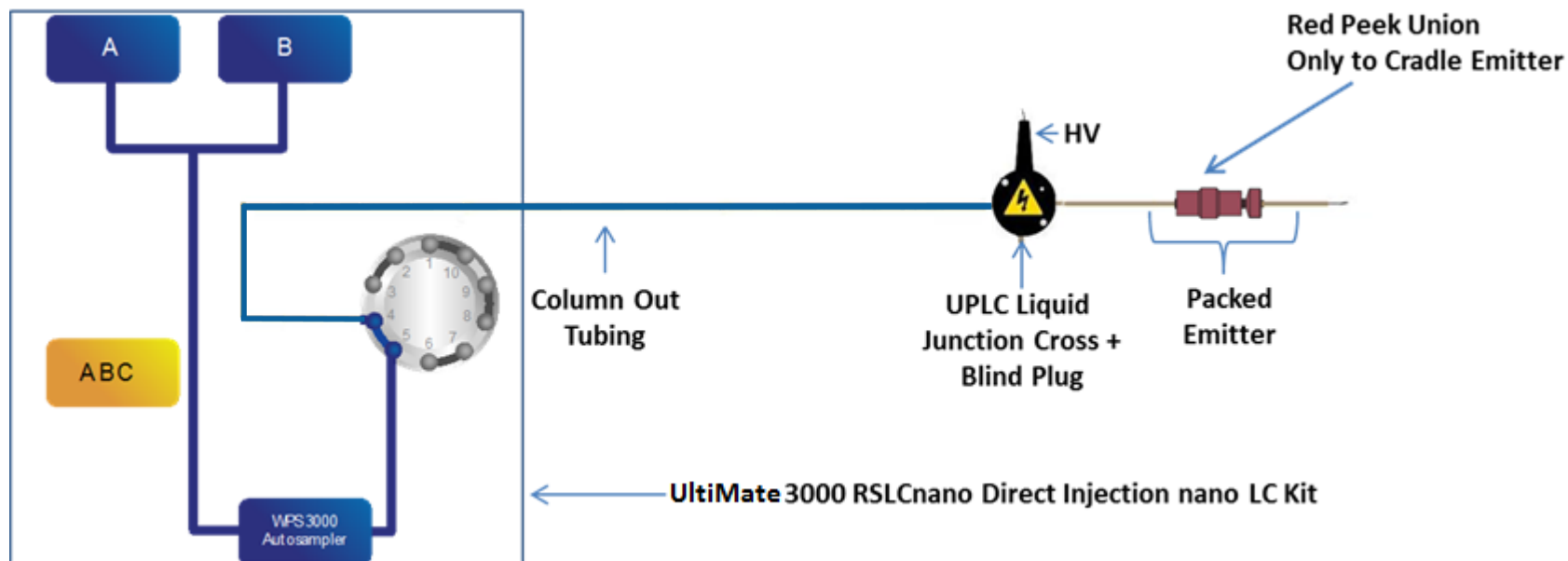
RSLCnano with Liquid Junction, Room Temperature, Analytical Column and Silica Emitter




Item	Image	P/N
UltiMate 3000 RSLCnano Direct Injection nano LC kit	Contents Slide 38	6720.0300
Column Out Tubing*	Viper on LC side only*	6041.5290*
UHPLC Liquid Junction Cross Kit		ES269

Item	Image	P/N
UHPLC Blind Plug		(IDEX) P-116
MicroTight® Union Assembly 1/32"		G10-0035
Beige sleeves for 360 µm O.D. capillary		SC603
Silica Emitter		FS360-20-10-N-20 (New Objective)

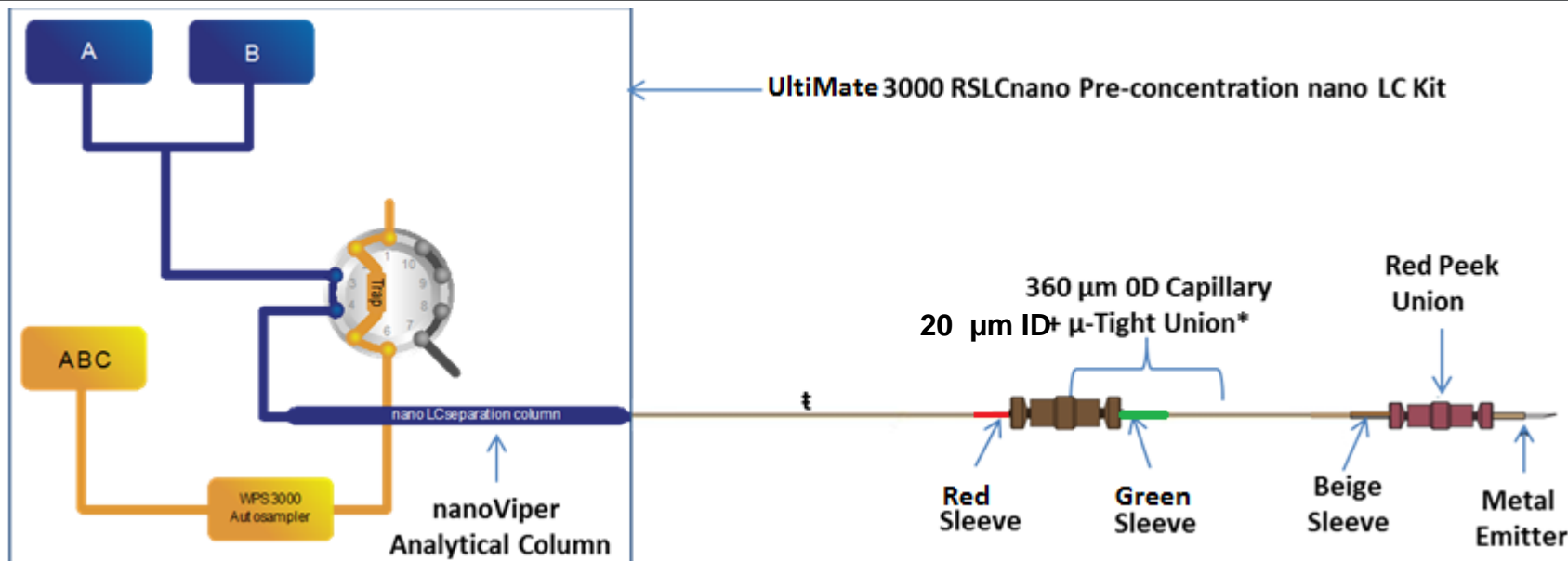
RSLCnano with Liquid Junction and Packed Emitter



Item	Image	P/N
UltiMate 3000 RSLCnano Direct Injection nano LC kit	Contents Slide 38	6720.0300
Column Out Tubing	Viper on LC side only	6041.5290*
UHPLC Liquid Junction Cross Kit		ES269

Item	Image	P/N
UHPLC Blind Plug		(IDEX) P-116
MicroTight® Union Assembly 1/32"		G10-0035

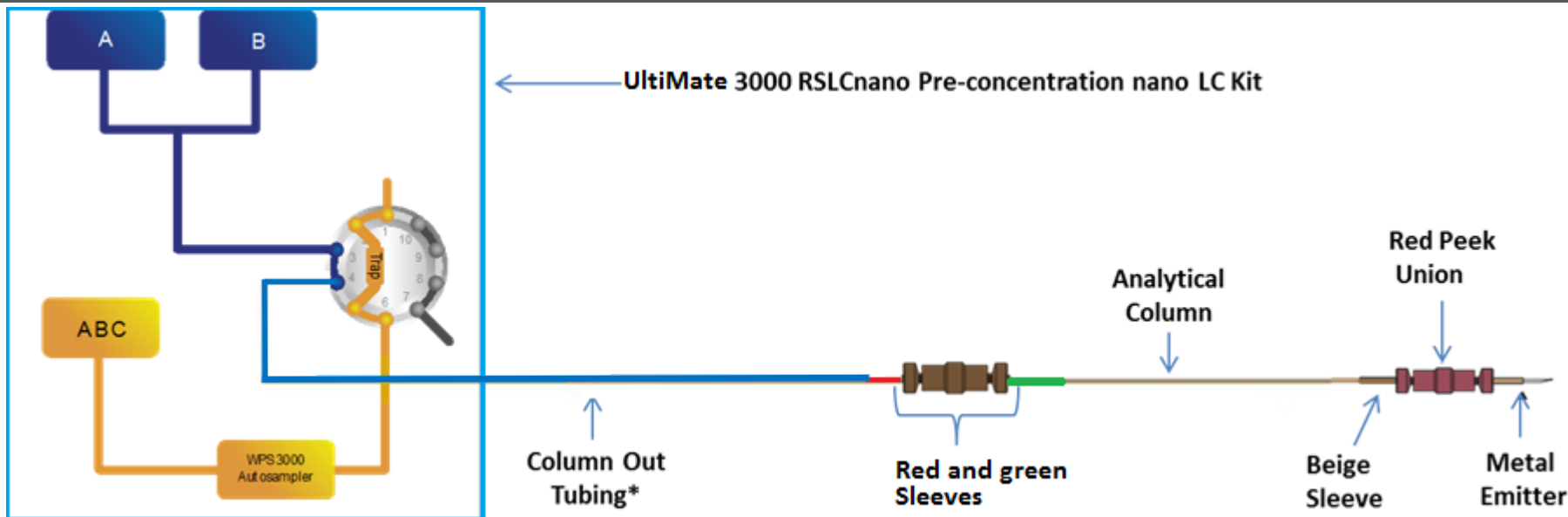
RSLCnano with Pre-column, Heated Analytical Column and Metal Emitter









Item	Image	P/N
UltiMate 3000 RSLCnano Pre-concentration nano LC kit	Contents Slide 37	6720.0310
MicroTight® Union 1/40" *		6720.0074*
Sleeves for connecting O.D. 280 µm capillary to beige MicroTight® Union		6720.0075
Sleeves for connecting 360 µm capillary to beige MicroTight® Union		6720.0076

Item	Image	P/N
MicroTight® Union Assembly 1/32"		G10-0035
Beige sleeves for connecting O.D 360 µm capillary to Microtight Unions		SC603
Metal Emitter		E542

RSLCnano with Pre-column, Room Temperature Analytical Column and Metal Emitter

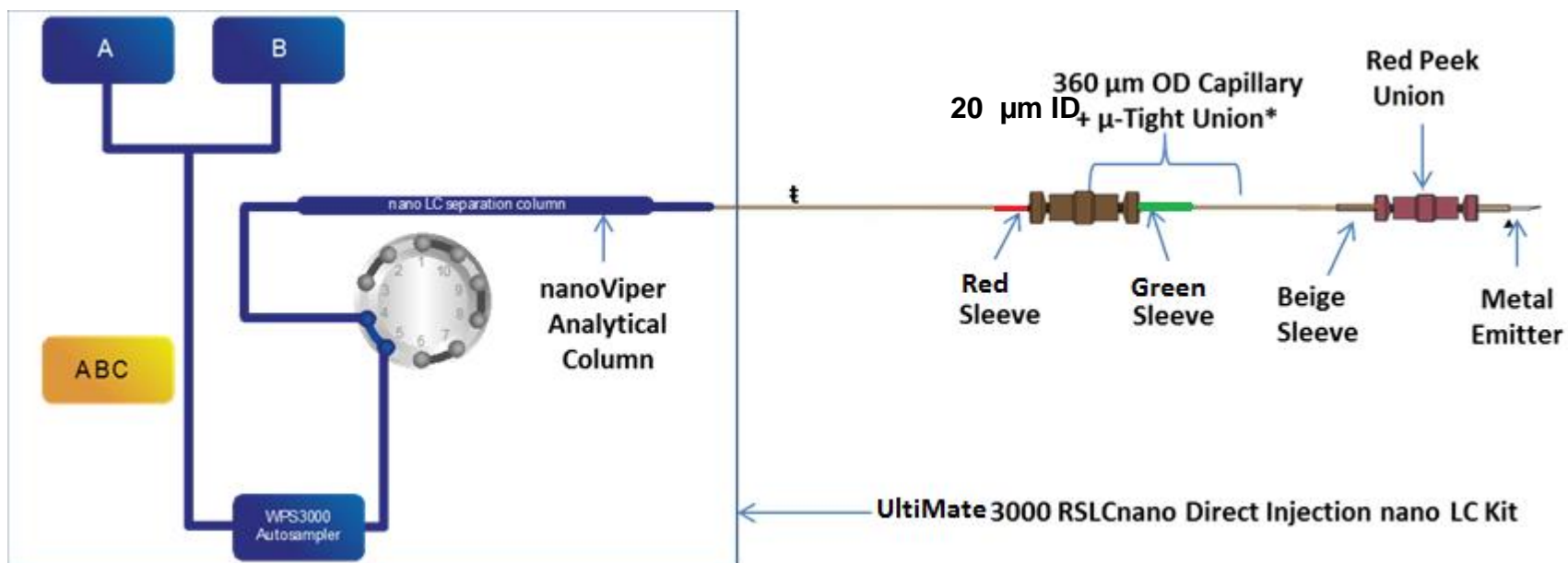




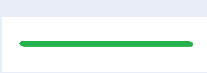
Item	Image	P/N
UltiMate 3000 RSLCnano Pre-concentration nano LC kit	Contents Slide 37	6720.0310
Column Out Tubing*	Viper on LC side only*	6041.5290*
MicroTight® Union 1/40"		6720.0074
Sleeves for connecting O.D. 280 µm capillary to beige MicroTight® Union		6720.0075
Sleeves for connecting O.D. 360 µm capillary to beige MicroTight® Union		6720.0076




Item	Image	P/N
MicroTight® Union Assembly 1/32"		G10-0035
Beige sleeves for connecting O.D. 360 µm capillary to Microtight Union		SC603
Metal Emitter		ES542

*For non-Viper Column Connections

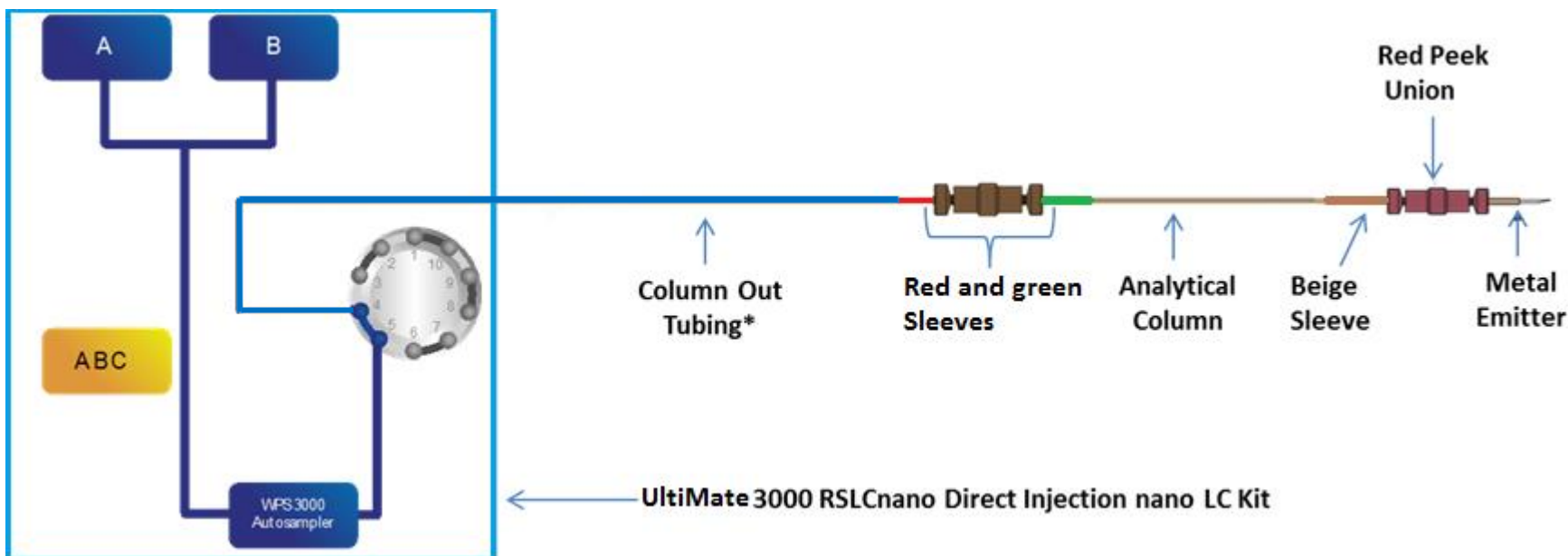
RSLCnano with Heated Analytical Column and Metal Emitter



Item	Image	P/N
UltiMate 3000 RSLCnano Direct Injection nano LC kit	Contents Slide 38	6720.0300
MicroTight® Union*		6720.0074*
Sleeves for connecting O.D. 280 µm capillary to beige MicroTight® Union		6720.0075
Sleeves for connecting O.D. 360 µm capillary to beige MicroTight® Union		6720.0076

Item	Image	P/N
MicroTight® Union Assembly 1/32"		G10-0035
Sleeve for connecting O.D 360 µm capillary to MicroTight® Union		SC603
Metal Emitter		ES542

RSLCnano with Room Temperature Analytical Column and Metal Emitter



Item	Image	P/N
UltiMate 3000 RSLCnano Direct Injection nano LC kit	Contents Slide 38	6720.0300
Column Out Tubing*	Viper on LC side only	6041.5290*
MicroTight® Union 1/40"		6720.0074
Sleeves for connecting O.D. 280 µm capillary to beige MicroTight® Union		6720.0075
Sleeves for connecting O.D. 360 µm capillary to beige MicroTight® Union		6720.0076

Item	Image	P/N
MicroTight® Unions Assembly 1/32"		G10-0035
Sleeve for connecting O.D 360 µm capillary to MicroTight® Union		SC603
Metal Emitter		ES542

*For non-Viper Column Connections

UltiMate 3000 RSLCnano EASY-Spray Connection Kit

UltiMate 3000 RSLCnano EASY-Spray connection kit	6720.0395
Item	Replacement P/N
300 µm I.D. x 5 mm, packed with Acclaim PepMap100 C18, 5 µm, 100Å (set of 5 cartridges)*	160454*
µ-Precolumn holder, 5 mm, with 30 µm I.D. connecting tubing, nanoViper fittings*	164649*
nanoViper Capillary FS/PEEK sheathed 1/32" I.D. x L 20 µm x 350 mm	6041.5240
nanoViper Capillary FS/PEEK sheathed 1/32" I.D. x L 20 µm x 550 mm	6041.5260
nanoViper Capillary FS/PEEK sheathed 1/32" I.D. x L 20 µm x 650 mm	6041.5275
nanoViper Capillary FS/PEEK sheathed 1/32" I.D. x L 20 µm x 750 mm	6041.5280
nanoViper Capillary FS/PEEK sheathed 1/32" I.D. x L 75 µm x 550 mm	6041.5760
nanoViper Capillary FS/PEEK sheathed 1/32" I.D. x L 75 µm x 650 mm	6041.5775
nanoViper Sample Loop 20 µL, FS/PEEK sheathed	6826.2420
Union Viper	6040.2304
PTFE tubing, 500 µm I.D. x 100 cm, used as waste tubing	6720.0077
1/16" Universal Fingertight Fitting, one-piece design, extra long thread, 4 pieces	6720.0015
Polypropylene vials for WPS with glass insert, 250 µL, 25 pieces	6820.0027
Polypropylene caps for WPS vials, 25 pieces	6820.0028
Cytochrome C digest, 1.6 nmol, Lyophilized	161089

*For Pre-concentration Set Up Only

UltiMate 3000 RSLCnano Pre-concentration nano LC Kit

UltiMate 3000 RSLCnano Pre-concentration nano LC Kit		6720.0310
Item	Replacement P/N	
75 µm I.D. x 15 cm, packed with Acclaim PepMap RSLC C18, 2 µm, 100Å, nanoViper	164534	
300 µm I.D. x 5 mm, packed with Acclaim PepMap100 C18, 5 µm, 100Å (set of 5 cartridges)*	160454	
µ-Precolumn holder, 5 mm, with 30 µm I.D. connecting tubing, nanoViper fittings	164649	
nanoViper capillary FS/PEEK sheathed 1/32" I.D. x L 20 µm x 350 mm	6041.5240	
nanoViper Capillary FS/PEEK sheathed 1/32" I.D. x L 75 µm x 650 mm	6041.5775	
nanoViper Capillary FS/PEEK sheathed 1/32" I.D. x L 75 µm x 550 mm	6041.5760	
nanoViper Capillary FS/PEEK sheathed 1/32" I.D. x L 20 µm x 750 mm	6041.5280	
nanoViper Sample Loop 20 µL, FS/PEEK sheathed	6826.2420	
PTFE tubing, 500 µm I.D. x 100 cm, used as waste tubing	6720.0077	
1/16" Universal Finger tight Fitting, one-piece design, extra long thread, 4 pieces	6720.0015	
Polypropylene vials for WPS with glass insert, 250 µL, 25 pieces	6820.0027	
Polypropylene caps for WPS vials, 25 pieces	6820.0028	
Cytochrome C digest, 1.6 nmol, Lyophilized	161089	

UltiMate 3000 RSLCnano Direct Injection nano LC Kit

UltiMate 3000 RSLCnano Direct Injection nano LC Kit	6720.0300
Item	Replacement P/N
75 µm I.D. x 15 cm, packed with Acclaim PepMap RSLC C18, 2 µm, 100Å, nanoViper	164534
nanoViper Capillary FS/PEEK sheathed 1/32" I.D. x L 20 µm x 750 mm	6041.5280
nanoViper Capillary FS/PEEK sheathed 1/32" I.D. x L 75 µm x 550 mm	6041.5760
nanoViper sample loop 1 µL, FS/PEEK sheathed I.D. x L 100 µm x 127 mm	6826.2401
Polypropylene vials for WPS with glass insert, 250 µL, 25 pieces	6820.0027
Polypropylene caps for WPS vials, 25 pieces	6820.0028
Cytochrome C digest, 1.6 nmol, Lyophilized	161089

For the details of comprehensive applications on the RSLCnano, go to :

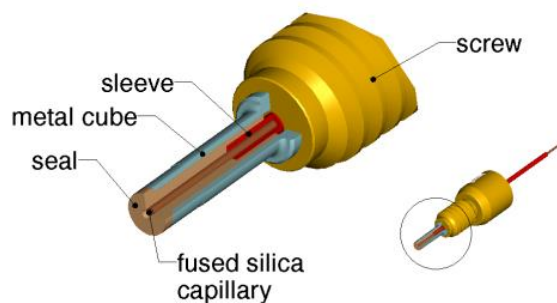
<http://www.dionex.com/en-us/webdocs/87961-Man-LC-U3000-RSLCnano-StdApplications-Nov12-4820-4103-V2.pdf>

'How to' Guideline

- Making Viper Connections — [Slide 40](#)
- 1000 vs 1200 nanoViper Capillaries — [Slide 41](#)
- Making Connections with Sleeves — [Slide 42](#)
- Limit Pressure on EASY-nLC Systems — [Slide 43](#)
- Limit Pressure on RSLCnano — [Slide 44](#)
- How frequently should I replace my Unions and Sleeves? — [Slide 45](#)
- Know your Column and Dead Volumes — [Slide 46](#)

Making nanoViper and Viper Connections

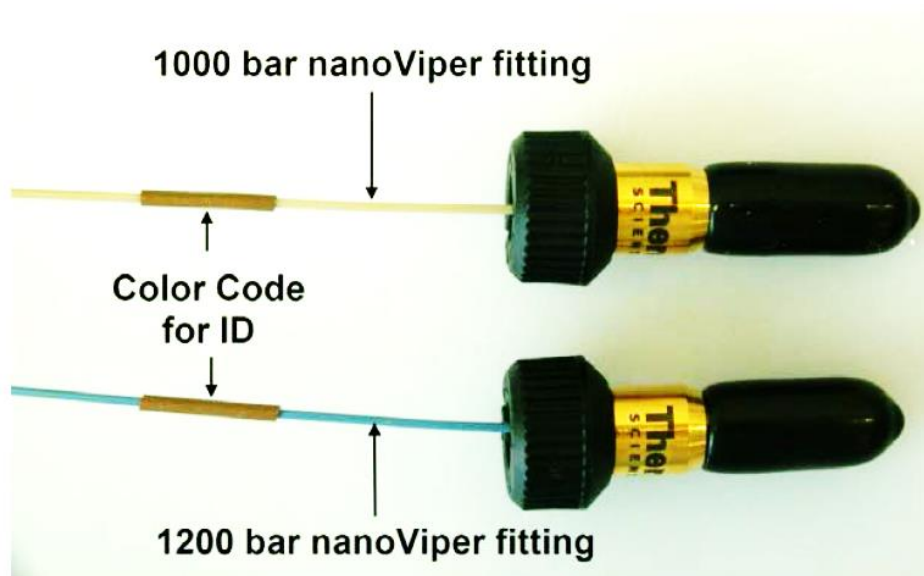
- Carefully tighten the nut fingertight using the black knurled nut
- Do not overtighten – Maximum of 1/8 turn after fingertight
- Remove the black knurled nut when tightened / after installation



nanoViper fitting and capillary

1000 vs 1200 bar nanoViper Capillaries

- NanoViper capillaries capable of withstanding pressures up to 1200 bar are coated with blue colored PEEK tubing to distinguish them from the 1000 bar (beige) capillaries
- All packaging containing 1200 bar compatible nanoViper fittings are marked with a blue sticker



Packaging label for boxes containing 1200 bar nanoViper fittings

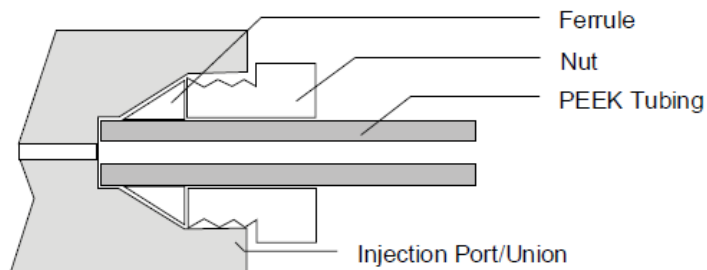
Capillaries with 1000 and 1200 bar nanoViper fittings the color code indicating the tubing inner diameter is unchanged (brown)

- **ONLY 1200 bar compatible nanoViper capillaries should be used with the EASY-nLC 1200 system**

Making Connections With Sleeves

e.g. fused silica on a nano column

- Insert the PEEK sleeve with the stainless steel nut (standard) or PEEK nut (biocompatible system) and the appropriate ferrule in a port (or the preassembly tool, when working on a biocompatible system!).
- Push the sleeve all the way into the port. It is essential for a zero dead volume connection that the assembly seats firmly.
- Tighten the nut by two or three turns to make certain that the ferrule grabs the sleeve.
- Remove the pre-assembled fitting, and then slide the capillary (or column) into the sleeve.
- When re-installing the fitting together with the capillary (or column), make certain that the tip of the tubing does not extend the tip of the sleeve. Tighten the nut fingertight.
- Push the capillary (column) all the way into the sleeve (port) to minimize dead volume.
- Finally tighten the connection sufficiently to hold the pressure. It is essential for a zero dead volume connection that the assembly seats firmly, also under pressure.



Limiting Pressure on EASY-nLC Systems

To limit the EASY-nLC 1200/1000 to 300 bars when running with a column setup rated to max 300 bar please change the Max pressure setting to 300 bar in:

- Method Editor: for Sample loading and Analytical and Pre-column equilibration
- Scripts: for Analytical and Pre-column equilibration
- Choose only flows for gradient, isocratic flow and idle flow that will create less than 300 bar on your column setup.

The image displays three screenshots of the Thermo Scientific software interface, illustrating the steps to set the maximum pressure to 300 bar.

Method Editor - Sample loading: The 'Max. pressure' field is highlighted with a red box.

Method Editor - Precolumn equilibration: The 'Max. pressure' field is highlighted with a red box.

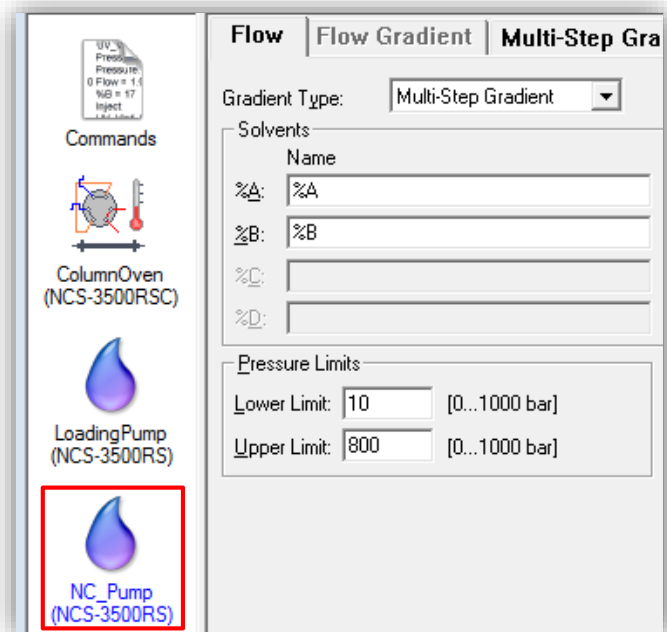
Method Editor - Analytical column equilibration: The 'Max. pressure' field is highlighted with a red box.

Scripts - Analytical column equilibration: The 'Max. pressure [bar]' field in the Parameters table is highlighted with a red box.

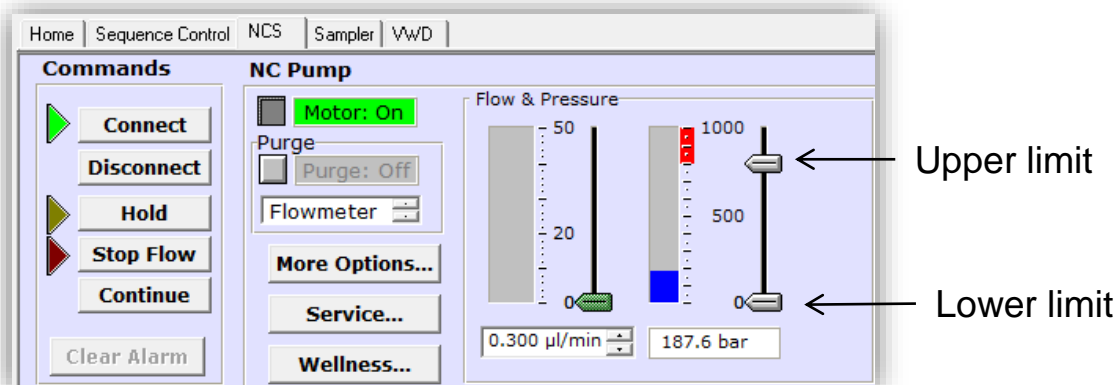
Scripts - Precolumn equilibration: The 'Max. pressure [bar]' field in the Parameters table is highlighted with a red box.

Limiting the Pressure on RSLCnano systems










- The RSLCnano has an upper and lower pressure limit
- The pressure limit can be set in each instrument method
 - NC_Pump icon on the flow tab



- or directly on the control panel, using the sliders



How Frequently Should I Replace My Unions and Sleeves?

Item	Image	P/N	On Hand	When to replace
MicroTight® Union Assembly 1/32"		G10-0035	10	No more than two connections
MicroTight® Union 1/40"		6720.0074	10	No more than two connections
Sleeves for connecting O.D 280 µm capillary to MicroTight® Union Assembly 1/32"		SC903	20	Every time you make a new connection
Sleeves for connecting O.D 360 µm capillary to MicroTight® Union Assembly 1/32"		SC603	20	Every time you make a new connection
Sleeves for connecting O.D 280 µm Capillary to beige MicroTight® Union		6720.0075	10	Every time you make a new connection
Sleeves for connecting O.D 360 µm Capillary to beige MicroTight® Union		6720.0076	10	Every time you make a new connection
Column Out Tubing	Viper on LC side only	6041.5290	2	Whenever viper is damaged, silica is too short, or line is clogged
Waste In Tubing	Viper on LC side only	6041.5289	2	
Column Out Flow Line		LC560	1	When Viper is damaged or line is clogged
Waste In Flow Line	 Column Waste	LC562	1	
HPLC-to-column connector		SC900	2	Good to have on hand for EASY-nLC Leak Tests
UltiMate 3000 RSLCnano EASY-Spray Connection Kit	Contents Slide 36	6720.0395	1	When tubing clogs or column fails
UltiMate 3000 RSLCnano Pre-concentration nano LC kit	Contents Slide 37	6720.0310	1	When tubing clogs or column fails
Ultimate 3000 RSLCnano Direct Injection nano LC kit	Contents Slide 38	6720.0300	1	When tubing clogs or column fails

Know Your Column Dead Volumes

$$\text{Volume } (\mu\text{l}) = \text{Length in mm} * \pi * (\text{ID in mm}/2)^2$$

Tubing Volume (μl)					
Length (cm)	25 μm ID	50 μm ID	75 μm ID	100 μm ID	150 μm ID
10	0.05	0.20	0.44	0.79	1.77
20	0.10	0.39	0.88	1.57	3.53
30	0.15	0.59	1.33	2.36	5.30
40	0.20	0.79	1.77	3.14	7.07
50	0.25	0.98	2.21	3.93	8.83
60	0.29	1.18	2.65	4.71	10.60
70	0.34	1.37	3.09	5.50	12.37
80	0.39	1.57	3.53	6.25	14.13
90	0.44	1.77	3.98	7.07	15.90
100	0.49	1.96	4.42	7.85	17.67

Note: at least 5x column volume of mobile phase flow are suggested to equilibrate the column