

# Viper and nanoViper Fingertight Fitting Systems

## Tool-free LC connections for HPLC, UHPLC and low-flow UHPLC systems

### Benefits

- Provides virtually zero-dead volume fingertight connections
- Easy to install even in tight spaces such as on 10-port valves
- Reliable and reproducible LC connections to ensure low carry over and easy method transfer
- Supports operating pressures up to 1,500 bar (22,000 psi)
- Works with virtually any standard LC system, valve, or column
- Dedicated Viper MS connection kits for exceptional LC-MS performance
- Tailored kits for easy installation of application-specific workflows

### Keywords

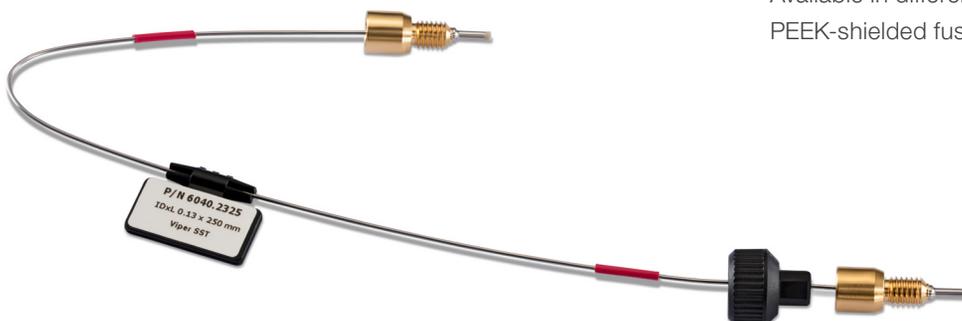
Viper, nanoViper, Fingertight Fittings, LC connections, LC-MS, UHPLC, low-flow LC

The Thermo Scientific™ Viper™ and Thermo Scientific™ nanoViper™ Fingertight Fitting Systems provide tool-free connections designed to be used for the entire fluidic pathway in LC systems to improve chromatographic results.

Virtually without any dead-volume, Viper and nanoViper fittings combine usability with high performance. Viper and nanoViper connections can be used on all standard LC modules, valves, and columns quickly, independent of different connection geometries and system backpressures. Dedicated capillary kits for standard LC system configurations and application-specific setups enable high qualitative and reproducible results for all flow rates and pressure ranges.

### Advantages of Viper and nanoViper Fingertight Fitting Systems

- Available in various lengths: from 65 to 1100 mm
- Available in different inner diameters: from 10 µm (0.0004 in.) to 150 µm (0.006 in.) in nanoViper design and from 100 µm (0.004 in.) to 180 µm (0.007 in.) in Viper design
- Available in different materials: stainless steel (SST), PEEK, PEEK-shielded fused silica or biocompatible MP35N™



## Viper Fingertight Fitting Systems - Specifications

### Thermo Scientific Viper Fingertight Fitting System – SST

Connection principle	Fingertight
Tubing type	Stainless steel (SST)
Wetted material	PEEK, SST
Maximum pressure	131 MPa (1,310 bar; 19,000 psi)
Maximum temperature limit	120 °C
Outer diameter	0.79 mm (1/32 in.)
Inner diameter	100 µm (0.004 in.), 130 µm (0.005 in.), 180 µm (0.007 in.)
Available lengths	Various lengths from 65 mm to 950 mm

### Thermo Scientific Viper Fingertight Fitting System – Biocompatible PEEK

Connection principle	Fingertight
Tubing type	PEEK
Wetted material	PEEK
Maximum pressure	34.5 MPa (345 bar; 5,000 psi)
Maximum temperature limit	120 °C
Outer diameter	0.79 mm (1/32 in.)
Inner diameter	65 µm (0.0026 in.), 90 µm (0.0035 in.), 130 µm (0.005 in.)
Available lengths	Various lengths from 65 mm to 850 mm

### Thermo Scientific Viper Fingertight Fitting System – Biocompatible MP35N

Connection principle	Fingertight
Tubing type	MP35N
Wetted material	PEEK, MP35N
Maximum pressure	151 MPa (1,517 bar; 22,000 psi)
Maximum temperature limit	120 °C
Outer diameter	0.79 mm (1/32 in.)
Inner diameter	100 µm (0.004 in.), 130 µm (0.005 in.), 180 µm (0.007 in.)
Available lengths	Various lengths from 65 mm to 950 mm

## nanoViper Fingertight Fitting Systems - Specifications

### Thermo Scientific nanoViper Fingertight Fitting System – Shielded Fused Silica (1200 bar)

Connection principle	Fingertight
Tubing type	PEEK-shielded fused silica, blue sleeve
Wetted material	PEEK, fused silica
Maximum pressure	120 MPa (1,200 bar; 17,400 psi)
Maximum temperature limit	120 °C
Outer diameter	0.79 mm (1/32 in.)
Inner diameter	Various I.D. from 10 µm (0.0004 in.) to 150 µm (0.006 in.)
Available lengths	Various lengths from 70 mm to 1100 mm

### Thermo Scientific nanoViper Fingertight Fitting System – Shielded Fused Silica (1500 bar)

Connection principle	Fingertight*
Tubing type	PEEK-shielded fused silica, purple sleeve
Wetted material	PEEK, fused silica
Maximum pressure	150 MPa (1,500 bar; 21,750 psi)
Maximum temperature limit	120 °C
Outer diameter	0.79 mm (1/32 in.)
Inner diameter	Various I.D. from 10 µm (0.0004 in.) to 50 µm (0.002 in.)
Available lengths	Various lengths from 70 mm to 950 mm

\* For optimal performance in low-flow LC at pressure >1200 bar the Vanquish Neo torque tool (P/N 6250.2100) is recommended.

## Viper Fingertight Fitting Systems—ordering guide

Choose between individual standard or advanced Viper capillaries, or system and application-specific Viper kits to equip your HPLC and UHPLC systems.



**Standard Viper Fingertight Fitting Systems** to be installed in the Thermo Scientific™ Vanquish™ Core HPLC Systems and the Thermo Scientific™ UltiMate™ 3000 SD and RS (U)HPLC Systems:

Viper Fingertight Fitting Systems – SST			
Length (mm)	0.10 mm (0.004 in.) I.D.	0.13 mm (0.005 in.) I.D.	0.18 mm (0.007 in.) I.D.
65	6040.2207	6040.2307	6040.2357
100	—	6040.2322	—
150	6040.2215	6040.2315	6040.2360
200	—	6040.2327	—
250	6040.2225	6040.2325	6040.2385
300	—	6083.2300	—
350	6040.2235	6040.2335	6040.2375
450	6040.2245	6040.2345	6040.2365
550	6040.2255	6040.2305	6040.2355
650	6040.2265	6040.2310	6040.2395
750	—	6040.2320	6040.2370
850	—	6040.2330	6040.2380
950	—	6040.2340	6040.2390

**Standard Viper Fingertight Fitting Systems** to be installed in **biocompatible** LC Systems like the Thermo Scientific™ Vanquish™ Flex UHPLC Systems, the Thermo Scientific™ Vanquish™ Horizon UHPLC System and Thermo Scientific™ UltiMate™ 3000 BioRS UHPLC System:

Viper Fingertight Fitting Systems – MP35N			
Length (mm)	0.10 mm (0.004 in.) I.D.	0.13 mm (0.005 in.) I.D.	0.18 mm (0.007 in.) I.D.
65	6042.2306		6042.2308
150	6042.2320		6042.2315
250	6042.2330		6042.2327
300	6083.7950		6042.2322
350	6042.2340		6042.2337
450	6042.2350		6042.2365
550	6042.2360		6042.2355
650	6042.2370		6042.2380
750	6042.2390	6042.2373	6042.2375
950	6042.2395		6042.2385

**Standard Viper Fingertight Fitting Systems** to be installed in **biocompatible** LC Systems for low pressure connections up to 345 bar:

Viper Fingertight Fitting Systems – PEEK			
Length (mm)	65 µm (0.0025 in.) I.D.	90 µm (0.0035 in.) I.D.	0.13 mm (0.005 in.) I.D.
65	—	—	—
75	—	6041.9075	—
150	6041.5615	—	6041.5616
250	6041.5625	6041.9025	—
650	6041.5665	—	—
750	6041.5675	—	—
850	6041.5685	—	—

**Advanced Viper Fingertight Fitting systems** for dedicated purposes like improved detector performance or eluent temperature conditioning:

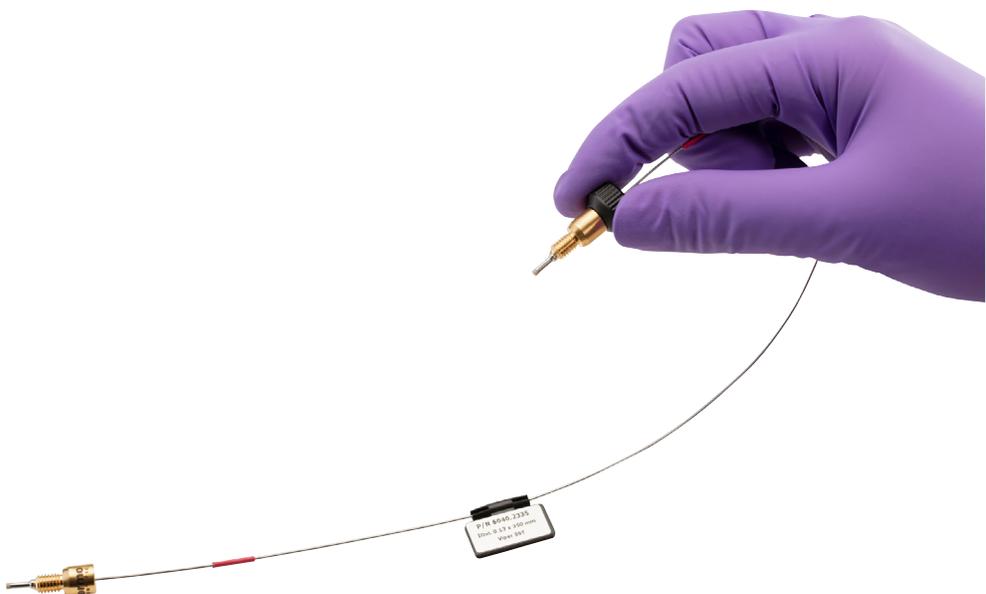
<b>For Thermo Scientific Vanquish HPLC and UHPLC Systems</b>	
<b>Viper Capillaries to optimize Thermo Scientific™ Vanquish™ Diode Array Detector HL performance</b>	
Viper MP35N 0.100 × 250 mm, thermally insulated	6083.2406
Viper MP35N 0.100 × 300 mm, thermally insulated	6083.2405
Viper MP35N 0.130 × 350 mm, thermally insulated	6083.2410
Viper MP35N 0.130 × 500 mm, thermally insulated	6083.2411
<b>Active Pre-heaters for Vanquish Column Compartment H and C</b>	
Active Pre-heater, MP35N, 0.100 × 380 mm (for Vanquish Column Compartment C)	6732.0110
Active Pre-heater, MP35N, 0.100 × 610 mm	6732.0150
<b>Passive Pre-heaters for Vanquish Column Compartments</b>	
Passive Pre-heater, SST, 1 µL, 0.180 × 530 mm	6732.0170
Passive Pre-heater, MP35N, 1 µL, 0.100 × 530 mm	6732.0174
Passive Pre-heater, MP35N, 1 µL, 0.100 × 680 mm	6732.0184
<b>Post-column Coolers for Vanquish Column Compartment H</b>	
Post-column Cooler, MP35N, 1 µL, 0.100 × 240 mm	6732.0510
Post-column Cooler, MP35N, 1 µL, 0.100 × 590 mm	6732.0520
<b>For Thermo Scientific UltiMate 3000 LC Systems</b>	
<b>Passive Pre-heaters for TCC-3000SD and TCC-3000RS</b>	
Passive Pre-heater, coated SST, biocompatible, 2 µL, 0.130 mm I.D. (max. 345 bar)	6723.0232
Passive Pre-heater, coated SST, biocompatible, 7 µL, 0.180 mm I.D. (max. 345 bar)	6723.0242
Passive Pre-heater, coated SST, biocompatible, 11 µL, 0.250 mm I.D. (max. 345 bar)	6723.0252
Passive Pre-heater, MP35N, biocompatible, 1 µL, 0.100 mm I.D.	6723.0235
Passive Pre-heater, MP35N, biocompatible, 7 µL, 0.180 mm I.D.	6723.0245
Passive Pre-heater, SST, 1 µL, 0.100 mm I.D.	6722.0510
Passive Pre-heater, SST, 2 µL, 0.130 mm I.D.	6722.0530
Passive Pre-heater, SST, 7 µL, 0.18 mm I.D.	6722.0540
Passive Pre-heater, SST, 11 µL, 0.25 mm I.D.	6722.0550
<b>Post-column Cooler for TCC-3000RS</b>	
Post-column Cooler, SST, 2 µL, 0.130 mm I.D.	6730.0008



**Viper Capillary Kits** for easy set-up of Thermo Scientific LC Systems:

For the Vanquish LC Systems choose between system capillary kits, dispersion optimized connection kits for LC-MS installations, and dedicated kits for application-specific Vanquish HPLC and UHPLC Systems to enjoy the remarkable user-friendliness. There are also several kits available for UltiMate 3000 LC Systems:

<b>For Thermo Scientific Vanquish HPLC and UHPLC Systems</b>			
<b>Viper System Capillary Kits for Vanquish LC Systems</b>			
Viper Capillary Kit for Vanquish Core HPLC Systems		6036.2302	
Method Transfer Kit for Vanquish Core HPLC Systems		6036.2100	
Viper Capillary Kit for Vanquish Horizon and Flex UHPLC Systems		6036.2303A	
MS Connection Kit for Vanquish UHPLC Systems		6720.0405	
<b>Viper Capillary Kits for Application-specific Vanquish LC Systems</b>			
Viper Kit for Vanquish Duo for Dual LC		6036.2305	
Viper Kit for Vanquish Duo for Tandem LC and LC-MS		6036.2020	
Viper Kit for Vanquish Duo for Inverse Gradient		6036.2010	
Viper Kit for Automated Method Scouting for Vanquish UHPLC Systems		6036.2807	
Extension Kit for Automated Method Scouting for Vanquish LC Systems		6036.0100	
Viper Kit for Trap Heart-Cut and Simple Switch 2D-LC for Vanquish UHPLC Systems		6036.2030	
<b>For Thermo Scientific UltiMate 3000 LC Systems</b>			
<b>Viper System Capillary Kits for UltiMate 3000 LC Systems</b>		<b>SD Systems</b>	<b>RS Systems</b>
Viper Capillary Kit for ISO, LPG, DGP pumps		6040.2302	6040.2301
Viper Capillary Kit for HGP pumps		6040.2309	6040.2308
Viper Capillary Kit for Biocompatible RS Systems		–	6841.2301
<b>Viper Capillary Kits for UltiMate 3000 LC Solutions</b>			
Viper Tandem Operation Solution Kits		6040.2804	6040.2803
Viper Parallel Setup Solution Kit		6040.2810	6040.2809
Viper Online SPE Solution Kit		6040.2802	6040.2801
Viper Application Switching Solution Kit		6040.2806	6040.2805
Viper Automated Method Scouting Solution Kit		6040.2808	6040.2807
Viper Automated Method Scouting Solution Kit, biocompatible		6042.2808	6042.2807
Extension Kit for Automated Method Scouting Solution		6040.0100	
Extension Kit for Automated Method Scouting Solution, biocompatible		6042.0100	
Viper Inverse Gradient Kit		6040.2819	6040.2820



## nanoViper Fingertight Fitting Systems—ordering guide

Choose between individual standard or advanced nanoViper capillaries, or application-specific nanoViper kits to equip your HPLC and UHPLC systems.



**Standard nanoViper Fingertight Fitting Systems** to be installed in the Thermo Scientific™ Vanquish™ Neo UHPLC Systems, the Thermo Scientific™ UltiMate™ 3000 RSLCnano Systems and the Thermo Scientific™ EASY-nLC™ Systems:

nanoViper Fingertight Fitting Systems									
Length (mm)	1500 bar (purple) For Vanquish Neo UHPLC system*			1200 bar (blue)					
	10 µm I.D. 0.0004 in. I.D.	20 µm I.D. 0.0008 in. I.D.	50 µm I.D. 0.002 in. I.D.	10 µm I.D. 0.0004 in. I.D.	20 µm I.D. 0.0008 in. I.D.	50 µm I.D. 0.002 in. I.D.	75 µm I.D. 0.003 in. I.D.	100 µm I.D. 0.004 in. I.D.	150 µm I.D. 0.006 in. I.D.
70	—	6250.5120	6250.5123	—	6041.5120	6041.5123	6041.5126	6041.5810	6041.5817
150	6250.5118 (L 180 mm)	6250.5121	6250.5124	6041.5118 (L 180 mm)	6041.5121	6041.5124	6041.5127	6041.5811	6041.5818
250	—	—	—	—	—	—	6041.5730	6041.5812	6041.5819
350	6250.5135	6250.5240	6250.5540	—	6041.5240	6041.5540	6041.5735	6041.5813	6041.5820
450	—	—	—	—	—	—	—	6041.5814	6041.5821
550	—	6250.5260	6250.5560	—	6041.5260	6041.5560	6041.5760	6041.5815	6041.5822
650	—	6250.5275	6250.5575	—	6041.5275	6041.5575	6041.5775	6041.5824	—
750	—	6250.5280	6250.5580	—	6041.5280	6041.5580	6041.5780	6041.5816	6041.5823
850	—	—	—	—	—	—	6041.5785	—	—
950	—	6250.5122	6250.5125	—	6041.5122	6041.5125	6041.5128	—	—
1100	—	—	—	—	—	—	6041.5711	—	6041.5828

\* For optimal performance at pressures >1200 bar the Vanquish Neo torque tool (P/N 6250.2100) is recommended.



**Advanced nanoViper Fingertight Fitting Systems** for dedicated purposes like improved detector performance or establishing low-flow UHPLC connections:

nanoViper Capillaries to optimize Thermo Scientific™ Vanquish™ Diode Array Detector HL performance	
nanoViper 0.075 × 300 mm, thermally insulated	6083.2415
Single-sided nanoViper Capillaries	
nanoViper 0.075 × 550 mm, single-sided, 360 µm O.D., for UHPLC liquid junction waste in	6041.5289
nanoViper 0.020 × 550 mm, single-sided, 360 µm O.D., for UHPLC liquid junction column out	6041.5290
nanoViper 0.020 × 1000 mm, single-sided, 280 µm O.D., LC column to MS tubing	6041.5292
nanoViper 0.020 × 1000 mm, single-sided, 360 µm O.D., LC column to MS tubing	6041.5293
nanoViper 0.050 × 1000 mm, single-sided, 280 µm O.D., LC column to MS tubing	6041.5294
nanoViper 0.050 × 1000 mm, single-sided, 360 µm O.D., LC column to MS tubing	6041.5295

**nanoViper Capillary Kit** for easy set-up of low-flow UHPLC Systems like the Thermo Scientific™ Vanquish™ Neo UHPLC System:

**For Thermo Scientific Vanquish Neo UHPLC Systems**

Standard Application Kit for Vanquish Neo UHPLC Systems 6250.1010

**For Thermo Scientific UltiMate 3000 RSLCnano Systems**

nanoViper EASY-Spray Connection Kit 6720.0395

nanoViper MS Connection for Low-flow UHPLC Systems 6720.0345



**Viper and nanoViper Fingertight Fitting System accessories—ordering guide**

Accessories help you to complete the installation depending on your application needs.

**Accessories**

Union for connecting Viper and nanoViper Capillaries 6040.2304

Viper Plug 6040.2303

Calibration Tool for Viper and nanoViper Fingertight Fitting Systems 6040.2312

Viper Inline Filter (Titanium) for column protection 6036.1045

Adapter for Viper Fingertight Fitting Systems, SST, 2 pcs 6261.5065



Learn more at [thermofisher.com/viper](https://thermofisher.com/viper)