

Thermo Scientific Viper and nanoViper Fingertight Fitting System

Universal tool-free connections
for every LC and nano LC system

Get better LC connections

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

Offering virtually dead-volume free LC connections, Viper and nanoViper fittings require no tools for installation, and combine simplicity with high performance.

BIOCOMPATIBILITY

Available in biocompatible materials

MORE OPTIONS

A variety of materials and dimensions (length and ID) available for nearly every system and application

HIGH TEMPERATURE

Withstands temperatures up to 120 °C

REMOVABLE KNURL

Easy to grip and easy to remove, taking up less space to fit the tightest gaps

ID COLOR CODE

Easy visualization with color-coded tags for quick ID recognition

FINGERTIGHT

Easy installation and fingertight up to 1500 bar

IDENTIFICATION TAG

Quickly locate important information such as part number, material, length and ID dimensions

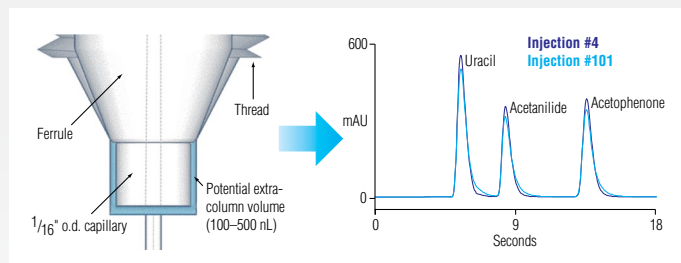
VIRTUALLY ZERO DEAD VOLUME

Seals at the tip of the tubing to minimize extra column volumes for higher efficiency and better chromatography—no more tailing peaks

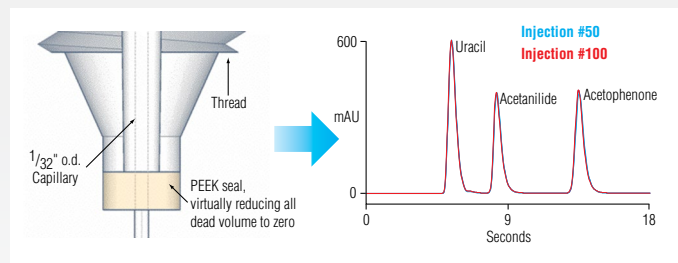
UNIVERSAL CONNECTIONS

Compatible with most columns and valves and small enough to fit in the most confined spaces, such as on 10-port valves

Conventional vs Viper Fittings



Conventional Fittings often create extra-column volumes by incorrect positioning of the ferrule or by the capillary slipping through the ferrule when subjected to high pressures. The chromatogram demonstrates deteriorated peak shape caused by a slipped capillary at a backpressure of only 600 bar (8700 psi).



Viper Fingertight Fittings does not use a ferrule and minimizes extra-column volume by design. The chromatogram overlay shows consistent peak shapes under identical conditions to those used with conventional fitting in the figure above.

Troublefree nano LC connections

LC connections matter with nano LC applications, as any dead volume can cause gradient delays, peak broadening, or increased peak asymmetry.

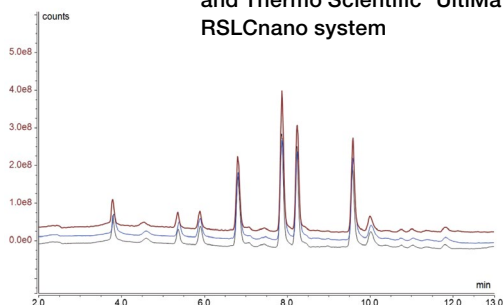
Thermo Scientific nanoViper Fingertight Fittings are designed to overcome the drawbacks of conventional fittings to ensure perfect and easy connections for maximum performance and robustness.

Advantages of nanoViper Fingertight fittings

- Easy to install, no matter how experienced the user
- Custom and standard capillary lengths available
- High capillary-to-capillary reproducibility
- Dedicated MS connection kits ensure no performance is lost between the LC and the MS



Thermo Scientific™ Q Exactive™ HF Hybrid Quadrupole-Orbitrap mass spectrometer and Thermo Scientific™ UltiMate™ 3000 RSLCnano system



Retention time RSD < 0.2% between three nanoViper capillaries (RSD based on the average value of four replicates per capillary)

More than just a column connection

Universal connections for all modules, valves and columns.



Thermo Scientific™ Vanquish™ Horizon UHPLC system

Autosampler

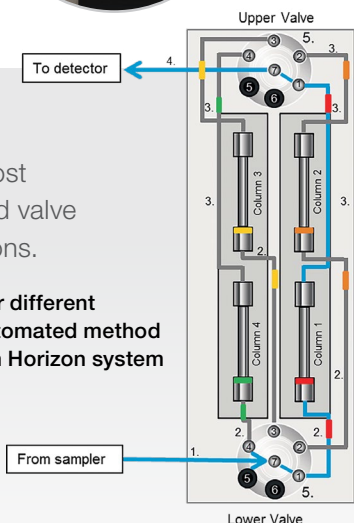
Pump



Flexible setups

Easy setup for the most advanced column and valve switching configurations.

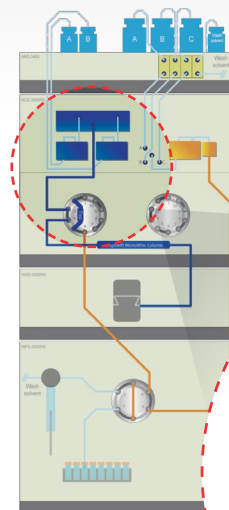
Example setup using four different columns for easy and automated method scouting on the Vanquish Horizon system



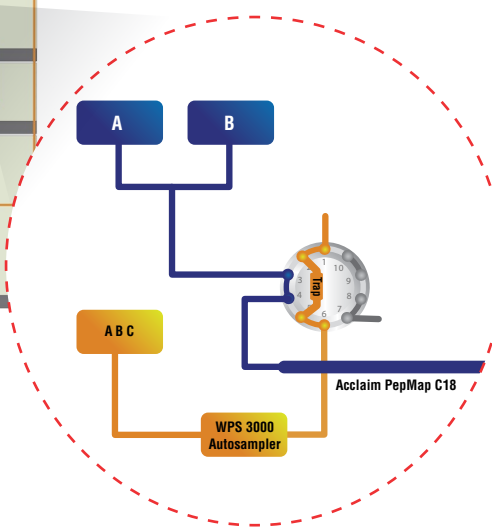
Viper and nanoViper application kits

For easy setup dedicated Viper and nanoViper application kits contain all the capillaries needed for advanced analytical and nano LC applications:






- Automated method scouting
- On-line SPE
- Pre-concentration on a nano column
- And more!



Setup for a pre-concentration experiment onto a nano column on an UltiMate 3000 RSLCnano system



Product Specifications for Viper and nanoViper Fingertight Fitting Systems

	Viper			nanoViper
	Stainless Steel	Biocompatible PEEK	Biocompatible MP35N	
Connection principle	Fingertight fitting			
Tubing type	Flexible stainless steel (SST)	PEEK™	MP35N™	Shielded fused silica + PEEK
Wetted material	PEEK, SST	PEEK	PEEK, MP35N	PEEK, fused silica
Maximum pressure	1310 bar (19,000 psi)	345 bar (5000 psi)	1500 bar (22,000 psi)	1200 bar (17,400 psi)
Maximum temperature limit	120 °C	30 °C	120 °C	80 °C
Viper nut threading	Compatible with 10–32 threaded ports			
Outer diameter (OD)	0.79 mm (.031")			
Inner diameter (ID) ID-color code	 100 μm (0.004") 130 μm (0.005") 180 μm (0.007")	 65 μm (0.0025") 90 μm (0.0035") 130 μm (0.005")	 100 μm (0.004") 130 μm (0.005") 180 μm (0.007")	 10 μm (0.0004") 20 μm (0.0008") 50 μm (0.0020") 75 μm (0.0030") 100 μm (0.004") 150 μm (0.006")
Available lengths	65–950 mm	65–850 mm	65–950 mm	70–1100 mm *customizable lengths
Viper and nanoViper portfolio—wide selection of wettable materials and dimensions for any application				

For more information, please visit:

- LC application kits, please see:
 - Viper solutions kits
 - Viper video
 - Viper and nanoViper product specification
- nano LC application kits, please see:
 - nanoViper application kits
 - RSLCnano application guide
 - The Complete and Easy Guide to Configuring Your Thermo Scientific™ NanoLC for Mass Spectrometric Analysis

Find out more at www.thermofisher.com/viper