



# COOL TOOLS!

Restek Innovations Save You Time and Money



**Chromatography Products**

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## Make Life Easier (MLE) Capillary Tool Kits, Inlet and FID Maintenance Kits

- Include the most common consumable GC supplies and tools.
- All parts meet or exceed performance by instrument manufacturer's parts.
- Parts list makes reordering easy.

Everything you need in one complete kit!



FID Kit



Inlet Kit

### All MLE Capillary Tool Kits include these components:

- $1/8"$ ,  $3/16"$ ,  $1/4"$  nylon brushes
- $1/4"$ ,  $3/8"$ ,  $3/16"$  stainless steel wire tube brushes
- stainless steel surface brush
- 6 stainless steel jet reamers (0.25–0.65mm OD)
- $1/4"$  x  $5/16"$  open end wrench
- $3/8"$  x  $7/16"$  open end wrench
- rubber-tipped slide-lock tweezers
- scoring wafers with handles
- inlet liner removal tool
- septum puller
- mini wool puller/insertor tool
- 4-inch tapered needle file
- swivel head flashlight
- mini hand drill set
- 15cm compact steel ruler
- pocket magnifier
- high temperature string (1 meter)
- pipe cleaner (12-inch)
- cotton tip swabs (pk. of 25)

### MLE Capillary Tool Kit for Agilent GCs

- (cat.# 22186) also includes:
- capillary installation gauge for Agilent GCs
  - injector wrench for Agilent GCs
  - septum nut removal tool
  - $7/16"$  x  $1/2"$  open end wrench
  - $1/2"$  x  $9/16"$  open end wrench

### MLE Capillary Tool Kit for PerkinElmer GCs

- (cat.# 22185) also includes:
- $7/16"$  x  $1/2"$  open end wrench
  - $1/2"$  x  $9/16"$  open end wrench

### MLE Capillary Tool Kit for Shimadzu GCs

- (cat.# 22182) also includes:
- capillary installation gauge for Shimadzu GCs
  - injector wrench for Shimadzu GCs
  - 6mm x 7mm open end wrench
  - 8mm x 10mm open end wrench
  - 16mm x 17mm open end wrench

### MLE Capillary Tool Kit for Thermo Scientific GCs

- (cat.# 22183) also includes:
- capillary installation gauge for Thermo Scientific GCs
  - liner cap removing tool for Thermo Scientific GCs
  - 6mm x 7mm open end wrench
  - 8mm x 10mm open end wrench
  - 16mm x 17mm open end wrench

### MLE Capillary Tool Kit for Varian GCs

- (cat.# 22184) also includes:
- capillary installation gauge for Varian GCs
  - $7/16"$  x  $1/2"$  open end wrench
  - $1/2"$  x  $9/16"$  open end wrench

### FID kits include:

- $1/4"$ , 0.4, 0.5, and 0.8mm ID graphite ferrules.
- FID/NPD capillary adaptor.
- Capillary nuts.
- Jet reamers/ferrule removers.
- $1/4"$  nut.
- Scoring wafer.
- Capillary column caps.
- Ignitor for either Agilent 5890 or 6890/6850/7890 GCs.

### FID kits include:

- FID flow measuring adaptor.
- $1/4"$  x  $5/16"$  wrench.
- Installation gauge.
- Wire cleaning brush.
- High-performance Siltek® treated FID jet for either Agilent 5890 (adaptable jet) or 6890/6850/7890 (dedicated jet) GCs.
- Spanner wrench.
- FID jet removal tool.

### Inlet kit includes:

- 0.4, 0.5, and 0.8mm ID graphite ferrules.
- Viton® O-rings.
- Capillary nuts.
- Inlet seals.
- Reducing nut.
- Scoring wafer.
- 11mm ThermoMolite® septa.
- 4.0mm single gooseneck liner.

### Inlet kit includes:

- 4.0mm split liner with wool.
- Capillary column caps.
- $1/4"$  x  $5/16"$  wrench.
- Septum puller.
- Installation gauge.
- Wire cleaning brush.
- Jet reamers/ferrule removers.
- Inlet liner removal tool.
- Septa nut removal tool.



MLE Capillary Tool Kit for Agilent GCs

Description	qty.	cat.#
Inlet Maintenance Kit for Agilent 5890/6850/6890/7890 GCs	kit	22181
FID Maintenance Kit for Agilent 5890 GCs	kit	22180
FID Maintenance Kit for Agilent 6850/6890/7890 GCs	kit	22179
MLE Capillary Tool Kit for Agilent GCs	kit	22186
MLE Capillary Tool Kit for PerkinElmer GCs	kit	22185
MLE Capillary Tool Kit for Shimadzu GCs	kit	22182
MLE Capillary Tool Kit for Thermo Scientific GCs	kit	22183
MLE Capillary Tool Kit for Varian GCs	kit	22184

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## did you know?

### Make Life Easier!

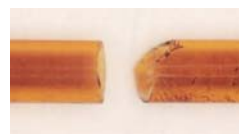
MLE Tool Kits provide the tools necessary for easier installation and maintenance of capillary columns!

The essential tool kits for capillary chromatographers!

## Cool Cutting Tools!

### A proper cut is key...

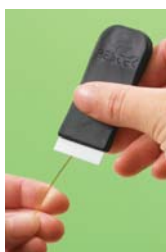
The key to obtaining a leak-tight seal in a Press-Tight® connector—or in other connecting devices that make a compression seal with the end of the column—is a clean, right angle cut at the end of the column. If you use an unsuitable device to cut your columns, you run the risk of angled cuts or chipped or jagged edges that will not seal effectively, or even crushing the end of the column. We offer a selection of scoring tools that will help you properly cut your columns.



Make a clean, square cut for optimum connector performance. The cut on the right will produce a poor seal.

### Scoring Wafer with Handle

- Ceramic wafer is serrated on one side and straight-edged on the other to cut both fused silica and metal tubing cleanly.
- Unique, ergonomic handle is made of soft, comfortable rubber.



Hold tubing firmly in one hand, allowing about two inches to extend freely. Hold the scoring wafer at a 45° angle to the tubing. Exert just enough pressure to put a slight arc in the tubing. Pull perpendicularly across the tubing.



The tubing should fall off on its own, or it should easily break at the score with a slight tap of the wafer.



Check the cut against the white of the scoring wafer. Look for a clean, square cut.



Make clean, square cuts!

#### Description

Scoring Wafer with Handle

#### qty.

2-pk.

#### cat.#

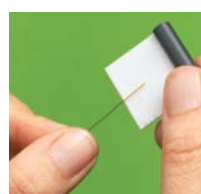
23015

### Ceramic Scoring Wafers

- Four straight scoring edges for cutting fused silica tubing and four serrated edges for cutting MXT® metal capillary columns.
- Sure-grip handle included.



Exert just enough pressure to put a slight arc in the tubing. The tubing should fall off or break with a slight tap of the wafer.



Check the cut against the white of the scoring wafer. Look for a clean, square cut.



#### Description

Ceramic Scoring Wafers

#### qty.

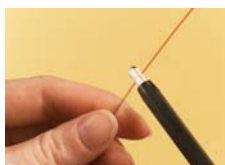
5-pk.

#### cat.#

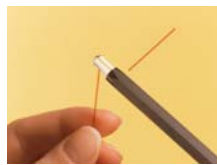
20116

### Sapphire Scribe

- Cuts fused silica tubing.
- Produces a clean, square cut.



One quick stroke...



...and just a tap leaves a clean, square end.



#### Description

Sapphire Scribe

#### qty.

ea.

#### cat.#

20182

### Capillary Column Caps

- Attach to the column in seconds to form an airtight seal.
- Increase column lifetime—prevent moisture and air from entering the column during storage.
- Color-coded for identifying detector and injector ends.
- Not recommended for reuse.



#### Description

Capillary Column Caps

#### qty.

10-pk.

#### cat.#

21044



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**No more burned fingers!**

The Inlet Liner Removal Tool safely removes an inlet liner from a hot injection port without cracking the liner.

**Inlet Liner Removal Tool**

- Easily remove liner from injector—no more burned fingers.
- Made from high-temperature silicone.
- Won't chip or crack the liner.



Gently push the liner removal tool onto the liner in the injection port, with a slight circular motion.



Slowly pull the liner out of the injection port.



Use the liner removal tool to place a new liner into the injection port, avoiding hot metal surfaces.

Description	qty.	cat.#
Inlet Liner Removal Tool	3-pk.	20181

**Mini Wool Puller/Inserter**

Insert and remove wool plugs easily. Order a spare pack so you'll always have one available.



Place a 1cm plug of loosely bound wool in the liner. Adjust its position with the puller/inserter tool.



Use the hooked end to retrieve a wool plug.

Description	qty.	cat.#
Mini Wool Puller/Inserter	2-pk.	20114

**Inlet Liner Packing Tool**

- Position wool reproducibly every time.
- Accurate to a specific, measured depth.



Loosen the nut on the side of the tool and adjust the gauge to the manufacturer's recommended depth.



Place a plug of loosely bound wool at the top of the inlet liner.



Insert the liner packing tool into the liner until the tool bottoms out. Remove the tool. The wool is positioned correctly in the liner and the liner is ready for use.

Description	qty.	cat.#
Inlet Liner Packing Tool	ea.	20339

Recommended for inlet liners with an ID  $\geq 2$ mm.

Eliminates user variation!

**Ferrule Removal Kit**

The tapered tools in this kit have teeth designed to grip and remove fused silica adaptor ferrules that have become stuck in the fitting detail. Each kit has two tools: one for removing 1/32-inch adaptor ferrules and one for removing 1/16-inch adaptor ferrules.

Description	Valco® #	qty.	cat.#
Ferrule Removal Kit	FRK1	kit	20146



## Septum Puller

- Keep several on hand in your laboratory—can be used in many different ways.
- Use hooked end for removing septa and O-rings; pointed end works well for removing stuck ferrules or fragments.



Remove septum without damaging an expensive weldment.



Dislodge a stuck ferrule quickly and easily—without scoring the fitting.

Easily remove septa and ferrules!

Description	qty.	cat.#
Septum Puller	ea.	20117

## Stainless Steel Jet Reamers

A great tool for cleaning detector jets and other small orifices. Serrated design is optimal for removing silica deposits and other contaminants. Ideal for removing ferrules that have become stuck in fittings.



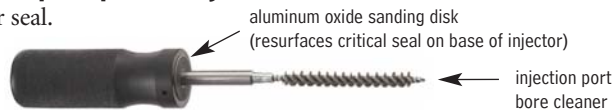
Dislodge ferrules or remove silica deposits.



Description	qty.	cat.#
Stainless Steel Jet Reamers	6-piece set	20113

## Injection Port Repair Tool for Agilent Split/Splitless Injection Ports

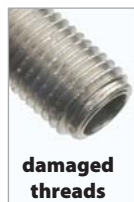
- Remove contaminants, achieve a better seal.
- Resurface critical inlet seal areas.



Description	qty.	cat.#
Injection Port Repair Tool for Agilent Split/Splitless Injection Ports	ea.	21393
Replacement Sanding Disks (5 fine & 5 medium)	10-pk.	22689
Replacement Bore Brushes (one 6.5mm & one 7mm)	2-pk.	21353

## Rethreading Tool

- Repair worn or damaged threads.
- Multiple uses (fittings, injectors, detectors, etc.)
- Built-in guide to prevent cross-threading.



Repeated installation, removal, and temperature changes cause wear and damage to threads on GC parts. This can cause a poor seal, and oxygen can enter the system, compromising analytical results and possibly destroying expensive analytical columns.



Simply screw the rethreading tool onto the part, unscrew, and inspect the threads. Repeat as necessary. When done, wipe threads clean with methanol to remove any debris.



Description	qty.	cat.#
Rethreading Tool for 1/16" compression fitting	ea.	23016
Rethreading Tool for 1/8" compression fitting	ea.	23017
Rethreading Tool for 1/4" compression fittings (Agilent split/splitless injection ports)	ea.	23018
Rethreading Tool for 7/16" compression fitting (Varian injection ports)	ea.	23019
Rethreading Tool for 1/4" Varian-style capillary column fittings	ea.	21893

Achieve a better seal!

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The Capillary Installation Gauge makes seating the ferrule and installing the column consistent and easy.

### Capillary Installation Gauge

- Seats ferrules onto column for consistent installations.\*
- Prevents crushed column ends.
- Made from high-quality stainless steel.



A) for Agilent-style fittings (compact ferrules)



B) for 1/16" fittings (1/16" ferrules)



C) for Thermo TRACE™ & Focus SSL (M4 ferrules)



D) for Varian GCs for use with 1/16" ferrules



E) for Shimadzu 17A, 2010, and 2014 GCs

#### Using the capillary installation gauge for Agilent-style fittings.



Install the column nut and ferrule onto the column. Slide the column into the installation gauge to the recommended insertion distance. Finger-tighten the nut.



Tighten the assembly to ensure a properly seated ferrule. Loosen the assembly and remove the column and column nut.



The ferrule will be properly seated, and should remain in place when light force is applied. If it slides loosely on the column, repeat procedure.

Description	qty.	cat.#
A) Capillary Installation Gauge for Agilent-style fittings (compact ferrules)	ea.	21034
B) Capillary Installation Gauge for 1/16" fittings (1/16" ferrules)	ea.	21399
C) Capillary Installation Gauge for Thermo TRACE™ & Focus SSL (M4 ferrules)	ea.	22330
D) Capillary Installation Gauge for Varian GCs for use with 1/16" ferrules	ea.	22335
E) Capillary Installation Gauge for Shimadzu 17A, 2010, and 2014 GCs	ea.	22333

\*Recommended for use with graphite ferrules.

### Capillary Installation Gauge for Agilent 5973/5975 MS

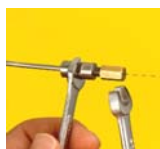
- Seats ferrules onto column for consistent installations.
- Made from high-quality stainless steel.



Easily seat ferrules for consistent installations in Agilent 5973/5975 MS.



Install the nut and ferrule onto the column, then insert the column through the installation tool, exposing several centimeters at the exit end.



Tighten the nut.



Score and remove the exposed end of the column, then loosen the nut.



The ferrule will be properly seated and should remain in place when light force is applied. Install the column into the GC/MS interface.

Description	Similar to Agilent part #	qty.	cat.#
Capillary Installation Gauge for Agilent 5973/5975 MS	G1099-20030	ea.	21894

### Injector Wrench for Agilent 5890/6890/6850 GCs

- Use to remove the septum nut and weldments during GC maintenance.
- High-quality stainless steel construction.
- Meets original equipment performance.



Use the smaller end to remove the septum nut.



Use the larger end to tighten the split/splitless weldment nut.

Description	Similar to Agilent part #	qty.	cat.#
Injector Wrench for Agilent 5890/6890/6850 GCs	19251-00100	ea.	22065

### Septum Nut Removal Tool for Agilent 5890/6890/6850/7890 GCs

- Easily remove the septum nut without touching the heated nut—no more burned fingers!
- Unique, ergonomic handle—easy to grip.



Slip tool over septum nut...



loosen nut...



and remove, avoiding hot metal surfaces.



Septum nut remains in tool until reinstalled.

Description	qty.	cat.#
Septum Nut Removal Tool for Agilent 5890/6890/6850/7890 GCs	ea.	24918

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No more burned fingers!



### Spanner Wrench for Agilent 5890/6890/6850/7890 FID Collector Assemblies

- Easily remove the nut from the FID collector without damaging the nut.
- Unique, ergonomic handle—easy to grip.



Remove FID ignitor castle.



Easily loosen the nut by aligning the two pins on the bottom of the wrench with the two open slots on the nut...



...then turn counterclockwise...



...and remove.

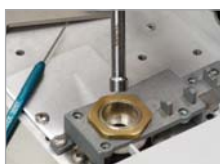
Description	Similar to Agilent part #	qty.	cat.#
Spanner Wrench for Agilent 5890/6890/6850/7890 FID Collector Assembly	19231-00130	ea.	22329

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Easily removes the nut without damaging it.



### FID Jet Removal Tool for Agilent 5890/6890/6850/7890 FIDs

- Securely grips jet in socket for easy removal or installation.
- Unique, ergonomic handle—easy to hold.



Slip tool over FID jet...



Loosen jet...



and remove.

Description	qty.	cat.#
FID Jet Removal Tool for Agilent 5890/6890/6850/7890 FIDs	ea.	22328

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Simplify FID jet removal & installation.





**Jet Removing Tool for Thermo Scientific GCs:  
Focus GC / TRACE™ GC / Ultra/TRACE™ GC x GC**

- Unique, ergonomic handle—easy to grip.
- Easily loosens the FID jet.



Remove FID cell assembly.



Slip tool over FID jet.



Turn counterclockwise to loosen jet.



Use tweezers (cat. #20101) to remove jet.

Description	Similar to TS part #	qty.	cat.#
Jet Removing Tool for Thermo Scientific GCs	205-019-00	ea.	24936



**Liner Cap Removing Tool for Thermo Scientific GCs:  
Focus GC / TRACE™ GC / Ultra/TRACE™ GC x GC**

- Easily loosens the liner cap from the injector.
- Unique, ergonomic handle—easy to grip.



Remove septum cap, septum holder, septum, and septum support.



Place tool on liner cap. Align two pins on bottom of tool with two open slots on liner cap.



Turn counterclockwise to loosen liner cap.



Use tweezers (cat. #20101) to remove liner cap.

Description	Similar to TS part #	qty.	cat.#
Liner Cap Removing Tool for Thermo Scientific GCs	205-070-10	ea.	24937

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Other Trademarks:  
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110 Benner Circle  
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**Restek U.S.** • 110 Benner Circle • Bellefonte, PA 16823 • 814-353-1300 • 800-356-1688 • fax: 814-353-1309 • [www.restek.com](http://www.restek.com)

**Restek France** • phone: 33 (0)1 60 78 32 10 • fax: 33 (0)1 60 78 70 90 • e-mail: [restek@restekfrance.fr](mailto:restek@restekfrance.fr)

**Restek Ireland** • phone: 44 2890 814576 • fax: 44 2890 814576 • e-mail: [restekeurope@aol.com](mailto:restekeurope@aol.com)

**Thames Restek U.K. LTD** • phone: 44 1494 563377 • fax: 44 1494 564990 • e-mail: [sales@thamesrestek.co.uk](mailto:sales@thamesrestek.co.uk)

**Restek GmbH** • phone: +49 (0) 6172 2797 0 • fax: +49 (0) 6172 2797 77 • e-mail: [info@restekgmbh.de](mailto:info@restekgmbh.de)

