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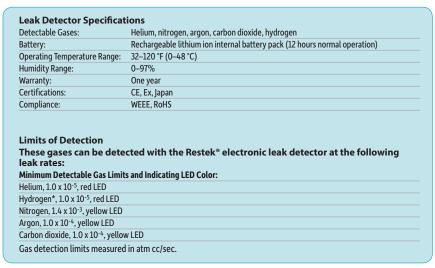


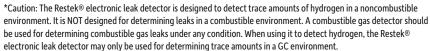
Dynamic Duo (Restek® Leak Detector and ProFLOW 6000 Flowmeter)

Protect your instrument and improve data quality with this powerful pair from Restek. Checking for leaks and verifying flows before you start helps you avoid costly problems

Restek's New Leak Detector

Redesigned and better than ever, our new leak detector is an essential tool for troubleshooting and routine maintenance of your gas chromatograph. Don't risk damaging your system or losing sensitivity; check for leaks often and protect your GC column and instrument with a Restek® leak detector!





ProFLOW 6000 Flowmeter

With its wide range of capabilities, the ProFLOW 6000 flowmeter simplifies gas flow measurement in the lab. Real-time measurements can be made for various types of flow paths, including continually changing gas types.

ype of Flowmeter:	Volumetric	
Battery:	2-AA	
Operating Temp. Range:	32–120 °F (0–48 °C)	
Warranty:	One year	
Certifications:	CE, Ex	
Compliance:	WEEE, RoHS	

Description	qty.	cat.#
Dynamic Duo Combo Pack (Restek Leak Detector and ProFLOW 6000 Flowmeter)	kit	22654
Related Products and Accessories		
Leak Detector With Hard-Sided Carrying Case and Universal Charger Set (U.S., UK, European, Australian)	ea.	22655
Small Probe Adaptor for Leak Detector	ea.	22658
Restek ProFLOW 6000 Electronic Flowmeter With Hard-Sided Carrying Case	ea.	22656
Soft-Sided Storage Case for Leak Detector or ProFLOW 6000 Flowmeter	ea.	22657















Restek's electronic leak detector makes finding leaks a quick and easy task.





Restek recommends

If you think that your Restek® electronic leak detector needs service or repair, please contact Restek® Customer Service before sending your unit in (cat.# 22655-R). Leak detector service/ repair will include inspection and testing of the unit.

Restek® Electronic Leak Detector

Don't let a small leak turn into a costly repair—protect your analytical column by using a Restek® leak detector.

Features & benefits include:

- Audible tone indicates the severity of a leak.
- Redesigned circuitry offers 12 hours of operation between charges.
- Detects a broad range of gases; Ex rated for use with hydrogen and other explosive gases.*
- Ergonomic, handheld design.
- Rugged side grips for added durability.
- Handy probe storage for cleanliness and convenience.
- Long-lasting battery; up to 12 hours of continuous use.
- · Automatic shutoff.
- A convenient carrying and storage case.
- Easy-to-clean probe assembly.
- A universal charger set (U.S., European, UK, and Australian plugs included).

Backed by a one-year warranty, the Restek® leak detector is the industry standard for performance and affordability in handheld leak detectors.

Leak Detector Specificati	ions
Detectable Gases:	Helium, nitrogen, argon, carbon dioxide, hydrogen
Battery:	Rechargeable lithium ion internal battery pack (12 hours normal operation)
Operating Temperature Range:	32–120 °F (0–48 °C)
Humidity Range:	0–97%
Warranty:	One year
Certifications:	CE, Ex, Japan
Compliance:	WEEE, RoHS
rates:	
	and Indicating LED Color:
Minimum Detectable Gas Limits	and Indicating LED Color:
Minimum Detectable Gas Limits Helium, 1.0 x 10 ⁻⁵ , red LED	and Indicating LED Color:
Minimum Detectable Gas Limits	and Indicating LED Color:
Minimum Detectable Gas Limits Helium, 1.0 x 10 ⁻⁵ , red LED Hydrogen*, 1.0 x 10 ⁻⁵ , red LED	and Indicating LED Color:
Minimum Detectable Gas Limits Helium, 1.0 x 10 ⁻⁵ , red LED Hydrogen*, 1.0 x 10 ⁻⁵ , red LED Nitrogen, 1.4 x 10 ⁻³ , yellow LED	·

Description	qty.	cat.#
Leak Detector With Hard-Sided Carrying Case and Universal Charger Set (U.S., UK, European, Australian)	ea.	22655
Small Probe Adaptor for Leak Detector	ea.	22658
Dynamic Duo Combo Pack (Restek Leak Detector and ProFLOW 6000 Flowmeter)	kit	22654
Soft-Sided Storage Case for Leak Detector or ProFLOW 6000 Flowmeter	ea.	22657
Car Charger/Adaptor	ea.	22652
Universal AC Power Adaptor	ea.	22653

Avoid using liquid leak detectors on a GC! Liquids can be drawn into the system and/or into the leak detector.

*Caution: The Restek® electronic leak detector is designed to detect trace amounts of hydrogen in a noncombustible environment. It is NOT designed for determining leaks in a combustible environment. A combustible gas detector should be used for determining combustible gas leaks under any condition. When using it to detect hydrogen, the Restek® electronic leak detector may only be used for determining trace amounts in a GC environment.









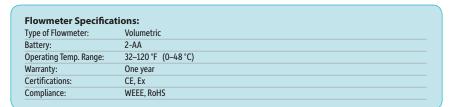
Restek ProFLOW 6000 Electronic Flowmeter

State-of-the-art features include:

- Measures volumetric flow for gases across a range of 0.5–500 mL/min.
- NIST traceable calibration.
- Ex rating (electrical apparatus for explosive gas atmospheres) for hydrogen and related gas types.
- Accuracy of \pm 2% of flow reading or \pm 0.2 mL/min, whichever is greater.
- Over-range warning indicator.
- · Auto shutoff feature.
- Use as a benchtop or handheld unit.
- Ergonomic design and side grips for comfort.
- Measures most gas types.*
- Convenient carrying/storage case included.
- Uses 2-AA batteries (included).
- Data output via USB port.
- 1-year warranty.
- Recalibration service available.

Flowmeters that can measure flammable gases are becoming mandatory due to the increased use of hydrogen in chromatography. With its Ex rating, the Restek® ProFLOW 6000 meter is designed specifically with explosive and flammable gases in mind.

The Restek® ProFLOW 6000 is the only flowmeter you need for any type of chromatography gas measurement because of its wide range of capabilities. The ProFLOW 6000 is an electronic meter capable of measuring volumetric flow for most gases. Realtime measurements can be made for various types of flow paths, including continually changing gas types. This portable unit is designed for easy handheld use, and the stand adds benchtop convenience.



Description	qty.	cat.#
Restek ProFLOW 6000 Electronic Flowmeter With Hard-Sided Carrying Case	ea.	22656
ProFLOW 6000 Recalibration Service	ea.	22656-R
Soft-Side Storage Case	ea.	22657

*The flowmeter is designed to measure clean, dry, non-corrosive gases. Patented



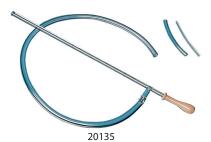
Restek recommends

Recalibrate your ProFLOW 6000 flowmeter once every year. Prolonged failure to recalibrate your unit may result in increased error. To always get the most accurate flow measurements, contact Customer Service to send in your flowmeter for recalibration (cat.# 22656-R).



22657 Optional soft-side storage case is ideal for storing your leak detector or flowmeter in smaller spaces, such as your toobox.





Soap Film Bubble Flowmeter

- 1 mL flowmeter for flows between 0.1 and 10 cc/min.
- 50 mL flowmeter for flows between 10 and 300 cc/min.
- Includes a reservoir bulb, twenty-four inches (60 cm) of ¹/₄-inch ID tubing, adaptor tubes for ¹/₈-inch tubing and 0.53~mm ID capillary columns, and Velcro $^{\circ}$ fasteners.

Description	Volume	qty.	cat.#
Bubble Flowmeter	1 mL	ea.	20135
Bubble Flowmeter	50 mL	ea.	20136

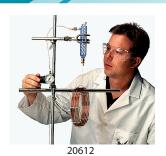
Methane Cylinder Kit

For optimizing linear velocity

Setting the column flow rate by injecting methane and optimizing linear velocity is a preferred method for establishing reproducible retention times (ASTM Method E1510-93). The kit includes a Scotty® 14 cylinder containing 1% methane in helium, a MINICYL regulator, a syringe adaptor, and a package of twenty-five septa for the adaptor.



qty.	cat.#
kit	20197
25-pk.	20198
ea.	20199
	kit 25-pk.



Capillary Column Rinsing Reservoir Kit

Restore the performance of bonded-phase capillary columns by dissolving and removing soluble, nonvolatile residue, using this reservoir kit. The 50 mL rinsing reservoir is equipped with ¹/₄-inch inlet and outlet connections and includes a built-in fritted disk to prevent particulate matter from contaminating the column. The kit includes reservoir, pressure regulator, fittings, ferrules, and tubing. Reservoir also available separately.

Description	qty.	cat.#	
Rinsing Reservoir Complete Kit	kit	20612	
Rinsing Reservoir only	ea.	20613	

Column not included.



21000

FID Flow Measuring Adaptor for Agilent 5890/6890/6850/7890 GCs

- · Makes setting flows easy.
- Meets or exceeds original manufacturer's performance.

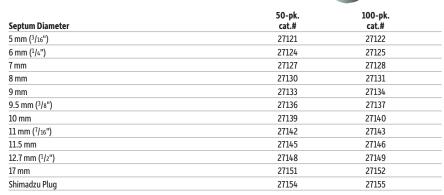
	Similar to			
Description	Agilent part #	qty.	cat.#	
FID Flow Measuring Adaptor	19301-60660	ea.	21000	





Restek® Thermolite® Septa

- Usable to 340 °C inlet temperature*.
- · Precision molding assures consistent, accurate fit.
- Excellent puncturability.
- · Preconditioned and ready to use.
- Packaged in ultra-clean blister packs**.
- A Restek exclusive!



Note: Due to differences in inlet design, the actual septum temperature for a given inlet setpoint can vary by manufacturer. Restek recommends using only BTO® septa in Thermo TRACE and Focus GCs. *For 17 mm inlets, the maximum temperature is 330 °C.

Premium Non-Stick BTO® Septa

- Usable to 400 °C inlet temperature*.
- New plasma coating eliminates sticking in the injection port.
- Precision molding ensures consistent, accurate fit.
- Partial predrilled CenterGuide design.
- Preconditioned and ready to use.
- Packaged in ultra-clean blister packs**.
- Each batch GC-FID tested.
- Bleed and temperature optimized; ideal for demanding GC and GC-MS applications.

	50-pk.	100-pk.
Septum Diameter	cat.#	cat.#
5 mm CenterGuide	27082	27083
9 mm CenterGuide	27084	27085
9.5 mm (³ / ₈ ")	27086	27087
10 mm	27088	27089
11 mm (7/16") CenterGuide	27090	27091
11.5 mm CenterGuide	27092	27093
12.7 mm (1/2") CenterGuide	27094	27095
17 mm CenterGuide	27096	27097
Shimadzu Plug	27098	27099

Note: Due to differences in inlet design, the actual septum temperature for a given inlet setpoint can vary by manufacturer. Restek recommends using only BTO® septa in Thermo TRACE and Focus GCs.

*For 17 mm inlets, the maximum temperature is 330 °C. For all injectors, minimum recommended operating temperature for BTO® septa is 250 °C.

Measure

your old septum here (size in mm)



















HANDY septum size chart

	Septum
	Diameter
Instrument	(mm)
Agilent (HP)	
5880A, 5890, 6850, 6890, 7890, PTV	11
5700, 5880	9.5/10
On-Column Injection	5
Bruker/Varian	
Injector type:	
Packed column	9.5/10
1078/1079	10/11
1177	9
1075/1077	11
Finnigan (TMQ)	
GC 9001	9.5
GCQ	9.5
oco	9.5
TRACE 2000	9.5
PerkinElmer	
Sigma series	11
900,990	11
8000 series	11
Auto SYS	11
Auto SYS XL	11
Shimadzu	
All models	Plug
SRI	
GCs with heated inlet	9.5
All other models	Plug
Thermo Scientific	
TRACE GC	17
GCO w/TRACE, PTV	17
8000 series	17
1300 and 1310 GC	11
Tracor	
540	11.5
550.560	9.5



Tips for Handling Septa

All septa, regardless of composition, puncturability, or resistance to thermal degradation will fail if they are mishandled. Overtightening a septum nut invariably will reduce septum lifetime by increasing coring/ splitting. All septa contain volatile materials (e.g., phthalates) that are released when the septum is heated (septum bleed). Because most GCs are equipped with a septum purge, septum bleed generally will disappear within 30 minutes after installing a new septum and exposing it to normal injector temperatures. All Restek septa are preconditioned and are ready to use without delay.

^{**12.7} mm and 17 mm septa packaged in precleaned glass jars.

^{**12.7} mm and 17 mm septa packaged in precleaned glass jars.



Choosing the Right Ferrule

Graphite ferrules are soft, easy to seal, stable to 450 °C, and contain no binders that might off-gas. Vespel®/graphite ferrules work better for vacuum and high-pressure applications (e.g., GC-MS) because they will not fragment or allow oxygen to permeate into the system, whereas graphite ferrules will. Because Vespel®/graphite ferrules are made from a harder material, they might require retightening after several temperature cycles.



Graphite Ferrules





Vespel® Ferrules

- 100% high-temperature polyimide.
- Stable to 350 °C.
- Durable, leak-tight.

Graphite Ferrules

- Preconditioned to eliminate out-gassing.
- High-purity, high-density graphite.
- Smoother surface and cleaner edges than conventional graphite ferrules.
- Contain no binders that can off-gas or adsorb analytes.
- Stable to 450 °C.

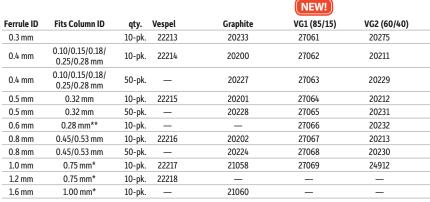
Vespel®/Graphite Ferrules

• VG2, 60% Vespel[®]/40% graphite blend offers the best combination of sealing and ease of workability.

Vespel® Ferrules

- VG1, 85% Vespel^o/15% graphite blend offers equivalent composition to Agilent Vespel[®]/graphite ferrules.
- Seal with minimal torque, reusable, and preferred for vacuum and high-pressure
- Stable to 400 °C.
- Recommended for mass spec transfer lines.

Capillary Ferrules for 1/16-Inch Compression-Type Fittings Available in Vespel®, graphite, or Vespel®/graphite material.



^{*}For micropacked columns.

Encapsulated Ferrules for 1/16-Inch Compression Fittings

- Reusable—will not deform and stick in fittings.
- Less torque needed to seal ferrule.
- Restek's unique blend of graphite minimizes fragmentation and out-gassing.

Ferrule ID	Fits Column ID	qty.	cat.#
0.4 mm	0.25 mm	10-pk.	21036
0.5 mm	0.32 mm	10-pk.	21037
0.8 mm	0.53 mm	10-pk.	21038



^{**}For 0.28 mm MXT columns.

Compact Ferrules for Agilent 5890/6890/6850/7890 GCs

Available in graphite or Vespel®/graphite material.

NEW!

Ferrule ID	Fits Column ID	qty.	Graphite	VG1 (85/15)	VG2 (60/40)
0.4 mm	0.25/0.28 mm	10-pk.	20250	27070	20238
0.4 mm	0.25/0.28 mm	50-pk.	20251	27071	20239
0.5 mm	0.32 mm	10-pk.	21007	27072	20248
0.5 mm	0.32 mm	50-pk.	21008	27073	20249
0.8 mm	0.45/0.53 mm	10-pk.	20252	27074	20263
0.8 mm	0.45/0.53 mm	50-pk.	20253	27075	20264
1.0 mm	0.75 mm*	10-pk.	21059	_	_
1.6 mm	1.00 mm*	10-pk.	21061	_	_



Standard Ferrules for 1/16-, 1/8-, and 1/4-Inch Fittings

Available in Vespel®, graphite, or Vespel®/graphite material.

NEW!

Fitting Size	Ferrule ID	qty.	Vespel	Graphite	VG1 (85/15)	VG2 (60/40)
1/4"	3/16"	5-pk.	_	_	_	20258
1/16"	1/16"	10-pk.	22210	20207	27076	20218
1/8"	1/8"	10-pk.	22211	20208	27077	20219
1/8"	reduce to 1/16"	10-pk.	_	20209	_	20220
1/4"	1/4"	10-pk.	22212	20210	27078	20221
1/4"	reduce to 1/8"	10-pk.	22219	20225	_	20222
1/4"	reduce to 1/16"	10-pk.	_	20226	_	20223





Two-Hole Ferrules for 1/8-Inch and 1/16-Inch Compression-Type Fittings

- Use 1/16-inch, two-hole ferrules with the 1/16-inch capillary inlet adaptor fitting kit (cat.# 27185).
- \bullet Use $^1/8\text{-inch}$, two-hole ferrules with the $^1/8\text{-inch}$ capillary inlet adaptor fitting kit (cat.# 20645).

Fitting Size	Ferrule ID	Fits Column ID	qty.	VG2 (60/40)	
1/16"	0.4 mm	0.25/0.28 mm	5-pk.	24848	
1/16"	0.5 mm	0.32 mm	5-pk.	24849	
1/8"	0.8 mm	0.45/0.53 mm	5-pk.	20246	



Reducing Ferrules

Available in graphite or Vespel®/graphite material.

(NEW!)

Ferrule ID	Fits Column ID	qty.	Graphite	VG1 (85/15)	VG2 (60/40)
0.4 mm	0.25 mm	5-pk.	20205	27079	20254
0.5 mm	0.32 mm	5-pk.	20205	27080	20255
0.8 mm	0.53 mm	5-pk.	20206	27081	20215
0.4 mm	0.25 mm	5-pk.	20203	_	_
0.5 mm	0.32 mm	5-pk.	20203	_	20257
0.8 mm	0.45/0.53 mm	5-pk.	20204	_	20217
	0.4 mm 0.5 mm 0.8 mm 0.4 mm 0.5 mm	0.4 mm 0.25 mm 0.5 mm 0.32 mm 0.8 mm 0.53 mm 0.4 mm 0.25 mm 0.5 mm 0.32 mm	0.4 mm 0.25 mm 5-pk. 0.5 mm 0.32 mm 5-pk. 0.8 mm 0.53 mm 5-pk. 0.4 mm 0.25 mm 5-pk. 0.5 mm 0.32 mm 5-pk.	0.4 mm 0.25 mm 5-pk. 20205 0.5 mm 0.32 mm 5-pk. 20205 0.8 mm 0.53 mm 5-pk. 20206 0.4 mm 0.25 mm 5-pk. 20203 0.5 mm 0.32 mm 5-pk. 20203	0.4 mm 0.25 mm 5-pk. 20205 27079 0.5 mm 0.32 mm 5-pk. 20205 27080 0.8 mm 0.53 mm 5-pk. 20206 27081 0.4 mm 0.25 mm 5-pk. 20203 — 0.5 mm 0.32 mm 5-pk. 20203 —



Blank Ferrules for 1/16-Inch Fittings

Fitting Size	Ferrule ID	qty.	VG2 (60/40)	
1/16"	no hole	10-nk	202/.0	





^{*}For micropacked columns.



PTFE Ferrules

- Upper temperature limit 250 °C.
- 100% PTFE; completely inert.
- One-piece design requires no back ferrule.

Fitting Size	Ferrule ID	qty.	cat.#
1/16"	1/16"	10-pk.	21122
1/16"	0.4 mm	10-pk.	21123
1/16"	0.5 mm	10-pk.	21124
1/16"	0.8 mm	10-pk.	21125
1/8"	1/8"	10-pk.	21126
3/16"	3/16"	10-pk.	21127
1/4"	1/4"	10-pk.	21128

Graphite Ferrules

(M4 Fittings) for Thermo Scientific TRACE, 8000, 8000 TOP & Focus GCs

- Preconditioned to eliminate out-gassing.
- High-purity, high-density graphite.
- Smoother surface and cleaner edges than conventional graphite ferrules.
- Contain no binders that can off-gas or adsorb analytes.
- Stable to 450 °C.

Ferrule ID	Fits Column ID	Similar to TS Part #	Graphite 2-pk.	Graphite 10-pk.
0.3 mm	0.10-0.15 mm	_	22221	22222
0.4 mm	0.18-0.28 mm	29013488 (2-pk.) 29053488 (10-pk.)	20280	20281
0.5 mm	0.32 mm	29013487 (2-pk.) 29053487 (10-pk.)	20282	20283
0.8 mm	0.45-0.53 mm	29013486 (2-pk.) 29053486 (10-pk.)	20284	20285



5 mm Ferrules for Shimadzu 17A GCs

- For use with packed columns.
- Graphite construction.

Description	qty.	cat.#
5 mm Ferrules for Shimadzu 17A GCs	10-pk.	21121



Graphite Ferrules for Shimadzu 17A, 2010, and 2014 GCs

- Graphite two-piece construction.
- Available in 0.4, 0.5, and 0.8 mm sizes.
- Packaged on mandrel for easy handling.

		Similar to			
Ferrule ID	Fits Column ID	Shimadzu Part #	qty.	cat.#	
0.4 mm	0.25 mm and less	220-90765-00	10-pk.	24827	
0.5 mm	0.32 mm	221-32126-05	10-pk.	24828	
0.8 mm	0.53 mm	221-32126-08	10-pk.	24829	



GRAPHPACK® 2M Ferrules for Gerstel CIS 3 and CIS 4 PTV Inlets

Fits Column ID	Similar to Gerstel Part #	qty.	cat.#	
0.25 mm	001805-040-00	10-pk.	22223	
0.32 mm	001805-045-00	10-pk.	22224	
0.53 mm	001805-007-00	10-pk.	22225	





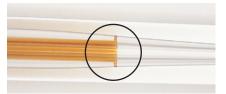
Restek Press-Tight® Connectors

Press-Tight[®] connectors are lightweight, quickly installed, and easy to use. They connect fused silica tubing having outside diameters ranging from 0.33 to 0.74 mm (Restek* 0.1 to 0.53 mm ID). Press-Tight* connectors do not cause solvent tailing, or adsorb active compounds.

Press-Tight® connectors most often are used to connect a guard column to an analytical column. They also are used to connect columns differing in polarity, for unique separations, or to repair a broken column.



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



A brown ring indicates a proper seal.

RESTEX

Our attention to detail is why Restek® products are known for quality and reliability.

Obtaining a leak-tight seal:

To achieve optimum performance from these connectors, begin with a properly cut fused silica column or retention gap end. Even if you use polyimide resin (cat.# 20445, page 228) for extra insurance, a poorly cut capillary column will make an inadequate seal.

Press the cut ends into the connector, then establish a flow, and leak-check the seal with a Restek® electronic leak detector (cat.# 22655, page 220) before heating the system.

What is the maximum temperature for a Press-Tight® connector?

Press-Tight* connectors are effective at oven temperatures up to 325 °C, the temperature at which the polyimide coating on the column decomposes and the connection will begin to leak. We strongly recommend using a Vu2 Union® (page 229) or SeCure® "Y" (page 230) connector if oven temperatures will exceed 325 °C for prolonged periods of time.

Can Press-Tight® connectors be used with MXT® columns?

No. To achieve a leak-tight fused silica to stainless steel connection, we recommend an MXT[®] connector (see page 231).



Restek will connect a guard column/transfer line to any analytical column, using a Vu2 Union® connector. We will leak-check the connection and confirm analytical integrity by analyzing a test mixture. To order a preconnected guard column/transfer line, add the threedigit suffix from the chart below to any analytical column catalog number. Example: A 5 m, 0.32 mm ID guard column connected to a 30 m, 0.32 mm ID, 1.0 μm Rtx°-5 column is cat.# 10254-163.

5m Guard Column ID	cat.# suffix	Additional Cost*
0.15 mm	-160	
0.18 mm	-161	
0.25 mm	-162	
0.32 mm	-163	
0.53 mm	-164	

10m Guard Column ID	cat.# suffix	Additional Cost*
0.25 mm	-165	
0.32 mm	-166	
0.53 mm	-167	

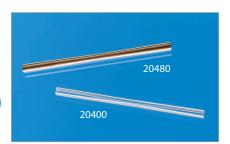
*Additional cost will be added to the price of the column.

Guard columns listed are intermediate polarity (IP) deactivated.

For more information about guard columns, see pages 18-19.

Press-Tight® Connectors

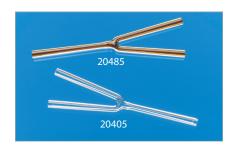
- Deactivated Press-Tight® connectors maintain complete inertness along the GC flow path.
- Siltek®-deactivated connectors are ideal for organochlorine pesticides analysis.
- Fit 0.33-0.74 mm OD columns (Restek® 0.1-0.53 mm ID).



Universal Press-Tight® Connectors

- Connect a guard column to an analytical column.
- Repair a broken column.
- Connect a column outlet to a transfer line.

Description	5-pk.	25-pk.	100-pk.
Universal Press-Tight Connectors	20400	20401	20402
Universal Press-Tight Connectors, Deactivated	20429	20430	_
Universal Press-Tight Connectors, Siltek Deactivated	20480	20449	_

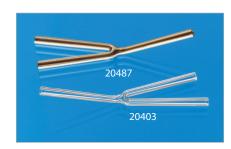


Universal "Y" Press-Tight® Connectors

An alternative method of performing dual-column confirmational analyses!

- Split sample flow onto two columns—perform confirmation analysis with a single injection.
- Split a single column flow to two detectors.

Description	ea.	3-pk.
Universal "Y" Press-Tight Connector	20405	20406
Universal "Y" Press-Tight Connector, Deactivated	20405-261	20406-261
Universal "Y" Press-Tight Connector, Siltek Deactivated	20485	20486



Universal Angled "Y" Press-Tight® Connectors

- Perform confirmation analysis with a single injection.
- Inlet and outlet ends conform to the column curvature—alleviates column-end connection strain.

Description	ea.	3-pk.	
Universal Angled "Y" Press-Tight Connector	20403	20404	
Universal Angled "Y" Press-Tight Connector, Deactivated	20403-261	20404-261	
Universal Angled "Y" Press-Tight Connector, Siltek Deactivated	20487	20469	



Polyimide Resin

Securely connects a Press-Tight® connector to a fused silica column.

Description	Max. Temp.	qty.	cat.#
Polyimide Resin	350 °C	5 grams	20445



Vu2 Union® Connectors

- · Connect a guard column to an analytical column.
- Connect a column to a transfer line.
- Connect two columns in series.
- Repair a broken column.
- Fit both Restek® cage designs.

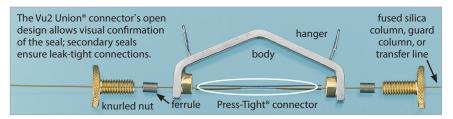
Restek's Vu2 Union® connector combines the simplicity of a Press-Tight® union with the strength of a metal union.

How does a Vu2 Union® connector work?

A Press-Tight[®] union in the Vu2 Union[®] connector joins the fused silica tubing ends together; the ferrule and knurled nut at each end of the connector hold the tubing in place via a secondary seal between the ferrule and the Press-Tight® union. Each knurled nut applies independent pressure to each ferrule to make leak-tight seals with the column ends. These ultra-strong connections will not unexpectedly disconnect under temperature changes, vibrations, or other stresses normally encountered in GC analyses. The open design allows visual confirmation of the seal between the column and the Press-Tight® union to ensure confidence in the connection. Hang the connector from the column cage to minimize stress on the connections.

Who will benefit from using Vu2 Union® connectors?

Any analyst using guard columns, transfer lines, or restrictor tubing; performing a dual-column analysis with columns connected in series; or seeking to repair a broken column will find Vu2 Union® connectors the simple, reliable, easy-to-use solution to their connection needs.



Kits include: Vu2 Union® body, two knurled nuts, two Press-Tight® unions, and four ferrules

Description	Ferrules Fit Column ID	qty.	cat.#
Vu2 Union Connector Kit	0.10-0.15 mm	kit	22220
Vu2 Union Connector Kit	0.18-0.28 mm	kit	21105
Vu2 Union Connector Kit	0.32 mm	kit	21106
Vu2 Union Connector Kit	0.45-0.53 mm	kit	21107
Knurled Nut		2-pk.	21108

Universal Press-Tight® Connectors

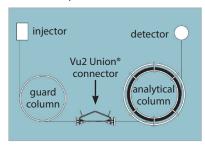
Description	5-pk.	25-pk.	100-pk.
Universal Press-Tight Connectors	20400	20401	20402
Universal Press-Tight Connectors, Deactivated	20429	20430	_
Universal Press-Tight Connectors, Siltek Deactivated	20480	20449	_

Graphite Ferrules for Vu2 Union® Connectors

- High-purity, high-density graphite.
- Stable to 450 °C.
- No binders that can off-gas or adsorb analytes.
- · Smooth surface and clean edges.

Ferrule ID	Fits Column ID	Graphite 2-pk.	Graphite 10-pk.
0.3 mm	0.10-0.15 mm	22221	22222
0.4 mm	0.18-0.28 mm	20280	20281
0.5 mm	0.32 mm	20282	20283
0.8 mm	0.45-0.53 mm	20284	20285

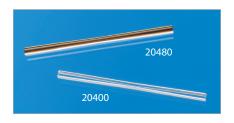








NOTE: This product is not recommended for GC column-to-MS connections.











Fit both Restek® cage designs.

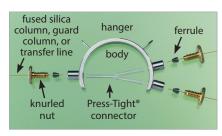


SeCure® "Y" Connector Kits

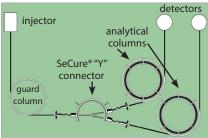
- Connect two analytical columns to a transfer line or guard column.
- Use standard "Y" Press-Tight® connectors and 1/16" graphite ferrules.
- Reliable seal integrity—will not unexpectedly disconnect during temperatureprogrammed analyses.
- Open design allows visual confirmation of the seal for added confidence in the connection.
- Fit both Restek® cage designs.

Combine the simplicity of a "Y" Press-Tight® connector with the strength of a metal union. The ferrules and knurled nuts hold the fused silica tubing in place, which prevents the tubing from unexpectedly disconnecting, even at temperatures as high as 400 °C.

The SeCure® "Y" connector's open design allows visual confirmation of the seal.



Dual-column confirmational analysis with a single injection—one of the SeCure® "Y" connector's many uses.



Kits include: SeCure® "Y" connector body, three knurled nuts, universal "Y" Press-Tight® union, three ferrules.

Description	Ferrules Fit Column ID	qty.	cat.#	
SeCure "Y" Connector Kit	0.18/0.25/0.28 mm	kit	20276	
SeCure "Y" Connector Kit	0.32 mm	kit	20277	
SeCure "Y" Connector Kit	0.45/0.53 mm	kit	20278	
Knurled Nut		3-pk.	20279	

Universal "Y" Press-Tight® Connectors

An alternative method of performing dual-column confirmational analyses!

- Split sample flow onto two columns—perform confirmation analysis with a single injection.
- Split a single column flow to two detectors.
- Deactivated Press-Tight® connectors maintain complete inertness along the GC
- Siltek®-deactivated connectors are ideal for organochlorine pesticides analysis.
- Fit 0.33-0.74 mm OD columns (Restek* 0.1-0.53 mm ID).

Description	ea.	3-pk.	
Universal "Y" Press-Tight Connector	20405	20406	
Universal "Y" Press-Tight Connector, Deactivated	20405-261	20406-261	
Universal "Y" Press-Tight Connector, Siltek Deactivated	20485	20486	



Graphite Ferrules for SeCure® "Y" Connectors

- · Preconditioned to minimize out-gassing.
- High-purity, high-density graphite.
- Stable to 450 °C.
- No binders that can off-gas or adsorb analytes.
- · Smooth surface and clean edges.

Ferrule ID	Fits Column ID	Graphite 10-pk.	Graphite 50-pk.	
0.4 mm	0.10/0.15/0.18/0.25/0.28 mm	20200	20227	
0.5 mm	0.32 mm	20201	20228	
0.8 mm	0.45/0.53 mm	20202	20224	





MXT®-Union Connector Kits for Connecting **Metal and/or Fused Silica GC Columns**

- Low dead volume, leak-tight connection.
- Reusable.
- Siltek® treatment ensures maximum inertness.
- Ideal for connecting a guard column or transfer line to an analytical column.
- Use to oven temperatures of 350 °C.
- Available in union and "Y" configurations.
- Can also be used for connecting fused silica to metal.

These MXT° connectors can be used with fused silica tubing because of a Valcon polyimide, 1/32-inch, one-piece fused silica adaptor. This unique graphite-reinforced composite allows a capillary column to slide into the adaptor and be locked in place simply by loosening and tightening the fitting.



MXT®-Union Connector Kits

for Connecting Metal and/or Fused Silica GC Columns

Each kit contains the MXT® union; two 1/32-inch nuts; and two, one-piece, fused silica adaptors.

Description	qty.	cat.#	
For 0.25 mm ID Fused Silica Columns	kit	21386	
For 0.32 mm ID Fused Silica Columns	kit	21385	
For 0.53 mm ID Fused Silica Columns	kit	21384	



MXT® "Y"-Union Connector Kits

for Connecting Metal and/or Fused Silica GC Columns

Each kit contains the MXT® union; three 1/32-inch nuts; and three, one-piece, fused silica adaptors.

Description	qty.	cat.#
For 0.25 mm ID Columns	kit	21389
For 0.32 mm ID Columns	kit	21388
For 0.53 mm ID Columns	kit	21387



1/32-Inch Valco® Adaptor Ferrules (Valcon Polyimide)

Fused silica adaptor ferrules are made from Valcon polyimide, a unique, graphite-reinforced composite specially prepared to maximize mechanical stability at temperatures up to 350 °C. The determining factor for selecting adaptor ferrule size is the fused silica tubing OD.

Tubing OD	Tubing ID	Valco#	qty.	cat.#	
0.25-0.40 mm	0.25 mm	FS.4-5	5-pk.	20137	
0.40-0.50 mm	0.32 mm	FS.5-5	5-pk.	20140	
0.50-0.80 mm	0.53 mm	ZF.5V-5	5-pk.	20141	
1/3	2" Replacement Nu	ıt	5-pk.	20389	



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 1/32inch adaptor ferrules and one for removing 1/16-inch adaptor ferrules.

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



Coupling GC Columns

An MXT® connector is a good alternative to a glass connector when coupling GC columns. This connector is constructed from stainless steel and will not break; it uses ferrules for sealing. The design ensures low dead volume, and Siltek® treatment ensures the MXT® connector is inert; both features help minimize peak tailing. MXT® connectors can be used to connect metal-to-metal, metal-to-fused silica, or fused silica-to-fused silica tubing. When connecting metal tubing, use 1/32-inch stainless steel ferrules (see page 232); for fused silica tubing, use Valcon polyimide adaptor ferrules (see above).



MXT® Low Dead Volume Connector Kits For Metal Columns

These low dead volume connectors are Siltek® treated to make them inert to active compounds, just like our MXT° columns. They can be used at temperatures up to 430 °C without degrading the deactivated layer. Purchase the appropriate ferrules for connecting 0.28, 0.32, or 0.53 mm ID tubing.



MXT® Low Dead Volume Connector Kits

for Metal Columns

- Connect a guard column/transfer line to an MXT° stainless steel column.
- Low thermal mass tracks rapid oven temperature programming.
- Stainless steel ferrules and nuts.
- Available in "Y" and union configurations.
- Siltek® treatment ensures ultimate inertness.

Each kit contains the MXT® union, two 1/32-inch ferrules and nuts.

Description	qty.	cat.#
For 0.28 mm ID MXT Columns	kit	20397
For 0.32 mm ID MXT Columns	kit	20536
For 0.53 mm ID MXT Columns	kit	20394



MXT® Low Dead Volume "Y" Connector Kits

for Metal Columns

Connect two MXT° columns to one inlet or one MXT° column to two detectors.

Each kit contains the MXT® union, three 1/32-inch ferrules and nuts.

Description	qty.	cat.#	
For 0.28 mm ID MXT Columns	kit	20396	
For 0.32 mm ID MXT Columns	kit	20537	
For 0.53 mm ID MXT Columns	kit	20395	

Replacement Ferrules

(1/32-Inch Stainless Steel) for MXT® Connectors





¹/₄-Inch-³/₁₆-Inch Open-End Wrenches

High-quality miniature wrenches to use with MXT® low-dead-volume connectors.

Description	qty.	cat.#	
1/4"-3/16" Open-End Wrenches	2-niece set	20388	



Capillary Columns

Ideal for High Temperature GC Analysis

- Metal tubing won't become brittle at high temperatures (430 °C).
- Exclusive Siltek® layer makes the internal surface as inert as deactivated fused silica.
- Can be tightly coiled well under 4.5" without breaking, even under stress.
- · Column efficiency (Trennzahl valve) is similar to that of fused silica.

See pages 104-115.

www.restek.com/mxt





Zero Dead Volume Valco® Internal Union

Ends of tubing seat squarely at bottoms of fitting details. Made of 300-series stainless steel. For use with 1/16" OD tubing. Stainless steel ferrules included.

Description	Union Bore	Valco #	qty.	cat.#	
Internal Union	0.15 mm	ZU1XC	ea.	20147	
Internal Union	0.25 mm	ZU1C	ea.	20148	
Internal Union	0.75 mm	ZU1	ea.	20149	
Internal Union	1/16"	ZU1T	ea.	20150	





Male Pipe to Valco® Internal Adapter (Stainless Steel)

Makes a minimum volume connection from a female pipe fitting on a pressure gauge or regulator to a Valco® zero-deadvolume fitting. Made of 300 series stainless steel; stainless steel ferrules included.

Description	Fitting Size	Bore	Valco#	qty.	cat.#	
Male Pipe to Valco Internal Adapter	1/8" NPT Male to 1/16" ZDV	1.0 mm	PZA21	ea.	20158	
Male Pipe to Valco Internal Adapter	¹ /4" NPT Male to ¹ /16" ZDV	1.0 mm	PZA41	ea.	20159	





Nuts & Ferrules

(1/16-Inch Stainless Steel) for Valco® Connectors

Description	Valco #	qty.	cat.#
Ferrules, 1/16" Stainless Steel	ZF1-10	10-pk.	20286
Nuts, 1/16" Stainless Steel	ZN1-10	10-pk.	20287





1/16-Inch Valco® Adaptor Ferrules

Fused silica adaptor ferrules are made from Valcon polyimide, a unique, graphite-reinforced composite specially prepared to maximize mechanical stability at temperatures up to 350 °C. The determining factor for selecting adaptor ferrule size is the fused silica tubing OD.

Valcon Polyimide		Virgin	Polyim	ide				
Tubing OD	Valco #	qty.	cat.#		Valco #	qty.	cat.#	
0.30≤0.40 mm	FS1.4-5	5-pk.	20142		FS1.4V1-5	2-pk.	21015	
0.40≤0.50 mm	FS1.5-5	5-pk.	20143		FS1.5V1-5	2-pk.	21016	
0.50≤0.80 mm	FS1.8-5	5-pk.	20144		_	_	_	
0.80≤0.90 mm	FS1.9-5	5-pk.	20145		_	_	_	



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FIND A LOCAL DISTRIBUTOR www.restek.com/distributor





Viton® O-Rings for Agilent GCs

Fit split (6.3 mm OD) or splitless (6.5 mm OD) liners.

Description	Max	Similar to	10-pk.	50-pk.
	Temp	Agilent Part #	cat.#	cat.#
Viton O-Rings for Agilent GCs	300 °C	5188-5365	22241	22242



Liner Seals for CIS4 and PTV

Description	Max Temp	Similar to Agilent Part #	Similar to Gerstel Part #	qty.	cat.#
Liner Seals for CIS4 and PTV	450 °C	5182-9749	007541-005-00	5-pk.	22684



Graphite O-Rings for Agilent and Bruker/Varian 1177 Injectors Excellent thermal stability at injection port temperatures up to $450\,^{\circ}\text{C}!$

Description	Max Temp	Similar to Agilent Part #	10-pk. cat.#	50-pk. cat.#
6.35 mm ID Graphite O-Rings for split liners	450 °C	5180-4168	20296	20297
6.5 mm ID Graphite O-Rings for splitless liners	450 °C	5180-4173	20298	20299



Replacement Viton® O-Rings for use with the

Agilent Flip Top Inlet Sealing System

Description	Similar to Agilent Part #	qty.	cat.#	
Viton Replacement O-Rings for use with the Agilent Flip Top Inlet Sealing System	5188-5366	10-pk.	22336	



Silver PTV Seals for Agilent 6890 GCs

Description	Similar to Agilent Part #	atv.	cat.#
Silver PTV Seals for Agilent 6890 GCs	5182-9763	5-pk.	21409



PTV Inlet Adaptor Kit for Gerstel CIS 3 and CIS 4 PTV Inlets

- Meets original manufacturer's performance.
- Includes inlet adaptor, silver PTV seal, and slotted capillary nut.

Similar to Gerstel Part #	qty.	cat.#	
007259-045-00	kit	22350	
002841-005-00	5-pk.	21409	
001268-005-00	2-pk.	22349	
007542-000-00	ea.	22352	
	Gerstel Part # 007259-045-00 002841-005-00 001268-005-00	Gerstel Part # qty. 007259-045-00 kit 002841-005-00 5-pk. 001268-005-00 2-pk.	Gerstel Part # qty. cat.# 007259-045-00 kit 22350 002841-005-00 5-pk. 21409 001268-005-00 2-pk. 22349



GRAPHPACK® 2M Ferrules for Gerstel CIS 3 and CIS 4 PTV Inlets

Fits Column ID	Similar to Gerstel Part #	qty.	cat.#	
0.25 mm	001805-040-00	10-pk.	22223	
0.32 mm	001805-045-00	10-pk.	22224	
0.53 mm	001805-007-00	10-pk.	22225	



Merlin Microseal Septa for Agilent GCs

- Allow operation from 3 to 100 psi (general-purpose Microseal septa) or 1 to 45 psi (low-pressure Microseal septa).
- 400 °C max injection port temperature.

The advantages of the Merlin Microseal septum include elimination of septum coring; longer life; and consistent, low needle-insertion force. The Microseal septum incorporates two separate sealing mechanisms. These sliding seals eliminate septum coring and the resulting accumulation of septum crumbs in the injection port liner.

The Microseal septum uses a 23-gauge (0.63 mm, 0.025") needle or probe with a blunt, truncated conical tip. Since the syringe plunger end details are determined by manual or autosampler compatibility, often a removable needle syringe is an effective way to match both of these requirements. No adapter is required for the Agilent inlet. Installation is simple, requiring no modification of the injection port.

Merlin	Similar to			
#	Agilent Part #	qty.	cat.#	
404	5181-8833	kit	22810	
405	5182-3442	kit	22811	
304		kit	22813	
305	5181-8816	kit	22814	
410	5182-3444	ea.	22812	
310	5181-8815	ea.	22815	
21-01W		ea.	22782	
403	5182-3445	ea.	22809	
	# 404 405 304 305 410 310 21-01W	# Agilent Part # 404 5181-8833 405 5182-3442 304 305 5181-8816 410 5182-3444 310 5181-8815 21-01W	# Agilent Part # qty. 404 5181-8833 kit 405 5182-3442 kit 304 kit 305 5181-8816 kit 410 5182-3444 ea. 310 5181-8815 ea. 21-01W ea.	# Agilent Part # qty. cat.# 404 5181-8833 kit 22810 405 5182-3442 kit 22811 304 kit 22813 305 5181-8816 kit 22814 410 5182-3444 ea. 22812 310 5181-8815 ea. 22815 21-01W ea. 22782

Note: Merlin Microseal septa require a 23-gauge (0.63 mm, 0.025") needle or probe with a blunt, truncated conical tip. Compatible syringes and replacement needles are available at www.restek.com.



Merlin MicroShot™ Injector

- NIST traceability assures accurate injections.
- Fixed volume reduces sampling error.
- Saves time—no need to transfer to autosampler vials.
- Prevents bent syringe plungers.
- Five injection volumes available.*

Increase the accuracy and reproducibility of manual injections with the Merlin Micro-Shot[™] injector. This new injector is calibrated to NIST reference standards to assure accurate and traceable displacement. Precise repeated injections of the preset volume can be made using a standard autosampler syringe with less variation than when injecting by hand. The trigger mechanism provides rapid sample delivery, which reduces needle residence time in the injection port and minimizes potential sample discrimination.

The Merlin MicroShot[™] injector allows convenient sampling from a wide variety of containers, so you can save time by eliminating the need to transfer aliquots into auto sampler vials. The design of this unit also includes a plunger support, which protects the syringe plunger and prevents it from bending.

Fits Agilent-style (ball-end plunger) autosampler syringes with either fixed or removable, 23- or 26-gauge needles.

Description	Merlin cat.#	qty.	cat.#	
0.1 µL injection volume	701-01	ea.	22226	
0.2 µL injection volume	701-02	ea.	22227	
0.5 µL injection volume	701-05	ea.	22228	
1.0 µL injection volume	701-10	ea.	22229	
2.0 µL injection volume	701-20	ea.	22230	

^{*}Syringe not included. Requires Agilent-style (ball-end plunger) autosampler syringe.











Septa for Agilent GCs

- Preconditioned and ready to use.
- · Packaged in ultra-clean blister packs.

Septum Diameter	50-pk. cat.#	100-pk. cat.#
Thermolite Septa (usable to 340 °C inle	t temp.)	
5 mm (³ / ₁₆ ")	27121	27122
9.5 mm (³ / ₈ ")	27136	27137
10 mm	27139	27140
11 mm (⁷ / ₁₆ ")	27142	27143
Premium Non-Stick BTO Septa (usable	to 400 °C inlet temp.*)	
5 mm CenterGuide	27082	27083
9.5 mm (³ / ₈ ")	27086	27087
10 mm	27088	27089
11 mm (7/16") CenterGuide	27090	27091

^{*}Minimum recommended operating temperature for premium non-stick BTO septa is 250 °C.

Note: Due to differences in inlet design, the actual septum temperature for a given inlet setpoint can vary by manufacturer.

HANDY septum size chart **Agilent Instrument** Septum Diameter (mm) 5880A, 5890, 6890, 6850, 7890, PTV 11 5700, 5880 9.5/10 On-Column Injection

Septum Puller

- Use hooked end for removing septa and O-rings; pointed end works well for removing stuck ferrules
- Keep several on hand in your laboratory for other

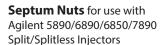


Dislodge a stuck ferrule quickly and easily—without scoring the fitting.



Remove a septum without damaging an expensive weldment.

Description	qty.	cat.#
Septum Puller	ea.	20117





- Needle guide allows easy penetration and prevents septum coring.
- Manual injection septum nut allows use of 26-gauge needles for on-column injections.
- Made of high-quality stainless steel.

Description	Similar to Agilent Part #	qty.	cat.#	
Septum Nut, Autosampler & PTV (for 23-gauge needles)	18740-60835	ea.	20631	
Septum Nut, Manual Injection (for 26-gauge needles)	18740-60835	ea.	21309	

Septum Nut Removal Tool

for Agilent 5890/6850/6890/7890 GCs

- Easily remove the septum nut without touching the heated nut-no more burned fingers!
- Unique, ergonomic handle easy to grip.
- Nut remains in tool for quick reattachment.



Slip tool over septum nut...



and remove, avoiding hot metal surfaces.



24918

loosen nut...



Septum nut remains in tool until reinstalled.

· · · · · · · · · · · · · · · · · · ·		
Septum Nut Removal Tool for Agilent 5890/6890/6850/7890 GCs	a. 24	·918



20117



Inlet Wrench for Agilent 5890/6850/6890 GCs

- Use to remove the septum nut and weldments during GC maintenance.
- Use the smaller end to remove the septum nut.
- Use the larger end to tighten the split/splitless weldment nut.
- High-quality stainless steel construction.
- Meets original equipment performance.

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



Description	qty.	cat.#	
Injection Port Repair Tool for Agilent Split/Splitless Injection Ports (includes: a handle and brush adaptor, 5 medium sanding disks, 5 fine sanding disks, a 6.5 mm bore brush, & a 7 mm bore brush)	ea.	21393	
Replacement Sanding Disks (5 fine & 5 medium)	10-pk.	22689	
Replacement Bore Brushes (one 6.5 mm & one 7 mm)	2-pk.	21353	

Rethreading Tool for Agilent Split/ Splitless Injection Ports

Worn and damaged threads can allow oxygen into the system-compromising analytical results and destroying columns. The built-in guide helps prevent cross-threading.



23018



Description

Rethreading Tool

Repair damaged injection port threads!

Screw the tool completely onto the injection port in a clockwise direction. Unscrew the tool and inspect the threads, repeat as necessary. When done, wipe threads with methanol to remove any debris.





Inlet Maintenance Kit for Agilent GCs

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

Inlet kit includes:

- 0.4, 0.5, and 0.8 mm ID graphite ferrules
- Viton® O-rings
- Capillary nuts
- Inlet seals
- Reducing nut
- · Scoring wafer • 11 mm Thermolite® septa
- 4.0 mm single taper liner
- 4.0 mm 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

Description	qty.	cat.#
Inlet Maintenance Kit	kit	22181



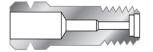


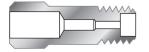




Capillary Column Nuts for Agilent 5890/6850/6890/7890 GCs

Available in brass or stainless steel.





Choose for use with "compact" Agilent-style ferrules...

or for use with standard ferrules.

	Similar to			
Description	Agilent Part #	qty.	cat.#	
For use with "compact" Agilent-style f	errules.			
Stainless Steel Capillary Column Nut	5181-8830	2-pk.	21884	
Brass Capillary Column Nut	5181-8830	2-pk.	21878	
For use with standard 1/16"-type ferrule	es.*			
Stainless Steel Capillary Column Nut	05921-21170	2-pk.	20883	
Brass Capillary Column Nut	05921-21170	2-pk.	21879	

^{*}Designed to fit a wider variety of 1/16" ferrules

free literature

GC Column Installation Made Easier

with Extended Reducing Nuts for the Agilent® Split/Splitless Inlet

Download your free copy from

www.restek.com

lit. cat.# GNAR2056-UNV





Extended Capillary Column Nuts

for Agilent 5890/6850/6890/7890 GCs

- Visible below inlet insulating cup for easy, breakage-free column installation without removing cup.
- Finger-tight design to allow wrench-free use.
- Available for standard (1/16") and compact (Agilent-style)
- Made from high-quality stainless steel.
- Meets or exceeds original manufacturer's performance.

Description	qty.	cat.#
Extended Capillary Column Nut Kit for standard 1/16" ferrules		
Includes: extended reducing nut and extended capillary column nut for standard 1/16" ferrules	kit	22633
Extended Capillary Column Nut Kit for compact ferrules		
Includes: extended reducing nut and extended capillary column nut for compact ferrules	kit	22634
Extended Reducing Nut	ea.	22635
Extended Capillary Column Nut for standard 1/16" ferrules	ea.	22636
Extended Capillary Column Nut for compact ferrules	ea.	22637



Inlet Liners

True Blue Performance

Exceptionally inert Sky® inlet liners with state-of-the-art deactivation improve trace-level analysis—and now come with a 100% satisfaction guarantee!*

See pages 193-202 or visit www.restek.com/sky

* For details on our 100% satisfaction guarantee, visit www.restek.com/sky



Hot Swap Capillary Column Nuts

- No more burned fingers!
- No more downtime waiting for injector parts to cool down.

Never worry again about burned fingers or having to wait for the injector to cool down. The Hot Swap capillary column nut allows you to change your capillary column while the injector temp is still hot.

Description	qty.	cat.#
For use with "compact" Agilent-style ferrules.		
Hot Swap Capillary Column Nut	ea.	22348
For use with standard 1/16"-type ferrules.		
Hot Swap Capillary Column Nut	ea.	22347

NOTE: For proper operation, oven fan must be kept operational during change out or risk of burn may occur.





Finger-Tight Capillary Column Nuts

- Allow wrench-free column installations.
- Available for standard (1/16") and compact (Agilent-style) ferrules.
- Made from high-quality stainless steel.

	Similar to			
Description	Agilent Part #	qty.	cat.#	
For use with "compact" Agilent-style	ferrules.			
Finger-Tight Capillary Column Nuts	5020-8293, 5020-8292	2-pk.	21040	
For use with standard 1/16"-type ferrul	es.			
Finger-Tight Capillary Column Nuts		2-pk.	21041	

Injector/Detector Plug Nuts



- Use to cap off an injector to isolate leaks.
- Use to cap off a detector for thermal cleaning.
- Use to check a detector or make-up gas flow rate.
- Use to cap off a detector and prevent hydrogen from accidentally diffusing into the oven from an unused detector base.

Similar to				
Description	Agilent Part#	qty.	cat.#	
Injector/Detector Plug Nuts	5020-8294	2-pk.	21883	





Easily seat ferrules for consistent installations!

Capillary Installation Gauge for Agilent GCs

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

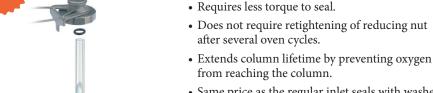
Description	qty.	cat.#
Capillary Installation Gauge		21034
for Agilent-style fittings (compact ferrules)	ea.	21034
Capillary Installation Gauge		21399
for 1/16" fittings (1/16" ferrules)	ea.	21399

^{*}For use with graphite ferrules only.









- Same price as the regular inlet seals with washers.
- Siltek® treatment provides enhanced inertness versus stainless steel.

• Does not require a separate washer.





Extend column lifetime!

0.8 mm ID Dual Vespel Ring Inlet Seal	2-pk. cat.#	10-pk. cat.#	50-pk. cat.#
Gold-Plated	21240	21241	23418
Siltek-Treated	21242	21243	23419
Stainless Steel	21238	21239	23420
1.2 mm ID Dual Vespel Ring Inlet Seal	2-pk. cat.#	10-pk. cat.#	
1.2 mm ID Dual Vespel Ring Inlet Seal Gold-Plated		•	
	cat.#	cat.#	

Dual Vespel® Ring Inlet Seals Washerless, Leak-Tight Seals for Agilent GCs



Dual Vespel® Ring Cross-Disk Inlet Seals for Agilent GCs

- Ideal for high-flow split applications >500 mL/min.
- Washerless, leak-tight seals.

0.8 mm ID Dual Vespel Ring Cross-Disk Inlet Seal	2-pk. cat.#	10-рк. cat.#	
Gold-Plated	22083	22084	
Siltek-Treated	22085	22086	

Restek innovation!



Patented



Flip Seal® Dual Vespel® Ring Inlet Seals

- Reversible, two-sided design allows significantly more analyses than other seals, at the same price—simply use, flip, then use again!
- Vespel® ring embedded in top and bottom surface eliminates need for a washer.
- Highly inert gold or Siltek®-deactivated seals reduce breakdown and adsorption of active compounds, maximizing component transfer to GC column.
- Very little torque required to make seal—reduces operator variability.

	2-pk.		10-рк.	
Flip Seal Dual Vespel Ring Inlet Seal	cat.#		cat.#	
Gold-Plated	23411		23413	
Siltek-Deactivated	23412		23414	
Flip Seal Dual Vespel Ring Inlet Seal Kit		qty.	cat.#	
Includes: gold-plated inlet seal, reducing nut adaptor, 1/16" SS nut		kit	23406	

Note: The Flip Seal® inlet seal requires a special reducing nut adaptor fitting, which is included in the kit. The Flip Seal® Adaptor can be used with standard 1/16" ferrules.



Replacement Inlet Seals With Washers

- Siltek® treatment provides enhanced inertness versus stainless steel.
- All seals include washers.

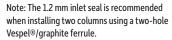
Replacement Inlet Seals for Agilent GCs

The inlet seal at the base of the Agilent 5890/6890/7890 GC injection port contacts the sample and must be changed frequently to prevent adsorption of active compounds. In addition, septum fragments and sample residue accumulate on the disk surface, requiring disk replacement.

To reduce breakdown and adsorption of active compounds, use Siltek® or gold-plated seals.

Single-Column 0.8 mm ID (Opening)	Similar to Agilent Part #	2-pk. cat.#	10-pk. cat.#	50-pk. cat.#
Gold-Plated	5188-5367	21317	21318	23415
Siltek-Treated		21319	21320	23416
Stainless Steel	18740-20880	21315	21316	23417
0.25/0.32 mm ID Dual-Column 1.2 mm ID (Opening)		2-pk. cat.#	10-pk. cat.#	
Gold-Plated		21305	21306	
Siltek-Treated		21307	21308	
Stainless Steel		20390	20391	
0.53 mm ID Dual-Column ¹ /16-inch ID (Opening)		2-pk. cat.#	10-pk. cat.#	
Stainless Steel		20392	20393	





All seals include washers.

Replacement Inlet Seal Washers

	Similar to			
Description	Agilent Part #	qty.	cat.#	
Replacement Inlet Seal Washers	5061-5869	15-pk.	21710	

Cross-Disk Inlet Seals for Agilent GCs

- Ideal for high-flow split applications >500 mL/min on Agilent 5890 GCs.
- Siltek® treatment provides enhanced inertness versus stainless steel.
- All seals include washers.

0.8 mm ID Cross-Disk Inlet Seal	Similar to Agilent Part #	2-pk. cat.#	10-pk. cat.#
Gold-Plated	5182-9652	20477	20476
Siltek-Treated	_	20475	20474
1.2 mm ID Cross-Disk Inlet Seal	Similar to Agilent Part #	2-pk. cat.#	10-pk. cat.#
0.11.01.4.1			
Gold-Plated	_	21009	21010



Silver PTV Seals for Agilent 6890 GCs

	Similar to			
Description	Agilent Part #	qty.	cat.#	
Silver PTV Seals for Agilent 6890 GCs	5182-9763	5-pk.	21409	





Restek innovation!



Simply slip the weldment removal tool over the weldment, then twist and remove the weldment. For speed and efficiency, the weldment stays secured in the weldment removal tool until you reattach it.

EZ Twist Top® Split/Splitless Injection Ports for Agilent GCs

- Change inlet liners faster and more easily.
- Gas lines are attached to shell weldment bottom to help eliminate broken gas lines.
- Gas lines don't interfere with routine maintenance.
- Weldment removal tool allows for quick removal of the hot weldment without fingers ever touching hot surfaces.
- Weldment stays secure in the tool for reattachment.

The importance of injection port maintenance has been well documented by instrument and column companies industry wide. Restek has made it easy to carry out this maintenance with the innovation of our EZ Twist Top® injection port.

	Restek	Agilent
Get the EZ Twist Top Advantage	EZ Twist Top	Flip Top
Eliminate damaged gas lines	Х	
Siltek deactivation for enhanced inertness & durability	Х	
Avoid touching hot metal surfaces—weldment tool included	X	



EZ Twist Top® Split/Splitless Injection Port for Agilent 7890 GCs

Description	qty.	cat.#
Injection Port Assembly Kit Includes: weldment, shell weldment, 2 weldment O-rings, Siltek dual Vespel ring inlet seal, septum nut, reducing nut, stainless steel capillary nut for use with $^1/_{16}$ " ferrules, and weldment removal tool	kit	22177
Injection Port Assembly Kit, Siltek Treated Includes: Siltek weldment, Siltek shell weldment, 2 weldment O-rings, Siltek dual Vespel ring inlet seal, septum nut, reducing nut, stainless steel capillary nut for use with $^1\!/_{16}$ " ferrules, and weldment removal tool	kit	22178
Weldment (2 weldment O-rings are installed on the weldment)	ea.	22724
Weldment, Siltek Treated (2 weldment O-rings are installed on the weldment)	ea.	22732
Shell Weldment	ea.	22175
Shell Weldment, Siltek Treated	ea.	22176
Weldment O-rings	10-pk.	22729
Septum Nut, Autosampler & PTV (for 23-gauge needles)	ea.	20631
Stainless Steel Capillary Column Nut (for use with standard 1/16" ferrules)	2-pk.	20883
Reducing Nut	ea.	22078
0.8 mm Dual Vespel Ring Inlet Seal, Siltek-Treated	2-pk. 10-pk.	21242 21243
Weldment Removal Tool	ea.	22728

Visit www.restek.com/slideshows for an educational video on our EZ Twist Top® injection port system.





Which EZ Twist Top® injection port should you buy?

The type of split vent trap you have connected to the EPC module/block on your 6890/6850 Agilent GC determines which EZ Twist Top® Injection Port you need to buy.

Simply remove the top and rear panel on the GC and see if you have the small (pencil type) split vent filter (cat.# 22820) or the large canister type filter (cat.# 23031) attached to the split vent gas line. If you have the small (pencil type) split vent filter, you need the EZ Twist Top® injection port for Agilent 6890/6850 GCs (cat.# 22721 or 22722). If you have the large canister filter, you'll need the EZ Twist Top® with optional split vent for Agilent 6890/6850 GCs, for use with large canister type filters (cat.# 22735 or 22736)



EZ Twist Top® Split/Splitless Injection Port

for Agilent 6850/6890 GCs With Large Canister-Type Filter

Description	qty.	cat.#
Injection Port Assembly Kit Includes: split/splitless weldment, shell weldment, 2 weldment O-rings, Siltek dual Vespel ring inlet seal, septum nut, reducing nut, stainless steel capillary nut for use with 1/16" ferrules, and weldment removal tool	kit	22735
Injection Port Assembly Kit, Siltek Treated Includes: Siltek split/splitless weldment, Siltek shell weldment, 2 weldment O-rings, Siltek dual Vespel ring inlet seal, septum nut, reducing nut, stainless steel capillary nut for use with 1/16" ferrules, and weldment removal tool	kit	22736
Optional Split/Splitless Shell Weldment	ea.	22733
Optional Split/Splitless Shell Weldment, Siltek Treated	ea.	22734



EZ Twist Top® Split/Splitless Injection Port

for Agilent 6850/6890 GCs with Pencil Traps

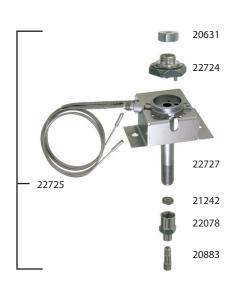
qty.	cat.#
kit	22721
kit	22722
ea.	22724
ea.	22732
ea.	22723
ea.	22730
10-pk.	22729
ea.	20631
2-pk.	20883
ea.	22078
2-pk. 10-pk.	21242 21243
ea.	22728
	ea. ea. ea. 10-pk. ea. 2-pk. ea. 2-pk. 10-pk.





EZ Twist Top® Split/Splitless Injection Port for Agilent 5890 GCs

Description	qty.	cat.#
Injection Port Assembly Kit Includes: split/splitless weldment, shell weldment, 2 weldment O-rings, Siltek dual Vespel ring inlet seal, septum nut, reducing nut, stainless steel capillary nut for use with 1/16" ferrules, and weldment removal tool	kit	22725
Injection Port Assembly Kit, Siltek Treated Includes: Siltek split/splitless weldment, Siltek shell weldment, 2 weldment O-rings, Siltek dual Vespel ring inlet seal, septum nut, reducing nut, stainless steel capillary nut for use with 1/1s" ferrules, and weldment removal tool	kit	22726
Weldment (2 weldment O-rings are installed on the weldment)	ea.	22724
Weldment, Siltek Treated (2 weldment O-rings are installed on the weldment)	ea.	22732
Shell Weldment	ea.	22727
Shell Weldment, Siltek Treated	ea.	22731
Weldment O-rings	10-pk.	22729
Septum Nut, Autosampler & PTV (for 23-gauge needles)	ea.	20631
Stainless Steel Capillary Column Nut (for use with standard 1/16" ferrules)	2-pk.	20883
Reducing Nut	ea.	22078
0.0 mm Dual Vocasal Dina Inlet Soal Ciltak Treated	2-pk.	21242
0.8 mm Dual Vespel Ring Inlet Seal, Siltek-Treated	10-pk.	21243
Weldment Removal Tool	ea.	22728





Supplies for Agilent GCs: Injection Port

Split/Splitless Injection Ports for Agilent GCs

Would you like better performance from your injector? Our Siltek*-treated split/splitless injector is a direct replacement for Agilent 5890 and 6890/6850 GCs, but Siltek* treatment passivates the metal surface to ensure an inert pathway for the sample, delivering increased performance. The injector is manufactured from high-quality stainless steel and meets or exceeds Agilent original equipment performance.





Split/Splitless Injection Port

(Direct Replacement or Siltek® Treated) for Agilent 5890 GCs

Description	Similar to Agilent Part #	qty.	cat.#
Replacement Weldment*	19251-60575	ea.	20265
Replacement Weldment*, Siltek Treated	19251-60575	ea.	20267
Replacement Shell Weldment	19251-80570	ea.	20266
Replacement Shell Weldment, Siltek Treated	19251-80570	ea.	20268

*Cat.# 20265 and 20267 are for use with manual flow or EPC on Agilent 5890 GCs. For use with manual flow only on Agilent 6890/6850 GCs.



Split/Splitless Injection Port

(Direct Replacement or Siltek® Treated) for Agilent 6890/6850 GCs

Description	Similar to Agilent Part #	qty.	cat.#	
Replacement Weldment with EPC	G1544-60575	ea.	22674	
Replacement Weldment with EPC, Siltek Treated	G1544-60575	ea.	22672	
Replacement Weldment*	19251-60575	ea.	20265	
Replacement Weldment*, Siltek Treated	19251-60575	ea.	20267	
Replacement Shell Weldment	G1544-80570	ea.	22673	
Replacement Shell Weldment, Siltek Treated	G1544-80570	ea.	22671	
Split/Splitless Weldment (for use with large canister-type filter)	G1544-60585	ea.	22686	
Split/Splitless Weldment (for use with large canister-type filter), Siltek Treated	G1544-60585	ea.	22670	

*Cat.# 20265 and 20267 are for use with manual flow or EPC on Agilent 5890 GCs. For use with manual flow only on Agilent 6890/6850 GCs.

Injection Port Weldments for Agilent GCs for Use With Purge and Trap Systems

Easily attach your purge-and-trap with pre-installed low dead volume fittings.

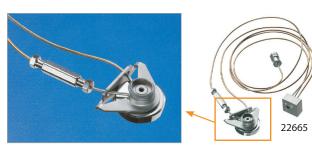




Injection Port Weldments

for Agilent GCs with Tekmar Purge and Trap Systems

Description	qty.	cat.#
Weldment for Agilent 6890 GCs	ea.	22664
Weldment for Agilent 6890 GCs with large canister-type filter	ea.	22668
Weldment for Agilent 5890 GCs	ea.	22666



Injection Port Weldments

for Agilent GCs with OI Purge and Trap Systems

Description	qty.	cat.#	
Weldment for Agilent 6890 GCs	ea.	22665	
Weldment for Agilent 6890 GCs with large canister-type filter	ea.	22669	
Weldment for Agilent 5890 GCs	ea.	22667	





1/16-Inch Capillary Inlet Adaptor Fitting Kit

Split/Splitless Fitting for Capillary Columns

- 1/16-inch split/splitless fitting that accepts standard capillary ferrules.
- Easier to install capillary columns because the nut protrudes farther from the insulated injection port chamber.
- Same column insertion depth as the original manufacturer's equipment.
- Kit includes adaptor fitting, capillary nut, gold-plated 0.8 mm ID dual Vespel® ring inlet seal, and one 0.4 mm ID ferrule.

Description	qty.	cat.#
¹ /16-Inch Capillary Inlet Adaptor Fitting Kit	kit	27184
O O ID D IV I Dio Inlat Carl Cald Diated	2-pk.	21240
0.8 mm ID Dual Vespel Ring Inlet Seal, Gold-Plated	10-pk.	21241

Direct Replacement Reducing Nut

for Agilent 5890/6850/6890/7890 GCs

- Made from high-quality stainless steel.
- Meets original manufacturer's equipment performance.

	Similar to			
Description	Agilent Part #	qty.	cat.#	
Reducing Nut	18740-20800	ea.	22078	



EPC Test Kit for Agilent 6890 GCs

Kit includes three O-rings, two plugs, one mounting screw, and one test block.

	Similar to		
Description	Agilent Part #	qty.	cat.#
EPC Test Kit for Agilent 6890 GCs	G1530-60960*	kit	24323

^{*}Similar to Agilent part # G1530-60960, but not exact equivalent. Kits differ in parts.



Heater Cartridge & Platinum Resistance Thermometer (PRT) Sensor for Agilent 5890 GCs

- Use with 5890 FID and split/splitless weldments.
- Meets or exceeds original manufacturer's performance.

	Similar to		
Description	Agilent Part #	qty.	cat.#
Injector/FID Heater and Injector/FID PRT Sensor	05890-61140	kit	22068
Injector/FID Heater	19231-60620	ea.	22069
Injector/FID PRT Sensor	19231-60660	62	23035

Heat Sink

22078

for Agilent 5890 GC Split/Splitless Injector Meets or exceeds original manufacturer's performance.



	Similar to			
Description	Agilent Part #	qty.	cat.#	
Heat Sink	18740-20940	ea.	20409	

Heater Block

for Agilent 6850/6890/7890 GC Split/Splitless Injector

Meets or exceeds original manufacturer's performance.



Description	Similar to Agilent Part #	qty.	cat.#	
Heater Block	G3452-20500, G1544-20570	ea.	27199	





Heater/Sensor Assembly for Agilent 6850/6890/7890 GCs

- Use with FID, TCD, NPD, and split/splitless inlets.
- Meets or exceeds original manufacturer's performance.

	Similar to			
Description	Agilent Part #	qty.	cat.#	
Heater/Sensor Assembly	G1530-61950	ea.	27200	

Heater Block Retaining Nuts

for Agilent GC Split/Splitless Injectors

- Aluminum construction.
- Meet or exceed manufacturer's performance.



	Similar to		
Description	Agilent Part #	qty.	cat.#
Heater Block Retaining Nut for Agilent 5890 GCs	19251-20620	ea.	22080
Heater Block Retaining Nut for Agilent 6850/6890 GCs	G1544-20590	ea.	23042



Oven Temperature Sensor Assembly for Agilent GCs

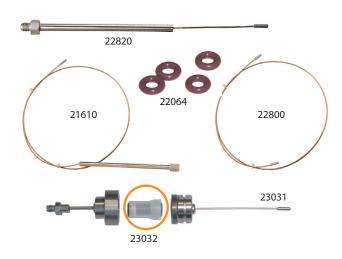
	Similar to		
Description	Agilent Part #	qty.	cat.#
Oven Temperature Sensor for Agilent 5890 GCs	05890-61030	ea.	23040
Oven Temperature Sensor for Agilent 6890 GCs	G1530-61030	ea.	23039



60 psig Backpressure Regulator Kit for Agilent GCs

Increase the versatility of your Agilent 5890 GC by replacing the existing 30 psig (207 kPa) backpressure regulator and gauge with our 60 psig (414 kPa) regulator. Enables you to use longer 60 m and 105 m columns as well as shorter 10 m columns. Includes complete instructions.

	Similar to			
Description	Agilent Part #	qty.	cat.#	
Backpressure Regulator Kit	19246-60630	kit	20634	



Replacement Chemical Traps and Parts for Agilent GCs

- Easy to install.
- Attach to same fittings as original manufacturer's equipment.
- Built-in frits retain fine particles; adsorbents remove both moisture and hydrocarbons.

	Similar to		
Description	Agilent Part #	qty.	cat.#
Replacement Split Vent Trap	G1544-80550	00	22820
for Agilent 6850/6890 GCs	01344-00330	ea.	22020
Replacement Chemical Trap	05890-61260		21610
for Agilent 5890 GCs	03690-01200	ea.	21010
Split Vent Line (32-inch) for Agilent GCs		بايد د	22000
Includes: all installation hardware		2-pk.	22800
O-Rings for Agilent Trap Fittings	5180-4181	25-pk.	22064
Optional Split Vent Trap Assembly	G1544-60610,	Lik	22021
for Agilent 6850/6890 GCs	G1544-80530	kit	23031
Replacement Traps (2) and O-Rings (4)	G1544-80530, 5188-6495	kit	23032



Air Diverter for Agilent GCs

- Divert GC exhaust heat up and away from the lab bench.
- Meets or exceeds original manufacturer's performance.
- Easy to install—no tools required.
- Compatible with 4" flexible metal dryer hose.

Air Diverter 19247-60510, 22076		Similar to		
22076	Description	Agilent Part #	qty.	cat.#
101 Agitetit 3030/0030/1030 GCS G1330-00030	Air Diverter for Agilent 5890/6890/7890 GCs	19247-60510, G1530-80650	ea.	22076



Inlet Wrench for Agilent 5890/6850/6890 GCs

- Use to remove the septum nut and weldments during GC maintenance.
- Use the smaller end to remove the septum nut.
- Use the larger end to tighten the split/ splitless weldment nut.
- High-quality stainless steel construction.
- Meets original equipment performance.



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

Rethreading Tool

for Agilent Split/Splitless Injection Ports

Worn and damaged threads can allow oxygen into the system—compromising analytical results and destroying columns. The built-in guide helps prevent crossthreading.





Repair damaged injection port threads!

Screw the tool completely onto the injection port in a clockwise direction. Unscrew the tool and inspect the threads, repeat as necessary. When done, wipe threads with methanol to remove any debris.

Description	qty.	cat.#
Rethreading Tool	ea.	23018

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.



No more burned fingers!









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



The Claw and The Claw Holder Kit

- Easily removes hot liners from injection ports.
- 4 mL vials (not included) can be replaced when dirty.

Never again will you burn your fingers removing a hot injection port liner. The Claw safely and cleanly removes liners, O-rings, or other small objects from the injection port. You can then place the hot objects in a clean 4 mL vial situated in The Claw holder until ready for reuse.



Description	qty.	cat.#
The Claw	ea.	26261
The Claw Holder Kit (includes The Claw and holder)	kit	26262
WISP 48 Snap Seal Vial	100-pk.	24658



Everything you need in one complete kit!



Make Life Easier (MLE) Capillary Tool Kit for Agilent GCs

- · Capillary installation gauge for Agilent GCs
- · Injector wrench for Agilent GCs
- · Septum nut removal tool
- 1/8", 3/16", and 1/4" nylon brushes
- 1 /4", 3 /8", and 3 /16" stainless steel wire tube brushes
- · Stainless steel surface brush
- 6 stainless steel jet reamers (0.25–0.65 mm OD)
- 1/4" x 5/16" open end wrench
- 3/8" x 7/16" open end wrench
- 7/16" x 1/2" open end wrench
- 1/2" x 9/16" open end wrench

•	Rubber-tipped	slide-lock	tweezers
---	---------------	------------	----------

- · Scoring wafers
- · Inlet liner removal tool
- · Septum puller
- Mini wool puller/inserter tool
- · 4-inch tapered needle file
- · Swivel head flashlight
- · Mini hand drill set
- 15 cm compact steel ruler
- · Pocket magnifier
- High-temperature string (1 meter)
- Pipe cleaner (12-inch)
- Cotton tip swabs (pk. of 25)

Description	qty.	cat.#
MLE Capillary Tool Kit for Agilent GCs	kit	22186

Column Hanger

for Agilent 7890, 6890, 5890, and 5880A GCs

Description	qty.	cat.#	
Column Hanger for Agilent 7890, 6890, 5890, and 5880A GCs	ea.	22128	



22128

Direct Injection (DI) Inserts and Liner Adaptor for ¹/₄-Inch Packed Column Injection Ports (for 0.25, 0.32, & 0.53 mm ID columns)

DI Glass Inserts for Agilent 5890 Packed Column GC

- Tolerances closely controlled.
- Can be removed from the septum nut weldment.

	Similar to		
Description	Agilent Part #	qty.	cat.#
DI Glass Inserts			
for Agilent 5890 Packed Column GC	5181-3382, 5080-8732	5-pk.	20967
(1.7 mm ID x 3.0 mm OD x 93 mm)			

DI Uniliner® Liners for Agilent 5890 Packed Column GC

- Press-Tight[®] taper forms dead volume free connection to
- Minimizes solvent and peak tailing.
- Use with 0.25, 0.32, and 0.53 mm ID capillary columns.
- Can be removed from the septum nut weldment.

Description	as Agilent Part #	qty.	cat.#
DI Uniliner Liner		ea.	20964
for Agilent 5890 Packed Column GC	5181-3382, 5080-8732	5-pk.	20965
(1.7 mm ID x 3.0 mm OD x 93 mm)		25-pk.	20966

DI Liner Adaptor

for Agilent 5890 Packed Column GC

- Uses standard ¹/₁₆-inch capillary nut and ferrules.
- Convenient wrench pad at base.
- Includes 1/4-inch graphite ferrule and stainless steel nut.
- Use with Agilent or Restek® DI glass inserts or Restek® DI Uniliner® liners for an Agilent 5890 packed column GC.



Description	Similar to Agilent Part #	qty.	cat.#	
DI Liner Adaptor for Agilent 5890 Packed Column GC	19244-80540	ea.	21303	



Siltek® treatment makes weldment inert and eliminates adsorption of sensitive compounds (e.g., DDT and endrin). Order Viton® O-rings (cat.# 21685, below) and appropriate septa (page 236) separately.

Description	Similar to Agilent part #	qty.	cat.#
Siltek Septum Packed Purge Port Weldment for Agilent 5890 GCs	19243-80570	ea.	21691
Viton Replacement O-rings	5080-8898	10-pk.	21685



Micropacked Inlet Conversion Kits

- Convert a capillary GC split/splitless inlet for use with 1/16" OD micropacked columns.
- For use with Agilent 5890, 6890, and 7890 GCs.
- Sample pathways deactivated for ultimate inertness.

Description	qty.	cat.#
Micropacked Column Adaptor Kit for Split/Splitless Injection*		
Complete kit with FID and injection port adaptors		
Kit includes: dual Vespel ring inlet seal, large bore; reducing nut, large bore; FID adaptor, large bore; 1 /4" ferrule, Vespel/graphite; 1 /4" nut, stainless steel; 1 /1s" ferrules, Vespel/graphite (2); 4 mm splitless liner, intermediate polarity deactivated; 1 /1s" nuts, stainless steel (2)	kit	22424
Micropacked Column Adaptor Kit for On-Column Injection*		
Complete kit with FID and injection port adaptors		
Kit includes: dual Vespel ring inlet seal, large bore; reducing nut, large bore; FID adaptor, large bore; 1 / ₄ " ferrule, Vespel/graphite; 1 / ₄ " nut, stainless steel; 1 / ₁₆ " ferrules, Vespel/graphite (2); Siltek treated metal liner installation guide; 1 / ₁₆ " nuts, stainless steel (2)	kit	22425
Micropacked Column Adaptor Kit for Split/Splitless Injection		
Injection Port Adaptor Kit	kit	22426
Kit includes: dual Vespel ring inlet seal, large bore; reducing nut, large bore; 1/16" ferrule, Vespel/ graphite; 1/16" nut, stainless steel; 4 mm splitless liner, intermediate polarity deactivated	KIL	22420
Micropacked Column Adaptor Kit for On-Column Injection		
Injection Port Adaptor Kit	kit	22427
Kit includes: dual Vespel ring inlet seal, large bore; reducing nut, large bore; ½1,16" ferrule, Vespel/ graphite; Siltek treated metal liner installation guide; ½1,16" nut, stainless steel	KIL	22421
Micropacked Column Adaptor Kit for FID*		
FID Adaptor Kit	kit	22428
Kit includes: FID adaptor, large bore; 1/4" ferrule, Vespel/graphite; 1/4" nut, stainless steel; 1/16" nut,	KIL	22428
stainless steel; 1/16" ferrule, Vespel/graphite		
Replacement Inlet Seals for Micropacked Column Adaptor	2-pk.	22429
Dual Vespel Ring Inlet Seals, large bore (2)	z-pk.	22429
Replacement Metal Liner Installation Guide for On-Column Injection, Siltek Treated	ea.	22430
Replacement 4 mm Splitless Liner	ea.	20772
*For use with packed column FIDs only.		





Large-Bore Dual Vespel® Ring Inlet Seals





1/4" SS Nut

Large-Bore **FID Adaptor**





1/4" Vespel®/Graphite Ferrule

1/16" SS Nuts





Large-Bore Reducing Nut

Graphite Ferrules

22430

20772



Solid Phase Extraction Cartridges from Restek

Proven Quality • Superior Cleanliness • Method-Specific Performance

See pages 396-399 or visit

www.restek.com/resprep





Supplies for Agilent GCs: Dual-Column



Inlet Adaptor Kit for Dual Column Installation

for Agilent Capillary Injectors (Split/Splitless Fitting for Capillary Columns)

- 1/16-inch split/splitless fitting that accepts standard, two-hole capillary ferrules.
- Easier to install capillary columns due to the nut protruding farther from the insulated injection port chamber.
- Same column insertion depth as the original manufacturer's equipment.
- Kit includes adaptor fitting, 1/16" capillary nut, gold-plated 1.2 mm ID dual Vespel® ring inlet seal, one 0.4 mm ID two-hole ferrule, and one 0.5 mm ID two-hole ferrule.

Description	qty.	cat.#
Inlet Adaptor Kit for Dual Column Installation for Agilent Capillary Injectors	kit	27185
1.2 mm ID Dual Vespel Ring Inlet Seal, Gold-Plated	2-pk.	21246
	10-pk.	21247



1/8-Inch Capillary Inlet Adaptor Fitting Kit

(Split/Splitless Fitting for 0.53 mm ID Capillary Columns)

- 1/8-inch split/splitless fitting accepts standard two-hole capillary ferrules and a standard 1/8-inch nut.
- Makes column installation easy due to the nut protruding farther from the insulated injection port chamber.
- The column insertion depth is the same as the original equipment.
- Kit includes adaptor fitting, capillary nut, stainless steel inlet seal, washer, and one 0.8 mm ID two-hole ferrule.
- Use recessed taper liners with this adaptor.

Description	qty.	cat.#	
1/8-Inch Capillary Inlet Adaptor Fitting Kit	kit	20645	
0.53 mm ID Dual-Column	2-pk.	20392	
1/16-inch ID (Opening) Replacement Inlet Seal	10-pk.	20393	



Two-Hole Ferrules

for 1/8-Inch and 1/16-Inch Compression-Type Fittings

- Use 1/16-inch, two-hole ferrules with the 1/16-inch capillary inlet adaptor fitting kit (cat.# 27185).
- Use 1/8-inch, two-hole ferrules with the 1/8-inch capillary inlet adaptor fitting kit (cat.# 20645).

Fitting Size	Ferrule ID	Fits Column ID	qty.	VG2 (60/40)	
¹ /16"	0.4 mm	0.25/0.28 mm	5-pk.	24848	
1/16"	0.5 mm	0.32 mm	5-pk.	24849	
1/8"	0.8 mm	0.45/0.53 mm	5-pk.	20246	

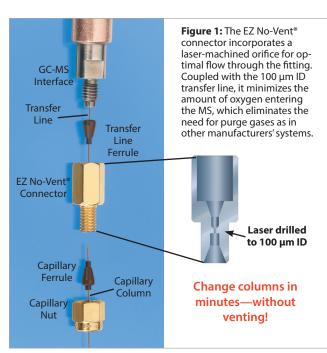




EZ No-Vent® GC Column-Mass Spectrometer Connector for Agilent GCs with 5971/5972, 5973, or 5975 GC-MS

- Change GC-MS columns in minutes without venting— $100~\mu m$ transfer line maintains vacuum and eliminates the need to vent.
- Easy to install and maintain—no special tools or plumbing required.
- Gold-plated body for inertness.
- High-temperature polyimide ferrules eliminate leaks at the problematic transfer line fitting.
- · Lower cost than other "no-vent" fittings.

We designed the EZ No-Vent® GC column-mass spectrometer connector to be simple and easy to use. A critical orifice in the EZ No-Vent® connector minimizes the amount of oxygen allowed into the MS source, eliminating the need for purge gas as is required for other manufacturers' vent systems. This enables you to skip the lengthy vent and pump-down cycle otherwise required when you make a column change, saving nearly a day of down-time with each column change. The EZ No-Vent® connector easily attaches to the MS source without special tools or extra plumbing.



Restek innovation!

Kit installs easily, without special tools or plumbing.

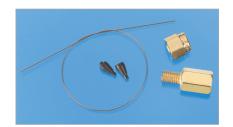
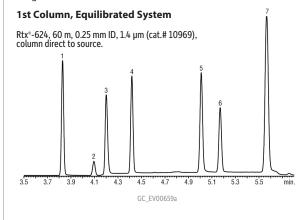
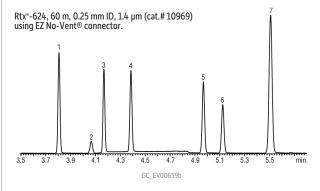


Figure 2: Sharp, symmetric peaks for gases show the EZ No-Vent® connector does not add dead volume and allows rapid column changes.



Acquired 76 Minutes After Installing 2nd Column



Peaks

1. Dichlorodifluoromethane

2. 1,2-dichlorotetrafluoroethene (Freon® 114)

3. Chloromethane

4. Vinyl chloride

5. Bromomethane

6. Chloroethane7. Trichlorofluoromethane

 $\begin{array}{ll} \text{Column} & \text{Rtx}@-624, 60 \text{ m}, 0.25 \text{ mm ID}, \\ 1.40 \ \mu\text{m} \ (\text{cat.}\#\ 10969) & \end{array}$

Sample 502.2 Calibration mix #1 (gases) (cat.# 30042)
Injection purge and trap split
Inj. Temp.: 300 °C

Oven Temp.: 60 °C

Carrier Gas He, constant flow Flow Rate: 1.0 mL/min

Detector Agilent 5973 GC-MS Transfer Line

Temp.: 280 °C
Analyzer Type: Quadrupole
Tune Type: BFB
lonization
Mode: EI
Scan Range: 35-550 amu
Instrument Agilent/HP6890 GC

Description	qty.	cat.#
EZ No-Vent Connector Kit Includes: EZ No-Vent Connector, two 0.4 mm ID adaptor ferrules for capillary column, two 0.4 mm ID ferrules for transfer line, 100 µm deactivated transfer line (3 ft.), column plug, column nut	kit	21323
Replacement ferrules for connecting capillary column to EZ No-Vent Connector:		
0.30≤0.40 mm Tubing OD (Virgin Polyimide)	2-pk.	21015
0.40≤0.50 mm Tubing OD (Virgin Polyimide)	2-pk.	21016
Replacement Ferrules (polyimide) for connecting transfer line to EZ No-Vent connector: 0.4 mm ID	2-pk.	21043
Replacement 100 µm Deactivated Transfer Line	3 ft	21018
Replacement EZ No-Vent Column Nut	20-pk.	23100
Replacement EZ No-Vent Plug	5-pk.	23112
Open-End Wrenches, 1/4" x 5/16"	2-pk.	20110





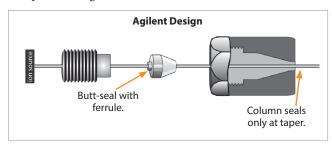
Supplies for Agilent GCs: GC-MS

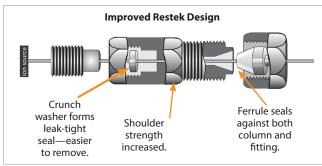
MSD Conversion Fitting

- A flat, soft aluminum sealing ring deforms and butt-seals against the MSD interface.
- A standard Vespel® ferrule seals the column and 1/16-inch stainless steel



- Fitting is constructed of nickel-plated brass for longevity and softness.
- Use any standard Vespel® or Vespel®/graphite 1/16-inch ferrule.
- Includes a 1/16-inch stainless steel nut and two replacement sealing rings. Order ferrules separately.
- · Improved design reduces chance of leaks.





Description	qty.	cat.#
MSD Conversion Fitting	ea.	21314
Replacement Ring Seal for MSD Conversion Fitting	2-pk.	21313

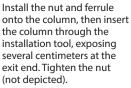
Restek innovation!



Capillary Installation Gauge for Agilent 5973/5975 MS

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







Score and remove the exposed end of the column.



Loosen the nut.

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

Gold Tip Transfer Line

- For use with Agilent 5971/5972 MS systems.
- Gold-plated for inertness.
- · Meets or exceeds original manufacturer's performance.



	Similar to			
Description	Agilent Part#	qty.	cat.#	
Gold Tip Transfer Line	05971-20305	ea.	24699	

MSD Source Nut

- 1.2 mm nut bore permits easy removal of ferrules with a standard tapered-needle file (cat.# 20106).
- · Made of brass to prevent threadstripping on the transfer line.
- Design enhances ease of threading onto the transfer line and improves overall lifetime.

	Similar to			
Description	Agilent Part #	qty.	cat.#	
(Detector) MSD Source Nut	05988-20066	2-pk.	20643	

Ion Source Cleaning Powder

Use this aluminum oxide powder to clean surfaces that contact the sample or ion beam when you encounter poor sensitivity and inadequate abundances at high masses.



	Similar to			
Description	Agilent Part #	qty.	cat.#	
Ion Source Cleaning Powder	8660-0791	1 kg	22685	



Inland 45 Pump Oil

Recommended for most mass spectrometers.

- · Ease at cold start.
- Low vapor pressure 10⁻⁷ torr.
- · Nontoxic and noncorrosive.
- · Compatible with buna-N, neoprene, and Viton® seals.
- Optimum vacuum pump performance.
- Lowest mass spectrometer background.
- Recommended for optimum mass spec performance.

Similar to				
Description	Agilent Part #	qty.	cat.#	
Inland 45 Pump Oil	6040-0834, 6040-0798	1 liter	24819	



- Formulated from crude oil stocks known for their durability and line-lubricating qualities.
- Use in Agilent 5973/5972/5971 and GCD mass spec systems, or in other manufacturers' MSD systems that require rough pump oil.
- Under average use, the oil in the foreline rough pump should be replaced every six months.

Description	qty.	cat.#	
Rough Pump Oil for MSD Pumps	1 liter	22687	



GC-MS Cleaning Kit

Poor sensitivity, loss of sensitivity at high masses, or high multiplier gain during an auto tune are all indicators that your mass spectrometer source may need to be cleaned. Restek has assembled all of the necessary components for cleaning and polishing your ion source.

Reorder Kit (cat.# 27196) Includes:

· Lint-free nylon gloves (small, 2 pair)

• Lint-free nylon gloves (large, 2 pair)

• Lint-free cotton cloth, 9 x 9 (10-pk.)

• Micro mesh 4 x 6 sheet (4-pk.)

The Restek GC-MS Cleaning Kit (cat.#s 27194, 27195) Includes:

- Lint-free nylon gloves (small, 2 pair)
- Lint-free nylon gloves (large, 2 pair)
- Lint-free cotton cloth, 9 x 9 (10-pk.)
- Micro mesh 4 x 6 sheet (4-pk.)
- Aluminum oxide (1-kg jar)
- Cotton tip applicators
- Tweezers, large
- Tweezers, small
- Septum puller
- Dremel® tool, battery-operated (optional, 27194)
- Tool kit bag

Description	qty.	cat.#	
Mass Spec Cleaning Kit with Dremel Tool	kit	27194	
Mass Spec Cleaning Kit without Dremel Tool	kit	27195	
Mass Spec Cleaning Kit Replacement Parts Kit Includes: cloths, micro mesh sheets, small and large gloves	kit	27196	



ETP Electron Multipliers

for Mass Spectrometry

- Proprietary specialized surface material resulting in very high secondary electron emission.
- · Air stable.
- 2-year shelf life guarantee.
- · Discrete dynode design results in extended operating life.



The electron multipliers manufactured by ETP use a proprietary dynode material. This material has a number of properties that make it very suitable for use in an electron multiplier. It has very high secondary electron emission, which allows exceptional gain to be achieved from each dynode. This material is also very stable in air. In fact, an ETP multiplier can be stored for years before being used. As a direct result of the high stability of the active materials used in ETP multipliers, they come with a 2-year shelf life warranty (stored in original sealed package). Many testing laboratories take advantage of this long shelf life by keeping a replacement ETP multiplier on hand, ready for immediate installation. This keeps instrument downtime to a minimum.

did you know?

For a typical ETP electron multiplier for GC-MS, the total active dynode surface area is ~1,000 mm². This can be compared to a standard continuous dynode multiplier that has a total channel surface area of only around 160 mm² (for a channel with 1 mm diameter and 50 mm length). This increased surface area spreads out the workload of the electron multiplication process over a larger area, effectively slowing the aging process and improving operating life and gain stability.

Description	qty.	cat.#
Electron Multipliers for Agilent GC-MS and LC-MS		
For Agilent 5970 GC-MS	ea.	23072
For Agilent 5971, 5972, GC GC-MS	ea.	23073
For Agilent 5973 & 5975 GC-MS (includes mount for initial installation)*†	ea.	23074
For Agilent 5973 & 5975 GC-MS and LC-MSD (Replacement Multiplier)*†	ea.	23075

*Note: The electron multipliers have been specifically developed to retrofit the original manufacturer's equipment. The detector incorporates a modular design to facilitate ease of replacement and additional innovations intended to enhance performance. First-time installation requires a mount that includes the mechanical housing. After initial installation, only the replacement electron multiplier is required.

†This unit is designed for use in the 5975, 5973 GC, and the LC-MSD (not for 5975C Triple Axis Detector).



Supplies for Agilent GCs: Detector



Heater Cartridge & Platinum Resistance Thermometer (PRT) Sensor for Agilent 5890 GCs

- Use with 5890 FID and split/splitless weldments.
- Meets or exceeds original manufacturer's performance.

	Similar to			
Description	Agilent Part #	qty.	cat.#	
Injector/FID Heater and Injector/FID PRT Sensor	05890-61140	kit	22068	
Injector/FID Heater	19231-60620	ea.	22069	
Injector/FID PRT Sensor	19231-60660	ea.	23035	





23044

FID Collector Housing Kits for Agilent GCs

- Meets or exceeds original manufacturer's performance.
- Available for Agilent 5890, 6890, or 7890 GCs.

Description	Similar to Agilent Part #	qty.	cat.#
FID Collector Housing Kit for Agilent 5890 GCs (includes collector body, spanner nut, and silicone washer—order mount separately)	19231-20920	kit	23037
FID Collector Housing Kit for Agilent 6890/7890 GCs (includes collector body, silicone washer, nut, and mount)	G1531-20550	kit	23045
FID Collector Housing for Agilent 6890/7890 GCs	G1531-20740	ea.	23044
Replacement Silicone Washers for FID Collector Housing for Agilent 5890/6890/7890 GCs	5180-4165	12-pk.	23064





FID Collector Mount for Agilent GCs

- Meets or exceeds original manufacturer's performance.
- Available for Agilent 5890, 6890, or 7890 GCs.

	Similar to		
Description	Agilent Part #	qty.	cat.#
FID Collector Mount	19231-20930		23036
for Agilent 5890 GCs	19231-20930	ea.	23030
FID Collector Mount	C1E31 30EE0		23043
for Agilent 6890/7890 GCs	G1531-20550	ea.	23043



FID Base Weldment for Agilent GCs

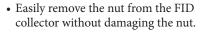
- Meets or exceeds original manufacturer's performance.
- Includes brass nut.
- Available for Agilent 5890, 6850, or 6890 GCs.

	Similar to		
Description	Agilent Part#	qty.	cat.#
FID Base Weldment for Agilent 5890 GCs	19231-80580	ea.	23041
FID Base Weldment, Pack Column FID for Agilent 6850/6890 GCs	G1531-80580	ea.	23052
FID Base Weldment, Capillary Column FID for Agilent 6850/6890 GCs	G1531-80630	ea.	23053

Note: 6890 GC connections to EPC modules are not compatible with the 7890 EPC modules.

Spanner Wrench

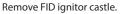
for Agilent 6890/6850/6890/7890 FID Collector Assemblies





• Fits all instrument models.







22329

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







and remove.

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



Supplies for Agilent GCs: Detector



FID Collector Assembly Kit for Agilent 5890 GCs

- Constructed of high-quality stainless steel.
- Meets or exceeds original manufacturer's performance.
- Individual replacement parts available.

Description	Similar to Agilent Part #		cat.#	
	Agilent Part #	qty.	Cat.#	
FID Collector Assembly Kit (includes insulators)	19231-60690	kit	23010	
FID Collector Assembly Kit w/Siltek Ignitor Castle		kit	21131	
	19231-20970.			
FID Collector (includes insulators)	19231-20960,	ea.	21138	
•	19231-20950			
FID Collector Nut and Washer	19231-20940,	set	21136	
TID Collector Nut and Washer	5181-3311	361	21130	
FID Ignitor*	19231-60680	ea.	21001	
FID Ignitor Castle	19231-20910	ea.	21137	
Siltek FID Ignitor Castle		ea.	21135	

^{*}Also fits OI Analytical 4410 detector (similar to OI part # 191833).



FID Flow Measuring Adaptor

for Agilent 5890/6890/6850/7890 GCs

- Makes setting flows easy.
- Meets or exceeds original manufacturer's performance.

	Similar to			
Description	Agilent Part #	qty.	cat.#	
FID Flow Measuring Adaptor	19301-60660	ea.	21000	

FID Gauge Pack for Agilent 5890 GCs

- Pressure regulators and gauges for air and hydrogen.
- 1/8-inch bulkhead allows easy hookup to instrument.
- Rated for inlet pressures to 250 psi (1,724 kPa).
- Rated for outlet pressures of 0 to 60 psi (0-414 kPa).



			22
Description	qty.	cat.#	
FID Gauge Pack for Agilent 5890 GCs	ea.	22071	



FID Collector Assembly Kit for Agilent 6850/6890/7890 GCs

- Constructed of high-quality stainless steel.
- Meets or exceeds original manufacturer's performance.
- Individual replacement parts available.

Similar to		
Agilent Part #	qty.	cat.#
G1531-60690	kit	21699
	kit	21132
G1531-20690, G1531-20700	ea.	21139
19231-20940, 5181-3311	set	21136
19231-60680	ea.	21001
19231-20910	ea.	21137
	Agilent Part # G1531-60690 G1531-20690, G1531-20700 19231-20940, 5181-3311 19231-60680	Agilent Part # qty. G1531-60690 kit kit G1531-20690, G1531-20700 19231-20940, 5181-3311 set 19231-60680 ea.

^{*}Also fits OI Analytical 4410 detector (similar to OI part # 191833).

FID Maintenance Kits for Agilent GCs

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

FID kits include:

- 1 /4" and 0.4, 0.5, and 0.8 mm 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 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

qty.	cat.#	
kit	22180	
kit	22179	
		kit 22180





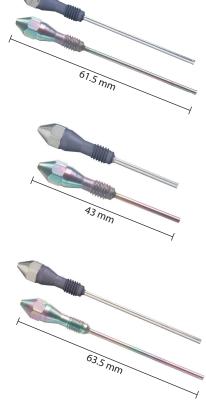
22179

Supplies for Agilent GCs: Detector



Which FID Jet Should I Use?

There are two FID jet configurations for Agilent GCs. The longer "adaptable" jet fits both 5890 and 6890 GCs, and can be used with capillary or packed columns. The shorter "dedicated" jet is for the FID in the 6890/7890 GC that is designed only for use with capillary columns.





22328

FID Replacement Jets

Standard Version

- Threads specially coated for easy installation and removal.
- Special processing ensures the highest degree of cleanliness.
- Meets or exceeds original manufacturer's performance.

High-Performance Version—Siltek® Treated

- Similar to the standard version, but Siltek® treated.
- Extremely inert, for use with active compounds.

Capillary Adaptable FID Replacement Jet for Agilent 5890/6890/6850 GCs

Engineered with a fluted tip to guide the capillary column into the jet.

	Similar to					
Description	Agilent Part #	qty.	cat.#	qty.	cat.#	
Standard, 0.011-Inch ID Tip	19244-80560	ea.	20670	3-pk.	20671	
High-Performance Siltek Treated, 0.011-Inch ID Tip	19244-80560	ea.	20672	3-pk.	20673	

Capillary Dedicated FID Replacement Jet for Agilent 5890/6890/6850/7890 GCs

	Similar to					
Description	Agilent Part#	qty.	cat.#	qty.	cat.#	
Standard, 0.011-Inch ID Tip	G1531-80560	ea.	21621	3-pk.	21682	
High-Temperature, 0.018-Inch ID Tip	G1531-80620	ea.	23078	3-pk.	23079	
High-Performance Siltek Treated, 0.011-Inch ID Tip	G1531-80560	ea.	21620	3-pk.	21683	

Packed Column FID Replacement Jets for Agilent 5890/6890/6850 GCs

- 0.018-inch ID jets: Used for most general-purpose packed column applications.
- 0.030-inch ID jets: For packings that exhibit high bleed and that frequently clog the tip of smaller 0.018-inch jets.

Similar to			
Agilent Part#	qty.	cat.#	qty. cat.#
18710-20119	ea.	21694	3-pk. 21695
18710-20119	ea.	21696	3-pk. 21697
Similar to			
Agilent Part#	qty.	cat.#	qty. cat.#
18789-80070	ea.	21688	3-pk. 21689
18789-80070	ea.	21686	3-pk. 21687
	Agilent Part # 18710-20119 18710-20119 Similar to Agilent Part # 18789-80070	Agilent Part # qty. 18710-20119 ea. 18710-20119 ea. Similar to Agilent Part # qty. 18789-80070 ea.	Agilent Part # qty. cat.# 18710-20119 ea. 21694 18710-20119 ea. 21696 Similar to Agilent Part # qty. cat.# 18789-80070 ea. 21688

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





Torx® Screwdriver Set

- Set includes TR-10, TR-15, and TR-20.
- Ideal for performing routine maintenance on Agilent 6890 and 7890 GCs.

Description	qty.	cat.#
Torx Screwdriver Set	set	23034

Torx® is a registered trademark of Textron Inc.



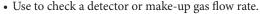
The FID/injector cleaning kit includes:

- Nylon tube brushes (1/8", 3/16", 1/4").
- Pipe cleaner.
- Stainless steel tube brushes (3/8", 3/16", 1/4").
- · Stainless steel surface brush.
- Stainless steel jet reamers.
- Emery cloth.

Description	qty.	cat.#
FID/Injector Cleaning Kit	kit	20120

Injector/Detector Plug Nuts

- Use to cap off an injector to isolate leaks.
- Use to cap off a detector for thermal cleaning.



• Use to cap off a detector and prevent hydrogen from accidentally diffusing into the oven from an unused detector base.

	Similar to			
Description	Agilent Part#	qty.	cat.#	
Injector/Detector Plug Nuts	5020-8294	2-pk.	21883	



FID/NPD Adaptor Fitting

- Easy-to-use, sturdy, compact stainless steel fitting.
- 1/16-inch nut uses standard graphite or Vespel®/graphite
- Wrench pad won't turn when installing a capillary column.
- Includes 1/4- and 1/16-inch stainless steel nuts, and 1/4-inch Vespel® and 0.4 mm ID graphite ferrules.

Description	qty.	cat.#	
FID/NPD Adaptor Fitting	kit	20884	

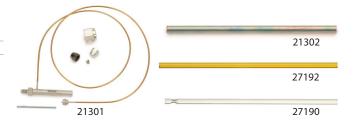


FID/NPD Capillary Adaptor Fitting

for Agilent 5890/6890/6850 GCs

- · High-quality stainless steel construction.
- Meets or exceeds original manufacturer's performance.

	Similar to		
Description	Agilent Part #	qty.	cat.#
FID/NPD Capillary Adaptor Fitting	19244-80610	ea.	22077



ECD/FID Dual-Purpose Make-Up Gas Kit

for Agilent 5890 GCs

Kit includes: replacement fitting, 1/4" nut, Vespel®/graphite ferrule, 1/16" nut, 0.4 mm ID graphite ferrule, Siltek®-treated guide.

Description	Agilent Part #	qty.	cat.#	
ECD/FID Replacement Fitting Kit with Flow Manifold Connection		kit	21301	
Replacement ECD Siltek Metal Guide		2-pk.	21302	
Replacement ECD Fused Silica Liner	19233-20625	ea.	27192	
		5-pk.	27193	
Replacement Micro ECD Liner	G2397-20540	ea.	27190	
		5-pk.	27191	



21883



Supplies for Agilent GCs: Cables & Autosampler

Replacement Cables

for Agilent GCs, Integrators, & Autosamplers

- Considerable savings over original manufacturer's
- Instructions and wiring diagrams included.
- Manufactured with only the highest-quality components.



Connect an Agilent 5890 GC to a non-Agilent integrator or standard strip chart recorder.

	Similar to				
Description	Agilent Part #	length	qty.	cat.#	
Replacement Cable	05890-60800	6 ft	ea.	20652	



Connect an Agilent 5890 GC to remote-start another piece of equipment or to start the Agilent 5890 GC from that piece of equipment.

	Similar to			
Description	Agilent Part #	length	qty.	cat.#
Replacement Cable	05890-61080	6 ft	ea.	20657



Injector Mounting Posts and Parking Post

for Agilent 7673 & 7683 Autosamplers

Performance equivalent to original manufacturer's parts.

Description	Similar to Agilent Part #	qty.	cat.#
Injector Mounting Post for Agilent 7673 Series Autosamplers for use with 6890 GCs	07673-21140	ea.	21237
Injector Mounting Post for Agilent 7683 Series Autosamplers for use with 6850/6890 GCs	G2613-20500	ea.	21172
Parking Post for Agilent 7673/7683 Series Autosamplers for use with 5890/6890/7890 GCs	05890-61525	ea.	22343

Turret Tray Assembly

for Agilent 7673 Autosamplers Holds sample, waste, and solvent vials.



Description	Similar to Agilent Part #	qty.	cat.#	
Turret Tray Assembly for Agilent 7673 Autosamplers	07673-60605	ea.	22855	

Autosampler Plunger Carrier Belt

for Agilent 7673A & 7673B Autosamplers

All parts meet or exceed original manufacturer's performance.



	For Agilent	
Description	Model #	qty. cat.#
Autosampler Plunger Carrier Belt	7673A, 7673B	ea. 22695

Carriage Motor Belt

for Agilent 7673A, 7673B, and 7673C Autosamplers Meets original manufacturer's performance.



	Similar to			
Description	Agilent Part #	qty.	cat.#	
Carriage Motor Belt for Agilent 7673A, 7673B, and 7673C	1500-0676	ea.	22692	

Z-Belt for Agilent 7673B & 7683 Autosamplers

Meets original manufacturer's performance.



Description	Similar to Agilent Part #	qty.	cat.#	
Z-Belt for Agilent 7673B & 7683 Autosamplers	1500-0803	ea.	22363	

Injector Turret Motor for Agilent 7673A & 7673B Injectors

Meets original manufacturer's performance.



	Similar to			
Description	Agilent Part #	qty.	cat.#	
Injector Turret Motor for Agilent 7673A & 7673B Injectors	07673-60810	ea.	22337	





Viton® O-Rings for Apex Liners

Description	Max. temp.	qty.	cat.#
Viton O-Rings for APEX liners	250 °C	25-pk.	22067



Accessories for ATAS LINEX DMI System

Description	qty.	cat.#	
Needle Guide for ATAS LINEX DMI Liner	5-pk.	22354	
Microvial/Insert for ATAS LINEX DMI Liner	100-pk.	22355	







Inlet Liner Seals

for Bruker/Varian 1177 Injectors

Meets or exceeds original manufacturer's performance.

Description	Max. Temp.	Similar to Bruker/Varian Part #	10-pk. cat.#	50-pk. cat.#
6.35 mm ID Graphite O-Rings for split liners	450 °C	_	20296	20297
6.5 mm ID Graphite O-Rings for splitless liners	450 °C	39-26119-40	20298	20299







Merlin Microseal Septa for Bruker/Varian GCs

400 °C max injection port temperature.

The advantages of the Merlin Microseal septum include elimination of septum coring, longer life, and consistently low needle-insertion force. The Microseal septum incorporates two separate sealing mechanisms. These sliding seals eliminate septum coring and the resulting accumulation of septum crumbs in the injection port liner.

The Microseal septum uses a 23-gauge (0.63 mm, 0.025") needle or probe with a blunt, truncated conical tip. Since the syringe plunger end details are determined by manual or autosampler compatibility, often a removable needle syringe is an effective way to match both of these requirements. Installation is simple, requiring no modification of the injection port.

Description	Merlin#	cat.#
General Purpose Kit for Bruker/Varian 1078/1079 GCs	MEILIII	Cat.#
Includes: Nut, Adapter, O-Ring, & 1 General-Purpose (#410) Microseal	21-11W	22779
General Purpose Kit for Bruker/Varian 1177 GCs		
Includes Nut, Adapter, O-Ring, & 1 General-Purpose (#410) Microseal	22-11W	22780
Replacement Microseals		
General-Purpose Microseal (most applications, 3 to 100 psi)	410	22812
Low-Pressure Microseal (1 to 45 psi)	310	22815
Microseal for SPME Applications (3 to 100 psi)	21-01W	22782



for Bruker/Varian 1078/1079 GCs

Description	Max. Temp.	Similar to Bruker/ Varian Part #	qty.	cat.#
5 mm Graphite Liner Seals for Bruker/Varian 1078/1079 GCs	450 °C	392611919, 392534201	10-pk.	22683





Septa for Bruker/Varian GCs

Septum Diameter	50-pk. cat.#	100-pk. cat.#	
Thermolite Septa (usable to 34	0 °C inlet temp.)		
9 mm	27133	27134	
9.5 mm (³ /8")	27136	27137	
10 mm	27139	27140	
11 mm (⁷ / ₁₆ ")	27142	27143	

Premium Non-stick BTO Septa (usable to 400 °C inlet temp.*)

9 mm CenterGuide	27084	27085
9.5 mm (³ / ₈ ")	27086	27087
10 mm	27088	27089
11 mm (7/16") CenterGuide	27090	27091

^{*}Minimum recommended operating temperature for premium non-stick BTO septa

Note: Due to differences in inlet design, the actual septum temperature for a given inlet setpoint can vary by manufacturer.

HANDY septum size chart

Injector Type	Septum Diameter (mm)
Packed Column	9.5/10
1078/1079	10/11
1177	9
1075/1077	11





Capillary Nuts for Bruker/Varian GCs

Choose brass or stainless steel construction.

Similar to			
Description	Bruker/Varian Part#	qty.	cat.#
Brass Capillary Nuts	03-949551-00	2-pk.	20881
Stainless Steel Capillary Nuts	03-949551-00	2-pk.	20882

Siltek® Treated Inlet **Support Springs**

for Bruker/Varian 1075/1077 Split Injectors

Siltek® treated to eliminate sample adsorption.



Description	Similar to Bruker/Varian Part #	qty.	cat.#	
Siltek Treated Inlet Support Springs for Bruker/Varian 1075/1077 Split Injectors	03-949786-00	3-pk.	21690	



22335

Capillary Installation Gauge for Bruker/Varian GCs

for use with 1/16" ferrules

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

Description	qty.	cat.#
Capillary Installation Gauge for Bruker/Varian GCs for use with 1/16" ferrules	ea.	22335

^{*}For use with graphite ferrules only.



Make Life Easier (MLE) Capillary Tool Kit

for Bruker/Varian GCs

Includes:

- Capillary installation gauge for Bruker/Varian GCs
- 1/8", 3/16", and 1/4" nylon brushes
- 1/4". 3/8", and 3/16" stainless steel wire tube brushes
- Stainless steel surface brush
- 6 stainless steel jet reamers (0.25-0.65 mm OD)
- 1/4" x 5/16" open end wrench
- 3/8" x 7/16" open end wrench
- 7/16" x 1/2" open end wrench
- 1/2" x 9/16" open end wrench
- Rubber-tipped slide-lock tweezers

- · Scoring wafers
- Inlet liner removal tool
- Septum puller
- Mini wool puller/inserter tool
- 4-inch tapered needle file
- · Swivel head flashlight
- · Mini hand drill set
- · 15 cm compact steel ruler
- Pocket magnifier
- High-temperature string (1 meter)
- Pipe cleaner (12 inch)
- Cotton tip swabs (pk. of 25)

Description	qty.	cat.#
MLE Capillary Tool Kit	kit	22184

Rethreading Tool

for Bruker/Varian Injection Ports

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





Make your injection port threads like new!

Screw the tool completely onto the injection port in a clockwise direction. Unscrew the tool and inspect the threads, then repeat as necessary. When done, wipe threads with methanol to remove any debris.

Description	qty.	cat.#
Rethreading Tool for 7/16" compression fitting (Bruker/Varian injection ports)	ea.	23019
Rethreading Tool for 1/4" Bruker/Varian-style capillary column fittings	ea.	21893



Restek innovation!

Kit installs easily, without special tools or plumbing.



EZ No-Vent® GC Column-Mass Spectrometer Connector

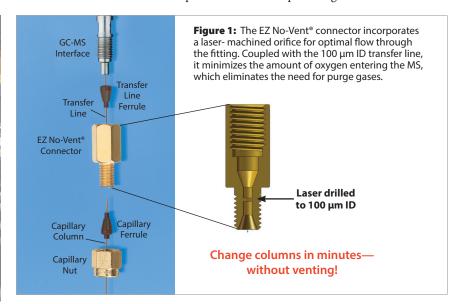
for Bruker/Varian Saturn 2000 Series Mass Spectrometers

- Change GC-MS columns in minutes without venting—100 μm transfer line maintains vacuum and prevents venting.
- Easy to install and maintain—no special tools or plumbing required.
- Gold-plated body for inertness.
- High-temperature polyimide ferrules eliminate leaks at the problematic transfer line fitting.
- Lower cost than other "no-vent" fittings.

We designed the EZ No-Vent* GC column-mass spectrometer connector to be simple and easy to use. A critical orifice in the EZ No-Vent® connector minimizes the amount of oxygen allowed into the MS source, eliminating the need for purge gas as is required for other manufacturers' vent systems. This enables you to skip the lengthy vent and pump-down cycle otherwise required when you make a column change, saving nearly a day of downtime with each column change. The EZ No-Vent® connector easily attaches to the MS source without special tools or extra plumbing.



As an employee-owned company, we take pride in producing the best chromatography products on the market.



Description	qty.	cat.#
EZ No-Vent Connector Kit for Bruker/Varian Saturn 2000 Series MSs Includes: EZ No-Vent connector, two 0.4 mm ID adaptor ferrules for capillary column, two 0.4 mm ID ferrules for transfer line, 100 μm deactivated transfer line (3 ft), column plug, column nut	kit	22423
Replacement ferrules for connecting capillary column to EZ No-Vent connector:		
0.30≤0.40 mm Tubing OD (Virgin Polyimide)	2-pk.	21015
0.40≤0.50 mm Tubing OD (Virgin Polyimide)	2-pk.	21016
Replacement Ferrules (polyimide) for connecting transfer line to EZ No-Vent connector: 0.4 mm ID	2-pk.	21043
Replacement 100 µm Deactivated Transfer Line	3 ft	21018
Replacement EZ No-Vent column Nut	20-pk.	23100
Replacement EZ No-Vent Plug	5-pk.	23112
Open-End Wrenches, 1/4" x 5/16"	2-pk.	20110



Graphite O-Rings for

PerkinElmer Auto SYS XL or Clarus GCs With PSS Injector



Fits 4 mm OD liners.

Description	Max. Temp.	Similar to PE Part #	qty.	cat.#
Graphite O-Rings for PerkinElmer Auto SYS XL or Clarus GCs	450 °C	N610-1751	10-pk.	21475
w/PSS Injector	450 °C	N610-1751	25-pk.	21476

Viton® O-Rings

for PerkinElmer PSS Injector

Fits 4 mm OD liners.



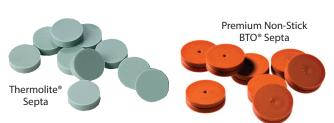
Description	Max. Temp.	Similar to PE Part #	qty.	cat.#
Viton O-Rings for PerkinElmer PSS Injector	250 °C	N6101747	10-pk.	20366

Silicone O-Rings

w/CAP Injector

for PerkinElmer Auto SYS XL or Clarus With CAP Injector

Fits 6.2 mm OD liners.					
Description	Max. Temp.	Similar to PE Part #	qty.	cat.#	
Silicone O-Rings for PerkinElmer Auto SYS XL or Clarus	250 °C	N6101374	10-pk.	20262	



Septa (11 mm) for PerkinElmer GCs

	hermolite Septa	Premium Non-Stick BTO Septa			
Usable	e to 340 °C Inlet Temp.	Usable to 400 °C Inlet Temp.			
qty.	cat.#	qty.	cat.#		
50-pk.	27142	50-pk.	27090		
100-pk.	27143	100-pk.	27091		

Note: Due to differences in inlet design, the actual septum temperature for a given inlet setpoint can vary by manufacturer. Restek recommends using only BTO® septa in Thermo TRACE and Focus GCs.

Merlin Microseal Septa

for PerkinElmer GCs

400 °C max injection port temperature.

The advantages of the Merlin Microseal septum include elimination of septum coring, longer life, and consistent low needle insertion force. The Microseal septum incorporates two separate sealing mechanisms. These sliding seals eliminate septum coring and the resulting accumulation of septum crumbs in the injection port liner.



The Microseal septum uses a 23-gauge (0.63 mm, 0.025") needle or probe with a blunt, truncated conical tip. Since the syringe plunger end details are determined by manual or autosampler compatibility, often a removable needle syringe is an effective way to match both of these requirements. Installation is simple, requiring no modification of the injection port.

Merlin#	Similar to PE#	cat.#
51-12W	N9303344	22781
410	N9303345	22812
310		22815
21-01W		22782
	51-12W 410 310	410 N9303345 310

Chroma **BLOG** raphy

Check out the Restek blog for the latest developments and new applications!







Injector Adaptors for PerkinElmer CAP Injector

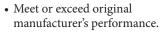
- Made of high-quality stainless steel.
- Meet or exceed original manufacturer's performance.
- Siltek®-treated version available for increased inertness.

Description	PE Part #	qty.	cat.#	
For use with PE-style capillary nuts				
Injector Adaptor for PerkinElmer CAP Injector	N6100157	ea.	22318	
Siltek-Treated Injector Adaptor for PerkinElmer CAP Injector	_	ea.	22320	
For use with 1/16" compression-style nuts				
Injector Adaptor for PerkinElmer CAP Injector	_	ea.	22319	

FID Capillary Column Adaptors

for PerkinElmer Auto SYS XL

• Made of high-quality stainless steel.





Description	Similar to PE Part #	qty.	cat.#
For use with PE-style capillary nuts			
FID Capillary Column Adaptor for PerkinElmer Auto SYS XL	N6120020	ea.	22608
For use with 1/16" compression-style nuts			
FID Capillary Column Adaptor for PerkinElmer Auto SYS XL		ea.	22609



FID Replacement Parts

for PerkinElmer Auto SYS XL and Clarus 500

- Made of high-quality stainless steel.
- Meet or exceed original manufacturer's performance.

Description	Similar to PE Part #	qty.	cat.#	
FID Jet for PerkinElmer Auto SYS XL and Clarus 500	N6100361	ea.	23038	
Auto-Ignite FID Replacement Part Kit for PerkinElmer Auto SYS XL and Clarus 500	N6103167, N6103175, N6101085, N6001204, 09912223	kit	23061	
Nozzle Insulator for PerkinElmer Auto SYS XL and Clarus 500	N6101085	ea.	23062	
FID Body for PerkinElmer Auto SYS XL and Clarus 500	N6100364	ea.	23063	



Make Life Easier (MLE) Capillary Tool Kit

for PerkinElmer GCs

Includes:

- 1 /8", 3 /16", and 1 /4" nylon brushes
- 1/4", 3/8", and 3/16" stainless steel wire tube brushes
- Stainless steel surface brush
- 6 stainless steel jet reamers (0.25–0.65 mm OD)
- 1/4" x 5/16" open end wrench
- 3/8" x 7/16" open end wrench
- 7/16" x 1/2" open end wrench
- 1/2" x 9/16" open end wrench
- Rubber-tipped slide-lock tweezers
- Scoring wafers

- Inlet liner removal tool
- · Septum puller
- Mini wool puller/inserter tool
- 4-inch tapered needle file
- · Swivel head flashlight
- · Mini hand drill set
- 15 cm compact steel ruler
- · Pocket magnifier
- High temperature string (1 meter)
- Pipe cleaner (12-inch)
- Cotton tip swabs (pk. of 25)

Description	qty.	cat.#
MLE Capillary Tool Kit	kit	22185





Viton® O-Rings

for Shimadzu 17A, 2010, and 2014 GCs

Description	Max. Temp.	Similar to Shimadzu Part #	qty.	cat.#	
Viton O-Rings for Shimadzu 17A, 2010, and 2014 GCs	250 °C	036-11203-84	10-pk.	24899	

Graphite O-Rings

for Shimadzu 2010 and 2014 GCs



Description	Max. Temp.	Similar to Shimadzu Part #	qty.	cat.#	
Graphite O-Rings for Split Liners	450 °C	221-48393-91	5-pk.	20243	
Graphite O-Rings for Splitless Liners	450 °C	221-47222-91	5-pk.	20244	





Premium Non-Stick BTO® Septa

Septa (Plug) for Shimadzu GCs

Usable	Septa to 340 °C Inlet Temp.		MIUM NON-STICK BTO Septa o 400 °C Inlet Ten	np.*
qty.	cat.#	qty.	cat.#	
50-pk.	27154	50-pk.	27098	
100-pk.	27155	100-pk.	27099	

Note: Due to differences in inlet design, the actual septum temperature for a given inlet setpoint can vary by manufacturer. Restek recommends using only BTO® septa in Thermo TRACE and Focus GCs.

*For 17 mm inlets, the maximum temperature is 330 °C. For all injectors, minimum recommended operating temperature for BTO® septa is 250 °C.

Septum Nut

for Shimadzu 17A, 2010, and 2014 GCs

- One-piece design for ease of installation and removal.
- Made of clear anodized aluminum and high-quality stainless steel.



Description	Similar to Shimadzu Part #	qty.	cat.#	
Septum Nut	221-41286-00, 221-44584-00	ea.	22079	



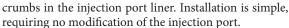
Injector Nut Kit for Shimadzu 17A, 2010, and 2014 GCs Includes 17A injector nut, 0.4 mm graphite ferrule, and ¹/₁₆-inch stainless steel capillary nut.

Description	qty.	cat.#
Injector Nut Kit for Shimadzu 17A, 2010, and 2014 GCs	kit	21895
Siltek Treated Injector Nut Kit for Shimadzu 17A 2010, and 2014 GCs	kit	22331

Merlin Microseal Septa for Shimadzu GCs

- Compatible with Shimadzu models GC-2010 and GC-2025 only.
- 450 °C maximum injection port temperature.
- For use with 23-gauge (0.63 mm, 0.025") needle or probe with blunt, truncated conical tip.

A Merlin Microseal septum provides several distinct advantages: elimination of septum coring, long lifetime, and consistently low needle-insertion force. The Microseal septum incorporates two separate sealing mechanisms; these sliding seals prevent septum coring and the associated accumulation of septum



Description	Merlin#	cat.#
General Purpose Kit for Shimadzu GCs (3 to 100 psi) Includes: Nut, Adapter, O-Ring, & 2 General-Purpose (#410) Microseals	61-12	22972
Replacement Microseals		
General-Purpose Microseal (most applications, 3 to 100 psi)	410	22812
Low-Pressure Microseal (1 to 45 psi)	310	22815
Microseal for SPME Applications (3 to 100 psi)	21-01W	22782



Capillary Nut for Shimadzu 17A, 2010, and 2014 GCs Meets original manufacturer's performance.

Description	Similar to Shimadzu Part #	qty.	cat.#	
Capillary Nut for Shimadzu 17A, 2010, and 2014 GCs	221-41533-00	2-pk.	22688	



Restek Enhanced Capillary Nut

for Shimadzu 17A, 2010, and 2014 GCs

- Restek's design eliminates the slot, increasing lifetime and durability.
- Meets or exceeds original manufacturer's performance.

Shimadzu Part #	qty.	cat.#
221-41533-00	2-pk.	20375
	Shimadzu Part #	Shimadzu Part # qty.

C:...:



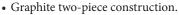
5 mm Ferrules for Shimadzu 17A GCs

- For use with packed columns.
- Graphite construction.





for Shimadzu 17A, 2010, and 2014 GCs



- Available in 0.4, 0.5, and 0.8 mm sizes.
- · Packaged on mandrel for easy handling.



21121

		Similar to		
Ferrule ID	Fits Column ID	Shimadzu Part #	qty.	cat.#
0.4 mm	0.25 mm and less	220-90765-00	10-pk.	24827
0.5 mm	0.32 mm	221-32126-05	10-pk.	24828
0.8 mm	0.53 mm	221-32126-08	10-pk.	24829



Inlet Wrench for Shimadzu 17A, 2010, and 2014 GCs

- Designed specifically for removing Shimadzu injection ports.
- High-quality stainless steel construction.

Description	Similar to Shimadzu Part #	qty.	cat.#	
Inlet Wrench for Shimadzu 17A, 2010, and 2014 GCs	221-46977-00	ea.	21159	



Capillary Installation Gauge

for Shimadzu 17A, 2010, and 2014 GCs

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

Description	qty.	cat.#	
Capillary Installation Gauge for Shimadzu 17A, 2010, and 2014 GCs	ea.	22333	

^{*}For use with graphite ferrules only.





Open-End Wrench Set for use with Shimadzu 17A, 2010, and 2014 Capillary Installation Gauge

Description	qty.	cat.#	
$^{1/4}$ " x 5 /16" and 10 mm x 11 mm Open-End Wrench Set for use with Shimadzu 17A, 2010, and 2014 Capillary Installation Gauge	ea.	22334	



FID Jets for Shimadzu 2010 GCs

Description	Similar to Shimadzu Part #	qty.	cat.#
Capillary FID Jet for Shimadzu 2010 GCs	221-48258-91	ea.	22630
Packed Column FID Jet for Shimadzu 2010 GCs	221-48885-91	ea.	22631
Wide Bore FID Jet for Shimadzu 2010 GCs	221-49373-91	ea.	22632

Everything you need in one complete kit!

Make Life Easier (MLE) **Capillary Tool Kit**

for Shimadzu GCs

Includes:

- · Capillary installation gauge for Shimadzu GCs
- · Injector wrench for Shimadzu GCs
- 1/8", 3/16", and 1/4" nylon brushes 1/4", 3/8", and 3/16" stainless steel
- · Stainless steel surface brush
- 6 stainless steel jet reamers (0.25-0.65 mm OD)

wire tube brushes

- 1/4" x 5/16" open end wrench
- 3/8" x 7/16" open end wrench
- 6 mm x 7 mm open end wrench
- 8 mm x 10 mm open end wrench
- 16 mm x 17 mm open end wrench

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- Rubber-tipped slide-lock tweezers
- Scoring wafers
- Inlet liner removal tool
- Septum puller
- Mini wool puller/inserter tool
- 4-inch tapered needle file
- Swivel head flashlight
- Mini hand drill set
- · 15 cm compact steel ruler
- Pocket magnifier
- High-temperature string (1 meter)
- Pipe cleaner (12 inch)
- Cotton tip swabs (pk. of 25)

Description	qty.	cat.#	
MLE Capillary Tool Kit for Shimadzu GCs	kit	22182	



Dual Vespel® Ring Inlet Seals

Washerless, Leak-Tight Seals for Thermo 1300/1310 GCs

- Does not require a separate washer.
- Requires less torque to seal.
- Does not require retightening of reducing nut after several oven cycles.
- Extends column lifetime by preventing oxygen from reaching the column.
- Same price as the regular inlet seals with washers.
- Siltek® treatment provides enhanced inertness versus stainless steel.

Feature	Benefit
Vespel® ring embedded in bottom surface.	Eliminates need for a washer.
Vespel® ring embedded in top surface.	Very little torque required to make seal—reduces operator variability.
Lower leak rate compared to OEM metal inlet seals.	Less detector noise.
Prevents oxygen from permeating the carrier gas.	Increases column lifetime.

Our patented dual Vespel® ring inlet seal greatly improves injection port performance—it stays sealed, even after repeated temperature cycles, without retightening the reducing nut! This seal features two soft Vespel® rings, one embedded in its top surface and the other embedded in its bottom surface. These rings eliminate the need for a washer and ensure very little torque is needed to make a leak-tight seal. The rings will not harm the critical seal in the injector body, or any other surface, and are outside the sample flow path.

To reduce breakdown and adsorption of active compounds, use a gold-plated or Siltek®-treated seal.

0.8 mm ID Dual Vespel Ring Inlet Seal	2-pk. cat.#	10-pk. cat.#	
Gold-Plated	22243	22244	
Siltek-Treated	22247	22248	
	2-pk.	10-pk.	
1.2 mm ID Dual Vespel Ring Inlet Seal	cat.#	cat.#	
1.2 mm ID Dual Vespel Ring Inlet Seal Gold-Plated	cat.# 22245	cat.# 22246	

Replacement Inlet Seals With Washers

- Siltek® treatment provides inertness similar to fused silica.
- All seals include washers.

Replacement Inlet Seals for Thermo Scientific 1300/1310 GCs

The inlet seal at the base of the GC injection port contacts the sample and must be changed frequently to prevent adsorption of active compounds. In addition, septum fragments and sample residue accumulate on the disk surface, requiring disk replacement.

Single-Column Installation

Single Column installation				
0.8 mm ID (Opening)	Similar to Thermo Part #	qty.	cat.#	
Gold-Plated	290GA082	2-pk.	22231	
Gold-Plated	290GA081	10-pk.	22232	
Siltek-Treated	290GA092	2-pk.	22237	
Siltek-Treated	290GA091	10-pk.	22238	
0.25/0.32 mm ID Dual-Column Installation				
1.2 mm ID (Opening)	Similar to Thermo Part #	qty.	cat.#	
Gold-Plated	290GA122	2-pk.	22233	
Gold-Plated	290GA121	10-pk.	22234	

Cross-Disk Inlet Seals for Thermo Scientific 1300/1310 GCs

All seals include washers.

0.8 mm ID Cross-Disk Inlet Seal	Similar to Thermo Part #	qty.	cat.#
Gold-Plated	290GA083	2-pk.	22235
Gold-Plated	290GA084	10-pk.	22236
Siltek-Treated	290GA093	2-pk.	22239
Siltek-Treated	290GA094	10-pk.	22240









Note: The 1.2 mm inlet seal is recommended when installing two columns using a two-hole Vespel®/ graphite ferrule.

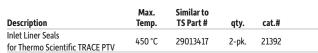




Supplies for Thermo Scientific GCs



for Thermo Scientific TRACE PTV





Graphite Sealing Ring for Thermo Scientific TRACE, 8000, 8000 TOP & Focus SSL Instruments

Description	Max. Temp.	Similar to TS Part #	qty.	cat.#	
Graphite Sealing Ring	450°C	290-334-06	ea.	21898	
for Thermo Scientific TRACE, 8000, 8000 TOP & Focus SSL	450°C	290-334-06	2-pk.	21899	



Septa (9 mm, 9.5 mm, 11 mm, 17 mm) for Thermo Scientific GCs Premium Non-Stick BTO® Septa

- Usable to 400 °C inlet temperature*.
- New plasma coating eliminates sticking in the injection port.
- Precision molding ensures consistent, accurate fit.
- Partial predrilled CenterGuide design.
- · Preconditioned and ready to use.
- Packaged in ultra-clean blister packs**.
- Each batch GC-FID tested.
- Bleed and temperature optimized; ideal for demanding GC and GC-MS applications.

Septum Diameter	50-pk. cat.#	100-pk. cat.#
Premium Non-Stick BTO Septa (usab	ole to 400 °C inlet temp.*)	
9 mm CenterGuide	27084	27085
9.5 mm (³ / ₈ ")	27086	27087
11 mm (7/16") CenterGuide	27090	27091
17 mm CenterGuide	27096	27097

Note: Due to differences in inlet design, the actual septum temperature for a given inlet setpoint can vary by manufacturer. Restek recommends using only BTO® septa in Thermo TRACE and Focus GCs.

*For 17 mm inlets, the maximum temperature is 330 °C. For all injectors, minimum recommended operating temperature for BTO® septa is 250 °C.

**12.7 mm and 17 mm septa packaged in precleaned glass jars.

HANDY septum size chart

Instrument	Septum Diameter (mm)		
Thermo Scientific			
TRACE GC, 8000, 8000 TOP, GCQ w/TRACE, PTV, 8000 series17	17		
TRACE 1300, 1310	11		
Finnigan (TMQ)			
GC 9001, GCQ, QCQ, TRACE 2000	9.5		

Septum Cap for Split/Splitless Injector on Thermo Scientific TRACE, 8000, 8000 **TOP & Focus SSL**



Description	Similar to TS Part #	qty.	cat.#
Septum Cap for Split/Splitless Injector on Thermo Scientific TRACE. 8000.	35001050		24971
8000 TOP & Focus CSI	32001020	ea.	24911



Septa Holder Kits

for Thermo Scientific TRACE, 8000, 8000 TOP & Focus SSL

- Includes septum support and holder.
- Made from high-quality stainless steel.
- Silcosteel®-AC-treated version helps with septum removal.

Description	Similar to TS Part #	qty.	cat.#	
Septa Holder for Thermo Scientific TRACE, 8000, 8000 TOP & Focus SSL	23303015, 350054335	kit	21299	
Silcosteel-AC-Treated Septa Holder for Thermo Scientific TRACE, 8000, 8000 TOP & Focus SSL	23303015, 35005433	kit	24972	

Gold-Plated Liner Cap

for Split/Splitless Injector on Thermo Scientific TRACE, 8000,





Silver Seals for Thermo Scientific TRACE, 8000, 8000 TOP & Focus SSL



22089

Description	Similar to TS Part #	qty.	cat.#	
Silver Seal	29033629	10-pk.	23057	
for Split/Splitless Injector	29033629	20-pk.	23058	



Supplies for Thermo Scientific GCs





on Thermo Scientific TRACE & Focus SSL

- Use same installation distance as manufacturer's adaptors.
- Made of high-quality stainless steel.
- Siltek®-treated version available for additional inertness.

Description	Similar to TS Part #	qty.	cat.#	
For use with standard 1/16" ferrules.				
Adaptor for Capillary Column on Detector Base		ea.	24916	
Adaptor for Capillary Column on Split/Splitless Injector		ea.	24917	
Siltek Treated Adaptor for Capillary Column on Split/Splitless Injector		ea.	20543	
For use with M4 ferrules.				
Adaptor for Capillary Column on Detector Base	347 25 436	2-pk.	24969	
Adaptor for Capillary Column on Split/Splitless Injector	347 05 451	ea.	24970	
Siltek Treated Adaptor for Capillary Column on Split/Splitless Injector		ea.	20544	

Nut for Terminal Fitting for Thermo Scientific TRACE GCs



Description	Similar to TS Part #	qty.	cat.#	
Nut for Terminal Fitting for Thermo Scientific TRACE GCs	350 221 25	2-pk.	24896	

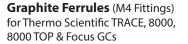
Fixing Nut for Capillary

Column for Split/Splitless Injector on Thermo Scientific TRACE, 8000, 8000 TOP & Focus SSL



Made of high-quality stainless steel.

	Similar to		
Description	TS Part #	qty.	cat.#
Fixing Nut for Capillary Column for Split/			
Splitless Injector on Thermo Scientific	350 32 423	5-pk.	24973
TRACE 8000 8000 TOP & Focus SSI			





Ferrule ID	Fits Column ID	Similar to TS Part #	Graphite 2-pk.	Graphite 10-pk.
0.3 mm	0.10-0.15 mm	_	22221	22222
0.4 mm	0.18-0.28 mm	29013488 (2-pk.) 29053488 (10-pk.)	20280	20281
0.5 mm	0.32 mm	29013487 (2-pk.) 29053487 (10-pk.)	20282	20283
0.8 mm	0.45-0.53 mm	29013486 (2-pk.) 29053486 (10-pk.)	20284	20285

FID Jet for Thermo Scientific TRACE & Focus GCs Meets or exceeds original manufacturer's performance.



Description	Similar to TS Part #	qty.	cat.#	
FID Jet for Thermo Scientific TRACE & Focus GCs	404 043 01	ea.	23080	

WORLD-CLASS SERVICE & LOCAL CONNECTIONS

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E-mail: salesreps@restek.com

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E-mail: intltechsupp@restek.com

FIND A LOCAL DISTRIBUTOR

www.restek.com/distributor





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	



Metric Wrench Set

High-quality 6 x 7 mm, 8 x 10 mm, and 16 x 17 mm wrenches for tightening a wide variety of fittings.

Description	qty.	cat.#	
Metric Wrench Set	set	22997	



Metric 9-Piece, Ball-Point Hex Key Set

Includes nine metric hex keys (Allen wrenches): 1.5, 2, 2.5, 3, 4, 5, 6, 8, and 10 mm.

Description	qty.	cat.#
Metric 9-Piece, Ball-Point Hex Key Set	set	22999



22330

Capillary Installation Gauge

for Thermo Scientific TRACE & Focus SSL (M4 Ferrules)

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



Install nut and ferrule onto column. Cut column end squarely. Slide column into installation gauge to recommended insertion distance. Fingertighten column nut.

Tighten assembly to ensure a properly seated ferrule. Loosen assembly and remove 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.#
Capillary Installation Gauge	00	22330
for Thermo Scientific TRACE & Focus SSL (M4 ferrules)	ea.	22330

^{*}For use with graphite ferrules only.



Everything you need in one complete kit!

22183



Make Life Easier (MLE) Capillary Tool Kit

for Thermo Scientific GCs

Includes:

- Capillary installation gauge for Thermo Scientific GCs
- Liner cap removing tool for Thermo Scientific GCs
- 1/8", 3/16", and 1/4" nylon brushes
- 1/4", 3/8", and 3/16" stainless steel wire tube brushes
- Stainless steel surface brush
- 6 stainless steel jet reamers (0.25-0.65 mm OD)
- 1/4" x 5/16" open end wrench
- 3/8" x 7/16" open end wrench
- 6 mm x 7 mm open end wrench • 8 mm x 10 mm open end wrench
- 16 mm x 17 mm open end wrench

- Rubber-tipped slide-lock tweezers
- Scoring wafers
- Inlet liner removal tool
- Septum puller
- Mini wool puller/inserter tool 4-inch tapered needle file
- Swivel head flashlight
- Mini hand drill set
- 15 cm compact steel ruler
- Pocket magnifier
- High-temperature string (1 meter)
- Pipe cleaner (12 inch)
- Cotton tip swabs (pk. of 25)

Description	qty.	cat.#
MLE Capillary Tool Kit	kit	22183



EZ No-Vent® GC Column-Mass Spectrometer Connector

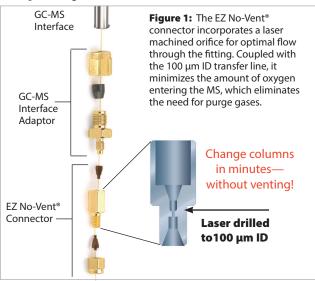
for Thermo Scientific Focus DSQ GC **Mass Spectrometers**

• Change GC-MS columns in minutes without venting—100 μm transfer line maintains vacuum and prevents venting.



- Easy to install and maintain—no special tools or plumbing required.
- Gold-plated body for inertness.
- High-temperature polyimide ferrules eliminate leaks at the problematic transfer line fitting.
- · Lower cost than other "no-vent" fittings.

We designed the EZ No-Vent® GC column-mass spectrometer connector to be simple and easy to use. A critical orifice in the EZ No-Vent® connector minimizes the amount of oxygen allowed into the MS source, eliminating the need for purge gas as is required for other manufacturers' vent systems. This enables you to skip the lengthy vent and pump-down cycle otherwise required when you make a column change, saving nearly a day of downtime with each column change. The EZ No-Vent® connector easily attaches to the MS source without special tools or extra plumbing.



·		
Description	qty.	cat.#
EZ No-Vent Connector Kit		
for Thermo Scientific Focus DSQ GC Mass Spectrometers Includes: EZ No-Vent Connector, interface adaptor, two 0.4 mm ID adaptor ferrules for capillary column, two 0.4 mm ID ferrules for transfer line, 100 µm deactivated transfer line (3 ft), column plug, column nut	kit	22454
Replacement Ferrules for connecting capillary column to EZ No-Vent Connector:		
0.30≤0.40 mm Tubing OD (Virgin Polyimide)	2-pk.	21015
0.40≤0.50 mm Tubing OD (Virgin Polyimide)	2-pk.	21016
Replacement Ferrules (polyimide) for connecting transfer line to EZ No-Vent connector: 0.4 mm ID	2-pk.	21043
Replacement 100 µm Deactivated Transfer Line	3 ft	21018
Replacement EZ No-Vent Column Nut	20-pk.	23100
Replacement EZ No-Vent Plug	5-pk.	23112
Open-End Wrenches, 1/4" x 5/16"	2-pk.	20110
Open-End Wrenches, 3/8" x 7/16"	2-pk.	22455



Transfer Line Reducing Kit

for Thermo Scientific TRACE & Focus DSQ Mass Spectrometers Meets or exceeds original manufacturer's performance.

	Similar to		
Description	TS part #	qty.	cat.#
Transfer Line Reducing Kit	76458-2014s,		
for Thermo Scientific TRACE & Focus	76458-2009s,	kit	22082
DSQ Mass Spectrometers	A0101-03151		

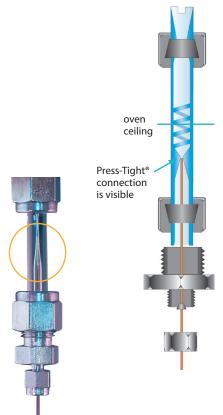






it's a fact

The ¹/₄-inch Vu-Tight liner fits directly into a 1/4-inch injection port. The connection between the liner and the column is in the GC oven, allowing visual confirmation of the seal. Problems, such as a crushed column end in the Press-Tight® taper, can be detected easily, making proper installation worry-free. The Cyclo Vu-Tight liner prevents nonvolatile residue from contaminating the column.



Converting Packed Inlets to Capillary Column Use

Two types of inlet conversion kits are available for a 1/4-inch packed column injection port to fit either 0.32 or 0.53 mm ID capillary columns: the Vu-Tight liner and the Uniliner® liner with adaptor (next page). The Vu-Tight liner fits directly into the 1/4-inch injection port and allows visual confirmation of the connection between the column and the liner. The Uniliner[®] liner and adaptor work together to allow either direct or on-column injection when using 0.53 mm ID columns. Both systems incorporate a Press-Tight® connection between the liner and column inlet, minimize dead volume, and reduce solvent peak tailing.

Features of Both Conversion Kits:

- Fit Agilent, Bruker/Varian, and other common GCs with 1/4-inch packed column injection ports (with maximum insertion depth of 4 inches).
- Install easily within 15 minutes.
- Accommodate either 0.32 or 0.53 mm ID fused silica columns (tubing OD \geq 0.5 mm).
- Liners are deactivated and extremely inert.
- Liners designed to accept dirty samples are available for either system.
- Press-Tight® connections between the liner and column inlet minimize dead volume, reduce solvent peak tailing, and sharpen early-eluting components.

Vu-Tight DI Liners for 1/4-Inch Packed Injection Port Conversion

- Visually observe the Press-Tight® connection between the column end and liner.
- Fit 0.32 and 0.53 mm ID capillary columns (column ODs from 0.5 mm to 0.8 mm).
- Slotted top prevents obstruction of carrier gas flow.
- Two designs available.
- Operate in the direct injection mode.

Vu-Tight DI Liners for 1/4-Inch Packed Injection Port Conversion

Can easily be packed with wool for dirty samples.

Description	qty.	cat.#
Vu-Tight DI Liner	ea.	20342
Vu-Tight DI Liner	5-pk.	20343
Vu-Tight DI Liner	25-pk.	20344

Cyclo Vu-Tight DI Liners (1/4-inch OD)

Ideal for dirty samples. Spiral bore prevents nonvolatile residue from contaminating the column.

Description	qty.	cat.#
Cyclo Vu-Tight DI Liner	ea.	20787
Cyclo Vu-Tight DI Liner	5-pk.	20788

Vu-Tight Installation Fittings Kit

Includes a 1/4-inch stainless steel nut and graphite ferrule for attaching the liner to the GC inlet and a ¹/₄ to ¹/₁₆-inch stainless steel reducer, plus a ¹/₄-inch and 0.5 mm ID graphite ferrule for attaching the column to the liner.

Description	qty.	cat.#
Vu-Tight Installation Fittings Kit	kit	20504





Uniliner® Liner for 1/4-Inch Packed Injection Port Conversion

- Reduces solvent tailing.
- Versatile—0.53 mm ID version can be used in the direct (DI) or on-column (OC) injection mode.
- Incorporates a gentle taper that seals the column and reduces dead volume in direct injection mode.
- · Available in various designs.

On-column injections can be performed only with 0.53 mm ID columns because 26-gauge needles do not fit into the bore of 0.32 mm ID columns, or into the Unliner® liner taper.

Description	Column ID Injection Mode*	ea. cat.#	5-pk. cat.#
Uniliner Liner (small buffer volume chamber 60 mm long, for injections ≤2 µL)	0.53 mm DI or OC	20902	20903
Uniliner Liner (large buffer volume chamber 85 mm long, for injections ≤4 µL)	0.32 & 0.53 mm DI only	20308	20309
	0.53 mm DI or OC	20301	20305
Cyclo-Uniliner Liner (for active, dirty samples)	0.32 & 0.53 mm DI only	20319	20320
Open-Top Uniliner Liner (packed with wool)	0.32 & 0.53 mm DI only	20315	20316
Low Volume/Purge & Trap Uniliner Liner (1 mm ID x 5 mm OD: use in 1/x" injection ports to troubleshoot purge & trap units)	0.32 & 0.53 mm DI only		20314
	Includes ¹ /	4-inch nut & graph and 0.8 mm ID gra	ite ferrule, ½16-inch nut, phite ferrule.
Uniliner Liner Adaptor (required for installing Uniliner liners in 1/4" injection ports)		Stainless Steel cat.#	Siltek-Treated cat.#
	For injection ports <8 cm	20310	22282
	For injection ports 8-15 cm	20311	
	qty.	cat.#	

^{*}DI = direct injection, OC = on-column injection

1/4" Ferrules for Uniliner Liner Adaptor

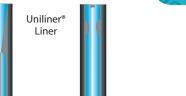
Note: a Uniliner liner must be used with a Uniliner liner adaptor (cat.# 20310 or 20311) for 1/4-inch injection ports. Remember to include a liner adaptor when ordering a Uniliner liner, unless you are purchasing replacement Uniliner liners.

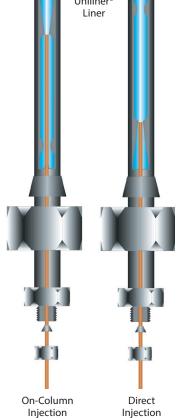
5-pk.

20234

it's a fact

5 mm Uniliner® liners fit into the 1/4-inch Uniliner® liner adaptor, which fits into a 1/4-inch injection port. The Uniliner® liner can be inserted in one direction for direct injections or inverted for on-column injections. Because the 1/4-inch injection port ferrule seals against the metal liner adaptor surface, it is virtually impossible to crack the glass Uniliner® liner during installation.







Injection Port Conversion Chart

Uniliner Liner Set-Up

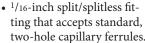
Vu-Tight Fitting

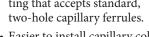
	OTHINTET EITIE	. set op	va right ritting		
Instrument	Uniliner Liner: cat.# 20301, 20305, 20308, 20309, 20315, 20316, 20319, 20320, 20902, & 20903	Liner Adaptor: cat.# 20310	Vu-Tight Fitting Kit: cat.# 20504 Liner: cat.# 20342, 20343, 20344, 20787, & 20788	Vu-Tight Fitting Kit: cat.#20504	
Agilent GCs (¹ / ₄ -inch injection ports) Models: 5700, 5710, 5711, 5712, 5830, 5840, 5880, 5890, 6850, 6890	✓	✓	✓	✓	
Varian GCs (¹ /4-inch injection ports) Models: 1200, 1400, 2100, 2400, 3300-3700, 4400, 4600, 6000	✓	✓	✓	✓	
Tracor GCs (1/4-inch injection ports) Models: 540, 550, 560, 565, 570	✓	✓	✓	✓	
Packard Becker GCs (1/4-inch injection ports) Models: 427, 428, 429, 430, 433, 436, 437, 438	✓	✓	✓	✓	
Gow-Mac GCs (1/4-inch injection ports) Models: 69-750, 69-550	✓	✓	✓	✓	
INU GCs (1/4-inch injection ports) Nodels: 301, 401, 421	✓	✓	✓	✓	
PerkinElmer GCs (1/4-inch injection ports) Models: Sigma, 1B-4B, 300, 2001, 2100	✓	✓	✓	✓	
PerkinElmer Auto SYS*	✓				

^{*}Does not require Uniliner liner adaptor.

Inlet Adaptor Kit for Dual Column Installation

for Agilent Capillary Injectors (Split/Splitless Fitting for Capillary Columns)





- Easier to install capillary columns due to the nut protruding farther from the insulated injection port chamber.
- Same column insertion depth as the original manufacturer's
- Kit includes adaptor fitting, 1/16" capillary nut, gold-plated 1.2 mm ID dual Vespel® ring inlet seal, one 0.4 mm ID two-hole ferrule, and one 0.5 mm ID two-hole ferrule.

Description	qty.	cat.#
Inlet Adaptor Kit for Dual Column Installation for Agilent Capillary Injectors	kit	27185
1.2 mm ID Dural Vasnal Bing Inlat Cool Cold Blated	2-pk.	21246
1.2 mm ID Dual Vespel Ring Inlet Seal, Gold-Plated	10-pk.	21247



Graphite Replacement Ferrules

ID	fitting size	qty.	cat.#	
0.5 mm	1/16"	10-pk.	20201	
	¹ /16"	50-pk.	20228	
0.8 mm	1/16"	10-pk.	20202	
	1/16"	50-pk.	20224	
¹ / ₄ -inch	1/4"	10-pk.	20210	



1/8-Inch Capillary Inlet Adaptor Fitting Kit

(Split/Splitless Fitting for 0.53 mm ID Capillary Columns)

- 1/8-inch split/splitless fitting accepts standard two-hole capillary ferrules and a standard 1/8-inch nut.
- Makes column installation easy due to the nut protruding farther from the insulated injection port chamber.
- The column insertion depth is the same as the original equipment.
- Kit includes adaptor fitting, capillary nut, stainless steel inlet seal, washer, and one 0.8 mm ID two-hole ferrule.
- Use recessed taper liners with this adaptor.

Description	qty.	cat.#	
1/8-Inch Capillary Inlet Adaptor Fitting Kit	kit	20645	
0.53 mm ID Dual-Column	2-pk.	20392	
1/16-inch ID (Opening) Replacement Inlet Seal	10-pk.	20393	

Two-Hole Ferrules for 1/8-Inch and 1/16-Inch Compression-Type Fittings

- Use 1/16-inch, two-hole ferrules with the ¹/₁₆-inch capillary inlet adaptor fitting kit (cat.# 27185).
- Use 1/8-inch, two-hole ferrules with the 1/8-inch capillary inlet adap fitting kit (cat.# 20645).

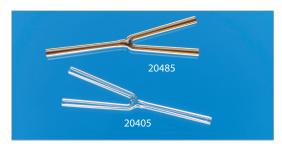
ıpt	or		
ID	qty.	Vespel/Graphite	
m	5-pk.	24848	
	E nk	24.94.0	

Fitting Size	Ferrule ID	Fits Column ID	qty.	Vespel/Graphite	
1/16"	0.4 mm	0.25/0.28 mm	5-pk.	24848	
1/16"	0.5 mm	0.32 mm	5-pk.	24849	
1/8"	0.8 mm	0.45/0.53 mm	5-pk.	20246	



Press-Tight® Connectors

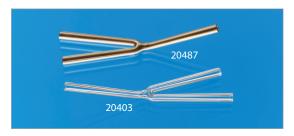
- Deactivated Press-Tight® connectors maintain complete inertness along the GC flow path.
- Siltek®-deactivated connectors are ideal for organochlorine pesticides analysis.
- Fit 0.33-0.74 mm OD columns (Restek* 0.1-0.53 mm ID).



Universal "Y" Press-Tight® Connectors An alternative method of performing dual-column confirmational analyses!

- Split sample flow onto two columns—perform confirmation analysis with a single injection.
- Split a single column flow to two detectors.

Description	ea.	3-pk.	
Universal "Y" Press-Tight Connector	20405	20406	
Universal "Y" Press-Tight Connector, Deactivated	20405-261	20406-261	
Universal "Y" Press-Tight Connector, Siltek Deactivated	20485	20486	



Universal Angled "Y" Press-Tight® Connectors

- Perform confirmation analysis with a single injection.
- Inlet and outlet ends conform to the column curvature alleviates column-end connection strain.

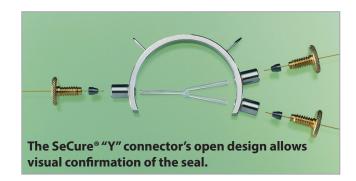
Description	ea.	3-pk.	
Universal Angled "Y" Press-Tight Connector	20403	20404	
Universal Angled "Y" Press-Tight Connector, Deactivated	20403-261	20404-261	
Universal Angled "Y" Press-Tight Connector, Siltek Deactivated	20487	20469	

Polyimide Resin

Securely connects a Press-Tight® connector to a fused silica column.



Description	Max. Temp.	qty.	cat.#	
Polyimide Resin	350 °C	5 grams	20445	



SeCure® "Y" Connector Kits

- Connect two analytical columns to a transfer line or guard column.
- Use standard "Y" Press-Tight connectors and 1/16" graphite ferrules.
- Reliable seal integrity—will not unexpectedly disconnect during temperature-programmed analyses.
- Open design allows visual confirmation of the seal for added confidence in the connection.
- Fit both Restek® cage designs.

Combine the simplicity of a "Y" Press-Tight® connector with the strength of a metal union. The ferrules and knurled nuts hold the fused silica tubing in place, which prevents the tubing from unexpectedly disconnecting, even at temperatures as high as

Kits include: SeCure® "Y" connector body, three knurled nuts, universal "Y" Press-Tight® union, and three ferrules.

Description	Ferrules Fit Column ID	qty.	cat.#
SeCure "Y" Connector Kit	0.18/0.25/0.28 mm	kit	20276
SeCure "Y" Connector Kit	0.32 mm	kit	20277
SeCure "Y" Connector Kit	0.45/0.53 mm	kit	20278
Knurled Nut		3-pk.	20279

MXT® "Y"-Union Connector Kits

For Connecting Metal and/or Fused Silica GC Columns

- Low dead volume, leak-tight connection.
- Reusable.
- Siltek® treatment ensures maximum inertness.
- · Ideal for connecting a guard column or transfer line to an analytical column.
- Use to oven temperatures of 350 °C.
- Available in union and "Y" configurations.
- Can also be used for connecting fused silica to metal.

Each kit contains the MXT® union; three 1/32-inch nuts; and three, one-piece, fused silica adaptors.

Description	qty.	cat.#
For 0.25 mm ID Columns	kit	21389
For 0.32 mm ID Columns	kit	21388
For 0.53 mm ID Columns	kit	21387





Purge-and-Trap Spargers

- Available with uniform frits to ensure maximum purging efficiency.
- Use nonfritted spargers for wastewater samples.
- Manufactured to tight tolerances to ensure a leak-tight seal.



Description	Volume	qty.	cat.#	
Fritted Spargers				
Fritted, 1/2-inch mount	5 mL	ea.	21150	
Fritted, 1/2-inch mount	10 mL	ea.	26138	
Fritted, 1/2-inch mount	25 mL	ea.	21151	
Non-Fritted Spargers				
Non-Fritted, 1/2-inch mount	5 mL	ea.	26139	
Non-Fritted, 1/2-inch mount	10 mL	ea.	26140	
Non-Fritted, 1/2-inch mount	25 mL	ea.	26141	



Moisture Control By-Pass Lines for Tekmar Instruments

- Increase response for ketones, alcohols, and acetates.
- Silcosteel®-deactivated tubing for increased inertness.
- Suitable for U.S. EPA Methods 8260, 524.2, and OLM4.1.
- Easily attaches in minutes.

Description	qty.	cat.#
Moisture Control By-Pass Line for Tekmar 3000	ea.	21035
Moisture Control By-Pass Line for Tekmar 3100	ea.	21109







Photoionization (PID) Lamps

Model 108-10.0/10.6 offers both 10.0 and 10.6 eV potential, has a 0.781" base diameter, and is used in Tracor, OI, and Baseline instruments. Model 103 has a 1.375" base and is used in HNU and SRI detectors. Model 108-BTEX lamp's higher output makes it ideal for detection of BTEX compounds.

Features	Benefits		
Longer life.	More for your money with each lamp.		
Model 108-BTEX has 33% more output than older models.	Operate continuously at 1 ma and 250 °C for 6 months and still have better than 50% of the initial output.		
Lamps individually tested.	Your lamp will work to specifications.		
Variety of models.	Among the best lamps available for most instrumentation.		

Description	eV Rating	Base	qty.	cat.#	
PID Lamp, Model 103 C	10.2	1.375"	ea.	20676	
PID Lamp, Model 108	10.0/10.6	0.781"	ea.	20675	
PID Lamp, Model 108-BTEX	10.0/10.6	0.781"	ea.	23020	
PID Lamp Polishing Kit (contains compound, swabs, and instruction		ing	kit	20674	



Antifoam Agent for Purge-and-Trap Samples

- Efficiently controls foam; effective over a wide pH range.
- No hazardous materials, no components that are target analytes.
- Effective at less than 0.1% of sample volume.

See page 546.



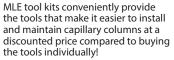
Make Life Easier (MLE) Capillary Tool Kits

Everything you need in one complete kit!

All 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 (0.25-0.65 mm OD)
- 1/4" x 5/16" open end wrench
- 3/8" x 7/16" open end wrench
- Rubber-tipped slide-lock tweezers
- Scoring wafers
- Inlet liner removal tool
- Septum puller
- · Mini wool puller/inserter tool
- · 4-inch tapered needle file
- Swivel head flashlight
- Mini hand drill set
- 15 cm 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 Bruker/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



- 7/16" x 1/2" open end wrench
- 1/2" x 9/16" open end wrench



- Capillary installation gauge for Shimadzu GCs
- Injector wrench for Shimadzu GCs
- 6 mm x 7 mm open end wrench
- 8 mm x 10 mm open end wrench
- 16 mm x 17 mm open end wrench



22186

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
- 6 mm x 7 mm open end wrench
- 8 mm x 10 mm open end wrench
- 16 mm x 17 mm open end wrench

Description	qty.	cat.#	
MLE Capillary Tool Kit for Agilent GCs	kit	22186	
MLE Capillary Tool Kit for Bruker/Varian GCs	kit	22184	
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	



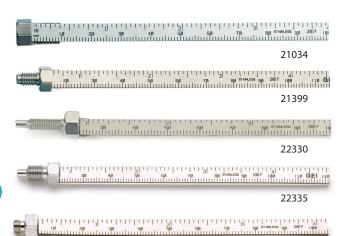








Easily seat ferrules for consistent installations!



Capillary Installation Gauge

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

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.

22333



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

Tighten the assembly to



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.#
Capillary Installation Gauge	ea.	21034
for Agilent-style fittings (compact ferrules)	ea.	21034
Capillary Installation Gauge		21399
for 1/16" fittings (1/16" ferrules)	ea.	21399
Capillary Installation Gauge		าาาาย
for Bruker/Varian GCs for use with 1/16" ferrules	ea.	22335
Capillary Installation Gauge		2222
for Shimadzu 17A, 2010, and 2014 GCs	ea.	22333
Capillary Installation Gauge		22220
for Thermo Scientific TRACE & Focus SSL (M4 ferrules)	ea.	22330
*For use with graphite ferrules only.		

Restek innovation!

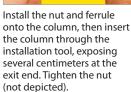


21894

Capillary Installation Gauge for Agilent 5973/5975 MS

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







Score and remove the exposed end of the column.



Loosen the nut.

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





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.
- Two styles to choose from: glass or silicone material.
- Glass caps are color-coded for identifying detector and injector ends.
- Not recommended for reuse.

Description	Material	qty.	cat.#	
Capillary Column Caps	Glass	10-pk.	21044	
Capillary Column Caps	Silicone	10-pk.	22858	





Scoring Wafer With Handle

- Ceramic wafer is straight-edged for cutting fused silica tubing cleanly.
- Unique, ergonomic handle is made of soft, comfortable rubber.

Description	qty.	cat.#
Scoring Wafer with Handle	2-pk.	23015

Ceramic Scoring Wafer

Four straight scoring edges for cutting fused silica tubing and four serrated edges for cutting MXT® metal capillary columns.



Description	qty.	cat.#	
Ceramic Scoring Wafers	5-pk.	20116	

Sapphire Scribe

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





and just a tap leaves a clean, square end.

20182

Description	qty.	cat.#
Sapphire Scribe	ea.	20182



Shortix® Capillary GC Column Cutter

- Consistently make precise, clean, square cuts with a diamond blade.
- Built-in magnifier to verify square cut.
- Use with 0.25 mm ID to 0.53 mm ID tubing (0.78 mm OD maximum).



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Description	qty.	cat.#
Shortix Capillary GC Column Cutter	ea.	23026
Maintenance Kit for Shortix Capillary GC Column Cutter (Includes: diamond cutting wheel, O-rings, and a tool to open the column cutter)	kit	23027

Reference Standards Documentation Search

Locate SDSs, certificates, and data packs by cat. # or lot #





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.

No more burned fingers!







20181

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



The Claw and The Claw Holder Kit

- Easily removes hot liners from injection ports.
- 4 mL vials (not included) can be replaced when dirty.

Never again will you burn your fingers removing a hot injection port liner. The Claw safely and cleanly removes liners, O-rings, or other small objects from the injection port. You can then place the hot objects in a clean 4 mL vial situated in The Claw holder until ready for reuse.



Description	qty.	cat.#
The Claw	ea.	26261
The Claw Holder Kit (includes The Claw and holder)	kit	26262
WISP 48 Snap Seal Vial	100-pk.	24658



Inlet Liner Packing Tool

- Position wool reproducibly every time.
- Accurate to a specific, measured depth.
- Can be used with all manufacturers' liners.







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 now 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 ≥ 2 mm.

Inlet Wrench for Agilent 5890/6850/6890 GCs

- Use to remove the septum nut and weldments during GC maintenance.
- Use the smaller end to remove the septum nut.
- Use the larger end to tighten the split/splitless weldment nut.
- High-quality stainless steel construction.
- Meets original equipment performance.



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





Inlet Wrench for Shimadzu 17A, 2010, and 2014 GCs

- Designed specifically for removing Shimadzu injection ports.
- High-quality stainless steel construction.

Description	Similar to Shimadzu Part #	qty.	cat.#	
Inlet Wrench for Shimadzu 17A, 2010, and 2014 GCs	221-46977-00	ea.	21159	



Open-End Wrench Set for use with Shimadzu 17A, 2010, and 2014 Capillary Installation Gauge

Description	qty.	cat.#
$^{1/\text{a}}$ " x 5 /1c" and 10 mm x 11 mm Open-End Wrench Set for use with Shimadzu 17A, 2010, and 2014 Capillary Installation Gauge	ea.	22334



Open-End Wrench Set

High-quality $^{1}/_{4}$ " x $^{5}/_{16}$ ", $^{3}/_{8}$ " x $^{7}/_{16}$ ", $^{7}/_{16}$ " x $^{1}/_{2}$ ", and $^{1}/_{2}$ " x $^{9}/_{16}$ " wrenches for tightening a wide variety of chromatography fittings.

Description	qty.	cat.#
Open-End Wrench Set	set	20387



Open-End Wrenches

High-quality wrenches for tightening capillary fittings.

Description	Size	qty.	cat.#
Open-End Wrenches	1/4" x 5/16"	2-pk.	20110
Open-End Wrenches	3/8" x ⁷ /16"	2-pk.	22455



Metric Wrench Set

High-quality 6 x 7 mm, 8 x 10 mm, and 16 x 17 mm wrenches for tightening a wide variety of fittings.

Description	qty.	cat.#	
Metric Wrench Set	set	22997	





Metric 9-Piece, Ball-Point Hex Key Set

Includes nine metric hex keys (Allen wrenches): 1.5, 2, 2.5, 3, 4, 5, 6, 8, and 10 mm.

Description	qty.	cat.#
Metric 9-Piece, Ball-Point Hex Key Set	set	22999



12-Piece, Ball-Point Hex Key Set

Includes twelve hex keys (Allen wrenches): 0.050", 1/16", 5/64", ³/₃₂", ⁷/₆₄", ¹/₈", ⁹/₆₄", ⁵/₃₂", ³/₁₆", ⁷/₃₂", ¹/₄", and ⁵/₁₆".

Description	qty.	cat.#
12-Piece, Ball-Point Hex Key Set	set	22998



Torx® Screwdriver Set

- Set includes TR-10, TR-15, and TR-20.
- Ideal for performing routine maintenance on Agilent 6890 and 7890 GCs.

Description	qty.	cat.#
Torx Screwdriver Set	set 2	23034

Torx® is a registered trademark of Textron Inc.





High-Temperature String

Use to restring capillary columns, attach column connectors to column cages, or hold the column in the GC oven. Capable of withstanding temperatures to 400 °C.

Description	qty.	cat.#
High-Temperature String	10 m	20109
High-Temperature String	450 m	20618



Slide-Lock Tweezers and 15 cm Compact Steel Ruler

- "Lock" capillary columns to the correct insertion distance recommended by the instrument manufacturer during installation.
- Useful for many laboratory tasks.

This duo provides an alternative way to install capillary columns to the correct insertion distance recommended by the instrument manufacturer.

Description	qty.	cat.#	
Slide-Lock Tweezers and 15 cm Compact Steel Ruler	set	20101	



Stainless Steel Tube Brushes/Surface Brush

Unlike brass brushes that can leave a metal residue, these stainless steel tube brushes (3/8-, 3/16-, and 1/4-inch) work well for cleaning dirty collectors, injector ports, and detector ports. The surface brush can be used to remove residue that builds up on metal detector jets and electronic contacts.

Description	qty.	cat.#
Stainless Steel Tube Brushes/Surface Brush	4-piece set	20112



Nylon Tube Brushes and Pipe Cleaner

Use to remove small septum fragments and residue from dirty glass inlet liners. Brushes are 1/8-, 3/16-, and 1/4-inch in diameter; pipe cleaner is one foot (30 cm) long.

Description	qty.	cat.#	
Nylon Tube Brushes and Pipe Cleaner	4-piece set	20108	



4" Tapered Needle Files

These files can be used for many purposes. They are especially useful for removing ferrules that are lodged in injector or detector ports.

Description	qty.	cat.#
4" Tapered Needle Files	2-pk.	20106



MXT® Needle Files

Multi-purpose files especially useful for cutting Siltek® treated stainless steel columns.

Description	qty.	cat.#
MXT Needle Files	2-pk.	21601





Drill ferrules to the proper ID in seconds! Includes three drills, for use with 0.25, 0.32, and 0.53 mm ID (0.4, 0.5, and 0.8 mm OD) capillary columns.

20122

Description	qty.	cat.#	
Mini Hand Drill Set	3-piece set	20122	



Stainless Steel Jet Reamers / Ferrule Removers

A great tool for cleaning detector jets or removing stuck ferrules from other small orifices. Serrated design is optimal for removing silica deposits and other contaminants.

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



Pocket Magnifier

- Small and easy to handle.
- 10x magnification makes it easy to see the column end to verify a square cut.

Description	qty.	cat.#
Pocket Magnifier	ea.	20124

GC Oven Thermometer

- Verify GC oven temperature.
- Quick measurements via sensor in the measuring tip.
- Swivel head can turn 180°.
- Wide measuring range: -50 °C to +350 °C.

Description	qty.	cat.#
GC Oven Thermometer	ea.	22066



22066

20117



Flashlight with Swivel Head

- Ideal for tight spaces—like inside a GC oven.
- Uses two AA batteries (included).

Description	qty.	cat.#
Flashlight with Swivel Head	ea.	22187

Septum Puller

- Use hooked end for removing septa and O-rings; pointed end works well for removing stuck ferrules or debris.
- Keep several on hand in your laboratory for other uses, too.



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



Remove a septum without damaging an expensive weldment.



