



Genuine Restek Replacement Parts

## Agilent GCs

**More** Parts & Accessories  
**for More** GC Systems

Agilent • Bruker/Varian • PerkinElmer • Shimadzu • Thermo Scientific • And More!

**RESTEK**

Innovative Chromatography Products [www.restek.com](http://www.restek.com)

# More Parts & Accessories for More GC Systems

Agilent • Bruker/Varian • PerkinElmer • Shimadzu • Thermo Scientific • And More!

Dear Colleague,

Restek's GC Accessories Team is devoted to bringing you the highest-quality products, delivered on time every time, to help you maximize data reproducibility and minimize instrument downtime—regardless of which brand of instrument you use. From our exceptionally inert Sky™ inlet liners on the right to our convenient EZ Twist Top® injection ports on page 16, Genuine Restek Replacement Parts are designed to meet or even exceed GC manufacturers' already-strict specifications and performance requirements. And of course, as with all Restek products, we also offer exemplary Plus 1 service before and after you order.

Do you have a product suggestion or question about Restek's GC accessories? Feel free to contact one of our team members or your Restek representative today. We look forward to hearing from you!

Sincerely,

*Scott Adams*

GC Accessories Product Marketing Manager



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## How can we help you today? Contact us...

customer **service:** 1-814-353-1300 (ext. 3)

technical **service:** 1-814-353-1300 (ext. 4) | email: [support@restek.com](mailto:support@restek.com)

### 3 ways to order

1. **CALL:** 1-800-356-1688 (ext. 3) or 1-814-353-1300 (ext. 3)  
Monday–Friday 8:00 a.m.–6:00 p.m. Eastern Time

2. **FAX:** 1-814-353-1309 24-hours a day

3. **ONLINE:** [www.restek.com](http://www.restek.com) 24-hours a day

4. **Outside the U.S.?** Find a distributor at  
[www.restek.com/distributor](http://www.restek.com/distributor)

## True Blue Performance

- Increase accuracy and reproducibility with state-of-the-art deactivation.
- Achieve lower detection limits for a wide range of active compounds.
- Use wool with confidence—quartz wool is deactivated after packing, preventing the loss of sensitive analytes.

The innovative deactivation used for Sky™ liners results in exceptional inertness for a wide range of analyte chemistries. By reducing active sites and enhancing analyte transfer to the column, these liners increase accuracy and precision, allowing lower detection limits for many active compounds. In addition to improved data quality, you'll benefit from fewer liner changes and less downtime for maintenance.

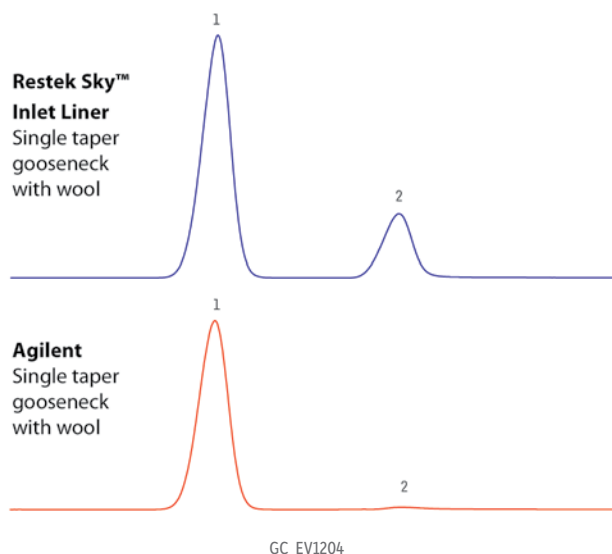


Visit us at [www.restek.com/sky](http://www.restek.com/sky)

### Greater Inertness Results in Higher Analyte Response

A common probe used to illustrate inertness is 2,4-dinitrophenol (2,4-DNP), which functions as an indicator of acid compound interactions. It is used to monitor system suitability in semivolatiles methods, which benefit from the use of wool to assist in sample vaporization. As shown in Figure 1, the response of 2,4-DNP with the Sky™ inlet liner, even at low concentrations, is superior to a competitor's liner. The Agilent liner with wool has active sites that adsorb 2,4-DNP and reduce its response. In contrast an excellent response is achieved using the Sky™ liner, even in the presence of wool.

**Figure 1:** The state-of-the-art deactivation used for Sky™ liners with wool results in higher responses for active acid compounds, such as 2,4-DNP.






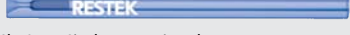

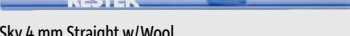

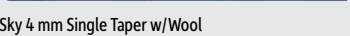


**Increase the response of  
active analytes with inert  
Sky™ inlet liners!**


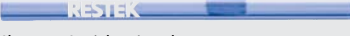
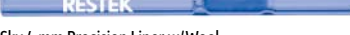

	2,4-DNP
	<u>Response Factor</u>
<b>Restek</b>	<b>0.28</b>
<b>Agilent</b>	<b>0.02</b>



**Peaks**  
1. Acenaphthene (IS)  
2. 2,4-DNP




**Column** Rxi®-5Sil MS, 15 m, 0.25 mm ID, 0.25 µm (cat.# 13620);  
**Sample** 10 µg/mL each 2,4-dinitrophenol and acenaphthene standard in  
methylene chloride; **Injection** Inj. Vol.: 1 µL splitless (hold 1 min.); **Liner:**  
Comparison of Sky™ Single Taper Gooseneck Inlet Liner with Wool  
(cat.# 23303.5) and Agilent Single Taper Gooseneck Inlet Liner with Wool  
(cat.# 5062-3587); **Inj. Temp.:** 250 °C; **Detector:** FID @ 300 °C.

# Sky™ Inlet Liners for Agilent GCs

Splitless Liners for Agilent GCs	ID OD x Length	Similar to Agilent part #	ea.	cat.# 5-pk.	25-pk.
 Sky 2 mm Splitless	2.0 mm 6.5 mm x 78.5 mm	5181-8818 (ea.) 5183-4703 (5-pk.) 5183-4704 (25-pk.)	23313.1	23313.5	23313.25
 Sky 2 mm Splitless w/Wool	2.0 mm 6.5 mm x 78.5 mm		23314.1	23314.5	23314.25
 Sky 2 mm Single Taper	2.0 mm 6.5 mm x 78.5 mm		23315.1	23315.5	23315.25
 Sky 2 mm Single Taper w/Wool	2.0 mm 6.5 mm x 78.5 mm		23316.1	23316.5	23316.25
 Sky 4 mm Straight	4.0 mm 6.3 mm x 78.5 mm	210-3003 (ea.) 210-3003-05 (5-pk.)	23301.1	23301.5	23301.25
 Sky 4 mm Straight w/Wool	4.0 mm 6.3 mm x 78.5 mm	19251-60540 (ea.) 5183-4691 (5-pk.) 5183-4692 (25-pk.)	23300.1	23300.5	23300.25
 Sky 4 mm Single Taper	4.0 mm 6.5 mm x 78.5 mm	5181-3316 (ea.) 5183-4695 (5-pk.) 5183-4696 (25-pk.)	23302.1	23302.5	23302.25
 Sky 4 mm Single Taper w/Wool	4.0 mm 6.5 mm x 78.5 mm	5062-3587 (ea.) 5183-4693 (5-pk.) 5183-4694 (25-pk.)	23303.1	23303.5	23303.25
 Sky 4 mm Double Taper	4.0 mm 6.5 mm x 78.5 mm	5181-3315 (ea.) 5183-4705 (5-pk.) 5183-4706 (25-pk.)	23308.1	23308.5	23308.25
 Sky 4 mm Cyclo Double Taper	4.0 mm 6.5 mm x 78.5 mm		23310.1	23310.5	23310.25

Split Liners for Agilent GCs	ID OD x Length	Similar to Agilent part #	ea.	cat.# 5-pk.	25-pk.
 Sky 1 mm Split	1.0 mm 6.3 mm x 78.5 mm	18740-80200 (ea.)	23333.1	23333.5	23333.25
 Sky 4 mm Straight w/Wool	4.0 mm 6.3 mm x 78.5 mm	19251-60540 (ea.) 5183-4691 (5-pk.) 5183-4692 (25-pk.)	23300.1	23300.5	23300.25
 Sky 4 mm Precision Liner w/Wool	4.0 mm 6.3 mm x 78.5 mm	210-4004-5 (5-pk.)	23305.1	23305.5	23305.25
 Sky 4 mm Cycloplitter	4.0 mm 6.3 mm x 78.5 mm		23312.1	23312.5	23312.25





Split/Splitless Liners for Agilent GCs	ID OD x Length	Similar to Agilent part #	ea.	cat.# 5-pk.	25-pk.
 Sky 4 mm Straight w/Wool	4.0 mm 6.3 mm x 78.5 mm	19251-60540 (ea.) 5183-4691 (5-pk.) 5183-4692 (25-pk.)	23300.1	23300.5	23300.25
 Sky Low Pressure Drop Precision Liner w/Wool	4.0 mm 6.3 mm x 78.5 mm		23309.1	23309.5	

Direct Injection Liners for Agilent GCs (for 0.25/0.32/0.53mm ID Columns)	ID OD x Length	Similar to Agilent part #	ea.	cat.# 5-pk.	25-pk.
 Sky Drilled Uniliner (hole near bottom)	4.0 mm 6.3 mm x 78.5 mm	G1544-80730 (ea.)	23306.1	23306.5	23306.25
 Sky Drilled Uniliner (hole near bottom) w/Wool	4.0 mm 6.3 mm x 78.5 mm		23307.1	23307.5	
 Sky Drilled Uniliner (hole near top)	4.0 mm 6.3 mm x 78.5 mm		23311.1	23311.5	23311.25


NEW!



CIS4 and PTV Liners  
for Agilent GCs

	ID OD x Length	Similar to Agilent part #	ea.	cat.# 5-pk.	10-pk.
 On Column PTV	1.7 mm 3.0 mm x 71 mm		23430.1	23430.5	
 Single Baffle PTV	2.0 mm 3.0 mm x 71 mm	5183-2036 (10-pk.)			23431.10
 Single Baffle PTV w/Wool	2.0 mm 3.0 mm x 71 mm	5183-2037 (10-pk.)			23432.10
 Baffled PTV	1.5 mm 3.0 mm x 71 mm	5183-2038 (10-pk.)			23433.10

SPME Liners  
for Agilent GCs

	ID OD x Length	ea.	cat.# 5-pk.	25-pk.
 SPME Liner	0.75 mm 6.35 mm x 78.5 mm	23434.1	23434.5	

## Liners for Agilent MMI



	ID OD x Length	Similar to Agilent part #	ea.	cat.# 5-pk.
Single Taper w/Dimple	2.0 mm 6.4 mm x 78.5 mm	5190-2296 (ea.)	23334.1	23334.5

# True Blue Performance

Also Available for **PerkinElmer, Shimadzu, Thermo Scientific, & Varian GCs**

Exceptionally inert, Sky™ inlet liners with a **state-of-the-art deactivation** improve trace level analysis.

**Sky**™  
Inlet Liners

- **Increase accuracy and precision** by preventing loss of sensitive analytes—even when using wool.
- **Achieve lower detection limits** for a wide range of active compounds.
- **Ensure liner-to-liner reproducibility** through consistent manufacturing and extensive testing.

[www.restek.com/sky](http://www.restek.com/sky)





Siltek®-Deactivated  
Inlet Liners

### Intermediate Polarity (IP)–Deactivation

- Phenylmethyl-deactivated surface for better recovery of polar and nonpolar compounds.
- Compatible with most common solvents.
- Our standard deactivation—every clear Restek liner is IP deactivated unless otherwise requested.

### Siltek®-Deactivation

For Siltek®-deactivated inlet liners, add the corresponding suffix number to the liner catalog number.

- Maximizes the inertness of the sample pathway with proprietary deactivation.
- Minimizes breakdown.
- Low bleed.
- Thermally stable.
- “Clean and green”—manufactured without the use of harmful organic solvents.
- Ideal for chlorinated pesticides.

The patented Siltek® deactivation process for liners produces a highly inert glass surface that features high temperature stability, extreme durability, and low bleed. Try Siltek® liners, guard columns, and connectors for better recovery of sample analytes.

qty.	Siltek Liner		Siltek Liner w/Wool		Siltek Liner w/CarboFrit	
each	-214.1	addl. cost	-213.1	addl. cost	-216.1	addl. cost
5-pk.	-214.5	addl. cost	-213.5	addl. cost	-216.5	addl. cost
25-pk.	-214.25	addl. cost	-213.25	addl. cost	-216.25	addl. cost

### Base-Deactivation

For base-deactivated inlet liners, add the corresponding suffix number to the liner catalog number.

qty.	Base-Deactivated Liner		Base-Deactivated Liner w/ Base-Deactivated Wool		Base-Deactivated Liner w/CarboFrit	
each	-210.1	addl. cost	-211.1	addl. cost	-229.1	addl. cost
5-pk.	-210.5	addl. cost	-211.5	addl. cost	-229.5	addl. cost
25-pk.	-210.25	addl. cost	-211.25	addl. cost	-229.25	addl. cost

## Don't Forget Routine Maintenance

Inlet liners are the key to good injection port maintenance; changing them regularly helps prevent problems such as:

- Sample degradation resulting in poor response.
- Sample adsorption resulting in poor peak shape (tailing).
- Sample discrimination.
- Irreproducibility.
- Extraneous peaks from contamination or cored septum particles.



















Finally, be sure to condition your liners at 20 °C higher than the operating inlet temperature for a minimum of 10 minutes to prepare them for use. By following these basic tips, you can avoid inlet problems and improve chromatographic performance.



## Looking for the Best Solution?

Sky™ inlet liners, featuring a state-of-the-art deactivation, give you the inertness you need for accurate, reproducible trace level results.

See pages 1-3 for details.

Splitless Liners for Agilent GCs	Benefits/Uses	ID* OD x Length	Similar to Agilent part #	ea.	cat.# 5-pk.	25-pk.
 2 mm Splitless	trace samples <2 µL	2.0 mm 6.5 mm x 78.5 mm	5181-8818 (ea.) 5183-4703 (5-pk.) 5183-4704 (25-pk.)	20712	20713	20714
 4 mm Splitless	trace samples >2 µL	4.0 mm 6.5 mm x 78.5 mm	210-3003 (ea.) 210-3003-5 (5-pk.)	20772	20773	20774
 4 mm Splitless w/Deact. Wool	trace samples >2 µL	4.0 mm 6.5 mm x 78.5 mm	19251-60540 (ea.) 5183-4691 (5-pk.) 5183-4692 (25-pk.)	22400	22401	22402
 5 mm Splitless	accommodates more polar solvents and lower MW solvents	5.0 mm 6.5 mm x 78.5 mm		22975	22976	
 2 mm Splitless (Quartz)	trace samples <2 µL	2.0 mm 6.5 mm x 78.5 mm	18740-80220 (ea.) 5183-4707 (5-pk.)	20914	20915	
 4 mm Splitless (Quartz)	trace samples >2 µL	4.0 mm 6.5 mm x 78.5 mm		20912	20913	
 4 mm Splitless w/Deact. Wool (Quartz)	trace samples >2 µL	4.0 mm 6.5 mm x 78.5 mm		22403	22404	
 Single Taper Splitless (2 mm)	trace samples <2 µL	2.0 mm 6.5 mm x 78.5 mm		20795	20796	20797
 Single Taper Splitless (4 mm)	trace samples >2 µL	4.0 mm 6.5 mm x 78.5 mm	5181-3316 (ea.) 5183-4695 (5-pk.) 5183-4696 (25-pk.)	20798	20799	20800
 Single Taper Splitless (4 mm) w/Deact. Wool	trace samples >2 µL	4.0 mm 6.5 mm x 78.5 mm	5062-3587 (ea.) 5183-4693 (5-pk.) 5183-4694 (25-pk.)	22405	22406	22407
 Single Taper Splitless (5 mm)	accommodates more polar solvents and lower MW solvents	5.0 mm 6.5 mm x 78.5 mm		22973	22974	
 Double Taper Splitless (4 mm)	trace, active samples >2 µL	4.0 mm 6.5 mm x 78.5 mm	5181-3315 (ea.) 5183-4705 (5-pk.) 5183-4706 (25-pk.)	20784	20785	20786
 Cyclo Double Taper (2 mm)	trace, active, dirty samples <2 µL	2.0 mm 6.5 mm x 78.5 mm		20907	20908	
 Cyclo Double Taper (4 mm)	trace, active, dirty samples >2 µL	4.0 mm 6.5 mm x 78.5 mm		20895	20896	20997
 Recessed Single Taper (2 mm)**	base easily packs with wool for dirty samples <2 µL	2.0 mm 6.5 mm x 78.5 mm		20980	20981	20982
 Recessed Single Taper (4 mm)**	base easily packs with wool for dirty samples >2 µL	4.0 mm 6.5 mm x 78.5 mm		20983	20984	20985
 Recessed Single Taper (4 mm) w/Deact. Wool**	base easily packs with wool for dirty samples >2 µL	4.0 mm 6.5 mm x 78.5 mm		22408	22409	22410
 Recessed Double Taper (4 mm)**	trace, active samples >2 µL	4.0 mm 6.5 mm x 78.5 mm		20986	20987	20988

\*Nominal ID at syringe needle expulsion point.

\*\*Use with two-hole ferrule for dual-column analysis.

All liners are shipped with intermediate polarity (IP) deactivation unless otherwise requested. (See page 4.)












Restek can provide any of the liners shown with any of three proprietary deactivation processes, including highly inert Siltek® coating. Ordering information is on **page 4**.






Packings materials, including wool and CarboFrit®, can be provided in any liner—subject to the liner ID and geometry. Ordering information is on **page 8**.



Siltek®-Deactivated Liners

Split Liners for Agilent GCs	Benefits/Uses	ID* OD x Length	Similar to Agilent part#	ea.	cat.# 5-pk.	25-pk.
 1 mm Split**	for purge & trap inlet splitting or sample <1 µL	1.0 mm 6.3 mm x 78.5 mm	18740-80200 (ea.) 5183-4709 (5-pk.)	20972	20973	
 4 mm Split w/Deact. Wool	universal, use with Agilent 7673 autosampler	4.0 mm 6.3 mm x 78.5 mm	19251-60540 (ea.) 5183-4691 (5-pk.) 5183-4692 (25-pk.)	20781	20782	20783
 Laminar Cup Splitter	high MW compounds	4.0 mm 6.3 mm x 78.5 mm		20801	20802	
 mini-Lam Split	high MW compounds	4.0 mm 6.3 mm x 78.5 mm		20990	20991	
 Cup Splitter	high & low MW compounds	4.0 mm 6.3 mm x 78.5 mm	18740-80190 (ea.) 5183-4699 (5-pk.)	20709	20710	
 Cyclosplitter	dirty samples, many injections before cleaning required	4.0 mm 6.3 mm x 78.5 mm		20706	20707	20708
 2 mm Split Precision Liner w/Deact. Wool	dirty samples, trace samples	2.0 mm 6.3 mm x 78.5 mm		20823	20824	
 4 mm Split Precision Liner w/Deact. Wool	dirty samples, trace samples	4.0 mm 6.3 mm x 78.5 mm	210-4004-5 (5-pk.)	21022	21023	20979
 4 mm Single Taper Precision Liner w/Deact. Wool	dirty samples, trace samples	4.0 mm 6.3 mm x 78.5 mm	210-4022-5 (5-pk.)	22983	22984	22985

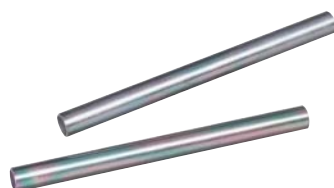
Split/Splitless Liners for Agilent GCs	Benefits/Uses	ID* OD x Length	Similar to Agilent part #	ea.	cat.# 5-pk.	25-pk.
 Low Pressure Drop Precision Liner w/Deact. Wool	universal	4.0 mm 6.3 mm x 78.5 mm		21032	21033	
 Low Pressure Drop Liner w/Deact. Wool	universal	4.0 mm 6.3 mm x 78.5 mm	5183-4647, 5183-4711 (ea.) 5183-4701, 5183-4712 (5-pk.) 5183-4713 (25-pk.)	20994	20995	20996

SPME Liners for Agilent GCs	Benefits/Uses	ID* OD x Length	cat.# ea.	cat.# 5-pk.
 SPME Liner	ideal for low-volume SPME applications	0.75mm 6.35mm x 78.5mm	21110	21111

\*Nominal ID at syringe needle expulsion point.

\*\*Use this liner for increased sensitivity.

All liners are shipped with intermediate polarity (IP) deactivation unless otherwise requested. (See page 4.)






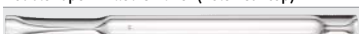
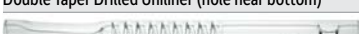
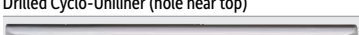


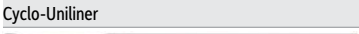
**Siltek®: Unsurpassed  
Inertness & Durability!**

## Siltek® Metal Inlet Liners for Agilent GCs

- Won't crack, chip, or break like glass liners.
- Excellent response for pesticides, phenols, and other active compounds.

Liner Type (5.2mm ID x 6.3mm OD x 78.5mm)	5-pk.	25-pk.
Cyclo/Single Taper	20974	20975
Single Taper	21702	21703
Cyclosplitter	20726	20729
Split/Splitless w/Deact. Wool	21700	21701


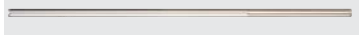



DI Liners for Agilent GCs** (For 0.25/0.32/0.53mm ID Columns)	Benefits/Uses	ID* OD x Length	Similar to Agilent part #	ea.	cat.# 5-pk.	25-pk.
 Drilled Uniliner (hole near top)	trace, active samples, high recovery & linearity	4.0 mm 6.3 mm x 78.5 mm		21054	21055	20998
 Drilled Uniliner (hole near bottom)	trace, active samples, high recovery & linearity	4.0 mm 6.3 mm x 78.5 mm	G1544-80730	20756	20771	
 Double Taper Drilled Uniliner (hole near top)	trace, active samples, high recovery & linearity	4.0 mm 6.3 mm x 78.5 mm		20508	20509	
 Double Taper Drilled Uniliner (hole near bottom)	trace, active samples, high recovery & linearity	4.0 mm 6.3 mm x 78.5 mm	G1544-80700	20954	20989	
 Drilled Cyclo-Uniliner (hole near top)	trace, dirty, high MW, active samples, high recovery & linearity	4.0 mm 6.3 mm x 78.5 mm		22979	22980	
 1 mm Uniliner	trace, active samples, samples <1 µL	1.0 mm 6.3 mm x 78.5 mm		21052	21053	
 Uniliner	trace, active samples, high recovery & linearity	4.0 mm 6.3 mm x 78.5 mm		22268	22269	
 Cyclo-Uniliner	trace, dirty, high MW active samples, high recovery & linearity	4.0 mm 6.3 mm x 78.5 mm		22270	22271	
 Open-top Uniliner w/Deact. Wool	trace, dirty, active samples, high recovery & linearity	4.0 mm 6.3 mm x 78.5 mm		22272	22273	

\*Nominal ID at syringe needle expulsion point.




\*\*Hole in Drilled Uniliner liner makes direct injection possible with EPC-equipped Agilent 6890 & 7890 GCs!

## Liners for APEX ProSep 800 & ProSep 800 Plus GCs

APEX Liners for ProSep 800 & ProSep 800 Plus GCs	Benefits/Uses:	ID* OD x Length	Similar to APEX part #	ea.	cat.#
 Mega IV (4.0 mm ID)	injections ≤125 µL	4.0 mm 6.0 mm x 243 mm	L-00410		21075
 Micro I (1.0 mm ID)	injections ≤5 µL	1.0 mm 6.0 mm x 243 mm	L-00110		21073
 MIDI II (2.0 mm ID)	injections ≤25 µL	2.0 mm 6.0 mm x 243 mm	L-00210		21074


\*Nominal ID at syringe needle expulsion point.

## Liners for ATAS Injectors

Liners for ATAS Injectors	Benefits/Uses:	ID* OD x Length	Similar to ATAS part #	ea.	cat.# 5-pk.
 ATAS Open Liner, 3 mm	universal	3.0 mm 5.0 mm x 80 mm		22415	22416
 ATAS Open Liner, 1 mm	trace, active samples <1 µL	1.0 mm 5.0 mm x 80 mm	A100049	22417	22418
 ATAS Fritted Gooseneck	dirty samples	3.0 mm 5.0 mm x 80 mm	A100126	22419	22420

\*Nominal ID at syringe needle expulsion point.

## 3.3mm ID DMI Inlet Liner For ATAS LINEX DMI System OPTIC 2 and 3 inlets

Liners for ATAS LINEX DMI System OPTIC 2 and 3 inlets	ID* OD x Length	cat.# 5-pk.
 ATAS LINEX DMI Liner	3.3 mm 5.0 mm x 81 mm	22353

All liners are shipped with intermediate polarity (IP) deactivation unless otherwise requested. (See page 4.)



24324

## Deactivated Wool

- More inert than our traditional fused silica wool.
- Use to vaporize a sample in a liner prior to introduction into a capillary column.

Description	qty.	cat.#
Deactivated Wool	10 grams	24324



20999

## Base-Deactivated Wool

Ideal for amines and other basic compounds.

Description	qty.	cat.#
Base-Deactivated Wool	10 grams	20999

## Prepacked Inlet Liners

Let Restek do the work! Just add the appropriate suffix to the liner catalog number.

qty.	Wool	CarboFrit	
ea.	-200.1	-209.1	addl. cost
5-pk.	-200.5	-209.5	addl. cost
25-pk.	-200.25	-209.25	addl. cost

†CarboFrit inserts require a neck greater than 2 mm.

## CarboFrit® Inlet Liner Packing Material

- Highly inert.
- Extends analytical column lifetime.
- Enhances reproducibility of split and splitless injections.
- Uniform pore size and consistent packing density guarantee consistent flow through the liner.
- Easy to install in any liner with an ID > 3.5 mm when using puller-insert tool listed below.\*



Add the corresponding suffix number to the liner catalog number.

qty.	suffix	
ea.	-209.1	addl. cost
5-pk.	-209.5	addl. cost
25-pk.	-209.25	addl. cost

\*Liners with IDs less than 3.5 mm are difficult to pack. We will pack them on a custom basis (minimum neck ID of 2 mm required).

## Replacement CarboFrit® Inserts

Description	qty.	cat. #
Frits for liner ID ≤ 4 mm	10-pk.	20295
Frits for liner ID > 4 mm	10-pk.	20294



21642

## CarboFrit® Puller/Inserter Tool

- Hook end for removing CarboFrit® inserts.
- Bent end (90°) for inserting CarboFrit® inserts.

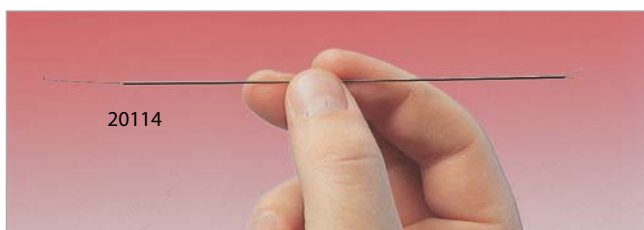
Description	qty.	cat.#
CarboFrit Puller/Insert Tool	ea.	21642



**tech**  
tip

### Use of Packings with an Autosampler

We recommend using an injection port liner with wool or CarboFrit® packing when making injections with an autosampler. If there is no packing material in the liner, the solvent droplets act like water on a hot iron: they bounce around until vaporized (Leidenfrost phenomenon). Because autosamplers make rapid injections, samples can be incompletely vaporized, leading to nonreproducible peak response and tailing. You can prevent this by using wool or CarboFrit® packing material in the splitless liner to provide a surface for the solvent droplets to "sit" on until the heat from the injector vaporizes them.



### Mini Wool Puller/Inserter

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



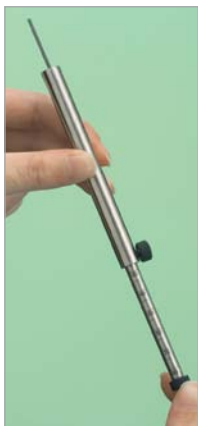
Description	qty.	cat. #
Mini Wool Puller/Inserter	2-pk.	20114



**Eliminates user variation!**

### Inlet Liner Packing Tool

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



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

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

Insert the liner packing tool into the liner until the tool bottoms out. Remove the tool. The wool is 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  $\geq$  2 mm.



**No more burned fingers!**

### 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.



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 have to 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



### Injector Maintenance

Approximately ninety percent of "bad" chromatography is traceable to problems in the injection port. These problems include contaminated carrier gas, incorrect injector flows, active or dirty sites on inlet seals and liners, improper use of wool, leaks, backflash, discrimination, incorrect injector temperature, poor column installation, and use of the wrong injection technique. To minimize injection port problems, set up a routine maintenance schedule and be sure to investigate the injector first when troubleshooting.



22839



## restek recommends

When your Leak Detector batteries need to be replaced, send the unit to us for a routine maintenance review to ensure continued sensitivity and reliability. We will replace not only the batteries, but also the probe and internal/external tubing. We will also recertify your unit. Contact Customer Service to send in your Leak Detector for maintenance (cat. #22839-R).



Carrying/storage case included with purchase of unit.



22658

Verify hard-to-reach leaks using the small probe adaptor (sold separately).

## Restek Electronic Leak Detector

Don't let a small leak turn into a costly repair—protect your instrument and analytical column by using a Restek Leak Detector.

Features & Benefits include:

- Optimized sample flow path.
- Ergonomic, hand-held design.
- Rugged side grips for added durability.
- Handy probe storage for cleanliness and convenience.
- Longer lasting battery, up to 6 hours of continuous use.
- Automatic shut-off.
- 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 1-year warranty, the Restek Leak Detector is the industry standard for performance and affordability in hand-held leak detectors.

### Leak Detector Facts

Detectable gases:	helium, nitrogen, argon, carbon dioxide, hydrogen
Battery:	Rechargeable Ni-MH internal battery pack (6 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

### Limits of Detection

These gases can be detected with the Restek Electronic Leak Detector at the following leak rates:

#### Minimum Detectable Gas Limits and Indicating LED Color:

- Helium,  $1.0 \times 10^{-5}$ , red LED
- Hydrogen\*,  $1.0 \times 10^{-5}$ , red LED
- Nitrogen,  $1.4 \times 10^{-3}$ , yellow LED
- Argon,  $1.0 \times 10^{-4}$ , yellow LED
- Carbon Dioxide,  $1.0 \times 10^{-4}$ , yellow LED

Gas detection limits measured in atm cc/sec

Description	qty.	cat.#
Leak Detector with Hard-Sided Carrying Case and Universal Charger Set (U.S., UK, European, Australian)	ea.	22839
Leak Detector Routine Maintenance Review	ea.	22839-R
Soft-Side Storage Case	ea.	22657
Small Probe Adaptor	ea.	22658

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

\*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.



Checking for leaks maintains the integrity of a GC system.

## 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 shut-off feature.
- Use as a benchtop or hand-held 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 Flowmeter 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 device capable of measuring volumetric flow for most gases. Real-time measurements can be made for various types of flow paths, including continually changing gas types. This portable unit is designed for easy hand-held use, and the stand adds benchtop convenience.

### Flowmeter Facts:

Type 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

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.



## 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).



## Viton® O-Rings for Agilent GCs

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



Description	Max. temp.	Similar to Agilent part #	qty.	cat.#
Viton O-Rings for Agilent GCs	250 °C	5188-5365	25-pk.	20377

## Graphite O-Rings for Agilent and Varian 1177 Injectors

Excellent thermal stability at injection  
port temperatures up to 450 °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

## 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

## 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

## 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.



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



## Septa for Agilent GCs

- Preconditioned and ready to use.
- Packaged in precleaned glass jars.

Septum Diameter	25-pk.	50-pk.	100-pk.
<b>Thermolite Septa (usable to 340 °C inlet temp.)</b>			
5 mm (3/16")	27120	27121	27122
9.5 mm (3/8")	27135	27136	27137
10 mm	27138	27139	27140
11 mm (7/16")	27141	27142	27143
<b>Premium Non-stick BTO Septa (usable to 400 °C inlet temp.)</b>			
5 mm CenterGuide		27082	27083
9.5 mm (3/8")		27086	27087
10 mm		27088	27089
11 mm (7/16") CenterGuide		27090	27091

## HANDY septum size chart

Agilent Instrument	Septum Diameter (mm)
5880A, 5890, 6890, 6850, 7890, PTV	11
5700, 5880	9.5/10
On-Column Injection	5



## Repair and Upgrade Your Agilent GC!

Restek offers a whole line of innovative  
replacement products for Agilent GCs. From  
injector to detector, the GC accessory parts you  
need are at [www.restek.com/gcacc](http://www.restek.com/gcacc)

### 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).
- Maximum temperature—Agilent 7890, 6890, 5890 Series II: 325 °C; Agilent 5890A: 300 °C.

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.

Description	Merlin #	Similar to Agilent#	cat.#
<b>General Purpose Kit for Agilent GCs (3 to 100 psi)</b>			
Nut & 2 General Purpose (#410) Microseals	404		22810
Nut & 1 General Purpose (#410) Microseal	405	5182-3442	22811
<b>Low Pressure Kit for Agilent GCs (1 to 45 psi)</b>			
Nut & 2 Low Pressure (#310) Microseals	304	5181-8833	22813
Nut & 1 Low Pressure (#310) Microseal	305	5181-8816	22814
<b>Replacement Microseals</b>			
General Purpose Microseal (most applications, 3 to 100 psi)	410	5182-3444	22812
Low Pressure Microseal (1 to 45 psi)	310	5181-8815	22815
Microseal for SPME Applications (3 to 100 psi)	21-01		22782
Replacement Microseal Nut	403	5182-3445	22809



### 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 MicroShot™ 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 autosampler 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.



22226



1/16" Adaptor  
Fitting



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-plated 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.

1.2 mm ID Flip Seal Dual Vespel Ring Inlet Seal	2-pk.	10-pk.
Gold-Plated	23411	23413
Siltek-Deactivated	23412	23414
Flip Seal Dual Vespel Ring Inlet Seal Kit	qty.	cat.#
Includes: gold-plated 1.2 mm ID 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.

## Dual Vespel® Ring Inlet Seals

Washerless, leak-tight seals for Agilent 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.



Extend your column lifetimes!

0.8 mm ID Dual Vespel Ring Inlet Seal	2-pk.	10-pk.	50-pk.
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.	10-pk.	
Gold-Plated	21246	21247	
Siltek-Treated	21248	21249	
Stainless Steel	21244	21245	

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

- Ideal for high-flow split applications.
- Washerless, leak-tight seals.

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



A Dual  
Vespel® ring  
inlet seal  
eliminates  
the need for a  
washer!

## Replacement Inlet Seals With Washers

- Siltek® treatment provides inertness similar to fused silica.
- 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 Installation 0.8 mm ID (Opening)	Similar to Agilent part #	2-pk.	10-pk.	50-pk.
Gold-Plated	18740-20885	21317	21318	23415
Siltek-Treated		21319	21320	23416
Stainless Steel	18740-20880	21315	21316	23417
<b>0.25/0.32 mm ID Dual-Column Installation</b>				
<b>1.2 mm ID (Opening)</b>		<b>2-pk.</b>	<b>10-pk.</b>	
Gold-Plated		21305	21306	
Siltek-Treated		21307	21308	
Stainless Steel		20390	20391	
<b>0.53 mm ID Dual-Column Installation</b>				
<b>3/16-inch ID (Opening)</b>		<b>2-pk.</b>	<b>10-pk.</b>	
Stainless Steel		20392	20393	

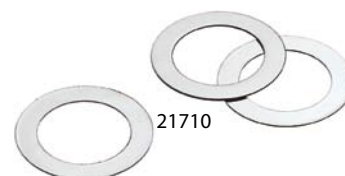


Note: The 1.2 mm inlet seal is recommended when installing two columns using a two-hole Vespel®/graphite ferrule.

All seals include washers.

## Replacement Inlet Seal Washers

Description	Similar to 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 on Agilent 5890 GCs.
- All seals include washers.

0.8 mm ID Cross-Disk Inlet Seal	Similar to Agilent part #	2-pk.	10-pk.
Gold-Plated	5182-9652	20477	20476
Siltek-Treated	—	20475	20474
1.2 mm ID Cross-Disk Inlet Seal	Similar to Agilent part #	2-pk.	10-pk.
Gold-Plated	—	21009	21010
Siltek-Treated	—	21011	21012



### Silver PTV Seals for Agilent 6890 GCs

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



## 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 **innovation!**  
Patented.

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



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

Description	qty.	cat.#
<b>Injection Port Assembly Kit</b> 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
<b>Injection Port Assembly Kit, Siltek Treated</b> 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
High Temperature Weldment O-Rings	10-pk.	23405
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.	21242
	10-pk.	21243
Weldment Removal Tool	ea.	22728

Visit [www.restek.com/slideshows](http://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).



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.



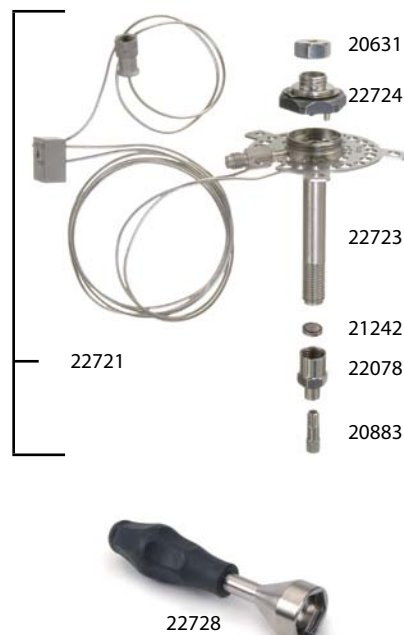
## EZ Twist Top® Split/Splitless Injection Port for Agilent 6890/6850 GCs (for use with large canister type filter)

Description	qty.	cat.#
<b>Injection Port Assembly Kit</b> 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
<b>Injection Port Assembly Kit, Siltek Treated</b> 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



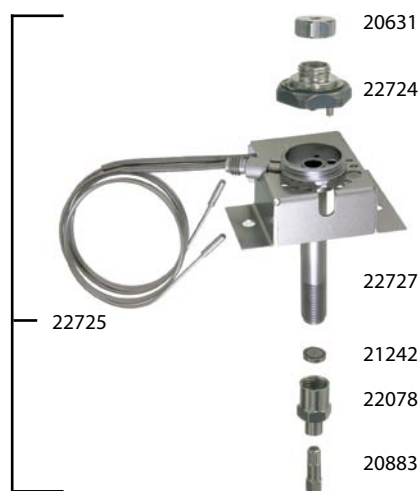
## EZ Twist Top® Split/Splitless Injection Port for Agilent 6890/6850 GCs with Pencil Traps

Description	qty.	cat.#
<b>Injection Port Assembly Kit</b> 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	22721
<b>Injection Port Assembly Kit, Siltek Treated</b> 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	22722
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.	22723
Shell Weldment, Siltek Treated	ea.	22730
Weldment O-rings	10-pk.	22729
High Temperature Weldment O-Rings	10-pk.	23405
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



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

Description	qty.	cat.#
<b>Injection Port Assembly Kit</b> 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
<b>Injection Port Assembly Kit, Siltek Treated</b> 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	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
High Temperature Weldment O-Rings	10-pk.	23405
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



## 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

\*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

\*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



### Installing a New Weldment

To eliminate possible leaks and damage to the weldment, always replace the split vent line, nut, and ferrule when installing a new shell weldment.

Did you know Restek offers a full line of Genuine Restek Replacement Parts for many instrument manufacturers? Visit [www.restek.com/gcacc](http://www.restek.com/gcacc) for more information.



20117

### 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—can be used in many different ways.



Description	qty.	cat.#
Septum Puller	ea.	20117

### Septum Nuts for use with Agilent 5890/6890/6850/7890 Split/Splitless Injectors

- 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.



21309

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 5890/6890/6850/7890 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.



24918

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

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



22065

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



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

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

injection port  
bore cleaneraluminum oxide  
sanding disk (cleans  
critical seal on base  
of injector)

21393

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

### Rethreading Tool for Agilent Split/Splitless Injection Ports

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



23018

Worn & damaged threads can allow oxygen into the system—compromising analytical results and destroying columns.

### 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, repeat as necessary. When done, wipe threads with methanol to remove any debris.



Description	qty.	cat.#
Rethreading Tool	ea.	23018



### Minimizing Injector Discrimination

When an injected sample is not completely vaporized, lower percentages of compounds that are less volatile (i.e., compounds with high boiling points or high molecular weights) are transferred into the analytical column. As a result, these later-eluting compounds will have progressively decreased peak areas. You can minimize injector discrimination by reducing injector flows, increasing the injector temperature, using pressure pulse injection or a fast autosampler, or using an injector liner that aids in vaporization (e.g., a laminar cup splitter or a liner packed with wool).

## Heater Block

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

Meets or exceeds original  
manufacturer's performance.



27199

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

## Heater Block Retaining Nuts for Agilent GC Split/Splitless Injectors

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



23042

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



27200

## 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.

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



23040

23039

## Oven Temperature Sensor Assembly for Agilent GCs

Description	Similar to Agilent part #	qty.	cat.#
Oven Temperature Sensor for Agilent 5890 GC	05890-61030	ea.	23040
Oven Temperature Sensor for Agilent 6890 GC	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.



20634

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



22820



21610

22064

22800



23031

23032

## Replacement Chemical Traps 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.

Description	Similar to Agilent part #	qty.	cat.#
Replacement Split Vent Trap for Agilent 6890/6850 GCs	G1544-80550	ea.	22820
Replacement Chemical Trap for Agilent 5890 GCs	05890-61260	ea.	21610
Split Vent Line (32-inch) for Agilent GCs Includes: all installation hardware	19251-80525	2-pk.	22800
O-Rings for Agilent Trap Fittings	5180-4181	25-pk.	22064
Optional Split Vent Trap Assembly for Agilent 6890/6850 GCs	G1544-60610	kit	23031
Replacement Traps (2) and O-Rings (4)	G1544-80530	kit	23032

## Heat Sink for Agilent 5890 GC Split/Splitless Injector

Meets or exceeds original  
manufacturer's performance.

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



20409





27184

### 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
0.8 mm ID Dual Vespel Ring Inlet Seal, Gold-Plated	2-pk.	21240
	10-pk.	21241

### Direct Replacement Reducing Nut

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



22078

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



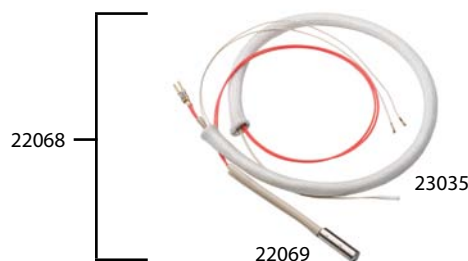
24323

### EPC Test Kit for Agilent 6890 GCs

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

Description	Similar to 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.

Description	Similar to 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



### 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.

Description	Similar to Agilent part #	qty.	cat.#
Air Diverter for Agilent 5890/6890/7890 GCs	19247-60510, G1530-80650	ea.	22076



### 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.



20181

**No more burned fingers!**



#### Description

Inlet Liner Removal Tool

#### qty.

3-pk.

#### cat.#

20181



**MLE**  
Make Life  
Easier!

22186

**Everything you need in one complete kit!**

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

#### Includes:

- 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/insertor 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

MLE Capillary Tool Kit for Agilent GCs

#### qty.

kit

#### cat.#

22186

26261



26262

### 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 have to 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

The Claw

#### qty.

ea.

#### cat. #

26261

The Claw Holder Kit (includes The Claw and holder)

#### qty.

kit

#### cat. #

26262

WISP 48 Snap Seal Vial

#### qty.

100-pk.

#### cat. #

24658



**also available**

Looking for autosampler vials? Restek carries a full line of autosampler vials for Agilent autosamplers. Visit [www.restek.com](http://www.restek.com) and search on autosampler vial.



22858



21044

### 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

Capillary Column Caps

#### Material

glass

#### qty.

10-pk.

#### cat.#

21044

Capillary Column Caps

silicone

#### qty.

10-pk.

#### cat.#

22858



### 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 VespeRing 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 VespeRing Inlet Seal, Gold-Plated	2-pk.	21246
	10-pk.	21247

### also available

Looking for more information or products on dual column analyses?  
Visit [www.restek.com](http://www.restek.com)



For use with  
0.53 mm ID columns.

### 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 Installation	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.	VespeRing/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

## 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.

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



### DI Uniliner® Liners for Agilent 5890 Packed Column GC

- Press-Tight® taper forms dead-volume-free connection to column.
- 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	Fits same liner adaptor as Agilent part #	qty.	cat.#
DI Uniliner Liner for Agilent 5890 Packed Column GC (1.7 mm ID x 3.0 mm OD x 93 mm)	5181-3382, 5080-8732	ea.	20964
		5-pk.	20965
		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® Septum Packed Purge Port Weldment

for Agilent 5890 GCs

Siltek® treatment makes weldment inert and eliminates adsorption of sensitive compounds (e.g., DDT and Endrin). Order Viton® O-rings (below) and appropriate septa separately. See page 12.



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.#
<b>Micropacked Column Adaptor Kit for Split/Splitless Injection*</b> <i>Complete kit with FID and injection port adaptors</i> 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); 4 mm splitless liner, intermediate polarity deactivated; 1/16" nuts, stainless steel (2)	kit	22424
<b>Micropacked Column Adaptor Kit for On-Column Injection*</b> <i>Complete kit with FID and injection port adaptors</i> 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
<b>Micropacked Column Adaptor Kit for Split/Splitless Injection</b> <i>Injection Port Adaptor Kit</i> 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	kit	22426
<b>Micropacked Column Adaptor Kit for On-Column Injection</b> <i>Injection Port Adaptor Kit</i> Kit includes: dual Vespel ring inlet seal, large bore; reducing nut, large bore; 1/16" ferrule, Vespel/graphite; Siltek treated metal liner installation guide; 1/16" nut, stainless steel	kit	22427
<b>Micropacked Column Adaptor Kit for FID*</b> <i>FID Adaptor Kit</i> Kit includes: FID adaptor, large bore; 1/4" ferrule, Vespel/graphite; 1/4" nut, stainless steel; 1/16" nut, stainless steel; 1/16" ferrule, Vespel/graphite	kit	22428
<b>Replacement Inlet Seals for Micropacked Column Adaptor</b> Dual Vespel ring inlet seal, large bore (2)	2-pk.	22429
<b>Replacement Metal Liner Installation Guide for On-Column Injection, Siltek Treated</b>	ea.	22430
<b>Replacement 4 mm Splitless Liner</b>	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



1/16" Vespel®/Graphite Ferrules



22430



20772

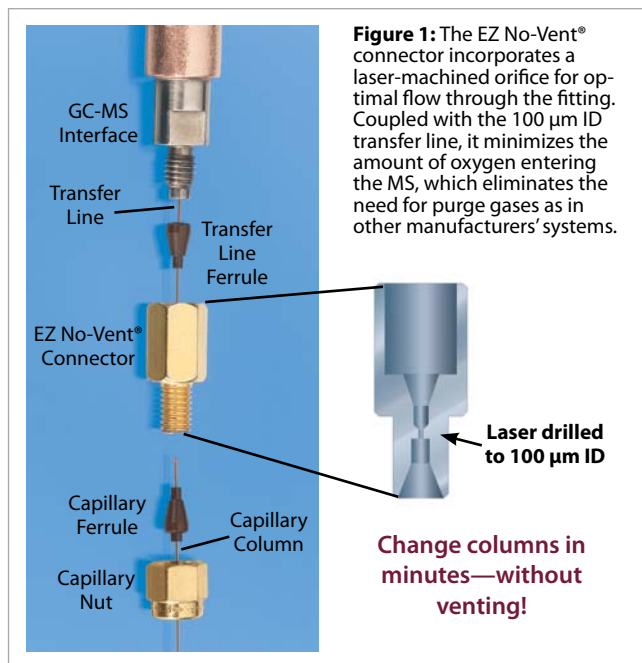
**EZ No-Vent® GC Column-Mass Spectrometer Connector**

for Agilent GCs with 5971/5972, 5973, or 5975 GC-MS

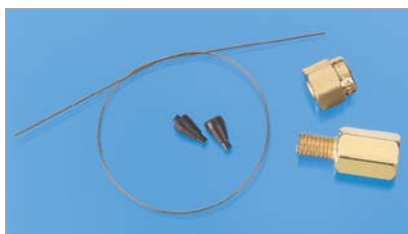
- Change GC-MS columns in minutes without venting—100 µm transfer line maintains vacuum and eliminates the need to vent.
- Easy to install and maintain—no special tools or plumbing required.
- Gold-plated body for inertness.
- High-temperature polyimide ferrules eliminate leaks at the problematic transfer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

Figure 1 shows the internal structure of the connector. Figure 2 illustrates the high performance achieved with the EZ No-Vent® connector.



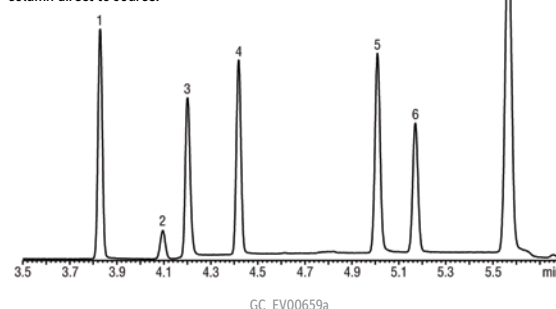
restek  
**innovation!**  
Kit installs easily,  
without special  
tools or plumbing.



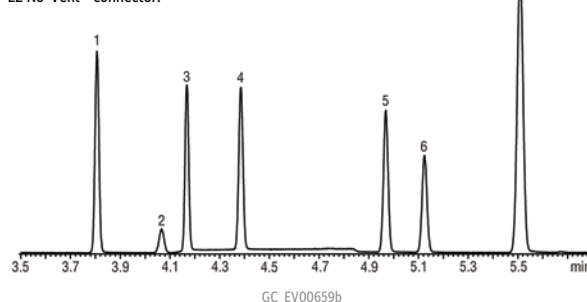
**Figure 2:** Sharp, symmetric peaks for gases show the EZ No-Vent® connector does not add dead volume and allows rapid column changes.

**1st Column, Equilibrated System**

Rtx®-624, 60 m, 0.25 mm ID, 1.4 µm (cat# 10969),  
column direct to source.

**Acquired 76 minutes after installing 2nd column**

Rtx®-624, 60 m, 0.25 mm ID, 1.4 µm (cat# 10969) using  
EZ No-Vent® connector.

**Peaks**

1. Dichlorodifluoromethane
2. 1,2-Dichlorotetrafluoroethene (Freon® 114)
3. Chloromethane
4. Vinyl chloride
5. Bromomethane
6. Chloroethane
7. Trichlorofluoromethane

<b>Column</b>	Rtx®-624, 60 m, 0.25 mm ID, 1.40 µm (cat.# 10969)	<b>Detector</b>	Agilent 5973 GC-MS
<b>Sample</b>	502.2 calibration mix #1 (gases) (cat.# 30042)	<b>Transfer Line Temp.:</b>	280 °C
<b>Injection</b>	Purge and trap split	<b>Analyzer Type:</b>	Quadrupole
<b>Inj. Temp.:</b>	300 °C	<b>Tune Type:</b>	BFB
<b>Oven</b>		<b>Ionization Mode:</b>	EI
<b>Oven Temp:</b>	60 °C	<b>Scan Range:</b>	35-550 amu
<b>Carrier Gas</b>	He, constant flow	<b>Instrument</b>	Agilent/HP6890 GC
<b>Flow Rate:</b>	1.0 mL/min.		

Description	qty.	cat.#
<b>EZ No-Vent Connector Kit</b> 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
<b>Replacement ferrules for connecting capillary column to EZ No-Vent connector:</b>		
0.4 mm (Polyimide)	2-pk.	21015
0.5 mm (Polyimide)	2-pk.	21016
<b>Replacement ferrules for connecting transfer line to EZ No-Vent connector: 0.4 mm ID</b>	2-pk.	21043
<b>Replacement 100 µm deactivated transfer line</b>	3 ft.	21018
<b>Replacement EZ No-Vent Column Nut</b>	20-pk.	23100
<b>Replacement EZ No-Vent Plug</b>	5-pk.	23112
<b>Open-End Wrenches, 1/4" x 5/16"</b>	2-pk.	20110

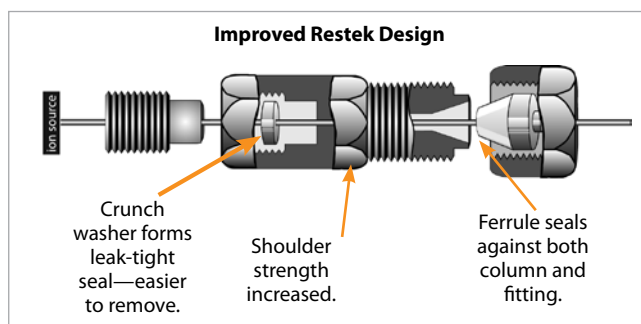
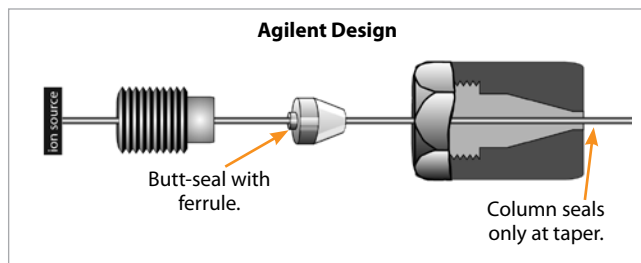


### MSD Conversion Fitting

- A flat, soft aluminum sealing ring deforms and butt-seals against the MSD interface.
- A standard Vespe® ferrule seals the column and 1/16-inch stainless steel nut.
- Fitting is constructed of nickel-plated brass for longevity and softness.
- Use any standard Vespe® or Vespe®/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.



21314



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

For ferrules, see page 35.



20643

### 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 thread-stripping on the transfer line.
- Design enhances ease of threading onto the transfer line and improves overall lifetime.

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

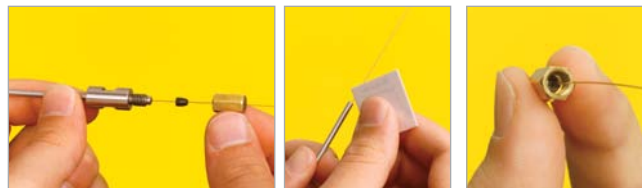
restek **innovation!**



21894

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

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



Install the nut and ferrule onto the column, then insert the column through the installation tool, exposing several centimeters at the exit end. Tighten the nut (not depicted).

Score and remove the exposed end of the column.

Loosen the nut.

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



24699

### Gold Tip Transfer Line

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

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

### 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.



22685

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



**Inland 45 is the highest-quality rough pump oil you can use for your mass spectrometer.**

### 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.



24819

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

### Rough Pump Oil #19 for MSD Pumps, Oil Vacuum Pump

- 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.



22687

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



27194

### GC-MS Cleaning Kit

**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

**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.)

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.

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	kit	27196
Includes: cloths, micro mesh sheets, small and large gloves		

### ETP Electron Multipliers

for Mass Spectrometry

- Air stable.
- 2-year shelf life guarantee.
- Discrete dynode design extends operating life.



23074

The multi-dynode approach of all ETP multipliers results in longer lifetimes and better sensitivities compared with channel multipliers because of greater surface area.

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?

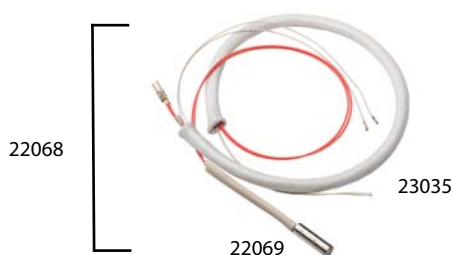
A typical ETP electron multiplier has a total active dynode surface area of ~1,000 mm<sup>2</sup> compared to a standard continuous dynode multiplier that only has a total channel surface area of around 106 mm<sup>2</sup>. The increased surface area of the ETP slows the aging process and improves operating life.

Description	qty.	cat.#
<b>Electron Multipliers for Agilent GC-MS and LC-MS</b>		
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).

Other ETP electron multipliers are available upon request. Call us or contact your Restek representative if you do not see your instrument listed.



## 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.

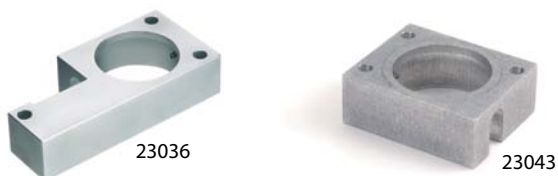
Description	Similar to Agilent part #	qty.	cat.#
Injector/FID Heater and Injector/FID PRT Sensor	05890-61140	kit	22068
Injector/FID Heater	19231-60620	ea.	22069
Injector/FID PRT Sensor	19231-60660	ea.	23035



## 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.

Description	Similar to Agilent part #	qty.	cat.#
FID Collector Mount for Agilent 5890 GCs	19231-20930	ea.	23036
FID Collector Mount 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.

Description	Similar to 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 5890/6890/6850/7890 FID Collector Assemblies

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



Remove FID ignitor castle.



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

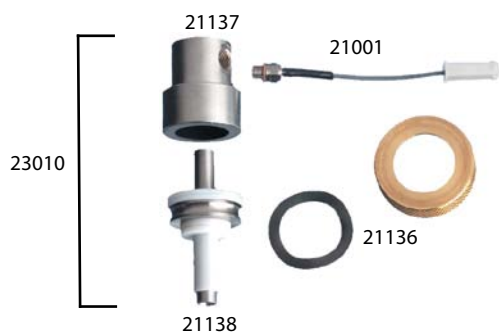


...then turn counterclockwise...



...and remove.

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



### 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 #	qty.	cat. #
FID Collector Assembly Kit (includes insulators)	19231-60690	kit	23010
FID Collector Assembly Kit w/Siltek Ignitor Castle		kit	21131
FID Collector (includes insulators)	19231-20970, 19231-20960, 19231-20950	ea.	21138
FID Collector Nut and Washer	19231-20940, 5181-3311	set	21136
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 Collector Assembly Kit for Agilent 6890/6850/7890 GCs

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

Description	Similar to Agilent part #	qty.	cat. #
FID Collector Assembly Kit (includes insulator)	G1531-60690	kit	21699
FID Collector Assembly Kit w/Siltek Ignitor Castle		kit	21132
FID Collector (includes insulators)	G1531-20690, G1531-20700	ea.	21139
FID Collector Nut and Washer	19231-20940, 5181-3311	set	21136
FID Ignitor*	19231-60680	ea.	21001
FID Ignitor Castle	19231-20910	ea.	21137

\*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.

Description	Similar to 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 & 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).



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

### FID Maintenance Kits for Agilent GCs

- Include the most common consumable GC supplies and tools.
- All parts meet or exceed performance of instrument manufacturers' 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.



Description	qty.	cat. #
FID Maintenance Kit for Agilent 5890 GCs	kit	22180
FID Maintenance Kit for Agilent 6850/6890/7890 GCs	kit	22179

## FID Replacement Jets

### Standard Version

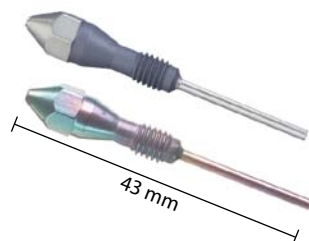
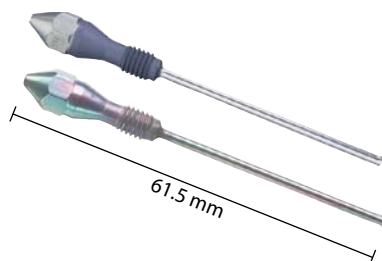
- Threads specially coated for easy installation and removal.
- Special processing ensures the highest degree of cleanliness.
- Meets or exceeds original manufacturer's performance.

### 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.



Description	Similar to 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 6890/6850/7890 GCs

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

### 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.

Description	Similar to Agilent part #	qty.	cat.#	qty.	cat.#
Standard, 0.018-Inch ID Tip	18710-20119	ea.	21694	3-pk.	21695
High-Performance Siltek Treated, 0.018-Inch ID Tip	18710-20119	ea.	21696	3-pk.	21697

Description	Similar to Agilent part #	qty.	cat.#	qty.	cat.#
Standard, 0.030-Inch ID Tip	18789-80070	ea.	21688	3-pk.	21689
High-Performance Siltek Treated, 0.030-Inch ID Tip	18789-80070	ea.	21686	3-pk.	21687

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

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



22328



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.



## FID/Injector Cleaning Kit

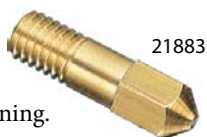
The FID/Injector Cleaning Kit includes:

- 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 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.



Description	Similar to 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 ferrules.
- 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

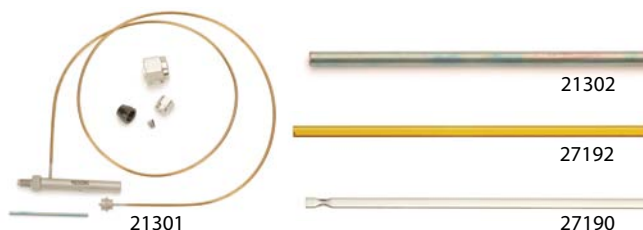
## FID/NPD Capillary Adaptor Fitting

for Agilent 5890/6890/6850 GCs



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

Description	Similar to 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	Similar to 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

## Replacement Cables

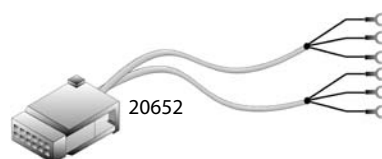
for Agilent GCs, Integrators, & Autosamplers

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



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

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



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

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



## Replacement Parts for Agilent Autosamplers

- All parts meet or exceed original manufacturer's performance.



### 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 5890/6890 GC	07673-60605	ea.	22855



### Autosampler Plunger Carrier Belt

for Agilent 7673A & 7673B Autosamplers

All parts meet or exceed original manufacturer's performance.

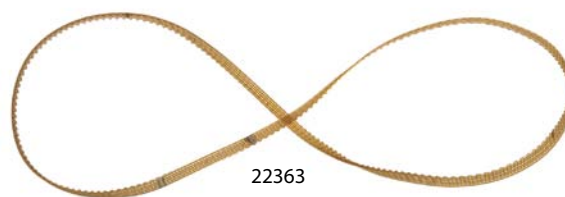
Description	For Agilent Model #	Similar to Agilent part #	qty.	cat.#
Autosampler Plunger Carrier Belt	7673A, 7673B	07673-61275	ea.	22695



### Carriage Motor Belt for Agilent 7673A & 7683B Autosamplers

Meets original manufacturer's performance.

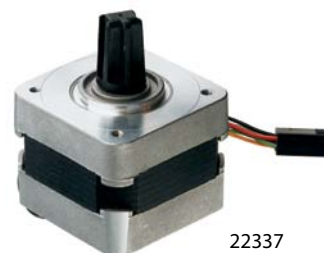
Description	Similar to Agilent part #	qty.	cat.#
Carriage Motor Belt for Agilent 7673A and 7673B	1500-0676	ea.	22692



### Z-Belt for Agilent 7673B Autosamplers

Meets original manufacturer's performance.

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



### Injector Turret Motor for Agilent 7673A & 7673B Injectors

Meets original manufacturer's performance.

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



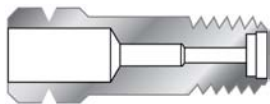
Stainless Steel



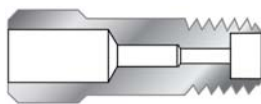
Brass

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

Available in brass or stainless steel.



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



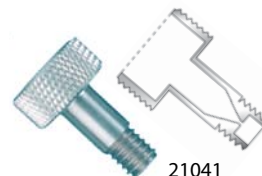
...or for use with standard ferrules.

Description	Similar to Agilent part #	qty.	cat.#
<b>For use with "compact" Agilent-style ferrules.</b>			
Stainless Steel Capillary Column Nut	5181-8830	2-pk.	21884
Brass Capillary Column Nut	5181-8830	2-pk.	21878
<b>For use with standard 1/16"-type ferrules.*</b>			
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



21040



21041

### Finger-Tight Capillary Column Nuts

- Allow wrench-free column installations.
- Work with standard or compact (Agilent-style) ferrules.
- Made from high-quality stainless steel.

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



21034



21399

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

\*For use with graphite ferrules only.

### 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.



22347

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

Did you know Restek sells gas generators?  
Visit [www.restek.com/gas](http://www.restek.com/gas) for more information.



## Scoring Wafer with Handle

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



23015



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



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



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

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.



20116



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



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

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

## 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—can be used in many different ways.



Remove septum without damaging an expensive weldment.



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



20117

Description	qty.	cat.#
Septum Puller	ea.	20117



save money!

Save money on column installation tools by purchasing the MLE Capillary Tool Kit. See page 22.

## Sapphire Scribe

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



20182



One quick stroke...



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

Description	qty.	cat.#
Sapphire Scribe	ea.	20182



23027

## 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).



23026

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

**Vespel® Ferrules**

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



Vespel® ferrules

**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**

- 60%/40% Vespel®/graphite blend offers the best combination of sealing and ease of workability.
- Sealed with minimal torque, reusable, and preferred for vacuum and high-pressure uses.
- 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.

Ferrule ID	Fits Column ID	qty.	Vespel	Graphite	Vespel/Graphite
0.3 mm		10-pk.	22213	20233	20275
0.4 mm	0.10/0.15/0.18/0.25/0.28 mm	10-pk.	22214	20200	20211
0.4 mm	0.10/0.15/0.18/0.25/0.28 mm	50-pk.	—	20227	20229
0.5 mm	0.32 mm	10-pk.	22215	20201	20212
0.5 mm	0.32 mm	50-pk.	—	20228	20231
0.6 mm	0.28 mm**	10-pk.	—	—	20232
0.8 mm	0.45/0.53 mm	10-pk.	22216	20202	20213
0.8 mm	0.45/0.53 mm	50-pk.	—	20224	20230
1.0 mm	0.75 mm*	10-pk.	22217	21058	24912
1.2 mm	0.75 mm*	10-pk.	22218	—	—
1.6 mm	1.00 mm*	10-pk.	—	21060	—

**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

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

Available in graphite or Vespel®/graphite.

Ferrule ID	Fits Column ID	qty.	Graphite	Vespel/Graphite
0.4 mm	0.25/0.28 mm	10-pk.	20250	20238
0.4 mm	0.25/0.28 mm	50-pk.	20251	20239
0.5 mm	0.32 mm	10-pk.	21007	20248
0.5 mm	0.32 mm	50-pk.	21008	20249
0.8 mm	0.45/0.53 mm	10-pk.	20252	20263
0.8 mm	0.45/0.53 mm	50-pk.	20253	20264
1.0 mm	0.75 mm*	10-pk.	21059	—
1.6 mm	1.00 mm*	10-pk.	21061	—

\*For micropacked columns.

\*\*For 0.28 mm MXT columns.

**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® and graphite ferrules are made from a harder material, they might require retightening after several temperature cycles. Alumaseal® ferrules are ideal for GC-MS. They will not crack or fragment and require no retightening after temperature cycles.



graphite ferrules



graphite ferrules



graphite ferrules





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

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

Fitting Size	Ferrule ID	qty.	Vespel	Graphite	Vespel/Graphite
1/4"	3/16"	5-pk.	—	—	20258
1/16"	1/16"	10-pk.	22210	20207	20218
1/8"	1/8"	10-pk.	22211	20208	20219
1/8"	reduce to 1/16"	10-pk.	—	20209	20220
1/4"	1/4"	10-pk.	22212	20210	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).
- Use 1/8-inch, two-hole ferrules with the 1/8-inch capillary inlet adaptor fitting kit (cat.# 20645).

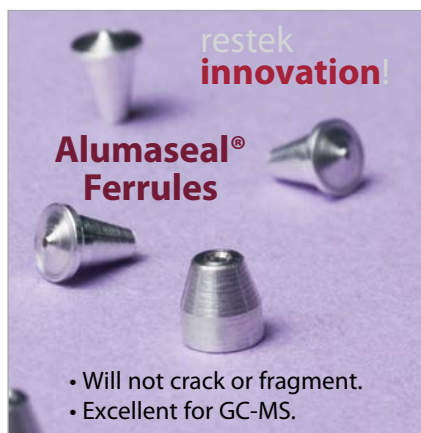
Fitting Size	Ferrule ID	Fits Column ID	qty.	Vespel/Graphite
1/16"	0.4 mm	0.25/0.28 mm	5-pk.	24848
1/16"	0.5 mm	0.32 mm	5-pk.	24849
1/8"	0.8 mm	0.45/0.53 mm	5-pk.	20246



## Reducing Ferrules

Available in graphite or Vespel®/graphite.

Fitting Size	Ferrule ID	Fits Column ID	qty.	Graphite	Vespel/Graphite
1/8"	0.4 mm	0.25 mm	5-pk.	20205	20254
1/8"	0.5 mm	0.32 mm	5-pk.	20205	20255
1/8"	0.8 mm	0.53 mm	5-pk.	20206	20215
1/4"	0.4 mm	0.25 mm	5-pk.	20203	—
1/4"	0.5 mm	0.32 mm	5-pk.	20203	20257
1/4"	0.8 mm	0.45/0.53 mm	5-pk.	20204	20217



## Alumaseal® Ferrules

- Aluminum construction—will not crack or fragment.
- No retightening required after temperature cycles—excellent for GC-MS.
- Eliminate out-gassing and make leak-tight seals for less detector noise.
- Unique two-piece design permanently locks on fused silica tubing without causing breakage.
- Will not stick in fittings, unlike Vespel® or graphite ferrules.
- Stable to 550 °C.
- Use with any 1/16" compression-type fitting.

Ferrule ID	Fits Column ID	qty.	cat. #
0.4 mm	0.25 mm	10-pk.	21472
0.5 mm	0.32 mm	10-pk.	21473
0.8 mm	0.53 mm	10-pk.	21474



## 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



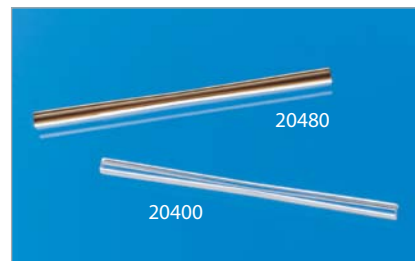
## Press-Tight® Connectors

- Deactivated Press-Tight® connectors maintain complete inertness for 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	

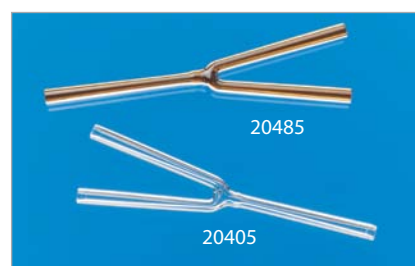


## Universal “Y” Press-Tight® Connectors

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.

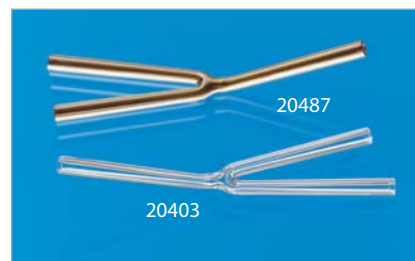
Description	ea.	3-pk.
Universal “Y” Press-Tight Connector	20405	20406
Universal “Y” Press-Tight Connector, Deactivated	20405-261	20406-261
Universal “Y” Press-Tight Connector, Siltek Deactivated	20485	20486



## 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

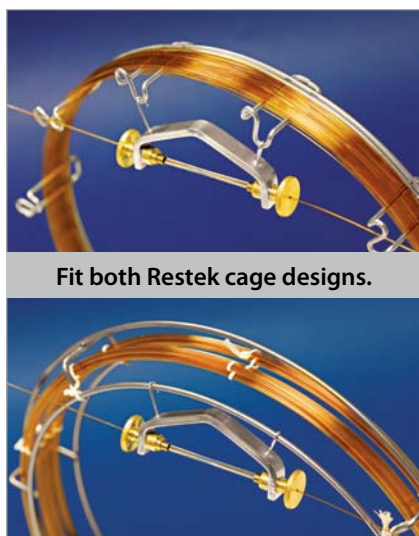


## Polyimide Resin

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

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

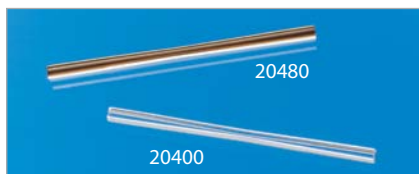




Fit both Restek cage designs.

Secure, reliable  
column-to-column  
connections!

**NOTE:** This product is not recommended for GC column-to-MS connections—use the Vacuum Vu-Union® union for this type of connection.

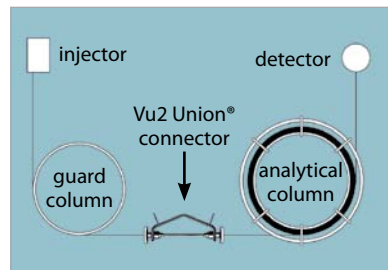


## Vu2 Union® Connectors

- 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.

A guard column connected to an analytical column by a Vu2 Union® connector.

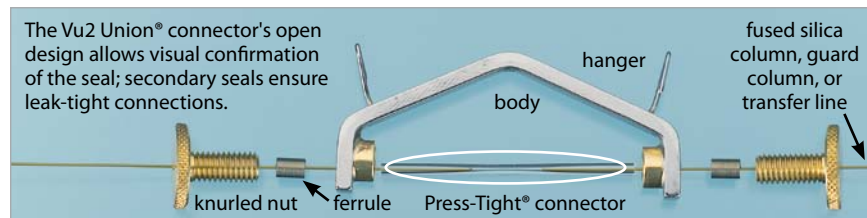


## How does a Vu2 Union® connector work?

A Press-Tight® union in the Vu2 Union® connector joins the fused silica 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, 2 knurled nuts, 2 Press-Tight® unions, and 4 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

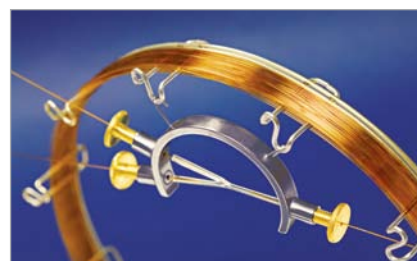
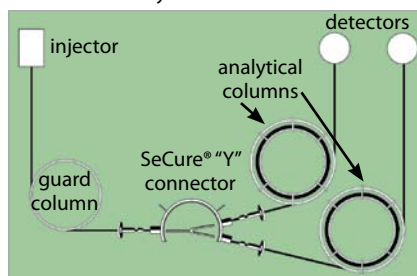
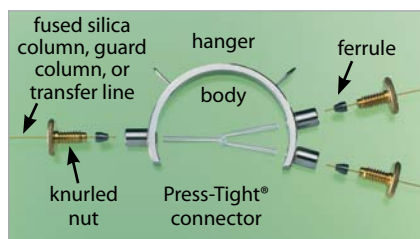
### SeCure® “Y” Connector Kits

- 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 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.



Fit both Restek cage designs.



**Secure, reliable  
column-to-column  
connections!**

Kits include: SeCure® “Y” connector body, 3 knurled nuts, “Y” Universal Press-Tight® union, 3 ferrules.

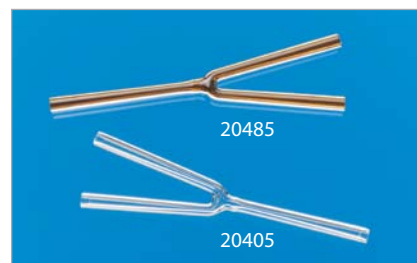
Description	Ferrules Fit Column ID	qty.	cat.#
SeCure “Y” Connector Kit	0.18/0.25/0.28 mm	kit	20276
SeCure “Y” Connector Kit	0.32 mm	kit	20277
SeCure “Y” Connector Kit	0.45/0.53 mm	kit	20278
Knurled nut		3-pk.	20279

### 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 for 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).

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 Fused Silica 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 360 °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 Fused Silica 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 Fused Silica 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 Fused Silica Columns	kit	21389
For 0.32 mm ID Fused Silica Columns	kit	21388
For 0.53 mm ID Fused Silica Columns	kit	21387

### 1/32-Inch Replacement Nut

Description	qty.	cat.#
1/32" Replacement Nut	5-pk.	20389



### Valco® Connectors—One-Piece Valcon Polyimide Adaptor Ferrule for Fused Silica

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.

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

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

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

## Electronic Rechargeable Crimpers and Decappers

- Easy to use; comfortable grip.
- Hundreds of operations from one charge.
- Adjustable crimping force.
- New battery allows for faster charge cycle.
- All kits include a universal plug set for the battery charger.
- For 11 mm and 20 mm caps.
- One-year warranty.

These redesigned electronic crimpers and decappers have a rechargeable 6.4-volt battery installed. The larger battery allows for quick, powerful operation and a faster charge cycle, minimizing downtime. Charging the battery takes thirty minutes to two hours. The universal plug set includes U.S., European, UK, and Australian plug clips.

Description	Size	qty.	cat.#
Electronic Crimper	11 mm	kit	22358
Electronic Crimper	20 mm	kit	22359
Electronic Decapper	11 mm	kit	22360
Electronic Decapper	20 mm	kit	22361
Replacement Battery for Electronic Crimpers and Decappers		ea.	22362



22358



Universal plug set for  
battery charger included  
in all kits.

## Easy Grip Manual Crimpers and Decappers

Our new Easy Grip crimpers and decappers feature tough, light, glass-filled plastic bodies with curved handles, that improve hand comfort during use. The bottom-pull handle allows for a steadier hold than top-push handles. An easily viewed adjustment knob is located at the head of the product. The clearly shown + and – symbols, along with directional arrows, simplify adjusting the intensity of the crimp/decap needed. The knob is also designed to indicate when the crimp setting has been reached, when it fully contacts the body of the product.

Description	Size	qty.	cat.#
Crimper	11 mm	ea.	23396
Decapper	11 mm	ea.	23397
Crimper	20 mm	ea.	23398
Decapper	20 mm	ea.	23399



Crimper



Decapper

Safer than removing  
caps with pliers, knives,  
or screwdriver blades!





24385



24383

## 2.0 mL Crimp-Top Vials, 12 x 32 mm, 11 mm

Choose with or without white graduated marking spots.

## 2.0 mL Crimp-Top Vials, 12 x 32 mm, 11 mm

Description	Color	Material	100-pk.	1,000-pk.
Vial w/White Graduated Marking Spot	Clear	Glass	24383	24384
Vial w/White Graduated Marking Spot	Amber	Glass	24385	24386
Vial without Graduated Marking Spot	Clear	Glass	21152	21153



21724

## 2.0 mL, 11 mm Aluminum Crimp Seals with Septa

Seal Color	Septa Material	100-pk.	500-pk.	1,000-pk.
Silver	PTFE/Natural Rubber	21174	—	21175
Blue	PTFE/Red Rubber	24351	—	24352
Green	PTFE/Red Rubber	24353	—	24354
Red	PTFE/Red Rubber	24355	—	24356
Yellow	PTFE/Red Rubber	24357	—	24358
Mixed	PTFE/Rubber	—	21724	—
Silver	PTFE/Silicone	24359	—	24360
Blue	PTFE/Silicone	24361	—	24362
Green	PTFE/Silicone	24363	—	24364
Red	PTFE/Silicone	24365	—	24366
Yellow	PTFE/Silicone	24367	—	24368
Mixed	PTFE/Silicone	—	21725	—
Silver	PTFE/Silicone/PTFE	24369	—	24370



24671

## 2.0 mL Crimp Vial Convenience Kits (Vials, Caps, & Septa)

Vials packaged in a clear-lid tray. Caps with septa packaged in a plastic bag.

Description	100-pk.	1,000-pk.
Clear 2.0 mL Vial, Deactivated, Silver Seal, PTFE/Natural Rubber Septa	24671	24672
Amber 2.0 mL Vial, Deactivated, Silver Seal, PTFE/Natural Rubber Septa	24673	24674
Clear 2.0 mL Vial, Untreated, Silver Seal, PTFE/Natural Rubber Septa	21196	21197
Amber 2.0 mL Vial, Untreated, Silver Seal, PTFE/Natural Rubber Septa	21198	21199
Clear 2.0 mL Vial, Untreated, Silver Seal, PTFE/Silicone Septa	24646	24647
Amber 2.0 mL Vial, Untreated, Silver Seal, PTFE/Silicone Septa	24648	24649



21776



24692



24518A

## Inserts for 2.0 mL, 11 mm Crimp-Top & 2.0 mL, 9 mm Short-Cap, Screw-Thread Vials

Description	Volume	Material	100-pk.	1,000-pk.
Big Mouth Insert w/Bottom Spring	50 µL	Glass	24513	21782
Big Mouth Insert w/Bottom Spring	250 µL	Glass	21776	21777
Big Mouth Insert w/Glass Flange (Step Design)*	250 µL	Glass	24516	21779
Insert, Flat Bottom	350 µL	Glass	21780	24517
Insert, Flat Bottom w/ID Ring	350 µL	Glass	24692	24693
Big Mouth Insert w/Bottom Spring	250 µL	Polypropylene	24518	—
Big Mouth Insert w/Bottom Spring & Graduated Markings	250 µL	Polypropylene	24518A	—
Big Mouth Insert, Top Flange	250 µL	Polypropylene	24519	—
Big Mouth Insert, No Spring	250 µL	Polypropylene	24520	—

\*Big Mouth insert w/glass flange (Step design) not to be used with 9 mm screw-thread vials.

## 2.0 mL Crimp-Top Vial with 100 µL Insert

- Plastic vial.
- Choice of glass or polypropylene insert.



24651

Description	100-pk.	1,000-pk.
Clear Plastic Vial w/100 µL Polypropylene Insert	24651	24652
Clear Plastic Vial w/100 µL Glass Insert	24653	—

## 2.0 mL, 11 mm Poly Crimp Seal Caps: Snap-on or Crimp

- Works on any crimp style vial.
- Crimps smoothly and easily—no more sharp edges from an aluminum crimp cap.
- Easily decaps using standard decapping tools.
- Eliminates inconsistent sealing that results from improper crimping.
- Unique design holds the septum firmly in place.
- Provides better seal than snap caps.\*
- Meets CONEG standards. The Poly Crimp seal is free of heavy metals and is easily disposed of or incinerated.



The patented Poly Crimp seal is versatile, working as either a snap-on or crimp-top cap. Simply use a standard crimping tool to secure the Poly Crimp seal onto any crimp-top vial. It's that easy!

Seal Color	Liner Material	100-pk.	400-pk.	1,000-pk.
Clear	PTFE/Butyl Rubber	24433	—	24434
Clear	PTFE/Silicone	24443	—	24444
Blue	PTFE/Silicone	24445	—	24446
Clear	PTFE/Silicone/PTFE	24453	—	24454
Blue	PTFE/Silicone/PTFE	24455	—	24456
Mixed	PTFE/Silicone/PTFE	—	21728	—

\*Based on continual use for 3–4 days.

## 2.0 mL, 11 mm GC Snap Ring Cap with Septum

- Snaps on any crimp-style vial.
- Clear polypropylene cap provides a tighter seal than standard Snap Ring cap.
- Good for pressurized injection systems.
- Save money! Use this snap cap when you don't need to crimp.

Description	Liner/Septa Material	100-pk.	1,000-pk.
Polypropylene Snap Ring Cap w/Liner	PTFE, 10 mil	21729	21730
Polypropylene Snap Ring Cap w/Septum	PTFE/Butyl Rubber	21731	21732
Polypropylene Snap Ring Cap w/Septum	PTFE/Silicone	21733	21734



21731

## Certified Autosampler Vial Kits

Certified Vials, 2.0 mL Screw-Thread Vials

- Certificates enclosed with each kit.
- Vials of clear or amber borosilicate glass with ID marking spots.
- Closures with pre-inserted septa.
- Each kit sealed for integrity.

### Certification Parameters Include:

Vial Dimensions:	height, diameter, bottom thickness, neck length, thread profile, and annealing
Cap/Septum:	diameter, height, thread integrity, center flash, septa insertion, sealing/resealing test, residue by headspace GC, and extractables
Chemical Test:	HPLC Test: nonvolatile residue
	GC Test: volatile residue

Description	100-pk.
Assembled Clear 2.0 mL Vial w/Marking Spot, Cap, Bonded PTFE/Silicone Slit Septa	22789
Assembled Amber 2.0 mL Vial w/Marking Spot, Cap, Bonded PTFE/Silicone Slit Septa	22788
Unassembled Clear 2.0 mL Vial w/Marking Spot, Cap, Bonded PTFE/Silicone Septa	22792
Unassembled Amber 2.0 mL Vial w/Marking Spot, Cap, Bonded PTFE/Silicone Septa	22790
Unassembled Clear 2.0 mL High Recovery Vial w/Marking Spot, Cap, Bonded PTFE/Silicone Slit Septa	22793
Unassembled Amber 2.0 mL Vial w/Marking Spot, Cap, Bonded PTFE/Silicone Slit Septa	22791



22788



22792

Agilent Compatible!



21140

Ideal for Agilent 7673, 7683, 7693 &  
other autosamplers that process  
12 x 32 mm crimp-top vials.



24668



22433

22435

also **available**See **page 42** for crimp seals.

22856

## 2.0 mL, 9 mm Short-Cap, Screw-Thread Vials, 12 x 32 mm

- Fit all 2.0 mL, 12 x 32 mm, crimp-top vial-based autosamplers.

### 2.0 mL, 9 mm Short-Cap, Screw-Thread Vials (vial only)

Description	Color	100-pk.	1,000-pk.
Short-Cap Vial w/White Graduated Marking Spot	Clear	21140	21141
Short-Cap Vial w/White Graduated Marking Spot	Amber	21142	21143
Short-Cap Vial without Graduated Marking Spot	Clear	21154	21155

### 2.0 mL, 9 mm Short-Cap, Screw-Vial Closures (Polypropylene, preassembled)

Cap Color	Liner Material	100-pk.	500-pk.	1,000-pk.
Blue	PTFE/Red Rubber	24473	—	24474
Mixed	PTFE/Red Rubber	—	24668	—
Blue	PTFE/Silicone	24485	—	24486
Green	PTFE/Silicone	24487	—	24488
Yellow	PTFE/Silicone	24493	—	24494
Mixed	PTFE/Silicone	—	24669	—
Blue	PTFE/Silicone/PTFE	24497	—	24498
Black	PTFE/Silicone/PTFE	24495	—	24496
Natural	PTFE/Silicone/PTFE	24501	—	24502
Red	PTFE/Silicone/PTFE	24503	—	24504
Yellow	PTFE/Silicone/PTFE	24505	—	24506
Mixed	PTFE/Silicone/PTFE	—	24670	—

### Interlock Vials

Interlock limited volume vials offer the performance and convenience of a one piece microvial for a fraction of the cost. A 300 µL insert is fused into a 12 x 32 mm clear or amber glass vial. This one piece design reduces the potential for contamination.

Description	Type	Volume	Color	Material	100-pk.	500-pk.
Interlock Vial	9 mm Thread	300 µL	Clear	Glass	22433	22434
Interlock Vial	9 mm Thread	300 µL	Amber	Glass	22435	22436
Interlock Vial	11 mm Crimp or Snap Ring	300 µL	Clear	Glass	22437	22438
Interlock Vial	11 mm Crimp or Snap Ring	300 µL	Amber	Glass	22439	22440

### 2.0 mL Sample Vial Racks

- Racks feature alphanumeric indexing for easier vial identification.
- Racks can be stacked for efficient storage.
- Fits most 2.0 mL, 12 x 32 mm vials (vials sold separately).

Description	Capacity	qty.	cat.#	qty.	cat.#
Polypropylene Storage Rack for 12 x 32 mm Vials	50 vials, 5 x 10	ea.	22856	5-pk.	22857

**Headspace Screw-Thread Vials (18 mm)**

Description	Volume	Color	Dimensions	100-pk.	1,000-pk.
Headspace Vial	10 mL	Clear	22 x 45 mm	23084	23085
Headspace Vial	10 mL	Amber	22 x 45 mm	23088	23089
Headspace Vial	20 mL	Clear	22 x 75 mm	23082	23083
Headspace Vial	20 mL	Amber	22 x 75 mm	23086	23087

Caps not included.

**Magnetic Screw-Thread Caps (18 mm)**

Description	Septa Material	100-pk.	1,000-pk.
Magnetic Caps and Septa	PTFE/Silicone	23090	23091
Magnetic Caps and Septa	PTFE/Silicone for SPME	23092	23093
Magnetic Caps and Septa	PTFE/Red Chlorobutyl	23094	23095

**Headspace Crimp Vials (20 mm)**

Description	Volume	Color	Dimensions	100-pk.	1,000-pk.
Headspace Vial	6 mL	Clear	22 x 38 mm	21166	21167
Headspace Vial, Flat Bottom	10 mL	Clear	23 x 48 mm	24683	24684
Headspace Vial, Rounded Bottom	10 mL	Clear	23 x 48 mm	21164	21165
Headspace Vial, Flat Bottom	20 mL	Clear	23 x 75 mm	24685	24686
Headspace Vial, Rounded Bottom	20 mL	Clear	23 x 75 mm	21162	21163
Headspace Vial	27 mL	Clear	30 x 60 mm	21160	21161

**Aluminum Seals w/Septa (20 mm, preassembled)**

Description	Seal Color	Septa Material	100-pk.	1,000-pk.
Seals w/Septa	Silver	PTFE/Gray Butyl Rubber	21761	21762
Seals w/Septa	Silver	PTFE/Silicone	21763	21764
Pressure Release Seals w/Septa	Silver	PTFE/Gray Butyl Rubber	21765	21766
Pressure Release Seals w/Septa	Silver	PTFE/Silicone	21767	21768

**Magnetic Seals w/Septa (20 mm, preassembled)**

Description	Seal Color	Septa Material	100-pk.	1,000-pk.
Magnetic Seals w/Septa, with 5 mm Hole	Gold	PTFE/Silicone	22833	22834
Magnetic Seals w/Septa, with 8 mm Hole	Gold	PTFE/Silicone	22831	22832
Magnetic Seals w/Septa, with 8 mm Hole	Gold	PTFE/Butyl	22835	22836
BiMetal Magnetic Seals w/Septa, with 8 mm Hole	Red/Silver	PTFE/Silicone	22441	22442
BiMetal Magnetic Seals w/Septa, with 8 mm Hole	Blue/Silver	PTFE/Silicone	22443	22444

5 mm hole is compatible with the following systems: Carlo Erba HS500/HS800, CTC 500, Fisons HS500/HS800 and Varian/Chrompack 9020/25. 8 mm hole is compatible with the Combi Pal.





20167

24793

### Guide to Needle Termination Codes

#### Hamilton:

(ASN) Autosampler Cemented Needle  
(ASRN) Autosampler Removable Needle

#### SGE:

(F) Fixed Needle  
(R) Removable Needle

## Standard Microliter Syringes for Agilent 7673, 7683, 7693A, and 6850

### Autosamplers

- Hamilton and SGE syringes are designed and tested to meet critical autosampler performance needs.
- Needle point styles are designed to withstand multiple, rapid injections through a septum.

### Hamilton

Volume	Needle Term.	Needle Gauge	Needle Length	Point Style	Hamilton		qty.	Restek cat.#
					Model	cat.#		
0.5 µL	ASRN	23s	1.71"	Agilent	7000.5	86276	ea.	24895
0.5 µL	ASRN	26s	1.71"	Agilent	7000.5	86274	ea.	21221
5 µL	ASRN	23s	1.71"	Agilent	75	87957	ea.	20172
5 µL	ASN	23s	1.71"	Agilent	75	87987	ea.	20168
5 µL	ASN	23s	1.71"	Agilent	75	87990	6-pk.	20170
5 µL	ASN	26s	1.71"	Agilent	75	87988	ea.	24592
5 µL	ASN	26s	1.71"	Agilent	75	87989	6-pk.	21230
5 µL	ASRN	23s-26s	1.71"	Agilent	75	87959	ea.	21223
5 µL	ASN	23s-26s	1.71"	Agilent	75	87993	ea.	24593
5 µL	ASN	23s-26s	1.71"	Agilent	75	87994	6-pk.	24594
10 µL	ASRN	23s	1.71"	Agilent	701	80357	ea.	20171
10 µL	ASN	23s	1.71"	Agilent	701	80387	ea.	20167
10 µL	ASN	23s	1.71"	Agilent	701	80390	6-pk.	20169
10 µL	ASRN	26s	1.71"	Agilent	701	80358	ea.	24597
10 µL	ASN	26s	1.71"	Agilent	701	80388	ea.	24595
10 µL	ASN	26s	1.71"	Agilent	701	80389	6-pk.	24599
10 µL	ASRN	23s-26s	1.71"	Agilent	701	80359	ea.	24598
10 µL	ASN	23s-26s	1.71"	Agilent	701	80393	ea.	24596
10 µL	ASN	23s-26s	1.71"	Agilent	701	80391	6-pk.	24600

### SGE

Volume	Needle Term.	Needle Gauge	Needle Length	Point Style	SGE		qty.	Restek cat.#
					Model	cat.#		
0.5 µL	R	23	42 mm	Cone	0.5BR-HP-0.63	000410	ea.	24791
0.5 µL	R	26	42 mm	Cone	0.5BR-HP-0.47	000400	ea.	24790
5 µL	R	23	42 mm	Cone	5R-HP-0.63	001815	ea.	24793
5 µL	F	23	42 mm	Cone	5F-HP-0.63	001810	ea.	24781
5 µL	F	23	42 mm	Cone	SK-5F-HP-0.63	001814	6-pk.	24783
5 µL	F	26	42 mm	Cone	5F-HP-0.47	001800	ea.	24780
5 µL	F	26	42 mm	Cone	SK-5F-HP-0.47	001804	6-pk.	24782
5 µL	R	23-26s	42 mm	Cone	5R-HP-0.63/0.47	001825	ea.	21211
5 µL	F	23-26s	42 mm	Cone	5F-HP-0.63/0.47	001821	ea.	21210
5 µL	F	23-26s	42 mm	Cone	SK-5F-HP-0.63/0.47	001822	6-pk.	21214
10 µL	R	23	42 mm	Cone	10R-HP-0.63	002815	ea.	24795
10 µL	F	23	42 mm	Cone	10F-HP-0.63	002810	ea.	24785
10 µL	F	23	42 mm	Cone	SK-10F-HP-0.63	002814	6-pk.	24787
10 µL	R	26	42 mm	Cone	10R-HP-0.47	002805	ea.	24794
10 µL	F	26	42 mm	Cone	10F-HP-0.47	002800	ea.	24784
10 µL	F	26	42 mm	Cone	SK-10F-HP-0.47	002804	6-pk.	24786
10 µL	R	23-26s	42 mm	Cone	10R-HP-0.63/0.47	002825	ea.	21213
10 µL	F	23-26s	42 mm	Cone	10F-HP-0.63/0.47	002821	ea.	21212
10 µL	F	23-26s	42 mm	Cone	SK-10F-HP-0.63/0.47	002822	6-pk.	21215
<b>Large Volume</b>								
25 µL	R	23	42 mm	Cone	25R-HP-0.63	003665	ea.	24798
50 µL	R	23	42 mm	Cone	50R-HP-0.63	004665	ea.	24799
100 µL	R	23	42 mm	Cone	100R-HP-0.63	005665	ea.	24800
250 µL	R	23	42 mm	Cone	250R-HP-0.63	006665	ea.	24801



## Gas-Tight PTFE-Tipped Syringes for Agilent 7673, 7683, 7693A, and 6850 Autosamplers

### Hamilton

Volume	Needle Term.	Needle Gauge	Needle Length	Point Style	Hamilton		Restek	
					Model	cat.#	qty.	cat.#
10 µL	ASN	23s	1.71"	Agilent	1701	80080	ea.	24894
10 µL	ASRN	23s	1.71"	Agilent	1701	80087	ea.	21224
10 µL	ASRN	26s	1.71"	Agilent	1701	80088	ea.	21228
10 µL	ASRN	23s-26s	1.71"	Agilent	1701	80089	ea.	21229

### SGE

Volume	Needle Term.	Needle Gauge	Needle Length	Point Style	SGE		Restek	
					Model	cat.#	qty.	cat.#
10 µL	F	23	42 mm	Cone	10F-HP-GT-0.63	002812	ea.	24789
10 µL	R	23	42 mm	Cone	10R-HP-GT-0.63	002818	ea.	24797
10 µL	R	23-26	42 mm	Cone	10R-HP-GT-0.63/0.47	002829	ea.	21220

## Replacement Needles for Agilent 7673, 7683, 7693A, and 6850 Autosampler Syringes

### Hamilton

Syringe Volume	Needle Gauge	Needle Length	Point Style	Hamilton		Restek	
					cat.#	qty.	cat.#
5-10 µL	23s	1.71"	Agilent		7786-01	6-pk.	20164
5-10 µL	26s	1.71"	Agilent		7786-02	6-pk.	20165
5-10 µL	23s-26s	1.71"	Agilent		7785-01	6-pk.	20166

### SGE

Syringe Volume	Needle Gauge	Needle Length	Point Style	SGE		Restek	
					cat.#	qty.	cat.#
0.5 µL	23	42 mm	Cone		033715	ea.	24821
0.5 µL	26	42 mm	Cone		033708	ea.	24820
5 µL	23	42 mm	Cone		036720	2-pk.	24823
10 µL	23	42 mm	Cone		037717	2-pk.	24825
10 µL	26	42 mm	Cone		037715	2-pk.	24824
25-250 µL	23	42 mm	Cone		038717	2-pk.	24826

Do not reuse TFE washers.

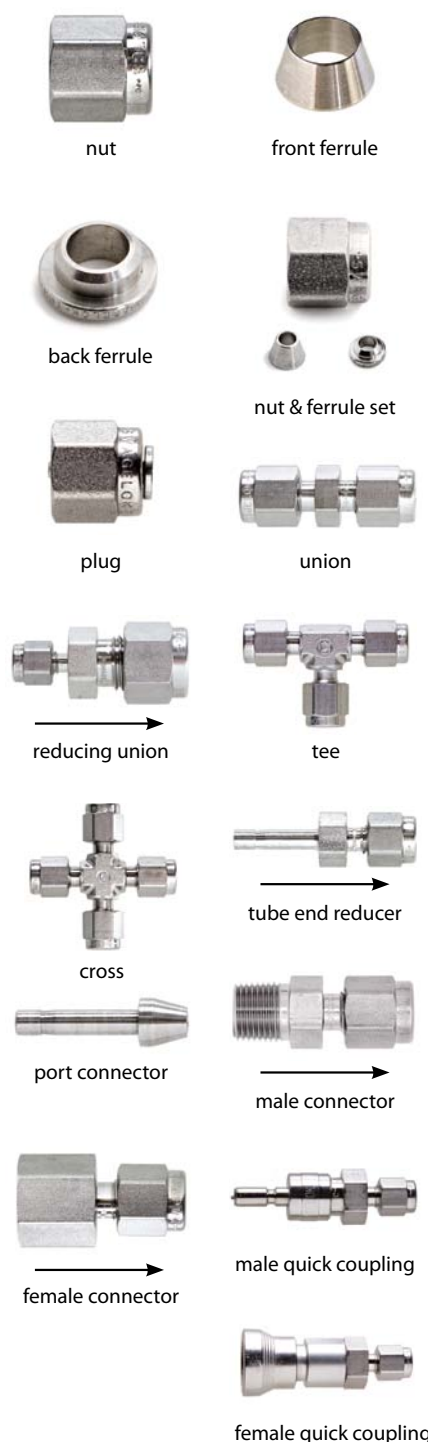


24894



## Swagelok® Fittings (Brass & Stainless Steel)

Restek is pleased to offer one of the premier lines of fittings available for chromatographers in the market today. We can supply the entire line of Swagelok® fittings. If you don't see the exact product you're looking for, please call us or contact your Restek representative for a quote.



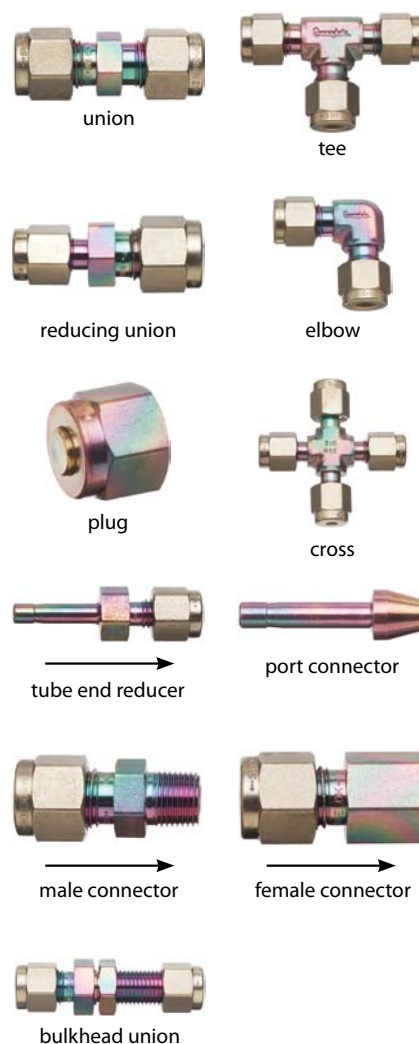
Fitting Type	Size	Swagelok #	Brass		316 Grade Stainless Steel	
			qty.	cat.#	qty.	cat.#
Nut	1/16"	102-1	20-pk.	23100	5-pk.	23150
	1/8"	202-1	40-pk.	23101	10-pk.	23151
	1/4"	402-1	40-pk.	23102	10-pk.	23152
Front Ferrule	1/16"	103-1	20-pk.	23103	10-pk.	23153
	1/8"	203-1	40-pk.	23104	20-pk.	23154
	1/4"	403-1	40-pk.	23105	20-pk.	23155
Back Ferrule	1/16"	104-1	20-pk.	23106	10-pk.	23156
	1/8"	204-1	40-pk.	23107	20-pk.	23157
	1/4"	404-1	40-pk.	23108	20-pk.	23158
Nut & Ferrule Set	1/16"		10-pk.	23109	2-pk.	23159
	1/8"		20-pk.	23110	5-pk.	23160
	1/4"		20-pk.	23111	5-pk.	23161
Plug	1/16"	100-P	5-pk.	23112	2-pk.	23162
	1/8"	200-P	10-pk.	23113	4-pk.	23163
	1/4"	400-P	10-pk.	23114	4-pk.	23164
Union	1/16"	100-6	3-pk.	23115	ea.	23165
	1/8"	200-6	5-pk.	23116	2-pk.	23166
	1/4"	400-6	5-pk.	23117	2-pk.	23167
Reducing Union	1/8" to 1/16"	200-6-1	5-pk.	23118	ea.	23168
	1/4" to 1/16"	400-6-1	5-pk.	23119	2-pk.	23169
	1/4" to 1/8"	400-6-2	5-pk.	23120	2-pk.	23170
Tee	1/16"	100-3	2-pk.	23121	ea.	23171
	1/8"	200-3	2-pk.	23122	ea.	23172
	1/4"	400-3	2-pk.	23123	ea.	23173
Cross	1/8"	200-4	2-pk.	23124	ea.	23174
	1/4"	400-4	2-pk.	23125	ea.	23175
Tube End Reducer	1/8" to 1/16"	100-R-2	5-pk.	23126	2-pk.	23176
	1/4" to 1/16"	100-R-4	5-pk.	23127	2-pk.	23177
	1/8" to 1/4"	400-R-2	5-pk.	23128	2-pk.	23178
	1/4" to 1/8"	200-R-4	5-pk.	23129	2-pk.	23179
Port Connector	1/8"	201-PC	5-pk.	23130	2-pk.	23180
	1/4"	401-PC	10-pk.	23131	2-pk.	23181
	1/8" to 1/4"	401-PC-2	5-pk.	23132	2-pk.	23182
Male Connector	1/8" to 1/8" NPT	200-1-2	10-pk.	23133	2-pk.	23183
	1/4" to 1/4" NPT	400-1-4	10-pk.	23134	2-pk.	23184
	1/16" to 1/8" NPT	100-1-2	5-pk.	23135	2-pk.	23185
	1/8" to 1/4" NPT	200-1-4	10-pk.	23136	2-pk.	23186
	1/4" to 1/8" NPT	400-1-2	10-pk.	23137	2-pk.	23187
Female Connector	1/8" to 1/8" NPT	200-7-2	5-pk.	23138	2-pk.	23188
	1/4" to 1/4" NPT	400-7-4	5-pk.	23139	2-pk.	23189
	1/4" to 1/8" NPT	400-7-2	5-pk.	23140	2-pk.	23190
Male & Female Quick Couplings	1/8" male*	QC4D-200	—	—	ea.	23191
	1/8" male	QC4S-200	—	—	ea.	23192
	1/8" female*	QC4B-200	—	—	ea.	23193
	1/4" male*	QC4D-400	—	—	ea.	23194
	1/4" male	QC4S-400	—	—	ea.	23195
	1/4" female*	QC4B-400	—	—	ea.	23196

\*Includes self-sealing shut-off valve.

**Swagelok® Fittings** (Siltek®/Sulfinert® & Silcosteel®-CR Treated)

- Full line of treated  $1/16$ ",  $1/8$ ", and  $1/4$ " fittings.
- Silcosteel®-CR treatment enhances corrosion resistance by 10x or more.
- For custom treatment on any Swagelok® fitting or other system parts not listed here, call us or contact your Restek representative.

Fitting Type	Size	Swagelok #	Siltek/Sulfinert Treated		Silcosteel-CR Treated	
			qty.	cat.#	qty.	cat.#
Union	$1/16$ "	SS-100-6	ea.	22540	ea.	22575
	$1/8$ "	SS-200-6	ea.	22541	ea.	22576
	$1/4$ "	SS-400-6	ea.	22542	ea.	22577
	$3/8$ "	SS-600-6	ea.	22909	ea.	22904
Tee	$1/16$ "	SS-100-3	ea.	22543	ea.	22578
	$1/8$ "	SS-200-3	ea.	22544	ea.	22579
	$1/4$ "	SS-400-3	ea.	22545	ea.	22580
	$3/8$ "	SS-600-3	ea.	22910	ea.	22905
Reducing Union	$1/8$ " tube to $1/16$ "	SS-200-6-1	ea.	22546	ea.	22581
	$1/4$ " tube to $1/16$ "	SS-400-6-1	ea.	22547	ea.	22582
	$1/4$ " tube to $1/8$ "	SS-400-6-2	ea.	22548	ea.	22583
	$3/8$ " tube to $1/4$ "	SS-600-6-4	ea.	22911	ea.	22906
Elbow	$1/8$ "	SS-200-9	ea.	22549	ea.	22584
	$1/4$ "	SS-400-9	ea.	22550	ea.	22585
Plug	$1/8$ "	SS-200-P	ea.	22573	ea.	22620
	$1/4$ "	SS-400-P	ea.	22574	ea.	22597
Cross	$1/8$ "	SS-200-4	ea.	22551	ea.	22586
	$1/4$ "	SS-400-4	ea.	22552	ea.	22587
Tube End Reducer	$1/8$ " tube to $1/16$ "	SS-100-R-2	ea.	22553	ea.	22588
	$1/4$ " tube to $1/16$ "	SS-100-R-4	ea.	22554	ea.	22589
	$1/8$ " tube to $1/4$ "	SS-400-R-2	ea.	22555	ea.	22590
	$1/4$ " tube to $1/8$ "	SS-200-R-4	ea.	22556	ea.	22591
Port Connector	$1/8$ "	SS-201-PC	ea.	22557	ea.	22592
	$1/4$ "	SS-401-PC	ea.	22558	ea.	22593
	$1/8$ " tube to $1/4$ "	SS-401-PC-2	ea.	22559	ea.	22594
Male Connector	$1/8$ " to $1/8$ " NPT	SS-200-1-2	ea.	22561	ea.	22595
	$1/4$ " to $1/4$ " NPT	SS-400-1-4	ea.	22562	ea.	22596
	$1/16$ " to $1/8$ " NPT	SS-100-1-2	ea.	22563	ea.	22610
	$1/8$ " to $1/4$ " NPT	SS-200-1-4	ea.	22564	ea.	22611
	$1/4$ " to $1/8$ " NPT	SS-400-1-2	ea.	22565	ea.	22612
	$3/8$ " to $3/8$ " NPT	SS-600-1-6	ea.	22912	ea.	22907
Female Connector	$1/8$ " to $1/8$ " NPT	SS-200-7-2	ea.	22566	ea.	22613
	$1/4$ " to $1/4$ " NPT	SS-400-7-4	ea.	22567	ea.	22614
	$1/4$ " to $1/8$ " NPT	SS-400-7-2	ea.	22568	ea.	22615
	$1/8$ " to $1/4$ " NPT	SS-200-7-4	ea.	22569	ea.	22616
Bulkhead Union	$1/8$ "	SS-200-61	ea.	22570	ea.	22617
	$1/4$ "	SS-400-61	ea.	22571	ea.	22618

**Custom Coatings**

- **Siltek®**—The ultimate passivation of treated surfaces, from glass to high nickel alloys of steel; ideal for sulfurs, automotive exhaust testing, or stack gas sampling.
- **Sulfinert®**—A required treatment for metal components when analyzing for parts-per-billion levels of organosulfur compounds.
- **Silcosteel®-CR**—A corrosion resistant layer that increases the lifetime of system components in acidic environments containing hydrochloric acid, nitric acid, or seawater.



## Swagelok® Fitting Kits

Save more than 40% by purchasing a Restek Swagelok® fittings kit compared to paying full price for the individual parts!

- Includes the most common assortment of 1/8" and 1/4" brass or stainless steel fittings.
- Parts list makes reordering easy.
- Parts come in sturdy toolbox for easy and convenient storage.



40%  
savings



### Swagelok® Fitting Kit (Brass)

#### Swagelok #, Description, qty included in kit

B-202-1	1/8" brass nut (20)
B-402-1	1/4" brass nut (20)
B-203-1	1/8" brass front ferrule (20)
B-403-1	1/4" brass front ferrule (20)
B-204-1	1/8" brass back ferrule (20)
B-404-1	1/4" brass back ferrule (20)
B-200-C	1/8" brass cap (6)
B-400-C	1/4" brass cap (6)
B-200-P	1/8" brass plug (6)
B-400-P	1/4" brass plug (6)
B-200-6	1/8" brass union (2)
B-400-6	1/4" brass union (2)
B-400-6-2	1/4" to 1/8" brass reducing union (2)
B-200-3	1/8" brass tee (2)
B-400-3	1/4" brass tee (2)
B-400-R-2	1/8" to 1/4" brass tube end reducer (2)
B-200-R-4	1/4" to 1/8" brass tube end reducer (2)
MS-IG-200	1/8" inspection gauge (1)
MS-IG-400	1/4" inspection gauge (1)

Description	qty.	cat.#
Swagelok Fitting Kit, Brass	kit	23141

### Swagelok® Fitting Kit (Stainless Steel)

#### Swagelok #, Description, qty included in kit

SS-202-1	1/8" SS nut (20)
SS-402-1	1/4" SS nut (20)
SS-203-1	1/8" SS front ferrule (20)
SS-403-1	1/4" SS front ferrule (20)
SS-204-1	1/8" SS back ferrule (20)
SS-404-1	1/4" SS back ferrule (20)
SS-200-C	1/8" SS cap (6)
SS-400-C	1/4" SS cap (6)
SS-200-P	1/8" SS plug (6)
SS-400-P	1/4" SS plug (6)
SS-200-6	1/8" SS union (2)
SS-400-6	1/4" SS union (2)
SS-400-6-2	1/4" to 1/8" SS reducing union (2)
SS-200-3	1/8" SS tee (2)
SS-400-3	1/4" SS tee (2)
SS-400-R-2	1/8" to 1/4" SS tube end reducer (2)
SS-200-R-4	1/4" to 1/8" SS tube end reducer (2)
MS-IG-200	1/8" inspection gauge (1)
MS-IG-400	1/4" inspection gauge (1)

Description	qty.	cat.#
Swagelok Fitting Kit, Stainless Steel	kit	23197



## Restek Super-Clean Gas Filters

- High-purity output ensures 99.9999% pure gas (at max. flow of 2 L/min).
- “Quick connect” fittings for easy, leak-tight cartridge changes.
- Glass inside to prevent diffusion; polycarbonate housing outside for safety.
- All traps measure 10 <sup>5</sup>/<sub>8</sub>" x 1 <sup>3</sup>/<sub>4</sub>" (27 x 4.4 cm).
- Each base plate unit measures 4" x 4" x 1 <sup>7</sup>/<sub>8</sub>" (10.2 x 10.2 x 4.8 cm).

**Table I** Each Super-Clean gas filter provides high-purity outlet gas.

Type of Filter	Outlet Gas Quality (%)	Maximum Pressure/ Maximum Flow Rates	Use for:	Indicator Color Change	Capacity			Estimated Lifetime (years)
					H <sub>2</sub> O (g)	O <sub>2</sub> (mL)	Hydrocarbons (g)	
Moisture cat.# 22028	>99.9999	11 bar 159 psi/ 7 L/min.	Inert carrier gas Air Hydrogen	Yellow/orange to clear	7.2	—	—	>2
Oxygen cat.# 22029	>99.9999	11 bar 159 psi/ 7 L/min.	Inert carrier gas	Green to grey	NA	1,000	—	>2
Hydrocarbons cat.# 22030	>99.9999	11 bar 159 psi/ 7 L/min.	Inert carrier gas Air Hydrogen	No indicator	NA	—	12 <sup>1</sup>	>2
Fuel Gas <sup>1</sup> cat.# 22022	>99.9999	11 bar 159 psi/ 7 L/min.	Inert carrier gas Air Hydrogen	Yellow/orange to clear	3.5	—	24 <sup>3</sup>	>1.5
Triple <sup>2</sup> cat.# 22020	>99.9999	11 bar 159 psi/ 7 L/min.	Inert carrier gas	Yellow/orange to clear Green to grey	1.8	500	4 <sup>3</sup>	>1
Helium Specific <sup>2</sup> cat.# 21982	>99.9999	11 bar 159 psi/ 7 L/min.	Helium	Yellow/orange to clear Green to grey	1.8	500	—	>1

<sup>1</sup>Removes hydrocarbons and moisture.

<sup>2</sup>Removes hydrocarbons, moisture, and oxygen.

<sup>3</sup>As *n*-butane.



22022

### did you know?

All Restek Super-Clean gas filter cartridges (except hydrocarbon filter cat.# 22030) feature easy-to-read indicators. The indicator code is shown on every trap so there is no confusion about when to replace it.



22020



21982



22025

## Restek Super-Clean Gas Filter Kits and Replacements

Description	qty.	cat.#
Carrier Gas Cleaning Kit Includes: mounting base plate, 1/8" inlet/outlet fittings, and oxygen/moisture/hydrocarbon Triple Gas Filter	kit	22019
Fuel Gas Purification Kit Includes: mounting base plate, 1/8" inlet/outlet fittings, and hydrocarbon/moisture Fuel Gas Filter	kit	22021
Ultra-High Capacity Hydrocarbon Filter	ea.	22030
Ultra-High Capacity Moisture Filter	ea.	22028
Ultra-High Capacity Oxygen Filter	ea.	22029
Replacement Triple Gas Filter (removes oxygen, moisture, and hydrocarbons)	ea.	22020
Replacement Fuel Gas Filter (removes moisture and hydrocarbons)	ea.	22022
Helium-Specific Carrier Gas Cleaning Kit Includes: mounting base plate, 1/8" inlet/outlet fittings, and oxygen/moisture/hydrocarbon Helium-Specific Filter	kit	21983
Replacement Helium-Specific Gas Filter (removes oxygen, moisture, and hydrocarbons)	ea.	21982
Gas Filter Bundle Kit Includes: one Triple Gas Filter (cat.# 22020) and two Fuel Gas Filters (cat.# 22022)	kit	22031



### Oxygen and Moisture Traps

Restek highly recommends oxygen and moisture traps for make-up gas when operating sensitive detectors such as electron capture detectors (ECD). The hydrogen reaction gas for sensitive electrolytic conductivity detectors (ELCD) also requires a hydrocarbon trap to remove trace impurities.

# Part Number Cross-Reference

Similar to				Similar to			
Agilent Part #	Page	Restek Part #	Product Name	Agilent Part #	Page	Restek Part #	Product Name
05890-60800	31	20652	Replacement Cable, 5890 to Strip Chart/Integrator	210-3003-5	5	20773	4 mm Splitless Liner
05890-61030	20	23040	Oven Temperature Sensor	210-4004-5	6	21023	4 mm Split Precision Liner w/Deact. Wool
05890-61080	31	20657	Replacement Remote Start Cable	210-4004-5	2	23305.5	Sky Liner, 4 mm Precision w/Wool
05890-61140	28	22068	Injector/FID Heater and Injector/FID PRT Sensor	210-4022-5	6	22984	4 mm Single Taper Precision Liner w/Deact. Wool
05890-61260	20	21610	Replacement Chemical Trap	500-1210	37	20445	Polyimide Resin
05890-61525	32	22343	Parking Post	500-2114	35	20250	Compact Ferrules, 1/16"
05921-21170	17	20883	Capillary Column Nut, SS	5020-8292	33	21040	Finger-Tight Capillary Column Nuts for Compact Ferrules
05921-21170	33	21879	Capillary Column Nut, Brass	5020-8292	33	21041	Finger-Tight Capillary Column Nuts for Standard Ferrules
05971-20305	26	24699	Gold Tip Transfer Line	5020-8293	33	21040	Finger-Tight Capillary Column Nuts for Compact Ferrules
05988-20066	26	20643	(Detector) MSD Source Nut	5020-8293	33	21041	Finger-Tight Capillary Column Nuts for Standard Ferrules
07673-21140	32	21237	Injector Mounting Post	5020-8294	31	21883	Injector/Detector Plug Nuts
07673-60605	32	22855	Turret Tray Assembly	5061-5869	15	21710	Replacement Inlet Seal Washers
07673-60810	32	22337	Injector Turret Motor	5062-3506	35	20212	V/G Ferrules, 0.5 mm ID
07673-61275	32	22695	Autosampler Plunger Carrier Belt	5062-3508	35	20211	V/G Ferrules, 0.4 mm ID
1500-0676	32	22692	Carriage Motor Belt	5062-3538	35	20213	V/G Ferrules, 0.8 mm ID
1500-0803	32	22363	Z-Belt	5062-3580	36	24848	V/G Ferrules, 2-hole, 0.4 mm ID
18710-20119	30	21694, 21695	FID Jet, Standard, 0.018-Inch ID Tip	5062-3581	36	24849	V/G Ferrules, 2-hole, 0.5 mm ID
18710-20119	30	21696, 21697	FID Jet, High-Performance, 0.018-Inch ID Tip	5062-3587	5	22405	Single Taper Splitless Liner (4 mm) w/Deact. Wool
18740-20800	17	22078	Reducing Nut	5062-3587	2	23303.1	Sky Liner, 4 mm Single Taper w/Wool
18740-20880	15	20390	Replacement Inlet Seal, 1.2 mm SS	5080-8732	24	20964, 20965, 20966	DI Unliner Liner
18740-20880	15	21315	Replacement Inlet Seal, 0.8 mm SS	5080-8732	24	20967	DI Glass Inserts
18740-20885	15	21305	Replacement Inlet Seal, 1.2 mm Gold Plated	5080-8773	35	20252	Compact Ferrules, 0.8 mm
18740-20885	15	21317	Replacement Inlet Seal, 0.8 mm Gold Plated	5080-8898	24	21685	Viton O-rings
18740-20940	20	20409	Heat Sink	5180-4165	28	23064	Silicone Washers for FID Collector Housing
18740-60835	19	20631	Septum Nut, AS & PTV	5180-4168	12	20296, 20297	Graphite O-Rings, 6.35 mm ID
18740-60835	19	21309	Septum Nut, Manual Injection	5180-4173	12	20298, 20299	Graphite O-Rings, 6.5 mm ID
18740-80190	6	20709	4 mm Cup Splitter Liner	5180-4181	20	22064	O-Rings for Trap Fittings
18740-80200	6	20972	1 mm Split Liner	5181-1210	42	21174	11 mm Aluminum Crimp Seals w/Septa
18740-80200	2	23333.1	Sky Liner, 1 mm Split	5181-1267	46	21212, 24596	Syringe, Standard, 10 µL, fixed, 23-26 gauge
18740-80220	5	20914	2 mm Splitless Liner	5181-1270	42	24513	Big Mouth Vial Insert w/Bottom Spring
18789-80070	30	21686, 21687	FID Jet, High-Performance, 0.030-Inch ID Tip	5181-1273	46	21210, 24593	Syringe, Standard, 5 µL, fixed, 23-26 gauge
18789-80070	30	21688, 21689	FID Jet, Standard, 0.030-Inch ID Tip	5181-3311	29	21136	FID Collector Nut and Washer
19231-00130	28	22329	Spanner Wrench	5181-3315	5	20784	Double Taper Splitless Liner (4 mm)
19231-20910	29	21137	FID Ignitor Castle	5181-3315	2	23308.1	Sky 4 mm Double Taper Liner
19231-20920	28	23037	FID Collector Housing Kit	5181-3316	5	20798	Single Taper Splitless Liner (4 mm)
19231-20930	28	23036	FID Collector Mount	5181-3316	2	23302.1	Sky 4 mm Single Taper Liner
19231-20940	29	21136	FID Collector Nut and Washer	5181-3319	47	20165	Syringe Needles
19231-20950	29	21138	FID Collector (includes insulators)	5181-3321	46	21213, 24598	Syringe, Standard, 10 µL, removable, 23-26 gauge
19231-20960	29	21138	FID Collector (includes insulators)	5181-3360	46	21215, 24600	Syringe, Standard, 10 µL, fixed, 23-26 gauge, 6-pk.
19231-20970	29	21138	FID Collector (includes insulators)	5181-3376	42	24385	Vial, 2 mL Amber Crimp
19231-60620	28	22069	Injector/FID Heater	5181-3377	42	24517	Vial Insert, 350 µL Flat Bottom
19231-60660	28	23035	Injector/FID PRT Sensor	5181-3382	24	20964, 20965, 20966	DI Unliner Liner
19231-60680	29	21001	FID Ignitor	5181-3382	24	20967	DI Glass Inserts
19231-60690	29	23010	FID Collector Assembly Kit (includes insulators)	5181-3395	38	20400	Universal Press-Tight Connectors
19231-80580	28	23041	FID Base Weldment	5181-3396	38	20429	Universal Press-Tight Connectors, Deactivated
19233-20625	31	27192	Replacement ECD Fused Silica Liner	5181-3397	39	20405	Universal "Y" Press-Tight Connector
19243-80570	24	21691	Siltek Septum Packed Purge Port Weldment	5181-3398	39	20405-261	Universal "Y" Press-Tight Connector, Deactivated
19244-80540	24	21303	DI Liner Adaptor for Packed Column GC	5181-8809	47	24789, 24894	Syringe, Gas-tight, 10 µL, fixed, 23 gauge
19244-80560	30	20670, 20671	FID Jet, Standard, 0.011-Inch ID Tip	5181-8811	47	20164, 24825	Needle for 10 µL Gas-tight Syringe, 23 gauge
19244-80560	30	20672, 20673	FID Jet, High-Performance, 0.011-Inch ID Tip	5181-8813	47	21224, 24797	Syringe, Gas-tight, 10 µL, removable, 23 gauge
19244-80610	31	22077	FID/NPD Capillary Adaptor Fitting	5181-8815	13	22815	Microseal, Low Pressure (1 to 45 psi)
19246-60630	20	20634	Backpressure Regulator Kit	5181-8816	13	22814	Microseal, Low Pressure Kit (1 to 45 psi)
19247-60510	21	22076	Air Diverter	5181-8818	5	20712	2 mm Splitless Liner
19251-00100	19	22065	Injector Wrench	5181-8818	2	23313.1	Sky 2 mm Splitless Liner
19251-20620	20	22080	Heater Block Retaining Nut	5181-8830	33	21878	Capillary Column Nut, Brass
19251-60540	6	20781	4 mm Split Liner w/Deact. Wool	5181-8830	33	21884	Capillary Column Nut, Stainless
19251-60540	5	22400	4 mm Splitless Liner w/Deact. Wool	5181-8833	13	22813	Microseal, Low Pressure Kit (1 to 45 psi)
19251-60540	2	23300.1	4 mm Straight Sky Liner w/Wool	5182-0543	42	24383	Vial, 2 mL Clear Crimp Top
19251-60575	18	20265	Replacement Weldment	5182-0549	42	24518	Big Mouth Vial Insert w/Bottom Spring
19251-60575	18	20267	Replacement Weldment, Siltek	5182-0552	42	24359	Crimp Caps w/Septa
19251-80525	20	22800	Split Vent Line (32-inch)	5182-0714	44	21154	Vial, 2 mL Clear, 9 mm Short Cap
19251-80570	18	20266	Replacement Shell Weldment	5182-0715	44	21140	Vial, 2 mL Clear Screw Thread w/Mk Spot
19251-80570	18	20268	Replacement Shell Weldment, Siltek				
19301-60660	29	21000	FID Flow Measuring Adaptor				
210-3003	24	20772	4 mm Splitless Liner				
210-3003	2	23301.1	Sky Liner, 4 mm Straight				
210-3003	2	23301.25	Sky Liner, 4 mm Straight				
210-3003-05	2	23301.5	Sky Liner, 4 mm Straight				

Similar to				Similar to			
Agilent Part #	Page	Restek Part #	Product Name	Agilent Part #	Page	Restek Part #	Product Name
5182-0716	44	21142	Vial, 2 mL Amber Screw Thread w/Mk Spot	9301-0713	46	20167, 24785	Syringe, Standard, 10 µL, fixed, 23 gauge
5182-0717	44	24473	Short-Caps, 9 mm PTFE Preassembled	9301-0714	46	24595, 24784	Syringe, Standard, 10 µL, fixed, 26 gauge
5182-0720	44	24485	Short-Caps, 9 mm PTFE/Sil Preassembled	9301-0725	46	20169, 24787	Syringe, Standard, 10 µL, fixed, 23 gauge, 6-pk.
5182-0723	44	24497	Short-Caps, 9 mm PTFE/Sil/PTFE Preassembled	9301-0891	46	24592, 24780	Syringe, Standard, 5 µL, fixed, 26 gauge
5182-0817	51	22028	Ultra-High Capacity Moisture Filter	9301-0892	46	20168, 24781	Syringe, Standard, 5 µL, fixed, 23 gauge
5182-0818	51	22029	Ultra-High Capacity Oxygen Filter	9301-0977	42	24653	Vial, 2 mL Crimp Top w/Insert (Glass/Clr Plastic)
5182-0820	51	22030	Ultra-High Capacity Hydrocarbon Filter	9301-0978	42	24651	Vial, 2 mL Crimp Top w/Insert (Poly)
5182-0830	47	24821	Needle for 0.5 µL Standard Syringe, 23 gauge	G1099-20030	26	21894	Capillary Installation Gauge
5182-0834	46	20172, 24793	Syringe, Standard, 5 µL, removable, 23 gauge	G1530-60960	21	24323	EPC Test Kit
5182-0835	46	21211, 21223	Syringe, Standard, 5 µL, removable, 23-26 gauge	G1530-61030	20	23039	Oven Temperature Sensor
5182-0875	46	20170, 24783	Syringe, Standard, 5 µL, fixed, 23 gauge, 6-pk.	G1530-61950	20	27200	Heater/Sensor Assembly
5182-3442	13	22811	Microseal, General Purpose Kit (3 to 100 psi)	G1530-80650	21	22076	Air Diverter
5182-3444	13	22812	Microseal, General Purpose (3 to 100 psi)	G1531-20550	28	23043	FID Collector Mount
5182-3445	13	22809	Replacement Microseal Nut	G1531-20550	28	23045	FID Collector Housing Kit
5182-9652	15	20476, 20477	Cross-Disk Inlet Seal, 0.8 mm Gold	G1531-20690	29	21139	FID Collector (includes insulators)
5182-9704	51	22019	Carrier Gas Cleaning Kit	G1531-20700	29	21139	FID Collector (includes insulators)
5182-9705	51	22020	Replacement Triple Gas Filter	G1531-20740	28	23044	FID Collector Housing
5182-9749	12	22684	Liner Seals for CIS4 and PTV	G1531-60690	29	21699	FID Collector Assembly Kit (includes insulator)
5182-9763	15	21409	Silver PTV Seals	G1531-80560	30	21620, 21683	FID Jet, High-Performance, 0.011-Inch ID Tip
5183-2036	3	23431.1	Single Baffle PTV Liner	G1531-80560	30	21621, 21682	FID Jet, Standard, 0.011-Inch ID Tip
5183-2037	3	23432.1	Single Baffle PTV Liner w/Wool	G1531-80580	28	23052	FID Base Weldment, Pack Column FID
5183-2038	3	23433.1	Baffled PTV Liner	G1531-80620	30	23078	FID Jet, High-Temperature, 0.018-Inch ID Tip
5183-2068	44	21141	Vial, 2 mL Clear Screw Thread w/Mk Spot	G1531-80630	28	23053	FID Base Weldment, Capillary Column FID
5183-2069	44	21143	Vial, 2 mL Amber Screw Thread w/Mk Spot	G1544-20570	20	27199	Heater Block
5183-4492	42	24384	Vial, 2 mL Clear Crimp Top w/Mk Spot	G1544-20590	20	23042	Heater Block Retaining Nut
5183-4493	42	24386	Vial, 2 mL Amber Crimp Top w/Mk Spot	G1544-60575	18	22672	Replacement Weldment with EPC, Siltek
5183-4498	42	21175	11 mm Aluminum Crimp Caps w/Septa	G1544-60575	18	22674	Replacement Weldment with EPC
5183-4500	42	24360	11 mm Aluminum Crimp Caps w/Septa	G1544-60585	18	22670	Split/Splitless Weldment
5183-4620	34	23026	Shortix Capillary GC Column Cutter				(large canister type filter), Siltek
5183-4621	34	23027	Maintenance Kit for Shortix Cap. GC Column Cutter	G1544-60585	18	22686	Split/Splitless Weldment
5183-4647	6	20994	Low Pressure Drop Liner w/Deact. Wool				(for use with large canister type filter)
5183-4691	6	20782	4 mm Split Liner w/Deact. Wool	G1544-60610	20	23031	Optional Split Vent Trap Assembly
5183-4691	5	22401	4 mm Splitless Liner w/Deact. Wool	G1544-80530	20	23032	Replacement Traps (2) and O-Rings (4)
5183-4691	2	23300.5	Sky 4 mm Straight Liner w/Wool	G1544-80550	20	22820	Replacement Split Vent Trap
5183-4692	6	20783	4 mm Split Liner w/Deact. Wool	G1544-80570	18	22671	Replacement Shell Weldment, Siltek
5183-4692	5	22402	4 mm Splitless Liner w/Deact. Wool	G1544-80570	18	22673	Replacement Shell Weldment
5183-4692	2	23300.25	Sky 4 mm Straight Liner w/Wool	G1544-80700	7	20954	Double Taper Drilled Uniliner (hole near bottom)
5183-4693	5	22406	Single Taper Splitless Liner (4 mm) w/Deact. Wool	G1544-80700	7	20989	Double Taper Drilled Uniliner (hole near bottom)
5183-4693	1	23303.5	Sky 4 mm Single Taper Liner w/Wool	G1544-80730	7	20756	Drilled Uniliner (hole near bottom)
5183-4694	5	22407	Single Taper Splitless Liner (4 mm) w/Deact. Wool	G1544-80730	7	20771	Drilled Uniliner (hole near bottom)
5183-4694	2	23303.25	Sky 4 mm Single Taper Liner w/Wool	G1544-80730	2	23306.1	Sky Drilled Uniliner (hole near bottom)
5183-4695	5	20799	Single Taper Splitless Liner (4 mm)	G2397-20540	31	27190	1 mm Micro ECD Liner
5183-4695	2	23302.5	Sky 4 mm Single Taper Liner	G2613-20500	32	21172	Injector Mounting Post
5183-4696	5	20800	Single Taper Splitless Liner (4 mm)	G3452-20500	20	27199	Heater Block
5183-4696	2	23302.25	Sky 4 mm Single Taper Liner				
5183-4699	6	20710	Cup Splitter Liner				
5183-4701	6	20995	Low Pressure Drop Liner w/Deact. Wool				
5183-4703	5	20713	2 mm Splitless Liner				
5183-4703	2	23313.5	Sky 2 mm Splitless Liner				
5183-4704	5	20714	2 mm Splitless Liner				
5183-4704	2	23313.25	Sky 2 mm Splitless Liner				
5183-4705	5	20785	Double Taper Splitless Liner (4 mm)				
5183-4705	2	23308.5	Sky 4 mm Double Taper Liner				
5183-4706	5	20786	Double Taper Splitless Liner (4 mm)				
5183-4706	2	23308.25	Sky 4 mm Double Taper Liner				
5183-4707	5	20915	2 mm Splitless Liner				
5183-4709	6	20973	1 mm Split Liner				
5183-4711	6	20994	Low Pressure Drop Liner w/Deact. Wool				
5183-4712	6	20995	Low Pressure Drop Liner w/Deact. Wool				
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5183-4771	51	22022	Replacement Fuel Gas Filter				
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5188-6474	51	21982	Replacement Helium-Specific Gas Filter				
5188-6475	51	21983	Helium-Specific Carrier Gas Cleaning Kit				
5190-2296	3	23334.1	Single Taper Liner w/Dimple				
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Lit. Cat.# GNM1158-UNV

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