optimizetechnologies

2010 Catalog

OPTIMIZE TECHNOLOGIES

Your Local Optimize Distributor:

optimizetechnologies

Innovative HPLC, UHPLC & LC/MS products

Optimize Technologies is dedicated to providing the highest quality HPLC, UHPLC and LC/MS products available. We combine innovative design and superior performance to engineer and manufacture our products.

For example, the new EXP™ product family provides reusable hand-tight connections and hand-tight cartridge replacement for UHPLC pressures of 20,000+ psi. The optilynx™ provides low-dispersion quick-connect LC connections rated to 6,000 psi. Our piston seals use unique polymer blends to provide the ultimate performance. Check valve ball and seat sets are perfectly mated; the geometry is optimized for the fastest response time and flawless operation.

We are constantly developing new products and expanding existing offerings. Please contact us if you have a custom design requirement or need support with your scientific instrumentation. Optimize welcomes the opportunity to provide custom design and engineering solutions.

We promise to bring you innovative products that offer unmatched performance, quality, and ease of use - all backed with the most responsive and effective customer service in the industry.

optimize service
How can we help you?

At Optimize, we take customer satisfaction seriously. Our products are only as good as the support we provide. Customer service is not just a department, but an integral part of our business. Our sales and quality assurance professionals, technical support specialists, machinists, engineers, chemists, and administrative team are available to provide answers to your questions.

Contact us directly or find your local authorized dealer at **http://www.optimizetech.com.**
Rest assured, Optimize will be there to provide effective and efficient service.

our guarantee

Every component and product is designed to offer optimal performance and to meet or exceed original equipment specifications. Every Optimize product carries our full guarantee. For more information, please see page 82.

Thank you for your business.

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optimizemanufacturing

made in the u.s.a.

PRECISION MACHINING

Optimize products are manufactured by skilled machinists at our facility in Oregon City, Oregon. To meet our exacting standards for quality and reliability, our designs push the limits of manufacturing tolerances. To maintain these dimensional tolerance controls, we individually machine components and avoid mold-based manufacturing techniques. We ensure the consistency of our manufacturing process with a rigorous quality control program.

THE DRIVING FORCE

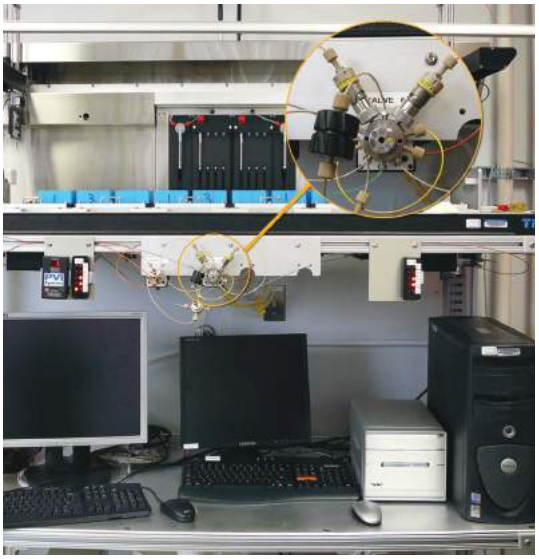
Innovation started Optimize and innovation continues to fuel its progress. The spirit of Optimize is exemplified by products such as the auto-adjusting stem, Hand-Tight EXP™ products rated to 20,000 psi, the Opti-Max® check valve system, and the Opti-Lynx™ quick-connect hardware. We push the limits to excellence in everything we create at Optimize.

RESEARCH & DEVELOPMENT

At Optimize Technologies we are obsessed with Research and Development. It's hard not to be when we define and pride ourselves on continual progress. Our team of engineers and chemists are constantly engaging in the evaluation of existing product designs and conceptualization of new ones. Optimize pushes the boundries of conventional product design while contributing a large portion of time and resources to the research and development process. Our many collaborative efforts with various original equipment manufacturers (OEMs) and pharmaceutical research companies have resulted in customized components and devices for a variety of unique applications, increasing our experience beyond the realm of HPLC.

custom design & manufacturing

At Optimize Technologies, we carry out virtually all of our manufacturing and design in the USA. Highly experienced machinists bring to life the innovations created by our team of design specialists, engineers, and chemists.



Custom packed OPTI-LYNX™ and OPTI-SOLV® filtration application at the Pfizer Lab.

Some of the industries we serve:

- Chromatography
- Drug Discovery
- Mass Spectrometry
- Nuclear Pharmacy
- Clinical
- Environmental
- Petrochemical
- Bio-Defense
- Pharmaceuticals

Quality assurance professionals, who have an established reputation for being the most demanding in the industry, ensure that Optimize Products meet or exceed the highest standards in the industry.

Team with Optimize Technologies to bring your ideas to reality. From simple one-piece fittings to entire fluid handling assemblies no project is too small or too large. We offer patented technologies such as EXP,™ Opti-Lynx™ and Opti-Solv® and can customize our products for your applications. For more diverse projects, we design your product from the ground up to meet your specifications.

SPECIFIC NEEDS, SPECIFIC RESULTS

On-site engineering and manufacturing allows Optimize make rapid changes to the production process to meet the immediate needs of our customers. Optimize specializes in custom design and development services including packed-bed products, quick-connect technology for scientific applications, and complex fluid handling devices. Our partnerships continue to benefit a variety of companies and customers with diverse applications.

Please refer to the testimonials on the following pages to see how our services help companies develop products and programs. Now more than ever, Optimize is the perfect partner to adapt existing designs to specific applications, engineer solutions for problematic situations, and create innovative products.

optimizepartners
see what our customers are saying...

One of our best kept secrets is our development & manufacturing of products to meet the individual needs of our customers. To see what they are saying, please visit our website, http://www.optimizetech.com/testimonials

Introducing EXP™

the new gold standard of
extreme pressure chromatography
hardware and consumables.

UHPLC

extreme pressure

Welcome to the new gold standard of ultra high pressure liquid chromatography (UHPLC) hardware and consumables. Optimize Technologies' EXP product family includes fittings, filters and packed-bed products which offer unparalleled convenience and ease of use through exciting new patented and patent-pending innovations. This advanced system is the first design to provide reusable hand-tight connections and hand-tight cartridge replacement for UHPLC. These innovations significantly accelerate challenging UHPLC applications and reduce costly instrument downtime.

Revolutionary features include:

- EXP titanium/PEEK hybrid ferrule offering repeated zero-dead-volume connections, hand-tight to 8,700 psi or wrench-tight to 20,000 psi (1,400+ bar).
- EXP holders and cartridges with ultra-low internal swept volume and hand-tight cartridge changeover for use to 20,000 psi (1,400+ bar).

This rare combination of attributes enables our EXP components to provide excellent protection with negligible impact on analyte retention and peak symmetry. The elegant design of our EXP line showcases sleek architecture for easy installation in restricted instrument compartments without compromising accessibility. Our commitment to exceed industry standards yields an entire EXP product family conservatively rated to 20,000+ psi (1,400+ bar). The EXP product line, as well as virtually all Optimize products, are proudly designed and manufactured in our facility in Oregon, USA*.

From the name you've trusted for 25 years of precision innovation in HPLC accessories and consumables, EXP represents the culmination of a generation of research and development in our field. Exacting quality control consistently guarantees that every product bearing the EXP trademark exemplifies our high standards, responsive customer service and expert technical support. Optimize is always here to back you up.

* 100% of all Optimize **EXP** products are made in the U.S.A. from raw materials originating in the U.S.A.
98% of all Optimize products are made in the U.S.A. from raw materials originating in the U.S.A.

The Foundation of the EXP Family

Optimize Technologies recognizes the challenges faced by scientists and technicians in the constantly evolving field of chromatography and LC instrumentation. Ultra high pressure liquid chromatography is one example of how these advances present an opportunity for innovative products.

In response to evolving UHPLC technologies, Optimize delivers with the EXP Titanium PEEK Hybrid ferrule. The ingenuity of the EXP ferrule lies in a design which adjusts to any 10-32 port depth and can subsequently be removed and reused in a different port while still maintaining adjustability. The EXP ferrule provides the necessary zero-dead-volume seal to allow connections beyond 20,000+ psi (1,400+ bar).

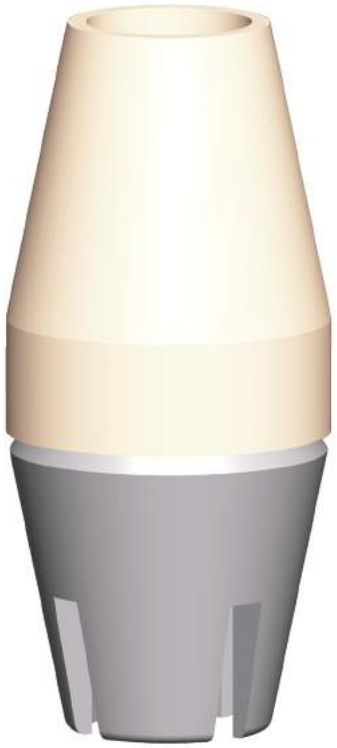
The EXP ferrule, with its innovative capabilities, forms the foundation of our EXP product family. A quick look through these pages shows that the EXP ferrule is incorporated into the entire EXP product line, demonstrating its wide array of applications. If you are interested to see how the EXP products can work for you, please contact Optimize Technologies or one of our authorized dealers. At Optimize, we strive to develop new products that are straight forward, yet elegant, solutions to daily issues in the lab.

ADVANTAGES OF THE EXP FERRULE

- Rated to 20,000+ psi (1,400+ bar)
- Tested to 30,000 psi
- Auto-adjusting ZDV connection
- Intended for many repeat uses

actual size

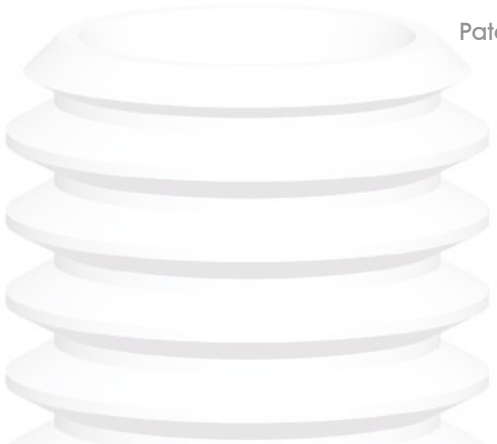
A Perfect Seal
with every connection



PEEK:
Proven sealing ability beyond 20,000 psi (1,400 bar).

Titanium:
Enables the swage to be released and reset. Intended for many repeat connections.

Patents Pending



EXP fitting system

The EXP Fitting System is the premier adjustable nut and ferrule compression fitting for extreme high-pressure connections between 1/16" tubing and any 10-32 port. The key advantages of the EXP fitting lie at the confluence of simplicity and versatility.

The patent-pending Titanium Hybrid Ferrule integrates the resilience of titanium with the proven sealing ability of PEEK in a superb one-piece design. The Hybrid Ferrule provides a perfect seal with every connection, yet the swage can be released without tools to adjust to the different port depths of various hardware. This adjustability provides unlimited value through repeated zero-dead-volume connections with any 10-32 port configuration.

With the EXP Fitting System, you no longer have to clip off and replace swaged ferrules or wonder if you are achieving the best possible connection.

ADVANTAGES OF EXP FITTINGS

- Available in hand-tight & wrench-tight configurations
- Rated to 20,000+ psi (1,400+ bar)
- Tested to 30,000 psi
- Auto-adjusting ZDV connection
- Intended for many repeat uses

HAND-TIGHT

hand-tight to 8,700+ psi
wrench-tight to 20,000+ psi

EXP Titanium Hybrid Ferrules

15-24-03831	Titanium Hybrid Ferrule
15-24-03832	Titanium Hybrid Ferrules (10/pk)

HAND-TIGHT EXP Fittings

15-20-03888	10-32 Hand-Tight Nut & Titanium Hybrid Ferrule
15-20-03930	10-32 Hand-Tight Nut & Titanium Hybrid Ferrule (10/pk)

HEX HEAD

rated to 20,000+ psi

HEX HEAD EXP Fittings

15-20-04120	10-32 Standard Hex Head Nut & Titanium Hybrid Ferrule
15-20-03839	10-32 Hex Head Nut, Short
15-20-03840	10-32 Short Hex Head Nuts & Titanium Hybrid Ferrules (10/pk)
15-20-03833	10-32 Hex Head Nut, Standard
15-20-03834	10-32 Standard Hex Head Nuts & Titanium Hybrid Ferrules (10/pk)
15-20-03841	10-32 Hex Head Nut, Long
15-20-03842	10-32 Long Hex Head Nuts & Titanium Hybrid Ferrules (10/pk)

HAND-TIGHT EXP Coupler

15-20-04128	1/16" OD x 0.005" ID x 5 cm Stainless Steel Tubing (Includes 2 EXP Hand-Tight Fittings)

Patents Pending

EXP stem filter

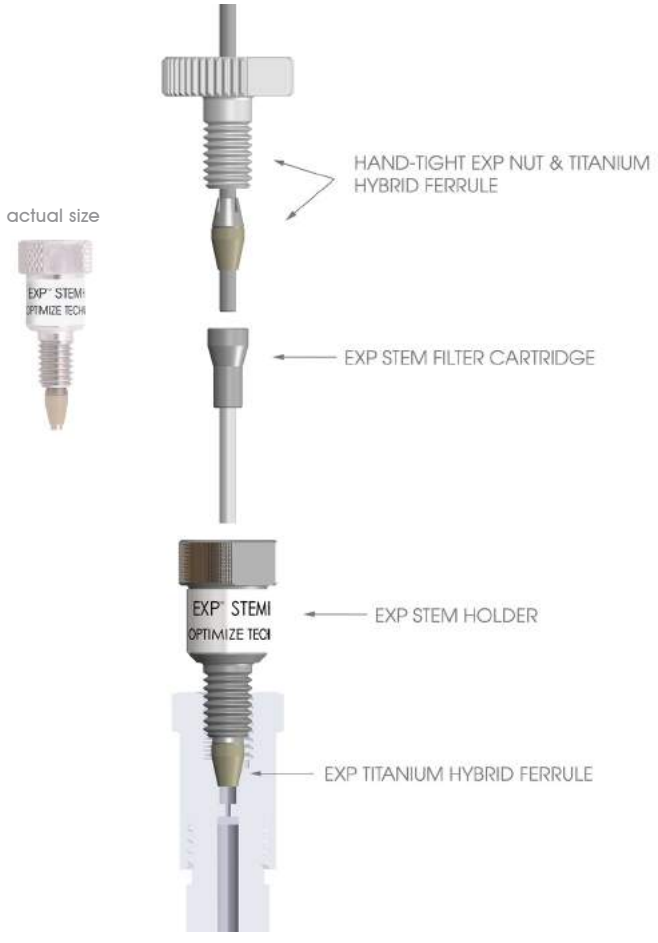
Modern UHPLC and UHPLC/MS instrumentation pushes the envelope in fluidhandling with tiny passages and extremely high pressures. At any time, an unprotected system is virtually a stray 1um seal fragment away from failure, loss of priceless data continuity and subsequent troubleshooting and repair. The best assurance against this costly prospect comes from safeguarding your system with thorough filtration.

The EXP Stem Filter features a choice of frit porosities integrated with our patented auto-adjusting stem for repeated ZDV connections with any 10-32 port. The entire filter stem and reusable holder are only slightly larger than a standard HPLC fitting. This slim architecture allows it to easily fit into crowded instrument compartments, tightly spaced injection ports, and anywhere else you need an extra level of protection against clogging and contamination. The EXP Stem Filter is an ideal solution to protect expensive UHPLC columns, injectors, autosamplers, and MS electrospray tips without extra-column effects.

When tightened by hand, the EXP Stem Filter seals to 8,700+ psi. The reusable holder hardware also incorporates wrench flats to enable flawless sealing to 20,000+ psi (1,400+ bar). The EXP Stem Filter is the ultimate low-impact protection for expensive UHPLC and MS equipment, assuring trouble-free performance so you can concentrate on the data, not troubleshooting.

ADVANTAGES OF EXP STEM FILTERS

- Approved for use at 20,000+ psi (1,400+ bar)
- Hand-tight and wrench-tight configuration
- Reusable holder intended for many repeat uses
- Auto-adjusting ZDV connections
- Low-dispersion cartridges
- Custom volumes/porosities available
- Ultra-low .27 µL total swept volume



U.S. Pat. No.s 5,525,303; 5,730,943; 5,911,954 and other U.S. and foreign patents pending.

EXP Stem Filter Kit

15-04-04122	0.2 µm, EXP Stem Filter Kit
15-04-04123	0.5 µm, EXP Stem Filter Kit

Includes: Holder, 3 Stem Filter Cartridges and Fittings.

EXP Stem Filter Cartridges

15-04-04117	0.2 µm, EXP Stem Filter Cartridge, 5/Pk
15-04-04119	0.5 µm, EXP Stem Filter Cartridge, 5/Pk

EXP pre-column filter

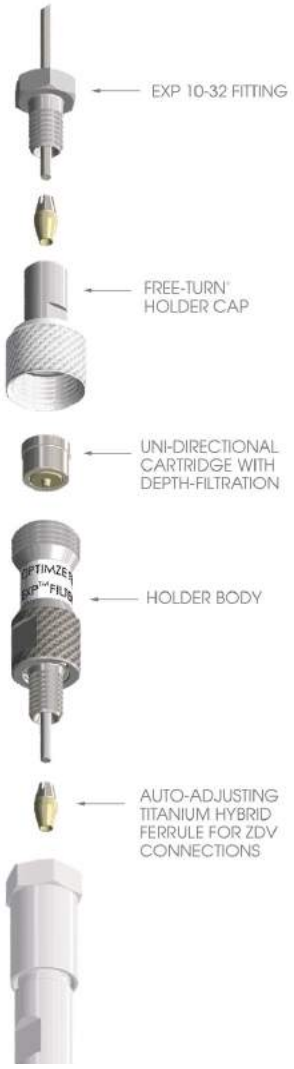
The EXP Pre-Column Hand-Tight Filter is ideal for protecting small-particle UHPLC columns at extreme pressures. Such techniques analyze samples in the most demanding applications, which can decrease the life of these expensive columns. EXP Pre-Column Filters help extend that life and protect your column investment without sacrificing performance. Free-turn® architecture allows the user to change cartridges by hand without breaking fluid connections on the holder inlet/outlet.

EXP Pre-Column Filter holders are available with Titanium Hybrid ferrules for easy direct connection to any 10-32 port. The filter holder comes as a complete package including fittings to provide repeated zero-dead-volume column connections.

ADVANTAGES OF EXP PRE-COLUMN FILTERS

- Approved for use at 20,000+ psi (1,400+ bar)
- Hand-tight filter replacement - NO TOOLS!
- Depth filtration maximizes capacity
- Auto-adjusting ZDV column connection
- Custom volumes/porosities available
- Low-volume, low-dispersion cartridges
- Hardened stainless steel end cap eliminates galling

actual size



EXP Pre-Column Filter Holder

15-04-03837	EXP Pre-Column Filter Holder (fittings included)

EXP Pre-Column Filter Cartridges

15-04-03093	0.5 µm, EXP Filter Cartridge, 5/Pk
15-04-03096	0.2 µm, EXP Filter Cartridge, 5/Pk
15-04-03094	0.5 µm, EXP Filter Cartridge, 10/Pk
15-04-03097	0.2 µm, EXP Filter Cartridge, 10/Pk

U.S. Pat. No.s 5,525,303; 5,730,943; 5,911,954 and other U.S. and foreign patents pending.

EXP stem traps

The entire EXP Stem Trap and reusable holder are only slightly larger than a standard HPLC fitting. Its slim architecture allows it to easily fit into crowded instrument compartments or to connect directly to tightly-spaced injection ports. When tightened by hand, the EXP Stem Trap seals to 8,700+ psi. All configurations incorporate wrench-flats to enable flawless sealing to 20,000+ psi (1,400+ bar). The unique packed floating stem installs directly into any 10-32 port and automatically adjusts to provide a perfect ZDV connection.

Our specialized features, patented technology, precision engineering, and state-of-the-art manufacturing make the new EXP Stem Trap an unbeatable choice for Ultra High Pressure trapping applications.

ADVANTAGES OF EXP STEM TRAPS

- Hand-tight and wrench-tight configurations
- Intended for many repeat uses
- Auto-adjusting ZDV connection
- Rated to 20,000+ psi (1,400+ bar)
- Custom packing available
- Bed volumes from 0.17µL to 2.6µL
- Low-volume, low-dispersion cartridges

EXP Stem Trap Kit

EXP STEM TRAP KIT / REPLACEMENT STEM SELECTION GUIDE

	Bed Volume	Suggested Max Load Rate**	Dimension Code
Stem Trap Kit	0.17 µL	60 µL/min	0 3 9 9 7
Replacement Stems*	0.17 µL	60 µL/min	0 3 9 9 2
Stem Trap Kit	0.33 µL	120 µL/min	0 4 0 0 3
Replacement Stems*	0.33 µL	120 µL/min	0 4 0 0 1
Stem Trap Kit	0.68 µL	250 µL/min	0 4 0 0 9
Replacement Stems*	0.68 µL	250 µL/min	0 4 0 0 8
Stem Trap Kit	1.5 µL	500 µL/min	0 4 0 1 5
Replacement Stems*	1.5 µL	500 µL/min	0 4 0 1 4
Stem Trap Kit	2.6 µL	1 mL/min	0 4 0 2 1
Replacement Stems*	2.6 µL	1 mL/min	0 4 0 2 0

Phase Code	Phase	
H A	C18	2.7µm HALO®
H B	C8	
H D	HILIC	
H E	RP-Amide	
H F	Phenyl-Hexyl	
HN	Peptide ES-C18	
H G	C18	3µm EXP™
H H	C8	
H I	C4	
H J	HILIC	
H K	Phenyl-Hexyl	
H L	SAX	
H M	SCX	
E S	Custom	

15- [ ][ ][ ][ ][ ][ ] - [ ][ ]

Part Number

For bed volume and phase requirements, please refer to the selection guide on the right. Custom packing is also available, please contact us for details.

Example: a three pack of 0.17 µL Stem Traps with C8 phase would have part number 15-03992-HB.

* Includes 3 replacement stems. To be used with reusable EXP Stem holder only.

**Suggested max load rate is based on 60/40 Acetonitrile/Water mobile phase.

ADDITIONAL EXP Stem Holders

15-02-03996 EXP Stem Holder (Fittings Included)

actual size

U.S. Pat. No.s 5,525,303; 5,730,943; 5,911,954 and other U.S. and foreign patents pending.

EXP trap columns

The patent-pending Hand-Tight EXP Trap Column is rated for use at 20,000+ psi (1,400+ bar). This unique design connects directly to any injection valve (with 10-32 threads) or in-line with 1/16" stainless tubing for unparalleled convenience and efficiency.

The EXP Cartridge System enables chemists to quickly remove detergents or salts which can affect the ionization process in MS work. This trapping technique can concentrate the sample directly on-line, allowing for increased recovery of precious sample material compared to off-line techniques. On-line trapping readily lends itself to automation for high-throughput analysis in UHPLC/MS applications. Free-turn® architecture allows the user to change cartridges by hand without breaking fluid connections on the holder inlet/outlet.

Our specialized features, patented technology, precision engineering, and state-of-the-art manufacturing make the new EXP Trap Column an unbeatable choice for Ultra High Pressure trapping applications.

ADVANTAGES OF EXP TRAP COLUMNS

- Hand-tight trap replacement - NO TOOLS!
- Rated to 20,000+ psi (1,400+ bar)
- Uni-directional cartridge
- Auto-adjusting ZDV connections
- Custom packing available
- Bed volumes from 4µL to 100µL
- Hardened stainless steel end cap eliminates galling

EXP Direct Connect Holder

EXP In-Line Holder

actual size

EXP Holders

15-02-03956	EXP Direct-Connect Holder (Fittings Included)
15-02-03946	EXP In-Line Holder (Fittings Included)
15-02-04041	EXP All-In One Holder Kit (Includes: In-Line and Direct-Connect Holder Components)

For bed volume and phase requirements, please refer to the selection guide on the right. Custom packing is also available, please contact us for details.

Example: a three pack of 4 µL Cartridges with C8 phase (2.7 µm) would have part number 15-03964-HB.

EXP TRAP CARTRIDGE SELECTION GUIDE

	Bed Volume	Suggested Max Load Rate*	Dimensions	Dimension Code	Phase Code	Phase	
3 PACKS	4 µL	2 mL/min	1.0 x 5 mm	0 3 9 6 4	HA	C18	2.7µm HALO®
					HB	C8	
					HD	Hilic	
					HE	Rp-Amide	
	10 µL	4 mL/min	1.5 x 5 mm	0 3 9 6 9	HF	Phenyl-Hexyl	
					HN	Peptide ES-C18	
	20 µL	6 mL/min	2.1 x 5 mm	0 3 9 7 3	HG	C18	3µm EXP™
					HH	C8	
					HI	C4	
					HJ	Hilic	
	40 µL	8 mL/min	3.0 x 5 mm	0 3 9 7 8	HK	Phenyl-Hexyl	
					HL	SAX	
					HM	SCX	
	100 µL	10 mL/min	4.6 x 5 mm	0 3 9 8 3	E S	Custom	

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Part Number

*Suggested max load rate is based on 60/40 Acetonitrile/Water mobile phase

U.S. Pat. No.s 5,525,303; 5,730,943; 5,911,954 and other U.S. and foreign patents pending.

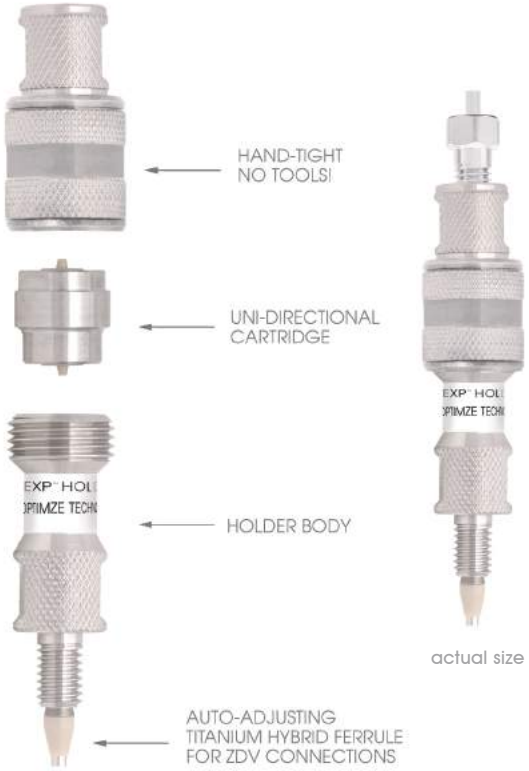
EXP guard columns

The EXP Guard Column cartridge system is rated to 15,000 psi with hand-tight replaceable cartridges. This unique design connects directly to any UHPLC column with the auto-adjusting Titanium Hybrid Ferrule and EXP™ Fittings, providing repeated zero-dead-volume connections and easy adjustability between various column types.

Free-turn® architecture allows the user to change cartridges by hand without breaking fluid connections on the holder inlet/outlet. The combination of low-dispersion and ultra high-pressure capabilities provides effective protection with negligible effects on retention time, plate count, and peak shape.

ADVANTAGES OF EXP GUARD COLUMNS

- Hand-tight guard replacement - NO TOOLS!
- Hardware rated to 20,000+ psi (1,400+ bar)
- Packed guard rated for routine use to 15,000 psi (1,000 bar)
- 1.4 µL Swept Volume (excluding packed bed)
- Hardened stainless steel end cap eliminates galling
- Low-volume, low-dispersion cartridges
- Auto-adjusting ZDV column connection
- Custom packing available



EXP Holder

15-02-03956	EXP Direct Connect Holder (Fittings Included)

For bed volume and phase requirements, please refer to the selection guide on the right. Custom packing is also available, please contact us for details.

Example: a three pack of 2.1 x 5 mm with C8 Phase (1.8 µm) would have part number 15-04104-HB.

EXP GUARD CARTRIDGE SELECTION GUIDE

	Dimension	Dimension Code	Phase Code	Phase	
3 PACKS	1.0 x 5 mm	0 4 1 0 0	H A	C18	1.8 µm
			H B	C8	
			H C	C4	
			H D	HILIC	
	1.5 x 5 mm	0 4 1 0 2	H E	C18	3 µm EXP™
			H F	C8	
			H G	C4	
			H H	HILIC	
			H I	Phenyl-Hexyl	
			H J	SAX	
			H K	SCX	
	2.1 x 5 mm	0 4 1 0 4			
	3.0 x 5 mm	0 4 1 0 6			
	4.6 x 5 mm	0 4 1 0 8	E S	Custom	

15- [ ][ ][ ][ ][ ] - [ ][ ]

Part Number

U.S. Pat. No.s 5,525,303; 5,730,943; 5,911,954 and other U.S. and foreign patents pending.

The best way to predict the **future** is to **invent it.**

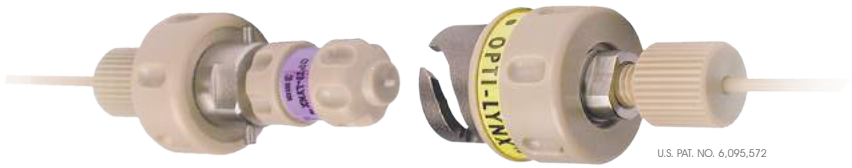
Team with Optimize Technologies to bring your UHPLC concepts to reality. No challenge is too small or too large for Optimize. We offer state-of-the-art manufacturing and design on-site in Oregon, USA. Our highly experienced and talented engineers, design specialists, chemists, and machinists have exactly what it takes to bring ideas to fruition.

- Need a check valve rated to 30,000+ psi (2,100+ bar)?
- Would a quick-connect UHPLC column improve productivity?
- Interested in upgrading your current HPLC system to perform at UHPLC pressures?

Contact us to discuss ways we can incorporate Optimize Technologies' patented features in your custom applications. Some of the key industries we serve include: Chromatography, Mass Spec, Pharmaceutical Research, Clinical, Environmental, Petrochemical, Defense, and other High Pressure Fluidics. We look forward to helping you optimize your laboratory.

optilynx™

A **revolutionary** quick connect system.



U.S. PAT. NO. 6,095,572

GUARD COLUMN

FILTER OR TRAP

SEALING ELEMENT
(for straight through union)

When Opti-Lynx was first introduced, it was a revolutionary idea in the HPLC industry–eliminating the use of wrenches for holders, stainless steel fittings, and the cranking down of finger tights to prevent leaks.

> "Problems with consistency and column longevity have been virtually eliminated since we started using Opti-Lynx products."
>
> **Partner: PFIZER**

Opti-Lynx was the first to fulfill the promise of a low dispersion quick-connect system. From high-throughput labs with the need for replacing components with the utmost efficiency, to single instrument labs that enjoy the ease of use Opti-Lynx offers - many have realized the advantages of the Opti-Lynx quick-connect system.

Simple. Innovative. Easy to use.

- Quarter-turn connection rated to 6,000 psi
- Low volume/low dispersion interface for volume critical regions
- True zero-dead-volume connection
- Hardware connection is only made once
- NO TOOLS

Versatility

The Opti-Lynx modular design provides the maximum in versatility for your system. Opti-Lynx inserts can be a filter, guard column, trap cartridge, analytical column. Since the interacting surfaces are identical, the only varible component is the holder tube. Install a guard column for one application and then switch to a pre-column filter for the next. Use an in-line filter with different porosities and diameters just by changing the insert. Switch out columns in an instant with the Velocity® system or retrofit current columns with the universal port adapter. We also offer columns with integrated Opti-Lynx end fittings. You can make and break flowpaths for multiple detectors, or anywhere else a break in flow is frequently made. Opti-Lynx allows all of this without ever having to change out the basic components.

Limitless Potential

The potential of Opti-Lynx goes beyond what is listed in this catalog. Opti-Lynx was designed without constraints in mind, and should be viewed as a hardware platform to make your applications easier and more efficient. At Optimize Technologies, we work hard to provide the ideal solution to our customers' applications. If you have a special requirement for your stationary phase, or need Opti-Lynx in a custom dimension or configuration, please contact us.

Our best ideas come from the needs of our customers.

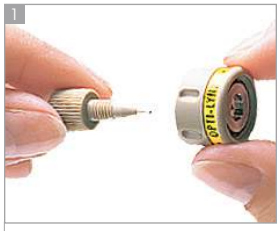
"The Quick-Connect design makes changing columns fast and easy, eliminating the need for any tools."

Partner: Pfizer

optilynx™ how it works

With Opti-Lynx, you can make and break tubing connections instantly - all it takes is a quarter-turn, by hand. To make an Opti-Lynx connection, two components - a slotted side and a pinned side - come together around a polymeric insert. One reason why the Opti-Lynx system is so useful and versatile is that the polymeric insert can contain a guard column, a filter, a trap cartridge, or even a whole analytical column. Practically any component found in the HPLC flow path can be made into an Opti-Lynx insert!

1



Connect your existing tubing to an Opti-Lynx Holder Cap using the included finger-tight fitting.

2

Tighten the slotted Holder Tube into the Holder cap.

3

Align the Holder Tube and Cap with the Column and Insert.

4

Bring the pins to the slot guide and twist closed.

optilynx™ | applications

Opti-Lynx may be used in any number of different applications. Below are just three ways Opti-Lynx quick-connect hardware can be used, but don't let this limit your thinking! We are constantly developing new ways of applying this system through both our applications lab and our customers' imaginations.

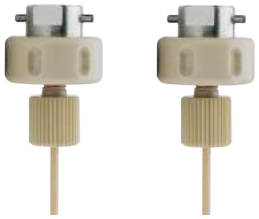
column switching

Set up a simple column-switching rig without the need for expensive high-pressure valves. Install Opti-Lynx universal port adapters on your columns and switch between different columns quickly and easily. When columns are not in use, seal them with the Opti-Lynx quick plug.

guards to filters & back again

One method requires a filter, while another calls for a guard column - no problem. Simply choose the insert you want, couple it with the correct holder tube, and you're off and running. There is no need to disconnect any tubing, and the only tools you need are your fingers.

switching flow paths



If you need to reroute flowpaths with the utmost efficiency, the Opti-Lynx Direct-Connect In-Line Kit is your answer. Simply terminate one tube with a holder cap, and get extra bayonet connectors for each mating tube connection. Switching flowpaths becomes a easy task with this setup, not a huge production.

optilynx™ hardware components

All Opti-Lynx hardware can be purchased in kits or separately as needed for your application. Opti-Lynx hardware is precision machined to maintain the highest quality and strictest tolerances. Below are a few examples of individual Opti-Lynx hardware components, and some complete kits are shown on the facing page to demonstrate how Opti-Lynx works. If you have special requirements for your stationary phase or would like Opti-Lynx hardware in custom dimensions or configurations, please contact us.

INSERTS

a.

Pre-Column Filter
(Order Filters on page 25)

b.

Trap Cartridge
(Order Cartridges on page 26)

c.

Guard Column Cartridge
(Order Cartridges on page 27)

d.

Velocity® Column Cartridge
(Order Cartridges on page 29)

INDIVIDUAL HOLDER COMPONENTS

1.

11-02333-AA
Holder Cap
(With 10-32 Female Port)

2.

11-02212-AA
Bayonet Connector
(With 10-32 Female Port)

3.

11-02290-AA
Universal Port Adapter
(For all 10-32 Female Ports)

4.

12-02415-AA
Bayonet Coupler

5.

11-02327-AA
Holder Tube
(For Sealing Elements)

6.

11-02570-AA
Filter & Trap Holder Tube
(For Filter Inserts & Traps)

7.

11-02328-AA
Guard Holder Tube
(For 15 mm Guard Column Cartridges)

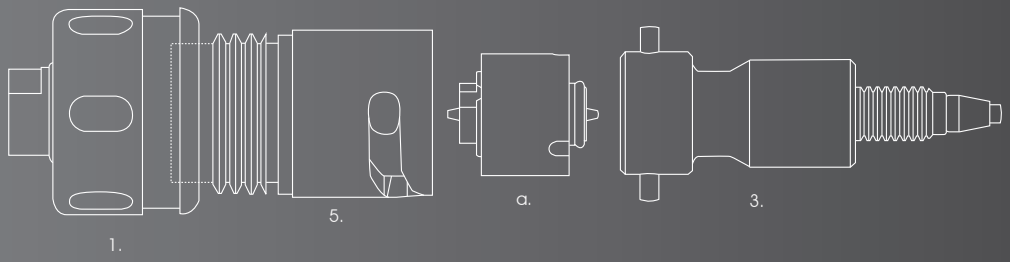
8.

12-02617-AA
Holder Tube
(For 30 mm Velocity® Cartridges)

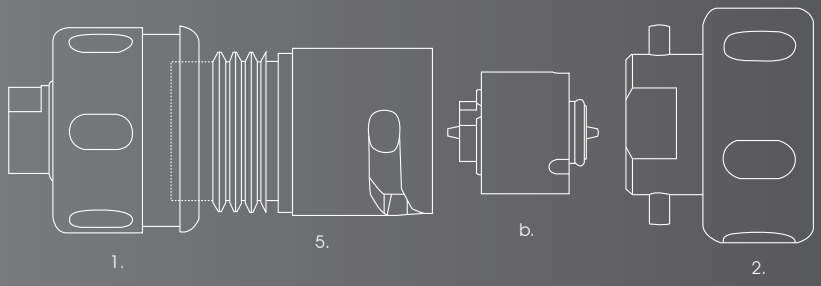
configurations

There are many ways to use Opti-Lynx, and there are many options for Opti-Lynx inserts. If you have special requirements for your stationary phase or would like Opti-Lynx hardware in custom dimensions or configurations, please contact us. Here are a few examples of how Opti-Lynx can be used:

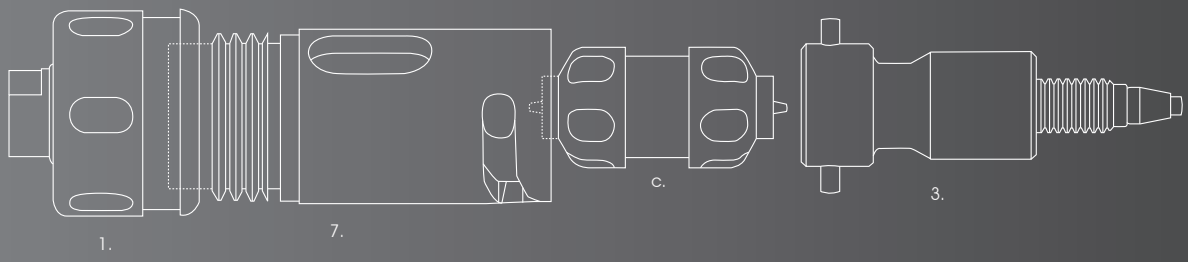
pre-column filter / direct-connect trap example



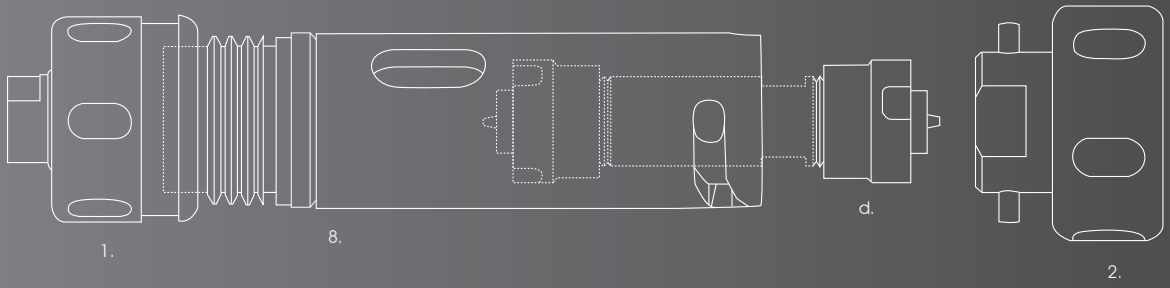
in-line filter / trap column example



guard column example



analytical column example

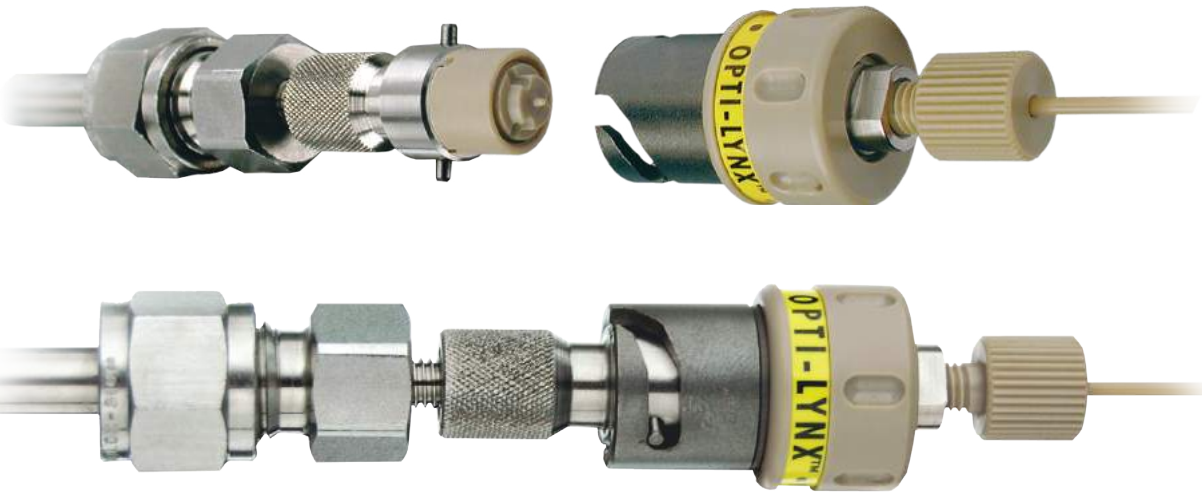


optilynx™ filtration

U.S. PATENT NO. 5,525,303

Need more room to change your in-line or pre-column filter? With HPLC systems getting smaller and more compact, the areas to work with are also decreasing in size. This often makes getting to the components that need frequent changing quite a task - especially if you need wrenches!

The Opti-Lynx In-Line Filter System features Optimize Technologies' proprietary Opti-Lynx hardware, allowing filter changes to be done in a quick quarter-turn. Opti-Lynx In-Line Filters offer unmatched versatility with a choice of nine different porosity/diameter combinations for every possible filtration need. Our revolutionary quick-connect design is ideal for high temperature GPC and position-emitting radionuclide filtration - not just HPLC.

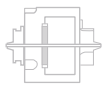
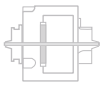


To change an optilynx™ pre-column filter, simply twist the holder - **no tools required.**

Pre-Column Filters can help extend the life of your analytical column by catching particulates that would otherwise clog the column inlet frit. The Opti-Lynx Pre-Column Filter System brings unparalleled versatility to pre-column protection, with the added convenience of quick-connect operation.

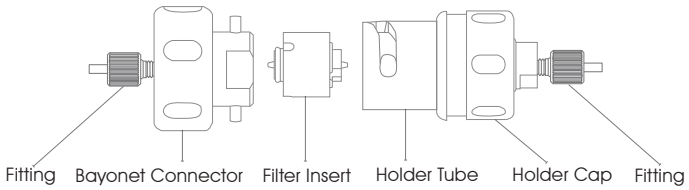
Each optilynx™ filter insert shares the same external dimensions, allowing you to use different diameters and porosities with the same holder hardware.

OPTI-LYNX FILTER INSERT SELECTION GUIDE

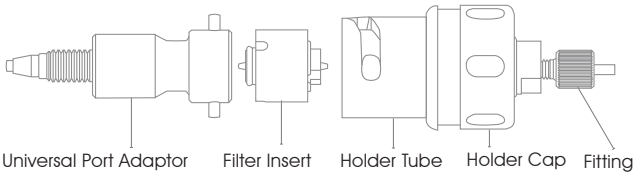
		Single	10 Pack	
Recommended for Pre-Column use		11-02595-CD	11-02797-CD	Low Volume Filter Insert, 0.5 µm/0.062" diameter
		11-02595-CE	11-02797-CE	Low Volume Filter Insert, 2.0 µm/0.062" diameter
		11-02595-CF	11-02797-CF	Medium Capacity Filter Insert, 0.5 µm/0.125" diameter
		11-02595-CG	11-02797-CG	Medium Capacity Filter Insert, 2.0 µm/0.125" diameter
Recommended for In-Line use		11-02595-CH	11-02797-CH	High Capacity Filter Insert, 0.5 µm/0.187" diameter
		11-02595-CI	11-02797-CI	High Capacity Filter Insert, 2.0 µm/0.187" diameter
		11-02595-CJ	11-02797-CJ	Semi-Prep Filter Insert, 2.0 µm/0.250" diameter*
		11-02595-CL	11-02797-CL	Semi-Prep Filter Insert, 10.0 µm/0.250" diameter*
		Single	5 Pack	
Prep		11-03038-C4	11-03039-C4	Prep Filter Insert, 10 µm/0.250" diameter* (For use with OPTI-LYNX Prep Holder only.)

*Opti-Lynx Semi-Prep Filter Inserts are rated for use at pressures of up to 4,000 psi (other Opti-Lynx products are rated to 6,000 psi unless otherwise stated). Opti-Lynx Filter Inserts are rated at temperatures up to 175° C.

In-Line Filter / Prep Filter Holder



Pre-Column Filter



OPTI-LYNX Filter Holders

11-02225-AA OPTI-LYNX In-Line Filter Holder
Includes: Bayonet Connector, Holder Cap, Holder Tube, Fittings.

11-03200-AA OPTI-LYNX In-Line Prep Filter Holder - For use with Prep Inserts only.
Includes: Bayonet Connector, Holder Cap, Holder Tube, Fittings.

11-02226-AA OPTI-LYNX Pre-Column Filter Holder
Includes: Universal Port Adapter, Holder Cap, Holder Tube, Fitting.

OPTI-LYNX filter inserts are ordered separately. Please use the table above to find your part number.

optilynx™ trap columns

OPTI-LYNX In-line Trap Holder

Opti-Lynx trap columns combine the convenience of our quick-connect holder with a versatile selection of packed-bed cartridges to offer chromatographers numerous options for on-line or off-line sample cleanup and preconcentration. Each cartridge shares the same external dimensions, allowing you to use different diameters and porosities with the same holder hardware.

Opti-Lynx traps are available in packed-bed volumes of 4ul to 100ul with a wide range of standard and custom packings. Whether you want to separate a peptide digest from its matrix for further analyses, or prepare a dilute small molecule sample for LC injection without any sample loss – Opti-Lynx Traps are the ideal tool to optimize your technique. These columns can be loaded and regenerated repeatedly for maximum value.
For smaller volume packed-bed trapping columns, please see Opti-Pak on pg. 36.
For more information on Trapping Applications, please visit www.optimizetech.com/literature.

selecting your optilynx™ trap

Use the selection guide below to find the five digits that match the trap dimensions you require. Then find the two letter packing code for your phase. **Example:** a five-pack of 20 µL trap cartridges with SCX phase would have part number 11-02870-TB.

OPTI-LYNX TRAP SELECTION GUIDE

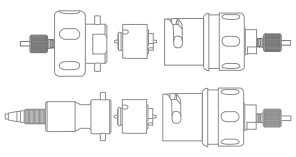
	Capacity	Load Rate	Bed Volume	Dimension	Dimension Code
5 PACKS	16 µg	40 - 160 µL/min	**4 µL**	1 x 5 mm	0 2 8 6 8
	40 µg	100 - 500 µL/min	**10 µL**	1.5 x 5 mm	0 3 7 8 7
	80 µg	200 - 800 µL/min	**20 µL**	2.1 x 5 mm	0 2 8 7 0
	160 µg	0.4 - 1.6 mL/min	**40 µL**	3.0 x 5 mm	0 2 8 7 2
	400 µg	1 - 4 mL/min	**100 µL**	4.6 x 5 mm	0 2 8 7 4

Phase Code	Phase
T A	C18
T B	SCX
T D	C18AQ
T E	SAX
T F	C8
T G	C4
T H	DVB
D Q	DVB/SCX
E S	Custom

11– [ ][ ][ ][ ][ ] – [ ][ ]

Part Number

OPTI-LYNX Trap Holders



11-02225-AA OPTI-LYNX In-Line Trap Holder
Includes: Bayonet Connector, Holder Cap, Holder Tube, Fittings.

11-02226-AA OPTI-LYNX Direct-Connect Trap Holder
Includes: Universal Port Adapter, Holder Cap, Holder Tube, Fitting.

OPTI-LYNX trap cartridges are ordered separately. Please use the table above to find your part number.

Contact us for Biocompatible Holder and Cartridge options.

optilynx™ guard columns

The Opti-Lynx Guard Column is a high performance, cartridge-based guard system suitable for use with any analytical column. Some cartridge-based guard column products offer convenience with a price: higher internal volumes. At Optimize Technologies, we refuse to compromise performance for anything. Opti-Lynx utilizes low dispersion component interfaces to keep extra column volume to a minimum: connection paths have a total internal volume of less than 2 µL. You get quick-connect convenience and low dispersion, all in one package.

The Opti-Lynx Guard Column fits any analytical column with a 10-32 port.
Start with our Opti-Lynx Guard Column Holder Kit, then select Opti-Lynx Guard Cartridges in the chemistries you require. They are available individually and in packs of five.

selecting your optilynx™ guard column cartridges

Use the selection guide below to find the five digits that match the dimension and quantity you require. Then find the two letter packing code for your sorbent/phase. Complete your guard column cartridge part number by using these codes in the part number template below the table.

Example: a five-pack of 3 mm C18 guard cartridges would have part number 11-02630-EA.

OPTI-LYNX GUARD SELECTION GUIDE

	Quantity	Dimension Code	Phase Code	Phase
3.0 x 15 mm	Singles	0 2 2 5 5	E A	C_{18}, 5 µm
	5 Pack	0 2 6 3 0	E B	C_8, 5 µm
2.1 X 15 mm	Singles	0 2 6 4 0	E C	Silica, 5 µm
	5 Pack	0 3 7 8 2	E D	Phenyl, 5 µm
1.0 x 15 mm	Singles	0 2 3 0 8	E E	Cyano/CN, 5 µm
	5 Pack	0 3 1 2 8	E F	Amino/NH_2
			E G	Anion/SAX
			E H	Cation/SCX
			J D	DVB/SCX
11–		–		

Part Number

U.S. PATENT NO. 5,525,303

OPTI-LYNX Guard Column Direct-Connect Holder

11-02232-AA	Holder for direct connection to analytical columns Includes: Universal Port Adapter, Guard Holder Tube, Holder Cap, Fitting

OPTI-LYNX guard cartridges are ordered separately. Please use the table above to find your part number.

velocity® analytical columns

Liquid chromatography is no longer limited to the "one column, one assay" setup. Researchers are now being asked to screen thousands upon thousands of compounds, all in less time. This is why Optimize Technologies offers Velocity - a true quick-connect analytical column system.

Velocity incorporates the Opti-Lynx™ system to provide connections in a quarter-turn. Rated to 6,000 psi, Velocity columns are individually quality tested and certified to guarantee analytical performance. Opti-Lynx quick-connect technology allows columns to be changed effortlessly: scale down column dimensions, switch between stationary phases, or swap methods in seconds - all without the use of tools.

Need to use a pre-column filter or guard column? With Velocity's integral pre-column protection hardware, adding or changing guard columns and filters is as easy as changing Velocity columns - just grab and twist.

Most importantly, Velocity and Opti-Lynx hardware will not adversely affect your chromatographic applications. Velocity is not affected by the shortcomings of other cartridge column designs such as excessive dead volumes and substandard performance versus conventional designs. Velocity has been meticulously engineered to the most stringent of standards. All connections conduct liquid through low-volume interfaces minimizing hardware contributions to dispersion and peak broadening.

velocity®
At the speed of discovery.

how does **velocity**® work?

VELOCITY is based on the Opti-Lynx™ system, so it uses the same four basic components: bayonet connector, insert, slotted connector, and holder cap. All columns of the same length share the same external dimensions, so switching between different IDs and packings requires no change in hardware configuration. To see a demonstration, go to www.optimizetech.com/velocityhplc.

A simple quarter-turn engages the **optilynx**™ connection.

Velocity® is an improvement over conventional designs plagued with excessive dead volume or cumbersome hardware.

Need to change column lengths? No problem. Just unscrew and install the appropriate slotted connector tube - no need to re-plumb any solvent lines. Once you are ready to go, a simple quarter-turn engages the Opti-Lynx connection. The actuation torque is so small, it's easier than opening a pickle jar.

PHASES & CHEMISTRIES

VELOCITY cartridge columns are available in multiple flavors, each available in 3 μm and 5 μm particle sizes. We also offer a selection of custom phases.
For more information or to order Velocity, visit our website at www.optimizetech.com or call 800-669-9015.

optisolv® filtration

Keeping particulates out of the flowpath prevents premature wear on vital components, drastically reducing the need for costly replacements or repairs. A holistic approach to filtration addresses potential particulates throughout the solvent flowpath and leads to consistent and efficient chromatography. Generally, there are three critical areas where filtration is necessary.

solvent reservoir

While the availability of HPLC-grade solvents diminishes the need for pre-filtering, it is still imperative that a filtration device be installed in the reservoir filter. Placing a filter in the reservoir is an economical way to filter particles that may result from buffer salt precipitation, airborne dust, improperly cleaned glassware, or microbial contamination; none of which are remedied by the use of HPLC-grade solvents.

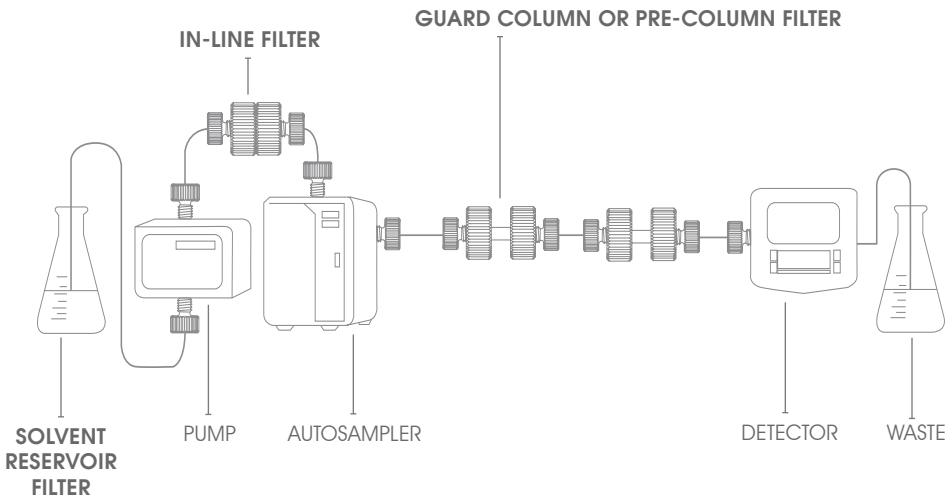
in-line

The frictional forces generated at the piston/seal interface inevitably lead to particulate shedding. Placement of a filtering element between the pump and injector/autosampler removes these particulates, preventing problems with downstream components and costly downtime.

pre-column | direct connect

Many things contribute to particulates in the post-injector region: incompatibilities between sample matrix and mobile phase, septa coring from the sample needle and shedding from moving parts in the injector, among others. Use of a low-impact, pre-column filter removes these particulates from the flowpath, saving your analytical column and detector from deleterious effects.

filtration process



solvent reservoir filter

Opti-Solv Reservoir Filters employ a unique conical design inside the filter housing to prevent air bubbles from getting trapped and disturbing your analysis.

A solid Teflon® body keeps Opti-Solv in the bottom of the bottle where a bottom-mounted titanium frit provides unrestricted solvent access. As always, Optimize makes installation as simple as possible - no tools or fittings required.

Biocompatable Opti-Solv Analytical Reservoir Filters

		Singles	5 Packs
1/16" OD Tubing	2 µm	10-04-00079	10-04-00080
	10 µm	10-04-00081	10-04-00082
1/8" OD Tubing	2 µm	10-04-00047	10-04-00050
	10 µm	10-04-00051	10-04-00053
3/16" OD Tubing (Waters Style)	2 µm	10-04-00054	10-04-00056
	10 µm	10-04-00057	10-04-00058

Biocompatable Opti-Solv Analytical Reservoir Prep Filters

1/8" OD Tubing	10 µm	10-04-00063	10-04-00065

All of the above filters are supplied with 5 feet of PTFE tubing pre-installed

Reservoir Filters with Tube Stem

Reservoir Filters with tube stems are made with Hastelloy C® for maximum corrosion resistance and inertness.

		Singles	5 Packs
1/16" ID Tubing	2 µm	10-04-00071	10-04-00072
	10 µm	10-04-00073	10-04-00074
1/8" ID Tubing (Waters Style)	2 µm	10-04-00115	10-04-00119
	10 µm	10-04-00111	10-04-00114

in-line filter

Installed between the pump and injector/autosampler, they prevent damage to downstream components – damage that can cost you in both instrument down time and troubleshooting labor.

Stainless Steel Wrench-Tight Version

> We have been using **Opti-Solv In-Line Filters** for several years in our high-throughput LC/MS Analysis of ADME screening samples.
>
> **Partner: Pfizer ADME Technology Group**

PEEK "Gorilla Grip" Hand-Tight Version

Order Replacement Filters Below

Hand tighten the PEEK holder to make a high-pressure seal, or for those who prefer wrenches, we also offer a wrench-tight stainless steel version. The user-friendly design is well suited for a number of applications, such as high temperature environments where quick changes are imperative.

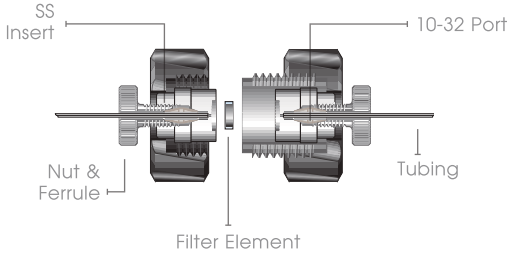
OPTI-SOLV In-Line Solvent Filter Holders

10-04-03685	In-Line Solvent PEEK Hand-Tight Holder
10-04-03686	In-Line Solvent Stainless Steel Wrench-Tight Holder

OPTI-SOLV Filter Elements (Frits)

10-04-03699	0.5 µm, 0.062" Dia Filter, 10 Pk
10-04-03700	2 µm, 0.062" Dia Filter, 10 Pk
10-04-03701	0.5 µm, 0.125" Dia Filter, 10 Pk
10-04-03702	2 µm, 0.125" Dia Filter, 10 Pk
10-04-02370	0.2 µm, 0.187" Dia Filter, 10 Pk
10-04-00100	0.5 µm, 0.187" Dia Filter, 10 Pk
10-04-00103	2 µm, 0.187" Dia Filter, 10 Pk

Two-Piece PEEK or Stainless Steel Holders



The Opti-Solv's unique swivel design allows frits to be changed without removing the connecting tubing. Just plumb it once and leave it.

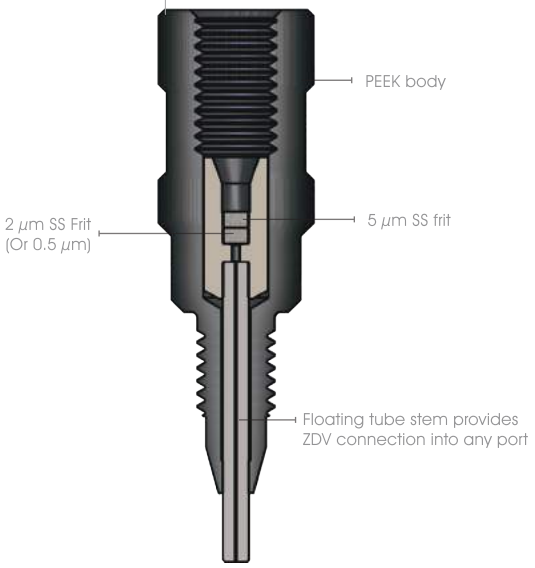
optisolv® mini filter

The Opti-Solv Mini Filter provides low-impact filtration in a package no larger than a finger tight fitting. Use them to prolong the life of your analytical column, or before your mass spectrometer as a last line of defense against debris.

Perfect zero-dead-volume connections are obtained every time with our patented automatic tube stop depth adjustment. Unique depth-filtering elements allow for greater capacity with no band spreading or loss of performance. The efficient design requires no holder, and threads directly into any 10-32 port.

The optisolv® mini filter automatically adjusts to fit all brands of columns.

Depth-filter design delivers higher capacity with low volume.



OPTI-SOLV Mini Filters

10-04-00095	OPTI-SOLV Direct Connect Mini Filter, 0.5 µm, 5/Pack
10-04-00097	OPTI-SOLV Direct Connect Mini Filter, 2.0 µm, 5/Pack
10-04-02768	OPTI-SOLV Direct Connect Mini Filter, 5.0 µm, 5/Pack

optisolv® micro filter

For your volume critical filtering needs, we now offer the Opti-Solv Micro Filter. Based on the same design that has made the Mini Filter a huge success, the Micro Filter cuts the internal volume to less than 200 nL but retains the Mini Filter's ease of use and functionality.

The Micro Filter is designed to be used in today's low volume, high sensitivity chromatographic applications as a last line of defense against debris. As with all Optimize column protection products, the Opti-Solv Micro Filter features a zero-dead-volume connection utilizing our patented floating stem technology.

The optisolv® micro filter is easy to use and performs exceptionally well for volume-critical applications.

Advantages of the optisolv® mini, micro and nano filters:

- Designed to filter out particles extending column life
- Perfect Zero-Dead-Volume connections every time
- Floating stem automatically adjusts to any depth port
- Easy to use finger tight - No tools required
- Rated to 6,000 psi

OPTI-SOLV Micro Filters

10-04-03707	OPTI-SOLV Micro Filter, 10 µm, 5/Pk
10-04-03357	OPTI-SOLV Micro Filter, 1.0 µm, 5/Pk
10-04-03389	OPTI-SOLV Micro Filter, 2.0 µm, 5/Pk
10-04-03621	OPTI-SOLV Micro Filter, 0.5 µm, 5/Pk

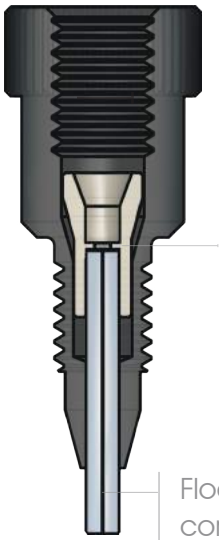
OPTI-SOLV Biocompatatble Micro Filters

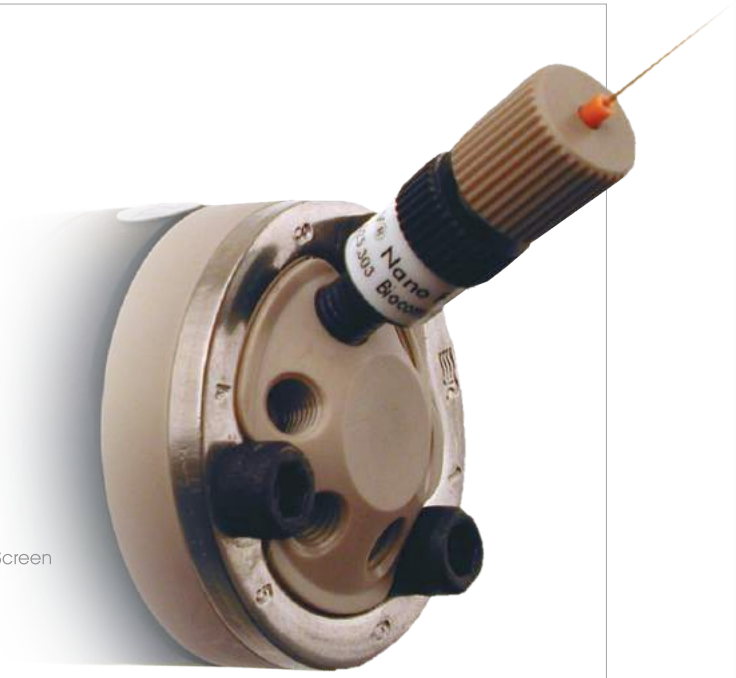
10-04-03936	OPTI-SOLV Biocompatible Micro Filter, 0.5 µm, 5/Pk

optisolv® nano filter

The Opti-Solv Nano Filter follows our Micro Filter but cuts the internal volume down even further.

With less than 50 nL of internal volume, the Opti-Solv Nano Filter is ideal for mass spectrometry to protect your electrospray and nanospray tips from clogging with debris.





U.S. PATENT NO. 5,525,303

Floating tube stem provides ZDV connection into any port (mini, micro and nano filters).

OPTI-SOLV Nano Filters

10-04-03625	OPTI-SOLV Nano Filter, 0.5 µm, 5/Pack

OPTI-SOLV Bio Compatable Nano Filters

10-04-03939	OPTI-SOLV Biocompatible Nano Filter, 0.5 µm, 5/Pack

optipak® trap columns

U.S. PATENT NO. 5,525,303

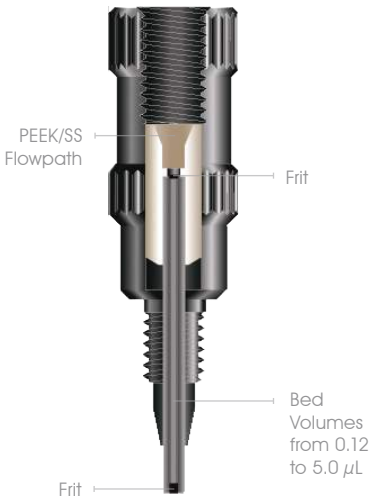
The Opti-Pak is specially designed for use in today's low volume applications. With bed volumes ranging from 0.12 µL to 5.0 µL, you can find the perfect balance between sample capacity and trap volume. A proprietary method of frit placement allows the packed stem to be positioned directly into the flowpath, which eliminates all excess swept volume. Less swept volume translates to absolute minimum sample dilution and dispersion.

The unique hardware design integrates a PEEK holder with an auto-adjusting stem which provides a fluid interface with any 10-32 standard or microinjector port, and guarantees a zero-dead-volume connection despite variances in tubestop depth.

For larger volume packed-bed trapping columns, please see Opti-Lynx on Pg. 26

optipak® trap columns with bed volumes as low as 0.12 µL can be installed into any 10-32 injection port. The stem auto-adjusts to provide a flawless ZDV connection every time.

Floating Stem Design For ZDV Connection into Any Port



Installing an Opti-Pak into the outlet of a switching valve will facilitate the trapping, desalting, and pre-concentration of an analyte mixture. With Opti-Pak's versatility, a second trap can be added downstream in the loop of an injection valve and effectively perform a 2D separation.

The elegant, flexible design of Opti-Pak makes it amenable to virtually any trapping application. Opti-Pak can be installed directly into the fitting port of an injection valve. Two or more Opti-Paks can also be installed side by side in the same valve stator without interference.

For more information on Trapping Applications, please visit www.optimizetech.com/literature.

selecting your optipak® trap

Use the trap cartridge code table below to find the five digits that match the bed volume you require. Then find the two letter packing code for the phase. Complete the trap cartridge part number by using these codes in the part number template located below the code table.
Example: a five pack of 0.5 µL trap cartridges with SCX phase would have part number 10-03317-TE.

Opti-Pak is available in a number of sorbents and chemistries to fit any application. Custom packing is also available - please contact us if you do not see the materials you require.

Opti-Pak trap columns for standard 10-32 injection valves.
(Includes 5 holders and cartridges)

	Capacity	Load Rate	Bed Volume	Dimension Code	Bed Code	Phase Code
STANDARD 10-32	0.5 µg	1.25 - 5 µL/min	**0.12 µL**	0 3 3 2 8	T A	C18
	1 µg	2.5 - 10 µL/min	**0.25 µL**	0 3 3 2 4	T B	C18AQ
	2 µg	5.0 - 20 µL/min	**0.5 µL**	0 3 3 1 7	T C	C8
	4 µg	10 - 40 µL/min	**1 µL**	0 3 2 2 5	T D	C4
	8 µg	20 - 80 µL/min	**2 µL**	0 3 2 2 9	T E	SCX
	20 µg	50 - 200 µL/min	**5 µL**	0 3 2 3 3	T F	SAX
BIO-COMPATIBLE 10-32	12 µg	30 - 120 µL/min	**3 µL**	0 3 6 0 8	T G	DVB
RHEODYNE M4 STYLE	0.7 µg	1.75 - 7 µL/min	**0.17 µL**	0 3 7 1 8	E S	Custom
	2 µg	5.0 - 20 µL/min	**0.5 µL**	0 3 7 2 0		
VALCO 6-40	0.7 µg	1.75 - 7 µL/min	**0.17 µL**	0 3 7 2 4		
	2 µg	5.0 - 20 µL/min	**0.5 µL**	0 3 7 2 6		

Opti-Pak trap columns for micro injection valves
(Includes 5 holders and cartridges)

10– [ ][ ][ ][ ][ ] – [ ][ ]

Part Number

10-32

Biocompatible

M4

6-40

OPTI-PAK Method Development Kit

10-02-04134 Assorted 5 Pack

optiguard® guard columns

The column is the heart of any liquid chromatography system and remains the most problematic component. HPLC columns accumulate retained material which can dramatically reduce longevity and cause downtime costs resulting from premature column failure and troubleshooting efforts.

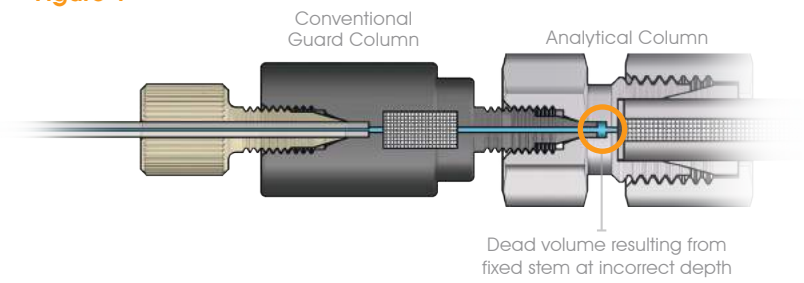
why use a guard column?

The best way to protect an analytical column from fouling is to install a guard column between the injection valve and the analytical column. The guard column traps particulates, solvent impurities, and retained sample components. The ideal guard column should have no effect on the separation. In order to achieve this, a guard column with matching bonded phase and optimal hardware configuration should be selected.

extra column volume

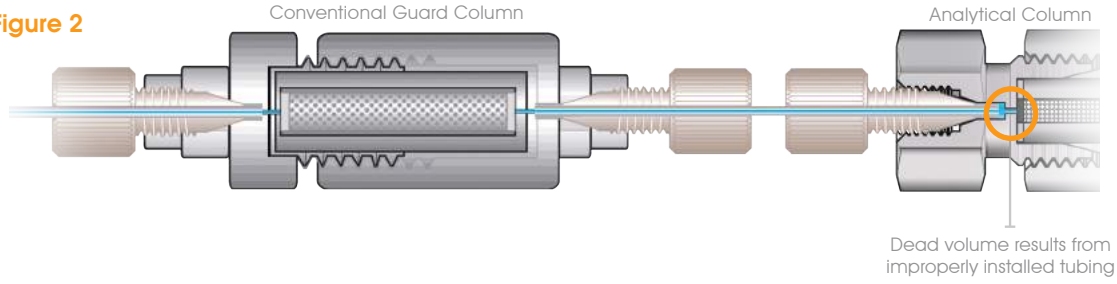
The ever-changing needs of HPLC applications such as smaller bed-volume columns, higher pressures, and increased sensitivity raise new demands on guard columns today. Many guard column manufacturers overlook the dead volume that results when a guard column or holder is connected to the analytical column. The use of pre-swaged or one piece nut and ferrule designs with fixed tube stems will increase extra column volume (shown in blue) and affect column efficiency (Figure 1).

Figure 1

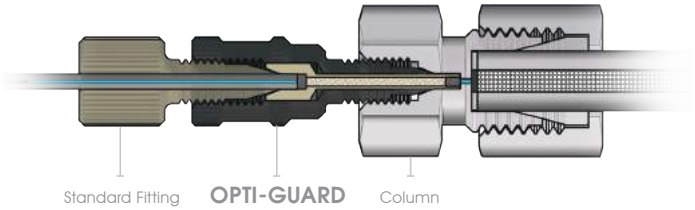


In addition, other cartridge-style guard column systems require extra connections and tubing, adding to extra column volume and decreasing your system's overall performance. (Figure 2)

Figure 2



Floating tube stem provides ZDV connection into any port.



optiguard 1mm

Opti-Guard sets the standard for low impact, easy to use pre-column protection. Designed for use with analytical (4.6, 3.0 mm i.d.) and narrow-bore (2.1, 1.0 mm i.d.) columns, the patented floating stem design automatically adjusts to any manufacturer's tube stop depth for a zero-dead-volume connection every time. The best part? It's no larger than a standard fitting.

Connecting the Opti-Guard requires no extra tubing or tools, maintaining the minimal impact philosophy that has made the Opti-Guard line so popular. As always, custom packing is available.

optiguard 3mm

The Opti-Guard 3 mm maintains the tool-free connectivity of the 1 mm, but incorporates a cartridge-based format to allow for a larger bed with more capacity. The two-part holder is designed for use with any analytical column to provide vital protection from dirty samples and strongly retained contaminants. An auto-adjusting stem conforms to any tube stop depth for a perfect zero-dead-volume connection.

OPTI-GUARD 1mm Guard Column

10-02-00007	C18, 5/Pack
10-02-00010	C8, 5/Pack
10-02-00014	Silica, 5/Pack
10-02-00018	Phenyl, 5/Pack
10-02-00022	Cyano/CN, 5/Pack
10-02-00026	Amino/NH2, 5/Pack
10-02-00030	Anion Exchange, 5/Pack
10-02-00034	Cation Exchange, 5/Pack
10-02-01714	Method Development Kit (5-Pack Assorted)

OPTI-GUARD 1mm Biocompatible Guard Column

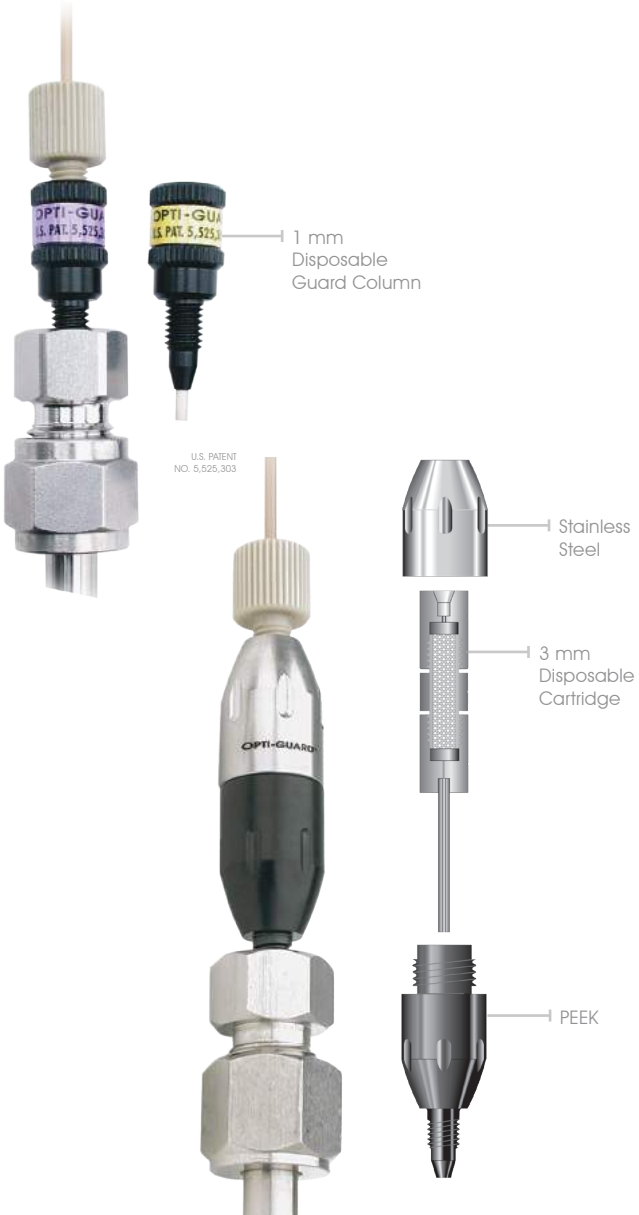
10-02-03532	Biocompatible C18, 5/Pack
10-02-03680	Biocompatible Anion Exchange, 5/Pack
10-02-03683	Biocompatible Cation Exchange, 5/Pack
10-02-03534	Biocompatible Silica, 5/Pack

OPTI-GUARD 3mm Guard Column Cartridges

10-02-01482	C18 Guard Column Cartridge, 5 µm, 3/Pack
10-02-01485	C8 Guard Column Cartridge, 5 µm, 3/Pack
10-02-01488	NH2 Guard Column Cartridge, 5 µm, 3/Pack
10-02-01491	Silica Guard Column Cartridge, 5 µm, 3/Pack

OPTI-GUARD 3mm Guard Column Holder

10-02-01495	OPTI-GUARD 3 mm PEEK/Stainless Steel Holder



hplc & uhplc oem systems

In the following pages you will find a list of replacement components designed specifically for OEM HPLC/UHPLC solvent delivery systems. At Optimize Technologies, we precision machine our components to the most exacting standards in the industry. Everything in the manufacturing process is controlled to ensure the continuing quality that has long been associated with the Optimize name. From the individual matching of check valve ball and seat sets to the proprietary blend of materials in our seals - experience the Optimize advantage.

Every replacement component we offer is designed to meet or exceed original equipment specifications. **Guaranteed.**

optimize and oem components

Most instrument manufacturers will tell you quite emphatically that for optimal instrument performance, you should only use components that match their performance specifications. At Optimize, we could not agree more. Every replacement component we offer is designed to meet or exceed original equipment specifications - guaranteed. In fact, several major OEM manufacturers incorporate Optimize components as original equipment on their new HPLC instruments. They realize the positive impact Optimize quality can have on instrument performance.

optimize innovation

At Optimize, innovation is the driving force. Although we offer a comprehensive selection of components for most brands of HPLC systems, we are always in the process of R&D to discover new products that will save your laboratory time and money. If you have a need for a product you do not see in this catalog, please call a technical support representative to discuss your particular fluid handling needs.

HPLC Finder™

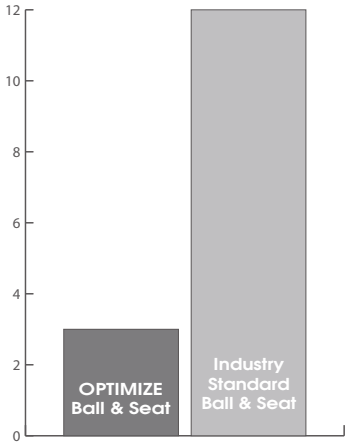
	BRAND	MODELS	PAGE NO.
A	ABI	Spectraflow 400	50
	Agilent	1050, 1090, 1100, 1200	51-53
	Alcott	Micromeritics 760, 765	56
	Anspec	SM 909	56
B	BAS	PM-48	64
	Beckman/Altex	100A, 105, 110A/B, 110 Prep, 112/112M, 114/114M, 116, 118, 125, 126, 127, 128	54
	Bio-Rad	1330, 1350, 1350T, 2700, 2800	55
	Bischoff	2200, 2250	56
D-G	Dionex	DQP, GPM-1&2, DRP, DXP, AGP, 2000, 4000, GP-40, IP-20, GP-50, IP-25	57
	Dupont	8800	64
	ESA	Model 580, 582, 584, 5700 SDM	62-64
	Gilson	All Pumps with 5, 10 or 25 mL S/SC Heads	67-68
	Gynkotek	300, M480	50
H-J	Hewlett Packard	See Agilent	51-53
	Hitachi	655, L-6000, L-6200/6200A, L-7100/LaChrom, L-2100, Smash Pump, L-2130, 7200, 7250	58
	Jasco	BIP-1, 880/980 Series, PU-2080, 2085, 2089, 1580-C02, 980, 1586, 2086, 986	59
K-P	Kratos	Spectraflow 400	50
	LDC/Milton Roy	All Analytical Pumps (including Constametric, Minimetric, Minipump)	65
	LKB/Amersham/ Pharmacia	2150, 2248, 2250	60
	Perkin-Elmer	Series 1, 2, 3, 3B, 4, 10, 100, Model 250, 200, 400, 410, 620, Integral 4000	61
R-S	Rainin	HP, HPX, HPXL, SD 200/300, Prostar 210/215	67-68
	Shimadzu	LC-6A, LC-7A, LC-8A, LC-9A, LC-10AT, LC-10ATVP, LC-10AD, LC-10ADVP, LC-10AS, LC-600 LC-AD/LC-20 AB, LC-20 AT, LC-2010, GP-20 & 50, LC-20 ADXR, SIL-10ADUP, GEP	62-63
	Spectra-Physics	8700, 8800, 8810, IsoChrom, P-Series, 8700XR, 8750	66
	SSI	200 Series, Model 300	64
	Sysmex	CA1000, CA500	50
T-W	Thermo	See LDC/Milton Roy, Spectra-Physics for model listings	65-66
	Varian	2010, 2510, 9000 Star/9000 Series, Prostar 210/215	67-68
	Waters	6K/6KA, Alliance, 2690, 2695, 2790, 2795, M45/45G, M501, 510, 515, 590, 600/600E, 610, 616, 625/626, 650, 6000, 6000A, DeltaPrep 3000 (#4 and #6 Heads), 1525, 1515	69-72

optimax®
check valves

Check valves are a crucial, yet often overlooked component of the HPLC system. While a properly functioning check valve is virtually unnoticeable, an improperly functioning check valve can lead to a noisy baseline, pressure fluctuations, and inconsistent flow. Because a check valve can have such a large impact on the performance of your pump, it is imperative when choosing your replacement check valves to select the very best. Of course, we believe that the Opti-Max check valve system is the very best - otherwise we wouldn't sell it.

Read on for the innovations we have implemented in our check valves. And as with any Optimize part–if you're not satisfied, return it for a refund.

Bubbles of nitrogen/minute at 90 psi which leak from ball & seat.



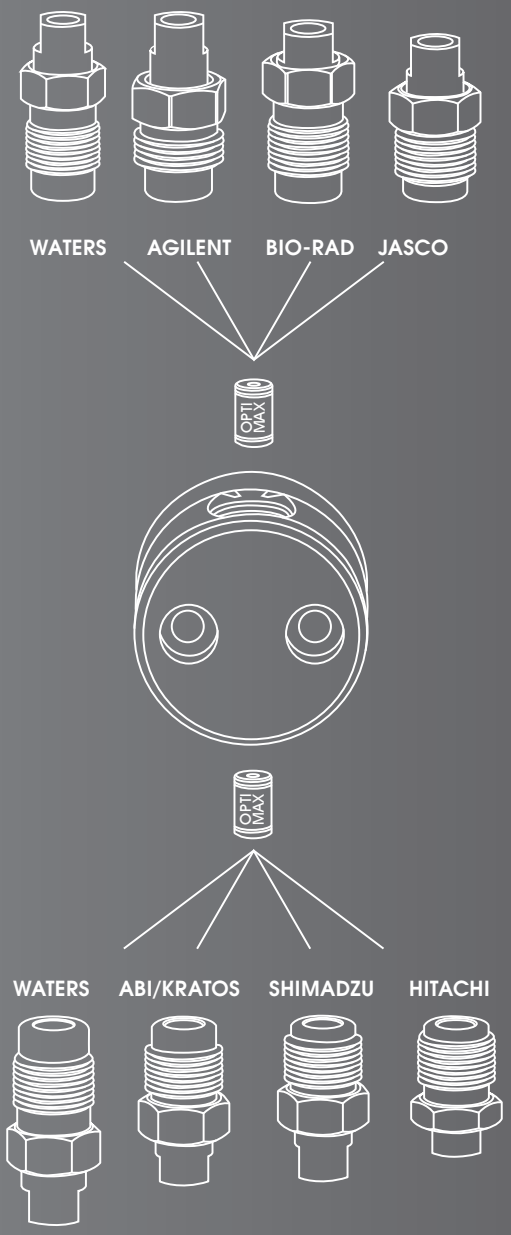
A Better Check Valve

Tighter specifications make a better valve. A check valve can only function effectively if it activates and seals properly in response to the piston cycle. The seating process is fairly simple - the ball lands on the seat and creates a seal - but there are many factors that contribute to optimal seating. At Optimize, we engineer our check valves to be as responsive as possible, scrutinizing every detail.

Each ball and seat set is individually matched to ensure a lock-and-key fit. This guarantees 3 bubbles/minute or less in the industry standard nitrogen bubble test; common acceptable standards are 12 bubbles or less. We have also minimized the ball travel distance within the check valve; less travel distance to equals quicker seating and more accurate pump metering.

optimax®
cartridges

a universal solution



A single Opti-Max cartridge is interchangeable across multiple pump brands and can function in either the inlet or outlet position.

The same Opti-Max cartridge will fit into Opti-Max housings for pumps manufactured by Waters, Shimadzu, Agilent/HP, and many other OEM solvent delivery systems.

The modular cartridge system allows you to minimize the number of spare check valve cartridges you keep on hand and dramatically reduce the cost of inventory required to cover your maintenance needs.

optimax® free turn® housing

"Make it easier for the user" is the mantra at Optimize. We were the first to introduce the concept of the Opti-Max Free-Turn housing where the thread that tightens a check valve housing into the pump head spins independently from the inner housing body. This enables you to change out a check valve without having to disconnect any tubing - an idea born in efficiency.

Most Opti-Max check valve housings feature the Free-Turn design. To see if they are available for your system, look for the Free-Turn logo next to the Opti-Max listings for your HPLC.

optimax® FREE TURN® housings can be removed with the tubing still attached, accelerating check valve maintenance while reducing fitting wear.

FREE-TURN® in action

Place wrench on the hex nut and turn. The hex nut or thread ring will turn independently of the fitting connection.

Continue to unscrew the thread ring until the entire check valve assembly is removed from the pump head.

Discard old check valve cartridge & replace with new cartridge.

Install entire assembly into pump head.

optimax® materials

Opti-Max cartridges are available in several different sizes and combinations of body and ball/seat materials, all manufactured and leak tested to meet the same high standard of performance.

Our Recommendation: **Stainless/Ceramic**

For high mechanical strength, stainless steel cartridges are the best choice. Ceramic ball & seat sets have higher density, which can make the valve more responsive and help the ball seat faster in lighter solvents.

For biocompatible HPLC systems with nonmetallic flowpaths, for high temperature applications, and with high percentages of THF, use PEEK cartridges with ceramic balls & seats.

Both cartridge body materials listed above are also available with ruby and sapphire ball & seat combos. Each pair is matched to the same exacting standards as our ceramic ball/seat sets.

CARTRIDGE MATERIAL OPTIONS | 2 PACKS

1/32"	10-39-02004	Cartridge fits in all housings that will take 1/16" and 1/8" cartridge. This size is only available in PEEK/PPS body with ruby/sapphire ball & seat.
1/16"	10-46-02004	**Recommended:** Microbore stainless steel cartridge body with ceramic ball & seat
	10-48-02004	Microbore PEEK cartridge body with ceramic ball & seat
	10-47-02004	Microbore stainless steel cartridge body with ruby ball & sapphire seat
	10-49-02004	Microbore PEEK cartridge body with ruby ball & sapphire seat
1/8"	10-56-02004	**Recommended:** Standard stainless steel cartridge with ceramic ball & seat
	10-58-02004	Standard PEEK cartridge body with ceramic ball & seat
	10-57-02004	Standard stainless steel cartridge with ruby ball & sapphire seat
	10-59-02004	Standard PEEK cartridge body with ruby ball & sapphire seat
3/16"	10-66-02005	**Recommended:** Stainless steel cartridge with ceramic ball & seat
	10-68-02005	PEEK cartridge with ceramic ball & seat
	10-67-02005	Stainless steel cartridge with ruby ball & sapphire seat
	10-69-02005	PEEK cartridge with ruby ball & sapphire seat
1/16"	10-76-02004	OPTI-MAX Cartridge Upgrade – for UHPLC Pressures. Microbore stainless steel cartridge body with fangeless PEEK caps. With ceramic ball & seat. Rated to 18,000 psi (1,250 bar).

*We cannot guarantee the Opti-Max check valve cartridge will fit in OEM housings.
Opti-Max cartridges must be used with Opti-Max housing for optimal results.

seals&pistons

Seals and pistons are, by design, a consumable part of the HPLC pump and should be replaced on a regular preventative maintenance schedule. To maintain peak performance and avoid unplanned downtime, piston seals should be replaced every three to six months while sapphire pistons require inspection every six months with yearly or as-needed replacement.

seals

Optimize Piston Seals are the longest lasting seals on the market. Machined from either of two proprietary polymer blends, UHMW-PE or ITB, Optimize Seals provide the ultimate in high pressure sealing capacity. For mostly aqueous buffered mobile phases, Opti-Seal UHMW-polyethylene is the wisest choice. Specially designed to be more resistant to abrasion and wear than standard polyethylene seals, they can last up to seven times longer under mostly aqueous conditions. Despite the UHMW-PE's durability, it has a coefficient of friction approaching that of Teflon®. The homogenous polymer nature leads to less shedding, but when it does occur, a larger, more fibrous particle is produced which is easily caught by a filter frit.

PTFE-based Improved Teflon® Blend (ITB) seals are a superior choice for applications with elevated temperatures, high organic content, or when the broadest possible solvent compatibility is required. ITB seals tend to be softer than those made from UHMW-PE, making them more forgiving at high pressures where piston side-loading or misalignment may occur. This softer nature also leads to more shedding, but the ITB proprietary blend is designed to shed particles that are large enough to be caught at the surface of a standard 2 μm frit, not embed within it.

pistons

Optimize sapphire pistons offer optimal concentricity and resistance to wear. Each sapphire rod is specifically cut in relation to the grain of the crystal lattice, yielding maximal resistance to breakage and superior wear characteristics. Attachment of the rod to the piston ferrule. And is performed through a proprietary process ensuring concentricity. This is an important, often overlooked procedure parameter that has a direct effect on seal lifetime.

seal form tool kit

Installing a piston seal can be a tricky undertaking. A relatively small seal must be fit into the seal cavity in such a way to ensure that it is pressed in evenly without distortion or damage. The Optimize Seal Forming/Insertion Tool Kit was specifically designed to aid in this endeavor.

This kit contains three tools to accommodate all of your HPLC piston seals. One end has a beveled cavity for seal forming, while the other is an insertion support for perfect seal installation. Also included with each kit are complete instructions for maximizing seal life and a solvent compatibility guide to aid in prudent seal material selection.

This kit includes three sizes assuring the perfect seal fit every time.

1

Forming cavities in three different sizes lets you pick the best tool for the seal you are installing.

2

The piston seal is formed by pressing the tool onto the seal jacket.

3

Then, the seal is pressed into the pump head seal cavity using the insertion support.

Seal Forming/Insertion Tool

10-10-02695	Seal Forming/Insertion Tool Kit Includes: Three Forming/Insertion Tools (Small, Medium, Large), Instruction Booklet & Solvent Compatibility Chart

Tip: For best performance, always use methanol or isopropanol to presoak piston seals for five to ten minutes prior to installation and to wet all mating surfaces (seal, piston, seal cavity) as the seal is formed and installed.

optimax® conversion kits

Make the switch to Opti-Max for less than ever before with Opti-Max Conversion Kits. These kits contain all the check valves you need for your HPLC pump grouped under a single part number and priced at **over 20% off list!**

Each kit includes all the Opti-Max check valve housings and cartridges you need to convert your HPLC pump. Simply find your HPLC pump/brand model in the list below and use the conversion kit part number to order. By default, each kit includes our most recommended Opti-Max cartridge–the stainless steel/ceramic Opti-Max (PEEK cartridges are supplied for biocompatible systems). However, if you'd like to substitue an alternate material the kit price will not be affected.

Bio-Rad
23-56-01239

Dionex
25-58-01242

Hitachi
28-46-02148

LDC
31-56-02153

BRAND	MODEL	CONVERSION KIT PART #	INLETS	OUTLETS
ABI/Kratos	Spectraflow 400	**21-56-02136**	1	1
Agilent/HP	1090 Systems 1050/1100/1200	**27-38-01959** **27-57-01330**	1 0	1 1
Beckman	100A, 126, 110A/B, 112/114, 116	**22-66-02137** **22-66-02138**	2 1	2 1
Bio-Rad	1330, 1350	**23-56-01239**	2	2
Bischoff	2200 Microbore 2200, SM909, 760	**24-46-02141** **24-56-02140**	1 1	1 1
Dionex	DQP, GPM-1, DRP GPM-2, XP, AGP, 2000, 4000	**25-58-02142** **25-58-02143**	1 1	1 1
GBC	1150, 1120 1150, 1120	**47-46-02271** **47-48-02271**	1 1	1 1
Gilson/Rainin	5, 10, & 25 mL Head	**26-56-02144**	1	1
Gynkotek	300, M480,	**44-46-02145**	1	1
Hitachi	655, 6000,6200 7100	**28-46-02147** **28-46-02148**	1 1	1 1
ISCO	2300, 2350	**29-66-02149**	1	1
Jasco	BIP-1 880, 980	**42-56-02150** **42-56-02151**	2 1	2 1

optimax® conversion kits

BRAND	MODEL	CONVERSION KIT PART #	INLETS	OUTLETS
KONTRON	420, 422	**45-46-02223**	1	1
LDC/Milton Roy	Minipump, Minimetric	**31-56-02152**	1	1
	Constametric, Mini Duplex	**31-56-02153**	2	2
LKB	2150, 2248	**32-46-02154**	2	2
Perkin-Elmer	Series 1, 2, 3, 3B	**33-56-02155**	2	2
	Series 10	**33-56-02156**	1	1
	4, 200, 400, 410, 4000, 250	**33-56-02157**	2	1
Shimadzu	LC-600/9A, LC-10AD	**34-46-02158**	2	2
	LC-10AT, LC-10ATVP	**34-46-02160**	1	1
	LC-10ADVP	**34-46-02627**	2	2
	LC-6A, LC-10AS	**34-56-02159**	1	1
	LC-8A	**34-66-02114**	2	2
	LC-20ADXR	**34-46-04139**	2	2
Spectra-Physics	8700, 8800, 8810, IsoChrom	**35-56-02161**	1	1
	P-Series	**35-56-02162**	1	1
SSI	200 Series, Model 300,	**36-56-02163**	1	1
Thermo-Electron	Surveyor L-Pump	**50-46-03645**	1	1
Varian	9000 Star, 9010, 9012	**38-56-01704**	0	1
	2010	**38-56-02164**	2	2
	2510	**38-56-02165**	1	1
Waters	616	**39-46-02168**	2	2
	625/626	**39-48-02170**	2	2
	Alliance 2690, 2695, 2790, 2795	**39-46-02187**	2	0
	100µL/Dual Head Systems	**39-56-02166**	2	2
	100µL/Single Head Systems	**39-56-02186**	1	1
	Extended Flow Systems	**39-66-01712**	1	1
	225µL/Head	**39-66-02167**	2	2
	400µL/Head	**39-66-02169**	0	2

Perkin Elmer
33-56-02157

Shimadzu
34-46-02158

Waters
39-46-02187

Waters
39-48-02170

abi, kratos, sysmex & gynkotek

OPTI-MAX for ABI, Kratos, & Gynkotek

optimax® check valves

ABI/Kratos Spectraflow 400		OEM #
21-56-00451	OPTI-MAX Inlet Housing & Cartridge	7200-0060, 1400-1999
21-56-00460	OPTI-MAX Outlet Housing & Cartridge	7200-0062, 1400-2250
10-56-02004	OPTI-MAX Replacement Cartridges, 1/8" ball, 2/Pack	
Gynkotek 300 & M480		**OEM #**
44-46-00451	OPTI-MAX Inlet Housing & Cartridge	5005-3200
44-46-00460	OPTI-MAX Outlet Housing & Cartridge	5005-3100
10-46-02004	OPTI-MAX Replacement Cartridges, 1/16" ball, 2/Pack	

OPTIONS: Stainless steel/ceramic OPTI-MAX cartridges are listed above.
For other options, please see page 45.

21-36-00437/
44-36-00437

21-34-00434/
44-34-00434

seals & pistons

ABI/Kratos Spectraflow 400		OEM #
21-36-00437	OPTI-SEAL UHMW PE* Piston Seal, w/Backup Ring	7200-0087, 7200-0088
21-36-00439	OPTI-SEAL UHMW PE* Piston Seal, w/Backup Ring, 10/Pack	7200-0087, 7200-0088
21-34-00434	Sapphire Piston	1400-1970
Gynkotek 300 & M480		**OEM #**
44-36-00437	OPTI-SEAL UHMW PE* Piston Seal w/Backup Ring	2266-0304
44-36-00439	OPTI-SEAL UHMW PE* Piston Seal, w/Backup Ring 10/Pack	
44-34-00434	Sapphire Piston	2267-0032
Sysmex CA1000, CA500		
21-36-00437	OPTI-SEAL UHMW PE* Piston Seal	
21-36-00439	OPTI-SEAL UHMW PE* Piston Seal, 10/Pack	

*UHMW PE - Ultra High Molecular Weight Polyethylene

lamps

ABI/Kratos Spectraflow 400, Gynkotek 300 & M480		OEM #
44-32-02838	DoubleLife™ Deuterium Lamp, for Gynkotek SP6	
21-32-02812	Deuterium Lamp, SF 757, 759A, 770, 773,783, 783A, 785A, 970, 980, 15X, 120A, 130A, 230A, 270A, 471A	2900-0489

ABI/Kratos
21-32-02812

agilent / hewlett-packard

Purge Valve Upgrade Kit for Agilent/HP 1100/1050

In-line filtration is a necessity for protecting downstream components from damage and blockages due to particulates. The placement of the Agilent/HP PTFE filter is buried deep within the pump head, making what is usually a quick job into a laborious procedure. What use is a filter if it is never replaced? Optimize continues its tradition of innovative solutions with the Purge Valve Upgrade Kit.

The Purge Valve Upgrade Kit resolves this difficulty by permanently replacing the PTFE filter with a low volume PEEK insert and then relocating the filter frit to an easily accessible holder on the side of the purge valve. What once was a cumbersome process of changing the filter becomes a quick and easy task.

Our FREE-TURN® filter holder lets you change frits without removing any tubing.

Purge Valve Upgrade Kit

27-31-02277	Purge Valve Upgrade Kit for Agilent/HP 1100, 1050 Includes: Filter Holder, PEEK Insert and 2 Filter Elements (2.0 µm)
10-04-00100	Replacement Frits, 0.5 µm, 10/Pk
10-04-00103	Replacement Frits, 2.0 µm, 10/Pk

agilent / hewlett-packard (continued)

OPTI-MAX

optimax® check valves

Agilent/HP 1050, 1100, 1200		OEM #
27-56-01330	OPTI-MAX Outlet Housing & Cartridge	G1311-60012, G1312-60012
10-56-02004	OPTI-MAX Replacement Cartridges, 1/8" Ball, 2/Pack	
27-38-02363	Replacement Cartridge for Active Inlet Valve	5062-8562

OPTIONS: Stainless Steel/Ceramic OPTI-MAX Cartridges are listed above.
For other options, please see page 45.

Active Inlet
Check Valve Cartridge

Agilent/HP 1090, Outlet
Housing & Cartridge

oem-type check valves

Agilent/HP 1090		OEM #
27-38-00680	Inlet Housing & Cartridge	79835-25211
27-38-00682	Outlet Housing & Cartridge	79835-25211
27-38-00672	Replacement Cartridges, 2/Pack	79835-67101

27-36-01570

27-36-02364

27-36-02366

27-36-01572

27-34-00658

seals, pistons & other parts

Agilent/HP 1050, 1100		OEM #
27-36-01570	OPTI-SEAL UHMW-PE* Piston Seal	0905-1420
27-36-01571	OPTI-SEAL UHMW-PE* Piston Seal, 10/Pack	
27-36-01572	ITB PTFE** Piston Seal	5063-6589
27-36-01573	ITB PTFE** Piston Seal, 10/Pack	
27-36-03073	PTFE*** Pump Seal, Green, Premium Grade	
27-36-03074	PTFE*** Pump Seal, Green, Premium Grade, 10/Pack	
27-36-02364	OPTI-SEAL UHMW-PE* Wash Seal	0905-1175
27-36-02365	OPTI-SEAL UHMW-PE* Wash Seal, 10/Pack	
27-36-02366	ITB PTFE** Wash Seal	0905-1175
27-36-02367	ITB PTFE** Wash Seal, 10/Pack	
27-36-02851	Gasket Wash Seal, 6/Pack	5062-2484
27-04-02852	PTFE Frits, 5/Pack	01018-22707
27-31-02853	2-in-1 Seal Cap (See adjacent page.)	5062-2485, 5001-3707
27-34-00658	Sapphire Piston	5063-6586

27-36-00663

Agilent/HP 1090		OEM #
27-36-00663	OPTI-SEAL UHMW-PE* Piston Seal	0905-1194
27-36-00664	OPTI-SEAL UHMW-PE* Piston Seal, 10/Pack	
27-36-00665	ITB PTFE** Piston Seal	5062-2494
27-36-00666	ITB PTFE** Piston Seal, 10/Pack	
27-34-00671	Sapphire Piston	3980-0672

27-36-00665

*UHMW PE - Ultra High Molecular Weight Polyethylene
**ITB PTFE - Improved Teflon® Blend
***Premium grade PTFE for maximum chemical compatibility and wear resistance

27-34-00671

2-in-1 Seal Cap for 1050/1100/1200

Our 2-in-1 Seal Cap replaces both the OEM outlet gold seal and outlet cap with a single component. Use it on your purge valve, OEM outlet check valve, or anywhere else on your 1050/1100/1200 system where gold seals and outlet caps are required.

Agilent/HP 1050, 1100, 1200		OEM #
27-31-02853	2-in-1 Seal Cap	5062-2485, 5001-3707

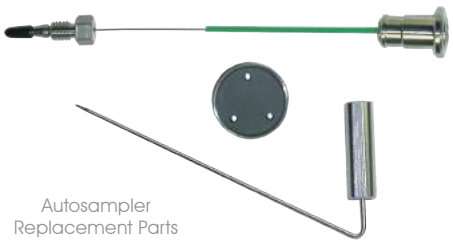
2-in-1 Seal Cap on Agilent Purge Valve Base

autosampler replacement parts

Agilent/HP 1100, 1200		OEM #
27-31-03212	Rotor Seal Assembly	0100-1853
27-31-03215	Needle	G1313-87201
27-31-03329	Needle Seat Assembly	G1313-87101

Agilent/HP 1050		OEM #
27-31-03603	Rotor Seal	0101-0626

Agilent/HP 1090		OEM #
27-31-03649	Rotor Seal, 3 Grooves, Vespel®	7010-039
27-31-03650	Rotor Seal Rebuild Kit	7010-999
27-31-03670	Rotor Seal, 2 Grooves, Vespel®	0101-0623

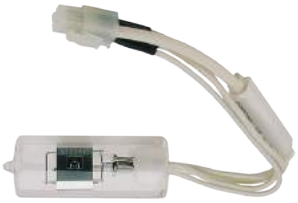


Autosampler Replacement Parts

Rotor Seal 27-31-03603

lamps

Agilent/HP		OEM #
27-32-02817	Deuterium Lamp, 1050 VWD A-Series, 79853A	79853-60002
27-32-02827	Deuterium Lamp, 1100 (CE System DAD)	2140-0585
27-32-02844	Deuterium Lamp, 1050C, 1050DAD, 1090, 1040	79883-60002
27-32-02845	DoubleLife™ Deuterium Lamp, 5181-1530, 2140-0813 DAD	1100, 1200
27-32-02846	DoubleLife™ Deuterium Lamp, 1100, 1200 VWD	G1314-60100
27-32-02715	Deuterium Lamp, 1100 VWD G1314A	G1314-60100
27-32-04037	Xenon Lamp, 1100	2140-0600
27-32-04038	Doublelife Deuterium Lamp, 1050	79883-60002



Agilent 1050 VWD A-Series 27-32-02817

Agilent 1100 DAD 27-32-02845

beckman / altex

OPTI-MAX for Beckman/Altex

optimax® check valves

110A, 110A/B, 112/112M, 114/114M, 116, 118, 125, 126, 127, 128		OEM #
22-66-00516	OPTI-MAX Inlet Housing & Cartridge	240720
22-66-00520	OPTI-MAX Outlet Housing & Cartridge	240721
10-66-02005	OPTI-MAX Replacement Cartridges, 3/16" Ball, 2/Pack	

OPTIONS: Stainless Steel/Ceramic OPTI-MAX Cartridges are listed above.
For other options, please see page 45.

22-36-00498

22-36-00492

22-36-00484

22-36-00486

22-36-00482

22-36-00494

22-34-00475

22-36-00500

22-34-00476

22-32-03659

seals & pistons

100A, 110A/B		OEM #
22-36-00498	OPTI-SEAL UHMW-PE* Piston Seal	887138, 2530-004
22-36-00499	OPTI-SEAL UHMW-PE* Piston Seal, 10/Pack	
22-36-00492	ITB PTFE** Piston Seal	887138, 2530-004
22-36-00493	ITB PTFE** Piston Seal, 10/Pack	
22-34-00475	Sapphire Piston, 110A/110B, 112/112M	243053, 110-07

105,110 Prep		OEM #
22-36-00484	OPTI-SEAL UHMW-PE* Piston Seal	887139
22-36-00485	OPTI-SEAL UHMW-PE* Piston Seal, 10/Pack	
22-36-00486	ITB PTFE** Piston Seal	887139
22-36-00487	ITB PTFE** Piston Seal, 10/Pack	

112/112M		OEM #
22-36-00482	OPTI-SEAL UHMW-PE* Piston Seal	236797
22-36-00483	OPTI-SEAL UHMW-PE* Piston Seal, 10/Pack	
22-36-00494	ITB PTFE** Piston Seal	236797
22-36-00495	ITB™ PTFE** Piston Seal, 10/Pack	
22-34-00475	Sapphire Piston, 110A/110B, 112/112M	243053

114/114M, 116, 126		OEM #
22-36-00500	OPTI-SEAL UHMW-PE* Piston Seal	241037
22-36-00501	OPTI-SEAL UHMW-PE* Piston Seal, 10/Pack	
22-36-00496	ITB PTFE** Piston Seal	241037
22-36-00497	ITB PTFE** Piston Seal, 10/Pack	
22-34-00476	Sapphire Piston	240714

*UHMW PE - Ultra High Molecular Weight Polyethylene
**ITB PTFE - Improved Teflon® Blend

lamps

Beckman/Altex		OEM #
22-32-03659	Deuterium Lamp, Beckman M-168	538711
22-32-02781	Deuterium Lamp, Beckman M-166, Altex 166	239372
22-32-01295	Deuterium Lamp for Beckman M-163	22 947029
22-32-04036	Deuterium Lamp for Beckman DU600, 620, 630, 640, 650, 6000, 7000, 7500	514366

bio-rad

optimax® check valves

1330, 1350		OEM #
23-56-00546	OPTI-MAX Inlet Housing & Cartridge	8001306, 125-0306
23-56-00551	OPTI-MAX Outlet Housing & Cartridge	8001306, 125-0307
10-56-02004	OPTI-MAX Replacement Cartridges, 1/8" Ball, 2/Pack	

OPTI-MAX for Bio-Rad

OPTIONS: Stainless Steel/Ceramic OPTI-MAX Cartridges are listed above.
For other options, please see page 45.

seals & pistons

1330, 1350, 1350T, 2700, 2800		OEM #
23-36-00534	OPTI-SEAL UHMW-PE* Piston Seal	9100363, 125-0302
23-36-00535	OPTI-SEAL UHMW-PE* Piston Seal, 10/Pack	
23-36-00531	ITB PTFE** Piston Seal	9100363
23-36-00532	ITB PTFE** Piston Seal, 10/Pack	
23-34-00530	Piston, 1330, 1350, 1350T	8001311, 125-0304

23-36-00534

23-36-00531

*UHMW PE - Ultra High Molecular Weight Polyethylene
**ITB PTFE - Improved Teflon® Blend

23-34-00530

lamps

Bio-Rad		OEM #
23-32-02081	Deuterium Lamp, Model 1790 Biofocus 300 CE	930-6106
23-32-03119	Deuterium Lamp, REMEDI	

Bio-Rad
23-32-02081

bischoff

OPTI-MAX
For Bischoff

optimax® check valves

Bischoff 2200, 2250, Anspec SM909, Alcott Micromeritics 760, 765 (Analytical Versions)		OEM #
24-56-00576	OPTI-MAX Inlet Housing & Cartridge	2200-0220, 760/25602/00
24-56-00581	OPTI-MAX Outlet Housing & Cartridge	2200-0230, 760/25604/00
10-56-02004	OPTI-MAX Replacement Cartridges, 1/8" Ball, 2/Pack	

Bischoff 2200, Anspec SM909, Alcott Micromeritics 760 (Microbore Versions), 765		OEM #
24-46-00585	OPTI-MAX Inlet Housing & Cartridge	2200-0120, 760/25602/01
24-46-00589	OPTI-MAX Outlet Housing & Cartridge	2200-0130, 760/25604/01
10-46-02004	OPTI-MAX Replacement Cartridges, 1/16" Ball, 2/Pack	

OPTIONS: Stainless Steel/Ceramic OPTI-MAX Cartridges are listed above.
For other options, please see page 45.

24-36-01297

24-36-01303

seals & pistons

24-36-00569

Bischoff 2200, Anspec SM909, Alcott Micromeritics 760, 765 (Analytical Versions)		OEM #
24-36-01297	OPTI-SEAL UHMW-PE* Piston Seal	2200-0212, 760/25601/00
24-36-01298	OPTI-SEAL UHMW-PE* Piston Seal 10/Pack	
24-36-01303	ITB PTFE** Piston Seal	2200-0212, 760/25601/00
24-36-01304	ITB PTFE** Piston Seal, 10/Pack	
24-36-00569	Piston Seal Support Ring	2200-0211, 760/25603/00
24-34-00559	Sapphire Piston	2200-0210, 760/25803/00

24-34-00559

24-36-00571

Bischoff 2200, Anspec SM909, Alcott Micromeritics 760 (Microbore Versions), 765		OEM #
24-36-00571	OPTI-SEAL UHMW-PE* Piston Seal	2200-0112, 760/25601/01
24-36-00572	OPTI-SEAL UHMW-PE* Piston Seal, 10/Pack	
24-36-00573	ITB PTFE** Piston Seal	2200-0112, 760/25601/01
24-36-00575	ITB PTFE** Piston Seal, 10/Pack	
24-36-00574	Piston Seal Support Ring	2200-0111, 760/25603/01
24-34-00562	Sapphire Piston	2200-0110, 760/25803/01

24-36-00573

24-36-00574

*UHMW PE - Ultra High Molecular Weight Polyethylene
**ITB PTFE - Improved Teflon® Blend

24-34-00562

lamps

Bischoff		
24-32-02838	DoubleLife™ Deuterium Lamp, Bischoff, Gynkotek SP6, LATEK VISI-6	

Bischoff
24-32-02838

optimax® check valves

GP-40*/IP-20*, DQP, GPM-1, DRP, GPM-2, DXP, AGP (Analytical), 2000, 4000, GP-50/IP-25		OEM #
25-58-00613	OPTI-MAX Inlet Housing & Cartridge	047660, 38273
25-58-00612	OPTI-MAX Outlet Housing & Cartridge	047661, 42761
10-58-02004	OPTI-MAX Replacement Cartridges, 1/8" Ball, 2/Pack	

OPTIONS: PEEK/ceramic OPTI-MAX cartridges are listed above.
For other options, please see page 45.

*The OPTI-MAX Check Valves above fit GP-40/IP-20 pumps. Users of microbore versions of these pumps should order OPTI-MAX microbore (1/16") cartridges. Please see page 44.

OPTI-MAX for Dionex

pistons & seals

GP-40/IP-20 (Analytical), DQP, GPM-1, DRP, GPM-2, DXP, AGP (Analytical), 2000, 4000		OEM #
25-36-00597	OPTI-SEAL UHMW-PE* Piston Seal (Hastelloy C® Spring)	40859
25-36-00598	OPTI-SEAL UHMW-PE* Piston Seal (Hastelloy C® Spring), 10/Pack	
25-36-00599	UHMW-PE* Piston Seal, (Elastomer O-Ring)	35686
25-36-00600	UHMW-PE* Piston Seal, (Elastomer O-Ring), 10/Pack	
25-36-00601	Back-Up Seal, for all models except GP40/IP20	36901
25-36-00602	Back-Up Seal, 10/Pack	
25-34-00596	Sapphire Piston, for all models except GP40/IP20	36904

*UHMW PE - Ultra High Molecular Weight Polyethylene

25-36-00597

25-36-00599

25-36-00601

25-34-00596

lamps

Dionex		OEM #
25-32-02081	Deuterium Lamp, Dionex VDM-1, DSA-1	
25-32-02820	Deuterium Lamp, Dionex CES 1. VDM-2	40651

Dionex
25-32-02081

hitachi

OPTI-MAX for 655, L-6000, L-6200/L-6200A

OPTI-MAX for L-7100

28-36-00690

28-36-00688

28-36-00691

28-34-00685

28-31-03650

Hitachi
28-32-02829

optimax® check valves

655, L-6000, L-6200/L-6200A		OEM #
28-46-00703	OPTI-MAX Inlet Housing & Cartridge	ANO-0833, 885-1330
28-46-00712	OPTI-MAX Outlet Housing & Cartridge	ANO-0834, 885-1331
10-46-02004	OPTI-MAX Replacement Cartridges, 1/16" Ball, 2/Pack	

L-7100 (LaChrom), L-2130		OEM #
28-46-02092	OPTI-MAX Inlet Housing & Cartridge	ANO-0836, 810-1004, 809-1408
28-46-02094	OPTI-MAX Outlet Housing & Cartridge	ANO-0837, 810-1005, 809-1409
10-46-02004	OPTI-MAX Replacement Cartridges, 1/16" Ball, 2/Pack	

OPTIONS: Stainless steel/ceramic OPTI-MAX cartridges are listed above.
For other options, please see page 45.

L-2100, Smash Pump, L-2130		
28-39-02092	OPTI-MAX Inlet Housing & Cartridge	
28-39-02094	OPTI-MAX Outlet Housing & Cartridge	
10-39-02004	OPTI-MAX Check Valve Cartridge Replacement, Microbore 1/32", 2/Pack	

seals & pistons

655, L-6000, L-6200/L-6200A, L-7100 (LaChrom), L-2100, Smash Pump		OEM #
28-36-00690	OPTI-SEAL UHMW-PE* Piston Seal	655-1080
28-36-00692	OPTI-SEAL UHMW-PE* Piston Seal, 10/Pack	
28-36-00688	ITB PTFE** Piston Seal	655-1080
28-36-00689	ITB PTFE** Piston Seal, 10/Pack	
28-36-00691	OPTI-SEAL UHMW-PE* Piston Seal with Hastelloy C® Spring	
28-36-00693	OPTI-SEAL UHMW-PE* Piston Seal with Hastelloy C® Spring, 10/Pack	
28-34-00685	Sapphire Piston	810-1033

*UHMW PE - Ultra High Molecular Weight Polyethylene
**ITB PTFE - Improved Teflon® Blend

autosampler replacement parts

7200, 7250		OEM #
28-31-03650	Vespel® Rotor Seal Rebuild Kit	ANO-0818

lamps

Hitachi		OEM #
28-32-02375	Deuterium Lamp, L-7000 Series, L-2400, L-3500, L-4000 Series	885-3570
28-32-02829	Deuterium Lamp, Hitachi 200, 300, 330, 340, 1500, 1800, 2000, 2001, 2800, 2810, 3200, L2500, -3000, -3100, U-Series, 655A, 150-20	ANO-0424, 890-2430
28-32-03928	Deuterium Lamp, Lachrom/Merck L-Series (excluding L-7000)	ANO-0424, 890-2430

optimax® check valves

BIP 1		OEM #
42-56-01038	OPTI-MAX Inlet Housing & Cartridge	6260-H101A
42-56-01043	OPTI-MAX Outlet Housing & Cartridge	6260-H102A
10-56-02004	OPTI-MAX Replacement Cartridges, 1/8" Ball, 2/Pack	

880/980 Series		OEM #
42-56-01544	OPTI-MAX Inlet Housing & Cartridge	6560-H405A
42-56-01546	OPTI-MAX Outlet Housing & Cartridge	6560-H404A
10-56-02004	OPTI-MAX Replacement Cartridges, 1/8" Ball, 2/Pack	

OPTIONS: Stainless steel/ceramic OPTI-MAX cartridges are listed above.
For other options, please see page 45.

OPTI-MAX for BIP 1

OPTI-MAX
For 880/980 Series

seals & pistons

BIP-1, PU-2080, 2085, 2089, 1580-C02, 980, 880, 1586, 2086, 986		OEM #
42-36-01357	OPTI-SEAL UHMW-PE* Piston Seal6560-H148, H149A	
42-36-01358	OPTI-SEAL UHMW-PE* Piston Seal, 10/Pack	
42-36-01355	ITB PTFE** Piston Seal 6560-H148-PE, H149A	
42-36-01356	ITB PTFE** Piston Seal, 10/Pack	
42-34-01354	Sapphire Piston	2305-0005A

*UHMW PE - Ultra High Molecular Weight Polyethylene
**ITB PTFE - Improved Teflon® Blend

42-36-01357

42-36-01355

42-34-01354

lamps

Jasco		OEM #
42-32-02841	DoubleLife™ Deuterium Lamp, 870, 875	5330-0097
42-32-02842	DoubleLife™ Deuterium Lamp, UV-1570, -1575, -2070, -2075, 975 B/C Series	5330-0091

42-32-02842

lkb / amersham / pharmacia

OPTI-MAX
For LKB/Pharmacia

optimax® check valves

LKB 2150, 2248, 2500		OEM #
32-46-00782	OPTI-MAX Inlet Housing & Cartridge	80-1035-19
32-46-00787	OPTI-MAX Outlet Housing & Cartridge	2150-300
10-46-02004	OPTI-MAX Replacement Cartridges, 1/16" Ball, 2/Pack	

OPTIONS: Stainless steel/ceramic OPTI-MAX cartridges are listed above.
For other options, please see page 45.

32-36-01303

32-36-01297

seals & pistons

LKB 2150, 2248, 2500		OEM #
32-36-01297	OPTI-SEAL UHMW-PE* Piston Seal with Back-Up Ring	80-1037-39
32-36-01298	OPTI-SEAL UHMW-PE* Piston Seal with Back-Up Ring, 10/Pack	
32-36-01303	ITB PTFE** Piston Seal, with Back-Up Ring	80-1037-39
32-36-01304	ITB PTFE** Piston Seal, with Back-Up Rings, 10/Pack	
32-34-00771	Sapphire Piston, 2150	80-1035-52

*UHMW PE - Ultra High Molecular Weight Polyethylene
**ITB PTFE - Improved Teflon® Blend

32-34-00771

lamps

LKB/Amersham/Pharmacia		OEM #
32-32-02816	Deuterium Lamp, LKB Productor 2140	8010-3135
32-32-02821	Deuterium Lamp, LKB Ultraspec I, II, III, Plus, 4050, 4051, 4054, 2141, 2151	

perkin-elmer

optimax® check valves

Series 1, 2, 3, 3B, 10		OEM #
33-56-00840	OPTI-MAX Inlet Housing & Cartridge	0254-0546
33-56-00845	OPTI-MAX Outlet Housing & Cartridge	0254-0547
10-56-02004	OPTI-MAX Replacement Cartridges, 1/8" Ball, 2/Pack	

Series 1, 2, 3, 3B, 10

Model 250, Series 4, 200*, 400, 410, 620, Integral 4000*		OEM #
33-56-00830	OPTI-MAX Inlet Housing & Cartridge	0254-0177
33-56-00835	OPTI-MAX Outlet Housing & Cartridge	0254-0197
10-56-02004	OPTI-MAX Replacement Cartridges, 1/8" Ball, 2/Pack	

OPTIONS: Stainless steel/ceramic OPTI-MAX cartridges are listed above.
For other options, please see page 45.
*These pumps have an intermediate check valve which is identical to the inlet check valve; to order a replacement intermediate valve, use the OPTI-MAX inlet part number.

Model 250, Series 4, 200, 400, 410, 620, Integral 4000

seals & pistons

Model 250, Series 200, 410, 620, Integral 4000 (Mfd. After 12/89)		OEM #
33-34-00798	Piston (High Pressure)	N260-0124
33-34-00797	Piston (Low Pressure)	N260-0104

33-34-00798

33-34-00797

Model 250, Series 4, 200, 400, 410, 620, Integral 4000, Series 1, 2, 3, 3B, 10		OEM #
33-36-01301	OPTI-SEAL UHMW-PE* Piston Seal (High Pressure)	0990-7324
33-36-01302	OPTI-SEAL UHMW-PE* Piston Seal (High Pressure), 10/Pack	
33-36-01299	ITB PTFE** Piston Seal (High Pressure)	0990-7328
33-36-01300	ITB PTFE** Piston Seal (High Pressure), 10/Pack	

33-36-01301

33-36-01299

Series 4, 400, 410, 620, Integral 4000		OEM #
33-36-00804	OPTI-SEAL UHMW-PE Piston Seal (Low Pressure)	0990-7330
33-36-00805	OPTI-SEAL UHMW-PE Piston Seal (Low Pressure), 10/Pack	
33-36-00802	ITB PTFE Piston Seal (Low Pressure)	0990-7330
33-36-00803	ITB PTFE Piston Seal (Low Pressure), 10/Pack	

33-36-00804

Series 100		OEM #
33-36-00806	OPTI-SEAL UHMW-PE* Piston Seal	N260-0108
33-36-00807	OPTI-SEAL UHMW-PE* Piston Seal , 10/Pack	
33-36-00808	ITB PTFE** Piston Seal N260-0109	
33-36-00809	ITB PTFE** Piston Seal, 10/Pack	

33-36-00802

*UHMW PE - Ultra High Molecular Weight Polyethylene
**ITB PTFE - Improved Teflon® Blend

33-36-00806

lamps

Perkin-Elmer		OEM #
33-32-03117	Deuterium Lamp, 200 UV/Vis	N292-0149
33-32-03114	DoubleLife™ Deuterium Lamp, Series 200 DAD	N292-2046

33-36-00808

33-32-03114

shimadzu

optimax® check valves

LC-10AT, LC-10ATVP

LC-10AT, LC-10ATVP	Shimadzu #	
34-46-01983	OPTI-MAX Inlet Housing & Cartridge	228-32166-91
34-46-00893	OPTI-MAX Outlet Housing & Cartridge	228-39093-92, 228-32531-92 228-34976-91
10-46-02004	OPTI-MAX Replacement Cartridges, 1/16" ball, 2/Pack	

LC-10ADVP

LC-10ADVP, LC-20AD/LC-20AB (Prominence), LC-20AT, LC-2010, GPC-20 & 50 (100 µl Head), ESA Models 582 & 584		Shimadzu #	ESA #
34-46-02644	OPTI-MAX Inlet Housing & Cartridge	228-39093-92 228-45704-91	70-4056
34-46-00893	OPTI-MAX Outlet Housing & Cartridge	228-34976-91 228-45705-91 228-37147-93	70-4057
10-46-02004	OPTI-MAX Replacement Cartridges, 1/16" ball, 2/Pack		

LC-20ADXR		Shimadzu #
34-76-02644	OPTI-MAX Inlet Housing & Cartridge	228-48249-91
34-76-00893	OPTI-MAX Outlet Housing & Cartridge	228-45705-91
10-76-02004	OPTI-MAX Replacement Cartridges 1/16" ball, 2/Pack	

LC-10AD, LC-600, LC-9A

LC-10AD, LC-600, LC-9A (also ESA Model 580)		Shimadzu #	ESA #
34-46-00885	OPTI-MAX Inlet Housing & Cartridge	228-18522-91 228-33492-91	70-0734
34-46-00893	OPTI-MAX Outlet Housing & Cartridge	228-18522-92 228-32531-92	70-0735
10-46-02004	OPTI-MAX Replacement Cartridges, 1/16" ball, 2/Pack		

LC-10AS, LC-6A		Shimadzu #
34-56-00902	OPTI-MAX Inlet Housing & Cartridge	228-12353-91
34-56-00907	OPTI-MAX Outlet Housing & Cartridge	228-09054-93
10-56-02004	OPTI-MAX Replacement Cartridges, 1/8" ball, 2/Pack	

LC-10AS, LC-6A

LC-8A		Shimadzu #
34-66-02112	OPTI-MAX Inlet Housing & Cartridge	228-20256-91
10-66-02005	OPTI-MAX Replacement Cartridges (for LC-8A Inlet), 3/16" ball, 2/Pack	
34-56-00907	OPTI-MAX Outlet Housing & Cartridge	228-09054-93
10-56-02004	OPTI-MAX Replacement Cartridges (for LC-8A Outlet), 1/8" ball, 2/Pack	

LC-8A

OPTIONS: Stainless steel/ceramic OPTI-MAX cartridges are listed above.
For other options, please see page 45.

lamps

		Shimadzu #
34-32-02837	DoubleLife™ Deuterium Lamp, SPD-10A, -10AV, -M10A, -10AS, -10AVP, -M10AVP, -20AV	228-34016-02
34-32-02838	DoubleLife™ Deuterium Lamp, SPD-2A, SPD-6A (V), LC-3A, -4A, 6A, SP4, 6500AA	
34-32-03102	DoubleLife™ Deuterium Lamp, LC 2010	228-37401-00

Shimadzu
34-32-02837

seals & pistons

LC-10ADVP, 2010, LC-20AD (also ESA Models 582 & 584)		Shimadzu #	ESA #
34-36-00855	OPTI-SEAL UHMW-PE* Piston Seal	228-32628-00 228-18745-00	
34-36-00856	OPTI-SEAL UHMW-PE* Piston Seal, 10/Pack		
34-36-03472	ITB Piston Seal	228-35146-00 228-18745-00	70-3602
34-36-03473	ITB Piston Seals, 10/Pack		
34-34-02645	Sapphire Piston for LC-10ADVP, LC-20AD	228-35601-91 228-35601-92	70-4052 70-4052

*UHMW PE - Ultra High Molecular Weight Polyethylene
**ITB PTFE - Improved Teflon® Blend

34-36-00855

34-34-02645

34-36-00865

LC-6A, LC-7A, LC-10AS, LC-10AT, LC-10ATVP, LC-20AT, SIL-10ADVP, GFP		Shimadzu #
34-36-00865	OPTI-SEAL UHMW-PE* Piston Seal	228-11999-00, 228-21975-00, 228-35145-00
34-36-00866	OPTI-SEAL UHMW-PE* Piston Seal, 10/Pack	
34-36-00863	ITB PTFE** Piston Seal	228-11999-00, 228-21975-00, 228-35145-00
34-36-00864	ITB PTFE** Piston Seal, 10/Pack	

Piston Wash Users: The above seals can also be used as Back Seals (OEM# 228-28499-00)

34-36-00863

34-34-00854

34-34-00854	Sapphire Piston for LC-6A	228-12904-93
34-34-01345	Sapphire Piston for LC-10AS	228-17019-93
34-34-01997	Sapphire Piston for LC-10AT (Universal Piston)	228-32654-91
34-34-02650	Sapphire Piston for LC-10ATVP	228-35009-92

34-34-01345

LC-600, LC-9A, LC-10AD (and ESA 580)		Shimadzu #	ESA #
34-36-00855	OPTI-SEAL UHMW-PE* Piston Seal	228-18745-00	
34-36-00856	OPTI-SEAL UHMW-PE* Piston Seal, 10/Pack		
34-36-00857	UHMW-PE* Elastomer Energized Seal	228-18745-00 228-35146-00	
34-36-00858	UHMW-PE* Elastomer Energized Seal, 10/Pack		
34-34-00853	Sapphire Piston	228-18523-91	70-1166
34-36-03472	ITB PTFE** Piston Seal	228-35146-00	70-3602
34-36-03473	ITB PTFE** Piston Seals, 10/Pack		

*UHMW PE - Ultra High Molecular Weight Polyethylene
**ITB PTFE - Improved Teflon® Blend

34-34-02650

34-36-00857

34-34-00853

Universal Sapphire Piston for Shimadzu LC-10AT

Our Universal Piston System for Shimadzu lets you install LC-10AS plungers into a special reusable housing for use in the LC-10AT. Now, the same piston can be used in both the LC-10AS and 10AT, consolidating your inventory and reducing replacement cost.

34-34-01997	**First Time:** LC-10AT Universal Piston Assembly
34-34-01345	**Subsequent:** LC-10AT piston replacement requires only one LC-10AS piston
34-34-01991	Sapphire Plunger Holder for Shimadzu LC-10AT (requires LC-10AS plunger as insert)

34-34-01997

filtration

LC-6AD, LC-610, LC-6A, LC-6AEF, LC- 9A, LC-10AD, LC-10AS, LC-10AT		Shimadzu #
34-04-03881	In-Line Filter Assembly	228-12642-93

34-04-03881

ssi

OPTI-MAX for SSI

optimax® check valves

200 Series, Model 300 (also BAS PM-48, ESA 5700 SDM, DuPont 8800)		OEM #
36-56-00982	OPTI-MAX Inlet Housing & Cartridge	02-0162
36-56-00987	OPTI-MAX Outlet Housing & Cartridge	02-0163
10-56-02004	OPTI-MAX Replacement Cartridges, 1/8" Ball, 2/Pack	

OPTIONS: Stainless steel/ceramic OPTI-MAX cartridges are listed above.
For other options, please see page 45.

UHPLC

optimax® cartridge upgrades

ULTRA CP

10-76-02004	OPTI-MAX Microbore 1/16" Diameter Ceramic Ball & Seat, SS Replacement Check Valve Cartridges w/ flangeless PEEK caps (For OEM Housing), 2/Pk Rated for use at 18,000 psi

36-36-01301

seals

200 Series, Model 300		OEM #
36-36-01301	OPTI-SEAL UHMW-PEA* Piston Seal	90-1034
36-36-01302	OPTI-SEAL UHMW-PE* Piston Seal, 10/Pack	
36-36-01299	ITB PTFE** Piston Seal	90-1012
36-36-01300	ITB PTFE** Piston Seal, 10/Pack	

36-36-01299

*UHMW PE - Ultra High Molecular Weight Polyethylene
**ITB PTFE - Improved Teflon® Blend

thermo: lcd / milton roy

optimax® check valves

All Analytical (including Constametric, Minimetric, Minipump)		OEM #
31-56-00759	OPTI-MAX Inlet Housing & Cartridge	900947001
31-56-00764	OPTI-MAX Outlet Housing & Cartridge	900947002
10-56-02004	OPTI-MAX Replacement Cartridges, 1/8" Ball, 2/Pack	

OPTIONS: Stainless steel/ceramic OPTI-MAX cartridges are listed above.
For other options, please see page 45.

OPTI-MAX for LDC

check valve fittings

All Analytical (including Constametric, Minimetric, Minipump)		OEM #
31-24-00735	1/8" Nut & Ferrule, for Suction Tube	1960066976
31-24-00736	1/16" Nut & Ferrule, for Discharge Tube	1960066975

31-24-00735

seals & pistons

All Analytical (including Constametric, Minimetric, Minipump)		OEM #
31-36-00806	OPTI-SEAL UHMW-PE* Piston Seal	206234
31-36-00807	OPTI-SEAL UHMW-PE* Piston Seal, 10/Pack	
31-36-00754	OPTI-SEAL Replacement Kit	801598
31-36-00808	ITB PTFE** Piston Seal, Black	206129001
31-36-00809	ITB PTFE** Piston Seal, Black, 10/Pack	
31-36-00750	Seal Replacement Kit, ITB	801598
31-36-00745	UHMW-PE* Piston Seal, Gold	206234
31-36-00746	UHMW-PE* Piston Seal, Gold, 10/Pack	
31-36-00747	Seal Replacement Kit, Gold	801892001
31-34-00738	Sapphire Piston	801306
31-34-00739	Crosshead Spring, Constrametric II, Mini-pump	9160282000
31-34-00740	Crosshead Spring, Minimetric	204040

31-24-00736

31-36-00806

31-36-00808

31-36-00745

*UHMW PE - Ultra High Molecular Weight Polyethylene
**ITB PTFE - Improved Teflon® Blend

lamps

LDC/Milton Roy		OEM #
31-32-01295	Deuterium Lamp, 3000 and 4000 Series, Spectromonitor I-II-III-D	108035
31-32-02824	Deuterium Lamp, 5000 (PDA)	

31-34-00738

31-32-01295

thermo: spectra-physics

OPTI-MAX for Spectra-Physics

optimax® check valves

8700, 8800, 8810, IsoChrom, P-Series		OEM #
35-56-00956	OPTI-MAX Inlet Housing & Cartridge	A3495-010
35-56-00961	OPTI-MAX Outlet Housing & Cartridge	A3490-010
35-56-00952	OPTI-MAX Transducer Housing & Cartridge	A3990-010
10-56-02004	OPTI-MAX Replacement Cartridges, 1/8" Ball, 2/Pack	

OPTIONS: Stainless steel/ceramic OPTI-MAX cartridges are listed above.
For other options, please see page 45.

35-36-00930

35-36-00938

35-36-00916

35-36-00918

35-36-00920

seals & pistons

8800, 8810, IsoChrom, P-Series		OEM #
35-36-00930	OPTI-SEAL UHMW-PE* Piston Seal	A2962-010
35-36-00931	OPTI-SEAL UHMW-PE* Piston Seal, 10/Pack	
35-36-00938	ITB PTFE** Piston Seal	A2962-010
35-36-00939	ITB PTFE** Piston Seal, 10/Pack	
35-36-00916	Back-Up Seal, Kel-F	A4848-010
35-36-00917	Back-Up Seal, Kel-F, 10/Pack	
35-36-00918	OPTI-SEAL UHMW-PE* Flush Seal	A2963-010
35-36-00919	OPTI-SEAL UHMW-PE* Flush Seal, 10/Pack	
35-36-00920	ITB PTFE** Flush Seal	A2963-010
35-36-00921	ITB PTFE** Flush Seal, 10/Pack	
35-34-00915	Sapphire Piston	A3102-010

35-34-00915

8700, 8700XR, 8750		OEM #
35-36-00934	OPTI-SEAL UHMW-PE* Piston Seal	A1703-020
35-36-00935	OPTI-SEAL UHMW-PE* Piston Seal, 10/Pack	
35-36-00936	ITB PTFE** Piston Seal	A1703-020
35-36-00937	ITB PTFE** Piston Seal, 10/Pack	

35-36-00934

*UHMW PE - Ultra High Molecular Weight Polyethylene
**ITB PTFE - Improved Teflon® Blend

35-36-00936

lamps

Thermo: Spectra-Physics		OEM #
35-32-01333	Deuterium Lamp, Spectra-Physics Focus, 100, 200, UV-100, -150, -200, -100, 2000, 3000, CE Series	9551-0023

varian, gilson / rainin

optimax® check valves

5, 10 & 25 mL S/SC Heads (Gilson, Rainin, ProStar 210/215, HP, HPX, HPXL, SD 200/300)		OEM #
26-56-00638	OPTI-MAX Inlet Housing & Cartridge	R007101616, R007101678
26-56-00647	OPTI-MAX Outlet Housing & Cartridge	R007101617, R007101679
10-56-02004	OPTI-MAX Replacement Cartridges, 1/8" Ball, 2/Pack	

OPTI-MAX for Gilson/Rainin

2010		OEM #
38-56-01038	OPTI-MAX Inlet Housing & Cartridge	00-997261-09
38-56-01043	OPTI-MAX Outlet Housing & Cartridge	00-997261-10
10-56-02004	OPTI-MAX Replacement Cartridges, 1/8" Ball, 2/Pack	

2010 for Varian

2510		OEM #
38-56-01544	OPTI-MAX Inlet Housing & Cartridge	00-997554-19
38-56-01546	OPTI-MAX Outlet Housing & Cartridge	00-997554-18
10-56-02004	OPTI-MAX Replacement Cartridges, 1/8" Ball, 2/Pack	

2510 for Varian

9000 Star, 9010, 9012, PROSTAR 220, 230, 240		OEM #
38-56-01067	OPTI-MAX Outlet Housing & Cartridge	03-919465-90
10-56-02004	OPTI-MAX Replacement Cartridges, 1/8" Ball, 2/Pack	

38-56-01067
OPTI-MAX for Varian

OPTIONS: Stainless steel/ceramic OPTI-MAX cartridges are listed above.
For other options, please see page 45.

seals & pistons

10mL S/SC Heads (Gilson, Rainin, HP, HPX, HPXL, SD 200/300)		OEM #
26-36-00632	OPTI-SEAL UHMW PE* Piston Seal	5463125895, R007101637
26-36-00633	OPTI-SEAL UHMW PE* Piston Seal, 10/Pack	
26-36-00630	ITB PTFE** Piston Seal	5463125095, R007101636
26-36-00631	ITB PTFE** Piston Seal, 10/Pack	
26-34-00624	Piston, 10 mL S/SC Head	3650009, R007101658

26-36-00632

26-36-00630

26-34-00624

5mL S/SC Heads (Gilson, Rainin, HP, HPX, HPXL, SD 200/300)		OEM #
26-36-00634	OPTI-SEAL UHMW-PE* Piston Seal	5463088863, R007101634
26-36-00635	OPTI-SEAL UHMW-PE* Piston Seal, 10/Pack	
26-36-00636	ITB PTFE** Piston Seal	5463088063, R007101633
26-36-00637	ITB PTFE** Piston Seal, 10/Pack	
26-34-00625	Piston, 5 mL SC Head	3650008, R007101657

26-36-00634

26-36-00636

26-34-00625

*UHMW PE - Ultra High Molecular Weight Polyethylene
**ITB PTFE - Improved Teflon® Blend

varian, gilson / rainin (continued)

38-36-01000

38-36-01002

38-34-00999

38-36-01555

38-36-01553

38-34-01342

26-32-01295

38-32-01637

seals & pistons cont.

ProStar 210/215 (10 mL Heads)		OEM #
38-36-00632	OPTI-SEAL UHMW-PE* Piston Seal	R007101637
38-36-00633	OPTI-SEAL UHMW-PE* Piston Seal, 10/Pack	
38-36-00630	ITB PTFE** Piston Seal	R007101636
38-36-00631	ITB PTFE** Piston Seal, 10/Pack	
38-34-00624	Sapphire Piston, 10 mL Head	R007101658

ProStar 210/215 (5 mL Heads)		OEM #
38-36-00634	OPTI-SEAL UHMW-PE* Piston Seal	R007101634
38-36-00635	OPTI-SEAL UHMW-PE*Piston Seal, 10/Pack	
38-36-00636	ITB PTFE** Piston Seal	R007101633
38-36-00637	ITB PTFE** Piston Seal, 10/Pack	
38-34-00625	Sapphire Piston, 5 mL Head	R007101657

2010, 2510		OEM #
38-36-01000	OPTI-SEAL UHMW-PE* Piston Seal	00-997261-37
38-36-01001	OPTI-SEAL UHMW-PE* Piston Seal, 10/Pack	
38-36-01002	ITB PTFE** Piston Seal	00-997261-37
38-36-01003	ITB PTFE** Piston Seal, 10/Pack	
38-34-00999	Sapphire Piston	00-997261-08

9000 Star, 9010, 9012, 9020, 220, 230, 240		OEM #
38-36-01555	OPTI-SEAL UHMW-PE* Piston Seal	03-919397-00
38-36-01556	OPTI-SEAL UHMW-PE* Piston Seal, 10/Pack	
38-36-01553	ITB PTFE** Piston Seal	03-919397-00
38-36-01554	ITB PTFE** Piston Seal, 10/Pack	
38-34-01342	Sapphire Piston	03-919180-00, 03-919102-90

*UHMW PE - Ultra High Molecular Weight Polyethylene
**ITB PTFE - Improved Teflon® Blend

lamps

Gilson / Rainin Models		OEM #
26-32-01295	Deuterium Lamp, Gilson/Rainin 112	
26-32-03671	Deuterium Lamp, Gilson/Rainin 115, 116, 117, 118, 119, 151, 152, 155, 156	100326
26-32-03069	Deuterium Lamp, Gilson/Rainin 170 DAD	2140-0590

Varian Models		OEM #
38-32-01637	Deuterium Lamp, Varian 2050, 2550, 5500	
38-32-03673	Deuterium Lamp, Varian Prostar 330 DAD	0393570502
38-32-02831	DoubleLife™ Deuterium Lamp, Vista 5000-5500, UV-50, -100, -200, -9050	0391615691
38-32-02081	Deuterium Lamp, Varian Prostar 340, 345, U-VC, UV-DII, UV-M, UVDII, UV	R000088515
38-32-03654	Deuterium Lamp, Varian Prostar 325, 335	
38-32-04022	Xenon Lamp, Varian Prostar 363	392613102

optimax® check valves

2690, 2695, 2790, 2795, Alliance*		OEM #
39-46-01949	OPTI-MAX Inlet Housing & Cartridge	WAT027112, 700002332
10-46-02004	OPTI-MAX Replacement Cartridges, 1/16" Ball, 2/Pack	WAT270941, 700002761

*2690/Alliance Systems have inlet check valves only - outlets are not required.

2690/Alliance

100 µL Head Systems (M45/45G, M501, 510, 515, 590, 600/600E, 610, 6K/6KA, 1515, 1525)		OEM #
39-56-01251	OPTI-MAX Inlet Housing & Cartridge	WAT033679, 700000253
39-56-01256	OPTI-MAX Outlet Housing & Cartridge	700000253
10-56-02004	OPTI-MAX Replacement Cartridges, 1/8" Ball, 2/Pack	700000254, 700002399

100 µL Head Systems

225 µL Head (#3) Systems (510, 515, 590, 600/600E, 610, 650, 6K/6KA)		OEM #
39-66-01262	OPTI-MAX Inlet Housing & Cartridge	WAT033679, WAT060307
10-66-02005	OPTI-MAX Replacement Cartridges 3/16" Ball, 2/Pack	
39-56-01256	OPTI-MAX Outlet Housing & Cartridge	WAT025216
10-56-02004	OPTI-MAX Replacement Cartridges 1/8" Ball, 2/Pack	700000254, 700002399

225 µL Head Systems

400 µL (#4), 500 µL (#5), & 900 µL (#6) Heads (Delta Prep 3000, 600/600E, 650)		OEM #
39-66-01267	OPTI-MAX Outlet Housing & Cartridge	WAT033326 WAT033325
10-66-02005	OPTI-MAX Replacement Cartridges, 3/16" Ball, 2/Pack	

400 µL, 500 µL & 900 µL Heads/Systems

625/626		OEM #
39-48-01907	OPTI-MAX Inlet Housing & Cartridge, PEEK	WAT030541
39-48-01909	OPTI-MAX Outlet Housing & Cartridge, PEEK	WAT030543
10-48-02004	OPTI-MAX Replacement Cartridges, 1/16" Ball, 2/Pack	WAT024120

625/626

616, 1525 µ (Micro)		OEM #
39-46-01949	OPTI-MAX Inlet Housing & Cartridge	WAT055845
39-46-01950	OPTI-MAX Outlet Housing & Cartridge	WAT055845
10-46-02004	OPTI-MAX Replacement Cartridges, 1/16" Ball, 2/Pack	WAT270941, 700002761

OPTIONS: Stainless Steel/Ceramic OPTI-MAX cartridges are listed above (except for the 625/626, which requires PEEK housings and cartridges). For other options, please see page 45.

616

waters (continued)

39-36-02596

39-34-02180

39-36-01305

39-36-01206

39-36-01208

39-36-01211

39-34-01188

39-34-01191

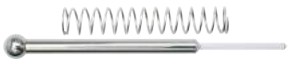
39-36-01216

39-36-01214

39-34-01193

39-36-02124

39-36-02127


39-34-01930

seals & pistons

Alliance/2690, 2695, 2790, 2795		OEM #
39-36-02596	OPTI-SEAL UHMW-PE* Piston Seal	WAT270938
39-36-02603	OPTI-SEAL UHMW-PE* Piston Seal, 2/Pack	WAT270938
39-36-02597	OPTI-SEAL UHMW-PE* Piston Seal, 10/Pack	
39-36-02855	Face Seals Replacement Kit, 4/Pack	WAT270939
39-36-02856	Seal Wash Face Seal Replacement Kit, 4/Pack	WAT271017
39-36-02858	Seal Wash Tube Seals Replacement Kit, 4/Pack	WAT270940
39-36-02860	Seal Wash, Piston Seal, Replacement Kit, 2/Pack	WAT271018
39-34-02180	Sapphire Piston	WAT270959

100 µL Head Systems (M45/45G, M501, 510, 590, 600/600E, 610, 6K/6KA, 1515, 1525, 515)		OEM #
39-36-01305	OPTI-SEAL UHMW-PE* Piston Seal	WAT022934/ WAT022946
39-36-01306	OPTI-SEAL UHMW-PE* Piston Seal, 10/Pack	
39-36-01206	ITB PTFE** Piston Seal, Black	WAT026613
39-36-01207	ITB PTFE** Piston Seal, Black, 10/Pack	
39-36-01208	ITB PTFE** Piston Seal, Red	WAT025638
39-36-01210	ITB PTFE** Piston Seal, Red, 10/Pack	
39-36-01211	ITB PTFE** Piston Seal, Tan	WAT025384
39-36-01213	ITB PTFE** Piston Seal, Tan, 10/Pack	
39-34-01188	Piston, 510, 590, 600/600E, 610, 6K/6KA	WAT025656
39-34-01191	Piston, M45/45G, M501	WAT026524
39-34-01195	Piston Indicator Rod & Spring Kit, 2/Pack	WAT069583
39-34-03522	Sapphire Piston, 1515, 1525, 515	WAS207069

225 µL Head (#3) Extended Flow Systems (510, 590, 600/600E, 610, 650, 6K/6KA)		OEM #
39-36-01216	OPTI-SEAL UHMW-PE* Piston Seal	WAT026644
39-36-01217	OPTI-SEAL UHMW-PE* Piston Seal, 10/Pack	
39-36-01214	ITB PTFE** Piston Seal	WAT026644
39-36-01215	ITB PTFE** Piston Seal, 10/Pack	
39-34-01193	Piston	WAT060304

616, 625/626		OEM #
39-36-02124	OPTI-SEAL UHMW-PE* Piston Seal	
39-36-02228	OPTI-SEAL UHMW-PE* Piston Seal, 10/Pack	
39-36-02127	ITB PTFE** Piston Seal	WAT031790
39-36-02229	ITB PTFE** Piston Seal, 10/Pack	
39-34-01930	Piston and Spring	WAT031788

*UHMW PE - Ultra High Molecular Weight Polyethylene
**ITB PTFE - Improved Teflon® Blend

lamps

Waters		OEM #
39-32-01175	Mercury Lamp, Waters 440, 441	WAT097323
39-32-01178	Quartz Lamp, Waters 150C	WAT075631
39-32-01179	Deuterium Lamp, Waters 484	WAT080357
39-32-01294	Deuterium Lamp, Waters 450	WAT098946
39-32-01295	Deuterium Lamp, Waters 480, 481, 481AZ	WAT099499
39-32-02823	Deuterium Lamp, Waters 486	WAT080678
39-32-02825	Deuterium Lamp, Waters 2487, 2488, Alliance	WAS081142
39-32-02835	DoubleLife™ Deuterium Lamp, Waters 996, 2996, PDA	WAT052586
39-32-02688	Xenon Lamp, Waters 490E	
39-32-02185	Deuterium Lamp, Waters 996, 2996, PDA	WAT057760

Waters
39-32-02825

Waters
39-32-02835

filtration

2690/2695, 2790/2795, 600		OEM #
39-04-03524	2 µm Filter Insert Assembly - In-Line	WAT088084
10-04-03151	Solvent Filter, 1/8", 10 µL, 4/Pack	WAT025531

For additional filtration configurations, see page 31.

39-04-03524
Filter Insert Assembly

inlet manifold parts & priming accessories

Part No	Description	OEM #
39-31-01144	Ball Plug	WAT005061
39-31-01293	Threaded Seal Insert, M45G, M501, 510, 590, 600/600E, 610, 6KA	WAT060015 WAT005098
39-31-01143	Ruby Ball	WAT005089
39-38-01233	Actuator Seat, PTF	WAT005081
39-31-01174	Inlet Manifold Rebuild Kit **Includes**: Plug Threaded Seal Insert Ruby Ball Actuator Seat	WAT060448*
39-31-01171	Optimize Safety Syringe (for pump priming)	WAT027629
39-31-01147	Needle with Nut & Ferrule	WAT025559
39-31-01151	Priming Syringe Kit **Includes**: Priming Syringe Needle Nut & Ferrule	

*Kit Inventory Differs Slightly

10-04-03151
Solvent Filter

M45/

Ball Plug

Threaded Seal Insert

Ruby Ball

Actuator Seat

Needle with /Nut & Ferrule

waters (continued)

WISP Syringe

waters WISP™ autosampler

Rebuild Kits for WISP Autosamplers

39-30-01132	715/717 Seal Pack Assembly Rebuild Kit

Includes:

39-30-01106	Needle Wash Frit (4)
39-30-01114	PTFE Washer (1)
39-30-01115	Upper Wash Spacer (2)
39-30-01119	Gasket (4)
39-30-01125	WISP™ Solvent Seal, long (2)

Replacement Components for WISP Autosamplers		OEM #
39-30-01093	250 µL WISP Syringe	WAT073109
39-30-01106	Injector Wash Frit	WAT005106
39-30-01114	PTFE Washer	WAT005135
39-30-01115	Upper Needle Wash Spacer	WAT005133
39-30-01125	WISP Solvent Seal, Long	

Rebuild your Waters WISP™ Autosampler with these rebuild kits and individual components.

Team with Optimize to bring your concepts to reality

We look forward to helping you optimize your laboratory

Use this space to take notes, sketch an idea or design new components for your instruments

We believe the best way to predict the **future** is to **invent it.**

back pressure regulators

Optimize flow-through back pressure regulators utilize an active mechanism to maintain steady back pressure across a range of mobile phase viscosities and flow rates. Placing one downstream from your detector will prevent solvent decompression and bubble formation in the flow cell, reducing baseline noise and drift.

Each regulator has an internal volume of 100 µL and is available in pre-set pressures of 10, 30, 60, 100, or 150 psi.

Place a back pressure regulator downstream from your detector to prevent solvent outgassing and bubble formation in the flow cell, reducing baseline noise and drift.

Back Pressure Regulators

10-06-00120	Back Pressure Regulator, 10 psi
10-06-00128	Back Pressure Regulator, 30 psi
10-06-00129	Back Pressure Regulator, 60 psi
10-06-00130	Back Pressure Regulator, 100 psi
10-06-00132	Back Pressure Regulator, 150 psi
	Fittings Included

optilok™
fittings, tubing & adapters

As complex and advanced as HPLC systems have become, they still need conduits for fluid transfer: tubing, fittings, and adapters. Though these components are simple in design and, with the advent of finger tight fittings, fairly easy to use, their role in the plumbing of an HPLC system is often overlooked until something goes wrong. Anyone who has ever used an HPLC knows the troubles a faulty or failing fitting can cause.

At Optimize Technologies, we realize that your time is valuable and should not be wasted worrying about fittings. For this reason, **all Optimize fittings are precision machined in the USA** for optimal quality and thread consistency. The machining process is the best way to ensure tight manufacturing tolerances and minimal product variance.

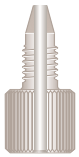
What does all this mean? It means that every fitting you purchase from Optimize will perform just as well as the last, so you'll have no worries about faulty fittings. This reflects our commitment to providing our customers with the highest quality, best-designed product available.

If you have questions about the machining process and how it differs from injection molding, give us a call. We are always eager to share our fabrication process and unyielding dedication to excellence.

optilok™ high pressure fittings

Opti-Lok™ fittings are ideal for making high-pressure connections with 1/16" OD tubing. All Optimize fittings are precision machined for optimal quality and thread consistency, and are designed for trouble-free operation at pressures of up to 6,000 psi.

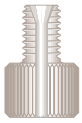
Looking for UHPLC Fittings? See page 11.



OPTI-LOK I (PEEK)

OPTI-LOK I 10-32 Hand-Tight Fittings with Integral Ferrule

Singles	10-20-00258	10 Pack	10-20-00259	OPTI-LOK I, Kel-F
	10-20-00264		10-20-00265	OPTI-LOK I, PEEK

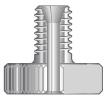


6K Knurled Head (PEEK)

OPTI-LOK 6K 10-32 Nuts & Ferrules

Singles, Nut Only	10-20-00268	10 Pack, with Ferrules	10-20-00270	Knurled Head, PEEK
	10-20-00271		10-20-00272	Hex Head, Short, PEEK
	10-20-00275		10-20-00276	Hex Head, Long, PEEK
	10-20-00273		10-20-00274	Knurled Head, w/wrench-flat SS
	10-20-00269		10-20-00518	Double Tight Ferrule, PEEK

6K Hex Head, Short (PEEK)



6K Knurled Head (SS)

Ferrule (PEEK)

Double Tight Ferrule (PEEK)

10-32 Couplers with 1/16" OD x .006" ID x 6cm SS Tubing

10-20-00263	Coupler, Kel-F
10-20-00266	Coupler, PEEK

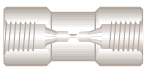
Universal 10-32 Nuts & Ferrules for 1/16" OD Tubing

10-24-00367	Universal Nut, SS
10-24-00376	Universal SS Nuts with Ferrules, 10/Pack
10-24-00369	Universal Ferrule, SS
10-24-00370	Universal Ferrule, PEEK

Universal Nut (SS)

10-32 Unions for 1/16" OD Tubing

10-20-00261	PEEK Union, .010" Thru
10-20-00262	PEEK Union, .020" Thru
10-24-00375	Universal Union, with Nuts & Ferrules, 010" Thru, SS
10-24-00373	Universal Union, with Nuts & Ferrules, 020" Thru, SS
10-24-00371	Universal Union, with Nuts & Ferrules, 030" Thru, SS



Union (PEEK)

10-32 Tees for 1/16" OD Tubing

10-20-00287	Tee, .020" Thru, PEEK

Tee (PEEK)

10-32 OPTI-LOK Plugs

Singles	10-20-00251	10 Pack	10-20-00253	Plug, White Acetal
	10-20-00255		10-20-00256	Plug, PEEK

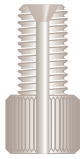
Plug (White Acetal)

optilok™ low pressure fittings

Opti-Lok™ LP Fittings are an excellent choice for making low-pressure connections into 1/4-28 ports. Connections to flat-bottomed ports can be made using OPTI-LOK flat-bottomed ferrules for 1/16" or 1/8" tubing, without the need for pre-flanged tubing ends. OPTI-LOK LP fittings are precision machined to deliver leak-free, zero-dead-volume connections every time. We also offer 1/4-28 unions in various through-hole sizes for joining flat-bottom fittings together.

OPTI-LOK LP 1/4-28 Nuts & Ferrules for 1/16" OD Tubing

10-21-00290	Nut, PEEK	**10-21-00293**	Nut, White Acetal
10-21-00292	Nut, Tefzel®	**10-21-00299**	Nut, Teflon® (PTFE)
10-21-00291	Nut, Long, PEEK	**10-21-00296**	Ferrule, PEEK
10-21-00295	Ferrule, Tefzel®	**10-21-00300**	Ferrule, Teflon® (PTFE)


Nut (PEEK)

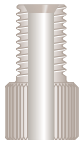
OPTI-LOK LP 1/4-28 Nuts & Ferrules for .100" OD Tubing

10-21-00283	Nut, White Acetal	**10-21-00284**	Nut, PEEK
10-21-00281	Ferrule, Tefzel®		

Ferrule (PEEK)

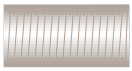
OPTI-LOK LP 1/4-28 Nuts & Ferrules for 1/8" OD Tubing

10-21-00307	Nut, PEEK	**10-21-00305**	Nut, Black Acetal
10-21-00310	Nut, White Acetal	**10-21-00306**	Nut, Kel-F
10-21-00309	Nut, Tefzel®	**10-21-00317**	Nut, Teflon® (PTFE)
10-21-00308	Nut, long, PEEK	**10-21-00313**	Ferrule, PEEK
10-21-00312	Ferrule, Tefzel®	**10-21-00318**	Ferrule, Teflon® (PTFE)


Nut (PEEK)

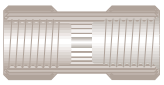
1/4-28 Unions

10-21-00322	Union, Polypropylene	**10-21-00323**	Union, Natural PEEK


Union (PEEK)

1/4-28 Peek Unions, Knurled with Wrench Flats

10-21-00341	Union, .010" Thru, PEEK	**10-21-00342**	Union, .020" Thru, PEEK
10-21-00343	Union, .050" Thru, PEEK		


Union (PEEK)

1/4-28 Tees for 1/16" OD Tubing

10-20-00286	Tee, .062" Thru, PEEK

OPTI-LOK LP 1/4-28 Plugs

10-21-01292	Plug, White Acetal	**10-21-00326**	Plug, Teflon® (PTFE)

Plug (white Acetal)

optilok™ | m6 metric nuts & ferrules

OPTI-LOK 6K PEEK Metric Fittings for 1/16" OD Tubing

10-22-00328	Nut, Knurled Head w/Hex, PEEK	**10-20-00269**	Double Tight Ferrule, PEEK
10-22-00329	Nut, Knurled Head w/Hex & Ferrules, 10/Pack		

Double Tight Ferrule (PEEK)

OPTI-LOK LP Metric Fittings for 1/16" OD Tubing

10-22-00297	Nut, White Acetal	**10-22-00301**	Ferrule, Short, Tefzel®
10-22-00303	Ferrule, PPS		

Nut (White Acetal)

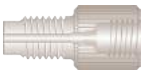
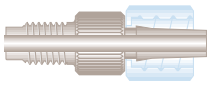
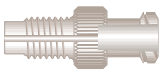
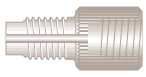
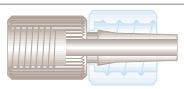
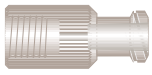
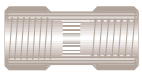
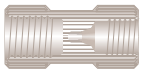
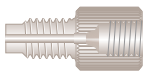
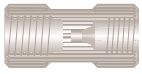
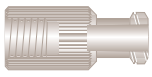
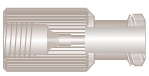
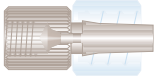
OPTI-LOK LP Metric Fittings for 1/8" OD Tubing

10-22-00314	Nut, White Acetal	**10-22-00315**	Nut, Black Acetal
10-22-00319	Ferrule, Short, Tefzel®		

Ferrule (PPS)

optilok™ adapters

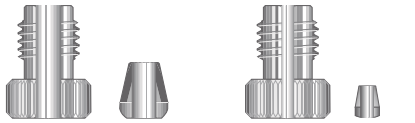
Opti-Lok™ Adapters offer maximum flexibility for making connections between your 1/4-28, M6 (Metric), Luer and 10-32 fittings and ports. They are available in a useful variety of thread-type combinations, all precision machined from PEEK.

	Part Number	Adapts from	Adapts to	Adapter
¼-28 TO 10-32	10-23-00350	1/4-28 Female	10-32 Parker Male	
¼-28 TO LUER	10-23-00352	1/4-28 Female	Luer Female	
	10-23-00353	1/4-28 Female	Luer Male	
¼-28 TO M6	10-23-00351	1/4-28 Female	M6 (Metric) Male	
¼-28 TO LUER	10-23-00347	1/4-28 male	Luer Female	
	10-23-00349	1/4-28 male	Luer Male	
¼-28 TO M6	10-23-00346	1/4-28 male	M6 Male, (with Web)	
¼-28 TO 10-32	10-23-00335	1/4-28 male	10-32 Parker Male	
M6 TO 10-32	10-23-00357	M6 (Metric) Female	10-32 Parker Male	
	10-23-00355	M6 (Metric) male	10-32 Parker Male	
M6 TO LUER	10-23-00363	M6 (Metric) male	Luer Male	
10-32 TO LUER	10-23-00358	10-32 Parker Male	Luer Male	
	10-23-00359	10-32 Parker Male	Luer female	

oem specific fittings

LDC-Style 5/16-24 Fittings

31-24-00735	1/8" Nut & Ferrule for Suction Tube, SS
31-24-00736	1/16" Nut & Ferrule for Discharge Tube, SS

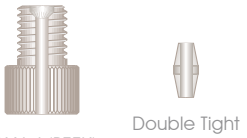


1/8" Nut & Ferrule, For Suction Tube (SS)

1/16" Nut & Ferrule, For Discharge Tube (SS)

SSI-Style 1/4-28 Fittings for 1/16" OD Tubing

10-20-00330	6K Nut, PEEK
10-20-00331	6K Nut & Ferrules, PEEK, 10/Pack
10-20-00269	Double Tight Ferrule, PEEK

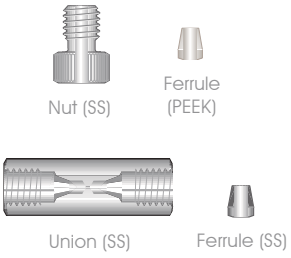


6K Nut (PEEK)

Double Tight Ferrule (PEEK)

Parker-Style 10-32 Fittings for 1/16" OD Tubing

40-24-01275	Nut, SS
40-24-01276	Nuts & Ferrules, SS, 10/Pack
40-24-01291	Ferrule, SS
40-24-01290	Ferrule, PEEK
40-24-01271	Union with Nuts & Ferrules, SS, .010" Thru
40-24-01273	Union with Nuts & Ferrules, SS, .020" Thru



Nut (SS)

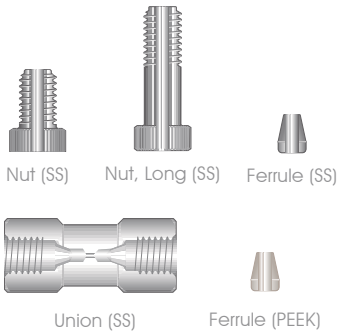
Ferrule (PEEK)

Union (SS)

Ferrule (SS)

Genuine Valco 10-32 Fittings for 1/16" OD Tubing

41-24-01277	Nut, SS
41-24-01281	Nuts & Ferrules, SS, 10/Pack
41-24-01278	Nut, Long, SS
41-24-01279	Ferrule, SS
41-24-01283	Union with Nuts & Ferrules, SS, .010" Thru
41-24-01280	Union with Nuts & Ferrules, SS, .030" Thru
41-24-01282	Ferrule, PEEK



Nut (SS)

Nut, Long (SS)

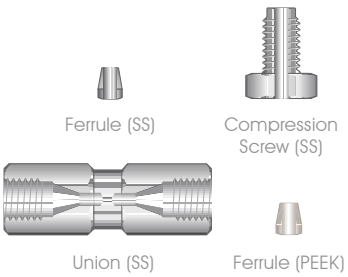
Ferrule (SS)

Union (SS)

Ferrule (PEEK)

Waters-Style 10-32 Fittings for 1/16" OD Tubing

		OEM #
39-24-01090	Compression Screw, SS	WAT005070
39-24-01091	Compression Screws & Ferrules, SS, 10/Pack	WAT025604 (5/Pack)
39-24-01291	Ferrule, SS, single	WAT005063 (10/Pack)
39-24-01290	Ferrule, PEEK	WAT021817
39-24-01088	Union w/ Nuts & Ferrules, SS	WAT097332

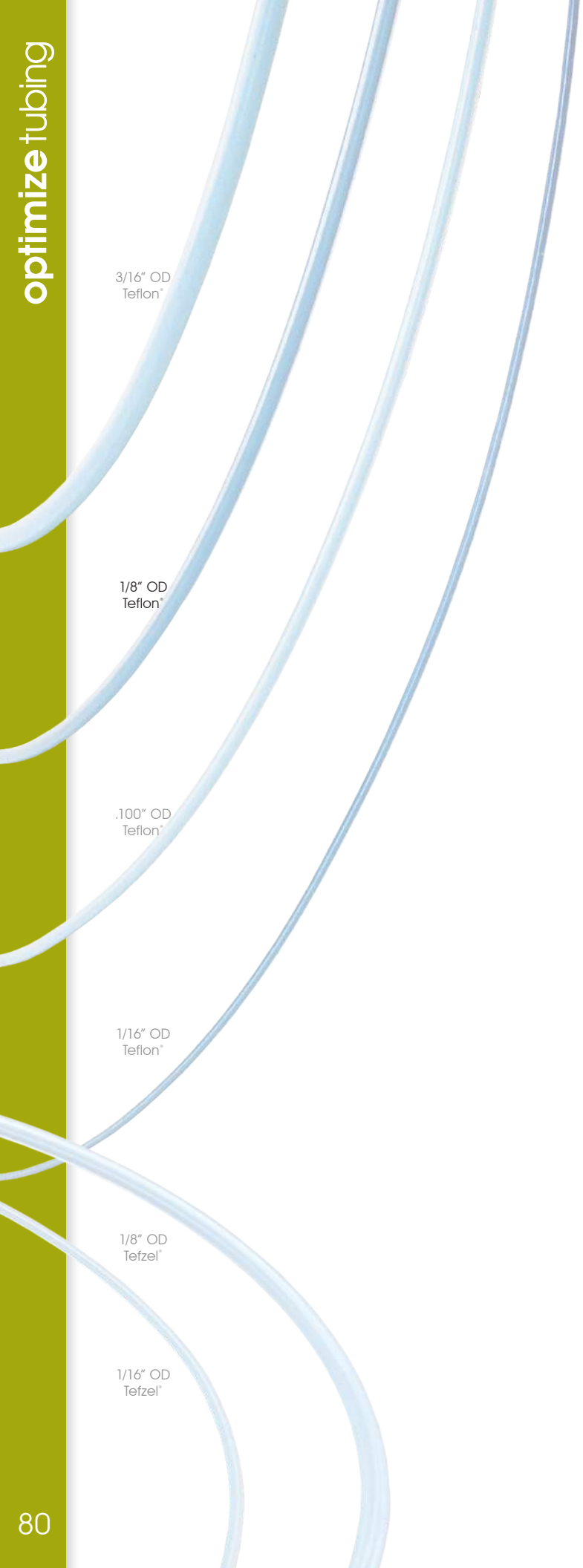


Ferrule (SS)

Compression Screw (SS)

Union (SS)

Ferrule (PEEK)



tubing

teflon® (ptfe) tubing

1/16" Outside Diameter Teflon® Tubing

10-15-00214	1/16" OD x .010" ID x 10 ft
10-15-00215	1/16" OD x .010" ID x 50 ft
10-15-00220	1/16" OD x .020" ID x 10 ft
10-15-00221	1/16" OD x .020" ID x 50 ft
10-15-00226	1/16" OD x .030" ID x 10 ft
10-15-00227	1/16" OD x .030" ID x 50 ft
10-15-00232	1/16" OD x .040" ID x 10 ft
10-15-00233	1/16" OD x .040" ID x 50 ft

.100" Outside Diameter Teflon® Tubing

10-15-00205	.100" OD x .040" ID x 10 ft
10-15-00206	.100" OD x .040" ID x 50 ft

1/8" Outside Diameter Teflon® Tubing

10-15-00238	1/8" OD x .062" ID x 10 ft
10-15-00240	1/8" OD x .062" ID x 50 ft

3/16" Outside Diameter Teflon® Tubing

10-15-00243	3/16" OD x .125" ID x 10 ft
10-15-00245	3/16" OD x .125" ID x 50 ft

tefzel® (etfe) tubing

1/16" Outside Diameter Tefzel® Tubing

10-14-00193	1/16" OD x .010" ID x 10 ft
10-14-00194	1/16" OD x .010" ID x 50 ft
10-14-00196	1/16" OD x .020" ID x 10 ft
10-14-00197	1/16" OD x .020" ID x 50 ft
10-14-00199	1/16" OD x .030" ID x 10 ft
10-14-00200	1/16" OD x .030" ID x 50 ft

1/8" Outside Diameter Tefzel® Tubing

10-14-00202	1/8" OD x .062" ID x 10 ft
10-14-00203	1/8" OD x .062" ID x 50 ft

tubing

optipeek™ tubing

1/16" Outside Diameter PEEK Tubing

10-13-00168	1/16" OD x .006" ID x 10 ft
10-13-00170	1/16" OD x .006" ID x 50 ft
10-13-00175	1/16" OD x .010" ID x 10 ft
10-13-00177	1/16" OD x .010" ID x 50 ft
10-13-00183	1/16" OD x .020" ID x 10 ft
10-13-00186	1/16" OD x .020" ID x 50 ft
10-13-00187	1/16" OD x .030" ID x 10 ft
10-13-00191	1/16" OD x .030" ID x 50 ft
10-13-00179	1/16" OD x .040" ID x 10 ft
10-13-00181	1/16" OD x .040" ID x 50 ft

stainless steel pre-cut tubing

1/16" Outside Diameter Stainless Steel Tubing

10-12-00145	1/16" OD x .006" ID x 6 cm
10-12-00143	1/16" OD x .006" ID x 10 cm
10-12-00144	1/16" OD x .006" ID x 20 cm
10-12-00141	1/16" OD x .006" ID x 10 ft
10-12-00151	1/16" OD x .010" ID x 6 cm
10-12-00148	1/16" OD x .010" ID x 10 cm
10-12-00149	1/16" OD x .010" ID x 20 cm
10-12-00150	1/16" OD x .010" ID x 30 cm
10-12-00146	1/16" OD x .010" ID x 10 ft
10-12-00157	1/16" OD x .020" ID x 6 cm
10-12-00154	1/16" OD x .020" ID x 10 cm
10-12-00155	1/16" OD x .020" ID x 20 cm
10-12-00156	1/16" OD x .020" ID x 30 cm
10-12-00152	1/16" OD x .020" ID x 10 ft
10-12-00162	1/16" OD x .030" ID x 6 cm
10-12-00160	1/16" OD x .030" ID x 10 cm
10-12-00161	1/16" OD x .030" ID x 20 cm
10-12-00158	1/16" OD x .030" ID x 10 ft
10-12-00167	1/16" OD x .040" ID x 6 cm
10-12-00165	1/16" OD x .040" ID x 10 cm
10-12-00166	1/16" OD x .040" ID x 20 cm
10-12-00163	1/16" OD x .040" ID x 10 ft

tubing cutters

10-10-00139	Plastic Tubing Cutter
10-10-00140	Stainless Steel Tubing Cutter

Plastic Tubing Cutter

1/16" OD PEEK

1/16" OD Stainless Steel

Stainless Steel Tube Cutter

Optimize stainless steel tubing is pre-cut and electropolished to ensure square, burr-free ends, and is passivated prior to shipment.

patents & trademarks

optimizetrademarks

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notes

optimizetechnologies

Please join us in supporting a place for children to heal

Optimize Technologies supports the Children's Center

A private, non-profit medical assessment center, the Children's Center supports children and families in cases of suspected physical abuse, sexual abuse, neglect, drug endangerment and witness to violence. Specialized evaluations are conducted to confirm and document abuse a child may have suffered, and include a complete medical exam, child forensic interview, treatment planning and family support. The results assure the child's safety, allow professionals to plan appropriate prevention and intervention services and prosecute perpetrators.

At the Children's Center

- Two-thirds of the children served at the Children's Center are girls and half are younger than seven years old.
- Seventy percent of child abuse assessments provided by the Children's Center are for suspected sexual assault of children.
- The Children's Center provides child abuse assessments for approximately 300 children every year and must turn away others due to limited capacity.

How You Can Help

Child abuse takes a toll on a child's physical, mental and emotional development. The Children's Center is committed to reducing the incidence and impact of child abuse. Please take a moment to learn more about the Children's Center at **www.childrenscenter.cc.**

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