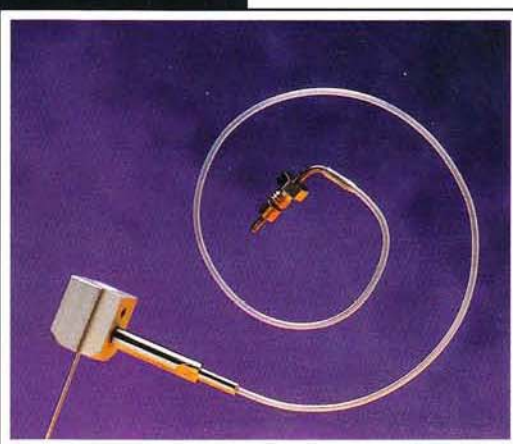
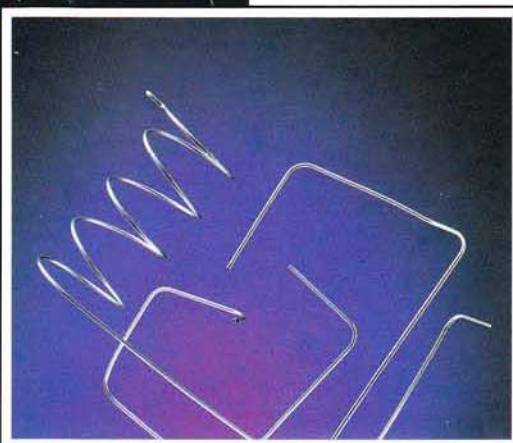
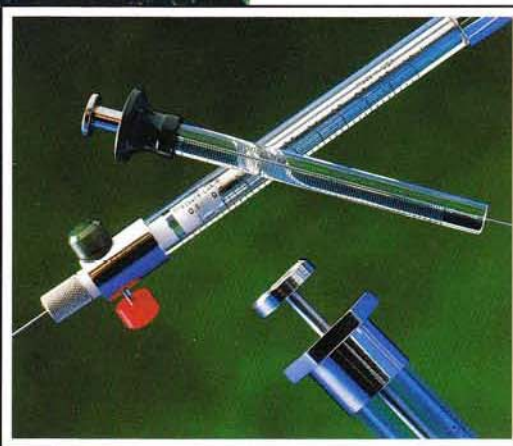


VICI

Precision Sampling

Analytical
Syringes
Valves
Probes
Accessories
Custom Tubing



Catalog 101

Recognized in laboratories worldwide

VICI Precision Sampling

Introduction

VICI (Valco Instruments Co. Inc.) acquired the syringe, Mininert™ valve, and probe business of Precision Sampling (formerly Dynatech Precision Sampling) in 1996. VICI specializes in the research, design, and manufacturing of components for the instrumentation market, and is the world's largest manufacturer of specialized fittings and valves for instrumentation. The alliance with VICI, along with Precision Sampling employees' combined tenure of two hundred years of manufacturing experience, strengthens our position of leadership in the high performance analytical syringe market.

We are a committed group of talented experts dedicated to providing cost-effective, high value, precision products. Customer satisfaction is our primary objective. We continually strive to provide our customers with high quality, reliable products and responsive service.

The VICI Family of Companies

VICI

Our parent company is the world's leading designer and manufacturer of valves, fittings, and detectors for analytical, biomedical, and biocompatible instrumentation. The VICI product line includes a wide range of related products such as pneumatic and electric actuators, tubing and sample loops, heated enclosures, valve sequence and temperature controllers, gas purifiers, and digital interfaces. You may not be aware of the VICI components in your detector, pump, nebulizer, column, or autosampler, but it is a rare analytical instrument that does not incorporate some product from VICI in its design.

VICI AG

International business is handled through VICI AG (Valco Europe), located in Schenkon, Switzerland. As a second location for the manufacturing of Valco and Cheminert valves, VICI AG also offers support for all products made by any VICI company, and expedites shipments to Europe, the Middle East, the Far East, and points beyond.

VICI Metronics and Condyne

VICI Metronics, Inc., located in the beautiful San Francisco Bay Area, is a leading manufacturer of devices and instruments that are used in the generation of test atmospheres containing very low concentrations of gases. The primary use of these devices is in the calibration of gas analyzers used to monitor air pollution. The Condyne division of Metronics provides quality gas flow control components for analytical instruments, supplying major instrument manufacturers worldwide.

Table of Contents

General Information

Pressure-Lok® syringe features	page 2
Specific features of select models	3
Ordering guides (a product overview)	4-5
Request for a custom product	32

Gas Syringes

Series A: <i>Pressurized sample storage w/built-in rotary valve</i>	page 6
Series A-2: <i>Pressurized sample storage w/built-in push-button valve</i>	7
Series C: <i>With optional Chaney adapter</i>	8
Series D: <i>Full-featured syringe without built-in valve</i>	9
Mininert syringe valves: <i>Add storage capability to C & D syringes</i>	9
Magnum: <i>Pressurized storage for trace sample isolation</i>	10
Replacement needles	11
Replacement parts	12-13

Liquid Syringes

Series C-160: <i>Our basic PTFE plunger tipped microsyringe</i>	page 14
Series C-120: <i>Barrel extension for attaching a vacuum bulb or line</i>	15
Series CG-130: <i>Reinforced plunger to prevent bending</i>	16
Series CGV-130: <i>Adds a side vent for filling and cleaning</i>	17
Series D-140: <i>For small volume (1 - 10 µl) injections</i>	18
Mini-injector: <i>For reproducible injections down to 0.01 µl</i>	19
HPLC syringes: <i>Designs for most injectors</i>	20-21
Purge and trap: <i>Premium syringe for environmental applications</i>	22
Replacement needles and parts for liquid syringes	23

Autosampler and OEM Syringes

Hewlett Packard	page 24
Varian	24
Perkin Elmer	25
Waters Wisp™	25
Dynatech	25

High Pressure Syringes

Pressure-Flo®: <i>High pressure syringe for cylinder sampling</i>	page 26
Micro-Flo®: <i>For samples up to 500 psi</i>	27
Replacement parts for high pressure syringes	27

Mininert™ Valves

General description and specifications	page 28
For syringes: <i>Add storage capability to a conventional syringe</i>	9
For screw-cap vials: <i>Leak-tight closures for screw-cap vials</i>	29
With standard tapers: <i>Fits standard laboratory glassware</i>	29
With threaded fittings: <i>Male and female NPT and 1/4-28</i>	29
Replacement parts and accessories: <i>Septa, tools, needle guides</i>	29

Probes

GC and LC Probes	page 30
PTA-30, WS, and DynaTrap Instruments	31
Varian Archon Instruments	31

Syringe Features

Pressure-Lok[®] Syringe Features

*PTFE Plunger Tip

Plunger tips are fabricated of PTFE, stress-formed by our own special process to insure a leak-tight seal. The self-lubricating plunger tip stays smooth for the life of the syringe, with none of the freezing up or residue build-up associated with conventional all-metal plungers.



PTFE-Sealed Needle

Standard needle attachment includes a barrier sleeve or packing of PTFE on the rear of the needle at the zero point. This isolates the sample from the needle cement, preventing possible dissolution of the adhesive or contamination of the sample. Many of our models are also available in a luer-tip version.



Ultra-Smooth Bore

Syringe barrels up to 100 µl are hand-fabricated from high quality borosilicate glass, manufactured to our specifications. The extremely smooth bore prevents undue wear of the plunger tip and insures a smooth, durable seal.

Hand Calibration

Each barrel undergoes a series of quality checks, including hand-calibration of consistent volume delivery. After final assembly of each lot, volume delivery is checked again with an electronic microbalance. These careful steps in quality control insure that every Pressure-Lok microsyringe measures up to today's stringent requirements for precision and accuracy.

Easily Replaceable Parts

Depending on the specific model, some or all of the wear parts can be easily replaced, optimizing your equipment investment.

Shaped Rear Flange

All of our syringes have a rear flange to provide a secure grip and keep the syringe from rolling.

Low Dead Volume

Every syringe design takes advantage of every opportunity to minimize or eliminate dead volume.

Crisp, Clean Graduations

Our methods insure easy reading of the sampled amount.

*PTFE is the generic name for polytetrafluoroethylene polymer, commonly sold as Teflon[®] by E.I. duPont de Nemours

Innovations which make Pressure-Lok syringes a standard in today's laboratories

Special Features of Select Models

Pressurized Sample Storage

Several of our syringes have a built-in valve to allow sample storage at up to 250 psi. This feature also allows pre-pressurization of the sample before injection so that the sample is flushed into the column instantaneously, providing better resolution. For conventional syringes, our Mininert syringe valve adds this capacity.

Gas p. 6-7, 10

High pressure p. 26-27

Removable Needles

Many models offer a special pressure-tight, low dead volume connection to facilitate easy removal and replacement of needles.

Gas p. 6-10

Liquid p. 14, 16, 18

Optional Luer Tip for Convenience

Although our standard PTFE-sealed needle offers superior performance, we also offer the added convenience of luer-tip models.

Gas p. 7-10

Liquid p. 22

Positive Rear Plunger Stop

If plunger damage from accidental plunger removal has been a problem, select one of our syringes with this feature.

Gas p. 6-8, 10

Liquid p. 18, 19

High pressure p. 26-27

Reinforced Plunger

If plunger-bending is a problem that contributes to excessive syringe repair bills in your lab, this feature offers a solution.

Liquid p. 16-19

Side Vent

We offer a unique model with a side vent, allowing easy syringe filling and cleaning.

Liquid p. 17

Safety Note

To prevent possible injury, proper safety precautions should always be observed when pressurizing glass cylinders such as syringes.

Ordering Guides

Gas Syringes

Features

Precision Sampling gas syringes have all the standard features on page 2, with special features delineated in the chart below.

	Pressure rating	Removable needle	Luer needle	Sample-Lok valve type	Plunger stop	Page number
Series A:	250 psi	✓		twist-lock	✓	6
Series A-2:	250 psi	✓	✓	push-button	✓	7
Series C:	250 psi	✓	✓	*	✓	8
Series D:	250 psi	✓	✓	*		9
Magnum:	30 psi	✓	✓	twist-lock	✓	10

*Order a Mininert syringe valve on page 9.

Sizes Available

	Series A	Series A-2	Series C	Series D	Magnum
Page no:	6	7	8	9	10
25 µl:		✓			
50 µl:		✓			
100 µl:	✓	✓	✓		
250 µl:	✓	✓	✓		
500 µl:	✓	✓	✓		
1 ml:	✓	✓	✓	✓	
2 ml:	✓	✓	✓	✓	
5 ml:	✓	✓	✓		
10 ml:	✓	✓	✓		
20 ml:					✓
50 ml:					✓
100 ml:					✓
250 ml:					✓
500 ml:					✓

Liquid Syringes

Features

Precision Sampling liquid syringes have all the standard features on page 2, with special features delineated in the chart below.

	Pressure rating	Removable needle	Fixed needle	Reinforced plunger	Plunger stop	Side Vent	Page number
Series C-160:	250 psi	✓	✓				14
Series C-120:	250 psi		✓				15
Series CG-130:	250 psi	✓	✓	✓			16
Series CGV-130:	250 psi		✓	✓		✓	17
Series D-140:	30 psi	✓		✓	✓		18
Mini-injector:			✓	✓	✓		19
Purge and Trap:		luer					22

Sizes Available

	Series C-160	Series C-120	Series CG-130	Series CGV-130	Series D-140	Mini-injector	Purge & trap
Page no:	14	15	16	17	18	19	22
.01 µl:						✓	
.10 µl:						✓	
1 µl:					✓		
2 µl:					✓		
5 µl:	✓	✓	✓		✓		
10 µl:	✓	✓	✓	✓	✓		
25 µl:	✓	✓		✓			
50 µl:	✓	✓		✓			
100 µl:	✓	✓		✓			
5 ml:							✓
10 ml:							✓

Gas Syringes

Series A

Removable needle: .029" x .012" x 2.25", bevel, open end

- ▶ **Integral sample storage valve** – actuated by turning the nose piece
- ▶ **Positive rear flange plunger stop** – prevents plunger from blowing out of barrel at elevated pressure
- ▶ **Modular construction** – all components may be quickly disassembled for easy cleaning or replacement
- ▶ **Leak-tight to 250 psi** – liquids and gases



Turn the nosepiece counterclockwise two turns and the valve is closed. Insert the needle through the septum, then start pushing the plunger as you turn the nosepiece clockwise. Carrier backflushing is eliminated, resulting in sharper peaks and better separations. When the plunger is fully depressed, the plunger face comes into firm, flush contact with the bottom of the front packing, forcing essentially all of the sample out – there is virtually no compressable dead volume remaining. The very small internal diameter of the needle also contributes to the dead volume minimization.

In addition to the characteristics which make it unique, the Series A gas syringe has all the standard Pressure-Lok features such as a PTFE plunger tip, PTFE-sealed needle, and ultrasmooth bore.

100 µl	250 µl	500 µl	1 ml	2 ml	5 ml	10 ml
010025	010031	010032	010033	010034	010035	010036

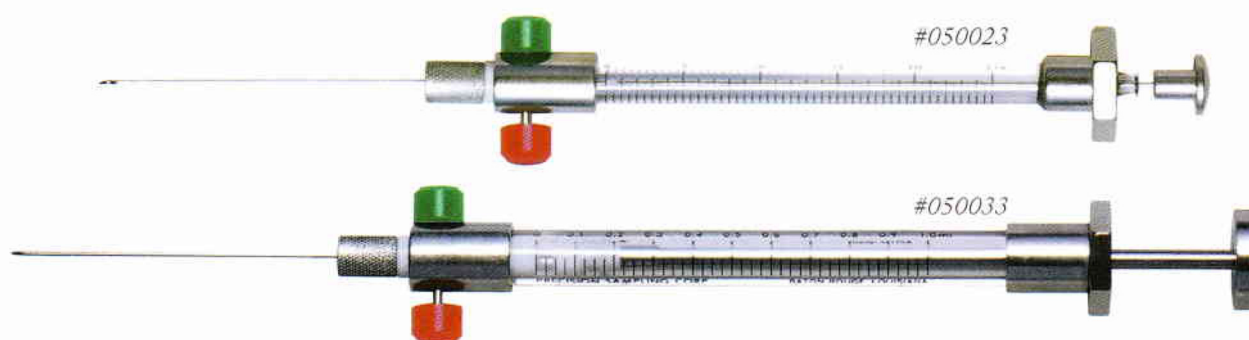
Replacement needles (special needles available on request)		
Size:	.029" x .012" x 2.25"	.029" x .012" x 2.25"
Type:	Bevel, open end	Side port, taper
Pkg. of 3:	913050	913052

Series A-2

Removable needles: .028" x .005" x 2", bevel, open end on 25, 50, and 100 µl
.029" x .012" x 2", bevel, open end on all others

All the advantages of the Series A syringe plus:

- ▶ **Push-button valve** – allows instantaneous injection
- ▶ **Smaller volumes** – great for small volatile samples



The A-2 features a push-button valve, which allows sample storage to 250 psi in syringes as small as 25 µl. This is useful with small liquid samples containing low-boiling components which would be lost through evaporation using ordinary syringes.

The positive rear stop (in 250 µl and larger sizes) prevents plunger blowout at elevated pressures, protecting against sample loss or operator injury. Like the Series A gas syringe, the A-2 has all the standard Pressure-Lok features such as a PTFE plunger tip, PTFE-sealed needle, and ultrasmooth bore. Replacement components (page 12) are available for easy repair.

	25 µl	50 µl	100 µl	250 µl	500 µl
Standard:	050023	050024	050025	050031	050032
Luer:	050043	050044	050045	050051	050052

	1 ml	2 ml	5 ml	10 ml
Standard:	050033	050034	050035	050036
Luer:	050053	050054	050055	050056

Replacement needles for standard syringes (Luer needles on page 11)			
Size:	.028" x .005" x 2"	.029" x .012" x 2"	.029" x .012" x 2"
Type:	Bevel, open end	Bevel, open end	Side port, taper
Pkg. of 3:	943050	943051	943052

Gas Syringes

Series C

- ▶ **Optional Chaney adapter** – much lower dead volume than luer-style connectors
- ▶ **Perfect syringe for everyday use** – all our standard features, but without a valve for pressurized sample storage



	100 μ l	250 μ l	500 μ l	1 ml	2 ml	5 ml	10 ml
Standard:	030025	030031	030032	030033	030034	030035	030036
Std. w/Chaney adapter:	101430	101440	101448	101455	101463	101470	101478
Luer:	030045	030051	030052	030053	030054	030055	030056

Replacement needles (Luer needles on page 11)

	Standard		Chaney adapter
Size:	.029" x .005" x 2"	.029" x .012" x 2"	.018" x .008" x .75"
Type:	Bevel, open end	Bevel, open end	Side port, taper
Pkg. of 3:	943050	943051	101935

Add sample storage capability to
any syringe with a Mininert syringe valve

Gas Syringes

Magnum Series



Removable needle: .035" x .023" x 2", bevel, open end



Built-in twist-lock valve – seals the sample (up to 30 psi) during transportation to the analysis site



Up to 500 ml capacity – for sampling low concentration levels

Positive rear plunger stop – prevents plunger from blowing out when contents are pressurized

The detection of low levels of various environmental contaminants can require extraordinarily large samples. Magnum syringes facilitate the trapping of such samples in remote locations. A built-in valve allows the sample to be sealed within the syringe, maintaining sample integrity during transportation to the analysis site.

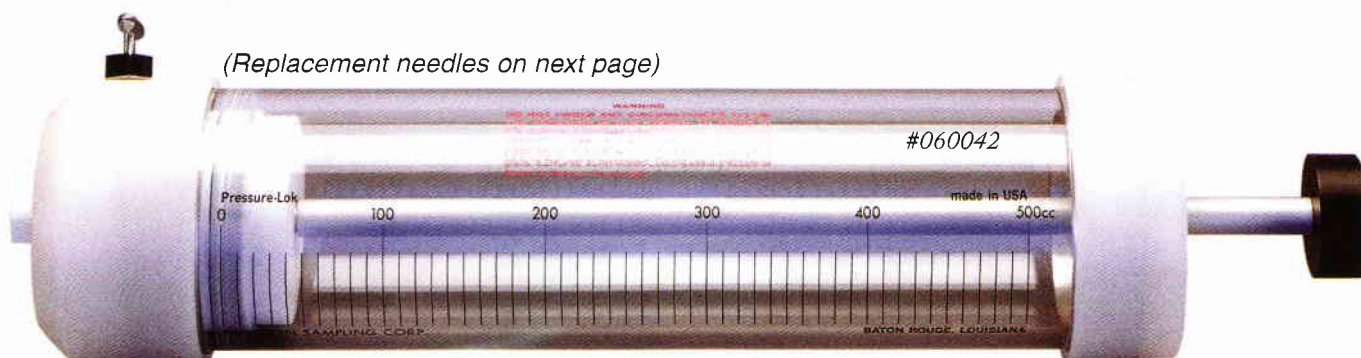
Magnums have been successfully used to sample atmospheric contaminants such as sulfur dioxide and oxides of nitrogen at distant points of the earth. The positive displacement capability of the durable PTFE plunger seal permits use in a variety of subsequent procedures involving extraction or concentration of trace components. (With a cryogenic enrichment apparatus, for example.)

The standard termination is a female threaded fitting (1/4-28), which accepts a variety of Cheminert® connectors or adapters.* Specially formed seals permit leak-tight operation to 30 psi (approximately 2 atmospheres). *Because of the obvious danger in overpressurizing any glass container, the internal pressure of a Magnum gas syringe should never exceed 2 atmospheres.*

* Call to request a copy of the Valco Instruments Co. Inc. catalog, with complete information about compatible Cheminert valves and fittings.

	20 ml	50 ml	100 ml	250 ml	500 ml
Standard:	060037	060044	060040	060041	060042
Luer:	060043		060045	060046	060047

(Replacement needles on next page)



Give us a call if you don't find
what you need in the table below

Replacement Needles for Gas Syringes

Slip-on needles for Series A-2, C, and D syringes feature a needle extension through the hub that fits inside the PTFE tip on the syringe. This design eliminates the dead volume inherent in conventional hubbed needles.

Needles are manufactured to exacting tolerances from high precision stainless steel tube stock. The point styles and lengths listed below are standard, but we are willing to supply others. Let us know your requirements.



1. Blunt tip, open end



2. Bevel, open end



3. Side port, taper

Pressure-Lok	OD	ID	Length	Type	Pkg. of 3
Series A	.029" x .012"	x 2.25"	2		913050
	.029" x .012"	x 2.25"	3		913052
Series A-2	.028" x .005"	x 2"	2		943050
	.029" x .012"	x 2"	2		943051
	.029" x .012"	x 2"	3		943052
Series C	.028" x .005"	x 2"	2		943050
	.029" x .012"	x 2"	2		943051
	.029" x .012"	x 2"	3		943052
Series D	.029" x .012"	x 2"	2		943051
	.029" x .012"	x 2"	3		943052
Magnum	.035" x .023"	x 2"	2		953050
	.035" x .023"	x 2"	3		953052

Luer	OD	ID	Length	Type	Pkg. of 3
Series A-2	.028" x .006"	x 2"	2		943060
	.028" x .016"	x 2"	2		943061
	.028" x .016"	x 2"	3		943062
Series C	.028" x .006"	x 2"	2		943060
	.028" x .016"	x 2"	2		943061
	.028" x .016"	x 2"	3		943062
Series D	.028" x .016"	x 2"	2		943061
	.028" x .016"	x 2"	3		943062
Magnum	.028" x .016"	x 2"	2		943061
	.028" x .016"	x 2"	3		943062

Gas Syringes

Replacement Parts for Series A, A-2, C, and D

Series:	A	A-2	C	D
Plunger tips				
100 µl	100017	100017	100017	—
250 µl	100029	100029	100029	—
500 µl	013932	013932	013932	—
1 ml	013933	013933	013933	013933
2 ml	013934	013934	013934	013934
5 ml	013935	013935	013935	—
10 ml	013936	013936	013936	—
Front packing				
100 µl	100010	—	—	—
250 µl	100028	—	—	—
500 µl	100042	—	—	—
1 ml	100057	—	—	—
2 ml	100070	—	—	—
5 ml	100086	—	—	—
10 ml	100100	—	—	—
Plunger assemblies				
25 µl	—	054123	—	—
50 µl	—	054124	—	—
100 µl	—	014425	014425	—
250 µl	014431	014431	014431	—
500 µl	014432	014432	014432	—
1 ml	014433	014433	014433	044433
2 ml	014434	014434	014434	044434
5 ml	014435	014435	014435	—
10 ml	014436	014436	014436	—

Replacement Parts for Magnum Series

Magnum Series:	20 ml	50 ml	100 ml	250 ml	500 ml
Std. nosepiece:	065037	065037	065037	065041	065041
Luer nosepiece:	065042	065042	065042	065043	065043
Stem cap:	100298	100298	100343	100343	100343
Valve stem guide:	100297	100321	100342	100361	100361
Plunger rod:	065437	065439	065440	065441	065442
(with thumbpiece)					
Plunger tip:	065537	065539	065540	065541	065542
Barrel assembly:	065637	065639	065640	065641	065642
Front sleeve:	100288	100312	100333	100352	100372
Rear sleeve:	100289	100313	100334	100353	100373
Front packing:	065937	065939	065940	065941	065942
Valve stem:	100296	100320	100341	100360	100379

Liquid Syringes

Series C-160

Fixed needle: .019" x .005" x 2", bevel, open end
Removable needle: .019" x .005" x 2.25", bevel, open end

- ▶ **PTFE needle seat at rear of needle** – prevents possible dissolution of needle cement or contamination of the sample
- ▶ **Replaceable needles** – complete with integral PTFE seal for a low dead volume connection and a leak-tight fit
- ▶ **Plunger tip of stress-formed virgin PTFE** – self-lubricating and durable
- ▶ **Leak-tight to 250 psi** – liquids and gases



The C-160 offers day-in, day-out dependability at an economical price. You also have the choice of fixed or removable needles.

	5 µl	10 µl	25 µl	50 µl	100 µl
Fixed needle:	160021	160022	160023	160024	160025
Removable needle:	160221	160222	160223	160224	160225

Replacement needles

Size: .019" x .005" x 2.25"
Type: Bevel, open end
Pkg. of 3: 123050

Series C-120

Fixed needle: .019" x .005" x 2", bevel, open end

- ▶ **Fixed needle** – zero dead volume connection
- ▶ **Leak-tight to 250 psi** – liquids and gases
- ▶ **Extended syringe barrel** – attach a bulb or suction line for easier cleaning and filling



In addition to standard Pressure-Lok features such as PTFE plunger tip and needle seat, the C-120 offers as standard equipment a barrel extension beyond the rear flange which permits attachment of a vacuum bulb or line for easier filling or cleaning.

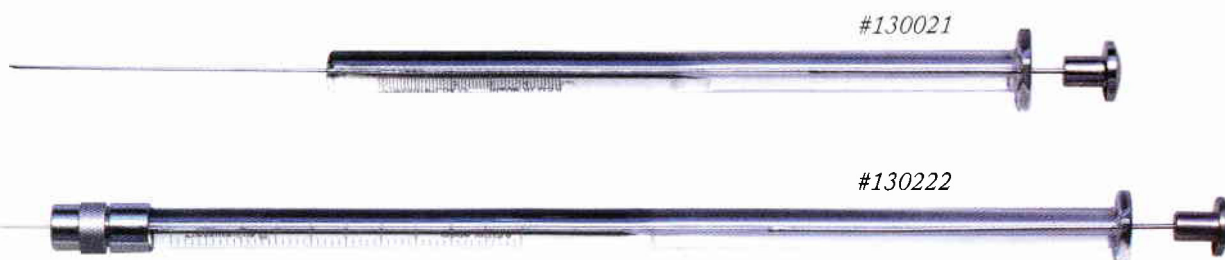
5 µl	10 µl	25 µl	50 µl	100 µl
120021	120022	120023	120024	120025

Liquid Syringes

Series CG-130

Fixed needle: .019" x .005" x 2", bevel, open end
Removable needle: .019" x .005" x 2.25", bevel, open end

- ▶ **Reinforced plunger** – eliminates plunger bending
- ▶ **Plunger guide in barrel** – smaller front section of plunger is confined within guide section
- ▶ **Replaceable needles** – low dead volume connection for a leak-tight fit
- ▶ **Leak-tight to 250 psi** – liquids and gases



A heavy, reinforced plunger within an enlarged plunger guide section of the CG-130 barrel virtually eliminates plunger bending. The smaller front section of the plunger is confined within the guide section even when the plunger is retracted, while the sturdy upper section absorbs the force of a rapid downstroke.

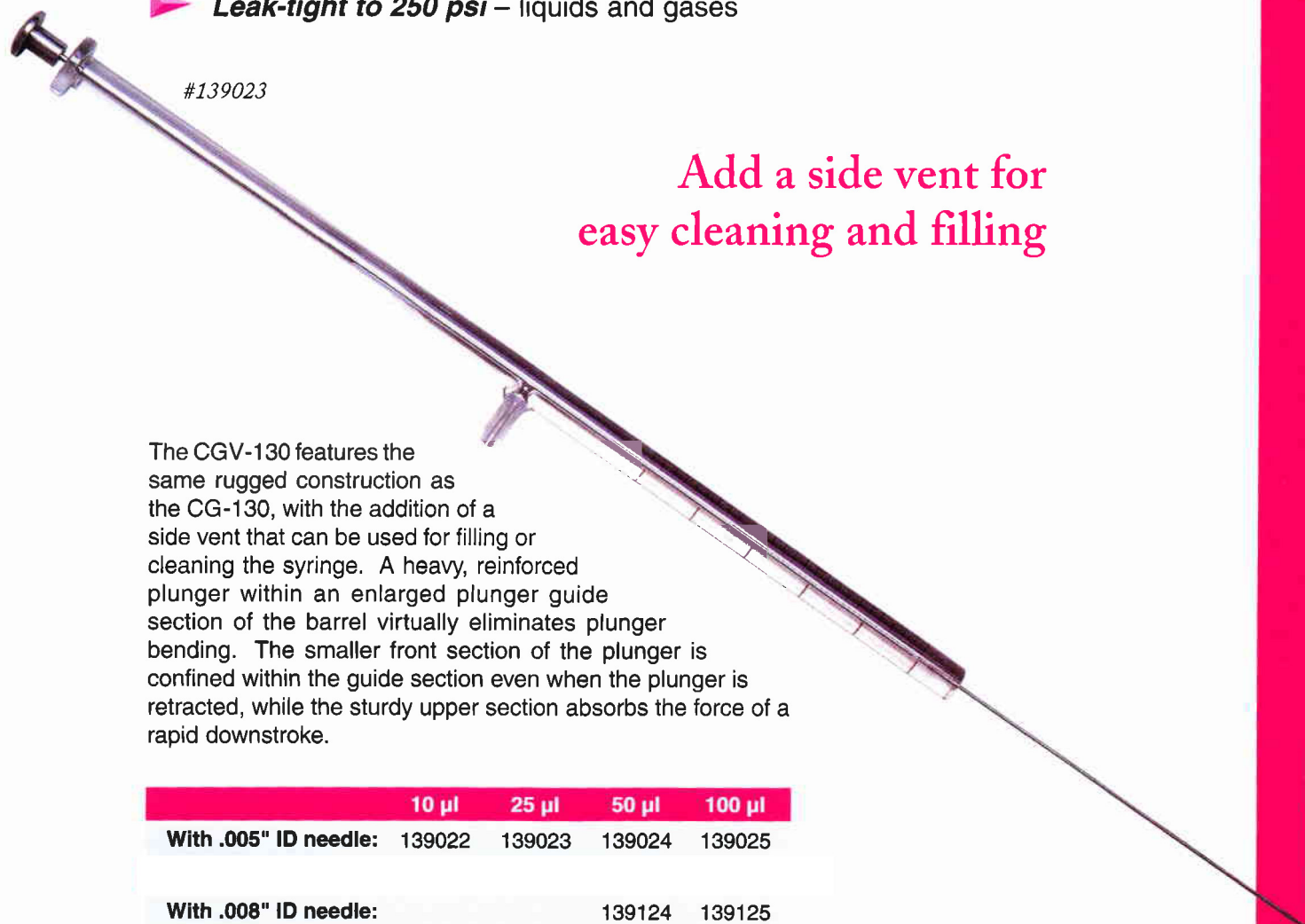
	5 µl	10 µl	Replacement needles
Fixed needle:	130021	130022	Size: .019" x .005" x 2.25"
			Type: Bevel, open end
Removable needle:	130221	130222	Pkg. of 3: 123050

With the Series CG-130
you'll never bend another plunger

Series CGV-130

Fixed needle: .028" x .005" x 3.25", bevel, open end
or .028" x .008" x 3.25", bevel, open end

- ▶ **Side vent** – for easy cleaning and filling
- ▶ **Reinforced plunger** – eliminates plunger bending
- ▶ **Plunger guide in barrel** – smaller front section of plunger is confined within guide section
- ▶ **Leak-tight to 250 psi** – liquids and gases



**Add a side vent for
easy cleaning and filling**

The CGV-130 features the same rugged construction as the CG-130, with the addition of a side vent that can be used for filling or cleaning the syringe. A heavy, reinforced plunger within an enlarged plunger guide section of the barrel virtually eliminates plunger bending. The smaller front section of the plunger is confined within the guide section even when the plunger is retracted, while the sturdy upper section absorbs the force of a rapid downstroke.

	10 µl	25 µl	50 µl	100 µl
With .005" ID needle:	139022	139023	139024	139025
With .008" ID needle:			139124	139125

Liquid Syringes

Series D-140

Removable needle: Size and style vary with syringe size

- ▶ **Total sample displacement** – the entire sample is contained in the needle, so it is totally injected when the plunger is depressed
- ▶ **Positive rear plunger stop** – eliminates accidental plunger removal and resultant damage
- ▶ **Modular construction** – all parts are replaceable, with easy assembly and disassembly



The Series D-140 is designed for small volume injection into gas chromatographs. Since the sample is totally contained within the needle, it is totally displaced by the plunger. Any residual sample or variation in sample size are minimized. (This also means that each size syringe has a different needle design. When ordering extra needles, be careful to specify the correct one.)

The PTFE seals, needle, plunger, and barrel are all replaceable. (Replacement parts are on page 23.) Thanks to superior alignment, the D-140 can be assembled time after time without difficulty or damage.

0 - 1 μ l	0 - 2 μ l	0 - 5 μ l	0 - 10 μ l
140011	140012	140021	140022

Replacement needles (Other replacement parts on page 23)

Size:	.019" x .005" x 2.5"	.019" x .008" x 2.5"	.028" x .012" x 2.5"	.028" x .018" x 2.5"
Type:	Blunt tip, open end	Blunt tip, open end	Bevel, open end	Side port, taper
Pkg. of 3:	923011	923012	923021	923022



1 and 2 μ l: Blunt tip, open end



5 μ l: bevel point, open end



10 μ l: side port, taper

Mini Injector

- ▶ **Reproducible sample injections down to 0.01 μ l** – without a splitter
- ▶ **Sample carried in the plunger itself** – the groove containing the sample is machined on the plunger, insuring repeatable results



The Mini Injector is ideal for capillary GC work, allowing reproducible injection of small samples (down to 0.01 μ l) without a splitter. This is possible through our unique use of a plunger-within-a-needle. The sample volume is carried in a precisely measureable groove ringing the wire plunger, with a durable PTFE packing to prevent leakage.

In use, the plunger is extended beyond the needle tip and dipped into the sample, where capillary action fills the groove. Then the plunger is drawn through a PTFE wiper and back into the needle for protection. When the needle is inserted into the inlet and the plunger is depressed, the sample carried on the plunger groove enters the heated zone, where it is flash-vaporized and swept into the column.

0.01 μ l	0.10 μ l
170091	170001

Liquid Syringes

Syringes for Valco, Cheminert®, and Rheodyne® Valves

Fixed needle: 22 gauge x 2", blunt tip, open end

Removable needle: 22 gauge x 2", blunt tip, open end

Syringes used to fill a loop on a sample injection valve have blunt smooth ends. The end of the needle must contact the bottom of the valve's fitting detail uniformly and seal on the outside of the tip to deliver sample with any repeatability. All Precision Sampling syringes for valve injections have smooth, burr-free ends that fit the valve fitting details perfectly. The standard HPLC syringe is our basic C-160 (described on page 14) with a 2" long 22 gauge needle.



	5 µl	10 µl	25 µl	50 µl	100 µl
Fixed needle:	160021R	160022R	160023R	160024R	160025R
Removable needle:	160221R	160222R	160223R	160224R	160225R
Needles (pkg. of 3):	123050R	123050R	123050R	123050R	123050R

Partial Loop Injections

Any percentage of a valve sample loop may be injected with Valco's fill ports for their Valco and Cheminert valve lines. The unique design places a small bubble in front of the sample when the needle is inserted, allowing partial loop injections for virtually any percentage of the loop.

Rheodyne recommends for their injectors that either a full loop or no more than 50% of the loop volume be syringe-loaded.

Valve fitting size:	1/32"	1/16"	1/8"
Fill port for Valco valves:			
for ≥ .75" needle	—	VISF-1	—
for 2" needle	VISF-AN	VISF-2	VISF-A
Fill port for Cheminert valves:			
for 2" needle		CVISF-1	

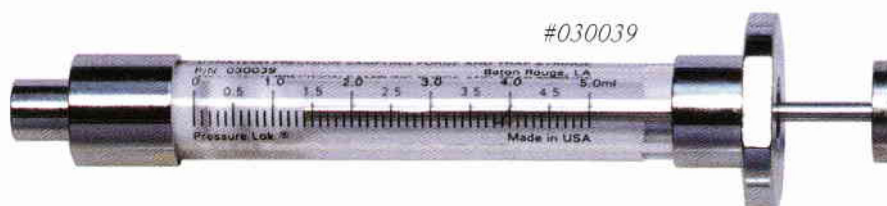


Liquid Syringes

Purge and Trap Syringe

Accept standard Luer hub needles

- ▶ **Luer lock** – for use with purge and trap analysis
- ▶ **Frosted glass on syringe barrel** – allows easy volume reading and accepts writing
- ▶ **Plunger tip of stress-formed virgin PTFE** – self-lubricating and durable.....
- ▶ **Heavy duty rear flange** – flat edges keep the syringe from rolling



The heavy duty construction of our purge and trap syringe helps eliminate costs of replacement and injuries due to breakage. All of our environmental syringes are repairable.

For this syringe, Luer needles must be ordered separately. (All of our other Luer syringes include a needle.)

5 ml	10 ml
030039	030040

Luer needles

Size: .028" x .016" x 2"

Type: Bevel, open end

Pkg. of 3: 943061

Syringes for most HPLC injectors

Special Syringes for Rheodyne Valves

Fixed needle: 22 gauge x 2", blunt PEEK tip, open end

Removable needle: 22 gauge x 2", blunt PEEK tip, open end

Many Rheodyne valves allow the syringe needle to rub across the sealing surfaces – a tradeoff in a valve design which avoids having to machine small concentric holes. To prolong the lifetime of these valves, we now offer a syringe with a PEEK tip which extends beyond the end of the needle so that only PEEK contacts the valve sealing surfaces.

	5 µl	10 µl	25 µl	50 µl	100 µl
Fixed needle:	160021RT	160022RT	160023RT	160024RT	160025RT
Removable needle:	160221RT	160222RT	160223RT	160224RT	160225RT
Needles (pkg. of 3):	123050RT	123050RT	123050RT	123050RT	123050RT

Syringes for the Waters U6K Loop Injector

Fixed needle: 26 gauge x 5 cm, blunt tip, open end

Removable needle: 26 gauge x 5 cm, blunt tip, open end

The Waters U6K requires a 26 gauge, 5 cm long needle with a 90° blunt tip and open end. We recommend mounting the needle on our basic C-160 syringe. (The C-160 is described on page 14.)

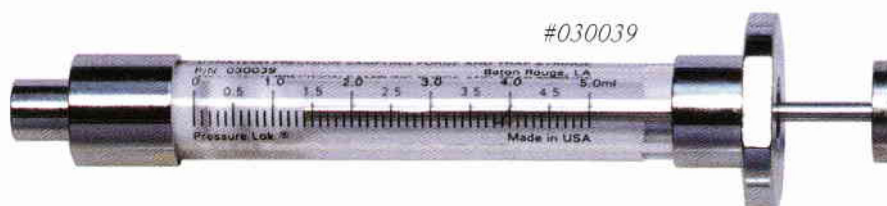
	5 µl	10 µl	25 µl	50 µl	100 µl
Fixed needle:	160021WB	160022WB	160023WB	160024WB	160025WB
Removable needle:	160221WB	160222WB	160223WB	160224WB	160225WB
Needles (pkg. of 3):	123050WB	123050WB	123050WB	123050WB	123050WB

Liquid Syringes

Purge and Trap Syringe

Accept standard Luer hub needles

- ▶ **Luer lock** – for use with purge and trap analysis
- ▶ **Frosted glass on syringe barrel** – allows easy volume reading and accepts writing
- ▶ **Plunger tip of stress-formed virgin PTFE** – self-lubricating and durable.....
- ▶ **Heavy duty rear flange** – flat edges keep the syringe from rolling



The heavy duty construction of our purge and trap syringe helps eliminate costs of replacement and injuries due to breakage. All of our environmental syringes are repairable.

For this syringe, Luer needles must be ordered separately. (All of our other Luer syringes include a needle.)

5 ml	10 ml
030039	030040

Luer needles

Size: .028" x .016" x 2"

Type: Bevel, open end

Pkg. of 3: 943061

Replacement Needles for Liquid Syringes



1. Blunt tip, open end



2. Bevel, open end



3. Side port, taper

	OD	ID	Length	Type	Pkg. of 3
C-160	.019" x	.005" x	2.25"	2	123050
CG-130	.019" x	.005" x	2.25"	2	123050
D-140	.019" x	.005" x	2.5"	1	923011
	.019" x	.008" x	2.5"	1	923012
	.028" x	.012" x	2.5"	2	923021
	.028" x	.018" x	2.5"	3	923022

Replacement Parts for Liquid Syringes

	5 µl	10 µl	25 µl	50 µl	100 µl
Plunger assembly					
C-160	163721	163722	163723	163724	163725
C-120	123721	123722	054123	054124	054125
CG-130	133721	133722	—	—	—
	1 µl	2 µl	5 µl	10 µl	
Plunger assembly					
D-140	143711	143712	143721	143722	
Plunger packing					
D-140	144011	144012	144021	144022	

Autosampler and OEM Syringes

Autosampler Syringes

Hewlett Packard

This 10 µl syringe has a sturdy plunger to stand up to continuous automatic operation. The PTFE plunger tip prevents blow-back or freeze-up.



	OD	ID	Length	Type	Gauge	P/N
HP 7670	.028" x	.005" x	2.0"	Bevel, open end	22	136022
HP 7671	.028" x	.005" x	2.0"	Bevel, open end	22	136022
HP 7673A	.019" x	.006" x	1.75"	Blunt, open end	26	101986
HP 7673A	.024" x	.005" x	1.75"	Blunt, open end	23	101987
HP 7673A	.019" x	.005" x	2.0"	Bevel, open end	26	101988

Varian

We presently supply the syringes for the Varian GC 511, PTA30, PTA30WS, and Archon instruments.



	OD	ID	Length	Type	Gauge	P/N
511-5 µl	.024" x	.006" x	2"	Taper, blunt, & open end	23	102100
511-50 µl	.024" x	.006" x	2"	Taper, blunt, & open end	23	102102
511-1.5 µl	.028" x	.008" x	2"	Taper, blunt, & open end	22	102103
PTA				Luer fitting		030038
PTA30WS				Luer fitting		030038
Dynatrap				Luer fitting		030038
Archon				26 ml barrel with decal		502968

All our autosampler syringes conform to specifications supplied by the manufacturer

Perkin Elmer



	OD	ID	Length	Type	Gauge	P/N
5 µl GC Autosystem	.024"	x.006"	x 70 mm	Taper, blunt, & open end	23	102052
5 µl GC Autosystem	.022"	x.005"	x 70 mm	Taper, blunt, & open end	24	101989

250 µl Waters Wisp™



P/N	Price
102030	\$99

Central Instruments Co. (formerly the Dynatech autosampler line)

Replacement syringes and needles for models GC-311, GC-111, GC-411, and Perkin Elmer models AS100 and AS300.



3 µl			5 µl		10 µl	
standard	viscous	megabore	standard	viscous	standard	viscous
500076	501071	503188	500084	501072	500090	501073



3 µl			5 µl		10 µl	
standard	viscous	megabore	standard	viscous	standard	viscous
500081	500994	502743	500088	501040	501064	501092

High Pressure Syringes

Pressure-Flo™ Syringes

Special integral calibrated needle

- ▶ **Seals at 500 psi** – take high pressure samples from a cylinder or “bomb”
- ▶ **Sample contained in a calibrated needle** – injects directly through the GC septum inlet
- ▶ **Use with cylinder adapter** – lets syringe interface with gas cylinder



The Pressure-Flo high pressure syringe is a tried and true method of taking homogeneous high pressure samples from a cylinder or “bomb”. It contains the sample in a calibrated needle with a wire plunger to displace it and PTFE packing to seal it in, permitting injection of the sample directly through the GC septum inlet for convenience and simplicity.

The body of the syringe is lightweight for easy handling. It houses a special crimped PTFE packing which seals firmly at pressures in excess of 500 psi even under severe operating conditions. Threads allow the syringe to make up on a cylinder via the special adapters listed below. Once the syringe is screwed tight, the cylinder valve is opened and the plunger is depressed, extending the needle into the liquid zone. Once sample is drawn into the syringe, it is stored pressure-tight while the cylinder valve is closed and the syringe is removed from the adapter.

To inject the sample, the nose of the syringe is pressed very firmly against the septum to form a pressure-tight seal. (This requires a minimum 1/8" hole in the septum cap.) As this is done, the pointed tip of the needle punctures the septum. When the large handle is pushed in, the needle containing the sample is inserted into the injection port without any loss of contents.

0.5 µl	1 µl	2 µl	5 µl	10 µl
220005	220011	220012	220021	220022



Bomb Adapters

Fitting (NPT):	1/8" female	1/4" female	1/8" male	1/4" male
	240040	240041	240042	240043

Micro-Flo Syringes

Annular needle, .028" x .006" x 1.875", side port, tapered, open end

- ▶ **Metal-encased syringe with PTFE seals** – for hard-to-handle volatile liquids and liquified gases
- ▶ **Special locking cylinder adapter and yoke assembly** – the syringe contacts the sample liquid in its pure, undisturbed state
- ▶ **Sample Lok valve** – seals in volatile materials at pressures up to 500 psi
- ▶ **Variable volume** – 0.5 to 5.0 µl



The Micro-Flo high pressure syringe prevents evaporation of lighter components under normal laboratory temperatures at atmospheric pressure. The syringe is encased in metal, with positive PTFE seals and positive plunger stops. The front end houses a special micro-volume annular needle with less than .05 µl dead volume and a positive mechanical valve to seal in volatile materials (up to 500 psi).

Syringe	Adapter
230051	230250



Replacement Parts for High Pressure Syringes

Pressure-Flo Series:	0.5 µl	1 µl	2 µl	5 µl	10 µl
Plunger assembly:	220315	220311	220312	220321	220322
Plunger packing:	100800	220347	220347	220347	220347
Front packing assembly:	220344	220344	220344	220344	220344
Needles:	220351	220352	220352	220352	220352

Micro-Flo Series	
Plunger assembly:	100854
Front packing:	100828
Barrel and decal:	100827
Rear washer:	100826
Spring:	100830
Needle:	100838

Cylinder Adapter and Yoke Assembly	
Syringe side packing:	100844
Plunger pin rod assembly:	100846
Plunger pin side packing:	100848

Mininert™ Valves

General Description

- ▶ **Leak-tight closure with syringe access** – take a sample with no exposure of vial contents to atmosphere
- ▶ **Models for virtually any laboratory glassware** – screw-cap and crimp-top vials, test tubes, flasks, reaction chambers, 1/4-28 or pipe thread
- ▶ **Economical** – save time and money through conservation of reagents, etc.
- ▶ **Replaceable septum** – easily replaced with no exposure of contents to atmosphere
- ▶ **Simple installation** – no tools required

Mininert push-button valves are highly dependable, leak-tight closures for screw-cap vials and other laboratory containers. When used with a glass vial, only PTFE and glass are in contact with the contents. Their unique features make Mininert valves the ideal closure for calibration standards, air- or moisture-sensitive fluids, derivatizing reagents, volatile chemicals, etc.

Operation is extremely simple – push the green button to open the valve, insert the needle through the septum and take a sample, withdraw the needle, and push the red button to close the valve.

Specifications

Temperature

Mininert valves can be used at temperature up to 105°F. However, after use at high temperatures, the valve may leak slightly when cooled to room temperature.

Pressure

The sealing ability of Mininert valves is more than adequate to contain most volatile liquids and gases at low pressures. Mininert valves have been used as high as 120 psi without leakage, but this is NOT a recommendation for pressurizing glass containers to these levels. Such pressurization of glass containers can be extremely dangerous.

Chemical Resistance

PTFE is highly inert and may be used with most common materials. It is particularly useful for working with most acids and organic solvents. Problems may be encountered when used with organometallics and some strong bases. We recommend actual exposure test before use with any material.

Mininert syringe valves are found on page 9

Valves for Vials

Models are available for screw-cap and crimp-top vials. The screw-cap Mininert is available in 13, 15, 18, 20, and 24 mm cap sizes. The crimp-top valve for 13 mm ID glassware slides into the neck of the vial and features a threaded flange which is turned to secure a tight fit.



Cap size:	13 mm	15 mm	18 mm	20 mm	24 mm	Crimp top
Thread size:	13 mm-425	15 mm-425	18 mm-400	20 mm-400	24 mm-400	
Pkg. of 12:	614158	614160	614161	614170	614163	614250

Valves with Standard Tapers

The laboratory taper model brings Mininert convenience and ease to a variety of applications using standard laboratory glassware, such as reaction chambers, test tubes, and other glass systems.

Taper:	14/20	19/22
	621102	621103

Valves with Threaded Fittings

Our threaded designs offer positive on/off fluid control as an in-line valve or syringe access as a termination valve at a sample point. In-line valves are 1/4-28 male to male or 1/4-28 female to female. Termination valves are offered in 1/4-28 male or female and 1/8" NPT male or female.

In-line valve:	1/4-28, male to male	1/4-28, female to female
	631205	631206



Termination valve:	1/4-28 male	1/4-28 female	1/8" male NPT	1/8" female NPT
	631201	631203	631202	631204

Replacement Septa and Septum Installation Tool

These silicone septa fit all Mininert valves. The installation tool is a handy device for quickly removing and replacing needle seal septa.

Pkg. of 50 septa	Installation tool
644350	644850



Probes



Probes are used to transfer liquid sample from a sample vial to the injection syringe by pressurizing the sample vial with helium.

GC and LC Probes

GC-111H	GC-111V	GC-311V	GC-411V	GC-311H	AS-300 (Perkin Elmer)
500031	500100	500100	500100	500441	500523

LC-241, 42 pos.	LC-241, 60 pos.
500335	500301

PTA-30, WS, and DynaTrap Instruments

#502971

Syringe probe assembly

502971

Needle purge upper probe

Upper soil probe assembly

with fittings

without fittings

with fittings

without fittings

505193

505118

505032

503840

Varian Archon Instruments

Water probe assembly

Water probe (old style)

with fittings

without fittings

with fittings

without fittings

505739

505828

505491

505831

Soil probe assembly

Needle purge probe assembly

with fittings

without fittings

with fittings

without fittings

505490

505830

505741

505829

#505829

