

Hamilton Reference Guide

Syringes & Needles





HPLC Autosampler Syringes

HPLC autosamplers enable the automatic introduction of samples into the sample loop as well as some sample preparation. Automatic injection has become very common, as it provides improved reproducibility and speed. Hamilton offers a wide range of HPLC autosampler syringes.

The features of the autosampler syringes are adapted for an exact fit to a specific autosampler.

Manufacturer	Model	For Syringes, See Model:	Page
Agilent	1290 Infinity LC Injector ProStar 410/420/430	PAL LC HTC, HTS Syringes Spark Holland Syringes	P. 34 P. 37
Antec	AS 100/110	Spark Holland Syringes	P. 37
Beckman Coulter	508	Spark Holland Syringes	P. 37
CTC/LEAP	A200S PAL LC HTC, HTS Syringes		P. 34 P. 34
Dionex	ASI-100 ESA Model 540/540 MT/542 Ultimate 3000	Spark Holland Syringes PAL LC HTC, HTS Syringes	P. 35 P. 37 P. 34
Grace Alltech	Model 580	Spark Holland Syringes	P. 37
Hitachi LaChrom	L-2200, 7200, 7250, 8800, 8900, AS 1000, 2000		P. 35
Kontron	360, 460, 465		P. 36
Perkin Elmer	Flexar FX-10, FX-15, Series 225 Series 220	Spark Holland Syringes	P. 37 P. 36
Shimadzu	SIL-6A SIL-10AF, SIL-10AP		P. 36 P. 36
Spark Holland	Midas, Triathlon, Endurance, Alias		P. 37
Thermo Finnigan	AS 100/300, AS 1000/3000/3500 SP 8780, SP 8875, SP 8880		P. 37 P. 38
Varian	ProStar 410/420/430 9100	Spark Holland Syringes	P. 37 P. 38
Waters	717 PLUS, WISP 2707 2777	Spark Holland Syringes PAL LC HTC, HTS Syringes	P. 38 P. 37 P. 34



CTC LEAP Syringes

A200S

Cemented Needle Syringes



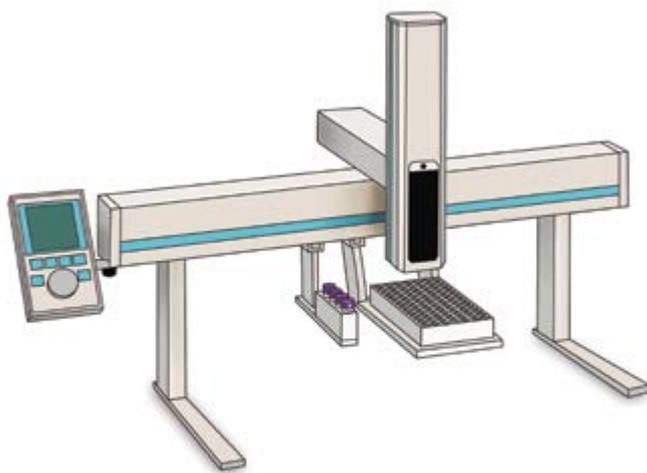
P/N	Volume	Gauge	Length	Point
203560	10 µL	22s ga	51 mm	3
203566	100 µL	22s ga	51 mm	3

CTC PAL Syringes

PAL LC HTC, HTS

CTC PAL® autosamplers are one of the most popular sample injection systems for HPLC analyses. Customers rely on its ability to sample from many different vial and well types and on its ultimate platform flexibility. The syringe is at the heart of every injection that the LC PAL® system performs, and CTC chose Hamilton to provide this critical component.

This section has syringes for PAL LC instruments. This section also includes syringes for Agilent, Dionex, and Waters as these instruments are a private label for CTC.



S-Line Syringes

S-Line syringes are the cost-effective choice for CTC PAL autosampler applications. It incorporates a precision-machined PTFE plunger tip which creates a leak-free seal. With the tight fit in the glass barrel, the tip wipes the interior of the syringe barrel free of sample, minimizing sample carryover.

C-Line Syringes

C-Line syringes incorporate several unique design features that ensure superior performance. The unique flange alignment design aids in installation and results in fewer bent needles while the plunger button can be adjusted to prevent plunger tip damage. An innovative direct attachment design of the needle to the barrel minimizes sample carryover.

X-Type Syringes

X-Type syringes have a near zero carryover and a long-lasting plunger tip to meet the requirements of sensitive, high-throughput life science applications. The syringe glass barrel is polished and coated for chemical inertness and enhanced lifetime. The needle is deactivated and coated to reduce sample adsorption.

S-Line Syringes



P/N	Volume	Barrel (O.D.)	Gauge	Point
67444-01	10 µL	6.6 mm	22s ga	3
67446-01	25 µL	7.9 mm	22s ga	3
67450-01	50 µL	6.6 mm	22 ga	3
67452-01	100 µL	6.6 mm	22s ga	3
67442-01	250 µL	7.9 mm	22 ga	3
67448-01	500 µL	7.9 mm	22 ga	3



CTC PAL Syringes (Cont.)

C-Line Syringes



P/N	Volume	Barrel (O.D.)	Gauge	Point
203073*	10 µL	6.6 mm	22s ga	3
203194	10 µL	6.6 mm	22s ga	3
203274	25 µL	6.6 mm	22s ga	3
203075	25 µL	7.9 mm	22s ga	3
203077	100 µL	6.6 mm	22s ga	3
203235	100 µL	6.6 mm	22 ga	3
203079	250 µL	7.9 mm	22 ga	3
203349	500 µL	7.9 mm	22 ga	3
203081**	1 mL	7.6 mm	22 ga	3
203083**	2.5 mL	9.65 mm	22 ga	3
203085**	5 mL	13.6 mm	22 ga	3

*This syringe is a Microliter Syringe.

**These syringes are a Luer Tip Cemented Needle (LTN) termination.

X-Type Syringes



P/N	Volume	Barrel (O.D.)	Gauge	Point
204475	25 µL	7.9 mm	22s ga	3
204379	50 µL	7.9 mm	22s ga	3
204452	100 µL	6.6 mm	22s ga	3
204400	100 µL	6.6 mm	22 ga	3
202668*	100 µL	6.6 mm		

* This part number is a Removable Needle (RN) termination.

Dionex Gina Syringes

ASI-100



Removable Needle (RN)



P/N	Volume
7654-01 (no needle included)	25 µL
7657-01 (no needle included)	250 µL

Hitachi LaChrom Syringes

L-2200, L-7200,
L-7250, L-8800,
L-8900, AS1000,
AS2000



Special Termination



P/N	Volume
0160310	500 µL

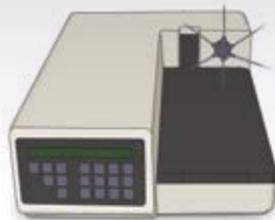


Point Styles

Point 2  Point 3  Point 4  Point 5  Point AS 

Kontron HPLC Syringes

360, 460, 465



Accudil (AD)



P/N	Volume
201050	100 µL

Perkin Elmer Syringes

SERIES 220



ChemSeal (C)



P/N	Volume
80962	50 µL
81062	100 µL
81162	250 µL
81262	500 µL
81360	1 mL
81460	2.5 mL

Shimadzu Syringes

SIL-6A



Removable Needle (RN)



P/N	Volume
7656-01 (no needle included)	100 µL

Shimadzu Syringes

SIL-10AF,
SIL-10AP



ChemSeal (C)



P/N	Volume
81260	500 µL
81460	2.5 mL

Spark Holland Syringes

This section has syringes for Spark Holland instruments. This section also includes syringes for Agilent, Antec, Beckman, Dionex, Grace Alltech, Perkin Elmer, Varian, and Waters as these instruments are a private label for Spark Holland.

ChemSeal (C)



P/N	Volume
62161-01	25 μ L
54658-01	100 μ L
54659-01	250 μ L
54660-01	500 μ L
54661-01	1 mL
54662-01	2.5 mL



Midas



Triathlon



Alias



Endurance

Thermo Finnigan Syringes

AS100/300,
AS1000/3000/3500



ChemSeal (C)



P/N	Volume
81162	250 μ L
81262	500 μ L
81360	1 mL
81460	2.5 mL





Thermo Finnigan Syringes

SP 8780, SP 8875,
SP 8880



ChemSeal (C)



P/N	Volume
202192	500 μ L
81460	2.5 mL

Varian Syringes

9100



ChemSeal (C)



P/N	Volume
0159902	100 μ L

Waters Syringes

717 PLUS, WISP

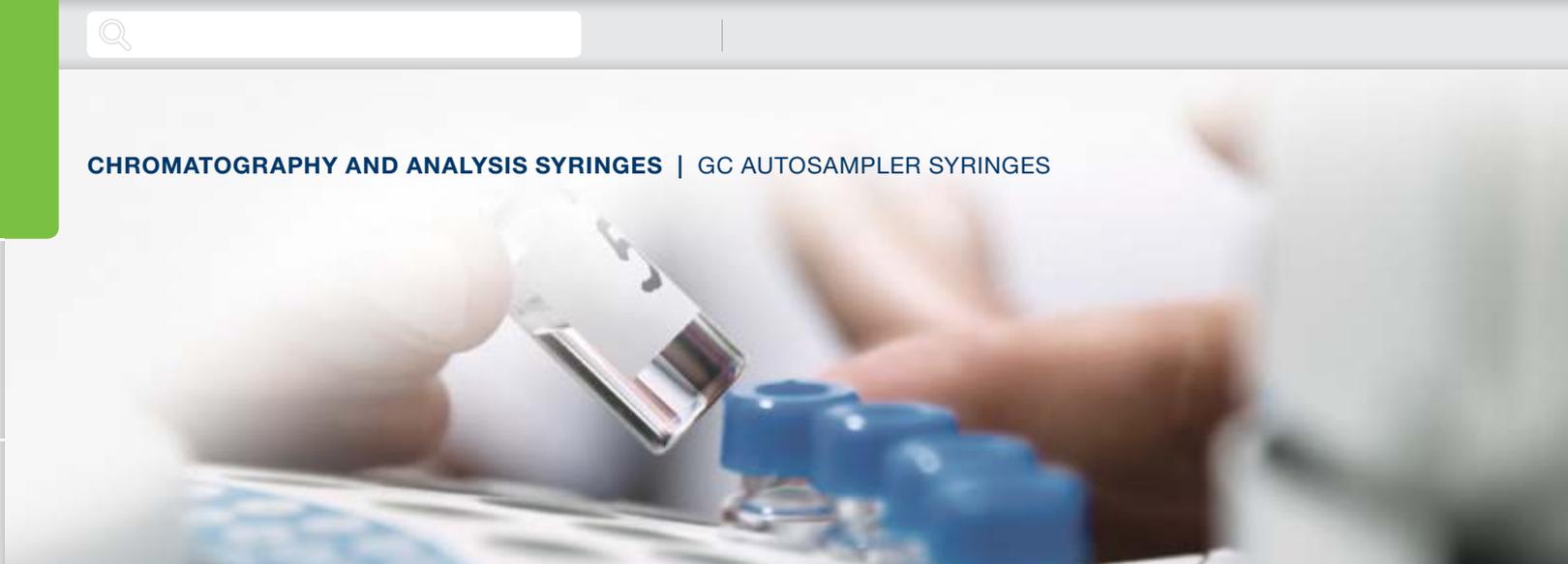


ChemSeal (C)



P/N	Volume
80020	25 μ L
80024	250 μ L





GC Autosampler Syringes

Autosamplers enable the automatic introduction of samples into the injector of the gas chromatograph (GC). Automatic injection has become very common as it improves reproducibility and speed.

Hamilton offers a wide range of autosampler syringes. The features of the autosampler syringes are adapted for an exact fit to a specific

autosampler. The point style AS (for autosampler) has been specifically designed to withstand repeated penetration through the GC septa. Syringes for headspace injection usually have a point style 5, which is ideal for large gas volume injection.

Manufacturer	Model	For Syringes, See Model:	Page
Agilent	7670, 7671, 7672 ALS 7673, 7683, 6850 ALS 7693A ALS		P. 45 P. 46 P. 48
Bruker Varian	8100, 8200 CP-8400/8410, CP-9010/9050 CP-9020/9025		P. 49 P. 49 P. 49
CTC / LEAP	CombiPAL (Headspace) CTC/LEAP PAL GC		P. 51 P. 50
Gerstel		CTC/LEAP PAL GC	P. 50
Perkin Elmer	AutoSystem Clarus 500 GC		P. 52 P. 52
Shimadzu	AOC-9 AOC-14, AOC-17, AOC-20 AOC-5000	CTC / LEAP CombiPAL (Headspace)	P. 52 P. 52 P. 51
Thermo Finnigan	AI/AS 3000 TriPlus AS 800/2000 HS 250/500/850 TriPlus	CTC/LEAP PAL GC	P. 53 P. 53 P. 53 P. 50



Agilent Syringes

7670, 7671, 7672 ALS

Hamilton maintains a large variety of replacement syringes for the most popular gas chromatography (GC) autosamplers, including the Agilent Automatic Liquid Sampler (ALS) instrument.

Hamilton has designed a series of syringes specifically for Agilent ALS autosamplers that meets the instruments' requirements for dimensional accuracy, needle length, needle gauge, needle tip, and overall lifetime. Every Agilent syringe produced by Hamilton undergoes quality control procedures that ensure they meet the strictest standards for accuracy, precision, and product life cycle.

Cemented Needle (N)



P/N	Volume	Gauge	Length	Point
87900	5 µL	26s ga	51 mm	2
80300	10 µL	26s ga	51 mm	2
80366	10 µL – 6 pk	26s ga	51 mm	2
80000*	10 µL	26s ga	51 mm	2

*This is a Gastight syringe.

Removable Needle (RN)



P/N	Volume	Gauge	Length	Point
80338	10 µL	26s ga	51 mm	2
80011*	10 µL	26s ga	51 mm	2

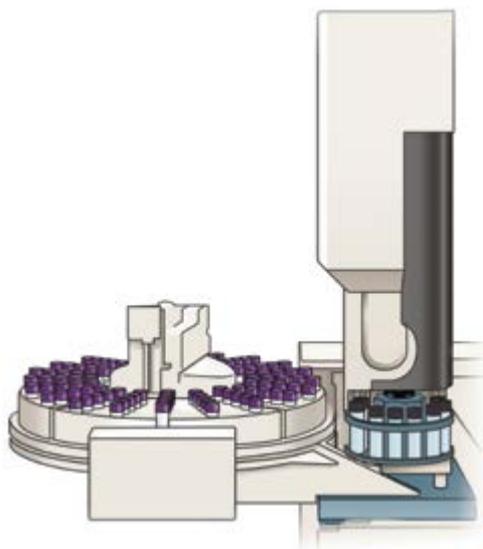
*This is a Gastight syringe.



Agilent Syringes

7673, 7683, 6850 ALS

The Agilent 7683 series automatic liquid sampler raises the standard for gas chromatography (GC) system performance and reliability. This is the automatic sampler to have for accuracy and ease of use, superior reproducibility with minimal rework, easy accommodation to changing needs, optimum injection flexibility, and enduring reliability.



Special Termination



P/N	Volume	Gauge	Length	Point
86274	0.5 µL	26 ga	43 mm	AS
86276	0.5 µL	23 ga	43 mm	AS
80175	1 µL	26 ga	43 mm	AS
80176	1 µL	23 ga	43 mm	AS

Cemented Needle (N)



P/N	Volume	Gauge	Length	Point
87992	5 µL	26s ga	43 mm	2
87988	5 µL	26s ga	43 mm	AS
87989	5 µL – 6 pk	26s ga	43 mm	AS
87991	5 µL	23s ga	43 mm	2
87987	5 µL	23s ga	43 mm	AS
87990	5 µL – 6 pk	23s ga	43 mm	AS
87993	5 µL	23s – 26s ga	43 mm	AS
87994	5 µL – 6 pk	23s – 26s ga	43 mm	AS
80399	10 µL	26s ga	43 mm	2
80388	10 µL	26s ga	43 mm	AS
80389	10 µL – 6 pk	26s ga	43 mm	AS
80398	10 µL	23s ga	43 mm	2
80387	10 µL	23s ga	43 mm	AS
80390	10 µL – 6 pk	23s ga	43 mm	AS
80080*	10 µL	23s ga	43 mm	AS
80094*	10 µL – 6 pk	23s ga	43 mm	AS
80393	10 µL	23s – 26s ga	43 mm	AS
80391	10 µL – 6 pk	23s – 26s ga	43 mm	AS
80079*	10 µL	23s – 26s ga	43 mm	AS
80096*	10 µL – 6 pk	23s – 26s ga	43 mm	AS

*These are Gastight syringes.

Removable Needle (RN)



P/N	Volume	Gauge	Length	Point
87958	5 µL	26s ga	43 mm	AS
87957	5 µL	23s ga	43 mm	AS
87959	5 µL	23s – 26s ga	43 mm	AS
80358	10 µL	26s ga	43 mm	AS
80088*	10 µL	26s ga	43 mm	AS
80357	10 µL	23s ga	43 mm	AS
80087*	10 µL	23s ga	43 mm	AS
80359	10 µL	23s – 26s ga	43 mm	AS
80089	10 µL	23s – 26s ga	43 mm	AS

*These are Gastight syringes.



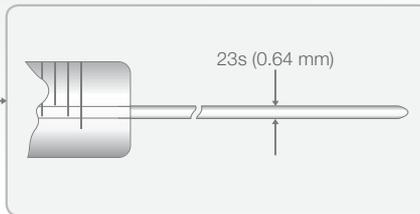
Point Styles

Point 2  Point 3  Point 4  Point 5  Point AS 

Needle Gauges

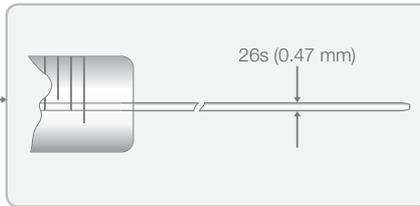
Choosing the Appropriate Agilent Needle

23s Gauge Needle Syringes



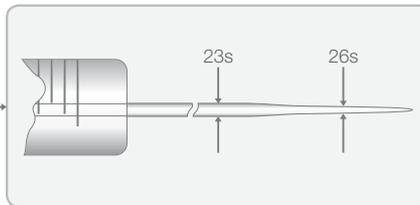
- Merlin Microseal™ septum and standard septum-equipped gas chromatographs
- Packed column injector ports
- Split/splitless injector ports

26s Gauge Needle Syringes



- On-Column injector ports
- Split/splitless injector ports

23s – 26s (Tapered) Gauge Needle Syringes

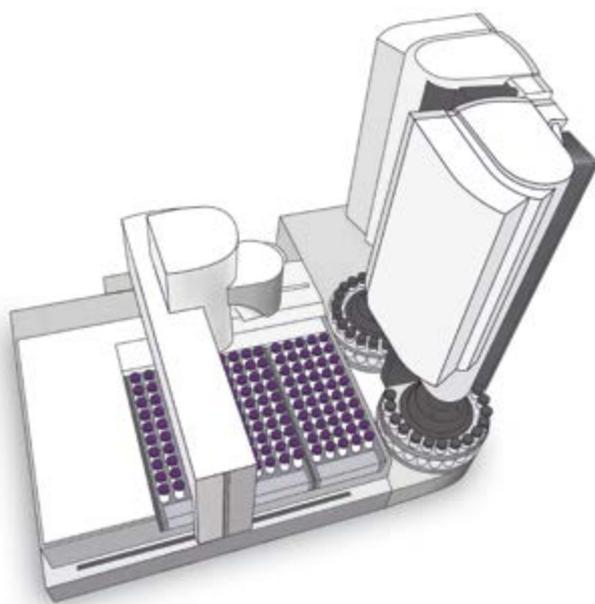


- Durability of a 23s gauge needle
- Ability of a 26s gauge needle to perform split/splitless and on-column injections

Agilent Syringes

7693A ALS

The 7693A builds on the proven Agilent Autosampler technologies that have worked reliably for customers in the past, including dual simultaneous injection and patented fast injection. The 7693A takes it one step further, adding basic sample preparation capabilities such as dilution, internal standard addition, heating, and more.



Special Termination



P/N	Volume	Gauge	Length	Point
86274	0.5 µL	26 ga	43 mm	AS
86276	0.5 µL	23 ga	43 mm	AS
80176	1 µL	23 ga	43 mm	AS

Cemented Needle (N)



P/N	Volume	Gauge	Length	Point
87988	5 µL	26s ga	43 mm	AS
87989	5 µL – 6 pk	26s ga	43 mm	AS
87987	5 µL	23s ga	43 mm	AS
87990	5 µL – 6 pk	23s ga	43 mm	AS
87993	5 µL	23s – 26s ga	43 mm	AS
87994	5 µL – 6 pk	23s – 26s ga	43 mm	AS
80388	10 µL	26s ga	43 mm	AS
80389	10 µL – 6 pk	26s ga	43 mm	AS
80387	10 µL	23s ga	43 mm	AS
80390	10 µL – 6 pk	23s ga	43 mm	AS
80080*	10 µL	23s ga	43 mm	AS
80094*	10 µL – 6 pk	23s ga	43 mm	AS
80393	10 µL	23s – 26s ga	43 mm	AS
80391	10 µL – 6 pk	23s – 26s ga	43 mm	AS
80079*	10 µL	23s – 26s ga	43 mm	AS
80096*	10 µL – 6 pk	23s – 26s ga	43 mm	AS

*These are Gastight syringes.

Removable Needle (RN)



P/N	Volume	Gauge	Length	Point
87958	5 µL	26s ga	43 mm	AS
87957	5 µL	23s ga	43 mm	AS
87959	5 µL	23s – 26s ga	43 mm	AS
80358	10 µL	26s ga	43 mm	AS
80088*	10 µL	26s ga	43 mm	AS
80357	10 µL	23s ga	43 mm	AS
80087*	10 µL	23s ga	43 mm	AS
80359	10 µL	23s – 26s ga	43 mm	AS
80089*	10 µL	23s – 26s ga	43 mm	AS

*These are Gastight syringes.





Bruker Varian Syringes

8100, 8200



Special Termination



P/N	Volume	Gauge	Length	Point
202880	10 µL	26s ga	50.5 mm	5

Note: Replacement needles for this syringe are part number 202903.

Bruker Varian Syringes

CP-8400/8410,
CP-9010/9050



Cemented Needle (N)



P/N	Volume	Gauge	Length	Point
80300	10 µL	26s ga	51 mm	2
80339	10 µL	26s ga	51 mm	5
80342	10 µL	23s ga	51 mm	AS
80330*	10 µL	26s ga	51 mm	2

**This is a Removable Needle (RN) syringe.*

Bruker Varian Syringes

CP-9020/9025

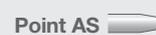
Luer Tip Cemented Needle (LTN)



P/N	Volume	Gauge	Length	Point
202660	2.5 mL	22 ga	56 mm	5



Point Styles



CTC / LEAP PAL GC Syringes

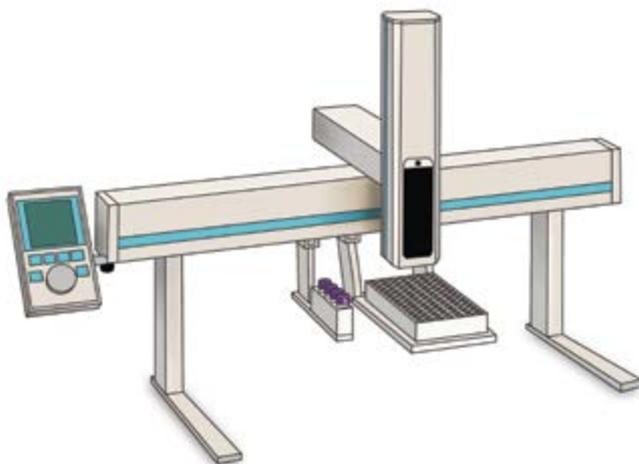
CTC PAL[®] autosamplers are one of the most popular sampling devices on the market today for GC and headspace analyses. Customers rely on its ability to sample from many different vial and well types and on its ultimate platform flexibility. The syringe is at the heart of every injection that the GC PAL[®] system performs, and CTC chose Hamilton to provide this critical component.

S-Line Syringes

S-Line syringes are the cost-effective choice for CTC PAL autosampler applications. S-Line syringes deliver great performance in everyday use for GC injections at an exceptional value. Fast injection speeds in GC analyses put considerable stress on syringe plungers and, as plungers wear the stresses increase, leading to broken syringes and unnecessary downtime and wasted money when samples cannot be analyzed.

C-Line Syringes

C-Line syringes incorporate several unique design features that ensure superior performance. The unique flange alignment design aids in installation and results in fewer bent needles while the plunger button can be adjusted to prevent plunger tip damage. An innovative direct attachment design of the needle to the barrel minimizes sample carryover.



S-Line Syringe



P/N	Volume	Barrel (O.D.)	Gauge	Point
67436-01	5 µL	6.6 mm	26s ga	AS
67438-01	10 µL	6.6 mm	26s ga	AS
67440-01	10 µL	6.6 mm	23s ga	AS
67454-01*	10 µL	6.6 mm	23s ga	AS
67430-01*	25 µL	7.9 mm	23 ga	AS
67434-01*	100 µL	6.6 mm	23 ga	AS

*These are Gastight syringes.

C-Line Syringes



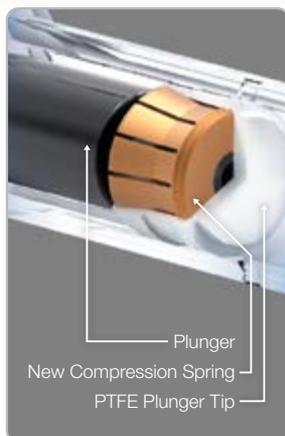
P/N	Volume	Barrel (O.D.)	Gauge	Point
203185	1.2 µL	6.6 mm	26 ga	AS
203189	5 µL	6.6 mm	26s ga	AS
203197	5 µL	6.6 mm	Custom	Custom
203205	10 µL	6.6 mm	26s ga	AS
203363	10 µL	6.6 mm	23s ga	2
203361	10 µL	6.6 mm	23s ga	AS
203362	10 µL	6.6 mm	23s – 26s ga	AS
203198	10 µL	6.6 mm	Custom	Custom
203206*	10 µL	6.6 mm	Custom	Custom
200740**	10 µL	6.6 mm	32 ga	4 at 45°
200742***	10 µL	6.6 mm	32 ga	4 at 45°
203074*	25 µL	6.6 mm	26s ga	AS
203043*	25 µL	7.9 mm	26s ga	AS
203209*	25 µL	6.6 mm	Custom	Custom
203076*	100 µL	6.6 mm	26s ga	AS
203226*	100 µL	6.6 mm	Custom	Custom
203078*	250 µL	7.9 mm	26 ga	AS
203219*	250 µL	7.9 mm	Custom	Custom
203080*	500 µL	7.9 mm	26 ga	AS
203225*	500 µL	7.9 mm	Custom	Custom

*These are Gastight syringes.

**This part number is 85 mm in length.

***This part number is 75 mm in length.

CTC / LEAP CombiPAL (Headspace) Syringes



HD-Type and HDHT-Type Syringes

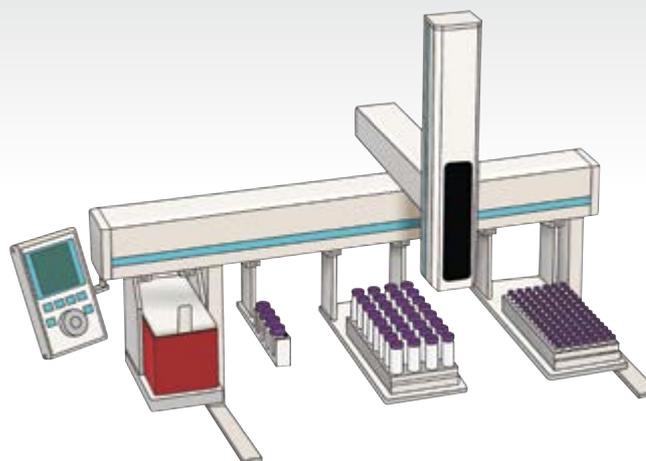
Modern GC headspace analysis requires injecting over large temperature ranges. Conventional headspace syringes on the market use a rubber O-ring sealed plunger which has a limited

sealing performance at high temperatures. This is due to varying thermal expansion between the different materials. The high dynamic HD-Type syringe and HDHT-Type syringes employ a unique spring in the plunger tip which compensates for the materials' different expansion coefficients, creating a superior seal over a larger temperature range, improving syringe lifetime.



HDHT-Type Syringes

A cement-free connection between the needle and the glass barrel make HDHT-Type syringes a perfect choice for applications where temperatures up to 200 °C will be used.



HD-Type Syringes (110 °C)



P/N	Volume	Gauge	Point
203141	1 mL	26 ga	5
203082	1 mL	23 ga	5
203181	2.5 mL	26 ga	5
203084	2.5 mL	23 ga	5
203182	5 mL	26 ga	5
203086	5 mL	23 ga	5

HDHT-Type Syringes (200 °C)

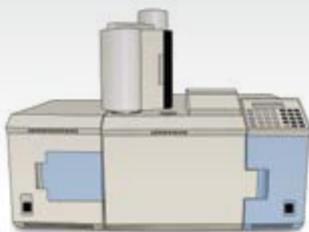


P/N	Volume	Gauge	Point
209682	1 mL	26 ga	5
209681	1 mL	23 ga	5
209684	2.5 mL	26 ga	5
209683	2.5 mL	23 ga	5
209686	5 mL	26 ga	5
209685	5 mL	23 ga	5



Perkin Elmer AutoSystem and Clarus Syringes

500 GC



Special Termination



P/N	Volume	Gauge	Length	Point
88040	5 µL	0.47 mm	70 mm	3
88035	5 µL	0.63 mm	70 mm	3

Shimadzu Syringes

AOC-9

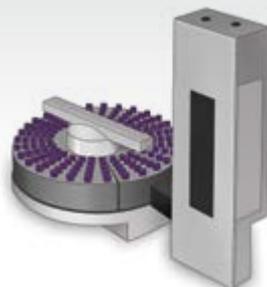
Removable Needle (RN)



P/N	Volume	Gauge	Length	Point
87930	5 µL	26s ga	51 mm	2
80330	10 µL	26s ga	51 mm	2

Shimadzu Syringes

AOC-14,
AOC-17,
AOC-20



Removable Needle (RN)



P/N	Volume	Gauge	Length	Point
202630	5 µL	22s ga	43 mm	2
202640	10 µL	22s ga	43 mm	2
202643*	10 µL	23s ga	43 mm	AS
93898-01**	10 µL	23s ga	43 mm	AS

*Cemented Needle termination with metal flange
**Cemented Needle termination with a glass flange



Point Styles





Thermo Finnigan Syringes

AI/AS 3000
TRIPLUS



Cemented Needle (N)



P/N	Volume	Gauge	Length	Point
204000	5 µL	26s ga	50 mm	2
204051	5 µL	26s ga	50 mm	AS
204001	10 µL	26s ga	50 mm	2
204052	10 µL	26s ga	50 mm	AS

Thermo Finnigan Syringes

AS 800/2000



Cemented Needle (N)



P/N	Volume	Gauge	Length	Point
80318	10 µL	26s ga	80 mm	AS

Thermo Finnigan Syringes

HS 250, 500, 850

Luer Tip Cemented Needle



P/N	Volume	Gauge	Length	Point
202660	2.5 mL	22 ga	56 mm	5

