



SGE Syringe Selection Guide





Welcome to the New SGE Analytical Science Syringe Selection Guide!

This is an exciting time for SGE with the introduction of the Diamond enhancements to the Syringe range – get ready to be dazzled by syringe brilliance! This new range is another development by SGE Analytical Science who began as a syringe manufacturer nearly 50 years ago. Now SGE Analytical Science manufactures a vast array of products used in chromatography and mass spectrometry.

SGE Analytical Science



SGE has achieved impressive success and growth since its founder Ernest Davies established Scientific Glass Engineering in a tiny garage at the backyard of a house in Melbourne, Australia. Today, SGE has two

modern facilities engaged in developing and manufacturing Chromatography and Analytical Products. SGE has nearly 400 employees, and a global distribution and support network. We are proud that all major analytical science instrument manufacturers rely on and incorporate SGE manufactured components in their systems. SGE has a commitment to quality and is an ISO accredited company. SGE is heavily committed to ongoing research and development that will allow the company to continue to bring innovative technologies and solutions to the scientific community.

About the SGE Syringe Selection Guide

The SGE Syringe Selection Guide is a complete reference for *finding, understanding and selecting* the best syringes and accessories to meet your particular needs. It's never been easier to select the right product and have technical performance data at your fingertips. We also want to share our expertise with you, so you'll find handy expert tips throughout the guide.

For more information on SGE's full range of products, including the world's most advanced electron multipliers, mass spectrometry components and innovative liquid and gas chromatography products, please visit our web site www.sge.com

SGE Syringe Design Capabilities

SGE syringes are consistently the choice of analytical equipment manufacturers and laboratories. Our customers choose SGE syringes because their reputation and results depend on the superior performance of our products.





SGE syringes are made to tight quality specifications resulting in accurate, precise and reliable syringes. All SGE products have two things in common:

- Outstanding performance.
- Superior quality.

SGE's knowledge and expertise in liquid handling technologies enables us to design syringes for a broad range of applications, such as nanoVolume sampling through to large volume air sampling - across diverse industries.

The SGE team is continually developing innovative ideas for products and technologies that make a difference for our customers.

Technical Support

For further detail on any SGE products, please contact our worldwide SGE technical support teams at your nearest SGE location, you'll find these listed on the back cover.

How to Order

So we can make ordering faster for you, please have this information ready:

- Part number.
- Description.
- Quantity.
- Purchase order number.

To order from SGE directly:

- Address and contact details of global SGE offices are listed on the back cover.

To order from your preferred SGE distributor:

- Address and contact details of our authorized distribution partners are listed on the SGE web site www.sge.com.

To order online:

- Visit www.sge.com






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| Syringe Selection |
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|  eVol® |
| General Purpose Manual Syringes |
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| LC Autosampler Syringes |
| LC Pump High Capacity Syringes |
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Syringe Selection

SGE offers a complete range of syringes with a range of capacities, termination types, and numerous needle sizes for a wide range of applications. This selection guide explains the SGE syringe features and how to select the ideal syringe for any application.

Manual or Autosampler Syringe?

If the syringe is being used by hand, a manual syringe should be selected. If the syringe is installed in an instrument then select an autosampler syringe to suit that particular instrument.



SGE has a large range of manual syringes for use in chromatography and many other applications. SGE manual syringes have a bright white backing and contrasting black print making it easy to see the fluid level. This provides confidence that the right volume is being delivered every time.



SGE's extensive range of autosampler syringes meet all fit, form and function criteria of a specific autosampler model. As minimum requirements, they meet dimensional specifications, have accuracy of better than $\pm 1\%$, are designed for worry free overnight sampling, have extended life and are color coded by volume for easy identification of syringe volume.

* Plunger in barrel syringes.

What Size Syringe?

For the best possible injection reproducibility and accuracy, the smallest injectable volume from any syringe (with the exception of eVol®) should be no less than 10 % of its total capacity, for example: the smallest recommended injection volume from a 10 μL syringe would be 1 μL .

To accurately dispense 1 μL or less a NanoVolume syringe is recommended. SGE NanoVolume syringes are available with capacities ranging from 0.5 μL to 5 μL . These syringes can inject down to 0.05 μL because the entire sample is contained within the needle. Designed with submicron tolerances, these syringes are rugged, robust and reliable with virtually zero dead volume. Liquid and gas tight, they provide precision and accuracy of $\pm 2\%$.

- The typical scale length on a 0.5 μL – 10 μL syringe is 54.1 mm.
- The typical scale length on a 25 μL – 25 mL syringe is 60 mm.

Note: Scale length is sometimes referred to as stroke length or the travel of the plunger in one direction.

What is Termination?

Termination refers to the interface between the syringe barrel and its mating connection such as the needle. There are several different termination options to accommodate a wide range of applications.

Many syringes are supplied and used with needles attached; there are also other terminations available: Luer Lock, Luer Tip, and threaded terminations.



Luer Lock and Luer Tip fittings are a universal fitting with a male Luer taper made from KEL-F or PTFE to ISO standard 594. Luer Lock needles and fittings are used with syringes having Luer terminations. These syringes are often used with syringe filters and syringe pumps.

SGE offers both fixed and removable Luer Lock syringes. Fixed Luer Lock syringes have a Luer fitting that is permanently fixed to the barrel. If the Luer Tip is ever damaged, the syringe will need to be replaced. Removable Luer Lock syringes have Luer fittings that screw onto the barrel with the Luer Tip inserted. Luer tips and Luer fittings can be replaced if these are damaged. Removable Luer tips need to be tightened securely to ensure they do not come loose during use.

Syringes with threaded terminations screw into a valve or other device, and are required for some LC autosamplers, syringe pumps and dispensers. There are many thread terminations possible, contact SGE if you require a particular threaded termination that is not covered in this Selection Guide.

SGE's Termination Codes

- F Fixed Needle
- R Removable Needle
- LL Luer Lock
- LT Luer Tip



Which Needle?

Needle selection is based on application and personal choice.



Fixed needle.



Removable needle.

Fixed Needle or Removable Needle Syringes:

Fixed needle syringes are often the preferred option for experienced operators or for applications requiring trace sample levels. A fixed needle syringe is recommended for autosampler use where the probability of needle bending is minimal. Fixed needles are easy to use and the most economical syringe option. Fixed needle syringes can be heated in an oven up to 70 °C.

For versatility a removable needle syringe is recommended. The removable needle syringe reduces cost over time because only the needle needs to be replaced if bent or blocked. Removable needle syringes can be heated to 120 °C. Removable needle syringes allow the needle to be changed for different applications.

Refer to pages 73-75 for a listing of replacement needles.



SGE divides its removable needles into different ranges:

- 5 µL eVol®
- 5 µL
- 10 µL
- 25 µL to 500 µL
(suitable for 50 µL eVol® Syringes)
- 1 mL to 2.5 mL
(suitable for 500 µL eVol® Syringes)
- 5 mL to 10 mL
- Luer Lock
- Valve Needles

Needles can be easily changed to meet the application need. For example: a standard 10 µL removable needle syringe can be easily converted for LC or on-column use.

Gauge or Outer Diameter (OD):

To reduce the possibility of bending, choose the largest available needle outer diameter suitable for the application. For autosamplers, syringes with 23 gauge or 0.63 mm OD cone tipped needles should be selected for all applications except on-column injection.

Inner Diameter (ID):

The ID of the needle is selected to ensure minimal dead volume without compromising the ability of the syringe to draw normal viscosity samples. Medium to high viscosity samples should be diluted prior to use or a larger inside diameter needle selected.

Needle Tip Styles:

SGE has various needle tip styles to suit a range of applications and uses.



Bevel: Manual GC

The standard general purpose needle tip style supplied with many SGE syringes is a 20 ° bevel tip. It is the preferred option for manual injection where piercing the septum in exactly the same place is difficult. The bevel tip is designed for optimum septum penetration and prevention of septum coring. Bevel tip needles are also known as point style 2.



Cone: GC Autosampler

The cone shaped needle tip is specially developed to withstand the multi injection demands and improve septum lifetime when used with an autosampler. The cone design effectively “parts” the septum during piercing not cutting it, as would a bevel needle. Cone tip needles are also known as point style AS for autosampler.



Dual Gauge:

Dual gauge needles have a narrow gauge at the tip suitable for megabore on-column injection. The wider gauge for the remainder of the needle gives increased strength to the needle for autosampler use.



LC: HPLC

These needles are used for LC and HPLC valve injection and have a 90 ° square tip with rounded and polished edges. This eliminates damage to the valve's rotor seal and stator face. LC/HPLC tips are also known as point style 3.



Dome:

This style needle is recommended for use with pre-drilled septa. The tip is rounded and polished to help septum penetration.



Side Hole:

Samples are filled and dispensed through the side hole eliminating septum plugging of the needle. Ideal for large volume gas injection. The solid domed tip minimizes septum damage. Side hole/dome tips are also known as point style 5.



Sheathed/Bevel: Manual GC

This needle tip style is the same as the bevel tip, except a 0.7 mm OD reinforcing sheath is silver soldered over the standard needle to within 10 mm of the tip. The sheath provides exceptional strength to the needle. Sheathed/Bevel needles are also known as point style 4.



Metal or PTFE Tipped Plunger?

A syringe with a PTFE tipped plunger should be selected when analyzing "dirty" samples such as serum and urine. The PTFE tip minimizes carryover and prevents particulate matter from getting between the plunger and barrel by effectively wiping the barrel inner diameter during the plunger stroke. PTFE tipped plungers are suitable for both liquid and gas samples. Syringes with PTFE tipped plungers have the added benefit of the plungers being replaceable as the PTFE wears due to use.

Metal plungers are individually fitted to the syringe glass barrel for a perfect "feel", optimized life with minimal carry over, a liquid tight seal between the barrel and plunger and excellent performance.

SGE Plunger Options:



Metal Plunger

- Stainless steel plunger individually fitted to its own syringe barrel.
- Plunger is not replaceable.
- Industry standard syringe for chromatography applications.
- For use when injection volume is greater than 1 μL .



PTFE Tipped Plunger

- Suitable for both liquid and gas samples.
- Plunger is replaceable.
- Ideal for "dirty" samples.
- Suitable for gas or headspace applications.
- Easy to remove and clean to extend plunger life.
- Capacities: 10 μL to 100 mL.



NanoVolume (plunger-in-needle)

- Plunger extends into the needle tip.
- Sample is contained only in the needle, i.e. no glass contact.
- Ideal for dispensing very small liquid volumes.
- Recommended for use when sample volume is less than 1 μL .
- Capacities: 0.5 μL , 1 μL and 5 μL .



SuperfleX™ Flexible Plunger

- Made from Titanium/Nickel alloy.
- Virtually indestructible plunger.
- Ideal for student use.
- Capacities: 5 μL and 10 μL .



Plunger Protection

- Extended protection from the top of the syringe back flange to help prevent plunger bending during injection and improve plunger stroke.
- Ideal for general use for both experienced and inexperienced users.
- Capacities: 5 μL and 10 μL (not necessary for capacities larger than 10 μL due to strength of the wider plunger diameter).



Guided Plunger

- Extended barrel guides plunger during injection.
- Robust and rugged.
- Ideal for student use.
- Capacities: 5 μL and 10 μL .

Special Purpose Syringes

SGE makes a range of special purpose syringes:

- On-column syringes for direct injection into a GC column.
- Solid sample syringes for injecting solids when using SGE's Pyrojector II™.
- High-pressure syringes for HPLC and other applications where the syringe is exposed to elevated pressures.
- Jumbo syringes – 500 mL, 1 L and 2 L often used for air sampling.

Custom Needles and Syringes

If you are not able to find a needle or syringe to meet your needs please contact your local SGE distributor or office.

Technical Information



Technical Information | Syringe Care, Maintenance and Use

An SGE syringe is a precision instrument with a high standard of fit between the plunger and the glass barrel. Like most precision instruments, regular maintenance is important for ensuring long life and robust performance.

Syringes should be routinely checked for damage to the barrel and needle. Look for fine cracks in the barrel. Needles should also be checked for burrs and rough surfaces which may cause tearing and excessive wear on the septum.

Syringe Cleaning

Syringe cleaning agents will usually depend on the contaminating material. Methanol, methylene chloride, acetonitrile and acetone are commonly used.



Do not immerse the entire syringe in solvent as this may damage the adhesive used to bond parts of the syringe. Clean externally by wiping with a tissue.

Syringe Cleaning Steps:

1. Rinse thoroughly with suitable solvent.
2. Rinse with distilled water.
3. Flush with acetone.
4. Remove plunger and wipe with tissue.
5. Refit plunger and flush with acetone.
6. Allow syringe to dry.

Cleaning Steps for NanoVolume syringes can be found in the manual supplied with the syringe.

SGE Syringe Temperature Specifications

Heating will remove semi-volatile material from the syringe. Before heating or autoclaving remove the plunger.

- Fixed Needle and Fixed Luer Syringes can be heated in an oven to 70 °C.
- Removable Needle and Removable Luer Syringes can be heated in an oven to 120 °C.
- NanoVolume Syringes can be heated in an oven to 70 °C.

Rapid changes in temperature can lead to splitting of the glass barrel. Ensure heating and cooling of a syringe is a gradual process.

Plunger Care

Metal Plungers for Standard Syringes

- Never force the plunger.
- Do not pump the plunger when the needle is blocked as the high pressure generated could crack the barrel.
- Replacement metal plungers are not available. Plungers are individually fitted to the barrels to achieve a perfect seal. This means that plungers are not interchangeable.
- Avoid unnecessary movement of plungers when the syringe is dry.

Metal Plungers for NanoVolume Syringes

- Always loosen needle cover nut before removing or inserting plunger.
- Wipe plunger with a lint-free tissue before replacing into the syringe.
- A heated syringe cleaner is recommended for cleaning needles and plungers of NanoVolume syringes.

PTFE Tipped Plungers

- Avoid unnecessary movement of plungers when the syringe is dry.
- Replacement PTFE tipped plungers are available.

Needle Care

Unblocking needles:

1. To unblock the needle, remove the plunger and fill the syringe with solvent using another syringe.
2. Insert plunger and gently push solvent through the needle. Never force the plunger as too much pressure may crack the syringe barrel.

SGE Syringe Cleaning Accessories:



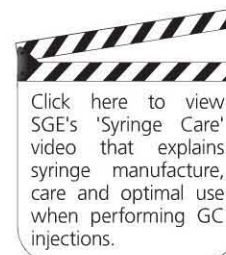
Needle Cleaning Kit (Part No. 031782): The kit contains a range of stylet wires for needle cleaning, tweezers and a surfactant material for barrel cleaning (see page 71).



Heated Syringe Cleaner (Part No. 031780, 031781): A heated syringe cleaner will remove organic residues from needles and is particularly useful for syringe cleaning when performing trace analysis (see page 70).

Syringe Use

- Always inspect the syringe before use. Check the barrel for cracks and the needle tip for burrs.
- To eliminate carryover between samples, flush the syringe with solvent 5-20 times, remembering to discard at least the first 2-3 washes.
- To eliminate air bubbles from the barrel, repeatedly draw and expel sample while keeping the needle tip immersed in the solution. Bubbles can also be removed by turning the barrel upright while expelling some of the sample. If bubbles persist, slow the aspiration speed.
- To make an injection, overfill the syringe then press the plunger until the correct volume is reached. Draw the plunger back slightly then wipe the needle tip with a lint free tissue. Make injection. For improved precision, syringes may be purchased fitted with a repeating adaptor, which allows the volume to be preset on the syringe.
- Before storage always rinse the syringe in solvent and air dry.



Technical
Information



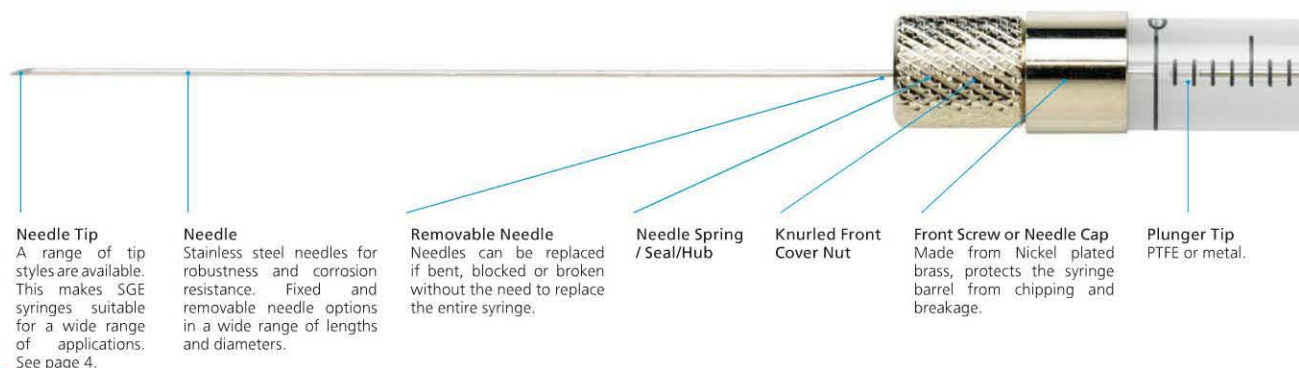
Technical Information | Syringe Care, Maintenance and Use



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Technical Information | Syringe Structure

Features of SGE Diamond syringes result in improved syringe lifetime and enhanced usability.



Technical Information | Syringe Barrel Internal Diameter (ID)

When using a syringe pump the internal diameter of the syringe barrel is required to calculate the pumping speed. The table below lists the internal diameters of SGE syringes based on volume.

| | | | | | | | | |
|--|-----------|------------|------------|------------|-------------|-------------|-------------|-------|
| Syringe Volume | 5 μ L | 10 μ L | 25 μ L | 50 μ L | 100 μ L | 250 μ L | 500 μ L | 1 mL |
| Internal Diameter of Syringe Barrel (mm) | 0.343 | 0.485 | 0.728 | 1.030 | 1.457 | 2.303 | 3.257 | 4.606 |

| | | | | | | |
|--|--------|-------|-------|-------|-------|--------|
| Syringe Volume | 2.5 mL | 5 mL | 10 mL | 25 mL | 50 mL | 100 mL |
| Internal Diameter of Syringe Barrel (mm) | 7.284 | 10.30 | 14.57 | 23.03 | 27.50 | 34.99 |



Backing Strip and Scale

Backing strip minimizes error when reading off scale.

Bright white backing with black scale markings on manual syringes for accurate reading of the syringe scale.

Color by volume on autosampler syringes for easy identification of installed syringes.

Scale is sharp, clear and easy to read – maximizes accuracy and precision.

Barrel

Made from borosilicate glass for robustness and solvent resistance.

Back Flange

Shape provides stability and prevents syringe rolling away, made from nickel plated brass to resist fracture.

Plunger Protection

Guides the plunger into the syringe. Helps to prevent plunger bending.

Plunger Stem

Plunger Button

Designed for easy syringe use or to fit appropriate autosampler.

Technical Information

Technical Information | Syringe Trouble Shooting

| Problem | Cause | Solution |
|----------------------|---|--|
| Blocked Needles | Improper cleaning. | Refer to syringe cleaning tips (page 7). |
| | Inappropriate needle selection. | Refer to needle selection guide (page 3). |
| Seized Plungers | Poor dispensing technique. | Ensure correct injection technique being followed. |
| | A build up of dirty samples. | Ensure correct syringe cleaning procedures are being followed (page 7). |
| | Syringe installed in autosampler incorrectly. | Ensure syringe installed correctly. |
| Poor Reproducibility | Incorrect syringe selection. | Refer to selection guide (page 1), the dispensed volume should be greater than 10 % of the entire syringe capacity. |
| | Poor operator technique. | Check that each sample is being injected in the same way. |
| | Incorrect instrument set up. | Check if any changes have been, or need to be made, to your instrument or set up (septa, injection port liner, etc). |
| Air Bubbles | Needle tip not fully immersed in sample or air being pulled up from sample by operator technique. | Repeatedly draw and expel sample while keeping needle tip immersed. |
| | | Turning the syringe upright while expelling the sample may help in the removal of the bubble. |
| | | Slow down. |
| Leakages | Leakage around needle due to needle fitted incorrectly. | Remove and refit the needle. Check seal is in place and undamaged. |
| | No seal at plunger tip –plunger tip damaged or worn due to use or using syringe dry. | Replace plunger assembly if using a PTFE tipped plunger. |
| Ghost Peaks | Dirty needle. | Between samples flush the syringe with solvent 5-20 times (discard at least the first 2-3 washes). |
| | | Consider a heated syringe cleaner. |



Syringe Brilliance

Technical Information | Syringe Structure and Syringe Trouble Shooting



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Technical Information | Syringe Validation and Calibration

If your laboratory is involved in GLP, ISO, GMP, NAMAS, ANSI, BSI or National Standards Protocol, then you will appreciate the importance of instrument calibration and its traceability. Although essential, this is often a time consuming, error prone and costly exercise to perform.

Certificate of Conformance

SGE supplies a syringe conformance certificate with every syringe to guarantee the syringe meets all specifications.

This syringe conformance certificate satisfies protocol requirements for syringes and provides traceability back to International Standards.

SGE syringes are produced in a manufacturing environment that operates under a quality management system that is independently certified in accordance with ISO9001:2008. All measuring equipment involved in production processes is calibrated and traceable to international standards and records are maintained. Through adherence to our quality system requirements SGE ensures that displacement volume will meet our specification for accuracy and reproducibility.

Certificate of Calibration

- Available for all SGE Syringes

SGE offers a factory calibration service, at an additional cost, for any syringe nominated by you at the time of purchase. These syringes are supplied with a Certificate of Calibration providing volume conformance and traceability. For identification each calibrated syringe is uniquely numbered and marked with this number.

Many companies attempt to calibrate syringes by measuring the mass of a dispensed volume. The accuracy of this technique is affected by many variables such as weighing errors, fluctuations in environmental temperature, pressure and evaporation, as well as operator error. Unlike competitors, which use these calibration techniques, SGE uses a superior technique of calibrated volume based on the length and diameter of the syringe barrel. Using specialized measuring equipment, SGE's calibration method has the highest degree of displacement volume accuracy and provides calibration traceability.

To order a calibrated syringe simply add 'CAL' to the end of the part number when ordering. For example; if you require a calibration certificate for a 002000, 10 µL fixed needle syringe; order part number 002000CAL.

SGE's eVol® – Digitally controlled analytical syringe, is the world's first user calibrated analytical syringe. Every eVol® is factory tested to ensure its operation complies with a comprehensive list of criteria. To achieve the highest level of accuracy possible each syringe may be calibrated. This will ensure your eVol® will dispense more accurately than any other manual syringe-based dispensing technique. A calibration factor for each syringe is used to adjust the software instructions controlling the motor to compensate for any slight variations in the positively displaced liquid volume. The calibration procedure for eVol® is based on a gravimetric measure of the volume dispensed from the eVol® (refer to page 17 for more details).

What's New



What's New | Diamond Syringe Technology

Expert Tip :

The Diamond Syringe Technology improvements are standard across the SGE syringe range and are proven through extensive testing and continuous monitoring by SGE's quality systems.



SGE Analytical Science Diamond Syringe Technology offers a never before seen level of **durability**, **clarity** and **accuracy** in the laboratory. SGE Diamond syringes provide:

- Longest working life in the industry.
- Improved solvent resistance.
- Greater operational temperature range.
- Reduced dead volume and carry over.

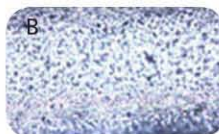
Diamond Syringe Technology – Syringe Brilliance

Durability

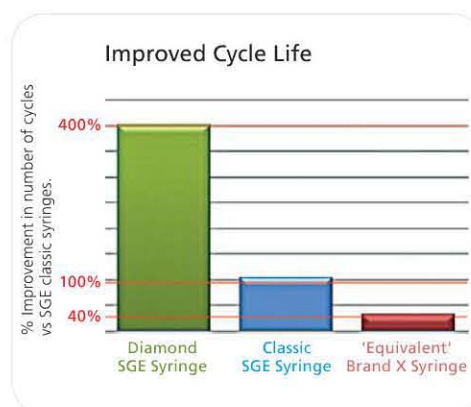
Glass Surface Technology

SGE's innovative technology enhancements provide a smoother glass surface finish. This smoother surface dramatically improves syringe life by reducing the wear on the plunger.

The images below show the inside glass surface of an SGE Diamond Syringe (A) compared to a competitor's syringe (B). These images are magnified 20 times.



These improvements deliver longer syringe life and improved cycle life of up to 400 % over the classic SGE syringe.



SGE Diamond Syringe removable needle hubs are permanently fused, greatly increasing their strength and ability to withstand higher temperatures.



Extensive testing shows the bond between the hub and the needle is even stronger than the needle itself. The risk of contamination and solvent attack is greatly reduced.



Chemical Compatibility

Materials used in the manufacture of SGE syringes are chosen to ensure the syringes are suitable for a wide range of applications.

- Borosilicate glass barrel for strength and inertness.
- Stainless steel needles – for inertness, strength and corrosion resistance.
- PTFE tipped plungers – for inertness and chemical resistance

Temperature Range of Syringes

- Fixed needle syringes can be heated in the oven to 70 °C.
- Removable needle syringes can be heated in the oven to 120 °C.

Clarity



The manual Diamond syringes have a bright white backing with contrasting black print for maximum readability and ease of use. The operator can easily see the scale ensuring the correct volume is delivered every time.



Autosampler and instrument syringes incorporate a vibrant new color scheme, distinguished by volume, enabling easy identification of syringes installed in instruments.

What's New?

| Color | Syringe Volumes | | | |
|--------------|--------------------|--------|--------|-------------------|
| Yellow | 1000 nL (1 µL) | | 1 mL | 1000 mL (1 L) |
| Grey | | 250 µL | 2.5 mL | 2000 mL (2 L) |
| Lime | 5000 nL (5 µL) | 5 µL | 5 mL | |
| Dark Orange | | 10 µL | 10 mL | |
| Green | | 25 µL | 25 mL | |
| Purple | | 50 µL | 50 mL | |
| Aqua | | 100 µL | 100 mL | |
| Light Orange | 500 nL (0.5 µL) | 500 µL | | 500 mL (0.5 L) |



What's New | Diamond Syringe Technology



14

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 Importers & Manufacturers
www.chromtech.net.au

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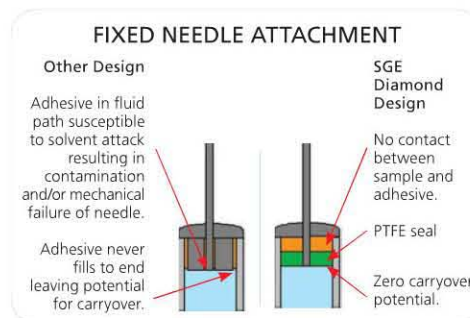
Website NEW : www.chromalytic.com.au E-mail : info@chromtech.net.au Tel: 03 9762 2034 . . . in AUSTRALIA

Accuracy

SGE Diamond syringes offer a new level of accuracy in the laboratory. SGE syringes eliminate areas where fluid can become trapped and potentially cause carryover. Carryover and dead volume are reduced by:

- **PTFE Plunger Tip Design**

The plunger tip used in PTFE tipped syringes eliminates areas where fluid can become trapped reducing dead volume and the chance of carryover or cross contamination. The tip sits flush against the insert further reducing the chance for carryover.

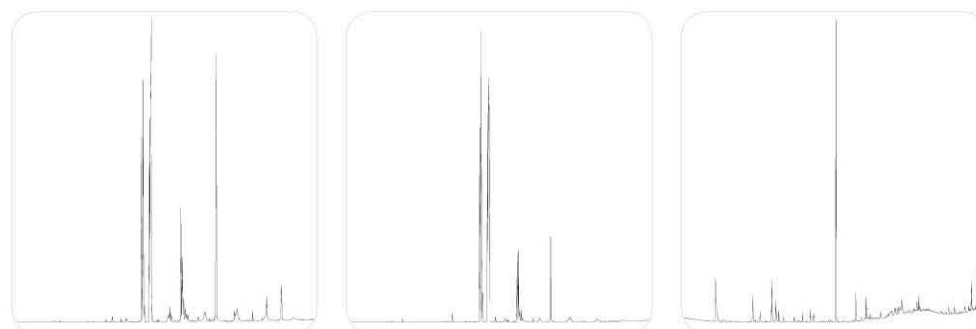


- **Fixed Needle Attachment Design**

A PTFE seal is added to separate fluid from adhesive. This reduces the chance of dead volume by eliminating areas where fluid can become trapped, and prevent carryover and any potential contamination from adhesives used to secure the needles.



GC MS traces from SGE Diamond syringe.



GC MS traces from three syringes currently available in the market showing peaks identified as being components of adhesives.

Syringe Packaging

SGE Diamond Syringe packaging is attractive, functional and easy to use. The packaging incorporates:

- Clear 100% recyclable protective inner syringe packaging.
- Box with window to allow easy identification of product through packaging.
- Fully recyclable outer box to contribute to a reduced environmental footprint.





What's New | XCHANGE®*

XCHANGE® Robotic Connections



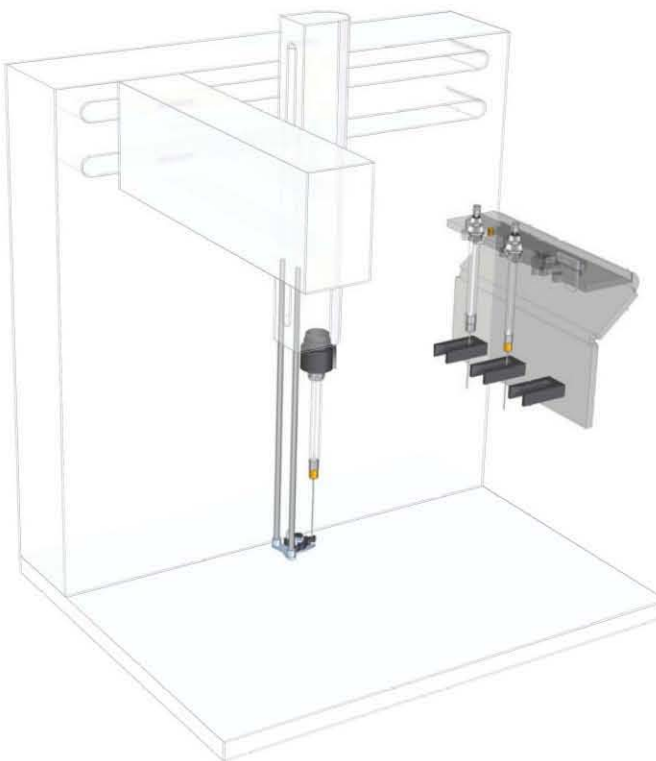
XCHANGE® (Patent Pending) is a coupling system easily integrated onto robotic platforms giving increased flexibility. It enables the simple and automated exchange of a range of XCHANGE® analytical syringes and robotic tools.

The XCHANGE® coupling system secures and locks the syringe or tool in place. This is achieved by a mating mechanical piece that captures the syringe or tool, and a magnet that automatically aligns - eliminating the need for springs, screws, or alignment gauges. Once engaged the syringe or tool is locked into position requiring zero holding force.

XCHANGE® components are easily adapted to different style platforms for the ultimate flexibility - they are ideal on manual or semi-automated systems as a quick-change option.

eVol® World's 1st Digitally Controlled Analytical Syringe, is one of the first examples of XCHANGE® in use.

What's New?



* Patent Pending



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What's New | XCHANGE®



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What's New | eVol®

eVol® - World's 1st Digitally Controlled Analytical Syringe

eVol® brings the technological advancements of laboratory liquid dispensing up to the levels seen elsewhere in the lab. eVol® is a complete dispensing solution with a broad range of functions and uses. eVol® revolutionizes the way laboratories work and the pace at which they process samples.

eVol® is the coupling of two precision devices: a digitally controlled electronic drive and an XCHANGE® (Patent Pending) enabled analytical syringe. See page 16 for further information on XCHANGE®. The result is a digitally controlled positive displacement dispensing system that can be programmed to reproducibly and accurately perform a wide variety of liquid handling procedures.

eVol® Improves Your Laboratory Workflow and Reporting Confidence

- The programmable digital drive accurately and precisely dispenses liquids independent of the user's skills - allowing more efficient workflow scheduling and a reduction in the re-analysis of incorrectly processed or false positive samples.
- XCHANGE® analytical syringes are easily and quickly changed allowing them to be dedicated to individual liquids to prevent possible cross-contamination of reagents.



eVol®
Every One an Expert

- To comply with stringent laboratory standards (e.g. GLP, GMP, FDA) eVol® is easily calibrated to ensure accurate dispensing at all times. eVol® is the world's first user calibrated analytical syringe. The gravimetric calibration procedure is simple, intuitive and can be performed at appropriate intervals. Calibration factors are stored for up to ten XCHANGE® syringes and quickly loaded when the syringe is changed.

Unlike air-displacement devices, eVol® is the perfect solution for accurately aspirating and dispensing both aqueous and non-aqueous liquids.



The three eVol® analytical syringe sizes can be used to accurately aspirate and dispense volumes covering a range from 200 nL to 500 µL.

- Accuracy $\pm 0.2\%$ for a calibrated syringe at full scale.
- Precision RSD (%) at full scale:
- eVol® 500 µL syringe 0.3 %.
- eVol® 50 µL syringe 0.4 %.
- eVol® 5 µL syringe 0.5 %.

The lightweight components and ergonomic design of the eVol® increases user comfort. Simple, one-handed operation minimizes handling time and exposure to hazardous substances.

eVol® features a Touch Wheel user interface and a full-color screen. The clever menu allows all the functions to be accessed logically and quickly. The programming functions are intuitive and include help screens and prompts.

Multiple operating modes maximize the flexibility of eVol® use:

- Dispense – aspirate and dispense the same volume.
- Repeat Dispense – repetitive dispensing of a desired volume.
- Manual – aspirate and dispense of varying volumes (i.e. titrations).
- Custom – create and store methods with parameters tailored to your solution (up to 98 steps).

Custom programs can be created tailoring methods that standardize laboratory work flows, improve efficiencies, reduce variation and better utilize laboratory staff. The automation of traditionally manual processes will increase throughput and generate valuable resource savings, highly sought after in commercial laboratories.

eVol® is powered by a rechargeable, long life, Lithium-ion Battery that provides approximately 3500 dispensing cycles between charges and can be used while charging.



eVol®

APPLICATIONS

Typical applications for eVol® include:

- Preparation of calibration standards.
- Preparation and addition of internal standards.
- Precise dispensing of aqueous and non-aqueous liquids.
- Sample dilution.
- Instrument (GC and LC) injections.
- Serial dilutions.
- Micro titrations.
- TLC spotting.
- Routine dispensing.
- Precise measurements.
- Spiking.
- Quantitative NMR.

Expert Tip:

Adjustable operational speed allows for variations in sample properties, such as viscosity and/or vapor pressure.



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What's New | eVol®



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eVol® - Electronic Syringe

| Part No. | Description |
|----------|---|
| 2910000 | eVol® Electronic Syringe Starter Kit Contains: <ul style="list-style-type: none"> eVol® Electronic Syringe (handle). 3 eVol® Syringes - 5 µL, 50 µL and 500 µL. Stand. Universal Charger. Comprehensive Instruction Manual. Disc with Manual in Multiple languages. |
| 2910005 | eVol® Electronic Syringe (handle only) |

eVol® XCHANGE® Syringes



| Syringe Part No. | Description | Needle Length (mm) | Needle Gauge | Needle OD (mm) | Needle ID (mm) | Needle Tip | Replacement Needle Part No. | Replacement Plunger Part No. |
|------------------|----------------------------------|--------------------|--------------|----------------|----------------|------------|-----------------------------|------------------------------|
| 2910020 | 5 µL | 50 | 25 | 0.5 | 0.12 | Bevel | 036910 | 2910380 |
| 2910021 | 5 µL (supplied without needle) | - | - | - | - | - | - | 2910380 |
| 2910022 | 50 µL | 50 | 25 | 0.5 | 0.2 | Bevel | 038110 [✓] | 2910382 |
| 2910023 | 50 µL (supplied without needle) | - | - | - | - | - | - | 2910382 |
| 2910024 | 500 µL | 50 | 25 | 0.5 | 0.2 | Bevel | 039110 [^] | 2910384 |
| 2910025 | 500 µL (supplied without needle) | - | - | - | - | - | - | 2910384 |
| 2910026 | 500 µL for MEPS™ applications* | - | - | - | - | - | - | 2910384 |

[✓] All SGE 25 - 500 µL replacement needles can be used with 50 µL eVol® syringes. [^] All SGE 1 - 2.5 mL replacement needles can be used with 500 µL eVol® syringes. * The standard 50 µL eVol® syringe and 500 µL eVol® MEPS™ syringe can be used with the range of MEPS™ BINs. Please refer to page 30 for the listing of available MEPS™ BINs.

Replacement Needles for 5 µL eVol® XCHANGE® Syringes

| Part No. | Description | Needle Length (mm) | Needle Gauge | Needle OD (mm) | Needle ID (mm) | Needle Tip | Pack Size |
|----------|---------------------------------|--------------------|--------------|----------------|----------------|------------|-----------|
| 036910 | Suitable for 5 µL eVol® Syringe | 50 | 25 | 0.5 | 0.12 | Bevel | 5 |
| 036912 | Suitable for 5 µL eVol® Syringe | 51 (2") | 22 | 0.028" | 0.17 | LC | 5 |
| 036914 | Suitable for 5 µL eVol® Syringe | 50 | 23 | 0.63 | 0.11 | Cone | 5 |
| 036916 | Suitable for 5 µL eVol® Syringe | 70 | 25 | 0.50 | 0.20 | Bevel | 5 |
| 036918 | Suitable for 5 µL eVol® Syringe | 70 | 26 | 0.47 | 0.11 | Cone | 5 |

Replacement Needles for 50 µL and 500 µL eVol® XCHANGE® Syringes

| Part No. | Description | Needle Length (mm) | Needle Gauge | Needle OD (mm) | Needle ID (mm) | Needle Tip | Pack Size |
|---------------------|-----------------------------------|--------------------|--------------|----------------|----------------|------------|-----------|
| 038110 [✓] | Suitable for 50 µL eVol® Syringe | 50 | 25 | 0.5 | 0.2 | Bevel | 5 |
| 039110 [^] | Suitable for 500 µL eVol® Syringe | 50 | 25 | 0.5 | 0.2 | Bevel | 5 |

[✓] All SGE 25 - 500 µL replacement needles can be used with 50 µL eVol® syringes. [^] All SGE 1 - 2.5 mL replacement needles can be used with 500 µL eVol® syringes. Refer to page 73 for replacement needles.

Accessories for eVol®



Part No. 2910010
eVol® Stand



Part No. 2910012
eVol® Universal Charger



Part No. 2910030
eVol® Charging Stand



Part No. 2910040
eVol® Replacement Battery

General Purpose Manual Syringes



SPECIFICATIONS

Accuracy and Reproducibility
 $\pm 2\%$ (dispensed volume)

Borosilicate Glass Barrel Outer Diameter (OD)
 6.5 mm and 8 mm

Scale Length
 54.1 mm (0.5 μ L and 1 μ L)
 46.4 mm (5 μ L)

International Standards Traceability

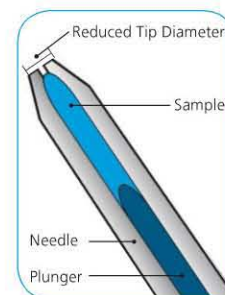
General Purpose Manual Syringes | 0.5 - 5 μ L NanoVolume

With the ability to inject down to 50 nL with high precision and accuracy, SGE NanoVolume Syringes are perfect for NanoVolume capillary chromatography injection as well as making accurate standards that require small volumes.

The sample is only drawn into the needle, not the syringe barrel. When the plunger is depressed, the sample is completely dispensed by the NanoVolume plunger that extends to the tip of the needle.

Displacing the full sample during injection results in virtually zero dead volume and carry over between injections.

The plungers and needles are matched sets and must be replaced as a set. Refer to page 75 for a list of replacement plunger and needle kits.



Nozzle tip shown in diagram.





| Syringe Part No. | Syringe Volume | Needle Length (mm) | Needle Gauge | Needle OD (mm) | Needle ID (mm) | Needle Tip | Syringe Code | Replacement Needle and Plunger Part No. |
|--|----------------|--------------------|--------------|----------------|----------------|------------|---------------|---|
| 6.5 mm Outer Diameter (OD) Barrel | | | | | | | | |
| 000300 | 0.5 µL | 50 | 23 | 0.63 | 0.15 | Cone | 0.5BNR-5 | 033010 |
| 000301 | 0.5 µL | 50 | 23 | 0.63 | 0.15 | Bevel | 0.5BNR-5BV | 033011 |
| 000303 | 0.5 µL | 50 | 26 | 0.47 | 0.15 | Cone | 0.5BNR-5/0.47 | 033012 |
| 8.0 mm Outer Diameter (OD) Barrel | | | | | | | | |
| 000310 | 0.5 µL | 70 | 23 | 0.63 | 0.1 | Cone | 0.5BR-7 | 033057 |
| 000311 | 0.5 µL | 70 | 23 | 0.63 | 0.1 | Bevel | 0.5BR-7BV | 033060 |
| 000500 | 1 µL | 50 | 23 | 0.63 | 0.15 | Cone | 1BR-5 | 034055 |
| 000501 | 1 µL | 50 | 23 | 0.63 | 0.15 | Bevel | 1BR-5BV | 034056 |
| 000505 | 1 µL | 70 | 23 | 0.63 | 0.15 | Cone | 1BR-7 | 034057 |
| 000506 | 1 µL | 70 | 23 | 0.63 | 0.15 | Bevel | 1BR-7BV | 034060 |
| 000510 | 1 µL | 115 | 23 | 0.63 | 0.15 | Cone | 1BR-11.5 | 034059 |
| 000570 | 1 µL | 70 | 26 | 0.47 | 0.15 | Cone | 1BR-7/0.47 | 034610 |
| 000800 | 5 µL | 50 | 23 | 0.63 | 0.37 | Cone | 5BR-5 | 035055 |
| 000801 | 5 µL | 50 | 23 | 0.63 | 0.37 | Bevel | 5BR-5BV | 035056 |
| 000802 | 5 µL | 70 | 23 | 0.63 | 0.37 | Cone | 5BR-7 | 035057 |
| 000803 | 5 µL | 70 | 23 | 0.63 | 0.37 | Bevel | 5BR-7BV | 035058 |
| 000804 | 5 µL | 115 | 23 | 0.63 | 0.37 | Cone | 5BR-11.5 | 035059 |
| 000805 | 5 µL | 70 | 23 | 0.63 | 0.37 | Nozzle | 5BR-7N | 035060 |

Expert Tip :

To eliminate carryover between samples, flush the syringe with solvent 5-20 times, remembering to discard the first 2-3 washes.



General Purpose Manual Syringes



Syringes Fitted with Repeating Adaptor

See page 69 for more details about the RAX repeating adaptor.

| Syringe Part No. | Syringe Volume | Needle Length (mm) | Needle Gauge | Needle OD (mm) | Needle ID (mm) | Needle Tip | Syringe Code | Replacement Needle Part No. |
|--|----------------|--------------------|--------------|----------------|----------------|------------|-----------------|-----------------------------|
| 6.5 mm Outer Diameter (OD) Barrel | | | | | | | | |
| 000350 | 0.5 µL | 50 | 23 | 0.63 | 0.15 | Cone | 0.5BNR-5-RAX | 033010 |
| 000353 | 0.5 µL | 50 | 26 | 0.47 | 0.15 | Cone | 0.5BNR-5/47-RAX | 033012 |
| 8.0 mm Outer Diameter (OD) Barrel | | | | | | | | |
| 000355 | 0.5 µL | 70 | 23 | 0.63 | 0.1 | Cone | 0.5BR-7-RAX | 033057 |
| 000550 | 1 µL | 50 | 23 | 0.63 | 0.15 | Cone | 1BR-5-RAX | 034055 |
| 000553 | 1 µL | 70 | 23 | 0.63 | 0.15 | Cone | 1BR-7-RAX | 034057 |

Expert Tip:

When replacing the plunger and needle follow the instructions included in the kit – the front cover nut must be loosened before removing the plunger.



General Purpose Manual Syringes | 0.5 - 5 µL NanoVolume



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SPECIFICATIONS

Accuracy and Reproducibility
± 1 % (dispensed volume)

Borosilicate Glass Barrel Outer Diameter (OD)
6.5 mm and 8 mm

Scale Length
54.1 mm

International Standards Traceability

General Purpose Manual Syringes | 5 - 10 µL Metal Plunger

Standard Plunger Protection Syringes

| Syringe Part No. | Syringe Volume | Needle Length (mm) | Needle Gauge | Needle OD (mm) | Needle ID (mm) | Needle Tip | Syringe Code | Replacement Needle Part No. | 6 Pack Part No. | 10 Pack Part No. | 25 Pack Part No. |
|-------------------------|----------------|--------------------|--------------|----------------|----------------|------------|--------------|-----------------------------|-----------------|------------------|------------------|
| Fixed Needle | | | | | | | | | | | |
| 001000 | 5 µL | 50 | 26 | 0.47 | 0.11 | Bevel | 5F | - | - | - | - |
| 001002 | 5 µL | 70 | 26 | 0.47 | 0.11 | Bevel | 5F-7 | - | - | - | - |
| 002000 | 10 µL | 50 | 26 | 0.47 | 0.11 | Bevel | 10F | - | 002030 | 002033 | 002035 |
| 002003 | 10 µL | 70 | 26 | 0.47 | 0.11 | Bevel | 10F-7 | - | - | - | - |
| 002005 | 10 µL | 50 | 26 | 0.47 | 0.11 | cone | 10F-5C | - | - | - | - |
| 002007 | 10 µL | 115 | 26 | 0.47 | 0.11 | Bevel | 10F-11.5 | - | - | - | - |
| Removable Needle | | | | | | | | | | | |
| 001050 | 5 µL | 50 | 26 | 0.47 | 0.11 | Bevel | 5R | - | - | - | - |
| 002050 | 10 µL | 50 | 26 | 0.47 | 0.11 | Bevel | 10R | 037110 | 002080 | - | - |
| 002055 | 10 µL | 70 | 26 | 0.47 | 0.11 | Bevel | 10R-7 | 037130 | - | - | - |



Expert Tip:

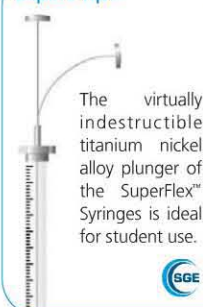
Plunger protection prevents plunger bending during injection.



SuperFlex™ Syringes

| Syringe Part No. | Syringe Volume | Needle Length (mm) | Needle Gauge | Needle OD (mm) | Needle ID (mm) | Needle Tip | Syringe Code | Replacement Needle Part No. | 6 Pack Part No |
|-------------------------|----------------|--------------------|--------------|----------------|----------------|------------|--------------|-----------------------------|----------------|
| Fixed Needle | | | | | | | | | |
| 001100 | 5 µL | 50 | 26 | 0.47 | 0.11 | Bevel | 5FX | - | - |
| 001105 | 5 µL | 50 | 26 | 0.47 | 0.11 | Cone | 5FX-5C | - | - |
| 002100 | 10 µL | 50 | 26 | 0.47 | 0.11 | Bevel | 10FX | - | 002130 |
| 002101 | 10 µL | 70 | 26 | 0.47 | 0.11 | Bevel | 10FX-7 | - | - |
| 002105 | 10 µL | 50 | 26 | 0.47 | 0.11 | Cone | 10FX-5C | - | 002133 |
| 002108 | 10 µL | 50 | 23 | 0.63 | 0.11 | Cone | 10FX-5/0.63C | - | 002135 |
| Removable Needle | | | | | | | | | |
| 001150 | 5 µL | 50 | 26 | 0.47 | 0.11 | Bevel | 5RX | 036110 | - |
| 002150 | 10 µL | 50 | 26 | 0.47 | 0.11 | Bevel | 10RX | 037110 | 002180 |

Expert Tip :



Expert Tip :



Guided Plunger Syringes

| Syringe Part No. | Syringe Volume | Needle Length (mm) | Needle Gauge | Needle OD (mm) | Needle ID (mm) | Needle Tip | Syringe Code | Replacement Needle Part No. | 6 Pack Part No |
|-------------------------|----------------|--------------------|--------------|----------------|----------------|------------|--------------|-----------------------------|----------------|
| Fixed Needle | | | | | | | | | |
| 001400 | 5 µL | 50 | 26 | 0.47 | 0.11 | Bevel | 5F-GP | - | - |
| 002400 | 10 µL | 50 | 26 | 0.47 | 0.11 | Bevel | 10F-GP | - | - |
| Removable Needle | | | | | | | | | |
| 001450 | 5 µL | 50 | 26 | 0.47 | 0.11 | Bevel | 5R-GP | 036110 | - |
| 001455 | 5 µL | 70 | 26 | 0.47 | 0.11 | Bevel | 5R-GP-7 | 036130 | - |
| 001495* | 5 µL | 50 | 26 | 0.47 | 0.11 | Bevel | 5R-GPS | 037110 | - |
| 002450 | 10 µL | 50 | 26 | 0.47 | 0.11 | Bevel | 10R-GP | 037110 | - |
| 002453 | 10 µL | 70 | 26 | 0.47 | 0.11 | Bevel | 10R-GP-7 | 037130 | - |

* Short half scale syringe (scale length 27 mm, barrel outer diameter OD 8 mm).



Syringes Fitted with Repeating Adaptor

See page 69 for more details about the RAX repeating adaptor.

| Syringe Part No. | Syringe Volume | Needle Length (mm) | Needle Gauge | Needle OD (mm) | Needle ID (mm) | Needle Tip | Syringe Code | Replacement Needle Part No. | 6 Pack Part No |
|--|----------------|--------------------|--------------|----------------|----------------|------------|--------------|-----------------------------|----------------|
| Fixed Needle | | | | | | | | | |
| 002040 | 10 µL | 50 | 26 | 0.47 | 0.11 | Bevel | 10F-RAX | - | - |
| Removable Needle | | | | | | | | | |
| 001090 | 5 µL | 50 | 26 | 0.47 | 0.11 | Bevel | 5R-RAX | 036110 | - |
| 002090 | 10 µL | 50 | 26 | 0.47 | 0.11 | Bevel | 10R-RAX | 037110 | - |
| Removable Needle - Guided Plunger | | | | | | | | | |
| 001490 | 5 µL | 50 | 26 | 0.47 | 0.11 | Bevel | 5R-GP-RAX | 036110 | - |
| 002490 | 10 µL | 50 | 26 | 0.47 | 0.11 | Bevel | 10R-GP-RAX | 037110 | - |
| 002493 | 10 µL | 70 | 26 | 0.47 | 0.11 | Bevel | 10R-GP-7-RAX | 037130 | - |



General Purpose Manual Syringes | 5 - 10 µL Metal Plunger



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SPECIFICATIONS

Accuracy and Reproducibility
±1 % (dispensed volume)

Borosilicate Glass Barrel Outer Diameter (OD)
8 mm

Scale Length
60 mm

International Standards Traceability

General Purpose Manual Syringes | 25 - 500 µL Metal Plunger

| Syringe Part No. | Syringe Volume | Needle Length (mm) | Needle Gauge | Needle OD (mm) | Needle ID (mm) | Needle Tip | Syringe Code | Replacement Needle Part No. |
|-------------------------|----------------|--------------------|--------------|----------------|----------------|------------|--------------|-----------------------------|
| Fixed Needle | | | | | | | | |
| 003000 | 25 µL | 50 | 25 | 0.5 | 0.2 | Bevel | 25F | - |
| 004000 | 50 µL | 50 | 25 | 0.5 | 0.2 | Bevel | 50F | - |
| 005000 | 100 µL | 50 | 25 | 0.5 | 0.2 | Bevel | 100F | - |
| 006000 | 250 µL | 50 | 25 | 0.5 | 0.2 | Bevel | 250F | - |
| 007000 | 500 µL | 50 | 25 | 0.5 | 0.2 | Bevel | 500F | - |
| Removable Needle | | | | | | | | |
| 003050 | 25 µL | 50 | 25 | 0.5 | 0.2 | Bevel | 25R | 038110 |
| 004050 | 50 µL | 50 | 25 | 0.5 | 0.2 | Bevel | 50R | 038110 |
| 005050 | 100 µL | 50 | 25 | 0.5 | 0.2 | Bevel | 100R | 038110 |
| 005055 | 100 µL | 70 | 25 | 0.5 | 0.2 | Bevel | 100R-7 | 038130 |
| 006050 | 250 µL | 50 | 25 | 0.5 | 0.2 | Bevel | 250R | 038110 |
| 007050 | 500 µL | 50 | 25 | 0.5 | 0.2 | Bevel | 500R | 038110 |



Syringes Fitted with Repeating Adaptor

See page 69 for more details about the RAX repeating adaptor.

| Syringe Part No. | Syringe Volume | Needle Length (mm) | Needle Gauge | Needle OD (mm) | Needle ID (mm) | Needle Tip | Syringe Code | Replacement Needle Part No. |
|-------------------------|----------------|--------------------|--------------|----------------|----------------|------------|--------------|-----------------------------|
| Removable Needle | | | | | | | | |
| 003090 | 25 µL | 50 | 25 | 0.5 | 0.2 | Bevel | 25R-RAX | 038110 |
| 004090 | 50 µL | 50 | 25 | 0.5 | 0.2 | Bevel | 50R-RAX | 038110 |
| 005090 | 100 µL | 50 | 25 | 0.5 | 0.2 | Bevel | 100R-RAX | 038110 |
| 006090 | 250 µL | 50 | 25 | 0.5 | 0.2 | Bevel | 250R-RAX | 038110 |
| 007090 | 500 µL | 50 | 25 | 0.5 | 0.2 | Bevel | 500R-RAX | 038110 |

Expert Tip:

The RAX repeating adaptor improves precision and reproducibility when repeatedly injecting the same volume manually.



SPECIFICATIONS

Accuracy and Reproducibility
±1 % (dispensed volume)

Borosilicate Glass Barrel Outer Diameter (OD)
10 µL = 6.5 mm
25 – 500 µL = 8 mm

Scale Length
10 µL = 54.1 mm
25 – 500 µL = 60 mm

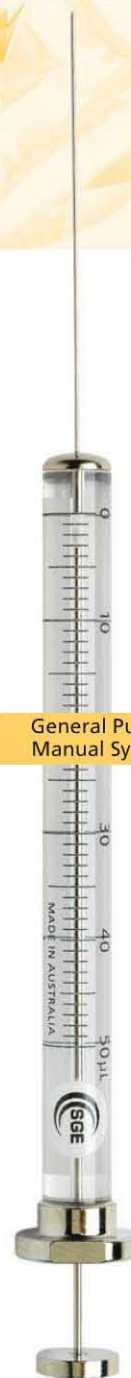
International Standards Traceability



General Purpose Manual Syringes | 10 - 500 µL PTFE Tipped Plunger

| Syringe Part No. | Syringe Volume | PTFE Tipped Plunger | Needle Length (mm) | Needle Gauge | Needle OD (mm) | Needle ID (mm) | Needle Tip | Syringe Code | Replacement Needle Part No. | Replacement Plunger Part No. | 6 Pack Part No. |
|-------------------------|----------------|---------------------|--------------------|--------------|----------------|----------------|------------|--------------|-----------------------------|------------------------------|-----------------|
| Fixed Needle | | | | | | | | | | | |
| 002200 | 10 µL | ✓ | 50 | 26 | 0.47 | 0.11 | Bevel | 10F-GT | - | 031810 | 002202 |
| 002208 | 10 µL | ✓ | 70 | 26 | 0.47 | 0.11 | Bevel | 10F-GT-7 | - | 031810 | - |
| 003200 | 25 µL | ✓ | 50 | 25 | 0.50 | 0.20 | Bevel | 25F-GT | - | 031815 | - |
| 004200 | 50 µL | ✓ | 50 | 25 | 0.50 | 0.20 | Bevel | 50F-GT | - | 031820 | - |
| 005200 | 100 µL | ✓ | 50 | 25 | 0.50 | 0.20 | Bevel | 100F-GT | - | 031825 | - |
| 006200 | 250 µL | ✓ | 50 | 25 | 0.50 | 0.20 | Bevel | 250F-GT | - | 031830 | - |
| 007200 | 500 µL | ✓ | 50 | 25 | 0.50 | 0.20 | Bevel | 500F-GT | - | 031835 | - |
| Removable Needle | | | | | | | | | | | |
| 002250 | 10 µL | ✓ | 50 | 26 | 0.47 | 0.11 | Bevel | 10R-GT | 037110 | 031811 | 002252 |
| 003250 | 25 µL | ✓ | 50 | 25 | 0.50 | 0.20 | Bevel | 25R-GT | 038110 | 031815 | - |
| 004250 | 50 µL | ✓ | 50 | 25 | 0.50 | 0.20 | Bevel | 50R-GT | 038110 | 031820 | - |
| 005250 | 100 µL | ✓ | 50 | 25 | 0.50 | 0.20 | Bevel | 100R-GT | 038110 | 031825 | - |
| 006250 | 250 µL | ✓ | 50 | 25 | 0.50 | 0.20 | Bevel | 250R-GT | 038110 | 031830 | - |
| 007250 | 500 µL | ✓ | 50 | 25 | 0.50 | 0.20 | Bevel | 500R-GT | 038110 | 031835 | - |
| Guided Plunger | | | | | | | | | | | |
| 002455 | 10 µL | ✓ | 50 | 26 | 0.47 | 0.11 | Bevel | 10R-GP-GT | 037110 | 031805 | - |
| On-Column | | | | | | | | | | | |
| 002500 | 10 µL | ✓ | 75 | - | 0.17 | 0.11 | On-Column | 10R-GT-OC-CE | 037675 | 031811 | - |
| Fixed Luer Tip | | | | | | | | | | | |
| 004229 | 50 µL | ✓ | - | - | - | - | - | 50F-LT-GT | - | 031820 | - |
| 005229 | 100 µL | ✓ | - | - | - | - | - | 100F-LT-GT | - | 031825 | - |
| 006229 | 250 µL | ✓ | - | - | - | - | - | 250F-LT-GT | - | 031830 | - |
| 007229 | 500 µL | ✓ | - | - | - | - | - | 500F-LT-GT | - | 031835 | - |
| Fixed Luer Lock | | | | | | | | | | | |
| 004230 | 50 µL | ✓ | - | - | - | - | - | 50F-LL-GT | - | 031820 | - |
| 005230 | 100 µL | ✓ | - | - | - | - | - | 100F-LL-GT | - | 031825 | - |
| 006230 | 250 µL | ✓ | - | - | - | - | - | 250F-LL-GT | - | 031830 | - |
| 007230 | 500 µL | ✓ | - | - | - | - | - | 500F-LL-GT | - | 031835 | - |

General Purpose Manual Syringes



General Purpose Manual Syringes | 10 - 500 µL PTFE Tipped Plunger



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SPECIFICATIONS

Accuracy and Reproducibility
± 1 % (dispensed volume)

Borosilicate Glass Barrel OD
1 mL = 9 mm, 2.5 mL = 11 mm, 5 mL = 14 mm,
10 mL = 18 mm, 25 mL = 27 mm, 50 mL = 32.8 mm,
100 mL = 40.8 mm

Scale Length
1 – 25 mL = 60 mm, 50 mL = 84.2 mm
100 mL = 104 mm

Thread in Plunger Stem
6-32 UNC

International Standards Traceability

General Purpose Manual Syringes | 1 - 100 mL PTFE Tipped Plunger Also Suitable for Syringe Pumps and Dispensers

| Syringe Part No. | Syringe Volume | PTFE Tipped Plunger | Needle Length (mm) | Needle Gauge | Needle OD (mm) | Needle ID (mm) | Needle Tip | Syringe Code | Replacement Needle Part No. | Replacement Plunger Part No. |
|----------------------------|----------------|---------------------|--------------------|--------------|----------------|----------------|------------|--------------|-----------------------------|------------------------------|
| Fixed Needle | | | | | | | | | | |
| 008102 | 1 mL | ✓ | 50 | 22 | 0.72 | 0.37 | Bevel | 1MDF-GT | - | 0318441 |
| 008502 | 2.5 mL | ✓ | 50 | 22 | 0.72 | 0.37 | Bevel | 2.5MDF-GT | - | 031852 |
| Removable Needle | | | | | | | | | | |
| 008100* | 1 mL | ✓ | 50 | 23 | 0.63 | 0.32 | Bevel | 1MR-GT | 039110 | 031842 |
| 008500 | 2.5 mL | ✓ | 50 | 23 | 0.63 | 0.32 | Bevel | 2.5MDR-GT | 039110 | 031852 |
| 008700 | 5 mL | ✓ | 50 | 23 | 0.63 | 0.32 | Bevel | 5MDR-GT | 031516 | 031856 |
| 008900 | 10 mL | ✓ | 50 | 23 | 0.63 | 0.32 | Bevel | 10MDR-GT | 031516 | 031862 |
| Fixed Luer Tip | | | | | | | | | | |
| 008020* | 1.0 mL | ✓ | - | - | - | - | Luer Tip | 1MF-LT-GT | - | 031842 |
| 008420 | 2.5 mL | ✓ | - | - | - | - | Luer Tip | 2.5MDF-LT-GT | - | 031852 |
| Fixed Luer Lock | | | | | | | | | | |
| 008025 | 1.0 mL | ✓ | - | - | - | - | Luer Lock | 1MDF-LL-GT | - | 0318441 |
| 008425 | 2.5 mL | ✓ | - | - | - | - | Luer Lock | 2.5MDF-LL-GT | - | 031852 |
| 008762 | 5 mL | ✓ | - | - | - | - | Luer Lock | 5MDF-LL-GT | - | 0318562 |
| 008962 | 10 mL | ✓ | - | - | - | - | Luer Lock | 10MDF-LL-GT | - | 031864 |
| 009463 | 25 mL | ✓ | - | - | - | - | Luer Lock | 25MDF-LL-GT | - | 031874 |
| Removable Luer Lock | | | | | | | | | | |
| 008760 | 5 mL | ✓ | - | - | - | - | Luer Lock | 5MDR-LL-GT | - | 031856 |
| 008960 | 10 mL | ✓ | - | - | - | - | Luer Lock | 10MDR-LL-GT | - | 031862 |
| 009462 | 25 mL | ✓ | - | - | - | - | Luer Lock | 25MR-LL-GT | - | 031870 |
| 009660* | 50 mL | ✓ | - | - | - | - | Luer Lock | 50MR-LL-GT | - | 0312170 |
| 009760* | 100 mL | ✓ | - | - | - | - | Luer Lock | 100MR-LL-GT | - | 0312176 |

* No thread in plunger stem of syringe part numbers 008100, 008020, 009660 and 009760.



Special Purpose Syringes

SPECIFICATIONS

Accuracy and Reproducibility
± 1 % (dispensed volume)

Borosilicate Glass Barrel Outer Diameter (OD)
See table under 'How to choose your product'.

Scale Length
60 mm

International Standards Traceability

Special Purpose Syringes | MEPS™

MEPS™ – Micro Extraction by Packed Sorbent

MEPS™ (Patent Pending) performs the same function as SPE, namely the purification or speciation of samples, but with some significant advantages:

- MEPS™ can be a fully automated one step extraction and injection process – eliminate all extra steps between sample preparation and sample injection.
- MEPS™ works with much smaller samples (as small as 3.6 µL) than full scale SPE.
- Reduce buffer and solvent volume from milliliters to microliters.
- MEPS™ is applicable to GC and LC.
- Reduce sample handling times – from hours to minutes.
- Significantly increases your sample throughput – up to 20 x faster than SPME, 40 x faster than SPE and 100 x faster than SBSE.
- Available in a variety of common SPE phases.
- Cost effective sample preparation compared to current techniques.

Sample Size

Sample volumes as small as 3.6 µL can be used or larger samples, 1 mL or more, may be concentrated by taking multiple aliquots of 100 µL or 250 µL.

Reusable

Typical Barrel-Insert-Needle (BIN) cartridge life is conservatively about 20-100 samples but actual life is dependent on the sample matrix. The small quantity of phase in the MEPS™ BIN can be easily and effectively washed between samples which removes the possibility of carry-over. This process simply is not practical on conventional SPE devices.

Flexible and Easy to Use

The MEPS™ BIN is easily installed into the syringe housing and then secured by the green front locking nut. The dimensions of the sorbent bed ensure that the sorbent performance remains identical to conventional SPE devices used for extraction of similar samples the BIN cartridge contains ~3 mg of phase.

Sample preparation for complex biological samples is readily adapted to MEPS™ and reduces the volume of sample and reagents required for extraction when compared with conventional SPE and other "micro extraction procedures".

The MEPS™ approach to sample preparation is suitable for reversed phases, normal phases, mixed mode and ion exchange chemistries. Because MEPS™ BINs can be used for sample volumes as small as 3.6 µL it makes them particularly well suited to on-line use with LC-MS analysis of volume limited samples.

How to Choose Your Product

Choose your MEPS™ syringe

The current range of syringes may be used manually or in CTC Analytics, HTA 300APlus and Varian 8400 auto-injectors. MEPS™ syringes are supplied without a needle.

| Part No. | Syringe Volume (µL) | PTFE Tipped Plunger | Description | Syringe Scale Length (mm) | Syringe Barrel OD (mm) | Replacement Plunger |
|----------|---------------------|---------------------|---|---------------------------|------------------------|---------------------|
| 005291 | 100 | ✓ | CTC Analytics, HTA 300APlus and Varian 8400 systems | 60 | 6.7 | 031826 |
| 006291 | 250 | ✓ | HTA 300APlus and Varian 8400 systems | 60 | 6.7 | 031831 |
| 006292 | 250 | ✓ | CTC Analytics systems | 60 | 7.8 | 0318301 |



Choose your MEPS™ BINs

MEPS™ BINs are available in needle styles to suit LC and GC applications. Needles are packed in a sealed blister pack of 5 needles to ensure their integrity. MEPS™ BINs are available in a variety of common SPE phases. Individual labelling of each BIN ensures the use of the correct stationary phase for each extraction.

| FOR GC APPLICATIONS (all needles are 23 gauge (0.63 mm OD), 50 mm in length and cone tipped) | | |
|--|---|-----------|
| Part No. | BIN Phase | Pack Size |
| MEPS™ BIN for HTA 300APlus, Varian 8400 and 100 µL CTC Analytics Systems (for use with MEPS™ syringe P/N 005291 and P/N 006291) | | |
| 2900101 | C18 | 5 |
| 2900102 | Silica | 5 |
| 2900103 | C8+SCX | 5 |
| 2900104 | C2 | 5 |
| 2900106 | C8 | 5 |
| 2900105 | Development kit (contains 1 each of C18, C8, C2, SILICA and C8+SCX) | 5 |
| MEPS™ BIN for CTC Analytics Systems using 250 µL Syringes (for use with MEPS™ syringe P/N. 006292) | | |
| 2900301 | C18 | 5 |
| 2900302 | Silica | 5 |
| 2900303 | C8+SCX | 5 |
| 2900304 | C2 | 5 |
| 2900306 | C8 | 5 |
| 2900305 | Development kit (contains 1 each of C18, C8, C2, SILICA and C8+SCX) | 5 |

| FOR LC APPLICATIONS (all needles are 22 gauge (0.72 mm OD), 50 mm in length and LC tipped) | | |
|---|---|-----------|
| Part No. | BIN Phase | Pack Size |
| MEPS™ BIN for HTA 300APlus, Varian 8400 and 100 µL CTC Analytics systems (for use with MEPS syringe part no.s 005291 and 006291) | | |
| 2900401 | C18 | 5 |
| 2900402 | Silica | 5 |
| 2900403 | C8+SCX | 5 |
| 2900404 | C2 | 5 |
| 2900406 | C8 | 5 |
| 2900408 | SCX | 5 |
| 2900409 | SAX | 5 |
| 2900405 | Development kit (contains 1 each of C18, C8, C2, SILICA and C8+SCX) | 5 |
| MEPS™ BIN for CTC Analytics systems using 250 µL syringes (for use with MEPS syringe part no. 006292) | | |
| 2900501 | C18 | 5 |
| 2900502 | Silica | 5 |
| 2900503 | C8+SCX | 5 |
| 2900504 | C2 | 5 |
| 2900506 | C8 | 5 |
| 2900508 | SCX | 5 |
| 2900509 | SAX | 5 |
| 2900505 | Development kit (contains 1 each of C18, C8, C2, SILICA and C8+SCX) | 5 |

Special Purpose Syringes





SPECIFICATIONS

Accuracy and Reproducibility
 0.5 μL = $\pm 2\%$, 5 μL and 10 μL = $\pm 1\%$ (dispensed volume)

Borosilicate Glass Barrel Outer Diameter (OD)
 0.5 μL = 8 mm, 5 μL and 10 μL = 6.5 mm

Scale Length
 0.5 μL = 63.5 mm, 5 μL and 10 μL = 54.1 mm

International Standards Traceability

Special Purpose Syringes | On-Column

A range of popular on-column syringes are available for general purpose applications. An extended range of instrument specific syringes is also available for most common on-column inlets.

When selecting an on-column syringe, the needle Outside Diameter (OD) must be smaller than the Inside Diameter (ID) of the capillary column it will be used with. Care must also be taken to select the correct needle length to suit the on-column injector. Wherever possible, a sheathed needle should be used for maximum needle strength and protection.

Two types of needles are offered:

- All fused silica or all stainless steel.
- Sheathed fused silica or sheathed stainless steel.

Fused silica needles are coated with polyimide and should not be operated above 360 °C.



General On-Column Syringes

| Syringe Part No. | Syringe Volume | Needle Length (mm) | Needle Gauge | Needle OD (mm) | Needle ID (mm) | Needle Material | Syringe Code | Replacement Needle Part No. |
|------------------|----------------|--------------------|--------------|----------------|----------------|--------------------------|-----------------|-----------------------------|
| 000372 | 0.5 µL | 100 | - | 0.23 | 0.1 | Sheathed Stainless Steel | 0.5BR-OC-100S | 033610* |
| 000376 | 0.5 µL | 70 | 26 | 0.47 | 0.1 | Stainless Steel | 0.5BR-OC-7/0.47 | 033630* |
| 000380 | 0.5 µL | 75 | - | 0.23 | 0.1 | Stainless Steel | 0.5BR-OC-CE-7.5 | 033620* |
| 001552 | 5 µL | 100 | - | 0.17 | 0.1 | Silica | 5R-OC-100VS | 036610 |
| 001554 | 5 µL | 100 | - | 0.17 | 0.1 | Sheathed Silica | 5R-OC-100SVS | 036635 |
| 002520 | 10 µL | 100 | - | 0.17 | 0.1 | Silica | 10R-OC-100VS | 037610 |

* Plunger and needle replacement kits.

Expert Tip :

Please note the On-Column Syringes are manual syringes with needle specifications to suit specific instruments.



Special Purpose Syringes

Instrument Specific On-Column Syringes

| Syringe Part No. | Syringe Volume | PTFE Tipped Plunger | Needle Length (mm) | Needle OD (mm) | Needle ID (mm) | Needle Material | Syringe Code | Replacement Needle Part No. | Replacement Plunger Part No. |
|--------------------------------|----------------|---------------------|--------------------|----------------|----------------|--------------------------|-----------------|-----------------------------|------------------------------|
| Agilent Instruments | | | | | | | | | |
| 001585 | 5 µL | - | 50 | 0.19 | 0.11 | Stainless Steel | 5R-OC-5/0.19 | 036701 | - |
| 001587 | 5 µL | - | 50 | 0.23 | 0.11 | Stainless Steel | 5R-OC-5/0.23 | 036703 | - |
| Varian Instruments | | | | | | | | | |
| 001565 | 5 µL | - | 107 | 0.19 | 0.11 | Sheathed Stainless Steel | 5R-OC-VAS | 036651 | - |
| PerkinElmer Instruments | | | | | | | | | |
| 001552 | 5 µL | - | 100 | 0.17 | 0.1 | Silica | 5R-OC-100VS | 036610 | - |
| Carlo Erba | | | | | | | | | |
| 000380 | 0.5 µL | - | 75 | 0.23 | 0.1 | Stainless Steel | 0.5BR-OC-CE-7.5 | 033620* | - |
| 001560 | 5 µL | - | 75 | 0.23 | 0.11 | Stainless Steel | 5R-OC-CE | 036675 | - |
| 001585 | 5 µL | - | 50 | 0.19 | 0.11 | Stainless Steel | 5R-OC-5/0.19 | 036701 | - |
| 001587 | 5 µL | - | 50 | 0.23 | 0.11 | Stainless Steel | 5R-OC-5/0.23 | 036703 | - |
| 002500 | 10 µL | ✓ | 75 | 0.23 | 0.11 | Stainless Steel | 10R-GT-OC-CE | 037675 | 031811 |
| SGE (OCI-5) | | | | | | | | | |
| 001570 | 5 µL | - | 95 | 0.27 | 0.11 | Sheathed Stainless Steel | 5R-OCI5-0.27 | 036685 | - |

* Plunger and needle replacement kits.



Special Purpose Syringes | On-Column



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SPECIFICATIONS

Accuracy and Reproducibility
± 2 % (dispensed volume)

Borosilicate Glass Barrel Outer Diameter (OD)
0.5 L = 70 mm, 1 L = 100 mm and 2 L = 130 mm

Scale Length
0.5 L = 179.2 mm, 1 L = 159.1 mm and 2 L = 179 mm

International Standards Traceability

Special Purpose Syringes | 0.5 L to 2 L Jumbo

- Designed for holding and dispensing large volumes of gas.
- Heavy duty acrylic barrels.
- Easy access to sample for the addition of standards or removal of subsample via secondary port.
- Plunger stem is removable for ease of transportation and storage.
- Ideal for calibration of medical equipment such as respirators and spirometers, and for stack and air sampling.
- Compatible with a range of fittings; has a 7/16" UNEF thread and designed to be used with Luer Lock needles and fittings. For the range of SGE Luer Lock needles refer to page 74.
- Refer to page 39 and 41 for the range of valves suitable for use with these syringes.



| Syringe Part No. | Syringe Volume | Barrel Length (mm) | Barrel OD (mm) | Major Scale Divisions (mL) | Minor Scale Divisions (mL) | Syringe Code | Replacement Plunger O-ring Part No. |
|------------------|----------------|--------------------|----------------|----------------------------|----------------------------|---------------|-------------------------------------|
| 009910 | 0.5 L | 245 | 70 | 50 | 25 | 500MAR-LL-GT | 032527 |
| 009920 | 1 L | 245 | 100 | 100 | 50 | 1000MAR-LL-GT | 032532 |
| 009930 | 2 L | 245 | 130 | 200 | 100 | 2000MAR-LL-GT | 032537 |

Jumbo Syringe Accessories

| Part No. | Description |
|----------|---------------------------------|
| 031902 | Luer Lock Adaptor |
| 032044 | Cover Nut |
| 041822 | Sealing CS Septa |
| 030930 | MSV Syringe Valve Connector |
| 030200 | I flow Two Port Standard Valve* |

*Other valve configurations available, see pages 39 and 41.

SPECIFICATIONS

Accuracy and Reproducibility
 $\pm 1\%$ (dispensed volume)

Borosilicate Glass Barrel Outer Diameter (OD)
 8 mm

Scale Length
 5 μL = 27.05 mm and 15 μL = 36 mm

International Standards Traceability

Special Purpose Syringes | Microsyringe/Pipette

- Two different syringe volumes allow the transfer of samples from 0.2 to 15 μL .
- Only the PTFE disposable tip contacts the sample, eliminating sample cross-contamination.
- Inert, non-wetting PTFE tips are easily replaced.
- Special "bulb" needle tip for easy and firm attachment of the PTFE tips.
- The spring loaded repeating adaptor can be preset to any volume and ensures excellent reproducibility.

| Syringe Part No. | Syringe Volume | Description | Replacement PTFE tubes Part No. | Replacement Needle Part No. |
|------------------|------------------|-----------------------------------|---------------------------------|-----------------------------|
| 001496 | 5 μL | 1 Syringe and 10 Spare PTFE Tubes | 031512 | 036953 |
| 002996 | 15 μL | 1 Syringe and 10 Spare PTFE Tubes | 031513 | 037995 |

Replacement PTFE tubes are supplied in packets of 100. Replacement needles are supplied in packets of 2.



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SPECIFICATIONS

Accuracy and Reproducibility
± 1 % (dispensed volume)

Borosilicate Glass Barrel Outer Diameter (OD)
8 mm

Scale Length
60 mm

International Standards Traceability

Special Purpose Syringes | Gas Sealing Gland

- Designed to avoid cold flow deformation and leakage associated with PTFE tipped plungers used under certain conditions.
- A gas tight, high pressure PTFE seal is used at the plunger end of the syringe barrel.

| Syringe Part No. | Syringe Volume | Needle Length (mm) | Needle Gauge | Needle OD (mm) | Needle ID (mm) | Needle Tip | Syringe Code | Replacement Needle Part No. |
|---------------------|----------------|--------------------|--------------|----------------|----------------|------------|--------------|-----------------------------|
| Fixed Needle | | | | | | | | |
| 003600 | 25 µL | 50 | 25 | 0.5 | 0.2 | Bevel | 25F-GSG | - |
| 004600 | 50 µL | 50 | 25 | 0.5 | 0.2 | Bevel | 50F-GSG | - |
| 005600 | 100 µL | 50 | 25 | 0.5 | 0.2 | Bevel | 100F-GSG | - |
| 006600 | 250 µL | 50 | 25 | 0.5 | 0.2 | Bevel | 250F-GSG | - |
| 007600 | 500 µL | 50 | 25 | 0.5 | 0.2 | Bevel | 500F-GSG | - |

| Syringe Part No. | Syringe Volume | Needle Length (mm) | Needle Gauge | Needle OD (mm) | Needle ID (mm) | Needle Tip | Syringe Code | Replacement Needle Part No. |
|-------------------------|----------------|--------------------|--------------|----------------|----------------|------------|--------------|-----------------------------|
| Removable Needle | | | | | | | | |
| 003610 | 25 µL | 50 | 25 | 0.5 | 0.2 | Bevel | 25R-GSG | 038110 |
| 004610 | 50 µL | 50 | 25 | 0.5 | 0.2 | Bevel | 50R-GSG | 038110 |
| 005610 | 100 µL | 50 | 25 | 0.5 | 0.2 | Bevel | 100R-GSG | 038110 |
| 006610 | 250 µL | 50 | 25 | 0.5 | 0.2 | Bevel | 250R-GSG | 038110 |
| 007610 | 500 µL | 50 | 25 | 0.5 | 0.2 | Bevel | 500R-GSG | 038110 |

SPECIFICATIONS

Accuracy and Reproducibility
± 1 % (dispensed volume)

Borosilicate Glass Barrel Outer Diameter (OD)
5 mL = 14 mm and 10 mL = 18mm

Scale Length
60 mm

International Standards Traceability



Special Purpose Syringes | Headspace/Soil Gas

| Syringe Part No. | Syringe Volume | Probe Length (mm) | Needle Gauge | Probe OD (mm) | Probe ID (mm) | Needle Tip | Syringe Code | Spare Probes Pkt 1 | Spare Needles Pkt 5 | Replacement Plunger Part No. |
|----------------------------|----------------|-------------------|--------------|---------------|---------------|------------|--------------|--------------------|---------------------|------------------------------|
| 008775* | 5 mL | 60 | - | 1.587 | 0.75 | - | 5MDR-HS-V | 031571 | 039802 | 031857 |
| 008975* | 10 mL | 60 | - | 1.587 | 0.75 | - | 10MDR-HSV | 031571 | 039803 | 031862 |
| Replacement Probes | | | | | | | | | | |
| 031571 | - | 60 | - | 1.587 | 0.75 | Side Hole | - | - | - | - |
| Replacement Needles | | | | | | | | | | |
| 039802 | - | 50 | 23 | 0.63 | 0.32 | Bevel | - | - | - | - |

* Syringe supplied with probe and needle.



Special Purpose Syringes



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SPECIFICATIONS

Accuracy and Reproducibility
± 1 % (dispensed volume)

Borosilicate Glass Barrel Outer Diameter (OD)
9 mm

Scale Length
60 mm

International Standards Traceability

Special Purpose Syringes | High Pressure

- Fitted with a gas tight ON/OFF valve.
- Designed for high pressure gas sampling – rated to 500 psi/1700 kPa.

| Syringe Part No. | Syringe Volume | Needle Length (mm) | Needle Gauge | Needle OD (mm) | Needle ID (mm) | Needle Tip | Syringe Code | Replacement Needle Part No. |
|------------------|----------------|--------------------|--------------|----------------|----------------|------------|---------------|-----------------------------|
| 008170 | 1 mL | 70 | 23 | 0.63 | 0.37 | Bevel | 1M-BP | 0315720 |
| 008171 | 1 mL | 70 | 23 | 0.63 | 0.37 | Side Hole | 1M-BP (0.36)H | 0315722 |



Syringe Valves

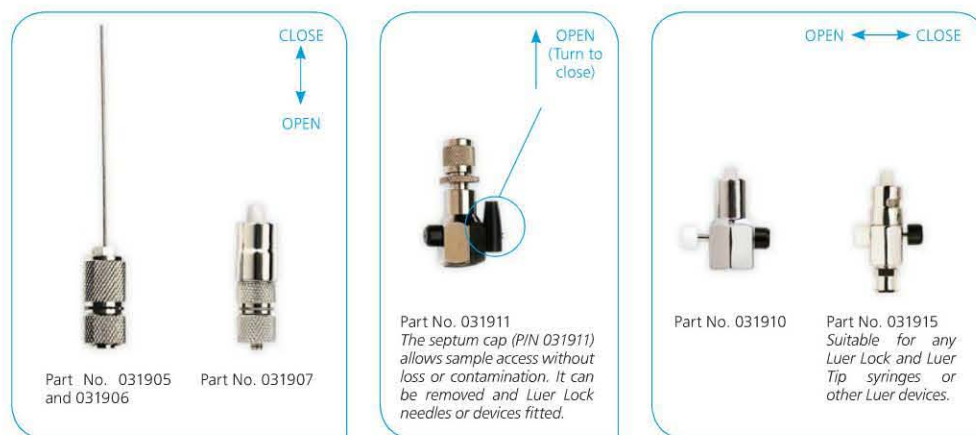


Syringe Valves

Syringe valves are ideal for sample storage and transportation or to pressurize sample prior to injection.

SGE offers two basic types of manually operated syringe valves; push-pull for smaller volumes (25 μ L – 2.5 mL) and push-button for larger volumes (5 mL – 2 L).

SGE Luer Tip, Luer Lock and removable needle syringes can be fitted with valves. The valve allows fluid to be stored in the syringe without contamination.



Expert Tip :
With the valve in closed position it is possible to move the plunger to pre-pressurize the sample.



| Valve Part No. | Description | Syringe Volume | Valve Code | Replacement Needle Part No. |
|----------------|--|---------------------|----------------|-----------------------------|
| 031905* | Push-pull Valve with Replaceable Needle | 25 μ L - 2.5 mL | V25/2.5M-0.63C | 038810 |
| 031906* | Push-pull Valve with Replaceable Needle | 25 μ L - 2.5 mL | V25/2.5M-0.47C | 038820 |
| 031907 | Push-pull Valve with Luer Lock | 25 μ L - 2.5 mL | VLL25/2.5M | - |
| 031910 | Push-button Valve with Luer Lock or Removable Needle | 5 mL - 2 L | VLLMA | - |
| 031911 | Septum Valve | 5 mL - 2 L | VLLMA5/2000 | - |
| 031915 | Push-button Valve with Luer Lock | 50 μ L - 2 L | SLLV | - |

* 50 mm, 0.63 mm OD cone tip needle. * 50 mm, 0.47 mm OD cone tip needle.



Syringes Pre-fitted with Syringe Valves

| Syringe Part No. | Syringe Volume | PTFE Tipped Plunger | Syringe Code | Replacement Needle Part No. | Replacement Plunger Part No. | Replacement Valve Part No. |
|--|----------------|---------------------|----------------|-----------------------------|------------------------------|----------------------------|
| Pre-fitted with Removable Needle and Valve | | | | | | |
| 004279 | 50 µL | ✓ | 50R-V-GT | 038810 | 031820 | 031905 |
| 005279 | 100 µL | ✓ | 100R-V-GT | 038810 | 031825 | 031905 |
| 006279 | 250 µL | ✓ | 250R-V-GT | 038810 | 031830 | 031905 |
| 007279 | 500 µL | ✓ | 500R-V-GT | 038810 | 031835 | 031905 |
| 008110 | 1 mL | ✓ | 1MR-V-GT | 038810 | 031842 | 031905 |
| 008510 | 2.5 mL | ✓ | 2.5MDR-V-GT | 038810 | 031852 | 031905 |
| Pre-fitted with Luer Lock Valve | | | | | | |
| 008160 | 1 mL | ✓ | 1MR-VLL-GT | - | 031842 | 031907 |
| 008560 | 2.5 mL | ✓ | 2.5MDR-VLL-GT | - | 031852 | 031907 |
| 008770 | 5 mL | ✓ | 5MDR-VLLMA-GT | - | 031856 | 031910 |
| 008970 | 10 mL | ✓ | 10MDR-VLLMA-GT | - | 031862 | 031910 |
| 009472 | 25 mL | ✓ | 25MDR-VLLMA-GT | - | 031870 | 031910 |
| 009670 | 50 mL | ✓ | 50MR-VLLMA-GT | - | 0312170 | 031910 |
| 009770 | 100 mL | ✓ | 100MR-VLLMA-GT | - | 0312176 | 031910 |

Syringe Valves

Valve Needles

| Valve Needle Part No. | Needle Length (mm) | Needle Gauge | Needle OD (mm) | Needle ID (mm) | Needle Tip | Pack Size |
|------------------------------------|--------------------|--------------|----------------|----------------|----------------|-----------|
| For use with P/N 031905 and 031906 | | | | | | |
| 038810 | 50 | 23 | 0.63 | 0.20 | Cone | 1 |
| 038815 | 50 | 23 | 0.63 | 0.20 | Side Hole/Dome | 1 |
| 038820 | 50 | 26 | 0.47 | 0.24 | Cone | 1 |

See page 74 for the complete range of Luer Lock needles suitable for use on Luer Lock valves.



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SPECIFICATIONS

Flow Path: 1.5 mm (0.059")
 Threaded Ports: 1/4-28 UNF
 Pressure Rating: 120 psi
 Temperature Rating: 10-120 °C
 Standard Weight: 58 g
 Bulkhead Weight: 65 g
 Breakaway Torque: 0.15 Nm
 Lifetime Testing: ≥ 8,000 cycles



Syringe Valves | SealTight™

SealTight™ low pressure valves are designed for improved valve seal life. SGE valves have overcome the problem of leakage by reducing perpendicular rotor force, and optimizing the rotor face union, thereby improving PTFE plug integrity. The end result is a longer life seal. The SealTight™ Valves are completely inert and enable connection of a variety of fittings. Valves are available in standard (SV) or bulkhead panel mounting connection (SVP) which can be easily mounted to a dispenser. Other valves, including custom OEM configurations, are available.

ADVANTAGES

- Extended life resulting from new face rotor seal technology, making valves cost effective and reliable.
- Inert PTFE and Kel-F® flow path compatible with a variety of solvents and sample matrices.
- Easily reassembled by hand: no need to torque it up like other valves.
- Screw thread connection directly onto 5 mL - 2 L syringes using valve connector (Part No. 030930) for convenience.

| Part No. | Description | Mounting | Code |
|----------------------------|---------------|----------|----------|
| Distribution Valves | | | |
| 030025 | 2-way L | Bulkhead | SVP-2L/D |
| 030040 | 3-way T | Standard | SV-3T/D |
| 030045 | 3-way T | Bulkhead | SVP-3T/D |
| Port Valves | | | |
| 030200 | I flow 2 port | Standard | SV-2I/I |
| 030240 | T flow 3 port | Standard | SV-3T/T |
| 030245 | T flow 3 port | Bulkhead | SVP-3T/T |
| 030260 | L flow 3 port | Standard | SV-3T/L |
| 030265 | L flow 3 port | Bulkhead | SVP-3T/L |



2-way L



3-way T



I flow 2 port



T flow 3 port



L flow 3 port

APPLICATIONS

SealTight™ valves offer the versatility to be utilized in a variety of industries. They can be added to the following systems:

- Dispensers.
- Diluters.
- Flow path variation.
- Biocompatible, suitable for use in pathology equipment.

SealTight™ Valve Fittings and Connectors

| Part No. | Description | Code |
|----------|---|------------|
| 030900 | Kel-F Female Luer | KSV-FL |
| 030905 | Kel-F Male Luer | KSV-LT |
| 030920 | Metal Thread Male Luer Lock - PTFE Flow Path | MSV-LL |
| 030930 | Syringe - Valve Connector (fits 5 mL - 2 L syringes) PTFE Flow Path | MSV-SYR |
| 030950 | Flangeless Tubing Connector for 1/16" Tubing (includes 2 ferrules) | MSV-1/16 |
| 030952 | Flangeless Tubing Connector for 1/8" Tubing (includes 2 ferrules) | MSV-1/8FLT |
| 0730018 | Replacement Ferrules for 1/16" Tubing | PF16-16 |
| 0730019 | Replacement Ferrules for 1/8" Tubing | PF8-8 |

GC Autosampler Syringes

SPECIFICATIONS

Accuracy and Reproducibility
 $\pm 1\%$ (dispensed volume)
 $(\pm 2\%$ for 0.5 μL and 1 μL syringes)

Borosilicate Glass Barrel Outer Diameter (OD)
0.5 μL = 6.5 mm, 1 μL = 8 mm (except P/N 000610 which is 6.5 mm)
5 μL to 250 μL = 6.5 mm

Scale Length
54.1 mm (except P/N 000610 which is 27.05 mm)

International Standards Traceability

GC Autosampler Syringes | Agilent Instruments

| Syringe Part No. | Syringe Volume | PTFE Tipped Plunger | Needle Length (mm) | Needle Gauge | Needle OD (mm) | Needle ID (mm) | Needle Tip | Syringe Code | Replacement Needle Part No. | Replacement Plunger Part No. | 6 Pack Part No. | 10 Pack Part No. | 25 Pack Part No. |
|---|-------------------|---------------------|--------------------|--------------|----------------|----------------|------------|-------------------|-----------------------------|------------------------------|-----------------|------------------|------------------|
| HP7673, 7683, 7693A and 6850ALS Fixed Needle | | | | | | | | | | | | | |
| 001800 | 5 μL | - | 42 | 26 | 0.47 | 0.11 | Cone | 5F-HP-0.47 | - | - | 001804 | - | - |
| 001810 | 5 μL | - | 42 | 23 | 0.63 | 0.11 | Cone | 5F-HP-0.63 | - | - | 001814 | - | - |
| 001821 | 5 μL | - | 42 | 23-26 | 0.63/0.47 | 0.11 | Cone | 5F-HP-0.63/0.47 | - | - | 001822 | - | - |
| 002800 | 10 μL | - | 42 | 26 | 0.47 | 0.11 | Cone | 10F-HP-0.47 | - | - | 002804 | - | - |
| 002810 | 10 μL | - | 42 | 23 | 0.63 | 0.11 | Cone | 10F-HP-0.63 | - | - | 002814 | - | 002813 |
| 002812 | 10 μL | ✓ | 42 | 23 | 0.63 | 0.11 | Cone | 10F-HP-GT-0.63 | - | 031808 | - | - | - |
| 002821 | 10 μL | - | 42 | 23-26 | 0.63/0.47 | 0.11 | Cone | 10F-HP-0.63/0.47 | - | - | 002822 | - | 002824 |
| 002826 | 10 μL | ✓ | 42 | 23-26 | 0.63/0.47 | 0.11 | Cone | 10F-HP-GT-63/47 | - | 031808 | 002827 | - | - |
| 002839 | 10 μL | - | 42 | 23 | 0.63 | 0.11 | Cone | 10F-4.2/0.63C | - | - | - | - | - |
| 003668 | 25 μL | ✓ | 42 | 23-26 | 0.63/0.47 | 0.11 | Cone | 25F-HP-GT-0.63/47 | - | 031818 | - | - | - |
| 004668 | 50 μL | ✓ | 42 | 23-26 | 0.63/0.47 | 0.11 | Cone | 50F-HP-GT-0.63/47 | - | 031822 | - | - | - |
| 005668 | 100 μL | ✓ | 42 | 23-26 | 0.63/0.47 | 0.11 | Cone | 100F-HP-GT-63/47 | - | 031823 | - | - | - |
| HP7673, 7683, 7693A and 6850ALS Fixed Needle - SuperFlex™ Flexible Plunger | | | | | | | | | | | | | |
| 002830 | 10 μL | - | 42 | 26 | 0.47 | 0.11 | Cone | 10FX-HP-0.47 | - | - | 002831 | - | - |
| 002835 | 10 μL | - | 42 | 23 | 0.63 | 0.11 | Cone | 10FX-HP-0.63 | - | - | 002838 | - | - |



| Syringe Part No. | Syringe Volume | PTFE Tipped Plunger | Needle Length (mm) | Needle Gauge | Needle OD (mm) | Needle ID (mm) | Needle Tip | Syringe Code | Replacement Needle Part No. | Replacement Plunger Part No. | 6 Pack Part No. | 10 Pack Part No. | 25 Pack Part No. |
|--|----------------|---------------------|--------------------|--------------|----------------|----------------|------------|------------------|-----------------------------|------------------------------|-----------------|------------------|------------------|
| HP7673, 7683, 7693A and 6850ALS Removable Needle | | | | | | | | | | | | | |
| 000400 | 0.5 µL | - | 42 | 26 | 0.47 | 0.1 | Cone | 0.5BR-HP-0.47 | 033708 | - | - | - | - |
| 000410 | 0.5 µL | - | 42 | 23 | 0.63 | 0.1 | Cone | 0.5BR-HP-0.63 | 033715 | - | - | - | - |
| 000415 | 0.5 µL | - | 42 | 23-26 | 0.63/0.47 | 0.1 | Cone | 0.5BR-HP-63/47 | 033730 | - | - | - | - |
| 000610 | 1 µL | - | 42 | 23 | 0.63 | 0.22 | Cone | 1BR-HP-0.63 | 034715 | - | - | - | - |
| 001805 | 5 µL | - | 42 | 26 | 0.47 | 0.11 | Cone | 5R-HP-0.47 | 036710 | - | - | - | - |
| 001815 | 5 µL | - | 42 | 23 | 0.63 | 0.11 | Cone | 5R-HP-0.63 | 036720 | - | - | - | - |
| 001825 | 5 µL | - | 42 | 23-26 | 0.63/0.47 | 0.11 | Cone | 5R-HP-0.63/0.47 | 036730 | - | - | - | - |
| 002805 | 10 µL | - | 42 | 26 | 0.47 | 0.11 | Cone | 10R-HP-0.47 | 037715 | - | - | - | - |
| 002815 | 10 µL | - | 42 | 23 | 0.63 | 0.11 | Cone | 10R-HP-0.63 | 037717 | - | - | - | - |
| 002817 | 10 µL | ✓ | 42 | 26 | 0.47 | 0.11 | Cone | 10R-HP-GT-0.47 | 037715 | 031809 | - | - | - |
| 002818 | 10 µL | ✓ | 42 | 23 | 0.63 | 0.11 | Cone | 10R-HP-GT-0.63 | 037717 | 031809 | - | 002820 | - |
| 002825 | 10 µL | - | 42 | 23-26 | 0.63/0.47 | 0.11 | Cone | 10R-HP-0.63/0.47 | 037730 | - | - | - | - |
| 002829 | 10 µL | ✓ | 42 | 23-26 | 0.63/0.47 | 0.11 | Cone | 10R-HP-GT-63/47 | 037730 | 031809 | - | - | - |
| 003665 | 25 µL | - | 42 | 23 | 0.63 | 0.2 | Cone | 25R-HP-0.63 | 038717 | - | - | - | - |
| 004665 | 50 µL | - | 42 | 23 | 0.63 | 0.24 | Cone | 50R-HP-0.63 | 038717 | - | - | - | - |
| 005665 | 100 µL | - | 42 | 23 | 0.63 | 0.24 | Cone | 100R-HP-0.63 | 038717 | - | - | - | - |
| 006665 | 250 µL | - | 42 | 23 | 0.63 | 0.24 | Cone | 250R-HP-0.63 | 038717 | - | - | - | - |
| HP7673, 7683, 7693A and 6850ALS Removable Needle Syringes - SuperFlex™ Flexible Plunger | | | | | | | | | | | | | |
| 002844 | 10 µL | - | 42 | 26 | 0.47 | 0.11 | Cone | 10RX-HP-0.47 | 037715 | - | - | - | - |
| 002845 | 10 µL | - | 42 | 23 | 0.63 | 0.11 | Cone | 10RX-HP-0.63 | 037717 | - | - | - | - |
| HP7670 Removable Needle | | | | | | | | | | | | | |
| 000585 | 1 µL | - | 50 | 23 | 0.63 | 0.15 | Bevel | 1BR-F5 | 034705 | - | - | - | - |
| HP7671A-7672 Removable Needle | | | | | | | | | | | | | |
| 000587 | 1 µL | - | 56 | 23 | 0.63 | 0.15 | Bevel | 1BR-FV-56 | 034710 | - | - | - | - |

GC Autosampler
Syringes





Specifications of the following syringes are matched to CTC holders to ensure proper fit and reliable functioning.

SPECIFICATIONS

Accuracy and Reproducibility
 $\pm 1\%$ (dispensed volume)
 $(\pm 2\%$ for 0.5 μL and 1 μL syringes)

Borosilicate Glass Barrel Outer Diameter (OD)
 0.5 μL to 100 μL = 6.5 mm, 250 μL and 500 μL = 8 mm, 1 mL = 7.6 mm, 2.5 mL = 9.7 mm

Scale Length
 0.5 μL = 27.05 mm, 5 μL and 10 μL = 54.1 mm, 25 μL to 2.5 mL = 60 mm

International Standards Traceability

GC Autosampler Syringes | CTC Analytics

| Syringe Part No. | Syringe Volume | PTFE Tipped Plunger | Needle Length (mm) | Needle Gauge | Needle OD (mm) | Needle ID (mm) | Needle Tip | Syringe Code | Replacement Plunger Part No. | 6 Pack Part No. |
|---------------------|-------------------|---------------------|--------------------|--------------|----------------|----------------|------------|-------------------------|------------------------------|-----------------|
| Fixed Needle | | | | | | | | | | |
| 001700 | 5 μL | - | 50 | 26 | 0.47 | 0.1 | Cone | 5F-CTC-5/0.47C | - | - |
| 001981 | 5 μL | - | 50 | 23 | 0.63 | 0.11 | Cone | 5F-C/T-5/0.63C | - | - |
| 001982 | 5 μL | - | 50 | 26 | 0.47 | 0.11 | Cone | 5F-C/T-5/0.47C | - | - |
| 002977 | 10 μL | ✓ | 50 | 26 | 0.47 | 0.11 | Cone | 10F-C/T-GT-5/0.47C | 031803 | 002976 |
| 002700 | 10 μL | - | 50 | 26 | 0.47 | 0.15 | Cone | 10F-CTC-5/0.47C | - | - |
| 002705 | 10 μL | - | 50 | 26 | 0.47 | 0.11 | Bevel | 10F-CTC-5/0.47BV | - | - |
| 002981 | 10 μL | - | 50 | 23 | 0.63 | 0.11 | Cone | 10F-C/T-5/0.63C | - | 002971 |
| 002983 | 10 μL | - | 50 | 22 | 0.72 | 0.175 | Side Hole | 10F-CTC-GT-5/0.72H | - | - |
| 002987 | 10 μL | ✓ | 50 | 23 | 0.63 | 0.11 | Cone | 10F-C/T-GT-5/0.63C | 031803 | 002972 |
| 003700 | 25 μL | ✓ | 50 | 26 | 0.47 | 0.11 | Cone | 25F-CTC-GT-5/0.47C | 0318922 | - |
| 003980 | 25 μL | - | 50 | 26 | 0.47 | 0.15 | Cone | 25F-C/T-0.47C | - | - |
| 003987 | 25 μL | ✓ | 50 | 23 | 0.63 | 0.24 | Cone | 25F-C/T-GT-0.63C | 031817 | - |
| 005700 | 100 μL | ✓ | 50 | 26 | 0.47 | 0.11 | Cone | 100F-CTC-GT-5/0.47C | 031826 | - |
| 005335 | 100 μL | ✓ | 50 | 23 | 0.63 | 0.24 | Cone | 100F-C/T-GT-0.63C | 031826 | - |
| 006700 | 250 μL | ✓ | 50 | 26 | 0.47 | 0.25 | Cone | 250F-CTC-GT-5/0.47C | 0318926 | - |
| 007700 | 500 μL | ✓ | 50 | 26 | 0.47 | 0.25 | Cone | 500F-CTC-GT-5/0.47C | 0318928 | - |
| 008135 | 1 mL | ✓ | 56 | 26 | 0.47 | 0.15 | Side Hole | 1MF-CTC-GT-HS-5/0.47H | 0318441 | - |
| 008130 | 1 mL | ✓ | 56 | 23 | 0.63 | 0.15 | Side Hole | 1MF-CTC-GT-HS-5/0.63H | 0318441 | - |
| 008635 | 2.5 mL | ✓ | 56 | 26 | 0.47 | 0.15 | Side Hole | 2.5MF-CTC-GT-HS-5/0.47H | 0318451 | - |
| 008630 | 2.5 mL | ✓ | 56 | 23 | 0.63 | 0.15 | Side Hole | 2.5MF-CTC-GT-HS-5/0.63H | 0318451 | - |





| Syringe Part No. | Syringe Volume | PTFE Tipped Plunger | Needle Length (mm) | Needle Gauge | Needle OD (mm) | Needle ID (mm) | Needle Tip | Syringe Code | Replacement Needle Part No. | Replacement Plunger Part No. |
|-------------------------|----------------|---------------------|--------------------|--------------|----------------|----------------|------------|-----------------------|-----------------------------|------------------------------|
| Removable Needle | | | | | | | | | | |
| 000490 | 0.5 µL | - | 50 | 26 | 0.47 | 0.175 | Cone | 0.5BNR-C/T-0.47C | 033770 | - |
| 000492 | 0.5 µL | - | 50 | 23 | 0.63 | 0.15 | Cone | 0.5BNR-C/T-0.63C | 033772 | - |
| 001984 | 5 µL | - | 50 | 23 | 0.63 | 0.11 | Cone | 5R-C/T-0.63C | 036011 | - |
| 002965 | 10 µL | ✓ | 51.5 | 23 | 0.63 | 0.11 | Cone | 10R-C/T-GT-5.15/0.63C | 037013 | 0318121 |
| 002982 | 10 µL | - | 50 | 26 | 0.47 | 0.11 | Cone | 10R-C/T-5/0.47C | 037785 | - |
| 002984 | 10 µL | - | 50 | 23 | 0.63 | 0.11 | Cone | 10R-C/T-0.63C | 037787 | - |
| 002985 | 10 µL | ✓ | 50 | 26 | 0.47 | 0.11 | Cone | 10R-C/T-GT-0.47C | 037787 | 0318121 |
| 003988 | 25 µL | ✓ | 50 | 26 | 0.47 | 0.24 | Side Hole | 25R-C/T-GT-0.47H | 038749 | 031816 |
| 003989 | 25 µL | ✓ | 50 | 22 | 0.72 | 0.375 | Side Hole | 25R-C/T-GT 0.72H | 038420 | 031816 |
| 005333 | 100 µL | ✓ | 50 | 26 | 0.47 | 0.2 | Cone | 100R-C/T-GT-0.47C | 038732 | 031826 |
| 005337 | 100 µL | ✓ | 50 | 23 | 0.63 | 0.24 | Side Hole | 100R-C/T-GT-0.63H | 038736 | 031826 |

GC Autosampler Syringes



GC Autosampler Syringes | CTC Analytics Instruments



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SPECIFICATIONS

Accuracy and Reproducibility
 $\pm 1\%$ (dispensed volume)
 $(\pm 2\%$ for 0.5 μL and 1 μL syringes)

Borosilicate Glass Barrel Outer Diameter (OD)
6.5 mm

Scale Length
0.5 μL and 5 μL = 27 mm, 50 μL = 54.1 mm

International Standards Traceability

GC Autosampler Syringes | PerkinElmer Instruments

| Syringe Part No. | Syringe Volume | PTFE Tipped Plunger | Needle Length (mm) | Needle Gauge | Needle OD (mm) | Needle ID (mm) | Needle Tip | Syringe Code | Replacement Needle Part No. | Replacement Plunger Part No. |
|---|------------------|---------------------|--------------------|--------------|----------------|----------------|------------|---------------|-----------------------------|------------------------------|
| AutoSystem and Clarus 500 Fixed Needle | | | | | | | | | | |
| 001953 | 5 μL | - | 70 | 26 | 0.47 | 0.15 | Cone | 5F-PE-0.47 | - | - |
| 001954 | 5 μL | - | 70 | 23 | 0.63 | 0.15 | Cone | 5F-PE-0.63 | - | - |
| 001955 | 5 μL | ✓ | 70 | 26 | 0.47 | 0.15 | Cone | 5F-PE-GT-0.47 | - | 031807 |
| 001957 | 5 μL | ✓ | 70 | 23 | 0.63 | 0.15 | Cone | 5F-PE-GT-0.63 | - | 031807 |
| 004670 | 50 μL | - | 70 | 23 | 0.63 | 0.24 | Cone | 50F-PE-0.63 | - | - |

| Syringe Part No. | Syringe Volume | PTFE Tipped Plunger | Needle Length (mm) | Needle Gauge | Needle OD (mm) | Needle ID (mm) | Needle Tip | Syringe Code | Replacement Needle and Plunger Kit Part No. |
|---|-------------------|---------------------|--------------------|--------------|----------------|----------------|--------------|---------------|---|
| AutoSystem and Clarus 500 Removable Needle | | | | | | | | | |
| 000475 | 0.5 μL | - | 70 | 26 | 0.47 | 0.1 | Beveled Cone | 0.5BR-PE-0.47 | 033750 |
| 000478 | 0.5 μL | - | 70 | 23 | 0.63 | 0.1 | Cone | 0.5BR-PE-0.63 | 033765 |

SPECIFICATIONS

Accuracy and Reproducibility
 $\pm 1\%$ (dispensed volume)
 $(\pm 2\%$ for 0.5 μL and 1 μL syringes)

Borosilicate Glass Barrel Outer Diameter (OD)
 6.5 mm

Scale Length
 0.5 μL = 27.05 mm, 5 μL to 250 μL = 54.1 mm

International Standards Traceability



GC Autosampler Syringes | Shimadzu Instruments

| Syringe Part No. | Syringe Volume | PTFE Tipped Plunger | Needle Length (mm) | Needle Gauge | Needle OD (mm) | Needle ID (mm) | Needle Tip | Syringe Code | Replacement Needle Part No. | Replacement Plunger Part No. |
|-------------------------------|-------------------|---------------------|--------------------|--------------|----------------|----------------|------------|-----------------|-----------------------------|------------------------------|
| AOC 9 Removable Needle | | | | | | | | | | |
| 000435 | 0.5 μL | - | 50 | 26 | 0.47 | 0.1 | Cone | 0.5BR-S(9)-0.47 | 033732 | - |
| 002885 | 10 μL | - | 50 | 26 | 0.47 | 0.11 | Cone | 10R-S(9)-0.47 | 037736 | - |

| Syringe Part No. | Syringe Volume | PTFE Tipped Plunger | Needle Length (mm) | Needle Gauge | Needle OD (mm) | Needle ID (mm) | Needle Tip | Syringe Code | Replacement Needle Part No. | Replacement Plunger Part No. |
|--|-------------------|---------------------|--------------------|--------------|----------------|----------------|------------|----------------|-----------------------------|------------------------------|
| AOC 14, 17, 20 and 20i Fixed Needle | | | | | | | | | | |
| 001987 | 5 μL | - | 42 | 26 | 0.47 | 0.11 | Cone | 5F-S-0.47 | - | - |
| 001988 | 5 μL | - | 42 | 23 | 0.63 | 0.11 | Cone | 5F-S-0.63 | - | - |
| 004682 | 50 μL | - | 42 | 23 | 0.63 | 0.24 | Cone | 50F-S-0.63 | - | - |
| 006682 | 250 μL | ✓ | 42 | 23 | 0.63 | 0.24 | Cone | 250F-S-GT-0.63 | - | 031828 |



| Syringe Part No. | Syringe Volume | PTFE Tipped Plunger | Needle Length (mm) | Needle Gauge | Needle OD (mm) | Needle ID (mm) | Needle Tip | Syringe Code | Replacement Needle Part No. | Replacement Plunger Part No. |
|--|-------------------|---------------------|--------------------|--------------|----------------|----------------|------------|---------------|-----------------------------|------------------------------|
| AOC 14, 17, 20 and 20i Removable Needle | | | | | | | | | | |
| 000440 | 0.5 μL | - | 42 | 26 | 0.47 | 0.1 | Cone | 0.5BR-S-0.47 | 033738 | - |
| 000445 | 0.5 μL | - | 42 | 23 | 0.63 | 0.1 | Cone | 0.5BR-S-0.63 | 033745 | - |
| 002897 | 10 μL | - | 42 | 26 | 0.47 | 0.11 | Cone | 10R-S-0.47 | 037745 | - |
| 002898 | 10 μL | - | 42 | 23 | 0.63 | 0.11 | Cone | 10R-S-0.63 | 037747 | - |
| 002902 | 10 μL | ✓ | 42 | 23 | 0.63 | 0.11 | Cone | 10R-S-GT-0.63 | 037747 | 031798 |

For syringes to suit the Shimadzu AOC-5000 Autosampler refer to the CTC Autosampler syringes on page 45.

GC Autosampler Syringes



Syringe Brilliance

GC Autosampler Syringes | Shimadzu Instruments



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SPECIFICATIONS

Accuracy and Reproducibility
 $\pm 1\%$ (dispensed volume)
 $(\pm 2\%$ for 0.5 μL and 1 μL syringes)

Borosilicate Glass Barrel Outer Diameter (OD)
 6.5 mm

Scale Length
 0.5 μL = 27.05 mm, 10 μL = 54.1 mm

International Standards Traceability

GC Autosampler Syringes | Thermo Scientific Instruments

| Syringe Part No. | Syringe Volume | PTFE Tipped Plunger | Needle Length (mm) | Needle Gauge | Needle OD (mm) | Needle ID (mm) | Needle Tip | Syringe Code | Replacement Needle Part No. | Replacement Plunger Part No. | Model | | | | 6 Pack Part No. |
|------------------|----------------|---------------------|--------------------|--------------|----------------|----------------|------------|--------------------|-----------------------------|------------------------------|---------|--------|--------|-----------|-----------------|
| | | | | | | | | | | | TriPlus | AS3000 | AS2000 | AS200/800 | |
| Fixed Needle | | | | | | | | | | | | | | | |
| 001981 | 5 µL | - | 50 | 23 | 0.63 | 0.11 | Cone | 5F-C/T-5/0.63C | - | - | ✓ | - | - | - | - |
| 002989 | 10 µL | - | 80 | 23 | 0.63 | 0.11 | Cone | 10F-C/T-8/0.63C | - | - | ✓ | - | ✓ | - | - |
| 002992 | 10 µL | - | 80 | 26 | 0.47 | 0.11 | Cone | 10F-C/T-8/0.47C | - | - | ✓ | - | ✓ | - | - |
| 002967 | 10 µL | - | 50 | 25 | 0.50 | 0.125 | Cone | 10F-C/T-5/0.50C | - | - | ✓ | ✓ | ✓ | ✓ | - |
| 002974 | 10 µL | - | 80 | 22 | 0.72 | 0.175 | Cone | 10F-C/T-8/22C | - | - | ✓ | - | ✓ | - | - |
| 002987 | 10 µL | ✓ | 50 | 23 | 0.63 | 0.11 | Cone | 10F-C/T-GT-5/0.63C | - | 031803 | ✓ | - | ✓ | - | 002972 |
| 002981 | 10 µL | - | 50 | 23 | 0.63 | 0.11 | Cone | 10F-C/T-5/0.63C | - | - | ✓ | ✓ | ✓ | ✓ | 002971 |
| 002980 | 10 µL | - | 50 | 26 | 0.47 | 0.11 | Cone | 10F-C/T-5/0.47C | - | - | ✓ | ✓ | ✓ | ✓ | 002986 |



| Syringe Part No. | Syringe Volume | PTFE Tipped Plunger | Needle Length (mm) | Needle Gauge | Needle OD (mm) | Needle ID (mm) | Needle Tip | Syringe Code | Replacement Needle Part No. | Replacement Plunger Part No. | Model | | | | 6 Pack Part No. |
|------------------|----------------|---------------------|--------------------|--------------|----------------|----------------|------------|--------------------|-----------------------------|------------------------------|-------|---|---|---|-----------------|
| Removable Needle | | | | | | | | | | | | | | | |
| 000490 | 0.5 µL | - | 50 | 26 | 0.47 | 0.155 | Cone | 0.5BNR-C/T-5/0.47C | 033770 | - | ✓ | ✓ | - | - | - |
| 000492 | 0.5 µL | - | 50 | 23 | 0.63 | 0.155 | Cone | 0.5BNR-C/T-5/0.63C | 033772 | - | ✓ | ✓ | - | - | - |
| 002982 | 10 µL | - | 50 | 26 | 0.47 | 0.11 | Cone | 10R-C/T-5/0.47C | 037785 | - | ✓ | ✓ | ✓ | - | - |
| 002984 | 10 µL | - | 50 | 23 | 0.63 | 0.11 | Cone | 10R-C/T-5/0.63C | 037787 | - | ✓ | ✓ | ✓ | ✓ | - |
| 002993 | 10 µL | - | 80 | 26 | 0.47 | 0.15 | Cone | 10R-C/T-8/0.47C | 031535 | - | ✓ | - | ✓ | - | - |

SPECIFICATIONS

Accuracy and Reproducibility
 $\pm 1\%$ (dispensed volume)
 ($\pm 2\%$ for 0.5 μL and 1 μL syringes)

Borosilicate Glass Barrel Outer Diameter (OD)
 8 mm

Scale Length
 54.1 mm

International Standards Traceability



GC Autosampler Syringes | Unicam Instruments

| Syringe Part No. | Syringe Volume | PTFE Tipped Plunger | Needle Length (mm) | Needle Gauge | Needle OD (mm) | Needle ID (mm) | Needle Tip | Syringe Code | Replacement Needle Part No. |
|-------------------------|------------------|---------------------|--------------------|--------------|----------------|----------------|------------|---------------|-----------------------------|
| Removable Needle | | | | | | | | | |
| 000581 | 1 μL | - | 70 | 26 | 0.47 | 0.15 | Cone | 1BR-U-7/0.47C | 034772* |
| 000582 | 1 μL | - | 70 | 23 | 0.63 | 0.15 | Bevel | 1BR-U-7BV | 034770* |
| 002684 | 10 μL | - | 70 | 22 | 0.7 | 0.15 | S/Bevel | 10R-U-7T | 037330 |

* These are needle and plunger kits

GC Autosampler Syringes



Syringe Brilliance

GC Autosampler Syringes | Unicam Instruments



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SPECIFICATIONS

Accuracy and Reproducibility
 $\pm 1\%$ (dispensed volume)
 $(\pm 2\%$ for 0.5 μL and 1 μL syringes)

Borosilicate Glass Barrel Outer Diameter (OD)
 1 μL = 8 mm, 10 μL = 6.5 mm, 100 μL = 8 mm

Scale Length
 1 μL and 10 μL = 54.1 mm, 100 μL = 60 mm

International Standards Traceability

GC Autosampler Syringes | Varian Instruments

| Syringe Part No. | Syringe Volume | PTFE Tipped Plunger | Needle Length (mm) | Needle Gauge | Needle OD (mm) | Needle ID (mm) | Needle Tip | Syringe Code | Replacement Needle Part No. | Replacement Plunger Part No. |
|--|------------------|---------------------|--------------------|--------------|----------------|----------------|------------|-------------------|-----------------------------|------------------------------|
| 8035, 8100 and 8200 Series Fixed Needle | | | | | | | | | | |
| 002923 | 10 μL | ✓ | 53 | 25 | 0.5 | 0.15 | S/Hole | 10F-GT-VA8X-2 | - | 031218 |
| 8400/8410, CP-9010/9050 Series Fixed Needle | | | | | | | | | | |
| 002950 | 10 μL | - | 50 | 26 | 0.47 | 0.11 | Bevel | 10F-VA8400-5/0.47 | - | - |
| 002981 | 10 μL | - | 50 | 23 | 0.63 | 0.11 | Cone | 10F-C/T-5/0.63C | - | - |



| Syringe Part No. | Syringe Volume | PTFE Tipped Plunger | Needle Length (mm) | Needle Gauge | Needle OD (mm) | Needle ID (mm) | Needle Tip | Syringe Code | Replacement Needle Part No. | Replacement Plunger Part No. |
|--|-------------------|---------------------|--------------------|--------------|----------------|----------------|------------|-----------------|-----------------------------|------------------------------|
| 8000 Series Removable Needle | | | | | | | | | | |
| 002926 | 10 μL | ✓ | 50 | 25 | 0.5 | 0.15 | Dome | 10R-GT-VA80-2 | 037775 | 031218 |
| 8035, 8100 and 8200 Series Removable Needle | | | | | | | | | | |
| 000655 | 1 μL | - | 51 | 26 | 0.47 | 0.15 | Cone | 18R-VA8X | 034720* | - |
| 002924 | 10 μL | ✓ | 53 | 25 | 0.5 | 0.15 | S/Hole | 10R-GT-VA8X-2 | 037777 | 031218 |
| 005921 | 100 μL | ✓ | 53 | 25 | 0.5 | 0.2 | S/Hole | 100R-GT-VA8X | 038745 | 031824 |
| 8400/8410, CP-9010/9050 Series Removable Needle | | | | | | | | | | |
| 002982 | 10 μL | - | 50 | 26 | 0.47 | 0.11 | Cone | 10R-C/T-5/0.47C | 037785 | - |

* This is a needle and plunger kit

LC Manual Syringes



SPECIFICATIONS

Accuracy and Reproducibility
± 1 % (dispensed volume)

Borosilicate Glass Barrel Outer Diameter (OD)
5 µL and 10 µL = 6.5 mm, 25 µL to 500 µL = 8 mm,
1 mL = 8.8 mm, 2.5 mL = 10.8 mm

Scale Length
60 mm

International Standards Traceability

LC Manual Syringes | Beckman/Altex, Rheodyne, SSI Instruments and Valco Valves

| Syringe Part No. | Syringe Volume | PTFE Tipped Plunger | Needle Length (mm) | Needle Gauge | Needle OD (mm) | Needle ID (mm) | Needle Tip | Syringe Code | Replacement Plunger Part No. | 6 Pack Part No. |
|---------------------|------------------|---------------------|--------------------|--------------|----------------|----------------|------------|--------------|------------------------------|-----------------|
| Fixed Needle | | | | | | | | | | |
| 001301 | 5 µL | - | 51 | 22 | 0.028" | 0.17 | LC | 5F-LC | - | - |
| 002300 | 10 µL Superflex™ | - | 51 | 22 | 0.028" | 0.17 | LC | 10FX-LC | - | 002330 |
| 002301 | 10 µL | - | 51 | 22 | 0.028" | 0.17 | LC | 10F-LC | - | 002315 |
| 002335 | 10 µL | ✓ | 51 | 23 | 0.028" | 0.17 | LC | 10F-LC-GT | 031810 | - |
| 003300 | 25 µL | - | 51 | 22 | 0.028" | 0.37 | LC | 25F-LC | - | - |
| 004300 | 50 µL | - | 51 | 22 | 0.028" | 0.37 | LC | 50F-LC | - | - |
| 005300 | 100 µL | - | 51 | 22 | 0.028" | 0.37 | LC | 100F-LC | - | - |
| 006300 | 250 µL | - | 51 | 22 | 0.028" | 0.37 | LC | 250F-LC | - | - |
| 007300 | 500 µL | - | 51 | 22 | 0.028" | 0.37 | LC | 500F-LC | - | - |



| Syringe Part No. | Syringe Volume | PTFE Tipped Plunger | Needle Length (mm) | Needle Gauge | Needle OD (mm) | Needle ID (mm) | Needle Tip | Syringe Code | Replacement Needle Part No. |
|--|----------------|---------------------|--------------------|--------------|----------------|----------------|------------|--------------|-----------------------------|
| Removable Needle with Repeating Adaptor | | | | | | | | | |
| 002345 | 10 µL | - | 51 | 22 | 0.028" | 0.17 | LC | 10R-LC-RAX | 037250 |
| 003320 | 25 µL | - | 51 | 22 | 0.028" | 0.37 | LC | 25R-LC-RAX | 038251 |
| 004320 | 50 µL | - | 51 | 22 | 0.028" | 0.37 | LC | 50R-LC-RAX | 038254 |
| 005320 | 100 µL | - | 51 | 22 | 0.028" | 0.37 | LC | 100R-LC-RAX | 038257 |
| 006320 | 250 µL | - | 51 | 22 | 0.028" | 0.37 | LC | 250R-LC-RAX | 038260 |
| 007320 | 500 µL | - | 51 | 22 | 0.028" | 0.37 | LC | 500R-LC-RAX | 038263 |



| Syringe Part No. | Syringe Volume | PTFE Tipped Plunger | Needle Length (mm) | Needle Gauge | Needle OD (mm) | Needle ID (mm) | Needle Tip | Syringe Code | Replacement Needle Part No. | Replacement Plunger Part No. |
|-------------------------|----------------|---------------------|--------------------|--------------|----------------|----------------|------------|--------------|-----------------------------|------------------------------|
| Removable Needle | | | | | | | | | | |
| 001310 | 5 µL | - | 51 | 22 | 0.028" | 0.17 | LC | 5R-LC | 036250 | - |
| 002310 | 10 µL | - | 51 | 22 | 0.028" | 0.17 | LC | 10R-LC | 037250 | - |
| 002313 | 10 µL | ✓ | 51 | 22 | 0.028" | 0.17 | LC | 10R-GT-LC | 037250 | 031811 |
| 002350 | 10 µL | - | 51 | 22 | 0.028" | 0.17 | LC | 10RX-LC | 037250 | - |
| 003310 | 25 µL | - | 51 | 22 | 0.028" | 0.37 | LC | 25R-LC | 038250 | - |
| 003312 | 25 µL | ✓ | 51 | 22 | 0.028" | 0.37 | LC | 25R-GT-LC | 038250 | 031815 |
| 004310 | 50 µL | - | 51 | 22 | 0.028" | 0.37 | LC | 50R-LC | 038252 | - |
| 004312 | 50 µL | ✓ | 51 | 22 | 0.028" | 0.37 | LC | 50R-GT-LC | 038253 | 031820 |
| 005310 | 100 µL | - | 51 | 22 | 0.028" | 0.37 | LC | 100R-LC | 038255 | - |
| 005312 | 100 µL | ✓ | 51 | 22 | 0.028" | 0.37 | LC | 100R-GT-LC | 038256 | 031825 |
| 006310 | 250 µL | - | 51 | 22 | 0.028" | 0.37 | LC | 250R-LC | 038258 | - |
| 006312 | 250 µL | ✓ | 51 | 22 | 0.028" | 0.37 | LC | 250R-GT-LC | 038259 | 031830 |
| 007310 | 500 µL | - | 51 | 22 | 0.028" | 0.37 | LC | 500R-LC | 038261 | - |
| 007312 | 500 µL | ✓ | 51 | 22 | 0.028" | 0.37 | LC | 500R-GT-LC | 038262 | 031835 |
| 008105 | 1 mL | ✓ | 51 | 22 | 0.028" | 0.37 | LC | 1MR-LC-GT | 039250 | 031842 |
| 008505 | 2.5 mL | ✓ | 51 | 22 | 0.028" | 0.37 | LC | 2.5MDR-LC-GT | 039250 | 031852 |

Expert Tip :

Users of Valco injectors requiring 3/4" long needles, must fit a Valco VISF-2 adaptor.



Expert Tip:

When using the complete loop fill technique, the syringe capacity should be greater than twice the loop volume. The loop capacity sets the injection volume.

When using the partial loop technique, the injection volume should be no greater than half the loop capacity. The injection size sets the injection volume.



LC Manual Syringes



Syringe Brilliance

LC Manual Syringes | Beckman/ Altex, Rheodyne, SSI Instruments and Valco Valves



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SPECIFICATIONS

Accuracy and Reproducibility
± 1 % (dispensed volume)

Borosilicate Glass Barrel Outer Diameter (OD)
8 mm

Scale Length
60 mm

International Standards Traceability

LC Manual Syringes | Waters U6K Valves



| Syringe Part No. | Syringe Volume | PTFE Tipped Plunger | Needle Length (mm) | Needle Gauge | Needle OD (mm) | Needle ID (mm) | Needle Tip | Syringe Code | Replacement Needle Part No. |
|-------------------------|----------------|---------------------|--------------------|--------------|----------------|----------------|------------|--------------|-----------------------------|
| Removable Needle | | | | | | | | | |
| 003375 | 25 µL | - | 50 | 25 | 0.5 | 0.2 | LC | 25R-WLC-RAX | 038260 |
| 004375 | 50 µL | - | 50 | 25 | 0.5 | 0.2 | LC | 50R-WLC-RAX | 038260 |
| 005375 | 100 µL | - | 50 | 25 | 0.5 | 0.2 | LC | 100R-WLC-RAX | 038260 |
| 006375 | 250 µL | - | 50 | 25 | 0.5 | 0.2 | LC | 250R-WLC-RAX | 038260 |
| 007375 | 500 µL | - | 50 | 25 | 0.5 | 0.2 | LC | 500R-WLC-RAX | 038260 |

Expert Tip:

The RAX repeating adaptor improves precision and reproducibility when repeatedly injecting the same volume manually.



LC Autosampler Syringes



SPECIFICATIONS

Accuracy and Reproducibility
± 1 % (dispensed volume)

Borosilicate Glass Barrel Outer Diameter (OD)
8 mm

Scale Length
60 mm

International Standards Traceability

LC Autosampler Syringes | Agilent Instruments

| Syringe Part No. | Syringe Volume | PTFE Tipped Plunger | Termination | Syringe Code | Replacement Plunger Part No. |
|------------------|----------------|---------------------|-------------|----------------|------------------------------|
| 003670 | 25 µL | ✓ | 1/4-28 UNEF | 25D-HP1090-GT | 0318181 |
| 006670 | 250 µL | ✓ | 1/4-28 UNEF | 250D-HP1090-GT | 031829 |



SPECIFICATIONS

Accuracy and Reproducibility
± 1 % (dispensed volume)

Borosilicate Glass Barrel Outer Diameter (OD)
8 mm

Scale Length
No scale

International Standards Traceability

LC Autosampler Syringes | Hitachi Instruments

| Syringe Part No. | Syringe Volume | PTFE Tipped Plunger | Front Thread | Syringe Code | Replacement Plunger Part No. |
|------------------|----------------|---------------------|--------------|--------------|------------------------------|
| 007660 | 500 µL | ✓ | M10 x 1.0 | 500C-HITACHI | 031837 |

SPECIFICATIONS

Accuracy and Reproducibility
± 1 % (dispensed volume)

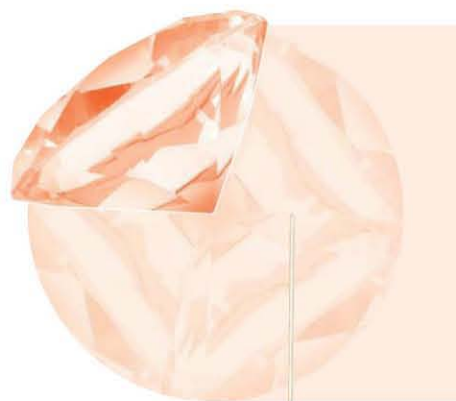
Borosilicate Glass Barrel Outer Diameter (OD)

10 µL to 250 µL = 6.5mm (except P/N 003715 and P/N 006720 = 8 mm)
500 µL = 8 mm, 1 mL = 7.6 mm, 2.5 mL = 9.7 mm, 5 mL = 14 mm

Scale Length

10 µL = 54.1 mm, 25 µL to 5 mL = 60 mm

International Standards Traceability



LC Autosampler Syringes | CTC Analytics/Leap

| Syringe Part No. | Syringe Volume | PTFE Tipped Plunger | Needle Length (mm) | Needle Gauge | Needle OD (mm) | Needle ID (mm) | Needle Tip | Syringe Code | Replacement Needle Part No. | Replacement Plunger Part No. |
|---------------------|----------------|---------------------|--------------------|--------------|----------------|----------------|------------|----------------------|-----------------------------|------------------------------|
| Fixed Needle | | | | | | | | | | |
| 002710 | 10 µL | - | 51 | 22 | 0.72 | 0.17 | LC | 10F-CTC-LC | - | - |
| 002715 | 10 µL | ✓ | 51 | 22 | 0.72 | 0.17 | LC | 10F-CTC-GT-LC | - | 031803 |
| 003715* | 25 µL | ✓ | 51 | 22 | 0.72 | 0.17 | LC | 25F-CTC-GT-LC | - | 0318921 |
| 003984 | 25 µL | - | 51 | 22 | 0.72 | 0.37 | LC | 25F-C/F-LC | - | - |
| 004810 | 50 µL | ✓ | 51 | 22 | 0.72 | 0.37 | LC | 50F-C/T-GT-LC | - | 031821 |
| 005715 | 100 µL | ✓ | 51 | 22 | 0.72 | 0.17 | LC | 100F-CTC-GT-LC | - | 0318261 |
| 005720 | 100 µL | ✓ | 51 | 22 | 0.72 | 0.4 | LC | 100F-CTC-GT-LC (0.4) | - | 0318924 |
| 006720* | 250 µL | ✓ | 51 | 22 | 0.72 | 0.4 | LC | 250F-CTC-GT-LC (0.4) | - | 0318926 |
| 007720 | 500 µL | ✓ | 51 | 22 | 0.72 | 0.4 | LC | 500F-CTC-GT-LC (0.4) | - | 0318928 |

* Please note barrel OD is 8mm.



| Syringe Part No. | Syringe Volume | PTFE Tipped Plunger | Needle Length (mm) | Needle Gauge | Needle OD (mm) | Needle ID (mm) | Needle Tip | Syringe Code | Replacement Needle Part No. | Replacement Plunger Part No. |
|-------------------------|----------------|---------------------|--------------------|--------------|----------------|----------------|------------|----------------------|-----------------------------|------------------------------|
| Removable Needle | | | | | | | | | | |
| 003985 | 25 µL | ✓ | 51 | 22 | 0.72 | 0.37 | LC | 25R-C/F-GT-LC | 038250 | 031816 |
| 005330 | 100 µL | ✓ | 51 | 22 | 0.72 | 0.37 | LC | 100R-C/F-GT-LC | 038250 | 031826 |
| 006330 | 250 µL | ✓ | 51 | 22 | 0.72 | 0.37 | LC | 250R-C/F-GT-LC | 038250 | 031831 |
| 008120 | 1 mL | ✓ | 51 | 22 | 0.72 | 0.4 | LC | 1MR-CTC-GT-LC(0.4) | 039180 | 0318444 |
| 008620 | 2.5 mL | ✓ | 51 | 22 | 0.72 | 0.4 | LC | 2.5MR-CTC-GT-LC(0.4) | 039182 | 0318454 |
| 008820 | 5 mL | ✓ | 51 | 22 | 0.72 | 0.4 | LC | 5MR-CTC-GT-LC(0.4) | 031525 | 0318564 |

LC Autosampler Syringes



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SPECIFICATIONS

Accuracy and Reproducibility
± 1 % (dispensed volume)

Borosilicate Glass Barrel Outer Diameter (OD)
50 µL to 500 µL = 8 mm, 1 mL = 9 mm, 2.5 mL = 11 mm

Scale Length
60 mm

International Standards Traceability

LC Autosampler Syringes | PerkinElmer Instruments

| Syringe Part No. | Syringe Volume | PTFE Tipped Plunger | Front Thread | Syringe Code | Replacement Plunger Part No. |
|------------------|----------------|---------------------|--------------|--------------|------------------------------|
| 004995 | 50 µL | ✓ | 1/4-28 UNF | 50D-CX-GT | 0318221 |
| 005990 | 100 µL | ✓ | 1/4-28 UNF | 100D-CX-GT | 0318271 |
| 006995 | 250 µL | ✓ | 1/4-28 UNF | 250D-CX-GT | 0318341 |
| 007995 | 500 µL | ✓ | 1/4-28 UNF | 500D-CX-GT | 0318381 |
| 008185 | 1 mL | ✓ | 1/4-28 UNF | 1MD-C-GT | 0318441 |
| 008687 | 2.5 mL | ✓ | 1/4-28 UNF | 2.5MD-C-GT | 031854 |



SPECIFICATIONS

Accuracy and Reproducibility
± 1 % (dispensed volume)

Borosilicate Glass Barrel Outer Diameter (OD)
250 µL = 8 mm, 1 mL = 9 mm

Scale Length
60 mm

International Standards Traceability

LC Autosampler Syringes | Spark Holland Instruments

| Syringe Part No. | Syringe Volume | PTFE Tipped Plunger | Front Thread | Syringe Code | Replacement Plunger Part No. |
|------------------|----------------|---------------------|--------------|---------------|------------------------------|
| 006683 | 250 µL | ✓ | 1/4-28 UNF | 250D-SPARK-GT | 0318348 |
| 008183 | 1 mL | ✓ | 1/4-28 UNF | 1MD-SPARK-GT | 0318448 |

SPECIFICATIONS

Accuracy and Reproducibility
± 1 % (dispensed volume)

Borosilicate Glass Barrel Outer Diameter (OD)
250 µL and 500 µL = 8 mm, 1 mL = 9 mm, 2.5 mL = 11 mm, 5 mL = 14 mm

Scale Length
No scale

International Standards Traceability



LC Autosampler Syringes | Thermo Scientific Instruments

| Syringe Part No. | Syringe Volume | PTFE Tipped Plunger | Front Thread | Syringe Code | Replacement Plunger Part No. |
|---------------------------------------|----------------|---------------------|--------------|------------------|------------------------------|
| SP8780/8875/8880 | | | | | |
| 007680 | 500 µL | ✓ | 1/4-28 UNF | 500C-THERMOSPEC | 031838 |
| 008660 | 2.5 mL | ✓ | 1/4-28 UNF | 2.5MC-THERMOSPEC | 031853 |
| AS100/300 and AS1000/3000/3500 | | | | | |
| 006660 | 250 µL | ✓ | 1/4-28 UNF | 250C-THERMOSPEC | 031833 |
| 007680 | 500 µL | ✓ | 1/4-28 UNF | 500C-THERMOSPEC | 031838 |
| 008180 | 1 mL | ✓ | 1/4-28 UNF | 1MC-THERMOSPEC | 031844 |
| 008660 | 2.5 mL | ✓ | 1/4-28 UNF | 2.5MC-THERMOSPEC | 031853 |
| 008780 | 5 mL | ✓ | 1/4-28 UNF | 5MC-THERMOSPEC | 031856 |



LC Autosampler Syringes



LC Autosampler Syringes | Thermo Scientific Instruments



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SPECIFICATIONS

Accuracy and Reproducibility
± 1 % (dispensed volume)

Borosilicate Glass Barrel Outer Diameter (OD)
8 mm

Scale Length
No scale

International Standards Traceability

LC Autosampler Syringes | Waters Instruments

| Syringe Part No. | Syringe Volume | PTFE Tipped Plunger | Front Thread | Syringe Code | Replacement Plunger Part No. |
|------------------|----------------|---------------------|--------------|--------------|------------------------------|
| 003990 | 25 µL | ✓ | 1/4-28 UNF | 25D-WISP | 031819 |
| 006690 | 250 µL | ✓ | 1/4-28 UNF | 250D-WISP | 031834 |

WISP Dipper Needle

| Part No. | Needle Length (mm) | Needle OD (mm) | Needle ID (mm) | Needle Tip | Description |
|----------|--------------------|----------------|----------------|----------------|-------------------|
| 038265 | 121 | 1.587 | 0.5 | Side Hole Cone | N-121/1.59(0.5)SH |

LC Pump High Capacity Syringes



SPECIFICATIONS

Accuracy and Reproducibility
 $\pm 1\%$ (dispensed volume)

Borosilicate Glass Barrel Outer Diameter (OD)
 1 mL = 9 mm, 2.5 mL = 11 mm, 5 mL = 14 mm
 10 mL = 18 mm, 25 mL = 27 mm

Scale Length
 60 mm

International Standards Traceability

LC Pump High Capacity Syringes

High capacity Luer Lock syringes are ideal for loop fill injection techniques when used in conjunction with an LC tipped Luer Lock needle. They are also perfect for flushing sample loops after injection, and priming the LC pump.



| Syringe Part No. | Syringe Volume | PTFE Tipped Plunger | Termination | Syringe Code | Replacement Plunger Part No. |
|------------------|----------------|---------------------|-----------------|--------------|------------------------------|
| 008025 | 1 mL | ✓ | Fixed Luer Lock | 1MDF-LL-GT | 0318441 |
| 008425 | 2.5 mL | ✓ | Fixed Luer Lock | 2.5MDF-LL-GT | 031852 |
| 008762 | 5 mL | ✓ | Fixed Luer Lock | 5MDF-LL-GT | 0318562 |
| 008962 | 10 mL | ✓ | Fixed Luer Lock | 10MDF-LL-GT | 031864 |
| 009463 | 25 mL | ✓ | Fixed Luer Lock | 25MDF-LL-GT | 031874 |



| Part No. | Description | Pack Size |
|----------|-------------------------|-----------|
| 200010 | Luer Lock Valve Adaptor | 2 |

Expert Tip:

For complete loop fill, the syringe capacity should be greater than twice the loop volume. The loop capacity sets the injection volume. For partial loop fill, the injection volume should be no greater than half the loop capacity. The injection size sets the injection volume.



Instrument Syringes



SPECIFICATIONS

Accuracy and Reproducibility
± 1 % (dispensed volume)

Borosilicate Glass Barrel Outer Diameter (OD)
1 mL = 8.8 mm, 2.5 mL = 10.8 mm, 5 mL = 13.7 mm,
10 mL = 18 mm, 25 mL = 27 mm, 50 mL = 32.6 mm, 100 mL = 40.6 mm

Scale Length
60 mm

International Standards Traceability

Instrument Syringes | 1 - 100 mL PTFE Tipped Plunger Also Suitable for Dispenser and Manual Use



| Syringe Part No. | Syringe Volume | PTFE Tipped Plunger | Needle Length (mm) | Needle Gauge | Needle OD (mm) | Needle ID (mm) | Needle Tip | Syringe Code | Replacement Needle Part No. | Replacement Plunger Part No. |
|----------------------------|----------------|---------------------|--------------------|--------------|----------------|----------------|------------|--------------|-----------------------------|------------------------------|
| Fixed Needle | | | | | | | | | | |
| 008102 | 1 mL | ✓ | 50 | 22 | 0.72 | 0.37 | Bevel | 1MDF-GT | - | 0318441 |
| 008502 | 2.5 mL | ✓ | 50 | 22 | 0.72 | 0.37 | Bevel | 2.5MDF-GT | - | 031852 |
| Removable Needle | | | | | | | | | | |
| 008100 | 1 mL | ✓ | 50 | 23 | 0.63 | 0.32 | Bevel | 1MR-GT | 039110 | 031842 |
| 008500 | 2.5 mL | ✓ | 50 | 23 | 0.63 | 0.32 | Bevel | 2.5MDR-GT | 039110 | 031852 |
| 008700 | 5 mL | ✓ | 50 | 23 | 0.63 | 0.32 | Bevel | 5MDR-GT | 031516 | 031856 |
| 008900 | 10 mL | ✓ | 50 | 23 | 0.63 | 0.32 | Bevel | 10MDR-GT | 031516 | 031862 |
| Fixed Luer Tip | | | | | | | | | | |
| 008020 | 1.0 mL | ✓ | - | - | - | - | Luer Tip | 1MF-LT-GT | - | 031842 |
| 008420 | 2.5 mL | ✓ | - | - | - | - | Luer Tip | 2.5MDF-LT-GT | - | 031852 |
| Fixed Luer Lock | | | | | | | | | | |
| 008025 | 1.0 mL | ✓ | - | - | - | - | Luer Lock | 1MDF-LL-GT | - | 0318441 |
| 008425 | 2.5 mL | ✓ | - | - | - | - | Luer Lock | 2.5MDF-LL-GT | - | 031852 |
| 008762 | 5 mL | ✓ | - | - | - | - | Luer Lock | 5MDF-LL-GT | - | 0318562 |
| 008962 | 10 mL | ✓ | - | - | - | - | Luer Lock | 10MDF-LL-GT | - | 031864 |
| 009463 | 25 mL | ✓ | - | - | - | - | Luer Lock | 25MDF-LL-GT | - | 031874 |
| Removable Luer Lock | | | | | | | | | | |
| 008760 | 5 mL | ✓ | - | - | - | - | Luer Lock | 5MDR-LL-GT | - | 031856 |
| 008960 | 10 mL | ✓ | - | - | - | - | Luer Lock | 10MDR-LL-GT | - | 031862 |
| 009462 | 25 mL | ✓ | - | - | - | - | Luer Lock | 25MR-LL-GT | - | 031870 |
| 009660 | 50 mL | ✓ | - | - | - | - | Luer Lock | 50MR-LL-GT | - | 0312170 |
| 009760 | 100 mL | ✓ | - | - | - | - | Luer Lock | 100MR-LL-GT | - | 0312176 |



SPECIFICATIONS

Accuracy and Reproducibility
± 1 % (dispensed volume)

Borosilicate Glass Barrel Outer Diameter (OD)
25 µL to 500 µL = 8mm, 1 mL = 8.8 mm, 2.5 mL = 10.8 mm,
5 mL = 13.7 mm, 10 mL = 18 mm

Scale Length
60 mm

International Standards Traceability



Instrument Syringes | General

Replacement for Hamilton C and CX Syringes

| Syringe Part No. | Syringe Volume | PTFE Tipped Plunger | Termination | Syringe Code | Replacement Plunger Part No. |
|------------------|----------------|---------------------|-------------|--------------|------------------------------|
| 003995 | 25 µL | ✓ | 1/4-28 UNF | 25D-CX | 0318191 |
| 004995 | 50 µL | ✓ | 1/4-28 UNF | 50D-CX | 0318221 |
| 005990 | 100 µL | ✓ | 1/4-28 UNF | 100D-CX | 0318271 |
| 006995 | 250 µL | ✓ | 1/4-28 UNF | 250D-CX | 031833 |
| 007995 | 500 µL | ✓ | 1/4-28 UNF | 500D-CX | 0318381 |
| 008185 | 1 mL | ✓ | 1/4-28 UNF | 1MD-C | 0318441 |
| 008687 | 2.5 mL | ✓ | 1/4-28 UNF | 2.5MD-C | 031854 |
| 008787 | 5 mL | ✓ | 1/4-28 UNF | 5MD-C | 0318591 |
| 008987 | 10 mL | ✓ | 1/4-28 UNF | 10MD-C | 0318631 |

| Syringe Part No. | Syringe Volume | PTFE Tipped Plunger | Termination | Syringe Code | Replacement Plunger Part No. |
|------------------|----------------|---------------------|-------------|--------------|------------------------------|
| 004232 | 50 µL | ✓ | Luer Lock | 50F-LLX-GT | 0318221 |
| 005232 | 100 µL | ✓ | Luer Lock | 100F-LLX-GT | 0318271 |
| 006232 | 250 µL | ✓ | Luer Lock | 250F-LLX-GT | 031833 |
| 007232 | 500 µL | ✓ | Luer Lock | 500F-LLX-GT | 0318381 |
| 008025 | 1 mL | ✓ | Luer Lock | 1MDF-LL-GT | 0318441 |
| 008425 | 2.5 mL | ✓ | Luer Lock | 2.5MDF-LL-GT | 031852 |
| 008762 | 5 mL | ✓ | Luer Lock | 5MDF-LL-GT | 0318562 |
| 008962 | 10 mL | ✓ | Luer Lock | 10MDF-LL-GT | 031864 |
| 009463 | 25 mL | ✓ | Luer Lock | 25MDF-LL-GT | 031874 |



Instrument Syringes



Syringe Brilliance

Instrument Syringes | General – Replacement for Hamilton C and CX Syringes



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SPECIFICATIONS

Accuracy and Reproducibility
± 1 % (dispensed volume)

Borosilicate Glass Barrel Outer Diameter (OD)
1 mL = 9 mm, 5 mL = 14 mm

Scale Length
60 mm

International Standards Traceability

Instrument Syringes | Grabner

| Syringe Part No. | Syringe Volume | PTFE Tipped Plunger | Termination | Syringe Code | Replacement Plunger Part No. |
|------------------|----------------|---------------------|-------------|-----------------|------------------------------|
| 008020 | 1 mL | ✓ | Luer Tip | 1MDF-LT-GT | 031842 |
| 008790 | 5 mL | ✓ | Luer Lock | 5MDF-GRABNER-GT | 031858 |

SPECIFICATIONS

Accuracy and Reproducibility
± 1 % (dispensed volume)

Borosilicate Glass Barrel Outer Diameter (OD)
250 µL = 8 mm

Scale Length
60 mm

International Standards Traceability

Instrument Syringes | Shimadzu Total Organic Carbon Analyzer - TOC5000

| Syringe Part No. | Syringe Volume | PTFE Tipped Plunger | Termination | Syringe Code | Replacement Plunger Part No. |
|------------------|----------------|---------------------|-------------|-----------------|------------------------------|
| 006680 | 250 µL | ✓ | 1/4-28 UNF | 250C-SHIM (TOC) | 031832 |

SPECIFICATIONS

Accuracy and Reproducibility
± 1 % (dispensed volume)

Borosilicate Glass Barrel Outer Diameter (OD)
5 mL = 14 mm, 10 mL = 18 mm

Scale Length
60 mm

International Standards Traceability

Instrument Syringes | Zymark

| Syringe Part No. | Syringe Volume | PTFE Tipped Plunger | Termination | Syringe Code | Replacement Plunger Part No. |
|------------------|----------------|---------------------|-------------------|----------------|------------------------------|
| 008792 | 5 mL | ✓ | Slotted Luer Lock | 5MD-ZYMARK-GT | 0318562 |
| 008992 | 10 mL | ✓ | Slotted Luer Lock | 10MD-ZYMARK-GT | 031864 |

Syringe Accessories



Syringe Accessories | Repeating Adaptor

The SGE Repeating Adaptor (RAX) ensures reproducibility of sample volumes with repeatedly accurate and precise injections.

The RAX is suitable for use on syringes with capacities from 0.5 μ L through to 500 μ L. It has easy to use finger grips and can be set to any desired volume. The RAX can be used as added protection against both plunger blowout at elevated pressures and plunger bending. The flat sides allow it to sit securely on the bench with the needle in a raised position helping to prevent damage. The RAX is supplied with an innovative double-ended tool to facilitate assembly; it is easily and quickly installed on, and if required, removed, replaced and even swapped between syringes.

| Part No. | Description |
|----------|-----------------------|
| 031930 | Repeating Adaptor RAX |

Syringe Accessories | Syringe Racks

Syringe racks organize your syringes and ensure that they do not roll off the bench or top of the instrument and break. A must for every laboratory.

| Part No. | Description |
|----------|--|
| 031776 | Syringe rack holds 6 syringes |
| 031786 | Syringe rack holds 6 XCHANGE® syringes |





Syringe Accessories | Heated Syringe Cleaner



Ensure organic sample residues are vaporized out of the needle, preventing ghost peaks and cross contamination, by using the SGE heated syringe cleaner.

The heated syringe cleaner is especially useful for NanoVolume syringes where the entire sample is confined to the needle.

Operation is simple. Insert the needle through the septum into the heated zone, hold for

approximately 30 seconds and then pump the plunger a few times to vaporize contaminants away. The device will accept needles up to 1 mm OD and 100 mm long.

The cleaner has a very short warm-up period; it takes approximately 20 minutes to reach the operating temperature (250 °C). The unit is thermostatically controlled for continuous use if required.

A vacuum source of approximately 10 Torr from a water pump or mechanical pump should be connected to the unit.

Expert Tip :

Ghost peaks or cross-contamination can be caused by a 'dirty' needle. Using the SGE heated syringe cleaner can eliminate this.



| Part No. | Description |
|----------|---------------------------|
| 031780 | 110-120 V Syringe Cleaner |
| 031781 | 220-240 V Syringe Cleaner |

Syringe
Accessories



Syringe Accessories | Heated Syringe Cleaner



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Syringe Accessories | Needle Cleaning Kit

Everything needed for thorough needle cleaning. A range of stylet wires, tweezers for holding the wires and a non-ionic surfactant material are provided in a convenient package.

| Part No. | Description |
|----------|--|
| 031782 | Needle Cleaning Kit Kit contains: Tube of Stylet Wires 150 mm x 0.10 mm OD Tube of Stylet Wires 150 mm x 0.15 mm OD Tube of Stylet Wires 150 mm x 0.20 mm OD 20 mL Cleaning Solution Concentrate Tweezer |

Syringe Accessories | Stylet Wires

Stylet wires are used for cleaning the inside of needles and are available in 3 sizes – check the needle internal diameter of the syringe to select the suitable wires (the needle ID is listed for syringes throughout this selection guide).

| Part No. | Description | Pack Size |
|----------|----------------------------------|-----------|
| 031745 | Stylet Wires 150 mm x 0.10 mm OD | 5 |
| 031746 | Stylet Wires 150 mm x 0.15 mm OD | 5 |
| 031747 | Stylet Wires 150 mm x 0.20 mm OD | 5 |

Replacement Guide

Replacement Guide | Needles

A variety of replacement needles are available for each syringe capacity. The needle length, gauge and tip style can be changed to optimize the syringe for a wide range of applications.

For tips on needle selection refer to page 3.

For needles for 5 µL eVol® syringes refer to page 19.



| Part No. | Needle Length (mm) | Gauge | Needle OD (mm) | Needle ID (mm) | Tip Style | Needle Code | Pack Size |
|----------------------|--------------------|-------|----------------|----------------|----------------|--------------------|-----------|
| 5 µL Syringe | | | | | | | |
| 036010 | 50 | 26 | 0.47 | 0.11 | Cone | N5-5C | 2 |
| 036011 | 50 | 23 | 0.63 | 0.11 | Cone | N5-5/0.63C | 2 |
| 036030 | 70 | 26 | 0.47 | 0.11 | Cone | N5-7C | 2 |
| 036031 | 70 | 23 | 0.63 | 0.11 | Cone | N5-7/0.63C | 2 |
| 036060 | 115 | 26 | 0.47 | 0.11 | Cone | N5-11.5C | 2 |
| 036110 | 50 | 26 | 0.47 | 0.11 | Bevel | N5-5 | 5 |
| 036130 | 70 | 26 | 0.47 | 0.11 | Bevel | N5-7 | 5 |
| 036160 | 115 | 26 | 0.47 | 0.11 | Bevel | N5-11.5 | 5 |
| 036250 | 51 (2") | 22 | 0.028" | 0.17 | LC | N5-LC | 5 |
| 036310 | 50 | 26 | 0.47 | 0.11 | Sheathed/Bevel | N5-5T | 2 |
| 036410 | 50 | 26 | 0.47 | 0.11 | Side Hole/Dome | N5-5H | 2 |
| 036510 | 50 | 26 | 0.47 | 0.11 | Dome | N5-5D | 2 |
| 036530 | 70 | 26 | 0.47 | 0.11 | Dome | N5-7D | 2 |
| 036603 | 50 | - | 0.17 | 0.1 | On-Column | N5-OC-5/0.17VS | 2 |
| 036605 | 75 | - | 0.17 | 0.1 | On-Column | N5-OC-7.5/0.17VS | 2 |
| 036610 | 100 | - | 0.17 | 0.1 | On-Column | N5-OC-10/0.17VS | 2 |
| 036625 | 110 | - | 0.17 | 0.1 | On-Column | N5-OC-11/0.17VS | 2 |
| 036635 | 100 | - | 0.17 | 0.1 | On-Column | N5-OC-10/0.17SVS | 2 |
| 036651 | 107 | - | 0.19 | 0.1 | On-Column | N5-OC-10.7/0.19S | 2 |
| 036675 | 75 | - | 0.23 | 0.1 | On-Column | N5-OC-7.5/0.23 | 2 |
| 036685 | 95 | - | 0.27 | 0.11 | On-Column | N5-OC-9.5/0.27 SSS | 2 |
| 036701 | 50 | - | 0.19 | 0.1 | On-Column | N5-HP-OC-0.19 | 2 |
| 036703 | 50 | - | 0.23 | 0.11 | On-Column | N5-HP-OC-0.23 | 2 |
| 036710 | 42 | 26 | 0.47 | 0.11 | Cone | N5-HP-0.47 | 2 |
| 036720 | 42 | 23 | 0.63 | 0.11 | Cone | N5-HP-0.63 | 2 |
| 036730 | 42 | 23/26 | 0.63/0.47 | 0.11 | Cone | N5-HP-63/0.47 | 2 |
| 10 µL Syringe | | | | | | | |
| 037010 | 50 | 26 | 0.47 | 0.11 | Cone | N10-5C | 2 |
| 037011 | 50 | 23 | 0.63 | 0.11 | Cone | N 10-5/0.63C | 2 |
| 037030 | 70 | 26 | 0.47 | 0.11 | Cone | N10-7C | 2 |
| 037031 | 70 | 23 | 0.63 | 0.11 | Cone | N10-7/0.63C | 2 |
| 037060 | 115 | 26 | 0.47 | 0.11 | Cone | N10-11.5C | 2 |
| 037110 | 50 | 26 | 0.47 | 0.11 | Bevel | N10-5 | 5 |
| 037111 | 50 | 23 | 0.63 | 0.11 | Bevel | N10-5/0.63 | 5 |
| 037130 | 70 | 26 | 0.47 | 0.11 | Bevel | N10-7 | 5 |
| 037160 | 115 | 26 | 0.47 | 0.11 | Bevel | N10-11.5 | 5 |
| 037250 | 51 (2") | 22 | 0.028" | 0.17 | LC | N10-LC | 5 |
| 037260 | 50 | 25 | 0.5 | 0.12 | LC | N10-WLC | 5 |
| 037270 | 70 | 22 | 0.028" | 0.17 | LC | N10-LC-7 | 5 |
| 037310 | 50 | 26 | 0.47 | 0.11 | Sheathed/Bevel | N10-5T | 2 |
| 037330 | 70 | 26 | 0.47 | 0.11 | Sheathed/Bevel | N10-7T | 2 |
| 037410 | 50 | 26 | 0.47 | 0.11 | Side Hole/Dome | N10-5H | 2 |
| 037510 | 50 | 26 | 0.47 | 0.11 | Dome | N10-5D | 2 |
| 037540 | 75 | 26 | 0.47 | 0.11 | Dome | N10-7.5D | 2 |
| 037605 | 75 | - | 0.17 | 0.1 | On-Column | N10-OC-7.5/0.17VS | 2 |
| 037610 | 100 | - | 0.17 | 0.1 | On-Column | N10-OC-10/0.17VS | 2 |
| 037675 | 75 | - | 0.23 | 0.1 | On-Column | N10-OC-7.5/0.23 | 2 |
| 037715 | 42 | 26 | 0.47 | 0.11 | Cone | N10-HP-0.47 | 2 |
| 037717 | 42 | 23 | 0.63 | 0.11 | Cone | N10-HP-0.63 | 2 |
| 037730 | 42 | 23/26 | 0.63/0.47 | 0.11 | Cone | N10-HP0.63/0.47 | 2 |

| Part No. | Needle Length (mm) | Gauge | Needle OD (mm) | Needle ID (mm) | Tip Style | Needle Code | Pack Size |
|--|--------------------|-------|----------------|----------------|----------------|----------------------|-----------|
| 10 µL Syringe Cont. | | | | | | | |
| 037736 | 50 | 26 | 0.47 | 0.11 | Cone | N10-S(9)-0.47 | 2 |
| 037745 | 42 | 26 | 0.47 | 0.11 | Cone | N10-S-0.47 | 2 |
| 037747 | 42 | 23 | 0.63 | 0.11 | Cone | N10-S-0.63 | 2 |
| 037775 | 50 | 25 | 0.5 | 0.11 | Dome | N10-VA8000-II | 2 |
| 037776 | 50 | 25 | 0.5 | 0.11 | Bevel | N10-VA8035-II | 2 |
| 037777 | 53 | 25 | 0.5 | 0.11 | Side Hole/Dome | N10-VA8X00H-II | 1 |
| 037778 | 105 | - | 0.17 | 0.11 | On-Column | N10-VA8035-0.17-II | 2 |
| 037779 | 53 | 23 | 0.63 | 0.11 | Side Hole/Cone | N10-VA8X00H-0.63-II | 2 |
| 037780 | 50 | 25 | 0.5 | 0.2 | Side Hole/Dome | N10-VA800H-II | 1 |
| 037785 | 50 | 26 | 0.47 | 0.15 | Cone | N10-C/F-5/0.47C | 2 |
| 037787 | 50 | 23 | 0.63 | 0.11 | Cone | N10-C/F-0.63 | 2 |
| 25 - 500 µL Syringe and 50 µL eVol® Syringe | | | | | | | |
| 031536 | 80 | 25 | 0.5 | 0.20 | Cone | N25/500-C/F-8/0.5C | 3 |
| 038030 | 70 | 25 | 0.5 | 0.20 | Cone | N25/500-7C | 2 |
| 038060 | 115 | 25 | 0.5 | 0.20 | Cone | N25/500-11.5C | 2 |
| 038110 | 50 | 25 | 0.5 | 0.20 | Bevel | N25/500-5 | 5 |
| 038111 | 50 | 23 | 0.63 | 0.24 | Bevel | N25/500-5/0.63 | 5 |
| 038130 | 70 | 25 | 0.5 | 0.20 | Bevel | N25/500-7 | 5 |
| 038131 | 70 | 23 | 0.63 | 0.24 | Bevel | N25/500-7/0.63 | 5 |
| 038160 | 115 | 25 | 0.5 | 0.20 | Bevel | N25/500-11.5 | 5 |
| 038161 | 115 | 23 | 0.63 | 0.24 | Bevel | N25/500-11.5/0.63 | 5 |
| 038250 | 51 (2") | 22 | 0.028" | 0.37 | LC | N25/500-LC | 5 |
| 038260 | 50 | 25 | 0.5 | 0.20 | LC | N25/500-WLC | 5 |
| 038270 | 70 | 22 | 0.028" | 0.37 | LC | N25/500-LC-7 | 5 |
| 038310 | 50W | 25 | 0.5 | 0.20 | Sheathed/Bevel | N25/500-5T | 2 |
| 038410 | 50 | 25 | 0.5 | 0.20 | Side Hole/Dome | N25/500-5H | 2 |
| 038430 | 70 | 25 | 0.5 | 0.20 | Side Hole/Dome | N25/500-7H | 2 |
| 038460 | 115 | 25 | 0.5 | 0.20 | Side Hole/Dome | N25/500-11.5H | 2 |
| 038510 | 50 | 25 | 0.5 | 0.20 | Dome | N25/500-5D | 2 |
| 038530 | 70 | 25 | 0.5 | 0.20 | Dome | N25/500-7D | 2 |
| 038717 | 42 | 23 | 0.63 | 0.24 | Cone | N25/500-HP-0.63 | 2 |
| 038730 | 50 | 23 | 0.63 | 0.15 | Bevel | N25/500-C/F-0.63/5 | 5 |
| 038732 | 50 | 26 | 0.47 | 0.2 | Cone | N25/500-C/F-5/0.47C | 2 |
| 038735 | 50 | 23 | 0.63 | 0.15 | Cone | N25/500-C/F-5/0.63C | 2 |
| 038745 | 53 | 25 | 0.5 | 0.15 | Side Hole/Dome | N25/500-VAR-5.3/0.5H | 1 |
| 038910 | 50 | 25 | 0.5 | 0.20 | PTFE Coated | N25/500-5P | 2 |
| 1 - 2.5 mL Syringe and 500 µL eVol® Syringe | | | | | | | |
| 039110 | 50 | 23 | 0.63 | 0.32 | Bevel | NM1/2.5-5 | 5 |
| 039116 | 50 | 23 | 0.63 | 0.32 | Dome | NM1/2.5-5/0.63D | 2 |
| 039115 | 50 | 22 | 0.028" | 0.37 | Bevel | NM1/2.5-5/22BV | 5 |
| 039120 | 50 | 23 | 0.63 | 0.32 | Side Hole/Dome | NM1/2.5-5-0.63H | 2 |
| 039130 | 70 | 23 | 0.63 | 0.32 | Bevel | NM1/2.5-7 | 5 |
| 039160 | 115 | 23 | 0.63 | 0.32 | Bevel | NM1/2.5-11.5 | 5 |
| 039250 | 51 (2") | 22 | 0.028" | 0.37 | LC | NM1/2.5-LC | 5 |
| 039260 | 50 | 25 | 0.5 | 0.20 | LC | NM1/2.5-WLC | 5 |
| 5-10 mL Syringe | | | | | | | |
| 031516 | 50 | 23 | 0.63 | 0.32 | Bevel | NM5/10-5 | 2 |
| 031521 | 70 | 23 | 0.63 | 0.32 | Bevel | NM5/10-7 | 5 |
| 0315233 | 51 (2") | 22 | 0.028" | 0.37 | LC | NM5/10-LC | 5 |
| 0315234 | 50 | 24 | 0.5 | 0.2 | LC | NM5/10-WLC | 5 |
| Luer Lock Needles | | | | | | | |
| 039120 | 50 | 23 | 0.63 | 0.32 | Side Hole/Dome | NM1/2.5-5-0.63H | 2 |
| 039802 | 50 | 23 | 0.63 | 0.32 | Bevel | NLL-5/23 | 5 |
| 039803 | 50 | 23 | 0.63 | 0.32 | Side Hole/Dome | NLL-5/23H | 2 |
| 039807 | 70 | 23 | 0.63 | 0.32 | Bevel | NLL-7/23 | 5 |
| 039808 | 70 | 23 | 0.63 | 0.32 | Side Hole/Dome | NLL-7/23H | 2 |
| 039811 | 115 | 23 | 0.63 | 0.32 | Bevel | NLL-11.5/23 | 5 |
| 039822 | 50 | 19 | 1.07 | 0.65 | Bevel | NLL-5/19 | 5 |
| 039823 | 50 | 19 | 1.07 | 0.65 | Side Hole/Dome | NLL-5/19H | 2 |
| 039827 | 70 | 19 | 1.07 | 0.65 | Bevel | NLL-7/19 | 5 |
| 039831 | 115 | 19 | 1.07 | 0.65 | Bevel | NLL-11.5/19 | 5 |
| 039842 | 50 | 18 | 1.27 | 0.80 | Bevel | NLL-5/18 | 5 |
| 039847 | 70 | 18 | 1.27 | 0.80 | Bevel | NLL-7/18 | 5 |
| 039851 | 115 | 18 | 1.27 | 0.80 | Bevel | NLL-11.5/18 | 5 |
| 039862 | 50 | 16 | 1.57 | 1.1 | Bevel | NLL-5/16 | 5 |
| 039867 | 70 | 16 | 1.57 | 1.1 | Bevel | NLL-7/16 | 5 |
| 039871 | 115 | 16 | 1.57 | 1.1 | Bevel | NLL-11.5/16 | 5 |
| 039880 | 50 | 14 | 2.1 | 1.6 | Bevel | NLL-5/14 | 5 |
| 039891 | 115 | 14 | 2.1 | 1.6 | Bevel | NLL-11.5/14 | 5 |
| 039895 | 51 (2") | 22 | 0.028" | 0.37 | LC | NLL-LC | 2 |
| 039897 | 50 | 25 | 0.5 | 0.20 | LC | NLL-WLC | 2 |

Replacement
Guide



Replacement Guide | NanoVolume Syringe Plunger and Needle Kits

Kits are available for 0.5 µL- 5.0 µL NanoVolume syringes. The kits are supplied with a matched plunger and needle, both must be replaced together. A list of replacement kits is below. Find the SGE syringe part number to determine the appropriate replacement plunger and needle kit.

| Replacement Plunger/ Needle Kit Part No. | Needle Length (mm) | Needle Gauge | Needle OD (mm) | Needle ID (mm) | Needle Tip | Description | Syringe Part No. |
|--|--------------------|--------------|----------------|----------------|------------|-------------------------------|------------------|
| 0.5 µL Syringes, 6.5 mm OD Barrel | | | | | | | |
| 033010 | 50 | 23 | 0.63 | 0.15 | Cone | NP0.5BN-5/0.63C | 000300 |
| 033011 | 50 | 23 | 0.63 | 0.15 | Bevel | NP0.5BN-5/0.63BV | 000301 |
| 033012 | 50 | 26 | 0.47 | 0.15 | Cone | NP0.5BN-5/0.47C | 000303 |
| 0.5 µL Syringes, 8mm OD Barrel | | | | | | | |
| 033057 | 70 | 23 | 0.63 | 0.1 | Cone | NP0.5B-7C | 000310 |
| 033060 | 70 | 23 | 0.63 | 0.1 | Bevel | NP0.5B-7BV | 000311 |
| 033605 | 100 | - | 0.23 | 0.1 | Cone | NP0.5B-OC-10/0.23 | - |
| 033610 | 100 | - | 0.23 | 0.1 | Cone | NP0.5B-OC-10/0.23T (Sheathed) | 000372 |
| 033620 | 75 | 26 | 0.23 | 0.1 | Cone | NP0.5B-OC-7.5/0.23 | 000380 |
| 033630 | 70 | 26 | 0.47 | 0.1 | Cone | NP0.5B-OC-7/0.47 | 000376 |
| 1 µL Syringes, 8 mm OD Barrel | | | | | | | |
| 034055 | 50 | 23 | 0.63 | 0.15 | Cone | NP1B-5C | 000500 |
| 034056 | 50 | 23 | 0.63 | 0.15 | Bevel | NP1B-5BV | 000501 |
| 034057 | 70 | 23 | 0.63 | 0.15 | Cone | NP1B-7C | 000505 |
| 034059 | 115 | 23 | 0.63 | 0.15 | Cone | NP1B-11.5C | 000510 |
| 034060 | 70 | 23 | 0.63 | 0.15 | Bevel | NP1B-7BV | 000506 |
| 034610 | 70 | 26 | 0.47 | 0.15 | Cone | NP1B-OC-7/0.47 | 000570 |
| 5 µL Syringes, 8 mm OD Barrel | | | | | | | |
| 035055 | 50 | 23 | 0.63 | 0.37 | Cone | NP5B-5C | 000800 |
| 035056 | 50 | 23 | 0.63 | 0.37 | Bevel | NP5B-5BV | 000801 |
| 035057 | 70 | 23 | 0.63 | 0.37 | Cone | NP5B-7C | 000802 |
| 035058 | 70 | 23 | 0.63 | 0.37 | Bevel | NP5B-7BV | 000803 |
| 035059 | 115 | 23 | 0.63 | 0.37 | Cone | NP5B-11.5C | 000804 |

Expert Tip:

When replacing the plunger and needle follow the instructions included in the kit – the front cover nut must be loosened before removing the plunger.



Replacement Guide | Autosampler NanoVolume Syringes

| Replacement Plunger/ Needle Kit Part No. | Syringe Volume | Needle Length (mm) | Needle Gauge | Needle OD (mm) | Needle ID (mm) | Needle Tip | Description | Syringe Part No. |
|--|----------------|--------------------|--------------|----------------|----------------|-------------|---------------------|------------------|
| 7673, 7683 and 6850 ALS Syringes | | | | | | | | |
| 033708 | 0.5 µL | 42 | 26 | 0.47 | 0.15 | Cone | NP0.5B-HP-0.47 | 000400 |
| 033715 | 0.5 µL | 42 | 23 | 0.63 | 0.15 | Cone | NP0.5B-HP-0.63 | 000410 |
| 033730 | 0.5 µL | 42 | 23/26 | 0.63/0.47 | 0.1 | Cone | NP0.5B-HP-0.63/0.47 | 000415 |
| 034715 | 1 µL | 42 | 23 | 0.63 | 0.15 | Cone | NP1B-HP-0.63 | 000610 |
| CTC/Leap and Thermo Scientific | | | | | | | | |
| 033770 | 0.5 µL | 50 | 26 | 0.47 | 0.15 | Cone | NP0.5BN-C/T-0.47C | 000490 |
| 033772 | 0.5 µL | 50 | 23 | 0.63 | 0.15 | Cone | NP0.5BN-C/T-0.63C | 000492 |
| PerkinElmer - AutoSystem and Clarus 500 | | | | | | | | |
| 033750 | 0.5 µL | 70 | 26 | 0.47 | 0.15 | Cone/ Bevel | NP0.5B-PE-0.47 | 000475 |
| 033765 | 0.5 µL | 70 | 23 | 0.63 | 0.15 | Cone | NP0.5B-PE-0.63 | 000478 |
| Shimadzu - AOC 14, 17, 20 and 20i | | | | | | | | |
| 033738 | 0.5 µL | 42 | 26 | 0.47 | 0.15 | Cone | NP0.5B-S-0.47 | 000440 |
| 033745 | 0.5 µL | 42 | 23 | 0.63 | 0.15 | Cone | NP0.5B-S-0.63 | 000445 |

Replacement Guide | Syringe Components

| Part No. | Description | Pack Size |
|----------|---|-----------|
| 031902 | Replacement Luer Lock Fitting (includes Kel-F Luer Cone and threaded Metal Adaptor) | 1 |
| 031903 | Replacement Kel-F Luer Cones | 2 |
| 032002 | Replacement PTFE Plunger Seal (supplied with tool) for 0.5 µL NanoVolume syringes with 8 mm OD Barrels | 1 |
| 032004 | Replacement PTFE Plunger Seal (supplied with tool) for 0.5 µL NanoVolume syringes with 6.5 mm OD barrels and 1 µL NanoVolume syringes | 1 |
| 032006 | Replacement PTFE Plunger Seal (supplied with tool) for 5 µL NanoVolume syringes | 1 |
| 032012 | Replacement Needle Seals 5 µL Syringes | 2 |
| 032014 | Replacement Needle Seals 10 µL Syringes | 2 |
| 032016 | Replacement Needle Seals 15 to 500 µL Syringes | 2 |
| 032018 | Replacement Needle Seals 1 to 2.5 mL Syringes | 2 |
| 032030 | Replacement Needle Springs | 10 |
| 032040 | Front Cover Nut for Removable Needle Syringes with 6.5 mm OD Barrel | 2 |
| 032042 | Front Cover Nut for Removable Needle Syringes with 8 mm OD Barrel | 2 |

Replacement
Guide



Syringe Brilliance

Replacement Guide | Autosampler Plunger-in-Needle Syringes and Syringe Components



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Replacement Guide | Plungers Listed by Syringe Part Number

| Syringe Part No. | Replacement Plunger Part No. | Plunger Code | Pack Size |
|------------------|------------------------------|---------------------|-----------|
| 001955 | 031807 | P5F-PE-GT 5 µL | 2 |
| 001957 | 031807 | P5F-PE-GT 5 µL | 2 |
| 002200 | 031810 | P10F-GT 10 µL | 2 |
| 002208 | 031810 | P10F-GT 10 µL | 2 |
| 002250 | 031811 | P10R-GT 10 µL | 2 |
| 002313 | 031811 | P10R-GT 10 µL | 2 |
| 002335 | 031810 | P10F-GT 10 µL | 2 |
| 002455 | 031805 | P10-GP-GT 10 µL | 2 |
| 002500 | 031811 | P10R-GT 10 µL | 2 |
| 002812 | 031808 | P10F-HP-GT 10 µL | 2 |
| 002817 | 031809 | P10R-HP-GT 10 µL | 2 |
| 002818 | 031809 | P10R-HP-GT 10 µL | 2 |
| 002826 | 031808 | P10F-HP-GT 10 µL | 2 |
| 002829 | 031809 | P10R-HP-GT 10 µL | 2 |
| 002902 | 031798 | P10R-S-GT | 2 |
| 002923 | 031218 | 10A-VP 10 µL | 1 |
| 002924 | 031218 | 10A-VP 10 µL | 1 |
| 002926 | 031218 | 10A-VP 10 µL | 1 |
| 002985 | 0318922 | P25F-CTC-GT | 2 |
| 002987 | 0318120 | P10F-C/T-GT 10 µL | 2 |
| 002991 | 0318120 | P10F-C/T-GT 10 µL | 2 |
| 003200 | 031815 | P25-GT 25 µL | 1 |
| 003250 | 031815 | P25-GT 25 µL | 1 |
| 003312 | 031815 | P25-GT 25 µL | 1 |
| 003668 | 031818 | P25-HP-GT 25 µL | 1 |
| 003670 | 0318181 | P25-HP1090-GT 25 µL | 1 |
| 003700 | 0318922 | P25F-CTC-GT | 1 |
| 003715 | 0318922 | P25F-CTC-GT | 1 |
| 003985 | 031816 | P25R-C/T-GT 25 µL | 1 |
| 003987 | 031817 | P25F-C/T-GT 25 µL | 1 |
| 003988 | 031816 | P25R-C/T-GT 25 µL | 1 |
| 003990 | 031819 | P25-WISP-GT 25 µL | 1 |
| 003995 | 0318191 | P25D-CX 25 µL | 1 |
| 004200 | 031820 | P50-GT 50 µL | 1 |
| 004229 | 031820 | P50-GT 50 µL | 1 |
| 004230 | 031820 | P50-GT 50 µL | 1 |
| 004232 | 0318221 | P50D-CX 50 µL | 1 |
| 004233 | 0318221 | P50D-CX 50 µL | 1 |
| 004250 | 031820 | P50-GT 50 µL | 1 |
| 004279 | 031820 | P50-GT 50 µL | 1 |
| 004312 | 031820 | P50-GT 50 µL | 1 |
| 004668 | 031142 | P50F-HP-GT | 1 |
| 004810 | 031821 | P50F-C/T-GT 50 µL | 1 |
| 004995 | 0318221 | P50D-CX 50 µL | 1 |
| 005200 | 031825 | P100-GT 100 µL | 1 |
| 005229 | 031825 | P100-GT 100 µL | 1 |
| 005230 | 031825 | P100-GT 100 µL | 1 |
| 005232 | 0318271 | P100D-CX 100 µL | 1 |
| 005236 | 031825 | P100-GT 100 µL | 1 |
| 005250 | 031825 | P100-GT 100 µL | 1 |
| 005279 | 031825 | P100-GT 100 µL | 1 |
| 005312 | 031825 | P100-GT 100 µL | 1 |
| 005330 | 031826 | P100R-C/T-GT 100 µL | 1 |
| 005331 | 0318261 | P100F-C/T-GT 100 µL | 1 |
| 005333 | 031826 | P100R-C/T-GT 100 µL | 1 |
| 005335 | 0318261 | P100F-C/T-GT 100 µL | 1 |
| 005668 | 031823 | P100-HP-GT 100 µL | 1 |
| 005700 | 0318924 | P100F-CTC-GT | 1 |
| 005720 | 0318924 | P100F-CTC-GT | 1 |
| 005921 | 031824 | P100-VA8X 100 µL | 1 |
| 005990 | 0318271 | P100D-CX 100 µL | 1 |
| 006200 | 031830 | P250-GT 250 µL | 1 |
| 006229 | 031830 | P250-GT 250 µL | 1 |
| 006230 | 031830 | P250-GT 250 µL | 1 |
| 006232 | 031833 | P250-THERMO 250 µL | 1 |
| 006250 | 031830 | P250-GT 250 µL | 1 |
| 006279 | 031830 | P250-GT 250 µL | 1 |
| 006312 | 031830 | P250-GT 250 µL | 1 |
| 006330 | 031831 | P250R-C/T-GT 250 µL | 1 |
| 006660 | 031833 | P250-THERMO 250 µL | 1 |
| 006670 | 031829 | P250-HP1090 250 µL | 1 |
| 006680 | 031832 | P250-SHIM (TOC) | 1 |
| 006682 | 031828 | P250-S-GT 250 µL | 1 |
| 006683 | 0318348 | P250D-SPARK 250 µL | 1 |
| 006684 | 0318349 | P250D-KONTRON-GT | 1 |

| Syringe Part No. | Replacement Plunger Part No. | Plunger Code | Pack Size |
|------------------|------------------------------|---------------------|-----------|
| 006690 | 031834 | P250-WISP-GT 250 µL | 1 |
| 006700 | 0318926 | P250F-CTC-GT | 1 |
| 006720 | 0318926 | P250F-CTC-GT | 1 |
| 006995 | 031833 | P250-THERMO 250 µL | 1 |
| 007200 | 031835 | P500-GT 500 µL | 1 |
| 007229 | 031835 | P500-GT 500 µL | 1 |
| 007230 | 031835 | P500-GT 500 µL | 1 |
| 007232 | 0318381 | P500D-CX 500 µL | 1 |
| 007250 | 031835 | P500-GT 500 µL | 1 |
| 007279 | 031835 | P500-GT 500 µL | 1 |
| 007312 | 031835 | P500-GT 500 µL | 1 |
| 007630 | 031835 | P500-GT 500 µL | 1 |
| 007660 | 031837 | P500-HITACHI 500 µL | 1 |
| 007680 | 0318381 | P500D-CX 500 µL | 1 |
| 007684 | 0318389 | P500D-KONTRON-GT | 1 |
| 007700 | 0318928 | P500F-CTC-GT | 1 |
| 007720 | 0318928 | P500F-CTC-GT | 1 |
| 007995 | 0318381 | P500D-CX 500 µL | 1 |
| 008020 | 031842 | P1M-GT 1 mL | 1 |
| 008025 | 0318441 | P1MD-C-GT 1 mL | 1 |
| 008100 | 031842 | P1M-GT 1 mL | 1 |
| 008102 | 0318441 | P1MD-C-GT 1 mL | 1 |
| 008105 | 031842 | P1M-GT 1 mL | 1 |
| 008110 | 031842 | P1M-GT 1 mL | 1 |
| 008120 | 0318444 | P1MD-CTC-GT 1 mL | 1 |
| 008140 | 0318443 | P1MD-LL-CAV (XL) | 1 |
| 008160 | 031842 | P1M-GT 1 mL | 1 |
| 008183 | 0318448 | P1MD-SPARK-GT 1 mL | 1 |
| 008184 | 0318449 | P1MD-KONTRON-GT | 1 |
| 008185 | 0318441 | P1MD-C-GT 1 mL | 1 |
| 008195 | 031842 | P1M-GT 1 mL | 1 |
| 008199 | 031842 | P1M-GT 1 mL | 1 |
| 008420 | 031852 | P2.5MD-GT 2.5 mL | 1 |
| 008425 | 031852 | P2.5MD-GT 2.5 mL | 1 |
| 008500 | 031842 | P1M-GT 1 mL | 1 |
| 008502 | 031852 | P2.5MD-GT 2.5 mL | 1 |
| 008505 | 031852 | P2.5MD-GT 2.5 mL | 1 |
| 008510 | 031852 | P2.5MD-GT 2.5 mL | 1 |
| 008560 | 031852 | P2.5MD-GT 2.5 mL | 1 |
| 008584 | 0318549 | P2.5MD-KONTRON-GT | 1 |
| 008660 | 031853 | P2.5M-THERMO 2.5 mL | 1 |
| 008685 | 0318545 | P2.5MD-LL-CAV(XL) | 1 |
| 008692 | 031852 | P2.5MD-GT 2.5 mL | 1 |
| 008700 | 031856 | P5MD-GT 5 mL | 1 |
| 008760 | 031856 | P5MD-GT 5 mL | 1 |
| 008762 | 0318562 | P5MDF-GT 5 mL | 1 |
| 008770 | 031856 | P5MD-GT 5 mL | 1 |
| 008775 | 031856 | P5MD-GT 5 mL | 1 |
| 008780 | 031856 | P5MD-GT 5 mL | 1 |
| 008785 | 0318595 | P5MD-LL-CAV (XL) | 1 |
| 008787 | 0318562 | P5MDF-GT 5 mL | 1 |
| 008790 | 031858 | P5M-GRABNER 5 mL | 1 |
| 008792 | 0318597 | P5MD-ZYMARK-GT | 1 |
| 008820 | 031856 | P5MD-GT 5 mL | 1 |
| 008900 | 031862 | P10MD-GT 10 mL | 1 |
| 008960 | 031862 | P10MD-GT 10 mL | 1 |
| 008962 | 031864 | P10MDF-LL 10 mL | 1 |
| 008970 | 031862 | P10MD-GT 10 mL | 1 |
| 008975 | 031862 | P10MD-GT 10 mL | 1 |
| 008985 | 0318635 | P10MD-LL-CAV(XL) | 1 |
| 008987 | 031864 | P10MDF-LL 10 mL | 1 |
| 008992 | 031864 | P10MDF-LL 10 mL | 1 |
| 009462 | 031870 | P25MD-GT 25 mL | 1 |
| 009463 | 031874 | P25MDF-GT 25 mL | 1 |
| 009472 | 031870 | P25MD-GT 25 mL | 1 |
| 009485 | 0318715 | P25MD-LL-CAV(XL) | 1 |
| 009660 | 0312170 | 50MAX-P 50 mL | 1 |
| 009670 | 0312170 | 50MAX-P 50 mL | 1 |
| 009760 | 0312176 | 100MAX-P 100 mL | 1 |
| 009770 | 0312176 | 100MAX-P 100 mL | 1 |
| 009990 | 031804 | MULTI-CHAN 10 µL | 2 |
| 009992 | 031804 | MULTI-CHAN 10 µL | 2 |
| 009994 | 031804 | MULTI-CHAN 10 µL | 2 |
| 009996 | 031804 | MULTI-CHAN 10 µL | 2 |
| 009998 | 031804 | MULTI-CHAN 10 µL | 2 |

Cross Reference Guide

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SGE Replacements for Hamilton Syringes.

| Hamilton Part No. | Hamilton Product Code | SGE Part No. | SGE Product Code |
|-------------------|-------------------------------|--------------|------------------------|
| 80000 | 1701 N | 002200 | 10F-GT |
| 80011 | 1701RNHP(26s/51/2) | 002250 | 10R-GT |
| 80020 | 1702WISP | 003990 | 25D-WISP |
| 80024 | 1725WISP | 006690 | 250D-WISP |
| 80030 | 1701RN(26s/51/2) | 002250 | 10R-GT |
| 80065 | 1701RNR - Rheodyne | 002313 | 10R-GT-LC |
| 80074 | 175ASN(23s/1.71"/HP) | 002812 | 10F-HP-GT-0.63 |
| 80076 | 175ASN(23s-26s/1.71"/HP) | 001821 | 5F-HP-0.63/0.47 |
| 80079 | 1701ASN(23s-26s/1.71"/HP) | 002826 | 10F-HP-GT-0.63/0.47 |
| 80080 | 1701ASN(23s/1.71"/HP) | 002812 | 10F-HP-GT-0.63 |
| 80084 | 175ASRN(23s/1.71"/HP) | 001815 | 5R-HP-0.63 |
| 80086 | 175ASRN(23s-26s/1.71"/HP) | 001825 | 5R-HP-0.63/0.47 |
| 80087 | 1701ASRN(23s/1.71"/HP) | 002818 | 10R-HP-GT-0.63 |
| 80088 | 1701ASRN(26s/1.71"/HP) | 002817 | 10R-HP-GT-0.47 |
| 80089 | 1701ASRN(23s-26s/1.71"/HP) | 002829 | 10R-HP-GT-0.63/0.47 |
| 80090 | 175ASN(23s/1.71"/HP)pk/6 | 001814 | SK-5F-HP-0.63 |
| 80092 | 175ASN(23s-26s/1.71"/HP)pk/6 | 001822 | SK-5F-HP-0.63/0.47 |
| 80094 | 1701ASN(23s/1.71"/HP)pk/6 | 002813 | SK-10F-HP-GT-0.63 |
| 80096 | 1701ASN(23s-26s/1.71"/HP)pk/6 | 002827 | SK-10F-HP-GT-0.63/0.47 |
| 80175 | 1701ASRN(26s/1.71"/HP) | 000400 | 0.5BR-HP-0.47 |
| 80176 | 1701ASRN(23s/1.71"/HP) | 000410 | 0.5BR-HP-0.63 |
| 80200 | 1702N(22s/51/2) | 003200 | 25F-GT |
| 80230 | 1702RN(22s/51/2) | 003250 | 25R-GT |
| 80238 | 1702RNV | 003375 | 25R-WLC-RAX |
| 80262 | 1702CX | 003995 | 25D-CX-GT |
| 80265 | 1702RNR - Rheodyne | 003312 | 25R-GT-LC |
| 80300 | 701N(26s/51/2) | 002000 | 10F |
| 80330 | 701RN(26s/51/2) | 002050 | 10R |
| 80338 | 701RN-HP(26s/2"/2) | 002050 | 10R |
| 80350 | 701SN(26s/2.75"/2) | 002003 | 10F-7 |
| 80357 | 701ASRN(23s/1.71"/HP) | 002815 | 10R-HP-0.63 |
| 80358 | 701ASRN(26s/1.71"/HP) | 002805 | 10R-HP-0.47 |
| 80359 | 80359 (23s-26s/1.71"/HP) | 002825 | 10R-HP-0.63/0.47 |
| 80360 | 901N | 002400 | 10F-GP |
| 80365 | 701NR - Rheodyne | 002301 | 10F-LC |
| 80366 | 701N 6p/k | 002030 | SK-10F |
| 80370 | 901RN | 002450 | 10R-GP |
| 80387 | 701ASN(23s/1.71"/HP) | 002810 | 10F-HP-0.63 |
| 80388 | 701ASN(26s/1.71"/HP) | 002800 | 10F-HP-0.47 |
| 80389 | 701ASN(26s/1.71"/HP) Pkt6 | 002814 | SK-10F-HP-0.63 |
| 80390 | 701ASN(23s/1.71"/HP) Pkt6 | 002804 | SK-10F-HP-0.47 |
| 80391 | 701ASN(23s-26s/1.71"/HP) | 002822 | SK-10F-HP-0.63/0.47 |
| 80393 | 701ASN(23s-26s/1.71"/HP) | 002821 | 10F-HP-0.63/0.47 |
| 80400 | 702N(22s/51/2) | 003000 | 25F |
| 80419 | 702SN(22s/51/3) | 003300 | 25F-LC |
| 80465 | 702NR - Rheodyne | 003300 | 25F-LC |
| 80500 | 705N(22s/51/2) | 004000 | 50F |
| 80501 | 705LT | 004229 | 50F-LT-GT |
| 80530 | 705RN(22s/51/2) | 004050 | 50R |
| 80551 | 705CA (50 µL, 2.5") | 005236 | 100F-LT-GT-6.5CA |
| 80565 | 705NR(22s/51/3) | 004300 | 50F-LC |
| 80600 | 710N | 005000 | 100F |
| 80601 | 710LT | 005229 | 100F-LT-GT |
| 80630 | 710RN | 005050 | 100R |
| 80665 | 710NR(22s/51/3) | 005300 | 100F-LC |
| 80700 | 725N(22s/51/2) | 006000 | 250F |
| 80701 | 725LT | 006229 | 250F-LT-GT |
| 80730 | 725RN(22s/51/2) | 006050 | 250R |
| 80765 | 725SNR - Rheodyne | 006300 | 250F-LC |
| 80800 | 750N | 007000 | 500F |
| 80801 | 750LT | 007229 | 500F-LT-GT |
| 80830 | 750RN(22s/51/2) | 007050 | 500R |
| 80865 | 750SNR - Rheodyne | 007300 | 500F-LC |
| 80900 | 1705N(22s/51/2) | 004200 | 50F-GT |

| Hamilton Part No. | Hamilton Product Code | SGE Part No. | SGE Product Code |
|-------------------|--------------------------|--------------|------------------|
| 80901 | 1705LT | 004229 | 50F-LT-GT |
| 80920 | 1705TLL | 004230 | 50F-LL-GT |
| 80930 | 1705RN | 004250 | 50R-GT |
| 80938 | 1705RNW | 004375 | 50R-GT |
| 80956 | 1705SL | 004279 | 50R-V-GT |
| 80962 | 1705CX | 004995 | 50D-CX-GT |
| 80965 | 1705RNR - Rheodyne | 004312 | 50R-GT-LC |
| 81000 | 1710N | 005200 | 100F-GT |
| 81001 | 1710LT | 005229 | 100F-LT-GT |
| 81020 | 1710TLL | 005230 | 100F-LL-GT |
| 81030 | 1710RN(22s/51/2) | 005250 | 100R-GT |
| 81056 | 1710SL | 005279 | 100R-V-GT |
| 81060 | 1710C | 005990 | 100D-CX-GT |
| 81065 | 1710RNR - Rheodyne | 005312 | 100R-GT-LC |
| 81100 | 1725N(22s/51/2) | 006200 | 250F-GT |
| 81101 | 1725LT | 006229 | 250F-LT-GT |
| 81120 | 1725TLL | 006230 | 250F-LL-GT |
| 81122 | 1725TLLX | 007230 | 500F-LL-GT |
| 81130 | 1725RN | 006250 | 250R-GT |
| 81138 | 1725RNW | 006375 | 250R-WLC-RAX |
| 81156 | 1725SL | 006279 | 250R-V-GT |
| 81162 | 1725CX | 006995 | 250D-CX-GT |
| 81165 | 1725RNR - Rheodyne | 006312 | 250R-GT-LC |
| 81201 | 1750LT | 007229 | 500F-LT-GT |
| 81220 | 1750TLL | 007660 | 500C-HITACHI |
| 81230 | 1750RN | 007250 | 500R-GT |
| 812560 | 1750SL | 007279 | 500R-V-GT |
| 81262 | 1750CX | 007995 | 500D-CX-GT |
| 81265 | 1750RNR - Rheodyne | 007312 | 500R-GT-LC |
| 81301 | 1001LT | 008020 | 1 MDF-LT-GT |
| 81320 | 1001TLL | 008025 | 1 MDF-LL-GT |
| 81330 | 1001RN(22/51/2) | 008100 | 1 MDR-GT |
| 81356 | 1001SL | 008110 | 1MDR-V-GT |
| 81360 | 1001C | 008185 | 1MD-C-GT |
| 81401 | 1002LT | 008420 | 2.5MDF-LT-GT |
| 81420 | 1002TLL | 008425 | 2.5MDF-LL-GT |
| 81430 | 1002RN(22/51/2) | 008500 | 2.5MDR-GT |
| 81456 | 1002SL | 008510 | 2.5MDR-V-GT |
| 81460 | 1002C | 008687 | 2.5MD-C-GT |
| 81520 | 1005TLL | 008762 | 5MDF-LL-GT |
| 81530 | 1005RN(22/51/2) | 008700 | 5MDR-GT |
| 81610 | 1010W | 008962 | 10MDF-LL-GT |
| 81630 | 1010RN(22/51/2) | 008900 | 10MDR-GT |
| 82520 | 1025TLL | 009463 | 25MDF-LL-GT |
| 84852 | 801N(26s/51/2) | 002400 | 10F-GP |
| 84853 | 801RN(26s/51/2) | 002450 | 10R-GP |
| 84877 | 1801RN(26s/51/2) | 002455 | 10R-GP-GT |
| 85020 | 1050TLL | 009660 | 50MR-LL-GT |
| 86020 | 1100TLL | 009670 | 100MR-LL-GT |
| 86274 | 7000.5ASRN | 000400 | 0.5BR-HP-0.47 |
| 86275 | 7000.5ASRN/PE | 000478 | 0.5BR-PE-0.63 |
| 86276 | 7000.5ASRN | 000410 | 0.5BR-HP-0.63 |
| 86311 | 50500 (TLL) | 009910 | 500MAR-LL-GT |
| 86312 | 51000 (TLL) | 009920 | 1000MAR-LL-GT |
| 86314 | 52000 (TLL) | 009930 | 2000MAR-LL-GT |
| 863260 | 1025SL | 009472 | 25MDR-VLLMA-GT |
| 863360 | 1050SL | 009670 | 50MR-VLLMA-GT |
| 86346 | 1100SL | 009770 | 100MR-VLLMA-GT |
| 87402 | 701RNFs(0.17/10cm/3) | 002520 | 10R-OC-100VS |
| 87900 | 75N(26s/51/2) | 001000 | 5F |
| 87920 | 95N 5.0ul SYR (26s/2"/2) | 001400 | 5F-GP |
| 87925 | 95RN | 001450 | 5R-GP |
| 87930 | 75RN(26s/51/2) | 001050 | 5R |
| 87939 | 75N(26/51/5) | 001821 | 5F-HP-0.63/0.47 |

Expert Tip :

If you can not find an equivalent syringe listed, contact SGE for a suitable replacement.



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| Hamilton Part No. | Hamilton Product Code | SGE Part No. | SGE Product Code |
|-------------------|------------------------------|--------------|-------------------------|
| 87957 | 75ASRN(23s/1.71"/HP) | 001815 | 5R-HP-0.63 |
| 87958 | 75ASRN(26s/1.71"/HP) | 001805 | 5R-HP-0.47 |
| 87959 | 75ASRN(23s-26s/1.71"/HP) | 001825 | 5R-HP-0.47/0.63 |
| 87987 | 75ASN(23s/1.7"/IHP) | 001810 | 5F-HP-0.63 |
| 87988 | 75ASN(26s/1.71"/HP) | 001800 | 5F-HP-0.47 |
| 87989 | 75ASN(26s/1.71"/HP) Pk/6 | 001804 | SK-5F-HP-0.47 |
| 87990 | 75ASN(23s/1.71"/HP) Pk/6 | 001814 | SK-5F-HP-0.63 |
| 87993 | 75ASN(23s-26s/1.71"/HP) | 001821 | 5F-HP-0.63/0.47 |
| 87994 | 75ASN(23s-26s/1.71"/HP) Pkt6 | 001822 | SK-5F-HP-0.63/0.47 |
| 88000 | 7105KH (24/2.75"/3) | 000802 | 5BR-7 |
| 88011 | 7105KH (24/2.75"/2) | 000803 | 5BR-7BV |
| 88035 | 75ASN/PE-0.63 | 001954 | 5F-PE-0.63 |
| 88040 | 75ASN/PE-0.47 | 001953 | 5F-PE-0.47 |
| 202066 | 701N Fisons(0.47/80/AS) | 002992 | 10F-C/T-0.47/8C |
| 202201 | 701N(25s/51/2) | 002980 | 10F-C/T-5/0.47 |
| 202315 | 1702RN w/o needle | 003670 | 25D-HP1090-GT |
| 202325 | 1725RN w/o needle | 006670 | 250D-HP1090-GT |
| 202400 | 7005LS (Type B) | 001965 | 5R-SM-7 |
| 202640 | 701RSN-AOC14 | 002898 | 10R-S-0.63 |
| 202880 | 701 Varian | 002924 | 10R-VA8X-II |
| 202910 | 701RNLS | 002988 | 10R-SM-7 |
| 203043 | 1702 CTC(26s/51/AS) | 003700 | 25F-CTC-GT-5/0.47C |
| 203072 | 701N CTC (26s/2) | 002705 | 10F-CTC-5/0.47BV |
| 203073 | 701N CTC (22s/3) | 002710 | 10F-CTC-LC |
| 203074 | 1702 CTC(26/AS) slim line | 003980 | 25F-C/T-0.47C |
| 203075 | 1702 CTC(22s/51/AS) | 003715 | 25F-CTC-GT-LC |
| 203076 | 1710 CTC(26s/51/AS) | 005700 | 100F-CTC-GT-5/0.47C |
| 203077 | 1710 CTC(22s/51/3) | 005715 | 100F-CTC-GT-LC |
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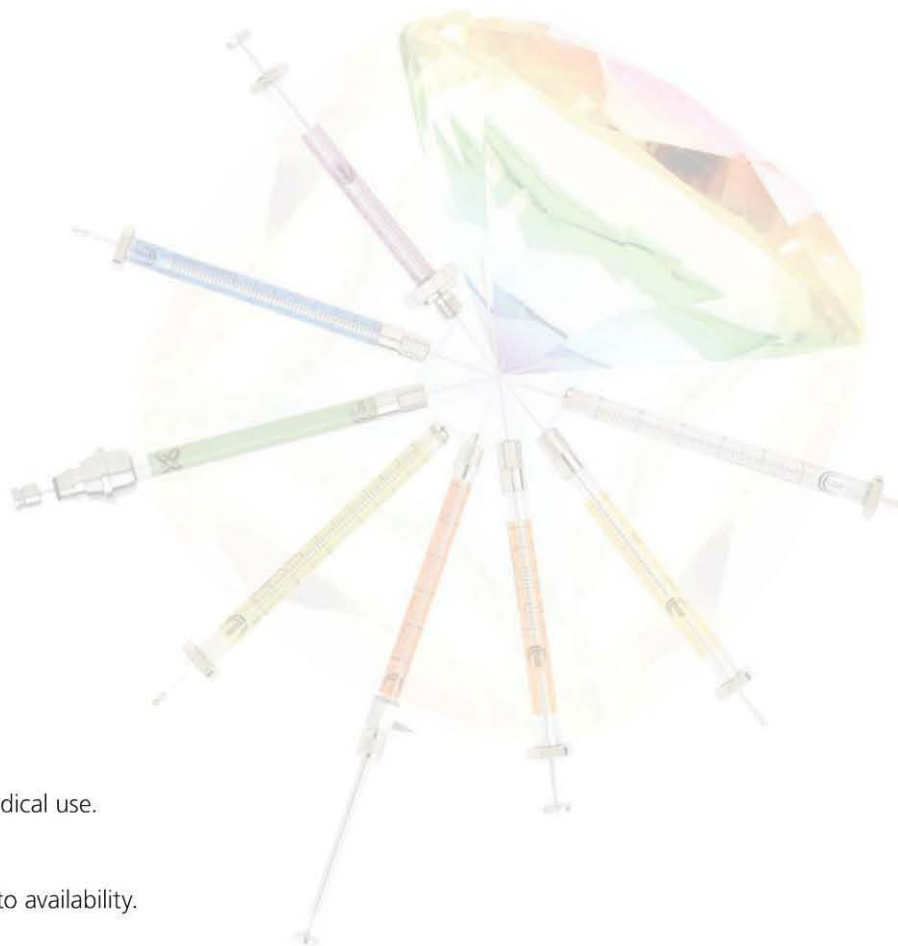
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