

Series 200 Autosampler



new standard

in automated sample processing

Series 200 Autosampler

Designed to Meet All of Your...

Automated injection of sample sequences is certainly a key factor in increased laboratory productivity. Today, requirements in an autosampler include high precision and accuracy, random access to individual samples, and task-oriented programming along with options and accessories for additional sample handling routines. With the added pressures of meeting regulatory guidelines such as GLP (Good Laboratory Practice) and other internal and external validation procedures, the user looks to the instrument manufacturer to help ease this burden as well as provide high-performance products.

That's why PerkinElmer has researched, engineered, and developed the Series 200 Autosampler to ensure that precision, flexibility, reliability, and ease-of-use expectations are fully met and in fact

exceed those available in other standard autosamplers. And we offer complete IQ/OQ protocols for the Series 200 Autosampler to assist you in the qualification process. Our easy-to-follow workbook format contains step-by-step procedures for comprehensive installation and operational qualification.

Add the Series 200 Autosampler to any HPLC system. Its compact, stackable, and well-executed engineering design provides extraordinary precision and the most reliable automation to your laboratory.

Our unique XYZ design allows you to take advantage of the built-in "extra" capabilities including dilution, derivatization, and standard addition – all without additional hardware or cost. This exciting design has also minimized the number of moving parts, which maximizes efficiency and eliminates the need for external positioning and alignment.

If you need high throughput and high speed, the Series 200 is designed for injecting up to 768 samples at rates as fast as 2-3 injections per minute from any sample position – ideal for LC/MS work. The Series 200 even supports direct injections from microtiter plates – shallow or deepwell format!

For high throughput requirements, the Series

200 can easily be interfaced with a Zymark Twister to feed multiple microtiter plates!

For even more power in your laboratory, add a TotalChrom® Chromatography Workstation providing full HPLC system control, method and sequence documentation, and much more. And for biomolecular applications, the autosampler is available in a fully biocompatible flow path.

So, take a look at the Series 200 Autosampler – it truly is the standard in Automated Sample Processing.

Precision at its best – from microbore to semi-prep

Inject as little as 0.1 µL or as much as 2.5mL. Switch easily between standard industry syringes: 50, 100, 250, 1000, or 2500 µL – without tools – to achieve the best precision in microbore to semi-prep injections using fixed or variable-fill modes.

Choose from a variety of valves: the industry-standard Rheodyne® 7725, the Biocompatible 9725 or the 8125 Micro-valve – which are available with optional rotor-seal materials including PEEK, Vespel®, and Tefzel®. Depending on your analysis, you can expect better than 0.5% RSD for volumes down to 3 µL. Using the 8125 Micro-valve, this new design is truly optimized for microbore and LC/MS applications due to its low dispersion characteristics and excellent precision at lower injection volumes.

Series 200 Autosampler At a Glance

- Precise & Reliable
- High Throughput (up to 768 samples) with Fast Sampling
- Space Saving Design – no add-on modules required
- Stackable
- Standard Precolumn Dilution and Derivatization
- Biocompatible
- Interchangeable Sample Trays – including Peltier cooled formats
- Easily interfaces with the Zymark Twister™ for High Throughput Applications

Sample Injection Requirements

Standard features

include dilution and derivatization Without adding hardware or cost, the Series 200 Autosampler will perform precolumn routines at any time.

Larger sample tray capacity and fast sampling for high productivity

You expect an autosampler to provide not only precision, but also reliable, fast injections to enhance laboratory productivity. Our unique XYZ mechanism allows for extremely fast sampling (2-3 injections per minute) and rapid vial-to-vial transfer. Coupled with our large capacity sample tray (225 vial positions), this makes the Series 200 Autosampler ideal for high throughput such as QA/QC applications and LC/MS without having to add on additional modules (or costs) such as robotic arms.

True biocompatibility

Choose the Rheodyne 9725 PEEK-based valve, with plastic transfer tubing for the biocompatibility version of the Series 200 and you have an autosampler for all your biomolecular applications requiring an inert sample flow path. Also available is an optional microtiter sample tray that you can move directly from your PCR instrument to the autosampler for immediate analysis without any sample contact.



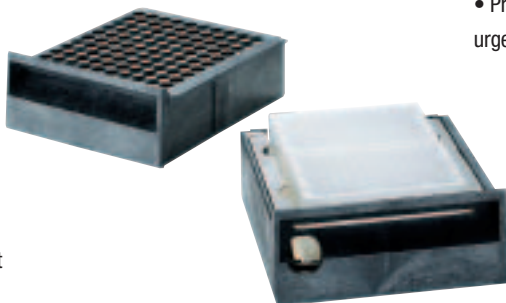
Individual vial and method programming with "Dialog Box"

Using the Dialog Box, you can define the range for each input:

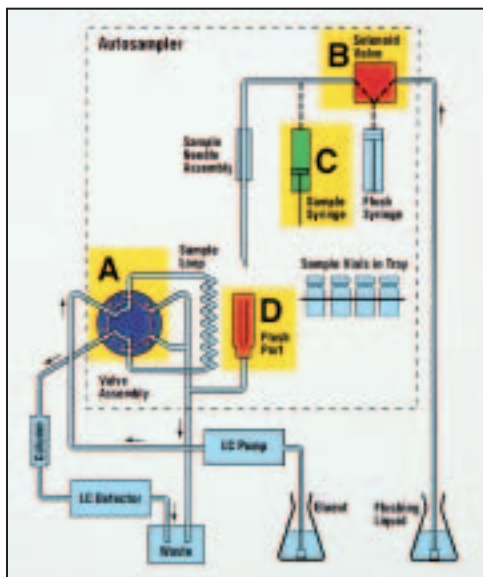
- 0.1- μ L to 1- μ L injection volumes feature 0.1- μ L increments
- 1- μ L to 2.5-mL injection volumes feature 1- μ L increments
- 99 injections per vial
- 20 methods stored in battery backed-up memory OR unlimited PC-based storage
- Automatic chaining together of multiple methods with different vial sequences
- Variable sampling speed for viscous samples
- Selectable flush speed/volume and number of cycles to reduce carryover
- Priority Inject with just one button click to interrupt a sequence and automatically resume at the same point in the sequence
- Reinject from specified calibrant vials as often as needed

Easy, yet sophisticated programming

- Easy programming with seven-line backlit LCD display and tactile keyboard
- Simple method editing with all method parameters visible on a single screen
- Versatile programming for either sequential or totally random vial sequences using random-access programmability
- Optional delayed injection time programming for column reequilibration, automated method switching, and for transfer of gradient chromatography from one system to another.
- Accommodates and facilitates sample handling functions including dilution and derivatization
- Priority vial programming for urgent samples



New Design Engineered for Highest Precision/Lowest Maintenance



Series 200 Autosampler Design

A– Choose from a variety of valves: the industry-standard Rheodyne 7725, the Biocompatible 9725 or the 8125 Micro-valve to optimize your analysis.

B– Active solenoid valve control of the fluid stream improves precision, accuracy, and reliability as well as allows the flexibility for sample handling such as dilution and derivatization.

C– A full line of syringes provides nanoliter resolution and allows you to select the best volume for your samples to achieve the most precise analysis.

D– Needle rinsing both inside and outside at the wash station before and after the injection results in the lowest carryover thus superior performance.

High-speed stepper-motor-driven XYZ design for highest precision

Using a unique stepper-motor-driven XYZ design, this precise metering device is capable of displacing each microliter of sample through 320 steps. This equates into each step measuring only 0.003 microliters (with 50- μ L sample syringe). The Series 200 Autosampler provides precision down to the 3- μ L level of better than 0.5%. This unique XYZ design also allows integrated sample handling such as dilution and derivatization as part of your everyday injection routines.

Lowest carryover < 0.02%

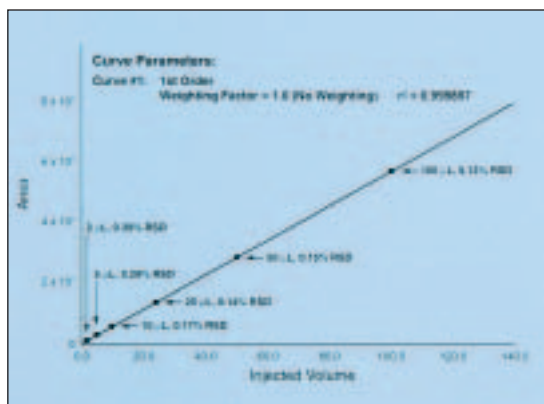
The Series 200 Autosampler is also optimized for the lowest carryover possible. There is continuous loop flushing and the inside and outside of the needle are flushed at the needle-wash station using varied flush cycles (1-9 user selectable) before and after each injection. All of this

engineering attention results in a carryover of less than 0.02% – *how's that for confidence?*

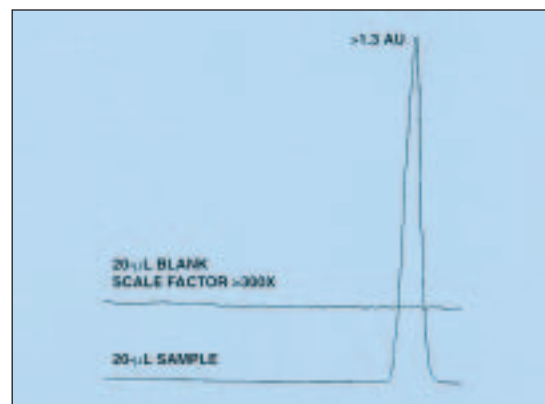
Low maintenance

A good design should also provide for worry-free operation and the lowest maintenance possible. The Series 200 provides easy accessibility to the valve, needle, and syringes. The valve is accessible at any time through a front door while additional access can be gained via a unique pull-out drawer. Since the valve is a standard Rheodyne, changing sample loops is simple. Replacing the sample syringe can easily be done by the user because no tools are required. Even changing the needle is simple due to its accessibility and self-aligning design.

As part of our continuing engineering efforts, we will offer enhancements through “flash rom” firmware to update your unit with the newest capability without a service call.



This figure demonstrates the excellent precision and linearity over a wide injection range. The %RSD is shown at each injection volume (10 replicates).



The Series 200 Autosampler is optimized for the lowest carryover as shown by the 20- μ L blank run after the 20- μ L sample injection.

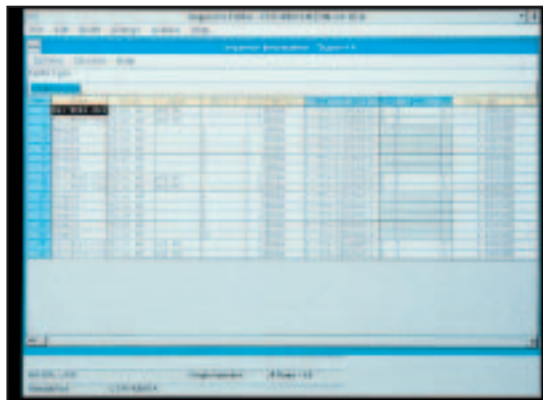
Maximum Automation and Versatility

Stand-alone or PC-based for complete system control and automation

The Series 200 Autosampler can operate as a stand-alone unit providing sophisticated automation including chaining together multiple methods with different injection sequences. The Series 200 Autosampler can also be fully controlled as part of a TotalChrom LC Plus™ System – utilizing the industry-standard, award-winning TotalChrom Workstation.

In a TotalChrom LC Plus system, the Series 200 Autosampler is under full-system, single-keyboard control, with complete documentation of

all injection and sequences parameters as well as additional programming capability. Additional programming features include unattended method development and sophisticated solvent optimization using Turbo Method Development Software. TotalChrom also provides the unique time-saving Sequence Template, where you simply designate the number of samples to be injected and the frequency of calibration – TotalChrom will automatically build the sequence for you so there is no need to reenter information.



TotalChrom LC Plus will automatically create a sequence table after you designate the number of samples and the calibration frequency using the unique time-saving sequence template.

TotalChrom LC Plus System including the Series 200 Autosampler



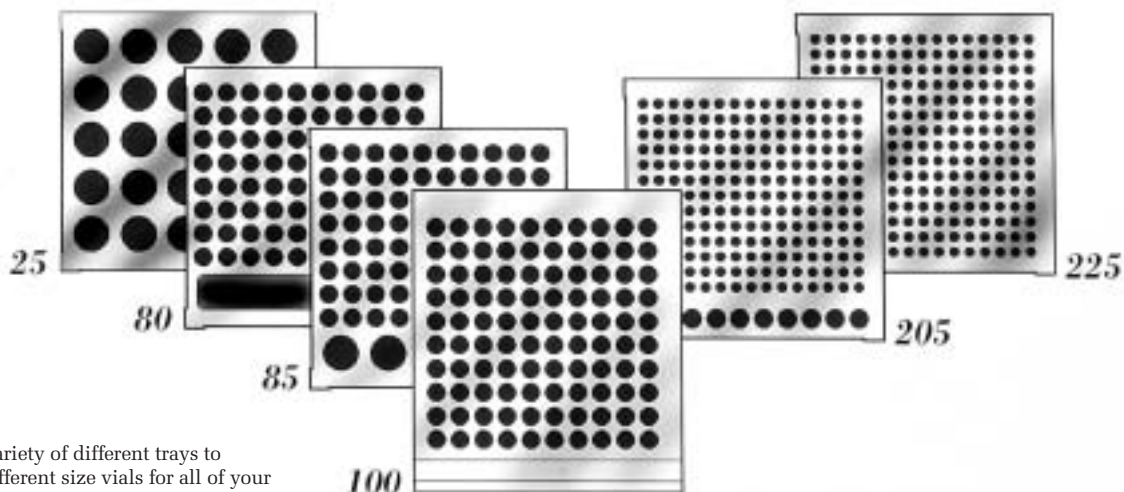


A variety of optional interchangeable sample trays for utmost convenience

The Series 200 Autosampler supports several interchangeable sample trays including a 25-vial capacity tray with 7-mL vials which may be useful when you're doing semi-prep repeat injections of the same sample. Or perhaps you'd prefer a 225-vial capacity tray with 250- μ L vials for maximum throughput. The trays can hold mini-, micro-, and standard vials crimp-capped or screw-capped. We even have several 96-well and 384-well microtiter trays able to support shallow or deep-well plates.

Optional Peltier Cooling accessory

Add an optional Microtiter Plate or 100-sample Peltier Sample Tray for unattended analysis of temperature-labile samples such as proteins and peptides. The sample temperature range is from 4 to 50 $^{\circ}$ C – all selectable from the keyboard.

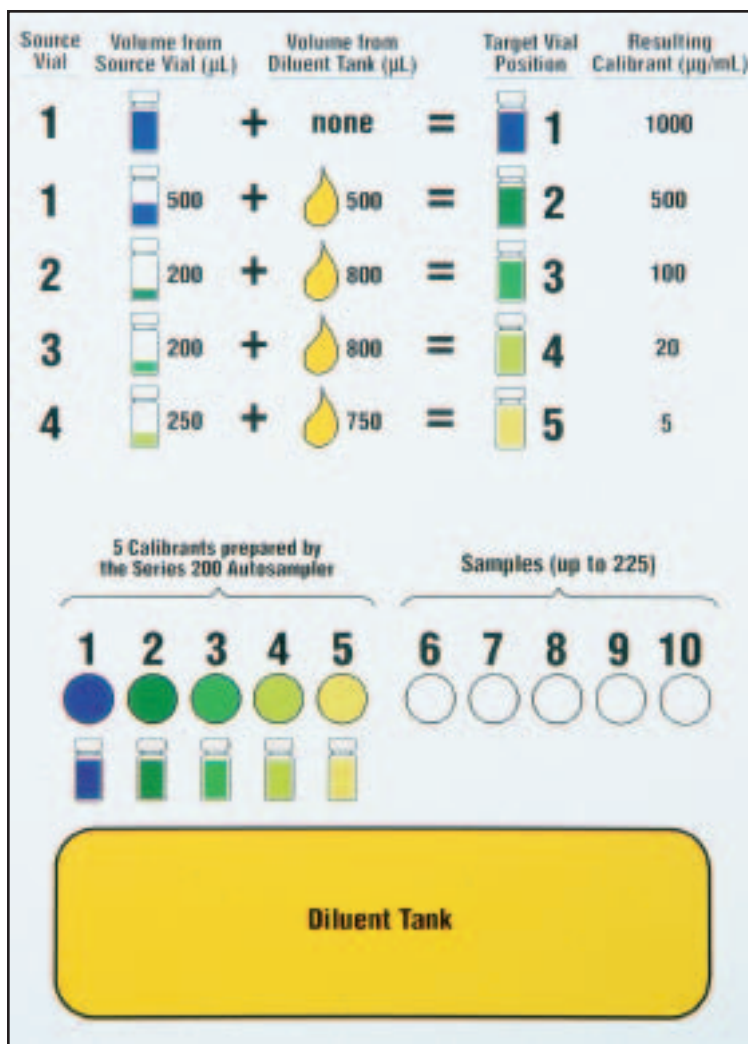


Choose from a variety of different trays to accommodate different size vials for all of your sampling needs.

Integrated dilution and derivatization routines – without adding additional hardware or cost

Due to the unique XYZ design, the Series 200 Autosampler includes dilution and derivatization as part of the standard shipping unit. Transfer contents of one vial to another for applications such as diluting a series of vials to specified concentrations before injection or adding an internal standard or marker. Serial dilution is made easy with automated transfer of a specified amount of liquid between any two vials – this also permits automated preparation of standard dilutions from a single standard.

For those samples requiring specialized precolumn chemistries such as OPA or FMOC, you can mix up to five derivatizing reagents in the sample vial itself – you can even control the reaction time and the exact time of injection. This overcomes problems with sample chemistries with short half-lives. And if the temperature needs to be under control, use the optional Peltier tray.



Link the serial dilution routine to the analysis. You simply set up the autosampler to automatically prepare the calibrants and then go on to inject your samples with bracketed calibration. After the initial setup, you can start the whole process at any time by pressing one key.

Calibration Routines

You can perform single- or multilevel calibrations with user-specified calibration vials even using the stand-alone unit. And we offer a special sample tray with large positions for your calibrant vials. You can also automate the autosampler to set up and generate a linearity curve.

Dedicated Support

At PerkinElmer, we recognize that your investment requires confidence in the company and its products and support services. From the moment you contact us, you'll discover our

commitment to providing solutions to your analytical problems. Our technical specialists are available to help you select the right HPLC systems and modules to meet your analytical needs. Our commitment to our customers doesn't end with your purchase of instrumentation. We believe the best in product quality deserves the best in product support. That's why we offer service installation of new equipment and training courses on instrument operation and maintenance at many of our worldwide locations.

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