

Agilent Automation Solutions

Automatic productivity for life science discovery

Our measure is your success.

products | applications | software | services



Agilent Technologies

Agilent Automation Solutions

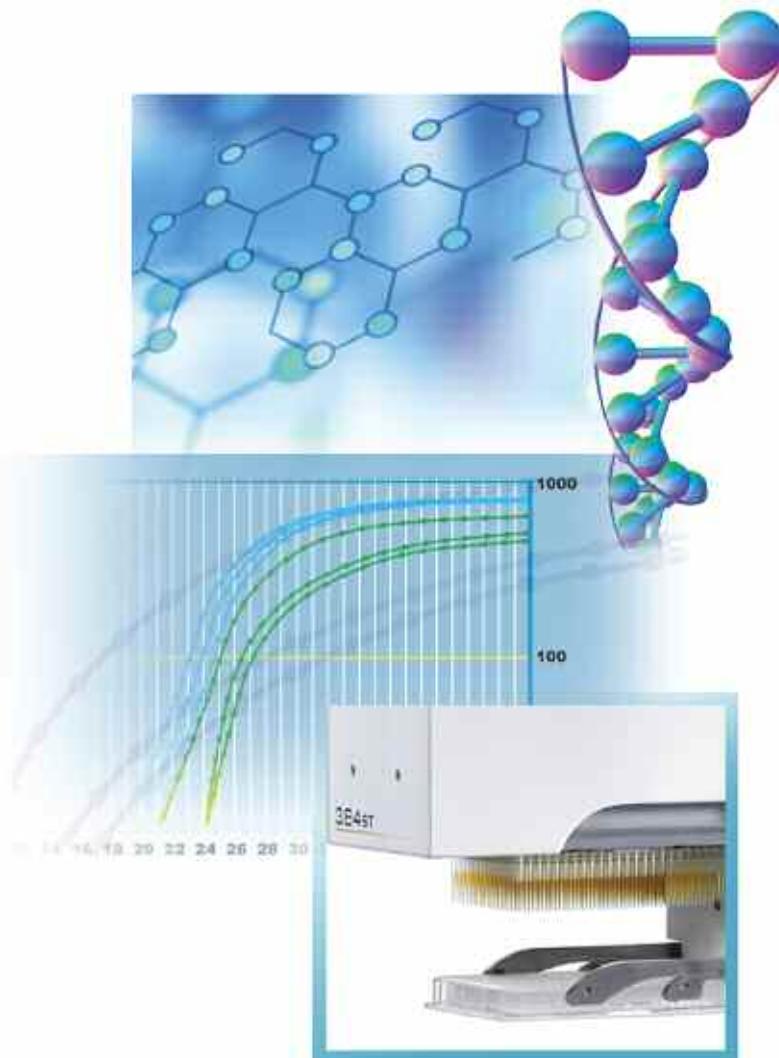
If you want to increase your pace of discovery, here's where to start.

Whether you're a biotech start-up still doing everything on the bench or working with automation in a multinational pharmaceutical company, Agilent Automation Solutions can help you accelerate your discovery. Automatically.

Our proven, Agilent-reliable automation platforms are speeding up cycle times and maximizing productivity on every scale, covering the full spectrum of life science discovery applications.

Applications for Life Science Discovery

- High throughput screening
- Compound management and high speed plate replication
- Genomics sample prep—PCR, sequencing, RNA purification and analysis
- ADME/Tox assays
- Cell maintenance and processing
- Cell-based screening

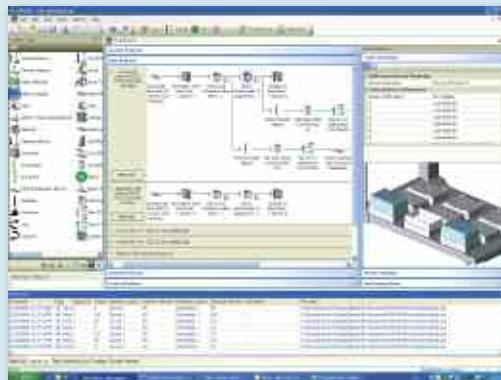


Fast, flexible solutions let you address today's bottlenecks—without adding any new ones.

From high performance benchtop workstations to large, fully integrated systems, Agilent combines creative automation approaches with personalized service and support. Our goal is to increase your lab's efficiency and "walk-away time," and our easily customizable application solutions give you the flexibility to solve problems today—without the long lead time, expense and uncertainty of "from scratch" solutions.

Built around robust, proven hardware and software, Agilent automation solutions provide an order-of-magnitude increase in throughput over manual or semi-automated methods. Compact, easily configurable modules let you create a system that's exactly right for your lab and its applications.

The result? You get a level of fit with your needs you'd expect only in fully-customized solutions—plus the dependability, affordability and quick integration of standardized components.



Easy-to-use Agilent VWorks Automation

Control software lets you integrate and control your laboratory automation assets across your entire discovery pipeline. [\(See page 10\)](#)

A complete lineup of flexible, scalable automation solutions.



Liquid handling —

Our automated liquid handling solutions span virtually all discovery applications. They incorporate advanced fluid delivery technologies to deliver precise, reliable performance, as well as legendary Agilent reliability. [\(See page 4\)](#)



Integrated systems —

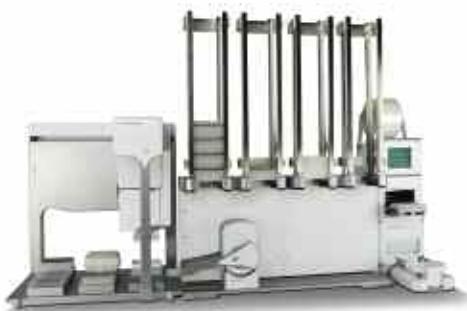
Application-specific or multi-workflow systems, such as the BioCel system, let you automate—and accelerate—everything from cell maintenance to microplate replication to multiplexed high content assays. [\(See page 9\)](#)



Microplate handling —

Agilent's microplate handlers, sealers, centrifuges and barcode labelers deliver outstanding performance as stand-alone instruments, in versatile combinations or integrated into benchtop workstations or sophisticated robotic systems. [\(See page 6\)](#)

Benchtop workstation solutions — By combining our versatile Bravo Automated Liquid Handling Platform and a variety of modular components, you can automate genomics workflows, high throughput screening, plate maintenance and more. [\(See page 8\)](#)



Liquid Handling Solutions

Unmatched precision. Unbeatable versatility.

Agilent liquid handling instruments deliver superior precision, as well as rock solid day-after-day reliability, for results you can depend on—every time.



Bravo Automated Liquid Handling Platform includes a configurable deck, interchangeable 96- and 384-channel pipette heads and an integrated plate gripper—all in a compact, space-saving package.

Bravo Automated Liquid Handling Platform

The fastest, smallest, most versatile liquid handling system available

The Bravo Automated Liquid Handling Platform's nine plate position footprint easily fits inside a standard laminar flow hood, enabling automated liquid handling for cell-based assays or hazardous reagents. The unit automatically performs multi-channel pipetting and serial dilutions in 96-, 384-, and 1536-well formats and can also dispense to a single well.

Offering numerous plate pad accessories and quick change-out of various dispensing heads, the deck is easily customized to meet a wide range of applications, including:

- General Liquid Handling
- Serial Dilutions
- PCR Preparation and Cleanup
- Cell-based Assays
- Filtration Assays
- Magnetic bead based separations

Precise — Proven high-accuracy pipette heads dispense from 100 nL to 200 μ L in 96-, 384-, and 1536-well microplates, in either disposable or fixed tip applications.

Versatile — Seven different easy-change head types can be swapped in minutes, and numerous plate pad options are available to enable a wide range of assays and liquid handling applications.

Easy to integrate — Unique open design allows access from all sides for simple system integration as well as stand-alone use.



Vertical Pipetting Station has eight sliding shelves on either side of the pipetting head, allowing easy access to microplates while conserving deck space.

Vertical Pipetting Station

Industry-leading speed and unparalleled performance

Serving either as a stand-alone unit or integrated into a larger robotic platform, Agilent's Vertical Pipetting Station significantly reduces cycle times for your most demanding sample handling and liquid transfer applications. The pipette head's 2-axis positioning provides access to all quadrants of 96-, 384- and 1536-well microplates, and an intuitive user interface lets you easily create and run complex pipetting protocols for operations such as:

- General liquid handling
- Plate replication and reformatting
- PCR preparation and cleanup

Ultra-compact design — Unique eight plate position design in a footprint of only three plate positions allows seamless integration into automation systems.

High throughput — Simultaneously pipetting while processed plates are replaced boosts throughput and significantly reduces assay time.

Versatile — Pipetting range of 100 nL to 200 µL accommodates virtually any application requirement; pipette heads are easily interchanged in less than 2 minutes.

Microplate Handling Solutions

All the speed and functionality a busy lab can use.

Along with liquid handling, microplate handling is at the heart of just about every discovery lab. With a complete selection of readily integratable modules, Agilent can help you automate virtually every plate handling operation.

PlateLoc Thermal Microplate Sealer

Fast, small, easy to use, and easy to integrate

Agilent's PlateLoc Thermal Microplate Sealer is not only one of the smallest, most dependable plate sealers on the market, it's also the most versatile. The module automatically adjusts to accommodate a wide range of standard microplates and tube racks for applications such as:

- Compound Storage
- Screening
- PCR/qPCR/rtPCR
- Sequencing



High precision — With sealing temperature control of $\pm 2^{\circ}\text{C}$ and advanced seal slitting control, seal integrity is always the same for every microplate—perfect.

High throughput — Fast cycle times, with no required cool down periods enable rapid microplate sealing, and an easy-to-access, top-loading seal roll support minimizes downtime when replenishing consumables.

Microplate Centrifuge

Stable high speed centrifugation with 3-second loading times

The Agilent Microplate Centrifuge is a very compact, robot-accessible unit that provides both vibration and noise control in a small, low-maintenance package. With a three-second loading time and robust spin control, it's ideal for high- or medium-throughput applications such as:

- Filtration protocols for PCR purification
- Cell harvesting for plasmid preps
- Condensate spin-down for post-PCR processes
- Removal of air bubbles in high-density plates



Universally accessible — With the automated centrifuge loader and high-throughput door design, the Microplate Centrifuge can be integrated with most robotic systems.

Stackable design — Multiple Microplate Centrifuge units can be stacked on each other, increasing the system throughput without adding to the footprint.

Low vibration — Dampening isolates vibration from mounting surface and minimizes impact on adjacent instruments.

Microplate Barcode Labeler

Label one or all four sides of a microplate

The Agilent Microplate Barcode Labeler fits easily on a benchtop and prints up to six fields (bar codes and human readable) per label. The system can print at speeds up to one label every 3 seconds and can also apply barcode labels to microplates. Using the optional barcode reader, it can verify barcodes (and reapply if necessary) and create data clones and log barcode activity.



Multiple configurations — A wide selection of fonts, barcode formats and magnifications allows maximum flexibility. The convenient software can access a variety of data sources, including comma- or tab-delimited files and spreadsheets, and can be integrated with an ODBC-compliant LIMS.

Microplate Seal Piercer

Accurately pierce sealed microplates

The Agilent Microplate Seal Piercer complements the PlateLoc Thermal Microplate Sealer and is used for screening or other applications that don't require tip washing between microplates. It pierces a wide variety of seals on 96- or 384-well microplates in a cycle time of only 4 seconds.



Piercing head — Interchangeable 96- or 384-pin heads are available with a variety of pin-plate designs, guaranteeing a clean, controlled puncture every time with a penetration depth of 3 mm. The pierce head is easily removed for cleaning and can be changed in seconds for reconfiguration between formats.

Plate accessibility — The unit can be loaded by hand or by articulated arm robot. A hardware interlock on the front door ensures operator safety.

Automated Workstations and Custom Systems

Modular convenience and affordability, tailored for your application.

Agilent Automation Solutions offers customized workstations and systems scaled to meet the complete range of application requirements in today's discovery laboratory.



Genomics/Proteomics Workstations

Based on the versatile BenchCel Microplate Handler and Bravo Automated Liquid Handling Platform, a typical automated genomics solution—in the example above, an RNAi workstation—might also include a Microplate Barcode Labeler and PlateLoc Thermal Microplate Sealer (shown).

Agilent automation components can be combined with a variety of industry-leading plate readers, washers and incubators to give you a compact benchtop solution for screening enzymes, proteins, antibodies or cells. Other configurations can be assembled for bulk dispensing, plate reading, PCR setup/cleanup, genomic assays, cell maintenance and cell viability applications.

BenchCel Microplate Workstation

Compact benchtop system with the performance of a full-size automation platform

Combining automated microplate handling and storage, the BenchCel Microplate Workstation delivers speed and precision you would expect to find only in much larger systems. The small-footprint unit easily integrates popular laboratory devices with other Agilent automation components and features a high-speed robot that can access peripheral instruments as well as its own microplate stacks to enable operations such as:

- Labeling and sealing
- Centrifugation
- Plate replication
- Mix-and-read screening assays
- PCR sample prep



Easily customizable design of the Agilent BenchCel Microplate Handler gives you the flexibility and scalability to meet the needs of the most diverse discovery applications.

High speed — 8-second transfer time from stack to instrument rivals even much larger automation systems.

Flexible capacity — 2-, 4-, or 6-rack options accommodate a maximum of 360 standard microplates. Higher capacity gives you 66% more walk-away time than competitive systems.

Convenience — System provides storage and handling of most microplates, lidded plates, tip boxes and tube racks. Delidding function adds even more versatility, removing and replacing microplate lids as necessary.

BioCel Systems

The perfect environment for higher productivity

Agilent BioCel Systems combine the Agilent Direct Drive Robot, the industry's most advanced robot for plate handling, with sophisticated VWorks Automation Control software to deliver fully-integrated, completely customizable processing for medium and high throughput screening applications.



The Agilent BioCel 1800 System is a robust, high-performance automated platform specifically designed for cell culturing and cell-based screening. Rigorous environmental control protects and preserves your valuable cell lines.



It's all in how you put it together. Using application-proven, standardized modular components, we can help you create flexible solutions that meet your particular needs—with rapid lead times and no development hassles.

The versatile systems are available in three sizes with various enclosure options and environmental control features. They let you automate—and accelerate—everything from cell maintenance to microplate replication to multiplexed high content assays, including:

- High-throughput screening
- Secondary screening and ADMET assays
- Genomics—DNA extraction, PCR sample preparation
- Cell-based assays—ELISAs, FLIPRs, FACS and stem cell assays
- Microplate-based cell maintenance
- Compound management
- Enzyme assays

Reproducible — Standardized, fully-automated procedures improve the quality and consistency of cell-based assays and other complex discovery operations and minimize experimental variability that could produce erroneous results.

Efficient — Save time by reducing tedious, costly manual interventions and increase your group's productivity by running 24/7.

Flexible — Unique hardware and software architecture allows seamless integration of devices and instruments and easily accommodates future expansion.

The BioCel 900 and 1200 robots are capable of reaching outside of the system frame to permit the integration of large devices and instruments on docking tables. In addition, multiple BioCel systems can be combined to handle complex applications.

Direct Drive Robot

One-person, one-touch teaching



You can teach the Agilent Direct Drive Robot just about anything, with the click of a button. One person can quickly integrate instruments into the system minimizing setup personnel and time.

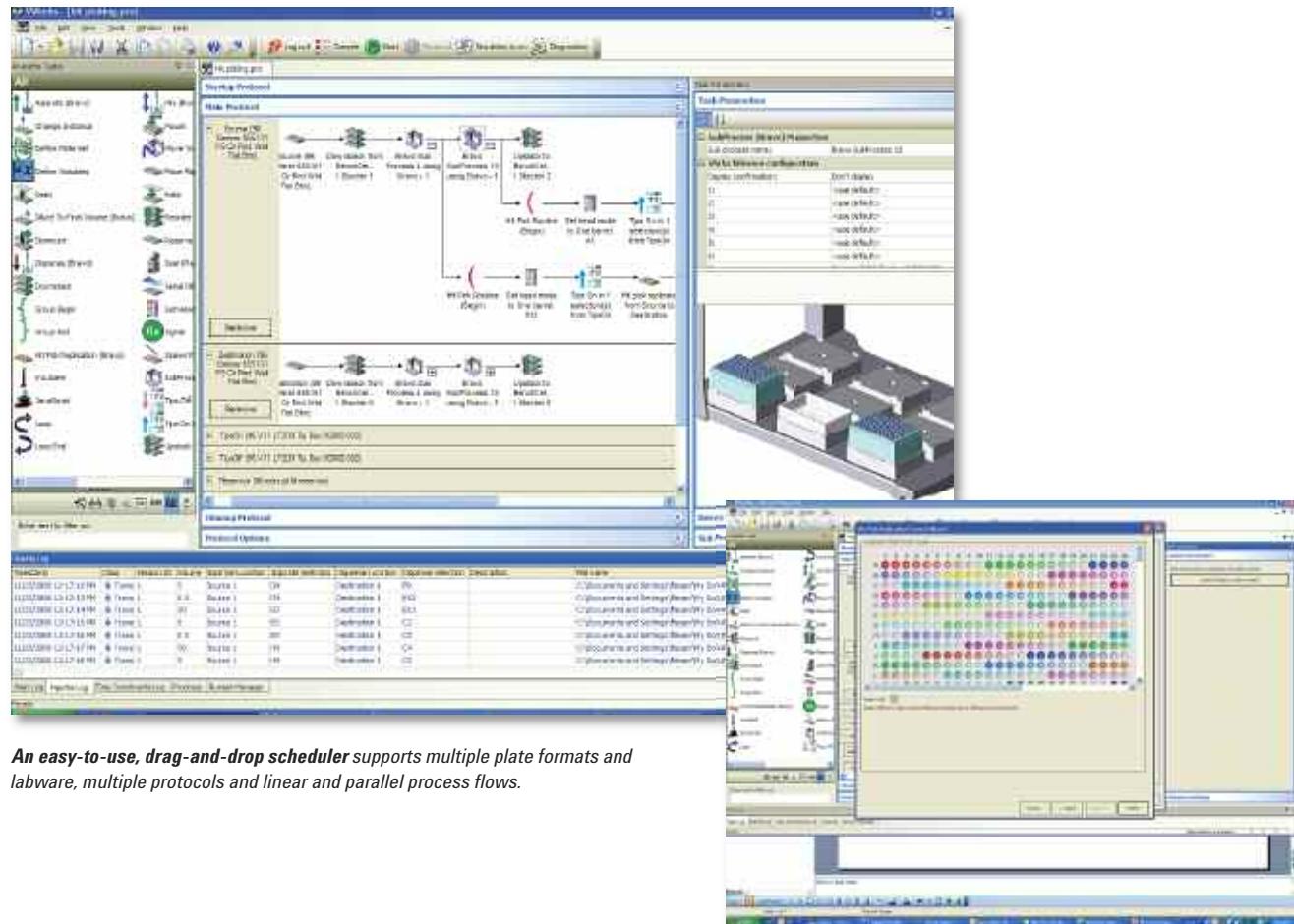
What makes these things so smart?

The same thing that makes Agilent automation solutions so easy to use: VWorks Automation Control software.

VWorks provides a comprehensive interface for all of your Agilent lab automation. Having a single platform reduces training costs and maximizes productivity and allows complete, confident control for all levels of operators.

The software links Agilent and third party devices such as liquid handlers, plate readers and washers to provide a cohesive, integrated lab automation environment—a system that helps you achieve maximum throughput and optimal resource utilization.

A flexible, expandable architecture readily accommodates additional modules and new third party devices, and the software includes a built-in database capable of managing most labware, including standard microplates, filter plates, deep well microplates, tip boxes and tube racks.



An easy-to-use, drag-and-drop scheduler supports multiple plate formats and labware, multiple protocols and linear and parallel process flows.

Hit pick wizard saves time and resources.



Need a hand adapting your workflows to automation?

Our experienced automation specialists can get you up and running in a hurry. And if you've got a question, we'll get you the answers you need. Fast.

To make sure your Agilent automation solution does everything you expect—and more—Agilent Application Scientists are a vital part of every workstation and integrated system collaboration. They'll work with you to make sure your proposed solution is optimally configured to meet the true demands of your application, not just on paper, but every day in the lab. The Application team is also responsible for defining and performing the application testing on the system.

Of course, we also provide expert installation, familiarization and advanced training to make sure you continue to get maximum performance and productivity from your Agilent automation solution.



Agilent-certified automation consumables and accessories.

To make sure your applications continue to perform flawlessly, Agilent Automation Solutions provides high quality, verified, validated and application-tested consumables such as pipette tips, microplate seals and microplate barcode label stock.

We also supply a growing range of accessories that help you perform your applications with greater ease and speed.

So, when do we start?

The first step on a faster path to discovery starts with a phone call to your Agilent representative. To find out more about our automation solutions for discovery (and beyond), call today.

For more information

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U.S. and Canada

1-800-227-9770

agilent_inquiries@agilent.com

Europe

info_agilent@agilent.com

Asia Pacific

adquiry_aplsca@agilent.com

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