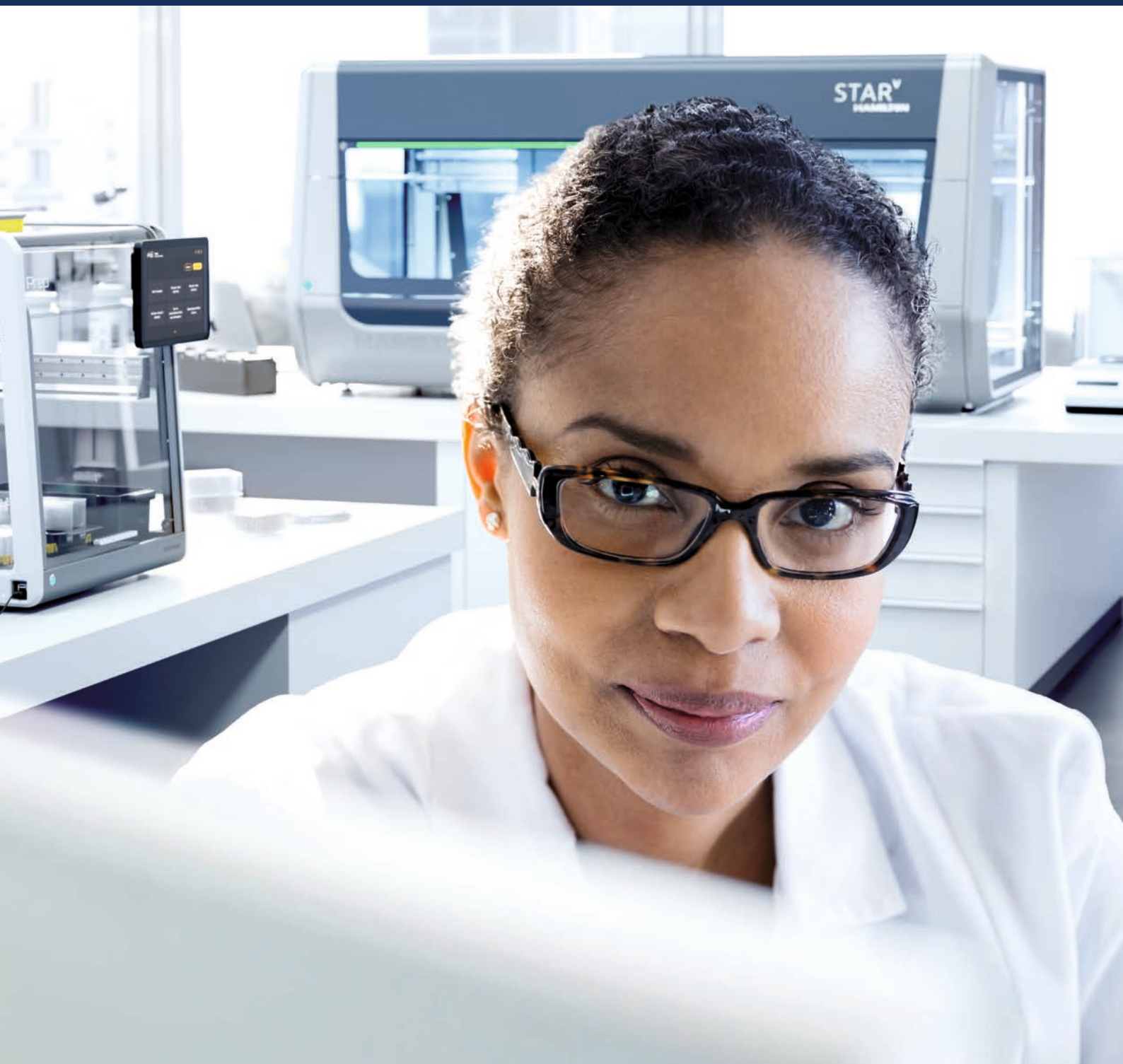
HAMILTON

Automated Solutions

Empowering Scientists to Achieve More



Over 50 Years of Experience in Automation

Empowering scientists to achieve more

For over 70 years, Hamilton has worked alongside those at the forefront of research. This exchange of knowledge allows Hamilton to transform the latest scientific trends into automated solutions – providing scientists with technology to accelerate their research.

Today, Hamilton Robotics serves as a leading innovator in laboratory automation. The company introduced the world's first semi-automated diluter in 1970 and the first fully automated workstation in 1980. The company continues to lead the industry in groundbreaking robotic liquid-handling platforms, including the Microlab STAR Line, introduced in the early 2000s.

Additional platforms like the Microlab Prep, Microlab NIMBUS, and Microlab VANTAGE Liquid Handling System allow Hamilton to offer automated solutions from simple to complex applications. The newest addition to the Hamilton Line, Microlab STAR V, combines the flexibility of STAR with the high-end features of VANTAGE, improving speed and low-volume pipetting.

The entire product portfolio offers maximum reliability, efficiency, flexibility, and user-friendliness. From production to service and support, the focus is always on your individual needs.

Contents

Unlock Your Lab's Full Potential

Looking for workstations that are assay ready? Browse the Hamilton library of Assay Ready Workstations for your specific workflows, applications, or assay needs at: www.hamiltoncompany.com/arw

Hamilton instruments excel in automating multiple applications for both biological and analytical sciences. Thousands of STAR Line workstations have been installed around the world to automate a wide range of applications. They offer the flexibility and modularity users need to create the perfect automated solution for their laboratory. For specific demands, the Hamilton Application Engineering and International Support Groups are available to design everything from custom racks to complex system integrations.

Our systems cover a wide range of applications, varying from genomics, cell biology, drug discovery applications to complex workflow solutions in biobanking and analytical chemistry. STAR or VANTAGE Line-based automated applications vary from simple benchtop solutions to complex, large-scale workflows with automated sample management or different third-party device integrations.

Hamilton offers pre-configured Assay Ready Workstations for a wide range of common applications. These include nucleic acid extraction, NGS library preparation, automated PCR setup, blood fractionation, sample preparation, and LC-MS sample preparation. We can deliver a solution for nearly any routine laboratory workflow while providing the industry standard in customer service, user-friendliness, and process safety.

Proven Technologies for a Safe and Efficient Lab

CO-RE II – Tip/Tool attachment

For the gentle Grip

The new CO-RE II technology assures more precise tip alignment minimizing the risk of collisions. Also, tip coupling is faster which boosts productivity. Besides tips, a wide range of Hamilton tools are applicable with CO-RE II.

Aerosol–free tip ejection

To prevent cross-contamination

CO-RE II technology enables forceless tip pick-up and eject, eliminating the risk of aerosol production and possible contamination.

Autoload

For convenient identification

Eliminate manual errors with barcodeequipped Autoload and automatically detect and load deck equipment, while also scanning barcodes for complete sample tracking. Keep track of tip type and batch number with ease, ensuring accuracy in every step of your work.

CO-RE gripper

For additional movements

The CO-RE Gripper streamlines workflows by transforming channels into a plate gripper, adding the capability for on-deck transports of plates and tip racks. This feature allows for more hands-free time, as plates can be effortlessly moved to an incubation position, enhancing the overall efficiency.

DPS – Dynamic positioning system

For efficient movements

DPS enables simultaneous pipetting of all channels even at irregular patterns, thus ensuring efficient liquid handling, unlike systems with fixed channels.

Dual LLD – Dual liquid level detection

For accurate aspirations

With conductive and pressure-based LLD, systems can detect the surface of any liquid. Dual means: conductive and pressure-based LLD. This industry leading technology assures that the surface of any liquid is detected safely and fast.

Plate gripper

For flexible integration

With a Plate Gripper, plates can be transported and fed to additional devices that extend the functionality of the system.

MagPip

For cutting edge Liquid Handling

The tubular linear drive inside our MagPip channels can accelerate at speeds that enable precise and ultra fast pipetting down to 350nL.

MAD – Monitored air displacement

For unmatched reliability

Monitored Air Displacement pipetting acts like a second set of eyes for all pipetting steps. It also ensures that the liquid has been aspirated correctly.

TADM – Total aspiration & dispense monitoring

AI based technology for highest safety

TADM can detect even the smallest deviations from expected aspiration and dispense steps, ensuring results that you can trust.

Scalable system

To safeguard your investment

Modern labs have to quickly adjust to changing requirements. Scalable Hamilton systems make it easy to increase capacity or add new functionalities.

Platforms for Every Need

Find the right Hamilton platform for your Lab

Hamilton's automated liquid handling platforms are designed for exceptional performance. They feature cutting-edge innovations like CO-RE technology and advanced monitoring tools like MAD and TADM. Additionally, Hamilton offers a wide range of accessories, devices, and consumables to customize your platform for maximum efficiency and walk-away time.

Whether you're looking to automate routine tasks, achieve reliable and consistent results, or streamline your entire workfl ow, one of Hamilton's five liquid handling platforms is the ideal solution for your lab's needs.

Basic Level

Affordable entry into the world of automation

Microlab Prep – Big results, compact package
The Microlab Prep is designed to make research and experimentation convenient, efficient, and accurate. Compact and versatile, the platform allows users to maximize their workflows and achieve results they can count on. Easy set-up means the Prep can go from unboxing to up and running in just 60 minutes. A small footprint allows the platform to easily fit on a benchtop or be stored when not in use. Operator-friendly software allows even novice users to program routine processes with the touch of a few buttons. Improve performance and increase productivity in your lab with the Microlab Prep!

Microlab NIMBUS – Efficiency in a small footprint
Introduce your lab to the ultimate automation solution with Hamilton's compact, multi-channel Microlab NIMBUS. Designed with speed, flexibility, ease of use, and superior pipetting performance in mind, NIMBUS is the perfect solution for any lab looking to improve efficiency and accuracy. NIMBUS's compact footprint allows it to easily fit in any lab, and its multi-channel capabilities allow it to handle multiple samples at once. Affordable and multifunctional, NIMBUS is a must-have for any laboratory.

Size (Width)	0.5 m	0.9 m
Pipetting Option (max. Number)	1000 µL Channels (2)	1000 µL Channels (8)
Multi-Probe Head Option	8	96 or 384
Volume Range	1 µL - 1000 µL	1 µL - 1000 µL
Sample Tracking	with handheld Barcode Reader	Semi-Manual
Sample Loading	Manual	Manual
Device Integration	Hamilton Heater Shaker	On-deck or left side
Capacity (ANSI/SLAS Plates)	8	11, 12, or 20
Software	Microlab Prep Software	VENUS Software
Technologies		

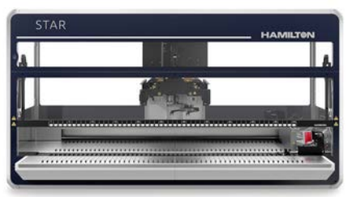
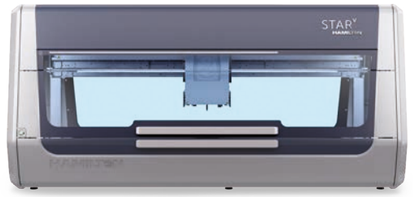
Advanced

Microlab STAR – Reliable liquid handling for 20 years (and counting)
The Microlab STAR is the workhorse of Hamilton's automated platform lineup, with over 20 years of proven performance and 20,000 satisfied customers. The STAR Line comes in three sizes, STARlet, STAR, and STARplus. Every system offers flexible customization, able to meet the needs of any application or requirement. The STARlet can even be upgraded to a STARplus in the lab, when more throughput is needed. Upgrade your laboratory with the STAR and see why it's the gold standard in liquid handling automation.

Professional

STAR V – Boost productivity by 30 %
The power of Hamilton's Microlab VANTAGE meets the flexibility of STAR. Together, they create the Microlab STAR V, the future of lab automation. Streamline your laboratory's workflows faster than ever before with up to 30% increase in speed without sacrificing results. STAR V can easily integrate third-party devices from the back and side panels and also features a single multi-use arm that can handle every step along the process. Bring power and precision to your lab with the STAR V.

Microlab VANTAGE Liquid Handling System – High-Throughput Automation Platform
The Microlab VANTAGE is designed for the most demanding laboratory operations. It empowers automation experts to take control of their lab and optimize their workflow, with enhanced performance, 360° integration capabilities, and extended walk-away time for high-throughput labs. Whether you need to increase speed, accuracy, or efficiency, this system is tailored to meet the most demanding requirements.

Size (Width)	2.16 m (STARplus), 1.66 m (STAR), 1.12 m (STARlet)	2.0 m and 1.3 m	2.0 m and 1.3 m
Pipetting Option (max. Number)	1000 µL, 5 mL Channels (16, 8)	1000 µL, 5 mL, MagPip Channels (16, 8, 8)	1000 µL, 5 mL, MagPip Channels (16, 8, 8)
Multi-Probe Head Option	96 or 384	96 and/or 384	96 and/or 384
Volume Range	1 µL - 5000 µL	0.35 µL - 5000 µL	0.35 µL - 5000 µL
Sample Tracking	with Autoload Barcode Scanner	with Autoload Barcode Scanner	with Autoload Barcode Scanner
Sample Loading	Automatic, Continuous	Automatic	Automatic
Device Integration	180° (Left and Right)	270° (Left, Right, and Rear)	360° (Left, Right, Rear, and Below)
Capacity (ANSI/SLAS Plates)	30 - >55, 45, 25	60 or 35	60+
Software	new VENUS Software	new VENUS Software	new VENUS Software
Technologies			
			

MagPip

A new dimension in pipetting

We are proud to be revolutionizing the world of pipetting with the new MagPip. There are thousands of reasons why this completely new technology represents the future. In short, it's incredibly fast, covers a wide volume range, and is extremely precise. This leads to more efficiency across the entire workflow. Smaller volumes mean you'll use fewer samples and reagents. The massive speed will increase throughput and save valuable time in the lab. The MagPip combines opposites – fast, while still being precise.

Speed of the MagPip Channels
Hamilton's MagPip channels utilize miniaturized components and a slim design to achieve unparalleled speeds. Linear motors on all axes generate smooth and fast movement without the use of gears, spindles, or gear wheels.
MagPip's air displacement pipetting uses a magnetized piston moved by the tube's magnetic field for unmatched acceleration.

350 nL pipetting in air dispense mode
MagPip accelerates at a faster speed than conventional drives by fusing the pipetting piston in the tubular linear motor. As a result, the pipetting volume ranges from 350 nL to 750 µL without the need of tip/liquid contact or immersion.

Tools

For systems as individual as you are

All Hamilton systems are designed for change – offering increased flexibility and scalability. Modules can be added, removed, or rearranged quickly and easily, allowing for more adaptability to changing needs and environments.

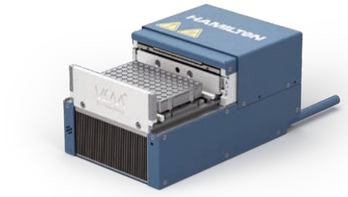
This modularity ensures that components are interchangeable and can be used with other components, making it easier to maintain, repair, and upgrade the system, giving users more control over how components interact, leading to more efficient and effective designs.

Works the Way You Do
Select from individual Pipetting Channels with different volume ranges and Multi-Probe Heads that can simultaneously pipette 96 and 384 samples. The interior of the selected pipetting system can be set up so that all sample and reagent vials can be handled safely, leading to results that you can trust.

From a Simple Pipetting Platform to an Automated Workflow
Sometimes the ability to move a plate to an incubation position is all that is required to automate a whole new process. In addition to robotic grippers that can transport and turn plates and even reach outside the instruments, all Hamilton platforms can simply pick up CO-RE Grippers with pipetting channels and move plates on deck. Entry into more demanding automation workflows has never been easier and more affordable.

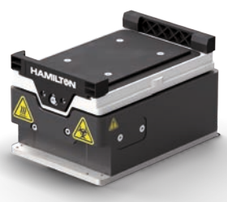
Heating, Cooling, or Shaking
With the addition of functional accessories, your system can perform almost anything: From simple shaking, cooling or heating to more demanding tasks like PCR, centrifugation or positive pressure chromatography – even fluorometric measurements. Everything is handled and easily controlled with VENUS software. When it comes to automating your assay, there are no limits.

Temperature



On-Deck Thermal Cycler (ODTC)
The ODTC is a fully automated on-deck thermal cycling solution. Designed for on-deck integration with all Hamilton liquid handling workstations, the on-deck footprint of the ODTC is equivalent to 2.5 ANSI/SLAS positions. Offering fast PCR runs and highest performance guaranteed, the ODTC provides thermal cycling with the innovative 3D vapor chamber technology (VCM®).

Sample Cooling Carrier
The Sample Cooling Carrier combines two essential features: Keeping samples cooled to a predefined temperature and enabling fully automated barcode identification via Autoload.

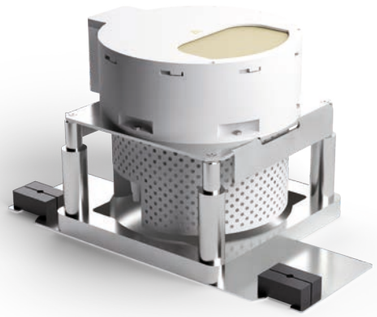


Hamilton Heater Shaker (HHS)
The HHS automates the heating and shaking of ANSI/SLAS footprint microplates. Multiple units may be integrated and connected for higher throughput applications. Various interchangeable adapters for users guarantee optimal heat conductivity for all labware.

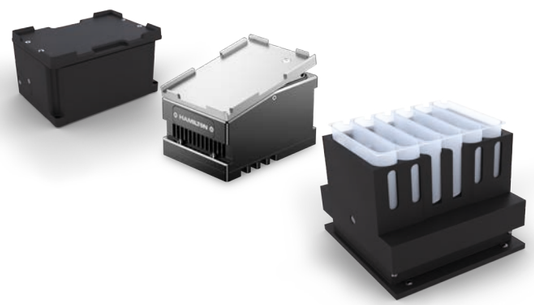
Hamilton Heater Cooler (HHC)
The HHC can heat plates up to 110 °C or keep samples cool at temperatures as low as 0 °C. It is compatible with NIMBUS, STAR, STAR V, and VANTAGE Platforms. It can also be used as a standalone benchtop device.

Hamilton Incubator Shaker (HIS)
The HIS provides fully automated incubation and shaking with on-deck loading and unloading functionality. Offering up to four independent incubation slots and full flexibility of ANSI/SLAS plate types, the HIS is completely controlled through VENUS software.

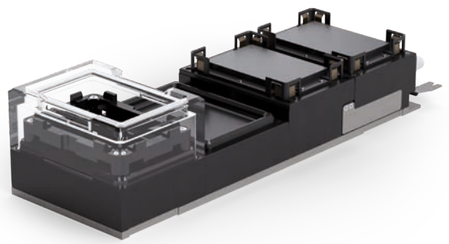
Keep Moving



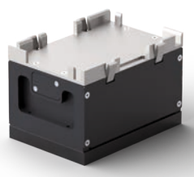
On-Deck Centrifuge
The Hamilton Centrifuge is an ideal solution for on-deck centrifugation. The centrifuge is designed with two labware positions, accommodates labware up to 60 mm (maximum height), and reaches a maximum g-force of 2000 x g.



Turn, Tilt, and Seesaw Modules
Whether plates have to be turned for incubation/reading positions, tilted to remove liquid from flat wells, or gently moved back and forth for incubation: There is always the right MultiFlex Module to perform the task perfectly.

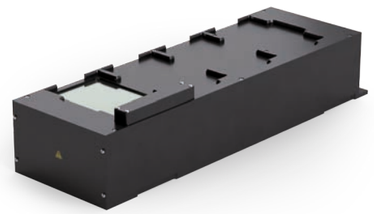


Clear Vacuum Station
Filtration-based purifications are easy with the single position, on-deck, automated vacuum station that is completely controlled through the VENUS software and consists of a manifold top, dedicated carrier, vacuum pump, and controller.

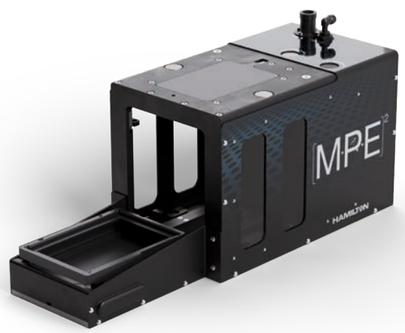


Active Plate Nest
By temporarily fixing a plate in position, the Active Plate Nest prevents plates from lifting after piercing and pipetting and offers increased positional accuracy when pipetting 384- or 1536-well plates.

Identification & Extraction



easyCode Carrier
Integration-friendly, the easyCode Carrier offers high performance 2D barcode reading right from the VENUS software's interface. The proven vision and robotics technology ensures complete sample tracking for greater method security.



[MPE]²
The [MPE]² is an all-in-one, compact device for automating positive-pressure Solid Phase Extraction (SPE) and evaporation. Designed to easily integrate with all of Hamilton's liquid handling platforms, easy installation and control via the VENUS software allows for upgrades to existing platforms.

FluorEye
FluorEye is an on-deck module to measure fluorescence by moving a mobile reading device with a 1000 µL pipetting channel over the plates of interest. The system has two separate Excitation/Detection wavelengths and is ideal for fast on-deck fluorescence measurements, such as DNA concentration readings.

Consumables

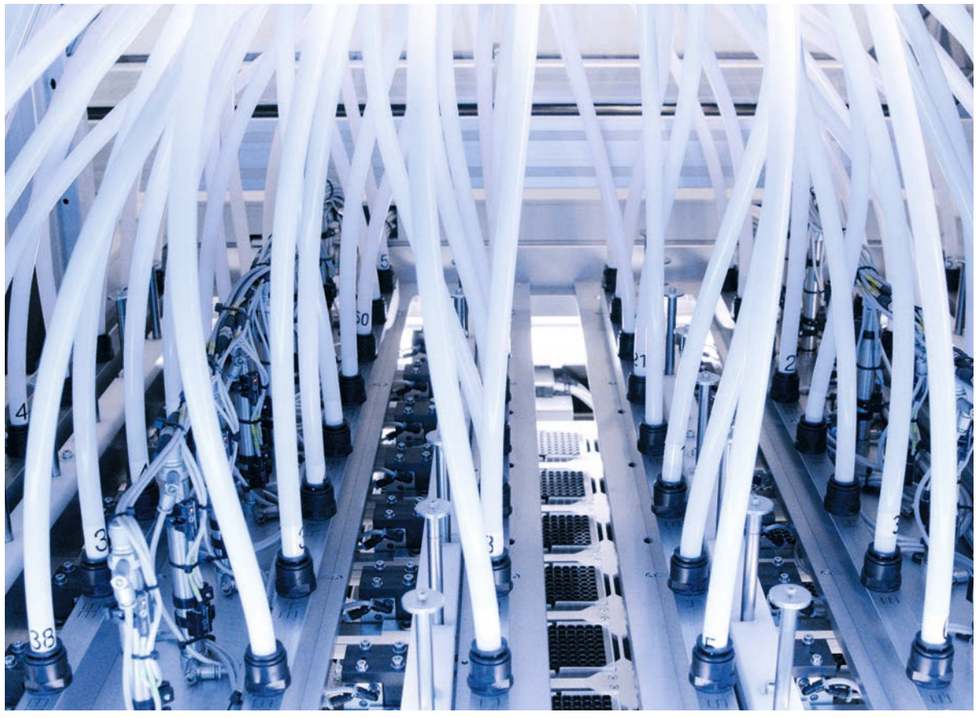
Essential for safe and reliable liquid handling

Consumables are the essence of every workflow. That's why Hamilton offers a wide range of high-quality consumables that provide security, efficiency, and convenience. Our tips are made in-house, guaranteeing the Hamilton standard of quality and availability.

- Automated cleanroom production
- Automatic digital image processing inspections
- Complete, documented traceability

Tips are manufactured to the highest quality standards:

- Production areas in accordance with ISO-14644-1 (Class 8)
- Quality Management System in accordance with ISO 9001, ISO 13485, 21 CFR 820 (FDA Quality System Regulation) and EU In Vitro Diagnostics Directive
- Sterile CO-RE tips manufactured in accordance with ISO 11137-1, ISO 11137-2, and ISO 11137-3



New VENUS Software

Know one, know all

Efficiency at Your Fingertips: The New VENUS
Hamilton's new VENUS software is designed to make lab automation user-friendly. VENUS is expanding from the Microlab STAR to the STAR V and Microlab VANTAGE, allowing you to transfer workflows between systems and platforms.

VENUS Software
The system's flexible hardware is reflected by the VENUS software, which provides several programming levels to fit your applications. VENUS offers simple-to-complex programming, without limiting your imagination or compromising your requirements. Additional software packages, such as the Dynamic Scheduler (for optimized resource use), the TADM feature (for full traceability of the pipetting workflow), the DatabasePlus option (to use remote tracking servers), and the Dynamic Liquid Classification plugin (for automatic liquid class selection), make VENUS even more powerful.

Make it Yours
VENUS has a Home Screen that is completely customizable with your icons, photos, or images. This allows users to immediately identify their preferred methods and launch desired workflows by simply clicking on their personalized images.

Intuitive Method Creation
VENUS's intuitive editors give you full control in every aspect of your method. It comes with guided steps for simple method creation and offers advanced programming functions for ultimate customization and flexibility. Customize your labware, dynamic pipetting patterns, individual volumes, error handling options, data handling, walk-away routines, and much more. For example, almost every programming step offers an individual treatment of every possible error case, in which automatic, semi-automatic or manual recovery is selectable. It is an intuitive user interface to control the Microlab NIMBUS, Microlab STAR and STAR V, Microlab VANTAGE, and any third-party component that allows remote access. While programming, the intuitive and modular concept reduces programming time and lets you achieve results faster with less training. At runtime, intelligent dialogs (created with the Customized Dialog step) reduce error-prone user inputs and provide clear visualization of method parameters or custom-tailored loading instructions.

Operate everything from one control center

Today's automation solutions often require demanding integration of third-party equipment. Hamilton has responded to these needs with seamless integration via device drivers. Remote-controllable third-party components can be integrated into VENUS at any time, making your system integration friendly, flexible, and future-proof. Thanks to its open design, VENUS software can control most third-party hardware. Benefit from Hamilton's outstanding error-handling concept, which provides multi-level error recoveries, even for non-Hamilton components. This intelligent setup guarantees worry-free operation in which all resources work seamlessly in one, integrated system.

New VENUS Software

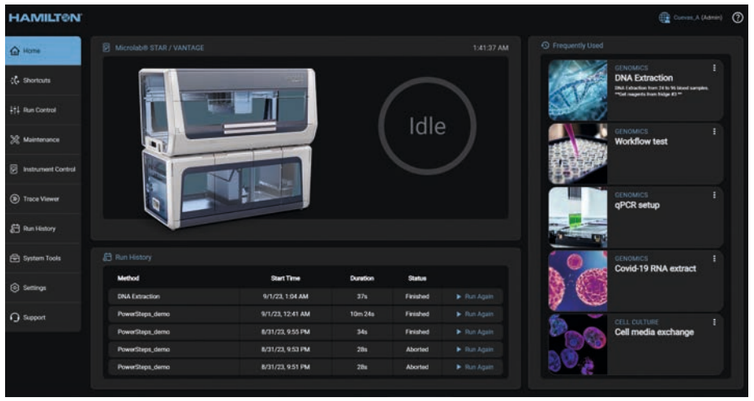
Better user guidance and programming

The VENUS software provides basic and advanced programming, offering flexible assay setup without compromising your requirements. Intuitive editors provide full control over every aspect of your method. VENUS is designed to be simple to use, yet powerful enough to provide the flexibility to set up assays exactly the way you want them automated.

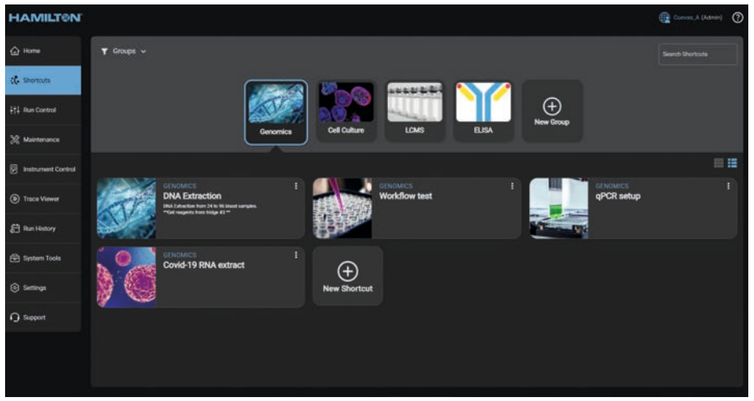
Power steps

VENUS's Power Steps offer a quick and easy start into the world of automation, for everyone, at any time. There are six intuitive visual guides for the most frequently used pipetting tasks:

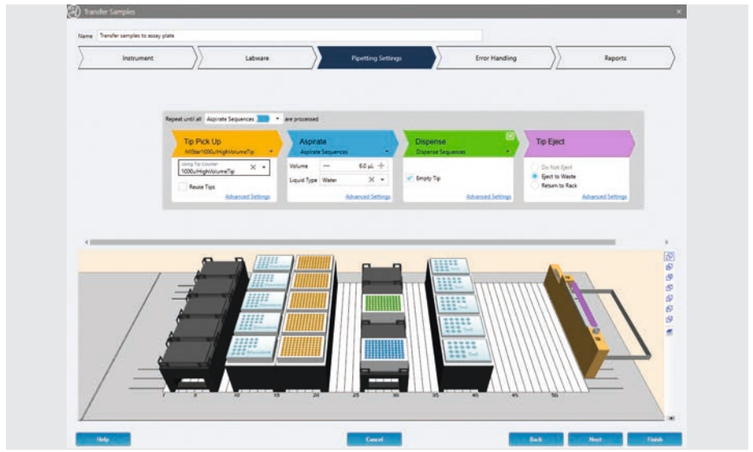
- Transfer Samples
- Add Reagents
- Serial Dilution
- Replicates
- Hit-Picking
- Load and Match



Experience a seamless navigation experience with the all-new main interface of VENUS. The touch-screen-friendly cockpit view provides easy access to crucial information and functions at your fingertips. These include: Frequently used methods, Run History and status of the connected system.



Get organized and save time with the new Shortcuts menu. Create custom shortcuts to your frequently used methods, group them into folders, and personalize them with a variety of included icons and photos. You can even upload your own images to make it truly your own.



Streamline your workflow creation process with Power Steps in VENUS. Select from a variety of templates for common pipetting tasks, and easily customize specific parameters such as volume and liquid type with the intuitive visual guide. Simplify your work and save time with Power Steps.

Safe Process

The sample in focus

Hamilton understands how important process reliability is in the laboratory. That's why we use a variety of sophisticated technologies and solutions to greatly reduce the potential for error. Know that your processes are secure with traceability throughout your workflow. Your lab's procedures are in good hands with Hamilton!

- Worklist Handling
- Badge Number Tracking
- Autoload with Tracking
- Customizable Error Recoveries
- Labware Reporting
- Intelligent Pipetting
- Bi-Directional LIMS Integration
- Status Light
- 2D-Barcode Reading

Industry-Leading Support

Service & support you can count on

Our worldwide Service organization strives to provide the best service and support in the industry. Local engineers are trained by our Hamilton-certified trainers and supported by Service centers and distributors. Our commitment to high-quality standards goes beyond ISO 9001 certification and includes continuous training of all authorized service technicians. You can always rely on Hamilton for industry-leading service and support.

Extra-mile support

Always there when you need us

- Our global field service and support network - from the technical support hotline to local service engineers and application specialists - guarantees a fast response to your request and minimizes downtime. Whether routine maintenance, service support, or application support, the Hamilton team ensures your lab will be back up and running as quickly as possible.

Training makes perfect

- Hamilton offers customers in-depth training sessions to ensure laboratories know how to properly use their automated handlers. Whether a general overview of your equipment at a Hamilton facility or personalized sessions in your lab, we are committed to setting your team up for success.

Highest quality level and the best service

Quality from a single source

- We guarantee the highest standards of quality, reliability, and precision for all our products, from our own production and state-of-the-art quality control systems to final inspection.

System installation made to measure

- All Hamilton systems are installed according to strict procedures and in accordance with ISO 9001. Every system includes a comprehensive Installation Qualification (IQ) and detailed documentation.

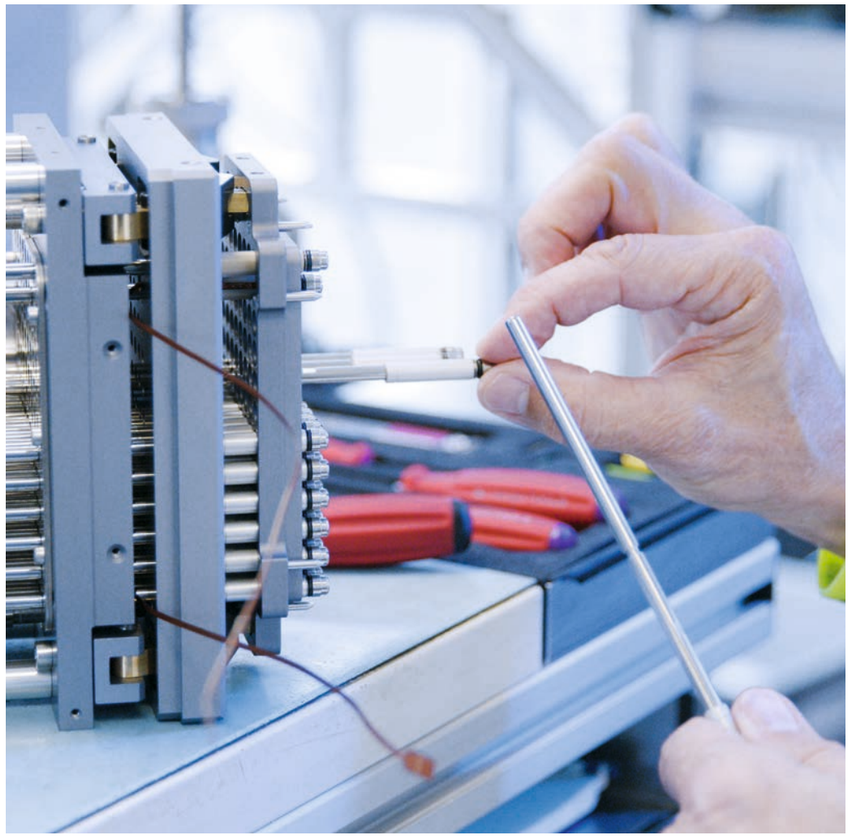
Service as individual as you are

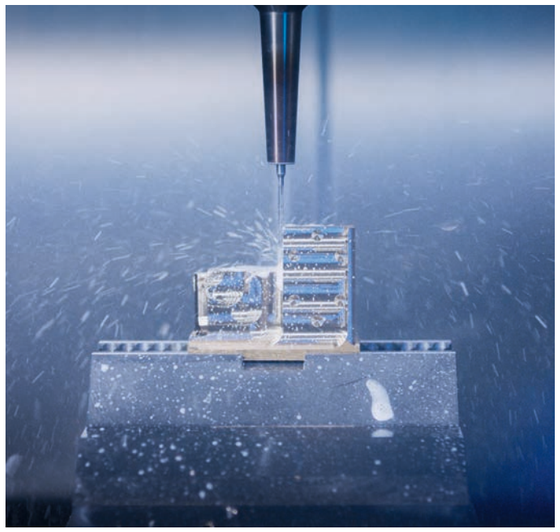
- Ensure the longevity and peak performance of your automated system with a Hamilton service contract, including regularalized sessions in your lab, we are committed to setting your team up for success.

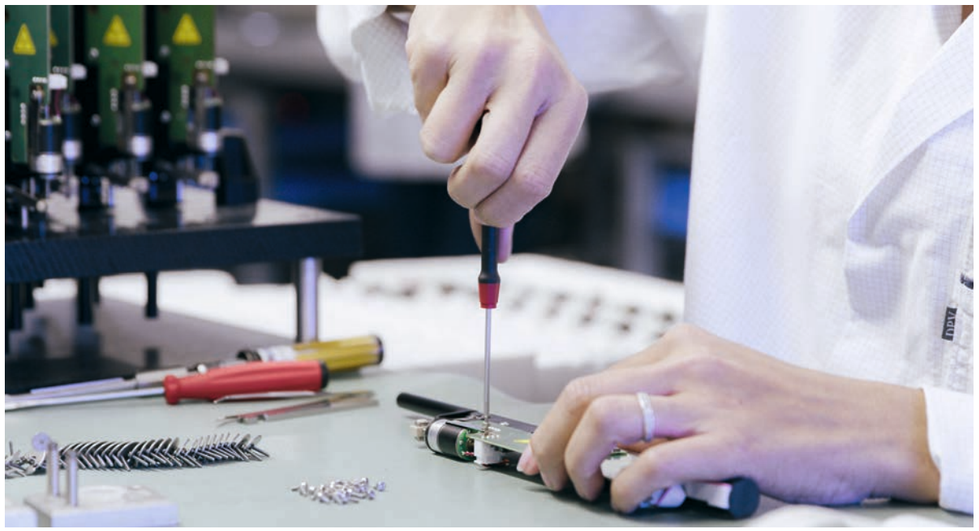
In-House Production

Top-quality products, all under one roof. Hamilton takes pride in its in-house production capabilities, allowing us to maintain high-quality standards and quickly adapt to an ever-changing market. In addition to developing our own software systems, Hamilton produces CNC parts and pipetting tips. Trust Hamilton to create the ultimate solution for your lab.

Hamilton understands the importance of dependability. That's why we are committed to providing our customers with the product support they need. From in-house parts to creating customized solutions tailored to meet your needs, rest assured you're in good hands with Hamilton.







Automating Your Imagination

Hamilton Robotics
Hamilton Robotics is the industry leader in the development and production of state-of-the-art automated liquid handling systems and technologies. We drive innovation in laboratories around the world, turning concepts into realities.

Our products are characterized by maximum reliability, efficiency, flexibility, and ease of use. From production to service to support, Hamilton’s focus is always on your individual needs.

Hamilton
Hamilton has been at the forefront of Life Science and Medical Technology for over 70 years. Our journey began as a visionary concept, transforming into a global company today. Though we’ve grown, Hamilton’s passion, curiosity, and innovative spirit have never wavered. We remain committed to researching, developing, and producing cutting-edge solutions that improve people’s lives.

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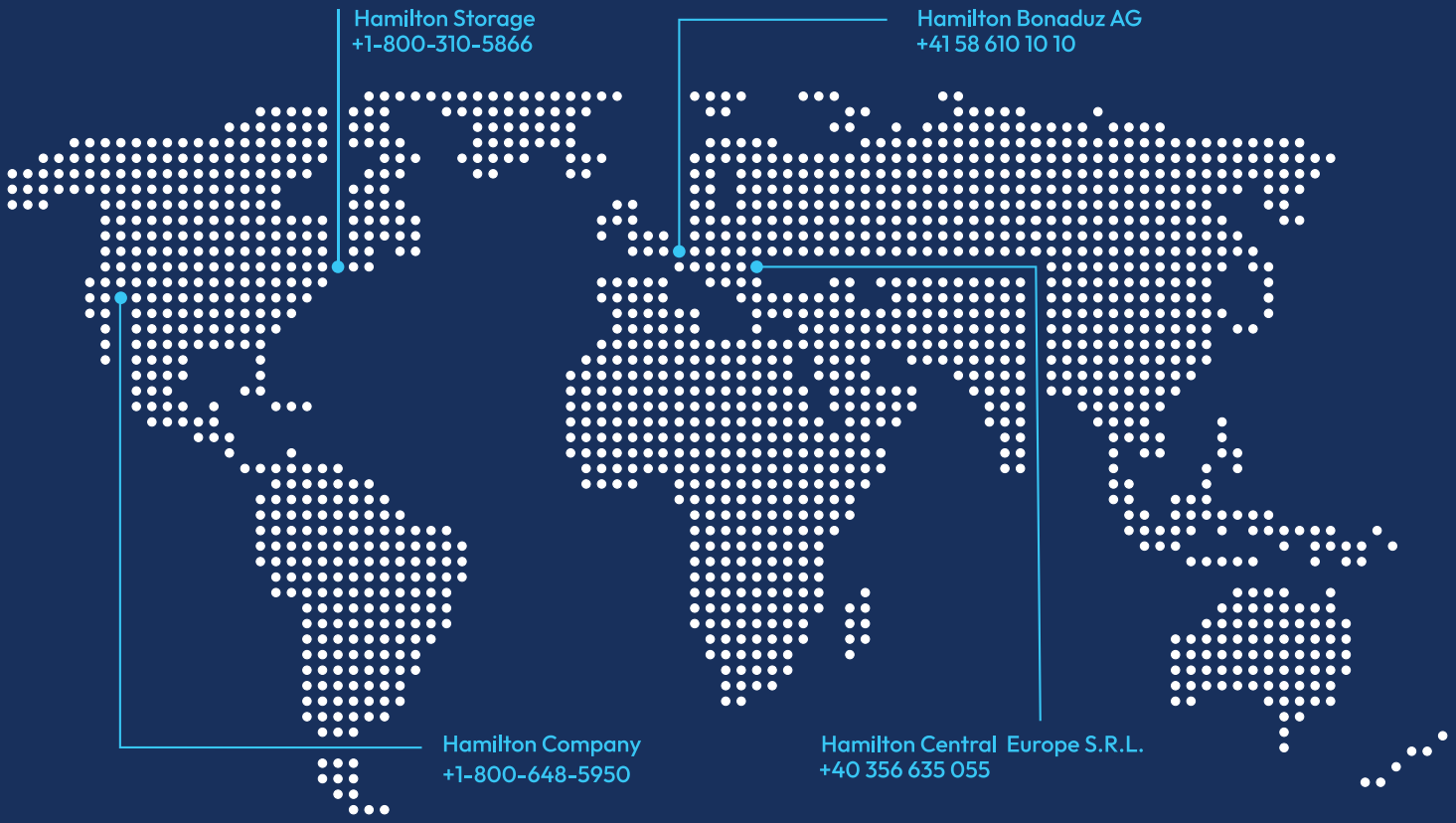

Years of Experience
75+

Locations Worldwide
22+

Employees Internationally
3,000+

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