

# **Automated Liquid Handling Market Forecasts to 2032 – Global Analysis By Product (Robotic Liquid Handling Systems, Semi-Automated Liquid Handling Systems, Fully Automated Liquid Handling Systems, Pipetting Systems and Dispensing Systems), Component, Technology, Application, End User and By Geography**

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## **Abstracts**

According to Statistics MRC, the Global Automated Liquid Handling Market is accounted for \$2.64 billion in 2025 and is expected to reach \$6.03 billion by 2032 growing at a CAGR of 12.5% during the forecast period. Automated liquid handling refers to the use of robotic systems and precision instruments to accurately and efficiently transfer, dispense, and manipulate liquids in laboratory settings. This technology minimizes human intervention, reducing errors, contamination risks, and repetitive strain while enhancing reproducibility and throughput. Widely used in applications such as drug discovery, genomics, proteomics, and clinical diagnostics, automated liquid handling streamlines complex workflows involving microplates, test tubes, and other labware. By integrating advanced software, sensors, and robotics, these systems allow precise volume control, sample tracking, and high-throughput processing, ultimately accelerating research, improving data quality, and supporting large-scale experimental studies.

Market Dynamics:

Driver:

Advancements in laboratory automation

Integration with robotics and artificial intelligence improves reproducibility and enhances operational efficiency. Rising demand for speed, scalability, and data integrity is prompting widespread adoption of automation across laboratories. Miniaturized dispensing technologies and contactless workflows are unlocking new applications in genomics, proteomics, and drug discovery. Transformation of laboratory infrastructure is underway as automation becomes central to workflow modernization. Continued innovation in system design and functionality is reinforcing long-term market relevance.

#### Restraint:

##### Need for skilled personnel

Training costs and operational preparedness often pose barriers for smaller institutions. System integration and troubleshooting complexities tend to prolong deployment timelines. Specialized operator requirements contribute to elevated total cost of ownership. Adoption rates are notably lower in resource-constrained environments due to these operational hurdles. Market penetration is therefore uneven, particularly in regions lacking technical infrastructure.

#### Opportunity:

##### Growing prevalence of chronic diseases

Diseases like cancer and diabetes demand scalable and precise testing platforms. Automation ensures consistent sample handling and accelerates diagnostic workflows. Hospitals and labs are investing in infrastructure to manage rising patient volumes. Integration with genomic and proteomic tools supports advanced disease profiling. These factors are fueling sustained market momentum.

#### Threat:

##### Supply chain and operational disruptions

Component shortages and shipping delays hinder manufacturing and delivery. Limited access to technical support or spare parts can interrupt lab operations. External shocks such as pandemics or trade restrictions amplify these vulnerabilities. Laboratories may encounter reduced efficiency or downtime. These issues threaten the reliability of market expansion.

### Covid-19 Impact:

The Covid-19 pandemic significantly accelerated the demand for automated liquid handling systems due to the urgent need for high-throughput testing, vaccine development, and research on therapeutics. Laboratories worldwide prioritized automation to reduce manual handling, enhance accuracy, and minimize contamination risks. Supply chain disruptions initially slowed equipment availability, but increased investments and government support boosted market adoption. Additionally, heightened awareness of biosecurity and efficiency in diagnostic and research workflows reinforced the long-term reliance on automated liquid handling technologies.

The hardware segment is expected to be the largest during the forecast period

The hardware segment is expected to account for the largest market share during the forecast period owing to its essential role in automated liquid handling platforms. Robotic modules, pipetting systems, and dispensing units form the backbone of these solutions. Demand is growing for customizable and robust hardware configurations. Software integration enhances control and adaptability across workflows. Manufacturers are prioritizing precision and modularity to meet evolving lab requirements. This segment will remain the primary revenue driver.

The clinical diagnostics segment is expected to have the highest CAGR during the forecast period

Over the forecast period, the clinical diagnostics segment is predicted to witness the highest growth rate due to rising demand for fast and reliable testing. Automated systems streamline sample processing for PCR, immunoassays, and molecular diagnostics. The growing burden of chronic and infectious diseases is prompting lab upgrades. Integration with digital tools improves compliance and data management. Decentralized testing models are expanding system usage. This segment is poised for accelerated growth across healthcare markets.

### Region with largest share:

During the forecast period, the North America region is expected to hold the largest market share by well-established pharmaceutical, biotechnology, and research sectors. There is strong adoption of fully automated systems to enhance precision, throughput, and reproducibility in laboratories. Increasing demand for personalized medicine, drug

discovery, and diagnostics fuels market expansion. Technological innovations, such as robotic platforms and advanced pipetting systems, are widely integrated. The presence of major industry players and continuous investments in laboratory automation infrastructure contribute to steady growth across the U.S. and Canada.

#### Region with highest CAGR:

Over the forecast period, the Asia Pacific region is anticipated to exhibit the highest CAGR due to increasing investments in biotechnology, pharmaceuticals, and academic research. Growing demand for high-throughput screening, genomics, and proteomics is driving adoption, especially in emerging economies. Automation helps reduce human error and improve laboratory efficiency. Strategic collaborations and rising healthcare infrastructure development are further accelerating market growth. Countries like China, Japan, and India are leading the market, supported by government initiatives and a growing focus on R&D and laboratory modernization.

#### Key players in the market

Some of the key players in Automated Liquid Handling Market include Thermo Fisher Scientific, Hamilton Company, PerkinElmer, Tecan Group, Agilent Technologies, Danaher Corporation, Formulatrix Inc., Mettler-Toledo International Inc., Becton Dickinson and Company, Aurora Biomed Inc., Eppendorf AG, Analytik Jena AG, Hudson Robotics Inc., Corning Incorporated, Gilson Inc.

#### Key Developments:

In July 2025, Hamilton acquired UK Robotics and Trisonic Discovery to strengthen its integration and dispensing capabilities. The acquisition added dynamic scheduling software (RevoWeb) and acoustic dispensing technologies to Hamilton's portfolio, enabling scalable, contactless liquid handling for genomics, drug development, and diagnostics.

In February 2025, Thermo Fisher launched the Multidrop™ Combi+ and Multidrop™ Pico™ 8 dispensers at SLAS2025. These systems offer ultra-fast microliter and picoliter dispensing for reagents and cell lines, improving precision and throughput in pharmaceutical and biotech liquid handling applications.

#### Products Covered:

Robotic Liquid Handling Systems

Semi-Automated Liquid Handling Systems

Fully Automated Liquid Handling Systems

Pipetting Systems

Dispensing Systems

#### Components Covered:

Hardware

Software

Services

#### Technologies Covered:

Pipette-based Systems

Microplate-based Systems

Modular Liquid Handling Systems

Microfluidics-based Systems

Other Technologies

#### Applications Covered:

Genomics

Proteomics

Drug Discovery

Clinical Diagnostics

Biopharmaceutical Manufacturing

Other Applications

End Users Covered:

Biotechnology Companies

Research Institutes & Academic Labs

Diagnostic Laboratories

Hospitals

Contract Research Organizations (CROs)

Other End Users

Regions Covered:

North America

US

Canada

Mexico

Europe

Germany

UK

Italy

France

Spain

Rest of Europe

Asia Pacific

Japan

China

India

Australia

New Zealand

South Korea

Rest of Asia Pacific

South America

Argentina

Brazil

Chile

Rest of South America

Middle East & Africa

Saudi Arabia

UAE

Qatar

South Africa

Rest of Middle East & Africa

What our report offers:

- Market share assessments for the regional and country-level segments
- Strategic recommendations for the new entrants
- Covers Market data for the years 2024, 2025, 2026, 2028, and 2032
- Market Trends (Drivers, Constraints, Opportunities, Threats, Challenges, Investment Opportunities, and recommendations)
- Strategic recommendations in key business segments based on the market estimations
- Competitive landscaping mapping the key common trends
- Company profiling with detailed strategies, financials, and recent developments
- Supply chain trends mapping the latest technological advancements

### **Free Customization Offerings:**

All the customers of this report will be entitled to receive one of the following free customization options:

#### Company Profiling

Comprehensive profiling of additional market players (up to 3)

SWOT Analysis of key players (up to 3)

#### Regional Segmentation

Market estimations, Forecasts and CAGR of any prominent country as per the client's interest (Note: Depends on feasibility check)

#### Competitive Benchmarking

Benchmarking of key players based on product portfolio, geographical presence, and strategic alliances

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