

Lynx

Liquid Handling Robotic Workstation



dynamicdevices





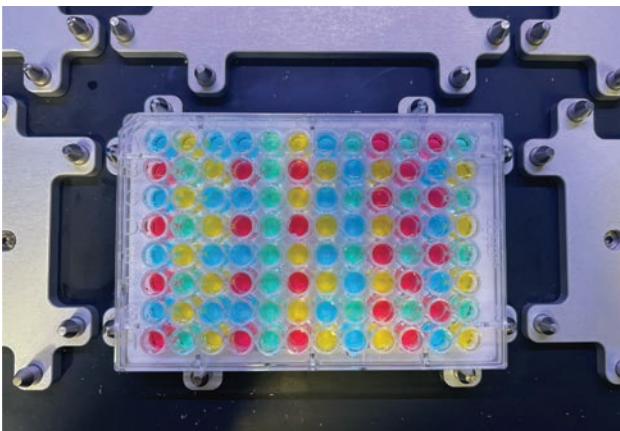
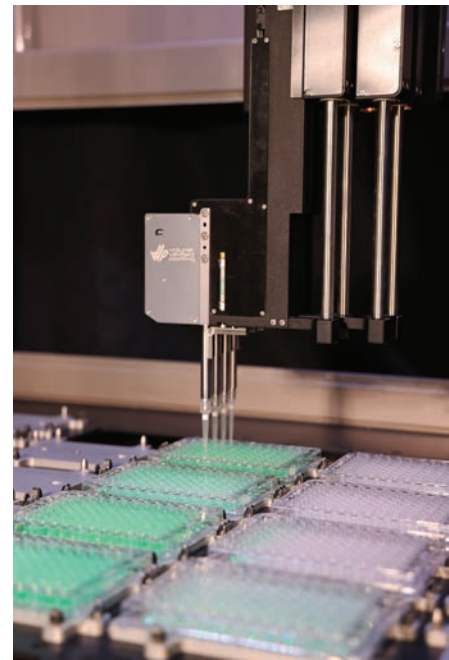
For more than two decades and with over 500 instruments sold, Dynamic Devices has consistently dedicated itself to exceeding individual needs in the ever-evolving field of liquid handling and automation. As the exclusive provider of liquid handlers featuring Volume Verified Pipetting (VVP) technology, Dynamic Devices leaves a significant imprint both domestically and globally, with the Lynx finding utility in countries such as Singapore, Japan, China, and Australia. Demonstrating innovation across diverse industries, including agricultural biotech, clinical laboratories, universities, and government labs, Dynamic Devices has established a presence in every field it touches.

Pipetting Technology

What do we mean by “volume verified pipetting”?

Volume Verified Pipetting Technology provides real-time tracking for every liquid transfer, monitors aspirations for short samples, identifies clots/clogs, and manages liquid-to-air (or air-to-liquid) transitions. The volumetric data generated is saved and displayed to the user in an output file for later analysis and within the software interface after each liquid aspiration or dispense.

This technology is achieved through precise control of vacuum and positive pressure, monitored by a MEMS flow sensor present in every channel. Consequently, each channel is equipped with liquid level detection, enabling independent and accurate liquid aspiration and dispensing.



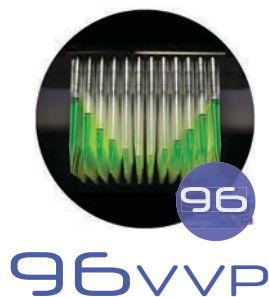
How does variable volume asp/disp work?

The flow sensor technology measures the pressure difference across an integrated fluidic restriction. A silicon chip consisting of two piezo-resistive pressure sensors, connected by a micro-channel, forms that flow sensor device. Aspiration and dispensing of liquid samples are air-driven, utilizing vacuum or positive pressure.

To achieve high performance, as the valve opens, the inline flow sensor measures the instantaneous flow rate, which is integrated in real time by the electronic controller. Once the set volume is achieved, the controller closes the valve, ensuring precise control regardless of sample properties.

Pipetting Technology

Available Configurations



With the flagship 96 VVP Pipetting Tool, 96 independent volumes of 96 different liquids can be transferred without the need for calibration. Activate pipetting diagnostics for challenged samples in each individual tip. Pipette complex samples like whole blood and plant seed homogenates with clot/clog detection and on-the-fly correction.



Our 24 VVP Pipetting Tool allows 24 5mL disposable tips may be used for different 'large volume' transfers. Achieve tasks such as liquid biopsy DNA magnetic bead purification across a full plate in a single dispense with ClickBio extraction blocks. These blocks enable 'plate processing' for larger sample matrixes.



The Lynx's entry-level VVP tool (f8) transfers 8 independent volumes of liquid with verified volume reporting and full pipetting diagnostics.

By removing independent spreading and Z-axis capabilities, the VVP pipetting tool is both economically efficient and functional.



The F4iZ VVP pipetting tool has the capability of independent z-axis motion per individual tip with a fixed y-axis. With independent Z, individual access to variable spaced tubes and individual wells is possible.

Features

Real-Time Transfer Validation and Visualization



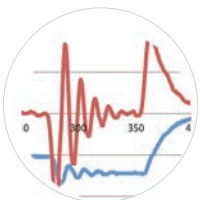
With VVP Pipetting Tools, real-time closed-loop monitoring displays actual pipette volumes as they occur. A color based visualization screen allows the operator to confirm the success of each sequential step as it is executed.

96, 24, 8, or 4 Independent Volumes



With VVP's independent control and monitoring of each channel, whether in 8 or 96 format, different volumes may be independently aspirated and dispensed. Applications like DNA Normalization and Compound Dissolution are accomplished within an entire 96 well plate in one transfer.

VVP Liquid Level Detection and Residual Volume



VVP technology in both the 96 & 8 channel pipetting tools includes Liquid Level Detection (LLD) using clear tips. The system generates outward air flow, monitoring it until a solid meniscus is detected. The Residual Volume in the well is calculated based on the tip's height at the contact point and well volume parameters.

Volumetric Reporting

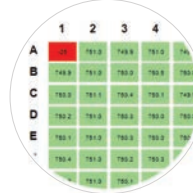
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...L; Ch:G02
Ch:G02 850.0uL/1
; Ch:G03 850.0uL/1.5
; Ch:G04 850.0uL/1.5u
; Ch:G05 850.0uL/1.5uL
ul; Ch:G06 850.0uL/1.5uL
; Ch:G07 850.0uL/1.5uL
; Ch:G08 850.0uL/1.5u
; Ch:G09 850.0uL/1.5
; Ch:G10 850.0uL/1
; Ch:G11 850.0uL/1

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The Method Manager control software monitors and tracks each liquid transfer, enabling operators to save volumetric data for each pipetting sequence in an output file.

Short Sample Diagnostics



Short sample or Air-In-Sample diagnostics is established by the monitoring of all channels with millisecond sampling analyzing the flow rate of the liquid into each tip.

Any disruption of the samples flow rate by air entering a channel traps Short Sample Error. The end user may predetermine how to handle this Short Sample Error.

Simplify Liquid Classes



The VVP directly generates the volumetric flow of the liquid entering the tip. There are no requirements for pre-set, pre-defined or pre-calibrated settings to pipette your protocols.

Simply provide a target volume and the system monitors the actual flow of the liquid into the tip over time until the target volume is achieved.

Real-Time Clot/Clog Detection and Correction



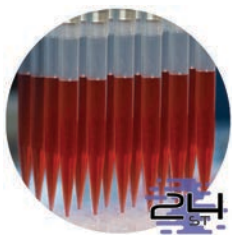
During aspiration, channels are continuously monitored for flow interruptions. If detected, the affected channel stops while others continue. After all aspirations, successful tips are held, initiating a retry loop for clogged tips until success or the user-specified limit is reached. An error-reporting file is subsequently generated.

Pipetting Technology

About our Standard Volume Pipettors

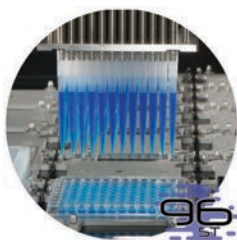
The Lynx's high precision 24, 96 & 384 Standard Volume (ST) syringe based pipetting tools allow the precise and rapid transfer of samples across 24, 96, 384 or 1536 well microplates. Using our syringe based pipetting technology, developed over the past two decades, the Lynx provides a highly economical resource in which to facilitate same volume liquid transfers across rows, columns or entire plates.

Available ST Pipetting Tools



24_{ST}

Our 24ST Pipetting Tool allows 24 5mL disposable tips to be used for uniform volume transfers. Fast pipetting of all your large volume samples. Now accomplish applications like In-Parallel Magnetic Bead Extraction.



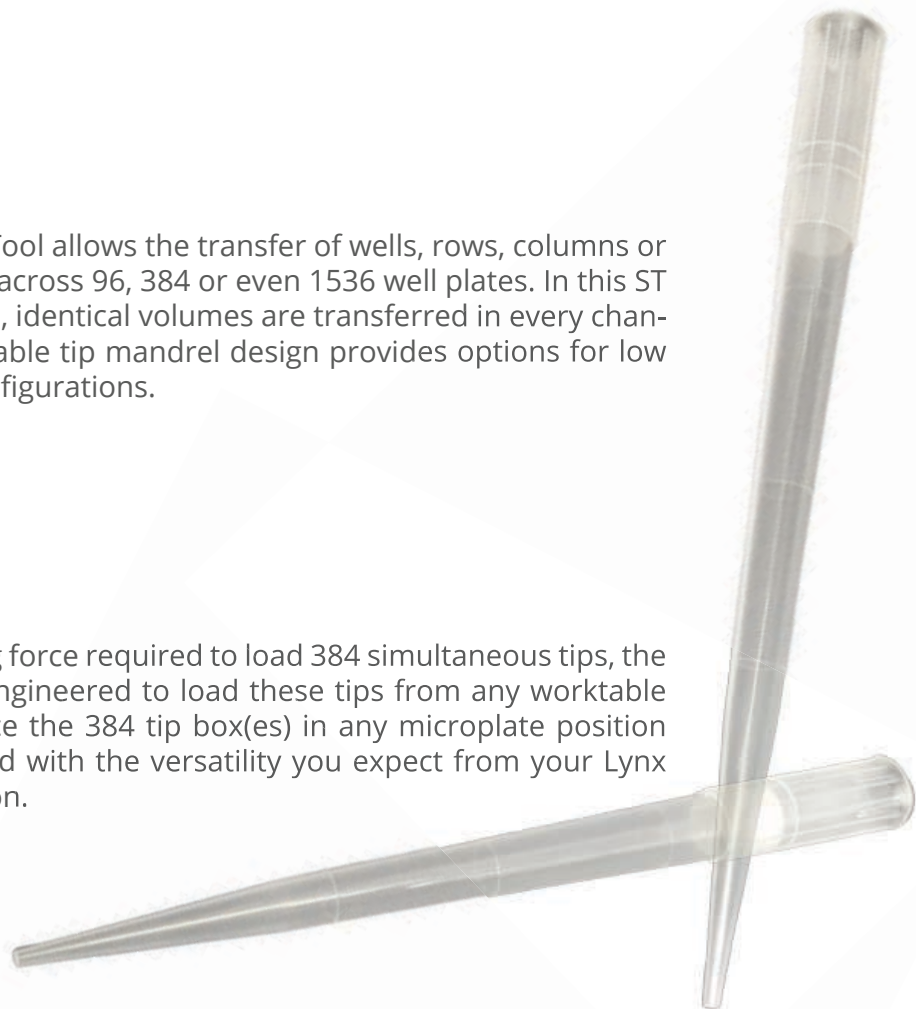
96_{ST}

Our 96 ST Pipetting Tool allows the transfer of wells, rows, columns or entire 96 well plates across 96, 384 or even 1536 well plates. In this ST syringe based design, identical volumes are transferred in every channel. The dual disposable tip mandrel design provides options for low and high volume configurations.



384_{ST}

With the high loading force required to load 384 simultaneous tips, the Lynx is specifically engineered to load these tips from any worktable position. Simply place the 384 tip box(es) in any microplate position and run your method with the versatility you expect from your Lynx LM Series Workstation.

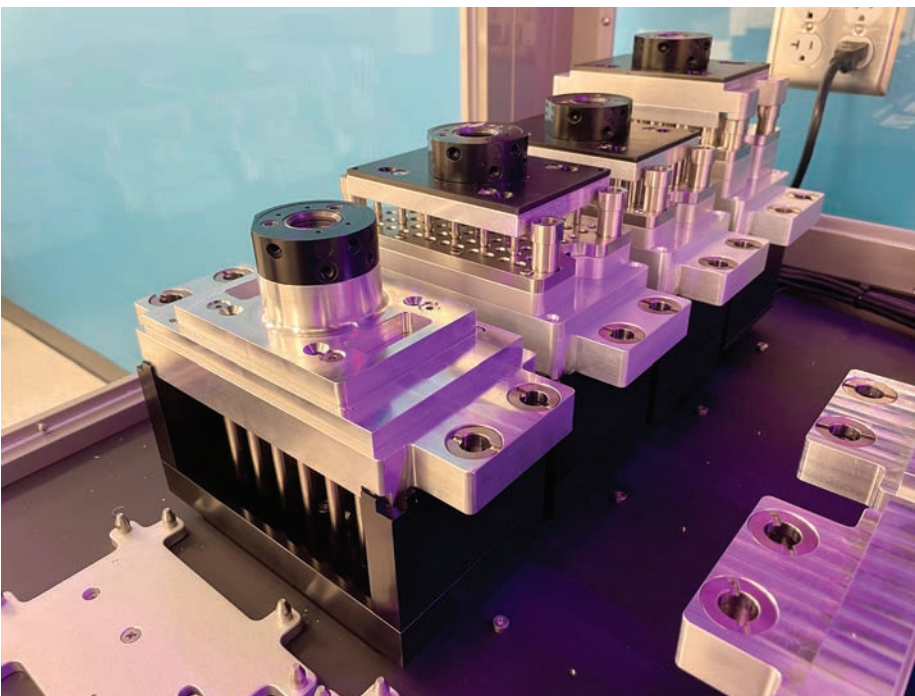


Multi-Core Pipetting Arm (MCPA) Tools

≡ On the Fly, Swappable, Multipurpose Tools

The MCPA tools are a suite of head tools that can be swapped on and off the SV system. The arm has the ability to swap on a variety of head tools with two commands: load and unload. With no need for calibration in between swaps, and on the fly swapping within a method, the MCPA elevates the SV system to a modular, all-in-one, automation engine.

Available MCPA tools include 24, 96, 384 standard volume pipetting head tools, 24 and 96 magnetic rod tools for automated on-deck purification, and positive pressure tools.

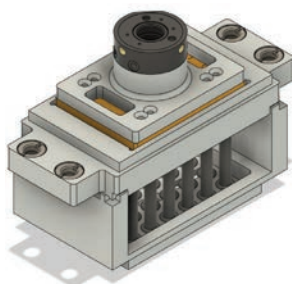


Tools are swapped in 45 seconds!

Multi-Core Pipetting Arm (MCPA) Tools

KS Magnetic Rod Tools

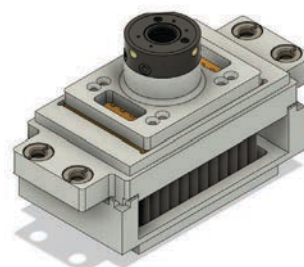
The KS Magnetic Rod Tools are an automated solution for paramagnetic bead based separation in scientific assays such as DNA and RNA extraction, PCR purification, size selection, and clean up based assays. This solution leads to faster processing and lower sample loss than other traditional bead clean up methods.



24KS Magnetic Rod Tool

Equipping your liquid handler with the 24KS Magnetic Rod Tool provides dual functionalities: magnetic processing and liquid handling.

When paired with the 24ST, in just 45 seconds, seamlessly transition from the magnetic rod tool to the 24 5mL pipetting tool, enabling high-volume, completely automated, end-to-end processing while increasing sample recovery.



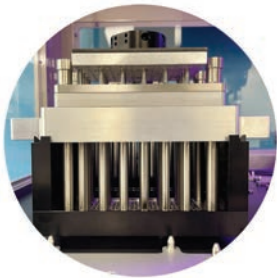
96KS Magnetic Rod Tool

The 96KS Magnetic Tool enhances sample recovery in purification assays while saving space through its compatibility with both our pipetting tools and most standard kits on the market. It effortlessly integrates into your workflow, offering adaptability with minimal effort for the customer. When combined with a pipetting tool, it forms a fully automated, end-to-end system, eliminating the necessity for multiple instruments and softwares.

Multi-Core Pipetting Arm (MCPA) Tools

Pipetting Tools

The MCPA pipetting tools serve as the standard volume pipet tools integrated into the MCPA suite. This adaptation enhances the liquid handling platform's versatility, enabling users to seamlessly switch between multiple head types on a single system. With the capacity to handle volumes ranging from 0.3 μL to 5mL, this platform empowers users to conduct a significantly higher number of assays than previously possible.



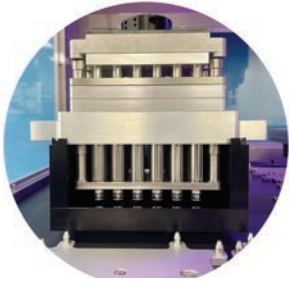
24ST 1mL

The 1mL 24ST MCPA pipet tool seamlessly pairs with 96 1250 μL tip boxes, offering users the flexibility to work not only with 24 well plates but also with 96 well plates through offset pipetting. Additionally, it optimizes the usage of disposable tip boxes by utilizing four sets of 24 tips into a single 96 tip box. This tool proves especially advantageous for processes that use both 24 and 96 well plates and tubes.



96ST

The 1mL 96ST MCPA pipet tool is a versatile solution, compatible with various tip sizes and capable of consistently delivering accurate volumes ranging from 1 μL to 1000 μL across different plate types. It is well-suited for a range of assays, including DNA, Protein SPE, and magnetic bead purification.



24_{ST}

The 5mL 24ST MCPA pipet tool is tailored for large volume applications. When transitioning from large to small volumes, easily switch to a small volume MCPA pipet tool such as the 24ST 1mL pipet tool or the 96ST pipet tool for impressive accuracy and precision.



96_{ST} 300 μ L

A compact version of the 1mL 96ST MCPA pipet tool, this option is ideal for users seeking space efficiency or looking to pair a 96 MCPA pipet tool with the LM700. Despite its smaller size, it maintains the exceptional accuracy and precision of the 1mL 96ST.



384_{ST}

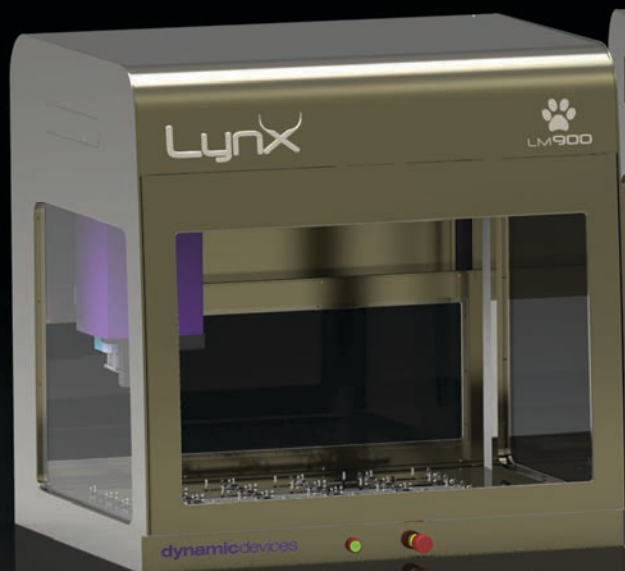
Designed for smaller volume applications that demand a notable sample size, the 384ST MCPA Pipet Tool is the ideal choice for enhancing throughput. Capable of pipetting volumes as low as 0.3 μ L to 70 μ L, this tool is the perfect solution for increased efficiency.

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LMI200

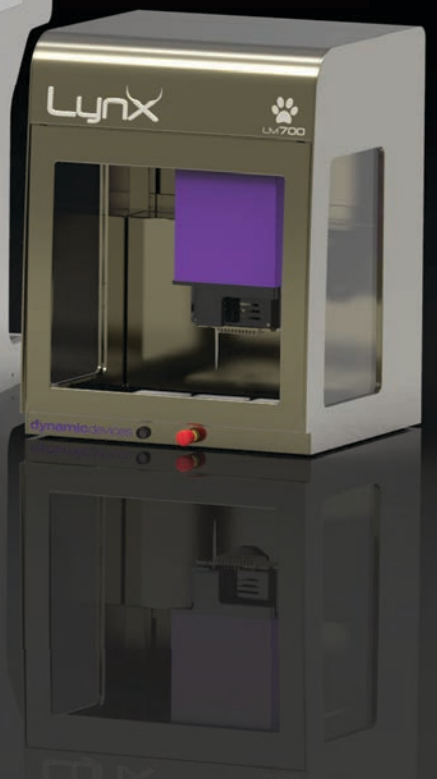
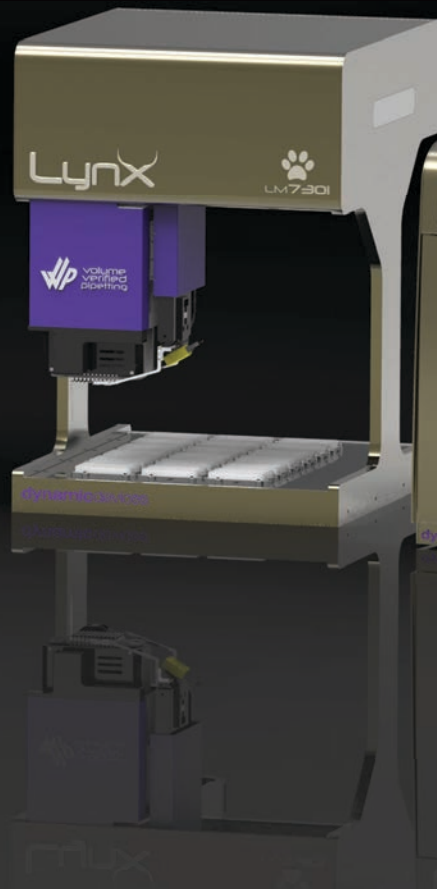
LM900



LM1800

LM730i

LM700



LM700

LM730i

LM900

Size (LxWxH)	28" x 26" x 26"	28" x 32" x 40"	40" x 36" x 40"
VVP Compatible	No	Yes	Yes
Pipetting Tool (VVP)	No	24, 96	24, 96
Pipetting Tool (ST/MCPA)	96 (300µL), 384	24 (5mL & 1mL), 96 (300µL & 1250µL), 384	24 (5mL & 1mL), 96 (300µL & 1250µL), 384
Dual Arm Compatible	No	No	No
Positions	12	18	30

Available Pipet Tools

24ST	No	50µL - 5mL	50µL - 5mL
96ST	1µL - 300µL	1µL - 1000µL	1µL - 1000µL
384ST	0.3µL - 70µL	0.3µL - 70µL	0.3µL - 70µL
96VVP, F4iZ, F8	No	2µL - 1250µL	2µL - 1250µL
24VVP	No	50µL - 5000µL	50µL - 5000µL

VVP Specifications

Sample Viscosity: 0.5 to 10 cP

Operating Temperature: 10 to 40 C

Volume Range: 2uL to 5 mL

Typical dispensing speed up to 450 uL/s

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LMI200

LMI800

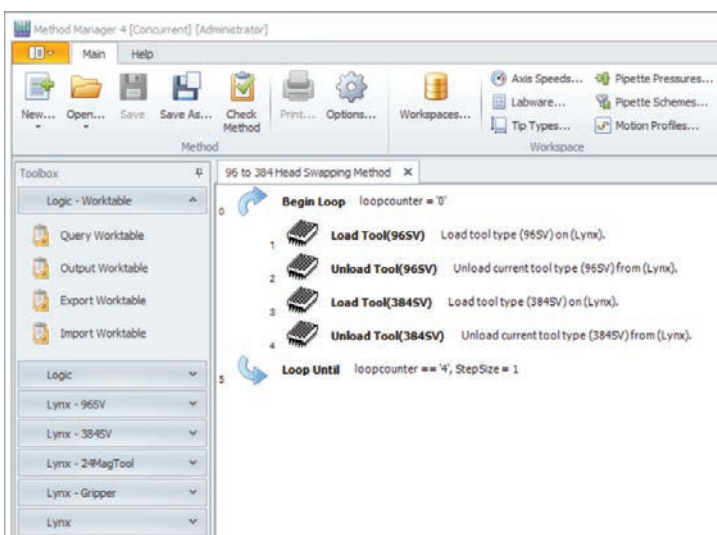
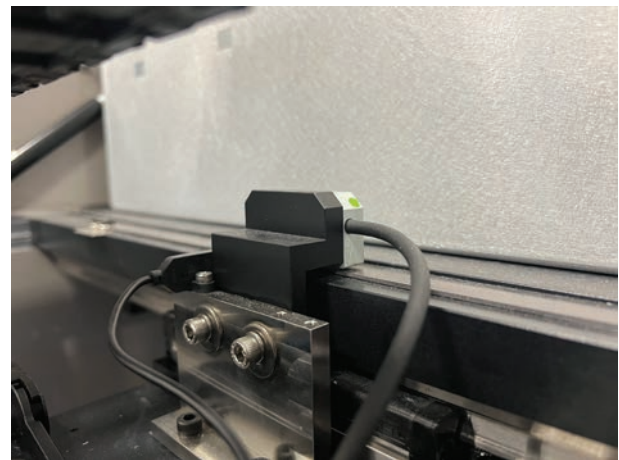
	52" x 36" x 40"	75" x 36" x 40"
	Yes	Yes
	24, 96, F8, F4iZ	24, 96, F8, F4iZ
L), 96 (300µL & 1250µL), 384	24 (5mL & 1mL), 96 (300µL & 1250µL), 384	24 (5mL & 1mL), 96 (300µL & 1250µL), 384
	Yes	Yes
	42	66
	50µL - 5mL	50µL - 5mL
	1µL - 1000µL	1µL - 1000µL
	0.3µL - 70µL	0.3µL - 70µL
	2µL - 1250µL	2µL - 1250µL
	50µL - 5000µL	50µL - 5000µL

Why Choose the Lynx LM Series Liquid Handling Platform?

Where we pull ahead

Absolute positioning with Linear Magnetic Motors and Encoders

Linear motors and encoders offer enhanced positional accuracy, precision, and repeatability compared to traditional mechanical rotation-to-translation mechanisms like racks & pinions or belts & pulleys typically used in laboratory liquid handling instruments. Moreover, they contribute to higher speeds, decreased maintenance requirements, and improved performance in pipetting tools.



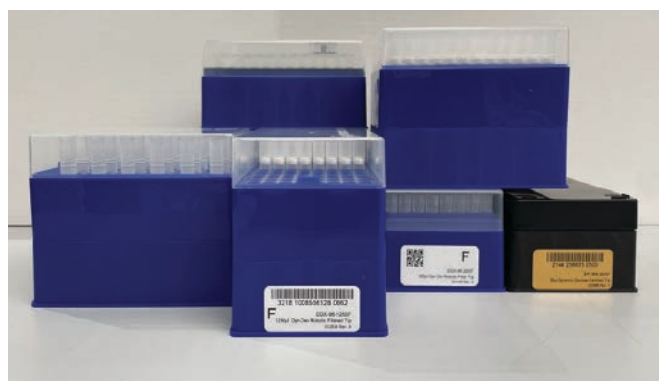
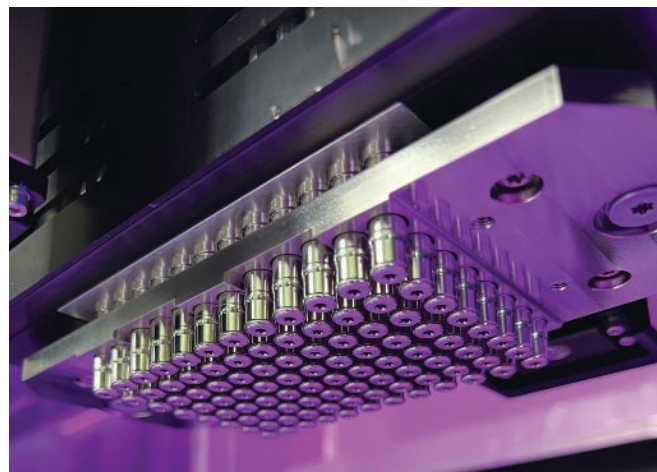
Easy to Use Software with Method Manager 4.0

Method Manager 4.0 offers a user-friendly and streamlined approach for programming methods, importing files, exporting pipetting data, and handling pipetting diagnostics and errors with ease.

Low Maintenance Solid Mandrel Tip Loading

The Solid Mandrel (SM) tip adapters, designed for loading disposable pipette tips, have eliminated the necessity of maintaining high-maintenance components such as rubber O-rings and tip seals.

By adopting SM tip loading, the requirement for a 3 or 6-month preventive maintenance service is avoided, as it excludes the most maintenance intensive component on the robot.

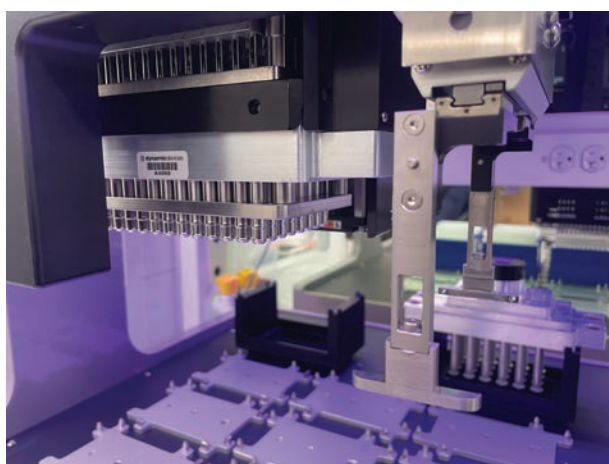


Flexibility with an Unrestricted Worktable

The Lynx worktable features SBS-compliant microplate footprints in each position, providing flexibility for organizing plates, tips, or disposables. With a robust chassis and vertical drive, the Lynx can load 96 or 384 tips from any of its 66 worktable locations. This versatility, along with a complete line of disposable tips in SBS free-standing tip boxes, creates a highly efficient and flexible worktable.

Open Design For Flexible Integration

The Lynx offers versatile integration possibilities ranging from basic pipette head grippers to 6-axis SCARA robots capable of reaching off the deck. Its open chassis design enables integration from all four sides, and it accommodates horizontal conveyor options and vertical incorporation through the worktable.



Platform Life Science Application

Just a few...



Large Volume MagBead Extraction

As automation streamlines DNA purification from larger volumes, often exceeding the capacity of most main-stream systems, Dynamic Devices introduces a solution. The 24-channel extraction tool, equipped with 5mL pipetting tips, is seamlessly integrated with Click-Bio's large volume extraction block technology. Or simply integrate with the 24kS Magnetic Rod Tool.



DNA Purification and Magnetic Bead Purification

With the iMagZ and KS Magnetic Tools, DNA purification for several plates can be achieved without a gripper tool. The 96ST pipetting tool facilitates the direct transfer of samples, washing buffer, and elution buffer to the PCR plate in a static position, ensuring ease of use.



Normalization/Compound Dissolution

Using worklist files from a concentration or compound weight, individual wells may be diluted with different volumes using all 96 channels.



DNA & Protein SPE Purification

Using the 96ST pipetting tool, DNA and protein purification may be carried out in PhyTip solid phase extraction tips. On-deck accessories include a tip drying station and refillable reagent trough system.



Plant/Seed/Blood Transfers (Clog Detection & Correction)

Using the 96 VVP pipetting tool with clot/clog detection active, challenging samples are aspirated with individual channel diagnostics. If a clog/clot hinders liquid aspiration, the affected tip is paused until the other tips complete their actions. Subsequently, the system clears and reaspirates the problematic channel.



Cell Maintenance & Distribution

Utilizing either our 96 or 384 pipetting tool in conjunction with system incubators ensures the seamless maintenance of cell lines. Tasks such as media swapping for cell feeding and high-throughput cell distribution for cell assays are accomplished with ease and speed.

Integrations

Scheduling Software

Scheduling softwares are a crucial tool within laboratory automation, providing a central hub for instrument control and workcell scheduling. These applications are versatile, catering to both simple setups involving a single instrument and complex configurations with numerous instruments. Whether the software that you choose be static, dynamic, or both; Method Manager 4 is capable of integrating seamlessly with the scheduling software of your choice, while enhancing the overall user experience.

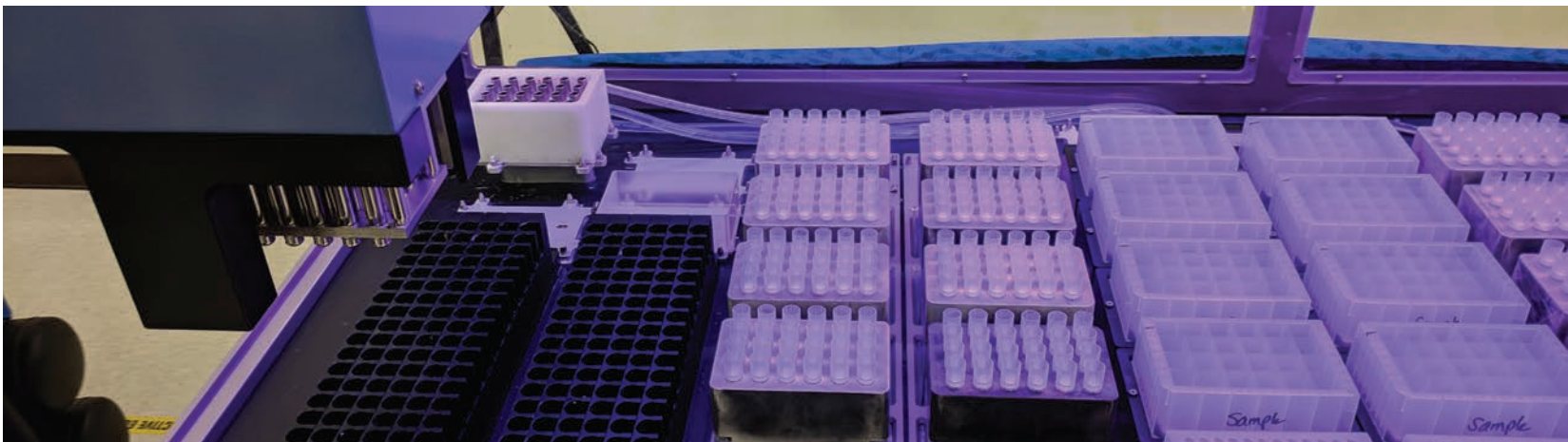


Softwares we've integrated with

PAA Overlord, Wako Director, Retisoft Genera, High Res Cellario, BioSero Green Button Go, ThermoFisher Momentum, Lab Services Plate Butler

Accessories

Adding accessories to your liquid handler is a great enhancement, and can, depending on the application, significantly improve efficiency and increase throughput.. The Lynx's open system design allows for versatile customization, adapting the system to specific needs easily. The integration of accessories streamlines processes and automates tasks, boosting overall productivity and ensuring a dynamic and responsive laboratory environment.



Accessories

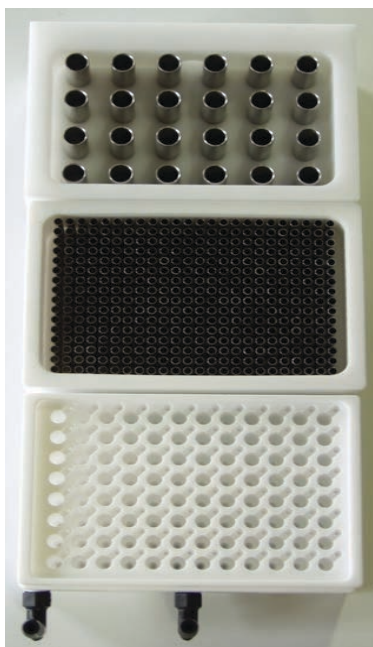
iMagZ: Magnet Elevator Position



Vacuum Station



Wash and Waste Trough



More:

- 2D Barcode Scanner
- HEPA
- Shaker/incubators
- On-deck thermocycler
- Automation Tables
- Teach Blocks
- Head mounted gripper
- 1D and 2D Vision
- Autofill Reservoir
- Bulk Reagent Dispenser
- Micro Assay Incubator
- Locking Plates
- Tip Wash Station

Integrations

Just a few...

Existing Driver List

Accuris MR9600 Reader

Covaris LE220P

Curiox HT2000 Laminar Wash

Agilent VSpin + Autoloader

Covaris R230

Inheco On Deck Thermal Cycler

Agilent PlateLoc

Thermo Cytomat

Brooks IntelliXCap

PAA KX2 Robotic Arm

Luminex Guava

Unchained Labs Lunatic

Micronic CS700

Brooks SampleStore

LiCONiC Plate Carousel

MSD Reader

Inheco Teleshake

SMC Electronic Pressure Regulator

BioTek EL406

LiCONiC STX44

BioTek Epoch/NeoReader

Hudson 10x Dispenser

Keyence Vision Camera

Thermo ALPS 3000

Ziath DP5

Halo Aura

Precise Automation PF400 Robotic Arm

Inheco 4-Position Incubator

Hudson Rapidwash

Unchained Labs Stunner

Qinstruments Bioshake, Temp- Controlled Shakers, Coldplate, HotPlate

Didn't see what you wanted?

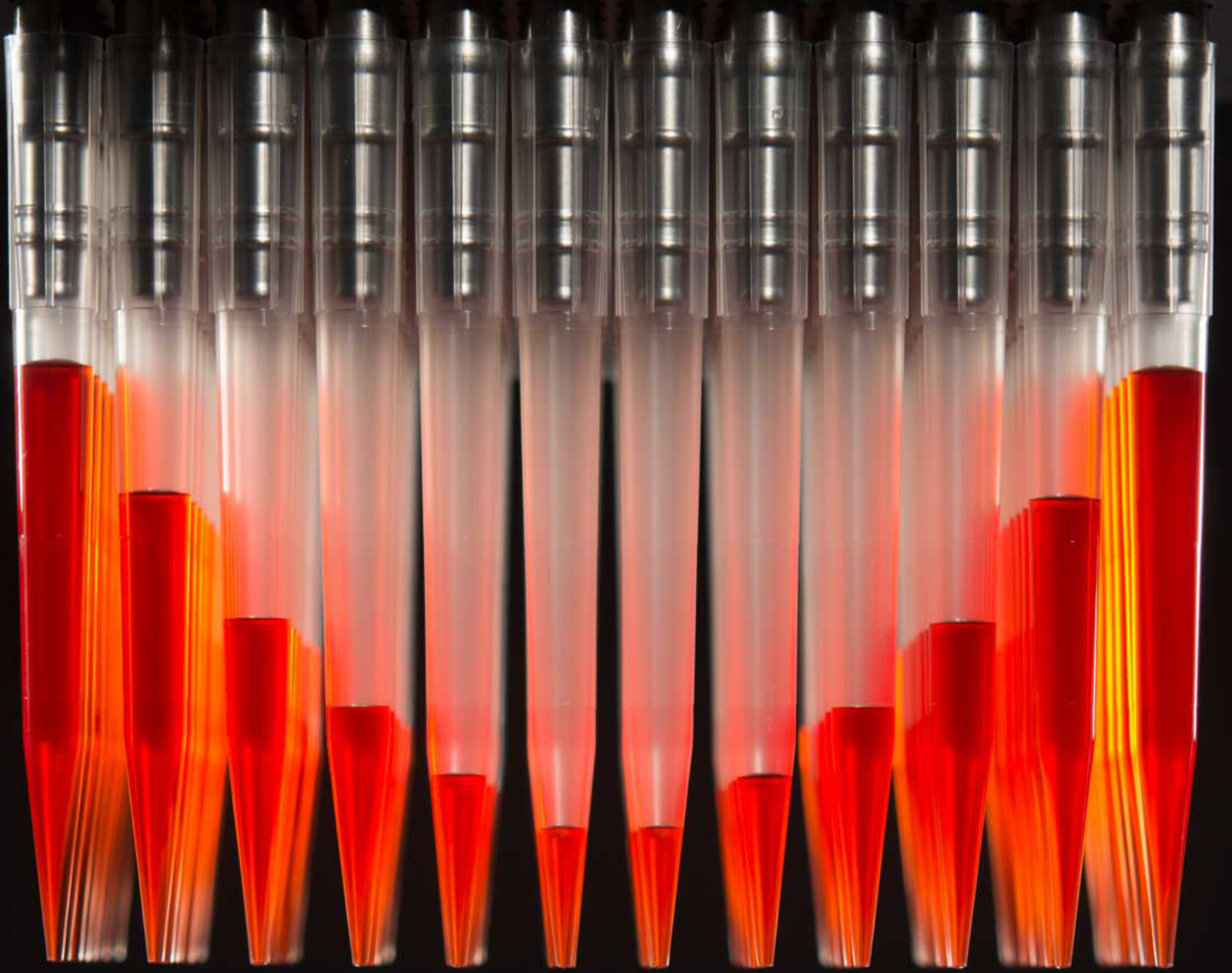
Coming Soon

Dynamic Devices is always developing new tools and accessories as we encounter new applications or see an investment in helping our customers take their process away from manual intervention to fully end to end automation. The 24XL KS Magnetic Rod Tool is a larger take on the 24KS Mag Rod Tool designed to support large volume 8-10mL in processes such as cfDNA, midi, and maxi protocol. It has the same easy swappability as the other MCPA tools.

The Crushing Tool is a versatile MCPA tool that can be used for a variety such of applications. One such application is seed crushing!

Just Ask!

Most of our innovations were requested from customers just like you. We are happy to receive any kind of feedback or requests on our tools, systems, or software. If you think your process is too complex to be automated or you've never seen an instrument that can do your manual process — think again! It just might be the next development to come out of Dynamic Devices.





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