JANUS Automated Workstation

real-time adaptability
without compromise

PerkinElmer®
precisely.

real-time and future adaptability in throughput, capacity and dynamic volume range

In today's fast-paced, high throughput research laboratories, automation of methods and assays has become a necessity. Escalating workloads, limited sample supply, expensive reagent costs and changing methodologies continue to impact today's life science researcher. For over 20 years, PerkinElmer has provided innovative solutions to meet your automation needs.

PerkinElmer continues this tradition with the convergence of our key liquid handling platforms, MultiPROBE™ and Evolution™. **The new JANUS™ Automated Workstation**, powered by Packard™ innovation, is designed for the efficient automation of sample preparation procedures utilized in pharmaceutical, biotech research and clinical applications.

Maximize your investment for the present and for your future

PerkinElmer's automated liquid handling solutions eliminate the challenge of obsolescence by providing modular and scalable solutions to meet your needs now and in the future:

- Adaptability – JANUS adapts as your application and throughput demands evolve. With your choice of up to three arms for dispensing and labware movement, configure for today's needs and adapt anytime for future requirements.
- Flexibility – The JANUS Automated Workstation employs a modular design to deliver real-time adaptability in throughput, capacity, and dynamic volume range. In addition, JANUS provides the capability to treat each sample uniquely.
- Precision – JANUS delivers optimal pipetting performance across all of today's volume requirements from nL to mL's with a choice of fixed, washable or disposable tips to address your carry-over elimination requirement.

The power of Modular Dispense Technology

Now you can program the right dispense volume tool for each step in your protocol, automatically, "on-the-fly".

The JANUS Automated Workstation with proprietary Modular Dispense Technology™ (MDT) delivers real-time and future adaptability in throughput, capacity and dynamic volume range – without compromise in performance or methodology.

- MDT provides hands-off, "on-the-fly" adaptability in dynamic volume range and microplate densities for up to 1536 wells.
- Dispense heads can be automatically switched within a single protocol, to change from nanoliters to microliters in seconds or from 96- to 384-tip with no user intervention.
- Modular design for optimal performance by selecting the right dispense tools for the volume to be dispensed. Use a low volume head for nanoliter dispensing and automatically switch to a larger volume head for buffer or diluent additions.

The modular design of JANUS also lets you integrate with other accessories or instrumentation for true walk-away automation.

adaptable scalable upgradeable

precise

Flexible today, scalable for tomorrow — JANUS Automated Workstation powered by Packard innovation.

Start with one of three JANUS platforms. Choose Standard, Expanded or Integrator models offering your choice of deck size and dispense arm. Include a Gripper™ pick and place robotic arm and interface with other laboratory devices including; PlateStak, plate readers, shakers, etc.

Choose single- or dual-arm systems for dispensing and labware movement

- 4-tip or 8-tip dispense arms with Varispan™ for multi-tipped processing from tubes to vials to plates.
- Tip options include fixed washable tips, disposable tips, or both.
- 96- or 384-tip MDT dispense arms for automatic “on-the-fly” switching of heads for optimal precision pipetting and performance in microplates.
- Unique MDT NanoHead™ dispense heads take assay miniaturization to another level with 384- and 1536-tip processing down to 50 nL with C.V.s better than 13%.
- Need dual-arm flexibility and throughput plus labware movement? Add the optional Gripper Integration Platform for both on-deck labware movement and off-deck integration.

flexible

Easily transition from one JANUS configuration to another

Because of its modular design, you can easily reconfigure it for more throughput, capacity or dynamic volume range. For total walk-away automation, just add a second integrated labware movement module. If you need additional capacity for microplates or disposable tip boxes, simply connect a PlateStak™ Microplate Storage Device. With JANUS, there are no limits to your liquid handling capabilities, now or years from now.

Additional key features of the JANUS platform include:

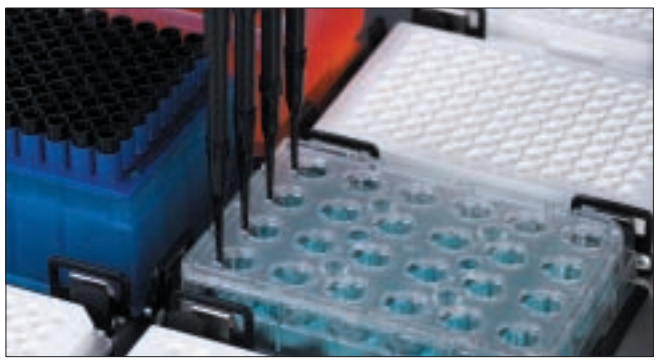
Varispan™ – Provides automatic computer-controlled variable sample probe spacing for multi-tipped processing of different methodologies allowing test tubes, microplates, deep-well plates, vials, etc. to be automated.

VersaTip™ – Enables both washable and disposable tips to be used on one tip adapter. No user intervention required to change from one tip type to another.

Accusense™ – Patented independent liquid level sensing optimizes performance by minimizing over-immersion of sampling tips and detection of both ionic and non-ionic liquids.

WinPREP® – User friendly software provides “drag-and-drop” applications programming without complexity.

Increase your lab’s throughput and efficiency even more by integrating other proven PerkinElmer detection and analytical instrumentation for complete assay automation.



application solutions

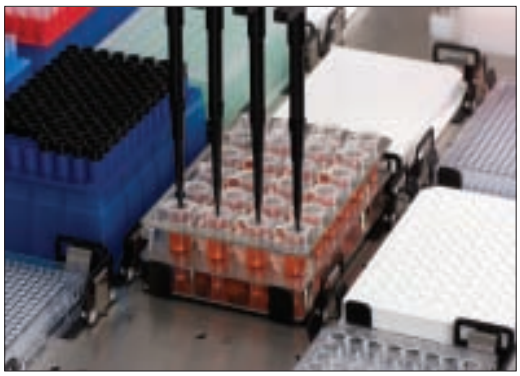
The JANUS Automated Workstation is designed for the efficient automation of sample preparation procedures utilized in pharmaceutical, biotech and research applications. And its modular design lets you adapt as needs change – from throughput to capacity to different applications. When enhanced walk-away automation is required, JANUS can be integrated to other instrumentation or peripheral accessories for true application automation.

Utilized around the world for accelerating life science research and testing, JANUS has become a chosen automation platform for today's laboratories.

- Because of its modular design, once you have the JANUS system, you can easily reconfigure it for more throughput, capacity without the need to re-validate assays
- WinPREP enables a single program to address unlimited user-defined run-time variables minimizing the amount of time required on protocol set-up

Proteomics

- Maldi-Spotting
- Protein purification
- Protein biomarker assays
- In-gel digestion
  - precision low volume pipetting
  - automatable vacuum extraction
  - supports wide variety of plates/slides



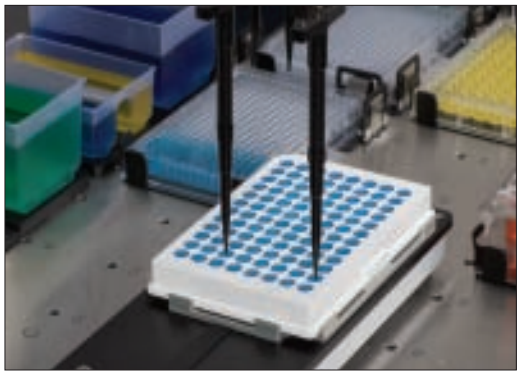
Genomics/Molecular Biology

- PCR set-up
- Sequencing set-up and clean-up
- DNA normalization
- Multiplex Gene Expression
- Plasmid preparation
  - precision low volume pipetting
  - contamination control options
  - ready-to-use application templates for magnetic vacuum extraction and centrifugation separation methodologies
  - integrated solution with PerkinElmer Victor with DNA protocol

Forensics

- Sample preparation
- QPCR setup
- DNA normalization
  - sample security
  - handles wide range of sample types
  - ready-to-use templates for casework or database samples
  - sample tracking database
  - choices in disposable tips

application solutions



Drug Discovery

- Plate replication
- HiTS picking
- Dilutions
  - Modular Dispense Technology delivers optimal performance for both throughput and dispensing accuracy with 96- and 384-tip options
  - high throughput nanoliter dispensing
  - easy importing of Excel® files
  - variable dilution functionality
  - positive sample identification

Molecular Diagnostic Research

- Protein Biomarker Assays
- Gene expression
- Microarray
- Cancer markers
  - precision low volume pipetting
  - temperature control options
  - sample Tracking
  - contamination control

Clinical Applications

Designed and manufactured in a GMP environment, JANUS is capable of automating today's growing clinical diagnostic and research applications. Flexible, yet easy-to-use WinPREP software and a robust modular platform provides an optimal design for the clinical marketplace.

- Endocrinology
- Steroids
- Molecular diagnostic/research
- Infectious diseases
- Immunology

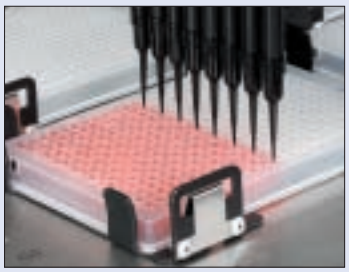
Cellular Assays

- ADME/TOX
- Cell Metabolism
- Reporter Gene
- CaCO2 Assays
  - Complex assay automation through integration, sample prep, incubation, plate-washing, mixing and detection
  - Complete solutions with integration to PerkinElmer Victor or EnVision plate readers
  - Temperature and environmental control options

real-time flexibility

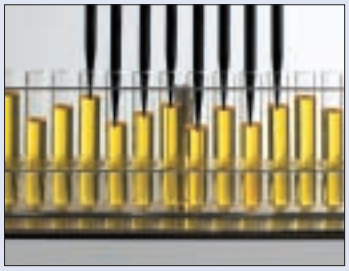
Multi-tipped throughput for all assay formats

JANUS systems are designed for multi-tipped processing regardless of the type of labware utilized in any assay. Equipped with four or eight sampling tips with Varispan, JANUS is able to automatically vary the spacing between sampling tips thus ensuring uncompromised throughput and flexibility for different methodologies regardless of the type of labware utilized. From vials to tubes to microplates of different densities, JANUS can adapt.



Sample probe choices to meet any application requirement

JANUS offers flexibility in carry-over elimination with VersaTip. Washable Teflon®-coated, stainless steel sampling tips provide contamination control for routine procedures where washing of sampling tips via a peristaltic pump is sufficient. For applications requiring total flexibility, PerkinElmer's exclusive VersaTip technology enables a single sampling probe to provide selective use of either washable tips or a variety of disposable tips in the same procedure and without any user-intervention required to change from one tip type to another. This versatility eliminates contamination while minimizing the consumption of disposables when unnecessary.



Superior liquid level sensing performance

Accusense, PerkinElmer's patented liquid level sense technology has established itself as the "best in class". With accurate sensing, over-immersion of sampling tips is minimized and improvement in pipetting performance is achieved. No need to employ inferior tip touching techniques when accurate sensing is available.

– Minimizes the amount of liquid required in a vessel (less than 50 uL required in microplates)

Enables both ionic and non-ionic liquids such as DMSO or methanol to be detected.

Barcode reader for traceability

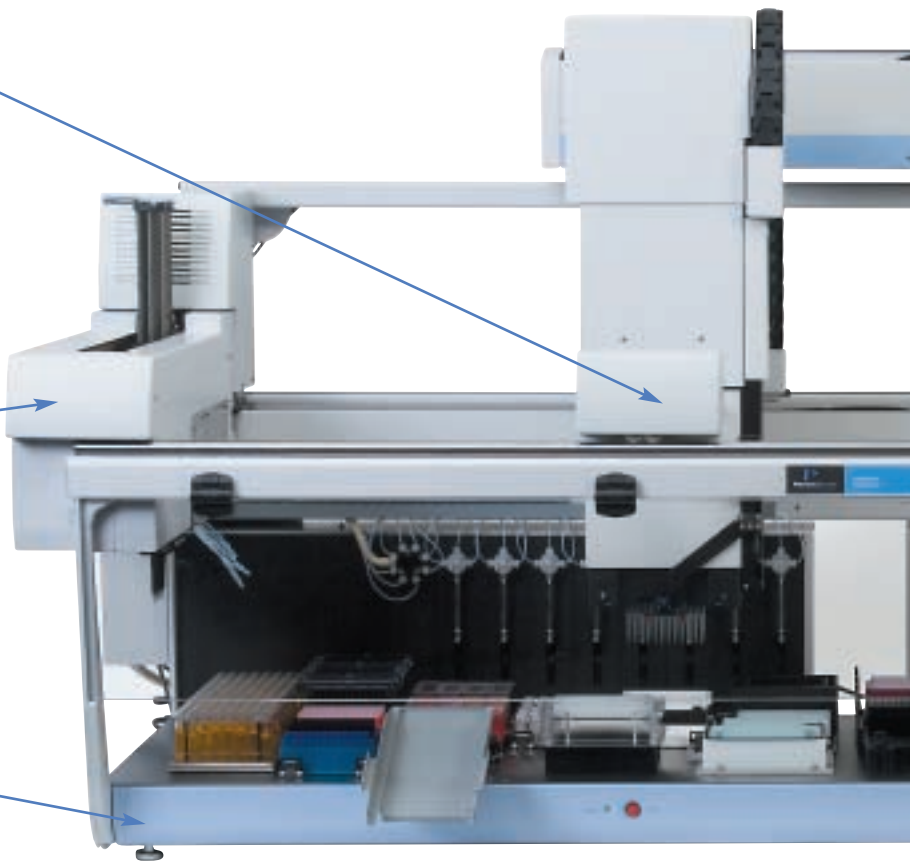
Positive ID is provided via high throughput sample barcode reading. Up to 192 samples can be read in less than 90 seconds. Track samples from source to destination labware with secondary labware ID enabling both tubes and microplate identifications to be tracked and logged into a database.

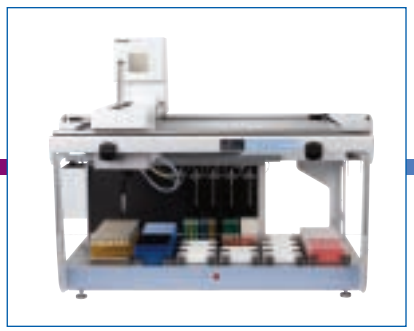
real-time performance

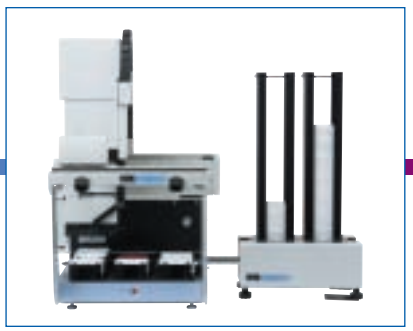
MDT enables automatic switching of heads for optimal precision pipetting. It offers a variety of 96- or 384-tip MDT pipetting tools and unique nanodispensing down to 50 nL with C.V.s better than 13%.

Choice of 4-tip or 8-tip dispense arm with Varispan for multi-tipped processing from tubes to vials to plates. Tip options include fixed tips, washable tips or both.

Modular deck design enables choice in application accessories. From test tubes to microplate racks, reagent troughs, disposable tips, vacuum manifolds, heating and cooling tiles and much more.

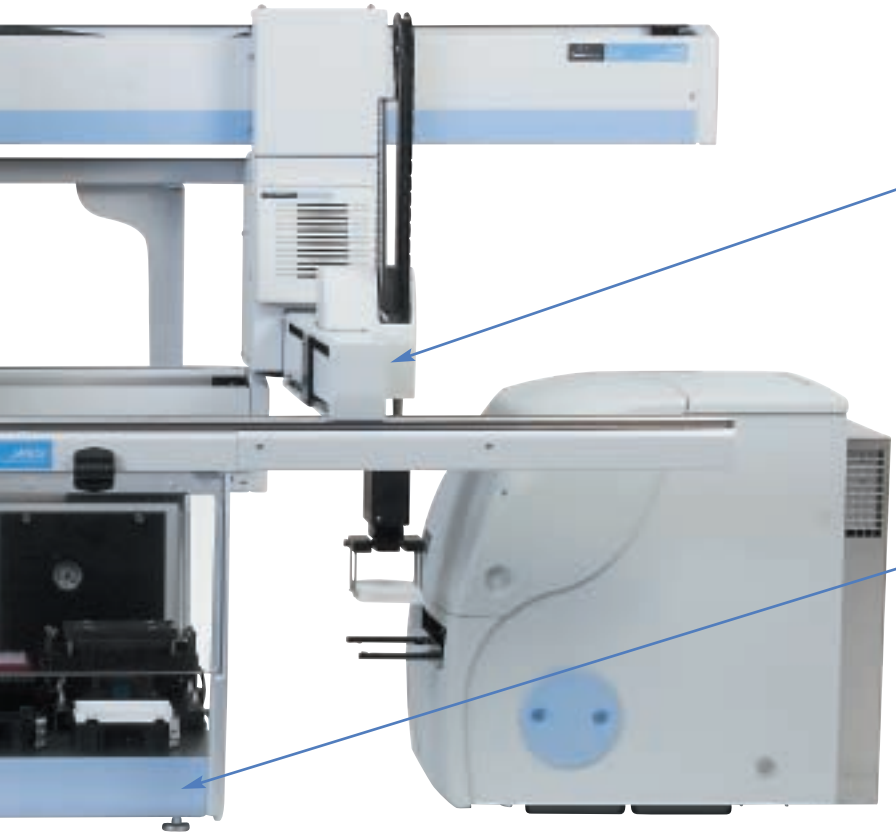






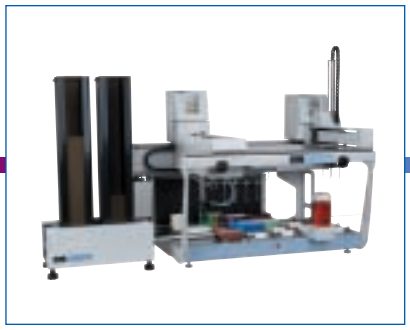
adaptability

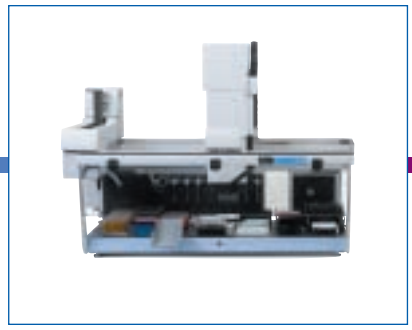
real-time throughput



Labware movement module enables complete assay automation by linking pipetting tools with labware movement around deck or into anciliary devices such as readers, washers, incubators or other application enhancing devices.

Four deck sizes provide capacity up to 1536 test tubes or 32 microplates or any combination.





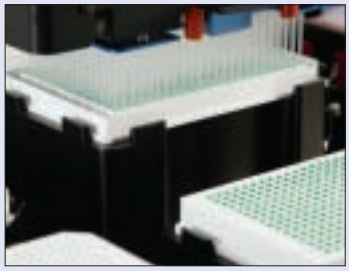
real-time application solutions

A model to meet every capacity need

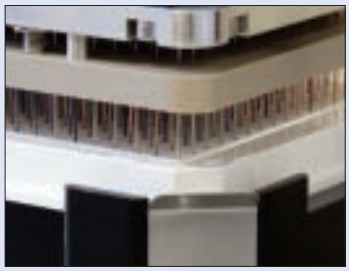
The JANUS family of Automated Workstations offers multiple deck sizes to address every capacity need. From compact deck sizes to large expanded models, JANUS offers multiple models to meet laboratory space and capacity requirements. Mini models are compact in size requiring limited bench space while offering deck capacity of up to 9 labware tiles. Standard, Expanded and Integrator models offer up to 32 deck positions for larger labware requirements.

Dynamic volume range from nanoliters to milliliters

Today's applications are demanding instrumentation capable of expanded dynamic volume ranges. But dynamic volume dispensing should not require compromise on performance at any one level. With MDT, there are no compromises. This unique design enables you to automatically optimize the right pipetting head to a specific liquid transfer, each time and every time. All changing is done "on-the-fly" and automatically without any user intervention or the requirement of a second arm.

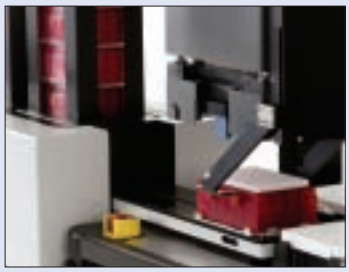


- Select a 96- or 384-tip dispense head based on labware density and optimal throughput requirements
- Select a large volume dispense head for large volume dispenses
- Select pin tools for sample transfers from 1 nL and up
- Select NanoHead for precision dispensing from 50 nL to 1 uL with precision of better than 13%.



Complete assay automation – your way

Requirements change and so should your choice of automation. Need liquid handling today? Need to expand to a complete walk-away solution tomorrow? JANUS is designed for scalability, adapting to your needs as they change. Start with a one arm flexible liquid handler. When more complete assay automation is required, JANUS can be upgraded to a two arm system adding labware movement capabilities.



If both flexibility and throughput are required on a single platform, combine 4- or 8-tip technology with industry leading 96- or 384-tip MDT technology. Add a third labware movement module to enable on-deck and off-deck access linking liquid handling with peripheral devices such as detection systems, incubators, temperature control devices and much more.

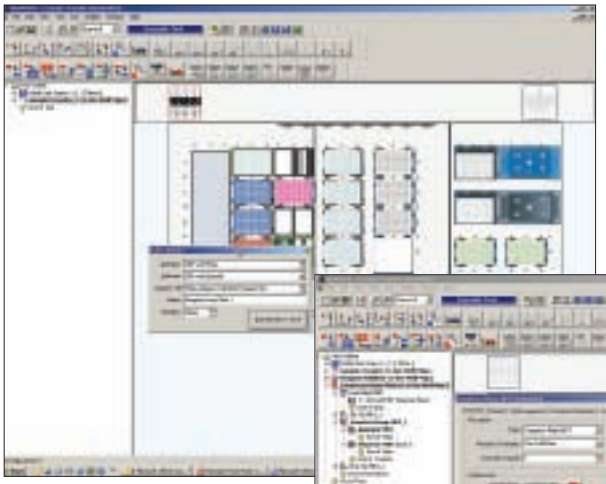
drag and drop simplicity

Today's applications often require frequent modifications to procedures as new methodologies and tests are developed, evaluated, and implemented within the workplace. Today's lab needs applications programming that can mimic a manual performance setup in simplicity yet offer the power of today's complex and emerging technologies.

Enter WinPREP, JANUS' application programming engine, capable of providing all the flexibility required for defining today's applications, but with programming simplicity as easy as 1-2-3.

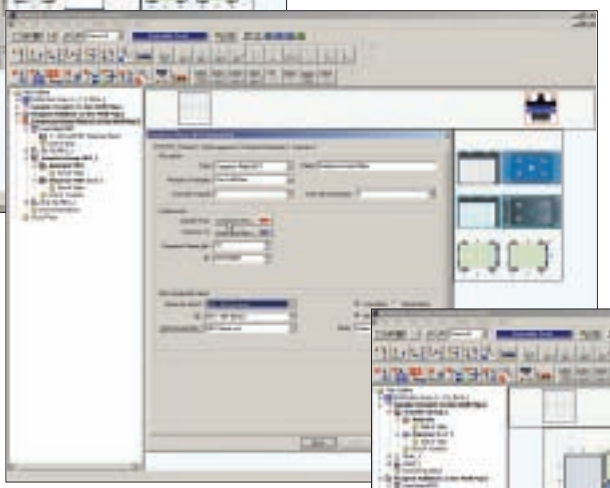
In the past, choosing a liquid handling platform forced users into making choices and accepting compromises. Flexible software meant complex programming, while easy-to-use packages looked "pretty" but lacked the functionality and robustness required of today's diverse applications. With JANUS and WinPREP, you do not have to compromise.

Easy as 1-2-3



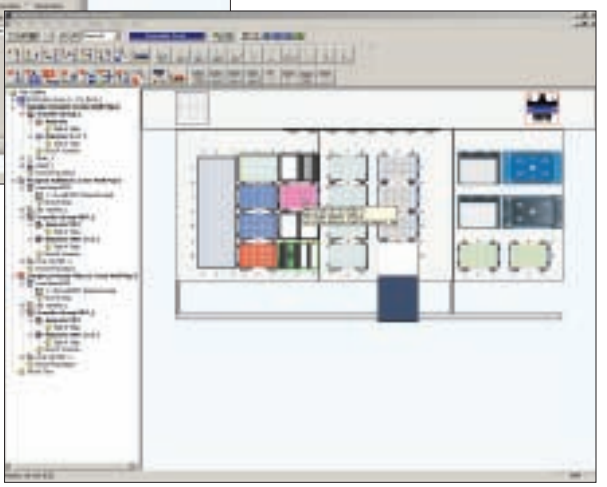
1

Populate your deck with labware, choose from WinPREP's labware library. Then drag and drop onto the deck view.



2

Choose a procedure template from a list of standard pipetting operations. Templates for procedures make protocol definition easy.



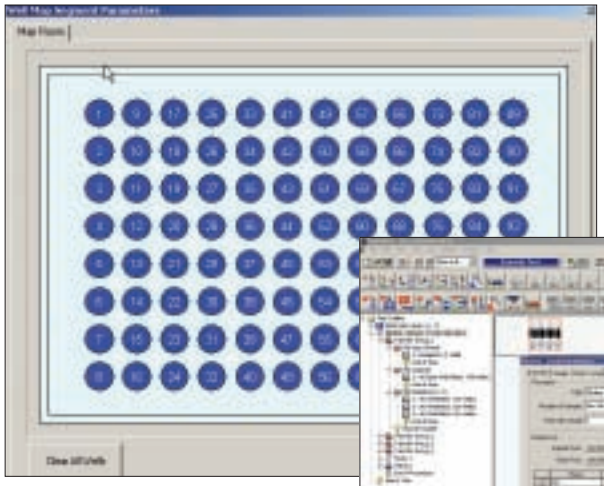
3

Select the labware on your deck, then drag and drop it onto the pipetting operation step in the test outline where it is to be used.

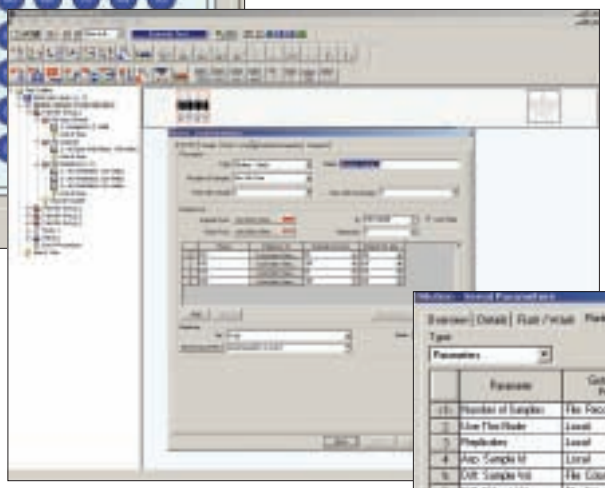
without complexity

With WinPREP, powerful automation is made simple:

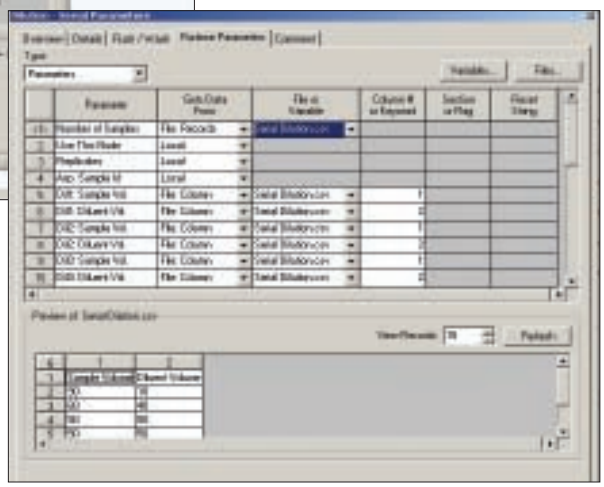
- JANUS utilizes a single software interface regardless of number of arms, type of dispensing heads or configuration. The learning curve is minimized regardless of your configuration or future upgrades.
- Pre-defined labware library enables users to select a piece of labware, then drag and drop it anywhere on the deck. You can move it anywhere without requiring a new definition. Have your own labware? Just define it once, then it's there to stay.
- Procedure templates are available for standard pipetting operations such as liquid transfers, reagent additions, dilutions, plate replication, cherry picking, or plate expansion.
- User-friendly applications interface: Select the optimal pipetting tool for your application and optimized procedure parameters are automatically loaded. Performance file libraries ensure good pipetting performance for different liquid types, volumes, sampling tip types and heads.
- Pipetting patterns are easily defined by selecting a standard pattern or selectively checking on specific wells in the order of processing. Unique patterns can be created for each piece of labware.
- Integration Manager software simplifies device integration through simple user prompts.
- Sample tracking is maintained through positive identification of source and destination barcodes or positions, and maintained in industry standard ACCESS® databases.



WinPREP's Map Rooms provides flexible pipetting patterns or processing order to be defined or optimized easily.



Flexible dilution templates enable easy definition of direct, serial or custom dilution schemes.



File-based protocols for cherry picking or dilutions can be easily imported into WinPREP. Sample positions or volumes can vary fro each sample and be easily imported via Excel® or standard CSV file formats.

Wherever your liquid handling needs take you, the JANUS Automated Workstation will be there for you.

With JANUS, you can increase your lab's throughput and efficiency even more by integrating other proven PerkinElmer detection and analytical instrumentation for complete assay automation including PlateStak Microplate Storage Devices, FlexDrop Precision Reagent Dispensers, Victor Plate Readers, and the EnVision Multilabel Plate Readers.

The JANUS Automated Workstation is also the heart of several application focused workstations including:

JANUS Cellular Workstation – the Integrated PerkinElmer assay platform with pre-programmed assay templates for cell-based assays, cell viability, apoptosis, cytotoxicity and proliferation.

- Cell plating, washing, test compound addition, incubation and detection
- Predefined application templates
- Plate movement within JANUS and the external devices.
- Assay scheduling
- Multi-label detection with PerkinElmer's EnVision and Victor3™ plate readers

JANUS CS Autoplex Workstation – designed to automate sample processing and assay setup utilizing the high content Luminex® xMAP technology.

- Optimized for automated Luminex cytokine immunoassay to ensure optimal sensitivity, specificity, precision, linearity of dilution and dynamic range.
- Substantial improvements in throughput and reliability compared to manual sample processing.
- Carry out all aspects of a variety of Luminex assay protocols, including liquid handling, plate movement, vacuum filtration, blotting, magnetic particle processing, mixing and temperature control operations.

JANUS Forensic Workstation – streamlines DNA isolation, quantitation and preparation procedures to increase productivity, eliminate human error, reduce contamination, and increase data integrity and traceability. You'll realize higher throughput sample processing along with reliable and high quality Short Tandem Repeat (STR) typing analyses.

The Forensic Workstation comes with built-in automated DNA protocols that let you:

- Save hours on forensic DNA isolation – extracts DNA from virtually any type of casework or database forensic sample.
- Speed up real-time PCR (QPCR) – quickly determine sample suitability for forensic DNA typing.
- Ensure successful downstream STR typing analysis – automate DNA normalization for widely varying concentrations of DNA (10,000-fold range) and PCR setup.

To learn more, call **1-800-762-4000**
or visit www.perkinelmer.com/labautomation

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