

# TAKE YOUR NEXT STEP WITH **CONFIDENCE**

Biomek-Automated Genomic Solutions



ACCELERATED WORKFLOWS. Faster Discovery.



# IT STARTS WITH DEFINING THE **RIGHT WORKFLOW SOLUTION FOR YOU**

Human Health • Agricultural • Animal Health • Environmental • Food & Beverage • Forensics

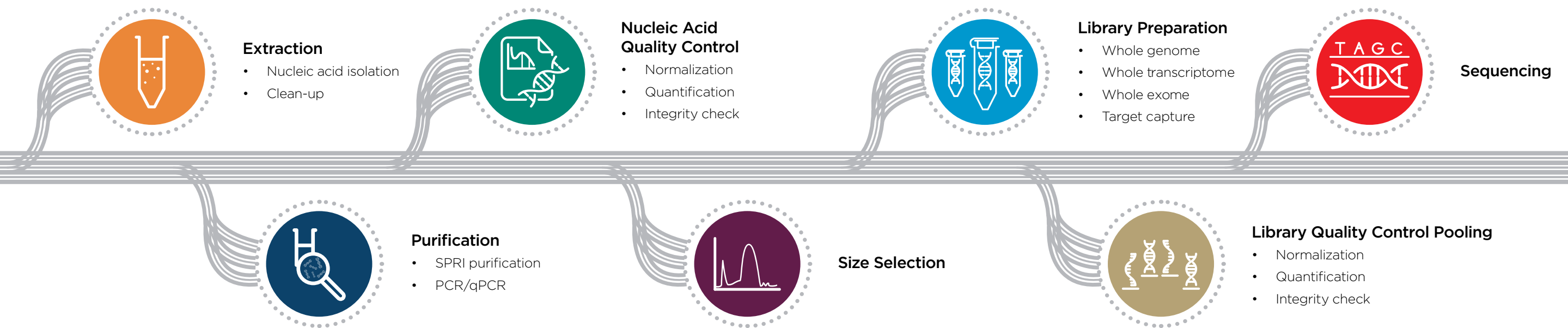
Scientists using genomic analysis for discovery in life science research and applied applications take on new challenges every day. This process isn't easy.

We're committed to providing automated workflow solutions that help you reduce the sample prep burden and achieve repeatable, reliable results. We've listened to your challenges, needs and desires, and taken action to support your evolving workflow priorities.

## Your partner for more comprehensive automated sample prep solutions

From the Human Genome Project to today's quest for precision medicine, Beckman Coulter Life Sciences is invested in providing sample prep solutions that improve your productivity. Biomek Automated Workstations combined with in-house nucleic acid sample prep reagent kits enable us to deliver more comprehensive workflow solutions.

We also partner with customers and leading technology vendors to develop and deliver the best solutions. The vast portfolio of Biomek-automated methods are demonstrated to generate quality data using real-world samples, and includes a growing number of Illumina®-qualified NGS methods.



## Automation for the entire workflow

Robust Biomek-automated solutions can start at nucleic acid isolation, then continue through steps like NGS library construction, and result in analysis-ready samples. Regardless of your workflow need, you'll receive much more than a liquid handler.

### Standardized Workflows

- Reproducible results
- Reduced errors
- Simplified processes

### Ready-to-Implement Methods

- Data demonstrated processes
- Quick implementation
- Easy execution through Demonstrated Method Interface

### Laboratory Efficiency

- Increased throughput
- Reduced hands-on time
- Faster results

### Extensive Support Network

- Knowledgeable applications, service and support teams
- Flexibility for change
- Real-time system analysis and resolution

## Popular applications

A sampling of workflows that benefit from these solutions:

- Next-generation sequencing sample prep
  - Whole genome sequencing
  - Transcriptome sequencing
  - Target/exome capture
  - Amplicon sequencing
  - Cancer panels
  - HLA typing
- Microarray sample prep
  - Genotyping
  - Gene expression
- Nucleic acid sample prep
  - DNA/RNA isolation
  - DNA/RNA clean-up
  - DNA size selection
  - Plasmid prep
- Sanger sequencing
  - Big dye clean-Up
- qPCR/PCR setup

# ACCELERATE YOUR RESEARCH WITH **BIOMEK AUTOMATION**



**Biomek 4000 Automated Genomics Workstation**



**Biomek NX<sup>P</sup> Automated Genomics Workstation**



**Biomek FX<sup>P</sup> Automated Genomics Workstation**



**Biomek i5 Automated Genomics Workstation**



**Biomek i7 Automated Genomics Workstation**

Learn about the current family of **BIOMEK AUTOMATED WORKSTATIONS**.

Platforms vary in size, deck capacity and overall capabilities. A variety of configurations allows you to optimize performance and reduce hands-on time for most genomic application workflows.

**Deck Positions:** 12  
**Pipetting Volume Range:** 1 µl - 1,000 µl  
**Pipetting Technology:** Multiple interchangeable single and eight-channel pipetting tools and gripper

**Deck Positions:** 16  
**Pipetting Volume Range:** 0.5 - 220 µl (MC) and 0.5 - 5,000 µl (Span-8)  
**Pipetting Technology:** Multichannel head (96/384) or Span-8 pipetting with gripper

**Deck Positions:** 24  
**Pipetting Volume Range:** 0.5 - 220 µl (MC) and 0.5 - 5,000 µl (Span-8)  
**Pipetting Technology:** Choose from available single and dual pipetting head configurations: Single multichannel head (96/384) with built-in gripper tool or Span-8 pipetting, dual-multichannel heads (96/384 with built-in grippers, or multichannel head (96/384) with built-in gripper and Span-8 pipetting

**Deck Positions:** 25  
**Pipetting Volume Range:** 0.5 - 1,000 µl (MC) and 0.5 - 5,000 µl (Span-8)  
**Pipetting Technology:** Multichannel head (96/384) or Span-8 pipetting with gripper

**Deck Positions:** 45  
**Pipetting Volume Range:** 0.5 - 1,000 µl (MC) and 0.5 - 5,000 µl (Span-8)  
**Pipetting Technology:** Choose from available single and dual pipetting head configurations: Single multichannel head (96/384) or Span-8 pipetting with gripper, dual-multichannel heads (96/384) with grippers, or multichannel head (96/384) and Span-8 pipetting with grippers

<b>Active Automated Labware Positioners (ALPS)</b> manage on-deck processing of incubations throughout a workflow.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Barcode reading and logging</b> delivers real-time data tracking.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>On-deck thermocycler (optional)</b> integration capability eliminates need for manual intervention.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Protective enclosure (optional)</b> provides dust protection and environmental control to reduce contamination risks.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Light Curtain</b> provides key safety feature during operation and method development.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Liquid level sensing</b> enables pipetting from liquid level and reduces the need for high reagent dead volumes.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Large-volume, 1 mL multichannel pipetting head</b> expedites sample transfers and enables more efficient mixing steps.				<input type="checkbox"/>	<input type="checkbox"/>
<b>Rotating gripper</b> with unique offset finger design optimizes access to high-density decks, enabling more efficient workflows.				<input type="checkbox"/>	<input type="checkbox"/>
<b>Open-platform design</b> provides generous space for labware, accessories and on-deck integrations to accommodate intensive workflows to virtually eliminate user-intervention for most workflows.				<input type="checkbox"/>	<input type="checkbox"/>
<b>Onboard cameras</b> enable live broadcast and on-error video capture to expedite response time and system diagnosis.				<input type="checkbox"/>	<input type="checkbox"/>
<b>Bright, multiple color- and pattern-coded status light bar</b> alerts you to the instrument's current mode, even from across the room.				<input type="checkbox"/>	<input type="checkbox"/>
<b>Internal LED light</b> illuminates the instrument deck for easy access and monitoring of your workspace status.				<input type="checkbox"/>	<input type="checkbox"/>



# SOFTWARE INTELLIGENCE AT **EVERY STEP**

Biomek software gives you unprecedented control over your workflow.

- Modular methods help optimize flexibility for throughput and scheduling.
- Point-and-click interface simplifies method authoring with no programming required.
- Captures the data you need to validate your processes and help ensure reproducible results.
- Let's you "lock down" the instrument and protect validated methods from being altered inadvertently by operators.
- Integrates with LIMS to import work orders and export data (e.g., user IDs, lot numbers and sample tracking information).
- Enables remote instrument monitoring using any device with a Google Chrome browser.

Benefit from software packages that provide simplicity and flexibility when adding automated genomic methods to your workflow. This enables development of demonstrated, ready-to-implement methods that streamline your process, improve efficiency and significantly reduce hands-on time.

The Demonstrated Method Interface consists of three parts that make method setup virtually foolproof and error-free.



**1** Biomek Method Launcher (BML) – secure interface for selecting methods and conducting system maintenance without affecting method integrity.



**2** Method Options Selector (MOS) – Select runtime options and maximize flexibility in daily scheduling and method execution.



**3** Guided Labware Setup (GLS) – Generated per options selected in the MOS, provides the user-specific text and graphical setup instructions with reagents calculation. Eliminates most setup mistakes and makes setup easy work.

To further optimize workflow efficiency, consider these additional software tools:

- Data Acquisition and Reporting Tool (DART 2.0): gathers data and synthesizes runtime information from Biomek log files to capture each manipulation of the sample during the course of the method. Customizable reports provide compatibility with virtually all LIMS, including systems custom-designed for your lab.
- PowerPack: Makes easy work of cherry-picking, standalone, normalizations and other data-driven processes.

# COMPLETE YOUR WORKFLOWS WITH **OUR GENOMIC REAGENTS**

Biomek automation can be complemented by a growing portfolio of genomic reagent kits, which currently includes nucleic acid extraction and purification kits built on a patented Solid Phase Reversible Immobilization (SPRI) technology. High-performance SPRI technology uses paramagnetic beads to selectively immobilize nucleic acids by type and size. Optimized binding conditions enable highly specific separation and clean-up protocols.

## Portfolio examples include:



### DNA Isolation from FFPE Tissue

#### FormaPure DNA

- gDNA from FFPE samples
- Compatible with a variety of downstream analysis tools: target amplicon and capture NGS, whole exome and genome sequencing, qPCR
- Automated on Biomek 4000 with less than 15 minutes of hands-on time



### RNA Isolation from Blood

#### RNAdvance Blood

- RNA from blood (PAXgene tubes), cells and tissues
- Compatible with a variety of downstream analysis tools: gene expression and NGS applications
- Automation-ready



### Size Selection

#### SPRIselect

- Used for fragment size selection for library construction in NGS processes
- Validate to target fragments between 150 bp to 800 bp in length
- Automation-ready



### PCR Purification

#### AMPure XP

- Removes primers, unincorporated dNTPs, primer dimers, salts and other contaminants
- Eliminates fragments < 50 bp
- Recovers both double- and single-stranded DNA templates
- No PCR degradation after storage at 4° C for 7 days
- Captures DNA > 100 bp

Visit [beckman.com/nucleic-acid-sample-prep](http://beckman.com/nucleic-acid-sample-prep) for a complete listing of our genomic reagents.



# WORLD-CLASS TRAINING, SERVICE AND SUPPORT ARE **INSTRUMENTAL TO SUCCESS**

From online classes or instructor-led training, to on-site application support – we’re committed to doing everything possible to ensure that you can operate your Biomek workstation with confidence.

And you can expect service and maintenance of your workstation from an organization that’s rated higher for technical support than any major competitor.

Further building on our commitment to world-class service, PROService Remote Monitoring is now available to help maximize system uptime by shortening service calls and expediting repair times.

**This overview can’t begin to encompass all the diverse automation-based solutions available to support your evolving genomics workflow priorities. Visit [beckmanngs.com](http://beckmanngs.com) or speak with your Beckman Coulter representative to learn more about the right solutions for you and your lab so you can take your next step with confidence.**



<sup>1</sup>Currently in development

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