BECKMAN COULTER Life Sciences

Automated Solutions for NGS Library Prep

Your Guide to Workflow Intelligence

Review our solutions by **Products**

Review our solutions by **Workflow**

Product Solutions

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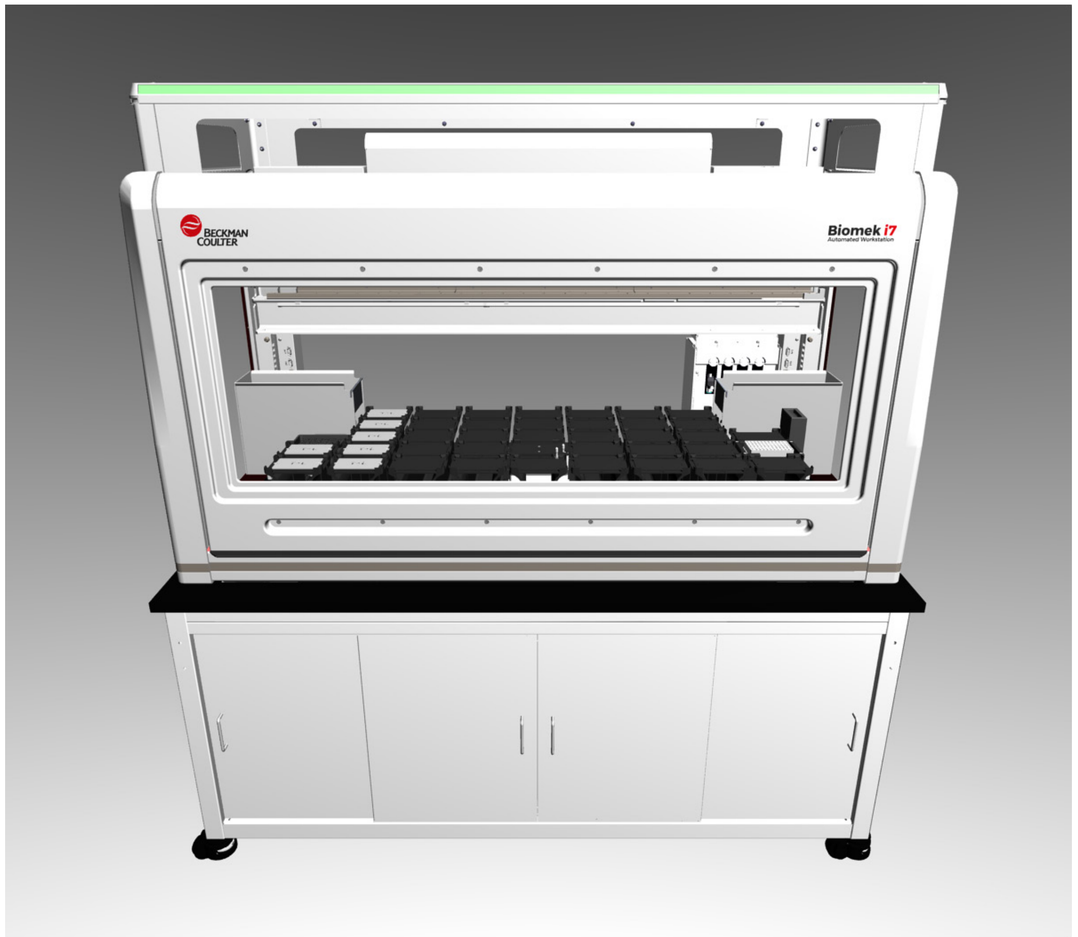
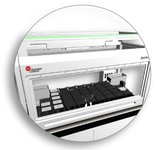
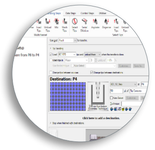
Biomek i7 Hybrid NGS Workstation




GO
Biomek i7 Hybrid


GO
Biomek Software


GO
Demonstrated Method Interface


GO
DART


GO
Automated Thermal Cycler (Optional)


GO
Orbital Shaker

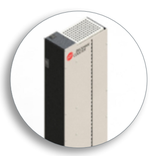

GO
Static Peltier


GO
Shaking Peltier (Optional)

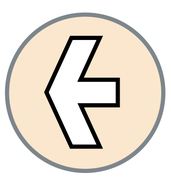

GO
Multichannel Wash Station


GO
Automated Labware Positioners


GO
Span-8 Active Wash


GO
Labware Feeder (Optional)


GO
Enclosures (Optional)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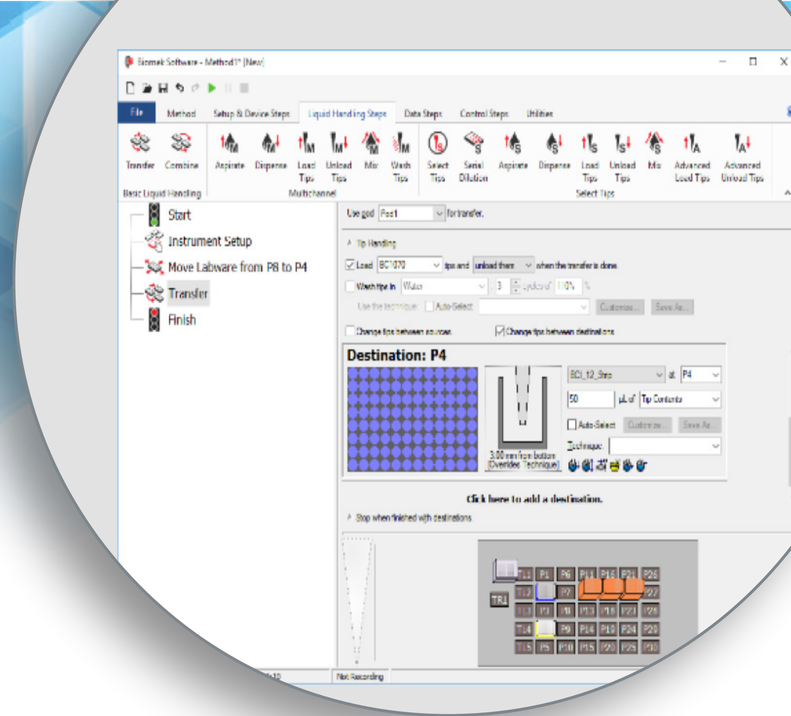

Biomek Software

Validates methods in real time.

- User friendly “point-and-click” interface allows users to quickly create powerful methods
- Biomek’s 3D simulator demonstrates exactly how the method will execute
- Enables integration with LIMS to import information and work orders and export data
- Supports 21 CFR 11 compliance with features including access control, electronic signatures and audit trails

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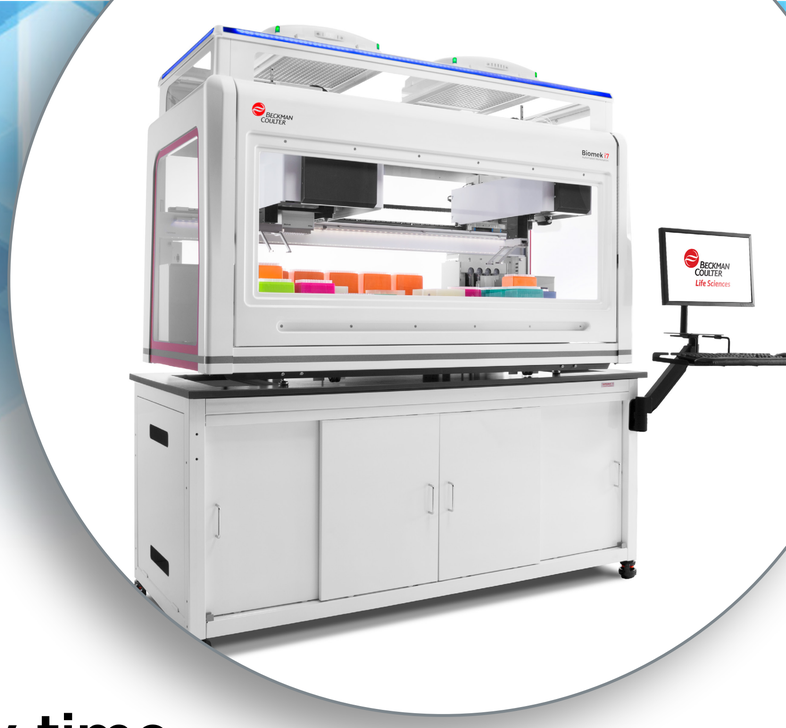


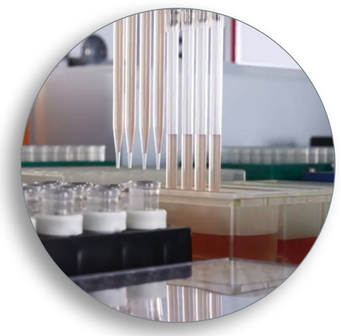
Biomek i7 Hybrid

Designed to optimize dependability and walk-away time.

- Spacious, open-platform with 45 deck positions
- 4D integration capabilities
- Configurable for specific applications
- Optional HEPA filter integration

Multichannel head

- 60, 300 and 1200 µL heads support selective tip pipetting for more flexible transfer options: Individual tip(s), column(s), row(s), patterns



Span-8 pod

- Equipped with conductive Liquid Level Sensing (LLS)
- Allows sample volume tracking through Biomek software

"High-access" rotating gripper

- Optimizes access to high-density decks
- Allows for direct device integrations
- Two grippers on a dual arm Biomek i7

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Automated Labware Positioners (ALPs)

Workstation-integrated and interchangeable components that perform specific tasks. ALPs make it possible to configure the platform to accommodate a wide range of applications.

- Static labware positioners in 1x1, 1x3 and 1x5 configurations

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Orbital Shaker

This ALP provides mixing of samples and/or reagents with user-definable and reliable agitation of plates and general vortexing.

- Smooth and continuous motion, enabling homogenization without splashing
- Timed orbital and pulse shaking
- Ramped acceleration/deceleration: shaking speed ranges from 100 rpm to 1800 rpm
- Space saving
- Easily integrated with Biomek i7 and i5 to increase experimental flexibility

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Static Peltier

This ALP provides temperature control between 4-100°C in 0.1°C increments.

- 96 and 384 well plate adaptors available for efficient heat transfer
- Space saving
- Accessible by Biomek gripper

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Shaking Peltier

This ALP provides heating or cooling of labware for a software-controlled set point between 4°C and 70°C.

- Shaking speed range from 100 to 1400 rpm
- Equipped with an automatic startup routine to avoid spillage of samples
- 96 and 384 well plate adaptors available for efficient heat transfer
- Space saving

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Thermo Fisher Automated Thermal Cycler (ATC)

Optional integration on Biomek workstations to minimize hands-on time by carrying out PCR on deck.

- Saves space on deck
- Easy-to-install software and stand-alone operation allows assay optimization before integration
- Heated cover slides forward to cover the plate nest, enabling thermal contact and minimizing evaporation

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Multichannel Wash Station

This ALP provides a constant flow of liquid to wash the interior and exterior of pipetting tips, conserving tip usage.

- Available in 96 and 384 formats
- Enable user to define the number of wash cycles and volumes
- Can be configured for different liquids or for specific pipettors

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Span-8 Active Wash Station

This ALP washes fixed tips on the probes of a Span-8 Pod.

- Provides a flow of wash fluid from a source reservoir for tip washing
- A peristaltic pump circulates fluid through the 8-Channel Active Wash ALP from a source reservoir to a waste reservoir

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Labware Feeder

An under-deck storage device used to stack plates or tips to be delivered to the work surface for access by a Biomek gripper or a robotic arm. This increases walk-away capacity to allow more plates to be processed in an automated run.

- Comes in two sizes:
  - Standard-capacity labware feeder holds ~50 lidded microplates
  - High-capacity labware feeder holds ~80 lidded microplates
- Used with a variety of plate and tip types
- Can be used to store labware after use

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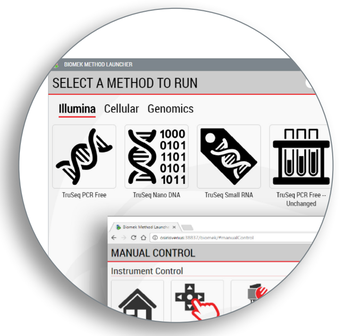
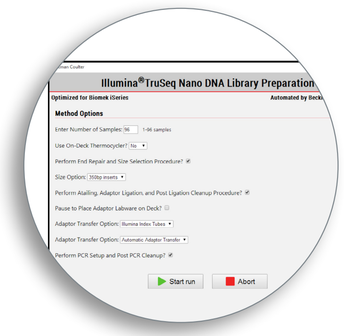
Demonstrated Method Interface

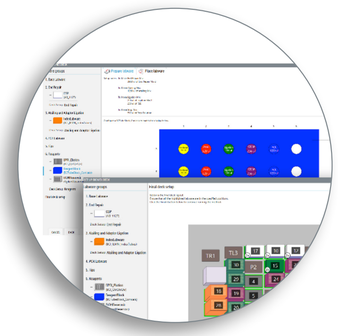
Provides ease of use and flexibility in three simple steps for method execution.



1. **Biomek Method Launcher (BML)**



2. **Method Options Selector (MOS)**



3. **Guided Labware Setup (GLS)**

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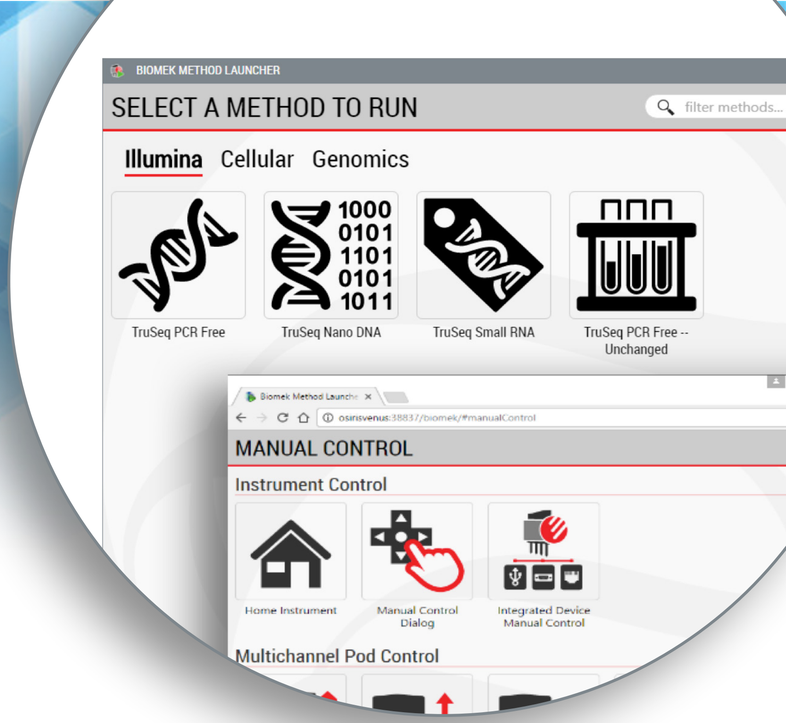
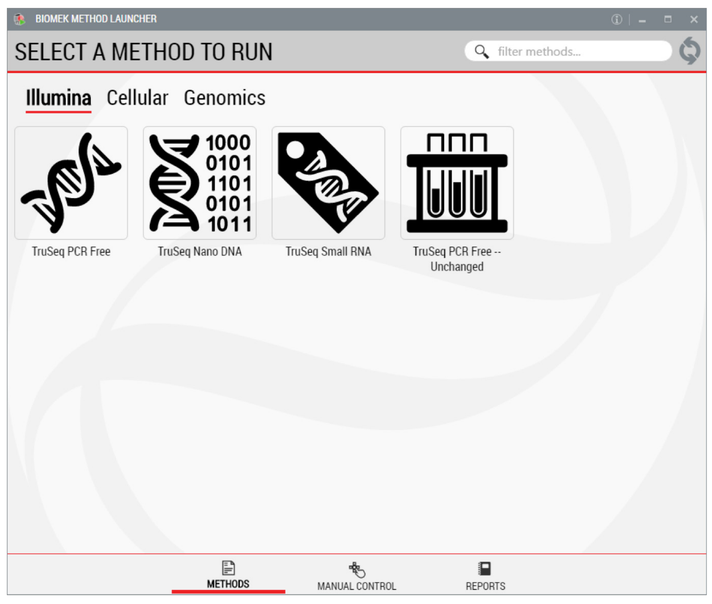
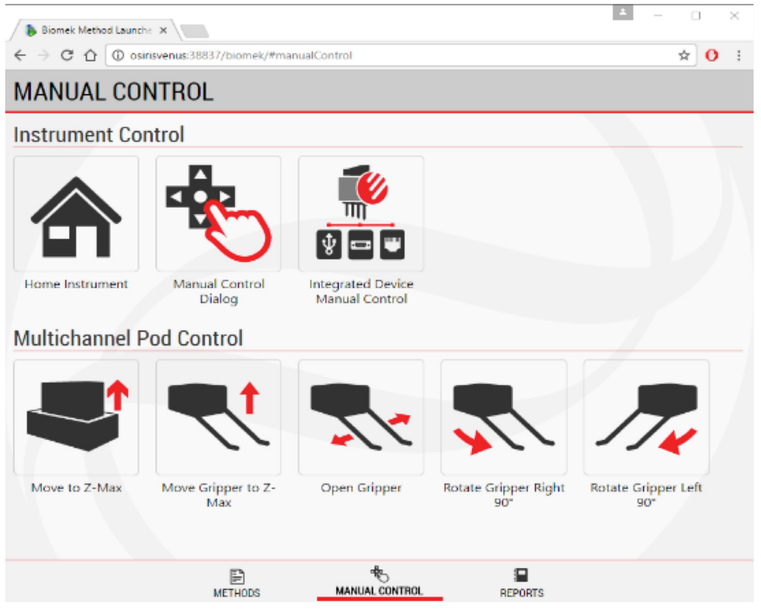


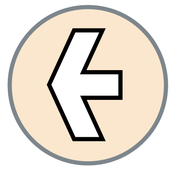
Biomek Method Launcher (BML)

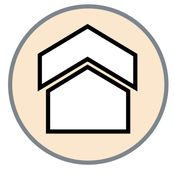
A secure interface for selecting methods without affecting method integrity.

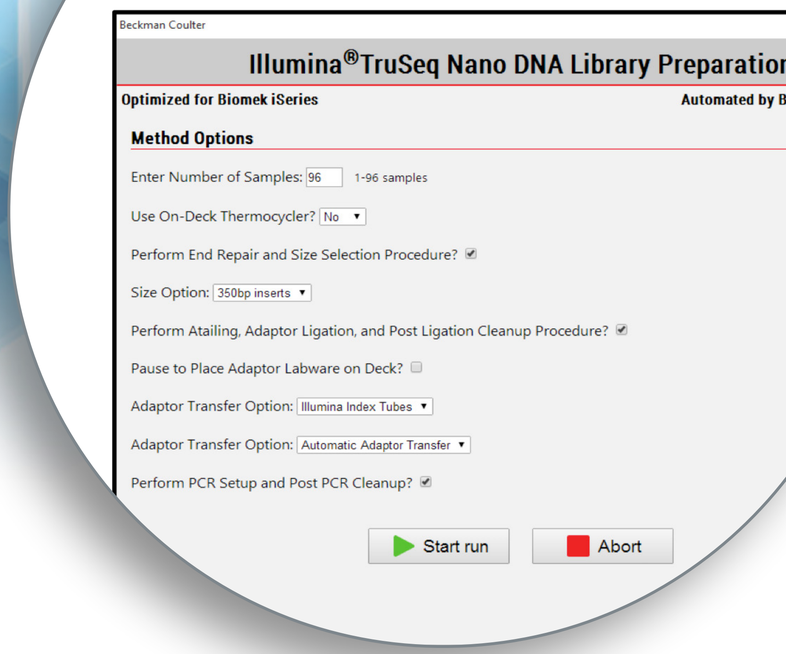
- Conduct system maintenance
- Enables remote monitoring





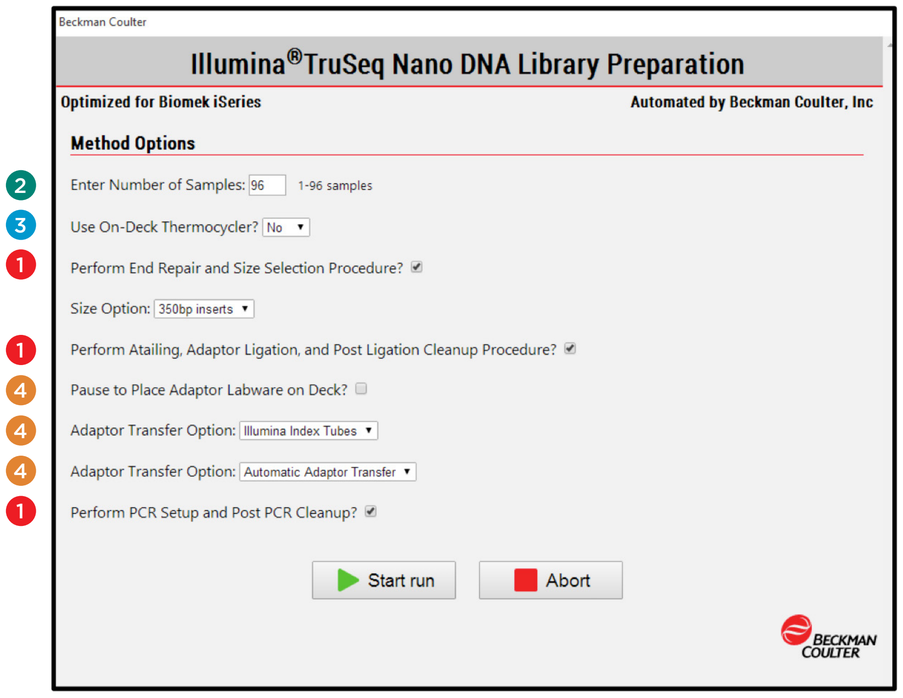






Method Options Selector (MOS)

Enables selection of run-time options to maximize daily scheduling and method execution flexibility.



1. Modular design with vendor approved stop points allows user to run entire method or specific sections
2. Vary sample number per run
3. Choose on- or off-deck thermal cycling
4. Adapter transfer options
   - Start on-deck or pause to add
   - From tube or plates
   - Custom assignments from a file

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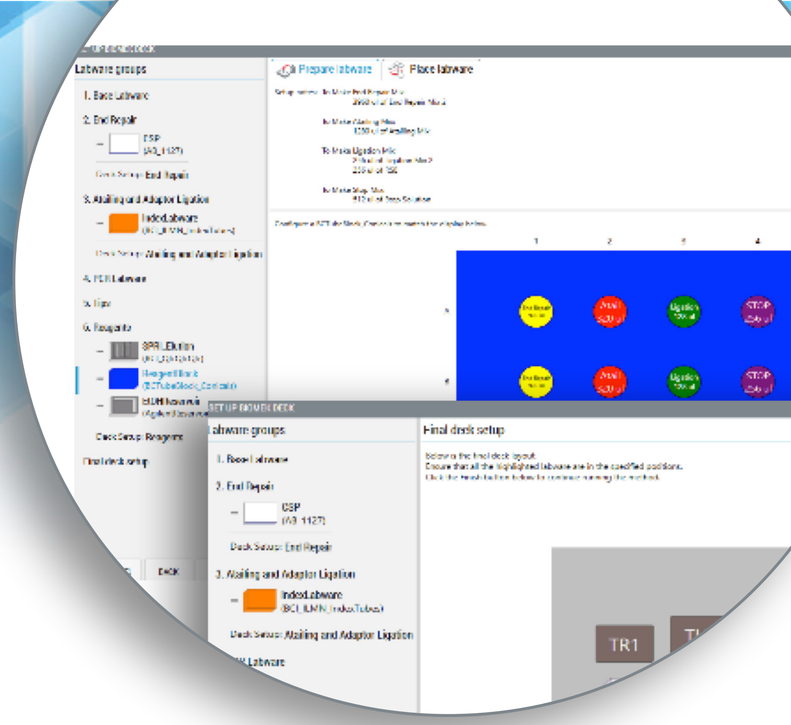
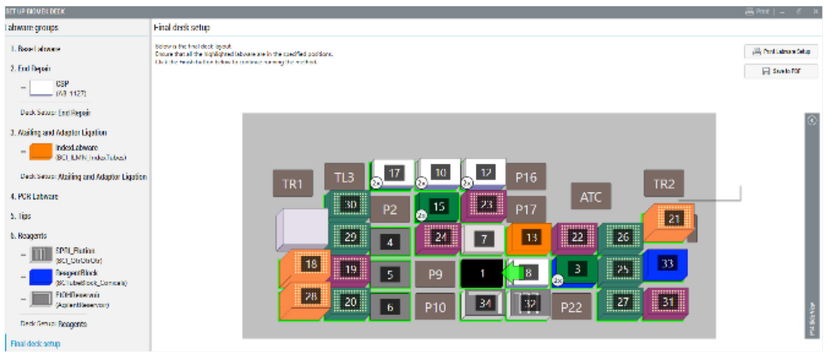


Guided Labware Setup (GLS)

Generates method setup instructions, including reagent calculations, based on input from the Method Options Selector.

- Simplifies setup process reducing opportunity for errors
- Provides the user specific text and graphical setup instructions for labware placement
- Automatically calculates required reagent volumes



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WORKFLOW Solutions

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Review our NGS Library Prep Solutions by WORKFLOW.

Whole Genome Sequencing

Transcriptome Sequencing

Target / Exome Capture

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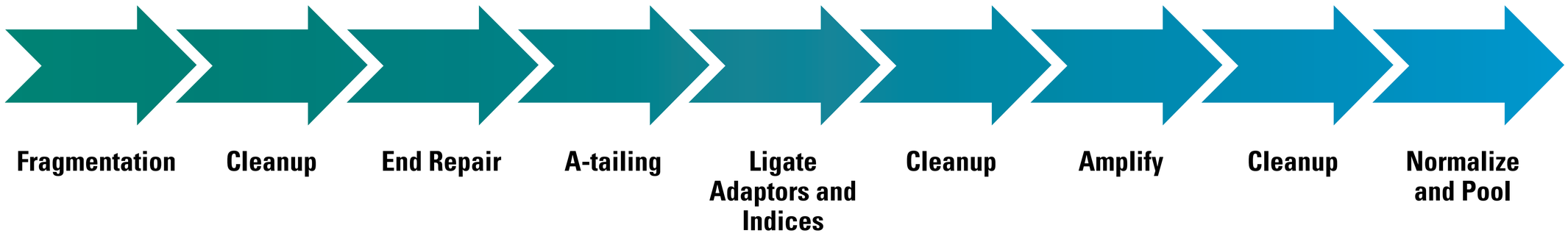
Whole Genome Sequencing

Automation of entire workflows, from extraction to sequence-ready libraries, on-deck normalization and pooling options.



- Modularity, ease of use and flexibility
- Optional advanced on-deck thermocycling to increase walk-away time
- Ability to customize adaptor assignments in Biomek Software
- Information management
- Faster processing with multichannel selective tip pipetting
- Advanced process control (e.g., temperature control, shaking)
- Reduce particle contamination via optional enclosures and HEPA filters
- Demonstrated Method Interface provides ease of use and flexibility
- A portfolio of demonstrated methods available

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Modularity, Ease of Use and Flexibility

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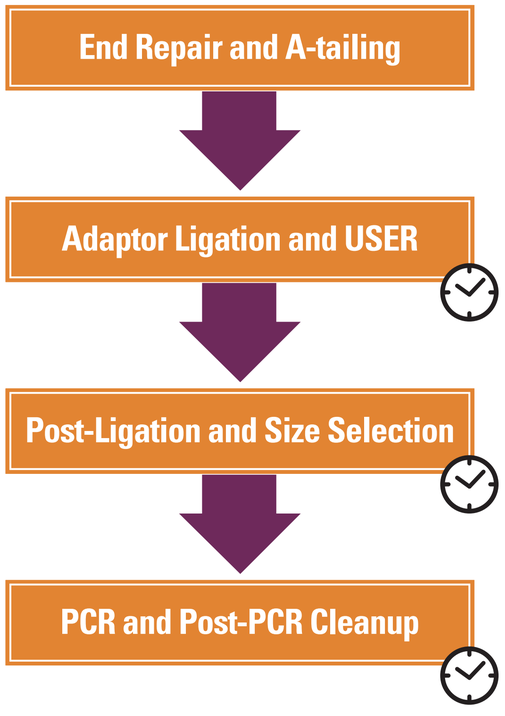
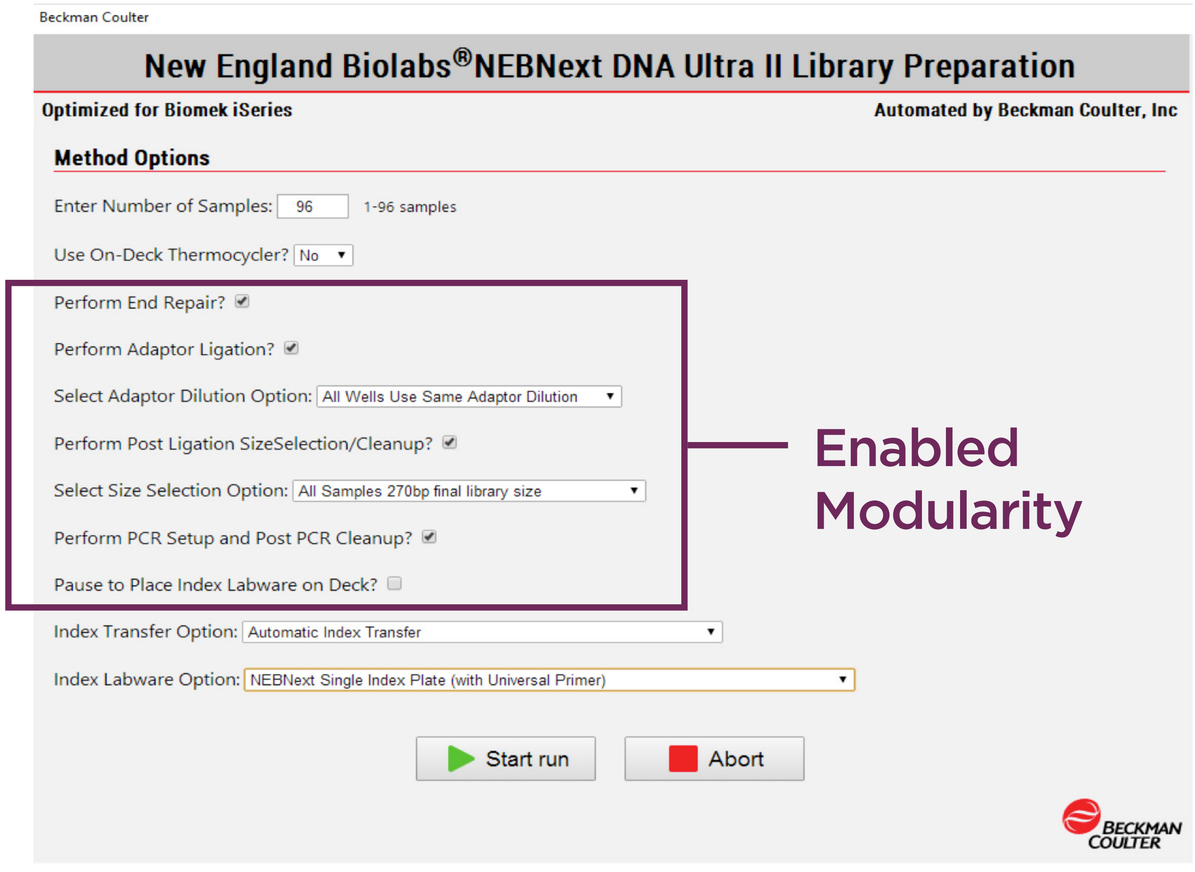
Options of complete walk-away or logical Start and Stop points assigned based on vendor recommendations, providing flexibility in scheduling.



NEB approved stop/start points



New England Biolabs® NEBNext DNA Ultra II library preparation kit workflow on Biomek i7

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Ability to customize adaptor assignments in Biomek Software

- File-driven custom adaptor assignment options
- Dataset-driven primer ID capability logs which primer has been assigned to which sample

	A	B	C	D	E	F	G	H	I	J	K
1	Sample	SampleWe	AdtDilFactor	SizeOption	IndexWel	SelectPlate1ID	SelectPlate2ID	AdaptorDilPlateID	IndexLabwareID	SingleIndexVol	PCRPlateID
2	Sample1	A1	1	270bp	A5	SizeSelect1	SizeSelect2	AdaptorDilPlate	IndexLabware	10	PCR
3	Sample2	B1	10	320bp	B5	SizeSelect1	SizeSelect2	AdaptorDilPlate	IndexLabware	10	PCR
4	Sample3	C1	15	370bp	C5	SizeSelect1	SizeSelect2	AdaptorDilPlate	IndexLabware	10	PCR
5	Sample4	D1	20	480bp	D5	SizeSelect1	SizeSelect2	AdaptorDilPlate	IndexLabware	10	PCR
6	Sample5	E1	25	600bp	E5	SizeSelect1	SizeSelect2	AdaptorDilPlate	IndexLabware	10	PCR
7	Sample6	F1	30	750bp	F5	SizeSelect1	SizeSelect2	AdaptorDilPlate	IndexLabware	10	PCR
8	Sample7	G1	40	Cleanup	G5	SizeSelect1	SizeSelect2	AdaptorDilPlate	IndexLabware	10	PCR
9	Sample8	H1	50	270bp	H5	SizeSelect1	SizeSelect2	AdaptorDilPlate	IndexLabware	10	PCR
10	Sample9	A2	1	320bp	A6	SizeSelect1	SizeSelect2	AdaptorDilPlate	IndexLabware	10	PCR
11	Sample10	B2	10	370bp	B6	SizeSelect1	SizeSelect2	AdaptorDilPlate	IndexLabware	10	PCR
12	Sample11	C2	15	480bp	C6	SizeSelect1	SizeSelect2	AdaptorDilPlate	IndexLabware	10	PCR
13	Sample12	D2	20	600bp	D6	SizeSelect1	SizeSelect2	AdaptorDilPlate	IndexLabware	10	PCR
14	Sample13	E2	25	750bp	E6	SizeSelect1	SizeSelect2	AdaptorDilPlate	IndexLabware	10	PCR
15	Sample14	F2	30	Cleanup	F6	SizeSelect1	SizeSelect2	AdaptorDilPlate	IndexLabware	10	PCR
16	Sample15	G2	40	270bp	G6	SizeSelect1	SizeSelect2	AdaptorDilPlate	IndexLabware	10	PCR
17	Sample16	H2	50	320bp	H6	SizeSelect1	SizeSelect2	AdaptorDilPlate	IndexLabware	10	PCR
18	Sample17	A3	1	370bp	A7	SizeSelect1	SizeSelect2	AdaptorDilPlate	IndexLabware	10	PCR
19	Sample18	B3	10	480bp	B7	SizeSelect1	SizeSelect2	AdaptorDilPlate	IndexLabware	10	PCR
20	Sample19	C3	15	600bp	C7	SizeSelect1	SizeSelect2	AdaptorDilPlate	IndexLabware	10	PCR
21	Sample20	D3	20	750bp	D7	SizeSelect1	SizeSelect2	AdaptorDilPlate	IndexLabware	10	PCR
22	Sample21	E3	25	Cleanup	E7	SizeSelect1	SizeSelect2	AdaptorDilPlate	IndexLabware	10	PCR
23	Sample22	F3	30	270bp	F7	SizeSelect1	SizeSelect2	AdaptorDilPlate	IndexLabware	10	PCR
24	Sample23	G3	40	320bp	G7	SizeSelect1	SizeSelect2	AdaptorDilPlate	IndexLabware	10	PCR
25	Sample24	H3	50	370bp	H7	SizeSelect1	SizeSelect2	AdaptorDilPlate	IndexLabware	10	PCR

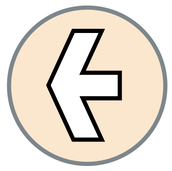
DNA Indices (Single Index Primer Kits)

	1	2	3	4	5	6
A	1	5	9	13	18	22
B	2	6	10	14	19	23
C	3	7	11	15	20	25
D	4	8	12	16	21	27

PCR Plate

	1	2	3	4	5	6	7	8	9	10	11	12
A	1	9	18	1	9	18	1	9	18	1	9	18
B	2	10	19	2	10	19	2	10	19	2	10	19
C	3	11	20	3	11	20	3	11	20	3	11	20
D	4	12	21	4	12	21	4	12	21	4	12	21
E	5	13	22	5	13	22	5	13	22	5	13	22
F	6	14	23	6	14	23	6	14	23	6	14	23
G	7	15	25	7	15	25	7	15	25	7	15	25
H	8	16	27	8	16	27	8	16	27	8	16	27

Select Index Tube Layout:



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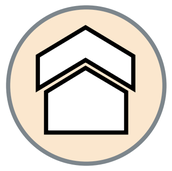

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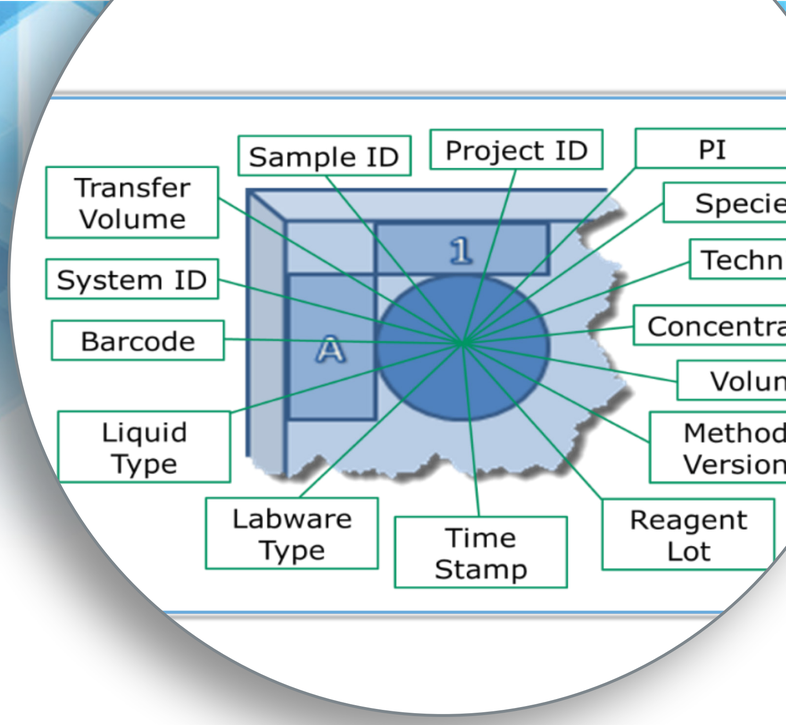
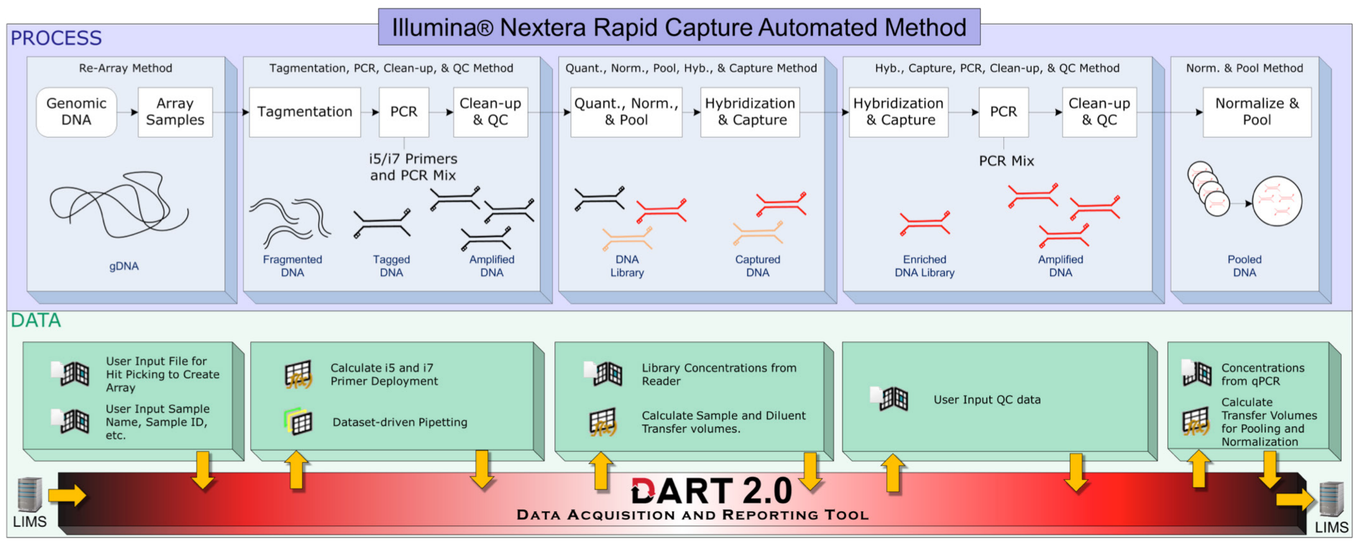


Data Acquisition Report Tool (DART)

Information management software to track sample and plate data across multiple methods on multiple instruments.

- Create reports in Excel or LIMS
- LIMS compatible



DART

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Faster Processing

The Biomek i-Series multichannel heads support selective tip pipetting for more flexible transfer options.

- Full plates, individual tip(s), column(s), row(s), custom patterns

Select Tip by Column

Select Tip by Row

Select Tip, 6 Columns

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Advanced Process Control

Advanced process control (e.g., temperature control, shaking).

Orbital Shaker

Static Peltier

Shaking Peltier

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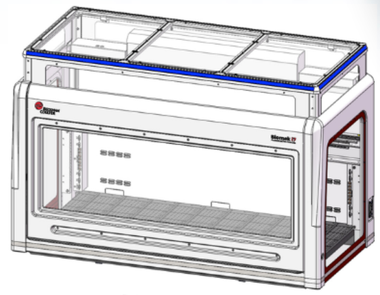
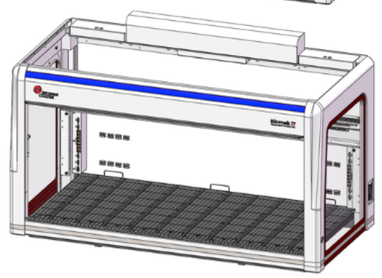
Enclosures

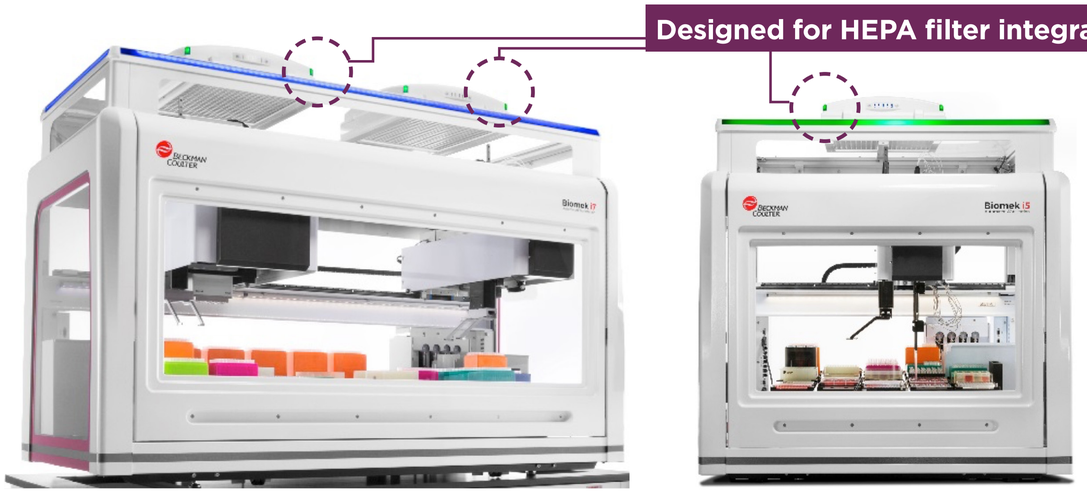
Biomek i-Series are offered with or without enclosure.

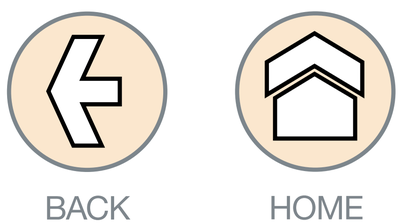




Enclosure includes:

- Vertical lift door that does not obstruct aisle-ways
- Top panel “dust cover” to protect samples from some particulates introduced by laboratory HVAC systems
- Standard side and back acrylic panels for safety
- Designed for HEPA filter integration for positive, clean air flow over the work surface to protect samples from some viable and non-viable particulates





Demonstrated Methods

Our growing portfolio of Biomek-automated DNA sequencing sample prep methods are demonstrated to generate quality data using real-world samples, and includes a growing number of Illumina®-qualified NGS methods.

	DEMONSTRATED METHOD	BIOMEK i7 HYBRID	BIOMEK i7/i5 MULTICHANNEL	BIOMEK i5 SPAN-8	BIOMEK FX^P HYBRID	BIOMEK FX^P/NX^P MULTICHANNEL	BIOMEK NX^P SPAN-8	BIOMEK 4000
DNA SEQUENCING	Illumina Nextera® DNA Flex Library Prep Kit	●						
	Illumina Nextera® XT				●			
	Illumina TruSeq® DNA PCR-Free	■		■	■			■
	Illumina TruSeq® Nano DNA	■					■	■
	Illumina TruSeq® Custom Amplicon Low Input Kit				●			
	KAPA Hyper Prep Library Prep Kit for Illumina NGS				▲			
	KAPA HyperPlus Library Prep Kit for Illumina NGS				▲			
	NEB NEBNext® Ultra DNA for Illumina NGS (ChIP-seq and HLA)				■			
	NEB NEBNext® Ultra II DNA Kit for Illumina NGS	■			■			
	Rubicon Genomics ThruPLEX® Plasma-seq Kit for Illumina NGS				■			
	Swift Biosciences Accel - NGS® 2S Plus DNA Library Kit for Illumina NGS				■			

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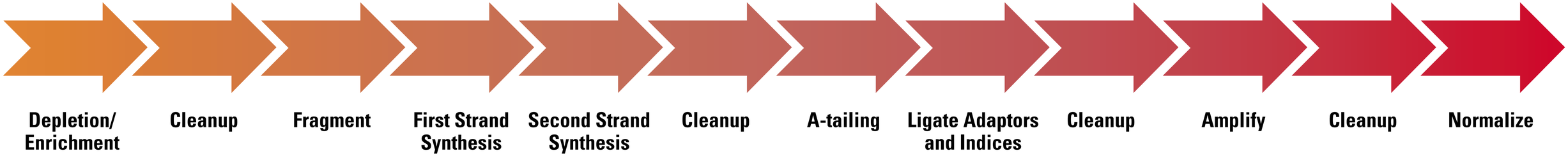
Transcriptome Sequencing

Automation of entire workflows, from extraction to sequence-ready libraries, on-deck normalization and pooling options.



- Modularity, ease of use and flexibility
- Optional advanced on-deck thermocycling to increase walk-away time
- Ability to customize adaptor assignments in Biomek Software
- Information management
- Faster processing with multichannel selective tip pipetting
- Advanced process control (e.g., temperature control, shaking)
- Reduce particle contamination via optional enclosures and HEPA filters
- Demonstrated Method Interface provides ease of use and flexibility
- A portfolio of demonstrated methods available

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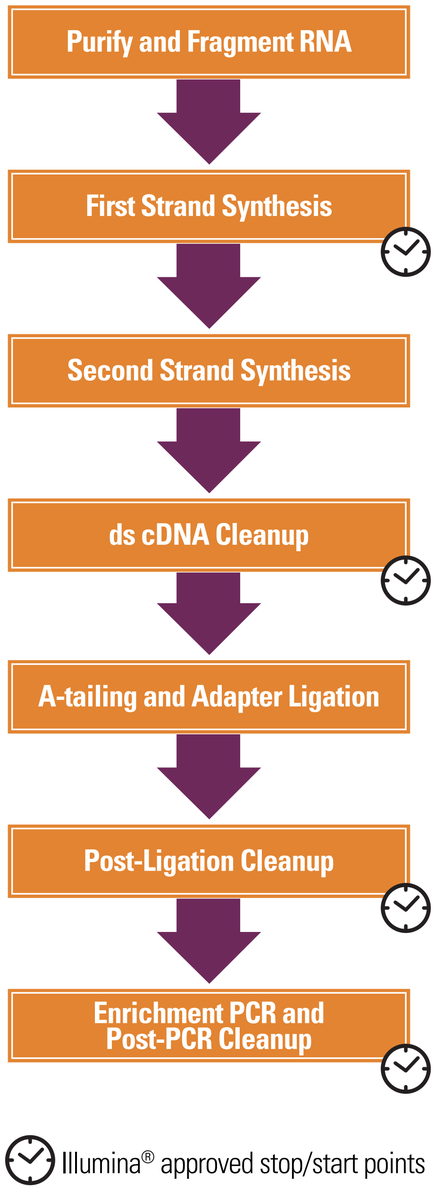
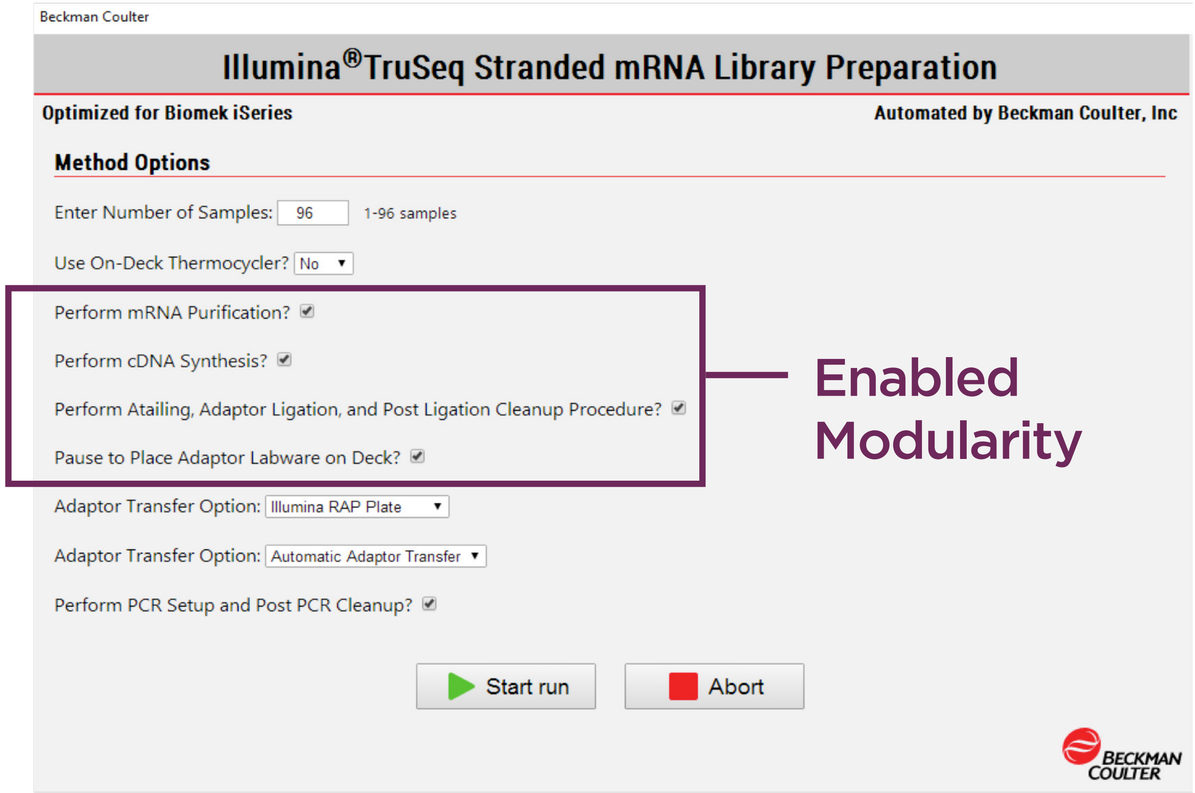
Modularity, Ease of Use and Flexibility

Options of complete walk-away or logical Start and Stop points assigned based on vendor recommendations, providing flexibility in scheduling.



Illumina® approved stop/start points



Illumina® TruSeq Stranded mRNA library preparation kit workflow on Biomek i7

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Demonstrated Methods

Our growing portfolio of Biomek-automated RNA sequencing sample prep methods are demonstrated to generate quality data using real-world samples, and includes a growing number of Illumina®-qualified NGS methods.

DEMONSTRATED METHOD		BIOMEK i7 HYBRID	BIOMEK i7/i5 MULTICHANNEL	BIOMEK i5 SPAN-8	BIOMEK FXP HYBRID	BIOMEK FXP/NXP MULTICHANNEL	BIOMEK NXP SPAN-8	BIOMEK 4000
RNA SEQUENCING	Illumina TruSeq® RNA v2				■			
	Illumina TruSeq® RNA Access	■			■			
	Illumina TruSeq® Stranded mRNA	■			●			
	Illumina TruSeq® Stranded Total RNA	■			●			
	NEB NEBNext® Small RNA Kit for Illumina NGS							■
	NEB NEBNext® Ultra Directional RNA Library Kit for Illumina NGS				■			

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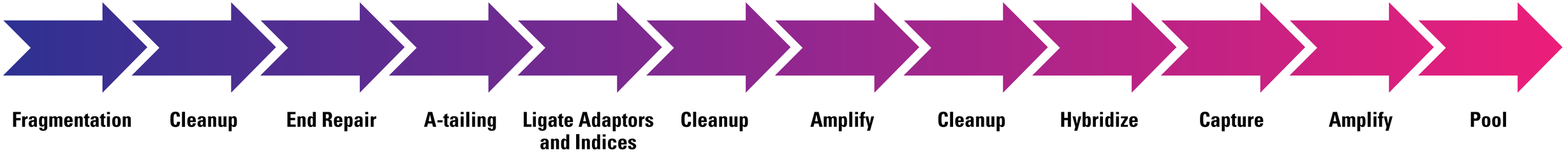
Target Capture Protocols

Automation of entire workflows, from extraction to sequence-ready libraries, on-deck normalization and pooling options.



- Modularity, ease of use and flexibility
- Optional advanced on-deck thermocycling to increase walk-away time
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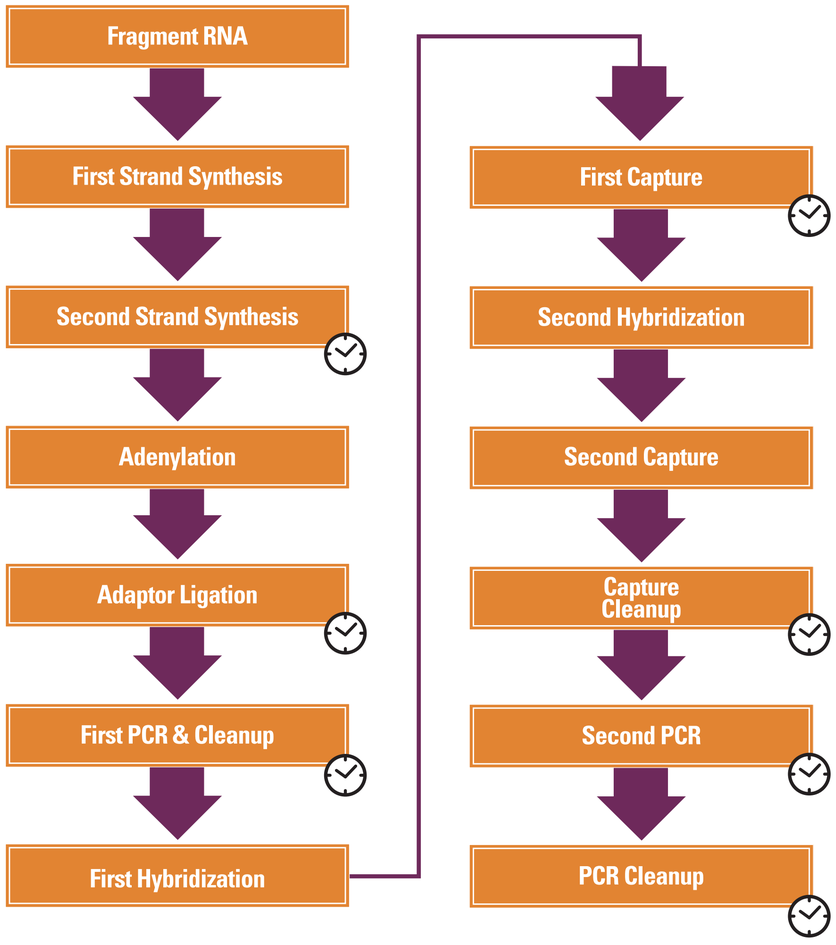
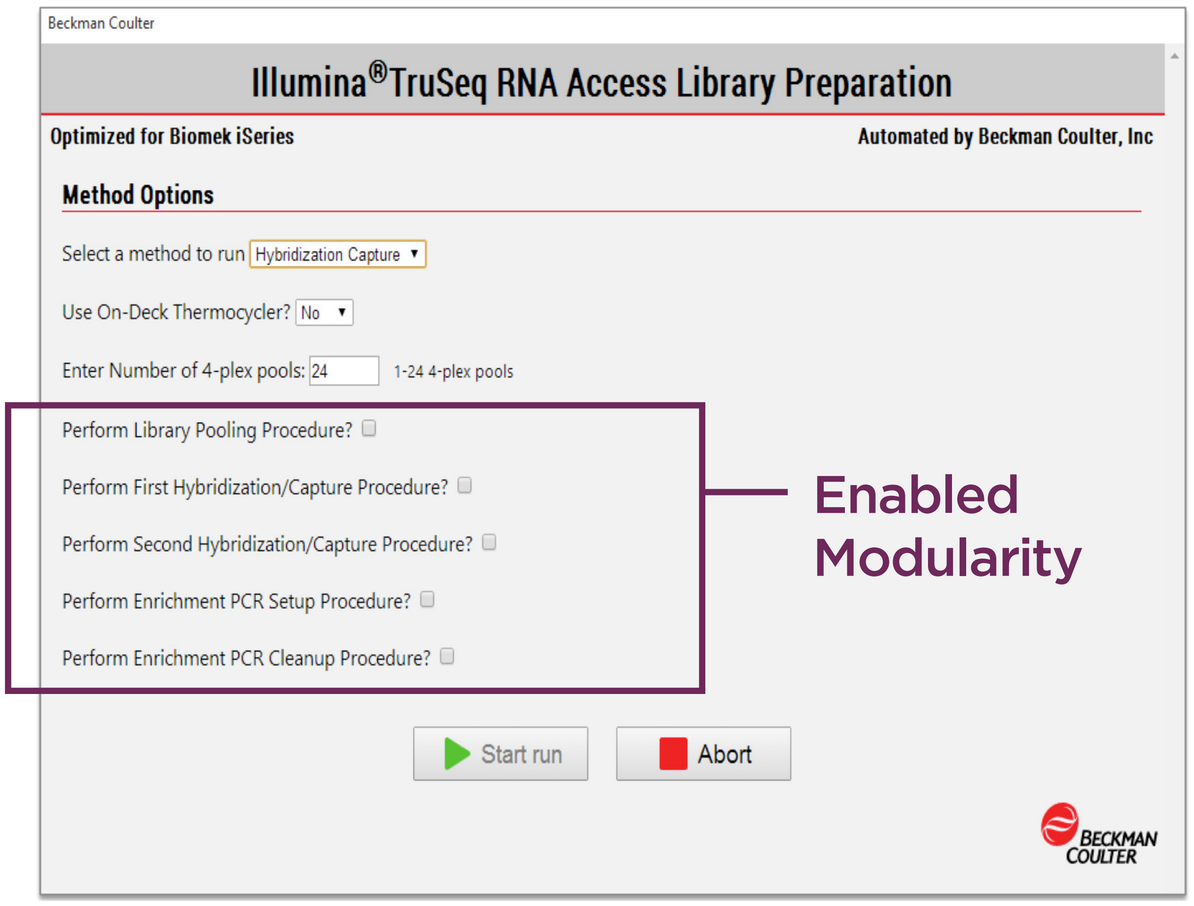
Modularity, Ease of Use and Flexibility

BECKMAN COULTER Life Sciences

Logical Start and Stop points assigned based on vendor recommendations, providing flexibility in scheduling.



Illumina® approved stop/start points



Enabled Modularity

Illumina® TruSeq RNA Access library preparation kit workflow on Biomek i7

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Demonstrated Methods

Our growing portfolio of Biomek-automated target/exome capture sample prep methods are demonstrated to generate quality data using real-world samples, and includes a growing number of Illumina®-qualified NGS methods.

DEMONSTRATED METHOD		BIOMEK i7 HYBRID	BIOMEK i7/i5 MULTICHANNEL	BIOMEK i5 SPAN-8	BIOMEK FXP HYBRID	BIOMEK FXP/NXP MULTICHANNEL	BIOMEK NXP SPAN-8	BIOMEK 4000
TARGET/EXOME CAPTURE	Agilent HaloPlex™ Target Enrichment - Ion Torrent				■		■	■
	Agilent SureSelect XT*				■			
	Epicentre ScriptSeq® Complete Gold Low Input				●			
	Illumina Nextera® Rapid Capture				●			●
	Illumina TruSeq® Exome	■			■			
	Illumina TruSeq® Rapid Exome				■			
	Roche Nimblegen SeqCap EZ® for Illumina NGS				■			

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