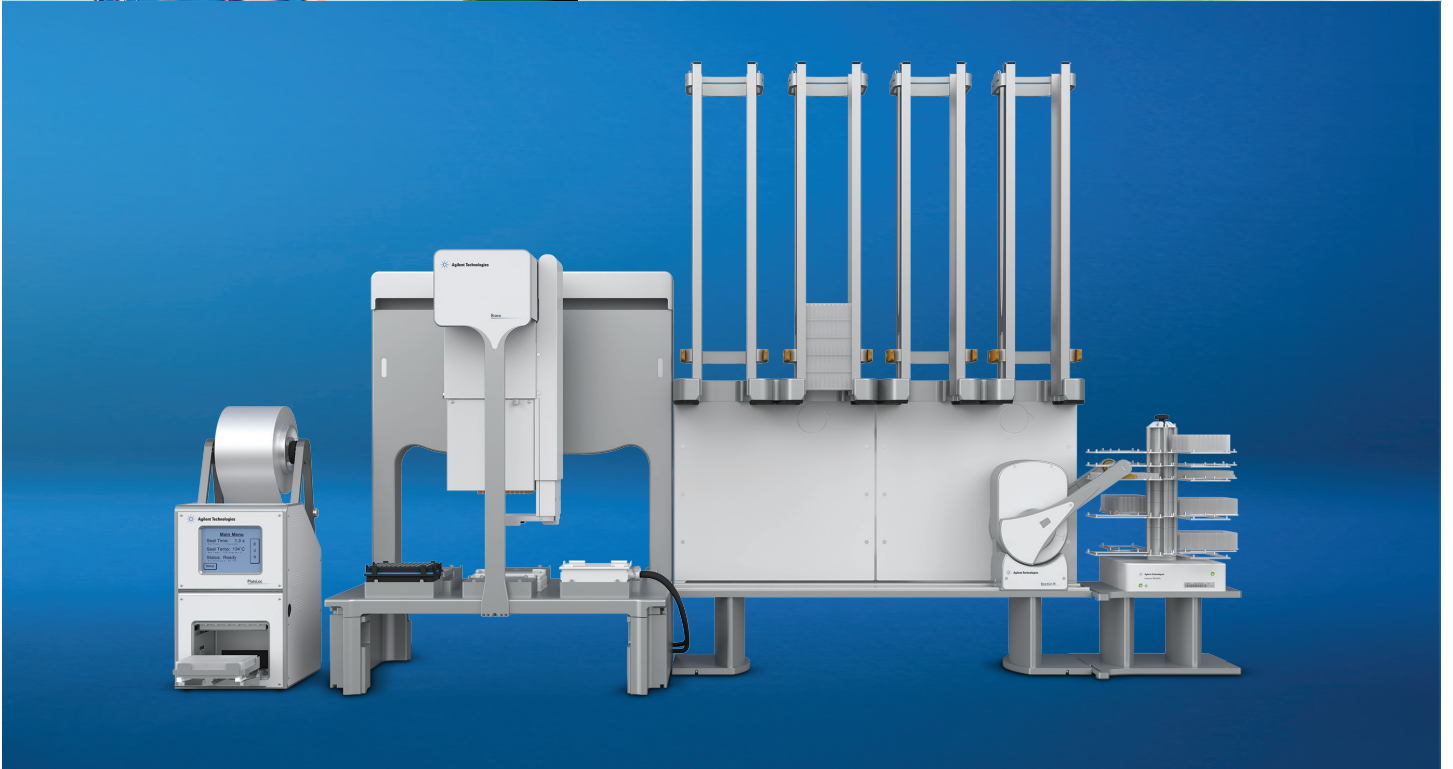


# Fast, accurate sequencing starts here

Accelerate your NGS success with automated sample prep



# The most complete and versatile system for automated NGS sample preparation

Agilent offers a complete instrument and reagent solution for automating Next Generation Sequencing (NGS) sample preparation. As a result, you can achieve excellent reliability and reproducibility with easy scale up of your research laboratory throughput using reagents, automation, protocols, and support from a single source.

## Optimized protocols

Our NGS automation solutions include optimized scheduling protocols for liquid handling and labware management using VWorks software to easily automate your NGS sample preparation. Protocols have been fully developed and validated for Agilent's SureSelect/HaloPlex library preparation and target enrichment reagents. Additional automation protocols for select 3rd-party reagent providers are also available.

## Reproducible data

Automated liquid handling for library preparation and target enrichment leads to more consistent yields and higher quality data than manual processing.

## Higher Throughput

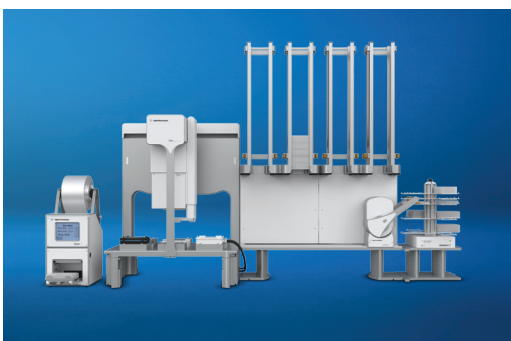
Agilent's comprehensive and flexible automation solutions reduce manual intervention to increase throughput and maximize your walk-way time.

# Simplify your scale up with modular automation solutions



## Agilent Bravo NGS (NGS A, Option A): High throughput and improved reproducibility with a small footprint

- Agilent Bravo Automated Liquid Handling platform
- Agilent 96 Channel Disposable Tip Head
- Agilent Bravo accessories for heating, cooling, shaking, and magnetic separation



## Agilent Bravo NGS (NGS B, Option B): High throughput and improved reproducibility with more walkaway time

- Agilent Bravo NGS
- Agilent BenchCel 4R Microplate Handler
- Agilent Labware MiniHub
- Agilent PlateLoc Thermal Microplate Sealer

### Agilent NGS Workstation delivers higher throughput with less hands-on time

Automating your NGS sample preparation with either Agilent Bravo NGS or NGS Workstation increases laboratory throughput up 3.5 fold compared to manual sample preparation. For whole genome sequencing applications that require only library preparation, 96 samples can be prepared in less than four hours to increase laboratory output to 960 sequencer ready libraries in a single week. For more complex protocols, such as targeted resequencing using Agilent SureSelect<sup>XT</sup>, both systems can complete library preparation and target enrichment for 192 samples in a five-day work week.

	Hands-On Time for complete Manual Prep workflow	Maximum Number of Samples Processed/Day	Hands-On Time for complete Automated Prep workflow	Maximum Number of Samples Processed/Day
Library Prep	375 min	8-24	25 min	96
Pre-Capture PCR	20 min	8-24	15 min	96
Hybridization Preparation	20 min	8-24	5 min	96
Capture	210 min	8-24	20 min	96
Post-Capture PCR	50 min	8-24	10 min	96
<b>Totals</b>	<b>675 min</b>	<b>16-48 per week</b>	<b>75 min</b>	<b>192 per week</b>

**Table 1.** NGS Workstation drives 3.5x throughput with 4x less hands-on time by automating pipetting and sample handling with Agilent SureSelect<sup>XT</sup>. Number of samples/day assumes staggering sample processing by end user over multiple days.

# Reproducible genomics protocols made easy

The Bravo Automated Liquid Handling Platform is the core of Agilent NGS automation solutions



## Highly Capable Liquid Handler

- Compact design with a small footprint is compatible with most laboratory bench tops
- Open system for other genomics applications: PCR/qPCR plate setup, CRISPR library preparation, serial dilutions, and nucleic acid purifications
- Fast and flexible processing of full or partial plates

## Reproducible and Accurate Pipetting Performance

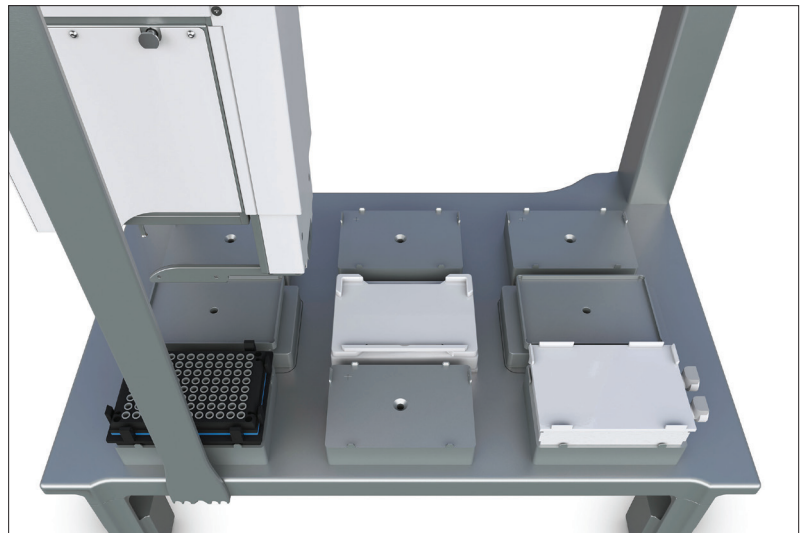
- Dispenses from 2 uL to 180 uL with 5 % CV  $\pm$  10 % accuracy
- Installation Qualification (IQ) and Operation Qualification (OQ) services are available

## Versatile Platform

- Easily swappable head expands your throughput to 384 wells
- Fully customizable with each position configurable for shaking, heating, cooling, and more
- Easy-to-change pipette heads expand dispensing volume from 300 nL to 250  $\mu$ L in 96, 384, and 1536-well formats

## A proven standard for NGS automation

Bravo liquid handlers deliver reliable performance for NGS at over 150 customer sites worldwide, including major genome research centers, biopharmaceutical companies, and academic research laboratories



# Agilent's components increase throughput and protect precious samples



## BenchCel 4R Microplate Handler

The BenchCel 4R Microplate Handler is a reliable, rapid robotic plate handler with high-capacity labware storage. It delivers labware and reagents between the Labware MiniHub and the Bravo platform. The BenchCel gives users substantially more walkaway time for liquid-handling intensive NGS sample preparation methods.



## PlateLoc Thermal Microplate Sealer

The programmable PlateLoc Thermal Microplate Sealer creates a high precision seal that preserves the integrity of low volume samples during heated incubations and even overnight. It is easy to use and flexible, accommodating a wide range of microplates and tube racks.



## Labware MiniHub

The Labware MiniHub is a rotating, randomaccess carousel for presenting and storing labware. Featuring user-configurable spacing to easily hold a mix of microplates, reagent reservoirs, and pipette tips, the Labware MiniHub is compact and flexible.



## Agilent VWorks Automation Control Software

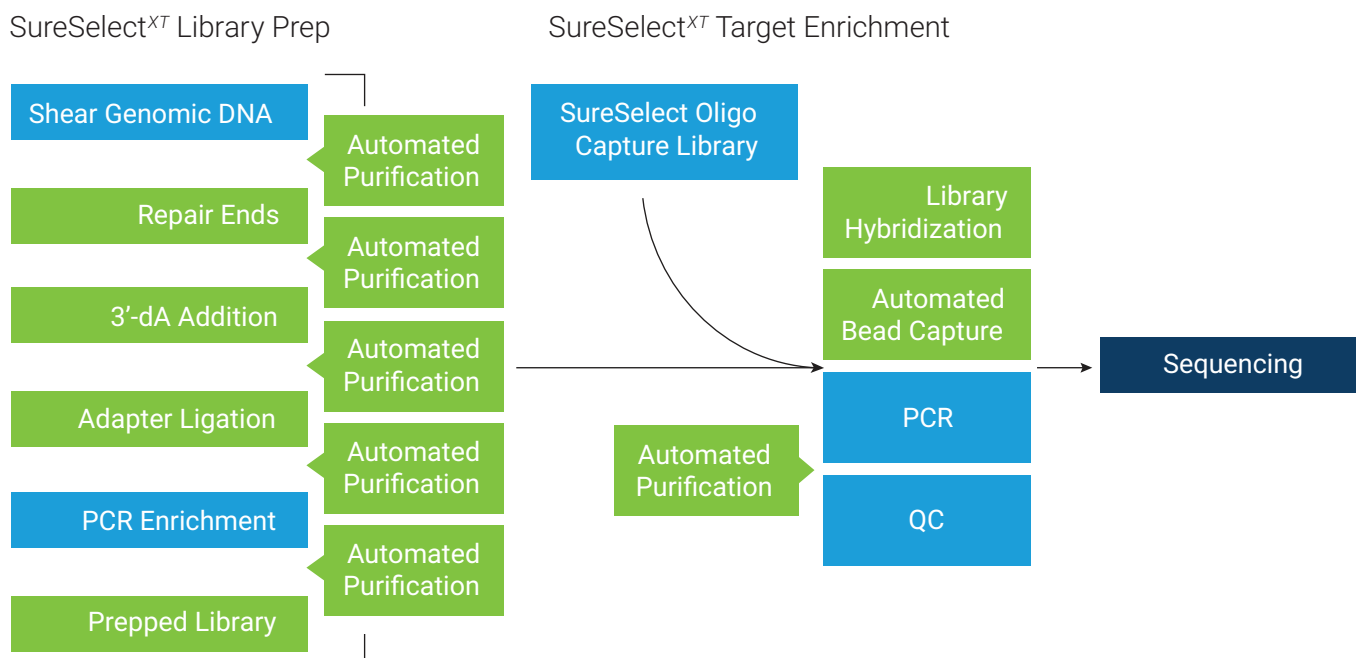
Agilent VWorks is an intuitive scheduling program capable of driving the operation of the Bravo platform and additional devices. The graphical user interface makes it easy for users to run existing protocols, develop new protocols, and monitor progress. Forms are available for SureSelect, HaloPlex and numerous 3rd-party NGS reagents to save time and maximize productivity.

# Proven protocols streamline next generation sequencing sample preparation



## Automated sample preparation for NGS sequencing platforms

Agilent has developed a complete automation protocol for SureSelect<sup>XT</sup> library preparation and target enrichment reagents for Illumina.

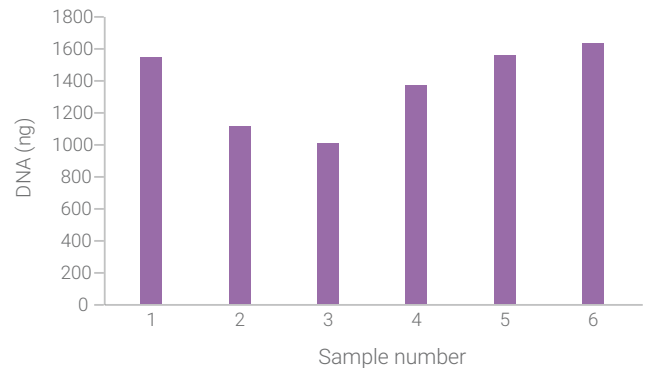
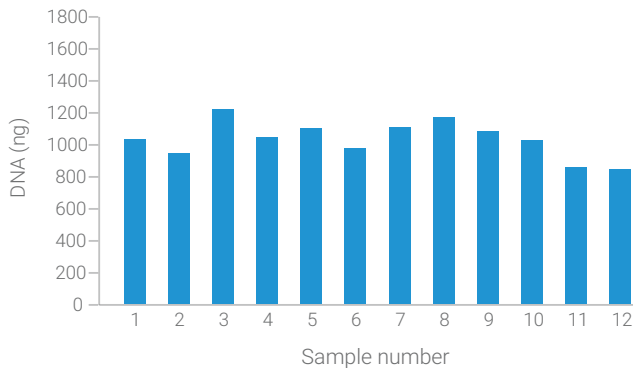


- Procedures automated with Agilent Bravo NGS or NGS Workstation.
- Procedures not carried out on the Bravo deck.



# Ready to use protocols for automated NGS sample prep

DNA yields of NGS libraries prepared using SureSelect<sup>XT</sup> on the Bravo platform display higher reproducibility as shown by a lower coefficient of variance (CV) compared to manual preparation.



In a comparison of library preparation DNA yield between automated and manual protocols (left and right figures, respectively), the automated samples show a tighter reproducibility of 11 % CV compared to 18 % CV for the manually prepared samples.



## Add higher throughput sample QC

The Agilent 4200 TapeStation system simplifies and expedites DNA or RNA quality control for NGS applications. Automated process allows for walk-away operation for up to 96 samples. The easy-to-use system delivers results at the rate of one sample per minute to increase your walk-away time.

## Agilent CrossLab Services: Maximize uptime with end-to-end support

You can trust Agilent CrossLab service experts to deliver valuable insights and keep your instruments running at top performance. Our industry-leading services—tailored to meet your needs—include technology refresh, application consulting, repairs, preventive maintenance, compliance verification, and education. Ask us how we can support your laboratory today.

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