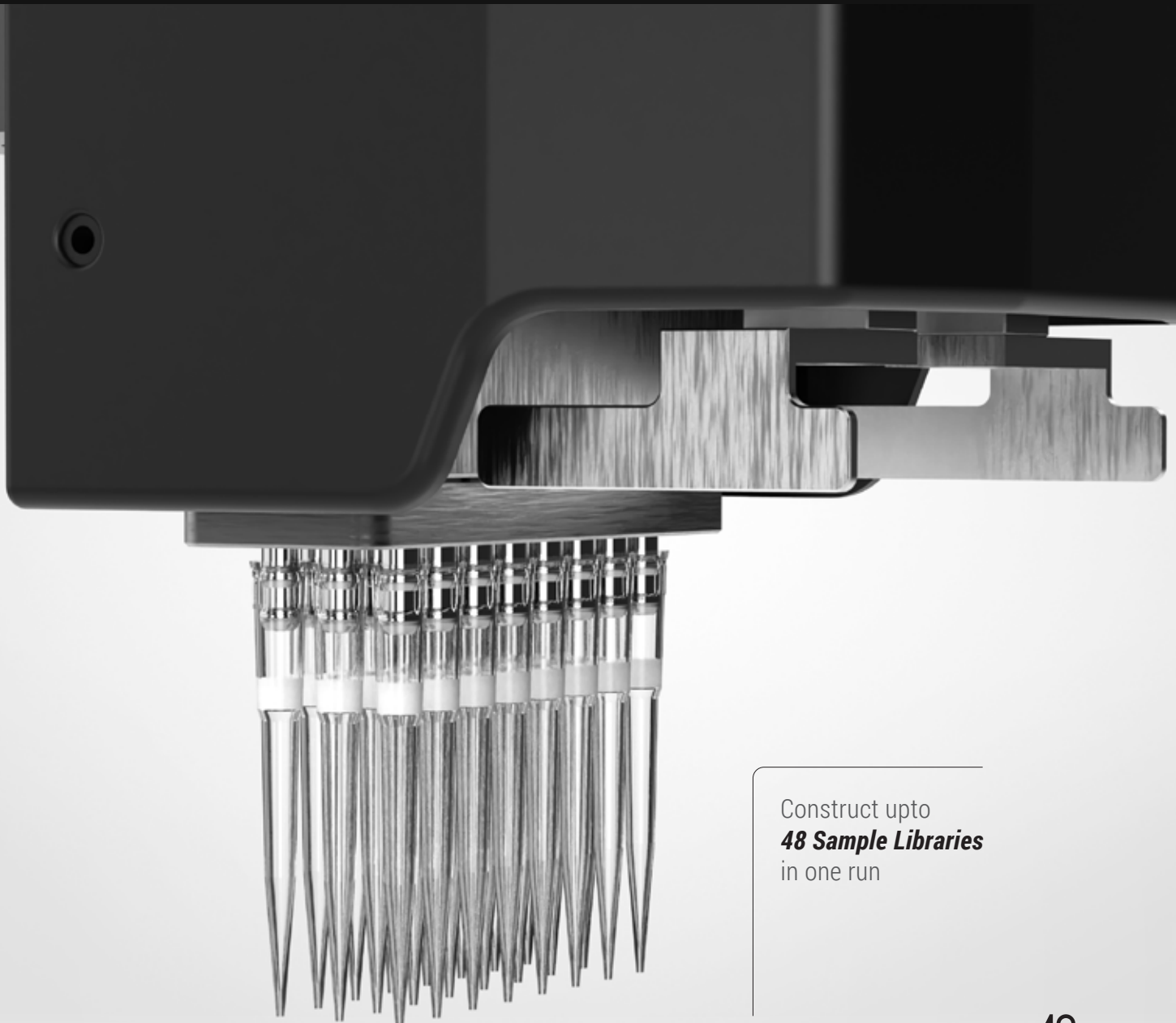


# *Automated* **NGS Library** **Preparation** *Workstation*



Construct upto  
**48 Sample Libraries**  
in one run

EZY AutoPrep - 48

# Automated NGS Library Preparation Workstation

## EZY AutoPrep - 48

Construct upto 48 Sample Libraries  
in one run



Built to streamline the intricate process of sample preparation for NGS, our platform combines state-of-the-art technology with user friendly design to empower your library preparation experience

With the continuous advancements in Next-Generation Sequencing (NGS) technology and the decreasing costs associated with it, NGS has rapidly become the preferred choice for genomic research.

As the demand for efficient and scalable NGS workflows increases, we are proud to introduce the EZY-AutoPrep 48, an automated NGS library preparation workstation that can automate the NGS sample library preparation for up to 48 libraries in a single run.

It is designed to streamline and automate the entire NGS library construction process. By directly loading nucleic acid samples, the system fully automates critical steps such as fragmentation, end repair, adapter ligation, PCR amplification, hybridization, and quantification. The workstation is equipped with a built-in thermal cycler and a fluorometer. This end-to-end solution minimizes hands-on time, reduces human errors, and significantly enhances throughput, making it an ideal choice for high-throughput sequencing applications.

With EZY-AutoPrep 48, one can rely on consistent, reproducible results, allowing them to focus on their scientific discoveries with confidence.

# EZY-AutoPrep - 48

Automated NGS Library  
Preparation Workstation

## SPECIAL FUNCTION MODULE

01 Equipped with fluorometer module, it is capable of simultaneous quantitation of 8 samples, requiring 2 to 20 µl of samples to obtain accurate sample concentrations, with a minimum detection limit of down to 0.4 ng (dsDNA).

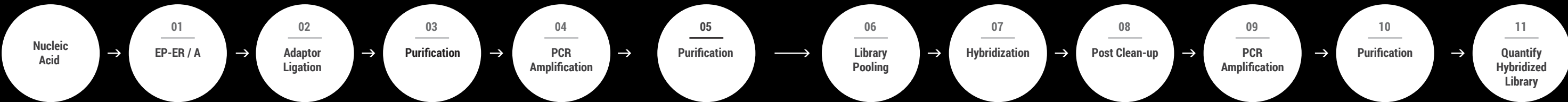
02 The 24 channel pipettor has a pipetting range of 0.5 - 200 µL. With multiple liquid parameter settings, it can flexibly handle samples and reagents of different properties and volumes to meet various application scenarios.

03 At the same time, the workstation integrates heating and cooling module, magnetic plate gripper module, PCR thermal cycle module, UV sterilization lamp and efficient purification filter module, ensuring efficient library construction & eliminating cross-contamination.



## NGS LIBRARY

## CONSTRUCTION WORKFLOW



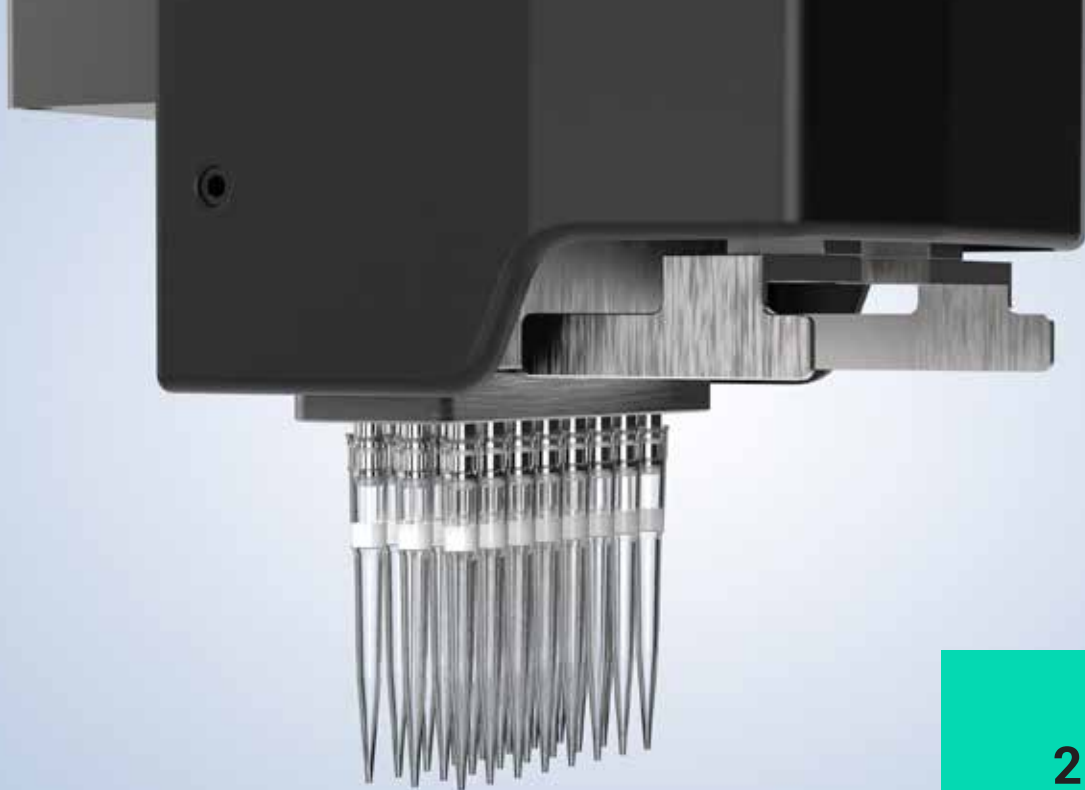
EZY AutoPrep - 48 is capable of performing the whole process of library construction except for "Library Pooling"

# INSTRUMENT FUNCTION

Equipped with a built-in flexible touchscreen computer, designed to provide maximized flexibility & effortless operation. Comes preloaded with GUI Software, pre-optimized NGS library prep protocols, drag & drop features for a seamless user experience.

## EZY-AutoPrep - 48

Automated NGS Library  
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### 24-Channel Pipettor

High-precision  
pipettor  
for fast and  
accurate  
pipetting

Pipetting range	Pipetting precision (CV)	Pipetting accuracy (A)
2~200 $\mu$ L	2 $\mu$ l : $\leq$ 5% 100 $\mu$ l : $\leq$ 1% 200 $\mu$ L: $\leq$ 1 %	2 $\mu$ l : $\pm$ 10% 100 $\mu$ l : $\pm$ 2% 200 $\mu$ L: $\pm$ 1.5%

Standard volume: 2 $\mu$ L			
Channel	Measured mean value ( $\mu$ L)	Accuracy	CV
1	1.99	-0.50%	2.28%
2	1.95	-2.30%	1.87%
3	1.93	-3.60%	4.16%
4	1.93	-3.50%	3.82%
5	1.98	-1.20%	3.08%
6	1.97	-1.60%	2.92%
7	1.98	-1.20%	5.03%
8	1.93	-3.60%	2.48%

Standard volume: 200 $\mu$ L			
Channel	Measured mean value ( $\mu$ L)	Accuracy	CV
1	200.25	0.13%	0.10%
2	200.44	0.22%	0.27%
3	199.69	-0.16%	0.10%
4	199.89	-0.06%	0.32%
5	200.03	0.02%	0.16%
6	200.04	0.02%	0.25%
7	199.93	-0.03%	0.24%
8	200.54	0.27%	0.33%

Note: actual measured data of 24-channel pipettor. Due to space limitations, only 8-channel are displayed, each channel are repeated 10 times



# PRODUCT FEATURES

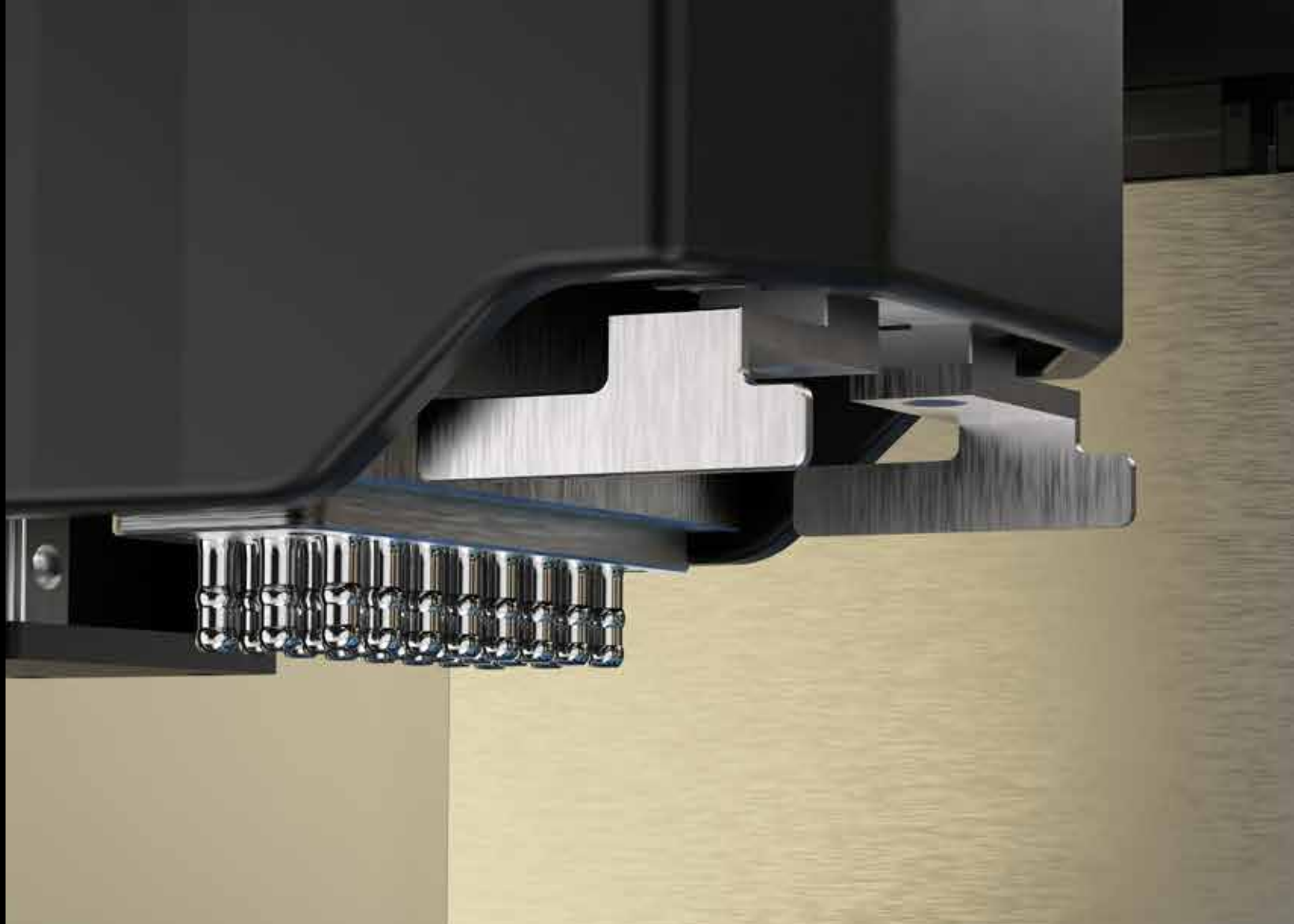


## Gripper Arm

The gripper arm picks up and transfers sample plates between different locations moving along multiple axes to access different deck locations of the workstation.

This may include stacking plates or moving the plates to magnet location or orbital shaker or incubation deck location based on experimental needs. It is based on motorized clamping mechanism to securely hold onto sample plates while taking them from one deck location to another deck location.

EZY-AutoPrep - 48



## Intelligent & Visual

- Allows users to freely choose running part or all of the experimental processes.
- Program settings like error reporting and prompt functions ensure that users can quickly find programming errors.
- Graphical process editing, guided operation, drag-and-drop script elements, makes up for a user-friendly GUI.



## Flexible to Match Experimental Needs

- Equipped with multiple temperature control modules to meet the special temperature requirements such as - for reagent and sample storage.
- High efficiency magnetic module to avoid loss or residual of magnetic beads.
- The fully automatic thermal cycling module can effectively meet the nucleic acid amplification process in the process of library construction.



## Efficient Contamination Prevention

- Equipped with efficient purification and filter system (positive pressure HEPA system) and UV sterilization to prevent cross-contamination of the experimental cabin.
- The PCR module in EZY AutoPrep-48 can use disposable automatic cover or conventional sealing cover to avoid condensation on the top & reduce the risk of cross-infection.



## Simple Operation, Get Started Quickly

- Multi-level account management system supports the different needs of new users and advanced users.
- Drag-and-drop flows simplifies program setting.
- GUI is easy to understand and use.
- New users can also quickly master the operation methods of library construction.



## Multiple Functional Modules

- The 24 plate positions, together with the gripper, 24-channel pipettor, can help in the simple automated library preparation of 48 samples.
- The software program allows flexibility for sample processing by enabling the same program to quickly execute the same experimental process by simply adjusting the number of samples.

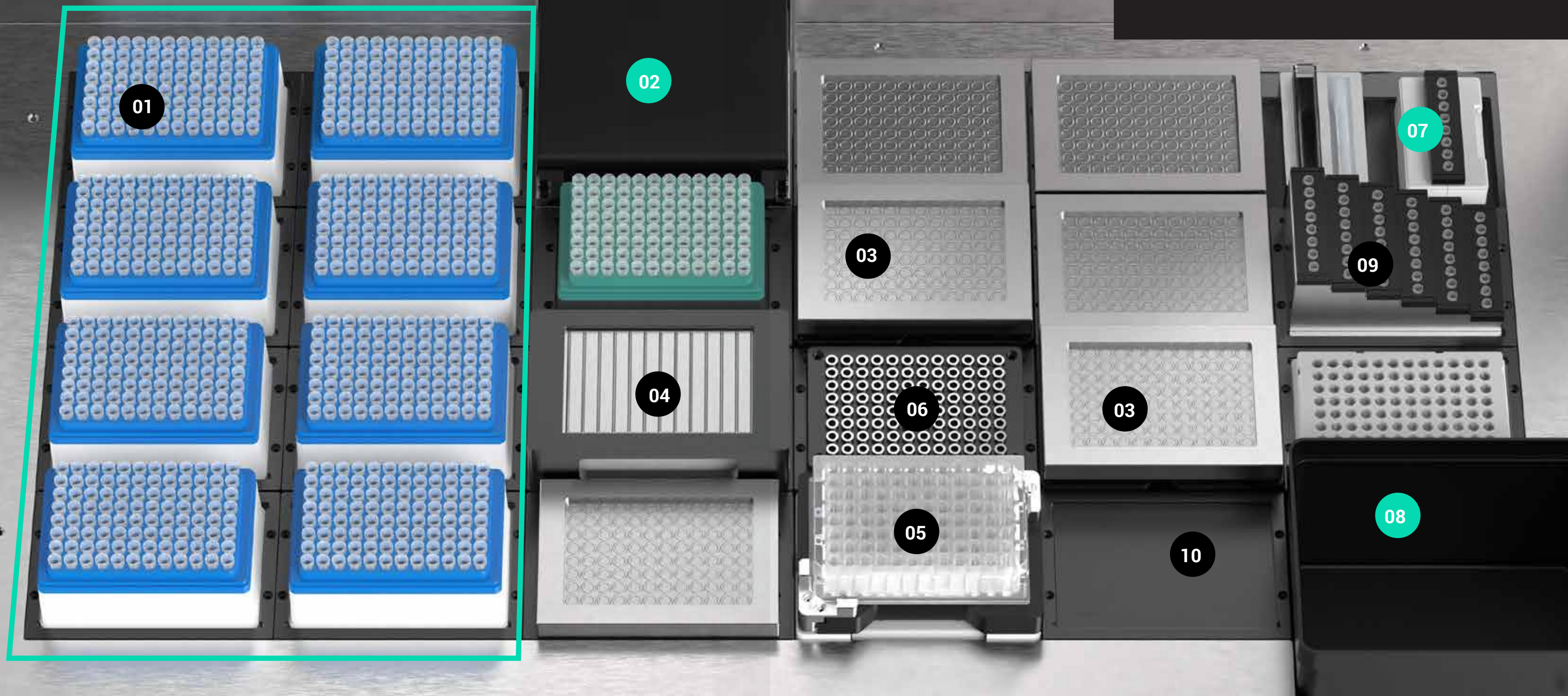


## Precise Pipetting

- The self-developed high-precision 24-channel pipettor can be used as a single channel.
- A variety of liquid parameters setting ensure accurate control of liquid aspirating and dispensing process.
- Based on Air Displacement pipetting principle, effectively removing chances of aerosol contamination.



# DECK LAYOUT



## (01) Tip Area

200  $\mu$ L / 50  $\mu$ L TIP holders. Two tip holders are provided in this machine to cater to various aspirating requirements as per the protocols

## (02) PCR Block

Mainly used for the PCR amplification step during the library preparation process. Can place 96 $\times$ 0.2 mL full-skirted PCR consumables.

## (03) Temp. Control Block

Temp. control range: 4~75  $^{\circ}$ C, can store reagents with these refrigeration needs. Different modules can be used at these locations to place different types consumables

## (04) Reagent Area

Used for storage of room temperature bulk reagents/buffers in 7 $\times$ 25 mL reagent tanks or SBS standard 12 well reservoirs.

## (05) Thermo Shaker Incubator Block

96-deepwell plate can be heated, incubated and mixed, with an amplitude of 2 mm and a max speed of 2000 rpm. Temperature range: RT. +5 $^{\circ}$ C~99 $^{\circ}$ C, and temperature uniformity of  $\leq$  1.5 $^{\circ}$ C.

## (06) Magnetic Area

The bottom 96-well magnetic area can closely fit with the 2.0 mL / 1.0 mL 96-well plate.

## (07) Fluorometer

The quantitation block can simultaneously detect 8 samples, requiring 2 to 20  $\mu$ L of samples to obtain accurate sample concentrations, with a minimum detection limit of down to 0.4 ng (dsDNA).

## (08) Waste Area

Waste liquid container, TIP off box; both the waste liquid container and TIP off box are freely accessible.

## (09) Fluorometer Consumables

Equipped with shading covers to store fluorescent reagents and consumables.

## (10) Expandable Area

Can be used for any SBS consumable or tip boxes, PCR plates.

EZY-AutoPrep-48



# Temperature Control



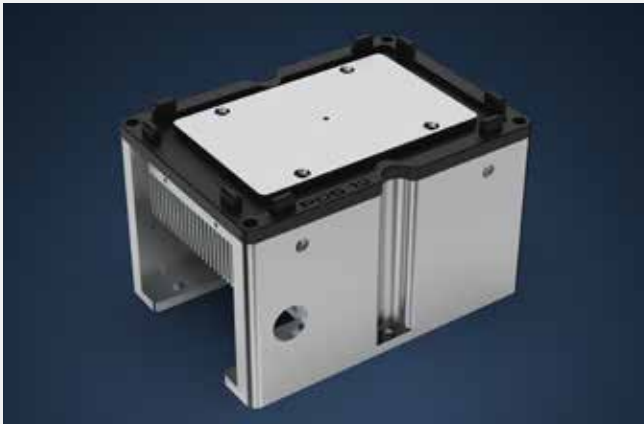
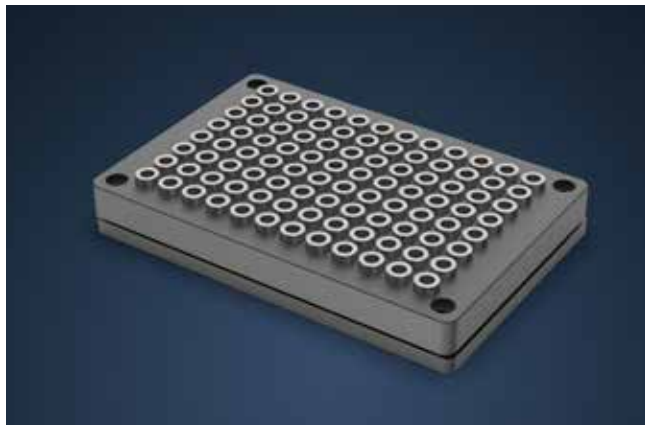
## PCR Amplification Block

Designed specifically to integrate seamlessly with EZY AutoPrep systems, it supports automated workflows by featuring robotic-friendly heated lids, SBS standard 96 well plates, remote control capabilities with minimal to no manual intervention.

- (1) Block temperature control range: 4°C ~ 99 °C, the max temperature of the thermo lid is 105 °C
- (2) Temperature precision: ±0.5 °C
- (3) Temperature uniformity: ±1 °C

## Magnetic Plate Module

Movable 96-well magnetic module that can be handled by the gripper arm, this allows seamless integration into automated workflows, enabling efficient magnetic bead-based purification and processing without manual intervention.



## Temperature Control Module

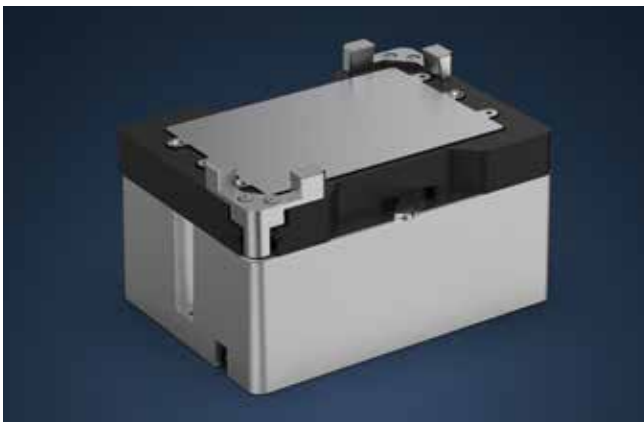
Can be freely set at 4~75°C. It's the standard temperature control block of NGS series. According to the usages, block adapters can be customized to meet different consumables requirements.

Temperature accuracy :	±1°C
Temperature uniformity :	±1°C

## Thermo Shaker Incubator Block

A thermo shaker incubator has been provided in this automation workstation. The incubator can be used for heating, incubation and mixing of deepwell plates. The high-precision zero positioning function ensures the safe pipetting by the pipettor, with the anti-vibration technology and 2D motion control.

Temperature accuracy:	±2°C
Temperature uniformity:	±1.5°C
Oscillation speed:	200 - 2000 RPM



## Built-in Fluorometer

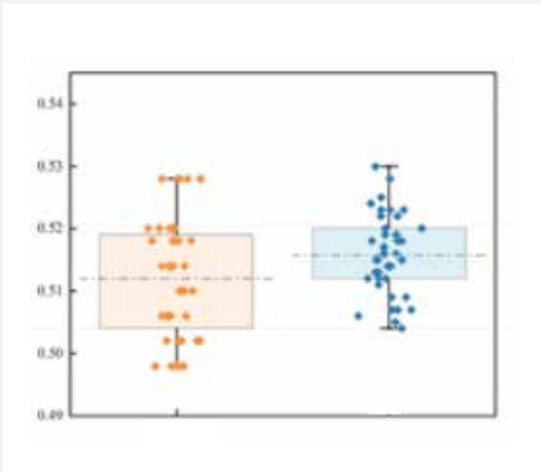
Quantitation is sensitive and highly accurate, making it a reliable dsDNA measurement method

- Automation-specific block can test 8 samples simultaneously.
- Accurate quantitation and high accuracy with only 2-20 µl of samples
- Lowest detection limit down to 0.4 ng (dsDNA).
- Cooperates well with the automatic calculation of the software & high-precision pipetting to quickly achieve accurate sampling.

Uses built-in fluorometer and Qubit Flex for concentration detection on 8 groups of 8 low concentration samples.

The results showed no significant difference between the two test results.

Repeatability	CV ≤ 1.5%
Linear	R <sup>2</sup> ≥ 0.995
Linear range	4 orders of magnitude



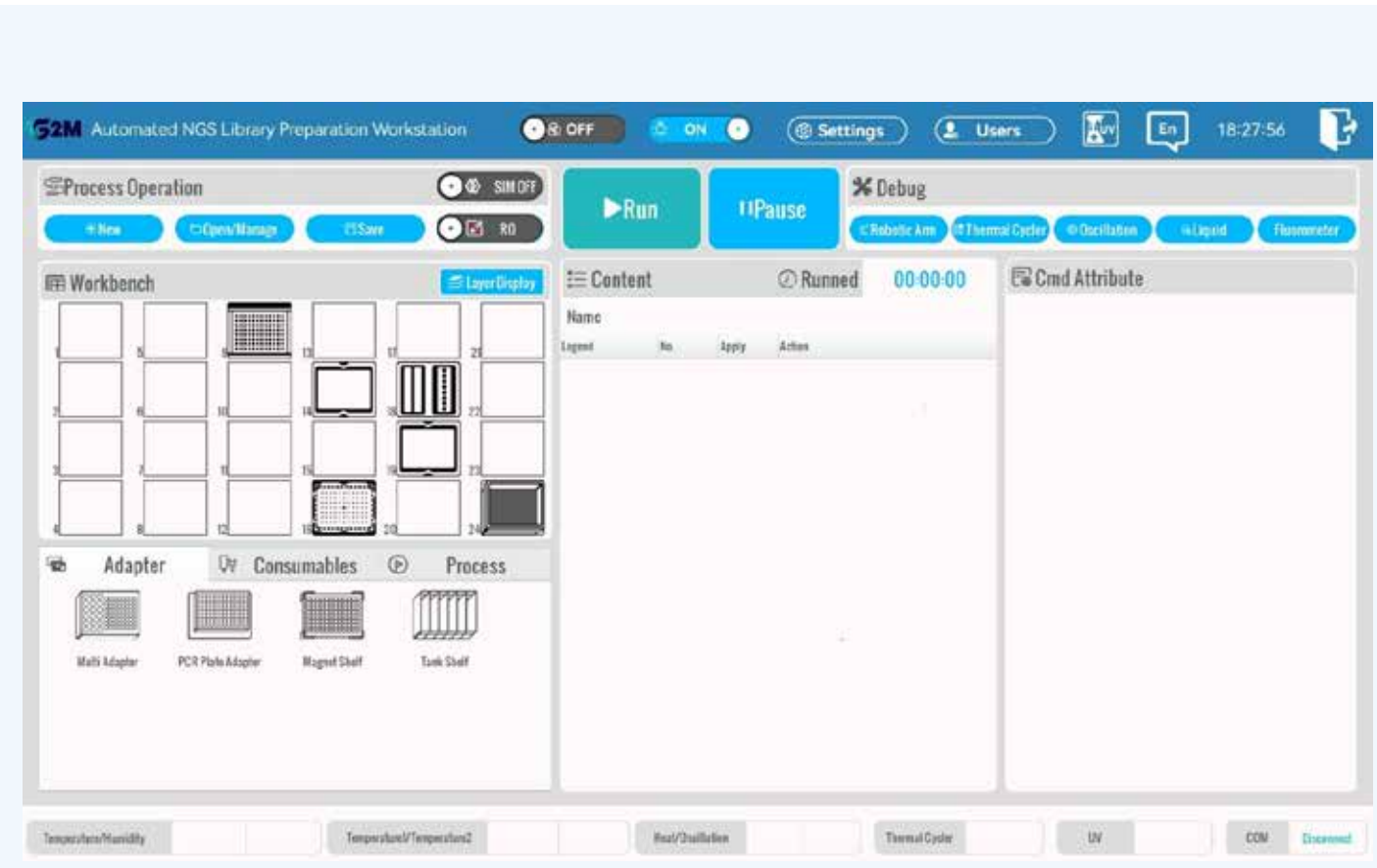
## EZY-AutoPrep - 48

Automated NGS Library Preparation Workstation

# Software

## EZY-AutoPrep - 48

The user-friendly and intuitive GUI allows you to easily initiate the library construction program right after installation, making it simple to create and run automated liquid handling protocols. To further enhance the usability of EZY-AutoPrep 48, we can customize the design based on customer needs for common NGS library construction methods.



**Main Page** The main page has a simple layout, which is convenient and easy to use

Adapter

Consumables

Process

Wait

Load

Unload

Transfer

Aspirate

Segment

Dispense

Mix

Module

Circulate

Pause

Pack

Variable

Assign

if()

### Program Interface

The program settings are open and flexible. Different processes such as reagent transfer, sample transfer and PCR can be set up according to different kits to meet the needs of different experimental steps.

Specification				
Model		EZY AutoPrep - 48		
Throughput		48		
Deck locations		24		
Compatible Consumble		SBS standard 96 well plate, deep well plate, reservoirs etc.		
Tips		200µL and 50µL		
Magnetic plate		96-well annular magnetic plate		
XYZ Robot		X-axis Repeated Positioning Precision: ±0.1 mm Y-axis Repeated Positioning Precision: ±0.1 mm Z-axis Repeated Positioning Precision: ±0.1 mm		
Pipettor	Pipettor type	24-channel fixed spacing pipettors		
	Pipetting principle	Air displacement pipetting technology		
	Pipetting range	2 - 200 µL		
	Precision(CV)	2 µL: ≤5%	100 µL: ≤1%	200 µL: ≤1%
	Accuracy	2 µL: ±10%	100 µL: ±2%	200 µL: ±1.5%
Gripper		Motorized Gripper for automated consumable transfer and handling		
Temperature control module		Including 2 temperature control blocks. Temperature control range: 4~75°C Temperature control accuracy: ±1°C Temperature control uniformity: ±1°C		
Fluorescence detection module		Simultaneous detection of 8 samples, 2-20µL sample, 0.4 ng~100 ng		
Heating & Oscillation Module		(Room Temperature +5°C) ~ 99°C Temperature Accuracy: ±2.0°C ; Temperature Uniformity: ≤ 1.5°C ; Oscillation Speed: 200rpm to 2000rpm		
PCR Module		Temperature Range: Lid: 30°C~ 105°C, Module: 4°C~ 99°C Uniformity: ≤ 1°C Accuracy: ± 0.5°C		
UV sterilization		Equipped with UV sterilization lamp, high-efficiency purification filter device		
Interface		Integrated 14" Colour Touch Screen Windows PC		
Instrument port		USB port, CAN communication		
Ambient condition		Temperature requirement: 20±5°C, humidity: ≤80 %		
Instrument Weight		200Kg		
Dimension (W×D×H)		1180mm W x 860mm D x 955mm H		
Power input		100~240 V, 50~60 Hz, rated power 2000 W		

ORDERING INFORMATION	
Commercial Name	Cat No.
EZY AutoPrep - 48 Automated NGS Library Preparation Workstation	G2MBR4-0712



Fully Automated State-of-the-art Manufacturing Facility  
of 1,50,000 Sq.Ft. in Manesar, INDIA



## Genes2Me Pvt. Ltd.

1105, 11th Floor, Tower B, SAS Tower, Medicity,  
Sector - 38, Gurgaon - 122 001, Haryana, India  
Tel : + 91 18001 214030 / + 91 88000 23600  
E-mail : [contact@genes2me.com](mailto:contact@genes2me.com)  
[www.genes2me.com](http://www.genes2me.com)

