# MGI

### **Performance Parameters**

	Pipetting range	1 µԼ-1000 µԼ
	Pipetting CV	1 μL: CV<8 %
		200 μL: CV<1 %
Pipette		1000 μL: CV<1 %
	Pipetting accuracy	1 μL: accuracy<±10 %
		200 μL: accuracy<±2%
		1000 μL: accuracy<±1%
Robotic arm	Positioning accuracy: $\pm 0.1$ mm	

### **Hardware Parameters**

UV disinfection system	The dose of irradiation is higher than 100, 000 μW.s/cm²		
Size	W: 1410 mm, H: 799 mm, D: 970 mm (without HEPA module)		
Net weight	Approximately 220 kg (485lb, without carriers)		
Dowar raquiramenta	Voltage	200-240 V, 50/60 Hz	
Power requirements	Rated power consumption	1500 VA (not including modules on operation deck and optional modules)	
Working environment	Relative humidity	20 %RH–80 %RH, No condensation	
working environment	Air pressure range	80-106 kPa	

## MGI Tech Co., Ltd.

Building 11, Beishan Industrial Zone, Yantian District, Shenzhen.CHINA

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# MGISP-Smart 8

Your Independent 8-channel Pipetting Robot



# 

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MGISP-Smart 8
Automated sample preparation system

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More about MGISP-Smart 8

# Why Choose

**MGISP-Smart 8** 

Automated sample preparation system



# **MGISP-Smart 8**

# Flexible Pipetting Robot For Lab Automation



# Flexible pipetting

 $MGISP-Smart\,8\,is\,a\,professional\,automated\,pipetting\,robot, equipped\,with\,an\,independent\,8\,pipetting\,channels.\,The\,pipetting\,volume$ range is from 1 µL to 1000 µL, It's pipetting distance, volume and height are independently adjustable, which allow various flexible pipetting routines, greatly improving automated sample transfer, plate setup, and assay processes.

# **Easy and Efficient**

MGISP-Smart 8 has a graphic workflow design software, which includes abundant functional commands and supports defined template for easy and efficient process design. In addition, MGISP-Smart 8 supports user-defined consumable parameters and Liquid parameters for different scenarios.

# Modular design

MGISP-Smart 8 adopts the modular design concept of plug-and-play, which can provide abundant selections of function modules and carriers, so it can be flexibly adapted to different application.

# Flexible **Pipetting**

Independent 8-channel pipetting



MGISP-Smart 8 has eight independent pipetting channels. Its pipetting based on air displacement, which ensures stability, accuracy and avoids cross-contamination.

• The dynamic pipetting range of MGISP-Smart 8 is 1-1000μL that enables flexible pipetting. The channels also feature dual liquid level detectioin.

# **Dual Liquid Level Detection**

- Capacitive Liquid Level Detection: Conductive liquid level can be detected quickly, with conductive tips, based on the instant capacitance change.
- Pneumatic Clot Detection: Intelligent identification of clots and blockages in tips based on internal air pressure monitoring.

# **Performance Parameter**

Pipetting Range	Pipetting Volume	Pipetting CV	Pipetting Accuracy
	1 μL	<8 %	<±10 %
1 μL-1000 μL	200 μL	<1 %	<±2 %
	1000μL	<1 %	<±1%

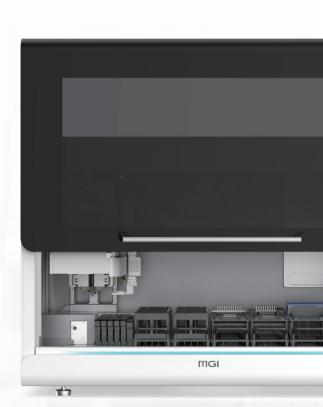
# **Triple Flexible Pipetting**

- Unequal Volume Pipetting: Each channel pipette allows for unequal volume pipetting from 1  $\mu$ L to 1000  $\mu$ L volume.
- Unequal Height Pipetting: The pipette height of each channel can be adjusted intelligently.
- Unequal Distance Pipetting: Unequal independent spreading channels from 9mm-480mm allows for cross-tube and cross-plate pipetting.

# Plus\*: Advanced Pipetting Freedom

Intelligent Liquid Level Tracking

The tip depth under the liquid surface can be adjusted intelligently, which will avoid the tip hanging fluid.



# Easy and Efficient

Graphical workflow design

# Easier graphical interface

# Powerful process editing software

- MGISP-Smart 8 software adopts a graphical interface with intelligent guidelines and contains 9 functional instructions and 35 modular commands.
- MGISP-Smart 8 adopts drag-and-drop process editing, which enables users to create all types of experimental workflows flexibly.

# Easy and efficient process creating

 MGISP-Smart 8 provides verified templates to help simplify workflow creation. In additional, MGISP-Smart 8 also supports users defining their own processes templates based on their requirement.

# Open parameter setting

# Consumables parameters

 MGISP-Smart 8 is compatible with various common consumables. In additional, MGISP-Smart 8 also supports users to add third-party consumables based on their requirement.

### Liquidclass parameters

 The MGISP-Smart 8 has many common liquidclass parameters to ensure pipetting accuracy, also,
 MGISP-Smart 8 supports users to add new liquids for abundant pipetting applications.



# Modular design

Modular carriers and multiple configurations

# Modular design provides greater flexibility and expandability

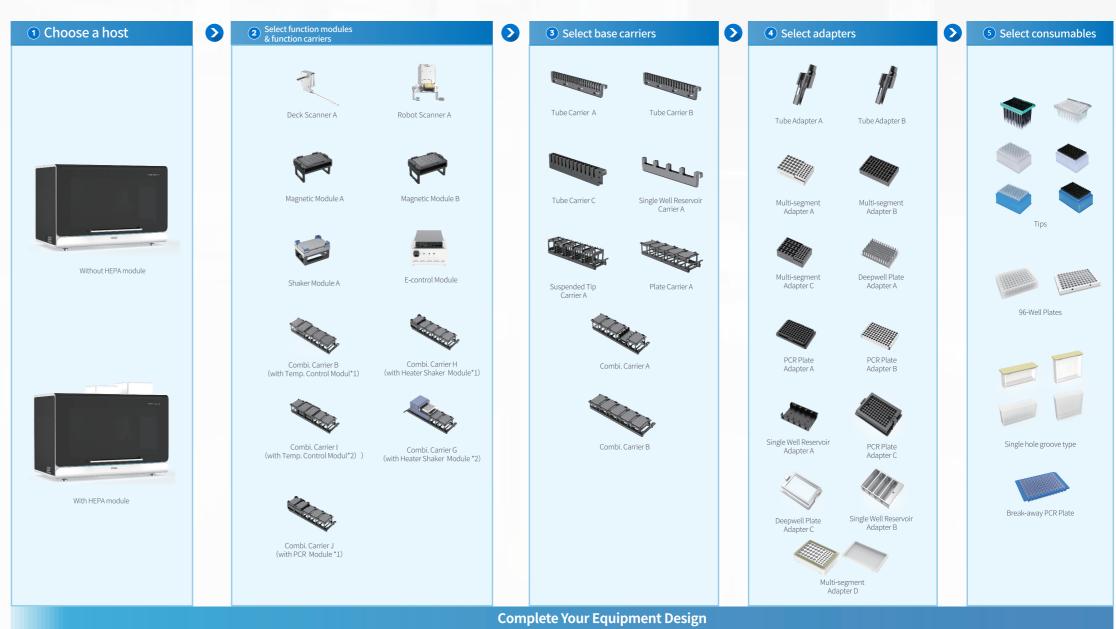
# Modular system design

• The modular design allows to quickly and easily combine, replace or rearrange functional modules & carriers & adapters, flexibly serving different application scenarios.

# Multiple functional modules

• The MGISP-Smart 8 includes abundant functional modules to realize the transition from a simple pipetting platform to an automated workstation adapted to different applications.





<sup>\*</sup>Please confirm the application, compatible kits and throughput before starting to design your MGISP-Smart 8.

# **How to Choose**

# **MGISP-Smart 8**

Config.1 Cherry Picking Workstation

Config.2 Sample Transfer & Reaction Preparation Workstation

Config.3 Nucleic Acid Extraction Workstation

Config.4 Library Preparation Workstation





# **▷** Config.1 Cherry Picking Workstation

• It is suitable for various consumables, realizing flexible pipetting.



# ▶ Config.2 Sample Transfer & **Reaction Preparation Workstation**

• It realizes sample and reagent dispensing and reaction preparing, etc., with the Temp. Control Module.



# **▷** Config.3 Nucleic Acid Extraction Workstation

- It can fully automate the workflows including sample dispensing / nucleic acid extraction/reaction setup/normalization.
- It reduces aerosol contamination with dual HEPA system.



# **▷** Config.4 **Library Preparation Workstation**

• It can automate most library preparation processes such as extraction, normalization, purification, enzyme reaction, hybridization & capture, make DNB, pooling, etc.

# MGISP-Smart 8RS Config.1

# **Cherry Picking Workstation**



900-000495-00





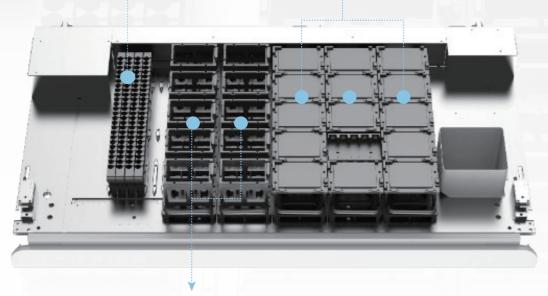


### Tube carrier A\*4

 Suitable for 0.6mL, 0.5mL, 1.5mL, 2mL tubes (adapter required) and 6mL, 10mL blood collection tubes

### Plate Carrier A\*2+Combi. Carrier A\*1

Suitable for 50mL and 100mL Single Well
 Reservoir and 96 Well SBS Microplates



### Suspended Tip Carrier A\*2

• Suitable for 1000μL, 200μL and 50μL automated tips

# The following adapters require extra purchase (not in config.1)

Picture	Name	Item No.	Picture	Name	Item No.
	Tube Adapter A	510-002097-00		PCR Plate Adapter A	510-003556-00
	Tube Adapter B	510-00209-00		Multi-segment Adapter B	510-003557-00
	PCR Plate Adapter C	510-003047-00		Multi-segment Adapter C	510-003560-00
	Deepwell Plate Adapter B	510-003174-00			

# MGISP-Smart 8RS Config.2

# 900-000500-00

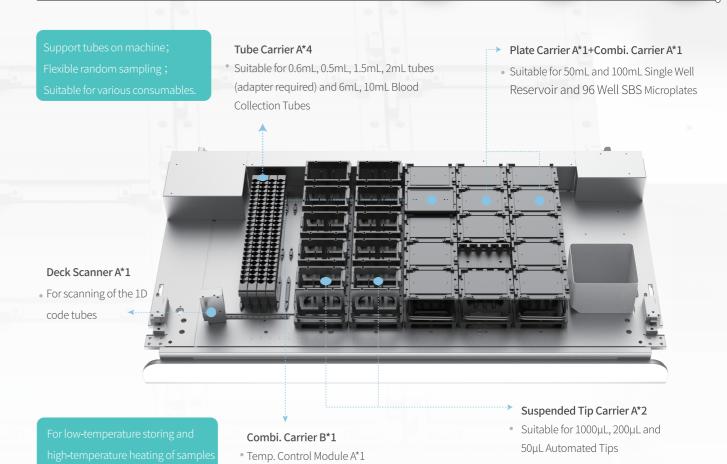
# Sample Dispensing & Reaction Preparation Workstation











# The following adapters require extra purchase (not in config.2)

• Multi-segment Adapter A\*1

Picture	Name	Item No.
1	Tube Adapter A	510-002097-00
	Tube Adapter B	510-00209-00
	Multi-segment Adapter B	510-003557-00
	Multi-segment Adapter C	510-003560-00
	Multi-segment Adapter D	510-003173-00
	Single Well Reservoir Adapter B	510-003175-00

Picture	Name	Item No.
	PCR Plate Adapter A	510-003556-00
	PCR Plate Adapter B	510-003558-00
	PCR Plate Adapter C	510-003047-00
manue	Deepwell Plate Adapter A	510-003563-00
	Deepwell Plate Adapter B	510-003174-00
	Deepwell Plate Adapter C	510-003172-00

# MGISP-Smart 8RS Config.3

900-000498-00

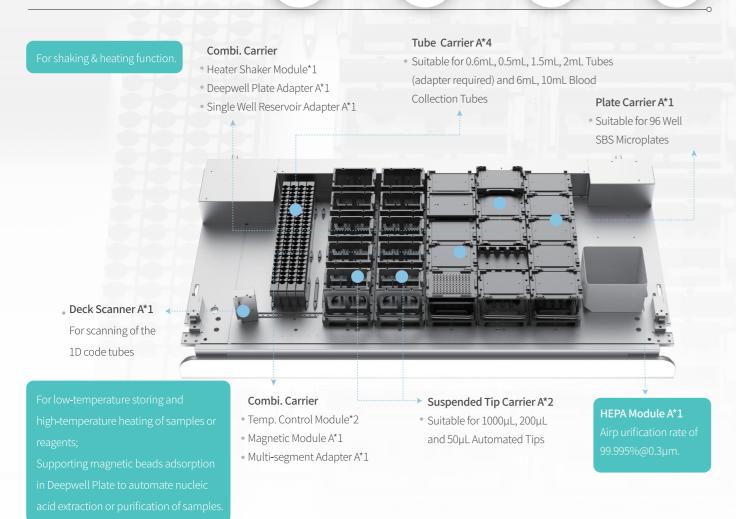
# **Nucleic Acid Extraction Workstation**











### The following adapters require extra purchase (not in config.3)

Picture	Name	Item No.
	Tube Adapter A	510-003559-00
4/1	Tube Adapter B	510-003561-00
	Multi-segment Adapter B	510-003557-00
	Multi-segment Adapter D	510-003173-00
	Single Well Reservoir Adapter B	510-003175-00

Picture	Name	Item No.
	Multi-segment Adapter C	010-004055-00
	PCR Plate Adapter A	510-003556-00
	PCR Plate Adapter B	510-003558-00
	PCR Plate Adapter C	510-003047-00
	Deepwell Plate Adapter B	510-003174-00
	Deepwell Plate Adapter C	510-003172-00

# MGISP-Smart 8RS Config.4

# **Library Preparation Workstation**



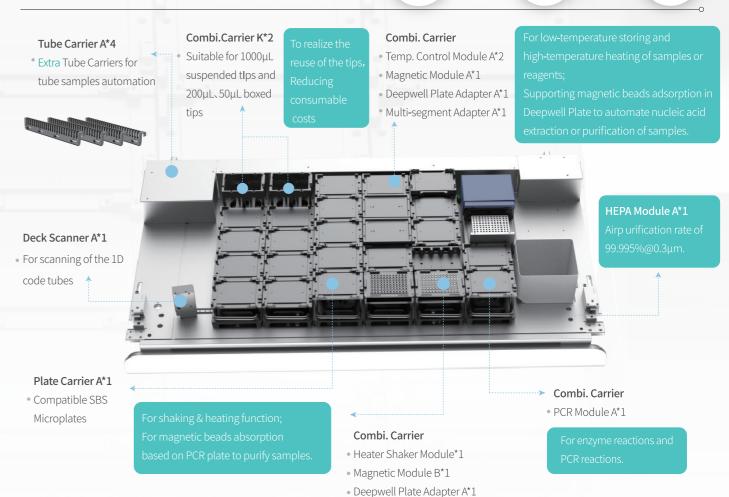
900-000503-00



• Single Well Reservoir Adapter A\*1







### The following adapters require extra purchase (not in config.4)

Picture	Name	Item No.
	Tube Adapter A	510-003559-00
#	Tube Adapter B	510-003561-00
	Multi-segment Adapter B	510-003557-00
	Multi-segment Adapter D	510-003173-00
	Single Well Reservoir Adapter B	510-003175-00

Picture	Name	Item No.
	Multi-segment Adapter C	510-003560-00
	PCR Plate Adapter A	510-003556-00
	PCR Plate Adapter B	510-003558-00
	PCR Plate Adapter C	510-003047-00
	Deepwell Plate Adapter B	510-003174-00
	Deepwell Plate Adapter C	510-003172-00

# **Purchasing Guide**

More about MGISP-Smart 8
Unlock flexibility and possibilities



# Hosts

Image	Name	Description	Item NO.
	MGISP-Smart 8RS Automated Sample Preparation System	Without HEPA.	900-000592-00
	MGISP-Smart 8RS Automated Sample Preparation System	With HEPA,maintain negative pressure inside the machine.	900-000589-00

# **■** Function Modules (Optional)

Image	Name	Description	Item NO.
n	Robot Scanner A	Able to move with pipette arm, used for scanning barcodes of microplates.	510-001991-00
	Deck Scanner A	Fix on the left side of the table, used for scanning barcodes of tubes.	510-002091-00
	Magnetic Module A	For magnetic beads absorption based on Deepwell Plates.	510-002090-00
	Magnetic Module B	For magnetic beads absorption based on 0.2mL 96 Well Skirted PCR Plates.	510-002095-00
	Shaker Module A	For mixing during experiments on Deepwell Plates.	510-002089-00
	E-control Module	An automatic control system that connects the communication between the computer and machine, and provides power for machine, Temp.Control Module A, Heater&Shaker Module A, Shaker Module A and PCR Module A.	510-002096-00

# **Function Carriers**

lmage	Name	Description	ltem NO.
	Combi. Carrier B	The second position is a Temp.Control Module A for low-temperature storing and high-temperature heating of samples or reagents.	510-001996-00
	Combi. Carrier G	Ireludes PCR Module A for enzyme reaction and PCR reaction.	510-002000-00
	Combi. Carrier H	The first position is the Heater & Shaker Module A, providing both shaking and heating functions.	510-001997-00
	Combi. Carrier I	Two Temp.Control Modules A for low-temperature storing and high-temperature heating of samples or reagents.	510-001994-00
	Combi. Carrier J	Two Heater & Shaker Module A provide shaking & heating functions.	510-002003-00

# Tube Carriers

Image	Name	Description	Item NO.
	Tube Carrier A	It can be placed 24 tubes, compatible with 0.5mL, 0.6mL, 1.5mL, 2mL Centrifugal Tubes (adaptors required) or 6mL, 10mL Blood Collection Tubes.	510-002097-00
	Tube Carrier B	It can be placed 20 tubes, compatible with 5mL Centrifugal Tubes.	510-002093-00
MIMILIA	Tube Carrier C	It can be placed 12 tubes, compatible with 50mL Centrifugal Tubes.	510-002092-00

# **■ Tip Carriers**

Image	Name	Description	Item NO.
	Suspended Tip Carrier A	It can be placed 5 boxes of tips, compatible with 50μL, 200μL, 1000μL Tips.	510-002094-00
	Plate Carrier B	Suitable for 200μL、50μL boxed tips	510-002912-00

# **Reservoir Carriers**

Image	Name	Description	Item NO.
LLL	Single Well Reservoir Carrier A	It can be placed 4 Single Well Reservoirs, compatible with 50mL and 100mL Reservoirs.	510-001992-00

# Plate Carriers

Image	Name	Description	Item NO.
	Plate Carrier A	It can be placed 5 microplates.	510-002001-00
	Combi. Carrier A	The fourth plate is Plate Carrier Rack B, with Single Well Reservoirs Adapter A, which can hold 4 SBS Microplates and 5 Single Well Reservoirs of 50mL and 100mL.	510-001998-00

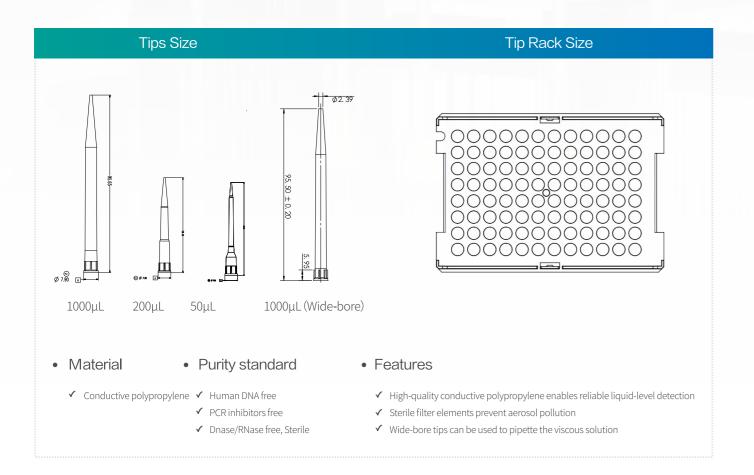
# Adapters

Image	Name	Description	Item NO.	
	Tube Adapter A	Applied to Tube Carrier A, compatible with 0.5mL, 2mL Cryo Tubes and 1.5mL, 2mL Centrifuge Tubes.	510-003559-00	
	Tube Adapter B	Applied to Tube Carrier A, compatible with 0.6mL Centrifuge Tubes.	510-003561-00	
	Single Well Reservoir Adapter A	Applied to Plate Carrier Rack B, compatible with 5 single Well Reservoirs of 50mL and 100mL single well reserviors, 50mL and 100mL single well reservior and cap sets	510-003562-00	
	PCR Plate Adapter A	Applied to SBS Plate, compatible with 0.2 mL 96 Well Half-skirt PCR Plate.	510-003556-00	
	PCR Plate Adapter B	Applied to Temp.Control Module A, compatible with 96 Well PCR Plates.	510-003558-00	
	Deepwell Plate Adapter A	Applied to Temp.Control Module A and Heater Shaker Module A, compatible with 1.3ml 96 Well U-bottom Deepwell Plate.	510-003563-00	
A KATEK BA	Multi-segment Adapter A	Applied to Temp.Control Module A, compatible with 0.5mL, 2mL Centrifuge Tubes and Break-away PCR Plate.	510-003564-00	
	Multi-segment Adapter B	Applied to SBS Plate, compatible with 0.6mL Centrifuge Tubes.	510-003557-00	
	Multi-segment Adapter C	Applied to SBS Plate, compatible with 0.5mL, 2mL Cryo Tubes and 1.5mL, 2mL Centrifuge Tubes and Break-away PCR Plate.	510-003560-00	

Image	Name	Description	Item NO.
	PCR Plate Adapter C	It supports automated pipetting of PCR plate during sealing, providing anti-banding function, which is applied to standard plate.	510-003047-00
	Deepwell Plate Adapter B	It supports automated pipetting of 1.3mL deep well plate during sealing, providing anti-banding function, which is applied to standard plate.	510-003174-00
	Deepwell Plate Adapter C	It supports automated pipetting of 1.3mL deep well plate during sealing, providing anti-banding function, which is applied to temp.control module.	510-003172-00
	Single Well Reservoir Adapter B	It supports temperature control of liquids in large volumes, which is suitable for temp.control module and adapted to 50mL single well reservoirs and 50mL single well reserviors and cap sets	510-003175-00
	Multi-segment Adapter D	It is anti-condensation water adapter on the temperature control module, which is compatible with Break-away PCR Plate and 0.5mL and 2mL cryo tubes.	510-003173-00

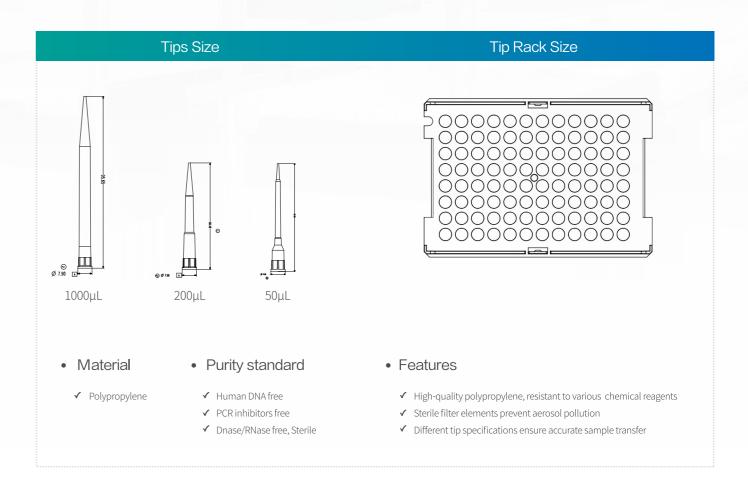
# Automated Conductive Tips

lmage	Name	Specification	Unit	Sterility	Item NO.
	1000µL Tips, Conductive , Filtered, Suspended	96 tips/rack, 40 racks/case	Case	Sterile	091-000223-00
	200µL Tips, Conductive , Filtered, Suspended	96 tips/rack, 24 racks/case	Case	Sterile	091-000156-00
	50µL Tips, Conductive , Filtered, Suspended	96 tips/rack, 24 racks/case	Case	Sterile	091-000159-00
	1000μL Black Conductive Tips, Sterile, Filtered (Wide-Bore)	96 tips/rack, 16 racks/case	Case	Sterile	091-000020-00



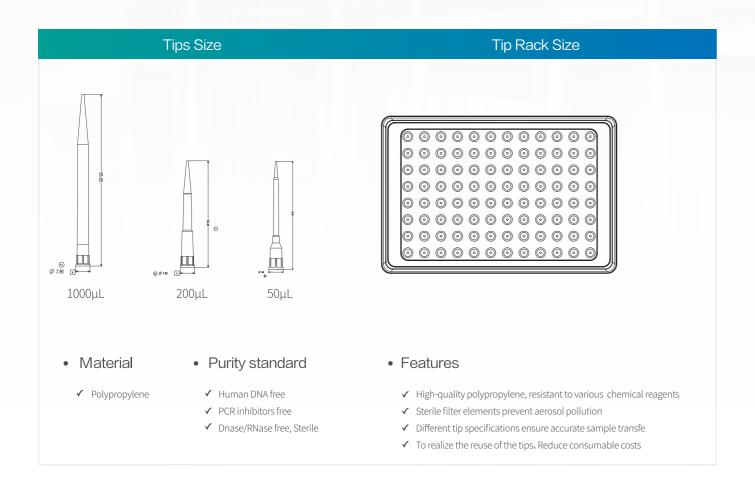
# Automated Transparent Tips

Image	Name	Specification	Unit	Sterility	ltem NO.
	1000μL Tips, Transparent , Filtered, Suspended	96 tips/rack, 16 racks/case	Case	Sterile	1000023970
	200μL Tips, Transparent , Filtered, Suspended	96 tips/rack, 24 racks/case	Case	Sterile	091-000158-00
	50μL Tips, Transparent , Filtered, Suspended	96 tips/rack, 24 racks/case	Case	Sterile	091-000157-00



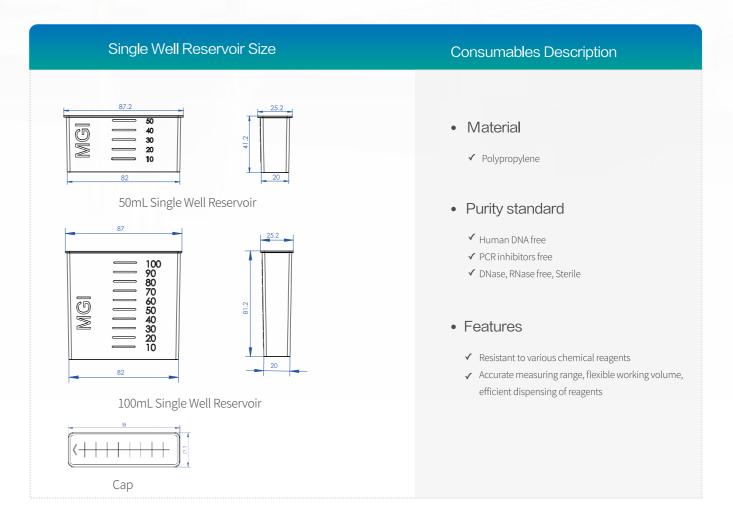
# Automated Transparent Tips

Image	Name	Specification	Unit	Sterility	Item NO.
	200μL Tips, Conductive , Filtered, Box	96 tips/box 24 boxes/case	Case	Sterile	091-000164-00
	200μL Tips, Transparent , Filtered, Box	96 tips/box 24 boxes/case	Case	Sterile	091-000163-00
	50μL Tips, Conductive , Filtered, Box	96 tips/box 24 boxes/case	Case	Sterile	091-000161-00
	50μL Tips, Transparent , Filtered, Box	96 tips/box 24 boxes/case	Case	Sterile	091-000162-00



# **■ Single Well Reservoirs**

Image	Name	Specification	Unit	Volume	Sterility	Item NO.
	50mL Single Well Reservoir	50 pieces/box	Вох	2-50mL	Sterile	012-000780-00
	100mL Single Well Reservoir	50 pieces/box	Вох	2-100mL	Sterile	012-000779-00
	50mL Single Well Reservoir and Cap Set	50 Sets/box	Вох	2-50mL	Sterile	091-000375-00
	100mL Single Well Reservoir and Cap Set	50 Sets/box	Вох	2-100mL	Sterile	091-000374-00



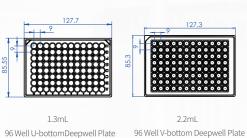
# 96 Well Plates

Image	Name	Specification	Unit	Volume	Sterility	Item NO.
	1.3ml 96 Well U-bottom Deepwell Plate	2 plates/bag	Bag	≤1.3mL	Sterile	1000004644
	2.2 mL 96 Well V-bottom Deepwell Plate	60 plates/case	Case	≤2.2mL	Sterile	1000008088
	Hard-shell Thin-wall 96 Well Skirted PCR Plates, White Shell/Clear Well	10 plates/bag	Bag	€200 μL	Sterile	1000012059
	0.2 mL 96 Well Half-skirt PCR Plate	10 plates/box, 20 boxes/case	Case	≤200 μL	Sterile	1000000671

# 96 Well Plate Size

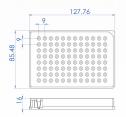
### Consumables Description

• Material: USP Class VI and FDA approved medical grade polypropylene material





- Purity standard
  - ✓ Human DNA free ✓ PCR inhibitors free
  - ✓ DNase, RNase free, Sterile
- Features
  - ✓ High-quality heat-resistant and corrosion-resistant polypropylene material
  - ✓ Letter-number coordinate design, easy to locate well
  - ✓ High flatness and good consistency of external dimension, and conducive to the grab of automatic instrument mechanical arm



96 Well Half-skirt PCR Plate

- Purity standard
- ✓ Sterile, pyrogen free
- ✓ Endotoxin, DNA free ✓ DNase, RNase free
- ✓ Inhibitors free

### Features

- ✓ High-quality heat-resistant and corrosion-resistant polypropylene material
- ✓ Ultra-thin tube wall provides fast and uniform heat conduction effect
- ✓ Letter-number coordinate design, easy to locate well
- ✓ Convex edge design of the tube guarantees the sealing and pollution-free

0.2ml 96 Well Half-skirt PCR Plate

# Purity standard

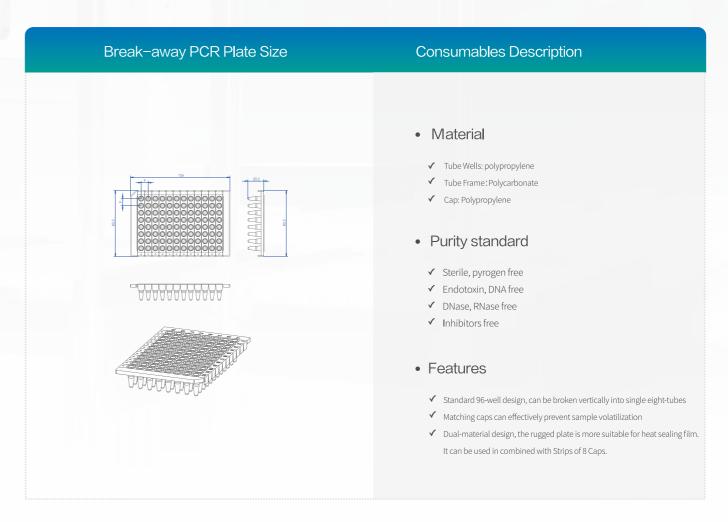
- ✓ Sterile, pyrogen free ✓ Endotoxin, DNA free
- ✓ DNase, RNase free
- ✓ Inhibitors free

### Features

- ✓ High-quality heat-resistant and corrosion-resistant polypropylene material
- ✓ Ultra-thin tube wall provides fast and uniform heat conduction effect
- ✓ Convex edge design of the tube guarantees the sealing and pollution-free

# ■ Break-away PCR Plate

Image	Name	Specification	Unit	Volume	Sterility	Item NO.
	Break-away PCR Plate and Cover, 96 Well	10 plates/box(Tube) 120 strips/box (Cap)	Вох	≤200 μL	Sterile	100-000016-00



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# **■** Consumables List

# **Automated Tips**

Name	Specification	Unit	Item NO.
1000μL Tips, Conductive , Filtered, Suspended	96 tips/rack, 40 racks/case	Case	091-000223-00
200μL Tips, Conductive , Filtered, Suspended	96 tips/rack, 24 racks/case	Case	091-000156-00
50µL Tips, Conductive , Filtered, Suspended	96 tips/rack, 24 racks/case	Case	091-000159-00
1000μL Black Conductive Tips, Sterile, Filtered (Wide-Bore)	96 tips/rack, 16 racks/case	Case	091-000020-00
1000µL Tips, Transparent , Filtered, Suspended	96 tips/rack, 16 racks/case	Case	1000023970
200μL Tips, Transparent , Filtered, Suspended	96 tips/rack, 24 racks/case	Case	091-000158-00
50μL Tips, Transparent , Filtered, Suspended	96 tips/rack, 24 racks/case	Case	091-000157-00
200μL Tips, Conductive , Filtered, Box	96 tips/box, 24 boxes/case	Case	091-000164-00
200μL Tips, Transparent , Filtered, Box	96 tips/box, 24 boxes/case	Case	091-000163-00
50μL Tips, Conductive , Filtered, Box	96 tips/box, 24 boxes/case	Case	091-000161-00
50μL Tips, Transparent , Filtered, Box	96 tips/box, 24 boxes/case	Case	091-000162-00

# Single Well Reservoirs

Name	Specification	Unit	Item NO.
50mL Single Well Reservoir	50 pieces/box	Вох	012-000780-00
100mL Single Well Reservoir	50 pieces/box	Вох	012-000779-00
50mL Single Well Reservoir and Cap Set	50 Sets per Box	Вох	091-000375-00
100mL Single Well Reservoir and Cap Set	50 Sets per Box	Box	091-000374-00

# 96 Well Plates

Name	Specification	Unit	Item NO.
1.3ml 96 Well U-bottom Deepwell Plate	2 plates/bag	Bag	1000004644
2.2 mL 96 Well V-bottom Deepwell Plate	60 plates/bag	Case	100008088
Hard-shell Thin-wall 96 Well Skirted PCR Plates, White Shell/Clear Well	10 plates/bag	Bag	1000012059
0.2 mL 96 Well Half-skirt PCR Plate	10 plates/box, 20 boxes/case	Case	1000000671

# **Break-away PCR Plate**

Name	Specification	Unit	Item NO.
	10 plates/box (Tube)	_	100-000016-00
Break-away PCR Plate and Cover, 96 Well	120 strips/box (Cap)	Box	

# **MGISP Series**

Multi-faceted to meet your laboratory's individual needs



MGISP-100

Throughput 8 or 16 Samples/Run\*

Deck capacity 6 SBS positions

- Fixed 8-channel pipette
- Compact countertop, standardized model for library preparation
- Suitable for small and medium-sized laboratory



**MGISP-Smart** 8

Throughout >1-48 Samples/Run\*

Deck capacity 30 SBS positions

- Independent 8-channel pipette
- Rail-type countertops, customizable for different applications
- Fit for flexible throughput laboratory



MGISP-960

Throughput > 96 Samples/Run\*

Deck capacity > 24 SBS positions

- Fixed 96-channel pipette
- Compact countertop, integrate multiple function modules
- Suitable for high throughput laboratory

<sup>\*</sup>The numbers were calculated based on the throughputs of library preparation.