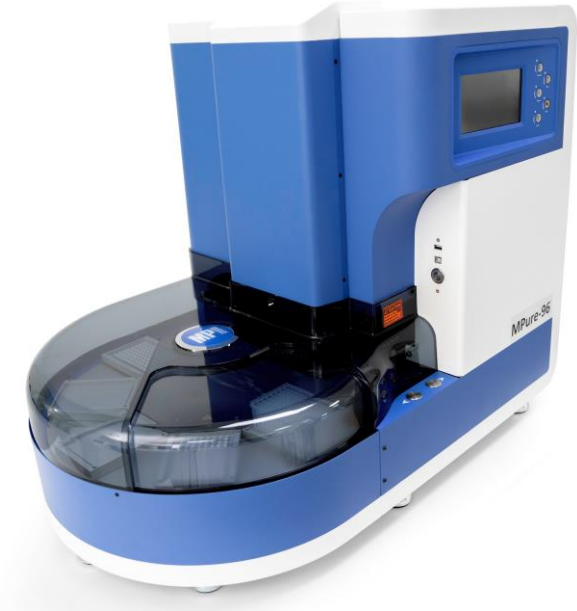


MP Diagnostics
MPure-96 aNAP System



Operation Manual



(Compatible with power 220V-240V only)



IMPORTANT - Please read this manual carefully before using the MPure-96 aNAP System

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About Manual

The label on the instrument, the User Manual, and other packaging material may contain following symbols:



Catalog number



Non-Sterile



Serial number



Temp Limit
(Operating)



Manufacturer



Humidity Limit
(Operating)



The date of manufacture



Biologic Risks



Keep Away From Sunlight



Keep Dry



Consult Instructions for Use



The CE mark



In Vitro Diagnostic Medical Device



Authorized European Representative



Caution, consult accompanying documents



Hot surface, risk of burns



Watch your fingers and your hands



The symbol indicates that the product should not be discarded as unsorted waste but must sent to separate collection facilities for recovery and recycling

About Instrument

WARNING

- Use a power cord that meets your country's standard. In case of any questions about the power cord, contact your local distributor or reseller.
- Do not use the instrument with voltage other than the voltage specified on the device.
- Do not use the instrument with damaged power cord or a loose socket.
- When the power plug is disconnected from the AC outlet, please hold the power plug itself instead of pulling the power cord.
- Before working on maintenance, must disconnect the power plug from the outlet in advance.
- Do not pour any liquid on the instrument.
- Do not place any containers with liquid on the instrument. Doing so may cause a fire, electric shock or malfunctions of the instrument.
- Do not touch the power plug or cord if there is a chance of lightning. Failure to observe this may cause electric shocks.
- If you hear thunder or suspect approaching lightning, quickly turn off the power switch and pull the power plug from the AC outlet. Failure to observe this may cause a fire or malfunctions.

About Instrument

CAUTION

- Never attempt to remodel the instrument without the permission from the manufacturer. Doing so may lead to a fire or electric shock.
- Do not bump or knock the instrument. Doing so may cause malfunctions.
- Repairs to the instrument must be performed by agencies authorized by MP Biomedicals Asia Pacific Pte Ltd.
- Only original spare parts from MP Biomedicals Asia Pacific Pte Ltd can be used on the instrument.
- If the equipment is used in a manner not specified by the manufacturer, the protection given by the instrument may be impaired or invalid.

1. Introduction

MPure-96 aNAP System is an automated nucleic acid platform designed for high-throughput applications. Specialized spin tips enable super mixing efficiency of magnetic beads and larger processing volume. With intuitive interface and flexible program, MPure-96 aNAP System will boost laboratory productivity by transforming routine operations into a walk-away solution.

Operation Principle

MPure-96 aNAP System uses magnetic rods to collect and transfer magnetic beads and spin tips to mix suspension. Rotating the spin tips will mix suspension very well. Extended magnetic rods can collect magnetic beads efficiently.

Purified nucleic acids can be obtained after cell lysis, nucleic acids absorption, wash and elution.

Intended Use

- MPure-96 aNAP System shall be used in combination with MP Biomedicals MagBeads Extraction Kits to extract DNA/RNA from clinical or non-clinical specimens.
- MPure-96 aNAP System can handle magnetic beads for extraction and purification of nucleic acid.
- This product should be operated by a trained laboratory personnel.

1. Introduction

Environmental Requirements

To avoid shortening of the lifespan of the instrument, use MPure-96 aNAP System in a location that meets the following criteria:

- Choose a location that has good air circulation.
- Place MPure-96 aNAP System on the table capable of bearing at least the weight of MPure-96 aNAP System (≈ 95 kg).
- Do not use MPure-96 aNAP System in a location where there is large temperature variability or high humidity.
- Suggested operation condition:
Temperature: 10-35°C
Relative humidity: 40-80%
- Storage and transportation condition:
Temperature: 5-60°C
Relative humidity: 20-90%
- Maximum operating altitude: 2000 m

1. Introduction

Safety Instructions and Guidelines

- This device can be used with potentially biohazardous materials. Use appropriate personal protective equipment (gloves, safety goggles, lab coat, etc.) for handling and disposing of biohazardous materials.
- Under normal condition, sound pressure level from MPure-96 aNAP System does not exceed 80 dB and cause a hazard. Please contact technical support in case of higher sound pressure level.
- This device can be hazardous due to the use of chemical and biohazardous substances.
- Users should adhere to their institutional guidelines for the handling and disposal of all infectious substances used with this device.
- It is important to clean the device after every use. If samples or reagents have been spilled, it is important to clean the instrument immediately to avoid damage or contamination of samples.
- This device has to be used with the compatible spin tips. Using incompatible spin tips may cause poor extraction performance.
- Read this user manual in its entirety prior to operating the device. Failure to read, understand, and follow the instructions in the manual may result in damage to the device, injury to laboratory and operating personnel or poor performance.

1. Introduction

Safety and EMC Information

Safety Requirements

- The MPure-96 aNAP System has passed the tests and conformed to the standards of IEC 61010-1:2010, "Safety requirements for electrical equipment for measurement, control, and laboratory use - Part 1: General requirements".
- The MPure-96 aNAP System has passed the tests and conformed to the standards of IEC 61010-2-101:2018, "Safety requirements for electrical equipment for measurement, control and laboratory use - Part 2-101: Particular requirements for in vitro diagnostic (IVD) medical equipment".

EMC Requirements

- The MPure-96 aNAP System has passed the tests and conformed to the standards of IEC 61326-1:2012 & IEC 61326-2-6:2012, "Electrical equipment for measurement, control and laboratory use - EMC requirements - Part 2-6: Particular requirements - In vitro diagnostic (IVD) medical equipment".
- The MPure-96 aNAP System has passed the tests and conformed to following standards:
 - EN 61326-1:2013
 - EN 61326-2-6:2013

1. Introduction

Equipment list

Please note that following accessories accompanying with instrument may vary from region to region.



Power cord x1



Transmission cable x1



Magnetic separator x1



Tips combo pack x1



16-base (for Autotube) x6



User manual x1

=Remark=

Power cord varies from region to region.

16-base (for Autotube) must be used with 6-tube format Autotube.

2. Instrument Overview

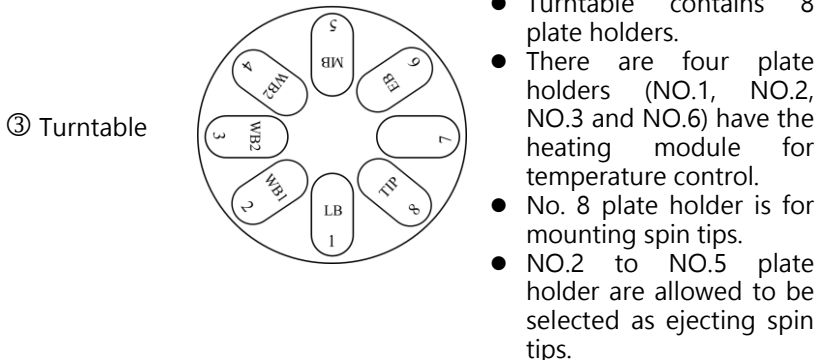
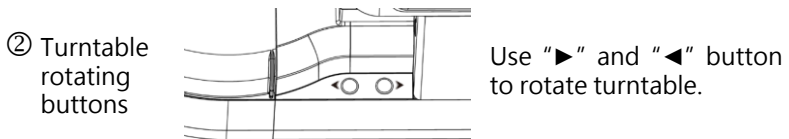
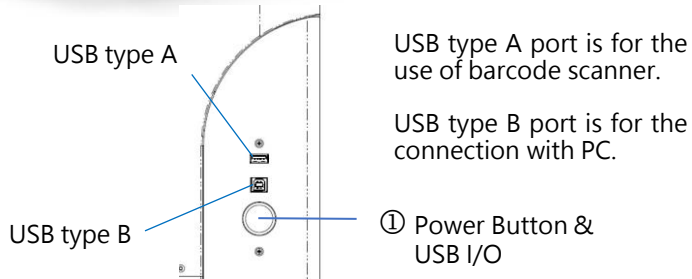


ITEM	SPECIFICATION
Model	MPPure-96 aNAP System
Weight	Approx. 95 kg
Dimensions	870(W) x 575(L) x 700(H) mm
Power rating	220-240Vac, 50/60Hz, 3.5A (Class I)
Fuse	250V, 5A
Max. Throughput	96 samples per run
Process. volume	50 μ l -1,600 μ l
Spin speed	up to 3000 rpm
Heater	4 independent heating plates
Magnetic rod	>3900 gauss
Display	7-inch touchscreen
UV & HEPA	UV: UV-C type 4W, HEPA: E10 Class



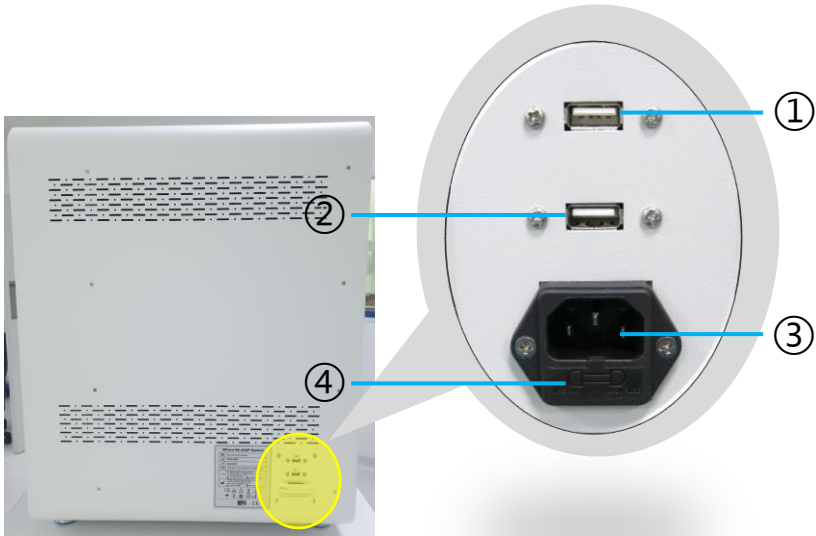
Please note that this machine is compatible with 220-240V power only. Using wrong power may lead to malfunction or damage to the instrument.

2. Instrument Overview



2. Instrument Overview

Rear View



- ① USB type A for use of upgrading HMI program
- ② USB type A for use of upgrading PLC program
- ③ Power inlet
- ④ Fuse



Please note that only MP Biomedicals technicians and authorized technicians or service engineers shall engage in HMI and PLC program upgrade.

2. Instrument Overview

Control Panel



To turn off the alarm



To pause the program. Press again to resume the program.



To turn on/off the LED light.



To initiate the program



Emergency to stop machine

3. Installation & Get Started

Installing MPure-96 aNAP System is easy. Please follow the guide below to correctly set up the instrument.

Please note that this instrument weights around 95kg, it is highly recommended to have 3 or more persons to handle when taking it out from the box.

Step 1:

Take out the instrument from the box (may require 3 or more persons to handle).

Step 2:

Remove the cushions around the instrument.

Step 3:

Place the instrument to a flat-table that can bear 120kg weight.

Step 4:

Connect to the power. Please note that this instrument is compatible with 220-240V power only. Using wrong power source will lead to malfunction or damage to the instrument.

Step 5:

Power on the instrument and it will perform initialization. Once initialization is done, please remove Y-axis protector from the instrument and the instrument is ready to use.



◀ Y-axis protector

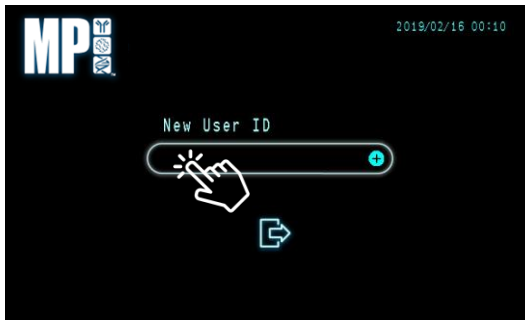
4. User Interface Guidelines

Create a User ID

A user ID is required to access the instrument. For a brand new machine, there is a need to create a user ID in advance. Click the icon to create your own user ID.



◀ Press the icon to create a new user ID



◀ Click blank space to call out keyboard




◀ Use the keyboard to input user ID and then click [Enter] to save and exit

User ID: max. 12 characters

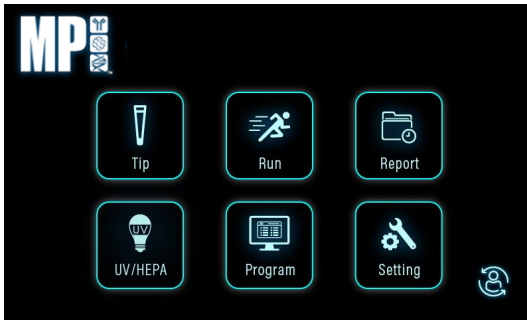
4. User Interface Guidelines

Save User ID

After creating the user ID, please click  to save, then the program will automatically let you access the system.




◀ Instrument is trying to save new user ID



◀ You will be guided to the main page after saving. Now you can prepare for extraction work.



◀ Switch user

To switch user, there is no need to power off/on the instrument. Take advantage of icon  to switch user quickly.

4. User Interface Guidelines

Possible Error Message

Some possible error messages may occur when you try to log in or create a user ID.



- ◀ **User ID not found**
Make sure you input the existing user ID account correctly



- ◀ **User ID repeated**
Please change the name of the new user ID



- ◀ **Account is full**
A maximum of 24 user ID are allowed. If the account is full, please contact the dealer nearest to you for further assistance.

4. User Interface Guidelines

Main Page

There are six functions that are available on main page.



To mount and eject spin tips



To execute the extraction program



To export extraction records



To use UV & HEPA to clean the instrument



To edit, add, and delete extraction program



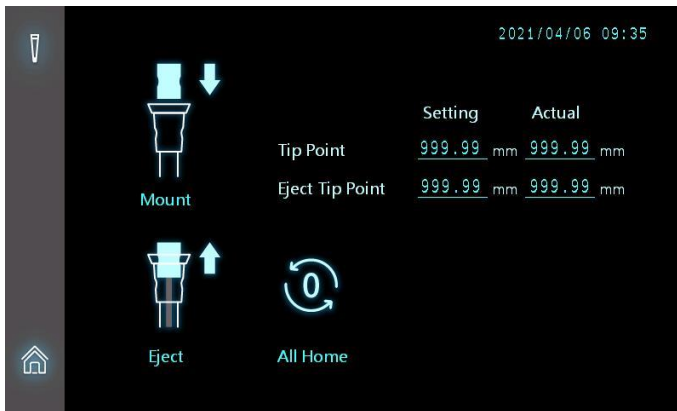
To set basic parameter of instrument

4. User Interface Guidelines

Tip (Test on Mount and Eject Spin Tips)



Please complete the tip mounting before you start the extraction protocol.



- ❑ Tip Point (Setting): Parameter setting value upon mounting tips
- ❑ Tip Point (Actual): Actual tip-mounting parameter value
- ❑ Eject Tip Point (Setting): Parameter setting value upon ejecting tips
- ❑ Eject Tip Point (Actual): Actual tip-ejection parameter

=Remark=

Actual value needs to be equal to Setting value

4. User Interface Guidelines

How to test mounting and ejecting spin tips

Step 1: Click "All Home" to set X/Y/Z-axis to zero



Step 2: Place tip combo pack (for use of mounting spin tips) or blank 96DW plate (for use of ejecting spin tips) to #8 plate position



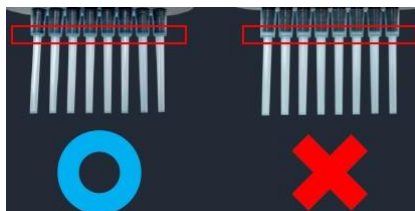
◀ Tip function is designed to test the performance of mounting and ejecting spin tips.

Step 3: Use "▶" and "◀" button to move #8 plate underneath the extraction module

Step 4: Click "Mount" icon to execute mounting spin tips (tip combo pack required) or click "Eject" icon to execute ejecting spin tips (blank 96DW plate required)



Step 5: Check if all spin tips are mounted to spin shaft without any gap or if all spin tips are completely ejected from spin shaft.

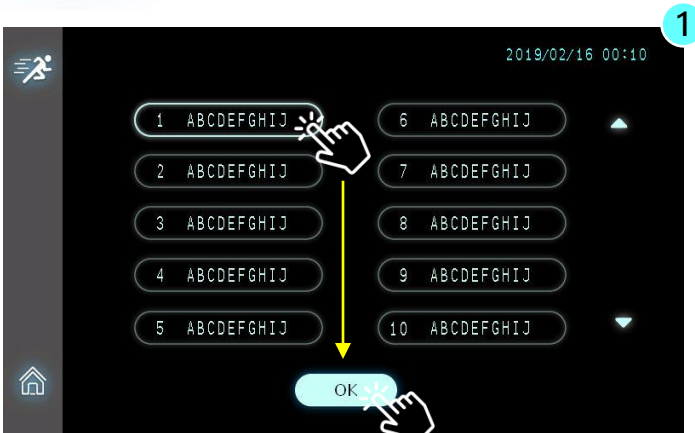


4. User Interface Guidelines

Run (Execution of Extraction Program)

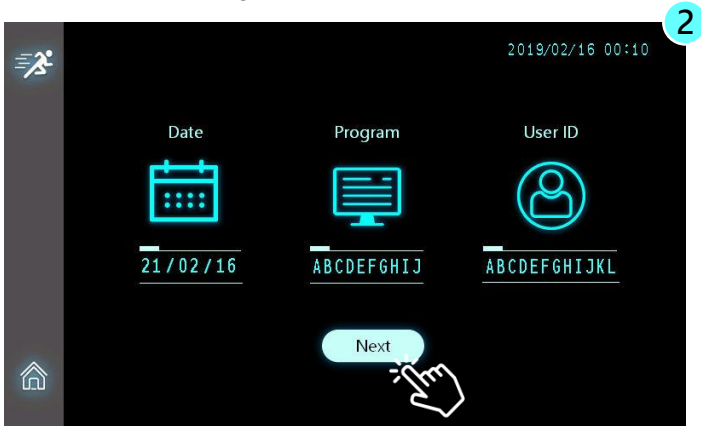


Run function is designed to execute nucleic acid extraction program stored in the instrument.



- ▲ MPure-96 aNAP System is capable of storing up to 25 programs. Please follow the guideline of reagent kits and select the program correctly.

Step 1: Click the program first, and then click [OK] to continue



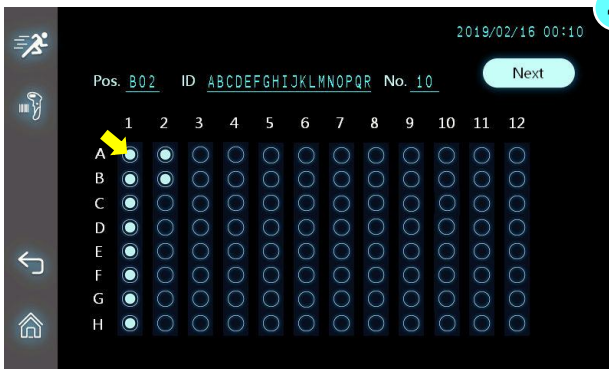
Step 2: Click [Next] to continue

4. User Interface Guidelines

Run (Execution of Extraction Program)



Step 3: Click space to input "Kit Lot" and "Tip Lot", if needed. Click [Next] to continue. Both Kit Lot and Tip Lot can accommodate 18 characters input.



Step 4: Input sample ID, if needed. Press the circle first, and then use on-screen keyboard or USB barcode scanner to scan it if 1-D barcode is available. Sample ID can accommodate 18 characters input. Once completed, press [Next] to continue.

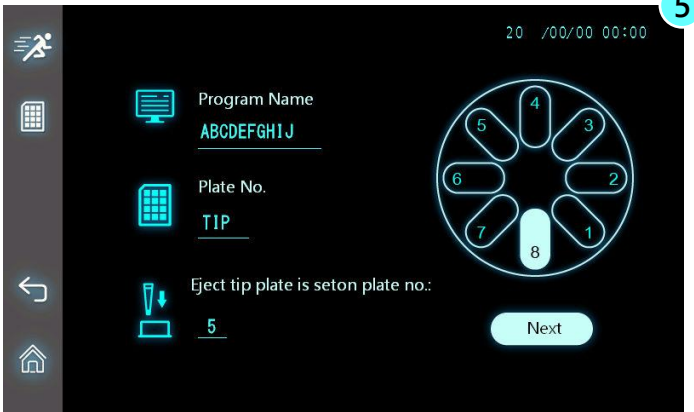
- ❑ Pos. : Hole position on the plate
- ❑ No. : Total number of Sample ID
- ❑ ID : Name of Sample ID

=Remark=

MPure-96 aNAP System is only compatible with USB-type infrared barcode scanner.

4. User Interface Guidelines

Run (Execution of Extraction Program)



Step 5: Follow the guide on screen to place the reagent plate onto the correct plate accordingly. Please note that the priority is the spin tips combo pack, please place the NO.8 plate first.

=Remark=

Eject tip plate can be assigned to any of the NO.2 to NO.5 plate according to user's needs.



Step 6: Ready to run the extraction program. Click [Yes] to begin the operation. If you choose [No], the process will go back to previous page.

4. User Interface Guidelines

During the Run

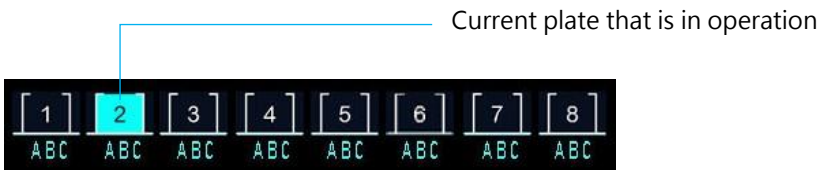
Understanding of every symbol in the operation process is important. It helps you to clearly know the status of nucleic acid extraction.



 Pause: Cease an extraction program temporarily



▲ From plate 1 to plate 6, name of buffer varies from kits to kits



- ❑ Start time: Time of extraction program started
- ❑ Est. End time: Estimated time the extraction program coming to the end
- ❑ Speed: Spin speed
- ❑ Volume: Liquid volume in the working well

4. User Interface Guidelines

During the Run

Understanding of every symbol in the operation process is important. It helps you to clearly know the status of nucleic acid extraction.

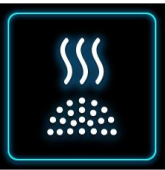


Mixing



Beads collection

In the course of beads collection, if you click Pause button or Stop button, the instrument will not act immediately until the collection process comes to the end.



Vaporing EtOH

Before entering the Elute process, the protocol will work on Vapor process to evaporate EtOH. Poor evaporation of EtOH will influence the qPCR result significantly.



Program completed

When a run comes to the end, the Buzzer will sound for a few seconds.



Resume a run

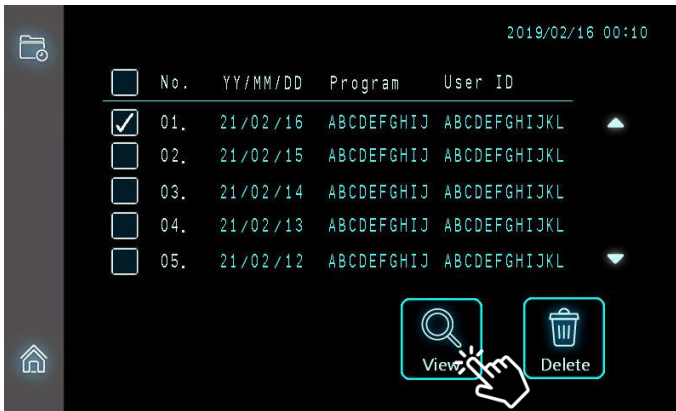
During the operation, if you click Pause to temporarily stop the program, you can click Resume to continue the operation.

4. User Interface Guidelines

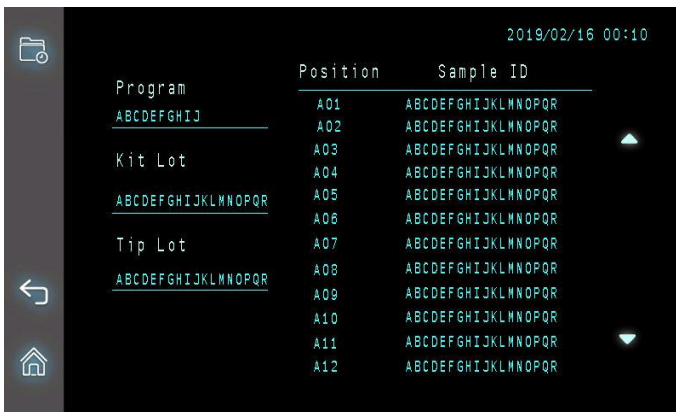
Report (Export extraction records)



Report function enables you to view experimental records and the user that performed the experiment.



- ▲ MPure-96 aNAP System is designed to store the last 15 experimental records.



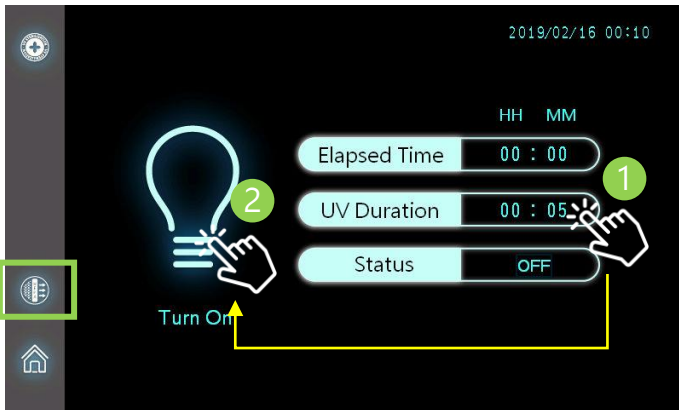
- ▲ By clicking View button, you can navigate the detail of sample ID.

4. User Interface Guidelines

UV / HEPA



It is highly advised to use UV to clean the instrument after each experiment.



▲ Set UV lighting time first, and then press icon to start

- ❑ Step 1: Set lighting time by clicking UV duration field
- ❑ Step 2: Click the bulb icon to start turning on the UV light



Click HEPA icon to switch to HEPA function
Similar to UV, set HEPA time first, then click the icon to start

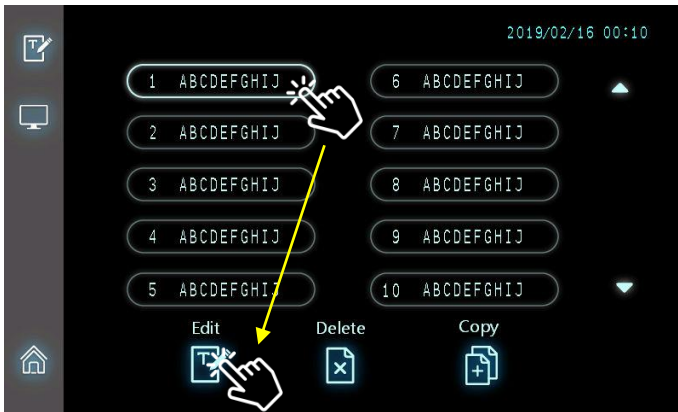
⚠ Before turning on the UV light, please close the cover door of turntable. The recommended lighting time is at least 30min.

4. User Interface Guidelines

Program (Edit / Delete / Copy / Add a Program)



Program function enables you to customize the extraction protocol.

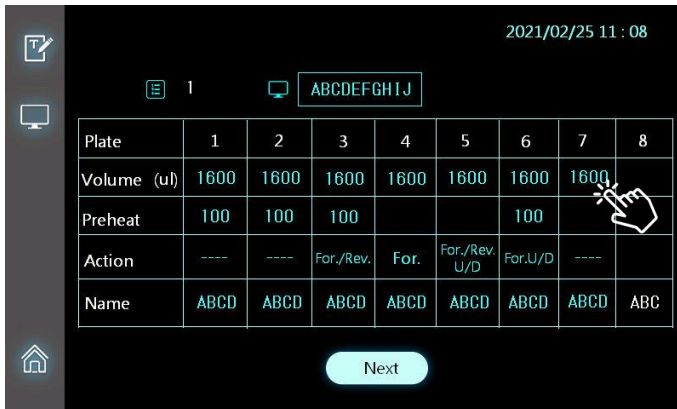


▲ Click a protocol first, then choose a function to proceed

	To adjust the setting of existing protocols, which contains well volume, preheat temp, spin direction, extraction steps, time of mixing and collection.
	To add a new program, you need to use Copy to duplicate a program first, and then use Edit to write the protocol.
	To delete an unused program (to save the memory space). MPure-96 aNAP System can store up to 25 programs, each program may have 35 steps in total.

4. User Interface Guidelines

Edit a Program



▲ Click the above interface to change the setting.

Program	Name of program, up to 10 characters
Plate	No. of plate
Vol.(µl)	Total processing volume
Preheat (°C)	Heating a plate to a particular temperature before mixing step. Preheat temperature may range from 25°C to 100°C.
Action	Way of binding during the mixing process For.: Forward For./Rev.: Forward and reverse (spin direction will change regularly) For. U/D: Forward with up-and-down move For./Rev. U/D: Forward and reverse with up-and-down move
Name	Name of plate, which may contain the following buffer: LB: Lysis buffer WB1: Wash buffer 1 WB2: Wash buffer 2 MB: Magnetic beads EB: Elute buffer



Please note that the name of plate 8 is unalterable.

4. User Interface Guidelines

Edit a Program



▲ Touch the screen to edit the protocol.

Step	Extraction step MPure-96 aNAP System supports up to 35 steps in a program
Plate	No. of plate
Temp	Please set to the appropriate assay temperature before running the test (as recommended by the reagent kit protocol) Protocol temperature and preheat temperature are different. When executing a program, preheat temperature will be achieved first, followed by the protocol temperature when the target plate is about to be used.
Mixing	Mixing time may range from 0 to 999.9 mins
Spin	Mixing (spinning) speed may range from 500 to 3000 rpm
Collect	Time of beads collection may range from 0 to 999.9 sec
Vapor	Time of EtOH evaporation may range from 0 to 999.9 mins
Pause	To automatically pause the assay after the current step is completed. If additional reagents need to be added during the extraction process, this step may be used.



Please note that name of plate 1 and plate 8 is unalterable.

4. User Interface Guidelines

Add a new program

1. Touch one of standard programs button.
2. Press Copy button and fill in the blank space.
3. Choose the new program and press Edit button to set the relevant parameters.



- ▲ Touch one of the standard programs button and press Copy button.

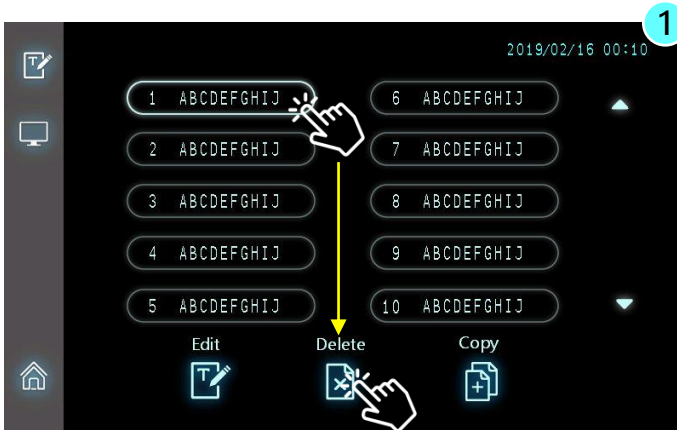


- ▲ Confirm the new program number. The keyboard will appear after pressing the destination number. Once completed, click Yes to add the program.

4. User Interface Guidelines

Deleting a Program

To delete a program, touch the program that is no longer needed, then click on Delete icon to execute.



▲ Press the unwanted program, then press the Delete icon



▲ Click Yes to confirm the deletion

4. User Interface Guidelines

Setting



Setting is designed for user to change basic system parameter setting, such as display language, time info and barcode scanner management.



- ▲ Admin user is allowed to access Language, Time, and Barcode functions.



Language

MPure-96 aNAP System supports multi-language display, including English, Traditional Chinese, Simple Chinese, Korean and Spanish.



Time

When a new instrument is delivered, please adjust to the right time zone.



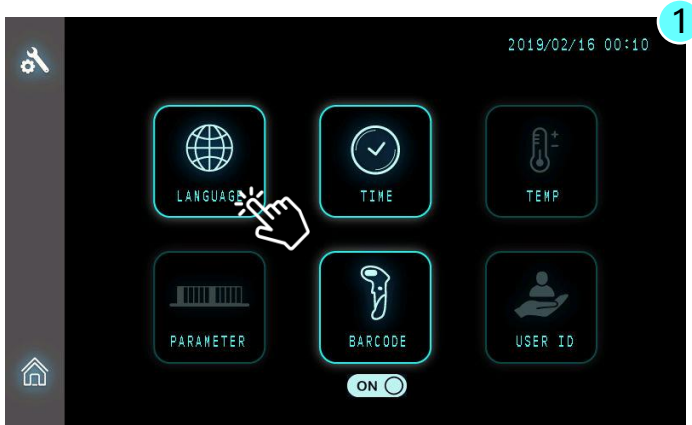
Barcode

To use the barcode scanner to enter the related information, e.g. lot number, sample ID.

4. User Interface Guidelines

Setting (Language)

MPure-96 aNAP System supports multi-language operating interface including English, Traditional Chinese, Simplified Chinese, Korean and Spanish.



▲ Press Language icon to access

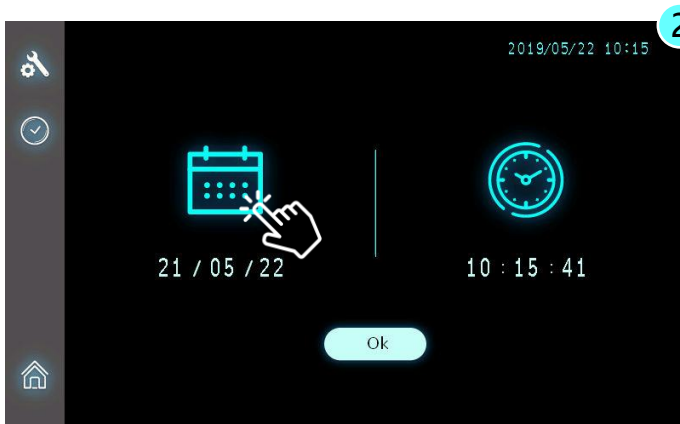
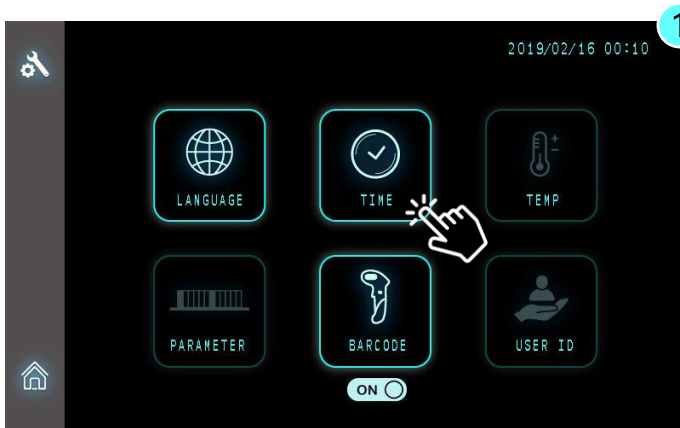


▲ Choose the appropriate language

4. User Interface Guidelines

Setting (Time)

To set the correct time for the system (according to the local time)



- ▲ Click the appropriate icon to set the Date and Time for the system; once set up is done, press [OK] to apply the latest setting.

4. User Interface Guidelines

Setting (Barcode)

MPure-96 aNAP System is only compatible with the USB-type infrared barcode scanner.



▲ Click the icon to turn the barcode scanner ON/OFF

⚠ If barcode scanner is set to OFF, even if the USB-type barcode scanner is connected to MPure-96 aNAP System, scanned data will not appear.

5. Technical Support

MP Biomedicals Asia Pacific Pte Ltd provide post-sales service and technical support. In case of any questions, please try to contact our authorized distributor nearest to you or our company for more help.

If there is a need to contact us, you can call our rep number at +65 6775 0008 or email us at enquiry_ap@mpbio.com for further assistance.

To efficiently solve the problems and answer your questions, please provide us your instrument serial number when you talk to our technician personnel. Thanks for your cooperation.

6. Cleaning and Maintenance

- It is important to clean the device after every use. If there is a spillage of sample or reagent, it is important to clean the device immediately to avoid damage or contamination to the instrument.
- Wear gloves and appropriate personal protective equipment. If the device is used with biohazardous materials, dispose of any cleaning materials used in accordance to your institutional guidelines.
- If the device was run without covering the magnetic rod, the magnetic rod needs to be cleaned immediately.
- To clean the magnetic rod, wipe it with a soft cloth dampened with pure water. Do not use alcohol or any other solvent.
- If the magnetic rod cannot be cleaned, please contact MP Biomedicals Asia Pacific Pte Ltd for technical assistance.

7. Disposal

To dispose the instrument, the relevant legal regulations have to be observed. As disposal regulations may differ from country to country, please contact your local supplier if necessary. Please follow your institutional and country-specific requirements to handle the disposal of accessories. The device must be decontaminated prior to disposal.

8. Appendix

Fuse Replacement for MPure-96 aNAP System

Fuse Specification :

- UL recognized component
- Rated 5A, 250VAC x2pcs
- UFE, Size 5.2Φ x 20mm

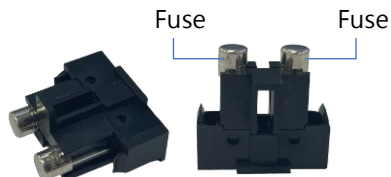
Safety precautions for replacing the fuse

The following safety precautions will prevent injury to personnel and damage to equipment. These are the MINIMUM safety precautions for replacing the fuse.

1. Ensure that the power is off, and the circuit is discharged before replacing a fuse.
2. Use an identical replacement fuse.
3. Remove any corrosion from the fuse holder before replacing with a new one.
4. Be certain that the fuse fits the fuse holder properly.

How to fix the fuse

1. Turn the power off and discharge the circuit before removing a blown fuse.
2. Use a fuse puller (an insulated tool) when you remove a fuse from a clip-type fuse holder.
3. Remember, always replace the faulty fuse with the one equal in size, amperage, rating and type.
4. Turn the main power switch back on and see if electricity is restored.

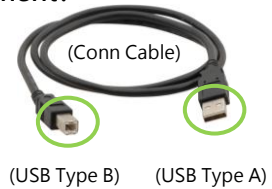


8. Appendix

How to use MPure-96 aNAP System Utility Program to update extraction protocols in the instrument?

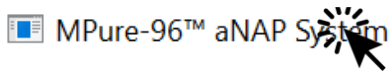
Connect the instrument to your PC

Power on the instrument, then use the cable (USB A to B) to link the instrument to your PC (Type A to PC, Type B to instrument).

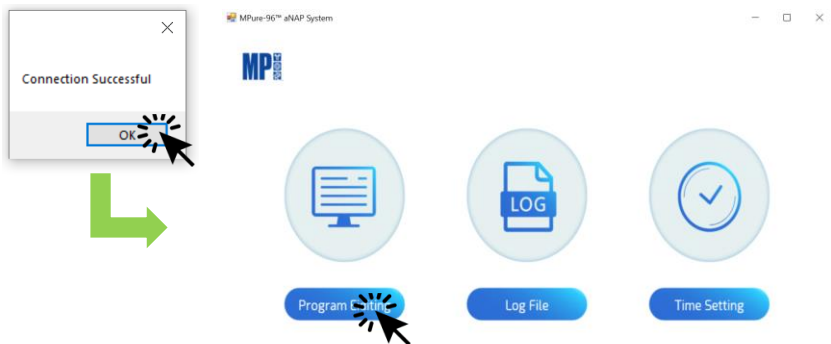


Execute the utility program "MPure-96 aNAP System"

A utility program will be sent to you via email attachment or a USB thumb drive.



Upon clicking on the utility program, the program will automatically detect the connection between the instrument and PC. If successfully connected, a pop-out window will appear.



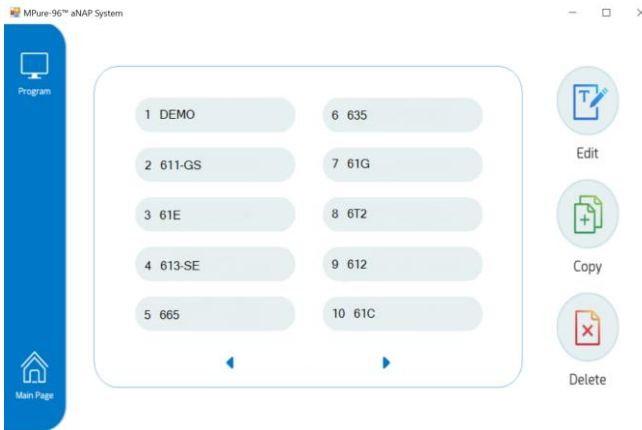
V1.0.2.102

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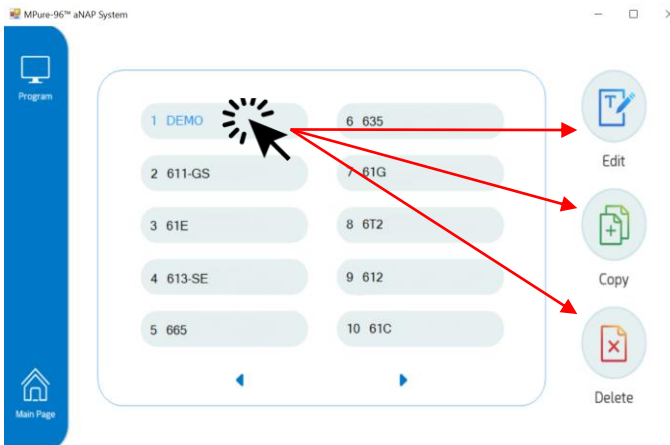
How to use MPure-96 aNAP System Utility Program to update extraction protocols in the instrument?

Program Editing

After connection, the utility program will automatically read all protocols stored in the instrument.



Select the protocol first and choose the function to be performed. The selected protocol will be marked in Blue.

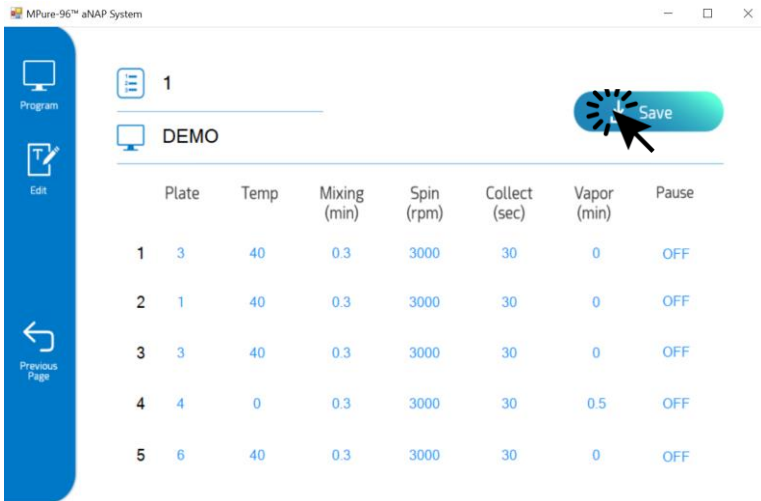


8. Appendix

How to use MPure-96 aNAP System Utility Program to update extraction protocols in the instrument?

Remember to SAVE settings

After adjustment of protocol contents, please BE SURE to click "Save" to get most updated contents applied. Once you click "Save", the utility program will automatically update the protocol contents in the instrument.



The screenshot displays the MPure-96 aNAP System Utility Program interface. On the left, there is a blue sidebar with icons for 'Program', 'Edit', and 'Previous Page'. The main area shows a list of protocols under the heading '1 DEMO'. A table lists the protocols with columns for Plate, Temp, Mixing (min), Spin (rpm), Collect (sec), Vapor (min), and Pause. A 'Save' button is highlighted with a mouse cursor.

	Plate	Temp	Mixing (min)	Spin (rpm)	Collect (sec)	Vapor (min)	Pause
1	3	40	0.3	3000	30	0	OFF
2	1	40	0.3	3000	30	0	OFF
3	3	40	0.3	3000	30	0	OFF
4	4	0	0.3	3000	30	0.5	OFF
5	6	40	0.3	3000	30	0	OFF