

## **Instruction Manual**

## **Automated Nucleic Acid Purification System**

# ZiXpress 64 Dx system



Catalog No.: 112C2 Rev. Date: 20.06.2024

Manual No. IFU-ZP01-112C2

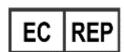
Version: 1.6



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## **TABLE OF CONTENTS**

	Page #
1. Introduction	2
1.1 About <b>ZiXpress 64 Dx system</b>	2
1.2 Technology Introduction	2
1.3 Safety Information	3
1.4 Important Instructions	4
2. Intended Use & Specifications	6
2.1 Intended Use	6
2.2 Specifications	6
2.3 Environment Requirements	6
2.4 Dimension and Weight	7
3. Instrument Overview	8
4. Installation	10
4.1 Composition of the <b>ZiXpress 64 Dx system</b>	10
4.2 Operating Environment / Conditions	12
4.3 Initial Setting	14
4.4 Notes for Transportation / Shipping	16
4.5 Functional Descriptions	17
5. Getting Started	20
5.1 Preparation	20
5.2 Operation	21
6. Cleaning & Maintenance	29
7. Troubleshooting	30
8. Contact Zinexts Life Science	31
9. Warranty Information	32



### INTRODUCTION

About ZiXpress 64 Dx system Thank you for purchasing ZiXpress 64 Dx system for your laboratory. This guide contains important information regarding the safe use of the ZiXpress 64 Dx system. Please read this manual carefully, before starting to operate the instrument for the first time, especially the Safety Information.

If there is any question about how to install or operate it, please contact our certified representatives / agents or email our technical support center (<a href="mailto:support@zinexts.com">support@zinexts.com</a>).

## **Technology Introduction**

#### **Principle**

ZiXpress 64 Dx system utilizes the unique characteristic of magnetic beads bonding with nucleic acid under a specific environment to purify the target nucleic acid samples. The purification protocol includes four basic steps: sample lysis, nucleic acid binding, wash and elution. Using ZiXpress 64 Dx system, the majority of nucleic acid purification processes will be done automatically inside of ZiXpress 64 Dx system, it dramatically reduce the human error and use the lab force much more efficiently.

During the purification process, a 8-link rod comb, which is attached to the tip comb rack, moves up and down repeatedly to mix the reagents by creating turbulences in the 96 Deep-Well Plate. When the permanent magnetic rods are insert into the rod combs, the assembly lowers into the solution to collect the magnetic beads at the bottom of the comb. The whole assembly then move to a different Well and the magnetic beads are then release by retracting the permanent magnetic rods. ZiXpress 64 Dx system equips an exclusive temperature control module that perfectly connect with the 96 Deep-Well Plate to enhance the lysis and elution efficiency. ZiXpress 64 Dx system purifies DNA and RNA from a variety of samples which are essential and broadly used in molecular biology, genetic screening, sequencing, food safety, forensic, etc.

#### **Applications**





## **Safety Information**

#### **Attention**

This chapter presents safety information that you need to be familiar with and strictly follow before you operate, maintain or service this instrument. If you failed to follow the safety information, or neglected the warning in this user manual, it might cause damage to the instrument. Please note that operating the instrument outside its intended use might lead to personnel injury and material loss.

For your safety and those of others, follow the guidelines provided in the following pages concerning the use of the ZiXpress 64 Dx system.

**ZINEXTS LIFE SCIENCE CORP.** will not be held liable for any errors, damage, or other unexpected events resulting from miscarried following safety guideline.

#### Safety Symbols & Labels

Safety

The meanings of safety precaution marks are as follows:

Warning

"WARNING" indicates a dangerous condition that may lead to death or serious injury.

**Biohazard** 



This symbol is used to indicate that certain precautions must be taken when working with potentially infectious material.

Caution



This symbol is used to indicate that non-compliance with instructions or procedures may lead to physical injury or even death or could cause damage to the instrument.

**Important** 

"IMPORTANT" shows the important notes for usage, as well as prohibited actions.

Note

"**NOTE**" indicates the notes, procedures that should be obeyed and supplementary information for use.

Hot surface



This symbol is used to label potentially hot instrument surfaces.



## **Important Instructions**

#### **Read First!**

For your safety and those of others, follow carefully the guidelines provided in the following pages concerning the use of the **ZiXpress 64 Dx system**.

#### **About Instrument**

#### Warning:

- Make sure the instrument is installed in a well ventilated environment and away from any water source
- Make sure the power source is matching the rating, labelled on the instrument
- Turn off, remove the power cord and cover the instrument before a period of non-use or any transportation
- The power cord is one of the emergency power supply control, please do not place the power cord in a location hard to reach
- If you heard or smelled anything during the operation, please immediately disconnect the power and contact your local representative / agent



#### Caution:

- Never attempt to remodel the **ZiXpress 64 Dx system** without the manufacturer's permission
- Do not place or drop objects on the **ZiXpress 64 Dx system**. Also, refrain from bumping or knocking it.
- Repairs to the ZiXpress 64 Dx system should be only performed by representatives / agents that are specifically authorized, and with original spare parts that are certified by the ZINEXTS LIFE SCIENCE CORP.
- If the equipment is used in a manner not specified by the manufacturer, the protection provided by the equipment may be impaired.

#### **About Reagent Kits**



#### Caution:

- When handling any of the kits, refer to the respective handbook.
- Reagents in each kit should be handled by observing the

## ZiXpress



- safety information and precautions regarding the kit.
- Extraction should be performed in an appropriate laboratory or workspace.
- Note:
- Reagent kits will be generally not supplied with the ZiXpress 64 Dx system instrument. Please select your desired Reagent Kits and order them separately.

#### **About Samples**



#### Biohazard:

Always wear appropriate gloves, a mask, and safety goggles etc. when handling any infectious samples.

# About Infectious Wastes

When handling or disposing of infectious materials, follow the laboratory guideline or the law regarding infectious waste to perform proper incineration, fusion, sterilization, and/or disinfection.

When you use a third party to dispose of it, outsource this work an operator licensed to handle medical waste subject to special control, and give them the manifest of the medical waste at the same time.





## **INTENDED USE & SPECIFICATIONS**

Intended Use This product and any of its accessories is for the extended

use of nucleic acid extraction, purification isolation in molecular biology research laboratories and clinical

diagnosis laboratories.

## **Specifications**

**Product** 

Model Name ZiXpress 64 Dx system
Specifications

**Instrument Type** Bench-top automated Nucleic

**Acid Extractor** 

Sample Processing 1 - 64 samples per batch
Consumable 2.2 ml 96 Deep-Well Plate

**Collection Efficiency** 100 copies/mL, positive detecting

rates > 95%

Inter-Well Purification CV < 3%

Accuracy

Heat Block Temperature Room temperature to 80 °C

Mixing Speed 3 adjustable speeds

Reagent Type Magnetic Beads

Control Interface 7-inch touch panel

Protocol 4 preset protocols;

16 user-defined protocols

**Decontamination**Built-in UV light **Fuse**F3.15A 250V

## **Environment Requirements**

**Operating Environment temperature**: 10 - 40°C

Relative humidity: < 80%

Power rating: AC 100-240V, 400VA, UPS

optional

**Storage** Environment temperature: -20 - 55°C

**Relative humidity:**  $\leq 80\%$ 





<u>Transportation</u> Environment temperature: -20 - 55°C

Relative humidity: < 80%

**Dimension & Weight** 

**Dimensions:** 722 x 360 x 490 mm

Weight: 38 kg

**EMC** EN61326-1

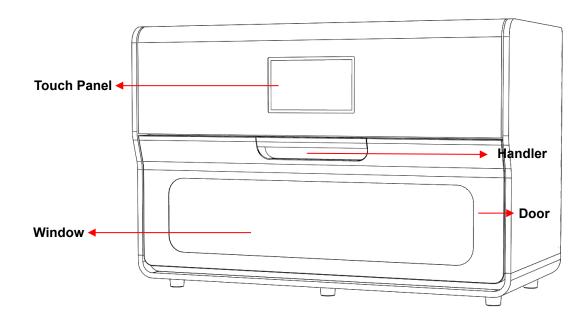
**Safety** EN60101-1, EN60101-2



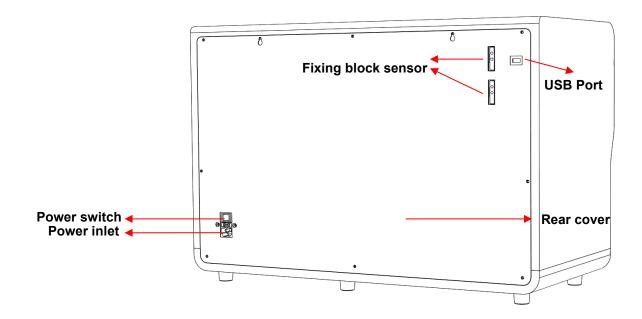


## **INSTRUMENT OVERVIEW**

## Front view



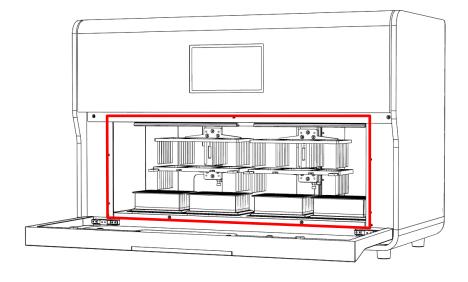
## **Rear view**



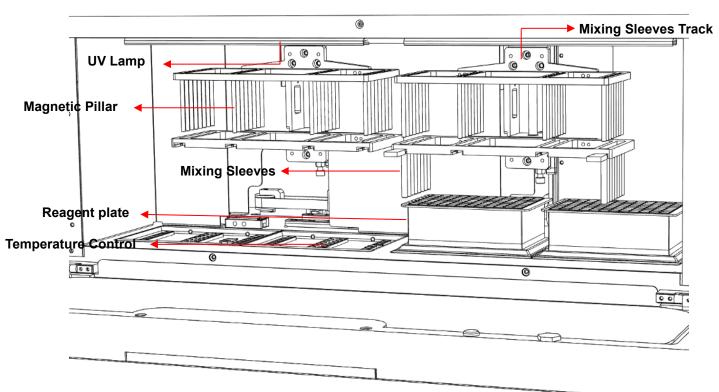




## Inside view









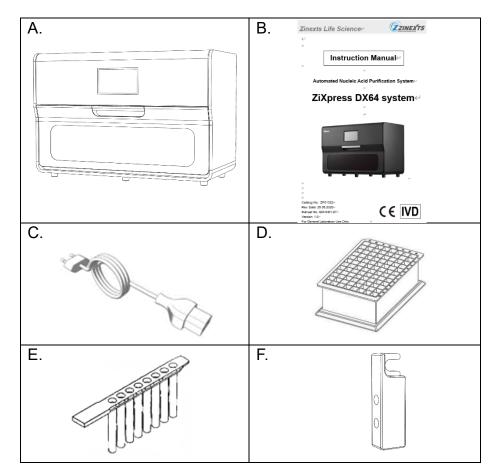
## **INSTALLATION**

## Composition of the ZiXpress 64 Dx system

#### **Packaging**

Check that the following parts are included in the package. Contact your local representative if you notice any missing part(s).

#### **Instrument**



#### Quantity:

A.	Instrument	x1	B.	User Manual	<b>x</b> 1
C.	Power Cord	x1	D.	2.2ml Deepwell 96 Plate	x4
E.	8-Tip Comb	x4	F.	Fixing block	x1

Please make sure all components are free of damages as soon as you get the system. If any damage is found, please contact your local representative for support.

#### Note:

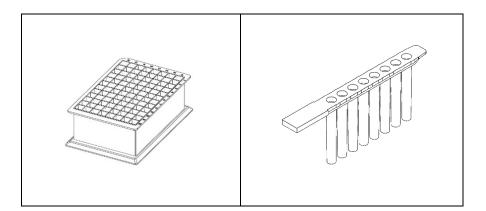
Zinexts Life Science's global warranty does not cover





#### **Extraction Kits**

transportation damages or improper handling and operation.



#### Quantity:

A. 2.2ml Deepwell 96 Plate x12 (plates)

B. 8-Tip Comb x24 (pcs)

#### Note:

Extraction kits have to be purchased separately. Please contact your local representative / agent for further information.

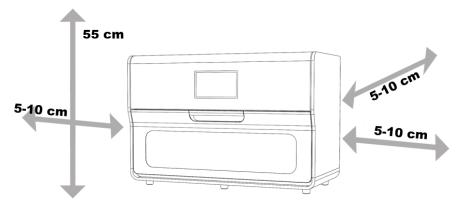
The contents of extraction kits are various. Refer to the Reagent Kit Handbook, enclosed in the reagent box, for further details.





## **Operating Environment / Conditions**

ZiXpress 64 Dx system Operating Environment Use the **ZiXpress 64 Dx system system** in an environment that meets the following conditions:



- The space for the allocation of **ZiXpress 64 Dx system** must secure 5-10 cm distance from the instrument to the wall.
- A location where power can be provided.
- A location with a temperature between 10 40°C, and a humidity of < 80%RH (non-condensing)</li>
- A location with a stable temperature (Warming a cold room suddenly or moving the instrument from a room with low temperature to a warm room may cause condensation inside the device, that might resulting in abnormal extraction!)
- A location that is flat and stable, without external vibrations
- A location away from direct sunlight (If necessary, block the sunlight by closing curtains or blinds)
- A location which is well ventilated and not dusty
- A location far from objects which generate strong magnetic fields, as motors, transformers, TV, audio speakers, magnets, etc. (Bringing the ZiXpress 64 Dx system close to any type of magnetic field may cause a malfunction.)

#### Warning:





Do not use the **ZiXpress 64 Dx system** in an environment where it is wet or can be splashed with water. It may cause a device failure, fire, or electric shock.

When relocating the **ZiXpress64 DX system**, disconnect the plug from the outlet first. If the power cable is damaged, this may cause a device failure, fire, injury, or electric shock.



#### Caution:

Do not use the **ZiXpress 64 Dx system** in an unstable place such as a slanted surface or a place subject to vibrations. It may cause injury or device failure.

Do not use the **ZiXpress 64 Dx system** in direct sunlight or close to a heating device. It may shorten the life of the **ZiXpress 64 Dx system**, or cause trouble.

## ZiXpress 64 Dx system Operating Conditions

Items		Conditions
Temperature (°C)	During operation	10 - 40
Humidity (RH)	During operation	< 80%
Max. wet bulb temperature (°C)	During operation	29 (non-
		condensing)
	During down time	29 (non-
		condensing)
Temperature gradie	12 or less	
Temperature gradient (°C/hr)		(non-condensing)
Humidity gradient (	30 or less	
Humidity gradient (RH/day)		(non-condensing)
Altitude, operating (	1600 or less	





## **Initial Setting**

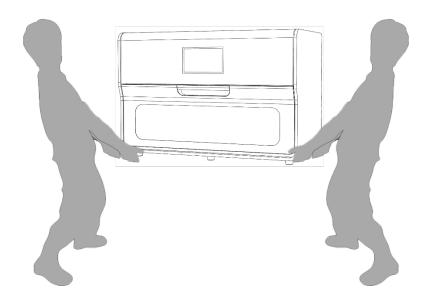
## ZiXpress 64 Dx system Settings

(1) Open the packing box and take out the instrument and related accessories.

#### Important:

The **ZiXpress 64 Dx system** has a weight of more than 25kgs.

It should be lift and moved by two persons. Hold the moving handler of the instrument from two sides to move it out of the transportation box.



Do not hold the door or the plastic outer covering while transporting the instrument.



#### Caution:

Improper handling of the movement of the **ZiXpress 64 Dx system** will lead to instrument damages.

For correct and safe use of the **ZiXpress 64 Dx system**, install it in a location that is close to electrical outlet and has enough space for installation and operation from the main switch.

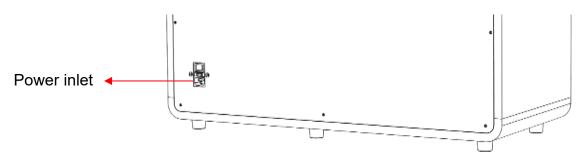
#### Important:



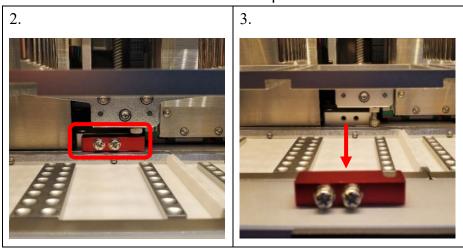


Keep the shipping box and fixing block, they are needed for transporting the **ZiXpress 64 Dx system**.

(2) Connect power cord to the instrument.

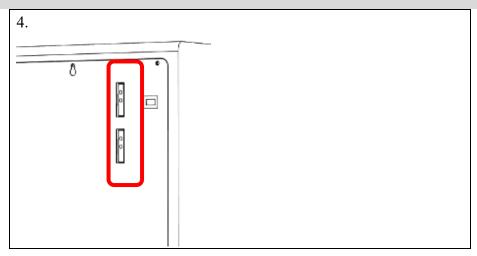


- (3) Remove the Fixing Block inside the instrument and place it in the Fixing Block Sensor Spot, following the guideline below:
  - 1. Plug in the power cord to the electric outlet
  - 2. Use a Phillips head screwdriver to release the red screws
  - 3. Remove the Fixing Block
  - 4. Place the Fixing Block in the upper part of the back of the instrument, in the Fixing Block Sensor Spot. Without performing this step, the sensor will not allow the instrument to operate.













## **Notes for Transportation / Shipping**

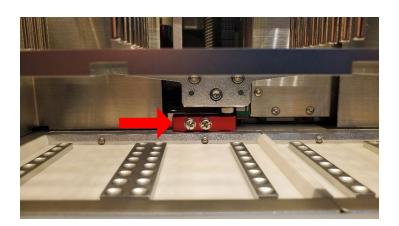
ZiXpress 64 Dx system Transportation When transporting / shipping the **ZiXpress 64 Dx system** to a new location, perform the following tasks:

#### 1. Insert Fixing Block

(1) Put the Fixing Block to fix the Magnetic Pillar frame.



(2) Install the Fixing Block



- (3) Use Phillips head screwdriver for the red screw
- (4) Close the door
- **2.** Disconnect the plug from the outlet and remove all attached parts (Power Cord) from the instrument.

#### Warning:

If the power cable is damaged, this may cause a device failure, fire, injury, or electric shock.

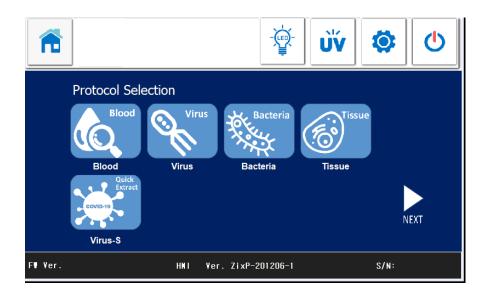


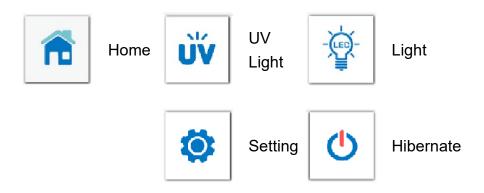


3. Pack the **ZiXpress 64 Dx system** instrument, including accessories in its original shipping box or some other equivalent parcel.

## **Functional Descriptions**

#### Main Menu





#### **LED Light**

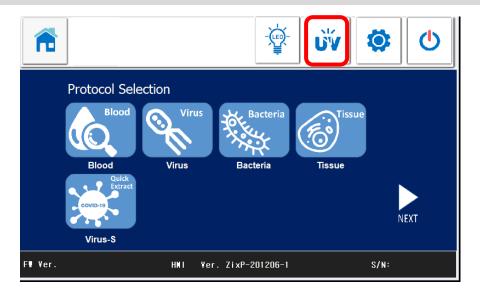
After pressing button, the icon will change into the instrument's light will turn off.

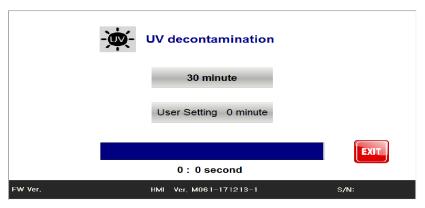
#### **UV Light**

After pressing button, Press <30 minutes> to start a default 30 minutes decontamination process or press <User setting> to set a desired time.



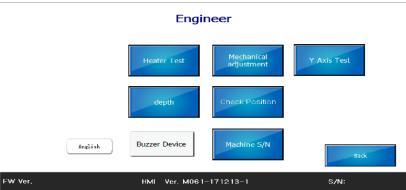






#### <u>Settings</u>

After pressing button, you can do the instrument adjustment / check / test.



#### Sleeping mode

After pressing button, the instrument will get into the "sleeping mode". If you want to wake up the instrument, touch the screen again.

#### Note:

Before getting into the sleeping mode, please press button first to turn off the LED light.









## **GETTING STARTED**

## **Preparation**



#### Biohazard:

Always wear appropriate gloves, a mask, and safety goggles during any biohazardous operations in extraction process. Even when touching the device after any operation with a biohazard risk, wear appropriate gloves and a mask since the device may be contaminated.

#### Important:

Before starting the extraction, put on appropriate gloves, a mask, and safety goggles if required by the operation. Be careful not to contaminate the sample material with sweat, saliva, etc., within the sample preparation steps.

The following items are required for extraction operation:

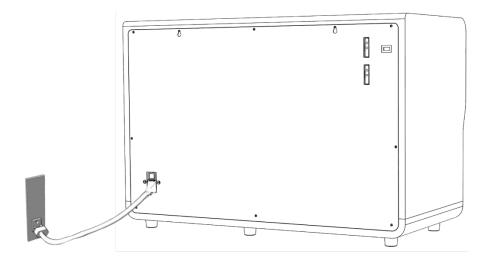
- Gloves
- Mask
- Safety Goggles
- Extraction Kit Handbook
  - + Reagent Plates and Mixing Sleeves (Provided in Reagent Kits)



## **Operation**

### Operation Procedure

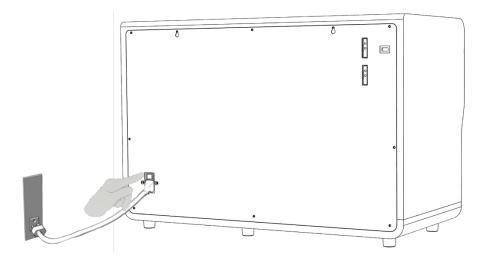
- (1) Make sure that the power cable is securely connected to the **ZiXpress 64 Dx system**.
- (2) Connect the plug of the power cable to the outlet.



(3) Turn the power switch on and wait for the Touch Panel to turn on and displaying "ZiXpress 64 Dx system initializing". The system will process self-testing, and then go to steady mode.

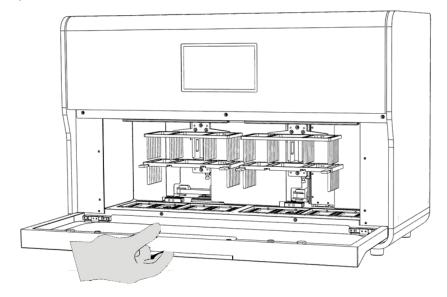
#### Note:

The system will block main functions before the completion of self-testing process.





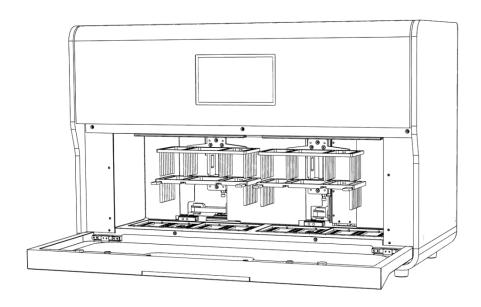
(4) Open the door.



(5) Set up the mixing sleeves on the mixing sleeve track.



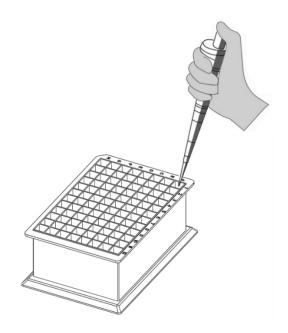
Make sure the sleeves have entered completely!



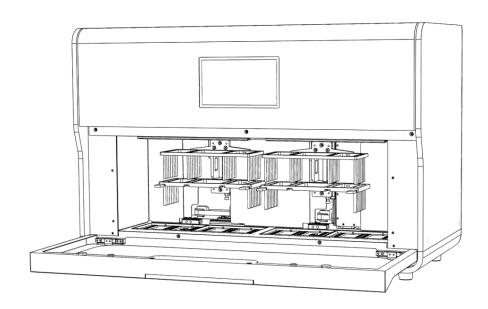




**(6)** Remove carefully the aluminum foil sealing membrane on the reagent plate. Add samples to Well 1 and Well 7.



(7) Place the reagent plate(s) into the instrument.



(8) Close the door before starting the instrument!



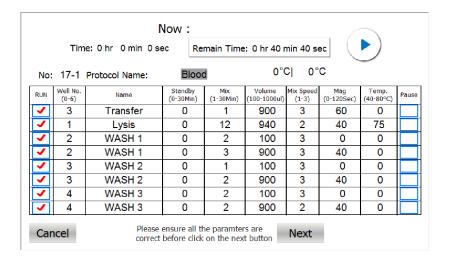


#### (9) Select protocol



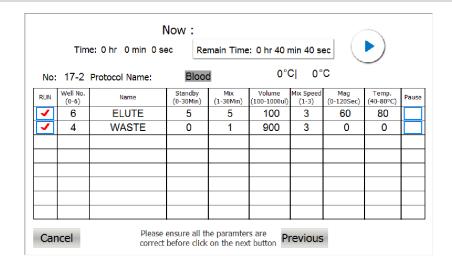
Select the pre-installed protocols.

This figure is the standard protocol in **ZiXpress 64 Dx** system:







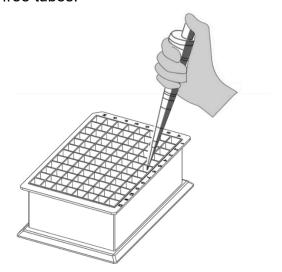


(10) Press to start the extraction process.

#### Note:

The process time and remaining process time will be displayed on the screen.

(11) While the extraction procedure is finished, transfer the extracted products located at Well 6 and Well 12 into nuclease-free tubes.



#### Note:

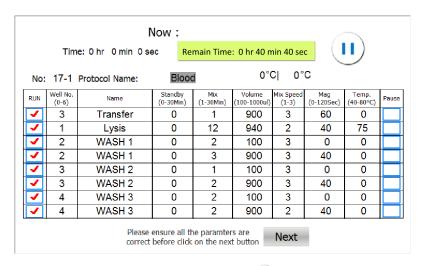
Store the purified nucleic acid at 4°C (short-term, less than 10 days) or aliquot and store at -70°C (long-term) before performing any downstream analysis.



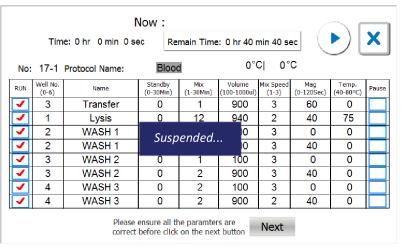
- (12) Discard the used consumables into biohazard waste.
- (13) If you are not using the instrument in short-term, press
  - button to get into "sleeping mode".

# Pause & Restart Procedures

(1) If you want to stop / pause the procedure during the operation, please press button.



(2) To restart the procedure, press buttor

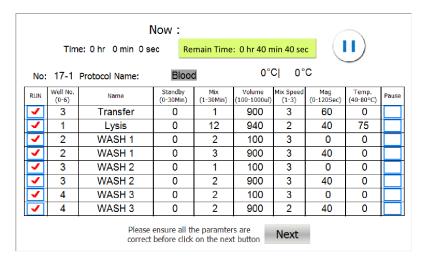


**Stop the Process** 

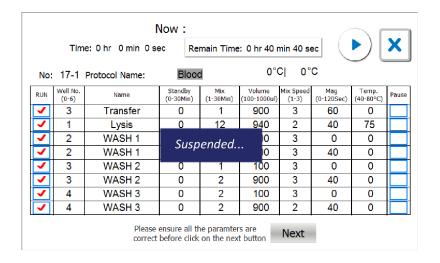
(1) During the process, if you want to stop/pause the



procedure, please press button.



(2) To stop the process, press button,



(3) Press <Yes>, then the instrument will do the initializing.







# After Extraction Process

(1) Transfer the extracted products located at Well 6 and Well 12 into nuclease-free tubes.

#### Note:

You can apply quality checking, do downstream study or storage them as what you expect.

- (2) Remove the used plastic disposables from the instrument and dispose them.
- (3) Follow the suggested Maintenance Routines.

## **CLEANING & MAINTENANCE**

### ZiXpress 64 Dx system Cleaning

- After every operation of purification, please properly remove used plastic consumables.
- At the end of every working day, please wipe clean any fluid that remains on the inside and outside of the instrument with damp cloth, use 75% ethanol and UV light to disinfect the surface.

#### Note:

Press button to get into the UV light mode, and select the disinfecting time.

Clean the instrument body by removing dust gently with a dry, soft cloth. If the outside of the ZiXpress 64 Dx system is heavily soiled, or if any samples that may cause infection are adhered to the outside of the ZiXpress 64 Dx system, wipe with a soft paper tissue, soaked with 75% ethanol.

## ZiXpress 64 Dx system Maintenance

Two types of maintenance have to be performed on the **ZiXpress64 Dx system** instrument, for details on each type of maintenance, see the list below:





Maintenance Type	Performed by	Schedule
Routine		
Cleaning instrument	User	Bi-weekly
body (outside)		
Cleaning instrument		
body (inside)	User	Daily
Preventive	Service Engineer	Annually





## **TROUBLESHOOTING**

Problem	Cause	Solution
	Power disconnected	Check AC power cord connections at both ends. Or use the correct cords.
No display after turned on the power switch.	Blown fuse	Replace the fuse
	Malfunction power switch	Replace the switch
	Others	Contact your local representative / agent
Touch Panel turns on when the power is on but the self-testing program does not run	Forget to remove the fixing block from instrument	Turn off the instrument and remove the fixing block.
	Technical problem	Contact your local representative / agent
The beeping alarm sound or "System error" message on the display	Self-check error	Contact your local representative / agent
Display error	Firmware installing failed	Contact your local representative / agent
	Display connection failed	Contact your local representative / agent
Cannot enter on the Touch Panel	Touch Panel malfunction	Contact your local representative / agent





## **CONTACT ZINEXTS LIFE SCIENCE**

**Company** Legal Name: **Zinexts Life Science Corp.** 

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Product of Origin: Taiwan (R.O.C.)

**Technical Support Zinexts Life Science - Service Center** 

For technical problem and instrument maintenance please contact our service center: <a href="maintenance">support@zinexts.com</a>

Before contacting the Technical Support, refer to "Troubleshooting" to check the problems. If the issue cannot be solved, contact your local representative / agent, or the Zinexts Life Science - Service Center.





## **WARRANTY INFORMATION**

### Product Warranty

- 1. The general warranty period for the instrument is 12 months from the delivery day of the product.
- 2. The warranty does not cover any problem that is caused by
  - (i) Conditions, malfunctions or damage not resulting from defects in material or workmanship.
  - (ii) Any consumption spare parts including fuses, light bulbs, UV lights, LED lighting sets.
- 3. For further information about the Warranty Policy and Extended Warranty offers, please contact your local representative / agent, or visit our website <a href="https://www.zinexts.com">www.zinexts.com</a>.

# ZiXpress



## **Zinexts Life Science Corp.**

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## **Revision History**

VER	Location of changes	Essence of changes
1.6	Upper right of the page	2024.10.01 Change company logo