

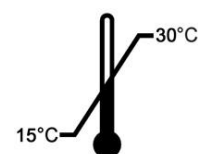
ExiPrep™48

Fully Automated Nucleic Acid Extraction System



REF

A-5150-1



Research Use Only

ExiPrep™48

Fully Automated Nucleic Acid Extraction System

User's Guide

Version No.: 1.0 (2017-08)

Please read all the information in booklet before using the instrument



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U.S. and Canadian Safety Standards

Standard for Electrical instrument for measurement, control and laboratory use;

Part1: General Requirements,

UL 61010-1, 2nd Ed, Rev., October 28, 2008&CAN/CSA-C22. 2 No. 61010-1-04(R2009)

Part 2: Particular Requirements for Automatic and Semi-Automatic Laboratory Instrument for Analysis and Other Purposes,

CAN/CSA-C22. 2 No. 61010-2-081:04

Part 2-010: Particular Requirements for Laboratory Instrument for the Heating of Materials

CAN/CSA-C22.2 NO. 61010-2-010-04

Part 2: Particular requirements for in vitro diagnostic (IVD) medical instrument,

CAN/CSA-C22. 2 No. 61010-2-101:04

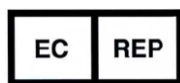


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PRODUCT

: ExiPrep™48
Fully Automated Nucleic Acid Extraction System

CATALOG NO.



A-5150-1

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I. Before Starting

Thank you for the purchasing a product from Bioneer Corp.

We, at Bioneer Corp. always try our best to offer a satisfactory experience to customers.

This manual includes the guidelines and precautions that are necessary in the day-to-day use of the product.

Before starting to use the product, please read and understand the manual thoroughly.

Web site

- For more information regarding *ExiPrep*™48, visit our website at <http://eng.bioneer.com>.

Purpose

- *ExiPrep*™48 is a instrument that can separate needed nucleic acids from various samples, automatically separate and can store at low temperatures.

General information

- *ExiPrep*™48 is a trademark of Bioneer Inc.
- This manual is copyrighted by Bioneer Inc and any unauthorized distribution of this manual in whole or in part is prohibited.
- Various examples, original texts, diagrams and photographs are subject to change without notice for performance upgrade.
- This Instrument is equipped with a sterilizing lamp (UV). Please be sure to read the precautions for sterilization.
- Please see “*ExiPrep*™48 warranty” for information on product service and support.
- This instrument can be used as *ExiStation*™. When used as an *ExiStation*™, you can verify the results faster. Please contact our website or your local distributor for details.



Description on Safety Cautions of the *ExiPrep*™48

English	Please pull out/push in the base plate carefully to avoid possible overflow from the waste tray.
Francais	Afin d'éviter le débordement du bac à déchets, veuillez faire attention lorsque vous tirez et remettez en place la plateau de base.
English	Do NOT open the door during instrument's operation. You can be injured your hands or body.
Francais	Ne pas ouvrir la porte pendant la durée des opérations des instruments. Risque de blessures corporelles.

Symbols in User Guide

The table below presents the symbols used in user guide.

	Conformité Européenne Mark
	Temperature limit
	Manufacturer
	Authorized representative in the European Community
	Catalog number

Please refer to ‘Safety precautions’ contained in the manual.

Safety Symbols

	Hot surface. Note that surface is hot.
	Please pull out/push in the base plate carefully to avoid possible overflow from the waste tray.
	Do NOT open the door during instrument’s operation. Injuries may result when opening and closing door.
	Warning! Keep a safe distance while the door is operating. It may cause injury while in operation.
	Please note that there is a risk of infection if you contact the waste liquid inside a waste tray.

Electrical Symbols

	Indicates the On position of the main power switch.
	Indicates the Off position of the main power switch.
	Indicates the standby switch status while the main power source is ‘On’.
	Displays the ground terminal for the main protective ground of the instrument.
	Indicates a terminal that receives or supplies alternating current or voltage.
	Indicates a terminal that receives or supplies direct current or voltage.

Environmental Symbols on the ExiPrep™48

The following symbol (WEEE) applies to the ExiPrep™48 placed on the European market.



Do not dispose of *ExiPrep*TM48 as unsorted municipal waste.

Follow local municipal waste ordinances for proper disposal provisions to reduce the environmental impact of waste electrical and electronic instrument.

European Union customers:

Call your local Europe office for Bioneer instruments pick-up and recycling.

II. Safety warnings and cautions

Please read carefully warnings and cautions for safety before use. The precautions listed herewith are important safety messages and should be observed to ensure the product is used safely and properly to prevent accidents and danger. In this manual, the degree of risk from improper handling is classified into the following three categories. “Safety warnings and cautions” is classified into “Danger”, “Warning” and “Caution” and they mean the following:



Ignoring this sign or improper handling may result in death or serious injury.



Hazards or dangerous actions that may result in minor injury or damage.



Hazards or dangerous actions that may cause a burn.



Hazards or dangerous actions that may result in electric shock.

1. Cautions for experimenters or during the experiment



- 1) Be sure that the power cord (100–240V~, 50/60Hz) is properly connected to the main unit and that the power cord is plugged in the outlet correctly. If the power cord is not properly connected the power may not turn on and cause malfunction.
- 2) This is a instrument to extract a nucleic acid. Please use it according to the purpose.
- 3) Operating the LCD touch screen during operation of this product may result in stoppage or error in the test results. Be sure to operation the LCD touch screen after the operation of instrument is completed.
- 4) Do not turn off the power or shut down the program during operation. Data communication errors can cause the instrument to operate unsteadily or affect the results of the experiment.
- 5) This product should be installed on a flat surface.
- 6) Handling the product with wet hands may cause malfunction or electric shock. The power cord should be handled with a dry hand.
- 7) You must initialize the instrument before removing the setup tray if the instrument is stopped due to mishandling of operator, improper accessory installation or instrument malfunction, and if the setup tray is removed while not initialized, malfunction may result from damages of heating block and internal parts due to interference between heating block and other accessories. If the cartridge is installed in the instrument, it is not visually possible to confirm and therefore the instrument must be initialized, or before removing the setup tray, remove the cartridge to check the position of heating block to remove.
- 8) When installing the cartridge, be sure to install completely close contact with the heat transfer block that is installed in the position of the cartridge in the setup tray. If it is not close contact, the performance of Prep can deteriorate for the cartridge does not come in close contact with the heat transfer block.
- 9) Do not place objects on the left or right of the instrument. It may reduce the cooling efficiency when the system is in operation.
- 10) Be sure not to allow any foreign objects into the cooling fan network on the bottom right side. If the cooling fan does not work due to foreign objects, it may cause fire from overheating of motor and cooling agent.
- 11) When installing contamination shield, make sure if the setup tray has accessory or if properly installed. Otherwise, the contamination shield will be improperly installed or move out of position resulting in the malfunction.

2. Environmental precautions



- 1) Do not use when the power plug is loose. The power plug damaged from overheating may cause fire or electric shock.
- 2) Do not connect multiple instruments to a single outlet. Failure to do so may result in overheating of the socket due to overload and may cause fire.
- 3) Be sure to handle the power cord with a dry hand when connecting and disconnecting. It may cause electric shock.
- 4) Do not place objects near the product that may interfere with product operation.
- 5) Do not install the instrument in a dusty area. It may cause malfunction.
- 6) Install the instrument away from electric heating devices. It may cause fire.
- 7) Install the instrument avoiding areas of splashing water or humidity. It may cause electric shock, fire or malfunction.
- 8) Do not install the instrument in a place where flammable or corrosive gas is generated. If gas leaks, do not operate the power cord, but open the window to ventilate. Fire sparks may cause explosion and a fire.
- 9) Do not disassemble or modify the product. It may cause fire, electric shock or malfunction and may not be covered by warranty.

3. Installation precautions



- 1) The instrument is a precision drive unit and should be installed away from direct sunlight.
- 2) Please install it on a flat surface where there is no vibration.
- 3) When installing the instrument, place the system at least 15cm away from the wall.
- 4) When installing the instrument, make sure that the cooling fan network on the bottom right is not damaged.
- 5) When connecting computer, router and *ExiPrep*™48, please be sure the power is turned off. Connecting the instrument while the power is on may damage the instrument.
- 6) When connecting computer, router and *ExiPrep*™48, check the communication cable connection. If the connection is unstable, the normal test result may not be obtained due to the data transmission error while the instrument is in operation.

4. Usage precautions



- 1) Wipe off the dust from the power plug and plug it securely so that the plug does not move. Unstable connection may cause fire.
- 2) The ambient temperature of the instrument shall be within 15℃~30℃. If the external temperature is too high, it may affect the operation of the instrument and accurate experimental results may not be obtained.
- 3) Keep the recommended humidity (20~80%, no condensation). Excessive humidity or dryness may cause corrosion or malfunction.
- 4) Do not place objects around sides and the rear of the instrument. It may cause malfunction during operation.
- 5) This instrument is built with precision drive parts. Do not drop or give a strong shock. It may cause malfunction and cause safety problems.

- 6) The sterilization lamp automatically shuts off when the door is opened while it is in operation. For safety, be careful not to have your eye or skin to come in contact while operating the sterilization lamp.
- 7) Turn off the power and unplug if not used for a long time. It may cause fire due to heating and ignition.
- 8) Be careful when pulling out the setup tray if the waste tray contains liquid, and also when pushing the waste tray back with liquid. Otherwise, the liquid in the waste tray may overflow into the instrument and cause damage or fire.
- 9) Be sure that the cooling fan network on the bottom right is not damaged. If the cooling fan network does not work, it may cause fire from overheating of the cooling fan motor and cooling agent.
- 10) When connecting to an external computer, select 'Monitor Off', 'Hard disk off', 'System standby mode', 'System maximum hibernation mode' to 'Disable'. ExiPrep™48 and computer transmit data during operation and therefore it may cause malfunction if monitor or hard disk turn off during operation.

5. Warnings and cautions and danger regarding the use and management of the product



CAUTION



WARNING



DANGER

- 1) This instrument shall be used only for nucleic acid extraction and automatic dispensing and shall not be used other than the purpose described in the manual.
- 2) Be sure to use the accessories and tubes supplied by us.
- 3) Do not modify or delete the information of the built-in instruments.
- 4) Do not touch the LCD touch screen with sharp objects. Using sharp drills, nails, picks, etc. may cause damage the product.
- 5) The sterilization lamp only works when the door is closed. Make sure that no foreign objects are in the door sensor.
- 6) Please be careful when using solvent or strong detergent or chemical solvent on the surface of the instrument. It may discolor. If those come into contact with the product, immediately wipe it gently off with a soft cloth.
- 7) Do not store in high humidity for a long time. It will then be classified as malfunction due to immersion and will not be covered under warranty. On the other hand, the product may not be used for they are unrepairable even if you pay.
- 8) Modifying and disassembling the instrument may exclude you from warranty and not covered by after-sale service.
- 9) Do not forcefully disconnect the power cord from the instrument during operation. It may cause malfunction.
- 10) The sterilization lamp automatically shuts off when the door is opened while it is in operation. For safety, be careful not to have your eye or skin to come in contact while operating the sterilization lamp.
- 11) Be careful when pulling out the setup tray if the waste tray contains liquid, and also when pushing the waste tray back with liquid. Otherwise, the liquid in the waste tray may overflow into the instrument and cause damage or fire.
- 12) If you smell burning or experience severe overheating while using the product, stop using it immediately and contact us.
- 13) Do not drop or give a strong shock. It may cause malfunction and may not be covered under warranty regardless of a warranty period.
- 14) Make sure that the heating block is in a normal position before removing the setup tray of the instrument. If the setup tray is removed while not initialized, malfunction may result from damages of heating block and internal parts due to interference between heating block and other accessories. If the cartridge is installed in the instrument, it is not visually possible to

confirm and therefore the instrument must be initialized, or before removing the setup tray, remove the cartridge to check the position of heating block to remove.

- 15) Be sure not to allow any foreign objects into the cooling fan network on the bottom right side. If the cooling fan does not work due to foreign objects, it may cause fire from overheating of motor and cooling agent.
- 16) When connecting to an external computer, select 'Monitor Off', 'Hard disk off', 'System standby mode', 'System maximum hibernation mode' to 'Disable'. *ExiPrep™48* and computer transmit data during operation and therefore it may cause malfunction if monitor or hard disk turn off during operation.

6. Precautions in using sterilization lamp



- 1) Ozone may be generated during operation of the sterilization lamp and a large amount of ozone is harmful to human body. The product is programmed to operate for 15 minutes for sterilization and safety. Do not use the sterilization for a long time.
- 2) Ultraviolet rays of the sterilization lamp may cause severe damage to eyes and skin and therefore not advisable to see directly or indirectly. Be sure to take safety precautions such as ultraviolet shielding instrument so as to not to see directly or indirectly or irradiate skin.

III. Precautions on waste liquid

This product uses a kit containing a solution comprised of a large amount of chlorine compound. Nucleic acids extracted through the instrument and kits are conservative and may affect the performance if residues are present. Please refer to the following for proper prevention of hazards.

1. Precautions immediately after using the Instrument



Waste tray is filled with waste liquid after using the instrument. Please be careful when operating the setup tray.

- 1) Waste liquid from the waste tray may overflow and contaminate the instrument if the setup tray is handled abruptly resulting in false positive from the next experiment.
- 2) Waste liquid contains a large amount of chlorine ions that corrodes metals as stainless steels which causes the instrument corrosion.
- 3) If the waste liquid contaminates inside the instrument due to mishandling of the waste try, the instrument must be disassembled and to wash clean. Please contact us.

2. Cleaning solution used for inside and outside of the Instrument

- 1) Use distilled water (DW), 70% ethanol, nucleic acid decomposition solution (5% Nitric acid, 1% lox, DNAzap). Be careful for lox and DNAzap corrode metal. Moisten lint free cloth or paper towel, not soaking wet to drip for it may drop on the instrument. Do not spray the liquid on the instrument.

3. Contamination of Instrument

NOTE

If the instrument is contaminated, proper measures must be taken immediately to prevent accumulation and damage.

- 1) If contamination occurs inside the instrument but did not yet make it into the inside, absorb it immediately with a paper towel moisten with nucleic acid decomposition liquid and rinse with a paper towel moisten with DW again. Absorb the remaining solution with a dry paper towel and operate UV lamp to remove the contaminants from the instrument.
- 2) If contaminants enter into the setup tray or inside the instrument, the instrument must be disassembled to wash. Please contact us.

4. Waste Treatment

- 1) Waste liquid and consumables used must be disposed of properly according to the waste disposal regulations.
- 2) Wear appropriate eyewear, clothing, and gloves when handling reagent and waste tray.

IV. Summary

This is a instrument that can automatically extract nucleic acid. It can use several instruments at the same time by using a computer and a router. In the case of nucleic acid extraction, entire process from sample lysis to elution can be done in a short time.

In addition, it can refine fluidly per individual sample unit and has an automated dispensing function to increase efficiency and productivity, saving time and cost. This unit comprises a syringe unit, heating block and a cooling system.

The syringe functions to dispense the various reagents to extract the DNA in order and the heating block doubles the culture of the sample to extract the nucleic acid in a short time. The cooling system maintains a low temperature to enable storage of samples extracted.

The tip protector is equipped to prevent the contaminants from falling from the tip during operation or from being adversely affected by contaminants on tip and the internal sterilization instrument can eliminate the internal contamination to enhance the stability of the result.

Purpose of use

It is instrument capable of separating and automatically dispensing nucleic acid needed in various samples –1 for the gene amplification test.

V. Product configuration and description

1. Product configuration



ExiPrep™ 48

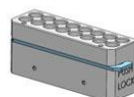


User's Guide

Accessories



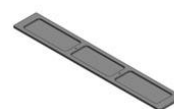
Elution Tube Rack



Sample Tube Rack



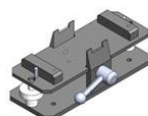
8 Hole Punch



Contamination Shield



Setup Tray



Protection Cover Separation Tool



Clamp



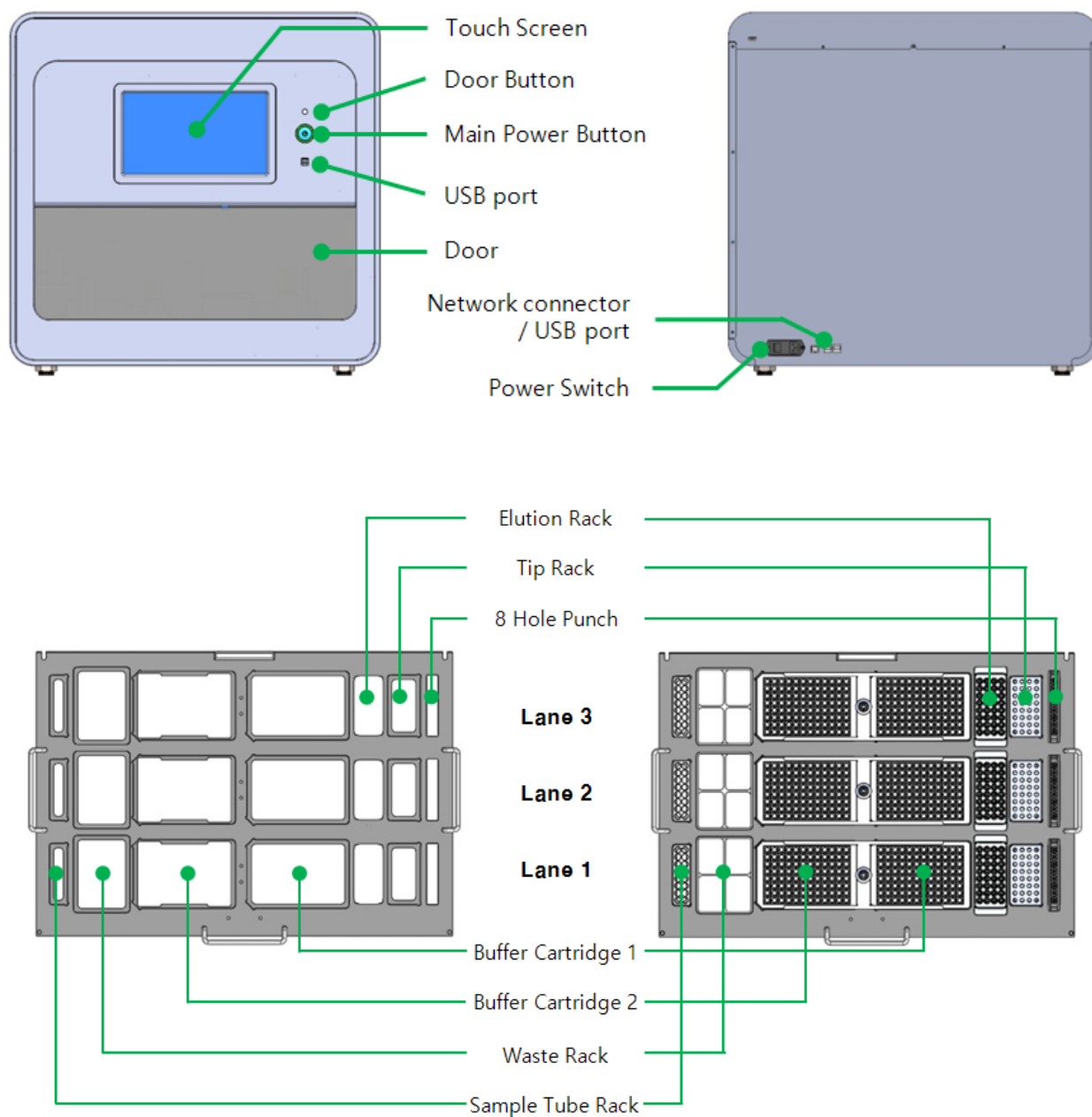
Power Cord

Part Name	Cat. No.	Qty.
ExiPrep™ 48	A-5150-1	1 ea
User's Guide		1 ea
Elution Tube Rack		3 ea
Sample Tube Rack		3 ea
8 Hole Punch		3 ea
Contamination Shield		1 ea
Setup Tray		1 ea
Protection Cover Separation Tool		1 ea
Clamp		3 ea
Power cord		1 ea

2. Specifications

Physical specifications	
Dimensions	760mm(W) x 620mm(D) x 750mm(H) 30in(W) x 25in(D) x 29.5in(H)
Weight	87 Kg
Voltage / Frequency	100–240VAC, 50/60Hz
Power	500VA Max (Fuse: 250V, F6.3AL, 2ea)
Operating specifications	
Magnet & Heating block	30–90°C (86–194 °F)
Temperature controlled block	4–90°C (39.2 ~ 194 °F)
Operating temperature	15 – 30°C (59.0 – 86.0°F)
Operating humidity	20 – 80%, no condensation
Operating system	Built-in
Communication	TCP/IP
User interface Display	13.3 inch Full HD (1920 x 1080), Touch
Data Storage	USB 3.0 (Front x2), USB 2.0 (Rear x2)
Output Display	HDMI Port (x1)

3. Instrument structure and name



VI. Product installation requirement

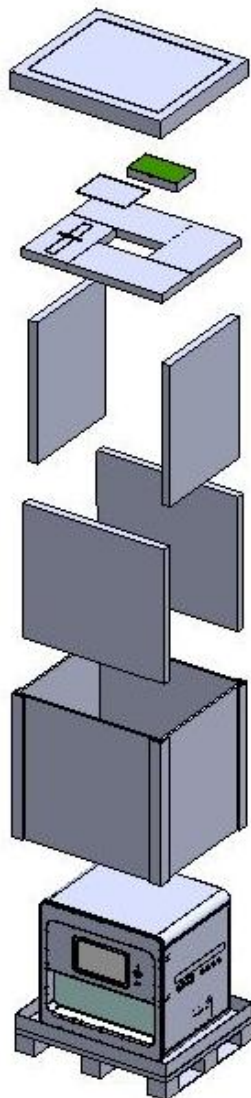
- *ExiPrep™48* the instrument designed for indoor user and the following things must be considered in selecting the place of installation.
 - Satisfies the requirements for space and weight.
 - Satisfies environmental requirements.
 - The power outlet with the power rating of 600VA or above should be located within 1.5m (4.92ft.).
 - Must be isolated from any form of moisture.

Materials needed

- Box cutter, scissors, knives, gloves

Unpack

- 1) Unpack *ExiPrep™48*:



- a) Cut the product from box with scissors.
- b) Open the product top box and remove *ExiPrep*™48 accessory box and Contamination shield.
- c) Remove the protective cover at the top and lift out the outer packaging box over the top of instrument. At this time two or three persons must work.
- d) Lift the instrument from the bottom packaging box and move it to the desired location. At this time two or three persons must work.
- e) Unpack the *ExiPrep*™48 and check that the instrument has no damages.



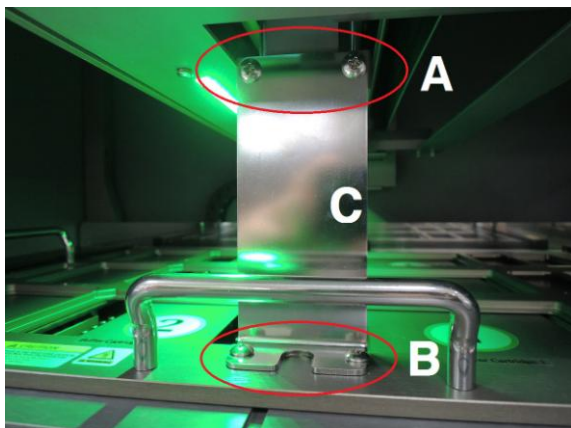
If the instrument is damaged, record the damage and contact us or your dealer.

- 2) If you want to place the instrument in the desired space, check the following.
 - Check the location where you can comfortably hold the instrument.
 - Take a comfortable posture so that your spine is not stressed.
 - Bend you knees and use your legs to lift the instrument.
 - Do not twist your body while holding the instrument and two or more people must work together.
 - Check the accessory of *ExiPrep*™48.

VII. Removing the shipping bracket and approving power source

- Clean up the test bench that you want to place the instrument
- Refer to this manual to check if all accessories are included in the box
- If the instrument does not work after removing the shipping bracket, and connecting power after installation or initialization process is being completed, stop the operation immediately and contact us or your dealer.

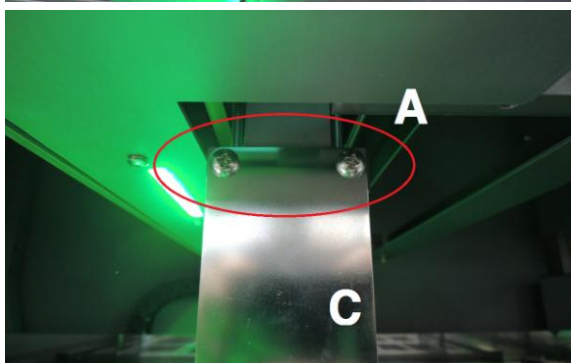
1. Removing shipping bracket



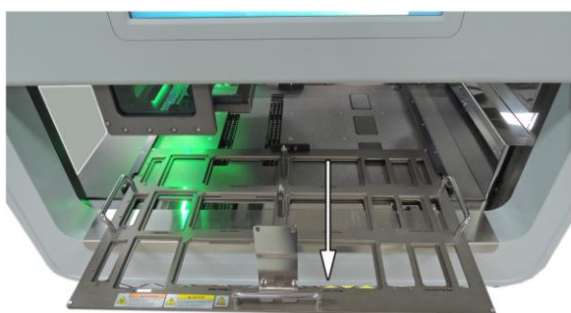
- 1) When you open the door, inside the instrument you can see the bolt (A, B) and shipping bracket (C) that holding the setup tray and syringe in the front.



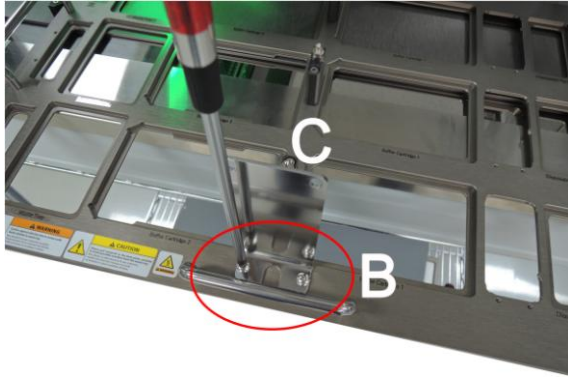
The shipping bracket must be removed before approving the power source. Turning the power source and operating the instrument without first removing the shipping bracket may damage the instrument



- 2) First, remove two bolts (A) that are connected to syringe.



- 3) Place the setup tray in the middle of the instrument.



- 4) Remove **two bolts (B)** that are connected to the setup tray.



- 5) When the bolts (A, B) are removed, the **shipping bracket(C)** can be separated.

NOTE

Store the shipping bracket and bolts removed separately so that you can use it again when relocating the instrument.

2. Approving power source



1) Connect the power cord to the back of the instrument and approve the power source.



2) Press the POWER switch on the front of the unit for about 1 second.

3) The instrument will be initialized and the LCD screen will turn on automatically.

NOTE

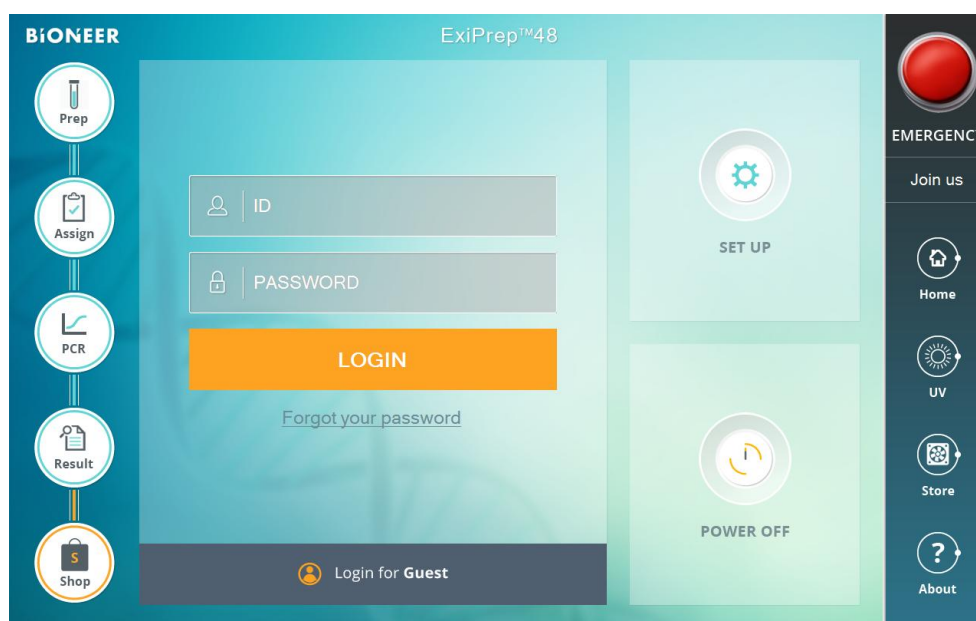
LED color of Power button displays current operation status.

- **Red light:** Displayed when a problem occurs during self-diagnosis.
- **Blue light:** The instrument is ready for operation and the next operation is ready to perform (Standby).
- **Green light:** The instrument is ready for operation.
- **Yellow light:** self test.
- **Cyan light:** The instrument is in operation.
- **Purple light:** Door is open.
- **White light:** Pause during operation.

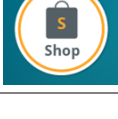
VIII. Program description

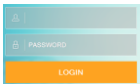
1. Main Screen

When the initialization of the instrument is completed, the main screen appears on the LCD screen. If initialization is not completed normally, such as elapsing more than 5 minutes with the progress bar screen halted during the initialization, please contact Bioneer or your local dealer.



Main Screen(Home)

Icon	Description
	Prep Go to the screen for nucleic acid extraction.
	Assign When Prep is executed by selecting ExiStation Mode, extracted information can be displayed on Assign step, which is a previous step to PCR.
	PCR Go to the screen for PCR.
	Result It is a screen showing results after executing PCR.
	Shop Links to Home page that can purchase related products. Caution: This function can only be used if connected to internet.

	Set up Environmental settings for machine operation, network setups and operation of the instrument can be performed.
	Power off Shuts down the instrument and program.
	Emergency Button It is a button that can immediately stop the operation when a problem occurs during the operation of <i>ExiPrep</i>™48. Control module is used during normal operation and is not a physical shutdown.
	Login You can login using user ID and password, and can login as a guest if you don't have a user ID.
	Home Go to main screen.
	UV It operates UV lamp to sterilize inside the instrument after the instrument is shutdown.
	Store After the extraction process is finished, the temperature is maintained to store Elution block's samples.
	About You can check basic information and versions of the instrument.

2. Main screen configuration

Assign

ExiPrep™48 Assign Screen Details:

Lane	Assign	Current Step	Diagnosis Kit	Prep Kit	Prep WorkList	Start Time	Finish Time	Device
Lane 1	☒	1-2	Prep End	HBV-1111	K-4476	StandardCalibration_2...	2017-01-02 12:00:00	2017-01-02 01:40:00
Lane 2	☒	5-6	Prep End	HCV-1111	K-4476	StandardCalibration_2...	2017-01-02 12:00:00	2017-01-02 01:40:00
Lane 3	☒	9-10	Prep End	HIV1-1111	K-4476	StandardCalibration_2...	2017-01-02 12:00:00	2017-01-02 01:40:00

	HBV-1111			HCV-1111			HIV1-1111					
	1	2	3	4	5	6	7	8	9	10	11	12
A	NTC	SAMPLE			NTC	SAMPLE			NTC	SAMPLE		
B	SPC1	SAMPLE			SPC1	SAMPLE			SPC1	SAMPLE		
C	SPC2	SAMPLE			SPC2	SAMPLE			SPC2	SAMPLE		
D	SPC3	SAMPLE			SPC3	SAMPLE			SPC3	SAMPLE		
E	SPC4	SAMPLE			SPC4	SAMPLE			SPC4	SAMPLE		
F	SPC5	SAMPLE			SPC5	SAMPLE			SPC5	SAMPLE		
G	SAMPLE	SAMPLE			SAMPLE	SAMPLE			SAMPLE	SAMPLE		
H	SAMPLE	SAMPLE			SAMPLE	SAMPLE			SAMPLE	SAMPLE		

Run PCR

When Prep is activated with ExiStation Mode, extracted information is displayed for each lane in the Assign step, a previous step to PCR.

User confirms the completed samples by Prep and check the left box of each lane.

After you complete the selection, click the 'Run PCR' button to activate *Exicycler™* 96 to perform qPCR.

PCR

ExiPrep™48 PCR Screen Details:

Experiment Information

Master	2016_11_14_Test
Protocol	ExiProtocol03
Plate	2016_11_14_Test
Data Name	2016_11_14_Test
User Name	GUEST
Run Time	00:00:34
Finished	17:07:18
Hottop	105 °C
Cycle	0

Well Information

No.	Protocol
1	Incubate at 50.00°C, for 0:15:0
2	Incubate at 95.00°C, for 0:10:0
3	Incubate at 95.00°C, for 0:0:5
4	Incubate at 55.00°C, for 0:0:5

Graph Color Setting

No.	Name	C	Flu. Dye	Quench
1	HBV-BC00	FAM	BHQ	
2	HCV-BC00	TET	BHQ	

Exicycler™ is automatically activated if you click the 'Run PCR' button on the Assign screen to produce the amplified result file when the qPCR operation is completed.

Result

BiONEER ExiPrep™48

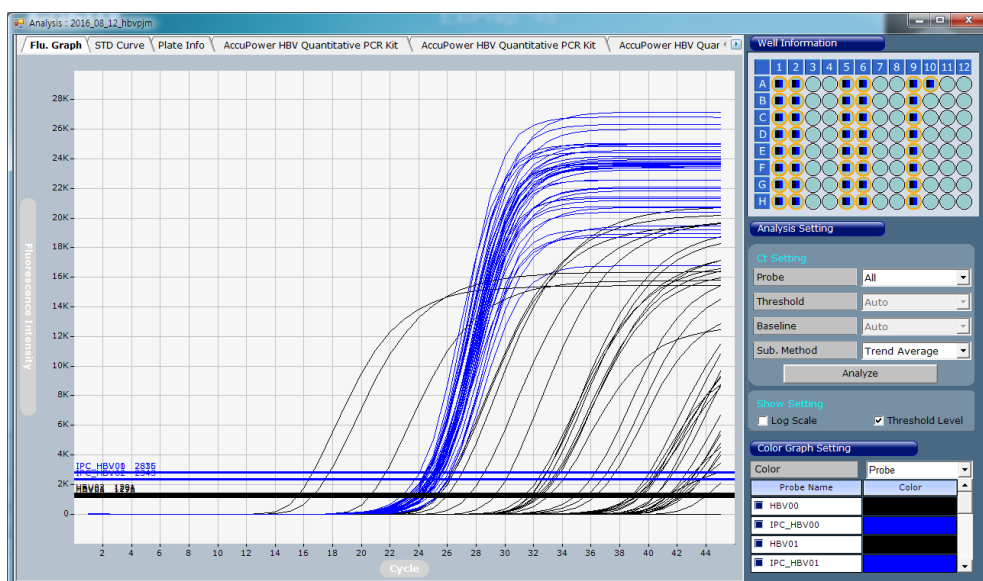
Data : 2016_04_08_swtest_HBV_HIV_HV8_C Analysis Print

PCR Result HBV-1111/Prep1 HIV1-1111/Prep2 HIV8-1111/Prep3 CMV-1111/Prep3

Seq	Sample ID	Test/Prep unit	IPC Result	Result
1	12	HBV-1111/Prep1	Valid	Not Detected
2	f32	HBV-1111/Prep1	Invalid	Invalid
3	4t	HBV-1111/Prep1	Invalid	Invalid
4	y	HBV-1111/Prep1	Invalid	Invalid
5	235	HBV-1111/Prep1	Invalid	Invalid
6	235	HBV-1111/Prep1	Invalid	Invalid
7	g	HBV-1111/Prep1	Invalid	Invalid
8	drq	HBV-1111/Prep1	Invalid	Invalid
9	sc	HBV-1111/Prep1	Invalid	Invalid
10	4y5	HBV-1111/Prep1	Invalid	Invalid
11	N	HIV1-1111/Prep2	Valid	Not Detected
12	6	HIV1-1111/Prep2	Invalid	Invalid
13	6	HIV1-1111/Prep2	Valid	Not Detected
14	12	HIV1-1111/Prep2	Valid	Not Detected
15	12	HIV1-1111/Prep2	Invalid	Invalid
16	25	HIV1-1111/Prep2	Invalid	Invalid
17	25	HIV1-1111/Prep2	Invalid	Invalid
18	35	HIV1-1111/Prep2	Invalid	Invalid
19	35	HIV1-1111/Prep2	Invalid	Invalid
20	50	HIV1-1111/Prep2	Invalid	Invalid
21	50	HIV1-1111/Prep2	Invalid	Invalid
22	100	HIV1-1111/Prep2	Invalid	Invalid
23	100	HIV1-1111/Prep2	Invalid	Invalid
24	2	HIV8-1111/Prep3	Valid	Non-detected

* Result (U/ml)

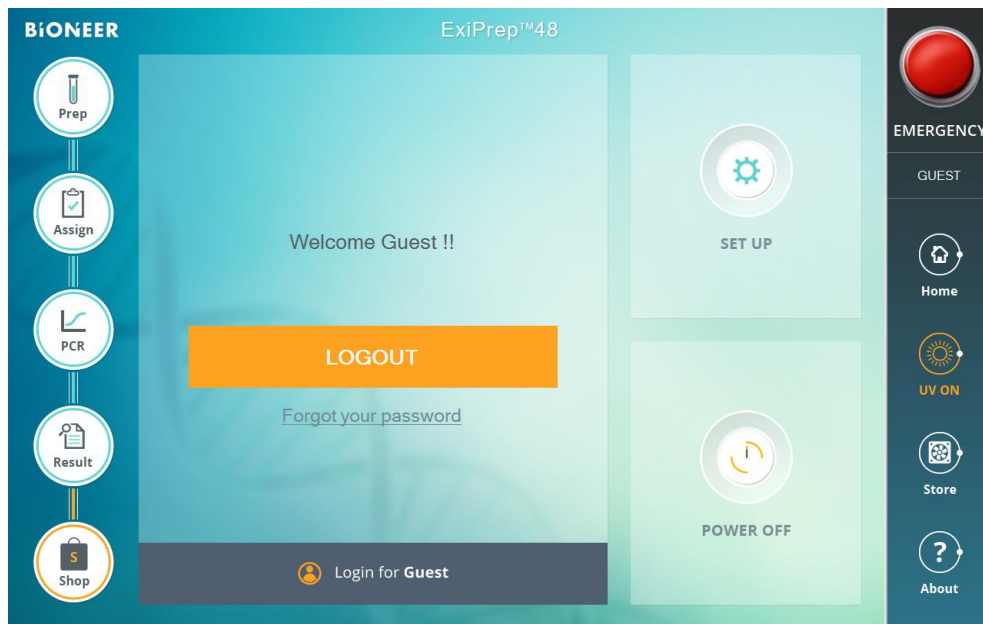
You can confirm the result when qPCR is completed. And you can check the previous data. Click the left menu 'Result' and select a data file, the result information will appear on the screen.



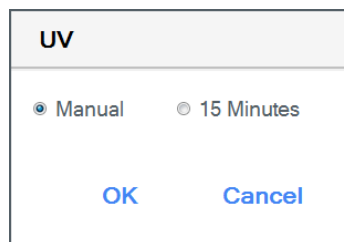
You can closely analyze the data through the analysis program by clicking the 'Analysis' button at the top.

To print, click 'Print' in the upper right to make the selection and proceed to the final print.

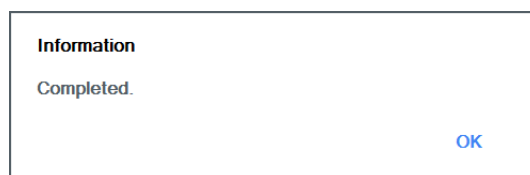
UV



Press the UV button on the right to perform UV operation, and then 'UV' message is generated to select option.

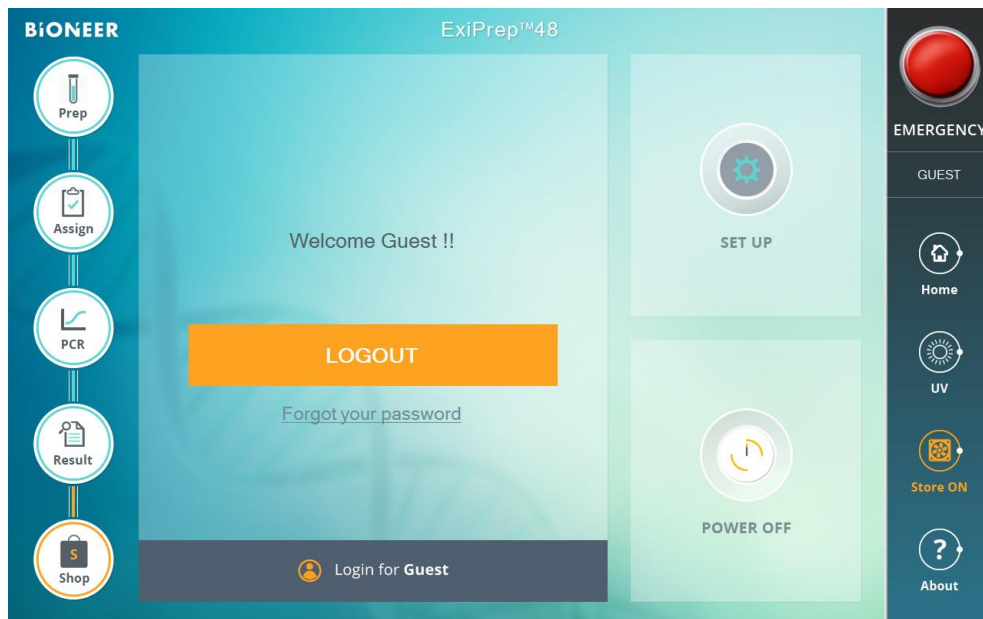


- **Manual:** It is an option to select on/off for UV operation. UV will proceed until 'off' is selected.
- **15 Minutes:** UV operation is performed for 15 minutes, after a lapse of 15 minutes, UV operation will end automatically.

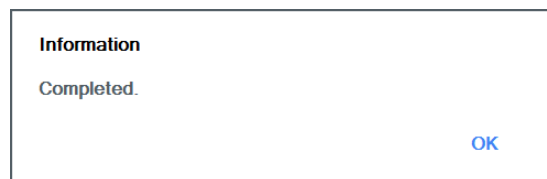


When UV operation is finished, the 'Completed' message is generated. Press the 'OK' button to go to other screens.

Store



Press the Store button on the right of screen to activate Store operation, On/Off.



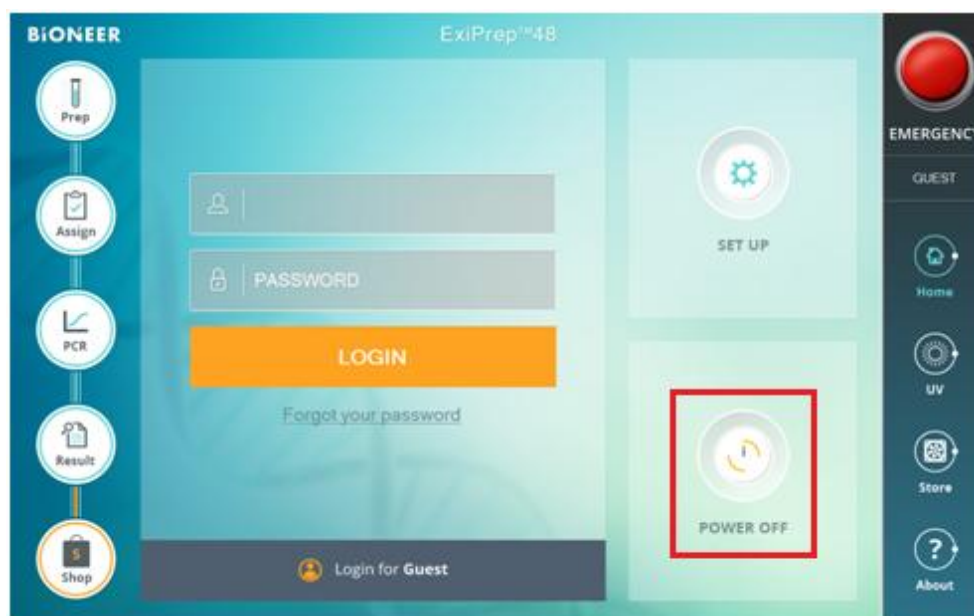
When finished, the 'Completed' message is generated. Click the 'OK' button to go to other screens.

About



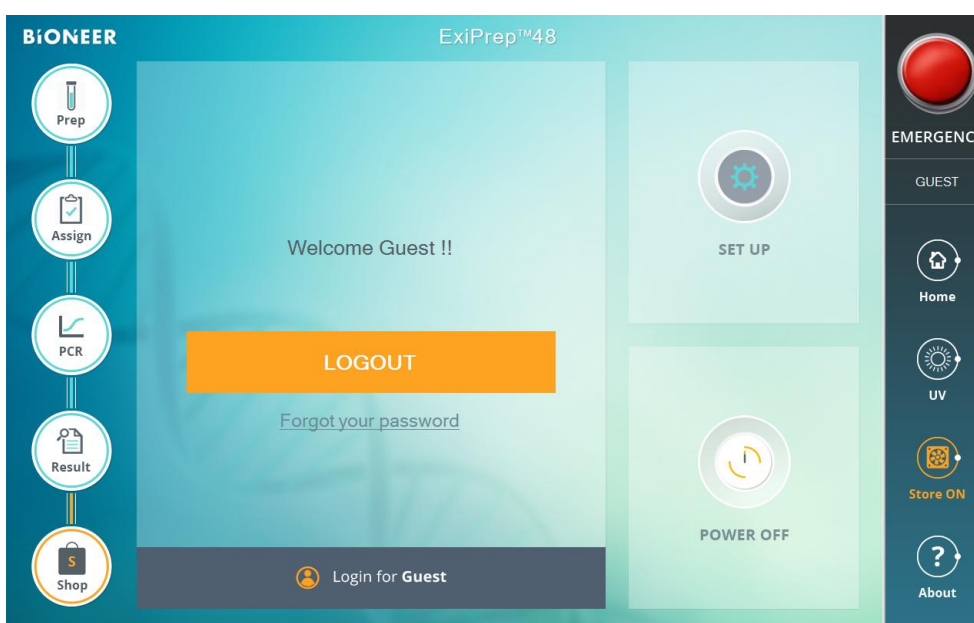
You can check the program version information, homepage, address and email information.

Power Off



When the operation of the instrument is finished, go to the main screen to press the 'POWER OFF' button to shutdown the instrument and program.

Emergency Button



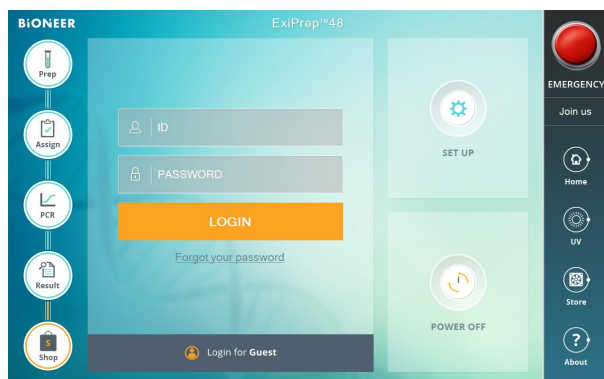
Click the red 'EMERGENCY' button in the upper right when the emergency situation occurs during operation. The drive shaft of the instrument stops immediately.

At this time Prep movement stops, however, if Control Module and qPCR(*Exicyler*™ 96) which are equipped in *ExiPrep*™48 is connected, it will operate normally.

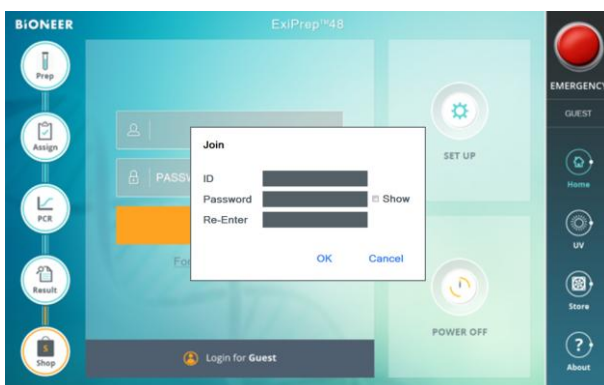
3. Log in screen

In order to use *ExiPrep*™48, you must login using assigned accounts, and can also login as a Guest ID if you are not separately registered as a user.

(1) User ID registration

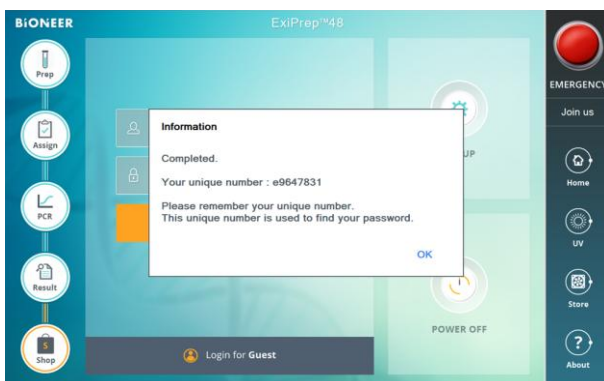


- 1) You can register the user ID in the program .
- 2) To register user ID, click the 'Join us' icon in the upper right of the screen.



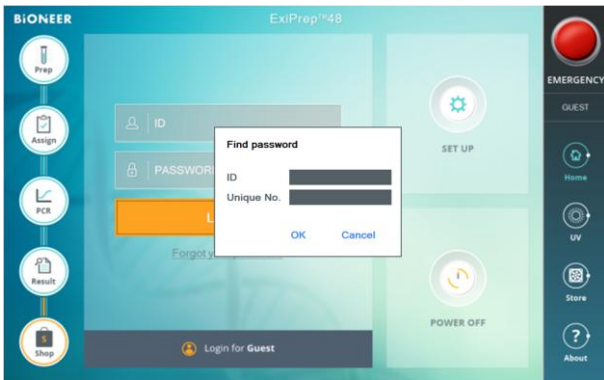
- 3) To register User ID, enter the required information and click the 'OK' button

- ID: Enter ID to use
- Password: Enter password to use
- Re-Enter: Re-enter password to use



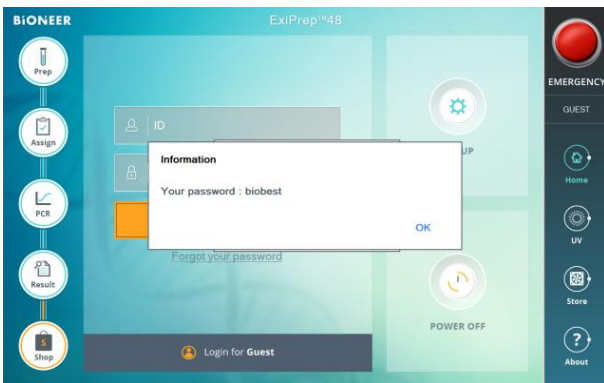
- 4) Completed message appears when user ID is registered. The message shows the unique number assigned according to the ID, and the unique number is used to find the password.
- 5) You can login to the program using the registered user ID.

(2) Finding password



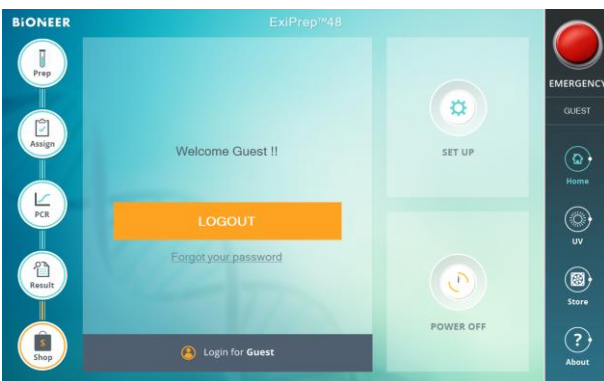
1) If you do not remember the password you entered, you can use the password search function.

2) Click 'Forgot your password' on the screen.



3) Enter User ID and 'Unique No.', it shows the password for the ID registered.

(3) Login as a Guest



1) You can use this without registering ID to use the instrument.

2) You are logged in as a guest if you click 'Loign for Guest' on the main screen.

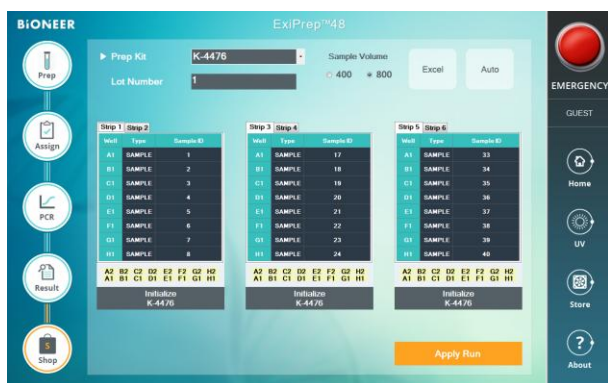
4. Prep Mode selection

In order to extract the nucleic acid using *ExiPrep*™48, follow the procedure at below.

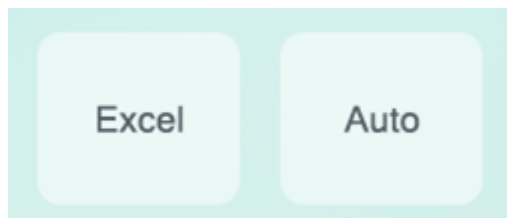
(1) Prep Mode



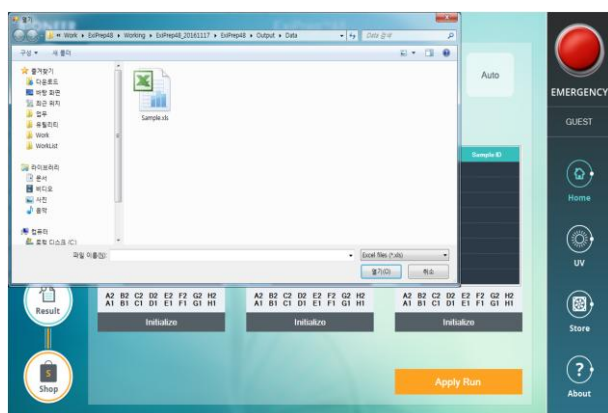
- 1) Press the **Prep** icon on the main screen.
- 2) Enter Prep Mode by touching the Prep configuration figure.



- 3) It converts to the Design experiment window that enters necessary information to Prep.



- 4) If 'Excel' is selected, if hospital or user created a sample through Excel file sample information, you can enter automatically by selecting the file without entering it again.
- 5) 'Auto' automatically assigns numbers to 48 samples to reduce time to assign.



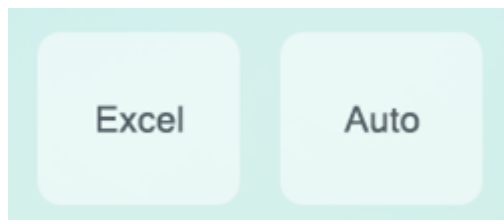
(2) ExiStation Mode



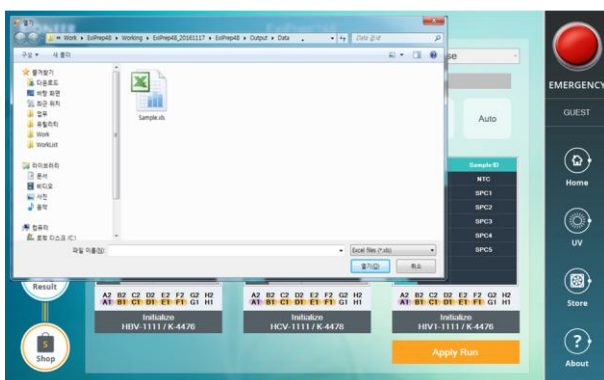
- 1) Press the Prep icon on the Main screen
- 2) Enter Prep Mode by touching the ExiStation configuration figure.



- 3) It converts to Design experiment window that enters necessary information for ExiStation operation.



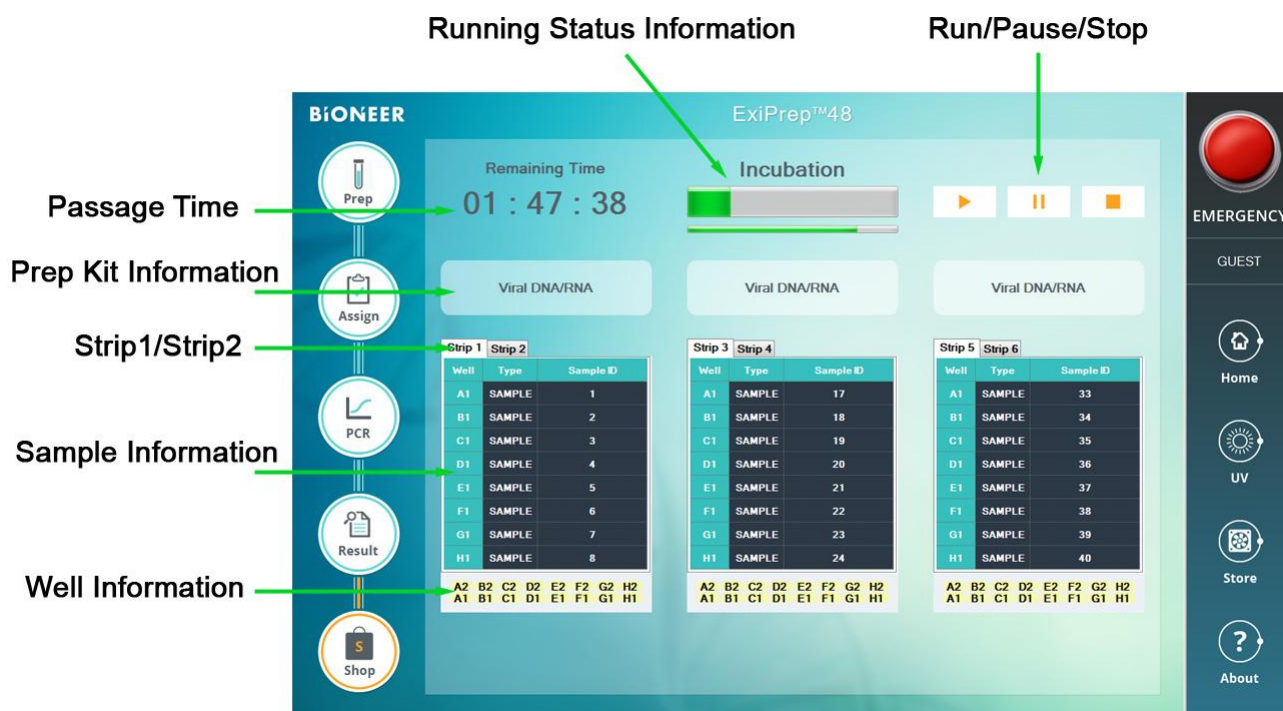
- 4) If 'Excel' is selected, if hospital or user created a sample through Excel file sample information, you can enter automatically by selecting the file without entering it again.
- 5) 'Auto' automatically assigns numbers to 48 samples to reduce time to assign.



5. Operation screen

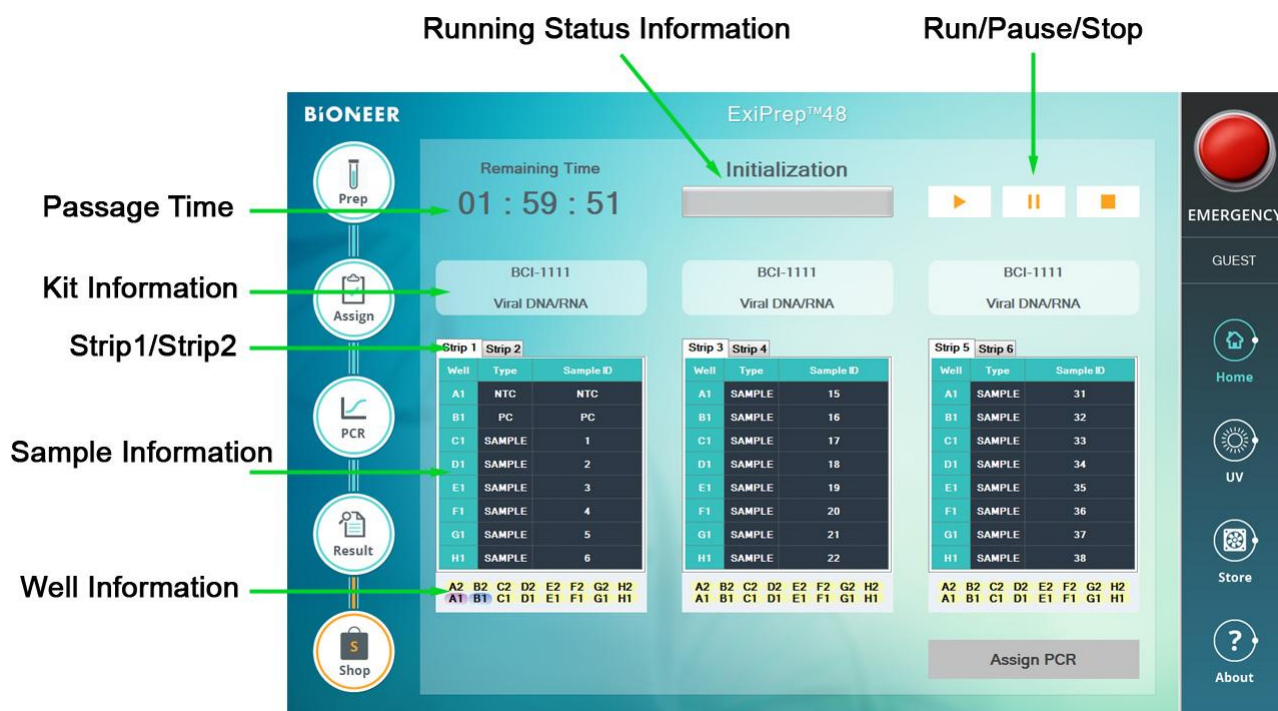
Screen configuration

1) Prep Mode



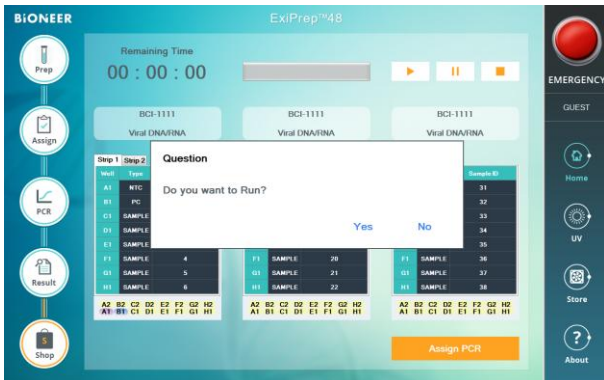
Name	Description
Running status (Progress bar)	Displays the progress of nucleic acid extraction.
Run/Pause/Stop	You can finish the pause and nuclei extraction process using Pause/Stop during the nucleic acid extraction process, and you can resume the nucleic acid extraction using the Run function after Pause.
Passage time	It shows the time elapsed. Mode changes if you click time. (operation time, remaining time, completion time)
Prep kit Information	Show the name of Prep Kit selected.
Strip1/Strip2	You can check strip1 and strip 2 well information per Lane.
Sample Information	You can check the information assigned to sample and control names.
Well information	You can check the Well information at a glance by displaying it as an image.

2) ExiStation Mode



Name	Description
Running status (Progress bar)	Displays the progress of nucleic acid extraction.
Run/Pause/Stop	You can finish the pause and nuclei extraction process using Pause/Stop during the nucleic acid extraction process, and you can resume the nucleic acid extraction using the Run function after Pause.
Passage time	It shows the time elapsed. Mode changes if you click time. (operation time, remaining time, completion time)
kit Information	Displays Prep selected and names of diagnostics kit.
Strip1/Strip2	You can check strip1 and strip 2 well information per Lane.
Sample Information	You can check the information assigned to sample and control names.
Well information	You can check the Well information at a glance by displaying it as an image.

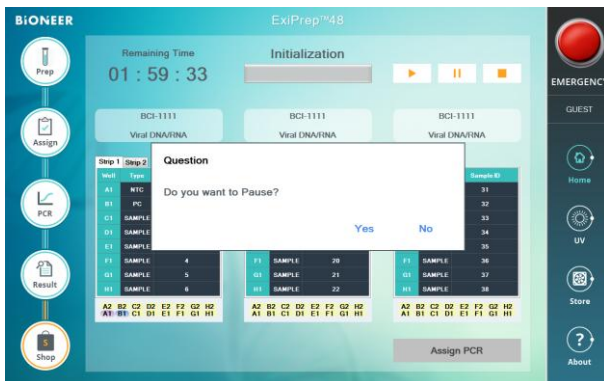
RUN



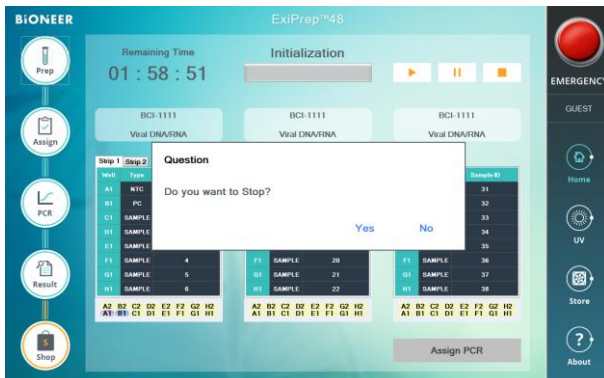
- 1) In order to activate the instrument after installing kit and accessory, press the RUN icon () and the message to confirm the operation appears on screen.
- 2) If you press “Yes” on the operation confirmation message screen, the instrument operates.

Pause/Stop

You can use Pause/Stop to pause or stop the instrument while nucleic acid is being extracted.



- 1) You can pause the instrument by pressing pause icon () located in the center of screen, and press the Run icon () to resume operation.

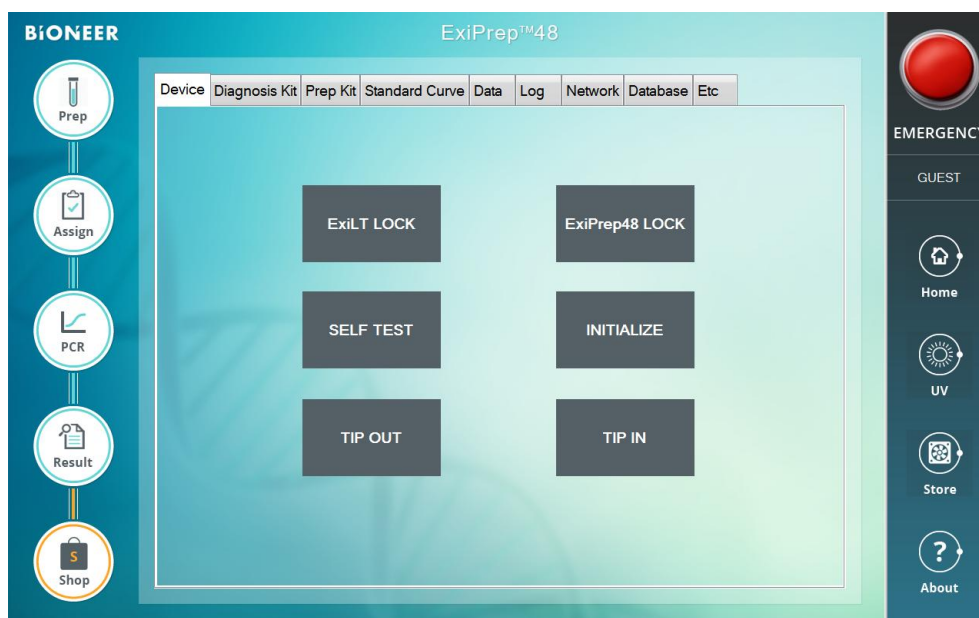


- 2) You can use stop the operation of instrument. Be careful as the nucleic acid extraction is stopped when pressing Stop.
- 3) You will see the pop up window asking if you want to stop when pressing the Stop button (). Press ‘Yes’ to shut down the instrument.

6. Setup screen

You can check the instrument status and set the instrument by setting various operation environments and confirming particular operations of *ExiPrep*™48.

(1) Device



You can use it when finished by confirming the basic operation status of the instrument and shutting down power and be sure damaged Tip or accessory are not being used.

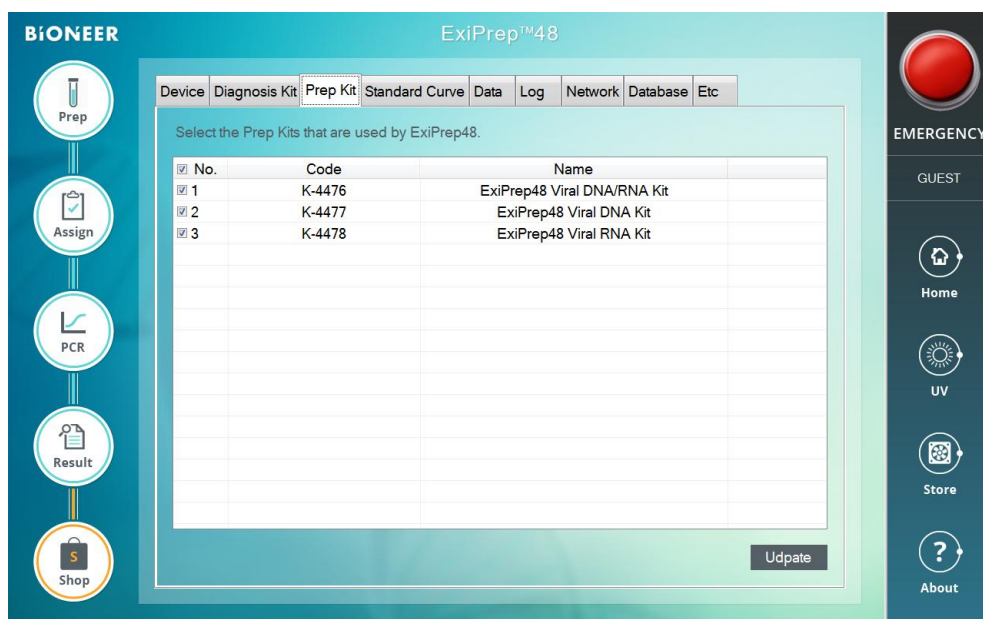
SELF TEST	Self Test You can identify the operation status the instrument and can check the operation normal status before use.
INITIALIZE	Initialize Initializes of each operation shaft to the instrument
TIP OUT	Tip Out TipOut operation of the instrument is activated. You can perform if you need to remove Tip if a problem occurs during operation.
TIP IN	Tip In Tip In operation of the instrument is activated. You can use by checking for normal operation if Tip is not inserted into Tip Adapter.
ExiLT LOCK	ExiLT Lock If you use for <i>ExiStation</i> ™ 48A, moving to fixture position for block lock.
Prep48 LOCK	Prep48 Lock Moving to fixture position for block lock.

(2) Diagnostics



You can select the Kit usable in the user site. You can add additional kits later or renew it.

(3) Prep Kit



You can check or set the prep kit available in Prep mode. It can not be used for kits not included in the list with this instrument.

(4) Standard Curve

BiONEER ExiPrep™48

Device Diagnosis Kit Prep Kit Standard Curve Data Log Network Database Etc

Edit the Standard Curve Information.

No.	Diagnosis Kit	Lot Number	Prep Kit	Lot Number	Slant	Intercept
1	HBV-1111		K-4476			
2	HBV-1111		K-4477			
3	HCV-1111		K-4476			
4	HCV-1111		K-4478			
5	HIV1-1111		K-4476			
6	HIV1-1111		K-4478			

Clear No. 1 Diagnosis Kit : HBV-1111 Prep Kit : K-4476 Update

You can set the values for Lot Number, Slant, Intercept of Kit which is supported by site and can store values using buttons as 'Clear' on the left and 'Update' on the right.

(5) Data

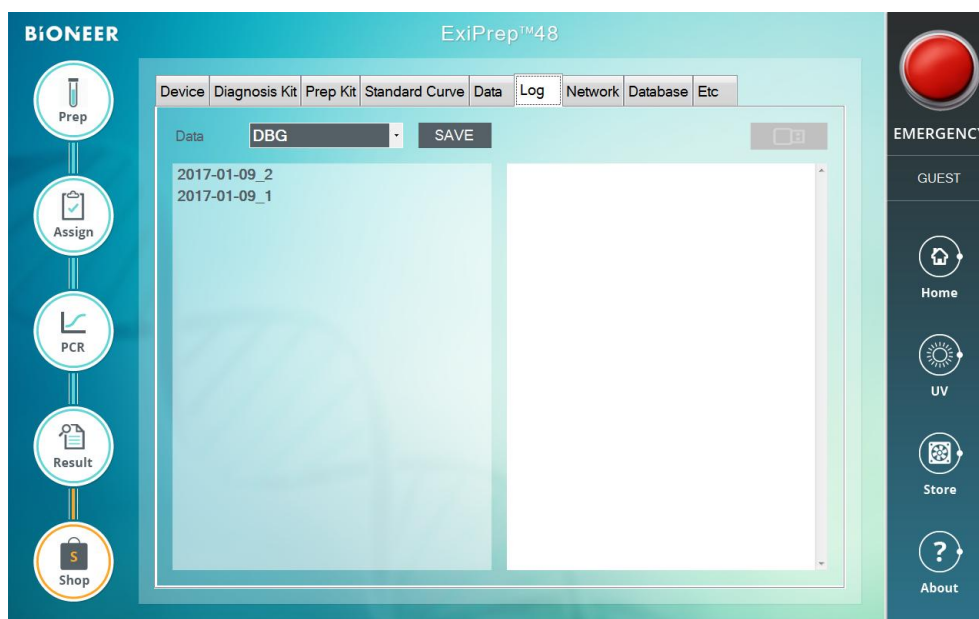
BiONEER ExiPrep™48

Device Diagnosis Kit Prep Kit Standard Curve Data Log Network Database Etc

Data WorkList Exicycler Log SAVE

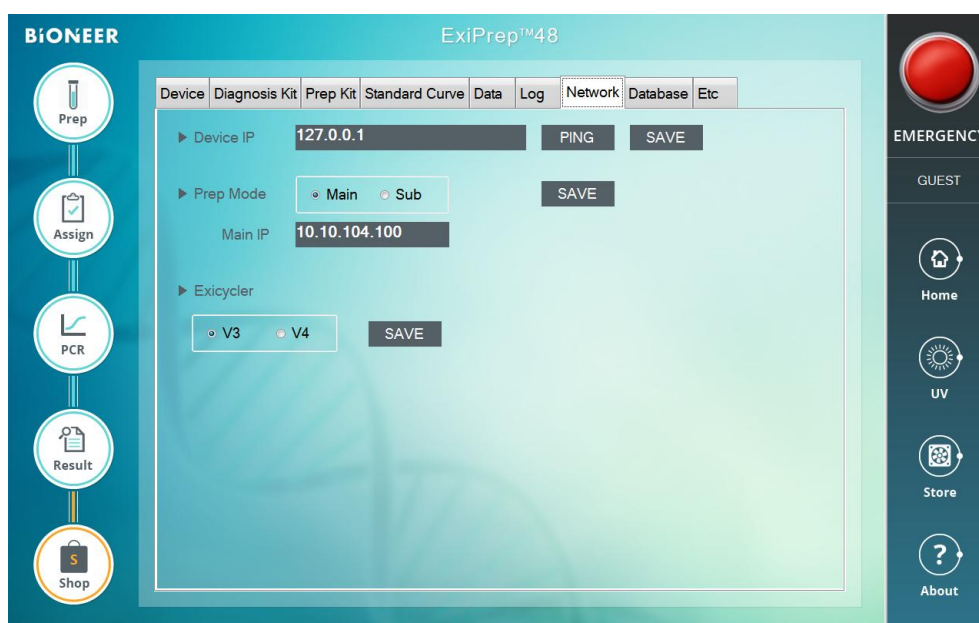
You can manage the data (work list, log file) generated by *Exicycler™* when used in conjunction with *Exicycler™*. Also you can use a USB flash drive to move data.

(6) Log



Once *ExiPrep*™48 is activated, you can see a logfile created and the record of data and only company's engineers are authorized for access.

(7) Network



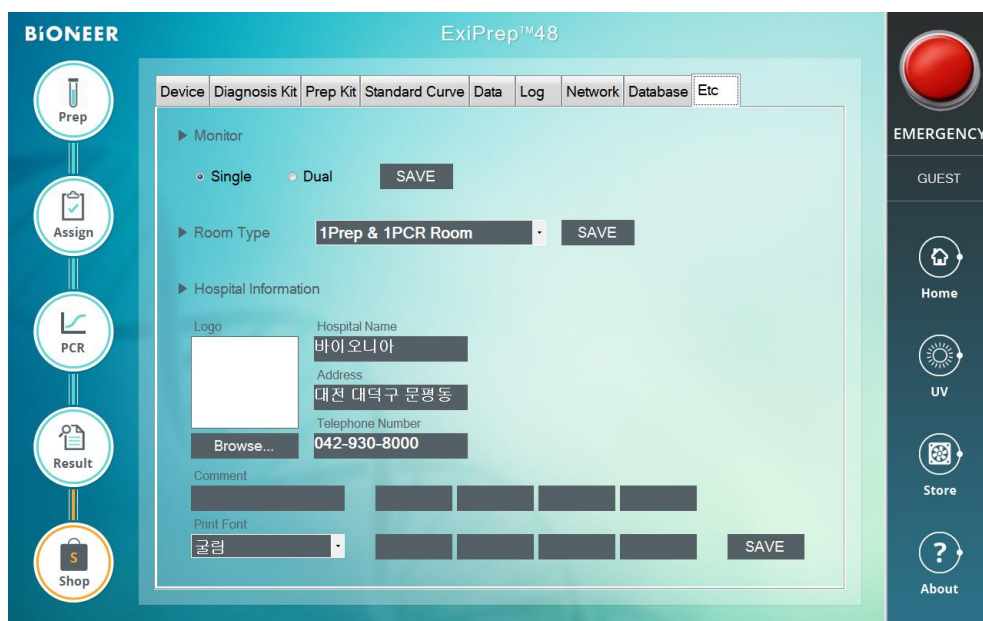
You can set the network using the environment setting for the operation of the instrument and perform the instrument operation test. Also, you can select Prep Mode and *Exicycler*™ type. You do not need a separate setting during operation of the instrument. Only company's engineers are authorized for access.

(8) Database



It initializes Database of *ExiPrep*™48. Only company's engineers are authorized for access.

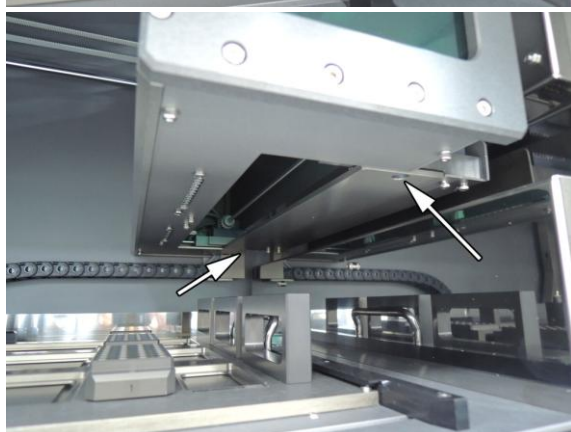
(9) Etc



▶ Monitor	In order to use our company's Real-time Quantitative Thermal Block, which is <i>Exicycler™</i> 96, you can select the external monitor supports. If you want to use the external monitor, select 'Daul' and press  button to save the information.
▶ Room Type	<i>ExiPrep™</i> 48 configuration is One Room located in a space or select Room type of a different PCR Room for the operation of Prep Room and <i>Exicycler™</i> of the 96 <i>ExiPrep™</i> 48 and press  button to save the information.
▶ Hospital Information	You can print the result. Call the user information being used at this time as the hospital information, enter information to display in print, and click the  button to save information. It is information being used at Print in Result.

IX. Sample preparation

1. Contamination Shield Installation



- 1) After turning on power, and the instrument is initialized, the syringe axis is positioned on the right.
- 2) Door opens automatically when initialization is completed.

- 3) Point the part with 3 grooves of the contamination shield to face upward and move it close to the installation bench of driving shaft.

NOTE

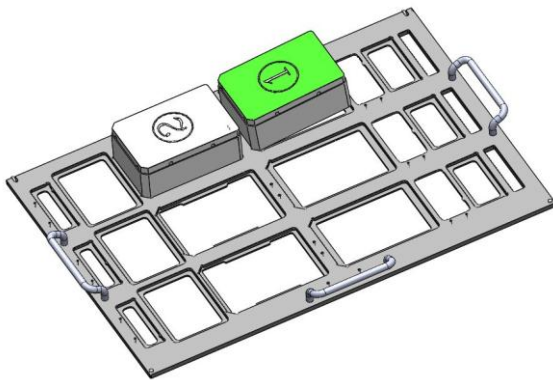
There is difference between up and down, but no difference between front and rear. Locate the part with grooves to face upward to the syringe shaft.

- 4) Move it close to the contamination shield driving shaft bench and it naturally install itself on its own.

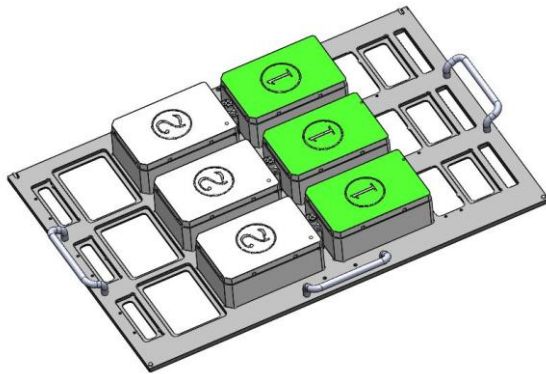
2. Preparing samples



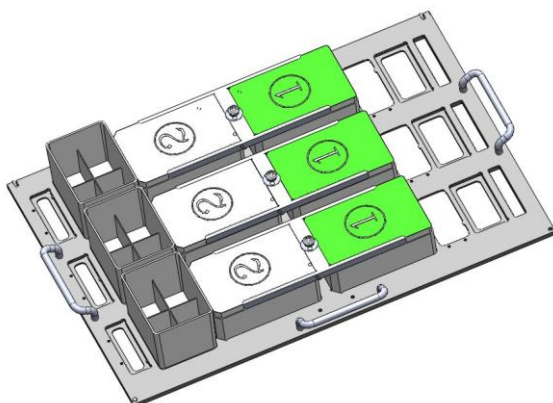
- 1) Open the door of the instrument, remove Setup tray installed inside and place it on a flat experiment bench.



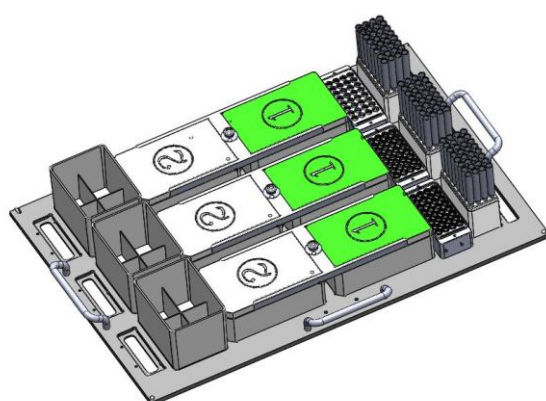
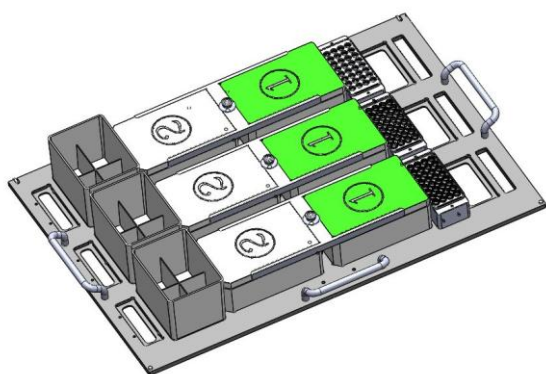
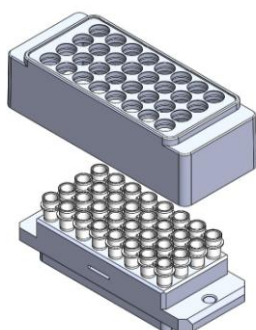
- 2) Setup tray에 Install Buffer Cartridge ①, ② on the Setup tray.
- 3) Install the buffer cartridge to the sample quantity.
- 4) Buffer cartridge ① and ② are included in the DNA/RNA extraction kit.



- 5) Install the clamp on top of the buffer cartridge.
- 6) Clamps must be installed per lane.



- 7) Install Waste Rack.
- 8) Waste Rack is included in the DNA/RNA extraction kit.



- 9) Prepare the elution tube to the sample quantity and install it to elution tube racks.
- 10) Check the front and rear of the Elution tube rack and insert the tube.
- 11) Elution tube is included in the DNA/RNA extraction kit.

- 12) Check the quantity and location of elution tubes inserted in the Elution tube rack, and push the protection cover into the grooves of the elution tube rack.
- 13) Do not use excessive force when pushing Protection cover.
- 14) Protection cover is included in the DNA/RNA extraction kit.

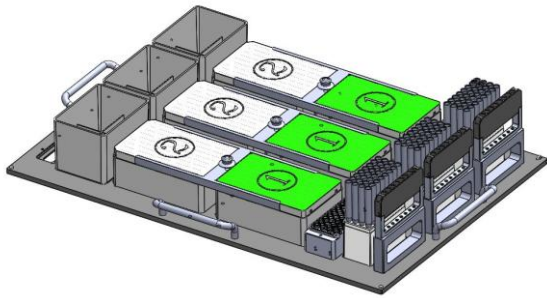
- 15) When Protection cover is installed, install the elution rack to the setup tray.



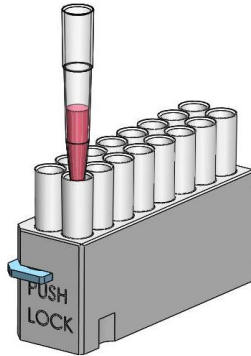
Elution tube racks are different shape each lane.

Each elution tube rack should be fitted properly position.

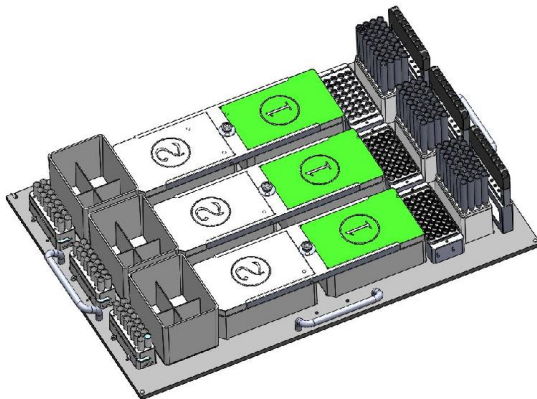
- 16) Unpack the Disposable tip rack and remove cover and install it to the setup tray.
- 17) Disposable tip rack is included in the DNA/RNA extraction kit.



18) Install the 8 hole punch into the setup tray.



19) Insert the right quantity and locations of sample tubes to the Sample Tube Rack and pour sample into the Sample Tube.

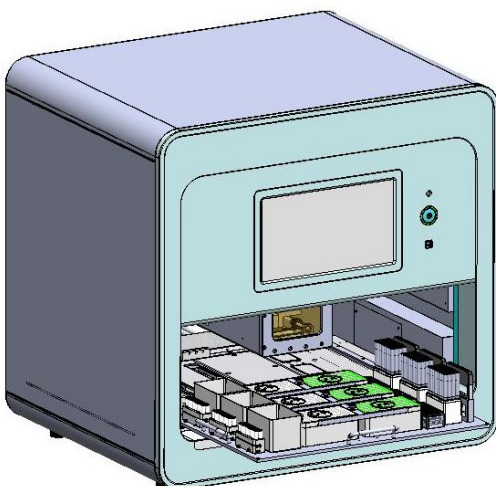


20) Install the sample tube rack that contains samples.



Sample tube racks are different shape each lane.

Each sample tube rack should be fitted properly position.



21) After completing installing all items to the Setup tray, install the setup tray into the instrument.

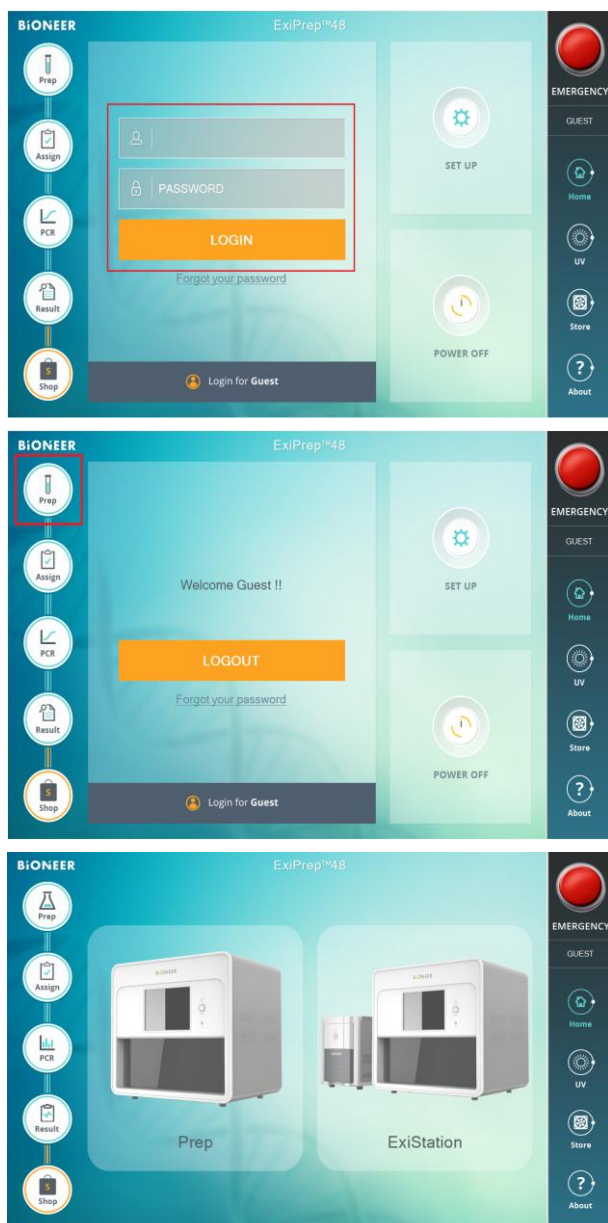
NOTE

Place the Sample tube rack on the left and the 8 hole punch on the right and push it into the fixed guide of the instrument.

X. Instrument operation



Before starting the machine, check if the retainer instrument located inside at the front is removed. If the machine is powered and operated without removing the retainer, the instrument may be damaged and it may not operate normally.

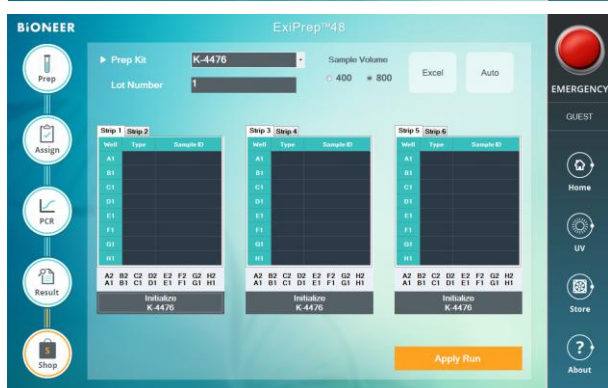


- 1) When the initialization of the machine is normally performed, the main screen (Home) as shown in left appears.
- 2) Login with the registered user ID. If the registered user ID is not available, use a new registered user ID or you can login as a guest and operate the machine.
- 3) Press the Prep icon to go to the experiment setting screen to extract the nucleic acid.
- 4) It converts to the Design experiment screen for the nucleic acid extraction test.

1. Prep Mode



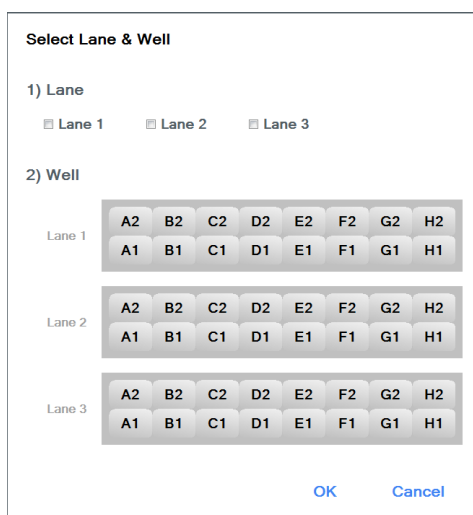
1) Press the Prep icon in Main screen.



2) Touch the figure of Prep configuration and enter the 'Prep Mode'. It goes to the Design experiment window to enter needed information for Prep.

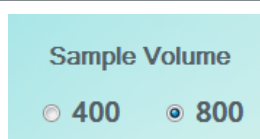


3) Select the prep kit to use in ExiPrep™48.



4) Select 3 lanes of ExiPrep™48.

5) Click to remove the well number you are not using.



6) Select the volume of sample to be used in Prep. The volume of the sample can be selected from 400 μ l or 800 μ l.

► Prep Kit **K-4476**

Lot Number **1**

Well	Type	Sample ID
A1	SAMPLE	1
B1	SAMPLE	2
C1	SAMPLE	3
D1	SAMPLE	4
E1	SAMPLE	5
F1	SAMPLE	6
G1	SAMPLE	7
H1	SAMPLE	8

BIONEER ExiPrep™48

► Prep Kit **K-4476** Sample Volume **400** **800** **Excel** **Auto**

Lot Number **1**

Strip 1 Strip 2

Well	Type	Sample ID
A1	SAMPLE	1
B1	SAMPLE	2
C1	SAMPLE	3
D1	SAMPLE	4
E1	SAMPLE	5
F1	SAMPLE	6
G1	SAMPLE	7
H1	SAMPLE	8

Strip 3 Strip 4

Well	Type	Sample ID
A1	SAMPLE	17
B1	SAMPLE	18
C1	SAMPLE	19
D1	SAMPLE	20
E1	SAMPLE	21
F1	SAMPLE	22
G1	SAMPLE	23
H1	SAMPLE	24

Strip 5 Strip 6

Well	Type	Sample ID
A1	SAMPLE	33
B1	SAMPLE	34
C1	SAMPLE	35
D1	SAMPLE	36
E1	SAMPLE	37
F1	SAMPLE	38
G1	SAMPLE	39
H1	SAMPLE	40

Apply Run

Apply Run

BIONEER ExiPrep™48

Remaining Time **01 : 47 : 38**

Incubation

Viral DNA/RNA

Strip 1 Strip 2

Well	Type	Sample ID
A1	SAMPLE	1
B1	SAMPLE	2
C1	SAMPLE	3
D1	SAMPLE	4
E1	SAMPLE	5
F1	SAMPLE	6
G1	SAMPLE	7
H1	SAMPLE	8

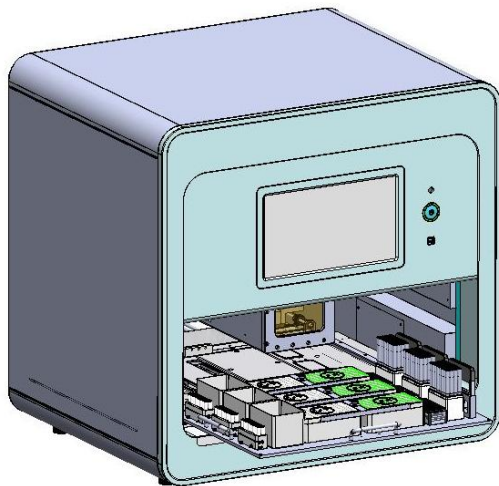
Strip 3 Strip 4

Well	Type	Sample ID
A1	SAMPLE	17
B1	SAMPLE	18
C1	SAMPLE	19
D1	SAMPLE	20
E1	SAMPLE	21
F1	SAMPLE	22
G1	SAMPLE	23
H1	SAMPLE	24

Strip 5 Strip 6

Well	Type	Sample ID
A1	SAMPLE	33
B1	SAMPLE	34
C1	SAMPLE	35
D1	SAMPLE	36
E1	SAMPLE	37
F1	SAMPLE	38
G1	SAMPLE	39
H1	SAMPLE	40

- Enter lot No of the Prep kit selected.
- You can confirm the Lot No per prep kit on the front of package box or on the side of cartridge.
- Wells other than designated as Control, their type is designated as samples, and can enter sample ID. You can enter sample ID using a barcode reader and enter it directly.
- Finish entering all information as Prep kit selection, lot No, well designation and sample ID.
- When the setting for all experiment information is completed, click the 'Apply Run' icon to start the nucleic acid extraction.
- When the nucleic acid extraction is in progress, it converts from the Design experiment setting screen to the Run experiment. You can check Cat. No used in the nucleic acid extraction, elapsed time, remaining time, etc from the Run experiment screen.



- 13) When the nucleic acid extraction is completed, remove all parts such as elution tube, buffer cartridge from the setup tray and push the setup tray all the way in and close the door.

NOTE

If the automatic UV-sterilization mode is set, a window to start the UV-sterilization appears.

- UV-sterilization starts if the Start button is pressed.
- UV-sterilization is skipped if the Skip button is pressed.

2. ExiStation Mode



1) Press the Prep icon in the Main screen.

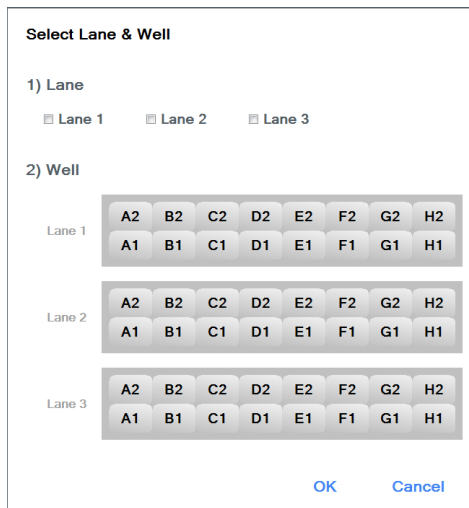
2) Touch the Prep configuration figure and enter the 'ExiStation Mode'. It converts to the Design experiment window to enter needed information for Prep.

3) Select the diagnosis Kit to use in *ExiPrep™48*.



4) Select the lane to position the control (NTC. PC) out of 3 lanes in *ExiPrep™48*.

5) Click to remove wells not being used.



► **Diagnosis Kit 1** **BCIM-1111**

Lot Number **1**

► **Prep Kit** **K-4476**

Lot Number **1**

Strip 1		Strip 2
Well	Type	Sample ID
A1	SAMPLE	1
B1	SAMPLE	2
C1	SAMPLE	3
D1	SAMPLE	4
E1	SAMPLE	5
F1	SAMPLE	6
G1	SAMPLE	7
H1	SAMPLE	8

BiONEER ExiPrep™48

► **Diagnosis Kit 1** **BCIM-1111** ► **Diagnosis Kit 2** **Do not use**

Lot Number **1** **Lot Number**

► **Prep Kit** **K-4476** **Sample Volume** **400** **800** **Excel** **Auto**

Lot Number **1**

Step 1 (Strip 2) **Step 3 (Strip 4)** **Step 5 (Strip 6)**

Well Type Sample ID

A1 NTC NTC A1 SAMPLE 15 A1 SAMPLE 31

B1 PC PC B1 SAMPLE 16 B1 SAMPLE 32

C1 SAMPLE 1 C1 SAMPLE 17 C1 SAMPLE 33

D1 SAMPLE 2 D1 SAMPLE 18 D1 SAMPLE 34

E1 SAMPLE 3 E1 SAMPLE 19 E1 SAMPLE 35

F1 SAMPLE 4 F1 SAMPLE 20 F1 SAMPLE 36

G1 SAMPLE 5 G1 SAMPLE 21 G1 SAMPLE 37

H1 SAMPLE 6 H1 SAMPLE 22 H1 SAMPLE 38

Initialization **BCIM-1111 / K-4476** **BCIM-1111 / K-4476** **BCIM-1111 / K-4476**

Apply Run

EMERGENCY **QUEST** **Home** **UV** **Store** **About**

Apply Run

BiONEER ExiPrep™48

Remaining Time **01 : 59 : 51** **Initialization** **▶** **||** **■**

BCI-1111 **BCI-1111** **BCI-1111**

Viral DNA/RNA **Viral DNA/RNA** **Viral DNA/RNA**

Step 1 (Strip 2) **Step 3 (Strip 4)** **Step 5 (Strip 6)**

Well Type Sample ID

A1 NTC NTC A1 SAMPLE 15 A1 SAMPLE 31

B1 PC PC B1 SAMPLE 16 B1 SAMPLE 32

C1 SAMPLE 1 C1 SAMPLE 17 C1 SAMPLE 33

D1 SAMPLE 2 D1 SAMPLE 18 D1 SAMPLE 34

E1 SAMPLE 3 E1 SAMPLE 19 E1 SAMPLE 35

F1 SAMPLE 4 F1 SAMPLE 20 F1 SAMPLE 36

G1 SAMPLE 5 G1 SAMPLE 21 G1 SAMPLE 37

H1 SAMPLE 6 H1 SAMPLE 22 H1 SAMPLE 38

Assign PCR

EMERGENCY **QUEST** **Home** **UV** **Store** **About**

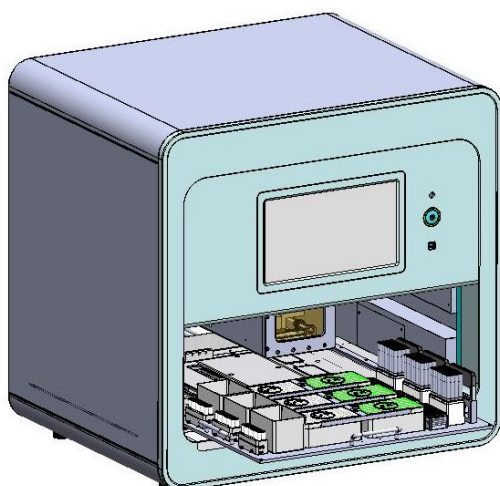
- 6) Enter Lot Number of the diagnosis Kit selected.
- 7) Select the Prep Kit that corresponds to the diagnosis kit selected.
- 8) Enter the Prep Kit Lot Number selected.
- 9) You can confirm on the front of the prep Kit package box or on the side of cartridge.

- 10) Wells other than designated as Control, their type is designated as samples, and can enter sample ID. You can enter sample ID using a barcode reader and enter it directly.

- 11) All information such as diagnosis Kit1, diagnosis Kit2, Prep kit selection, Lot No, well designation and sample ID have been entered.

- 12) When the setting for all experiment information is completed, click the 'Apply Run' icon to start the nucleic acid extraction.

- 13) When the nucleic acid extraction is in progress, it converts from the Design experiment setting screen to the Run experiment. You can check Cat. No used in the nucleic acid extraction, elapsed time, remaining time, etc from the Run experiment screen.



- 14) When the nucleic acid extraction is completed, remove all parts such as elution tube, buffer cartridge from the setup tray and push the setup tray all the way in and close the door.

NOTE

If the automatic UV-sterilization mode is set, a window to start the UV-sterilization appears.

- UV-sterilization starts if the Start button is pressed.
- UV-sterilization is skipped if the Skip button is pressed.

XI. Troubleshooting

In case of abnormal operation, please check the followings or contact us or your local dealer.

Problem	Measures
Cannot turn on power	1. Ensure that power connector is connected to the outlet. 2. Check if the power cord is connected to the body. 3. Check if the body's power switch on the front is turned on. 4. Contact your local dealer for repair.
Power is on but not being initialized	1. Press the power switch to shut off the power source. 2. Check if it has been shut down abnormally. 3. Check if accessory, tip, etc inside the body have remained if abnormally shut down. 4. Check if there is any accessory that remains or hinder the operation and remove it. 5. Place the syringe block inside the body to the center. 6. Press the power switch to approve the power source and check if it initializes. 7. Contact your local dealer for repair.
Power is on but LCD screen does not turn on	1. It could be a problem with the instrument. Contact your local dealer for repair.
Does not run even if Apply Run button is pressed	1. Check if the retainer bracket for transport has been removed. 2. Check if it is normally initialized when powering up. 3. Check if there are foreign objects or accessories that may hinder the operation. 4. Check if accessories are properly installed and attached. 5. Check if there is any other button is operating on the LCD screen. 6. Contact your local dealer for repair.
It operates but not correctly	1. Check if the Setup Tray is in a right position. 2. Check if there are foreign objects or accessory that may hinder the operation. 3. Check if accessories are properly installed and attached. 4. 4. Contract your local dealer for repair.
Front door does not close	1. Check if the Setup Tray is in a right position. 2. Press the door button to check if door goes up or down. 3. Contact your local dealer for repair.
Setup Tray does not completely move to its right position	1. Check if there are foreign objects or accessory that may hinder the operation. 2. Check if accessories are properly installed and attached. 3. Contact your local dealer for repair
Does not work even after closing the front door	1. Be sure to check if the Setup Tray has moved to its original position. 2. Check if the Waste Tray is positioned to the Prep number it wants to perform. 3. Check if there are any foreign objects or accessories at the

Problem	Measures
	bottom of the front door. 4. Contact your local dealer for repair.
Setup Tray does not completely come out	1. Check if there are foreign objects or accessories that may hinder the movement of the Setup Tray inside the instrument. 2. Check if there are foreign objects or accessories that may hinder the movement of the Setup Tray on the front of the instrument. 3. Contact your local dealer for repair.
Accessories cannot be installed	1. Check if the accessory is the right one for the location. 2. Check if there are foreign objects and accessories and rack, etc at their locations. 3. Check if accessories, racks, retainer pin are damaged or bent. 4. Contact your local dealer for repair.
Syringe block cannot insert tips during operation	1. Be sure to check if the front door is completely closed. 2. Check if tip rack is properly installed. 3. Check if foreign objects or accessories are blocking while inserting tips. 4. Check if stop or pause buttons are pressed. 5. Check if approved tips are installed. 6. Check if tip is damaged or bent. 7. Contact your local dealer for repair.
Syringe block has properly installed tips but not able to move	1. Be sure to check if the front door is completely closed. 2. Check if there are foreign objects or accessories are blocking while syringe block is moving. 3. Check if cartridge is properly installed. 4. Check if stop or pause buttons are pressed. 5. Contact your local dealer for repair.
Stops while operating	1. Check if the power source is connected. 2. Check if the power switch is turned on. 3. Check if the green progress bar on the top of LCD screen is moving which means it is being delayed. 4. Check if stop or pause buttons are pressed. 5. Contact your local dealer for repair.
Operates abnormally	1. Check if it were used for protocols other than its original purpose. 2. Check if motor malfunctioned blocked by foreign objects or accessories while the syringe block is moving. 3. Check if it operates normally by rebooting the same protocol. 4. Contact your local dealer for repair.
It operates normally but elution does not	1. Check if accessories as Elution rack, tube are properly installed. 2. Check if tips are completely inserted. 3. Check if the end of tip is blocked. 4. Check if the sample is inserted into the cartridge. 5. Check if syringe block is leaking. 6. Contact your local dealer for repair.

Problem	Measures
Syringe block leaks	1. Stop using the well and call your local dealer for repair.
Solution drips to the bottom of the instrument	1. Check if the solution inside the Waste Tray is empty. 2. Check if accessories as rack and waste tray are properly installed. 3. Check for the leaks in syringe block. 4. Contact your local dealer for repair.
Heater does not work	1. Check if accessories as rack and waste tray are properly installed. 2. Check if solution did not drip to the setup tray and inside the instrument during operation. 3. Contact your local dealer for repair.
Smells burning from the instrument	1. Disconnect the power plug immediately and stop using the instrument. 2. Contact your local dealer for repair.
UV Lamp does not work	1. Be sure to check if the front door is completely closed. 2. Contact your local dealer for repair.
Elution tube rack is not maintained at a low temperature	1. Check if power source is connected. 2. Check the temperature setting from the LCD screen or PC operating program. 3. Contact your local dealer for repair.
Cooling fan does not work	1. Check if power source is connected. 2. Check the temperature setting from the LCD screen or PC operating program. 3. Contact your local dealer for repair.
Protocol update does not progress	1. Check if the USB inserted has been properly recognized. 2. Check if the external computer and instrument are properly connected via LAN cable. 3. Turn off the power source of computer and instrument and turn back on. 4. Start an update. 5. If fails, try another update once again. 6. Contact your local dealer if it keeps failing.
POWER or DOOR button is not working	1. Check if the power cord is properly connected and turn the power switch 'ON'. 2. The button does not work when the instrument is performing self-diagnosis. After the self-diagnosis is completed, check if the status of LED flashes green and operate the button.
If the instrument and Exicycler™ 96 do not communicate each other	1. Check if the USB cable is properly connected. 2. Be sure if the computer and instrument are connected with the USB cable provided from manufacturer. You must use the cable that supports USB 2.0 high speed. 3. Make sure the instrument is in standby mode. The status LED shall be in green. If the status light LED flashes in red, turn the power off and start again.

If <i>ExiStation</i> ™ is used along with PC	
Problem	Measures
The instrument does not operate with PC operating program	1. Check the connection of network cable between PC and router. 2. Check the network cable between the router and instruments. 3. Check the power on the router. 4. Check if the PC network setting is properly entered. 5. Check if the operating program is located in the right folder. 6. Contact your local dealer for repair.
Operating program works differently	1. Check if the same operation button has been clicked more than twice. 2. Check if the operation program has been activated more in duality. 3. Turn off and on the power of the instrument and operating program 4. Contact your local dealer for repair.
Picture or button of the operating program do not appear	1. Delete the operating program and install anew.

XII. User Maintenance

1. Cleaning of the main body

Note

- Turn off the power of *ExiPrep*™48 and disconnect the power cord.
- Wait until the temperature of heat block drops back to room temperature.

(1) Cleaning of the LCD Touch Screen

- Clean the LCD touch screen using the cleaning solution available in the market
- Be careful not to leave any scratch on the screen

(2) Cleaning of the Door

- Clean the Door using the cleaning solution available in the market
- Be careful not to leave any scratch on the screen.

2. Replacing the Fuse

This instrument uses two fuses.

- **Tools required for the replacement**
 - 2 fuses with the specification of 250V, F6.3AL, 5×20mm
 - 1 flat-head screwdriver (small)
- **Replacing the Fuse**

- 1) Turn off the power at the rear of *ExiPrep*™48 and disconnect the power cord.



Risk of electric shock

Serous electric shock may result during the operation of high voltage instrument and it may cause physical injury or even death. To prevent the electric shock, disconnect the power cord at least one minute before use and disconnect the power supply from the external power source.

- 2) If you insert a flat-head screwdriver into the upper part of power inlet, the fuse cover can be opened.



- 3) Pull out the fuse slot and check the condition of fuses.



- 4) Take out the disconnected fuse from the fuse slot, and replace it with a new fuse with the specification of 250V, F6.3AL, 5×20mm.



- 5) Return the fuse slot to its original position under the power cord inlet and close the fuse cover.
6) Push the fuse cover firmly until it gets to the original position.
7) Connect the power cord of the instrument.

3. Storage Method

Storage Condition

- (1) Temperature: 0~40℃
(2) Relative humidity: Within the range that vapor doesn't get condensed, which is around 20 to 80%

Storage of the Instrument

- (1) The instrument must be stored in accordance with the cautions presented in the user manual, when not in use.

- (2) It must be stored in accordance with all the storage conditions stated above.

4. Shipping the Instrument for Service

- 1) First of all, please inform the regional manager of customer center about the contents of the service request.
- 2) Remove the source of contamination of the instrument.



If the bath block is contaminated by radioactive material, remove the source of the contamination with a commercial decontamination agent. If contaminated material cannot be removed with a decontamination agent, Bioneer Corp. will not receive the instrument for services.

- 3) Check whether the source of contamination is completely removed.
- 4) Pack the main body of instrument in the box with the packaging materials that were supplied at the time of purchase. Do not send the accessories and power cord.
- 5) If you attach the shipping slip on the box, the instrument would be sent to the service center mentioned on the shipping slip. The repair process will take 1 to 3 weeks.

NOTE

If the service request sheet is not submitted, the repair of the instrument may be delayed.

XIII. *ExiPrep*™48 Warranty

This instrument is warranted by Bioneer against manufacturing defects in materials and workmanship for a limited warranty period of one (1) year from the date you received your product. Bioneer will either (1) repair the product at no charge if a hardware defect is found or (2) exchange the product if the same hardware defect arises more than three times during the limited warranty period. Any other accessories other than the instrument itself are considered as consumables and warranted for three months. Spare parts for the instrument will be available for five years from the initial instrument release date. If a defect arises after the limited warranty period, shipping and handling charges may apply to any repairs or exchanges of the product undertaken by Bioneer.

Exclusions and limitations

This warranty does not apply: (a) to cosmetic damage, including but not limited to scratches, dents, and broken plastic on ports; (b) to damage caused by accident, abuse, misuse, flood, fire, earthquake or other external causes; (c) to a product or part that has been modified in any way without explicit written consent of Bioneer; or (d) to damage caused by any services performed by unauthorized engineers or service providers.

Obtaining Warranty Service

Please review this User Manual and access the online support referred to in the manual accompanying this product before requesting warranty service.

Revision History

Rev. No.	Rev. Date	Reason	Revision contents	etc
1.0	2017-08-30		First issue	

A/S Request Form

Product	<i>ExiPrep™</i> 48, Fully Automated Nucleic Acid Extraction System		
Catalog No.	A-5150-1	Serial No.	
Date of request			
Date of purchase			
Service issue	* Please list one service issue or concern per line.		
	Issue 1		
	Issue 1		
	Issue 1		
	Issue 1		
	Issue 1		
Customer Information	Address		
	Company		
	Name		
	Contact	Phone:	Fax:
	E – mail		

ExiPrep™48 Maintenance Sheet

Month/Year: /																								Operator:											
S/N: EP48-																																			
Description	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31				
Daily																																			
Worktable Cleaning																																			
Waste Tray Cleaning																																			
Elution Tube Rack Cleaning																																			
Hole Puncher Celaning																																			
Cooling Fan Check																																			
Setup Tray Cleaning																																			
Contamination Shield Cleaning																																			
Check Touch Screen operation																																			
Weekly																																			
Self Test Check																																			
Plate Cleaning																																			
UV Lamp Check																																			
Exterior Check																																			
Cooling Fan Cover damage Check																																			
Biannually or When Required																																			
Setup Tray Running Check																																			
Pollutants inside the instrument Check																																			
Syringe Leaking Check																																			
Heating Block Temperature Check																																			
Home Position Check																																			
Check grease of moving part and oiling																																			

* Required Materials: Distilled Water, 70 % Ethanol, 1 % Clorox (Or 2 % acetic acid), DNA Zap, Swab, Wiper, Powder-free disposable glove.

● Bioneer Worldwide

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